

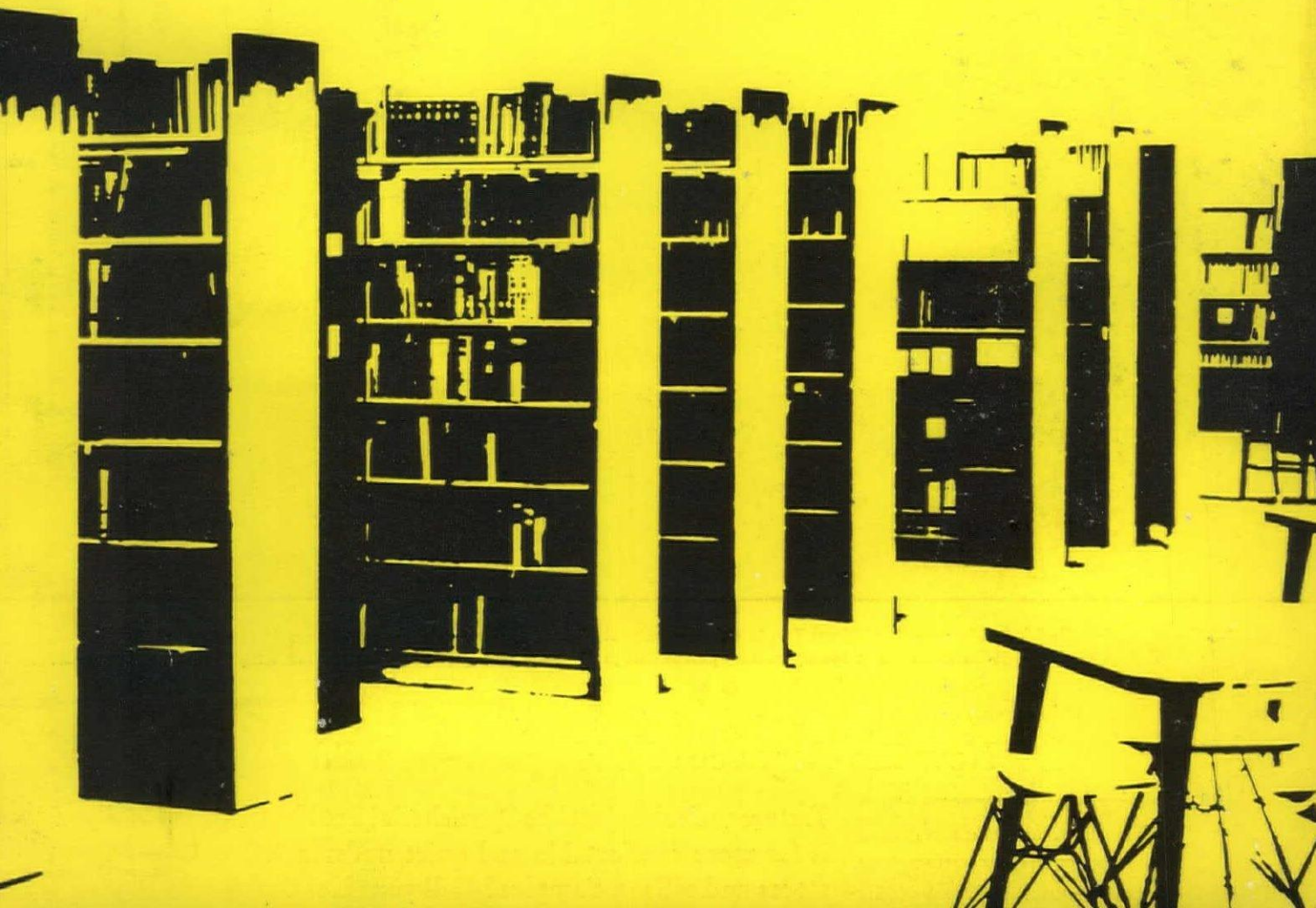


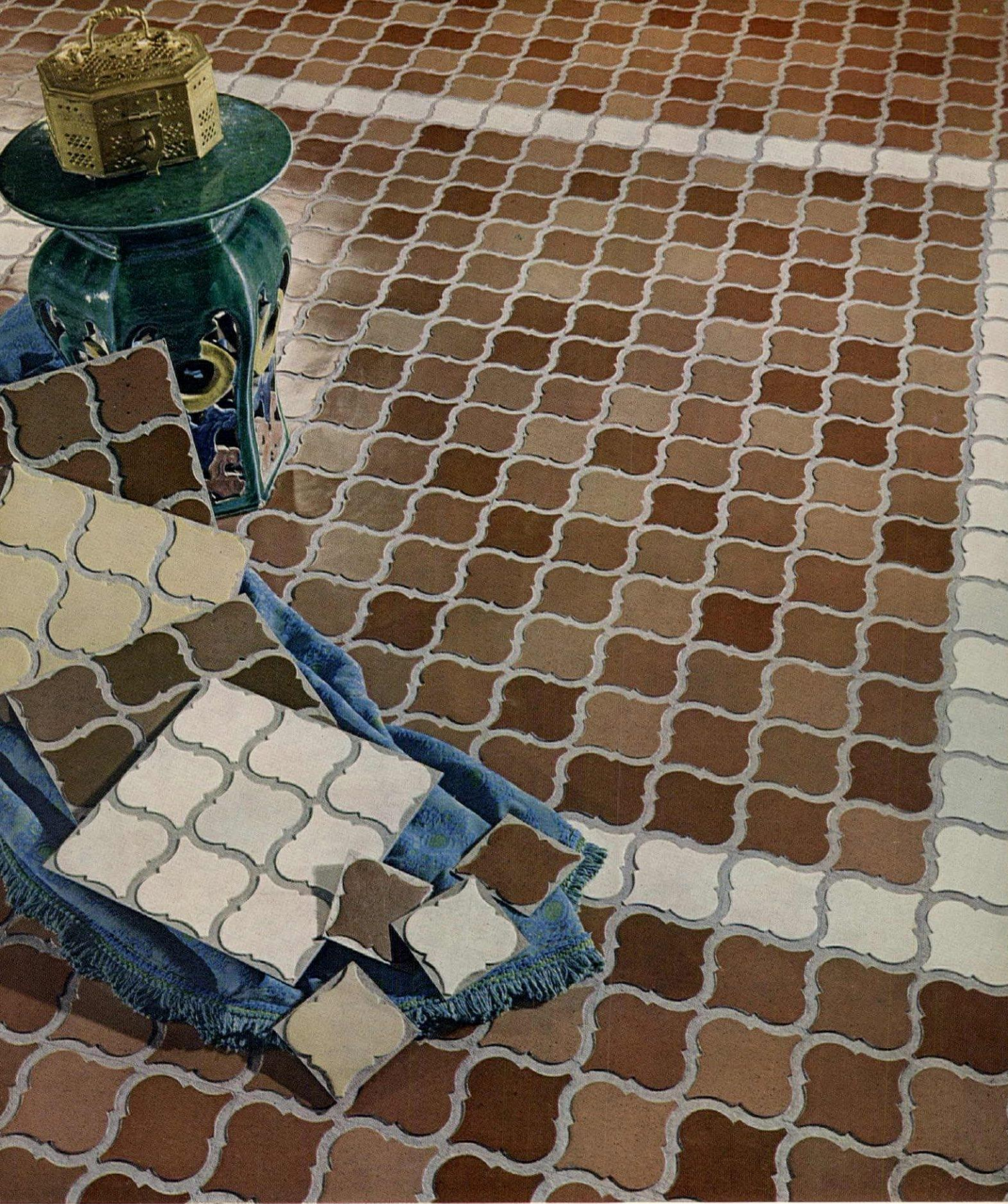
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Journal

Library Buildings Award Program

August 1966





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LOOKING AHEAD TO SEPTEMBER

The 98th—The Week That Was: From whatever measuring stick you might use—attendance, professional program, hospitality—the 1966 AIA convention seemed to be an unqualified success. What was said and done in Denver, and in such neighboring spots as Central City and the US Air Force Academy, will be recapped in next month's issue, the Official Convention Report.

