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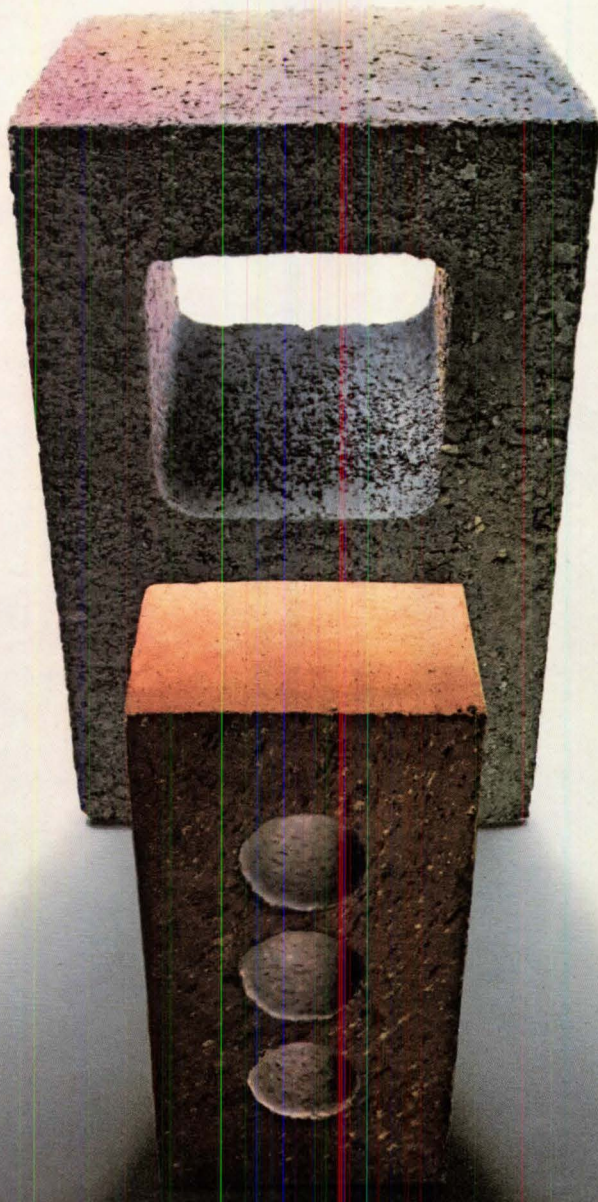
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An Entirely New Code of Ethics for the Architectural Profession? 8

The AIA board endorses an executive committee draft for presentation to the national convention in May. If adopted then, it would remove present prohibitions against advertising and contracting, among other things, and would place a strong new emphasis on professional competence.

Philadelphia in the Years Since Its Local Renaissance—Donald Canty 31

A pictorial progress report on the famous center city plan of the early 1960s.

Perspectives on Philadelphia's Approach to Planning—Beth Dunlop 48

A collection of varied views on what it has meant to the face and life of the city.

Making Money: Financial Planning and Controls—Peter Piven, AIA 55

Practice Is People: Guidelines to Sound Personnel Practices— 60

David M. Bowen, AIA

The first two in a series of excerpts from the forthcoming Institute-prepared book, "Current Techniques in Architectural Practice."

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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 \$12 a year; \$20 two years; \$8 to architectural students in the U.S., its possessions and Canada. For all others: \$18 a year in the U.S., its possessions and Canada; other countries to those who are by title, architects: \$18 a year. All others outside the U.S., its possessions and Canada: \$30 a year. Single copy: \$2, payable in advance. Publisher reserves the right to refuse unqualified subscriptions. For subscriptions: write Circulation Department; for change of address: send Circulation Department both old and new addresses; allow six weeks. Second class postage paid at Washington, D.C. Quotations on reprints of articles available. Microfilm copies available from University Microfilm, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Referenced in *The Architectural Index*, *Architectural Periodicals Index*, *Art Index*, *Avery Index to Architectural Periodicals*. © 1976 by The American Institute of Architects. Opinions expressed by contributors are not necessarily those of the AIA.® VOL. 65 NO. 3



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An Entirely New Ethical Code for the Profession?

Meeting in Nashville early this month, the AIA board endorsed a new and drastically revised set of standards of ethical practice for submission to the 1976 convention.

The proposed new standards were drafted by the executive committee in February. At this writing they are being put in final form with the aid of legal counsel.

The executive committee draft is remarkably brief and determinedly positive in tone. Its very first ethical "guideline" is development and maintenance of professional competence.

It goes on to forbid any professional activity that is dishonest, illegal or discriminatory, or that compromises professional judgment.

However, it omits present prohibitions against paid advertising, use of free sketches or services to get a job, product endorsements—and contracting.

It permits an AIA member to engage in any business activity for which he is qualified, just so he states his qualifications forthrightly to the client and warns him of any potential for conflict of interest in their relationship.

In presenting its draft to the board, the executive committee said in a covering memorandum that its intent was not "a weakening of ethics." It acknowledged that the proposed new standards contain "fewer prohibitions against specific activities." But it emphasized that they would impose "strong, new imperatives for competence, honesty and fairness." In all, the committee said, "the intent is to establish a performance ethic instead of a prescriptive code and in so doing to create a new definition of professionalism."

At January's annual grassroots meetings, Hilliard T. Smith Jr., FAIA, secretary of the Institute and member of a

special executive committee task force on ethics (other members: John M. McGinty, FAIA, first vice president, and Robert L. Wilson, AIA, vice president), had told the membership that "pressures for change" in the ethical standards are "heavy and mounting" both from within the profession and from outside sources. "We may be forced to change our ethics or to strongly defend our current position."

The debate within the profession has stemmed primarily from the increasing number of design-construction entities, the so-called "package dealers" who have invaded the traditional architect's territory. Indeed, the committee on architecture for commerce and industry last year proposed a change in ethical standards to allow the architect to act as builder, developer or financier of a project.

Pressures from outside have included recent statements by the Department of Justice and the Federal Trade Commission which indicate, as Smith said, "that the entire concept of licensing of professionals is under attack." A number of professional associations are struggling in debate over ethical problems. In February, for the first time in its history, the American Bar Association voted that lawyers should be authorized to advertise limited information about fees and services in approved publications.

Restrictions on lawyer advertising are being attacked in six lawsuits brought by consumer groups and attorneys. In complaint about ABA's "limited" action on advertising, the executive director of the National Consumer Center for Legal Services said that his group would "see ABA in court." He called ABA's action on advertising "a shabby effort, designed to accomplish as little as possible."

The American Medical Association has not given as much ground as ABA, however. In December, a spokesman for the Federal Trade Commission called a press conference at which time he said that AMA should relinquish any ethical principles which restrict "a doctor's freedom to advertise, solicit patients or to inde-

pendently determine the fees at which services will be performed." AMA immediately issued a statement declaring that it would fight. "Advertising by a profession is the very antithesis of professionalism," a spokesman said.

The Supreme Court, however, has recently handed down two rulings which would suggest that a ban on advertising might be invalid as an antitrust violation and, if imposed by statute or regulation, as infringement of free speech and a free press. And the Justice Department's antitrust division has already filed a suit against the American Pharmaceutical Association and its Michigan state component in which it is charged that bans on advertising violate the Sherman Antitrust Act.

A recent event hits even closer to home for architects. Bruce E. Babbitt, attorney general for the state of Arizona, is investigating virtually all professional societies in that state to see if they are in violation of antitrust laws. He has served papers on the three AIA components in Arizona. At this writing, he has proposed a consent decree for the Central Arizona chapter/AIA which would eliminate in that state AIA's ban on advertising as well as its restrictions on architectural design competitions.

Clearly, the winds of change are blowing. The principal issue in the proposed new standards of ethical practice for the architectural profession, in Smith's view, is whether AIA is to attempt "to accommodate all the variations of practice among its membership" or only those "with a reasonable compatibility of practice."

New AIA Fellows Announced

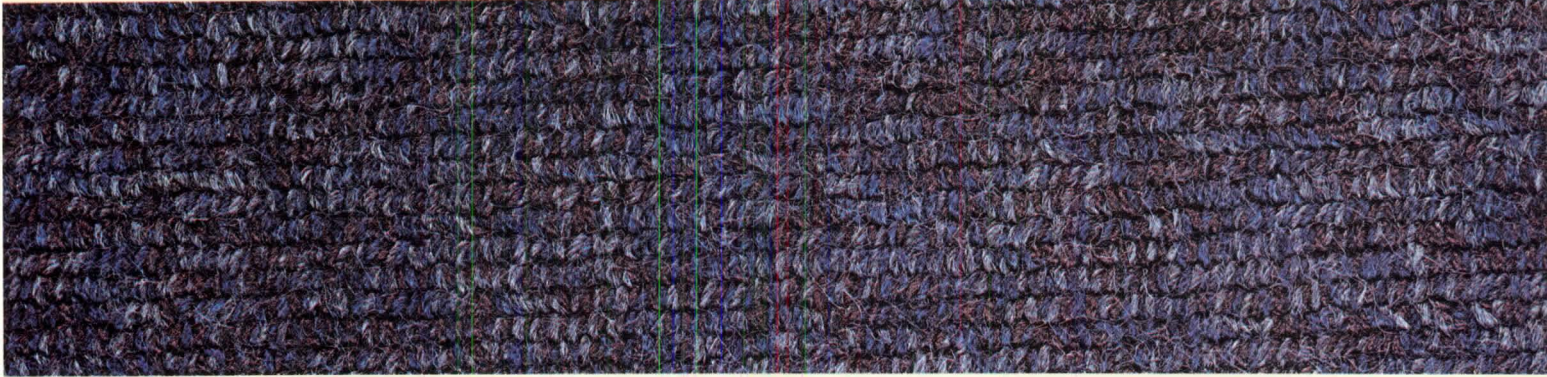
AIA may bestow a fellowship for achievement in architecture on members "who have notably contributed to the advancement of the profession." This distinctive honor requires the most careful consideration by those who nominate the

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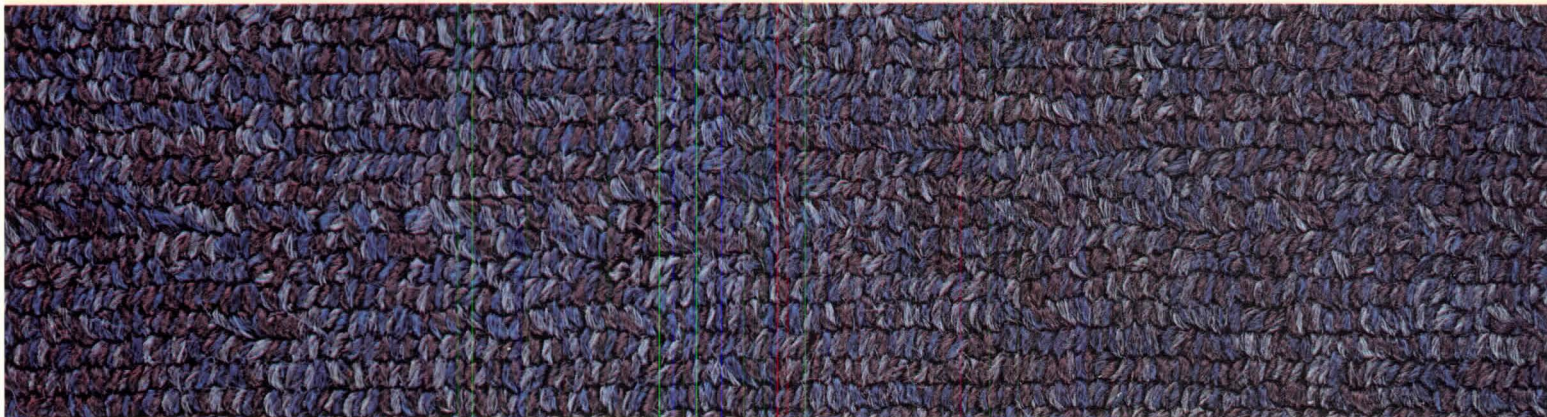
Ed. Note: *This issue of the JOURNAL has been intentionally delayed to allow us to report the board action on ethics. In April, we will go on a new schedule designed to get the magazine to its readers earlier each month than before.*

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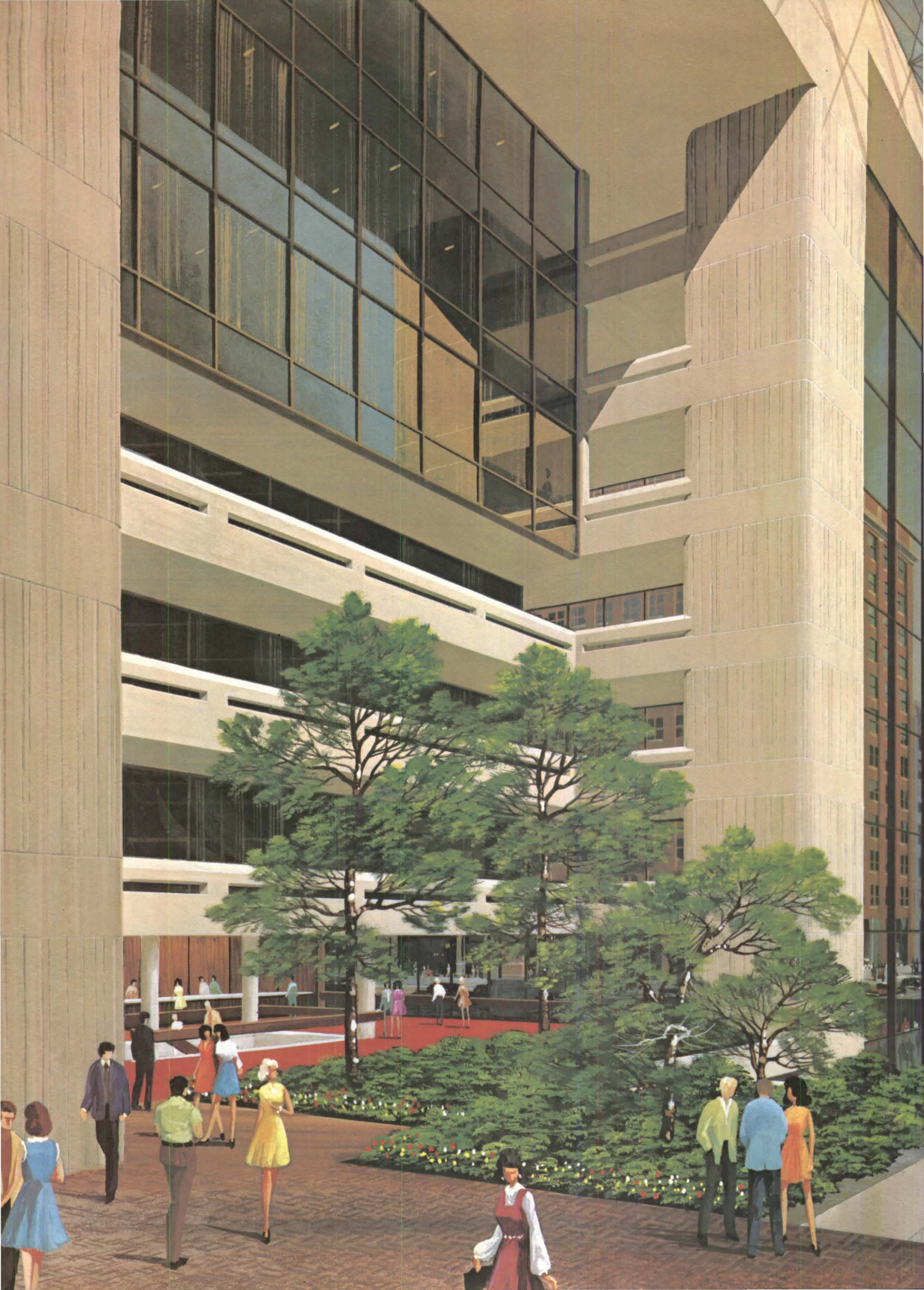
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Going On from page 8
person and by the jury of fellows.

The jury of fellows, chaired by Edward A. Killingsworth, FAIA, has advanced 71 members to fellowship, of whom three are women. The following persons have been advanced to fellowship:

George A. Agron, San Francisco
William Bain Jr., Seattle
James B. Baker, New York City
Rex M. Ball, Oklahoma City
Jay W. Barnes, Austin, Tex.
Orville Henry Bauer, Toledo, Ohio
Frederick R. Bentel, Locust Valley, N.Y.
Maria A. Bentel, Locust Valley, N.Y.
Charles A. Blondheim Jr., Eufaula, Ala.
Lloyd G. Borget, Houston
Benjamin E. Brewer Jr., Houston
Joseph W. Burcham, Baltimore
Arthur L. Burns, Indianapolis
Robert A. Chervenak, Bellevue, Wash.
Gordon M. Comb, Minneapolis
Jerome M. Cooper, Atlanta
Horacio Diaz, Hato Rey, Puerto Rico
James D. Ferris, Chicago
H. Curtis Finch, Lake Oswego, Ore.
Edward D. Francis, Detroit
Thomas F. Galvin, New York City
William Allaman Ganster, Waukegan, Ill.
Bennie M. Gonzales, Scottsdale, Ariz.
Ronald Gourley, Cambridge, Mass.
Anna M. Halpin, New York City
John Hyatt Hammond, Asheboro, N.C.
Hugh Hardy, New York City
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Hugh B. Johnson, Washington, D.C.
Gerhard Michael Kallmann, Boston
William Koblik, Sacramento, Calif.
Bill N. Lacy, Washington, D.C.
Gene E. Lefebvre, Kansas City, Mo.
John Russell Levikow, San Mateo, Calif.
George S. Lewis, New York City
Walter R. Livingston, Philadelphia
Wendell V. Locke, Oklahoma City
Charles Warren Luther Jr., Attleboro, Mass.
William W. Lyman Jr., Birmingham, Mich.
Ian Mackinlay, Orinda, Calif.
Elmer Hugh McDowell, St. Thomas, Virgin Islands
John Milton McGinty, Houston
Richard Alan Meier, New York City
Arthur F. O'Leary, Beverly Hills, Calif.
Edward S. Parsons, Reno
Jay S. Pettitt Jr., Detroit
Richard Lee Rice, Raleigh, N.C.
Darryl Thomas Roberson, San Francisco
Harold G. Sadler, San Diego
Hans K. Sander, Princeton, N.J.
Kenneth M. Schaefer, St. Louis
Herbert W. Schneider, Phoenix
Alan Schwartzman, New York City
Howard Charles Sherman, Shreveport, La.
John E. Stefany, Tampa, Fla.
James A. Stenhouse, Charlotte, N.C.

Donald J. Stephens, Center Berlin, N.Y.
Preston Stevens Jr., Atlanta
Eugene Calvin Swager, Peoria, Ill.
Frank Tomsick, San Francisco
Karl Edward Treffinger, San Francisco
William Turnbull Jr., San Francisco
Shirley Jane Vernon, Philadelphia
Searle H. von Storch, Waverly, Pa.
Charles H. Warner Jr., Nyack, N.Y.
Harry B. Wilson Jr., Los Angeles
Richard Saul Wurman, Philadelphia
Ronald Westman Yeo, Corona del Mar, Calif.

Mitchell/Giurgola Receives Architectural Firm Award

Mitchell/Giurgola, Philadelphia and New York City, has been selected to receive the highest honor that AIA can bestow on an architectural firm. The architectural firm award, which will be presented at the Institute convention in Philadelphia, is given "in recognition of a firm in which continuing collaboration among the firm members has been the principal force in producing distinguished architecture."

The jury on Institute honors said that Mitchell/Giurgola's work "reflects the best qualities and concerns influencing architecture today." Its projects include "both isolated monuments of splendid integrity and modest fragments of a larger urban fabric." The firm's personnel were praised by the jury as "dedicated architects and enlightened citizens who have contributed generously to the broader public and academic worlds that surround our profession."

Founded in 1958, the firm's first major project was the Wright Brothers Memorial Visitors Center, Kill Devil Hills, N.C. Since then, the firm has won many awards for distinguished design work, including AIA honor awards for MDRT Foundation, Bryn Mawr, Pa. (1974) and Columbus East High School, Columbus, Ind. (1975). The firm's diverse projects have ranged from single family houses to auto assembly plants.

Edmund Bacon To Be Honored At Convention

Edmund N. Bacon, FAIA, will be honored by the Institute at its annual convention when he is presented with a medal in recognition of his accomplishments as executive director of the Philadelphia City Planning Commission. He became head of the commission in 1949 and in that capacity "led a renewal and revitalization effort that remade the city's urban core and established his reputation as a far-sighted and effective planner."

Bacon was described by the jury on Institute honors as "architect, planner, teacher and world citizen (who) took

Philadelphia as his own and has remade it with the help of businessmen, bankers, architects and planners who drew their inspiration from this courageous, brilliant and practical man of vision." He is the author of the widely acclaimed book *Design of Cities*, now in its second revised edition.

Charles A. Blessing, FAIA, will receive an AIA medal for his "unique and artistic documentation of many of the world's great cities." The jury said: "During the course of his life as an architect and city planner, Blessing has documented the cities and places of this world as has no other person before him. His drawings, 'Cities in Perspective,' have become a more meaningful way of expressing and recording the drama, form, scale and grain of the man-made environment." Blessing, director of city planning for the Detroit City Plan Commission since 1953, has gone all over the world gathering material for his drawings.

Kemper Award to Daly, Young Award to Campbell

Leo A. Daly, FAIA, of Omaha, Neb., president of Leo A. Daly Co., has been selected to receive the Edward C. Kemper award for 1976. The award, named in honor of the late executive director of the Institute, is given yearly for significant contribution to AIA and to the architectural profession.

Daly, in 1972, became chairman of the AIA task force on energy conservation, and under his leadership the task force developed a major energy document titled "Energy and the Built Environment: A Gap in Current Strategies." He also headed the task force's successor, the AIA energy steering committee. This committee prepared another document, "A Nation of Energy Efficient Buildings by 1990." These two documents, with the work of the task force and the committee, have formed the foundation of AIA's favored approach to solving the nation's energy problems.

Daly has served also as chairman of the Committee on Federal Procurement of Architectural and Engineering Services and of the National Council on Research in Energy Conservation, and also as a member of the executive advisory committee of the National Power Supply, Federal Power Commission.

Wendell J. Campbell, AIA, one of the founders and first president of the National Organization for Minority Architects, has been named recipient of an AIA medal awarded in honor of the late civil rights leader, Whitney M. Young Jr. The honor is awarded annually to an architect or an architecturally oriented organization for significant contribution toward

continued on page 21

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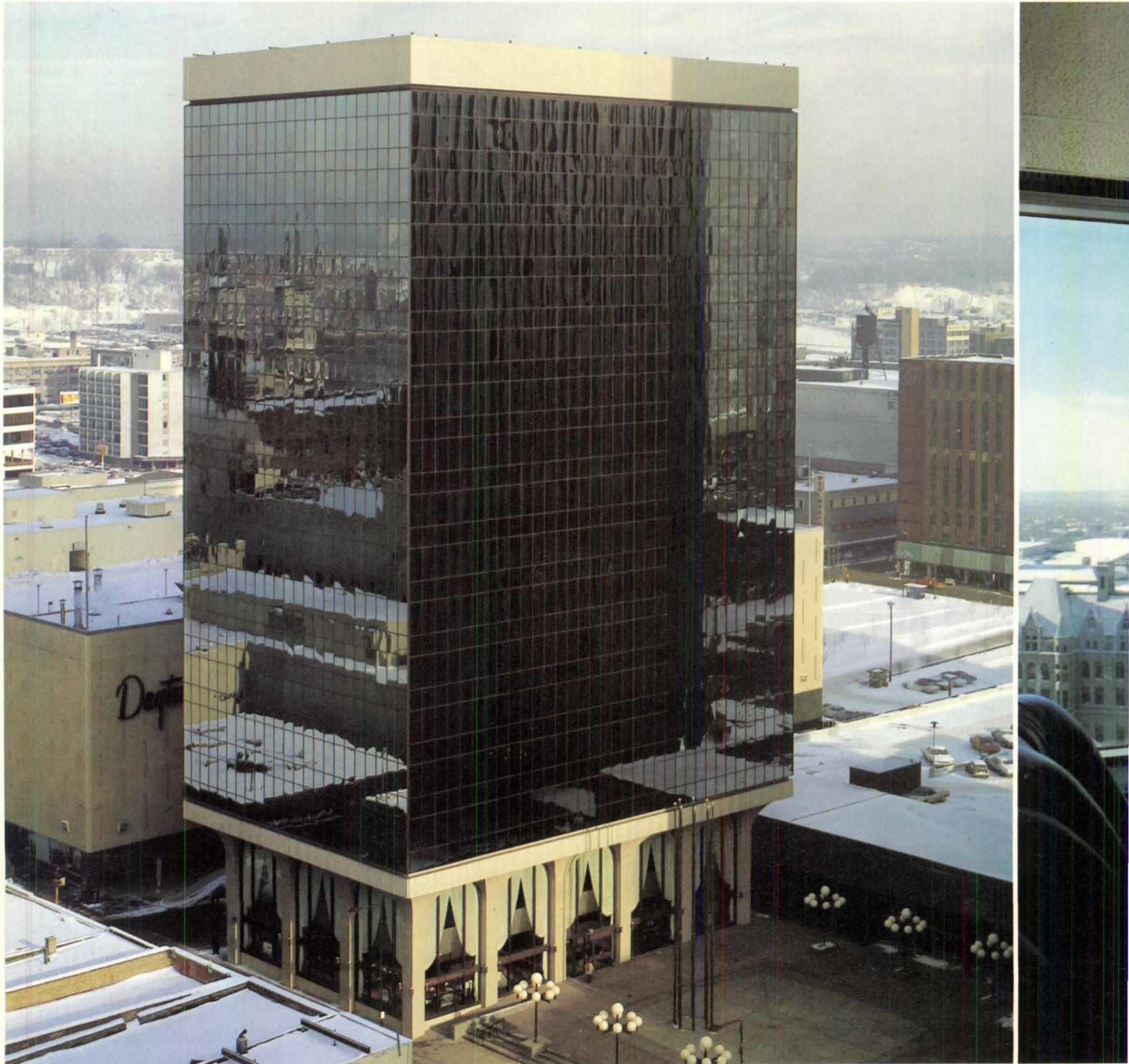


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Redwood — a renewable resource

**WHEN YOU'RE AN
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Northern Federal Building, St. Paul, Minnesota. Owner: Yorktown Investment

INCH AWAY FROM 98° ABOVE, PERFORMANCE GLASS.



THE GLASS FOR ALL SEASONS.

VARI-TRAN®-THERMOPANE®

While extremes may not be the norm, the people of St. Paul, Minnesota, have stepped very quickly through -34° winter mornings, and sweltered through long 98° summer days. Under these extreme conditions, architects and owners select building materials very wisely. At the Northern Federal Building in St. Paul, wise meant selecting LOF reflective Vari-Tran® coated glass in Thermopane® insulating units for the tower.

SAVINGS ON ELECTRIC ENERGY TO HEAT BUILDINGS.

In the 14-story tower portion of the building glazed with LOF high-performance glass, the amount of energy required for heating at a peak load is just over 2,800,000 BTUH. Had it been glazed in single-pane clear glass, the peak load requirements would have been 4,700,000 BTUH. The 1,900,000 BTUH difference reduces peak load system input by 559 kilowatts—amounting to a considerable savings in electrical heating cost.

OVER \$164,000 SAVED IN INITIAL A/C COSTS.

The total building cooling requirements were also reduced from over 900 tons to 736 tons. Over \$164,000 savings in initial costs resulted. In fact, Vari-Tran 1-114's ability to cut solar heat gain has made the walls so efficient that during most of the summer only one of the two 368-ton A/C units installed is used.

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LOF makes a wide variety of high-performance, hard-working glasses. Their versatility to meet the requirements of extreme conditions has been widely proven. If you would like to know how the right glass can save you building and energy dollars, our highly qualified architectural representatives will be glad to help you. Or write LOF, 811 Madison Avenue, Toledo, Ohio 43695.

LOF

Circle 9 on information card

SOME PEOPLE ARE MAKING ENERGY CONSERVATION CLAIMS YOU CAN SEE RIGHT THROUGH.

When it comes to saving energy, insulated brick walls are hard to beat. That's why most glass ads don't mention brick in their energy conservation comparisons.

It's true that the new "reflective" glass is better than the old glass.

But the question is: What's the best wall system for saving energy?

You can't answer that question by comparing glass to glass.

So let's compare glass walls to

brick walls. Their best vs. our best.

Since you can't insulate glass walls without destroying their primary function, we won't. And since we've always recommended that brick walls be insulated, we will.

The best of the brick wall line-up is the 10-inch insulated brick-and-brick cavity wall with a U value of .058.

That's about six times better than the best, double-glazed

reflective glass in reducing heat loss. And the brick wall is about 30 times better in reducing solar heat gain — and costs less to build and maintain.

That's the kind of comparison that's meaningful.



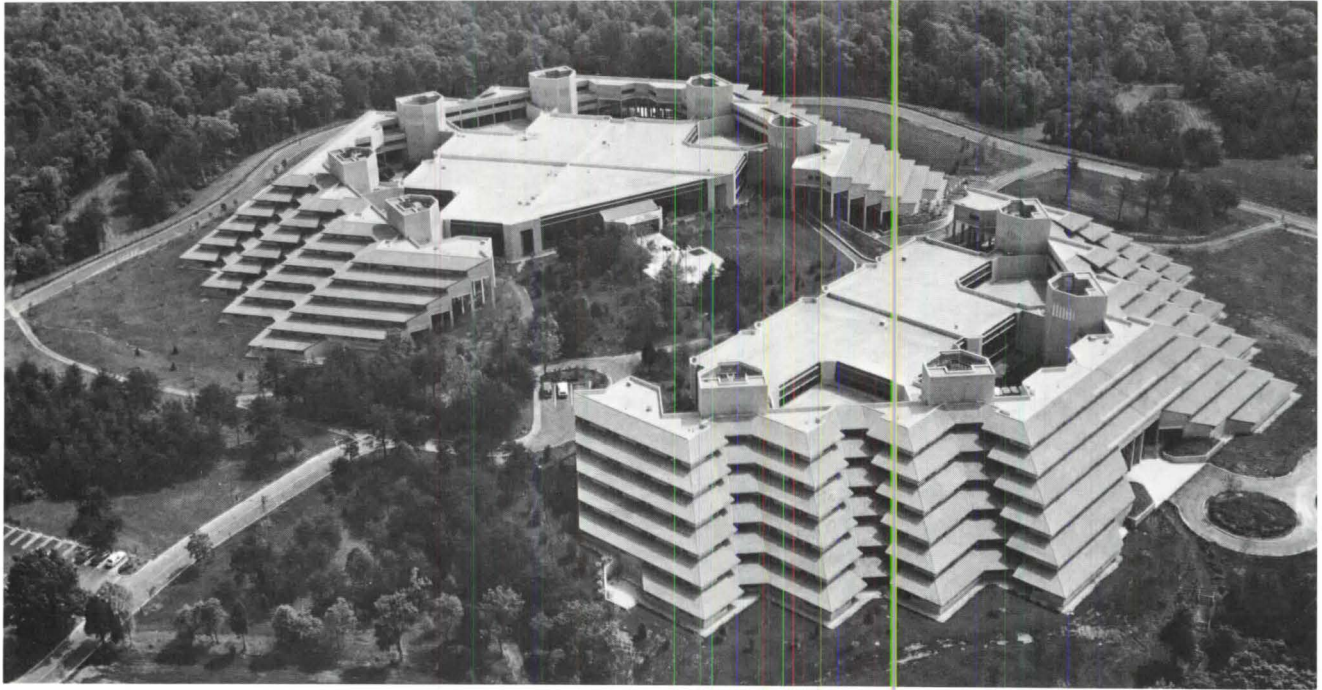
**BRICK INSTITUTE
OF AMERICA**

1750 Old Meadow Rd., McLean, Va. 22101



Circle 10 on information card

Xerox Runs Off Five Campus Originals: Living/Learning Modules That Save Students' Time and HVAC Energy



Air view of two main buildings of Xerox center. Students live in terraced perimeter surrounding flat-roofed learning areas.

With innovations such as octagonal classrooms and electric heat recovery, this new industrial training facility features a cohesive layout that encourages employees to learn from one another as well as from their teachers.

Leesburg, Virginia. Along with a number of other brilliantly run U.S. firms, Xerox Corporation is studied and analyzed as a classical model of good management in the classrooms of Ivy League business schools. When it decided to build its own campus back in 1971, however, Xerox did not return the compliment by emulating traditional college architecture. Instead it came up with a totally unique approach that is as inventive in its own way as the company's famed copying process.

A standard vision of the American college scene is one of large numbers of

students hurrying across the grassy expanses between dormitory and classroom buildings set here and there at random. The physical exercise involved certainly does the students no harm, especially when there are four leisurely years to spend and time is not of the essence. In industrial training, however, where courses range only from a day or two to a few weeks, time is very much a factor and campus walkabouts could be considered dispensable items in tight schoolday schedules. Xerox and its architects thought so, at least, and invented their own solution: the "living/learning module."

