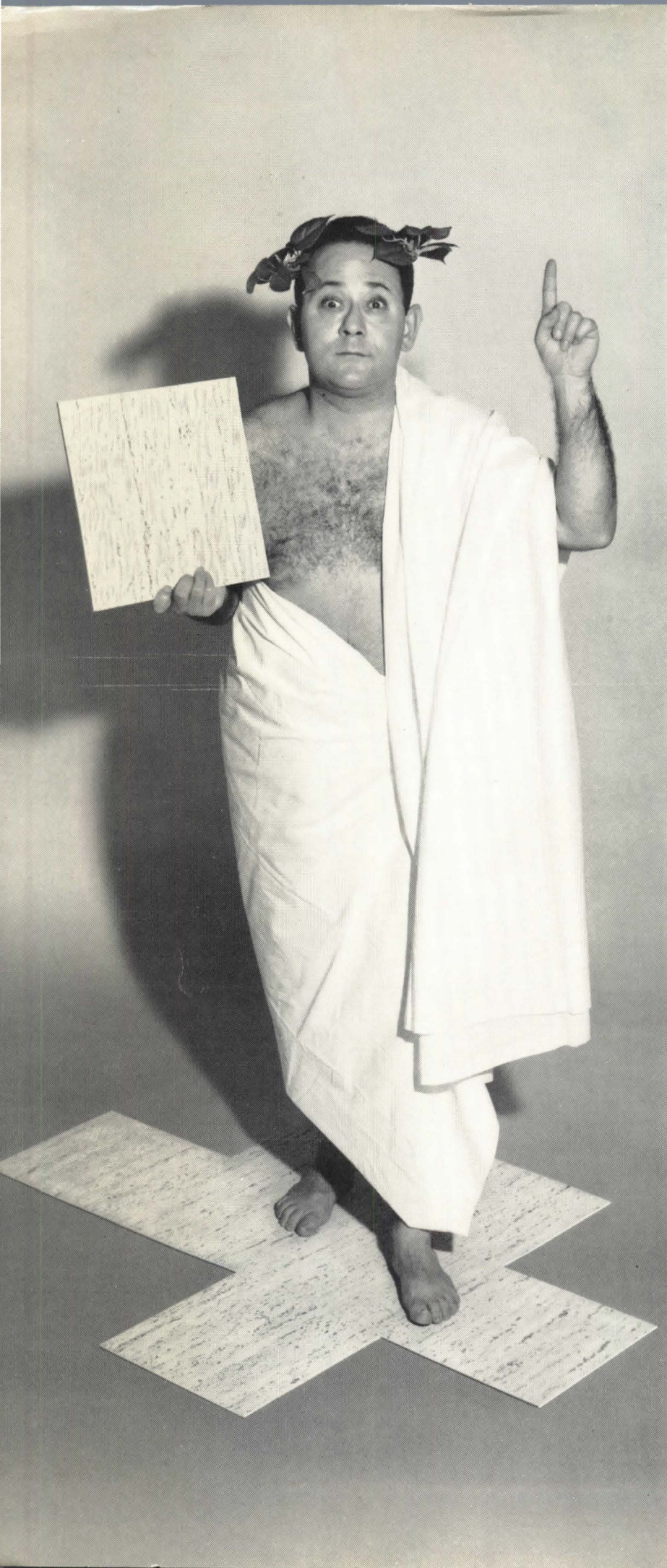


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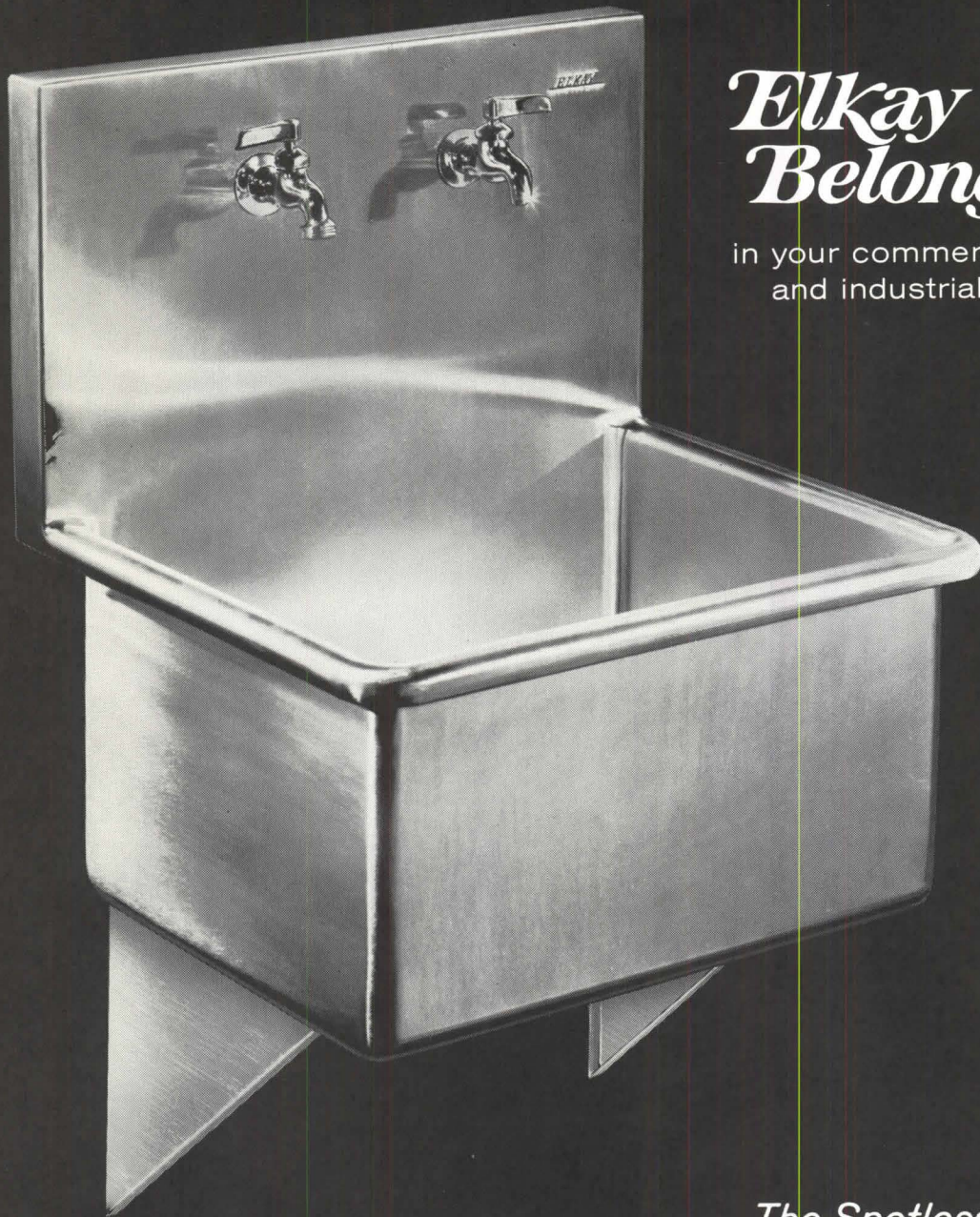
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VOL. XLVIII, NO. 6

## Comment & Opinion

**Taking Stock:** To quote Tin Pan Alley, 1967 will go down in the annals of the AIA JOURNAL as "a very good year"; consequently, a review of sorts seems especially apropos. Encouraging, indeed, have been the high scores earned on readership surveys—on the question of significant editorial content in particular—conducted by independent research organizations and, in one instance at least, by another architectural magazine.

In terms of circulation, the JOURNAL now has a total of 26,900 subscribers, including 22,000 architects. Better readership combined with more readers have resulted in an all-time high in advertising volume, going against the prevailing downward trend in the architectural press.

Several specifics regarding our editorial activity this past year deserve special mention.

**A New Face:** We added an assistant editor a few months back when Bess Balchen left a similar position with *Fordham* magazine in New York City. She had six years' experience with a publishing house in Oslo before coming to the United States where she has served as a correspondent for the Norwegian daily *Morgenbladet*.

Mrs. Balchen is the author of a children's book, *Summer in Alaska*,

and a cookbook, *Food in a Flying Hurry*, and her photographs have appeared in publications here and abroad. In short, she brings the kind of background and experience that can prove valuable in covering a field whose boundaries are ever expanding.

**How We Rate:** Earlier this year the JOURNAL found itself in the No. 3 spot—and the only architectural magazine in the first 10—in a survey of periodicals most frequently mentioned as either a source or an outlet for "environmental behavior" research. The results were determined through a questionnaire distributed by two University of Washington professors to the 200-plus professionals listed in the Di-

### General Articles

Complete listing ..... 33

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### Cover

A concept of air rights as envisioned by Antonio Luccarelli.

rectory of Behavior and Environmental Design: 1965.

The top 10 in order of rank: *Journal of the American Institute of Planners, Landscape, AIA JOURNAL, Behavioral Science, Ekistics, Journal of Social Issues, Milieu, Scientific American, Sociometry and Trans-Action.*

**A Look Back:** We began 1967 by introducing a new format with a special issue on housing, "The Immediate Environment." Among the media which commented editorially was the *Indian Builder*, published for the Builders Association of India in New Delhi. It said that "A house can only be complete if it uplifts the human spirit and satisfies man's material needs to the optimum limit" and that our January issue "contains articles which are based on this very theme of man's material needs and deserves careful study."

An article which drew kudos from coast to coast was the extensive presentation on "Cities: What's the Matter?" in April. The highest praise of all came from Raymond Moley in *Newsweek* (Aug. 21) when he declared: "My files are crammed with the stuff [vast literature on cities]. But out of the mass I select one item which seems to make the most sense. It is the report of a 1966 conference of 33 urban specialists." Cosponsors of the conference were the AIA and the National League of Cities.

The article, which ran simultaneously in *Nation's Cities*, provided grist for the mill for editorial writers and columnists in a number of daily newspapers.

The July report of the jury for the first R. S. Reynolds Memorial Award for Community Architecture was a welcome winner, too, and up to this writing requests for close to 15,000 reprints have been fulfilled, many of them coming from architectural schools.

**A Look Ahead:** We approach 1968 with enthusiasm as we anticipate the publishing of articles on lively, topical matters. To begin the year, we will introduce a new series of architectural criticism in collaboration with the AIA Committee on Esthetics. In later months we will consider such topics as the housing crisis, the urban church and that most controversial of subjects, architectural competitions. And we will attempt to maintain a sense of humor amid such sobering aspects of the profession.

ROBERT E. KOEHLER

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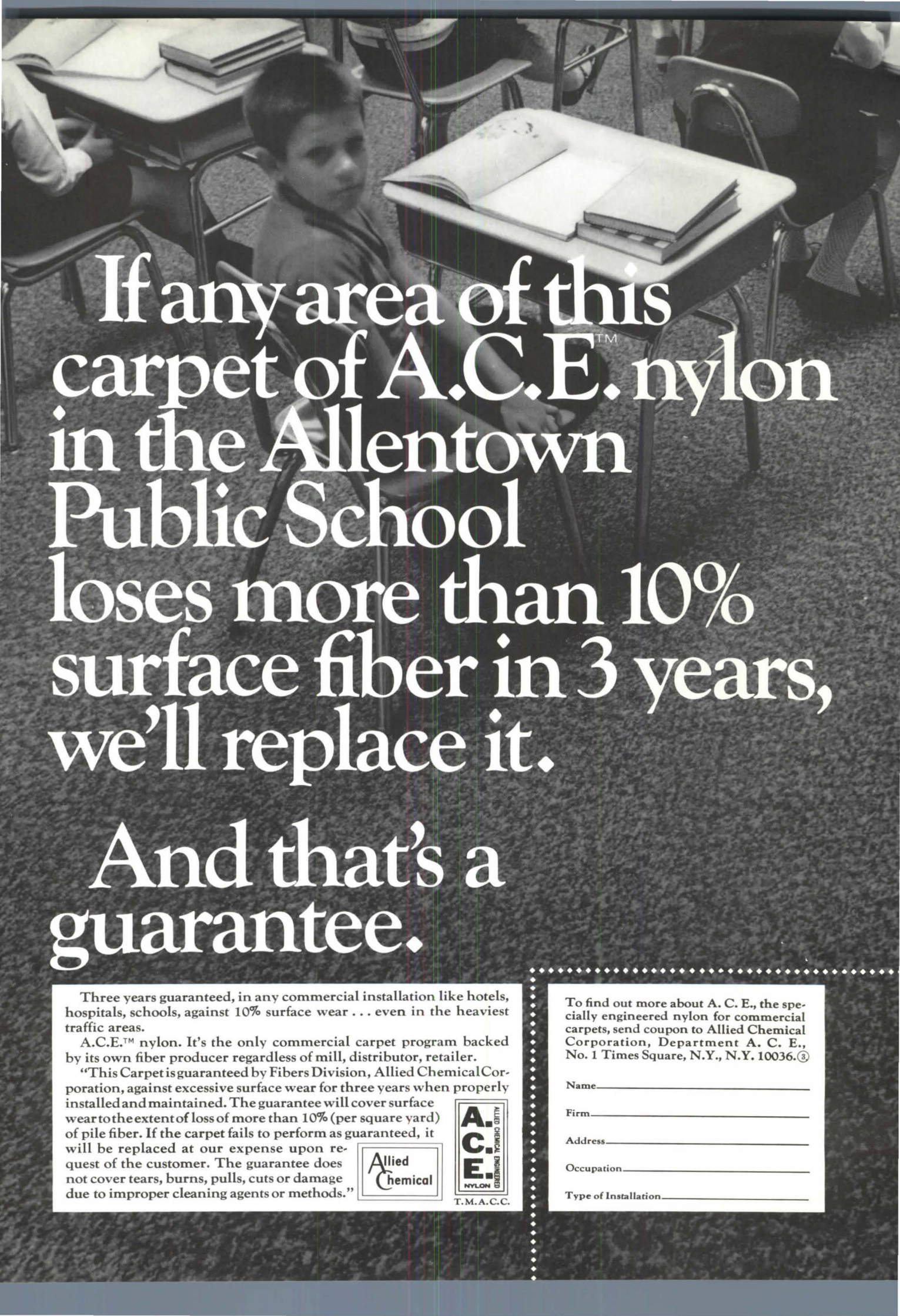
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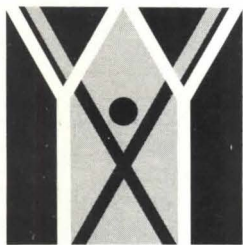
# Newslines

## Man, Architecture, Nature Is Theme for Institute's First Two-City Convention

The American Institute of Architects will hold its first two-city convention June 23-29 in Portland, Ore., and Honolulu, Hawaii. Both cities are first-time locations.

The theme of the convention, the AIA's 100th, is "Man/Architecture/Nature"—MAN.

The nature aspect, a particularly appropriate topic for examination amid the abundant natural re-



sources of the Northwest, and the subject of man and his problems will be covered in two theme sessions.

The architecture side of the theme triad will be handled by various workshops.

The session in Portland, from June 23-26, will constitute the main portion of the convention. In Portland will be the usual convention features—the Purves Lecture, President's Reception, Host Chapter Party, Honor Awards Luncheon and the business session.

**Investiture Is Separate:** One notable change in format is that the Investiture of Fellows will be a separate program for the first time this year. With the number of members to be so honored increasing, it was felt that this event deserved singular accommodation.

The 18th Building Products Exhibit will be held in the new Portland Memorial Coliseum—official headquarters for the convention. The exhibit layout is being planned by Host Chapter volunteers. Trees and flowers will be a feature of the design for the area, which will also include an exhibit by award winners and medalists.

Workshops will be in the same format that proved to be popular at the St. Louis and Denver conventions. Two or three sessions will be held concurrently, convention-goers choosing the discussion which most interests them.

The smaller sessions provide situations of a greater intimacy and more dynamic discussion, it has been found. Among scheduled topics are historic preservation, practice economics and government contract procedures.

Thursday, the 27th, will be a day of tours and travel. Those persons remaining in Portland will have local tours provided for them, while those continuing on to Hawaii will board morning planes for the five-hour trip.

**Hawaiian Workshops:** The major events of the three-day session in Hawaii will be two special workshops and a luau. There will also be optional tours.

Paul D. Jones is chairman for the Honolulu portion and David A. Pugh for the session in Portland. Overall chairman of the national convention is Robert B. Martin, director of the Northwest Region.

Already, more than 1,400 members have indicated that they will attend the Portland convention; of that number, nearly 1,000 plan to go on to Hawaii. Since, therefore, requests for air space and hotel space are mounting, members are urged to send in their reservations and deposits as soon as possible.

## McCormick Place Design: A Bridge to the Future?

It's neither a model of City '70 (page 40) nor a suspension bridge, but the shape of Chicago's soon-to-be-built McCormick Place.

It is the design of C. F. Murphy Associates, architects for the project of some \$70 million.

The catenary cables will run the building's 1,200-foot length, pass over the towers at its ends and extend 560 feet to anchorages.

Suspenders from the cables will hold roof trusses extending 60 feet

beyond the suspender line to columns in the exterior walls.

The foundation of the old exposition hall, ravaged by fire last January, and the undamaged parts of the old floors will be utilized in the new building which will contain 607,500 square feet. Exhibit areas in the old building totaled 500,000 square feet.

The new building was also to include a 2,250-seat Arie Crown Theater, but Chicago's Metropolitan Fair and Exposition Authority recently requested the architects to reconsider their design in order to provide for a 5,000 seat theater.

Public requests for a larger theater led to a study that supported an increased capacity, the authority explained.

## Sixty-three Cities Chosen For Model Cities Grants

The names of 63 cities chosen from 193 applicants to take part in the Model Cities Program were made public last month by Secretary Robert C. Weaver, Housing and Urban Development.

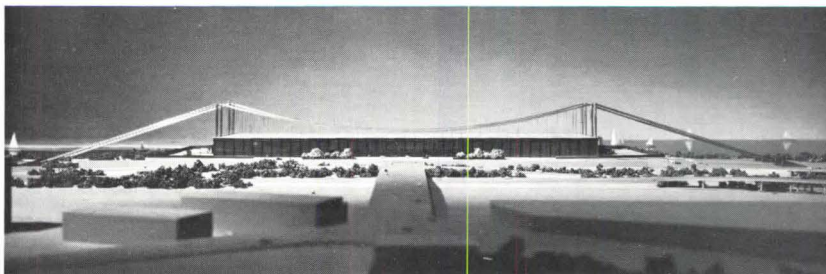
In the first stage, the chosen cities will share \$11 million to draw up detailed plans for the rebuilding of the slums. Individual grants will range from \$50,000 to \$350,000, Weaver said. The size of each will be decided by federal and local officials and will be announced later.

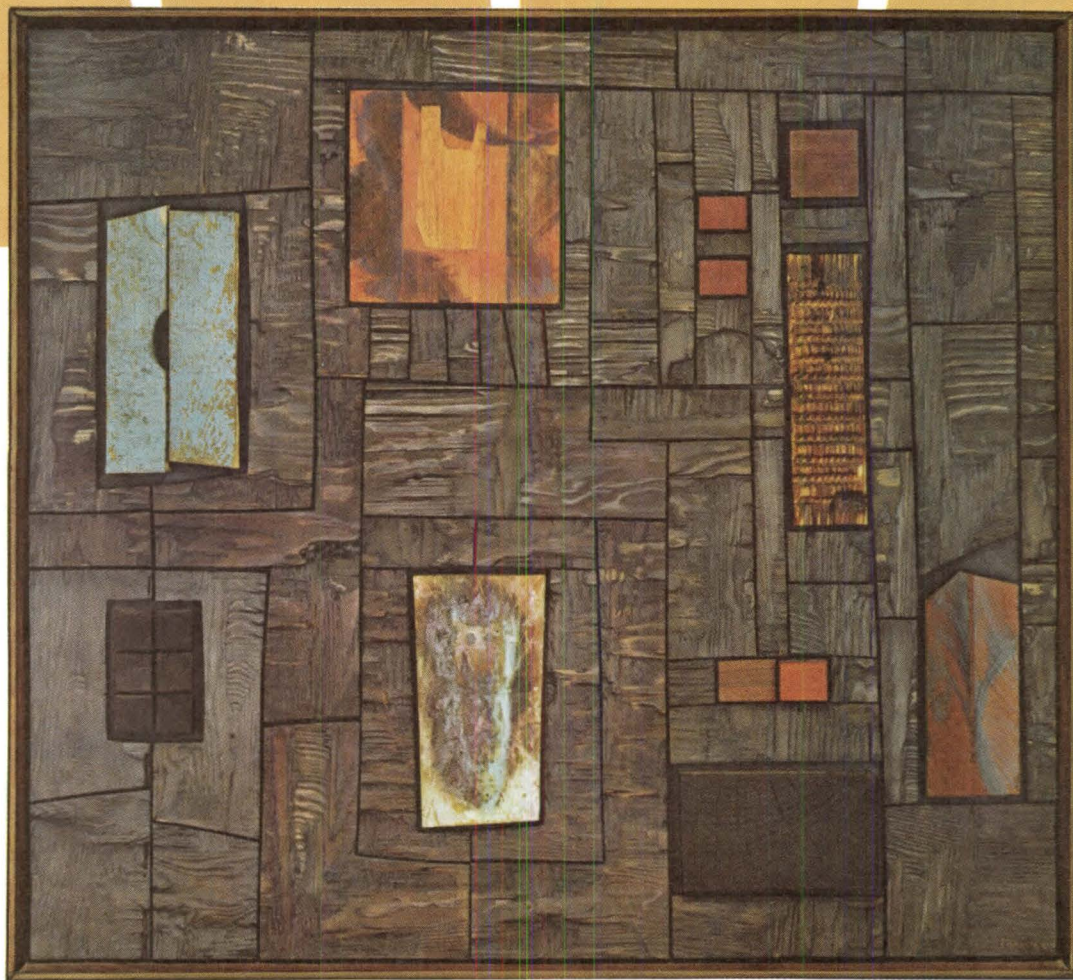
It is generally understood, Weaver said, that although no specific deadline is set, the plans will be submitted within a year, some much sooner. He said that cities receiving planning funds will not automatically receive construction funds; this depends on the success of their planning.

Congress has appropriated \$300 million to carry out the rebuilding.

*Continued on page 14*

C. F. Murphy Associates' cable-hung design for Chicago's McCormick Place.





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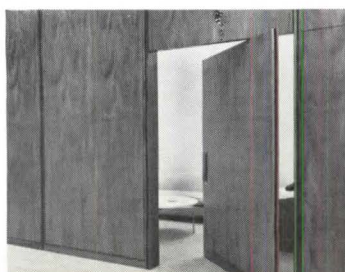
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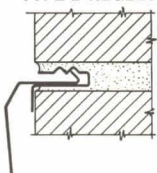
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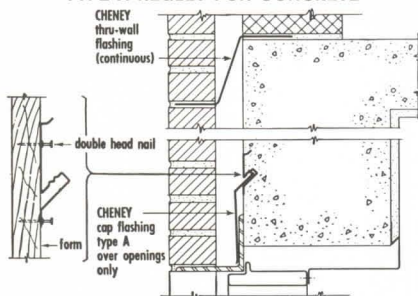
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14 AIA JOURNAL/DECEMBER 1967

Newslines from page 12

The President had originally asked for \$662 million for fiscal year 1968.

In spite of the cuts and the resulting small share that will go to the many participants, Weaver viewed the very start of the Model Cities Program as "tremendously significant."

The selection of the cities stirred up quick criticism from Capitol Hill. House Republican Leader Gerald R. Ford noted that only nine of the 63 cities chosen were in Republican congressional districts.

Weaver urged the losers to be patient, since \$12 million has been appropriated for a second round of applications.

The cities chosen in the first round were:

Huntsville, Ala.; Texarkana, Ark.; Fresno, Oakland, Richmond, Calif.; Denver, Trinidad, Colo.; Bridgeport, Hartford, New Haven, Conn.; Washington, D.C.; Dade County, Tampa, Fla.; Atlanta, Gainesville, Ga.; Honolulu, Hawaii; Chicago, East St. Louis, Ill.; Gary, Ind.; Des Moines, Iowa; Pikeville, Ky.; Portland, Me.; Baltimore, Md.; Boston, Cambridge, Lowell, Springfield, Mass.; Detroit, Highland Park, Mich.; Duluth, Minneapolis, Minn.; Kansas City, St. Louis, Mo.; Manchester, N.H.; Hoboken, Newark, Trenton, N.J.; Albuquerque, N.M.; Buffalo, Harlem, Bronx, Brooklyn, Poughkeepsie, Rochester, N.Y.; Charlotte, N.C.; Columbus, Dayton, Toledo, Ohio; Tulsa, Okla.; Portland, Ore.; Philadelphia, Pittsburgh, Reading, Wilkes Barre, Pa.; San Juan, P.R.; Providence, R.I.; Nashville, Smithville, Tenn.; Eagle Pass, San Antonio, Texarkana, Waco, Tex.; Winooski, Vt.; Norfolk, Va.; and Seattle, Wash.

### Fired Simon Investigates New Towns for Indians

Robert E. Simon Jr., founder and past president of Reston, Va., was ousted last month from his position of only a few weeks as chairman of the newly formed Gulf-Reston, Inc., a subsidiary of Gulf Oil.

At the same time, Secretary of the Interior Stewart L. Udall announced that Simon will visit Arizona, New Mexico and other states as a consultant for the Department of Interior to determine the feasibility of "new towns" on Indian reservations.

Reston, \$45 million in the red, was recently taken over by Gulf

Oil which has \$15 million at stake in the project. Gulf stated that "policy differences" were the reasons for the removal of Simon.

Robert H. Ryan, the new director of Gulf-Reston, said, however, that Simon's policies and Reston's master plan will be continued.

Also terminated were the services of the architectural firm of Conklin & Rossant, which helped draw up master plans for the new town and designed some of its buildings.

The residents of Reston gave Simon a touching "going away" ceremony. "I've never known of a community that honored its developer before," one Restonite commented.

### Reston's Problems Do Not Reflect on the Viability Of New Towns—Durham

The management change at Reston (preceding story) prompted Institute President Robert L. Durham, FAIA, to make a statement on behalf of the AIA.

Durham stressed that it would be a mistake to believe that Reston's problems raise any questions about the viability of the "new town" movement. The difficulties encountered by Reston reflect the fact that we in the US have not yet faced up to the special kind of financing needed by such towns, he said.

What is needed, Durham maintained, is access to sources of "patient money"—long-term financing that will carry the project until sufficient income is available. He suggested that government should be in on the financing of the new towns in one way or another, since, he said, they certainly should qualify as a "public work."

Durham praised Reston's architecture, but pointed to the lack of a strong transportation link between it and Washington, D.C. However, he felt that this did not reflect on the plan or design of the project, but rather on a general lack of sound metropolitan planning.

If we continue to plan and build over large urban areas on a piecemeal basis, the kind of access problem that Reston has will persist, Durham said.

"There will be a number of new town projects larger than Reston, and many more that are smaller. We believe that new towns are definite public assets, and that government in this country should treat them that way," he concluded.

Continued on page 16



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Newslines from page 14

### Plans Would Shift Highway From Staten Island Shore And Install a Community

New York's Borough of Richmond—commonly referred to as Staten Island—rarely has benefited from an excess of planning. But here were four alternative plans to choose from for the development of the 1,080-acre Annandale-Huguenot area.

It was to Mayor Lindsay "an opportunity to avoid the development of mistakes of the past, the mindless planning that has resulted in uprooted trees, leveled hills, blockaded waterfronts, gridiron streets and monotonous housing elsewhere in the city. Instead, we can make use of Annadale-Huguenot's woods, ponds, hills and shorelines."

The four plans suggested by Raymond & May Associates, a New York consulting firm specializing in city planning and urban design and renewal, all had one thing in common: to move Staten Island's proposed Shore Front Drive, an eight-lane expressway, inland.

**Waterfront for People:** This would make the waterfront directly available for homes and people rather than for high-speed automobiles and trucks. At the inland location, the road, though passing



**View of marina, encircled by housing, shopping facilities and promenades.**

through the new town, would not sever it in two; it would be depressed and have at least three crossings for automobiles and pedestrians as well as two crossings exclusively for pedestrians.

The four plans, work on which was started last February under a \$200 contract, were as follows:

- To continue the present trend of one-family homes, on 60-foot-wide lots, none smaller. Total population would be 11,400 in 2,350 new and 487 existing houses. Utility and amenity costs would average \$27,210 per dwelling unit.

- Also for single-family homes on 60-foot lots, but with lots clustered

to create larger open areas. Population 12,100 in 2,550 new and 480 homes now existing. Utility and amenity costs would average \$23,710 per unit.

- Detached one-family houses would comprise 16 percent, townhouses 61 percent and apartments 23 percent for a population of 23,500 in 6,200 new dwellings and 457 existing ones, with a cluster arrangement. The plan would include a communitywide park system and a man-made lagoon on Raritan Bay. Utility and amenity costs would average \$10,200 per unit.

- Apartment houses would comprise 76 percent, townhouses 16 percent and one-family detached houses 8 percent, also with a central park system and man-made lagoon. Population would be 35,200 in 10,400 new units and 448 existing houses. Utility and amenity costs would average \$6,225 per unit.

Seventy percent of the land in Annadale-Huguenot is now undeveloped. New York City owns more than half of the vacant land.

**Quality Planning Myth:** While Raymond & May recommend the third plan, the four alternatives will now be taken under study by city agencies.

"The popular myth is that high quality planning is expensive. These plans prove just the opposite," said Jason R. Nathan, housing and development administrator.

Development will be staged over a number of years with private developers and the city sharing the cost under a formula to be determined by final plans.

### Beefy Thief Takes Bauhaus Papers from Parked Car

It's hard to imagine, but 150 pounds of scholarly works on the Bauhaus were stolen from a parked car in Chicago.

Among the material were books, articles, letters, notes, and a carbon copy of a manuscript containing 14 chapters for a book, *Inside the Bauhaus*, being written by Howard Dearstyne, AIA, who was a student at the Bauhaus when it was closed in 1933.

It is possible that some of the works might turn up in a rare-book shop. The books are in German, and the Bauhaus magazines were published between 1928 and 1932. The letters were from Kandinsky to Dearstyne and from Dearstyne

*Continued on page 18*



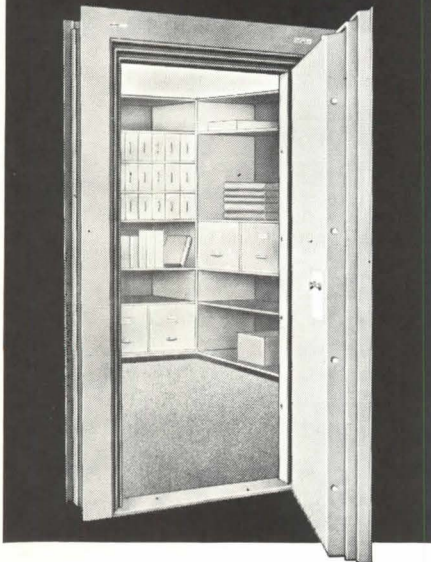
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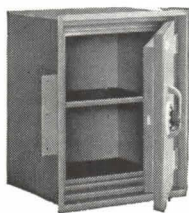
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18 AIA JOURNAL/DECEMBER 1967

Newslines from page 16

(while a student) to his mother. The notes are on 3 x 5-inch cards.

Anyone encountering any of the material can reach Dearstyne at the Department of Architecture, Illinois Institute of Technology, Crown Hall, Chicago, Ill. 60616.

### Business' Role in Cities Doubted, Defended; And Lions Press Ahead

A strongly doubtful tone was sounded recently against the as-yet feeble efforts of private business to help solve the problems of our ailing cities. "Total failure" of such ventures was the prediction of John Kenneth Galbraith, president of Americans for Democratic Action.

Delivering the main address of the 75th anniversary dinner of the City Club of New York, Galbraith said that "in the end the results will be invisible."

He was referring specifically to President Johnson's plan to have insurance companies invest in slum housing and Sen. Robert F. Kennedy's support of private efforts to redevelop the Bedford-Stuyvesant section of Brooklyn.

The Harvard economist made no mention of the Urban Coalition, a group of prominent business, labor and civil rights leaders, other than to say it was formed primarily to pressure government to increase support of the cities.

**Government Must Do It:** The government must plan and finance future development of the cities, Galbraith maintained, stressing that the importance of private enterprise is becoming less important in large cities. "Private enterprise and private investment are being aroused to their responsibilities—as they have been without result a hundred times before."

But Sen. Jacob K. Javits (R-N.Y.) sprang to his feet to contend otherwise. With private enterprise, he said, "you will have more tax incentives and a calling of attention to the responsibility of the private sector . . . which has . . . the power, personnel and capacity to help the cities."

Capability, yes, but how about interest? A series of indications that business has the interest, too, continues to extend. Steward S. Cort, president of Bethlehem Steel Co., for example, recently challenged the steel construction industry leaders to help in finding solutions to the nation's growing social problems.

**Lions' Share:** While Galbraith and Javits exchanged opinions, the world's largest service club organization, Lions International, sided with the latter.

At a three-day international symposium on "The City of the Future," President Jorge Bird called upon the more than 850,000 Lions of the world to accept the challenge of broadening their scope of public service beyond the local, personal and community area by establishing themselves in the area of man's current greatest problem—the city.

The Lions are responsible for a considerable number of public and social service projects and provide in excess of \$100 million yearly for charitable purposes.

### Coalition, Other Groups, Bend Efforts for Cities

"Frankly," said Carl B. Stokes, "I don't know what the motivation is, fear or genuine social concern, or both. But the important thing is that business is becoming involved."

Such was the comment of Cleveland's newly elected mayor on the upsurge of interest from private groups in helping cure the nation's urban woes.

In Cleveland alone, private enterprise has put up \$400,000 for a revolving fund for slum rehabilitation projects.

In Pittsburgh, several corporations have contributed \$1.4 million to renovate ghetto houses and sell them back to the ghetto residents.

In Detroit, almost 10,000 ghetto residents have been hired by the auto industry since the riots last summer.

And across the country, 1,200 business, labor, religious and civil rights leaders have joined forces with local government and established the Urban Coalition in an effort to bring action instead of promises to the ghettos.

The coalition, which can act only in an advisory capacity, grew out of a year-long effort by the big-city mayors to overcome what they felt was "citizen indifference" to city problems.

Now all of four months old, the Urban Coalition has helped set up more than 50 local coalitions.

Though met with less than lukewarm Congressional enthusiasm, and with skepticism from other quarters suspecting a quickie show of concern, the Urban Coalition is steadily gaining momentum.

Continued on page 21

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## The unifier.

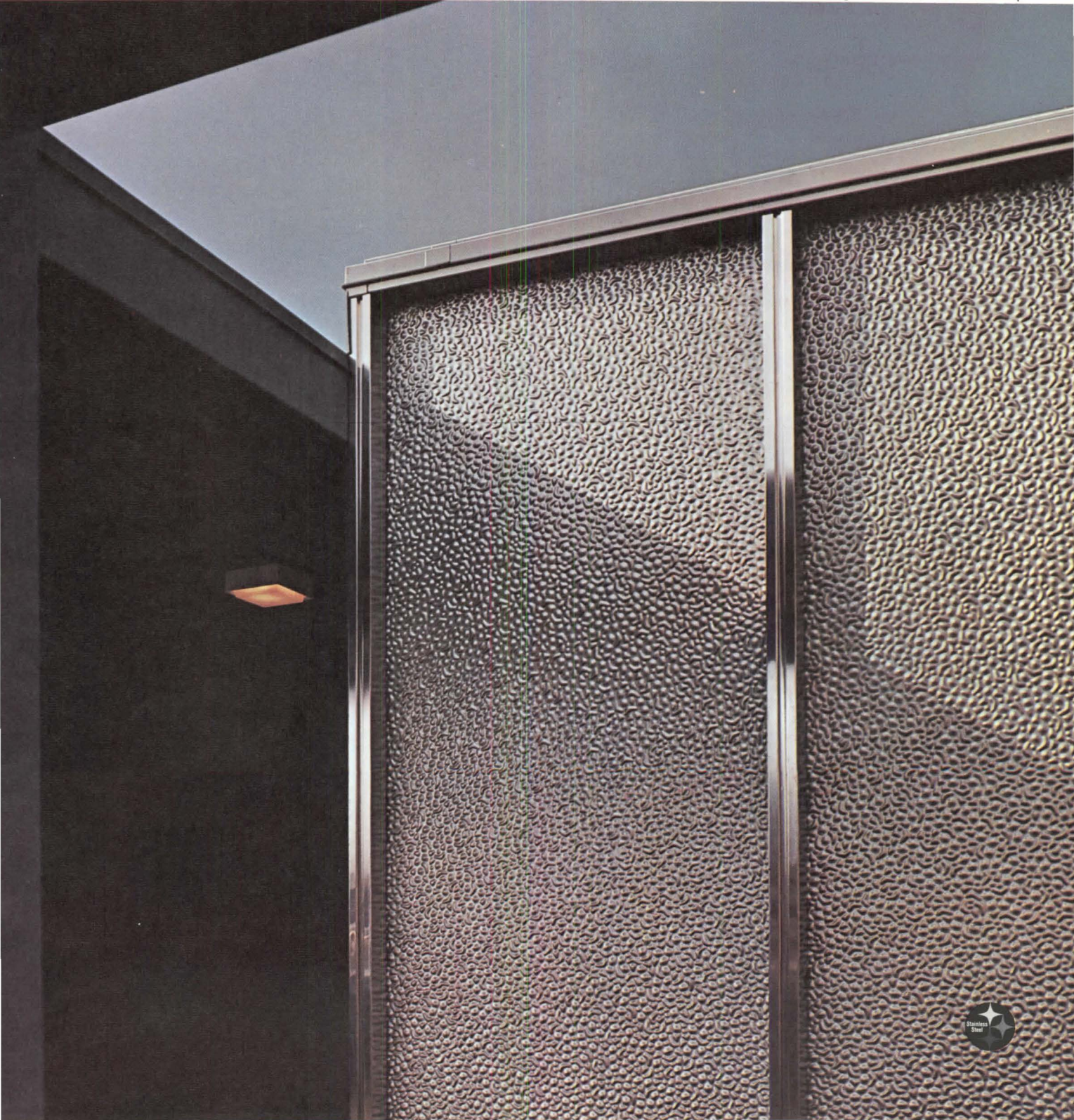
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## RFK Applauds and Prods Private Sector's City Role

The role of the private sector in rebuilding the nation's cities got a further shot in the arm from Sen. Robert F. Kennedy (D-N.Y.) in an address before the Building Products Executive Conference in Washington, D.C.