Free Association. The module is a physical structure containing classrooms, laboratories, residence rooms, recreational areas and other needed support facilities. Two or more modules can be freely combined in one building. Each module serves about 200 people, a number large enough for efficient application of physical plant and teaching facilities—yet small enough for a stabilizing, congenial sense of community among the members and for attention to the individual needs

and progress of each student.

When the architects elected to couple the living and learning spaces, an intriguing opportunity was presented to the team of design engineers. The classrooms and laboratories were to be highly loaded with electronic teaching aids, test equipment and working models of the company's own machines. The engineers were given the challenge of recovering the energy dissipated by this equipment and using it to provide space heating for the living spaces.

River View. The Xerox International Center for Training and Management Development sits on a wooded hillside overlooking the Potomac River, near the historic village of Leesburg and about 30 miles from the nation's capital. Overall, the site comprises 2265 acres, but the facility uses only about 40 acres of the available land. Two terraced buildings are the essence of a complex totaling more than one million square feet and accommodating over a thousand students at a time plus a staff of 500. These buildings contain five of the living/learning modules (three in one building, two in the other).

*One of a series of reports giving recognition to the efforts of architects and engineers on behalf of resource conservation.

The unique architectural approach opened for the engineers the intriguing possibility of transferring excess heat from spaces where students would work during the day to where they would sleep at night.

Entering any one of the modules from its courtyard, the visitor finds himself in a dramatic three-story-high carpeted mall known as the "commons" area. Each commons contains a different variety of facilities which are used by all of the students. A service desk, newsstand and game lounge are housed in module 1; a snack bar/cocktail lounge in module 2; a large dining room in module 3; barber shop, health services area and game lounge in module 4; and a library in module 5.

The service desks accommodate the registration of newcomers as well as the distribution of mail, check cashing and valet services. Game lounges are well planned for student relaxation, furnished with amenities such as grand pianos, billiards and table tennis equipment, card tables and softly cushioned seating arrangements. These lounges and the pub area are where students gather during evenings and weekends.

Tiered Suites. Ringing each high-bay mall or commons are six levels of glassed-in space where the students reside. The living quarters on these tiers are divided into suites for six people. The focal point of a suite is its generously proportioned lounge. Upholstered butcher block sofas, swivel armchairs, television consoles and indoor plants give these lounges a living room atmosphere that reflects the wooded environment of the site.

Six private bedrooms open directly onto each lounge. Carpeting and brightly colored blinds and bedspreads make these small but efficient rooms pleasant retreats for sleeping or studying. Between each pair of rooms is a full-sized bathroom shared by the two occupants. All bedrooms are outside rooms with unobstructed views of the lush Virginia countryside.

One of the two major items of furniture in a sleeping room is a single bed with a custom designed headboard containing a lockable storage compartment for the student's use. The second item is a large, well-lighted desk that runs the full length of one wall. In a sense, the desk could be considered as part of



Architect Peter Gerridge isn't particularly upset when, now and then, a casual visitor leaves with the wrong impression.

the HVAC system. One side of the desk-top is supported by the customary drawer case. The opposite side, however, rests on the cabinet of a free-standing, floor-mounted heat pump unit that supplies the room's heating and cooling. The louvered outlet grille for the unit is flush-mounted directly into the laminated plastic work surface.

Don't Stop Now. The visitor who stops his tour at this point might come away with the impression that he had just seen one of the newer hotels built around soaring lobbies designed to spellbind guests with architecture as drama. Or, perhaps, a fine resort motel. "We certainly wouldn't be displeased if people did get that impression," says lead architect Peter Gerridge of the Kling Partnership. Kling's several divisions handled the entire design. "We wanted the modules to be interesting and comfortable places in which to stay. For several reasons.

"First, the training that goes on here is rather intensive, and after an eight-hour day in class, the students need some relaxation. The center is far away from any type of downtown entertainment, so we had to help them provide their own. Second, we aimed to provide a structural environment that would help relieve any sense of boredom. The average employee may return here many times during his career, and we hoped to make him want to come back. But our most important design objective was to provide structures that encourage employee interaction. Xerox feels strongly about this. A lounge where, for example, a sales representative and a service engineer converse informally about their particular approaches to the company's objectives can be just as important as the classroom in promoting on-the-job performance and harmony."

Learning-in-the-Round. To get to class each day, the students leave their rooms, cross the commons and enter the "learning area." This is a three-story space that contains sales and service classrooms and labs.

The Leesburg classrooms are unusual—octagonal in shape rather than rectangular. Because it has no identifiable "front," the octagon dispels the traditional image of the instructor standing at the head of the class as the dominant figure. The effect is a learning-in-the-round atmosphere that encourages student involvement. Instructors guide the work, but there is also plenty of crosstalk among the students as the lesson proceeds.

Another reason for embracing the octagon is simply that it has more sides and all of them are put to work. One wall and the space behind it are occupied by audiovisual aids, including a rear screen projector, a television receiver and videotape cassette unit and storage racks for tapes and slides. Others are lined with tackboards and chalk slates.

Some small classrooms have adjoining studio/like rooms for taping the role-playing exercises used in sales training. Here a pair of students can act out a customer sales situation and later participate in a group critique as the tape is played back on the audiovisual equipment. Larger classrooms for technical instruction have adjoining labs where students receive hands-on training on current Xerox machines.

Engineering Helps. The design of the electrical and mechanical systems was carefully coordinated with the overall objectives for the living/learning modules. Lighting, for example, is a blend of various types of equipment, each chosen only after some consideration



Electrical engineer Peter Knuppel sees a place for mood lighting even in a down-to-business educational center.

of psychological effect. "We lighted learning areas to 130 footcandles with fluorescent fixtures," reports Kling/Lindquist electrical engineer Peter Knuppel. "We did this, of course, to provide the conditions needed for efficient work in the classrooms and labs. But we wanted the students to experience a change in mood, an uplift, when they left the learning areas for the day. So we went to the softer tones of lighting afforded by incandescent fixtures in the living spaces. The multistory commons areas presented a special problem which was solved nicely through the installation of a low-brightness system using 250-watt quartz floodlamps."

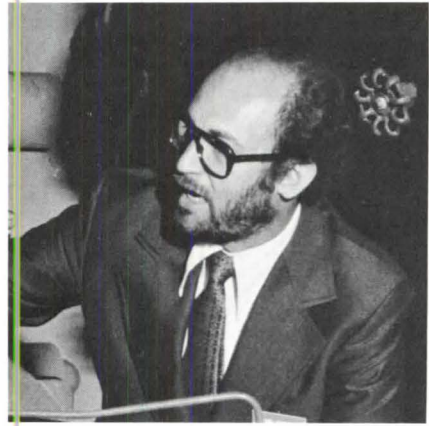
Space conditioning for the two-module building and for the three-module building is supplied by two separate closed-loop water-to-air electric heat pump systems. The total of 1700 individual units in the two buildings makes the Leesburg installation one of the largest based on the closed-loop principle. Unit sizes range from 3/4 to 20 tons. The smallest of these are of the cabinet type with integral thermostats and are located in the students' bedrooms. Larger areas, such as the lounges and classrooms, are served by ducted units installed above ceilings or in equipment closets.

All of the heat pump units in a building are coupled into a common closed loop of circulating water. In the cooling mode, the heat pumps reject heat to the circulating water; in the heating mode, they extract heat from it. It is the closed loop that makes possible the heat recovery capability of this system. The highly loaded learning areas are almost continually on cooling even in cold weather. Heat rejected to the water by the equipment in the learning spaces is then available when required for the commons or residence spaces. Supplementary heating is provided by two

1500-kw electric boilers in the three-module complex and by two 1020-kw boilers in the two-module building.

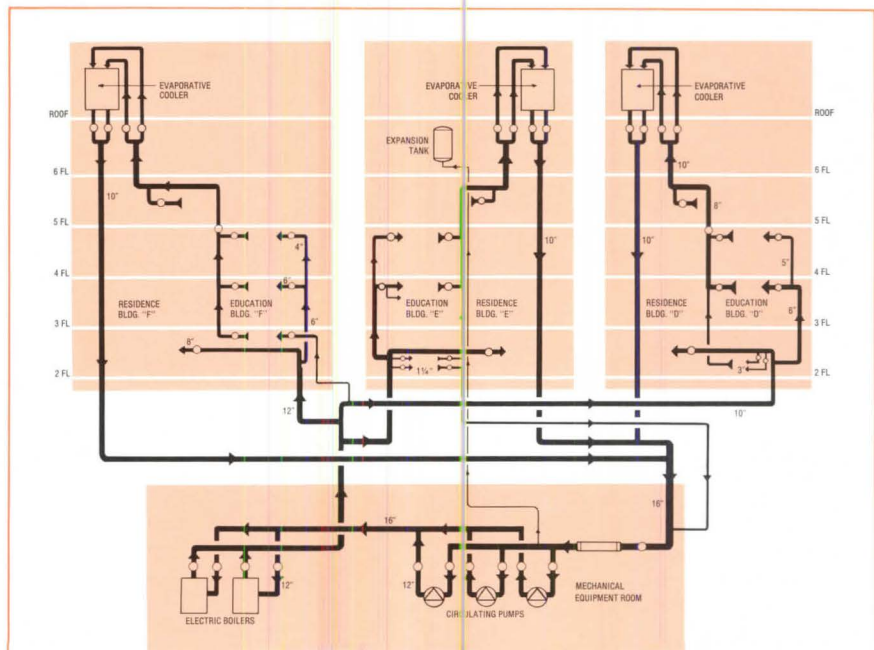
No Limits on Loops. The efficient operation of water-to-air heat pumps entails some very specific flow requirements in terms of gallons per minute. So the success of any installation hinges on the design of the hydronic circuits with emphasis on adequate pipe diameters. As a general rule, pipe size in the main loop is directly proportional to the total tons of heat pumps served. Over the past several years, main loops four, six and eight inches in diameter and serving a hundred or more units have become commonplace.

From a statistical standpoint, it would appear that the greater the number of units in a single loop, the more often balanced conditions would obtain in the random mix of units on heating and cooling. But large numbers of units need great volumes of circulating water, and one wonders just what are the practical limits on system size.



Manager of plant engineering Henry Specor salvages energy for use long after the crowds have left the meeting hall.

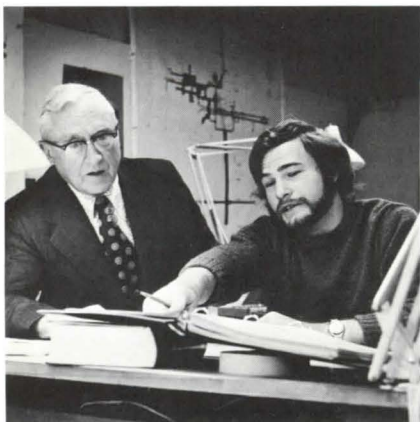
"We haven't seen the maximum limit on loop size," says HVAC engineer Howard Shaner, associate with Kling/Lindquist, Inc. "Not yet at least. We have more than 1000 units in the system for the larger of the two living/learning complexes at Leesburg. We



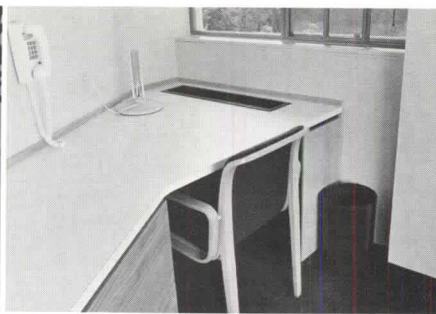
PIPING LAYOUT FOR THREE-MODULE SYSTEM

Schematic diagram shows the interconnection of the hydronic piping network in the three-module complex. The smaller pipe sizes installed in individual zones feed into progressively larger branches which terminate in the 16-inch-diameter welded steel main trunk. Water circulation throughout the entire network is maintained by two continuously operating pumps and one standby machine located in the mechanical room.

Situated near the circulating pumps are two electric boilers whose function is to provide supplementary heating whenever recoverable heat is insufficient to offset the cumulative heat losses of the structure. The boiler resistance elements are energized in sequence as water in the main trunk approaches 65F, which is the lower limit of the recommended range of operating temperatures. The upper limit is 90F, and whenever water temperature approaches that maximum, the roof-mounted evaporative coolers are phased into operation. For faster response to temperature fluctuations, each cooler is controlled independently by a sensor in a feeder pipe in the branches nearest it. The original plan to operate the coolers in response to temperature in the main trunk was shelved when it was determined that there was a lag of several minutes before a change occurring in a branch was reflected in the water temperature in the 16-inch main.



HVAC engineers Howard Shaner and Roger Halterman are still probing for the upper limits on closed loops for heat pumps.



Innovations in the center include high-bay recreational lounge in commons (left); desk partially supported by heat pump cabinet (top right); octagonal classroom (bottom right).

could have treated this three-module complex as six separate buildings (see box). However, our early studies proved that one large system would be more economical and we didn't hesitate to design it that way. We're looking forward to applying this same heat recovery concept to even larger structures."

Orderly Approach. Kling/Lindquist engineers designed the hydronic network as an orderly progression of increasing pipe sizes. Starting with branches as small as 1¼-inch diameter in certain zones, the network feeders expand gradually and culminate in a massive welded-steel main trunk 16 inches in diameter.

An added benefit of loops of this magnitude is that the volume of contained water is great enough to offer considerable thermal inertia. This tends to stabilize the system despite hour-to-hour shifts in the operating modes of various zones. Also, heat stored in the water provides a flywheel effect that helps meet heating needs at night and during weekends when there is less recoverable heat available or none at all.

"The sheer magnitude of the loop did oblige us to make a couple of design compromises," remembers engineer Rodger Halterman. "We might have chosen a single evaporative cooler for the three-module complex but we couldn't obtain one large enough. So we had to divide the cooling job among three identical units, one for each residential structure."

The original intention was to control the three evaporative coolers in unison by means of a single sensor immersed

in the 16-inch-diameter main trunk. During shakedown trials of the system, however, it was determined that a three-minute lag occurred before a temperature rise in the water flowing in the branches of any one of the modules was reflected by a rise in the water temperature in the main trunk. Accordingly, the system was retrofitted for independent control of each evaporative cooler from a sensor installed in a branch pipe close by.

Crowded Room. Several hundred yards away from the module complex is a separate recreational building. Space conditioning for this structure is also provided by a closed-loop system. "You might consider this an unusual application for the heat recovery concept," says Xerox manager of plant engineering Henry Spector. "Most of the volume of the building is taken up by two college-size gymnasiums. Ordinarily there is only a modest amount of heat exchange among the four large packaged heat pump units in each gym as they operate to equalize temperature conditions throughout the building.

"However one gym is designed to double as an auditorium and is equipped with demountable seating for

DESIGN SUMMARY*

GENERAL DESCRIPTION:
 Area: 1,020,000 sq ft
 Volume: 11,150,000 cu ft
 Number of floors: six
 Number of occupants: 1000 resident students, 500 nonresident staff
 Types of rooms: classrooms, laboratories, private and general offices, bedrooms, lounges, kitchen, dining room, TV studios, mechanical rooms, storage

CONSTRUCTION DETAILS:
 Glass: single
 Exterior walls: ribbed-face concrete block or mahogany siding over steel frame, 1" urethane insulation (R-7), gypsum board; U-factor: 0.1
 Roof and ceilings: clay tile over built-up roof, 2" rigid insulation (R-7), suspended acoustical tile ceilings; U-factor: 0.1
 Floors: concrete slab on grade
 Gross exposed wall area: 150,000 sq ft
 Glass area: 20,000 sq ft

ENVIRONMENTAL DESIGN CONDITIONS:
Heating:
 Heat loss Btuh: 35,940,000
 Normal degree days: 4300
 Ventilation requirements: 100,000 cfm
 Design conditions: 10F outdoors; 75F indoors
Cooling:
 Heat gain Btuh: 30,080,000
 Ventilation requirements: 100,000 cfm
 Design conditions: 95F dbt, 79F wbt outdoors; 75F, 50% rh indoors

LIGHTING:
 Levels in footcandles: 25-130
 Levels in watts/sq ft: 1-5
 Type: fluorescent, incandescent, quartz

CONNECTED LOADS:

Heating and Cooling (3340 tons)	12,000 kw
Lighting	3,000 kw
Pumps and Fans	500 kw
Water Heating	1,000 kw
Cooking	300 kw
Machines and Misc.	11,700 kw
TOTAL	28,500 kw

PERSONNEL:
 Owner: Xerox Corporation
 Architects: Vincent G. Kling & Partners
 Consulting Engineers: Kling/Lindquist, Inc.
 General Contractor: Frank Briscoe Co.
 Electrical Contractor: Beach/Fischbach & Moore, Inc.
 Mechanical Contractor: Courter-Poole & Kent, Inc.
 Utility: Virginia Electric and Power Company

*For all five modules.

500 people. When this room has a capacity crowd, we strike it rich. We can recover enough heat to take care of the remainder of the building for hours."

ENERGY MANAGEMENT PROGRAM

Conservation & Energy Management Division
EDISON ELECTRIC INSTITUTE
 90 Park Avenue, New York, N.Y. 10016

Going On from page 12

meeting the profession's responsibility to the social issues of the day.

The jury on Institute honors said of Campbell: "His services to the profession and Institute complement his dedication to the social and economic concerns of his community." Campbell, currently head of the Chicago firm of Wendell Campbell Associates, has long worked closely with neighborhood and community groups in helping solve urban problems. He is chairman of AIA's community services commission and a director of the Chicago chapter/AIA.

Robert Le Ricolais, Hon. FAIA, senior fellow in architecture at the University of Pennsylvania school of fine arts, has been chosen to receive an AIA medal for architectural research. "The work of this structural inventor, mathematician and engineer," said the jury on Institute honors, "reflects the heights to which creative genius can aspire. His research has made possible numerous structural and architectural inventions which have provided elegant solutions to city transportation networks, suspended floor systems, bridge design and other configurations approaching poetry in the harmony of their logic."

Born in France, Le Ricolais has been at the University of Pennsylvania since 1955, where he conducts courses in experimental structures.

All these medals will be presented to the recipients at the AIA convention in Philadelphia in May.

Steinberg, Fitch, Scully, Cullen To Receive Medals

"Whether with tolerant smile or ruthless parody, he opened our eyes to what was, and subtly suggested what might be," said the 1976 jury on Institute honors of artist Saul Steinberg who has been named to receive an AIA medal at the forthcoming AIA convention in May. The jury praised the "incisive wit and consummate artistry" that have characterized his view of the built environment.

Steinberg, whose drawings began to be published in *The New Yorker* in the 1940s, was born in Romania. He earned a doctorate in architecture from a university in Milan, Italy, in 1940. That same year, he left Europe and lived for two years in Santo Domingo before settling in New York City. Since that time, he has published several collections of drawings, has had numerous exhibitions in this country and abroad and continues to delight readers of *The New Yorker*.

At the convention, a medal will be presented also to James Marston Fitch for his contributions as teacher, author and critic. Fitch, whose career has

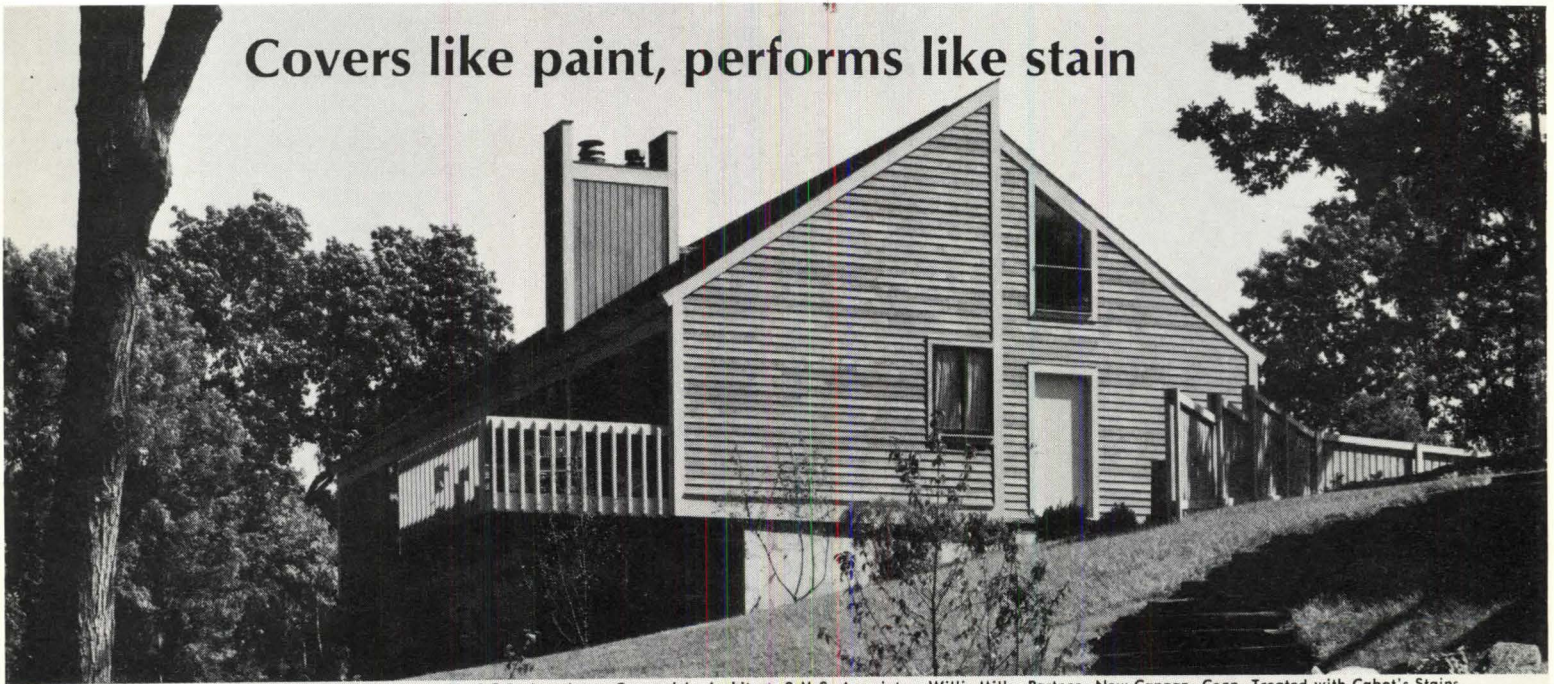
spanned three decades, is well known for his book *American Building*, published in 1948, and expanded into two volumes in its second edition. Presently professor of architecture and director of the graduate program in historic preservation at Columbia University's graduate school of architecture and planning, Fitch was cited by the AIA jury for his "clarity of vision and simplicity of expression" which "remain fresh and understandable in a time too full of obscurantism and faddish jargon." The jury noted his "vision of American architecture as a continuum."

In addition to writing about American architecture, Fitch has dedicated much of his life to the preservation of the American architectural heritage. He has been a consultant on many preservation projects and has helped draft legislation proposals. He was honored in 1974 by the National Trust for Historic Preservation with a special award in tribute to his many accomplishments in support of historic preservation.

Vincent J. Scully Jr., of Yale University, will also receive an AIA medal for his contributions as an architectural historian. A prolific author, he was described by the jury as a "stimulating lecturer to several generations of architectural students" who has "identified many of the previously unrecognized general achievements of Amer-

continued on page 24

Covers like paint, performs like stain



Lyon Farm in Greenwich, Conn.; Developer: C.E.P. Associates, Greenwich; Architect: S.M.S. Associates, Willis Mills, Partner, New Canaan, Conn. Treated with Cabot's Stains.



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This fine product combines the best features of a stain and a paint. An oil-base finish of great beauty and durability, it is suitable for wood, metal, masonry . . . and is applicable to all surfaces: textured, striated, smooth, previously painted or stained. These unique stains resist cracking, peeling, and blistering. Available in 31 colors.

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AIA JOURNAL/MARCH 1976 21

Circle 11 on information card

Kawneer Thermal Barrier Products

Thermal integrity for a changing world.

Today's building will live its life in a different world. Life cycle costing (rather than initial construction economies) has become a primary concern. This means that thermal considerations must receive more and more emphasis in architectural design. Building materials will need to be an integral part of interior climate systems.

To conserve our energy resources, the designer must look beyond conventional building materials and solutions in order to achieve thermal integrity. For example, in curtainwall designs, the aluminum glass-holding members themselves can make a vital contribution to thermal efficiency.

Kawneer pioneered the positive thermal break concept in windows and wall systems. By providing a thermal barrier, contact between inside and outside metal is eliminated. Heat transfer to the outside during cold months and into the building during warm months is minimized. Result: Expenditures for heating and air conditioning are reduced and energy is conserved. And, by offering an extensive line of thermal barrier products, Kawneer is able to give you a great degree of design latitude, providing thermal integrity without esthetic compromise.

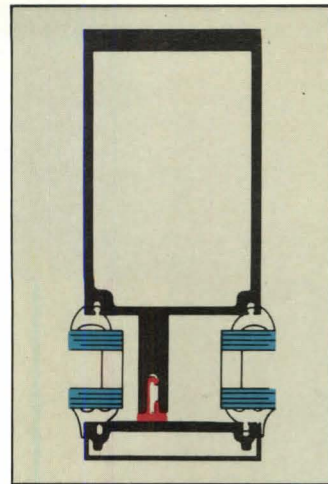
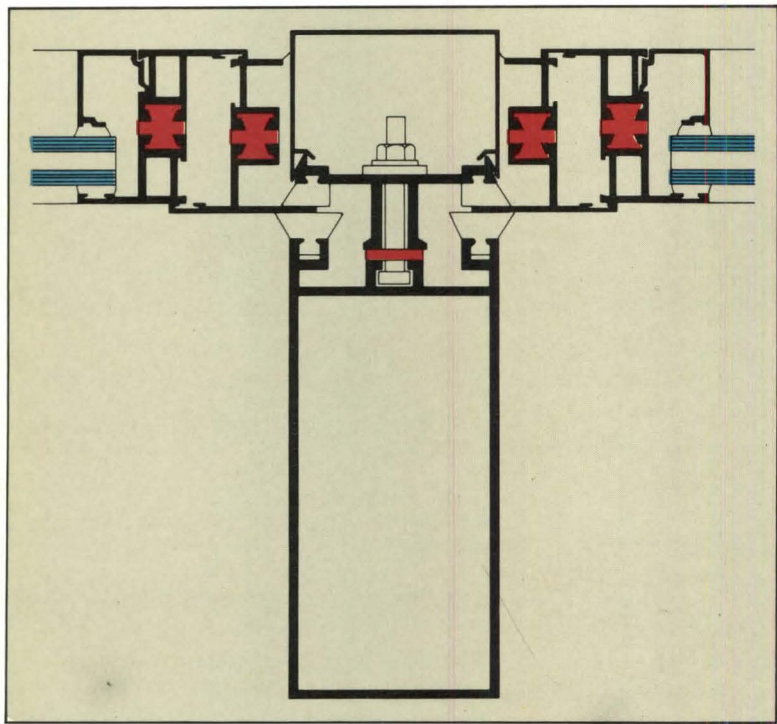
All of these innovative products are covered in the Thermal Products section of Sweets Architectural File. Or, write for our new book, *Kawneer Thermal Barrier Products*, Kawneer Architectural Products, Dept. C, 1105 North Front Street, Niles, Michigan 49120.



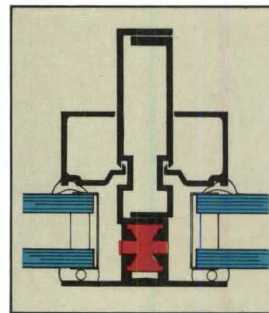
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506 Thermal Windows — one of a diverse selection of windows that accommodate many functions. Shown here with thermally broken 8000 Stickwall.



1602 I.G. Thermal Curtainwall — choose from a wide variety of thermal curtainwall systems for high-rise buildings and framing systems for store front and low-rise applications.



SM 350T Thermal Framing — The patented seamless coupling mullion feature on this product provides a unitized framing system with unbroken sight lines.



Circle 13 on information card

Going On from page 21

ican architecture." The jury said: "He has saved particular examples from destruction and enabled their ideals to enter the mainstream of contemporary architecture, thereby guaranteeing the survival of much that is best in our native tradition."

Scully, who has written a dozen books in the past 25 years, has received national awards for his literary contributions. His most recent book, *Pueblo: Mountain, Village, Dance*, was published last September. He was named an honorary member of AIA this year.

Gordon Cullen, British artist and author, will receive an AIA medal for his book *Townscape*, published in 1961 and now widely acclaimed. The jury on Institute honors said that Cullen's "message has clearly transcended the particular English models about which he was concerned and become a universal statement about man and his built environment."

The foundation which provided background for the book included Cullen's training in architecture, his experience in architectural firms and his work for *Architectural Review* as assistant editor, writer and artist. He presently serves as a consultant to many communities and private firms. His drawings, closely related to his experience in architecture and planning, have been exhibited at the Royal Academy and Paris Salon.

New York City Planners, Research Group Honored

The New York City Planning Commission will receive an AIA medal at the annual Institute convention in May for its "creative use of zoning and planning legislation" that led in 1971 to the creation of a residential area for artists in a commercial neighborhood. The district in lower Manhattan is called Soho (for south of Houston Street) and it contains some of the world's finest examples of cast iron architecture. The multiple uses of the area, where industrial, residential and open loft space are combined, bring economic vitality to the district and at the same time preserve fine examples of cast iron architecture.

Soho was described by the jury on Institute honors as a "priceless neighborhood" that was "saved from decay and destruction by internal revitalization that recognized the coarse strength of this tough part of town." The jury cited the commission for responding "with sensitivity to the needs and suggestions of a pioneering group of artists and galleries."

Another group located in New York City will also receive an AIA medal. The Institute for Architecture and Urban Studies will be honored for its research and education programs. The jury called

the institute "one of the most unusual and innovative education institutions in the country," praising "its dedication to excellence in research, publications and public education." The institute, said the jury, "has wielded an influence well beyond its home base in New York City, where it has become a controversial center of discussion and debate concerning the fundamentals of architecture and planning."

The institute, chartered in 1967 by the board of regents of the State University of New York, is an independent research and educational corporation.

A Highly Diverse List of New Honorary Members

AIA has elected 10 persons outside the profession to honorary membership. The honor is conferred upon those individuals "in recognition of their distinguished contributions to the architectural profession or to allied arts and sciences." The memberships will be presented at the Institute annual convention in Philadelphia in May.

The new honorary members are:

- Weld Coxe, Philadelphia management consultant, author of *Marketing Architectural and Engineering Services* and editor of a newsletter on marketing. He has worked with AIA's continuing education program in the development of training laboratories and has served as a member of the task force on marketing professional services and client relations.
- Dwayne E. Gardner, executive director of the Council of Educational Facility Planners for the past seven years, editor of the *CEFP Journal* and visiting professor at Ohio State University. He was instrumental in opening CEFP's membership to architects and has worked actively to develop effective working relationships between the architectural profession and clients in the educational community. He is a consulting member of AIA's committee on architecture for education.
- Gordon Gray, chairman emeritus of the National Trust for Historic Preservation, former president of the University of North Carolina and Secretary of the Army under President Truman. While he was chairman of the National Trust, its membership increased from 4,000 to 42,000, its assets were increased through the gifts of seven major historic properties and leadership was provided on state and federal levels for the enactment of protective legislation and programs. He is credited with playing a key role in the passage of the National Historic Preservation Act in 1966.
- Andrew Heiskell, chairman of the board and chief executive officer of Time, Inc., founder in 1954 of the American Council to Improve Our Neighborhoods and first chairman of Urban America's

board of trustees. Founder and currently co-chairman of the National Urban Coalition and a director of the New York Urban Coalition, he has received many awards in recognition of his active leadership role in urban affairs.

• Henry A. Judd, associated with the National Park Service for 22 years and since 1973 chief historical architect responsible for all programs involving historic architecture. He has supervised numerous historical restoration projects throughout the nation and is the author of many articles and studies on historic restoration.

• John L. McClellan, Senator from Arkansas, known for his strong interest in environmental issues. He is highly regarded by the design professions for his successful efforts in the passage of Public Law 92-582, known as the Brooks-McClellan Bill, legislation which requires federal agencies to select architects and engineers on the basis of competence and qualifications, subject to fair and reasonable negotiated fees. Now in his sixth term in the Senate, he has served on many important committees.

• S. Dillon Ripley, secretary of the Smithsonian Institution and author of more than 250 articles and books. Under his administration, the Smithsonian has completed construction or restoration of five of its seven major art museums.

• Vincent J. Scully Jr., architectural historian and a member of the faculty of Yale University since 1947. His books and monographs reflect a wide range of architectural interests and have extended his influence far beyond the classroom. He has been a strong advocate for the preservation and restoration of the nation's architectural heritage.

• Pete Wilson, mayor of San Diego, Calif., member of the National League of Cities' environmental quality committee, a director of the Conservation Foundation and a member of the American Bar Association's advisory commission on housing and urban growth. His campaign for mayor in 1971 focused on the urgent need to control urban growth and to balance environmental quality with economic health. He was elected to the California Assembly in 1966 and was first chairman of its urban affairs and housing committee.

• William Zeckendorf, real estate developer and vice president, president and chairman of the board of Webb & Knapp between 1937 and 1965. He has initiated precedent-setting developments in many cities and in all his projects has sought to create ample open space by the acquisition of large sites and the confinement of construction to a fraction of the available land. He has fought to reverse the trend toward decentralization of cities and has long advocated master planning. He is presently a real estate consultant in New York City.

continued on page 28

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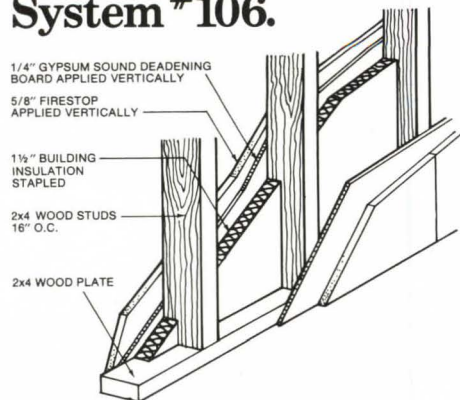
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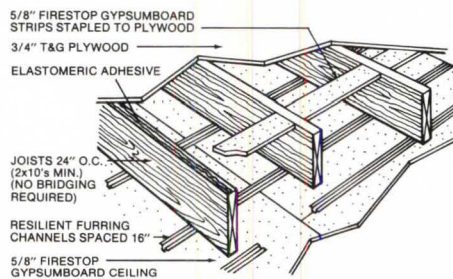


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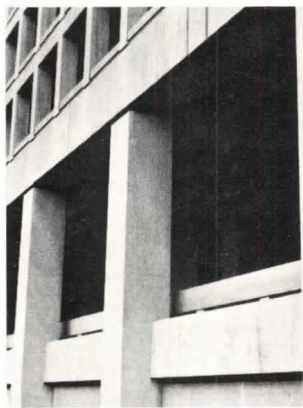
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Selection Process Changed For Federal Employment

In the future, architects, interior designers and landscape architects who want to hold federal positions in the Washington, D.C., area and overseas (except for the Pacific) will be examined not solely on education and/or experience, but also on the basis of knowledge, skills and abilities as demonstrated by a portfolio of work submitted. The portfolio, consisting of 16 to 20 35mm slides and supplemental information on the work of the applicant, will be evaluated by a panel of experts.

Applications for architects, interior designers and landscape architects will be accepted from Apr. 1 through Apr. 30, after which receipt of applications will be suspended until further notice. Portfolios must be postmarked no later than May 20.

Information about the exam and forms are available at local federal job information centers. Such centers are usually listed in local telephone directories under the heading "U.S. Government." If there is no listing, those interested may call (800) 555-1212 to obtain the toll-free number of a center nearest them.

New Contributing Editor

Stephen A. Kliment, AIA, has been appointed contributing editor of the JOURNAL for professional practice articles.

Kliment is a New York City architect and editorial consultant. He was formerly chief editor of *Architectural & Engineering News* and worked in the architectural offices of Skidmore, Owings & Merrill and Caudill Rowlett Scott.

The Employment Exchange

Positions Wanted

Job captain, project architect; reg. NCARB, NYS; 17 yrs. experience: hospitals, schools, office bldgs., residential; will relocate anywhere U.S./overseas. Charles D. Brodhead, AIA, 160 Fenway Drive, Syracuse, N.Y. 13224 (315) 446-4191

Architect, NCARB, extensive experience, multiple registrations seeks responsible position in restoration or architectural/environmental R & D. Murrel Dee Hobt, AIA, 29 Garfield Drive, Newport News, Va. 23602 (804) 874-2611.

Architect, MI and IN registrations; design/production experience; seeks responsible, challenging position with career expansion potentials. Family man, 33 yrs. old. William W. Cameron, AIA, 1217 Rynearson Road, Buchanan, Mich. 49107 (616) 695-9942.

continued on page 88

SITE... FORM... FUNCTION...

One of the most difficult architectural tasks is the successful incorporation of a highly functional contemporary building into a traditional and eclectic setting. This was the problem confronting Ezra D. Ehrenkrantz and Associates when they were commissioned to design three dormitories to be located in Harvard Yard, the University's hallowed inner campus; the success with which they resolved it has already been nationally acclaimed.

Meticulous attention was given to every building component, and we are particularly gratified that TCS (Terne-Coated Stainless Steel) was specified for all roofing. The governing considerations here were the material's unsurpassed longevity; its exceptional resistance to even the most severe corrosive attack, and its predictable weathering to a uniform dark gray which would be compatible with existing roofs on the campus.

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(Photograph by Steve Rosenthal)

Spec Consultants —Why so? A talk with our Spec Consultant Lawrence Katz.

Q. Who prepares project specifications?

A. Project specifications are presently prepared "in house" by spec writers, firm principals, project managers, architects, drafting personnel, clerical staffs and individuals who volunteer or who are drafted for these assignments. Preparations by independent Spec Consultants are the exception.

Q. What is a Specifications Consultant?

A. Specifications Consultants are specialists or specialized firms with expertise based on education, knowledge, training and experience in the preparation of contract specifications.

Q. Are firms recognizing and utilizing Specifications Consultants?

A. The trend is here and is gaining momentum.

Q. Why?

A. More firms are recognizing the advantages of an expert.

Q. Please elaborate.

A. The primary advantage is documents with uniform format, plus the ultimate "State of the Art" technology.

Q. Can you clarify that a little?

A. First of all, contract documents should present a uniform format. Secondly, there is the responsibility to clients for the ultimate knowledge to be utilized in preparation procedures. Thirdly, reference standards and industry technology should be available to clients. And last is the coordination and review of specification sections with the contract drawings.

Q. What about computerized specs vs. "cut and paste"?

A. A Specifications Consultant should offer an accurate,

computer-oriented guide spec for the "savvy" in preparation of contract documents. This expertise would be worlds above the antiquated use of specs with "cut & paste" methodology. The consultant also gives personalized, tailor-made services that nationalized canned computerized programs cannot offer.

Q. Are there other advantages?

A. Yes. The Specifications Consultant releases the office professional staff for more advantageous "in-house" activities. Schedules would be projected more effectively and efficiently. Spec Consultants prepare outline, preliminary and final specs, and offer follow-up review procedures for each phase, subsequent submittal reviews and field inspections. The overall result is extensive savings in time and costs, with increased technical proficiency.

Q. What about coordination with estimating?

A. Specifications/estimating should be closely coordinated throughout the project.

Q. What about coordination with other consultants?

A. It is the Specifications Consultant's responsibility to coordinate the functions of the other design consultants with his activities. This is essential for the ultimate effectiveness of the project.

Q. Can you summarize?

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"It gives maximum uniformity of format and technical proficiency."



"Documents should present a uniform format."



"The overall result is extensive savings."

Post-Renaissance Philadelphia

Fifteen years ago, when AIA last held its convention in Philadelphia, the city was the undisputed urban design capital of the nation. This was the place where all of the pieces were being put together—design talent, planning power, strategic public investment and enlightened private sector leadership.

Philadelphia was doing what other cities mainly were only talking about in the redevelopment era. And Philadelphia architects were actually able to do what others mainly dreamed about in the way of design extending beyond the bounds of individual buildings into the very fabric of the city.

The enthusiasm and hopefulness that pervaded the 1961 convention (see following page) seem like memories of youth in this era of urban neglect and near-despair. Even in Philadelphia it didn't take long for the mood to begin to change. Two years after the convention the city experienced a major civil disorder. The reform leaders in city hall were replaced by practitioners of politics as usual and, most recently, by a policeman. It seemed to take an awfully long time to get anything done.

What has happened to planning in Philadelphia during this post-renaissance period? How much of the plan displayed in 1961 has become reality? What difference has it made in the face and life of the city?

These are some of the questions which this issue attempts to address. In so doing, it concentrates on Philadelphia's center city, as did the planners of the renaissance. *D. C.*

The planners of Philadelphia's renaissance went onstage in 1961 in what is still remembered as one of the most effective presentations ever made at a modern-day AIA convention, and was memorialized in the form of a film that still makes fascinating viewing although showing its age.

Clearly they were among the best and the brightest of postwar urban designers. In the still from the film below are, from left, Wilhelm V. Von Moltke, Edmund N. Bacon, Vincent G. Kling, Oskar Stonorov, Roy F. Larson, I. M. Pei and Robert L. Geddes. As the film proceeded, they and others moved back and forth across a giant rendering of the plan for center city Philadelphia on a wheeled ladder, sketch-

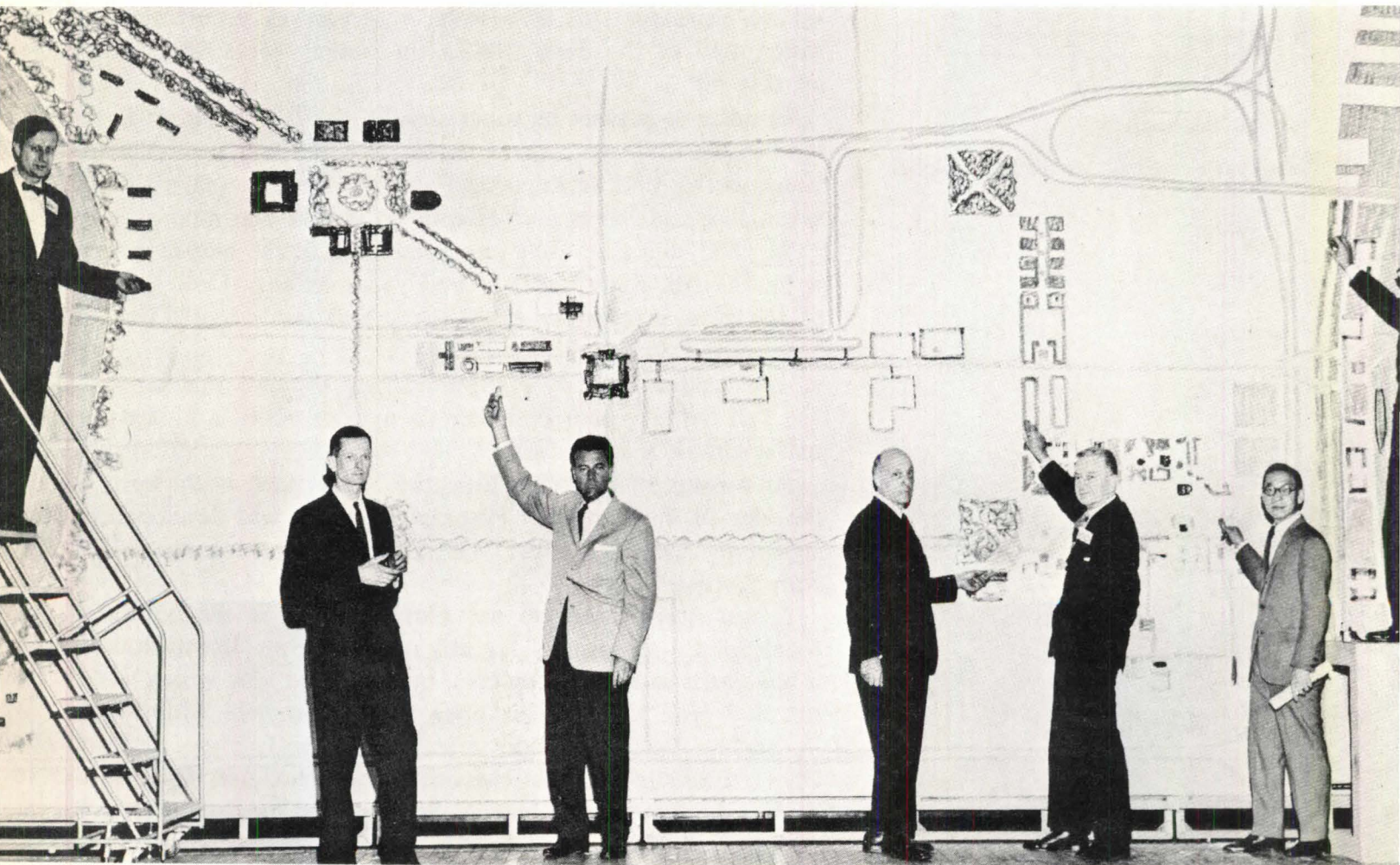
ing in elements of the plan as they went: a plaza here, a restored neighborhood there, and so on and on.

Lead role in the film belonged to Bacon, who opened it with a description of Pope Sixtus V's 16th century plan for rebuilding Rome, from which he had drawn inspiration. After describing William Penn's original plan for the city of 1683, he moves to the present. "We have endeavored," he tells the audience, "to establish a design idea of such potency that it welds the work of individual architects, designing in fragmented areas, into some kind of coherent whole."

The film describes the evolution of the renaissance from the time in 1940 when a group of young men joined in an effort to

reform Philadelphia by drafting a new city charter. That attempt failed but out of it emerged a larger group called the City Policy Committee, including Bacon and Stonorov. After World War II, the committee worked for and achieved creation of a powerful new city planning commission. With the reformers firmly ensconced in city hall, the renaissance was under way.

As this history is recited, the voices of a variety of participants are heard—notably the remarkable collection of businessmen and civic leaders who gave their support, financial and otherwise, to the revitalization of center city. Bacon humbly points out that the Sixtus of Philadelphia was not a single individual but a diverse and dedicated group working together.



The plan was the real star of the 1961 convention presentation. It covered the same area as Penn's plan and maintained his basic pattern of a grid broken by major public squares.

Principal emphases in the Bacon plan were all forms of circulation, with particular attention to the pedestrian; maintenance of existing open space and creation of new; and the construction of an organizing framework of substantial buildings.

Some of the buildings shaded in on the drawing at right were pre-existing, but a startling number were to be new construction induced through a combination of public action and the marshalling of private investment.

Starting at the bottom of the drawing, the plan's major elements were:

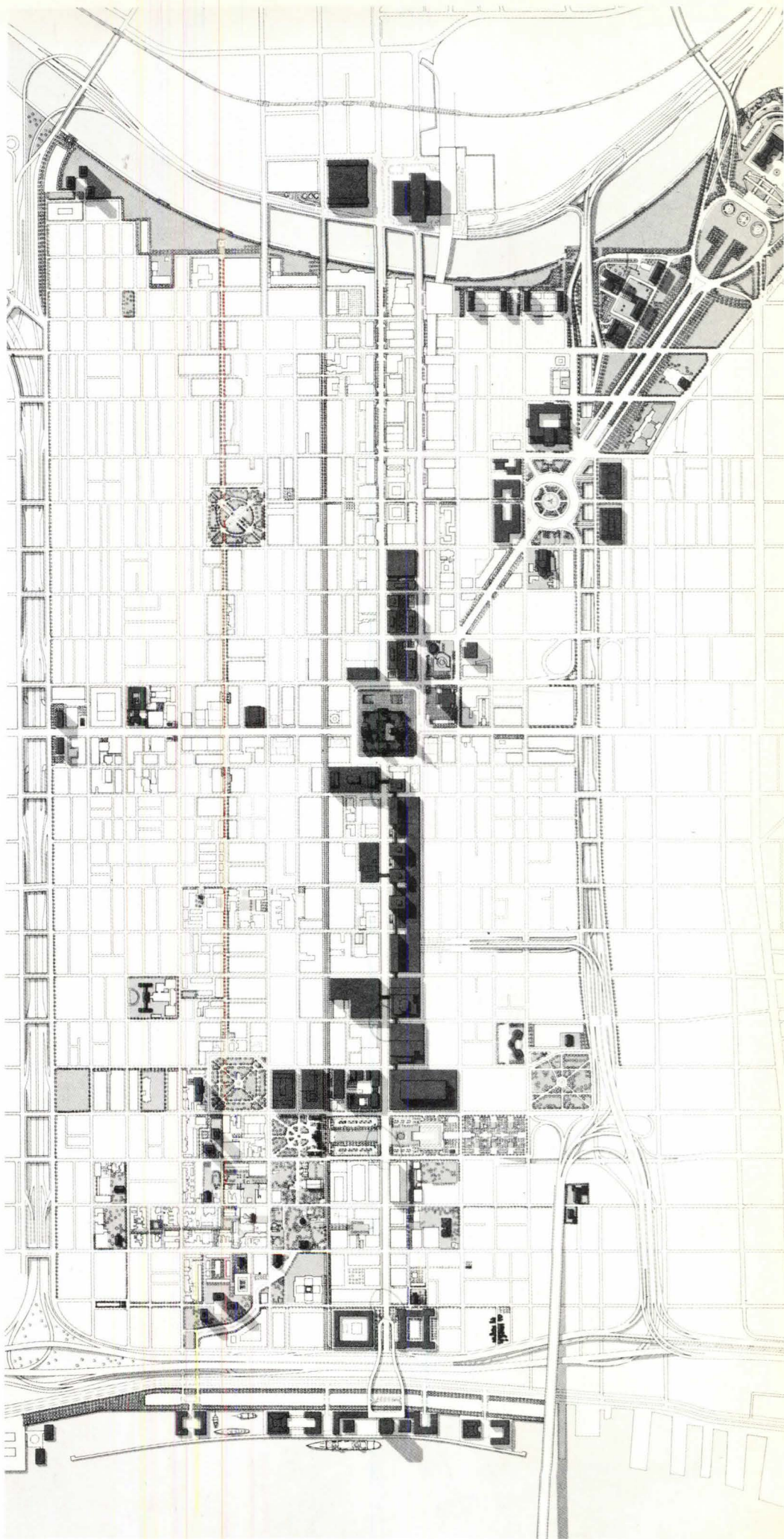
- Penn's Landing, a mingling of recreation facilities and major buildings, to be developed on landfill in the Delaware River at the exact spot where William Penn first set foot in Philadelphia.
- Society Hill, just above Penn's Landing and to the left in the drawing, the historic heart of the city, where the prescription was extensive restoration plus some new construction including three point towers by I. M. Pei, FAIA, two of which were in place by the time of the convention.

Proceeding up Market Street, the central east-west thoroughfare, the landscaped cross-axis is Independence Mall.

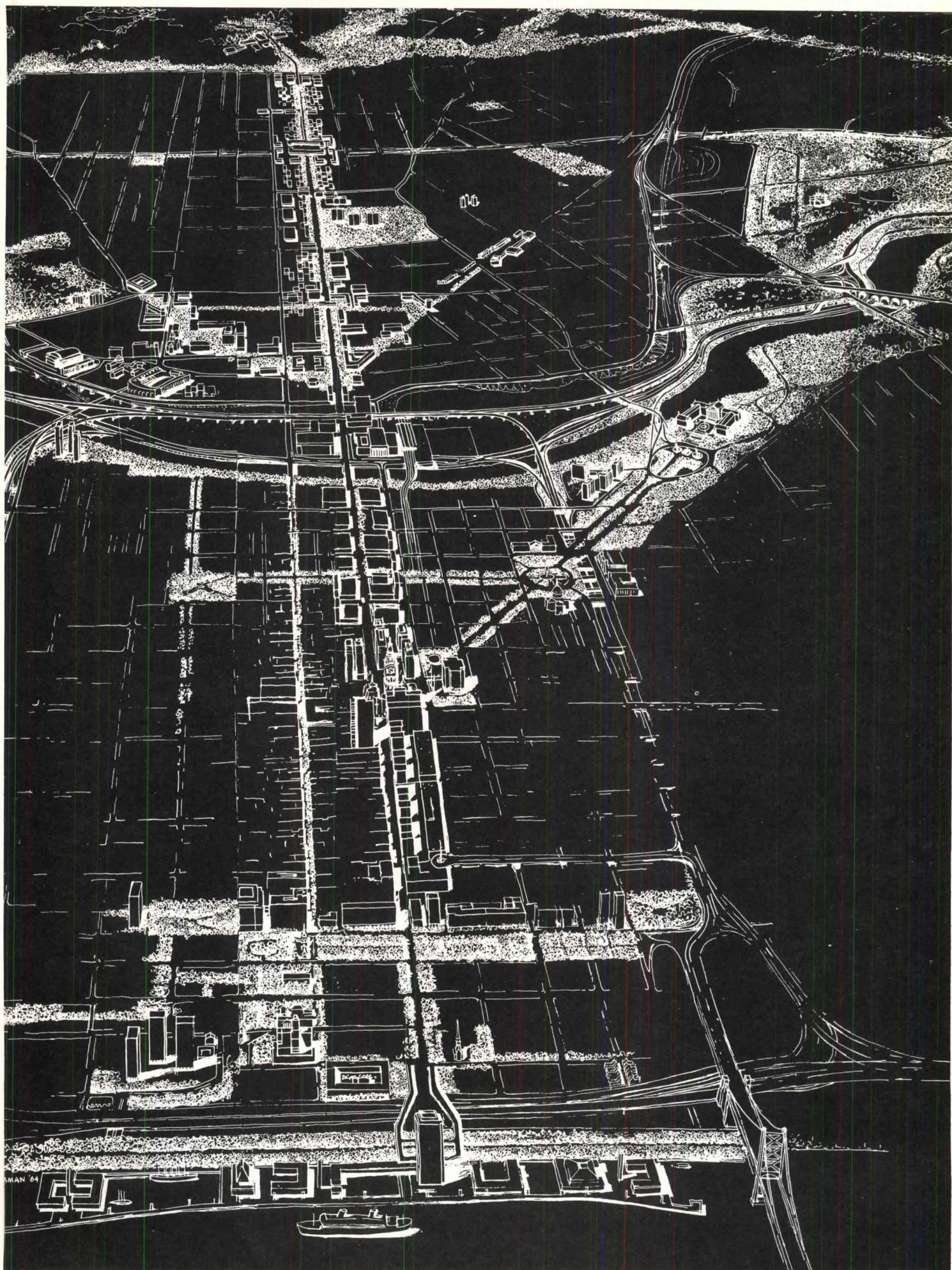
The continuous strip of development starting just above the mall is Market Street East, planned as an entirely new megastructural transportation-shopping-office complex.

On the other side of the hollow square of City Hall, centerpiece of the drawing, is Penn Center, the multiuse, multilevel development that was the plan's first major element to get underway and was already well along toward completion by 1961.

The diagonal swath proceeding upward and to the right from Penn Center is the Benjamin Franklin Parkway, which predated the plan by very many years, but was envisioned by Bacon as part of the framework for center city's revitalization.



The Vision in the form of a 1964 drawing of what the plan was expected to yield by this bicentennial year.



The Reality in the form of a current view up Market Street. A look at each of the plan's major elements follows.





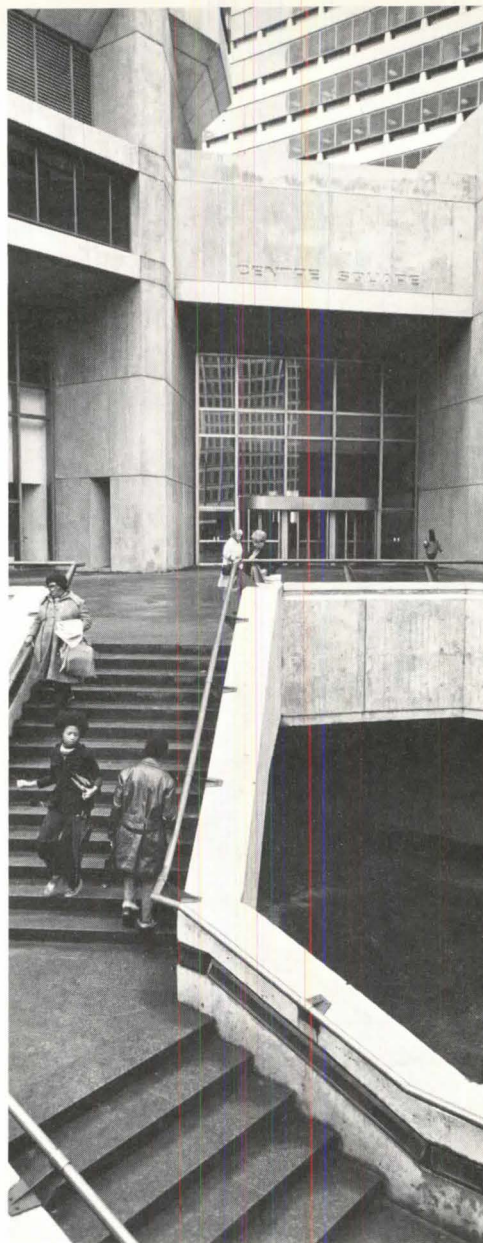


Penn Center was the very model of the multilevel superblock which many planners envisioned but few cities built in postwar years: a highly integrated complex of buildings, transportation facilities, underground concourses and ground-level open spaces.

The original portion of Penn Center, started in 1952 and completed in 1970, still has the look of a model. Critics initially were kind to the planning but not to the architecture of Penn Center's five nearly identical slab buildings. Time has been even less kind.

But Penn Center has fulfilled its planners' major objective: revitalization of the city's administrative core west of City Hall. Around it in recent years has risen a seemingly endless procession of large new office buildings, many plugged into Penn Center's concourses and spaces.

Largest and among the most interesting of the recent additions are the two towers of Centre Square (far left in photo across-page), joined to each other by a low structure containing a dramatic domed space (above) and joined to Penn Center un-



derground. These towers, along with the earliest Penn Center buildings and several of the other recent additions, all are the work of Vincent G. Kling, FAIA, who did the original Penn Center plan.

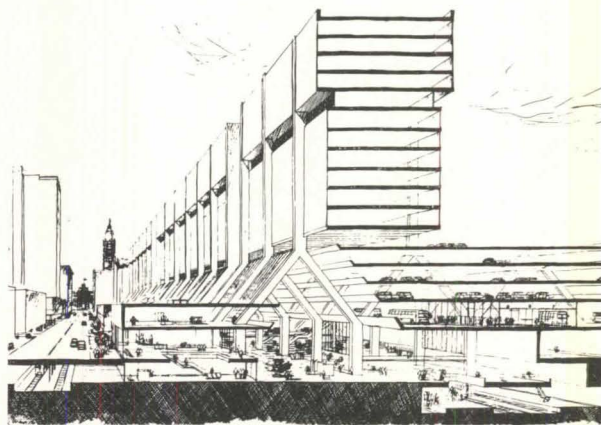
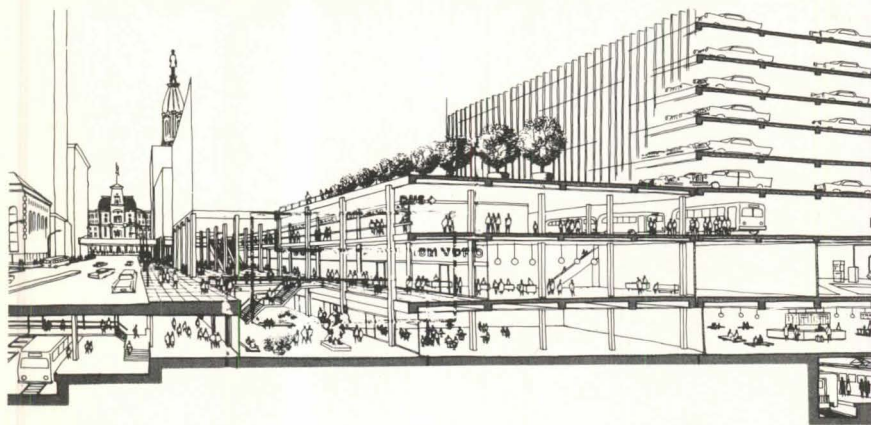
Centre Square, which started with a principal tenant for each of the towers, is now entirely rented, but some of the other new buildings are not faring so well. At this writing, 1818 Market (the tall tower under construction in the photo acrosspage) has yet to find a major tenant, and there are an estimated 2.5 million square feet of vacant office space in center city Philadelphia.

John C. Mitkus, incumbent executive director of the planning commission, predicts that the city will absorb this amount of space in three years and have need for more, but for now the office building boom around Penn Center has subsided. However, the Hyatt Regency hotel chain has announced plans for a hotel and convention center at 19th and Market, an especially welcome prospect since center city Philadelphia has long felt the lack of a major convention facility.



Photographs of center city Philadelphia by Joan Ruggles.

Cover photo by Tom McGill.



Market Street East, on the opposite side of City Hall from Penn Center, is Philadelphia's traditional shopping hub. But the postwar years brought it anything but a renaissance, as suburban shopping centers proliferated and began pulling customers from its great department stores. So the Bacon plan prescribed a dramatic remedy—the plan's single most dramatic element, in fact.

Along the north side of Market it proposed a layered structure (section above left), incorporating an enclosed shopping mall, a parking garage, a terminal to take long distance buses off Market and a commuter rail station. Bridges above ground and concourses below would link the structure to the stores and subway on the south side.

Over the course of the 1960s, the scheme became ever more elaborate in the hands of an illustrious series of designers. The section above right is a 1964 version by Romaldo Giurgola, FAIA,

turning the north side of Market into a continuous megastructure.

The elaboration occurred only on paper, however. The wheels of urban renewal grind slowly, and the decade passed without any construction. Meanwhile, it was proving all but impossible to achieve the intermixing of public and private facilities envisioned in the megastructural schemes.

Finally, in 1972, there was a groundbreaking on Market Street East. It was for a 20-story office building named for its address, 1234 Market, and designed by Bower & Fradley. It is the building just in front of PSFS in the photo at right, and its dramatic, multilevel lobby is shown above.

Last year there was another groundbreaking, a double one, on Market Street East. It was for a giant new Gimbel's department store (the Ballinger Co., architects) and an adjacent glass-domed, four-level retail center called the Gallery (also by Bower & Fradley). And north of

the Gallery, on Filbert Street, the Philadelphia Parking Authority is building an 800-car garage.

So there is action along Market Street East. And even though there are no megastructures in prospect, there will be many elements of the early plans—notably including linkages of the new buildings to each other and to the subway and rail stations.

One element of the Bacon plan remains the subject of both doubt and controversy: a 1.7-mile, \$300 million tunnel connecting the Reading Terminal on Market Street East and the Suburban Station at Penn Center. The tunnel would join all 500 miles of the Reading and Penn Central systems into a single rail network and, it is hoped, increase the flow of people into Market Street East. The federal government will pay \$240 million of the cost, but some Philadelphians are fearful of cost overruns that would push the local share out of sight.



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Independence Mall was first conceived in the 1930s by Roy F. Larson, FAIA, as a suitable setting for Independence Hall, then closely surrounded by small, mainly 19th century buildings and a few almost as historic as the hall itself.

In the 1940s, the National Park Service began clearing the blocks to the east as a national historical park, leaving only the most historic buildings and levelling some others of more than routine architectural interest. In the 1950s, the Commonwealth of Pennsylvania began making space for the mall on the three blocks to the north, installing new landscaping, pavilions, fountains and an underground garage and completing the project in 1967.

In the ensuing years, the area has been site of a building boom of major proportions. No less than 24 public and private projects have been undertaken, including some new federal buildings that would not suffer too much in a comparison of their bulk with that of their cousins along Washington's larger mall.

Among the 24 have been some interesting bicentennial projects. Several blocks from the mall is the new visitors' center

(right) by the Cambridge Seven Associates. And smack in the center of the mall is Mitchell/Guirgola's new pavilion for the liberty bell (above), already the subject of muted local controversy. Some admire its artistry, but others regard it as far too assertive a presence in this particular place.

The mall itself is not universally admired. Some find it simply too large a swath of space to cut in front of so delicate a monument as Independence Hall. Others preferred the previous scale of buildings in the area and lament the displacement of buildings, people—and jobs—that so much clearance has brought in its wake.

In an effort to partially countervail the last effect, a \$4.3 million garment center is under construction two blocks from the mall. It is a joint undertaking of the redevelopment authority, two development corporations, the garment industry and the International Ladies' Garment Workers Union. The major purpose of the center is to retain some blue-collar jobs in the area. It will include a day care center for 100 children.





Society Hill (opposite page) has emerged from more than 20 years of urban renewal as almost exactly what its planners envisioned: a thriving and flavorful community of sensitively restored historic houses (some 700 of them), interspersed with mainly respectful contemporary buildings, tied together (and joined to Independence Mall) by a system of greenways dotted by small parks, the whole punctuated by a triad of apartment towers and the spires of handsome colonial churches.

As the years go on, it gets better and better: Restoration spreads, property values soar (and the city's tax take with them), and the purchasing power of the residents attracts more and better shops and restaurants. Among the most recent additions is NewMarket (closest photo acrosspage), a four-block complex of new and old houses and a "glass palace" shopping arcade. (The contemporary elements of the project are by Louis Sauer,

and the restoration architect was Adolf DeRoy Mark.)

Not only is Society Hill a success in itself, it has stimulated the more spontaneous upgrading of neighborhoods around it. One such is Queen Village (above), in the process of rehabilitating itself without massive doses of urban renewal. The lower reaches of South Street (immediate left), once threatened by an expressway, have with equal spontaneity taken on a lively semihip character.