"Whatever government must do, there is no more promising asset we have today than the skills, the resources and the inventiveness of our private sector," he said.

Branding the crowded US city as "an alien land within our borders," the Senator exhorted the executives to join in a partnership between industry and community to rebuild neighborhoods by:

- devising new tools for lowering the costs of new housing for low-income families, and new products to make building and renovation less expensive
- training ghetto youths for a role in manufacturing
- offering executive talent to train the jobless and the idle for new tasks in rewarding and dignified labor.

Wallace F. Traendly, president of F. W. Dodge Co., sponsor of the October conference, said the success in meeting the challenge of the cities is directly related to "effective management information of every variety, from sociological to scientific."

He went so far as to say that "if we had done a better job of managing the information about the ghetto areas of our nation, perhaps we would have avoided the terrible riots of this summer."

## 'Fun to Look at' Ads Rate High, Conference Is Told

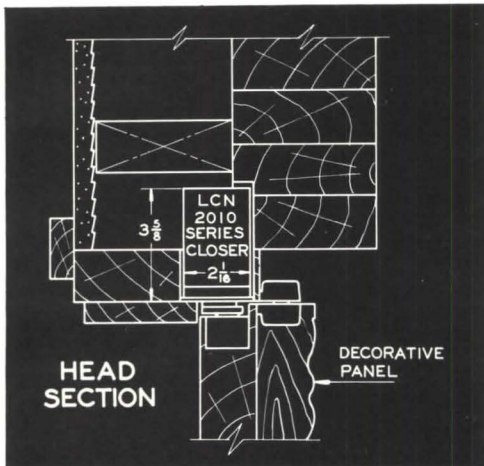
How do architects as users respond to technical advertising? What should be the appeals of product literature? How can the advertising approach meet the changing user markets?

These were some of the questions discussed by architects, manufacturers, homebuilders, agency personnel and others at the second annual Conference on Product Literature and Advertising in the Construction Industry, held Oct. 23-24 in Chicago.

John A. Holabird Jr., AIA, discussed the appeal that advertising holds for the user, basing his per-

*Continued on page 24*

## LCN for modern door control



Detail at head for LCN overhead concealed closer installation shown in photograph

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Full description on request or see Sweet's 1967, Sec. 16e/Lc



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## A report on **USS** Ultimet—the first truly competitive stainless steel wall framing

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Production of all stainless steel shapes used for curtainwall framing, lobbies and entrances, unique ULTIMET Horizontally Pivoted Window, and our attractive Narrow Stile door, is proceeding on schedule. Shipments are being made from a well-maintained inventory. All components meet very tight manufacturing tolerances—made possible only by roll-forming—and the appearance of the new Softline finish exceeds all expectations.

Shop fabrication, involving the relatively few, simple operations necessary to fabricate ULTIMET components for various wall

treatments, is being accomplished efficiently and economically by leading curtainwall fabricators and glass distributors. Only a minimum of tools and plant equipment is required. In fact, for many of the components, the only fabrication required is cutting to length.

Erection crews are installing ULTIMET walls at the site quickly and easily. Many of the parts simply “lock” into place.

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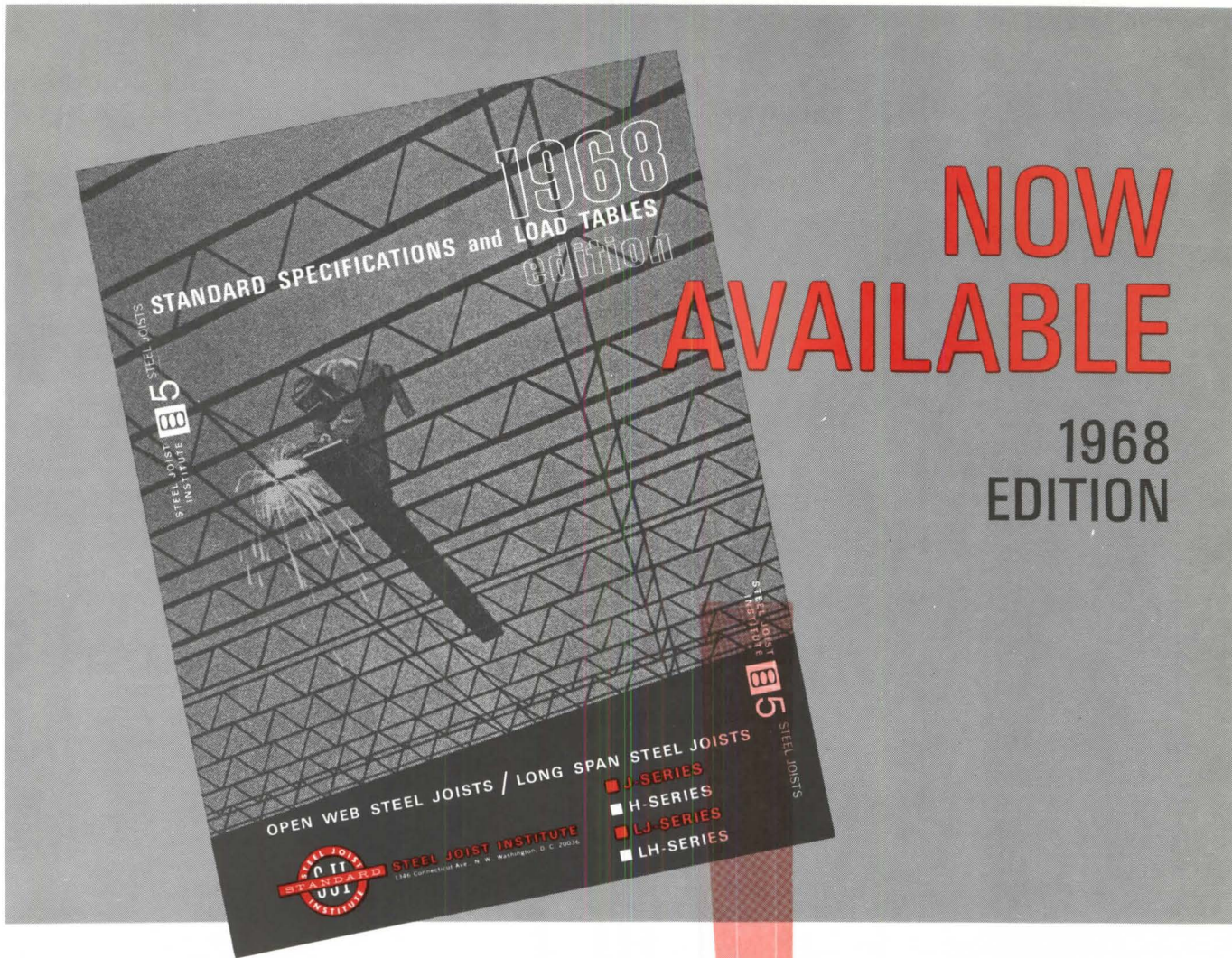
National Association of Architectural Metal Manufacturers.

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Newslines from page 24

as the situs picketing bill, the safety bill, the age discrimination bill and the civil rights injunction bill, to name a few."

Meantime, in the face of labor's efforts to broaden its domain in the construction field—efforts that include attempts to organize field crews, draftsmen and technicians—a Dec. 1 national conference on "Facing the Union Problem" was scheduled.

The Chicago meeting was co-sponsored by the AIA, American Congress for Surveying and Mapping, American Society of Civil Engineers, Consulting Engineers Council/USA, the Professional Engineers in Private Practice Section of NSPE and the National Council for Photogrammetry.

Sponsors stressed that the conference was not based on opposition to labor but on the incompatibility of professionalism and unionism.

Said Institute President Robert L. Durham, FAIA: "Individual responsibility, independent judgment and devotion to client interests are contrary to the regimentation fundamentally inherent in collective bargaining. This is evident in union reliance upon threats, bluffs and other tactics to stampede engineers and architects to labor's fold. Our societies believe the time for professional silence on this matter is past."

### HUD to Honor Design For Transit Facilities

The Department of Housing and Urban Development has invited all recipients of financial assistance under the Urban Mass Transportation Act to participate in the 1968 Design Awards Program conducted by its Urban Transportation Administration.

Awards will be made in two categories: systems or major portions of systems, and components such as stations, vehicles and trackage. Eligible projects include those completed after World War II or planned by Jan. 1, 1968.

Entries must be received no later than Jan. 1. Additional information is available from Robert H. McManus, Chairman, Committee on Design Awards in Urban Transportation, Department of Housing and Urban Development, 1626 K St., N.W., Washington, D.C. 20401.

### Mrs. Wright In 11th Hour Effort to Save Imperial

Mrs. Frank Lloyd Wright is in an 11th hour battle to save her late husband's famed Imperial Hotel in Tokyo and is seeking donations toward the preservation effort.

The hotel's imminent demise was described in the November AIA JOURNAL.

Mrs. Wright traveled to Japan, where she conferred with architects and officials, and drew considerable support for the hotel's preservation. The *Christian Science Monitor* termed the trip "touching" and wished Mrs. Wright "courage and perseverance."

Mrs. Wright is chairman of the Committee for Preservation of the Imperial Hotel. Contributions can be made payable to Mrs. Wright, Taliesin West, Scottsdale, Ariz. 85252.

A spokesman for Mrs. Wright said she is "especially hopeful that many small contributions from the

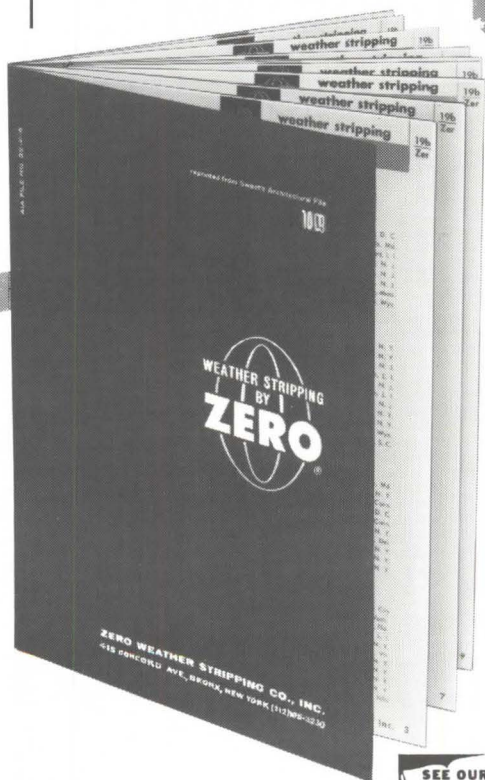
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### Fellowship Program Offers National Affairs Insight

The Commission on White House Fellows will soon select the fourth group of outstanding young leaders to work for a year with Cabinet

officers, the Vice President and members of the White House staff.

The nonpartisan program was initiated two years ago to give the participants firsthand, high-level experience with the workings of the federal government and to increase their understanding of national affairs.

The three previous groups have included engineers, business executives, professors and newly graduated students, among others.

Applicants must be college graduates and between 23 and 35 years of age on Sept. 3, 1968, and meet

vigorous standards of intelligence and character.

For further information and application forms, write Director, Commission on White House Fellows, the White House, Washington, D.C., 20500.

Deadline for mailing applications is Jan. 8.

### Mrs. Velma I. T. May, Octagon Hostess, Dies

Velma I. Tinnen May, long-time hostess of the Octagon, is dead after a lingering illness.


Born in Washington, D.C. in 1910, Mrs. May spent 17 years of her life showing visitors around the Octagon and explaining details of its history. She was particularly well acquainted with all the furnishings and various woods contained in the 167-year-old landmark.

One Institute colleague described Mrs. May, whose death occurred on Oct. 30, as a gracious and charming woman. "She knew the Octagon building intimately—all its nooks and crannies. Such devotion is an immeasurable loss."

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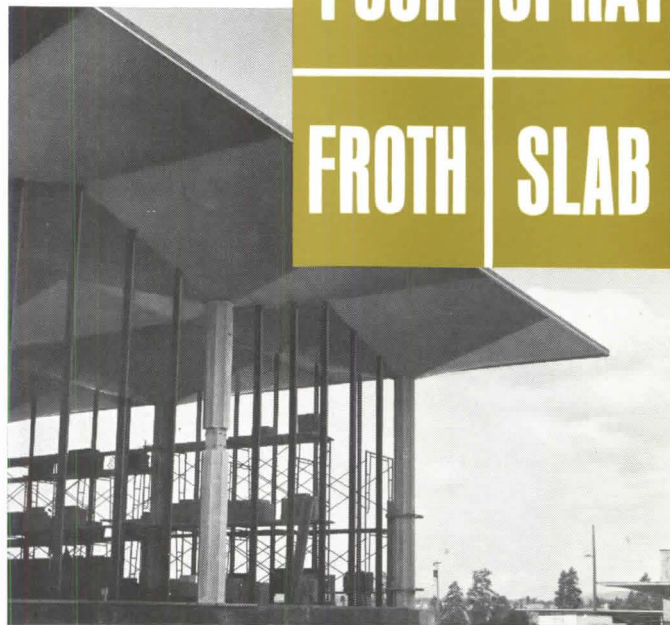
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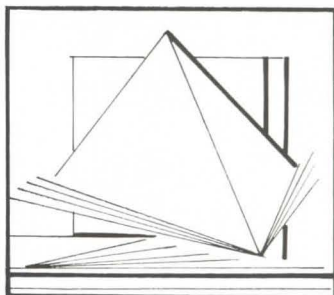
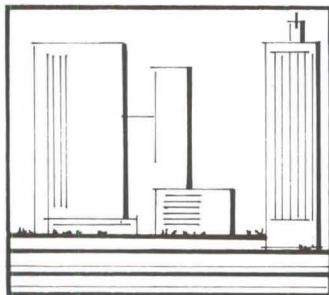
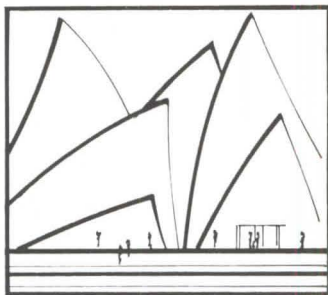
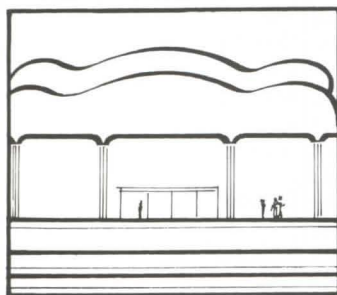
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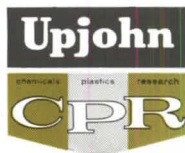


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## UNFINISHED BUSINESS

BY WILLIAM H. SCHEICK, FAIA  
Executive Director

# Dialogue on Differences

In the August JOURNAL I wrote a kind of parable on "vacuums" to make the point that architects must keep ahead of changes developing in today's society. I tried to show that the Institute is keenly aware of the forces for change and is moving positively to deal with them.

To my dismay a few readers thought I was making a case for the status quo. Heaven forbid!

This time I will simply try to show the influence of change upon architects' thinking. A moderator is questioning two architects and both answer each question. Their answers represent a composite of two very divergent viewpoints on such questions, as I hear them in architects' conversations.

If you enjoy the gambit of "reader tests," mark each answer that is nearest to one you would give and see how closely you resemble architect No. 1 or No. 2.

**Q: Will architecture continue as a profession?**

1. Yes. I assume you mean a profession with a code of ethics.
2. We can't continue to believe that we are able to practice in the purely professional sense as does the physician or the minister; we are in a complicated business.

**Q: Does that second answer mean that ethics are incompatible with practice today?**

1. Professionalism is under attack all over the world. We must stand fast on an ethical code.
2. The ethics under attack are relics from a time when the professions were "gentlemen's clubs." We need a simple "Statement of Principles" that the public understands as applicable to integrity and competence in practice. They should be readily enforceable.

**Q: Who is the leader of the environmental design team?**

1. The architect.
2. The guy with a client. (That's a joke, son.) Leadership is earned, not conferred. The leader of the total creative process may not be a design professional at all. He may be an entrepreneur. He will be an

expert in management and feasibility.

**Q: Do you mean one architect can't have all the necessary talents?**

1. With enough training he can.
2. This is not the age of the Renaissance Man. There aren't enough geniuses for the job at hand. Or enough time to educate them. "The architect" will have to be a team with diversified talents.

**Q: Is a competition a good way to select an architect?**

1. It is an excellent way to uncover new talent, new ideas.
2. Occasionally it can be justified for that purpose. For the client it is a shot-in-the-dark way to conceive a project. He does better to select an architect.

**Q: Are architects paid enough for their services?**

1. No. Fee percentages should be raised.
2. Who is ever paid enough? Some are paid too much, some too little. Some are poor businessmen. Some negotiate from fear that they won't get the job. Most of them are lousy salesmen. The educational process fails to prepare architects for this—or flunks out the salesmen. Some of our greatest architects are natural supersalesmen.

**Q: Should architects submit bids for their fees?**

1. No. It is unethical.
2. For once I agree. But clients would like to talk fees during the selection process. I wish we could discuss fees in relation to the value of services rendered. But not by percentage points.

**Q: Do your ethics prohibit contingent fees?**

1. Not clearly enough. They should.
2. It should be a matter of business sagacity, not ethics. In some cases a project is a gamble for everybody until feasibility is established by design. The AIA should teach architects how to control the contingent situation on a sound business basis rather than by rules of ethics. The architect should never use the contingent fee as a device to be selected as project architect.

**Q: Should architects guarantee to meet the project budget?**

1. Never. Too many variables.
2. They should come as close to it as possible through cost control. The profession gets a black eye every time an architect misses the budget badly. His client becomes a ready target for a package dealer.

**Q: Will architectural technicians unionize?**

1. They are too closely tied to professionalism to fall for that gag.
2. Their pay is low, fringe benefits few. Better jobs are available in industry. The situation is ripe for the union organizer.

**Q: Are typical drawings and specs too costly, possibly obsolete?**

1. They are costly all right. What else can we do?
2. Their cost-value ratio is one reason technicians are underpaid. We need automated techniques for information retrieval, design and cost analyses, and much of the graphics.

**Q: Won't automated techniques cost too much for all but the large firms?**

1. Yes. It's another advantage.
2. We must find ways to make it profitable for computer centers to service many small firms.

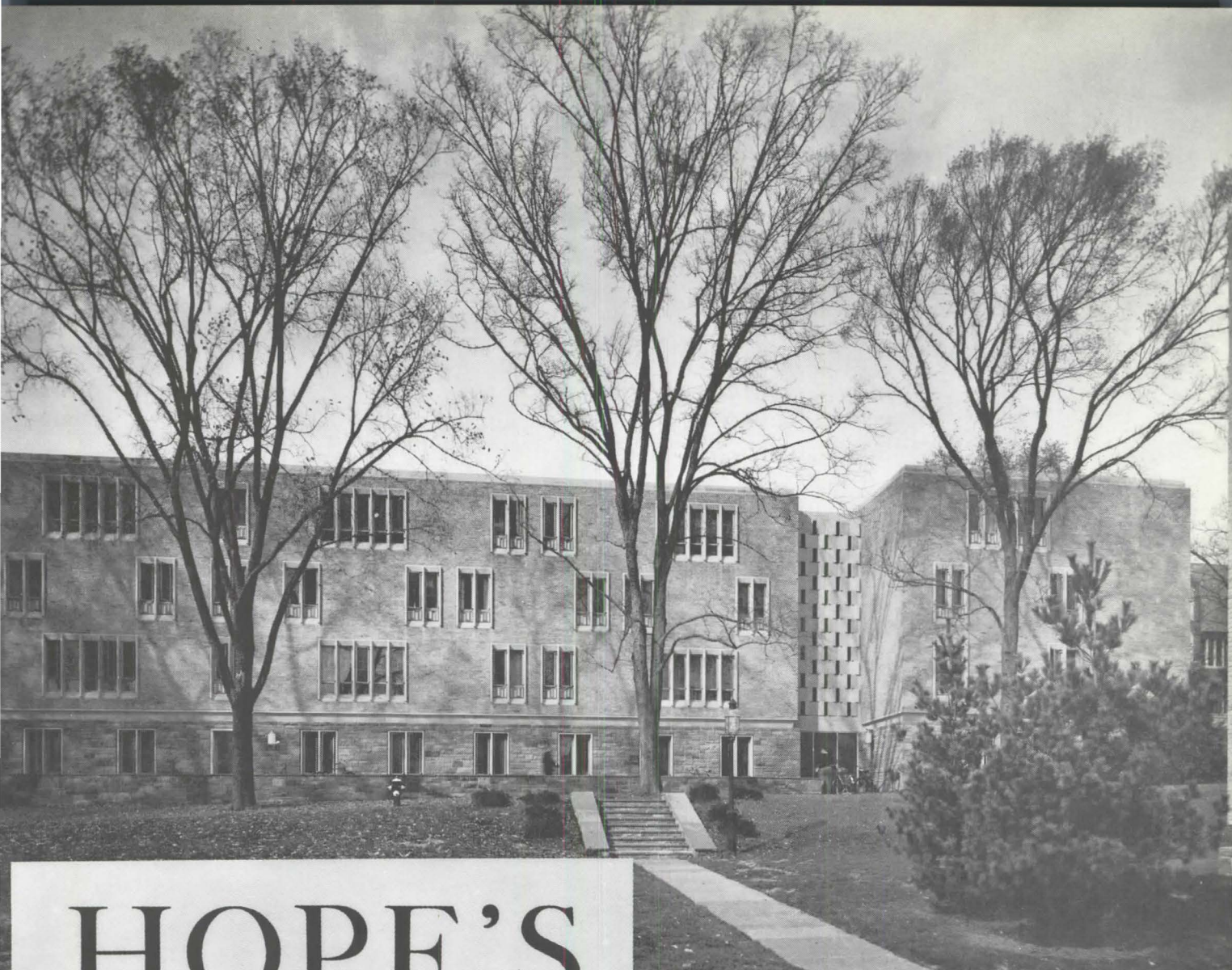
**Q: Do architects specialize in building types?**

1. Architects are generalists. A good architect will do a superior job on his first project of a given type.
2. That applies to esthetics only. If experience counts for anything, the specialist is bound to produce a better project in a complex building type.

**Q: Are big architectural firms the "way of the future"?**

1. Only in the sense that there will be a great volume of projects that only big firms can handle. There will still be many projects for smaller firms.
2. The big firms have the know-how to handle project management. Small firms must develop this capability or become obsolete.

**Moderator:** Sorry, our time is up. I have so many more questions. □



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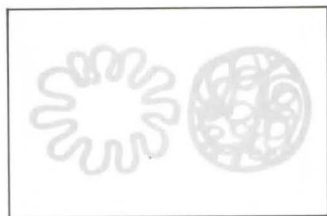
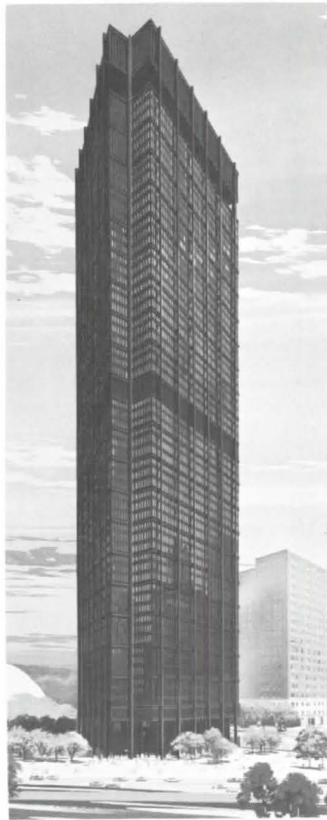
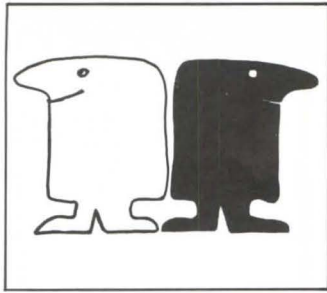
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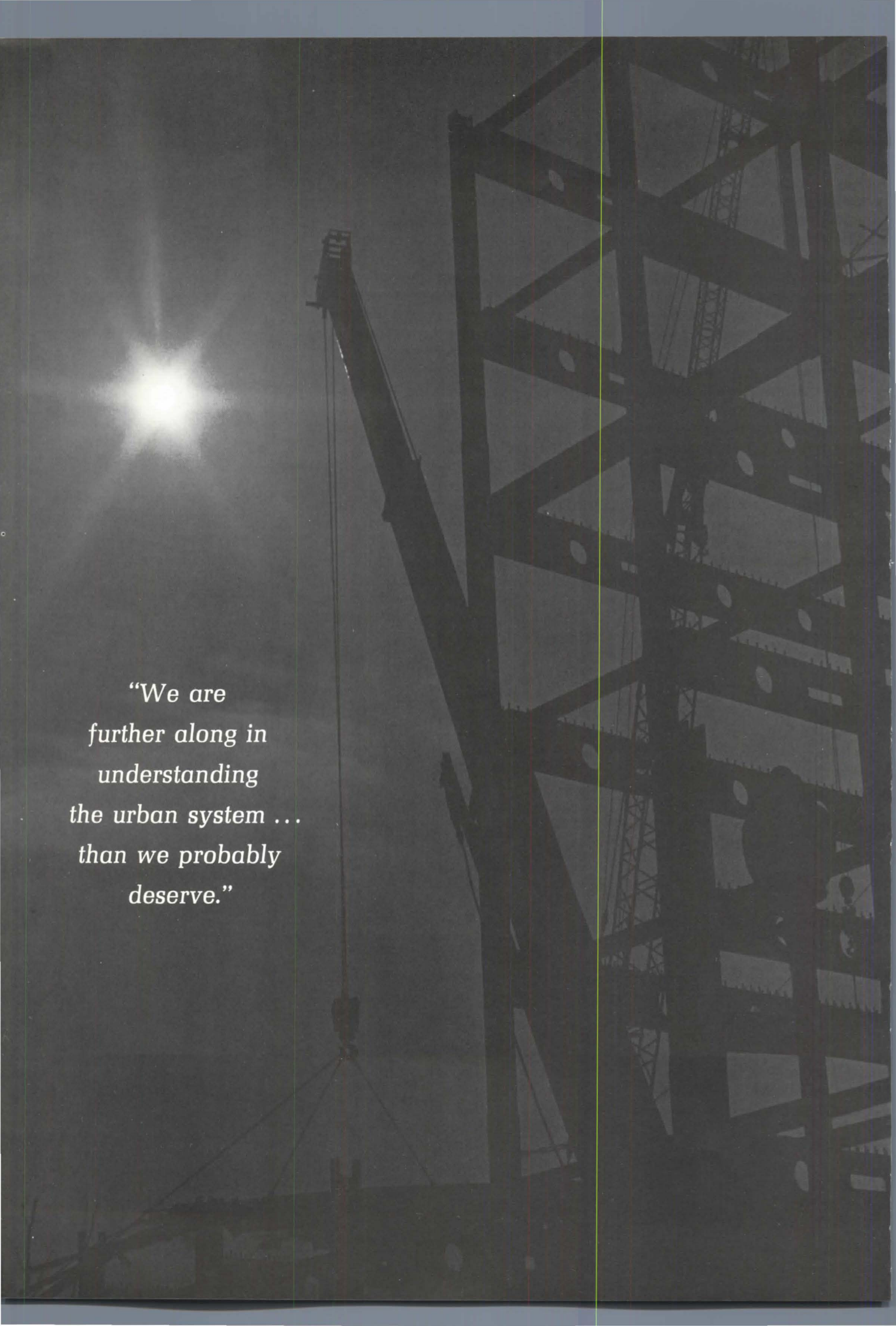


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*“We are  
further along in  
understanding  
the urban system ...  
than we probably  
deserve.”*

# Age of Reason for the City

BY ROBERT C. WOOD

Three distinctive features of the American character and culture that have generated this nation's uniquely successful development also are qualities sorely needed in our present struggle to build cities that reflect the best of our nation's aspirations:

- *a reliance on reason* in place of emotion or illusion as a means to solve problems both human and material
- *an emphasis on productivity*, on action, on work, on results—not talk—as the measure of competence
- *an insistence on quality* in the application of reason and the execution of tasks.

Since last May, we have passed through a series of calamitous events in our cities. This is the fourth consecutive year of urban violence, and the intensity is increasing.

These outbreaks were not unexpected. Nor were they, to the professional observer, inexplicable. But they have produced the torrent of commentary and explanation that now swirls around us and the sense of urgency and concern with our urban civilization that was lacking in earlier years.

All of us in the urban business welcome every indication of the public's sense of heightened urgency and broader concern. However, the solemn predictions of disaster, along with the panicky search for panaceas, constitute another, and disturbing, matter.

Urban problems we have aplenty, an inventory of ills assembled over years of indifference and inattention. Yet the potential for city building in the United States, grand in scale and fine in quality, has never been greater.

Indeed, my central theme is that we are in fact further along in understanding the urban system, in developing the capabilities to direct it and in deciding in what direction it should go than most Americans appreciate or than we probably deserve after decades of neglect.

This thesis runs contrary, of course, to the cloudburst of criticism that now falls on our city policies. The urban wailing wall is lined today

with eloquent communicators urging us in this direction or that. Some of these are old colleagues who only a few short years ago wrote learned treatises entitled "There Is No Urban Problem" or "Cities Are Better Than Ever." Others are the experts who called for the abolition of the automobile as a practical solution to the unspecified ills of suburbia.

Now while these observers come forward with a different set of opinions and assertions, prescriptions and philosophies, let me present some

**The author:** Dr. Wood, before becoming the Under Secretary in the Department of Housing and Urban Development in January 1966, headed the political science department at the Massachusetts Institute of Technology, where he recently participated in an alumni seminar. This article is adapted from the address he delivered at Cambridge.

evidence for long-run confidence in Americans as urbanites. The foundation for this optimism is principally that the characteristics of reason and problem solving are now being applied to urban affairs. Specifically:

1. We come increasingly to understand the city as a system of many variables in precise and accurate terms, as a complex set of relations of people and space involving many dimensions. This may sound theoretical, but an accurate description of the phenomenon is a prerequisite for guiding it. Until very recently in urban scholarship there was a clear and present danger of committing the single-factor fallacy in diagnosing our cities' ills. The special error was a tendency to analyze them solely in terms of race.
2. We are beginning to develop a balanced capacity to design and build better city systems. We are learning that, as in all great national endeavors, manpower, know-how, talent and commitment are as important as dollars. We ignore any one component at the peril of the total enterprise. And when we emphasize only one, we invite waste and error.
3. Our national policy states clearly that the task is still city building in the broadest sense of the word everywhere across this continent. It is not

only the ghetto and the ghetto resident that concern us but all urban dwellers and all parts of the urban complex. This means we must develop a broader system and direct it toward goals we identify and come to agree upon more clearly.

Let me expand on each of these points. The first reason for some confidence in our urban future is that, despite the spate of Sunday supplement commentary, we are beginning to define and study urban behavior systematically. It has been 10 years since Raymond Vernon began directing the New York Metropolitan Study. This was a truly extraordinary nine-volume inquiry into the economic functioning of our largest urban area.

This 30-man professional group effort established a new direction in urban scholarship. It shifted the study of the city away from the emotionally oriented, intuitive, historical and physical approaches of the lonely-scholar tradition. It moved urban scholarship toward a carefully designed, multidisciplinary exploration of the varied relationships between the location of jobs and households in urban space.

The economic focus of the New York study had its limitations. Vernon's policy conclusions were largely comforting and reassuring. They gave heavy emphasis to the fact that, relatively speaking, city dwellers are better off in material terms than ever before.

With 10 years' hindsight, it is possible to identify some critical missing elements of analysis. They include the failure to recognize that there is a psychological identity crisis among the new migrants from rural American circumstances; that we wrote off too quickly the potential role of government in the process of urban development; that we did not take into account the full meaning of changing technology.

But the foundations of urban systems analysis were clearly set by the study. They still stand in stark contrast to some contemporary diagnoses by latecomers in the field who even now persist in treating a multivariable situation in single cause and effect terms. The study carefully avoided any simple classification of a special category of urban people, a single source of discontent, or a particular kind of family problem.

As we build on the work of the 1950s we have come to know that urban conditions of stability or instability, squalor or decency, efficiency or inefficiency, beauty or ugliness are not the function of single factors.

They are not the result of

- just obsolescence of our housing supply
- just the changing requirements of industrial location
- just a radical change in the character of the jobs technology makes available

## SOME NOTES ON MODEL CITIES

*H. Ralph Taylor, HUD's Assistant Secretary for Demonstrations and Intergovernmental Relations, points out a challenge to architects.*

Within the Department of Housing and Urban Development we have embarked upon a historic, nationwide demonstration of how selected cities can organize the many public and private resources to revitalize entire neighborhoods that are losing the battle against human and physical blight. This is the Model Cities Program.

Model Cities offers a new, unprecedented and unparalleled opportunity in American history for urban centers to get at and destroy the root causes of poverty and blight. It contemplates a massive attack upon the economic, social and physical deficiencies of the slums. The heart of this new approach is a coordination of resources—federal, state and local, private and public—in a specific blighted area large enough for a comprehensive program.

We asked each city applying for Model Cities financial aid to undertake a searching analysis of the needs of the proposed model neigh-

borhood. On the basis of such an examination, they developed proposals that would make incisive inroads into the deficiencies of the area. We asked them to demonstrate the commitment of their city governments and all involved departments and agencies to the program and to evaluate their capacity to undertake and to follow through with such a program.

By the deadline date, 193 applications had been received. As of this writing, final selections have not been made, but we have been greatly encouraged by the response. The quality of many applications has been exceptionally high.

We have been struck, too, by the willingness and ability of the applicant cities to develop a program on a coordinated basis, with many agencies discussing their mutual problems in depth for the first time in their history. Based on these applications, a confidence arises that, within the next few years, there will be a development of some new and effective methods for coping with slum problems that other cities with similar urban ills can adopt.

By law, selection of cities must be

made on a basis of population and geographic distribution. Thus, architects all across the nation, in large cities and small, may become involved in Model Cities and may be offered the greatest challenges of this century. The scope of a Model Cities program is shown by the main purposes of the legislation. It underscores the principal objectives of:

- expanding housing, job and income opportunities
- reducing dependence on welfare payments
- improving educational facilities and programs
- combating disease and ill health
- reducing the incidence of crime and delinquency
- enhancing recreational and cultural opportunities.

In establishing these objectives, the law also specifies the need and desire for good urban design. It directs the Secretary of HUD to "emphasize local initiative in the planning, development and implementation of comprehensive city demonstration programs; encourage city demonstration agencies to 1) enhance neighborhoods by applying a high standard of design, 2) main-

- just the vast migration of rural citizens to strange and complex urban circumstances
- just discrimination
- just the desire of urban residents to be heard
- just hostility between generations
- just the increase in sheer numbers.

The urban condition is all of these. The issue is not the intuitive search for the single thesis, be it

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The Model Cities Program  
seeks to restore all  
aspects of the neighborhood  
with a total attack.