Residential rehabilitation, in fact, is rampant in center city Philadelphia, from river to river. As is the case in any area undergoing this form of mainly private improvement, many of those moved out in the process cannot afford to move back in, and there are those who say that the city has not been sufficiently sensitive to the plight of the displaced, especially given the chronic local housing shortage. Still, there are few who would not prefer a cycle of revival to a cycle of decay.



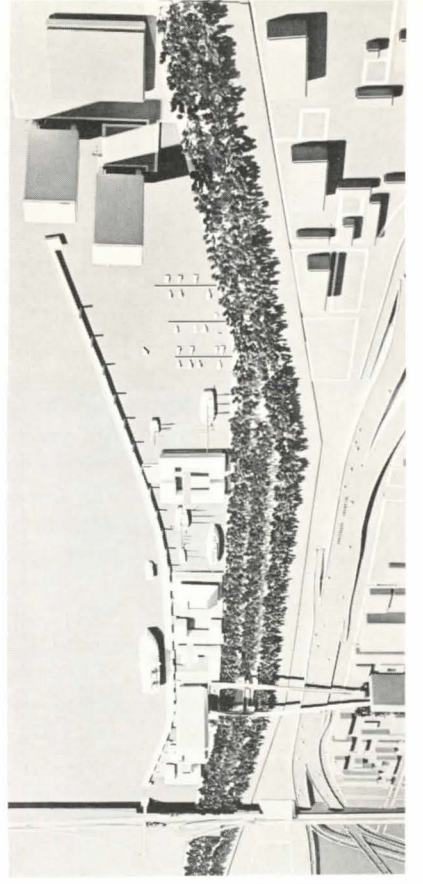
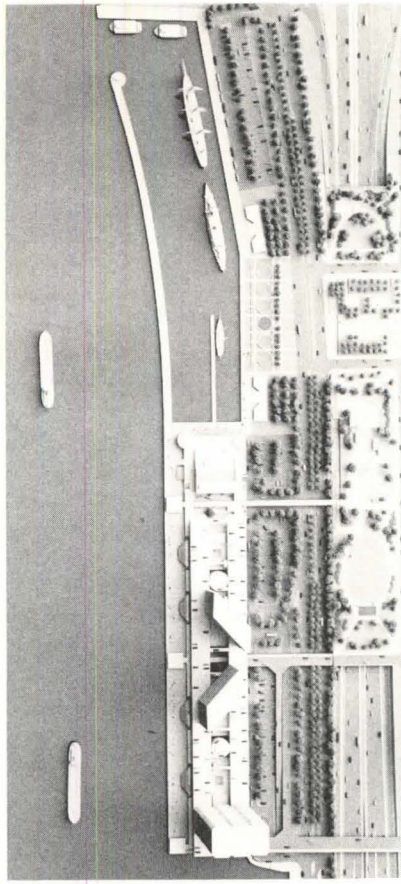
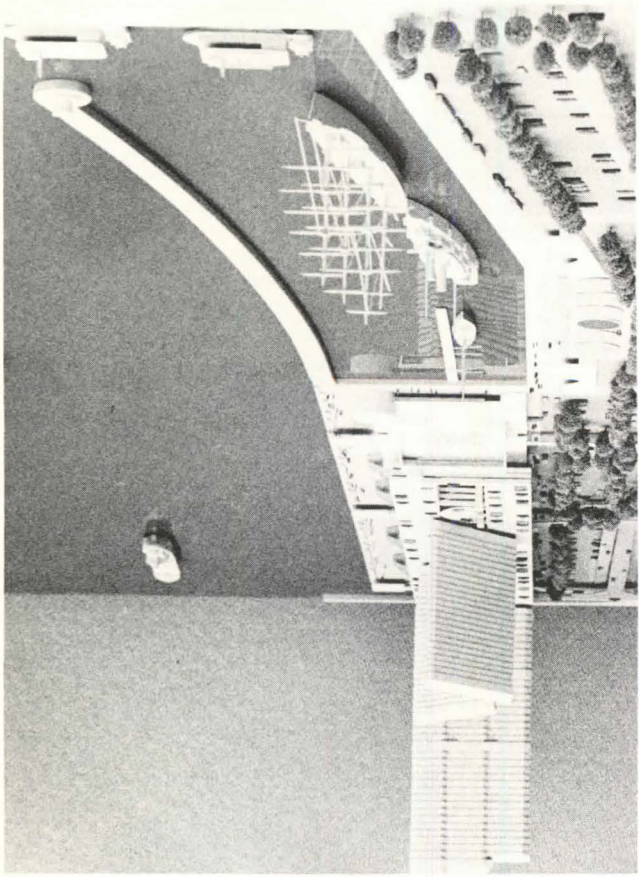
Penn's Landing, a multiuse development extending out into the Delaware just past I. M. Pei's trio of Society Hill towers, is the last major project in the Bacon plan to get moving. Since it first appeared in the plan in the form shown in the model photo immediately to the right, it has gone through a series of both travails and redesigns.

Some of the travails resulted from the fact that three levels of government were involved in the project: the federal government, which controlled the river as an inland waterway; the state, which owned the riverbed, and the city, which owned the shore.

Eventually, direction of the project was lodged in a development corporation, a favorite Philadelphia device for getting things done. The corporation engaged Murphy Levy Wurman as master planners and last year, after a competition that encompassed design as well as financial and marketing factors, chose the McCloskey Co. and its architects, Skidmore, Owings & Merrill (Chicago) to undertake development. The MLW plan and SOM design are shown in the second and third model photos on the opposite page.

Landfill and bulkheading have been completed, and work is underway on \$13 million in public site improvements including a landscaped park, marine facilities, pedestrian shelters and other amenities designed by MLW. A quay extends 1,300 feet to create a 10-acre boat basin that will contain historic ships and other attractions. Adjoining the boat basin will be a two-acre "world sculpture garden." Rising from all this will be the McCloskey development: three levels of shops, restaurants and amusements; an elevated parking garage, then three angular apartment, office and hotel towers.

Construction of the McCloskey portion is awaiting completion of a viaduct to the Delaware expressway, the other major source of *Penn's Landing's* travail and delay. The expressway originally was to cut straight across the face of Society Hill, severing it from the river. Through epic effort Philadelphians succeeded in shoving the most potentially damaging portion of the expressway under a landscaped lid. However, controversy continued over the expressway's ramps into the historic city, complicating negotiations with the developer and further delaying construction.





Benjamin Franklin Parkway

cuts grandly through Penn's grid, joining downtown to the Philadelphia Museum of Art (top photo) and Fairmount Park, interrupted only once, by Logan Circle (photo above). This is Philadelphia at its most urbane, an almost European precinct of the city.

The Bacon plan's only contribution to the parkway was a slight truncation of its downtown tip. Originally, it reached all the way to City Hall, but with construction of Penn Center its last block was closed to traffic and turned into the John F. Kennedy Plaza atop a parking garage.

The parkway was the product of an earlier period of civic design, the City Beautiful era. It was first proposed in 1892 and was conceived as "a baroque boulevard intended to create a diagonal

vista that would break the monotony of the grid plan," in the words of Richard Saul Wurman's excellent "Man-Made Philadelphia." In 1910, French landscape designer Jacques Greber was engaged to create the final plan for the parkway and construction of the art museum began. Construction of the parkway itself started in 1917 at the western end, which Greber modeled after the Champs Elysees with rows of trees and substantial building setbacks. Height limitations and setback requirements still are imposed by the city on buildings within 200 feet of the parkway.

Logan Circle started life as one of the four squares in the Penn plan, and took its present configuration with construction of the parkway. At that time, two of its major buildings, the Cathedral of Sts. Peter and Paul and the Academy of Natural Sci-

ences, already were in place. Greber and Paul Cret added the Free Library and Court Building clearly, says Wurman, "modeling them after the buildings of the Place de la Concorde." They also designed the Franklin Institute on the circle.

The parkway will be a major focal point of Philadelphia's bicentennial celebration, second only to the Independence Mall area. As such it is being given a welcome facelifting. More than \$1 million is being spent on paving, street furniture and lighting; a new plaza is being created in front of the cathedral, and the art museum is undergoing \$10 million in improvements.

The result should be to once again remind Philadelphians how beautiful, and how important to the face of the city, their City Beautiful parkway really is. *D. C.*



What Has It All Added Up to?

Perspectives on Philadelphia Planning

"This is a city where aristocratic cooperation has always been the style of doing things and yet it is not a city which thrives on monarchs and autocrats." Christopher Weeks, former city development coordinator, now a private consultant.

"Philadelphia is almost too parochial. It is an understated kind of city. And yet it's not a city where a small group of people have made the decisions, except perhaps for one brief period of time. We tend to hammer things out Quaker style—everyone gathers in a room and talks the problem out until a compromise is reached." Walter D'Alessio, executive director, Philadelphia Industrial Development Corp.

"The plan doesn't represent sporadic, disconnected efforts, nor is it dependent on individual brilliance. It was a growth process. Because it wasn't fragmented and has a centralized theme, that meant energies coalesced." Edmund Bacon, FAIA, and Philadelphia planning director from 1949 to 1970.

The contemporary renaissance of center city Philadelphia has been a long process; it has taken more than a generation. What is remarkable about it is that it is the result of a thorough, considered plan, and that selfsame planning process is still being carried out today. What is also remarkable is the overall spirit of unanimity with which center city Philadelphia has been and is being renewed. Despite wide differences of opinion—some people, for example, revere Ed Bacon, others revile him—those planners, politicians and redevelopers who have safe-guarded the plan into buildings are in large-scale, general accord: Philadelphia is better off because of it.

"When we started to work, Philadelphia was a mess," said Ed Bacon.

"There are three ingredients—governmental and political leadership, civic and community cooperation and organized planning," said William Rafsky, executive director of Philadelphia 76, and, as development coordinator in the 1950s and 1960s, one of the key movers of the city's renewal. "These are the elements which came together, particularly between 1952 and 1963 under leadership of (Mayors) Clark and Dilworth."

"Everything that happened here was related to the development of an overall total concept," said Bacon. "I do not believe that happened anywhere else. The jury won't be in for another 20 years about the success of the effort. It is important historically that one city bothered to try."

Although the final verdict may well be decades away, enough of center city Philadelphia's renewal is complete to raise questions and issues. The questions do not have easy answers because there are no easy solutions to the problems of American cities, particularly older Northeastern American cities. Few of those involved in the center city renaissance lay claim to miracles; the picture painted is more one of a city's tenacious attempt to find solutions to its problems through planning and urban renewal.

Because it was first and because it is completed, Penn Center engenders the most criticism. There is a jury decision, so to speak. Said Rafsky, for example:

"Penn Center is a worthwhile first effort, but it rates poorly in terms of building design, in terms of excitement and attracting

people. This is, as much as anything, a product of the railroad's fundamental conservatism."

"Penn Center is very successful, although some of the architecture is not too hot," said Institute President Louis de Moll, FAIA. "It is an example of good planning leaving open spaces. It proves the importance of that kind of planning."

"What do I like most about it? Its convenience to public transportation and the convenience of getting services from underground streets," said Vincent Kling, FAIA, who designed six of the buildings in Penn Center.

"Penn Center is a fiasco in architectural terms—tawdry dead spaces," said landscape architect-environmentalist Ian McHarg.

"Penn Center works—every city has to have monumental open spaces," said Damon Childs, who, in 1970, succeeded Bacon as planning director and is now a consultant.

"The construction of Penn Center eliminated one of the biggest eyesores in the city and created a tremendous development platform," said Christopher Weeks. "It is unfortunate that the early Penn Center buildings are such poor buildings—utilitarian, pragmatic, functional urban spaces. The ice rink was an early, primitive attempt, and the underground spaces are a labyrinth with stores that are not particularly successful."

"What's worst about Penn Center is the depopulation of the streets," said architect Louis Sauer. "It's torn the guts out of the city. After five, it's suddenly a no man's land; Penn Center shows a lack of understanding of how people use things, particularly in the uses on the ground level. We know much more about people and their needs today, so that's looking back. All you can really say is that the intuitions were not there."

Second on the Philadelphia agenda was Society Hill, which McHarg terms "a triumph of the Bacon regime, design-wise and sociologically."

Said Weeks: "Society Hill is architecturally magnificent, but in the process of renewal they removed small corner shops, the lifeblood, the spice."

"In Society Hill they got rid of all the poor people, the corner stores, the life. They wrote the humanistic aspects out of the plan," said Richard Saul Wurman, FAIA.

"Society Hill was left with a few local merchants—a tailor, an undertaker, two barbershops and a candy store. Everyone else was on his last legs, stores like neighborhood bars. But it was a mistake where we put the new commercial area," said Damon Childs, who is a longtime Society Hill resident.

D'Alessio, who was the redevelopment authority's project planner on Society Hill, believes that the old stores have been greatly romanticized in retrospect. "There were no mom and pop stores," he said. "What there was were a tavern, a cat house—the cruddiest, lowest forms of commercial enterprise."

"There's basically a high income group in Society Hill, but it was a bootstrap action," said Vincent Kling. "It is a sign of the times. A substantive interest in the past fed Society Hill, and it is a solid thing which will last."

Penn Center and Society Hill are distinct projects, and yet their significance come not so much from their value as such but as part of the overall framework. Other pieces of the so-called

Disappointment in Penn Center, triumph in Society Hill, and disagreement about the impact of the plan as a totality.

Bacon plan receive little comment today because they are just now under construction, but the plan and the process have been put under magnifying glass scrutiny.

"What is unique about Philadelphia is that the projects today are precisely the projects being worked on 20 years ago," said Weeks.

"It was a textbook kind of planning," said D'Alessio. "And the surprising thing is that it worked. Generally the market determined the timing. The framework that comes out of the plans from Penn Center to Penn's Landing showed that the concepts were valid and the economics bore them out in spite of changing political regimes."

Said Louis Sauer: "The Bacon plan was an unbelievable success on the terms in which it was conceived. I dislike it in terms of its separation of people from the formal aspects. I see what Bacon wanted to do as taking away from diversity."

"The success of the plan is an image that's fairly clean and strong," said Childs. "There is a whole interlocking scheme of ideas, and a structure that can and has been modified. This city has had a continual structure to relate to, unlike other cities."

"I'd rather have a larger coherent solution to a design problem than a single brilliant dissonant building," said Ed Bacon. "Instead of being fragmented and therefore to a large extent the energy being dissipated, the existence of a central theme meant that energies coalesced and were codirected toward the thing which received energy and then grew and responded. That is my notion of what's special about Philadelphia."

"I am extremely happy because of the depth and richness of the ideas we put forth, and I am pleased about the role I played in the totality. I am a specialist in the totality. I am completely preoccupied with the totality."

"Bacon was essentially not a shaker," said architect-planner David A. Wallace, FAIA. "He worked well within the system but has little understanding of how to deal with the grass roots. I think he achieved a level of design superficiality and he dealt with that superficiality well. But he proves out what I call the 'view from the window' theory. City planners tend to pay attention to what they can see from their window."

"No one thought about how these plans affected the ground; they always thought in terms of aerial views," said John Bower, FAIA.

"The fault of the plan is the long-range view that turns out to be an aerial view. But it did define the framework," said Romaldo Giurgola, FAIA.

Said John Higgins, a neighborhood specialist with the city planning commission:

"Bacon was a brilliant politician, but he maintained that all power derived from an idea, and he is certainly capable of blocking from consciousness ideas that don't suit him. He has a Rotarian, middle American view of things."

"My answer to criticism is what I did," said Ed Bacon, "not what I said."

"The plan was a bootstrap operation to stop the deterioration of downtown," said Bower. "Big projects were undertaken because that was the federal vehicle. Philadelphia has the disad-

vantage of being first. There were no models. But it didn't take advantage of this or learn from Penn Center how to get other projects done better.

"Making long-range plans can be damaging if they are on the books for years. No one will improve areas that are slated for demolition. So they hold still or go downhill. Bacon never hesitated to announce grandiose plans. Market East has gone totally downhill in 15 years because of this."

Perhaps the most persistent criticism of the "Bacon regime" is that it did nothing for the city's residential neighborhoods. The harshest critics of the center city renaissance think it was worthwhile; views on what happened to neighborhoods range from "nothing was ever done" to "we tried but we didn't ever find the right tools."

"Bacon felt that you should provide beauty for the poor to look at but never really did anything for neighborhoods," said Louis Sauer.

"Center city was consciously stressed at the expense of the rest of the city. There was the assumption that the economic vitality of the central business district was the first need," said Ian McHarg.

"Ed (Bacon) had tunnel vision when it came to downtown, and vested interests, the businessmen, were there. The vision was not broad enough at the time to keep a tax base alive outside center city, and the housing stock continued to decline," said Augustus Baxter, Hon. AIA, executive director of the Architect's Workshop.

"You can argue that if downtown is not strong you're going to make it more difficult if not impossible to do other things," said Damon Childs.

Said Vincent Kling: "I don't think the overall plan to save the city has been successful. There has been an exodus to suburbia. The vacuum they created was filled by minorities. There is enough housing empty and boarded to take care of all housing problems."

"The trickle back to the city has been nothing compared to the flow out," said architect Denise Scott Brown.

Said William Rafsky: "There are people who allege—at least in terms of 1954 to 1964—that we ignored neighborhoods when in fact the bulk of our resources went into neighborhoods. It is a mistake to talk about neighborhoods in an abstract sense. All of our efforts to save neighborhoods were not successful. Whatever programs were started were not enough to save them."

"The basic plans of the 1950s included lots of neighborhood plans," said Christopher Weeks. "Those plans were never really carried out, but the blame rests on the federal government."

"The failure is that of our society finding ways of building lower- and moderate-income housing," said Robert Geddes, FAIA.

"I think that as long as poverty exists, there is no source of satisfaction for anything anybody has done in a poverty area because the poverty remains. I think things are done to make it less awful to live in a poverty area than it was before," said Ed Bacon.

Whether there was—as some allege—a conspiratorial white

As center city is rebuilt, blighted areas continue to decline, 'and no one seems to have a handle on what to do.'

malice against the city's black population or simply never enough money, expertise and housing programs at the same time, the story of Philadelphia's governmental attempts to save its worst and declining neighborhoods is one pockmarked with failures.

Rafsky briefly sketched some of the history this way: In the beginning the city held as its neighborhood strategy a program in which it went into the oldest, most deteriorated neighborhoods, conserving the housing that could be saved and tearing down some for new construction.

"What we learned from this was that the amount of money was not enough," he said.

That was followed in the late 1950s by what was known as the central urban renewal area study, which proposed a strategy of classifying areas according to the degree of deterioration and working from the least deteriorated inward instead of from the worst outward.

"That strategy didn't work either," said Rafsky.

In some areas, he said, such as East Poplar, the first urban renewal neighborhood, there are "some excellent examples of new housing and rehabilitated housing." But, he added:

"Because the rest of the neighborhood was not coped with in terms of educational facilities, jobs, crime, these islands of good couldn't survive in a sea of adversity."

In the 1950s, the city set up a system of spending priorities for urban renewal funds which divided up the money this way: 50 percent for residential neighborhoods, 23 percent for center city, and 18 percent for institutional expansion.

It was out of the last, and smallest, amount that much of the resentment of the citizenry toward urban renewal arose over, as Rafsky put it, "the alleged octopus-like growth" of the University of Pennsylvania and Temple University. Those who defend the institutional expansion program argue, as Rafsky does, that "centers of higher learning are important for economic development, particularly for the kind of cultural cross-fertilization they provide." Likewise both Penn and Temple are among the largest private employers in the city.

Rafsky said the failure to stop the decline of Philadelphia's poorest neighborhoods is not the sole province of housing and urban renewal programs. In the antipoverty programs and in model cities "the money was spent on quite good programs." But, he said, "When you total up everything that's happened, the neighborhoods are no better off."

North Philadelphia, in particular, is no better off, and grows worse day by day, despite past and present efforts including urban renewal, public housing, antipoverty and model cities programs. North Philadelphia is the victim of the worst abandonment, deteriorating housing, crime, alcoholism, drugs, unemployment. And no one seems to have a handle on what to do.

"What can you do about North Philadelphia?" asked Ian McHarg. "I don't think anyone has an idea."

Baxter, like others, sees the city's biggest concern as the "quality of its housing stock—its depletion and the limitation of new housing." The 1973 federal moratorium on subsidized housing "left a great void which is not being filled," he said, adding:

"We have never had in the neighborhoods the same concentra-

tion of resources. Had we had the same concentration of effort as in Society Hill, the same land write-downs, we would be in much better shape. As it was, urban renewal left communities without strength. It destroyed the camaraderie, the continuity. Urban renewal took out whole blocks of housing, took out the leaders, and forced vacuums."

But Baxter is not gloomy about the future of Philadelphia's neighborhoods. He thinks, for example, that the city's abandonment problem can be arrested, given the proper effort. And he sees enormous strength emanating from the neighborhood groups. He describes North Philadelphia, which others despair over, as having "excellent leadership and talent," and says that the city will be really moving again within the next six years.

Even with better, stronger, more consistent federal programs, though, said Christopher Weeks, "I'm not sure things would be drastically different today—the pace of deterioration and disintegration of older neighborhoods has been so rapid."

Although no one has truly accurate figures, he said, the housing abandonment rate is somewhere around 3,000 units a year. This means that to keep even Philadelphia would need about \$100 million a year for housing and neighborhood renewal programs.

The city gets \$60 million a year in community development funds. Half of that is allocated to ongoing urban renewal programs of which there are more than 60. And, said Redevelopment Authority Executive Director Augustine Salvetti, there is demand throughout the city for the community development money, with haggles emerging over who is speaking for the citizens. The city is setting up neighborhood councils to create a more orderly dispersal of funds. "But they have got to understand that community development means the elimination of blight systematically," said Salvetti.

Without workable federal housing programs, the city is striving for new answers. Included in these are the "Mayor's Block Building Program," in which deteriorated homes on sound blocks are being rehabilitated and the urban homesteading program in which city-owned abandoned houses are sold at rock-bottom prices to families who will renovate them.

"The Rizzo administration has been honestly searching for answers, but no one has come up with viable programs except urban homesteading," said Rafsky.

Few Philadelphians would come close to the nihilistic picture painted by a former resident, that the city is strong downtown but two-thirds of the neighborhoods are unlivable. The truth probably falls somewhere in between the most negative and the most positive viewpoints. A recent study by the Federal Reserve Bank, for example, refutes the contention that all of Philadelphia has fled to suburbia, pointing out that the city's population has "remained remarkably stable between 1930 and 1970, housing within a band of 5 percent (or 100,000) more or less than two million." Added the report: "While the population has dropped below this band during the last few years, it is not clear whether this indicates a new trend or is merely a cyclical phenomenon." What has happened, however, is that the suburbs have absorbed most of the area's population increase in the past 60 years or so.

It will take another decade to complete execution of the plan. Then what does the city do for an encore?

Likewise, Philadelphia ranks below cities like Baltimore and Boston in the percent of population receiving public assistance—at 14.1 percent, compared to 15 percent in Baltimore, and 14.5 percent in Boston.

Nonetheless, the identifiable successes are indeed downtown, as are the step-by-step programs on the city's agenda for the future.

Well under way are several of the last elements of the Bacon plan—Market East and Penn's Landing. A third, and equally if not more important, project is also under construction. It is Franklin Town, a privately financed new town, in-town at the northwest corner of center city.

Franklin Town, said its Executive Director Jason Nathan, "bristles with significance." Only in three cities of the country, he noted, are there privately-financed projects of such "enormous cost and size." The new town in-town is a \$500 million, six-acre project with one apartment building—One Buttonwood Square—already completed, all the land assembly and relocation finished, and plans in the works for 950 to 1,000 apartments and houses.

Franklin Town is important, said Nathan, "because here is a bunch of private corporations saying we're putting our money into this thing because we believe in Philadelphia as a good investment. It's one thing for Gimbels to move in with an urban renewal land write-down, but to do this privately and to be able to do it creatively justifies the enormous public ventures in center city. And it's taking place here on a gigantic scale."

There is a less flamboyant agenda, too, including a continuing effort to attract jobs to the city and short-term solutions to center city problems. The Philadelphia Industrial Development Corp. is waging what it hopes is a successful campaign to lure industry from New York. (The advertising theme is W.C. Fields saying, "I was wrong," a funny twist for Philadelphia's most famous detractor.)

Although the city right now has 2.5 million square feet of empty office space, PIDC's Walt D'Alessio thinks this will be absorbed within three years and is predicting a need for more. The Federal Reserve Bank's review showed a shift from manufacturing to nonmanufacturing jobs and predicts a small gain in employment by 1980, concluding:

"These findings do not support the 'gloom and doom' predictions too often heard about Philadelphia. They point to an urban area changing and evolving, not necessarily decaying and withering. . . . The future of Philadelphia and the region in terms of employment does not appear at all discouraging. Both the city and the region should experience job growth over the long haul. It is true the mix of jobs and the make-up of the population are changing and change always generates some problems."

The Old Philadelphia Development Corp., too, is looking closely at short-term solutions, among them a "shopping list of improvements." On this list, said Michael Scholnik of OPDC, are such things as landscaping projects "to soften the cityscape"; revitalizing in some way the subway concourses, and making over the existing storefronts on Market Street.

"We are concerned with both the short run and the long run,"

said Scholnik. "We must do things for the future but not forget the here and now."

Although most of the pieces of the center city plan are being pulled into place, there is still enough to do to keep the city busy for a while.

"Looking at the long term, it is very realistic to say that the reform administration of the '50s created a form of long-range planning which resulted in urban development programs which are still being executed and will be for 10 more years," said Christopher Weeks. "What is lacking is a version of what should be done in the 20 years after that."

"Downtown is excellent. Without it the city wouldn't function. We've kept the major banks, department stores, corporate headquarters," said John Mitkus, planning commission executive director.

"Compare it to Sixth Avenue in New York, where you have a vast number of building programs side by side with the kinds of clients that could coordinate programs. But there was no synergism at all, no interaction, no larger consequence. It was like a suburban development with each house in its own yard," said Ed Bacon.

"No matter what critical glass you use," said Walt D'Alessio, "center city exists within a much larger framework of industry, university expansion, multinucleated neighborhood renewal. The only place where we really came apart was subsidized housing. There we are almost betrayed."

"Without the plan, Philadelphia would have had typical congested office spaces without good connections down below. The city has been made more attractive," said Louis de Moll.

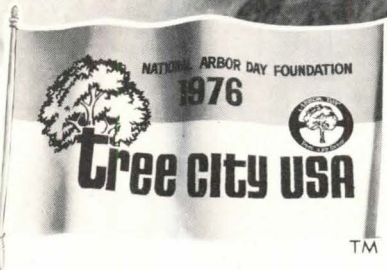
Added Weeks: "Philadelphia is basically a mature city, not a fast-growing metropolis. One of the primary challenges is how to keep itself a modern city in an economy which is essentially stable.

"We must keep the boat on an even keel and keep sailing straight ahead and not try to pretend it's an airplane."

"Philadelphia is certainly better off physically and economically for our efforts. Downtown is terrific. It's been a plus," said Rafsky. "True, we're no better off in terms of neighborhoods, housing deterioration, but our economy is in good shape. It's far from one to click your heels about, but compared to most Northeastern cities we're okay."

"Look at other cities where they've abandoned downtown," said Bacon. "Here we've held everything together—business, culture, theaters, offices, shops, galleries, restaurants. And all this means people.

"The planning process had an incredible effect on the face of the city. It was a three-dimensional injection of energy into the anatomy of the city, systematically at certain times and at certain locations. What we were really doing was dealing with the flow of energy through the city structure so we continually made decisions about the relative importance of neighborhood renewal, housing, industrial regeneration, railroads and expressways, revitalizing downtown business, transportation, subway stations, historical renewal, fancy housing, poor housing—the whole thing." *Beth Dunlop*



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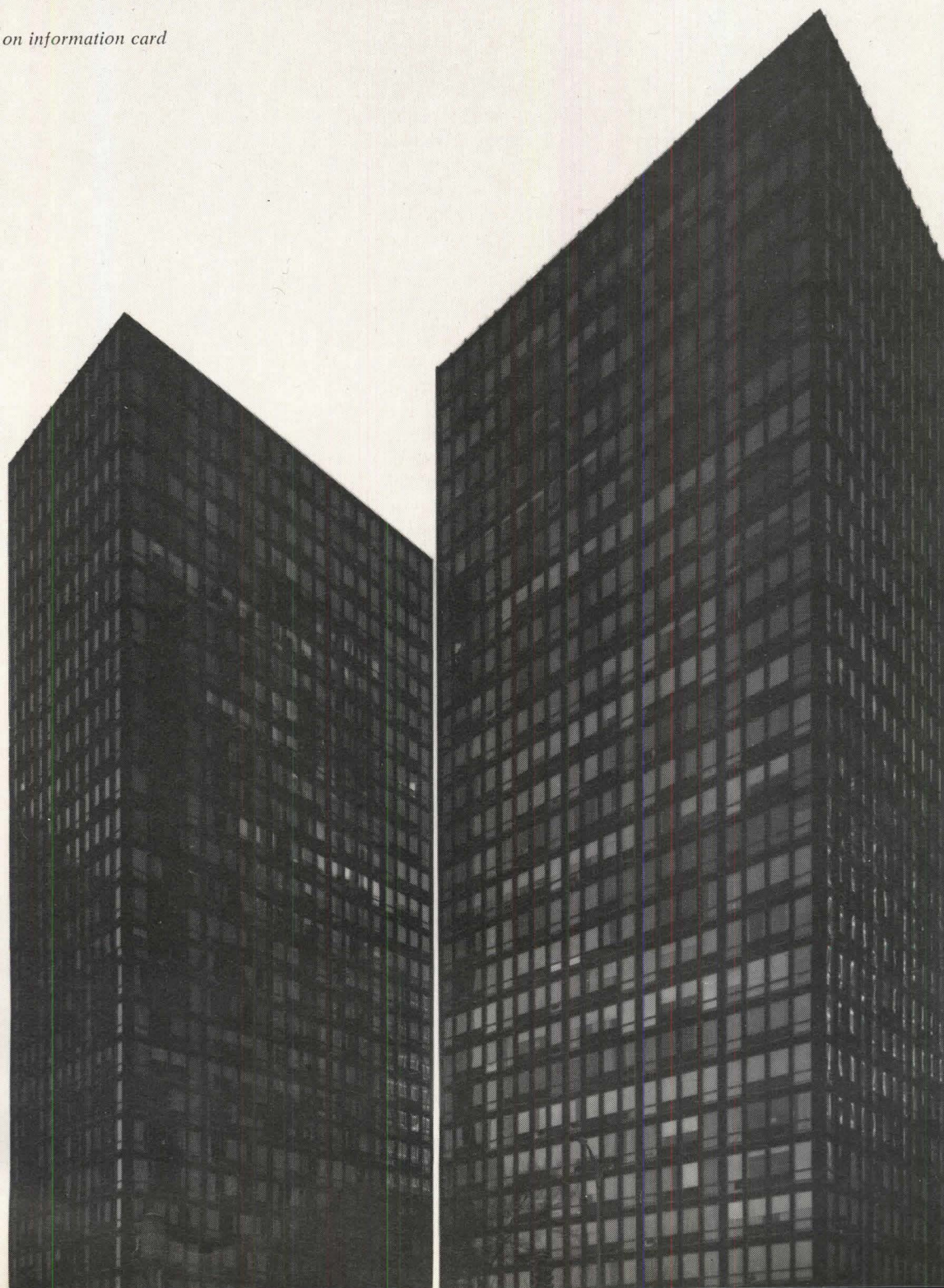
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Managing Money: A New Look At Financial Planning and Controls

Peter Piven, AIA

The forthcoming book *Current Techniques in Architectural Practice*, prepared by the Institute and edited by Robert Allan Class, AIA, and Robert E. Koehler, Hon. AIA, is a big step forward in providing the practicing professional with a sharp insight into management, an area of practice which is stressed less than any other discipline in the architect's training.

Class points out in the opening chapter: "As the architect's client becomes more sophisticated, the successful architect will develop a parallel degree of sophistication. The client's expertise in business matters must be matched by that of the architect. Attention to the business aspects of architectural practice may be demanding, but the process need not necessarily be difficult, with adequate preparation and planning."

The book is divided into four sections: methods of firm organization and project delivery; business management; the practical points of managing a project, and a review of the important everyday tools of management and production, including information resources, machines and contract documents.

As a service to its readers, the JOURNAL will publish selections from the book that pertain to some key areas of business management and consider important production tools. The selections offered this month concern financial management and personnel practices.

The book will be ready for distribution by the time of the AIA convention in Philadelphia. On May 3, the first day of the convention, Class and a number of the 18 contributing authors will lead a seminar based on the book. *Ed.*

The chapter on financial management discusses the profit plan, identifies basic accounting principles and reviews key financial reports, along with the indicators which the practitioner needs to keep track of as part of any sound financial management program. Cash management is also reviewed briefly, and a reading list points the way to sources of more in-depth information.