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anomie, or the unemployment rate among central city residents, or the family structure of poor people. The issue is how to balance and take into account, on some weighted basis, the play and pull of all these varied forces.

The Woods Hole Conference which the President's science adviser, Donald Hornig, and Secretary Robert C. Weaver sponsored in the summer of 1966 marked the first official effort to move in this direction. Walter Rosenblith, chairman of the

faculty at Massachusetts Institute of Technology, led some 50 largely "hardware" researchers in the search for simultaneous equations to locate and remove the sources of urban discontent. That summer study began the process that continues today within the Department of Housing and Urban Development. Its work was the basis that led the Congress to approve our first meaningful research and development budget.

Where one appreciates that a problem is complex and subtle, not responsive to massive undirected applications of energy or simple professions of goodwill and heartfelt concern, one is likely to search for a reasonably comprehensive and carefully developed response. This is the second reason for some optimism for urban America. Our public policy today, proposed by the President, enacted by the Congress, is of that character.

In the tumult of last summer it is easy to forget—but vital to remember—that urban aid legislation enacted in 1965 and 1966 was designed to remove the causes of the tumult. We have many new efforts underway to provide more housing for those who desperately need it. For the first time we are seeing the leaders of private enterprise focusing their talents and energies on the nation's most pressing urban problem. Here I mean the involvement of private industry in the

tain, as appropriate, natural and historic sites and distinctive neighborhood characteristics, 3) make maximum possible use of new and improved technology and design, including cost reduction techniques."

The implications for architects here are clear. Their services as designers of buildings and as planners of revitalized neighborhoods will, of course, be basic to the success of Model Cities programs, but their roles will be more encompassing. They must become "new designers," using an interdisciplinary approach to the problem. They must proceed with a *knowledge of the social and behavioral sciences*: They must be familiar with the behavioral patterns of residents, the types and levels and variances of their activities. Architects will have to deal with people who are unprofessional, unsophisticated, often uneducated and poor. The task might be strange for them; it will indeed be demanding.

Because the emphasis in Model Cities is on the people of the area, each item of input must directly affect the health, education, housing or other need of the neighborhood residents. There is a saying in HUD

that "Model Cities follows the resident." Program funds are thus available for activities outside the model neighborhood, provided they are used for the benefit of residents. Housing is but one of several considerations of the program.

One evidence of the affect housing can have to other problems was seen in 1963 when HUD financed a two-year, low-income housing demonstration in Washington, D. C. A grant of close to \$194,000 enabled the National Capital Housing Authority to lease 50 private homes for rent by large families of low income. Most of the houses, though structurally sound, required rehabilitation to conform to the District's housing code.

It was found, as was hoped and expected, that leased housing is both a valuable means of expanding housing for lower income families and an aid to upgrading neighborhoods. But as a side effect it was also revealed that the *improved housing conditions for these families also resulted in improved incomes.*

While it would be fallacious to assume that decent housing automatically insures higher earnings, the fact that improvement of and pride in

the home environment led to a more positive self-image and increased motivation is certainly worth further study. It is this quality of humanism, of assessing every activity in Model Cities—particularly design—on the basis of how it affects the individual in the neighborhood, that it is essential to instill in all planners involved in the program.

One way to insure humanism is, of course, to encourage—even insist upon—active participation by residents in the planning of model neighborhoods and in the executing of established plans. According to the Model Cities legislation, "A comprehensive city demonstration program is eligible for assistance only if . . . it is of sufficient magnitude to provide widespread citizen participation in the program."

The residents must cooperate to help us see their problems and provisions and define their goals and approaches. Once these determinations have been made, we can make a worthy start on urban design and embark on the kind of dynamic, provocative community involvement that we are seeking throughout the Model Cities Program. □

Rent Supplements Program which makes privately developed housing available to low-income families by helping them to pay the rent. I also mean the new program of leasing private housing which increases our supply of low-cost public housing. I mean the turnkey process by which private enterprise uses its ingenuity and efficiency to build low-cost housing for sale to local authorities.

And I mean the new refinement of turnkey in which private management firms will operate public housing.

The Model Cities Program of the 1966 act is designed explicitly to bring comprehensiveness to the rebuilding of older portions of older cities. It will provide more housing. But, more than that, the Model Cities Program seeks to restore all aspects of the neighborhood environment—by merging social, physical, public and private programs from many sources into a total attack. For the first time, it introduces quality control into urban rebuilding. For the first time, it offers bonuses to stimulate local innovation, local ingenuity, local solutions of local problems.

Then there is the Metropolitan Development Program of 1966. It would reward, and therefore encourage, collaboration between local governments. Finally, there is the new program to stimulate the development of entirely new communities. This offers the hope of providing fresh alternatives to urban living.

Taken together, these new efforts represent a reasoned strategy. They will expand the freedom of choice for urbanites. For all of us, they will increase our options for where we seek to live, to work and to invest our leisure time.

These, among others, are programs now on the statute books. Now they are all in the process of first funding. They already authorize many of the programs proposed in the 30-odd new bills introduced in the Congress in the aftermath of Newark and Detroit.

Their principal limitation at the moment is the size of the investment they call for. But here, amid calls for billion-dollar emergency funds, and a \$30 billion housing investment, three comments are in order.

The urban professional recognizes that all three levels of government and the private sector as well must be involved in the process of rebuilding our cities. The federal investment is not the total investment, as it is in space or national security programs. Those who make facile comparisons of just the gross federal budget figures are either amateurs in urban affairs or, worse, actors engaging in political chicanery.

The urban professional also recognizes that the investment of economic resources alone does not assure effective capacity. Talent and knowl-

edge are equally essential components, and our shortages in each are awesome. This year is the first of urban planning fellowships supported by the federal government. Our \$500,000 authorization this year will support 95 fellowships against an estimated shortage in urban planners of 1,500 to 1,700. This is also the first year of operation for our new Office of Urban Technology and Re-

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The architect  
must deal with the total  
environment.

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search in HUD. At a time when federal research and development expenditures were \$16 billion, we in HUD have spent only \$70 million. Though we have begun the development of a genuine research program, we remain woefully behind other areas of national concern.

In another sense, this recognition means that the urban professional understands he is the servant of a changing society. The architect, for instance, in the past had to be the esthete, the businessman, the public relations expert and the pragmatic engineer. Now he must broaden his scope to be responsive to the social as well as physical needs of his client. The architect must use the new technology, the computer, PERT and the systems analysis. He must avail himself of anthropology, sociology, economics and political science to deal with the total environment.

Meantime, the popular battle cry of many local officials remains: "Give us the money and we will do the job." This does not ring so true when they cannot show that they have trained people to spend the money on programs and enterprises that are well designed, carefully tested and certain to achieve the purposes for which they were intended.

Finally, the urban professional recognizes that the true test for an effective urban response is how it helps people. An effective program, at a minimum, involves an appreciation of the needs of the human personality and the human spirit. There is an oft-quoted line of Martin Lomasney, the old political boss of Boston, to the effect that "there's got to be in every ward somebody that any bloke can come to and get help."

Help these days is more than more urban renewal funds, more jobs, more housing. Help is all of these, and law and justice too. But help is first communicating with those who now feel debarred from our society and consequently debarred. Second, it is assurance of genuine partici-

pation in the process of city rebuilding and neighborhood restoration. Access to those in authority, a share in decision making—these are the vital components today.

It was this desire to show tangible, visible concern for the current conditions of the poor—and to take at least one specific step to eliminate at least one shameful condition—that led the Administration to propose the so-called rat control bill to the Congress. Those members of the House of Representatives who thoughtlessly laughed it out of the chamber, and those outside observers who wrote it off as budgetary trivia and therefore of no consequence, underestimate grievously one whole dimension of the urban challenge.

The same drive for action underlines our new program of making federal surplus property available for new community development. Our first project is building a new town in town for 25,000 people on the site of the National Training School in Washington.

Admittedly, human concerns are the most elusive elements of a truly capable response. Effective programs and activities are evolving slowly from the trial and error, and success and triumph, in our economic opportunity programs. But they are vital components and those who would have us return to New Deal days—of simply providing dole for the poor until their children or their children's children struggle forward to a state of middle-class blessedness—place more faith in economics and less faith in other social skills than I do.

At rockbottom, I cannot believe that we do not have the ability to engage our urban poor in democracy today nor any prospect of increasing their competence to deal with urban life today.

I cannot accept the proposition that there is no hope for my contemporaries in this urban world who did not have the luck of a good education and equal opportunity for a job.

I cannot believe that the only way to assure eventual economic well-being for all Americans is to relive the miseries, pain, despair and human costs of the Industrial Revolution of the 19th century.

Understanding the pattern of urban development as a complex system, fashioning a capacity with manpower and know-how as well as money to respond to the urban challenges, these two processes are underway. But unless we are prepared to deal with our urban future while we correct the mistakes of our urban past, they will not be enough. That is, no genuine urban response is sufficient that focuses solely on the American core city or identifies only the urban poor as the beneficiary of our public and private policies.

The truth is that the entire pattern of urban development, from central city to suburb to exurb,

is robbing us all of genuine freedom. We are all losing the choice of a clean, healthful and pleasing environment with pure air and water, a landscape unimpaired by destructive building processes. We are all losers when we are hit in the pocketbook by excessive and unnecessary costs in the construction of housing and provision of community facilities and services today. Unplanned, unguided, sporadic urban development cheapens our common environment and places prohibitive prices on land and improvements.

As we prepare for the generation of city building that lies just ahead—when we distribute 100 million more Americans across the continent in the next 30 years—these spiraling costs, this waste and the despoliation are common concerns. They shape a common cause among the urban poor, the urban middle class, the urban rich: Caucasian, Negro, Mexican-American and Puerto Rican.

There is a final common concern and challenge. How do we build our new urban communities on a geographical and numerical scale unanticipated even 20 years ago and still retain a sense of genuine community? What modern counterparts do we have for barn raisings, street dancing, Fourth of July celebrations? Where are our new village greens and town commons?

To rediscover community on a larger scale will surely mean making real again the old colonial

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Monuments should  
give way to communities,  
and architects must insure  
that we bring beauty  
as well as income  
to our urban ghettos.

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adage, "You are as good as any man—and better than none." Today, this means, at a minimum, freedom of choice for any family to live anywhere that its home economics makes possible. Open occupancy is a rudimentary necessity of an urban civilization today. Our increasingly urban character only serves to make more compelling than ever the fulfillment of the promises of democracy.

But genuine community building in our urban circumstances will require more positive action. Urban and suburban communities must recognize more explicitly that they have common concerns and common obligations.

We now, for example, at HUD are using some

of our assistance grants in mass transportation to carry workers from poor neighborhoods in the central city to factories on the suburban fringe.

In physical terms, design and construction must now be oriented toward the desires and needs of families. Monuments should give way to communities, and architects must insure that we bring beauty as well as income to our urban ghettos.

This is, we believe, a socially beneficial and well justified policy. It is, however, only a substitute for workers freely following their jobs and taking up residence close to where they work. If that freedom already existed, we could use this investment for other vital transportation needs.

Indeed, if we provide genuine variety in occupations, in income, in race and religion, in design, in cities and towns across our metropolitan regions, we accomplish two additional things simultaneously:

- We insure that no single part of the new urban community has to care for the majority of the poor, the old and the helpless.
- We provide the excitement of variety and complexity to the human experience in all parts of the community. For our children, free exchanges and encounters in early life can prevent prejudicial confrontations later on.

These are aspirations of community life yet to be realized, of course. Major changes in public attitude, in private industrial performance, in labor practices, in governmental patterns of behavior must occur before these aspirations are realized. But they are the objectives to which present, established national policy is committed.

Let me add that one of the most encouraging developments of last summer has been the unmistakable evidence of the community commitment by the private sector. Representatives of business associations, of individual industries, of community enterprises have been visiting with us in Washington. They all seek effective ways to expand their commitment to our urban communities. They no longer withdraw, retreat or simply complain about the urban condition. We welcome each and every step in the direction of massive commitment by private enterprise.

Those, then, are the bases for urban optimism. Urban programs fashioned by reason and not illusion, emphasizing practical and tangible results, committed to quality, are now underway.

They will not immediately quiet urban discontent nor instantly make competent citizens of the newest migrants from rural circumstances. They will not magically introduce effective local land development and tax policy nor will they easily eliminate hazards to health and beauty. They never will—without expanded and sustained commitment from the private sector and the academy on a scale never before undertaken. □

**With the air-rights principle as a framework, Antonio Luccarelli's City '70 attempts to synthesize some of the ideas being exploited by professionals seriously seeking ways to halt the urban cancer which is spreading across the land. For the diseases of the city have caught up with us, and they must be countered with the resources at hand; there are no magical cures.**

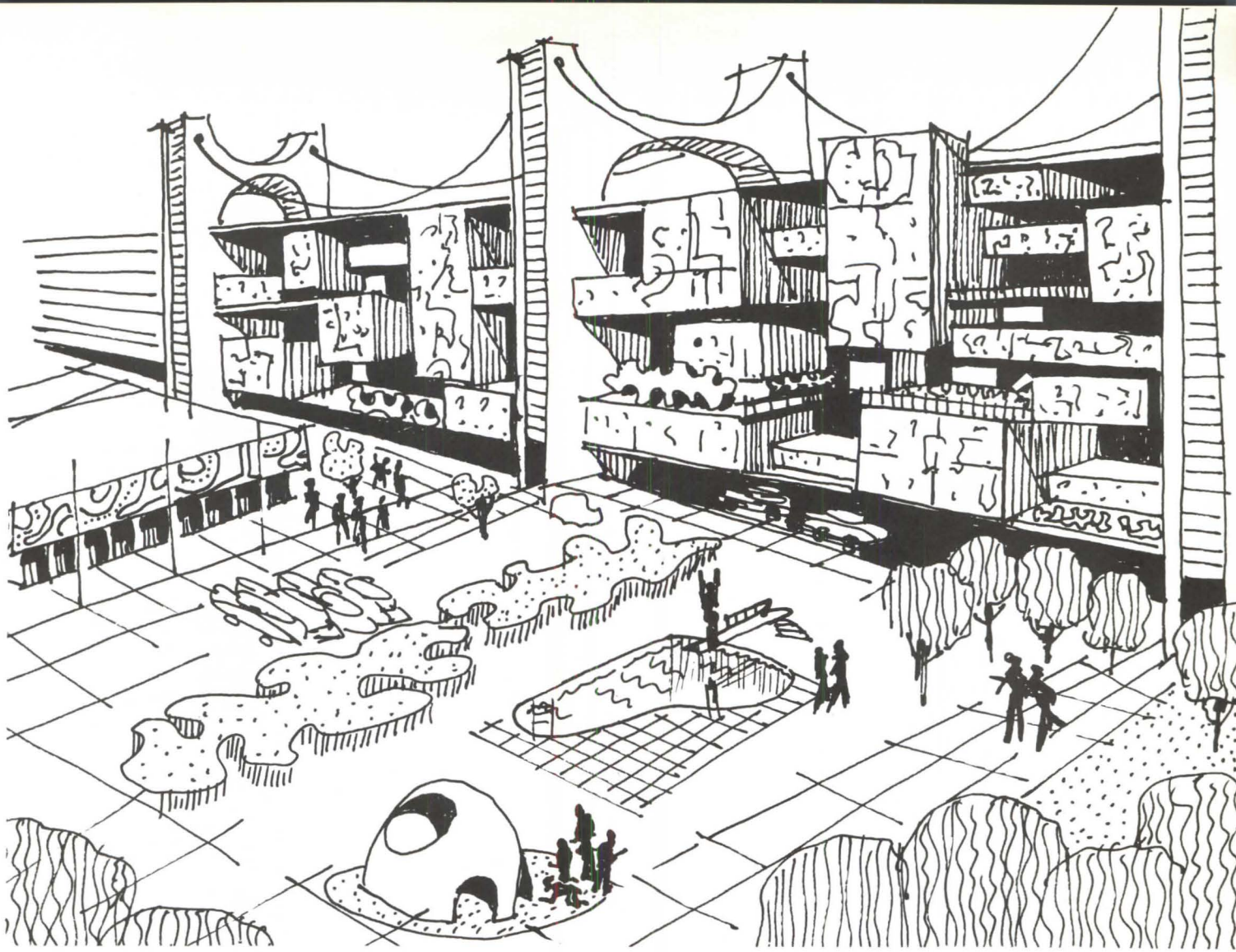
**Luccarelli's concern for the city and its citizens has been sharpened the past several years with his participation in feasibility studies in Central and South America for the development of low-cost housing projects. As an urban planner, he combines the sensitivity of an artist (exhibitor of one-man shows in New York and Washington) and the practicality of a businessman (owner of two restaurants).**

**City '70, by the way, is more than a working title. It is imperative that some kind of pilot project get underway within the next two or three years—whether this one or another is not the issue.**

**Robert E. Koehler**

# CITY '70





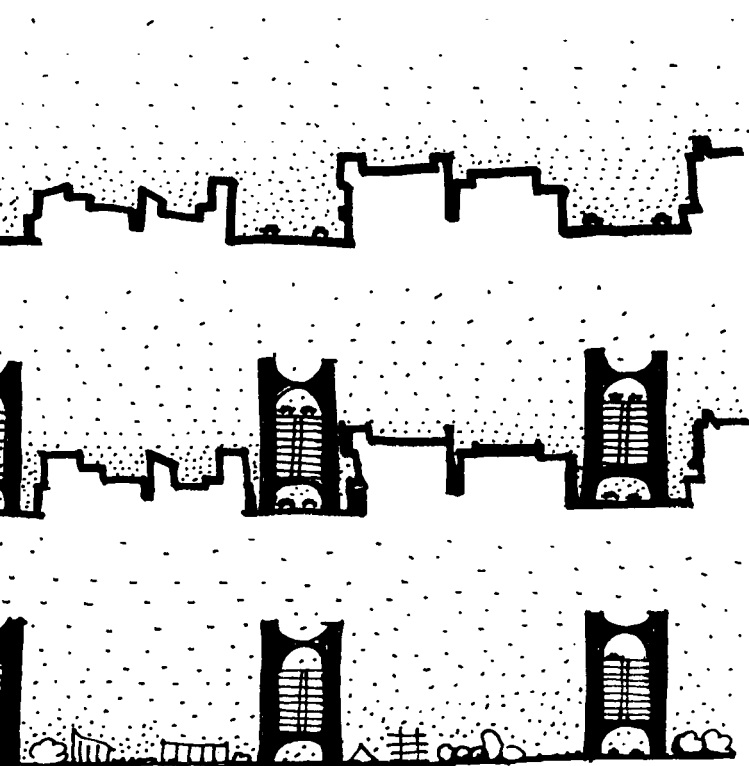
City '70 is a plan to re-create the old city... to transform it... not by renewal... NOT by rehabilitation but by giving birth to new spaces and new forms for new structures where they are needed most — in the heart of the slums... City '70 is a concept about city housing aiming at providing decent shelter for the urban poor...



City '70 is a plan to put back into the city the harmony of its working parts lost through decentralization and decay..!

is another new necessity and process. It is  
not to be feared by the citizen. The  
substitution and dimension of the neighborhood. It is  
clearer in the conscience a responsibility with some idea  
of the duty of the citizen. It is a  
route to democracy a little sounder than a  
area and the sounds of conscience. It is a way  
to go, in order to be a citizen.

It is a way to go, in order to be a citizen.  
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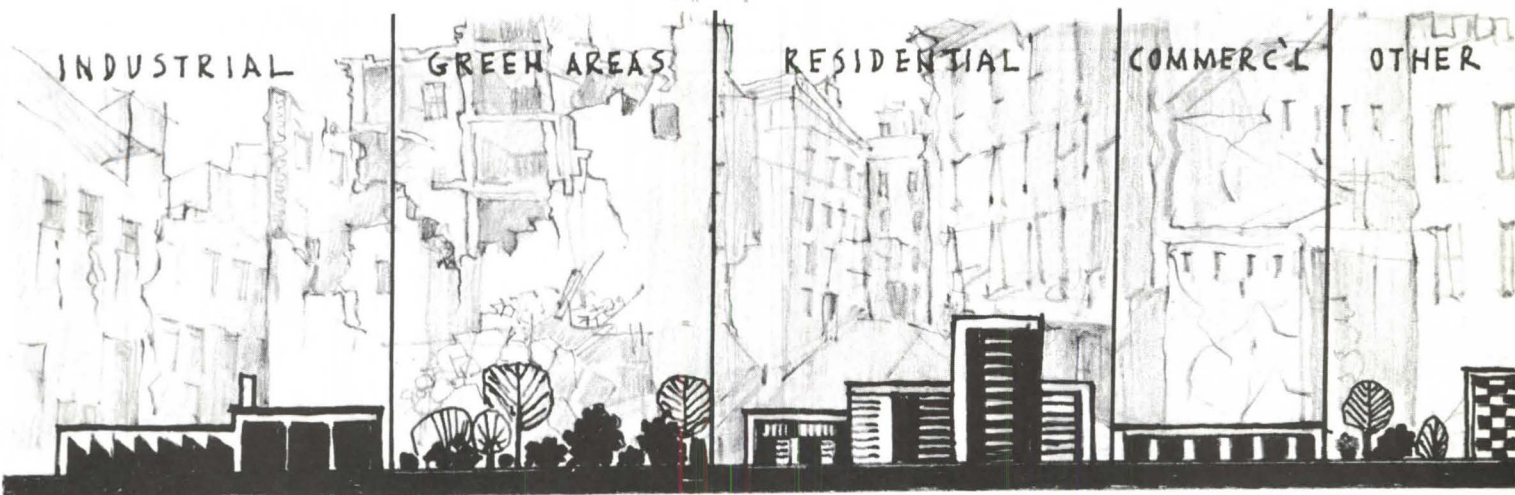


It is a way to go, in order to be a citizen.

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It is a way to go, in order to be a citizen.

With the job done who can say which was land and which was street? The city's old, rat-laden ghettos are at the mercy of a new bidder - the city itself - and the bulldozer... With this visual stigma removed, the gift to the city is space... space to live... The areas vacated by the slum population are transformed into a new luxury... space... dedicated to clean happy living...

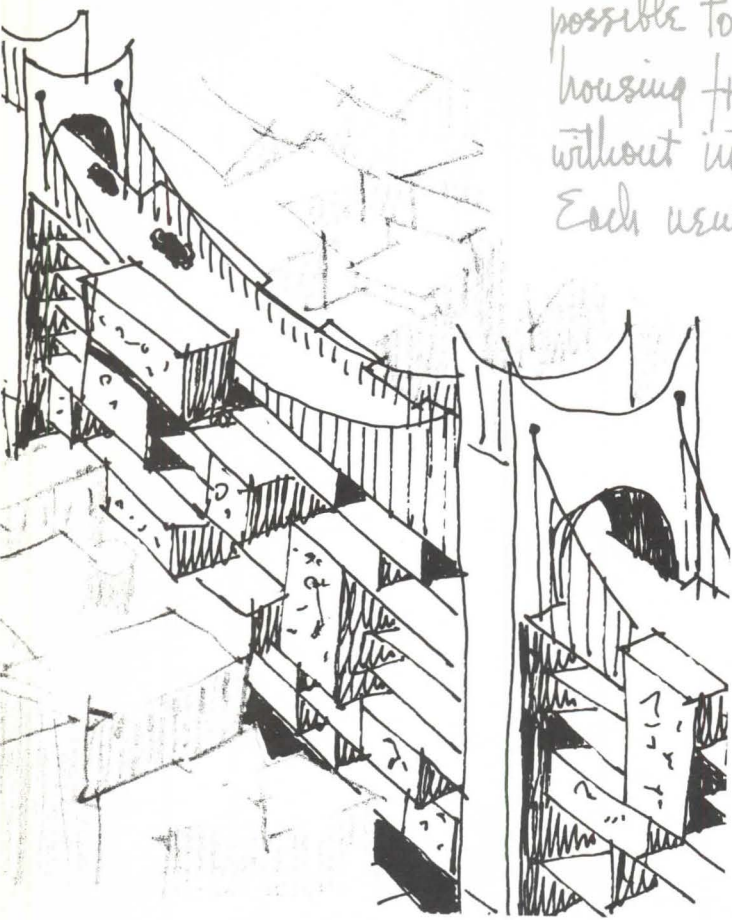


Space for recreational parks, parking, shopping centers, schools, churches, hospitals and, just as important, space for the commercial and industrial development desperately needed to provide vitally essential jobs for the urban poor...

Using suspension bridge-type structural systems and factory produced low cost housing, there is nothing new that needs to be invented to do the job...



City '70 is reduced to a technological synthesis applicable only to that part of the city which needs it.

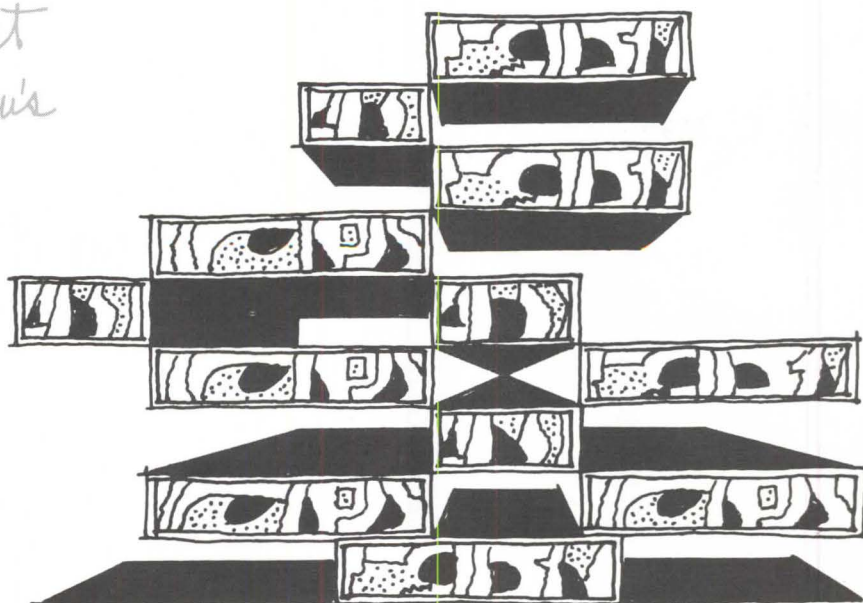


Using suspension structural systems, it is possible to span high and far, hang new housing from them right over the streets without interfering with the city's activities...

Each new structure may or may not be continuous, may or may not be a high rise, may or may not use its upper deck as a bonus to solve the city's traffic problem... Each new structure may be a "Habitat", or a vertical "mirror", or a "pylon" of contemporary sculpture to live in. Mostly however, new forms will be created to satisfy a new need for a new problem...

Production line pre-fabricated housing units are used. They will be engineered and reduced to simple finished castings. They will be cast of appropriate materials on or off the job site... Half a century of auto making experience is available to help realize the end product... When the new buildings have been completed the slum population is systematically transferred into them... The neighborhood remains intact...

In the new environment prevails new hope; man's human dignity has been restored. It is up to the designer, the teacher, and the employer to fulfill the inspiration the new environment has provided...



City '70 is realistic:

Its realization begins with the leasing of city owned streets. They represent the only land readily available in the right location. The city may later use the income to purchase vacated properties from the slums' landlords...

The project's direction, execution, and financing should be in the hands of a combine of top American industrial firms including the city government. Equity positions, in exchange for products may be given to those industries that can supply the material for building city '70. The same shall apply for those slum landlords who may find this means of settlement for their holdings equitable and fair. Other financing should be accomplished through bond issues and only by subscription. A fair return on investment is encouraged to insure enthusiasm and support. Long term permanent financing should have built-in flexibility to allow for complete rehabilitation of each resident of City '70, especially during the transitional occupancy period... No one will be spared who may facilitate bringing about these goals... Everyone will be grateful...

No man abdicates when he is down... It is a tribute to his humanity and spirit. He manages to bounce back through the acquisition of simple everyday needs — shelter, food, clothing; with these his life is sustained... He bounces back through his simple everyday desires — little pleasures; with these his life becomes meaningful... He bounces back through his simple everyday dreams — adventures in consciousness; with these his life becomes filled with magic, perhaps greatness, perhaps immortality... This is all there is, after all, and it is all that work and play will provide...

Antonio Fucarelli

# Property Taxes Cause Urban Decay

BY HERBERT J. G. BAB

The deterioration of urban life has many causes, but basically it results from the rapid urbanization of our society and our failure to change our policies and our institutions in accordance with the requirements of the urban age.

In, the slums and ghettos we can observe the disastrous consequences of our failures: lack of any migration or population policy; lack of effective planning because of fragmentation of local government; inferior education which reinforces racial discrimination; lack of jobs which breeds crime; poverty caused by inadequate welfare programs and, finally, faulty housing, fiscal and monetary policies.

In what way do property taxes contribute to urban decay? First, property taxes create inferior

**The author:** Dr. Bab, an economic consultant in Los Angeles, has based his article on an address presented before the Pasadena Chapter AIA. It is part of a manuscript soon to be published.

education, which deprives many Negroes and other minority groups of employment and encourages the white middle class to move to the suburbs. Second, local taxes increase the costs of residential construction and improvements and tend to retard the replacement of old and obsolete structures. Third, property taxes are conducive to decentralization and urban sprawl. Fourth, assessment practices have adverse effects on planning, zoning and land use. And finally the use of property taxes for the support of schools, for police, for health and welfare expenses pushes cities to the brink of bankruptcy.

## Schools, Tax Heavens and Hells

Dependence on property taxation leads necessarily to an uneven support of schools and school districts, and this results in inferior education. Uneven support is caused by the location of taxable resources. Industrial plants with large property values and expensive homes provide schools and school districts with ample taxable resources. This creates well-to-do school districts. The lack of industrial plants and of expensive homes, on the other hand, creates poor schools, poor school districts and inferior education. Property taxes cannot balance public needs with taxable resources. They create tax heavens and hells.

The Committee for Economic Development found that in Ohio in a fairly wealthy school district, assessed property values per pupil were 88 times as large as those in the poorest district. Assessed per pupil values in California's wealthiest elementary school district are 38,396 times as large as those in the poorest school district. They are 168 times larger than the statewide average. These variations are so large that they cannot be overcome either by differential tax rates or by state equalization programs. The CED came to the conclusion that "deficiencies in the financial machinery have been an important obstacle to the improvement of public education in the past."

The Twentieth Century Fund in its study "American Needs and Resources" stated that "where a child happens to live is likely to determine the quality of his education. In some areas children are taught by meagerly qualified teachers in substandard schools with inadequate equipment," and, "the money spent per pupil is below accepted standards." While we give lip service to equal educational opportunities, we continue to use property taxes for the support of schools, unaware that this form of taxation is the very cause of these inequities.

Property taxes increase the costs of homeownership and discourage residential construction. In many cities local rates are imposed at a rate which corresponds to 2 percent of full value. A tax burden of \$400 or more is imposed on a home with a value of \$20,000. The tax burden imposed on rental property corresponds in many cases to 15 percent or more of rents. This discourages new construction, reduces the supply of new apartments and increases rents. Because of depreciation allowances, the tax burden decreases with age. Thus property taxes tend to retard the replacement of old and obsolete structures. In the central areas of our cities where a huge potential demand exists for more and better housing, the effect of local taxes is depressing.

On the other hand, property taxes encourage premature and scattered development in urban fringe areas, where land values skyrocket because of residential development expected to take place in the future. Because of higher land values the tax burden of homes in central areas is much higher than that of homes in outlying areas. Only in a few instances do small homes in new subdivision pay their own way. The costs of providing public services and utilities usually exceed

the amount of taxes imposed. Thus "ad valorem" taxes encourage urban sprawl.

### **The Assessor and His Dilemma**

The effects of assessment practices on planning, zoning and land use have received only scant attention. Zoning regulations based on master plans are supposed to regulate land uses. Yet zoning by itself cannot secure the most rational and best use of land, if it is impaired or obstructed by the tax system and by assessment practices. For central areas where land is idle, wasted, misused or underdeveloped, assessors are likely to base assessments on the present actual use rather than on a potential, but uncertain, better use. Thus the underassessment of urban lots reinforces the adverse effects of "ad valorem" taxation.

The assessor's dilemma is whether to assess on the basis of actual use; potential, but uncertain, future use; on zoning restrictions; on the master plan or on some other factors. The elusive and ambiguous nature of the value concept allows, invites or forces the assessors to determine what the highest and best use of land should be and to establish assessments in accordance with their own judgment. In many cases assessments are made with disregard for existing zoning restrictions. By basing assessments on the future use of land, assessors usurp the functions of city planners and force development where such development is not planned and is undesirable.

### **Plight of the Cities**

One of the most important problems is how to restore the financial solvency of our cities. They must have adequate sources of revenue to halt the decay of urban environments and to provide better and more services. Yet most cities are in deep financial difficulties, and this prevents them from discharging their responsibilities. The plight is caused by the lack of taxable resources, which in turn is the result of using property tax dollars for the support of schools, police, and for health and welfare expenses. Local government is in essence territorial government, and for this reason it should support only local or territorial functions.

About 50 percent of all the revenues derived from property taxes are used for the support of schools. To this must be added the costs of the police and the local share of health and welfare expenses. The disparity between the great and growing burden of local governments and their meager taxable resources is only a symptom of the improper division of responsibilities between the three levels of government.

Our system of school finance has robbed the cities of taxable resources and has made them more and more dependent on federal aids.

What are the requirements of a sound local tax system?

First, local taxes should be used to support only genuine local or territorial functions. Schools, health and welfare are civil, not local affairs, functions, even though they are administered on the local level. Local support of schools has led to uneven and inferior education and has deprived the states of their proper controls. The equalization of school support between the states as well as health and welfare are responsibilities of the federal government.

Police is also a civil affairs function, with the exception of traffic police, which should be supported by gasoline taxes. All civil affairs functions should be supported by state and federal income taxes imposed on individuals and on business. The substitution of income taxes for property taxes to support civil affairs functions will reduce the local tax burden by at least two-thirds.

Second, all real estate improvements as well as all tangible and intangible property should be exempted from local taxes. This will shift the tax burden toward land and will encourage residential construction, the improvement and rehabilitation of homes and of rental property, and speed the replacement of old and obsolete structures.

Third, "ad valorem" taxation should be abandoned and replaced by "land service" taxes which correlate the tax burden with the cost of public services. "Ad valorem" taxes violate the benefit principle because the tax burden is distributed according to property and land values rather than costs. The abandonment of "ad valorem" taxation will put an end to inequal and arbitrary assessments which have plagued us for a long time.

Fourth, the financing of badly needed public improvements, of rapid transit and other forms of public transportation should be facilitated and encouraged. A substantial part of the costs of such projects can be financed with "land increment" taxes imposed on the excess earnings of land generated by such public improvements.

Land service taxes distribute the tax burden in accordance with the prorated costs of municipal services. In most instances these costs correlate with the size of the area to be served and with density of population. For example, the costs of fire protection do not correlate with property or land values but with square mileage and density of population.

Thus land service taxes are based on square mileage or footage, of land or built-up area and on population density. By using a physical yardstick rather than the nebulous value concept, land service taxes will have an accurate and firm base which cannot be manipulated. Administrative

costs should be regarded as overhead expenses to be allocated to the costs of each service. Carrying charges of bonds should be treated similarly.

"Land service" taxation requires that tax rates vary in accordance with land use and with the costs of public services and utilities. Differential tax rates will be established for land used by single-family homes, rental property, industry and commerce. In areas with mixed land uses, each lot will be taxed in accordance with its use or uses. In cases of multiple-use buildings the tax rate and tax burden will be determined by the number of square feet of each specific use.

### **The Utility Problem**

At present, public utilities charge the same rates regardless of the customer's location. Yet the costs of public utilities multiply with the distance from the distribution or load centers. By disregarding the costs of extending public utility lines and by averaging all costs, public utilities undercharge customers in outlying areas at the expense of customers in close-in areas. They subsidize the suburbs and promote urban sprawl. Under a "land service" tax, the costs of public utilities will be broken up into fixed (or standby) costs and variable costs. The costs of extending utility lines from the distribution centers to the customer's location represent fixed distribution costs. The costs of bringing utilities to the distribution centers of a city are variable costs. Fixed costs of public utilities will be charged to the city, which incorporates these in the monthly tax bills and charges them to landowners and landlords.

Reductions in the local tax rates and tax burden will enable landowners to absorb these charges. Landlords in central areas will have to bear smaller fixed costs than landlords in outlying areas where location costs are much larger. This will encourage development in central areas and discourage development in outlying areas. Tenants will pay only the variable costs of public utilities.