Before it develops any kind of financial management system, a firm must prepare a clear and simple statement of its objectives and of the policies needed to carry them out. One of these objectives must deal with the financial aspects of the existing practice or practice-to-be, especially as regards profit. Profit is vital for capital growth, reward for risks and return on investment.

Once it has its statement of overall goals, including those for profit, a firm must develop a subprogram for the financial management aspects alone. How are the firm's financial aspects to be managed? By whom? On what schedule? With what results? The answers to such questions constitute the firm's profit plan.

The profit plan identifies the profit goal and the income and expense levels required to attain that goal. As an integral part of the firm's overall management planning and control for the year, it becomes the basis for the periodic (usually monthly) budget used to control all expenses—direct (project) and indirect (overhead)—and to measure and evaluate the results.

Preparation of a profit plan can begin at either top or bottom: with projected income or desired profit. Ultimately, it must be worked back and forth so that it recognizes a reasonable income projection and matches expenses and profit to it. Or else, it must set a profit goal and either tailor expenses to it or identify the need for additional income.

Mr. Piven, chairman of the AIA financial management task force, is general manager of Geddes Brecher Qualls Cunningham, Philadelphia. This article has been condensed and adapted by Stephen A. Kliment, AIA, from the chapter on financial management.

In the architectural profession, income is largely a consequence of project compensation; hence, profit is earned when the net income from projects—the amount left after direct expenses—exceeds the firm's indirect expenses. The profit plan should help to keep the firm on target by cutting direct project expenses so as to increase net income from projects; by cutting indirect costs to reduce overhead; by creating new income; or, if all else fails, by pointing toward reduced profit.

The profit plan as expressed in a projected 12-month income and expense statement will identify all planned income, direct and indirect expense items and the percentage relationships between them. Key profitability indicators (discussed later) become clear; overhead factors are identified. Projects can then be budgeted in direct proportion to the total firm plan, and monthly income and expense budgets can be prepared for monitoring actual activity against the plan at monthly intervals.

Organization and people: The firm must organize itself to allow for effective financial management. In small proprietorships or partnerships, proprietors or partners are responsible for establishing the management policy of the firm and exercising direct control. They establish accounting procedures with the help of a consulting accountant, incorporating management policy and monitoring the results.

As the firm grows, the principals will probably devote more time to administration. The implementation and control functions begin to require a great deal of time in a specialized area in which the principals may be little qualified or interested. At this point, a second management level may be introduced. On projects, such functions are usually up to the project managers. In administering the firm, there may be need for a manager who carries out financial management policy, maintains the financial management system, oversees other administrative staff—especially the bookkeeper—and reports to the principals.

What kinds of people are required to carry out management duties? Today's principal very likely lacks any formal

management training. As a manager, he best seeks to build on basic abilities as a planner in the broad sense by developing an awareness of good management principles.

The general manager, who is responsible to the principals, should be either an architect who has accumulated experience as a manager and/or has had special management education, or a business-trained architect with a feel for the special conditions and needs of the professional firm. Overall obligations are apt to include financial and operational management, encompassing process planning, project manpower planning, personnel administration and central administrative services.

The business manager, who is responsible to the general manager or chief executive officer, should have a background in

accounting or systems analysis so that assignments in the area of financial systems and controls can be carried out.

The accountant helps to set up accounting systems and procedures and provides regular auditing, especially for tax purposes. This individual also offers help in budgeting and control. It may be wise to consider pairing an aggressive accountant with conservative legal counsel or vice versa.

Accounting principles: The division of the management process into *planning* and *control* provides the basis for effective decision making, which in turn is the nucleus of the management process. The data base for effective decision making is accounting. Accounting is on a cash or accrual basis.

Cash basis accounting recognizes income or expense when cash is received or paid. This method may be adequate for accounting in very small firms, for taxation reportage or cash flow projections (the forecast of an office's cash position resulting from anticipated receipts is illustrated in Table 1). In general, however, the cash basis method is misleading. It fails to recognize work-in-process (unbilled services)—so vital because billings usually follow services. Even operating under cost-based compensation, which prompts frequent, regular billings, not every firm will be able to bill out every active project at the end of every accounting period.

There are occasions when a large account payable, such as a major bill from a consultant, may seriously alter a firm's financial position when the bill is paid. This is another problem with cash basis accounting. When preparing periodic financial statements, firms on a cash basis may want to consider recognizing major "accounts payable" to better reflect their financial positions.

Accrual basis accounting recognizes the impact of events on assets and equities at the time that services are rendered or used. For an architectural firm, income is accrued when it is earned; expense is accrued when it is identified as having been expended, regardless of actual receipts or disbursements.

Work-in-process, or unbilled services, is that portion of the firm's direct project labor cost which has been expended on income-producing work but has not yet been billed to the client. The difference between *current* and *previous* work-in-process levels is the amount of uninvoiced income. The firm's invoiced and uninvoiced income constitute its *total* income from projects, but exclude nonproject income from investments, honorariums, rents, etc.

Reports: The manager uses various reports to monitor the activities of the firm. Three of the most important are the balance sheet, the income and expense statement and the office earnings report.

The balance sheet is the statement of a firm's financial status at any specific time. It has two counterbalancing sections: as-

TABLE 1.

EXAMPLE OF CASH FLOW PROJECTION

Cash Flow Projection — June through December 1973:

	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Cash inflow							
Cash balance	\$5,000						
XYZ project		\$1,000	\$3,000	\$3,000	\$ 3,000	\$ 3,000	\$ 5,000
A.C. project		1,000	—0—	—0—	—0—	—0—	20,000
Total	\$5,000	\$2,000	\$3,000	\$3,000	\$ 3,000	\$ 3,000	\$25,000
Cash outflow							
Staff cost	\$3,000	\$3,000	\$3,000	\$3,000	\$ 3,000	\$ 3,000	\$ 3,000
Overhead	2,000	2,000	3,000	2,000	2,000	2,000	3,000
Total	\$5,000	\$5,000	\$6,000	\$5,000	\$ 5,000	\$ 5,000	\$ 6,000
Net cash inflow (outflow)							
Accumulated	—0—	(\$3,000)	(\$3,000)	(\$2,000)	(\$ 2,000)	(\$ 2,000)	\$19,000
		(\$3,000)	(\$6,000)	(\$8,000)	(\$10,000)	(\$12,000)	\$ 7,000

This analysis indicates that starting July 1, outside cash will be required until late in December. Furthermore, it appears that the practitioner will need at least \$12,000 to cover expenses during this period.

Source: *Financial Management Concepts and Techniques for the Architect*, 1973, by Thomas J. Eyerman, Skidmore, Owings & Merrill, Chicago.

The most important action in the development of a financial management system is the establishment of a "clear and simple" statement of objectives and of policies to accomplish the goals. One goal is profit which "is vital for capital growth, reward for risk and return on investment."

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sets and liabilities plus equities (sometimes called capital or net worth). Assets include all goods and property owned as well as claims against others yet to be collected. Liabilities are claims against the assets, or debts due; equities are the amounts the owners (stockholders or partners) would divide if the business were liquidated at the value shown on the balance sheet.

The basic balance sheet equation is: Assets (A) = Liabilities (L) + Stockholders' Equity (SE).

From this equation is derived the essential balance of the report in which total debits (entries on the left) always equal total credits (entries on the right).

The balance sheet is an excellent report for determining the real value of a firm at any given time. When compared with other balance sheets at regular intervals, it is an effective way to measure and chart the firm's growth or decline. It is good for measuring the financial results of operations of the firm, but less so in measuring and controlling the operations themselves. For that, an income and expense statement (I&E)—sometimes called the profit/loss statement (P&L)—is needed.

The income and expense statement is the record of a firm's operations at any specific time. It is the key indicator of the financial success or failure of the firm as recorded in the bottom line: *profit* or *loss*.

A good I&E for an architectural firm would record both on a monthly and year-to-date basis the following items:

- The various income accounts, e.g., invoiced, uninvoiced income, investment income.
- The various direct project expenses, including labor, consultants, travel, reproductions, etc.
- The difference between the above two items, sometimes called gross margin or net income from projects.
- The various indirect expenses or overhead accounts, including indirect (non-project) labor, benefits, general and administrative expenses.
- Profit or loss.

A better I&E would record the percentages of total income for all accounts below the income line; a still better one would

show, on a separate report, budgeted versus actual expenditures for the accounting period reported and year-to-date. (The AIA standardized accounting systems, both manual and computer-based, provide these features.)

The I&E records the financial effects of operations for the entire firm. Many architects are project-oriented, however, and tend to relate better to individual project accounts than to officewide ones. Hence, the office earnings report (OER), developed as part of the AIA computer-based financial management system, presents critical financial indicators for the entire office on a project-by-project basis.

Items listed on the office earnings report for each project on a project-to-date basis include: project number; project name; fee (referring to total compensation); income type; earned income; billings; receipts; work-in-process; accounts receivable; expenses; profit/loss.

For each project on a year-to-date basis, the OER indicates earned income, expenses and profit/loss. By looking at one report, the firm's management is able to monitor the total financial operations on a project-by-project basis. By noting changes in successive accounting periods, it can develop a thorough understanding of how projects, individually or jointly, affect the office.

Indicators: The manager comes to rely upon certain numerical results as key indicators of the firm's operations. With total income shown as 100 percent on the I&E statement, the ratio of direct job labor (DJL)—and then of total labor (DJL plus indirect labor)—to total income is critical. Depending on the size of the firm and degree of in-house consulting disciplines, DJL/total income might range from 20 to 40 percent, and total labor/total income proportionally higher. The manager will soon learn at what level the firm must operate to be profitable.

Firms which require greater numerical sophistication can derive other productivity indicators from DJL/expense figures, including:

- Earning capacity as a multiple of direct personnel expense.
- Employee productivity as billings per employee.

- Employee effectiveness as profit per employee.
- Project efficiency as income from projects (gross margin) as a percentage of billings.
- Project labor productivity as billings per dollar expense.
- Project labor effectiveness as profit per labor dollar expense.

The project hours/total hours ratio provides another good indicator. As one of several output reports generated by time sheet input, these ratios not only help evaluate individual personnel, but also give a strong clue to the firm's overall productivity.

For most firms, a ratio of project hours/total hours, i.e., technical versus total labor, falling below 62 percent generally means unprofitable operations. Also, a productivity spread between project-related personnel and all personnel—including administrative and clerical—is a sign of profitability if it is on the order of 20 percent. In other words, if the ratio for all employees is 65 percent, that for project-related employees should be about 85 percent. These indices will vary with the firm and the firm's policy in recording time.

The most important aspect of financial monitoring involves the variances between *planned* (budgeted) and *actual* operations. Many of the architect's standard reporting forms—especially the I&E—lend themselves to this kind of reporting. By analyzing these variances, specific areas which require financial management control will emerge for each of the accounts on the I&E. The AIA's financial management system includes an I&E analysis that does precisely that.

Cash management: Whether a firm is on a cash or accrual basis of accounting, sound management of its cash is crucial.

The cash flow cycle starts with billings—turning the value of unbilled services into cash for the firm's operations. Regular, timely billing and collection are essential. Some firms even go so far as to declare project income only as a function of billings, thereby imposing on the project schedule a billing schedule. This serves to hasten project development in the interest of increased income and improved cash flow.

The billing process should also provide for management review through a report showing uncollected funds by project for the current period and spread by age for prior months, for use as a basis for follow-up calls and short-term financial planning. The collection process cannot be put on a routine basis to the same degree as the billing process; collections must be pursued by senior individuals, usually principals-in-charge of the project.

Backlog, the difference between total committed compensation and total billings, is a good indicator of the firm's total future cash resources. More important, it alerts the marketing staff of the gap between actual and projected (budgeted) income. Billing projections relate backlog spread by age for future months, generally for one full year. These projections chart the firm's future income and identify potential shortages in the firm's cash resources for the stipulated period. Along with an "aged accounts-receivable" report, the backlog report is a good basis for documenting applications for credit or loans, for meeting deficits, or conversely, for pointing to the need for a short-term investment plan for excess funds.

Future income over and beyond the study of backlog may be forecast to some extent by reviewing a firm's marketing history to see if there is any pattern of predicting potential income from the firm's success rate in developing new business. This allows it to plan on compensation it may expect to generate as a result of marketing activity in progress or planned.

The successful firm seeks to protect and expand its surplus capital. New firms or those with poor cash positions require interim funding.

New practices will require adequate cash resources, at the very least, for initial capital investment, trade accounts and suppliers, payroll and benefits. When money is readily available and cheap, the architect's personal bank should be a good funding source. In tight currency periods, good personal credit ratings, tenure in business, contracts with large, secure owners and cash flow positions will all be important in evaluating loans. Newer, more aggressive banks may be a useful

source; nor should one discount the value of the personal extended credit checking account.

The firm with a strong cash position will look for vehicles to make its money work. Some state banking laws prevent corporations from owning passbook savings accounts, but the rule generally does not apply to single proprietorships and partnerships. Commercial paper, treasury bills, certificates of deposit, bankers acceptances—in fact, all money-market funding sources—are available to all types of firms; for the longer run, stocks and bonds may be considered.

Regardless of its original form of practice, the growing firm will at some stage need to decide whether to open ownership to others in the firm. The corporate form of practice will permit change with the least disruption. From a financial standpoint, once the basic decision to expand has been made, the firm must be evaluated to establish the worth of the holdings of the present principals who own the business. Although the balance sheet will identify the net worth as the difference between assets and liabilities, this so-called book value does not reflect any increment of goodwill. Thomas J. Eyerman, AIA, in his article "Methods of Establishing a Firm's Value" (Aug. 1974) offers the capitalization rate method as one reasonable way to deal with the problems of including subjective values in assessing worth. The formula is:
$$\text{Capitalized Earnings} = \frac{\text{Average Earnings}}{\text{Capitalization Rate}}$$
 where 20 percent, i.e., five times earnings is given as a conservative capitalization rate for the architectural profession.

Worth may also be established by negotiation. In a closely held company, negotiation will be between selling principal(s) and those to whom shares or partnerships are being offered. For those firms offering shares to the public through investment bankers, the negotiation aspect appears first in the price per share established by the banker and the offering firm, and second in the actual price paid by the individual investor.

Once a formula has been derived to value the firm and to create a basis for later resale, the firm will require a funding

mechanism to carry out the actual purchase and transfer from present to prospective owner. One such method involves the funding of the buy-out with pretax dollars through increased salaries to the selling principals. Other means are possible, and expert legal and accounting advice should be sought.

In a climate of increased competition, the well-managed firm, regardless of size, will benefit from access to detailed financial data about itself. For the middle-sized and larger firms, a computer-based financial management system is a necessity due to the mass of data and level of detail required for effective management and control. Many firms have developed proprietary computer programs incorporating features unique to their own practices. (See Table 2 for a typical financial plan.)

Of particular interest is the AIA computer-based financial management system originally developed by G. Neil Harper from the AIA book *Financial Management for Architectural Firms*, prepared by Arthur Andersen & Co. It provides a complete range of integrated project and office financial reports, among which are:

- Project detail report.
- Project progress report.
- Cash journal.
- Direct expense summary.
- Journal log.
- Invoice log.
- Balance sheet.
- Income and expense statement.
- Office earnings report.
- Aged accounts receivable report.
- Expense analysis.
- General ledger.
- Time analysis report.

Such systems afford the architect a way not only to *account* but to *manage* a practice.

The various specific reports and methods discussed are all tools for use in the two key management tasks: planning and control. Financial management requires a firm to establish financial objectives, especially as regards profit; to plan its practice to generate that profit, and to control activities to bring it about. Successful financial management can create the solid base that will support the totally successful practice. □

TABLE 2

TYPICAL FINANCIAL PLAN

R PROJECT FINANCIAL PLAN		CAUDILL ROWLETT SCOTT, INC. (DATE AND TIME OF RUN: 02/11/75, 09:53:29, CTL = 07)										PAGE 1
----- FEE TYPE: PERCENTAGE		EST CONSTR COST: \$ 15,700,000		FEE BASIS PCT: 6.10		TOTAL FEE (INCL ASSOC SHARE): \$ 957,700.00		TYPE: M PM: CRANE, JOHN		STATUS: OPEN PRINT FLAG: 0 (PRINT)		CONTRACT OFFICE: HO
COMMITTED FEE: \$ 907,700.00		COMMITTED BACKLOG: \$ 153,372.35		CONTRACTED FEE: \$ 907,700.00		CONTRACTED BACKLOG: \$ 163,372.35		PERCENTAGE FEE: \$ 957,700.00		SCHEDULED BACKLOG: \$ 163,372.35		
PHASE	DATE	CONST COST	ASSOC PHASE %	CRS SHARE	CRS FEE PER PHASE	BILLED TO DATE	% BILLED					
PHASE 1	10/16/72	15,700,000	0.00%	15.00%	\$ 143,655.00	\$ 143,655.00	100.0					
PHASE 2	12/23/72	15,700,000	0.00%	20.00%	191,540.00	141,540.00	73.9					
PHASE 3	02/16/73	15,700,000	0.00%	40.00%	383,080.00	383,080.00	100.0					
PHASE 4	04/01/74	15,700,000	0.00%	5.00%	47,885.00	47,885.00	100.0					
PHASE 5	07/01/74	15,700,000	0.00%	20.00%	191,540.00	28,167.65	14.7					
CRS SHARE				100.00%	957,700.00	744,327.65						

FINANCIAL ANALYSIS											
		TOTAL		PHASE 1		PHASE 2		PHASE 3		PHASE 4	
	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	
GROSS BILLINGS	23.3%	957,700	744,328	15.0%	143,655	143,655	18.0%	191,540	181,540	141,540	
DIRECT JOB LABOR		223,164	179,603	5.0%	7,183	5,747	7.0%	13,408	9,346	9,346	
DIRECT JOB EXPENSE	10.7%	102,474	62,471								
ENGINEERING		0	0								
PRINTING		0	14,051								
TRAVEL		0	3,021								
CONSULTANTS		0	38,362								
EDP		0	3,613								
OTHER		0	3,395								
NET INCOME	68.3%	632,082	502,253	85.0%	114,924	123,120	75.0%	143,655	100,555	47,452	
APPLIED O.H. @ 1.49		334,672	269,369		32,318	22,179		51,709			
PROFIT	31.0%	297,410	232,884	57.5%	82,606	100,941	48.0%	91,946	53,104		
*TOTAL IN INVENTORY											
D.J.E.-		\$ 1,723.17									
D.J.E.-		\$ 1,222.14									

R PROJECT FINANCIAL PLAN		CAUDILL ROWLETT SCOTT, INC. (DATE AND TIME OF RUN: 02/11/75, 09:53:29, CTL = 07)										PAGE 2
----- FEE TYPE: PERCENTAGE		EST CONSTR COST: \$ 15,700,000		FEE BASIS PCT: 6.10		TOTAL FEE (INCL ASSOC SHARE): \$ 957,700.00		TYPE: M PM: CRANE, JOHN		STATUS: OPEN PRINT FLAG: 0 (PRINT)		CONTRACT OFFICE: HO
COMMITTED FEE: \$ 907,700.00		COMMITTED BACKLOG: \$ 153,372.35		CONTRACTED FEE: \$ 907,700.00		CONTRACTED BACKLOG: \$ 163,372.35		PERCENTAGE FEE: \$ 957,700.00		SCHEDULED BACKLOG: \$ 163,372.35		
PHASE	DATE	CONST COST	ASSOC PHASE %	CRS SHARE	CRS FEE PER PHASE	BILLED TO DATE	% BILLED					
PHASE 1	10/16/72	15,700,000	0.00%	15.00%	\$ 143,655.00	\$ 143,655.00	100.0					
PHASE 2	12/23/72	15,700,000	0.00%	20.00%	191,540.00	141,540.00	73.9					
PHASE 3	02/16/73	15,700,000	0.00%	40.00%	383,080.00	383,080.00	100.0					
PHASE 4	04/01/74	15,700,000	0.00%	5.00%	47,885.00	47,885.00	100.0					
PHASE 5	07/01/74	15,700,000	0.00%	20.00%	191,540.00	28,167.65	14.7					
CRS SHARE				100.00%	957,700.00	744,327.65						

FINANCIAL ANALYSIS											
		PHASE 3		PHASE 4		PHASE 5		PHASE 1		PHASE 2	
	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	PLAN	ACTUAL	
GROSS BILLINGS	23.0%	383,080	383,080	25.0%	47,885	47,885	35.0%	191,540	28,168	28,168	
DIRECT JOB LABOR		88,108	113,175	15.0%	11,971	14,433	15.0%	67,039	5,569	5,569	
DIRECT JOB EXPENSE	12.0%	45,970	23,452								
ENGINEERING		0	0								
PRINTING		0	0								
TRAVEL		0	0								
CONSULTANTS		0	0								
EDP		0	0								
OTHER		0	0								
NET INCOME	70.0%	249,002	246,453	50.0%	28,731	25,606	50.0%	95,770	6,528	6,528	
APPLIED O.H. @ 1.49		132,145	169,739		17,954	21,646		100,545	8,352	8,352	
PROFIT	30.5%	116,857	76,714	22.5%	10,777	3,959	2.4%	4,774	1,823		

SCHEDULED BILLINGS													
	FEB 5,746	MAR 5,555	APR 5,555	MAY 5,746	JUN 5,555	JUL 5,555	AUG 5,746	SEP 5,555	OCT 5,555	NOV 5,746	DEC 5,555	JAN 5,555	
ACCOUNTS RECEIVABLE	1-30 DAYS			31-60 DAYS			61-90 DAYS			91-180 DAYS			181-OVER
	0			5,633			0			0			0

Source: Caudill Rowlett Scott, Inc.

Practice Is People: Some Guidelines To Sound Personnel Practices

David M. Bowen, AIA

The larger part of the chapter on personnel practices is given over to a basic look at good office operating methods, covering compensation, work schedules, interview practices and the personnel policy manual.

The architectural profession's principal asset is people and their expertise. Relations with people is the core of effective management. The ability to properly manage human resources is directly reflected in the firm's morale, effectiveness, productivity and efficiency. In this sense, the best reputation that an office can have is as a good place to work.

In his book *Up the Organization*, Robert Townsend points out that the rewards offered to employees today are higher wages, medical benefits, vacations, pensions, etc.—none of which can be enjoyed *on the job*. Equitable salary and benefit arrangements are important but, attractive as they may be, they do not replace individual recognition, challenge and freedom to develop.

Interpersonal relations involve at least four factors: communication, evaluation, motivation and advancement.

A strong internal communications program is important for the sake of a common ground between employer and employee. At the bottom of many communication gaps lies the problem of an employer viewing an employee's grievance as misbehavior rather than as an intended positive feeling toward a final goal.

A study of 379 union organizing campaigns by the University Research Center in Chicago found that not one executive in 10 was aware of employee complaints, even after hearing them.

In numerous cases, principals are never involved until a complaint turns into a problem. Thus, exposure to certain employees is more often in connection with

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trouble than it is with success. One method used to listen to employees is the old-fashioned suggestion box. To be successful, top management must support it and promptly acknowledge—with an explanation—whenever a suggestion is rejected, as the box often gives the first glimmer of a problem.

Some offices support genuine participation by means of employee-management committees. Each committee keeps minutes of discussions and distributes them to the other employees. Recommendations are sent to management which must be prepared to react, sometimes also to seemingly negative proposals.

Many firms seek to deal with dissatisfaction by an open-door policy. Employees are encouraged at any time to call on the officers or principals to discuss their grievances or suggest improvements. This system seems to work fairly well, but it has the weakness that employees may feel, rightly or wrongly, that the door is closed to any matter of real substance. Such a fear could spawn unionization if a feeling grows that there is less jeopardy in approaching management as a group.

Other, more common, means of prompting employer-employee interchange are regular staff meetings, supervisory reports, team projects and periodic social activities.

Unfortunately, the busier and larger a firm becomes, the more difficult the communication process becomes. An employee newsletter or magazine is an important communication vehicle in many larger firms, with monthly and quarterly dates of issuance appearing to be the most popular. Such a publication tends to be a combination of human interest items and news of professional activities.

Promotional literature, including reprints of articles by members of the firm for distribution to clients and prospects, is a simple internal tool which management often overlooks.

A basic difficulty in office personnel communication is that the received meaning often is not the intended meaning. The greater the gap between the employer's background and experience and that of an employee, the greater the effort that must be made to find some common ground of understanding. Sometimes it is

better to communicate outside the work environment, particularly with an obviously frustrated employee—perhaps at lunch or on the way to a construction site. The employee should always have an opportunity to ask questions: Feedback is essential to find out if a point is being made.

Good communications within a firm do not happen by accident; they result from a deliberate effort. Few employers give such a program the place it deserves on the overall priority list.

A personnel evaluation system is crucial if motivation and advancement are to be put in their proper context. It offers these benefits to employer and employee:

- Serves as an employee rating procedure.
- Brings attention to employee weaknesses and strengths.
- Provides employees with objective feedback as to the value of their performance.
- Identifies character traits in employees.
- Affords a basis for a salary scale based on merit.
- Requires department heads or employers to become better acquainted with employee goals.
- Permits quick response to good performance.

Firms which have such systems normally evaluate new employees at the end of three months and on the average of twice a year thereafter. Some have two evaluators for each employee, giving the task to the immediate supervisors who are best able to assume the responsibility; others evaluate by committee to eliminate bias.

Several evaluation systems can be used. Using a general rating scale for all employees has its limitations. It assumes each category is of equal importance for a particular position. Some firms employ a numbering system and assume totals are additive; others use "unsatisfactory" to "outstanding" for each category. Subjective-type essay questions give a more complete picture and require the documentation of thought processes.

As a minimum, the rater should be required to comment on the reasons for selecting an above-average, average or below-average performance rating for an employee. (Table 1 is an example of an evaluation form providing that kind of

input while retaining a simple format that can easily be understood by rater and rated.)

A follow-up interview should be conducted so that the evaluation can serve as a means of feedback, charting the progress and standing of the individual and giving the manager a chance to counsel the rated employee on improving performance. Evaluation works best when the intent is to help individuals improve themselves; when used merely to establish wage rates it is not evaluation but classification.

Another vital link between employer and employee is motivation. As already noted, most rewards or benefits for service are enjoyed off the job. All too often, little effort is spent on making the job itself more rewarding. Some believe that high wages, fair treatment, good benefits,

etc., will automatically motivate employees. These things do bolster the firm's reputation in the community, attract better workers and reduce turnover. But they provide little direct motivation for personnel to contribute superior effort.

Major motivators might include achievement, recognition for that achievement, interest in the task, responsibility for an enlarged task and growth and advancement to higher level tasks. Properly used, a team-type system can provide an ego-building environment in which all or most of these motivational factors might be present.

Most firms differ in the extent to which they allow their employees to be recognized for their achievements as individuals. Some choose to recognize the individual contribution publicly, while others work

hard to maintain the "we-the-team" approach. Everyone has an ego—some are just more in evidence than others. Recognition is important both within and beyond the office.

Beyond compensation adjustments—directly related to employee performance—and the assignment of greater responsibility, other more ego-oriented methods of recognition might include:

- Listing of employees with tenure on office stationery.
- Assignment, where feasible, of personal stationery, business cards, etc.
- Individual nameplates at work stations.
- Placement of employee names on the drawings.

Nonetheless, some individuals are motivated primarily by economic factors. They want security, both financial and

TABLE 1

EMPLOYEE EVALUATION REPORT

Employee Name	Discipline/Group				Division	Classification
Evaluator	Date				Date Discussed With Employee	
Evaluation Narrative	Exceptional	Good	Average	Poor	Narrative	
Quality Of Work Describe accuracy, thoroughness and neatness of Employee's work	Consistent highest quality work; errors and omissions are rare	Work is consistently good; errors and omissions are infrequent	Work is usually acceptable, meets normal standards	Work is often below accepted normal standards		
Knowledge Of Work Describe Employee's understanding of the responsibilities undertaken	Thoroughly outstanding knowledge of his and related work	Very knowledgeable in his work	Average or required knowledge	Needs significant improvement		
Volume Of Work Describe quantity of work which meets professional standards	Consistently top output	Unusually high output	Satisfactory output	Regularly below acceptable output		
Initiative Describe the originality and enthusiasm with which Employee approaches assignments	Almost never needs supervision or encouragement	Requires relatively little supervision	Requires average amount of supervision	Generally only follows supervision		
Judgement Describe soundness and maturity of Employee's decisions and actions	Almost never faulty	Decisions are well considered	Judgement and soundness of decisions is normally reliable	Decisions are often faulty		
Cooperation / Dependability Describe Employee's willingness to accept and work with others and the ability to accomplish assigned tasks	Accepts and fulfills all assignments at superior level	Willingly handles all responsibilities	Normally willing and dependable	Sometimes unreliable and uncooperative		
Client / Colleague Relationships Describe Employee's ability to build and maintain positive contacts with clients and co-workers	Builds and maintains outstanding relationships	Usually has good rapport	Satisfactory relationships	Has some problems with others		
Potential Describe Employee's possible future growth at SH&G	At the top; exceptional potential	Above average potential	Average potential	Not to be counted upon		

Source: Smith, Hinchman & Grylls Associates Inc.

People—and their specialized knowledge—are the profession's principal asset. "The ability to properly manage human resources is directly reflected in the firm's morale, effectiveness, productivity and efficiency." No better reputation can an office achieve than the accolade: "It's a good place to work."

occupational, and are willing to work hard for it. They may have been active in changing jobs for the sake of experience, and may show interest in getting advanced training for better positions.

Others are motivated principally by noneconomic goals. They seek recognition and will respond well to praise and appreciation; they often make suggestions. In this category are those who wish to improve their positions, increase their prestige and exercise more power and responsibility.

Some have a strong need for companionship, both on and off the job. It is important to find this out. If individuals feel a strong need to work with other people, they will dislike being placed on jobs where they are isolated, and their productivity and morale will suffer.

The individual's motivations should be carefully appraised in employee selection. It is these which help produce action to the best of his or her ability, and often beyond.

Apart from increased responsibilities and compensation, advancement is also linked to professional development. In this area, continuing education can play a significant role. Many offices establish liaison with nearby colleges to keep abreast of offered courses which might help their personnel. Employees are encouraged to enroll in night courses and occasionally even day courses which relate directly to their jobs. Some firms pay 50 to 100 percent of tuition fees upon successful completion; others provide in-house courses or obtain outlines of seminars developed by professional organizations and conduct in-house sessions on a voluntary basis. Both are good methods for relating textbook teaching to practical experience.

An office may establish a library or reading service to aid employees in search of information, technical and/or general. As a secondary benefit, such a service is an outlet for constructive use of employee leisure time.

Many firms have instituted the more or less exclusive "brown-bag club." Members are encouraged to bring lunch and discuss current projects, view films on products or design or talk about the profession of

architecture. This effort is particularly valuable when a principal takes part in the program.

Offices may also foster membership in professional societies by assisting with dues and, as a public relations tool, by suggesting to key personnel that they take part in the work of service clubs. Others promote team spirit by giving financial support to such activities as in-house musical groups; drama, art and camera clubs, and team competition in bowling, softball, tennis or golf.

Office operations: Once management philosophy has been set and the need for a program of interpersonal relations acknowledged, a personnel program must be worked out in detail.

No matter how carefully a firm's structure has been organized, complete with defined areas of responsibility, authority and accountability for each position, it is the employees who give that structure vitality.

The classical structure reflects "rule from the top." It does not work well where operations change constantly, where technical information may be as accessible to well-informed, intelligent subordinates as it is to supervisors and where flexibility of structure can be important to successful operations. The flexible organization encourages group influence and enables the charge of decision making, once the exclusive property of top management, to be creatively shared.

The personnel policy manual, prepared for employer and employee alike, recognizes the responsibility each has to the other. The manual should be reviewed at least semiannually, and a legal adviser should be retained to check it over for compliance with local and federal laws relating to employment practices. It can also be used as a recruiting tool.

The format should be attractive, and the pages loose-leaf for easy updating. Detailed explanations of insurance and similar programs should be handled in separate pamphlets.

Compensation, sometimes referred to as direct personnel expense, is made up of salaries and benefits. When mandatory and customary benefits are combined, they can range as widely as 18 to 40 per-

cent of base income. Firms with advanced computer programs figure each employee separately; most others use an average percent for all personnel. When negotiating a government contract, the firm often must justify these figures. Definitions of compensation-related terms may be found in the federal procurement regulations. Monetary rewards are accomplished by a raise in pay, conversion from an hourly wage to a salary and participation in bonus or profit-sharing plans. They may include the opportunity to buy stock, to exercise an option or to receive partial payment in company stock; provision of an automobile or membership in a private club, or financial support for continuing education.

There are three basic types of profit-sharing plans: cash payment (taxable income), deferred payment (retirement income) and stock ownership. The motives behind such plans are a sense of partnership, group incentive and employee security. A sound profit-sharing plan contains the following features.

- Profits are analyzed fairly.
- Amount of compensation is related to employee performance.
- An explanation is given each employee regarding the portion received (or why a proportional share was not received).
- Exceptions are not made when a formula is used.