### **And Then There's Rapid Transit**

It is generally recognized that the costs of constructing and operating a transit system cannot be met solely from fares. Without subsidies, fares have to be kept too high and the quality of service will suffer. As a result, fewer persons will use rapid transit, and the benefits accruing to the users will be small. If rapid transit is subsidized by local taxes, all taxpayers will have to pay higher taxes, while only a small minority can be expected to use rapid transit. A similar situation will arise if rapid transit is subsidized by gasoline taxes. Only a few drivers can be expected to abandon their cars, traffic congestion on the freeways will hardly be reduced.

This impasse can be resolved by the imposition of "land increment" taxes which will make low fares and satisfactory service possible. Rapid transit will lead to steep increases in the value of land adjacent to the stations. Residents living near these stations will be in a position to reach their place of work without using a car. And for this reason they will be willing to pay higher rents. There will be a great influx of people and a greatly increased demand for rentals. High-rise apartment buildings will be constructed, parking space will be at a premium and soon garage buildings will replace parking lots. Merchants will want to locate in these areas to capitalize on the upsurge in trade and land values will soar.

Land increment taxes are imposed on the excess rental income, rental value or net income generated by a rapid transit system or by other improvement projects. Land increment taxes will be imposed only in areas declared as "improvement areas" by the city. Such taxes should be imposed yearly at a rate of about 75 percent of the excess income of landowners and landlords for the period of amortization. The financing of all construction costs with the help of these taxes would be regarded as an obtainable objective. Land increment taxes can be used for all improvements which result in increases in land values.

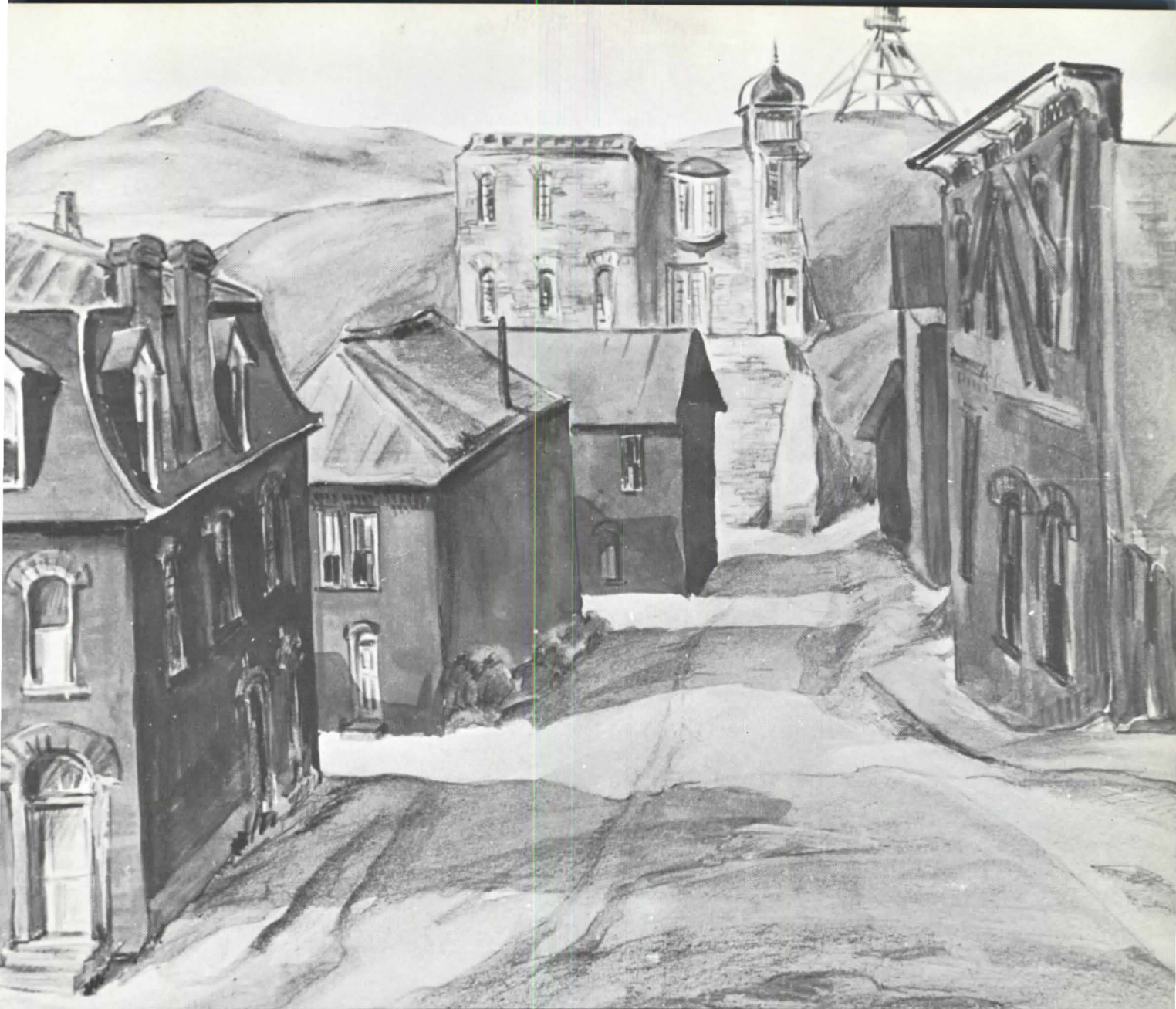
### **"A 19th Century Institution"**

In conclusion, I would like to emphasize that the abandonment of property taxation, a 19th century institution, must be regarded as essential for attaining some of the more important objectives of an urban society. The support of schools, health, welfare expenses and a part of police expenses with income taxes will eliminate the largest part of the present property tax burden; it will reduce the cost of homeownership and of housing; restore the financial solvency and independence of our cities; provide the financial resources to halt the decay of urban environments; improve public services and transportation.

The tangible property from local taxation will encourage residential construction and accelerate the replacement of old and obsolete structures; the abandonment of all "ad valorem" taxation and the imposition of "land service" taxes will create a tax system that does not impede or impair effective planning and more rational land uses. The inclusion of fixed distribution costs of public utilities in the landowners' tax bill will reduce the housing costs of tenants.

Finally, "land increment" taxes will help to finance all improvement projects which generate increases in land values. In short, tax reforms along these lines may very well prove to be the catalyst for the regeneration of our cities by private enterprise and initiative. □



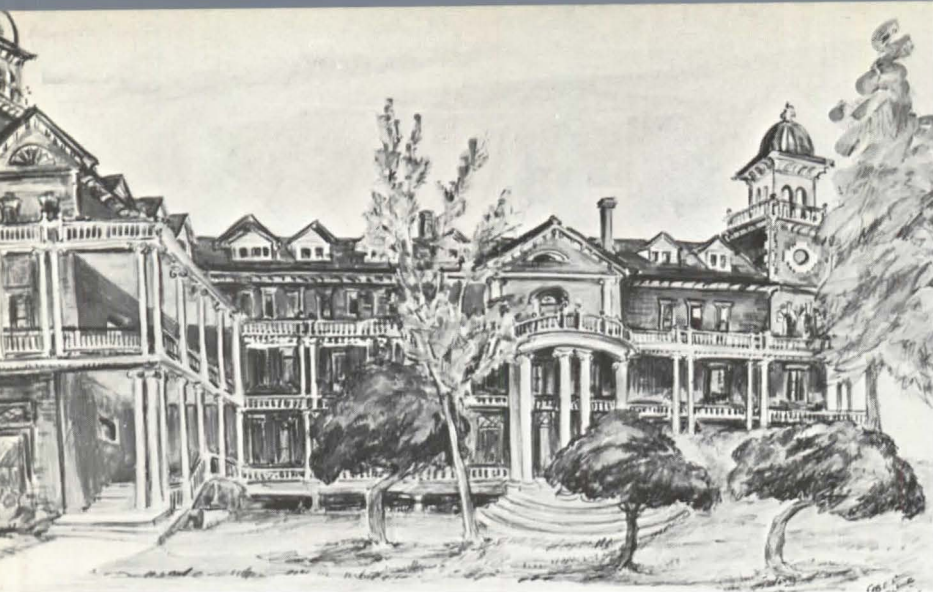


## Nuggets from Western Mining Towns

Muriel Sibell Wolle is a prospector of a type unknown to old-time miners: She finds her pay dirt in what the miners left behind—not precious ore, but extant artifacts. Brooklyn-born Mrs. Wolle went West in 1926 to teach art, which she did for the next 40 years, at the University of Colorado. Soon, she became intrigued by the old western mining towns and set out to make a pictorial record of them before they disappeared or were remodeled beyond recognition. Curious about their history, she tried to buy a book about them. When she found none, she started to write such a volume herself. For 22 years she searched through old newspaper files, interviewed pioneers and sketched camps, often hoofing it to remote mines

tucked away in canyons and hills or perched on mountaintops. Her manuscript was turned down by several publishers as being “too local.” Unperturbed, she published it herself in 1949. The first edition of *Stampede to Timberline*, 1,600 copies, was gone in 37 days; it is now out in 38,000 copies. *The Bonanza Trail* followed in 1953 and *Montana Pay Dirt* 10 years later.

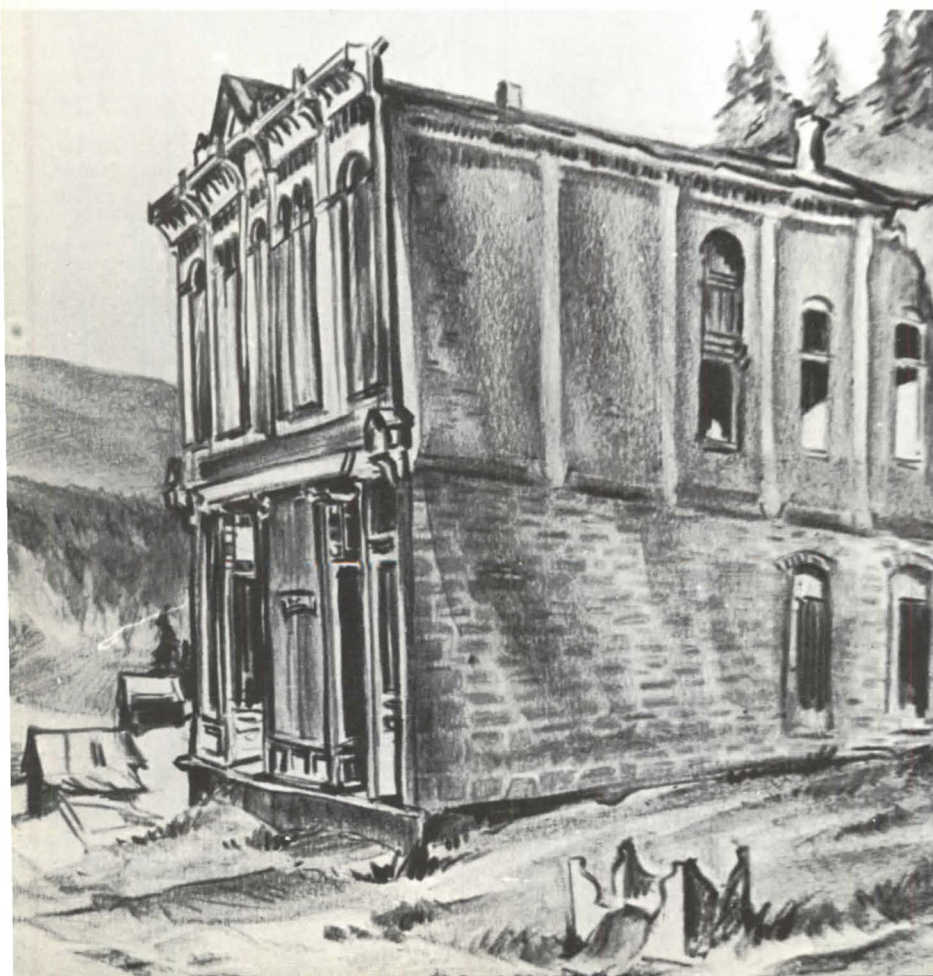
Rendering above: In Helena, Montana, many early buildings still stand on slopes of Last Chance Gulch. “Castle” in background was a gambling palace, watchtower on hilltop was Helena’s first fire alarm system. Architectural styles often repeated those in towns miners had come from.



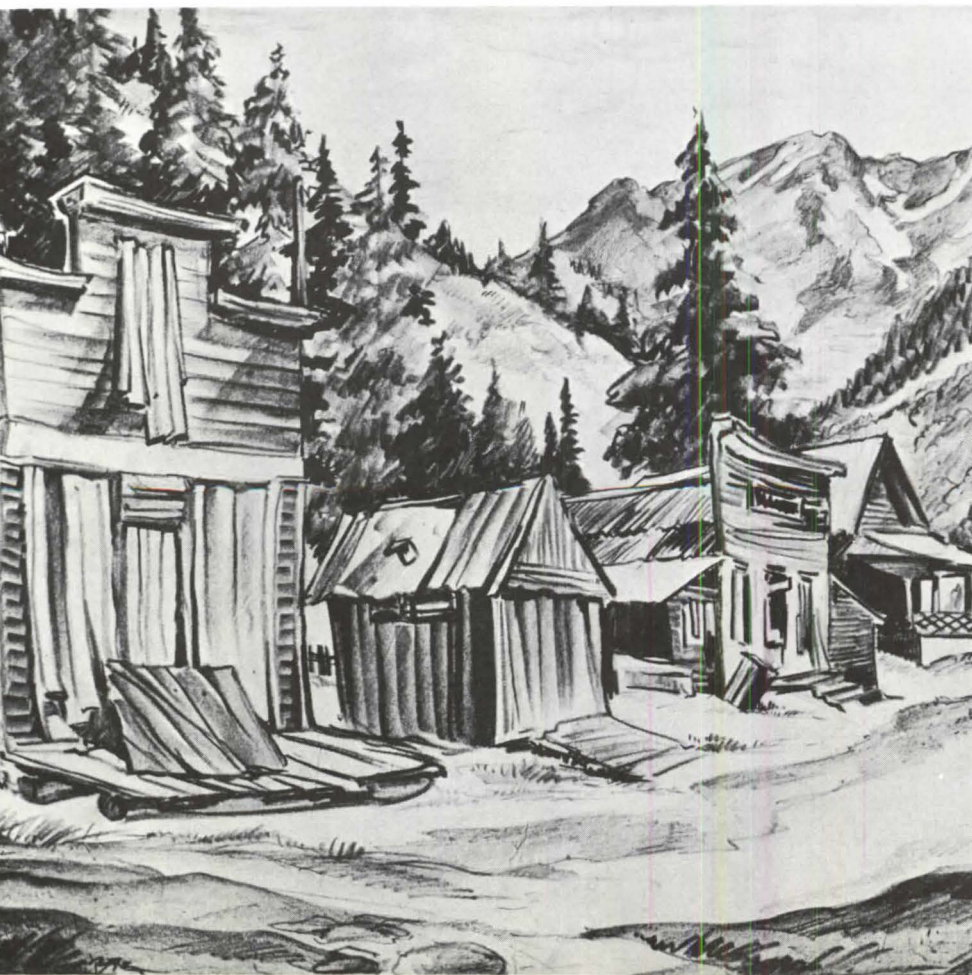
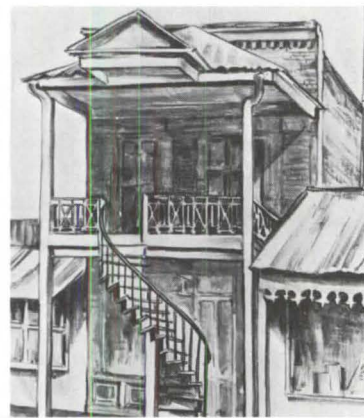
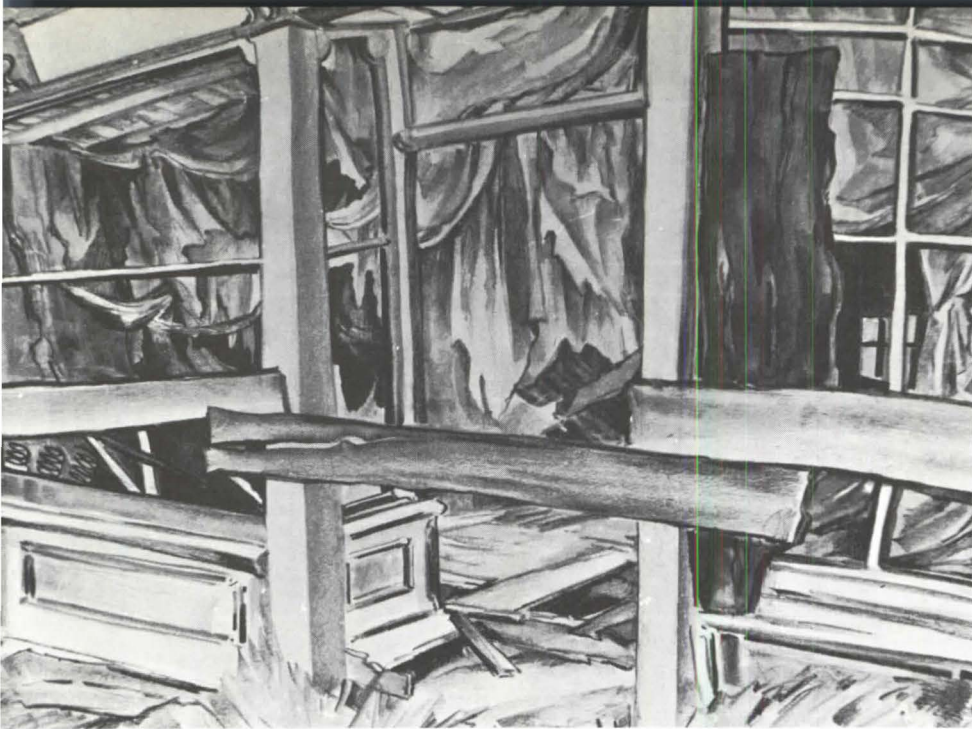
Idaho's "empire builder" Colonel William H. Dewey named the grandiose Dewey Hotel in Nampa for himself and was host here around 1900. He laid out the townsites of Silver City and Dewey in the 1890s. Idaho miners used wood for most of their construction; wooden shakes were commonly used for roofing.



The ore mill in Bayhorse, Idaho, almost follows the contour of the mountain behind it. After entering mill at top, ore is crushed and treated from level to level, emerging at bottom as a matte and hauled away to a smelter for refining.



Only a shell is left behind the elaborate false front of the Miners' Union Hall in Granite, Montana. The hall is one of the last remaining structures built close to two large mines which boomed nearly 100 years ago. Brick or stone was used only in camps of great promise.



Ashcroft, Colorado, 10 miles from Aspen, laid out by a townsite company in 1880, is hardly on the map anymore. Stores in wooden structures were vulnerable to theft, those in brick or stone buildings had iron shutters to keep robbers out. In many towns, warehouses and Wells Fargo Express Company offices offered some protection for valuables.

This joss house—or temple—in Weaverville is one of the last of its kind. All original decor and furnishings are intact. Presented to the state of California by a descendent of the Chinese family which built it, it is now a state historical monument.

The houses in Weaverville, California, are noted for their graceful, outside staircases. Adobe was frequently used for building in this region; one California settlement passed a law that every third house be of stone or adobe to serve as firebreaks. Fire destroyed nearly every mining camp at least once. The camps' powderhouses were wisely placed away from inhabited areas.

La Plata, Colorado, was deserted when Mrs. Wolle sketched it 30 years ago. The false fronts expressed a desire for something dressy in what was often—in spite of legend—a drab world. Though they fooled nobody, the false fronts were widely used all the way north to Alaska.

# High Honors for the Educational Park

BY A. J. FERENDINO, FAIA

The old things in the world are getting new names, and a considerable amount of the change taking place today is more in the noises made by people describing the change than in the actual state of the universe. This is not to say

**The author:** Mr. Ferentino is a principal in the Miami firm of Pancoast/Ferentino/Grafton and architect to the Dade County Board of Public Instruction.

there is no change—change is truly the key word of our era—but we must also note that modern man in all fields responds positively to new terminology.

In education it is the "educational park," a new name which belongs in the society and civilization which created the megalopolis, the cartel and the computerized bits and nanoseconds.

In its simplest form, the educational park appears to have evolved from the consolidated school concept, separated by one generation and given an urban setting. This is an oversimplification, of course, but it is not an unfair frame of reference, for the major characteristic of the park is inevitably the amassing of large groups of students on a single site, and some forms of park development are indeed indistinguishable in purpose and intent from the rural consolidated school.

The fact that the educational park concept is so new, at this writing, allows us some poetic license with the definition, since so many have been advertised and so few have been even partially constructed. Certain generalizations can be made, however, and certain patterns are emerging:

**1. The horizontal plan**—This forms a single school from many of the same level such as all elementary schools.

**2. The vertical plan**—This pattern is formed by a single elementary school, a single junior high, or middle school and a single high school. Each level moving up would need pupils from a correspondingly larger geographical area.

**3. The pyramid plan**—Here the conventional range of one high school, several junior high schools and many elementary schools are drawn from a constant geographical area and consolidated on one site.

**4. Other plans**—Many include some aspects of junior college, college, kindergarten, community school programs (Flint, Michigan, and Miami, for example), vocational and adult programs, health and welfare services, foreign student exchange programs, etc.

The problems which brought educators to the point of seriously considering the park concept vary from one locale to the next; however, among the published reports from educational park planning areas such as Pittsburgh; New York City; Syracuse; East Orange, New

Jersey; Desire Parish, Louisiana; Fort Lauderdale and Miami Beach, Florida, there appear several consistently acknowledged reasons for this consideration:

1. *Integration*—The educational park system offers the best approach to this problem in areas of high-density, single-race composition—the most frequently quoted reason for its consideration.

2. *Better programs*—The system can afford these by the additional access to talented staff by more children, by the ability to stockpile materials, by the ability to offer special courses because of the large population and by the propinquity of space which eliminates traditional barriers to articulation between elementary and middle school, middle school and secondary or senior high school.

3. *Mass purchasing, centralized delivery, centralized storage*—More savings can evolve from these, and the need for low-yield space such as auditoriums and other potentially multiuse areas is also reduced.

4. *Shifting of school population centers*—This often leaves underpopulated schools in one area and overcrowded schools in others. A rise in average age of residents (as in Miami Beach) may deplete schools, while rapidly developing slum areas may saturate schools in central districts.

The park has been highly controversial as a theoretical concept and has raised many thoughtful discussions within and without the pro-

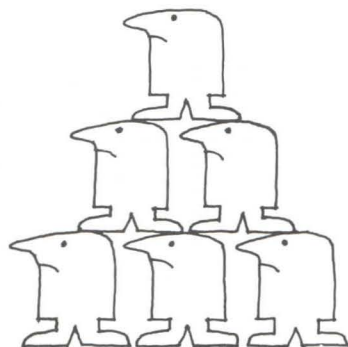
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*One of a series of papers prepared by members of the AIA Committee on School and College Architecture and by selected specialists to make laymen aware of school building problems and trends and to stimulate discussion. They are not intended to be definitive last words and carry only the authority of their respective authors. New subjects are being developed and contributed articles are welcome. Reprints of these nontechnical articles are widely distributed to educators and interested laymen. One copy of each current issue will be sent free of charge; additional copies, 10¢ each.*

fession, just as progressive education, teaching machines and merit pay did in their day.

The main concern of those who dissent with proponents of the educational park is that it will destroy the neighborhood school. This is a legitimate claim, since the park will tend to do this in the areas it serves, removing the children beyond walking distance and from neighborhood playmates, and removing the school from the parent and the community activities which the former cherishes as a unifying, cohesive community force.

Those who favor the park feel that the larger geographic area served helps expand the myopic view of the child who has been limited to a few blocks, in a world which can be circumnavigated in a matter of hours and in a nation whose average citizen makes a major move every five years.



*Amassing of large groups*

A second fear is that school populations up to 10,000 or more will tend to smother and annihilate the individual. Visions of "Brave New World" seem to describe the school world of massive, impersonal space and massive, impersonal crowds. Again, the concern is legitimate and a distinct possibility. However, there is no reason why it need be. The organization of the mammoth can be made softer, more personal, smaller, even acceptable by the creation of schools-within-a-school or by special pods or units which

limit the intermixing of crowds, so that most of the day for any student is spent within a group of 100-120, with adequate opportunity for small-group and individual study and guidance. Each such unit would have its administrative and staff integrity which would represent the unit in team administrative processes.

A third concern is that the transportation of children over long distances would produce much cumulative lost and wasted time. Again the claim may be justified. The best answer, that of equipping busses with programmed tapes and films, has not been proven in practice yet.

Other objections exist which, though less emotional, are still basic: Customary problems are greatly magnified by the increased size and complexity of the school. The educational park requires a large site which rarely will be found at reasonable prices in the geographical area desired. Assembling large numbers of people in one location requires sophisticated transportation systems, complicated by the very nature of school population. Present inequities of taxes and insufficient revenue sources must be solved before meaningful progress can take place.

Various major conferences this year have dealt seriously with the subject of educational parks. The consensus has been that educational parks in the planning stage will become realities and that many more will be planned and constructed in the near future. What follows here summarizes the hopes of those who agree upon the inevitability of the educational park.

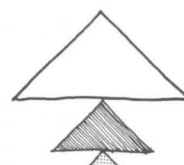
A first objective of a general park would be to produce a complete and continuous program vertically, without sharp breaks in the student's learning experience as he progresses through the system. This implies not only an upgraded system but total freedom and interaction with students at the same level of achievement, as well as in-

teraction in family and community relations. It assumes that school, family and living are all one harmonious experience, undivided by distinction of grades, schoolhouse and summer vacations.

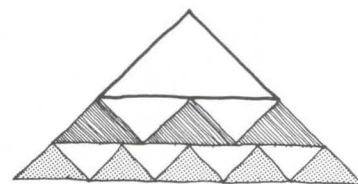
A tall order: It places emphasis on meeting the needs of the student



*Horizontal*



*Vertical*



*Pyramid*

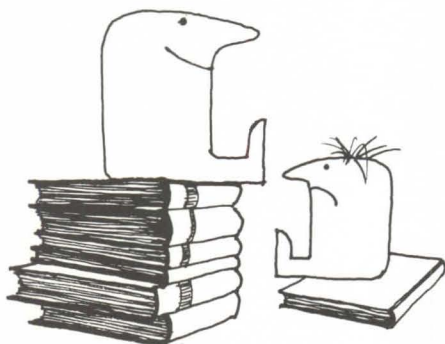
where they should be met and points out the tremendous importance of instructors who understand what these needs are. As an aid in achieving this understanding, the entire staff and faculty can plan and work together by having at hand all records and information available on the individual student.

The normal break which occurs as the pupil is passed from one administration to another can be avoided. Admittedly, in our mobile population, there will still occur many breaks as families move from one place to another. The computer can be of great aid in orderly transmission of such information and is bound to play a large part in school complexes such as we are envisioning.

However, this is not meant to imply that we can ignore human

scale. If life and learning experiences are to have any meaning, and even if life in mass population is to have any sanity, human scale and levels of "territoriality" must exist in all structures, be they educational parks, homes or offices. Research is at hand to substantiate this. Thus, to avoid pitfalls of future inhuman, impersonal, massive structures, the best innovative and creative administrative and architectural talent available will be required.

Educationally and psychologically, the large numbers of students will afford greater opportunities for more groupings according to the individual child's level of achieve-



Better programs

ment. There are likely to be fewer bright children bored by a pace maintained for the average. Facilities and opportunities for higher-quality education must eventually be offered by the educational park. Qualified personnel to staff and teach must be trained and recruited.

New concepts of education should breed new architectural concepts. Such a new building complex must be many things: It must be a happy welcoming place to small children as well as a place to stimulate and assure senior citizens who will be going back to school. Many of the students will come from dreary home environments in slums. Until the slums are erased, the school building must help offset their deadening impact.

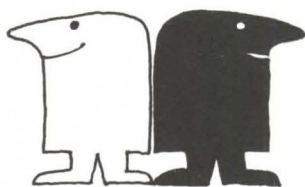
It must be a place where the brilliant scholar, as well as the slowest learner, can find equal challenge to his respective abilities. It must provide efficient utilitarian facilities for technological training; it must become truly a community school to which may come people from all walks of life in need of further education.

Lastly, the school must be an educational landmark which commands community respect and instills community pride. This, with

more, might be the charge of the educational park: to provide the new schoolhouse for tomorrow.

Once the educational program has been developed, the facility must be functionally planned to meet four basic needs:

1. Sufficient space, square footage as well as volume must be provided to house the necessary equipment



Integration

and staff to offer a full range of courses. Thought also must be given to the future, whether to expand the original facility or to build new ones as need for growth comes about.

2. Planning and program must be studied sufficiently to provide efficient physical relationships between the spaces and equipment of related courses.

3. Provision must be made to maintain the individual student's sense of identity and importance within the facility and the student body. This could be done by dividing the park into many subschools, each with an identity but all under a central administration.

4. Space must be provided for outside persons, such as social workers, sociologists, psychologists, etc.,



Dollar savings

to come into the school and work in collaboration with students and teachers on various parts of the curriculum. To facilitate this, the educational park should be located within easy reach of other community facilities.

Physical facilities must be planned not only for known past needs of educational buildings but also with an understanding of the

new functional possibilities of the educational park. The current trend of providing education for people of all ages will require study as to the range and extent of programs needed.

Today in an urban society under increasing government influence, there is a growing tendency to make available to the community more social services of many kinds. In the past as well as at present, facilities housing these services have been so fragmented and unrelated in both organization and geographical location as to be practically useless to those they were meant to serve. Thus the educational park must offer opportunities to centralize and expedite these services.

Throughout history people have gathered for living and working around some central focus. Since the beginning of the Industrial Revolution this focus has been the vast industrial complexes which have done so much to bring about the metropolis of today. Yet even today we see already the beginning of a new focal point: universities



New architectural concepts

and research centers. In the emerging megapolis of tomorrow, the educational park must become a "knowledge factory" which will be the focus of a new civilization.

In this developing trend, the educational park stands ready to break down the fortress school of today and become a "shopping center" of living which, in addition to educational facilities, contains art galleries, theaters, auditoriums, libraries and other centers of cultural learning activity. Now we are talking about school and community being one. Universities already do this to a degree, and centers in the planning stage increase the trend.

We can hope that this is a fair appraisal of the educational park and its potential. Whether its primary purpose is that of counteracting the ghetto or of providing more sophisticated (and expensive) educational facilities and equipment, the educational park can be made to serve the total community effectively. Loss of the corner schoolhouse, many communities feel, is not too high a price to pay. □

## UNDER THE HAT, WATERY LEGS

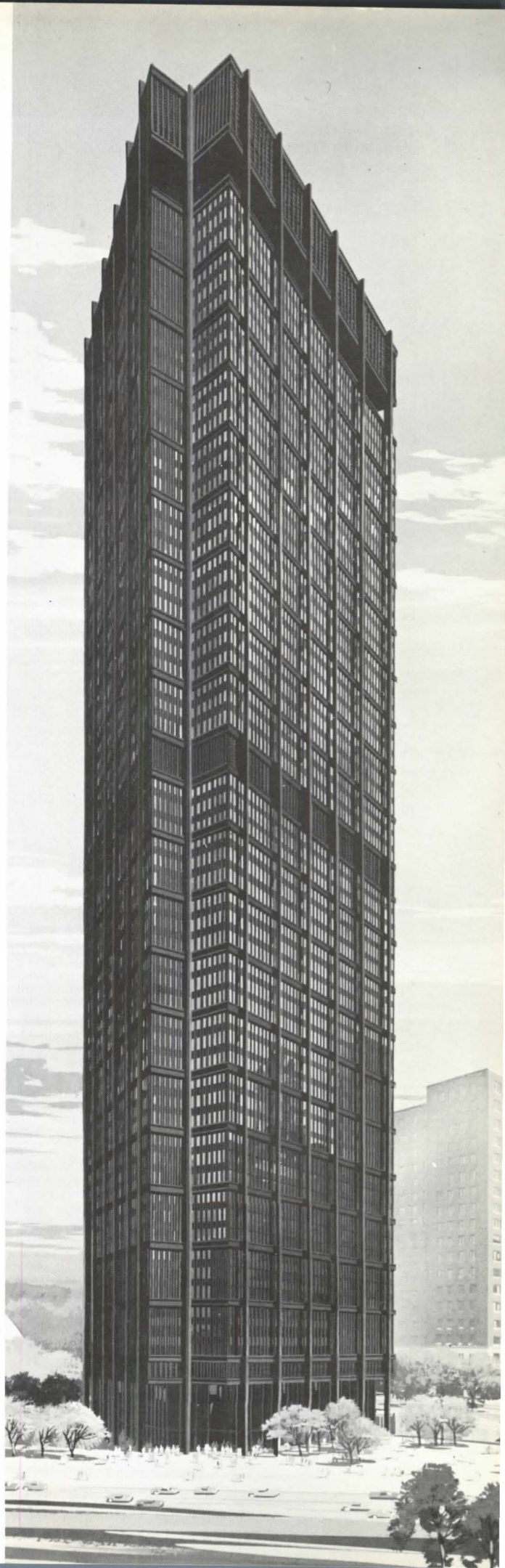
Under construction in Pittsburgh is a building that Max Abramovitz, FAIA, of Harrison & Abramovitz & Abbe, termed "one of the most exciting architectural experiences our office has been involved in." It is an in-town building with unclad exterior columns of steel. What else for the headquarters of United States Steel Corporation?

Fireproofing of these columns is done by pulling them outside the envelope and filling them with water—oh yes, and some anti-freeze. A braced-shell primary structural system, containing the service core, is tied to the exterior columns by a space-frame "hat." Foundation work, now well along, includes the encasement of a Pennsylvania Railroad spur running through the site at basement level, and soon to begin is the 13-month erection of the steel tower of 64 stories, each with a gross area of over 41,000 square feet.

Appropriately, the Golden Triangle building will be triangular in shape. Its floors will be attached to the exterior columns every third floor, the in-between floors supported by two-story-high columns resting on the primary floors. The exterior box columns, containing, by the way, a total of a half-million gallons of liquid, total 18, six on each of the building's three sides.

Both columns and skin will be of self-coating steel. Each column is divided into four vertical zones and the treated water in case of fire will circulate without mechanical aid, carrying off heat build-ups and preserving the structural integrity of the darkly russet exoskeleton.

"The cumbersome, expensive and messy conventional means of fireproofing has been eliminated, and the column cover is replaced by the structure itself," Abramovitz said. John Skilling of the building's structural engineers, Worthington, Skilling, Helle & Jackson, said the overall structural solution was born from "a high degree of cooperation and understanding between the owner, the builder



(Turner Construction Co.), the architects and the engineers.”

Further commentary by Skilling, given at a design and construction workshop and including a matter-of-fact description of the fireproofing method, follows:

We believe that the systems developed for this building have met the many complex and interacting problems to be faced and have solved them in a direct and in a very positive way.

In very tall buildings, the most important function of the structural system is to provide sufficient lateral strength and stiffness to resist the driving force of the winds. A good structural system does so without imposing undesirable conditions on others on the design team or on those who will operate the building in the future.

Even better, the structural system should open up new horizons and should simplify problems that have plagued designers of the past.

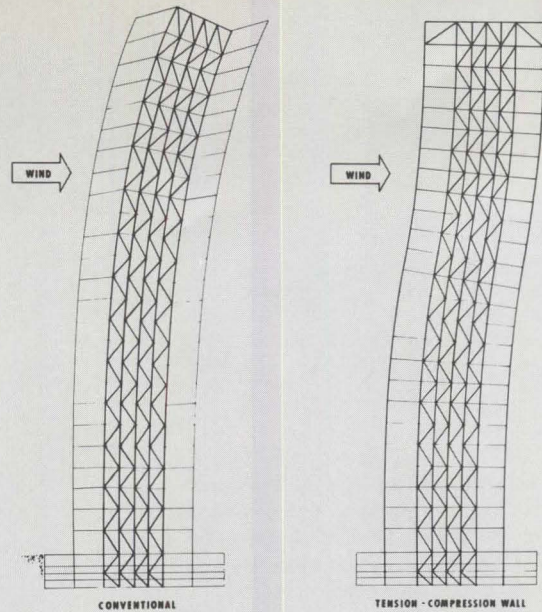
To achieve this necessary resistance to wind forces, a large-scale primary system composed of a triangular braced shell cantilevers from the foundations. This braced shell is within the exterior wall of the service core. If this shell were required to resist lateral loads unaided by any other elements of the structural system, it would behave as a cantilever curving farther and farther from the vertical as the height increased.

However, to this primary system we have added—at the top of the building—a space frame which ties the shell to the exterior columns. This system or “hat” develops the tension and compression capabilities of the exterior columns and mobilizes the load in these columns to aid in the resistance to lateral movements.

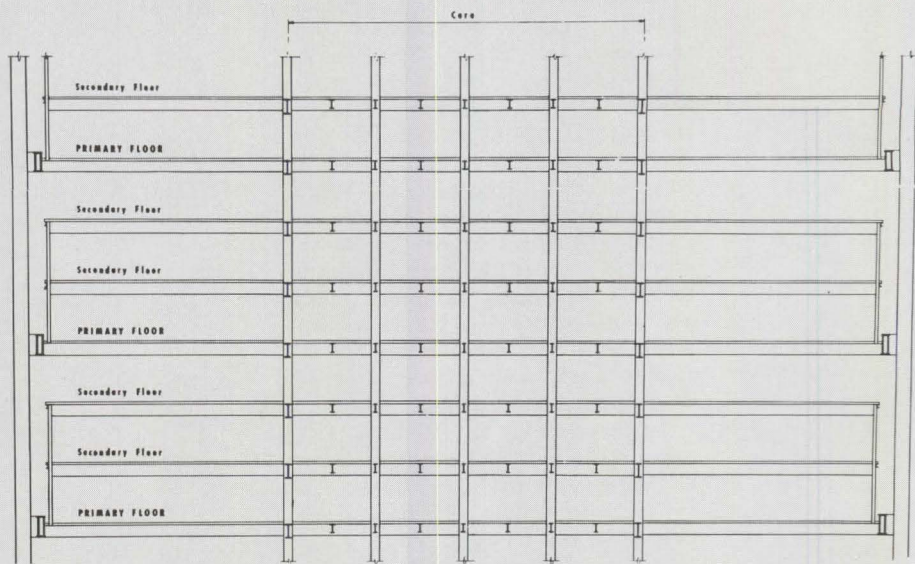
By utilizing the capabilities of these columns, we have been able to project the triangular shell far higher than would have been possible using conventional techniques.

The exterior columns, now standing free from the outside wall, could have been located within the building. In their present location, they are subject to the extremes of temperature and to relatively greater thermal expansion and contraction with respect to the interior braced shell.

Clearly, the hat can now take on yet another function by equating the deflections at the top of the building. The hat removes the danger of excessive movements, protecting partitions and finishes.

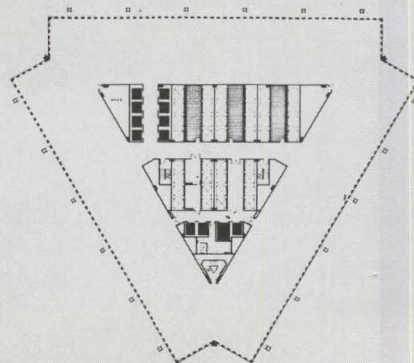


*Idealized mode shapes*

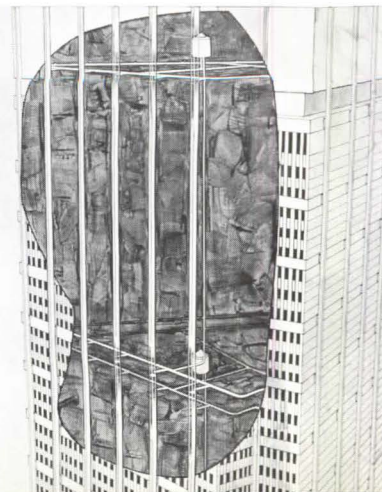


*Typical cross section*

Space-frame hat develops tension and compression capabilities of exterior columns (uppermost illustration), mobilizing them in resistance to lateral loading. Primary-secondary floor arrangement is shown above, and below, left, a fourth-floor plan reveals relationship of core to column-free spaces. Cut-away, below right, depicts interconnection of each column with other columns and storage tanks for heat-riding liquid.



*Low-rise*





Now, with the exception of the problem of fireproofing, the architects were left free to express the structure outside of the building. The problem of fireproofing was solved by providing a clear separation between the columns and the source of the fire and by designing the columns as box sections and filling them with liquid.

The liquid will, in case of fire, carry the heat away. We may have to pay a premium for this in extra care in fabrication and welding, but because we eliminated the weight and cost of conventional fireproofing, and because the architects chose to express the columns in self-coating steel without column covers or any special surface finish, there are more than compensating savings.

Having fixed on a general structural scheme, the frame had to be completed. One requirement of the client was column-free office areas. Therefore, the long span to the outside wall was a "must" if the cost picture was to be kept reasonable.

It was found that the long-span floor construction was not only feasible but was more economical than conventional short-span construction.

This followed because the increased depth of structure was permitted by the integration of the structure with the mechanical and electrical systems and because the long-span floors delivered gravity loads directly to the wind-resisting elements. The floor system is attached to the exterior columns, for stability, every third floor.

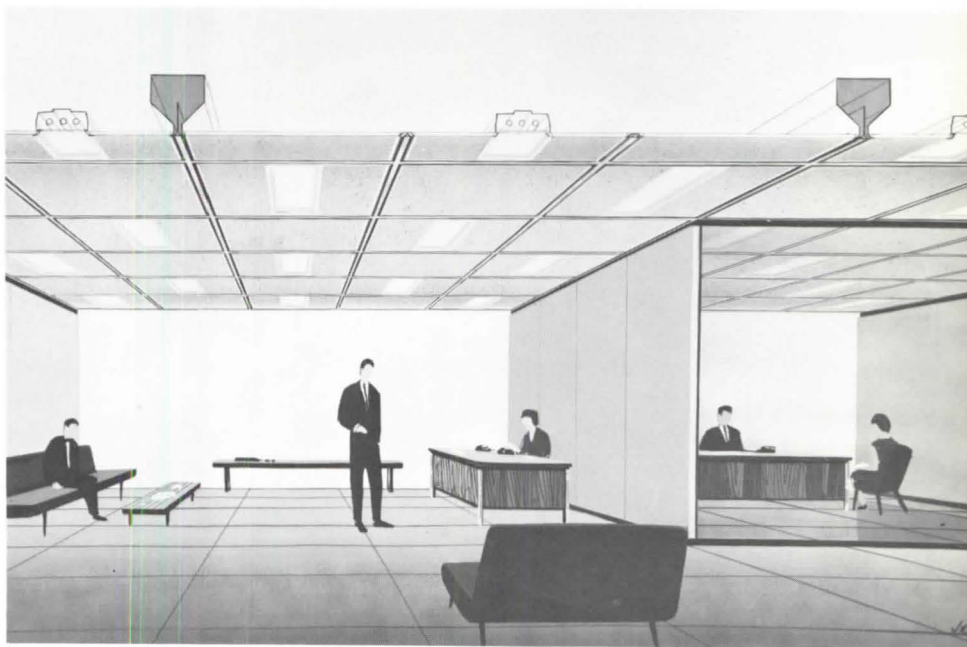
The two floors between the primaries are called secondary floors. The beams extending from the core wall to the outside wall are 13 feet on centers (three 4-foot, 4-inch modules).

The construction of the secondary floors, relative to the primary floors, can be compared to a series of two-story buildings within a three-story framework. The beam ends are supported by two-story columns which, in turn, rest on the primary floor. Surrounding the primary floors are box spandrel beams which serve to stabilize exterior columns.

The uniqueness of this overall design should be realized when it is stated that we have created column-free spaces with 10,000 square feet of area with 45-foot 6-inch clear span and 11 feet 10 inches floor-to-floor height in a 64-story building, using less than 30 pounds of structural steel per square foot of building area. □



View of the building's base, and below, an illustration of interior flexibility. System involves modules, 4 feet, 4 inches square. It is possible to relocate partitions without altering lighting, airconditioning, etc. Linear, two-way blow outlets for air permit the installation of partitions along center lines of ductwork, with air flow occurring on both sides of wall. At bottom, the tower towers over the triangle.





# THERE'S MORE

BY MARTIN GUTTMAN, AIA

Spain had just been discovered as a vacation land about five years ago. Prices were still low compared to those in the United States and most European countries. Good, comfortable hotel rooms were still scarce. Tourists, in general, were treated as kings and people flocked around to admire them.

Today, the situation is completely reversed. My wife (an interior designer and artist) and I traveled the entire east coast of Spain, from Barcelona to Valencia and farther down to Alicante, from there by boat to Mallorca, then back to Valencia and Altea. We did not go as tourists to see the sights but as consultants on hotel projects. We talked to the most progressive builders and architects and to both the governor and the mayor of Alicante.

We were amazed at the tremendous development in building construction and how the demand for new construction has been satisfied. Hotels, boardinghouses, tourist centers and apartment houses (for the rich and the poor) have mushroomed out of the earth, without regard to zoning or planning. Skyscrapers in desolated areas, skyscrapers in front of million-dollar residences, skyscrapers wherever you look. It is unbelievable to be confronted with a skyscraper on a beach where nothing else is built, where you have as much land as you want. Hotels, apartments and stores are separated or combined in high-rise buildings.

With all this building going on, no typical style has developed; everybody disregards everybody else and the only impression created is that every architect wants to create a monument for himself.

The exterior design is modern, sometimes good, often nothing but a conglomeration of different materials and surfaces, never related to the beautiful location or region. But once inside the building, all the modern ideas developed on

*Returning to the country*

*after five years,*

*an architect finds a construction*

# THAN CASTLES IN SPAIN *boom of*

*unbelievable proportions*

the outside are forgotten; the inside is still the Spain of the 19th century. Layouts are poor, especially for kitchens and bathrooms. Closets are not deep enough, sliding doors do not slide, and no facilities are provided for heating despite winter temperatures of between 40 and 60 degrees. All kitchens have two-burner ranges with bottled gas; small portable gas heaters, also fueled with bottled gas, are used for heat.

The carpentry, hardware, paint and other finishing materials are poor, and the workmanship is even worse since most of their labor force is working in West Germany. In general, wages are about one-fifth of our wages, and materials cost more or less the same as here but are of much poorer quality. Consequently, buildings cost practically the same per square foot as in this country.

It is almost impossible to rent an apartment in Spain. They are sold as condominiums at about \$8,000-\$10,000 for a one-bedroom unit. Now that Spain is becoming an industrial nation and tourist center, the demand for these apartments is so great that most are sold from the drawing board. About 30 percent of the buyers are Spaniards and the rest are foreigners, mostly German, English, Dutch, French and Scandinavian, in that order.

About 40 percent of all the building is undertaken by foreigners, with the Germans again in first place; consequently, between Altea and Alicante, some villages are completely German with all signs and inscriptions in that language. I wonder if the time will come when a German leader again will have to "liberate" his brethren on foreign shores. This thought is in the back of the minds of many Spaniards with whom we had occasion to talk.

Financing does not present such a problem as in the United States, once you have acquired the ground and have your project finished and approved. Every interested party who signs a sales agreement has to make a cash down payment equal to one-third of the price before anything is

done. Then, during construction, he pays monthly installments until he has paid up to two-thirds of the price; the key is then turned over. The balance is paid in monthly installments over the following three years. No mortgages are necessary, and the owner or builder always has cash on hand to complete his building. He does not even pay interest on the monies advanced to him, since a minimum of two years elapses from the initial agreement to the presentation of the key.

How does the architect fit into this picture? Thanks to his unique position, he is the key person. Most architects in Spain earn the highest incomes in the country because, at the beginning of the Franco regime, they had the foresight to create a very powerful lobby. Their position is enviable: The architect is king; he has a powerful

**The author:** Mr. Guttman is a practitioner in Camden, New Jersey, who, in addition to his work in Spain and Mallorca, has been retained as technical and economic consultant by a Swiss investment firm for projects in Israel, Turkey and Greece.

organization behind him called El Colegio Oficial de Arquitectos. Anyone who completes the prescribed studies and passes the examinations becomes a member of the Colegio and thus has earned the right to practice architecture.

So far, so good, but this is not all. All fees are scheduled by the Colegio, and everyone knows that these are the "law." Therefore, every owner or developer who needs architectural services picks the architect of his choice and signs the agreement without discussing fees since he has no alternative.

Once the agreement is signed, the owner or developer can say nothing more. Any intervention of the owner is to no avail because the architect discusses "his" project only with the Colegio, to whom he presents it, upon completion, and gets there—and only there—the stamp of ap-

proval. No concern about zoning, no concern about regional or local planning—the architect and the Colegio have spoken, and that is it. Now, if the owner wants his project for further study, estimates, promotion, etc., he must go to the Colegio and pick up his approved set of drawings (since he does not get them until he has paid the prescribed fee).

Many clients have paid from \$50,000 to \$75,000 for a set of drawings which they never could use because the plans far exceeded what they intended to build. In most cases, the owner constructs what was designed for him: He does not have another fee for another architect. Since supply and demand regulates the market, most of the better architects with good sense and knowledge are so booked up for years to come that the average person with a building program must go to the one who is available—usually a beginner with no practical experience at all.

Every rule, naturally, has exceptions; I believe that we encountered this in the form of a young, energetic contractor whose method of providing housing for the Spanish poor produced results that should amaze the world and provide an example for all of us. To better appreciate the success of his method, we must understand the milieu in which he began his operation.

After the civil war, the Spanish dictatorship had to face the problem of housing the poor in an impoverished country. Government agencies were filled with inadequate people, with loyal party members who expected the thanks of the government. True, during our first visit we found that some apartments had been built but, after five years, we saw that they were falling apart and becoming slums.

The contractor, Alvarez Franco Peizilla, went to the government with a proposition: "Give me the land and I will build you apartments for less than half the price they cost you to build!" Everyone thought that he wanted to start a revolution; nobody believed him; suppliers of materials started to boycott him. Finally he got some land and the permission to proceed with the understanding that the first building would be "taken apart" by government inspectors and checked to see if everything was done above board.

How could he do it? He came to the United States, studied our building industry, organization and scheduling and bought machinery to be in a position to manufacture everything himself. On every job, he has, for example, earthmoving machinery, a brick and block factory, carpentry and metal shop, plumbing and machine shop and tile factory. He also has specialized crews for every possible trade and has manufacturing and erecting scheduled so that he does not have one moment of lost time in his operations.

He finished about 3,000 apartment units in Alicante, has started another 3,000 there and about 6,000 in Valencia. Each cluster of apartments is a satellite city with its own movies, shopping centers, schools and other public facilities. The apartment units sell for about \$1,500, with half down at occupancy and the other half financed through the government for 30 years with a monthly carrying charge of about five dollars.

This young man is now respected by the government and loved by the Spanish people because he was the only one who was able, in a practical way, to help solve the housing problem of the poor masses. He is an idealist who wants to profit only once from the construction of buildings. All the profits from materials and manufacturing are, in reality, given to the individual buyer because all materials are incorporated into the construction at cost. His employees are paid adequately and, in addition, benefit from a profit-sharing plan. He even was in the enviable position of having his own architects on the payroll.

Now he is developing a complete city near Alicante, on which we had the pleasure of working with him as consultants.

Mallorca is quite different from the mainland. There the businessman had to take everything into their own hands. Because the island holds unhappy memories for Franco (the previous government exiled him to Mallorca) he refuses to be concerned about its problems. But Mallorca can, and does, support itself on income from its burgeoning tourist traffic. And what has happened? After five years, we did not recognize the city of Palma. In the center of town, an area of 20 city blocks was completely razed and rebuilt with eight-story buildings that enclosed the most modern stores and offices on the first three floors and apartments of the luxury type above.

Along the Mediterranean, most of the older hotels were also razed and rebuilt as high-rise buildings, 80 percent luxury-type hotels and 20 percent apartments. You want to buy an apartment? Impossible, even if you offer \$30,000. During April to October, you want a room in a better hotel? Impossible at any price.

All of this proves just one thing: With the right initiative and the right promotion, even the poorest country can achieve its place in the world and make some contribution toward betterment of the living standard. We, as sustaining nation for the entire world, should be able to recognize when the saturation point is achieved and begin to look at our own country, at what is needed here to help our own people achieve a better life. At the rate we are going now, it might not be long before some of the countries which we have sustained for so long will be better off than we are! □



**Editor:** Donlyn Lyndon, AIA, School of Architecture and Planning, Massachusetts Institute of Technology, Cambridge. **Contents:** *The Medium Is Not the Solution* by C. W. Rusch and S. M. Silverstone; *Mediating the Medium* by David Stea; *Workshop Listing*.

## AIA-ACSA Teachers' Seminar

The articles presented in this issue result from the 1967 AIA-ACSA Teachers' Seminar held in Chicago on June 16-24. Rather than compiling a selection of verbatim comments from the conference, we requested that three of the participants prepare articles based on the material presented at the seminar. While remaining close to the substance of the workshops, these articles are meant to extend rather than repeat the deliberations and will reflect only a segment of the seminar activity.

### The Medium Is Not the Solution

BY C. W. RUSCH AND S. M. SILVERSTONE

As the problems of physical design become increasingly complex, new methods of problem solving and the most advanced means of problem representation and communication must be used to their full advantage. Unfortunately, these new methods and modes of representation tend to be couched in a terminology that is alien to the designer.

As a result, he is forced either to use problem-solving and communication techniques he only partially understands or he must use traditional techniques which will only partially meet the demands of the problem. For example, in order to use computer decomposition programs to structure a complex urban design problem, the designer must have at least a minimal understanding of set theory, statistics and computer programming. If he does not, and he is not willing to accept a consultant's work on faith, then he may be forced to attack the whole problem in portions which may be arbitrary and will sacrifice a structure potentially useful for analyzing the problem in reasonably isolated segments.

Similarly, in representing and communicating the structure or solution of the problem to him-

"The Medium Is Not the Solution" is based on the workshop conducted by its authors, in association with John Fisher of the University of California. The intent of that workshop was to examine the existing methods of communication used by designers, to structure them according to their characteristics into some comprehensive framework and thereby to establish a context for the more specific workshops reviewed here by David Stea in the accompanying article.

self and to others (associates, consultants, clients, public), the designer will want to use the most advanced communication techniques to ensure that his ideas are not misunderstood and that they will have maximum impact. Here again terminology is a barrier.

Developments describing the new media and their relation to specific forms of content must be drawn from communication theory, information theory or the study of symbolic processes. If the designer does not understand the relation between content, representation and communication, he is likely to select an inappropriate medium with which to communicate his ideas. The result will be misunderstanding by the client (or even the designer) and completion of the job in a form that is unintended or unsatisfactory.

What is needed, then, is a conceptual framework with which the designer can relate the content he has to communicate with all means that are available for representing that content. If such a framework existed he would be able to select the appropriate mode of representation for a given content, and vice versa. For example, using the framework, he might decide to represent a circulation pattern with a flow diagram instead of describing it orthographically, verbally or numerically.

This paper attempts to formulate such a communication framework. Although the result of this attempt is quite elementary and simplistic, it

has already proven quite useful in analyzing communication situations. It has helped analyze formal meetings such as conferences with clients and classroom juries as well as informal ones such as sitting down to design at a drafting table.

The framework will be presented first in its simplest form, giving its overall structure and method of use. Further discussion will indicate why we think it is presently oversimplified, and which of the methods of representation indicated are most in need of development. Finally, the discussion will turn to the problem of what happens to information as it is transformed from one mode of representation to another and the operational techniques needed at these transition points.

### A Proposed Communication Framework

The first broad distinction of terms that must be made is between content, the ideas to be communicated and the mode of representing those ideas. The latter, which is sometimes called the symbolic vehicle or the vehicle of representation, should be distinguished from the medium of communication. For example, content in the verbal

**The authors:** Mr. Rusch, on leave as assistant professor in the department of architecture, University of California, Berkeley, is a Fellow in the Center for Advanced Study, University of Illinois, Urbana. Mr. Silverstone is a research engineer in the transportation division, department of civil engineering, Massachusetts Institute of Technology. Both are indebted to John S. Fisher, also at Berkeley, for his part in the leadership of the workshop and for portions of the material presented here.

mode can be communicated through the medium of sound or by alphabetic script. Thus the concept "canary" could be carried in the verbal mode by either speaking or writing the word. If it is carried by a drawing, a different mode has been used—graphic as opposed to verbal language. Each mode has a set of symbols peculiar to that mode; each symbol represents a concept which then is communicated through some medium.

Because we are specifically concerned with physical design problems, content, on our framework, may be further subdivided according to the various types that are communicated during the design process. The first division might be between that of relations, processes and properties. Relations could be further subdivided to include *conceptual relations* (such as privacy, comfort or security) and *abstract physical relations* (such as proximity or adjacency). Examples of the process type of content would include circulation, product, air- and heat-flow patterns. The classification properties could be divided into static properties, such as texture, color, temperature, and dynamic properties, which would refer to objects seen in

motion and in continuously changing juxtaposition and interaction. These content distinctions have been recorded in the upper half of the diagram on the following page.

The lower half records the various *modes* of representation traditionally used by designers to represent their ideas. The first division, proposed by Operations Research theorists, partitions all modes of representation into three types: symbolic, analog and iconic models. We have substituted the word "conventionalized" for "symbolic," inasmuch as any representation under our definition can be considered a symbol. "Conventionalized" is used here in the sense that the use of these models is agreed upon by convention, as are verbal languages and mathematical models.

Note that the diagram has a left to right order that structures content from "indeterminate" on the left to "determinate" on the right, and of modes of representation range from "abstract" on the left to "concrete" on the right. Both the types of content and the modes of representation, therefore, are seen more as divisions of a spectrum that lies between two poles than as sharply divided concepts.

The basis for the particular orders shown on the diagram needs to be clarified. The types of content have been ordered simply by how much the physical form has been determined at each point on the spectrum. Thus the designer's concept of a building design usually moves from somewhat vague desires at the outset to more explicitly stated requirements, then through various levels of representation and finally to a physical building. (This is not to imply that design is or should be this orderly or linear. In fact, it usually appears to be cyclical or to skip back and forth along the spectrum. However, the basic movement is usually from indeterminate to determinate.) It is less clear what basis can be used to order the modes of representation on a scale of abstraction.

What is suggested here is that the abstraction level of a symbol can be determined by judging the similarity that exists between its outer mate-



rial form (what it looks like) and its inner form (what it means). For example, the word "ball" has little resemblance to the properties of the object itself (how it looks, feels, acts), but the drawing of a ball begins to communicate some of those properties (i.e., its roundness). The drawing is therefore more concrete than the word.

The diagram attempts to order the content of any physical design problem from the indeter-

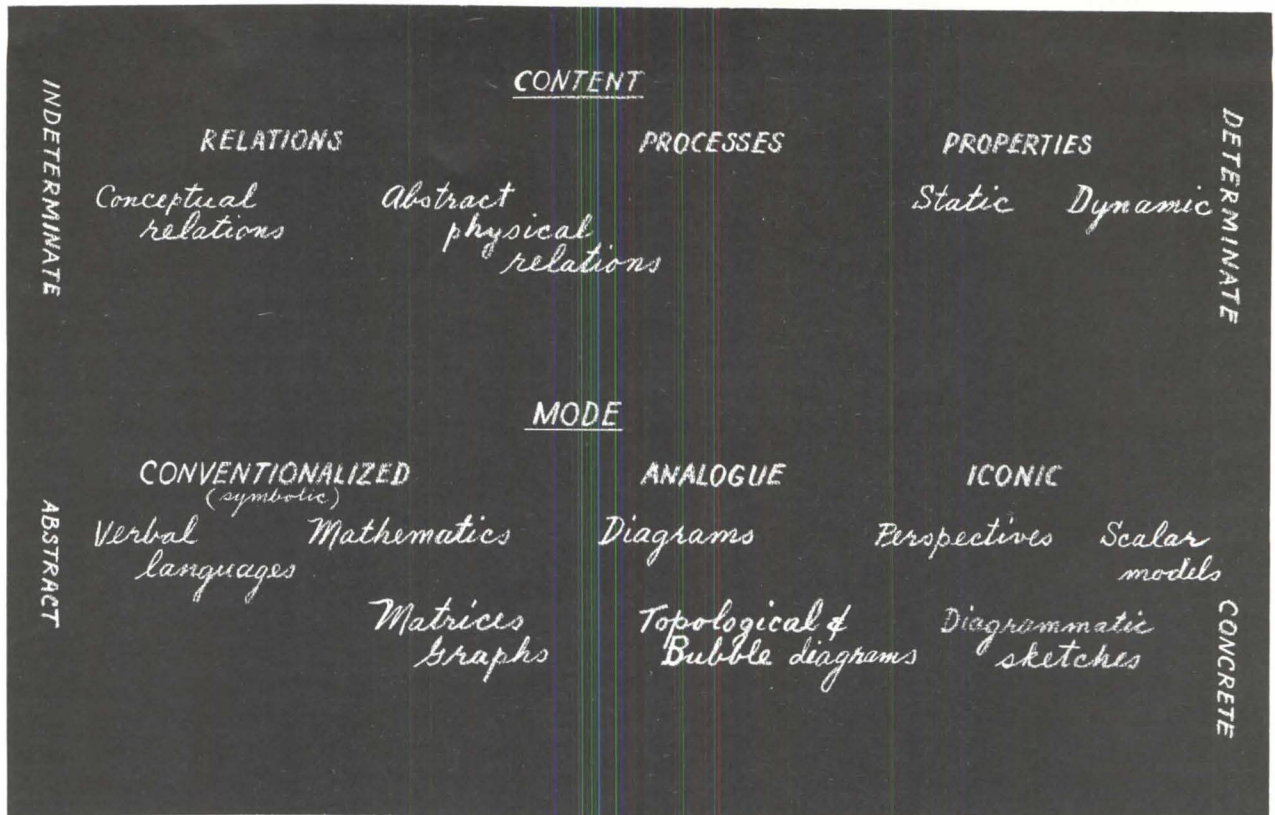


Diagram of communication framework.

minate to determinate and the traditional modes of representing that content from abstract to concrete. By filling it in with more detailed information, the ordering procedure spoken of earlier could be completed without difficulty.

However, unless some link is established between the content half of the chart and the representation half, the designer still would have no



criterion to guide selection of the most appropriate mode of representation for the content that he wishes to communicate. The hypothesis presented here for establishing this relation is drawn from the study of symbol formation by Heinz Werner and Bernard Kaplan: "An abstract reference requires a [symbol] in which the inner form is not intimately tied to the external form; accordingly, the more [a mode of representation] conduces the formation of [symbols] in which inner forms are manifest in external forms, the more difficult it is to employ this [mode] for the representation of relatively abstract concepts or abstract conceptual relations."

If this hypothesis is true, then the content

should "line up" in some way with the mode of representation. More specifically, the more abstract modes should be used to represent the more abstract (or physically indeterminate) content, and, similarly, the concrete modes would be best used to represent the content which is more related to physical things. The diagram has been so aligned by rough intuitive judgment; further study would permit a more precise ordering and alignment of the chart.

The importance of such an alignment cannot be overemphasized here because it provides the criterion for selecting the appropriate medium to communicate a given content. In fact, the hypothesis that content and mode should be aligned vertically on the chart is so simple that it can easily be conceptualized, remembered and mentally referred to when making decisions about communications. For example, one can decide whether to talk or draw on a napkin during lunch by assessing the abstractness of his thoughts.

A similar, although more complex, analysis would tell a firm what combination of words, diagrams, perspectives and models were needed to best communicate a proposal to a corporate client or a civic body. In this case, each concept that is to be communicated must be assessed as to its position on the chart and the most appropriate mode of representation selected for the level of abstraction intended. The presentation then would become an interplay of several modes of

## The Following Letter Serves as Documentary Evidence of Contrary Opinion

The Chicago AIA-ACSA meeting devoted to teaching processes and dealing with media of communication left this participant with a feeling of disorientation, distaste and misunderstanding. It was intended to improve the nationwide teaching process and acquaint the educator with new progressive training aids in architectural education. Closed circuit television, computers and the movie camera as media of communication through simulation supposedly help the architect or architectural student to visualize and evaluate architectural design.

"Space" as a nomenclature is now used everywhere and by everyone. The word "space," like the word "philosophy" as it was used a few years ago, has become a linguistic gimmick. This word is bounced around the studios like a ping-pong ball by freshmen through full professors. To understand space, and shape it for human use, means to have a full awareness of architecture. Besides theories, history, techniques and all other phenomena shaping our architectural profession, the architect and architectural student must have a well-trained ability to visualize and note every simple or complex organism of space. The architect must have three-dimensional vision.

Throughout history and in the present, good European schools of architecture have taught three-dimensional vision early in the course of study using many media. After this period the architectural student could visualize and "note everything in three dimensions." This vision serves as an aid to disciplined design courses including courses in structures, history and construction.

Their ability to visualize is achieved through:

- Analytic geometry (explaining spatial relationships in a mathematical way—first two years).
- Freehand drawing using all graphic media throughout the entire study program.
- Visual perspective, a course in perspective sketching, without analytic media.

In order to register for a course of visual perspective, the student must first have a background in analytic perspective with a working knowledge of horizon, vanishing points, etc. A visual perspective course teaches the student how to visualize proportions, depth and space in perspective. By forbidding the use of pencil, using only pen and ink, the student learns the discipline that each line is final and cannot be erased. This also exercises the student's hand and fingers in the use of various drawing techniques. Students prepared in this way will enter advanced design classes ready to visualize and explore thoughts in a graphical way. The course mentioned does not teach so-called delineation. It develops the brain to visualize three dimensions, nothing else. Delineation as it is understood in this country is not taught at all.

Let us now determine if it is essential for the professional to be capable of visualizing space. Competent solutions or answers for any design take time. The elimination of possible mistakes with respect to function, site, composition and technology requires time and the ability to judge through vision. Spatial solutions and relationships are only a part of the process.

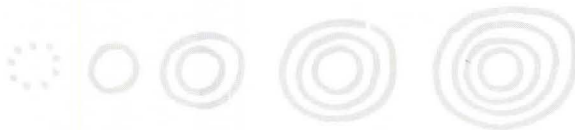
If our schools do not train people in three-dimensional vision, can the production line wait until one or more vital decisions are proven on working models? Would it not be better if all architects were trained in three dimensional discipline, ready to fully visualize the consequences of their decisions of their spaces? Simulation, model building, fancy perspectives and all other media are the expression of the public relations department of architectural activity.

The various methods discussed and demonstrated during the AIA-ACSA meeting in Chicago concerned the public relation aspects of our profession, not architect's competence. The major subject of professional competence was not discussed. As architects and educators we have a responsibility which is to teach professional competence, not escapism through the use of more advanced and expensive gimmicks to cover our incompetence. *T. M. Janowski, Associate Professor of Architecture, Department of Architecture, Iowa State University.*

representation all carefully matched to the content they were meant to convey.

Using the diagram for a specific example will help. According to the hypothesis, it would be inappropriate for an architect to use a realistic detailed birdseye perspective to represent the physical relations of a building complex. Such relations, being fairly abstract, would be better communicated by an abstract diagram such as a lattice or a topological graph.

This is not to say that the perspective could not communicate physical relations, but that a greater danger would exist of it being misread



because it contains extraneous information concerning what the complex would look like. The visual image of the complex will usually be reacted to first because it is more evocative. If this reaction is negative (in a view that may never be seen) the intended content (the relations) will not be objectively considered. We have seen communication breakdowns occur in exactly this way; too much information is put in a drawing, control of the discussion is lost and misunderstandings result.

The diagram, then, with its various ordering principles, represents the communication framework we propose—however crude and incomplete it may be at this stage.

### Undeveloped Potential Within the Framework

The areas within the proposed communication framework which in our opinion need the most development are the mathematical models, abstract diagrammatic models and sensory input models. In each of these areas, frequent communication breakdown presently occurs or communications and problem-solving benefits would occur if better models were developed.

Mathematical models are perhaps the least used of the models available to architectural practice, although with the adoption of more explicit and/or automatic techniques for information representation they could be the most useful. Their successful application in many other fields, despite the complexity involved, is influencing experimentation with the more quantifiable environmental variables. By defining mathematically the functions which relate building massing on an urban site, for example, to such influences as zoning regulations, appraised land values, FHA minimum standards, rent limits, taxes, operating costs and financing costs, many alternative optimizations of these factors can be eval-



uated. Unfortunately, the high initial development costs have not so far proven commensurate with the value of the output or the scope of the problem. But as we become more able to quantify our decision-making values, these tools should prove to be most useful and flexible for illuminating patterns of information which are not intuitively obvious.

In the area of analog representations, abstract diagrammatic models hold a similar potential for communicating design content. These models range from the more mathematically derived matrices, graphs and networks to diagrams of activity areas that begin to resemble plans. The more mathematical, diagrammatic representations have been conventionalized and are readily available for refining information and for filtering out certain classes of data in order to see new patterns and trends.

Those diagrammatic models such as bubble diagrams, circulation diagrams, functional and sequential notation systems, which are in wider use by designers, have not been conventionalized and exist only as personal or group aids in problem communication. As a means of communication, therefore, their present use is restricted, but their potential seems great because they could combine the manipulative capabilities of conventionalized models with the visual pattern characteristic of iconic models.

Finally, there is a need for sensory input models to "preperceive" solutions. As a design solution develops and the current alternatives are considered, the designer needs such modes to scrutinize his product and choose among alternative actions. Such simulation devices could allow for a working survey of solutions that would furnish feedback for subsequent solutions and decisions in other modes.

Primitive systems have been developed which not only simulate the movement of one observer



through a sequence of stimuli but include groups of people flowing within a space. In more advanced versions of these models, dynamic environments would be constructed which could include the impingement of other persons on a given observer. This is in marked contrast to the often deceptive photographs of completed "environments" which are taken after the crowds "get out of the way." But it is dynamic conditions such as these which are so relevant to a preconstruction, or predevelopment simulation.

Current work in computer graphics is just beginning to explore these potentials. New sophisticated display devices along with current research in environmental behavior and controlled physical environments could result in visually realistic, full-scale simulations.

### Operations Between Modes

So far we have presented a communication framework for designers and discussed the potential for development inherent in some modes of representation. One more class of problems connected with communication is what happens at particular transition points in the design process where information is transformed or mapped from one mode of representation to another. The discussion so far has suggested a need for the development of a set of unique design communication tools, each satisfying the requirements of a given design activity. These, in turn, must be linked together by sets of rules or operations for getting from one mode to another and back.

Consider, for example, the *initial problem definition* in architectural design. This might correspond to the most abstract point on the spectrum of modes. In fact, it represents a transition between a category which is off the scale—undefined, unformulated information possibly residing in the subconscious—and the category of conventionalized verbal and numeric information. The realization that there is a problem to be solved and that its goals, resources, context and limitations must be made explicit will have, and should have, a strong influence on the solution to that problem. Properly defined, this phase would also include specification of the goals and resources for the process as well as the product so that both could be assessed while they are under development.

Between the verbal-numeric representation of the problem and the abstract study of the relationships between elements, there usually occur *initial form statements* (using "form" in its non-physical sense, without shape or dimension). At this point in the process many decisions about the solution can be generalized—environmental character, levels of privacy, adjacencies between elements—for which many specific solutions are possible. This crucial phase of defining important form relationships and further refining the problem to be solved coincides with the gap between the most abstract description of the problem and some more tangible diagrammatic statement about a general class of solutions or parts of solutions.

The *initial shape specifications* are derived from these general solutions and are applications to some specific physical solution in real space. Usually to a greater extent than in the general

solutions, this phase requires the merging of often diverse and conflicting requirements, forcing the designer to choose among alternative solutions by ranking the importance of the requirements (or, in other words, relaxing the goal statements for the "compromised" requirements). Again there is a coincidence between a crucial phase of the design process and a gap in communications media: between abstract relationship diagrams and a concrete physical specification.

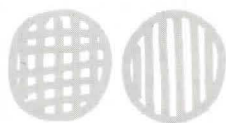
As solutions are developed and chosen for more detailed study, they could be represented by *execution process models* which can further



aid in the evaluation of existing alternatives and influence the generation of future ones. These models could define the physical realization of the solution in such terms as the construction process, the financial process or the political process. It should be possible to enter into these executional models during, rather than after, the development of the design solution, so that information gained from them could influence subsequent decisions in other modes.

In current practice we do not usually encounter the above four transitions between modes of representation because our use of the modes available is quite different from what has been proposed in this paper. For example, orthographic projections are often used to represent the information in all four phases.

Plans are sometimes used in the problem definition: Typical room plans are used to depict the



program needs. During the process of form statements, various arrangements of these "rooms" are studied to determine the ideal functional relationships and desired spatial configurations. Since the transformation from form to shape has been short-circuited, these same plan studies are often used to "walk through" the design and to evaluate the sensory input that has been created. Finally, this plan is supplemented with specific dimensions and details of crucial joints in order to establish the construction procedure for *execution*. Again this process is not strictly linear but involves many cycles and loops through the various phases.

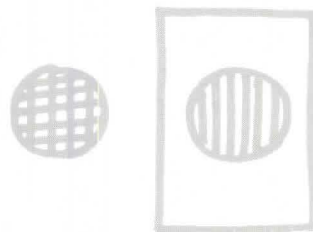
*The use of a single communication model for*

four distinct procedures suggests a compromise where no one procedure is served efficiently. Floor plans are too limited and too specific for problem definition; it is prejudicial to state a problem with solution-oriented symbols. Plans are also too specific for general form solutions and they cannot be flexibly manipulated to explore various alternatives. Even supplementing plans with elevations and sections gives the observer a static, two-dimensional view which does not simulate the actual sensory experiences which would be perceived.