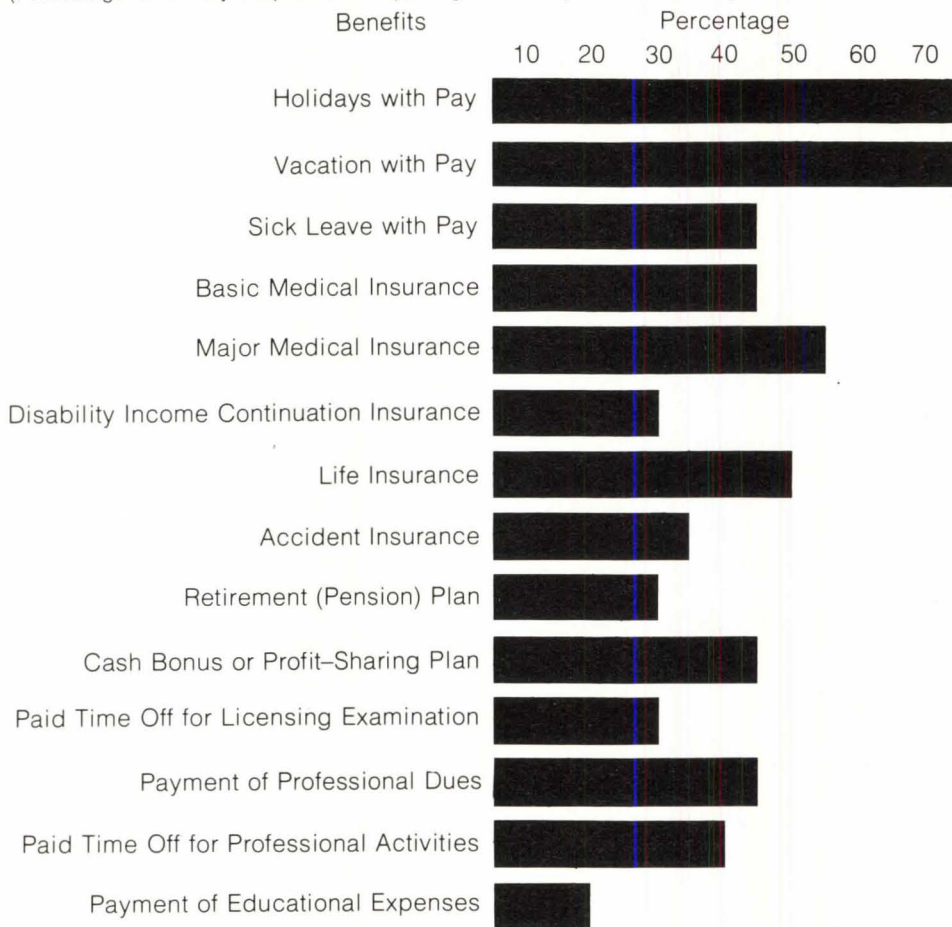
Dangers of profit-sharing plans include the fact that programs are so structured that employees expect a share of the profits periodically, even if not deserved; employees may resent receiving no payments when there are no profits, and employees may feel they have made extra efforts whereas profits decline for extraneous reasons.

Statutory benefits, often referred to as "mandatory benefits," include payroll taxes paid by the employer, such as FICA, workmen's (also known as worker's) compensation and unemployment compensation.

Since 1948, all states have provided workmen's compensation, furnishing protection related to on-the-job accidents and occupational hazards. An employer is permitted to obtain security for payment through three general methods: private

TABLE 2**PERSONNEL BENEFITS**

(Percentage of survey respondents reporting benefits provided by firm)



Source: Adapted from the AIA Survey of the Membership, 1974.

insurance, a public insurance system (mandatory in some states) and self-insurance. Since compensation laws vary from state to state, the employer should know the requirements of any jurisdiction in which an office is located. Through the authority of the Social Security Act, all states have enacted unemployment compensation legislation. Employers are required to pay a percentage of a defined amount of wages paid to each employee during the calendar year.

Time off with pay is an area which must be clearly spelled out in a firm's personnel policy manual, whether it refers to leave time, vacations or holidays. The AIA *Guidelines for a Personnel Practices Manual* underscores the importance of

such policies when it comments: "The absence of a formal sick leave policy can work a hardship on staff members who suffer bona fide illnesses. However, formal policies for sick leave and personal emergencies should not be confused with time off for vacations or leaves of absence. If the purposes of each type of time off are emphasized, abuses and morale problems will be minimized."

Leave time is used for sickness or personal time off. The amount of leave time granted (many firms restrict it to illness) varies from one-half day to one day per month. Some employers allow leave time to accumulate up to a maximum number of days. Leave time, like vacations, may be considered as a reward for service

where employees are compensated for time earned, whether used or not. Under this approach, the cost may be included as a direct personnel expense as defined in AIA document B141.

Some employers give each employee a "bank" of leave-time hours for the year. If the employee exceeds the time in the bank, additional absence is reflected in a deduction of pay. If all the hours are not used, the employee is paid at the current hourly rate for the remaining hours. A number of offices supplement this system with a group disability income plan to cover cases of extended absence due to sickness or accident.

The average paid vacation period is 14 days, according to the 1974 Survey of the Membership developed by Case & Co. Table 2 indicates personnel benefits reported by respondents as being provided by their firms. Some firms credit an employee with a fixed number of hours per month worked, to prevent conflict over the amount of vacation time earned in case of termination. Few offices offer employees pay in lieu of vacation.

The number of holidays granted varies from five to 11, with the Case survey showing the average to be 7.3 days.

Insurance programs provided by employers can include:

- Hospital insurance. A program may cover employees only, or include dependents. Many small firms seek to join a group for lower rates and higher benefits through AIA components or other associations. Of the AIA members responding to the Case survey, 47.8 percent are covered for hospitalization.
- Major medical insurance. This is the least expensive but, some say, the most important of all coverages. Over half—54.5 percent—of the Case respondents are provided with this insurance.
- Dental insurance. A new program that is becoming more common, though still expensive.
- Life insurance. This tends to be based on the salary of the individual employee, with the employee having the privilege of naming the beneficiary. Of the Case respondents, 51 percent are covered by a life insurance plan.

The Case survey indicates that 27.9

percent of the respondents are enrolled in a retirement program, with different levels of contribution by their employers. The most common plans are:

- Fixed benefit plan. Benefits are set according to a predetermined formula based on actuarial studies. Annual contributions to fund the benefits are made in accordance with what an employee will receive at age of retirement, geared to a salary-related formula.
- Money purchase plan. Contributions are set as a fixed percentage of covered payroll. Benefits are the amounts that have accumulated in employee accounts at retirement.
- Deferred profit-sharing plan. This is similar to the money purchase plan, but contributions are expressed as a percentage of profits.
- Deferred thrift plan. This resembles the profit-sharing plan, but contributions are a fixed percentage of required employee contributions.

Whatever the type, the sole purpose of a retirement plan is to provide retirement income for employees. To be workable, such a program in the highly mobile architectural profession should have portability. An employee should not have to sacrifice eligibility or accumulated benefits when changing employers.

Arrangement of the work week has a major impact on employee satisfaction, but most firms remain on the traditional five-day week, although some have been experimenting with other schedules.

The most common to date has been the four or four and one-half day week which in some instances has decreased absenteeism and increased recruitment possibilities. Another concept is known as "flexitime," a European idea which permits employees to tailor their work hours to personal needs. In a few cases, office hours are extended and employees are permitted to arrive as early or leave as late as they wish. They are, however, encouraged to be on the job between, say, 10 A.M. and 3 P.M., and firms rarely allow personnel to work the required hours in four days in order to have a full day off. For many employers, flexitime could become a major morale booster in relieving the stress of rigid schedules, rush-hour traffic, etc.

Firms which have been most successful with uncommon work schedules have taken care to orient both employees and clients to the new system. And none of these programs should be considered without understanding the Department of Labor rules on overtime pay as spelled out in the Fair Labor Standards Act.

Since the practice of architecture is especially subject to uneven workloads, many firms adopt a system for the temporary placement or "pooling" of personnel between offices. This provides a more stable employment base and continuity of benefits for the employee. It also allows the employer both to retain competent personnel without the economic loss of an unproductive payroll and to temporarily augment staff without the need for a long-term commitment. This practice can be traumatic for the "loaned-out" employee, who may feel unneeded or unwanted. At such a time, employer-employee communication takes on added importance.

Firms with 15 or more employees in each of 20 or more calendar weeks of the year are subject to Title VII of the Civil Rights Act of 1964. The act prohibits any discrimination with respect to employment on account of an individual's race, color, religion, sex or national origin. By law, the equal employment opportunity commission can investigate and conciliate complaints or bring civil actions against employers on behalf of aggrieved persons.

Employment cycle: All three stages of the employment cycle—recruitment, retention and termination—are vitally important in the overall personnel program, but somehow hiring and, most definitely, firing tend to get short shrift from a good many employers.

As a rule, an employment application that asks for information not directly related to the process of hiring may be cited as discriminatory. A written test is probably one of the most challenged of tests, especially if other employees or job applicants have not had to take it. Any employer with group benefit plans for employees, such as profit-sharing, hospitalization, etc., should take care to structure them so as to avoid a charge of discrimination. In any case, every firm should be prepared to show convincingly that it has made

substantial efforts to attract minorities and women in its recruiting program.

Handling interviews with employees or prospects properly is most important. Whatever the purpose—to hire an employee, handle a grievance, take disciplinary action, evaluate, assist with personal problems, transfer, promote or fire—the basics for a good interview are the same:

- Clearly establish objectives.
- Give the interviewee advance warning, which is reassuring, not alarming.
- Hold the interview in a quiet, secluded and comfortable setting, without interruption.
- Use straightforward language so there is never any doubt about meaning.

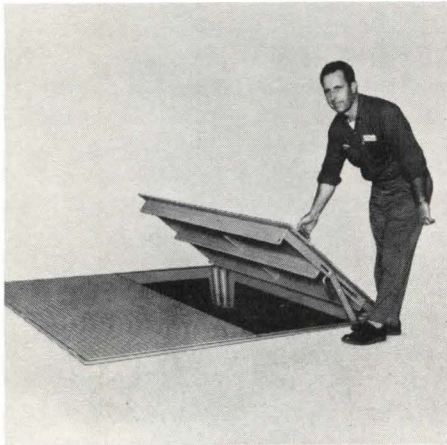
When an employee leaves—whether by dismissal, resignation or retirement—the final interview should be handled positively, helping the individual to preserve his self-respect. The firm itself can learn much since the employee has gained valuable data, ideas and insights which are wasted if not shared with management. Moreover, in a profession which is somewhat fluid, it is quite possible that the employee may some day be rehired.

Rating the office: In conclusion, to help rate its personnel practices, management should determine whether the office:

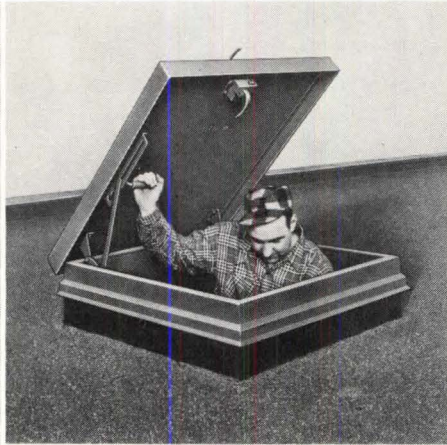
- Has a clearly stated policy based on the objectives and ideals of the firm.
- Gives employees a chance to talk and listens to them.
- Has a periodic job evaluation and advancement program, with appropriate follow-through.
- Keeps abreast of other employers' compensation patterns.
- Selects supervisors on the basis of management ability as well as technical skills.
- Reviews benefits to offer the best package possible.
- Sets forth policies in writing and complies with them before problem situations arise.
- Encourages professional activity.
- Steps back and looks at the firm through the eyes of the employees.

Offices which observe these guidelines will score well not only by any objective management yardstick, but also among their employees. □

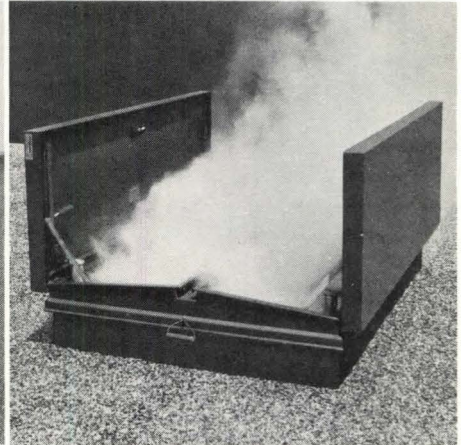
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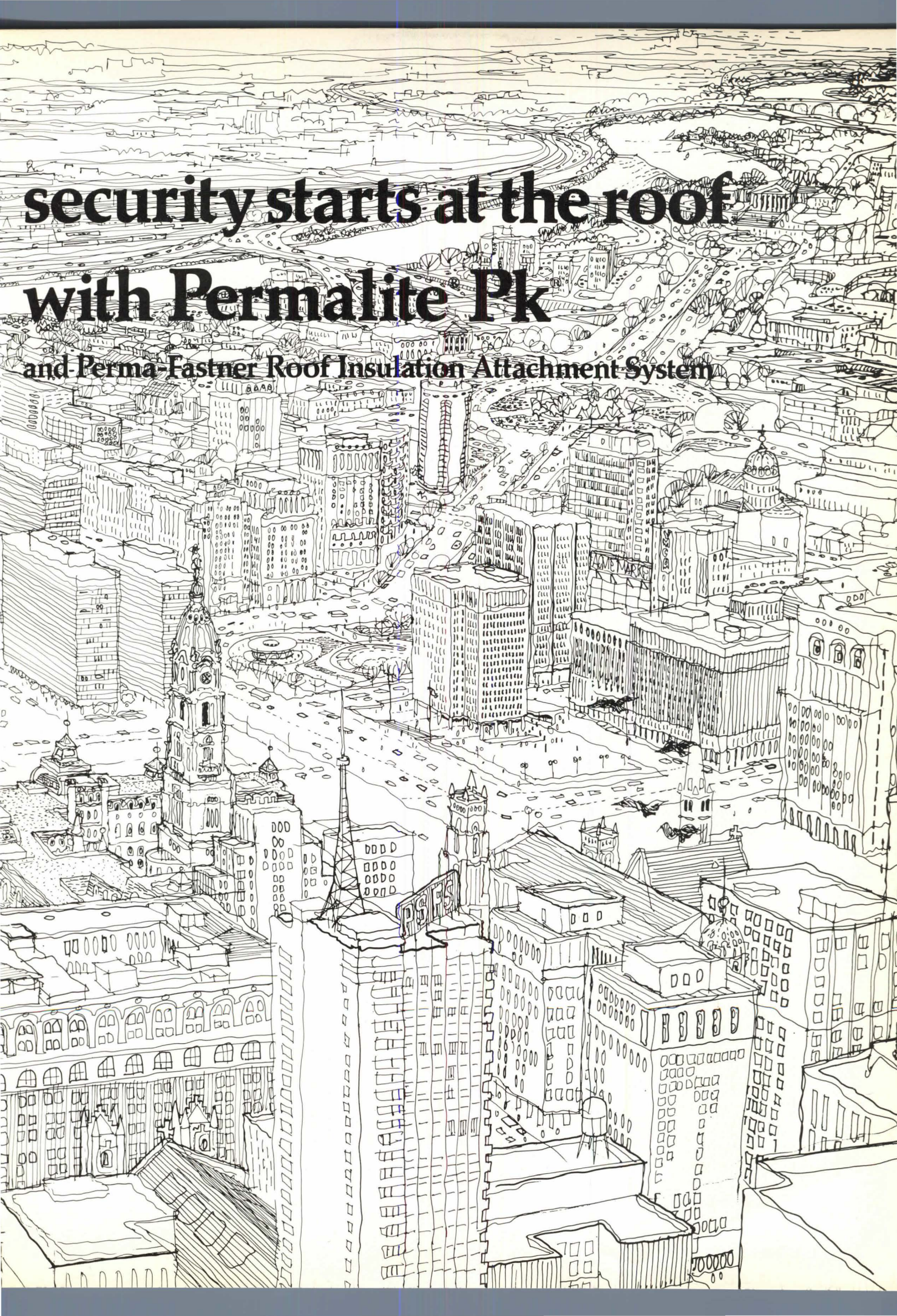


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The Autonomous House: Design and Planning for Self-Sufficiency. Brenda and Robert Vale. New York: Universe Books, 1975. 224 pp. \$9.95.

This might have been a landmark publication: a manifesto of the need, a litany of the directions or an entreaty for the philosophy that would revolutionize the intent and performance of buildings. It is not. And yet this important reference is a substantial contribution toward buildings that matter as extensions of earth synergetic systems.

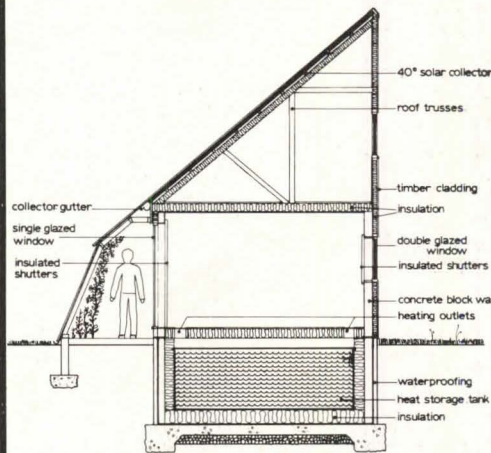
The authors are graduates of Cambridge University's department of architecture and contributors and monograph authors of its technical research division's autonomous housing study. They left the university because their belief in simplicity and self-building differed from the advanced technology and mass production directions of that study. But their book is neither a patchwork of Mother Earth wisdom nor a collection of sophomoric house designs; rather, it is a comprehensive scientific analysis of various technical alternatives toward designing houses or any kind of building as comfortable, productive, sheltering systems independent of utility and service connections. It is an overly ambitious goal.

A quarter of the book is devoted to "Power from the Sun." Beginning with greenhouses and flat plate collectors, a number of principles are explored by looking at built examples. The coverage is neither encyclopedic nor as exact as in *Energy, Environment and Building*, a book by their former lecturer at Cambridge, Philip Steadman. However, the Vales' introduction of historic greenhouse material is most welcome.

There are some gentle inaccuracies of fact if not theory. The description (p. 47) of the Harold Hay Skytherm house in California is of a preliminary study, and not of the house which has now successfully heated and cooled for over two years without the use of fuels or electricity. The description of a solar house by Steve Baer (p. 49) near Albuquerque is not only inaccurate but would not work for lack of proper distribution of air in the rock storage and the complete absence of circulation indication. The actual house, as

built, works very well. Although these errors are exceptional, some of the solar judgments and emphases seem questionable: There is only slight attempt at defining the climatic context of various solar buildings; the authors too quickly advocate focusing collectors, and economic imperatives are regularly called forth without definition, thus ignoring life costs, environmental accounting or material/labor balances.

In general, the authors are cautious, highly informed and well-reasoned. The chapter on windmills gives a good over-



view, particularly of general parameters, but a serious omission is useful information on electricity generators and circuitry—the bear cat of converting the variable mechanical power of windmills into usable energy.

There are separate chapters on heat pumps, recycled waste, batteries and heat storage. Perhaps the most informative is the chapter on water systems which assumes that water is never pure and examines some of the many ways of purifying it. The book concludes with a design for an autonomous house (which takes less than eight pages) that includes a 26,000-gallon water tank! It is a proposal that will win no design awards. Its importance is in demonstrating which techniques of the many examined that the authors selected are most viable. But the cause for the autonomous is best served neither by such unimaginative solutions nor by an example that floats without the context of site as an integral part of the building.

The book is illustrated by over 100 line drawings, many of examples that are otherwise difficult to find. The illustrations are seldom dimensioned and are not completely labeled. Dates refer not to time of completion but to time of publication.

The text badly needs an editor. Lack of humor and unevenness may be forgiven, but not obtuse style and confused words. A "cistern" (p. 136) is not a water closet, but a large vessel for storing liquids. Climatically and geographically, "America" is not a country, but at least one continent, if not two. And scrambling measurement scales between liters and gallons, celsius and fahrenheit, etc., does not help even if a table of conversion is included. Since the latest information in the book is from late 1973, one wonders at the lack of editorial prudence.

However, the most serious omission is in definition. Why an "autonomous" house? Why indeed a house? Neither the "lifeboat" concept nor the energy integration of livestock is included. The successful performance of any mechanical or biological device depends upon context. And if buildings are to be conceived as comprehensive systems, not only as four-dimensional esthetic collages but also as optimized networks of physical materials and environmental conditions to satisfy social goals, the definition of parameters is paramount. Context is everything.

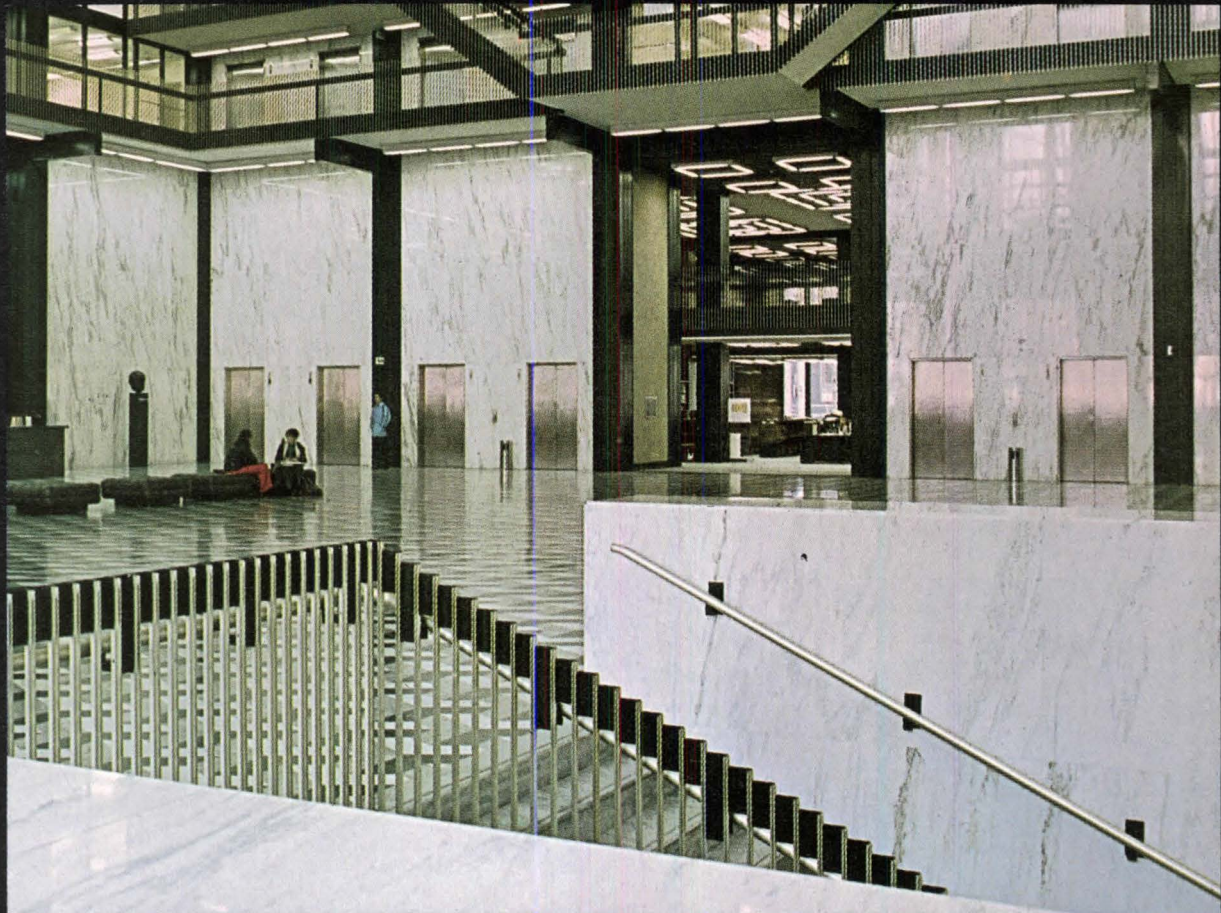
In spite of these objections, the book contains a great deal of material that is otherwise inaccessible. Most important, it demonstrates that a return to simple virtues in building is a most demanding and exacting science. The web of criteria and their interactions, while measurable, are always complex. New meaning for building based on energy and resource conscience must result from knowledge no less ordered than the disciplines of the most established architectural language. *The Autonomous House* contributes toward that Vitruvius. Jeffrey Cook, AIA

The Hospital: A Social and Architectural History. John D. Thompson and Grace Goldin. New Haven, Conn.: Yale University Press, 1975. 349 pp. \$25.

Save that \$25. This book falls essentially into two unrelated parts which share

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one common attribute: They are of little or no practical use to the contemporary hospital architect. The first section reviews American and European nursing units from the ancient Greeks up to the 1930s, with one incomplete 1970 example thrown in at the end. Arcane stuff. The second part consists principally of very limited out-of-date research on a series of generally obsolete design and operational solutions.

Unfortunately, there are very few current books on hospital design. The field moves too fast perhaps. But E. Todd Wheeler's *Hospital Modernization and Expansion* and other books are much more complete and up-to-date than this 1975 book. Sadly enough.

Herbert McLaughlin, AIA

Housing for the Elderly: The Development and Design Process. Isaac Green and others. New York: Van Nostrand Reinhold, 1975. 174 pp. \$13.95.

The aim of this highly recommended book is to provide guidelines for the design of quality housing for the elderly. The authors say that "housing the elderly is not only a physical undertaking. It is a social process, and those involved must have a sense of social inquiry." Hence, the book's five authors bring to the study a great deal of recent research information about the needs and aspirations of elderly people in order to develop housing that will "support independent lifestyles" of these who will occupy the housing. The emphasis is upon environments and services required to meet the needs of the users.

The book is organized into four major sections: programming, site selection, design and standards. There are specifics about such things as density, site size, paving, stairs and ramps, acoustic control and mechanical and electrical systems.

In order to carry out a successful program of housing for the elderly, a development team approach is recommended. Equally important, say the authors, are "preparation and implementation of the housing proposal, the design and production of the units and the marketing and management of the completed development." This book will be helpful to all members of the development team, including sponsor, financier, architect, builder, attorney and marketing agent.

Antiques Don't Lie: How to Make Antique Furniture Tell Everything, Including Its Age. Nelson W. Way and Constance Stapleton. Garden City, N.Y.: Doubleday, 1975. 150 pp. \$7.95.

How to tell the real thing from the fake? Never buy, say the authors, without looking, touching, feeling, smelling—and sometimes tasting. The hand can detect what the eye misses. Develop a sense of smell. Old furniture has a fragrance that

reminds you "of an attic on a rainy day." Use your sense of taste—not discrimination, but the actual taste buds. Old iron, for example, lingers on the tongue with a sharp biting taste. There are some experts who can even taste the difference in woods, but the authors think that the nose is a better barometer. Here are many clues to help get at the truth, even if the dealer tells a fib.

Victorian and Edwardian Theatres: An Architectural and Social Survey. Victor Glasstone. Cambridge, Mass.: Harvard University Press, 1975. 136 pp. \$17.50.

The theater flourished in the 19th and early 20th centuries. There was, of course, no competition from TV and the movies, and people flocked to theaters and music halls for entertainment. This book on theater architecture in Britain is a fascinating story of a people and an era, revealing the manner in which theater architecture reflected the social climate.

Glasstone comments colorfully on the many theaters that sprang up; the more than 200 illustrations, including contemporary engravings and photographs, complement the readable prose. It's a book to delight theater architects and aficionados, as well as observers of the social scene.

Management & Control of Growth: Issues, Techniques, Problems, Trends. Edited by Randall W. Scott, David J. Brower and Dallas D. Miner. Washington, D.C.: The Urban Land Institute, 1975. 3 vols. \$22.50, plus handling charges.

"The ethic of growth in America is increasingly being challenged; no longer is it being accepted unquestioningly as a premise of progress. Its effects on the quality of life are widely debated, and its management and control are seen by many as essential elements of modern land use policy."

This introductory quote contains the central idea of this well-structured three-volume anthology. The editors have done a remarkable job in assembling the works of over 140 authors into a comprehensive discussion of the management and control of growth. The editorial team has demonstrated a keen understanding, patience and great craftsmanship.

But why all the fuss? Why bother to put together 1,800 pages of essays on the management and control of growth? The editors say that this trilogy will serve as a background resource for elected officials, developers, practicing professionals and other interested citizens. This survey course in land use policy will aid those who are not likely to have the time individually to undertake surveys of documents or to collect complete assortments of material on growth questions. The serious researcher would not be satisfied and would necessarily study other more current and in-depth information. Person-

ally, I feel that this first organized treatment of the general literature in the growth management field does provide an excellent starting point.

Volume 1 focuses on the changing value system of the American public and how these values are manifested through public regulatory system. The second volume primarily deals with the legal bases for managing and controlling growth. It also covers the fiscal impacts of various forms of growth, which has become one of the central issues in the "no growth" movement. Volume 3 emphasizes the techniques of controlling growth, including traditional as well as new and innovative approaches.

In many ways these three volumes are a logical extension of AIA's own work on a national growth policy, particularly in the area of implementation. AIA would have found it most difficult to assemble a more competent team to produce a work on the implementation of its own national growth. *Michael B. Barker, AIP, Administrator, AIA Department of Environment and Design*

Learning Environments. Thomas G. David and Benjamin D. Wright, editors. Chicago: University of Chicago Press, 1975. 233 pp. \$10.

Psychologist Robert Sommer gets it all together when he writes, as the author of one of the dozen or more short, bright essays that make up *Learning Environments*: "The (typical) American classroom is characterized by fixed time-space coordinates with implicit, as well as explicit, behavioral norms. A student is expected to remain seated in a specified location for a designated number of minutes. Straight rows tell him to look ahead and ignore everyone except the teacher who, with back to the students, writes important messages on the blackboard."

That's what this refreshing compendium is all about—exploding the concepts of a passive listening environment bounded by four walls, and creating settings where children can *learn* and not just teachers *teach*.

Thus, for example, Robert Propst, of open planning fame, carries his workstation/let-the-space-fit-the-work office concepts over to the classroom: Let the user control, manipulate, adjust his (her) space! Let the space be such that information is out and visible and producing learning results, rather than reposing in storage and "out of process!" Let not the cost and bother of rearranging space be such as to discourage teachers from making the space fit the need!

Educational Facilities Laboratories' Alan Green picks up another timely theme when he takes the threat of underused schools due to enrollment drops and turns necessity into a virtue. Why not, he asks, use the excess space to provide facilities

continued on page 78

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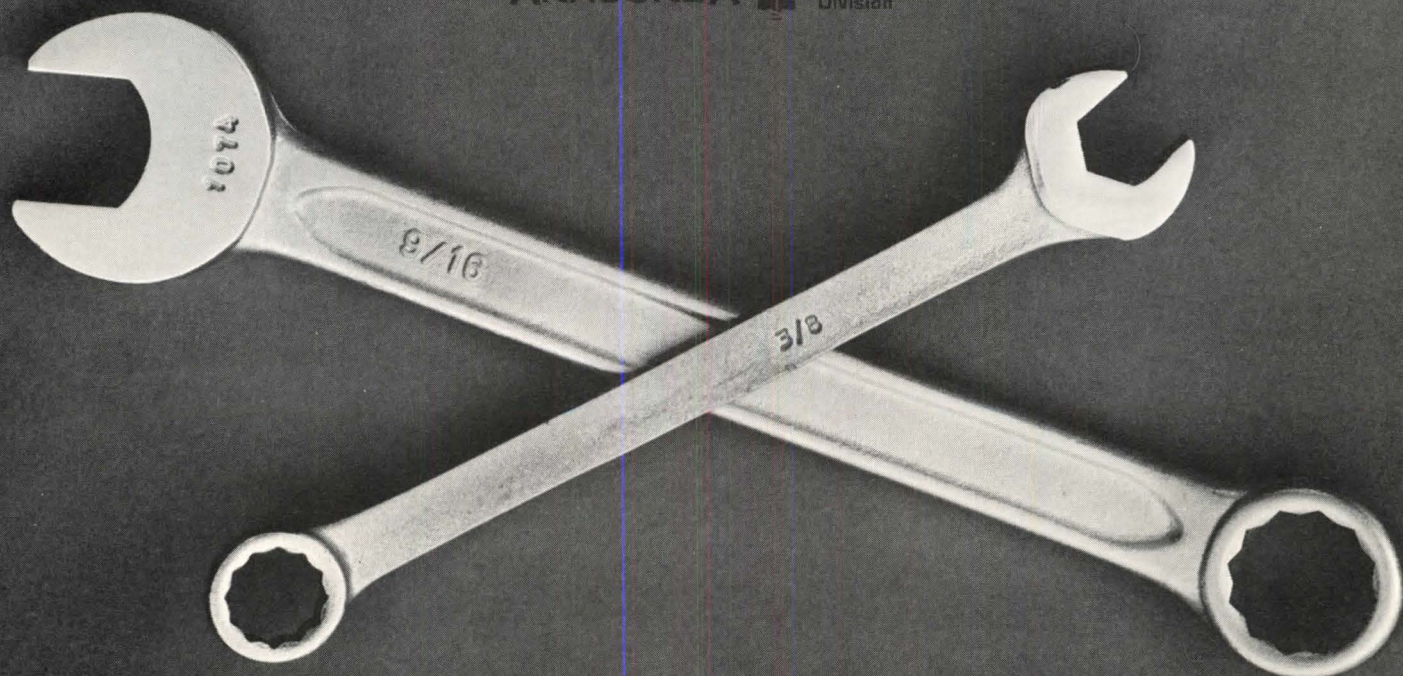
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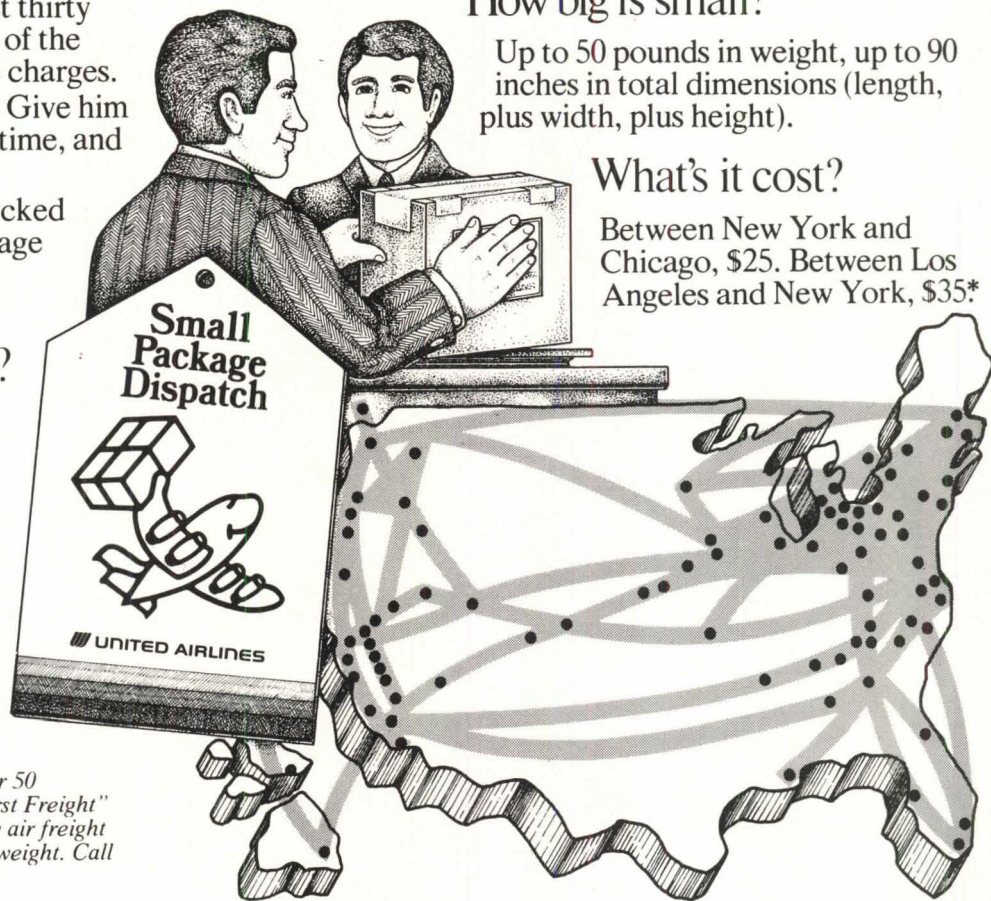
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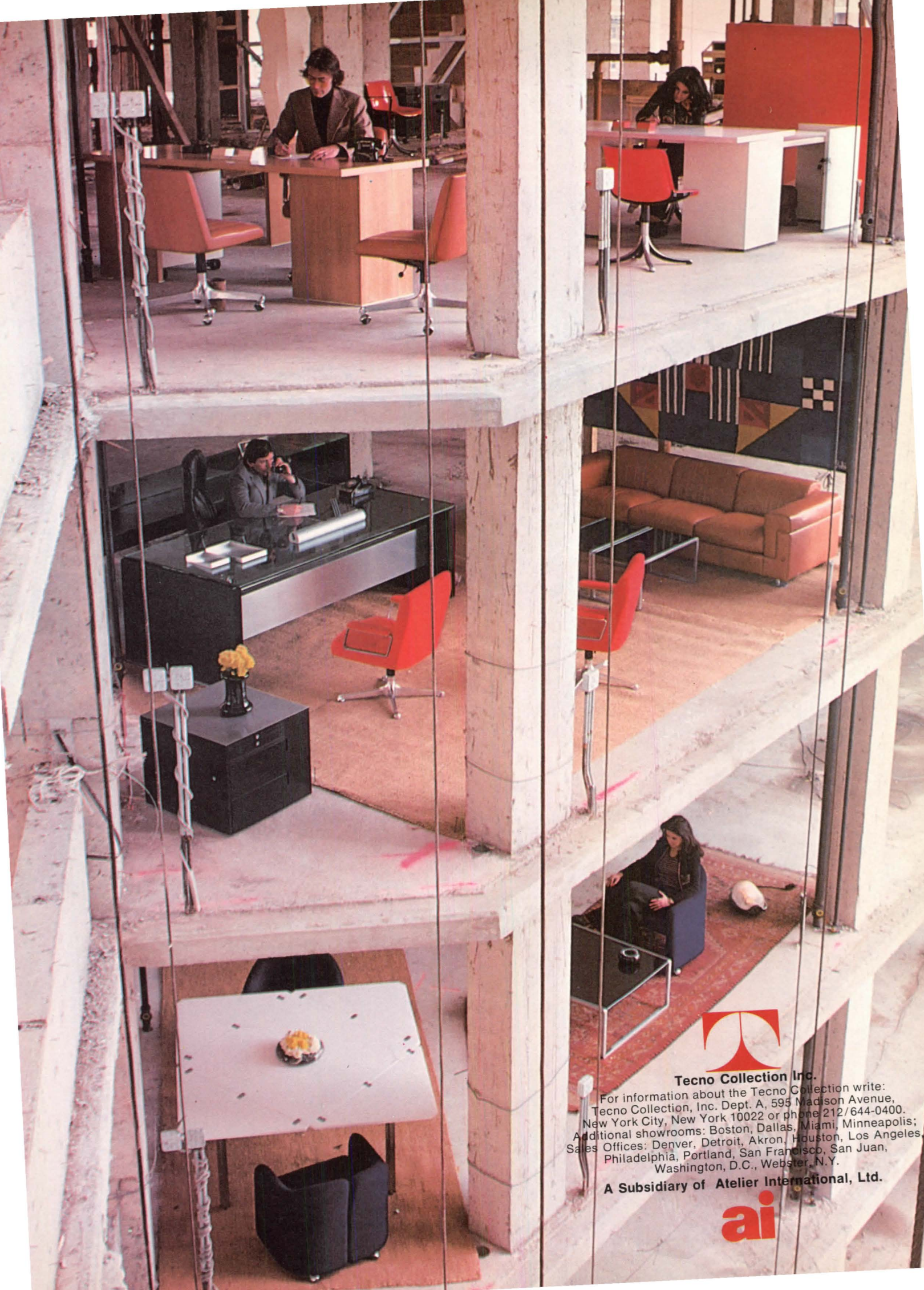


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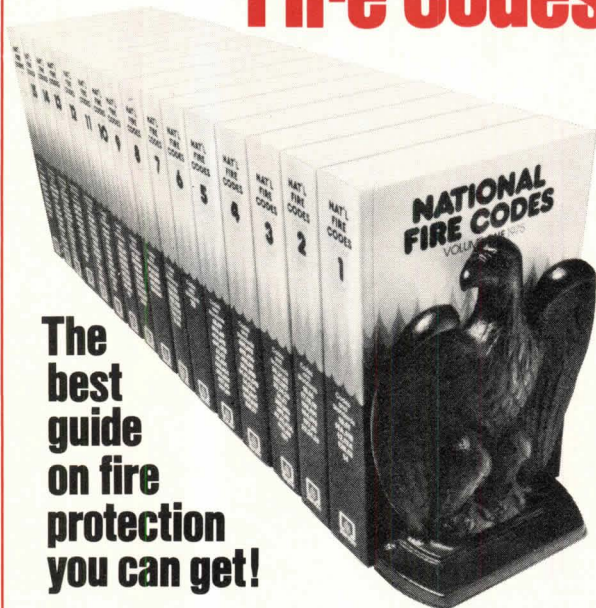
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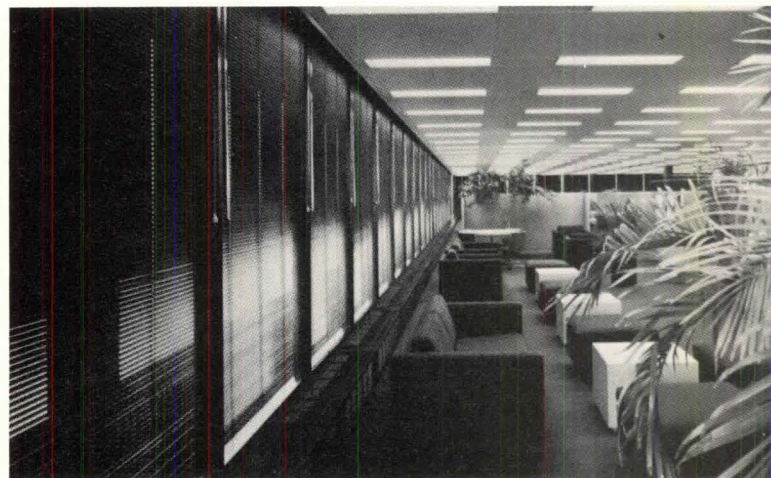
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Books from page 70

skipped on in boom times, such as better libraries, more room for the arts and sciences?

Going a step further, he urges "reconnecting the school to the community"—use the school for multipurpose community activities consciously worked out with other community agencies as part of an overall space use plan.

Green is especially concerned about two failings in the current climate of educational facilities innovation. First, the gift of physical space rearrangement is no use unless the teacher knows how to put it to work—and the potentials are rarely ex-

plained to her. Second, despite all the new knowledge about planning learning environments, "the architects and planners making day-to-day decisions are little affected by the research."

Environmental education, or rather "awareness," is duly explored in Thomas David's fine essay. The physical environment of the school should be part of the learning process; yet it's largely unexplored.

But Sommer cautions against simplistic solutions. Progress in shaping learning environments is more than taking the class to the museum to see a slide show, or to have the history class sit out on the lawn on a nice day. *Stephen A. Klimont, AIA*

Garbage Housing. Martin Pawley. New York: Halsted Press, 1975. 120 pp. \$16.50.

The transformation of waste materials into houses is "garbage housing." It is the "conversion of inflationary consumer goods into deflationary capital goods by means of building." Pawley knows that we're committed to consumption; nothing is served by bucking the tide. But he does call for cans and cars to be designed for a secondary, constructive use to help solve the worldwide problem of the housing shortage.

He tells of attempts to make garbage housing a reality. There is, for example, the efforts of Alfred Heineken of the well-known brewery to develop a "world bottle" that would be "not so much a bottle that could be used as a brick, but a brick that could hold beer." Heineken tried to produce such a bottle for housing on the island of Curaçao and even hired an architect to work out designs for the houses, but because of complexities the project never got anywhere.

One of the book's most significant features is Pawley's critique of current housing policy. He says that the "mad speculative gamble of recent years" has led to the "quadrupling of homelessness in urban areas." All this has been endorsed by "owner occupiers with everything to gain and very little to lose from runaway inflation in the housing market." Because housing "has become conceptually monolithic, it tends to be treated as a key resource, like iron or coal, instead of a function of the confluence of a wide range of other resources." Pawley believes that all the objections to garbage housing, such as the problems of recycling, costs and attractive home designs, can be overcome.

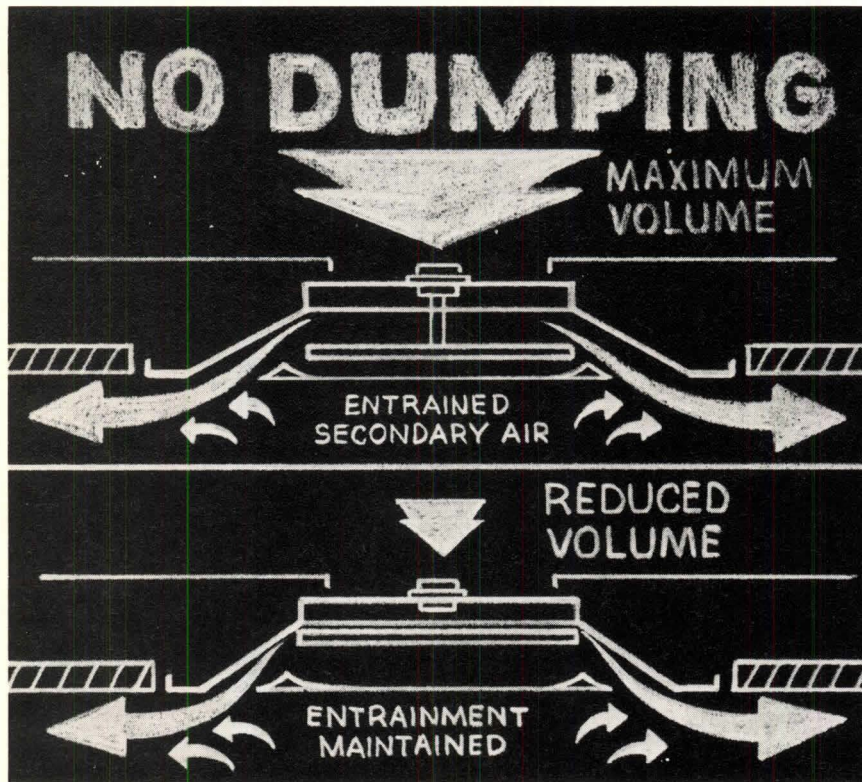
Restored America. Deirdre Stanforth; photographed by Louis Reens. New York: Praeger, 1975. 245 pp. \$25.

This is a book to lift the heart, not just because it is beautifully produced and most readable, but primarily because it's a success story, showing that there have been many victories in the never-ending battle to save architectural treasures of the past. The handsome photographs (many in color) and the informative text tell the story of rescued gems.

Although the emphasis is upon restored houses, such as an adobe structure in Santa Fe, N.M., and a Greek revival mansion in Mobile, Ala., there are examples of old buildings that have been adapted to new uses, such as a bottling plant in Brooklyn converted into offices for a corporation and a railway car in Aspen, Colo., that is now a restaurant.

The struggle goes on to save remnants of our past, and it is heartening to read this book and to learn of victories not only in Savannah and Georgetown, but also in Salt Lake City and Marshall, Mich.

continued on page 84D



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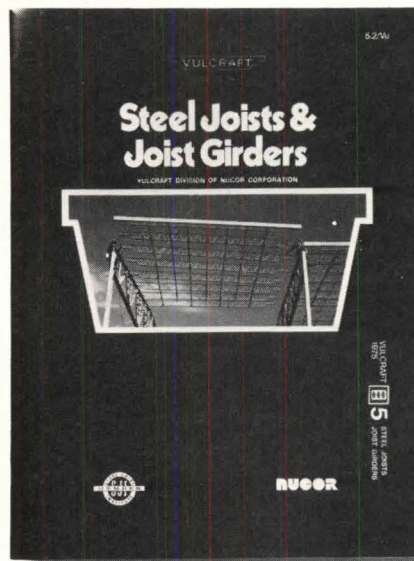
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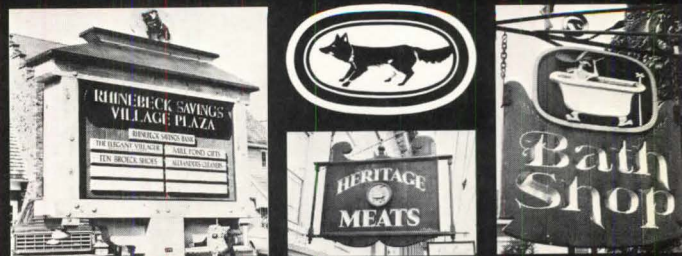
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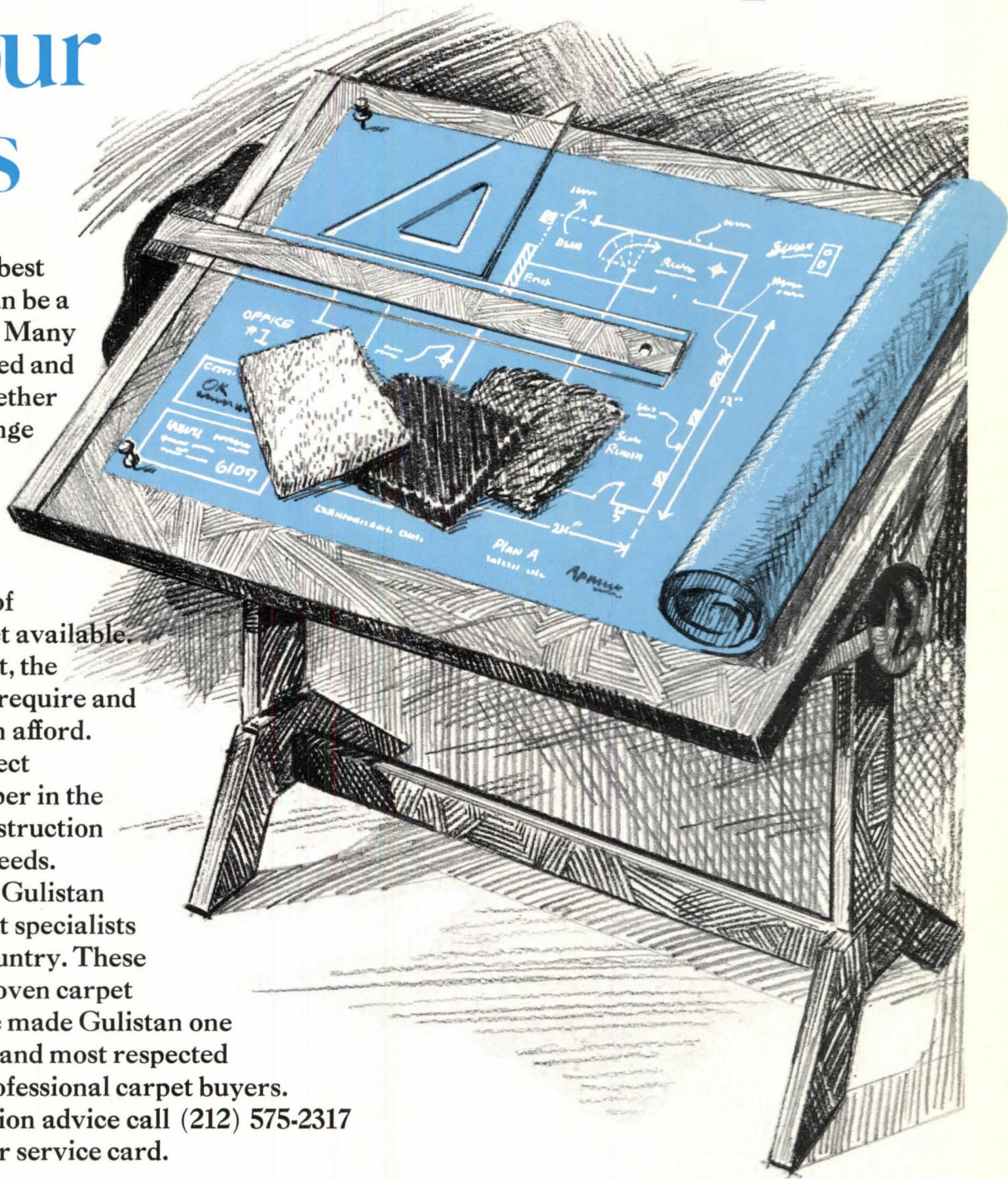
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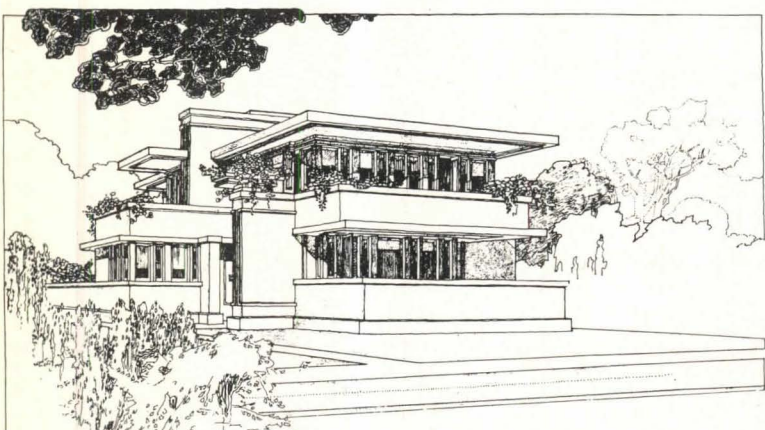
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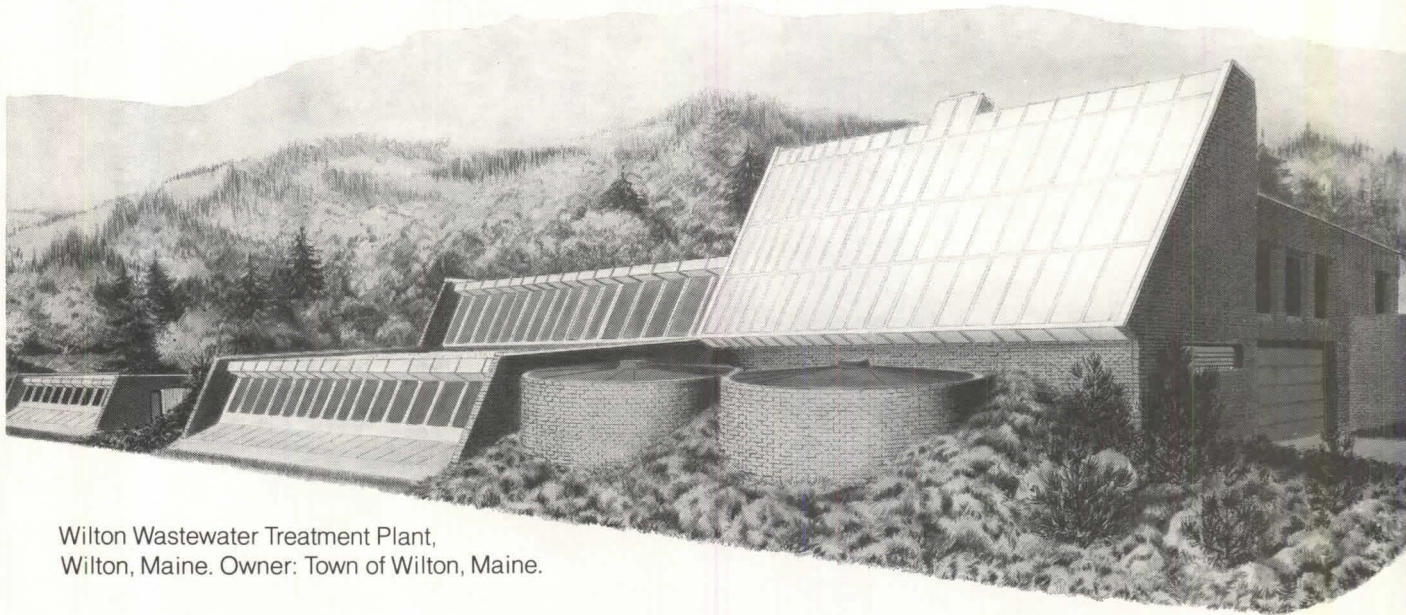
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Design by Douglas A. Wilke, Architect and Engineer, Glen Head, N.Y., and Wright, Pierce, Barnes, Wyman Engineers, Topsham, Maine.

Terraset Elementary School, Reston, Virginia

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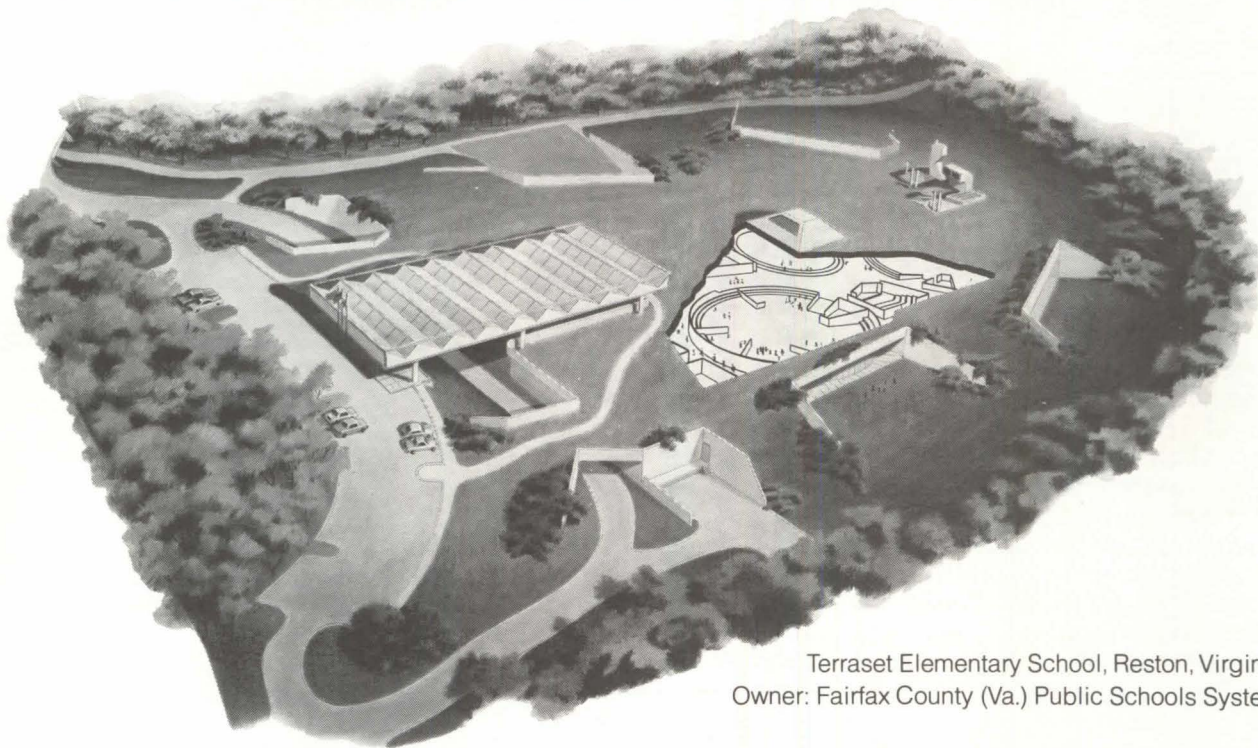
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Sotsgorod: The Problem of Building Socialist Cities. N.A. Miliutin. Introduction and preface by George Collins and William Alex. Cambridge, Mass.: MIT Press, 1975. 143 pp. \$25.

This book is tremendously important to those who are interested in the development of architectural and planning thought within the context of 20th century political reality. It was first published in the Soviet Union in 1930, and has been republished by MIT Press, with a splendid introduction by George Collins and William Alex. The introduction is a brief history of architecture and planning played against the background of developments in the Soviet Union in the late '20s and early '30s—in itself a remarkable essay.

In the initial phases of utopian totalitarian forms of government, there was quite often an exuberance of highly competent thinking in architecture and planning, only later to be replaced by phony classicism, conservatism and miscellaneous forms of architectural malaprop.

In the Soviet Union, architectural and planning thought flourished in the 1920s because the political authorities accepted the idea that a revolution in modern architecture and town planning corresponded with the desirable social and political revolution in Soviet life. By today's standards, there was a highly unusual openness in the Soviet Union as the power structure raced toward industrial strength, borrowing the best from the West and interpreting it through the Marxist-Leninist political theories. American industrial and management know-how was imported in massive quantities, a seldom recalled and poorly documented chapter in American-Soviet relations. Soviet authority encouraged free communications with Western leaders in modern architecture and town planning. Miliutin's book is a product of that heyday. Ironically, its influence has been felt least in the Soviet Union.

Quite suddenly, the Politburo in 1932 virtually by decree made modern architecture and planning synonymous with the old bourgeois Russia. It was a strange example of "double-think." The argument advanced to encourage innovative thinking was also used to justify the use of classical and traditional architectural styles. And, as Collins notes, "After 1936, there was nothing more to discuss and apparently no discussions of any substance are to be found in the literature from that date on."

Miliutin, a good Communist, had to reform his thinking. He began to defend the use of classical styles and planning. Marxist-Leninist theory was called on to justify his new position, a position which he was diametrically opposed to in his earlier creative and brilliant work. The power of contemporary politics to shape

thought has always been great, but this is one of the most dramatic and unsavory examples that I have encountered in the field of architecture and planning. The Inquisition intimidated Galileo to "reform" his thinking; the Soviet Politburo similarly "enlightened" Miliutin.

Why is this book so important? Certainly not for historic melancholy for opportunity lost, but in reality for its extremely sound thinking. Miliutin has taken the economic and social thought of the great socialist philosophers and translated them into specific proposals for housing, neighborhoods, cities and metropolitan areas, using the most advanced tools of production-line techniques and the application of industrial management systems. Le Corbusier was very much influenced by Miliutin, whom he met in Moscow in 1928 when the latter was finance minister of the Russian Republic.

The book is full of superb illustrations. Its design is the same as the edition published in 1930 and is an excellent example of early modern bookmaking. The translations from the Russian were done by Arthur Sprague, who deserves much credit for his careful interpretation and devotion to readability and accuracy. The book is highly recommended. *Michael B. Barker, AIP, Administrator, AIA Department of Environment and Design*

Normalization: The Principle of Normalization in Human Services. Wolf Wolfensberger. Toronto: National Institute on Mental Retardation (distributed by Leonard Crainsford), 1972. 258 pp. No price given.

The concept of "normalization" challenges those biases whereby so-called deviant individuals are considered to be in need of a kind of social and educational management that calls for separation, dehumanization and pity. The purpose of normalization, then, is to integrate normal and abnormal persons into an order where distinctions are abolished.

Normalization has become a fast-spreading catchword in contemporary education. The United Nations Declaration of the Rights of Mentally Retarded Persons is based on this thinking. Credit for the formulation of its principles goes to Scandinavians Bank Mikkelsen and Bengt Nirje, whose ideas revolve around the phrase that the retarded should live an existence which comes as close as possible to the "norms and patterns of the mainstream of society." Indeed, an outgrowth of the theory of normalization is called "mainstreaming," i.e., integrating exceptional children into the school program.

Quite aside from the question of how successful and long-lasting this new movement of normalization will be, it behooves architects to familiarize themselves with its theory and practice, particularly with regard to environmental consequences.

This book is important for all architects who are interested in or are designing schools and social service buildings.

Unfortunately, the book contains some untenable statements about architectural practice. The impression is given that architects often indulge in personal monumentalism. The evidence cited is the "endless presentation of groundplans, drawings and pictures of planned or completed facilities. . . ." Without seeing any such drawings, etc., as examples, no reader can judge the validity of such resentment. Presentation drawings are a legitimate tool of the architect, indicating his design attitudes.

The generalization that the architect works for his "own convenience rather than for client-use" is readily refuted by the intensive fact-finding studies that architects conduct as a matter of routine. In fact, mushrooming activities in the area of architectural psychology, design methods research and environmental design research are ample evidence contravening the fictitious movie image of the architect. The reader cannot ascertain from the book's bibliography if the author is familiar with this rich literature.

The level of social responsibility and devotion to build for the welfare of the future client-user on the part of the architect is considerably higher than the author assumes. Pioneering architects were fighting for the ideals of social architecture in the first quarter of this century, before the author's birth.

Many of the author's demands are good and reasonable—but not new. He is pleading for buildings that are not tailored to be "abuse resistant," with bars over the windows, wire glass, heavy-duty furniture, etc. He is also against overprotection of the handicapped, wanting rather to be guided by those provisions that will result in a normal use of the environment.

There is the issue, however, of risk-taking involved in this practice. Everybody ought to be protected from unreasonable risks. Building and fire codes have that much as a goal, although the wisdom is not always evident and revisions are called for constantly.

In spite of the objections I have indicated, this book has a spirited attitude and contains food for thought for us all. *H. H. Waechter, AIA*

Reinforcing Bar Splices. 3d edition. Chicago: Concrete Reinforcing Steel Institute, 1975. 30 pp. \$1.50.

This third edition of a CRSI booklet has been revised to include the 1973 and 1974 changes to the American Concrete Institute building code that affect splices and the development of reinforcing bars. Another purpose of the revision is to simplify splicing practice, thus reducing the time required for design, detailing and placing.

continued on page 86



Occupant Health

Public Health

Every architect is well aware of parallel responsibilities in the design of structures intended for human occupancy: The health and safety of the people who use the building, and the health and safety of the community.