Finally, the construction execution process is, on the whole, a sequential one in terms of time and the operation of joining together materials and structural elements. It seems illogical for the designer to think in terms of a sequential process, translate it into a static drawing and then have the contractor translate it back into another (possibly different) sequence for execution. Such inefficiency does not reflect the real world processes which it directs or upon which it depends.

#### Implications for Research and for Education

Although it is difficult to distinguish between all of the short- and long-term applications of the



communication framework which we have suggested, it remains apparent that it can help immediately in our daily work and that it will affect the use and introduction of new tools in the coming years. What is significant to today's practitioners is that something can be done now, within the existing market fee structure.

Communications can be improved immediately within existing representational systems and thereby result in more explicit goal and evaluation statements with potentially more informed (but not necessarily better) decision making. The relation of design content to modes of representation—problem formulations, verbal check lists, crude mathematical models, personalized abstract diagrams, plans, perspectives, study models and large-scale building sections—can be classified and understood so that the right tool will be available for use at the right time.

In many cases, research and development is needed to increase the understanding of existing tools and to increase the choice of available communication systems. If the gaps and transitions

which have been identified can be filled with better design aids, we might discover new approaches to design problem solving and to communication during design with clients, users and public policy makers. These aids might also have a strong and more natural influence on the development of automated design aids.

It is often stated that too many buildings are designed without the aid of architects; this problem can only be magnified in the future if too many design theories and problem-solving aids are developed by computer scientists, psychologists and mathematicians instead of architects. Schools of environmental design can play an important role in developing tools for architectural practice five or ten years hence. With the support of research money that could provide time to theorize about design activities, the schools could contribute substantially to the development of the design professions. There seems to be no better method than participation for implanting in future designers both an empathy for the problems that they will face in the next few years and a knowledge and facility in the use of the technologies which will shape our environments. □

## Mediating the Medium

BY DAVID STEA

The term "simulation" connotes, to most, an object of sorts—a scale model of another object, or some transduction of this model (e.g., through motion pictures), or an analog. Thus a model of a house is a simulation of that house, as is a motion picture or series of slides of that model, etc.

But more "abstract" forms of simulation are also possible. Few would deny that a computer with a graphic output was "simulating," but few would also apply the term to a numerical print-out of the same material. In the most general sense, a mathematical or conceptual model or a symbolic representation of a hypothesized designed environment going into and coming out of a computer is a form of simulation of that environment.

To state this position more exactly, the representation of any organism-environment interaction is a simulation if 1) anything other than the actual environment and the actual organism that will use the environment is presented; 2) the presentation is in such a form that it is at least theoretically possible to generalize the results of this presentation to another "higher" level of the organism-environment interaction; 3) the presentation is something more than a mere symbol (al-

though a mathematical model, a set of symbols with well-defined referents and rules of combination is clearly admissible).

In the foregoing sense a substantial portion of the workshops at the recent 1967 Teachers' Seminar were, effectively, discussions of simulation techniques: some for pedagogical or presentation purposes, some for problem resolution and some for problem definition. The following is meant to be a representative sample rather than an exhaustive listing of the contributions. The techniques explored could be roughly divided into three categories: those intended primarily for demonstration, presentation or study purposes; those intended primarily for research; and those so general that they could, with modifications, be used for demonstration, study or research.

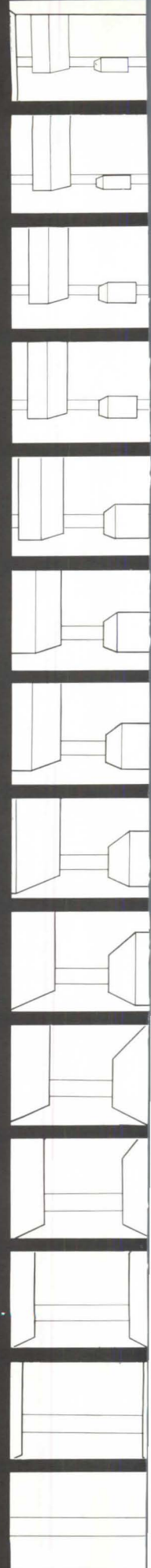
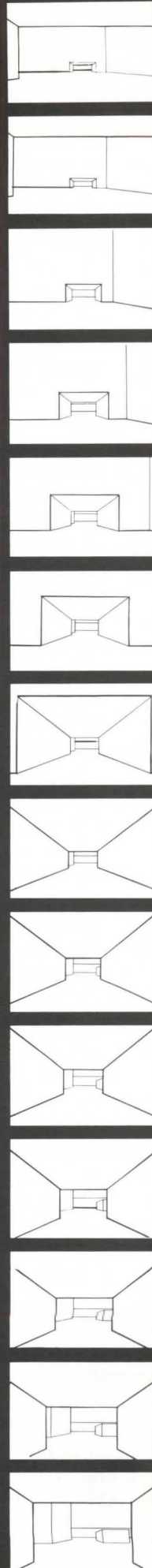
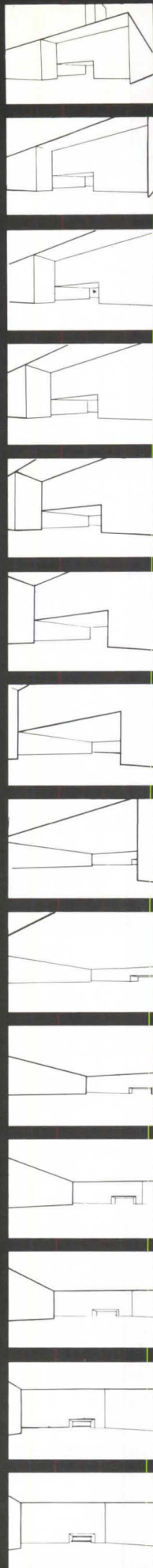
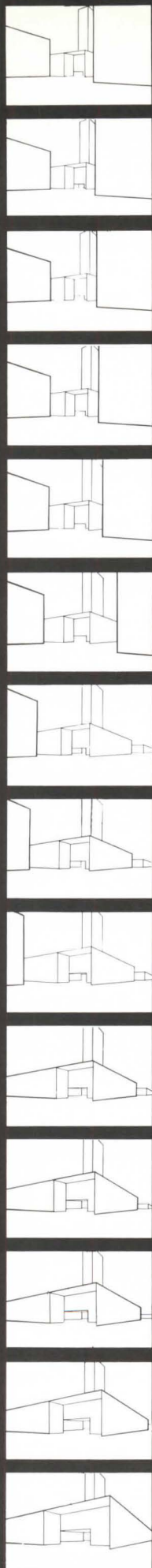
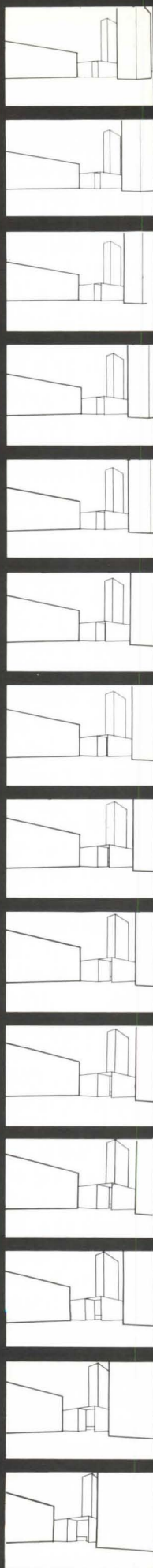
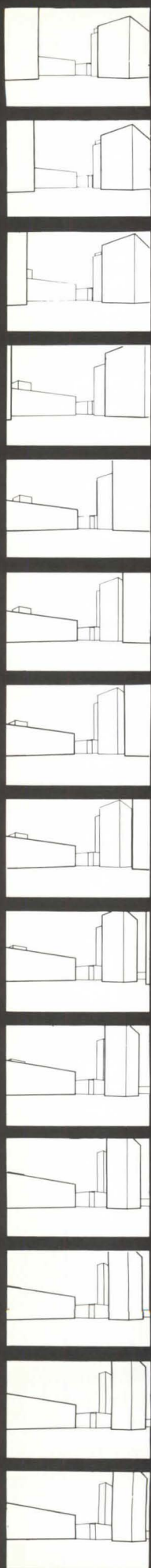
Most of the demonstration and study techniques relied heavily upon films, slides and television. Frederick Moyer of the University of Illinois used narrated movies taken with "zoom" cameras to present models for proposed urban development in the Chicago area. In another film, he explored the adequacy of low-cost 8mm equipment for simulation, using architectural models supplemented with animated indicators of scale (people, cars, boats); and added sound track with simulated noises of vehicular movement, water, etc. A third film of his was unique in comparing the experience of moving around Wright's Robie House in Chicago with the simulated experience of moving through a model of the same building.

Robert Sobel of Rice University and his staff, investigating the effectiveness of television media in engaging viewers, utilized a mobile periscope to simulate movement through a scale model and devised associated apparatus to transmit this experience through closed circuit television to an audience.

Robert Beckley of the University of Michigan began with students' sketches of a sequential experience in time, then collated these in "flip-through" decks of cards (next page) animated by motion pictures. He also investigated "zoom" camera possibilities for study and teaching.

Two slide projectors were used by Enn Kayari of North Carolina State University to produce a scene surrounding a single observer or small group of observers seated "within" a V-shaped screen. This was the only simulation which attempted to get the viewer "inside" the space.

Typical of simulation techniques on the "study-research" interface were those described by University of Washington's Philip Thiel and Charles Owen of the Illinois Institute of Technology. Thiel spoke of a system devised by himself and psychologist Gary Winkel which allowed a visitor at a simulated museum exhibit to "move through" this exhibit by selecting a slide repre-



senting what he would see to the left, right or center at each choice point. The simulation was in this case programmed by the observer rather than by the designer.

Owen described two computer programs. One represented the dynamic flow characteristic of museum visitors, and it was the only genuinely dynamic simulation technique in the sense that

**The author:** Mr. Stea is assistant professor of psychology and geography, Clark University, Massachusetts.

it depicted changes in a pattern of activity caused by changes in some other variable. Another represented an improved decomposition model, based on the work of Christopher Alexander, utilized in this instance for museum design. Presumably, these two could be integrated in such a way that for any set of visitor characteristics (input), the computer output would be the extent to which the design accommodated or failed to accommodate these characteristics.

The "general purpose" workshops included James Berry's (Boeing Corp.) filmed graphic computer outputs of simulated aircraft refuelings and landings, and John Fisher's discussion of which mathematical models can be of use to the architect in the design process. Contributions of existing mathematical models were explained by Fisher, who later explored the possibility of generating new models more specifically suited to shaping environments for man.

In summary, those who attended the 1967 AIA-ACSA conference were exposed to a variety of fascinating and imaginative simulation techniques. Generally, the method or device came across quite clearly, the intent of its creator somewhat less clearly.

However, the range of techniques represented was limited in several ways. Those which strove to reproduce realistically the experience of moving through an environment relied heavily, though understandably, upon visual presentation. Most of our information about the environment seems to come to us through the visual sense modality, i.e., what we have seen is apparently most important in determining our evaluation of what we have experienced.

Designers sometimes tend to assume that the second most important source of information is, in all situations, auditory input. Perhaps this is the reason why those workshop leaders who sought to increase the accuracy of reproduction of their simulation techniques tried to insert sounds—sounds made by the interaction of man and his mobile artifacts with the environment—into their simulations. In the opinion of many participants, the introduction of sound *per se* in

no case enhanced the realism of the presentation and in some cases even reduced it.

A little introspection may lead us to suspect that thinking in terms of the classic (and stereotyped) "five senses" is inadequate and often misleading. The problem in realistic reproduction before a seated audience is basically that the scene moves while the observers do not. Apparently, while hearing adds information in one way to a controlled visual experience, *proprioceptive feedback* and *kinesthetic feedback*—sensing that one is actually moving through a space—adds to sensory information the feeling of motor control, and hence lends realism to the experience.

It is this sensori-motor interaction which is of greatest importance, as psychological research substantiates. The problem for those devising simulation techniques is how to introduce this interaction. If the visual portion of the simulation were a slide sequence presented as a pedestrian viewing the scene would normally see it, proprioceptive feedback might be introduced in so simple (and so crude) a manner as placing the standing viewer on a moving sidewalk which travels at the same speed as the camera, giving the impression that the viewer is advancing through the scene. Undoubtedly, more sophisticated techniques could be devised. It may be that the central nervous system can be tricked into supplying something like proprioceptive feedback where the observer occupies a "natural" position within the scene—as in Cinerama or, at this conference, Kayari's presentation.

Thus the presentations were limited in terms of the sense modalities to which they appealed. A second limitation was the proposed applicability of the simulation techniques proposed. With a few notable exceptions (e.g., Owen and Thiel), the various devices demonstrated at Chicago were designed to supplement the teaching or client presentation process; or they were intended for use as study techniques, generally directed to the solution of specific problems. The uses of simulation as a research tool *per se*—in particular, for more precise problem formulation—were barely touched upon. The research for architecture *Zeitgeist* has in many cases reached the universities as research for architectural teaching. This is unquestionably a commendable application but not the only one possible.

Potential applications of simulation techniques as research tools to help uncover the effects of architectural environments upon the behavior of their occupants are thus still relatively unexplored. The simple availability of an increasing variety of simulation techniques does not indicate which, if any, is appropriate for application to a given problem.

This leads into the third limitation evidenced

in the presentations—a limitation more in conception than in technique. Because the only aspect of the organism-environment interaction frequently simulated is the environment, it often appears that this is the only variable which can be simulated or the only one which is of interest. If simulation is used as a teaching or presentation supplement, this is entirely the case; if it is to be used as a research tool, it may be desirable, even essential, to simulate some aspects of the participant as well.

This is precisely what is done when, as might be accomplished in an extension of Owen's work, the characteristics of a hypothetical group of museum visitors are fed into a computer to interact therein with even more hypothetical environments. It is precisely what is done when rats are substituted for humans in a limited study of the effect of environmental design upon density-produced social pathology. Simulating the environment reduces the cost, in time and money, of constructing an actual building; simulating the humans who will use the building reduces the cost involved in exposing individuals or groups to an actual or simulated environment, putting them through such an environment or asking them to live in it.

But the human can only be simulated where the relevant characteristics of the participant—the potential user of the environment under simulation—are already well known. We cannot simulate the passage of museum visitors through an exhibit if we know nothing about the characteristics of human movement. Basic research in the behavioral sciences has yet to supply much of the information we need in order to effect user simulation.

Simulation as a word, or an idea, is very much the vogue; as a tool, it is clearly of much interest and in widespread use. So many techniques are available, so many more under development, and some uses so obvious, that students and users of simulation devices and techniques often do not reflect on certain fairly basic issues. (Architects concerned with simulation are by no means unique in this; it is more common than not, particularly in the behavioral sciences, to be so immersed in a problem or field of study that one becomes, in fact, an integral part of it.) The basic issues may be phrased as questions, of which four appear to be fundamental:

- Why simulate?
- What, when and where shall we simulate?
- How shall we simulate?
- To what can we generalize the findings of research utilizing simulation techniques?

The answer to the first question was provided earlier, in greatly simplified form: We simulate to reduce expense, to save in time, money and per-

sonal hardship, the cost of presenting the actual object to the actual user.

The answer to the second question is less obvious. If the only objective of simulation were realism, the ideal solution would be *not to simulate* at all. Commercial airlines, to reduce loss of lives and cost, teach pilots with Link trainers, which externally appear nothing like aircraft but contain all the internal essentials. The question can be rephrased: What part or parts of the real situation must be abstracted; what must be produced in the simulation process for the purpose at hand? Still another way of stating this is: What are the goals or objectives of the participant; what does he need or want to perceive? Is realism or another kind of information being sought? Often the issue is: What parts of an experience are critical or most important in making the experience seem most like reality? It is a truism that a mode of simulation that is adequate for one purpose or person, using a given object, may be totally inadequate for another purpose or person using the same object.

Ideally, the answer to question 2 would dictate the answer to question 3: What, etc., to simulate would suggest a technique or set of techniques applicable to the problem. Most of the contributions to the Chicago conference, as indicated earlier, were directed to this question.

Question 4, in asking about generality, refers largely to the degree to which a situation is simulated rather than actual. The less realistic the display—the fewer the aspects and the more the aspects presented are in simulated rather than actual form—the less will be the ability to generalize the results of research which utilizes the simulation technique in the absence of other *a priori* information. In effect, to achieve economy of means, we are often forced to sacrifice the generality of our findings. Hopefully, in the future, exploration of these qualifications will supplement exploitation of simulation advantages in various fields of architectural design.

A witty little sign displayed over the desks of some executives reads, "Are you here with the solution or are you part of the problem?" It was once amusing; frequent exposure has rendered it now only instructive, a reminder of the statement made previously that we all become parts of the problems we try to solve. Extricating oneself from a field of study to examine the field from a detached point of view is often a nearly impossible task—one of the three paradoxes of rationality, we are told. But however critically the process continues, we may eventually be faced with simulators simulating other simulators in a simulation:

". . . and in the Beginning, Man made Machine . ."—New Genesis 1:1. □



## WORKSHOP PARTICIPANTS

### Simulation (visual)

*Robert Sobel*  
*Rice University*

Visual simulation by video tape from scale models.

*Fred Moyer*  
*University of Illinois*

Visual simulation by film from scale models. Comparison of movies from scale models with movies of actual buildings.

*Charles Davis*  
*University of Kentucky*

Visual simulation by sequential perspectives made by computer plot.

*Robert Beckley*  
*University of Michigan*

Visual simulation by film animation from sketches.

*Enn Kayari*  
*North Carolina State University*

Visual simulation by slide projection on screens surrounding viewer.

*Philip Thiel*  
*University of Washington*

Comparison of "designed experiences" by sequential notation with film or slide simulation of sequential experiences.

### Dynamic simulation

*Charles Owen*  
*Illinois Institute of Technology*

Simulation of a dynamic systems (e.g., circulation flow through a building) by G.P.S.S. programming.

### Media relationships

*John Fisher, Charles Rusch*  
*University of California, Berkeley*

*Stuart Silverstone*  
*Massachusetts Institute of Technology*

Sorting of the relations among typical architectural idea content, typical analogy and available media.

*Cecil Elliott*  
*Oklahoma State University*

Study of criticism as a form of communication, analysis of its use and limitations as a problem-solving and teaching tool.

*J. Stroud Watson*  
*Arizona State University*

*Leonard Warshaw*  
*University of Montreal*

Understanding and development of the physical model form as a study medium.

*John Gilchrist*  
*University of Southern California*

The effect of visual presentational media on the comprehension of material and idea content presented.

*Serge Bouterline*  
*International Signal, Inc.*

Computer-controlled interaction devices.

### Application to architectural curricula and architectural problem solving

*Charles Owen, Charles Davis*

The use of two decomposition and condensation computer programs in structuring design problems.

*Richard Levine*  
*University of Kentucky*

Study of the use of different media simultaneously at different scales as a control; several media used simultaneously to create a new medium.

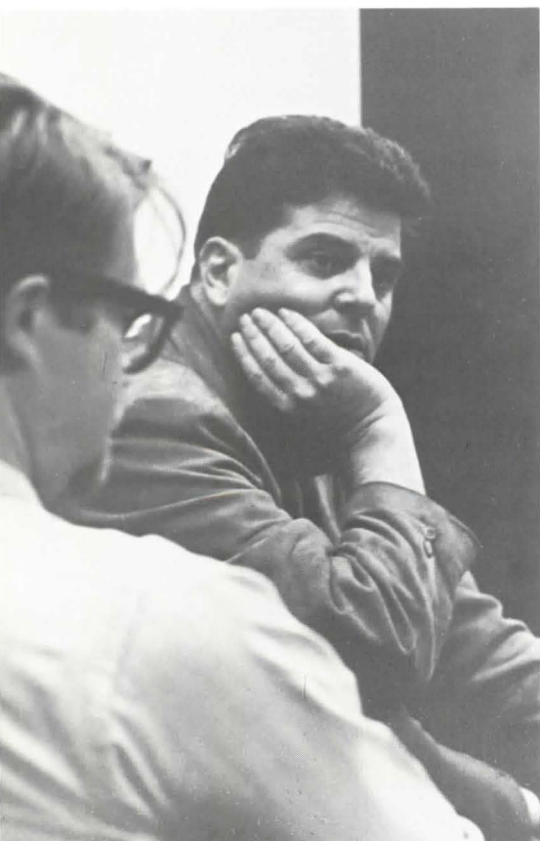
*Enn Kayari*

The influence of new study media on architectural curriculum structure and teaching methods.

*David Rinehart*  
*University of Oregon*

Study of the possibilities of extending the collected findings of this teachers' seminar in a project or projects to be used experimentally by schools.

*Serge Bouterline*



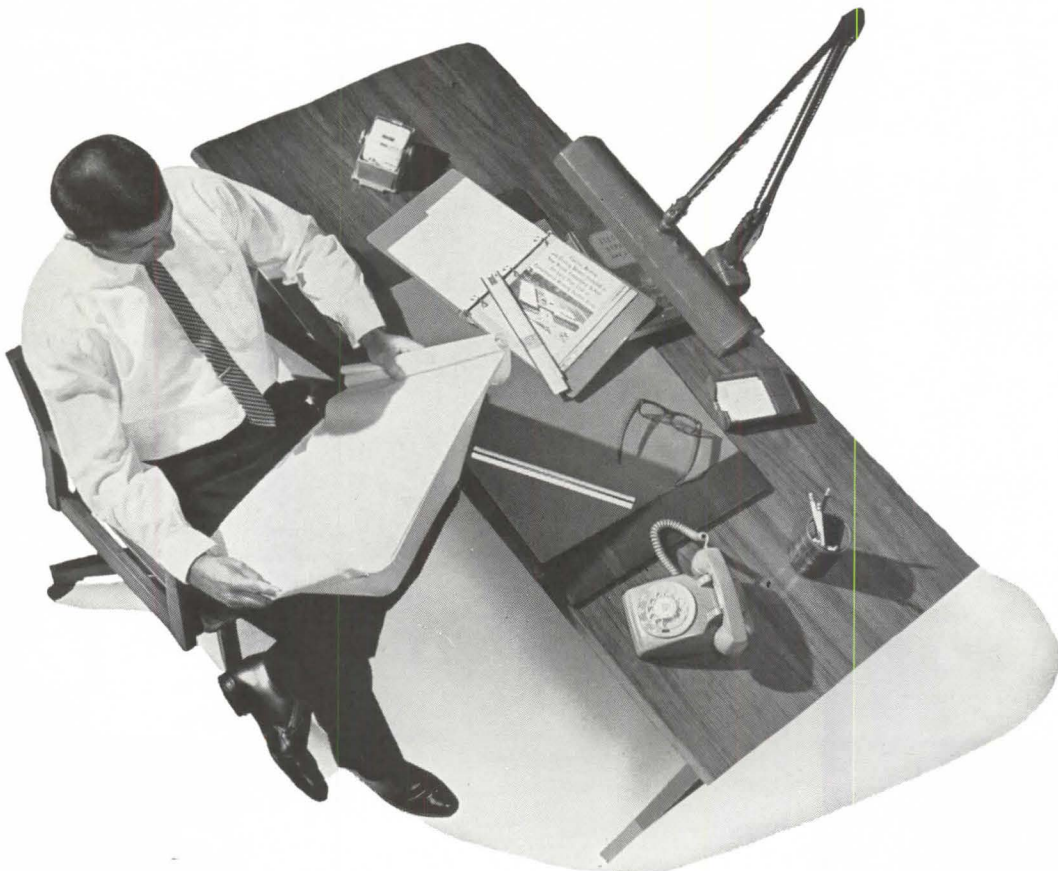
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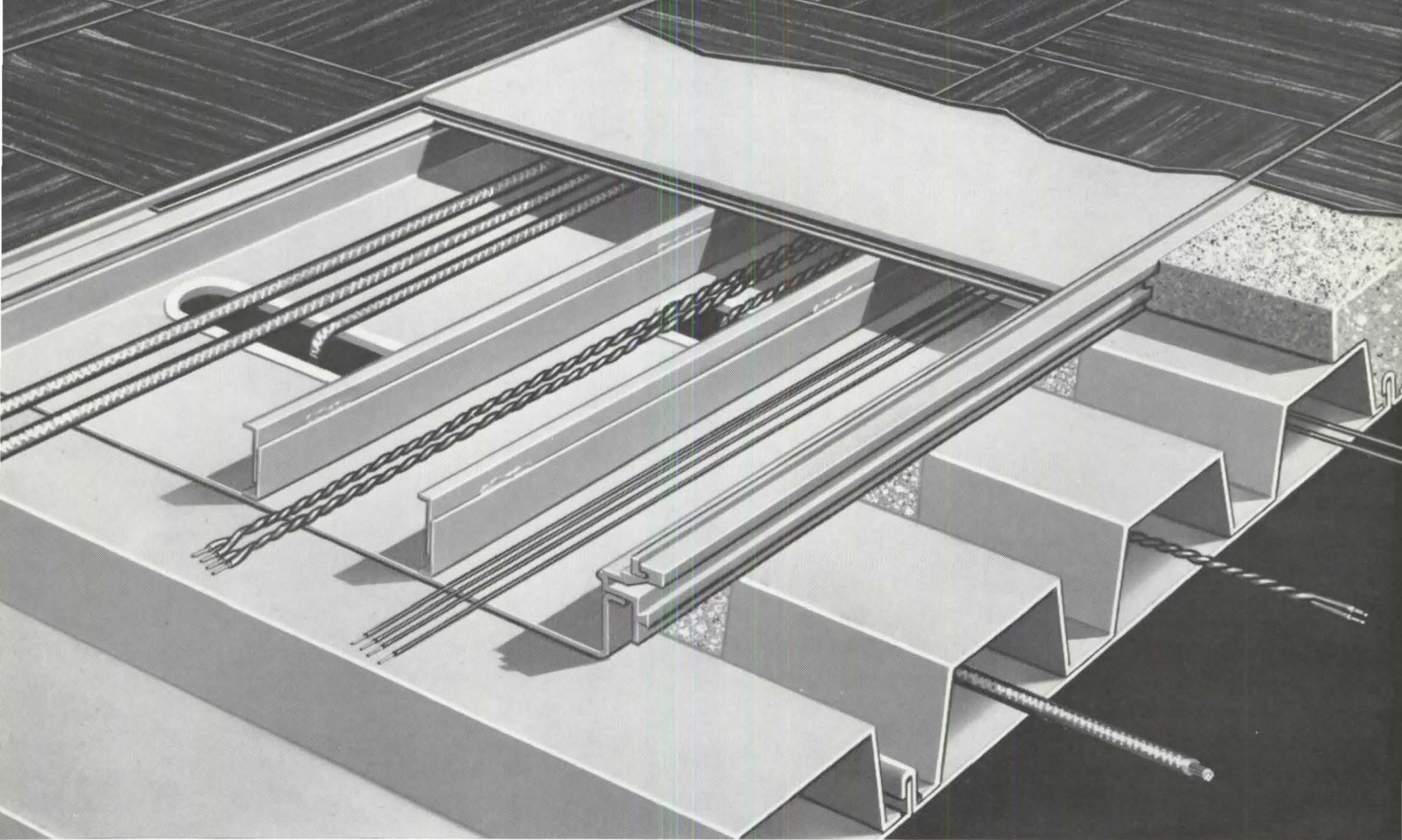
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# Experiencing Architecture

## —by Wheelchair

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You can travel in space, to the ends of the earth and to the bottom of the oceans in the Explorers Hall in the National Geographic Society Headquarters. Once inside, you're in a thrilling, capsule universe.

Outside, in his wheelchair, sat Fred Fay, 23. He couldn't get into the world of wonders beckoning behind the glass walls, the only world he could have explored unaided. Four steps were in his way.

A National Geographic editor happened by. A ramp could have been put out had Fay only called beforehand. That wasn't the point.

**Not-Such-Fun Obstacle Course:** Fay, an IBM computer programmer and president of the local chapter of the National Paraplegia Foundation, had the press with him to demonstrate how architectural barriers make him and a reported 22 million other handicapped Americans depend on help where more thoughtful design could have given them the joy of independence. Members of his party stood in awe as they watched him bump down or struggle up curbs and being shut out from building after building.

Finally carried up the four steps to the National Geographic, he still couldn't make it inside by himself. The double doors were too difficult to handle.

Help was offered again, but Fay had to continue on his obstacle course. "Bet I'll be *persona non grata* here from now on," mused he.

Bet not. Aware of the problems, the National Geographic will undoubtedly see to it that not only the usual welcome mat but a permanent welcome ramp will be out at all times.

**Design for All:** Fay's tour was part of a "Myth and Reality in Architecture" conference in Washington, D.C., sponsored by the AIA under a grant from the Vocational Rehabilitation Administration, Department of Health, Education and Welfare.

The meeting was the culmination of a year's work by an AIA task force on architectural barriers

made up of members of the Potomac Valley (Md.) Chapter AIA and a prototype for similar meetings to be held across the country.

"The 'average man' is a myth," said Edward H. Noakes, AIA, project director of the task force, speaking at the meeting. "We should not be designing for an 'average' individual who is assumed to have certain anthropometric characteristics, full mobility and a full range of sensory perceptions. Even today's 'average' will not remain young, healthy and fully active for the remainder of his life."

**Let Everybody in:** "Open up new worlds to millions of people," Mary E. Switzer, administrator of the Social and Rehabilitation Service, HEW, pleaded with the architects, government officials, health and education workers present. "Support for the elimination of architectural barriers in buildings used by the public is practically unanimous among architects, but so far only a relatively small number are taking the problem into consideration when they actually design a structure and its setting."

The design is not of prime importance, she went on, but the condition of society, and it should give the architect satisfaction to be able to consider his work part of a mosaic to reduce dependency among the handicapped, who in-

**It's just another curb to most of us; to Fred Fay and thousands upon thousands of others it is another major source of concern.**



deed have enough difficulties to overcome psychologically.

**Toward a Smoother Road:** Man-made difficulties, according to Fay, besides steep steps and revolving or narrow doors, include wide gratings; slippery floors; city shopping (suburban shopping centers are easier); layout of restaurants, hotels and theaters; drinking fountains; phone booths; restrooms—and finding a functional apartment or house in the right location.

What's the solution?

"To follow the standards," Fay said, referring to the *Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped*, approved by the American Standards Association in 1961. Other helpful milestones reached recently:

- All federal government buildings are being rebuilt for or designed to be used by the handicapped.
- Federal government agencies are supporting actions to eliminate architectural barriers.
- Every state now has a governor's committee on employment of the handicapped concerned with architectural barriers.
- The Senate has approved and sent to the House legislation (S. 222) to ensure that public buildings financed with federal funds are designed and constructed to be accessible to the physically handicapped. The bill authorizes the administrator of the General Services Administration to prescribe regulations establishing standards for design and construction of public buildings.

At the next session of the New York State Legislature, a bill will be introduced that goes much further than S. 222. It will require that multiple-dwelling apartment houses and buildings for public use in that state must have at least one primary entrance with a ramp or level approach, level floors on both sides of exits and corridor doors, a minimum width of 32 inches for all doors as well as adequate restroom facilities. □



Credits: Department store, Dayton, Ohio. Architect: Fred E. Wennlund, Chicago; Terrazzo by Weiffenbach Marble & Tile Co., Dayton, Ohio.

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AIA JOURNAL/DECEMBER 1967 75

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## Less Soul-Searching, More Research

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In April 1964, 16 delegates to what was optimistically titled the "first annual Architect-Researcher's Conference" gathered self-consciously at the Octagon to swap conjectures about the nature of architectural research. "We were rather pitiful, huddled in one corner," a researcher remembers.

"We spent a lot of time trying to define research for architecture, and secretly none of us was sure that what we were doing could be dignified by the name of research."

Some 200 researchers converged on the Smoky Mountain hamlet of Gatlinburg, Tennessee, recently and there was no cowering in the corner. (Getting to Gatlinburg is in itself a somewhat humbling experience, but a small army of bright, cheerful students from the University of Tennessee School of Architecture pitched in to ferry registrants from the Knoxville airport. They served in countless other ways, too, and delegates wished them nothing but straight A's.)

In Gatlinburg there was confidence in the attitude of the researchers—those on the platform and those in the audience (or audiences, since the ambitious scope of the program dictated concurrent sessions for many events). Nobody was terribly apologetic or diffident; this year's attendees were not so preoccupied with trying to define research for architecture. They were there to tell each other what they were doing and how.

**No Apologies for Idealism:** Nobody apologized much for idealism, either—and there were many visionaries there to fire the imaginations of the out-and-out pragmatists.

John Reese, AIA, a panelist representing the US Public Health Service, challenged his listeners: "Imagine a day when no building permits will be issued for a facility which will add to the amount—already insupportable—of pollution in the water or the air. Imagine a situation in which the US will be forced, of dire necessity, to deal effectively with its waste products.

"I can foresee a time," he ventured, "when such discards as junked automobiles will be stripped of combustibles, sterilized, compressed (à la James Bond movies), and will become a building material." (He may have been anticipated by the hippie colony of California's "Drop City," where hunks of junked cars have been welded into Fulleresque domes in a new folk-art form which, not incidentally, houses a lot of flower children.)

"Computer" was probably the keyword of the conference, or at least the word most frequently heard. "Systems" and "programming" tied for second, both in and out of their data processing contexts.

No less than 10 presentations had to do with computer usage *per se*, and several others cited the computer as a likely tool. "Systems" most often referred to an approach to construction.

**No Eyes Batted:** The architects listened to sociologists, systems analysts, behavioral scientists and one another—and seemed to have developed a *lingua franca* for interdisciplinary communication.

Nobody batted an eye when a psychiatrist announced as his topic "Psychiatry of the Absurd," and everybody nodded understandingly when an operations researcher described the use of operational gaming as a planning tool. Other topics dealt with "hard" research, from a study of design for life-safety from fire to a components system for a hospital bedroom.

Interspersed with presentations by the architect-researchers were panel discussions with participants drawn from government, nonprofit think tanks and private architectural practice.

One panelist, Bertrand Goldberg, FAIA, told his audience sternly, "Research can become an idiot's delight, if you go on and on without ever having to apply the results. Architectural research—although the term has only recently become fashionable—is not new."

**Cites Crystal Palace:** He cited the experimentation with steel and glass which culminated in the 19th century Crystal Palace; the emergence of prefabrication techniques prior to World War II, and, immediately afterwards, research in concrete construction. "Periodically," he said, "we rediscover architectural research as though we were rediscovering Monday."

But, contended fellow panelist John G. Dinkeloo, AIA, methods are still very crude. "We haven't really come so far from the cave," Dinkeloo said. "For example, heating: We still use the caveman's fire, although we have learned how to confine it in a pot, and even how to attach a fan to it so we don't have to stand so close."

Urging that researchers take a truly creative approach, Dinkeloo suggested that perhaps a national agency for architectural research should be created and given the same status as the effort now being exerted in the space program.

**A Reminder of Need:** If delegates needed to be reminded that their efforts to improve man's environment are desperately needed, Institute Vice President Robert F. Hastings, FAIA, was there to do so.

Alluding to last summer's rioting, Hastings said, "On 12th Street, in my city of Detroit, we had a recent and tragic reminder of the fact that our environment today has a dehumanizing effect on people." Our society, he said, has been made sick by the environment we live in.

Stressing that the violence in Detroit was not primarily racial, he explained that what happened in the city was a reaction by people who do not have the simple necessities which make life bearable, against the society which denies them those necessities.

"Now," he continued, "it is up to us, who are charged with responsibility for designing man's environment, to do our job in such a way that the events which took place in my city, and in dozens of others, will not be repeated in yours." MARILYN E. LUDWIG



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AIA JOURNAL/DECEMBER 1967 77

# The Technician's Training, Role, Status

Nine recommendations for attracting good support personnel to architects' offices and keeping them there have emerged from a study made possible by an AIA research grant.

Among the proposals are suggestions to establish organizations for support personnel and have them affiliated with the AIA.

The study was made by C. Herbert Wheeler Jr., AIA, another of whose research efforts resulted in the publication *Emerging Techniques of Architectural Practice*, and was carried out in cooperation with the Institute's Task Force on Architectural Technicians Training.

Discerned in the study was a withering role for the traditional architectural draftsman and an emerging need for a new kind of person—the architectural technician or master of techniques in architects' offices. Technician/specialists delineated in the study number nine and run from architectural technician/drafting to architectural technician/data processing. Functions of other technicians fall in graphic arts, models, specifications, estimating, reproduction, information and administration.