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Wind Loading on Buildings. Angus J. MacDonald. New York: Wiley, 1975. 219 pp. No price given.

Two branches of science are involved in the calculation of the load that wind exerts on a structure: meteorology and aerodynamics. Macdonald says that "in the present state of knowledge, neither the prediction of the weather nor the estimation of the properties of fluid flow around complicated shapes is an exact science." Advances have been made in recent years, but much "inspired guesswork" is still used to estimate wind loads.

Macdonald discusses the research that has been accomplished to date and provides the reader with background information on the physical properties of wind and wind pressure forces on buildings. In the fourth chapter, he gets to the real meat in his discussion of the design of buildings to resist wind. He explains wind-bracing systems for all common types of buildings, giving detailed information about the calculation of wind forces on steel frame structures, reinforced concrete buildings and brickwork buildings. The wind-loading problems discussed are those that a "general practitioner would normally deal with himself without specialist help."

The final chapters cover the dynamics of structures and the dynamic effect of wind on buildings where the advice of specialists should be sought, such as the complex phenomenon of the wind-induced oscillation of a slender structure.

The importance of the book's subject matter may be summarized in a single sentence by Macdonald: "Any structure which is built upon the earth's surface must be capable of withstanding the loads imposed on it by the weather."

L. A. in the 30's. David Gebhard and Harriette Von Breton. Salt Lake City: Peregrine Smith, 1975. 165 pp. \$8.50.

Garbo and Flynn are not herein. This book, as did the exhibition at the University of California at Santa Barbara that spawned it, deals with the constructed aspects of Los Angeles: its buildings and planning.

Gebhard, sometimes joined in the last few years by Harriette Von Breton, always includes in his works an abundance of new material full of stimulating implications. As a book, this one may hint of the paste-up quality of an exhibition catalog, which only adds to its exciting feeling of being cultural archaeology. We are not only interested in what has been uncovered, but also in what is to be uncovered and the future interpretations of it all.

The work coming from Santa Barbara is a valuable series of documents. In this one, the authors show us a cross section of the '30s rather than a fictionally cohesive front elevation. The well-documented

modern architects are included, as are also the traditionalists and all the ones between. It is heavy on the fashionable moderne buildings, which both the traditionalists and the undecorative modernists looked down upon, I imagine. It searches beyond the surface level to touch upon the why of the differences. The May Company on Wilshire is moderne, for instance, but Coulter's a few blocks away was more toward the high art (a Gebhard distinction) of the International Style. Coulter's design was deliberately planned, we are told, to attract an upper-middle class clientele.

The beauty and value of the book is that the authors do not become partisans; they just enjoy. The book thereby is open-ended, not conclusive. It seems to invite us to dig along with the enthusiastic authors and share what we find. *John Blanton, AIA*

Building Construction Illustrated. Francis D. K. Ching. New York: Van Nostrand Reinhold, 1975. 320 pp. \$17.95 hard-bound, \$9.95 paperbound.

In the Nov. 1975 issue of this magazine, Forrest Wilson, AIA, no mean wielder of pencil and pen himself, said that Ching is "one of the best architectural draftsmen" that he knows. Although this book is intended for the layman to inform him about the techniques of residential and light construction, it will appeal to the architect because of its thousand beautifully rendered drawings. The text has been completely hand-lettered by the author and should please do-it-yourselfers because of its practical graphic guidance to materials, structural calculations, cost estimating, HV AC systems, landscaping and other topics.

Performance Specification of Computer Aided Environmental Design. Kaiman Lee, AIA. Boston: Environmental Design & Research Center (940 Park Square Building, Boston, Mass. 02116), 1975. 2 vols. \$30.

This is a report based on the author's recent doctoral work at Texas A&M University and springs from his research and architectural work at Perry, Dean & Stewart in Boston. Most of the copious illustrations are drawn from Lee's 1974 five-volume book, *Computer Programs in Environmental Design*, which abstracts over 300 EDP programs used by design professionals.

Unlike many doctoral dissertations, this work is eminently readable, couched in language understandable by ordinary mortals. Thank you, Dr. Lee. The book concerns itself with an integrated system of 13 packages of computer programs: feasibility study, architectural programming, relational planning, site planning, two-dimensional graphics, three-dimensional graphics, cost/quality control, environmental control, circulation analysis,

text manipulation, project control, office management, evaluation.

The first volume opens with an examination of the design process and the role the computer may play in aiding this process by removing drudgery and freeing the designer to exercise imagination, intuition and creativity. The remainder of the volume is devoted to an analysis of the state of the art in the 13 areas listed above. This analysis includes the logic of the design process and the response of available computer programs to this logic. Even if the reader has no interest in computers, the analysis makes good reading as a review of the architect's processes.

The second volume gets down to the author's recommendations for an integrated system concept in which the data developed for one area of interest can be built upon for succeeding areas. Thus can replication of effort be avoided and efficiencies introduced into the conventional design process. Lee does not make recommendations for actual algorithms but rather gives the criteria for their development. He points out that only when computers are used as information machines rather than calculating machines will their potential be realizable by the architect. Their value will be the greatest with the use of interrelated subsystems which share common information for the project.

The work concludes with about 100 bibliographic references, unfortunately not annotated. While the book's meat is good, there are drawbacks in its presentation. The double-spaced typed text, printed only on one side of the paper, is frequently interrupted by several pages of illustrations, sometimes fuzzy. This makes it difficult to follow the thought flow. Should the demand for the book ever warrant a typeset edition with clear graphics, these drawbacks would disappear. The cover could also be changed so that the red color wouldn't come off on one's clothing. Even so, this reviewer would not hesitate to recommend this book to progressive students, educators, practitioners and computerniks interested in improving the design process. *Robert Allan Class, AIA, Director, AIA Management Division*

The Modern Fireplace. Jacques Debaigts. New York: Van Nostrand Reinhold, 1975. 163 pp. \$30.

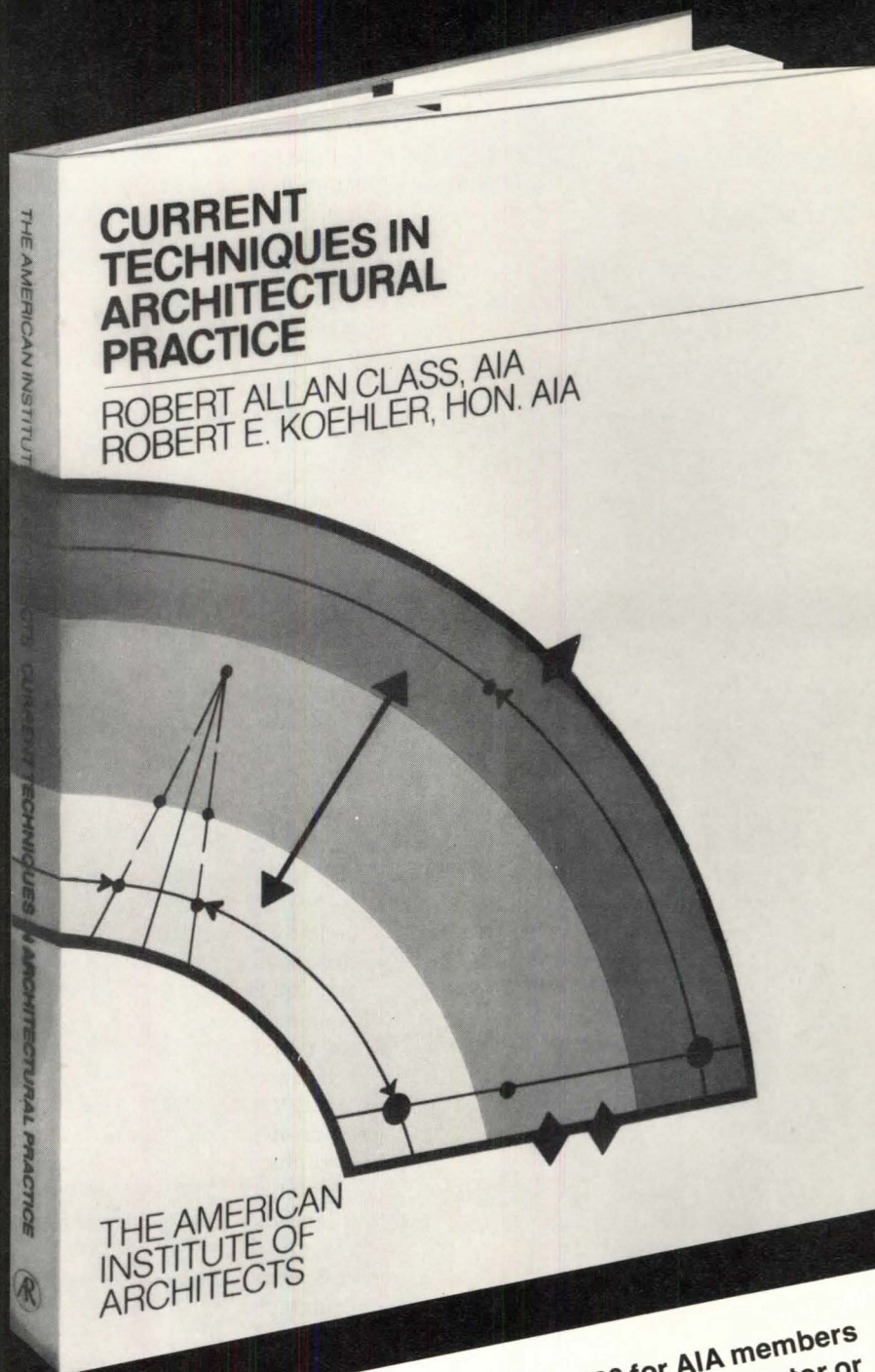
Better than a television set, says Debaigts, "hearth and fire" forge family ties. "What the fireplace provides is above all psychological comfort." This book on livingroom fireplaces is a handsomely illustrated one in which due consideration is given not just to the fireplace, but also to the layout of rooms and furnishings. The many examples given of the way in which the fireplace can be integrated into a modern interior are international in scope. The book is arranged according to three categories: wall, central and projecting fireplaces.

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LETTERS

Sensational Reporting?: It took me several days to simmer down after receiving my copy of the November issue. As an architect born and raised in Montana and still living in our beautiful mountain state, I took offense at the cover photographs. I took offense because on the cover of *my* AIA JOURNAL was a phoney, completely false story being shown to all architects in the U.S. and in the world. If the intention was to tell an honest story, the picture of the strip-mining area would have been compared with the adjacent agricultural area and not with a beautiful mountain scene several hundred miles away. The picture story is completely untrue and misleading. It is more typical of a Sierra Club type of approach than what would be expected from a professional organization that is normally open-minded, analytical and honest in its approach.

The remarks in the essay titled "Which Way the West?" on the "scarring of the landscape through strip-mining followed by the sooting of the 'big sky' of Montana and its neighbors" indicates that very little research or background study was done before the magazine fired from the hip. Montana has the most stringent laws in the nation on strip-mining reclamation and on control of "sooting of the big sky." What we are doing in our state cannot be judged by what has been seen in the past in the Eastern portion of our country. We are doing a good job out here in controlling our environment for the present and the future. We have attempted to balance environmental considerations with national needs. In our state, the pure environmentalists are somewhat ahead of our national needs.

I share in the general concerns and agree that we have to proceed with care and with proper plans. I do not necessarily agree that we have to develop a TVA or DRBC to get the job done. We might just be able to do it by ourselves without the help of our great white father.

If a member of the editorial staff of the magazine would like to take the time to become more knowledgeable about Montana and her "great coal rush of the '70s," I would be more than happy to fly this person to the areas being mined, let him see their operation, witness how they are reclaiming the land and show how the reclaimed land will be more productive for agricultural use than in its previous condition. I will see that there is an opportunity to visit proponents and opponents of Montana's method of strip-mining and will arrange for a major company to give first-hand information on how it is handling the nonexistent "soot."

In others words, I will see that the full spectrum of coal development in Montana is made available.

Incidentally, the picture of the coal bucket is frightening, almost as bad as "The Towering Inferno" or "Jaws." Sensationalism. I realize why these pictures were selected. I realize what the magazine was trying to do, but I resent the methods.

Anyone who is going to be an environmentalist should be a knowledgeable environmentalist. *Oswald Berg Jr., AIA Bozeman, Mont.*

Our Apologies: My statement as recorded in the article titled "Architecture in Transit: Washington's Metro" in the December issue is accurately reported. Unfortunately, the spelling of my name does not enjoy the same credibility.

*Emanuel Mevorah
Assistant Director
Office of Architecture
Washington Metropolitan Area
Transit Authority
Washington, D.C.*

EVENTS

Apr. 19-23: Course on Solar Utilization Now, Arizona State University, Tempe, Ariz.

Apr. 19-23: Conference on Applications of Solar Energy, Hilton Inn at Corporate Square, Baton Rouge. Contact: Ozer A. Arnas, Louisiana State University, Baton Rouge, La. 70803.

Apr. 20-22: Course on Designing for Firesafety and Hazard Control, Factory Mutual Engineering Corp., Norwood, Mass. (Repeat courses on June 15-17 and Aug. 17-19.) Contact: FMCEC, Education Department, 1151 Boston-Providence Turnpike, Norwood, Mass. 02062.

Apr. 20-22: Course on Design, Production and Control of Lightweight Concrete Mixes, Cement & Concrete Center, Skokie, Ill. Contact: Portland Cement Association, Old Orchard Road, Skokie, Ill. 60076.

Apr. 23-24: Forest Products Safety Conference annual meeting, Hyatt Regency Hotel, Vancouver, B.C. Contact: FPSC, Kenneth L. Patrick, Western Wood Products Association, 1500 Yeon Building, Portland, Ore. 97204.

Apr. 26-27: Inter-Society Color Council annual meeting, Statler-Hilton Hotel, New York City. Contact: ISCC, Fred W. Billmeyer Jr., Department of Chemistry, Rensselaer Polytechnic Institute, Troy, N.Y. 12181.

Apr. 26-30: Course on the Fundamentals of Commercial and Industrial Lighting, GE, Nela Park, Cleveland. (Repeat courses on June 7-11, Oct. 18-22, Dec. 6-10). Contact: Lighting Institute, GE,

Nela Park, Cleveland, Ohio 44112.

Apr. 30: Postmark deadline, Contractor of the Year nominations. Contact: National Association of Plumbing-Heating-Cooling Contractors, 1016 20 St. N.W., Washington, D.C. 20036.

May 2-5: AIA annual convention, Sheraton Hotel, Philadelphia. (Reconvened session, May 7-18, London and Edinburgh.)

May 2-6: Architectural Secretaries Association annual convention, Holiday Inn, Penn Center, Philadelphia.

May 12-15: Course on Energy Conservation and Solar Energy Applications in Residential/Commercial Buildings, University of Texas at Austin.

May 19-24: Society of Architectural Historians annual meeting, Hilton Hotel, Philadelphia. Contact: SAH, 1700 Walnut St., Philadelphia, Pa. 19103.

May 31-June 3: Architects' workshop on religious architecture, Glorieta Conference Center, Santa Fe, N.M. Contact: Howard McAdams, AIA, Church Architecture Department, Southern Baptist Convention, 127 Ninth Ave. N., Nashville, Tenn. 37234.

June 1: Postmark deadline: 1976 awards and fellowships. Contact: National Institute for Architectural Education, 20 W. 40 St., New York, N.Y. 10018.

Deaths

Howard H. Battin, White Plains, N.Y.

John A. Campbell, Hillside, N.J.

Howard P. Cross, New York City

Ralph C. Flewelling FAIA, Los Angeles

Thomas Machen, Baltimore

Carroll M. Meigs, Washington, D.C.

G. Lawrence Ott, Laguna Hills, Calif.

W. Hal Phelps, Little Rock, Ark.

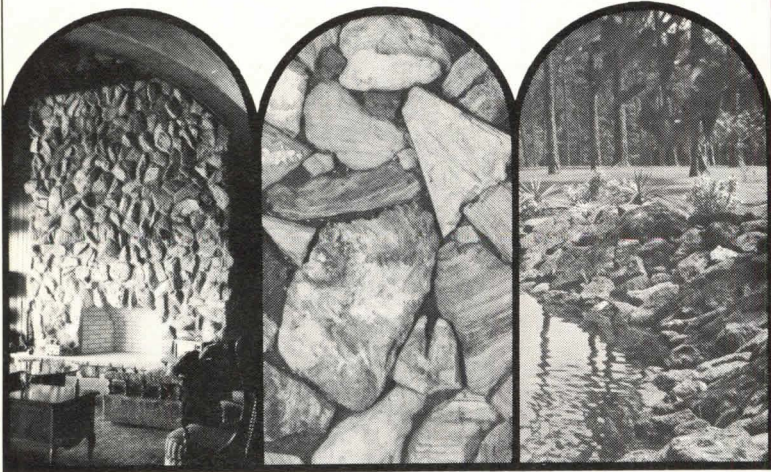
Sam R. Price, Shawnee Mission, Kan.

Winchton L. Risley, FAIA, Los Angeles

Maxwell T. Sandford, Kansas City, Mo.

Julian E. Berla, FAIA: As architect for the U.S. Resettlement Administration in 1936-37, Mr. Berla was a participant in the design of the famed new town of Greenbelt, Md. He was a partner in the former firm of Berla & Abel and was in private practice in the Washington, D.C., area from 1937 until his retirement in 1971. He was the architect of such structures as the Van Ness Center, the Farragut Building, the Indiana Building, Parkside Apartments and many residences and commercial buildings. Mr. Berla, who died on Feb. 16 at the age of 73, was the president of the Washington-Metropolitan chapter/AIA in 1946-47 and secretary in 1940-43. He had been a consultant to the Danish Building Ministry, the Washington Board of Trade and the design review board of the Baltimore Urban Renewal and Housing Authority. During the 1950s, he was chairman of the Citizens Committee for the Preservation of the Capitol.

ARCH 'n TRIUMPH

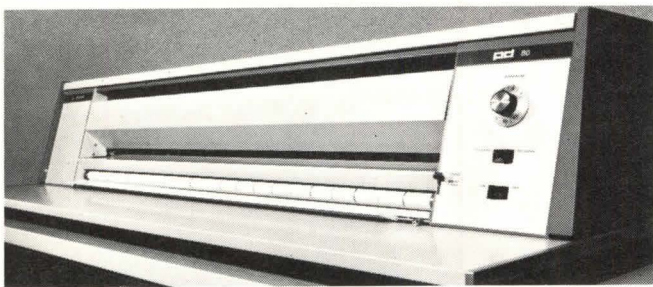


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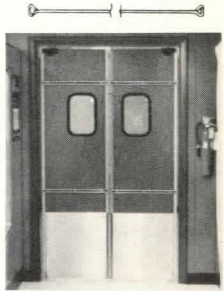
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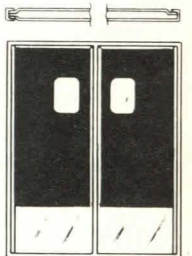


LWP 4: Same as "LWP 3" except with decorative high pressure laminate both sides. Decorative doors are practical with protective accessories. Door illustrated has 12" high Base Plates and two sets of Bumper Strips.



SCP 5: A Solid Core Door 3/4" thick. Illustrated door has Anodized Aluminum, Top Panels, 18 gauge steel center panels (SS front, Galv. rear), 14 gauge high carbon steel kick plates. Write for options and other Solid Core Door models. Applications same as "LWP 3", a heavier door but same easy action.

SCP 8: A Solid Core decor door. Illustrated door has 18" high Base Plates and Edge Trim (18 gauge Stainless Steel). Decorative High Pressure Plastic Laminate above Base Plates to top of door both sides. For Food Service and other areas where Solid Core Decor doors desired. Write for other models and options.



SCP 8



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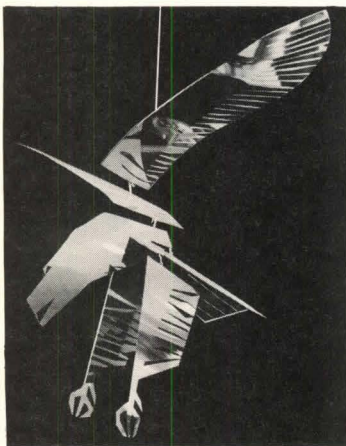
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Newslines

Max O. Urbahn, FAIA, of New York City, former Institute president, was recently elected vice president of the Pan-American Federation of Architects Associations. The organization's new president is Julian H. Ferris, Hon. AIA, of Venezuela. The two men will serve in these leadership posts until 1979.

New Jersey Society of Architects members give weekly two-hour lectures at a high school in Hunterdon County as part of an adult education program. The series, on "The Vitality of Architecture," explores architecture as a "living art form" that enriches the daily life of all. Also, more than 20 NJSA members are available to lecture throughout the state on the social, psychological and economic aspects of architecture.

Four six-month fellowships in design fields are offered by the American Academy of Rome, in conjunction with the National Endowment for the Arts. Candidates must hold a bachelor's degree or its equivalent, be licensed to practice and have at least five years of professional experience. The fellowships, which must be taken in Rome, are for the academic year 1976/77 and run from September through March or April through August. Contact: American Academy in Rome, 41 E. 65 St., New York, N.Y. 10021, (202) 535-4250.

A back-to-the-city phenomenon is unfolding in St. Paul, Minn., according to a recent report on the city's Historic Hill district titled "Building the Future from Our Past." The district had its heyday from the 1880s to the 1920s and then went into decline. Now the community is thriving, thanks to the hard work of neighborhood associations and the quality of the area itself. How it all happened is told in the beautifully designed report, which may be obtained from Old Town Restorations, Inc., 158 Farrington St., St. Paul, Minn. 55102.

John W. McLeod, FAIA, of Washington, D.C., was named "Planner of the Year for 1975" by the Council of Educational Facility Planners International. He is a principal in the firm of McLeod, Ferrara, Ensign.

David R. Cook, AIA, has been elected mayor of Tipp City, Ohio. For the past two years, he was a councilman.

E. J. Gambaro, FAIA, of New York City, was honored recently at a dinner given by the Brooklyn chapter/AIA in celebration of his 50th anniversary as a member of AIA and the chapter. A spokesman for the

chapter said: "Jimmy's tireless efforts over these past 50 years in serving the interests of our profession and our chapter have been monumental."

The Center for Earth Covered Buildings has been established at the University of Texas at Arlington through funds provided by the National Science Foundation. The center is functioning initially as a clearinghouse for information and research

Charles E. Thomsen, AIA, former associate editor of the AIA JOURNAL and recently associated with HUD's office of community planning and development, has been appointed principal administrator in the urban environment and land use division of the Organization for European Cooperation and Development. He is headquartered in Paris.

Heating and airconditioning costs can be lowered by means of a window that "fogs itself," say officials at Pennsylvania State University's materials research laboratory which has been given a grant from the Energy Resources Development Agency to develop a coated window. At present, a special liquid, devised by an industrial firm, is confined between two transparent plastic sheets; it turns milky white when certain temperatures are reached. The long-range goal at PSU is to achieve a thin-film solid with "switching properties" that could be applied to an ordinary window.

"First Principles" is the title of a film that won for the International Masonry Institute a coveted "Chris" award for "outstanding achievement" at the Columbus Film Festival. The film, shot on location in Italy, Bangladesh, India and North American sites, features masonry structures designed by the late Louis I. Kahn, FAIA. The film is distributed on a free loan basis by Association-Sterling Films, 600 Grand Ave., Ridgefield, N.J. 07657.

R. Randall Vosbeck, AIA, of the VVKR Partnership in Alexandria, Va., has been appointed by President Ford to serve a one-year term on the National Capital Planning Commission. Vosbeck is a member of the AIA board of directors, representing the Middle Atlantic Region.

The National Association of Home Builders has elected John C. Hart of Indianapolis as its president for 1976.

The International Centre for Conservation, based in Rome, is seeking a staff member who is a specialist in conservation. Architects with five to 10 years experience are invited to make application. Contact: ICC, Via di San Michele 13, 00153 Rome, Italy. □



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a study in comparative bacteriology

By Prof. Dr. FRANCO MARZULLI, Università degli Studi di Milano, Dipartimento di Microbiologia e Patologia Generale

All the results of the C.I.B.P. of Milan, research has been carried out with the aim of ascertaining, on the surfaces of various materials, the degree of bacterial contamination. The surfaces were subjected to specific treatment and which were kept in a sterile environment.

1) The degree of spontaneous contamination after contact with milk, meat and cheese.
2) The degree of induced contamination after contact with the bacterial suspensions.
3) The degree of contamination by means of chemical and physical agents.
4) The bacterial growth on the following surfaces:
a) Anodized aluminum
b) Raw aluminum
c) Dressed aluminum
d) Dressed plate
e) ABS polymer
f) Polystyrene
g) Porcelain-on-steel (P.O.S.)

MATERIALS AND METHODS
For our research we used new types of control plates (mediums 20, 202, 22) more adapted to universal use and more sensitive to bacterial growth.
The spontaneous contamination was followed by studying the development of spontaneous bacterial flora on sterile surfaces. The degree of contamination was determined and established in absence of the test and was then checked after 24, 48, 72 and 144 hours.
The induced contamination was followed by studying the development of bacterial colonies of *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas aeruginosa* with strains ATCC 49, 22 and 144 strains.
The decontamination was followed by studying the...

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Acknowledgments: 41, top right, Rollin R. La France; 44, bottom left, Murphy Levy Wurman; 45, bottom center and right, George Pohl.

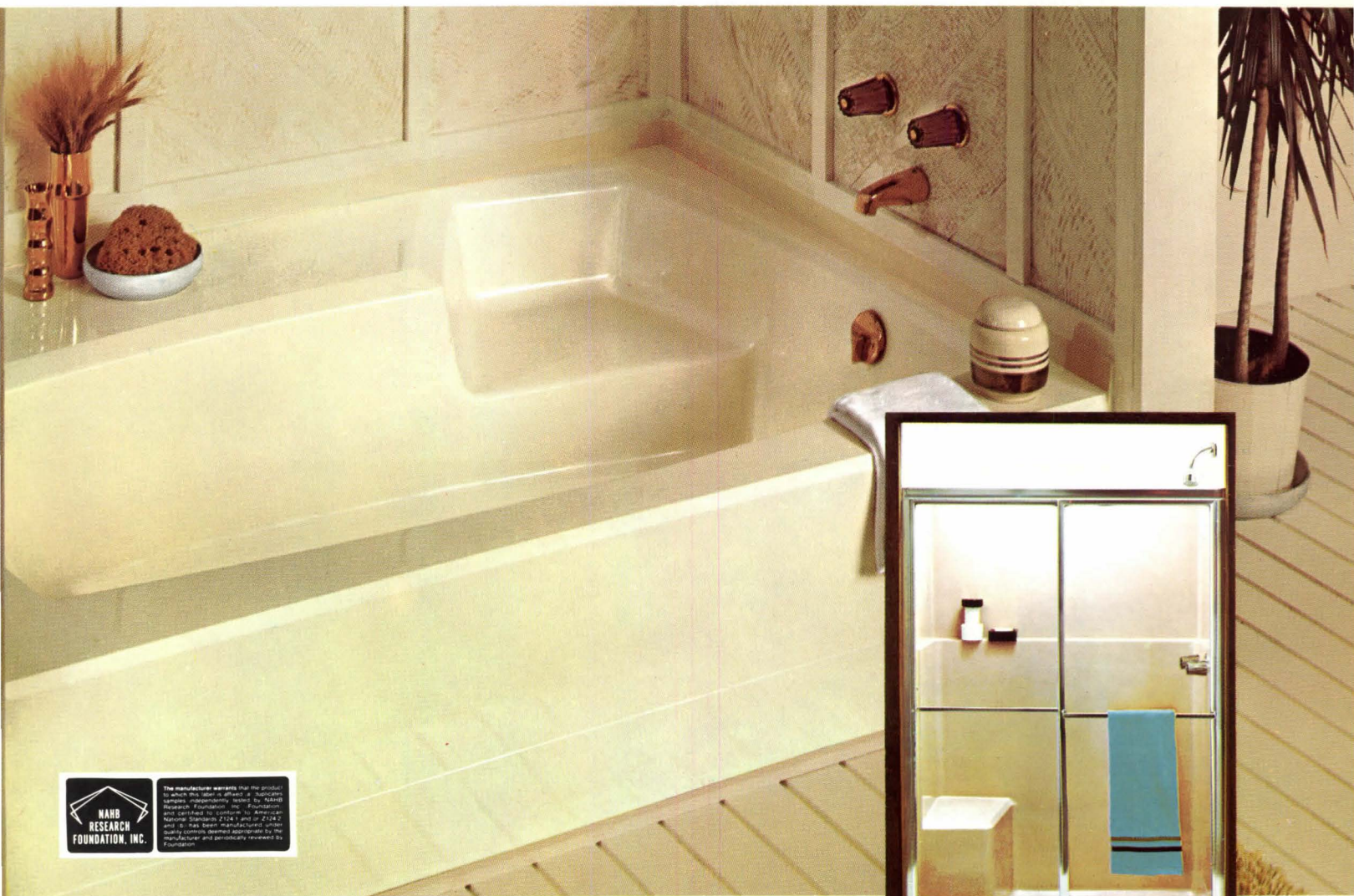
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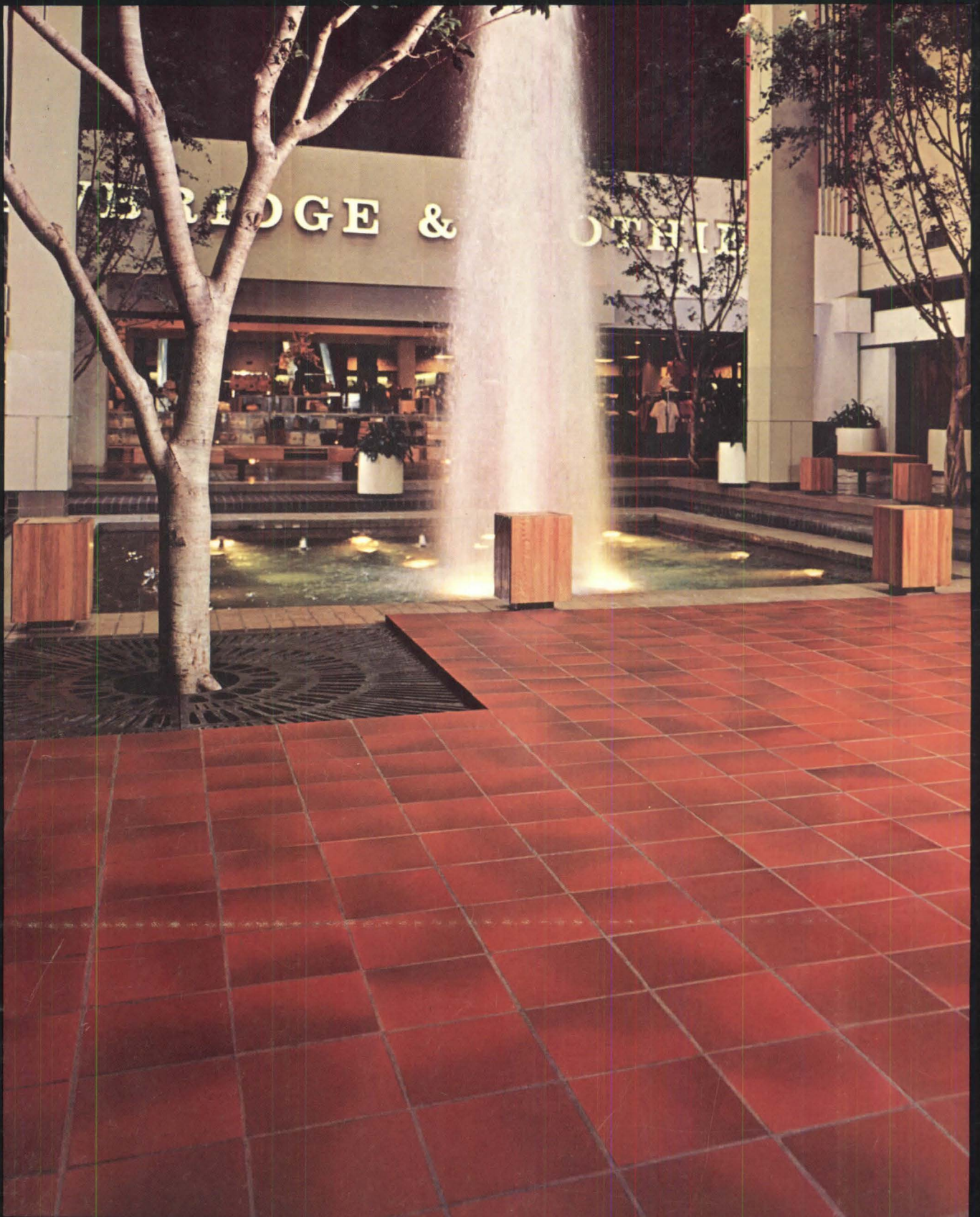
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