**A Few Observations:** Wheeler preceded his recommendations with some observations:

- The position of the traditional draftsman in today's practice is questionable. Finding a draftsman of high caliber, yet free from proclivities to encroach on professional prerogatives, is like "finding a needle in a haystack."

- Moreover, many architects prefer to use only architectural graduates for drafting and documentation on grounds that a strong design sense is necessary to prepare such documents.

- Additionally, the primary training ground for the architect appears to be "on the board."

- The functions of offices seem to divide into three categories: 1) Design and documentation, done by architects and architects in training. 2) Technological design and documents, by engineers and engineers in training. 3) Techniques, such as graphics, microfilming, network planning, cost estimating, model-making, technical writing, etc., performed by technicians.

Wheeler, an architect and an associate professor of architectural engineering at the Pennsylvania State University, laid the responsibility for obtaining support personnel of sufficient number and ability in the lap of the profession. "Conditions within architectural practice and attitudes about the management of support personnel seem to

call for strong leadership by the profession," his report says.

**Nine Recommendations:** The recommendations were "suggested as goals for the task force in a somewhat continuous and well-financed effort by the AIA to create a body of support personnel." They would have the task force:

1. Request the profession to require as a code of practice that all design be done by registered architects or by architects in training under supervision. The study in fact found a trend in this direction.

2. Initiate a program to sponsor and establish two groups of careers—architectural technologists and architectural technicians. (A recommendation that coincides with those of the AIA's Education Research Project.)

3. To enhance the careers of architectural technologists and "make them a fundamental part of the architectural family of careers," initiate and sponsor the establishment of an organization for technologists.

4. For the same reason, initiate and sponsor the establishment of an organization for technicians.

5. Seek to have the two organizations as affiliates of the AIA.

6. To stimulate the creation of education programs for technologists and technicians, establish minimum standards of education and develop a system of accreditation of institutions for both careers. The technologists would have four years and the technicians two years of higher education. (Again, in consonance with the Education Research Project's urgings.)

7. Establish a systematic procedure for a two-year period of supervised training for both technologists and technicians and a procedure for certification of both.

8. Initiate a professionwide program to provide positive career benefits, along with a system of citations, in developing a good socio-economic status for both careers, thus assuring an adequate number of both kinds of support personnel.

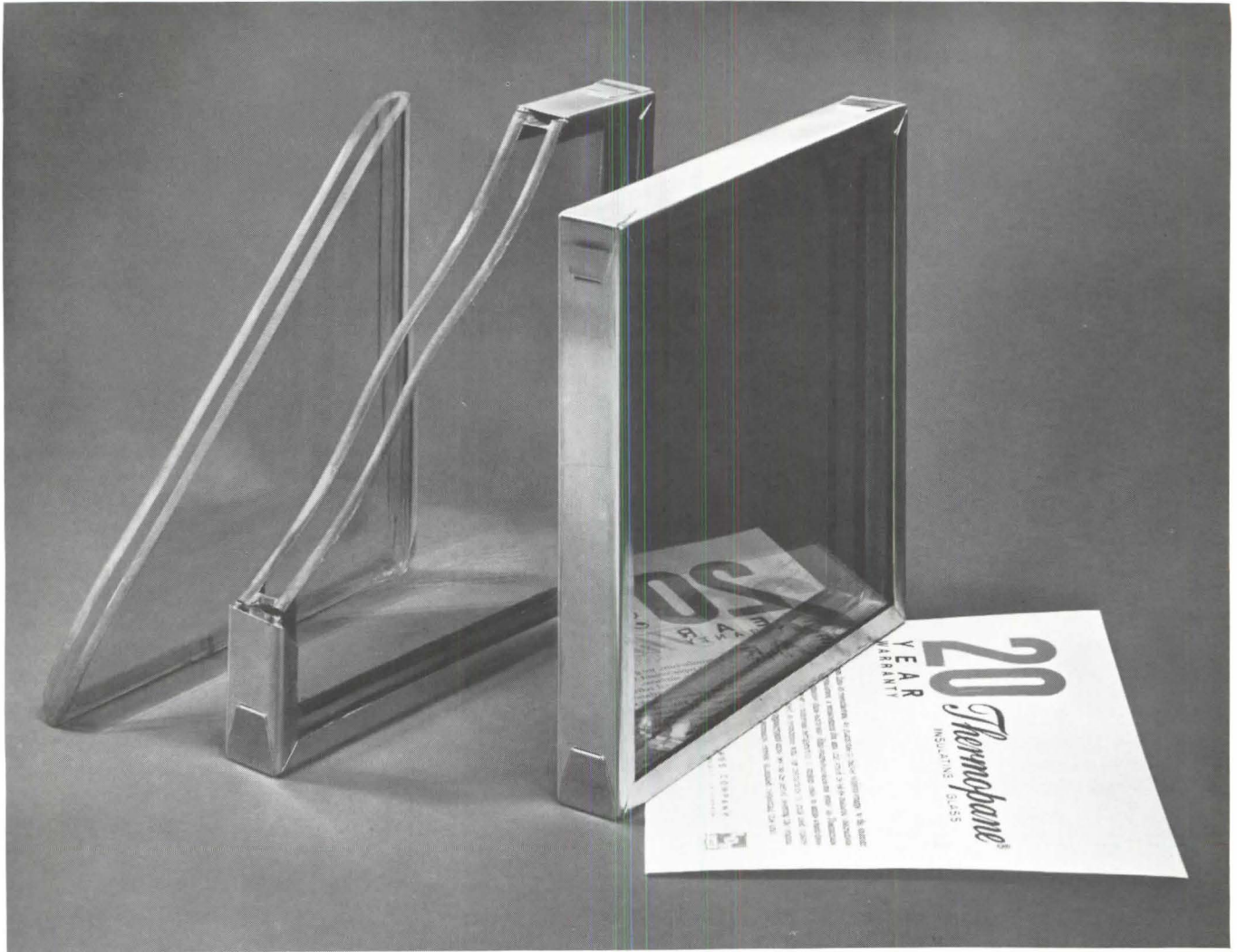
9. Study the establishment of both technologist and technician specialties to make it possible for support persons to be qualified on the basis of individual specialties.

Continued on page 80

The object of the AIA Task Force on Architectural Technicians' Training grant to Pennsylvania State University was "to support research in the advancement of knowledge and graduate training in the field of the role and responsibility of the architectural technician."

The task force, to go further into the background, was created "as a result of the demonstrated need for cooperation between the profession and the educational institutions to guide and develop training programs for the education of architectural technicians and support personnel."

Members of the task force are Clinton C. Ternstrom, chairman; Floyd Lamar Kelsey Jr., FAIA; Jack C. Tanner; Jesse M. Page; Philip L. Jacobson and J. J. Jordan, corresponding member. James Haecker, AIA, serves as staff.



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**Study's Widening Scope:** The study, aimed at an examination of the role and responsibility of the architectural technician, widened somewhat in scope as it progressed. For example, the report points out that "when it was discovered that many who are trained as architectural draftsmen do not go into, or stay in, architects' offices, it was decided to investigate all of the determinants which are used to select a technician's career." Eighty-five determinants were isolated.

One thing the study stressed was that the role, status and training of the technician have got to be improved—conceivably through a benchmark action such as the National Society of Professional Engineers' 1961 decision to sponsor the Institute for the Certification of Engineering Technicians.

"It is highly recommended that the AIA give top priority to an accelerated study of the formation and development of the two career groups," the study says, and that the task force step up efforts toward a more detailed study of how the technologists and technicians

will fit into the various sizes and types of architectural offices, and toward determination of the actual support personnel needs of the offices.

The study's survey of firms revealed small need for traditional draftsmen. From the draftsman's point of view, his is a career not without its "lids" and frustrations.

**Interns Dislodging:** "It appeared that the vital need of architectural graduates for drafting experience during their internship has taken the place of draftsmen in many offices," the study says.

But it adds that a need is growing for technicians to operate drafting machines, printing machines, computers, photographic and other equipment, or to handle CPM, estimating, graphics, scheduling, value analysis, specifications and other services.

Surveyed architects in general said yes to queries on proposals to strengthen performance of technicians, but were yes-and-no when asked whether the profession should encourage a technicians' organization.

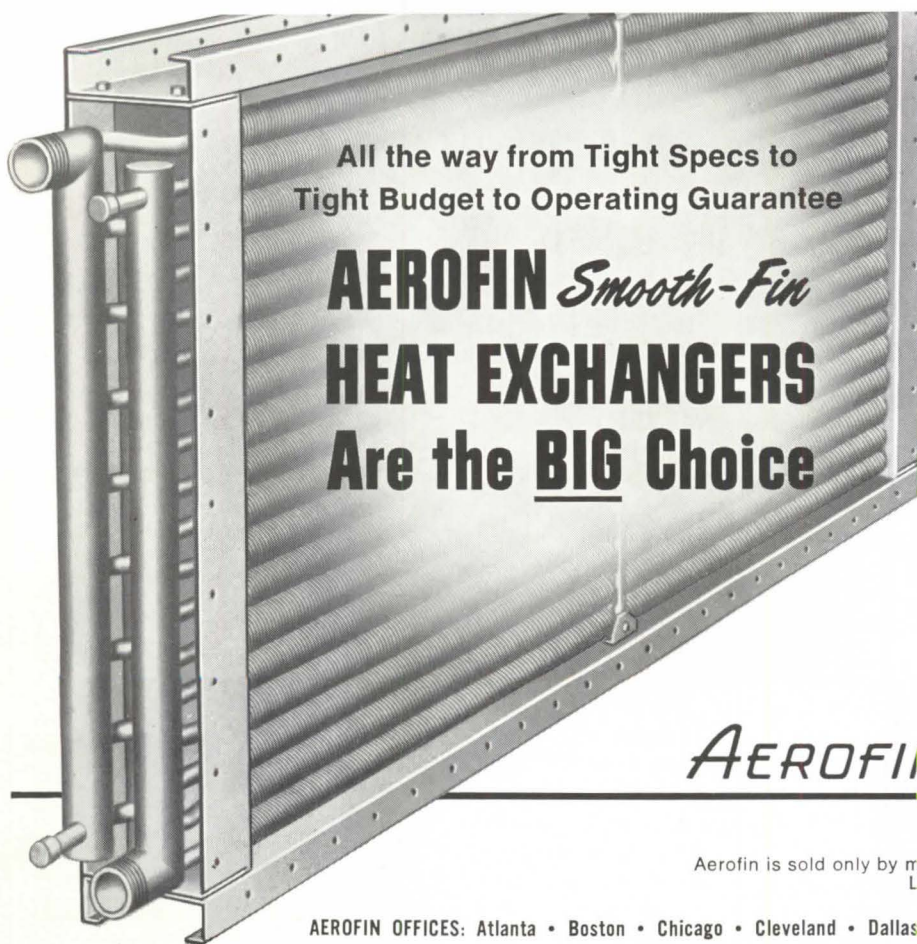
Architects supported the idea of beefing up employee benefits for

technicians/draftsmen. They even supported the concept of a job-security program comparable to those of major industries, notwithstanding fluctuating work loads although this characteristic of the building industry was cited in some responses.

**In the Future Office:** The study envisaged in "the office of the future" a series of "centers"—for computer-aided design, automated information, printing, graphic arts, models, materials and production services. Or perhaps cooperative service centers might be maintained by groups of firms, or still further, reliable urban service organizations might be used.

The important thing, the study points out, is that the trend toward the use of computers, microfilming, reproduction processes and other scientific equipment portends more technicians and probably fewer draftsmen as they are now known.

The study report is one of the supporting documents being used in the preparation of a guideline directed toward junior colleges, technical schools, etc., as well as AIA chapters. It is to be published early next year. □



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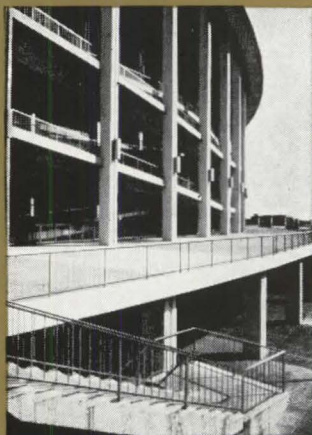


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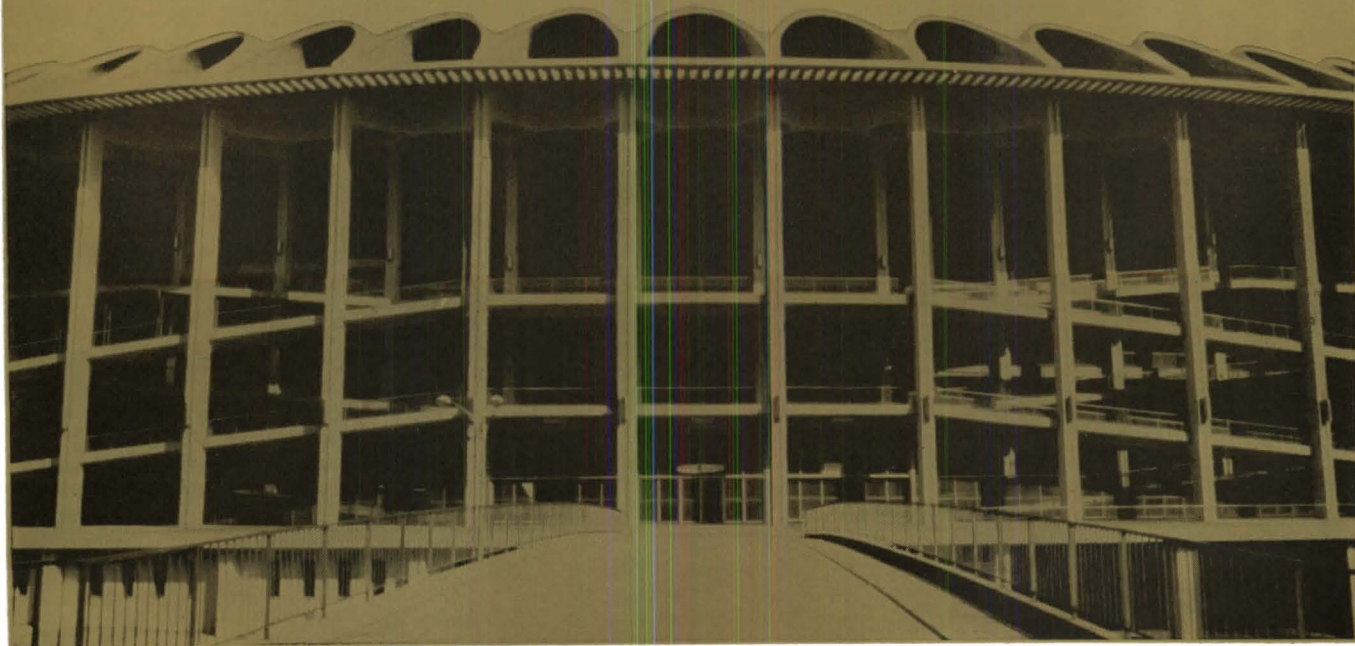


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# Books

**The Urgent Future.** Albert Mayer. New York: McGraw-Hill, 1967. \$16.50.

Few practitioners can claim the extent and breadth of experience of Albert Mayer, FAIA. His philosophic attitude is in the tradition of Patrick Geddes, Ebenezer Howard, Lewis Mumford, Benton MacKaye and Clarence Stein. But he also has firsthand knowledge of the maze of policies, programs, institutions, complexities, absurdities and potentialities of the forces that design and build America.

From all this, Mayer has abstracted a philosophy, an analysis and a prescription. That constitutes his book (fashioned from articles originally published in *Architectural Record*), and it is a valuable one indeed.

A work of such scope could easily founder by overemphasizing a particular topic. Mayer has avoided this without sacrificing quality or coverage. Here is a whole picture of what we are and what we might be as an enterprising and industrious nation. Here is a whole picture of what our national policies are and might be; what our governmental institutions are and



what they might be; how our financial institutions operate and how they might operate.

Mayer is a reformer of the genre whose suggestions may seem radical only because they confront vested interests, private as well as bureaucratic. As a reformer, however, his suggestions are those which, in the long run, prove to be most practical. He would reform those customs which cause us grief rather than stop with a treatment of the symptoms that are appearing ever more frequently. And he would recast our enterprises to

produce beneficial results without wasteful inefficiencies. He cites numerous examples of experiences here and abroad to prove that his is a practical utopia.

Although he writes from personal observation, his subjectivity never obscures his vision. On the contrary, it illuminates. While exploring the scanty quantity of low-income housing, he points out that nearly all innovation in housing has come from the federal effort alone. He acknowledges the imaginative and able work of Marie McGuire and William Slayton. And he warns that changes in nomenclature in the federal establishment are no substitute for real innovation and evolution.

Of particular value are Mayer's discussions of federal programs, private financing, regionalism, urban renewal, new towns, metropolitan-scale contexts of operation, public development bodies, limited profit corporations and the actual cost of a full-fledged program for the United States. On the point of actual cost, the author shows that it is well within our capabilities.

That our economics and statistics belie our real state of affairs is no small concern to Mayer, and he is not sparing in condemning those terribly persuasive but misleading idols that measure the obvious superficialities and conceal larger facts. He emphasizes that trend is not destiny.

Mayer's prescription includes a broad spectrum of actions: "public housing . . . urban renewal . . . new towns, greenbelts, the metropolitan galaxy, new regions and other freeing physical and ecological concepts and in implementation that we will be able to achieve, in both large totality and intimate scale, an ambience of landscape and architecture that will wholly express and maybe electrify our 20th century."

By way of comment on the importance of the book's ideas, one might say that it is a tragedy that they had to be written at all. The knowledge contained therein should by now have become a national attitude, our nation's daily business, our way of creating and maintaining a great physical and social environment in which we could flourish. It is a tragedy that we have not learned this better course, for it was offered to us in the early '20s in considerable formulation. But the job of learning is not yet beyond us, although it is considerably more difficult now to bring the reforms we need.

The one door still open is enlight-

enment—a rapid awakening of all our citizens and a glaring confrontation with the destructive forces that are in operation all around us. Really, they are more the product of stupidity than anything else. The principal medium for reform is still the written and spoken word. For that reason one might have wished for better editing, layout and design in Mayer's book. It will probably reach the "less than 5,000-copy professional market." We need to do much better than that—and this is a responsibility which the publishing world has not yet assumed sufficiently.

PAUL D. SPREIREGEN, AIA

**Papers of the American Association of Architectural Bibliographers**, Vols. II and III. Edited by William B. O'Neal. Charlottesville, Va.: University Press of Virginia, 1966. 113, 138 pp. \$5 each.

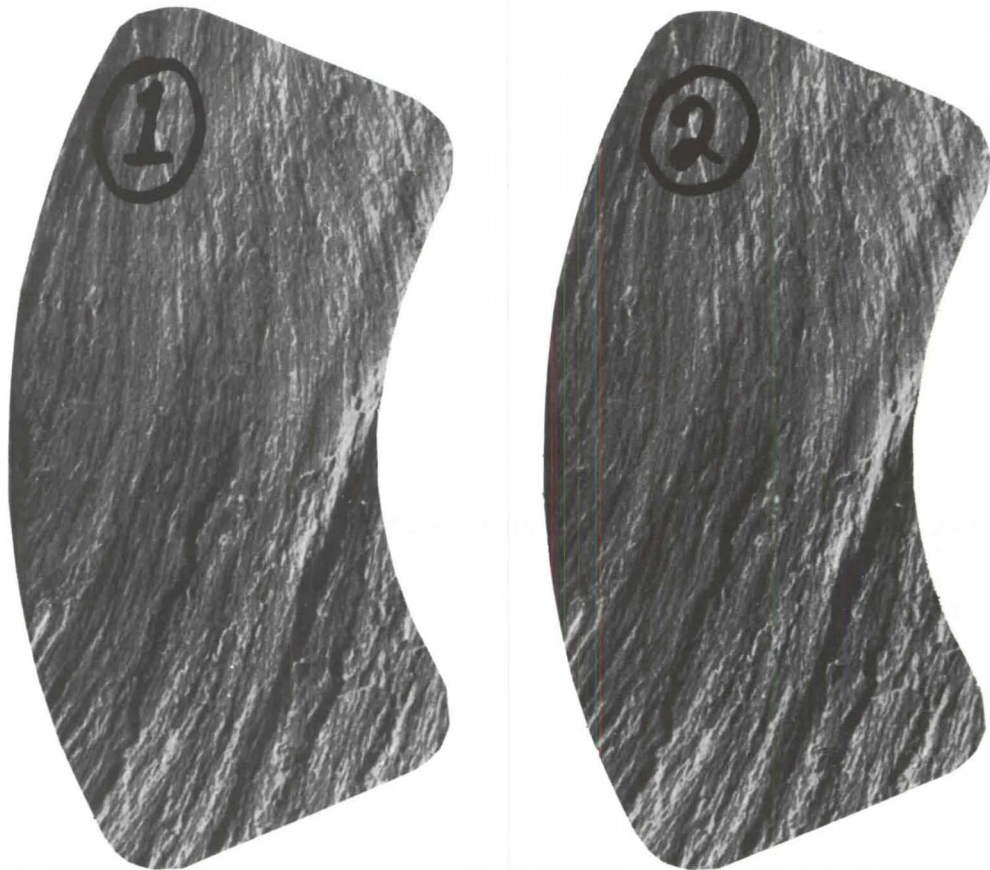
Volume II includes four bibliographies: *Architectural Writings of Sibyl Moholy-Nagy, January 1944 to March 1965*, by herself; Part II of *Writings by and about Philip C. Johnson*, by W. B. O'Neal; *Holabird and Roche: Chicago Architects*, by William Rudd; and *The Early Architecture of Virginia: Journals*, by F. D. Nichols.

Mrs. Moholy-Nagy's bibliography is the shortest but has been usefully grouped in categories. Although O'Neal's listing of writings on Johnson has been grouped by type of material, one wonders if it would not have been more useful grouped by subject of the articles. And why did he not at least try to further identify the 15 journal articles which he lists as having insufficient information? Some, at least, are readily identifiable. Many of the ephemera hardly seem worth the bother of listing.

Rudd's work on Holabird and Roche is most interesting, with the inclusion of some text material. With the entries divided into small groups and annotated, this list should be the most helpful bibliography in the volume.

Nichols' listing is the most comprehensive, including titles "even when they offer only a few useful paragraphs not elsewhere available." Accordingly, his list with some 500 to 600 entries could benefit more from annotations and some other arrangement than by author. One might note that no identification is given for the abbreviation CV which appears twice. In the entry under Flournoy it refers to

Continued on page 84



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*Confederate Veteran*; but it should not even have been used under Hamilton, where the reference is to *Current History*. The article listed anonymously as "Restoration of Arlington House" has an author, Enoch Aquila Chase.

Volume III is devoted entirely to Walter Gropius, which presents a puzzle since in Volume I, 1965, there appeared the first installment of a bibliography on Gropius. No explanation is given as to why that one is discontinued and this offered in its stead, but with the cost of bibliographical publication being what it is, one is tempted to deplore the successive publication in two years of much the same material.

The present listing comprises three main sections: writings by Gropius, subdivided by type of material; writings about Gropius, again subdivided; and indexes. A chronological arrangement is used under the various subdivisions.

Unfortunately, many of the references are incomplete, apparently as a result of being compiled primarily from Gropius' file copies, rather than from an inspection of the full publication. The editor states that the omission of volume number or pagination is because the information is unknown. On page 17 he gives page and volume references in the AIA JOURNAL to a review of a book by Herbert but by page 61 he has lost these facts. Also, the second review of the book noted is surprisingly different on each page. And one can hardly believe that the editor does not have ready access to such periodicals as page 35, *Architectural Review*; page 39, *Architectural Forum*; and page 115, *Progressive Architecture*. Because the page reference is not given for the October 1963 reference in *Architectural Review* on page 43, one is puzzled as to whether this is the same reference as on page 111. And if so, how can it be both by and about Gropius?

On page 37 he notes a reference in *Domus* November 1955, but it appears to be in February 1956, pages 1-4. Evidently it was assumed that since the talk was given in October, it was published the next month.

One error, doubly amusing, appears on page 115 where the first item under Zevi is given as in *ibid.*, thus referring back to *Progressive Architecture*. Actually, it is in *Architettura* and so noted correctly on the facing page 114 where the

same article is listed anonymously under title.

No effort has been made to check out the whole bibliography, but certainly this reviewer is satisfied that the editorial job was done quite perfunctorily. Obviously mistakes can occur in any publication, but when inconsistencies and easily remedied omissions are so apparent, it gives cause for concern.

This reviewer particularly dislikes being critical, for these volumes are offering material on important subjects, presented in a very attractive format. He feels, however, that the editors have not attained the standards which are implicit in the name "American Association of Architectural Bibliographers." He urges them to set their standards higher so that a casual inspection cannot reveal the inevitable occasional flaw which will then become apparent only as the bibliography is used, and so that the content will be worthy of the format.

G. E. PETTENGILL, HON. AIA

**Apartments: Their Design and Development.** Samuel Paul. New York: Reinhold, 1967. 308 pp. \$25.

Recent books on multifamily housing have been written by Europeans and, of course, the emphasis has not been on American problems. This new study of apartment design by a corporate member of the AIA is a welcome one, not only because its author is an American architect conversant with this country's design problems but also because it is a thorough analysis of a building type which is increasingly important.

The opening chapters of the book are given over to the predesign process, and here are discussed such topics as research, land acquisition, financing and the selection of the specialists who will work together on the project. Subsequent chapters deal with the design process itself which begins, Paul states, after the program of requirements has been established and includes every stage from concept to completed structure.



Paul includes a section on apartment design examples, endeavoring to show as wide a coverage of the United States as possible. He follows it with a survey of apartment house construction in western Europe and Scandinavia, discussing the basic differences in approach between the US and these countries.

Finally, there is a chapter on future trends in apartment house design. Among the ones Paul cites: Apartments will rise to greater heights than ever before; sound conditioning will be provided; air-supported structures will be used for swimming pools, tennis courts and other accessory buildings; large projects will have their own electric generators, sewage plants and water supply, detached from public utilities; electric heating will be used more and construction process will become more mechanized.

Three of the 16 chapters have been prepared by authorities in structural design and in mechanical and electrical engineering. There are more than 400 photographs, drawings and plans. Paul has written the book for those who are connected with apartment projects whether builder, investor, contractor or what-not. Because he is an architect, however, the book "is oriented toward the architectural aspect of apartments."

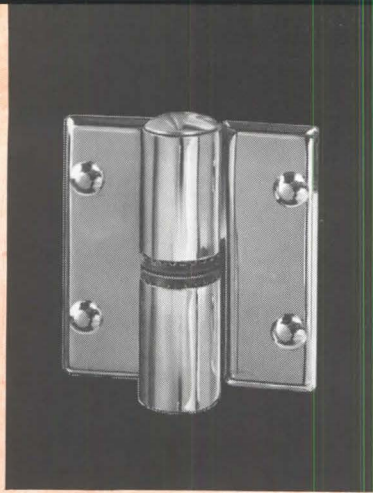
**The Region's Growth: A Report of the Second Regional Plan.** New York: Regional Plan Association, 1967. 143 pp. No price given.

The first metropolitan plan in the world, *Regional Plan of New York and Its Environs*, was published in two volumes in 1929 and 1931 after 10 research reports had been completed. It was indeed a landmark in the furtherance of the art and science of urban planning.

The Regional Plan Association was organized in 1929 to "foster and develop" the first regional plan, and since that time it has continued in its civic efforts to make the New York region a more pleasant and efficient place in which to live and work. The association is now in the process of developing a second regional plan, and this present inquiry and other similar reports will form an essential part of the plan. The report, now published, was supervised by S. B. Tinkel and edited by William B. Shore.

"The acceptance of large metropolitan size is not simply bowing before the inevitable; it is recogni-

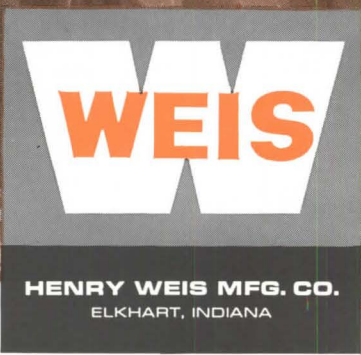
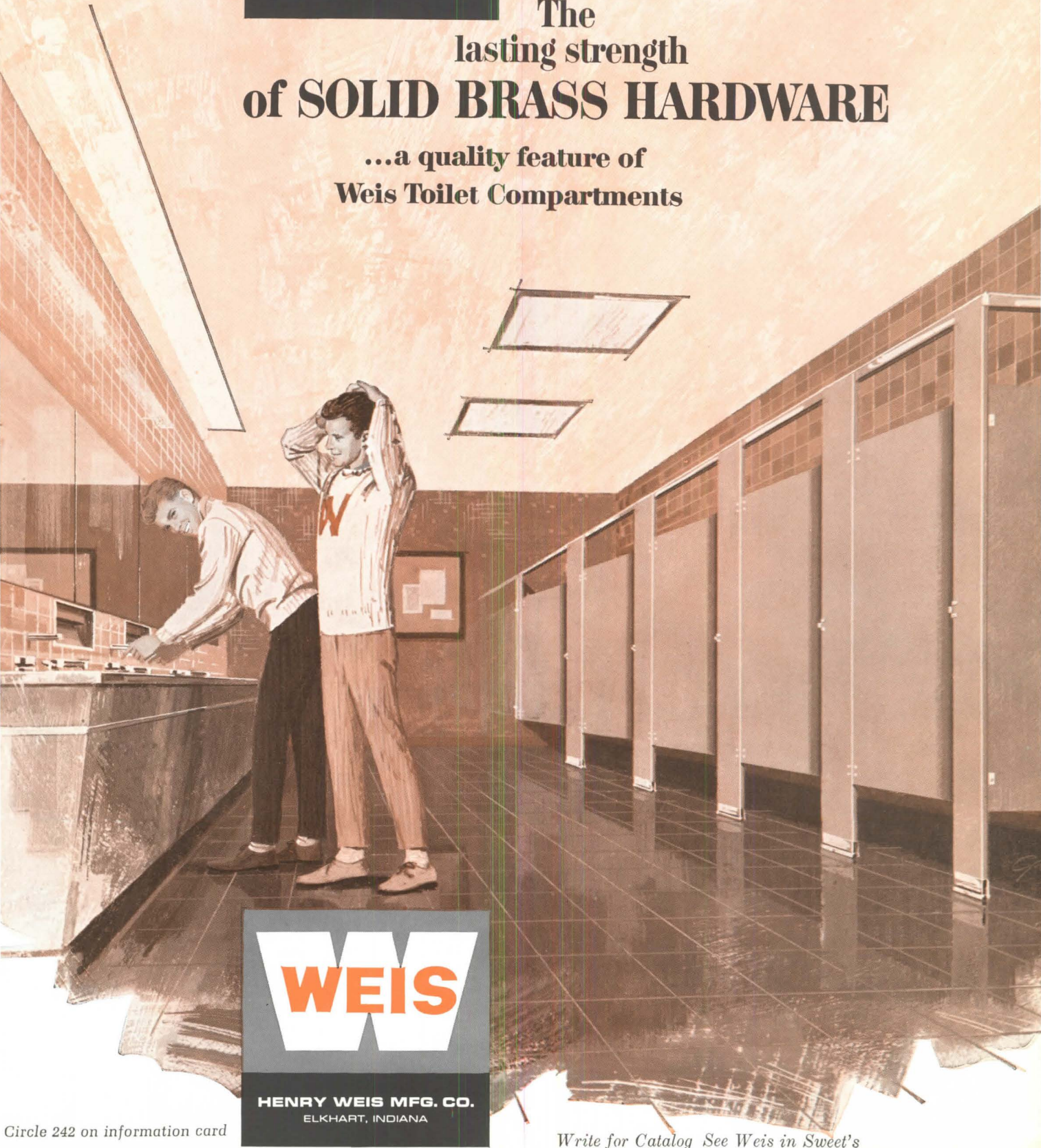
*Continued on page 86*



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tion that the great city is one condition of man's fulfillment in the modern world." This statement from the first part of the report, authorized by Boris Puskarev, suggests its tenor. The report concludes that the negative aspects of large city living are not due necessarily to size; rather, urban problems are related to planning, administration and design.

Moreover, continued growth of the urban region seems both logical and desirable. Efforts to restrict growth deliberately are likely to be unsuccessful, especially in a society where people may live where they choose. There is no way, the report stresses, to determine conclusively the ideal size that a city should have. City boundaries are lost, and the region should be thought of as "an open-ended system, consisting of multicentered, overlapping and partly autonomous subunits."

This section of the report is followed by an aerial portrait of the Atlantic Urban Region, edited by Louis B. Schlivek, who was the photographer of most of the illustrative materials. The stunning and revealing photographs surely add "a further dimension to the words, numbers and maps which describe the Atlantic Urban Region," as the report claims. The photographs are arranged in five parts to show city centers; examples of major activities outside the centers; the range of residential environments; the metropolitan fringe areas and open public space and its preservation.

One aim of the Regional Plan Association is to "expand opportunities" for all residents of the area. Part 2 of the report is concerned with the residents, and it forecasts population, jobs, households and income to the year 2000. Forecasts are necessary for planning purposes, and the association is hopeful that the work done here will be useful to business, civic, educational, religious and other organizations in the New York area. It is projected that jobs within the second regional plan area will rise from 7.8 million in 1965 to 13.2 million in the year 2000. The expected level and composition of employment by industry and occupation are indicated. The report projects the population and its makeup by age, households and income. The area's population is expected to increase from 19 million to 30.2 million between 1965 and 2000. The analysis and projections are by

Emanuel Tobier and the economics staff.

The Regional Plan Association is to be commended upon its thorough and thoughtful approach. Those concerned with urban planning will read the report with keen interest.

MARY E. OSMAN

**Le Corbusier, 1910-65** W. Boesiger and H. Girsberger. New York: Praeger, 1967. 351 pp. \$25.

This book encompasses in one volume the collected reviews of Le Corbusier's work published originally in seven consecutive volumes. Its arrangement differs from the others in that the contents are not presented in chronological order but are divided by subject matter in three divisions: architecture, urban planning and painting.



The thematic arrangement was decided upon, so the introduction states, "because an uninterrupted description of a certain subject—be it single-family homes or a whole block of buildings—reveals much more graphically the development of an idea from the very first sketch or draft right up to the completed structure."

The book, compiled by Willy Boesiger, a Swiss architect, and Hans Girsberger, is an admirable catalog of the work of a genius. Profusely illustrated, with text in English, German and French, it is the record of an amazing creativity.

Girsberger has commented cogently about Le Corbusier, and his words are borne out by an examination of this book: "His work is so wide in scope and content as to justify the doubt that it was accomplished by a single individual were it not for the fact that each of his creations bears the undeniable stamp of his personality, namely: lucidity of conception; inner logic; refusal to compromise; an inexhaustible wealth of imagination."

The book includes a biographical

sketch of Le Corbusier; a bibliography of publications on his work; and a chronological index of his buildings and plans and projects.

**Norwich Historic Homes and Families.** Marion K. O'Keefe and Catherine Smith Doroshevich. Stonington, Conn.: Pequot Press, 1967. \$6.

This is a presentation of photos and brief historic notes on 68 of the old houses of Norwich, Connecticut. In addition, there is a tabular presentation for each structure covering the following points: original or early owner; date built; position of house; type of construction; roof; chimney; height, ell, windows, foundation, interesting features.

A historic introduction and a list of 125 buildings surveyed add to the usefulness of the volume.

**A History of Western Architecture.** Mary Louise King. New York: Henry Z. Walck, 1967. 224 pp. \$7.50.

If an architect is looking for a book to present to a high school library or to a young person he hopes may become interested in architecture as a career, he would do well to consider this book. Mrs. King writes simply but without condescension, and the book will have appeal to the general, older reader as well.

She has concentrated on specific buildings and developments in the history of architecture which have had lasting pertinence and relates them to well-known buildings in the United States. For example, in the chapter on classical Greek architecture, the Lincoln Memorial in Washington is discussed, and its similarities and differences to a Greek temple are noted.

There are over 100 illustrations, drawings by John King and a glossary of architectural terms.

**Palladio's Villas.** James S. Ackerman, Locust Valley, N. Y.; J. J. Augustin. New York University, 1967. 79 pp. \$5.

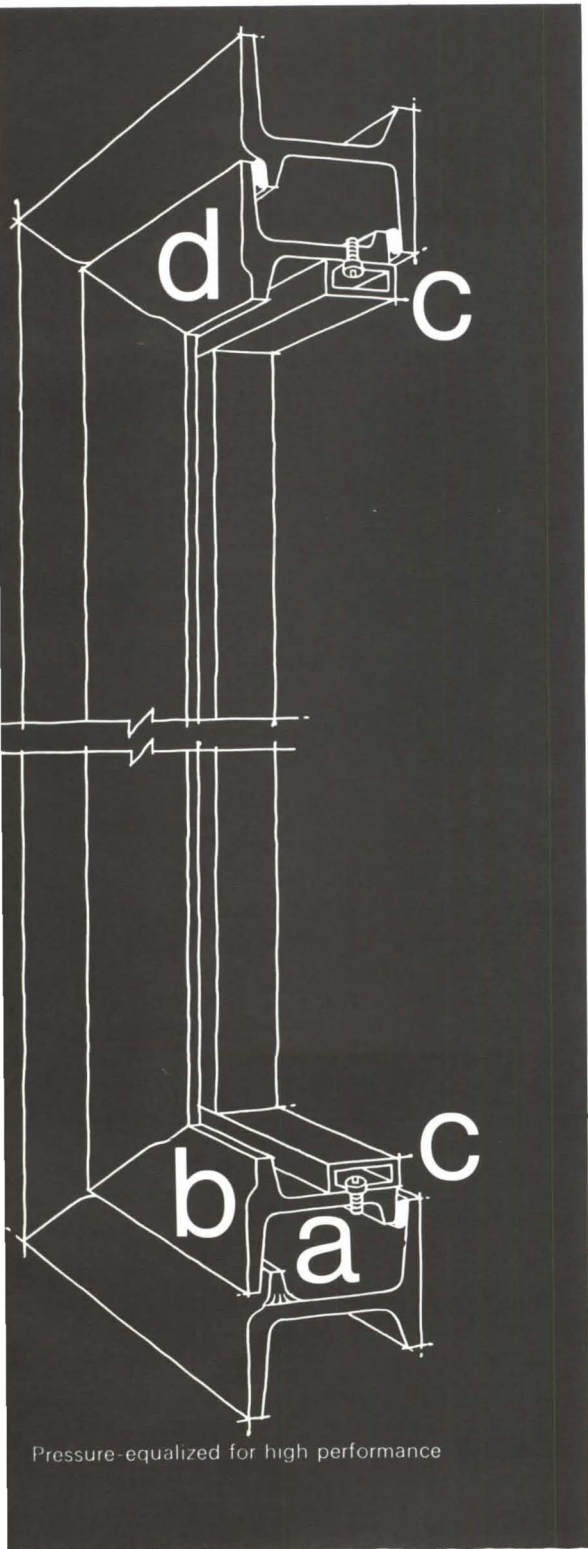
This neat little volume comprises the Annual Walter W. S. Cook Alumni Lecture delivered before the staff and students of the Institute of Fine Arts, New York University, by the eminent art historian, James S. Ackerman.

It is a concise study of Palladio's villas, augmented by notes, bibliography, a catalog of surviving villas and of destroyed and unexecuted villas and a group of illustrations which includes maps as well as photographs.

Continued on page 88

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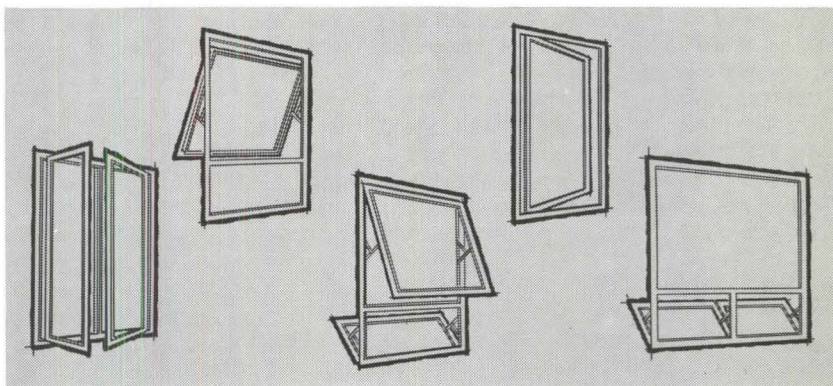


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**Architecture: Action and Plan.** Peter Cook. New York: Reinhold, 1967. 96 pp. \$5.50 hardbound, \$2.45 paperbound.

Cook is one of the designers of the well-known Plug-In City, an ingenious scheme that would stretch across Europe in a straight line. He is also editor of the avant-garde British publication *Archigram*.

It is reasonable, therefore, to expect his book to be provocative. And it is. "Everyone," writes Cook, "has a subconscious or habitual way of recognizing in buildings that are used every day symbols of comfort, familiar function and, occasionally, visual excitement." The aim of the book is "to extend this recognition, so that the cause and effect of these built symbols can be seen as deliberate, or at least relative."

The book is illustrated with much of the work from *Archigram*.

**Soil Surveys and Land Use Planning.** Edited by L. Bartelli, et al. Madison, Wis.: American Society of Agronomy, 1966. 196 pp. \$2.

This little book probably will not get much notice, which is too bad. It is a good collection of essays on a newly emerging aspect of land planning—soil information.

Architects generally care about soils from the viewpoint of drainage and bearing capacity. At a larger scale, geomorphology—flooding, acidity, topography, vegetation and drainage—become essential determinants of where things ought to go or not go. At a regional scale, the work of Phillip Lewis and Ian McHarg, both landscape architects, has been based on this kind of information.

The essays delve into many aspects of application from a very practical standpoint, including a legal one. The book outlines methods for obtaining the soils information and then interpreting it in terms of developmental appropriateness and intensity of use. Soils information may well be one of the most convincing and rational determinants of land usage. Architects ought to know about it.

**Architectural & Engineering Law.** Bernard Tomson and Norman Coplan. 2nd edition. New York: Reinhold, 1967. \$17.50.

The first edition of this work was published in 1951. Since that time the laws pertaining to the practice of architecture, engineering, land surveying and building construc-

tion have changed. Moreover, as the authors point out, "Many legal principles applicable to the problems of the building industry that were deemed settled in 1951 either have been modified or are open to question today." It is essential, therefore, that knowledge of the law be current.

This new edition is a welcome one and will provide considerable useful information for the architect and his legal counsel. The topics covered in each chapter are supported by citations arranged according to states, thus providing guidance in seeking a solution to complicated legal problems.

**Tall Buildings: The Proceedings of a Symposium on Tall Buildings with Particular Reference to Shear Wall Structures.** Edited by A. Coull and B. S. Smith. Oxford, New York: Pergamon Press, 1967. 607 pp. \$26.

Skyscrapers were once regarded as an American phenomenon but not any more. The tremendous increase in tall buildings throughout the world has created a need for precise information about the problems peculiar to the construction of such structures.

This book records a symposium organized in 1966 by the University of Southampton, England, assisted by the Civil Engineering Research Association. The object of the conference was to afford practitioners and research workers from many countries with the opportunity to review current practices and trends in the design and construction of shear wall structures; to discuss mutual problems relative to tall buildings; and to encourage and stimulate future research.

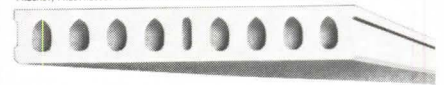
The published proceedings contain 25 papers and pertinent discussion which followed the papers. The general division of the book is in three parts: Wind Loading; Design and Construction; and Research. Two lectures by Americans (Fazlur R. Kahn of Skidmore, Owings & Merrill and Leslie E. Robinson) are included as appendices.

**Modern School Shop Planning.** Ann Arbor, Mich.: Prakken Publications, 1967. 252 pp. \$4.85.

This fifth, revised edition of a standard work on the planning and equipping of school shops contains new materials on the design of industrial education facilities. Most of the articles appeared originally in the magazine *School Shop*, although material included in this edition was published first in *Architectural Record*. □

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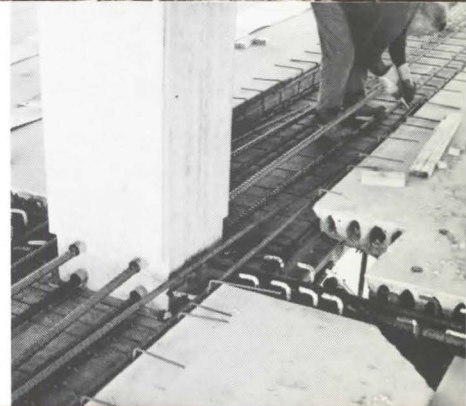
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# Letters

## More About Fees

EDITOR:

How does the young practitioner get his start in the world? Probably by cutting his fees below the chapter's recommended minimum because he hasn't found out yet what it really costs to do a job. He may have even lined up his first job while working in someone else's office. Anyway, be that as it may, he has got himself a job and would appreciate it if you would mind your business so he can mind his.

Then, our young Michelangelo tears into his work with the vim and devotion that only an inspired and hungry architect can show. He gets his job out and perhaps another or two, but the cards are stacked against him. If he started out on a cut fee, he is stuck with it—a fee schedule that keeps him impoverished.

Most jobs are either repeat orders from satisfied clients or jobs recommended by past clients, and if you ever tried raising the fee on a client, I'll bet you never do it again. It's the poorest way of influencing people and winning friends and the surest way of losing a client.

Schedules continue to be depressed in an area where the fees were probably already too low and the architects make everything but money. That, dear friends, is one reason why the oldest car parked at the construction site is so often the architect's.

Of course, this is a free country, and a man is free to practice as he pleases, charge what he pleases and starve if he pleases. It's the law of the jungle—but then the practice of architecture is a sophisticated profession in a civilized world, not the jungle.

EARL B. BAILEY, AIA  
Fairfax, Va.

## More About Education

EDITOR:

I have read with great interest Richard Stein's discussion of practice, education and licensing as it appeared in October. I have no quarrel with the statements he makes, but I believe there is a pressing need to extend beyond them to a more comprehensive view of the architect's role in environmental design.

For much too long, the parentage of architecture has been identified

solely with the visual parts—mostly painting and sculpture. But there are many important differences. Architecture is not primarily an object to look at but an enveloping environment within which various things are done; architecture is not restricted to those who choose to observe a unique personal expression, as in a museum, but is a constant and universal daily experience; architecture is not wholly responsive to the special desires of an individual designer but must recognize needs of a client, respect for neighboring structures, capabilities of the contractors and the complications of a team effort.

Most of all, architecture appeals to all the senses, and I think there is a deficiency in a design approach that does not consider acoustics, temperature, tactile sense (including air movement), the general luminous environment and similar factors as positive design components.

This is different from an understanding of the mechanics of putting things together. I think a competent profession should manage these mechanics competently, just as I think a doctor should put together the edges of an incision in a satisfactory and professional manner; but a managing of the mechanics is not the essence of the problem. It has, however, generally been the only interest of architectural schools and the profession in aspects of the environment other than the visual qualities. I think this is a limited view.

HARRY E. RODMAN, FAIA  
Professor of Architecture  
Rensselaer Polytechnic  
Institute  
Troy, N. Y.

## More About Cities

EDITOR:

Recently I read "Cities: What's the Matter?" in the April issue and wish to tell you that it is one of the best and most stimulating articles of its kind that I have come across.

(MRS.) KAREN C. SHENK  
Research Assistant  
Greater Wilmington Development  
Council, Inc.  
Wilmington, Del.

## And More About Airports

EDITOR:

In the Letters section of the September issue, James Morrison, AIA, Honolulu, wrote concerning design of future airports.

In our report "Long-Term Study of New Orleans Future Airport Re-

quirements" for the New Orleans Aviation Board, we recommended a three-tier design (instead of Mr. Morrison's two-tier design) in Lake Ponchartrain. It should please him to learn that this concept has been adopted by the board.

NED A. COLE  
Director  
Urban Studies Division  
Gulf South Research Institute  
Baton Rouge, La.

## One Picture . . .

EDITOR:



E. J. THIAS, AIA  
St. Louis, Mo.

## Educating the Public

EDITOR:

For many years the profession has talked a lot about introducing the subject of architecture in the public schools, but as far as I can determine, little or nothing has been accomplished.

It is obvious to many of us that there never will be a demand for good planning and design by the general public unless these subjects are introduced in the public schools and continued through our universities, especially in the colleges of education and of arts and sciences.

We all know our urban centers are a visual mess, and the suburban sprawl in general is no better; cities are growing by leaps and bounds in a helter-skelter manner. Yet the public is apathetic and, in fact, many people don't even know how to pronounce the word "architect."

We talk to ourselves about these problems, but the public is barely reached. The latter must be educated, and this process has to begin in the public schools. The older generation is a lost cause. What is the profession doing about it?

P. M. TORRACA  
Professor of Architecture Emeritus  
University of Florida  
Gainesville, Fla.

ED. NOTE: A report on what the Institute is doing about this very problem will appear in the JOURNAL early in 1968. For the moment, Mr. Torraca, much has been done; we hope to do likewise.

# Individual Room Control, Cleanliness And Economy Lead to Electric Space Conditioning System in Nursing Home



**THE CASE**—The Mobile Nursing and Convalescent Center in Mobile, Alabama, was designed to provide professional nursing care for approximately 100 elderly patients, many of them convalescing from a variety of illnesses. In planning the structure, Enloe, West & Granade, Inc., architects and engineers of Atlanta, Georgia, selected an electric space conditioning system for its ability to provide year-round comfort for the occupants and economical owning and operating costs for the owners.

**THE HISTORY**—The new building opened in November, 1964, with 33,000 sq ft of floor space, all on one floor. The buff-colored brick building has a main section containing community rooms, examination and treatment rooms, a large kitchen and dining room, a chapel, occupational therapy rooms, a laundry, and lounging areas.

Off the main section are two large wings, each with 50 beds, a nursing station, and an atrium where patients may relax in comfort, visit with each other, read or watch television. Patients also have

access to all rooms and both wings by means of indoor corridors, or, when weather permits, by way of landscaped garden walks.

Each room is space conditioned year-round by a self-contained, through-the-wall electric heating-cooling unit with individual controls.

"We chose this type of system," architect Hansell P. Enloe explained, "because it offered the largest number of advantages at the lowest total owning and operating costs. The electric system is ideal for Mobile because the heating season is very short and it seldom gets very cold. And it's an ideal system from the patients' point of view, too, because of the convenience of individual room control. The patient can have either heating or cooling as desired without regard to other rooms or the weather out-of-doors."

"After almost three years of operation, the electric heating-cooling system has proved satisfactory in every way," Mr. Enloe said. "It's very clean, comfortable and economical."

SEE REVERSE SIDE FOR DETAIL INFORMATION ▶

**1 CATEGORY OF STRUCTURE:**  
Nursing and Convalescent Home

**2 GENERAL DESCRIPTION:**  
Area: 33,000 sq ft  
Volume: 322,875 cu ft  
Number of floors: one  
Number of occupants: 100  
Number of rooms: 61  
Types of rooms: 50 bedrooms, 2 living rooms, 2 solariums, chapel, dining room, kitchen, treatment and examination rooms, laundry room, reception room and offices.

**3 CONSTRUCTION DETAILS:**  
Glass: single  
Exterior walls: 4" face brick, 2" polystyrene (R/7), 4" concrete block, 1/2" plaster. U-factor: .11  
Roof and ceilings: built-up roof on 1/2" rigid insulation on metal deck, 5" mineral wool batts (R/19), plaster and acoustical tile ceiling. U-factor: .05  
Floors: concrete slab, vinyl tile  
Gross exposed wall area: 11,984 sq ft  
Glass area: 2,028 sq ft

**4 ENVIRONMENTAL DESIGN CONDITIONS:**  
**Heating:**  
Heat loss Btuh: 361,500  
Normal degree days: 1,566  
Ventilation requirements: 4,220 cfm  
Design conditions: 20F outdoors; 75F indoors  
**Cooling:**  
Heat gain Btuh: 584,000  
Ventilation requirements: 4,220 cfm  
Design conditions: 95F dbt, 78F wbt outdoors; 78F, 50% rh indoors

**5 LIGHTING:**  
Levels in footcandles: 35-75  
Levels in watts/sq ft: 1-2  
Type: fluorescent and incandescent

**6 HEATING AND COOLING SYSTEM:**  
Self-contained, through-the-wall electric heating-cooling units with individual room controls provide year-round environmental control.

**7 ELECTRICAL SERVICE:**  
Type: overhead  
Voltages: 120/208v, 3 phase, 4 wire, wye  
Metering: secondary

**8 CONNECTED LOADS:**

Heating & Cooling (55 tons)	293 kw
Ventilation	6 kw
Lighting	33 kw
Water Heating	122 kw
Cooking	62 kw
Other	8 kw
<b>TOTAL</b>	<b>524 kw</b>

**9 INSTALLED COST:\***

General Work	\$353,000	\$10.73/sq ft
Plumbing & Mech.	49,000	1.47/sq ft
Electrical (Total)	50,000	1.50/sq ft
<b>TOTALS</b>	<b>\$452,000</b>	<b>\$13.70/sq ft</b>

\*Building was completed November 1964

**10 HOURS AND METHODS OF OPERATION:**  
24 hours a day, seven days a week.

**11 OPERATING COST:**  
Period: 8/23/66 to 8/22/67  
Actual degree days: 1,415  
Actual kwh: 834,480\*  
Actual cost: \$9,958.14\*  
Avg. cost per kwh: 1.19 cents\*  
\*For total electrical usage



Billing Date	Degree Days	Demand	kwh	Amount
9/23/66		173	67,200	\$ 852.10
10/20/66	32	158	54,480	739.78
11/18/66	173	158	65,520	715.24
12/20/66	374	223	70,320	796.54
1/23/67	370	227	95,040	996.28
2/22/67	363	238	76,800	857.62
3/23/67	100	245	69,840	806.56
4/21/67		155	58,800	761.14
5/23/67	3	162	64,560	817.12
6/22/67		166	68,160	850.54
7/25/67		166	75,600	910.06
8/22/67		169	68,160	855.16
<b>TOTALS</b>	<b>1,415</b>		<b>834,480</b>	<b>\$9,958.14</b>

**12 UNUSUAL FEATURES:**  
Because each room has its own heating and cooling and air distribution system, the danger of spreading infection is virtually eliminated. Each room can be individually controlled for either heating or cooling as required, regardless of the season, and there is no need to fire up a central boiler during in-between seasons when heating is needed for short periods only, as would be necessary with a central flame fuel system.

**13 REASONS FOR INSTALLING ELECTRIC HEAT:**  
An electric space conditioning system was selected for the nursing home because it would be clean, safe, economical and comfortable. In addition, it provided individual control, permitting each room to be either heated or cooled without regard to other rooms or the weather out-of-doors, an important advantage in a nursing home for the elderly.

**14 PERSONNEL:**  
Owner: Mobile Nursing and Convalescent Center, Inc.  
Architects and Engineers: Enloe, West & Granade, Inc.  
General Contractor: Wall Construction Co.  
Electrical Contractor: Kennedy Electric Co.  
Utility: Alabama Power Company

**15 PREPARED BY:**  
J. G. Pride, Commercial Sales Supervisor, Alabama Power Company.

**16 VERIFIED BY:**  
  
  
Hansell P. Enloe, AIA      J. J. Granade, Jr., P.E.



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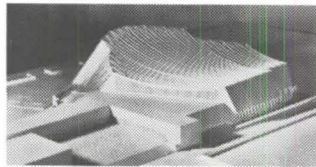
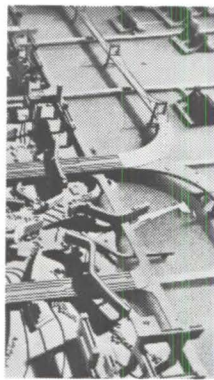
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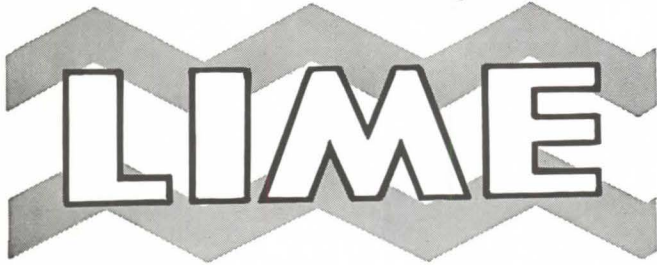
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# Calendar

*National*

- Jan. 9-13:** National Society of Professional Engineers Winter Meeting, Shoreham Hotel, Washington, D.C.
- Jan. 25-28:** Society of Architectural Historians Annual Meeting, Chase-Park Plaza Hotel, St. Louis
- Jan. 30-31:** AIA and Consulting Engineers Council of the United States Legislative Conference, Shoreham Hotel, Washington, D.C.
- Feb. 12-15:** American Society of Concrete Constructors Convention, St. Francis Hotel, San Francisco
- Mar. 2-8:** American Concrete Institute Annual Convention, Statler Hilton Hotel, Los Angeles
- June 23-29:** AIA Annual Convention, Portland Memorial Coliseum, Portland, Ore., and Ilikai Hotel, Honolulu (June 28-29)

*AIA Regional and State Conventions*

- Mar. 13-15:** Michigan Society of Architects, Hotel Ponchartrain, Detroit

*AIA Committees and Related Meetings  
(At the Octagon unless otherwise noted)*

- Dec. 11-13:** Jury of Fellows
- Jan. 11:** Committee Chairmen
- Jan. 12-13:** Grassroots East, Shoreham Hotel, Washington, D.C.
- Jan. 19-20:** Grassroots Central, Bel Air East Motor Hotel, St. Louis
- Jan. 22-23:** Grassroots West, Vacation Village, San Diego

*International*

- Feb. 17-25:** International Trade Exhibition, Munich, Germany
- June 30-July 6:** World Congress for Housing and Planning, Philadelphia. Nominations for the Fourth International Competition for Planning and Housing Films must be submitted by Jan. 1. For details, write the Film Competition Screening Committee, Paul Weinberg, Local Coordinator, 29th World Congress on Housing and Planning, 702 City Hall Annex, Philadelphia, Pa. 19107.

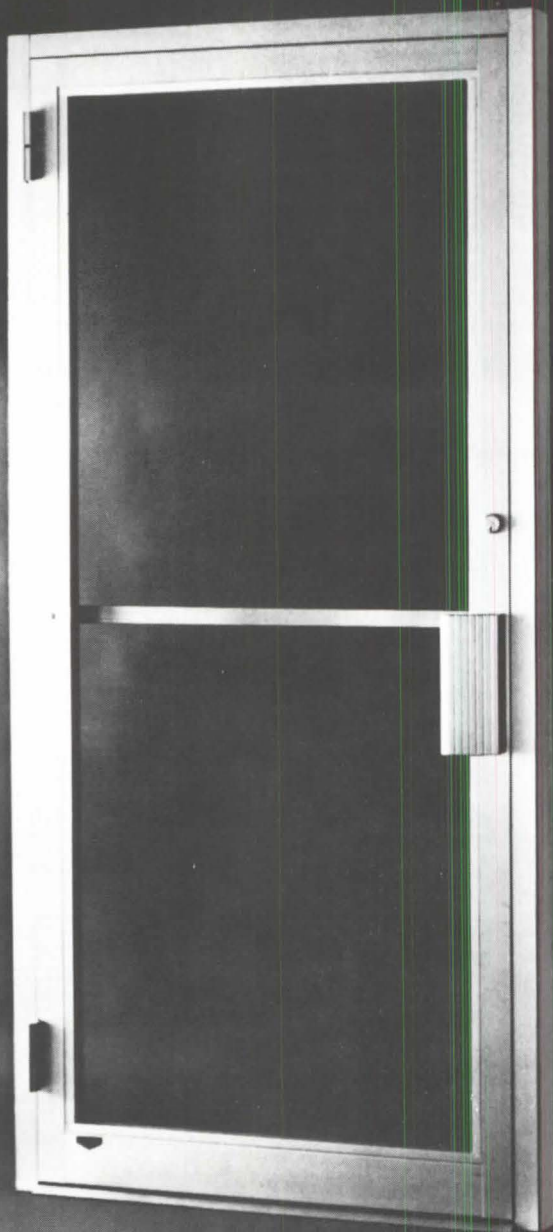
*Awards Program*

- R. S. Reynolds Memorial Award. Applications available from AIA. Registration closes Feb. 1.

*Tours*

- Around South America Architectural Trek, 21 days, departing Jan. 30. Repeated March 26, 1968. Arranged for AIA members with special group fares by United Travel Agency, Inc., 807 15th St. N.W., Washington, D.C. 20005.
- Mexican Architecture and Interior Design Seminar-Tour, meeting Mexico City, Feb. 25, 14 days. Repeated Sept. 15. Reservations accepted in order received with deposit of \$50 per person, airmailed to T. H. Hewitt, Apartado Postal 5-251, Mexico 5, D.F.
- Greek Settlements Through the Ages, July 6-13. Organized by the Athens Center of Ekistics. Applications must be sent to the ALFA Tourist and Travel Agency, 35 Voullis St., Athens 118, by May 6, with a deposit of \$52.50 (first class hotel) or \$42.50 (third class hotel). □

# Case in Point.

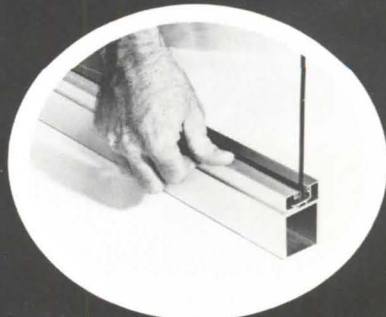
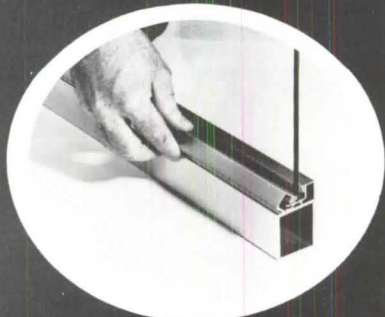


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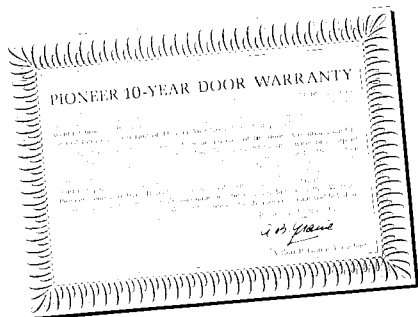
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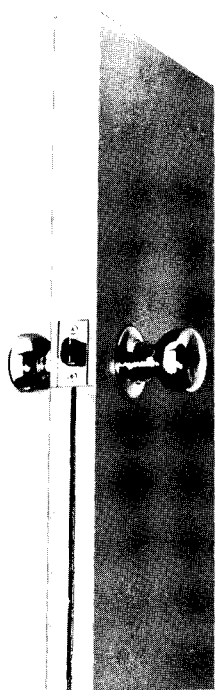
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## Next Month

**Casing the Olympics:** As our neighbors to the south prepare to host the 1968 Olympic Games in October, a half-dozen major buildings are being erected in and around Mexico City to accommodate the competitions and the competitors. The most significant of these appears to be the Sports Palace, designed by Felix Candela in association with two other architects. Other principal projects, shown in plans and construction photos, include the Swimming Pool-Gymnasium complex, Velodrome, University City Stadium (revamping) and Olympic Village.

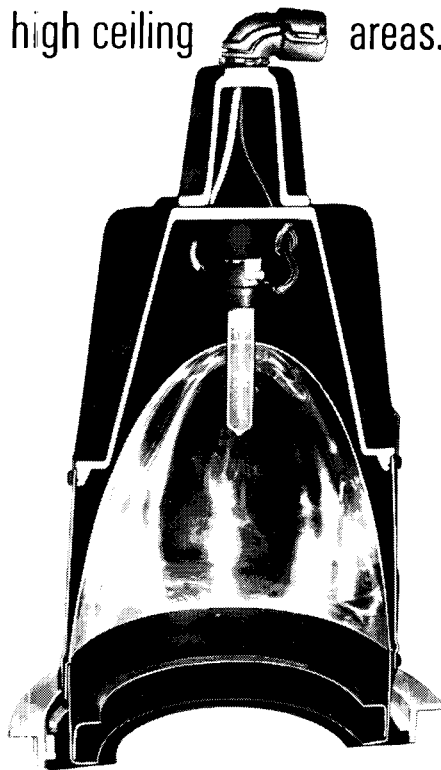
**Why Are We in UIA?** Worthwhile or wasteful? That is the question raised about AIA involvement in the International Union of Architects. A participant gives his personal impressions of the UIA Congress held last June in Prague. This frank criticism of UIA meetings, their procedures and discussions, attitudes of US delegates, etc., is complemented by a series of basic questions and answers concerning the organization itself.

**Upstaging the Theater:** In support of the philosophy that the most important aspect of theater design is "to seat the maximum number of people within that space around the proscenium plane which offers them good visibility and hearing," a Swiss architect presents the plans for theaters in Zurich, Neuchatel, Basel and Winterthur. The detailed illustrations support observations made by a US practitioner on these structures where the proscenium is in the spotlight.

**The Mind's Eye:** A seemingly small detail like the design for an employee dining room in a bank building could turn the employees into cliques or toward assimilation. This important business of perceiving through behavioral programming the psychological effects of certain designs is observed by an architect who has worked with a sociologist to effect a more encompassing, more successful program for architectural planning.

PHOTO & ART CREDITS: P. 12—Hedrich-Blessing; 32—Ron Jones; 49, 50 (bottom)—Courtesy Mr. & Mrs. Dale C. Hawkins, owners.

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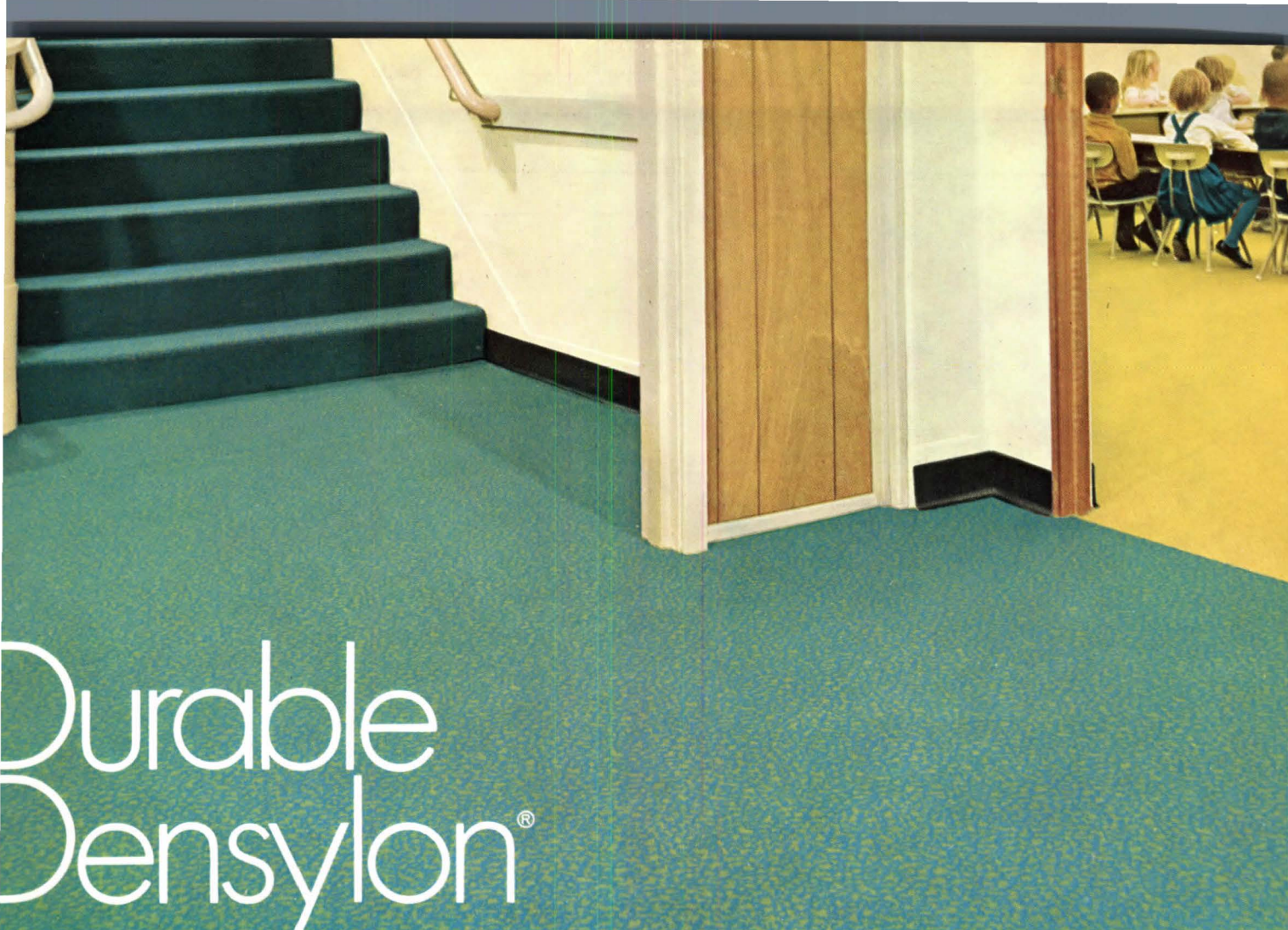
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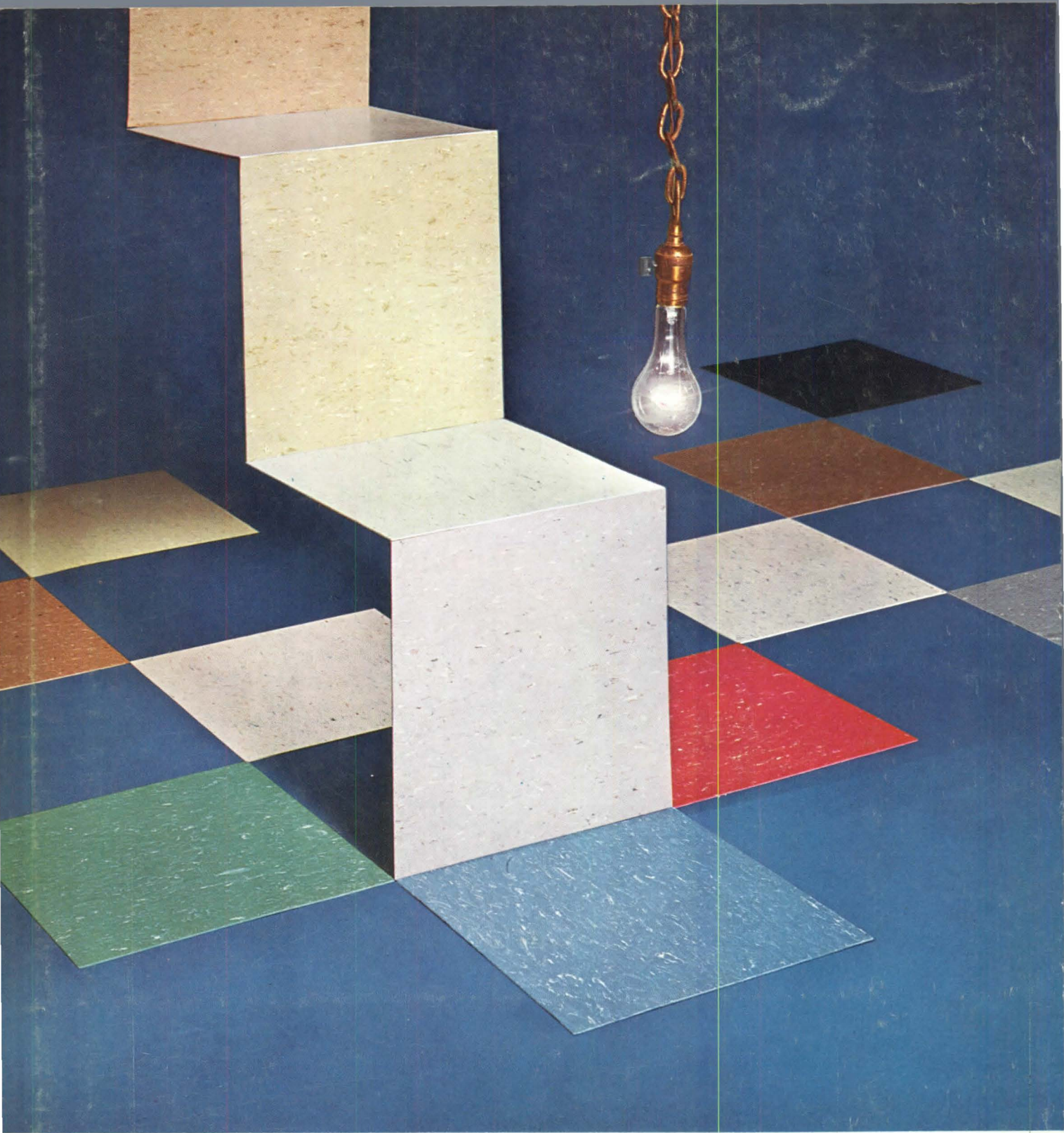
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