The Keynote—A Real Eye-opener: In one of the most widely discussed addresses ever given at an Institute convention in recent years, John Kenneth Galbraith used the opening ceremonies as a forum to expound his views on a minimum income. The Harvard educator's talk, in which he asserted the claims of beauty against those of economics, will be published in full.

The Threefold Theme—Exchanging Ideas: The workable format of the "Technology, Environment and Man" seminars, each with one principal speaker and commentary by three panelists as well as from the floor, made for lively discussion. The essence of this give-and-take will be summarized in three separate reports.

The Academy—SOM to Pusey: The entire convention moved to the Air Force Academy in midweek for a firsthand look at the complex and the chapel in particular and for the delivery of the second annual Purves Memorial Lecture. The complete text of Dr. Nathan M. Pusey's charge to the profession will be another feature of next month's report which will touch on all phases of the week-long program with the exception of the workshops, scheduled for later.

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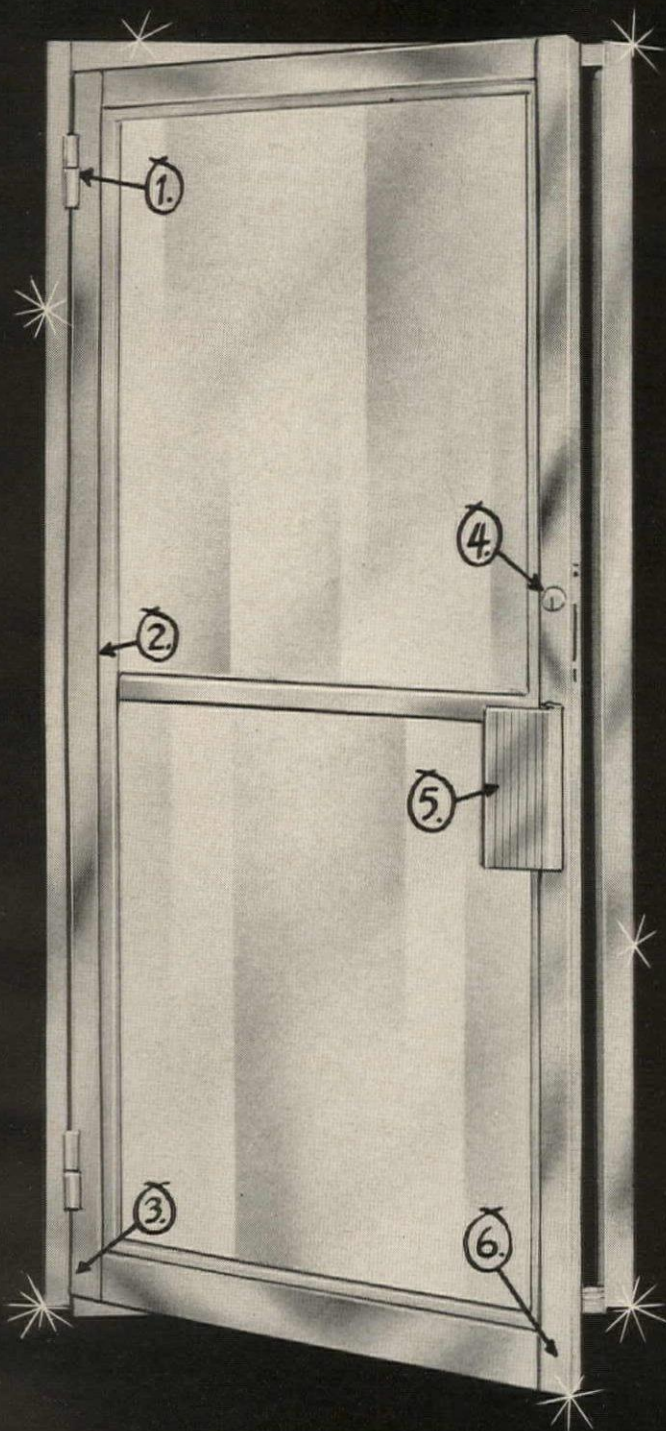
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Concerning Chapter Affairs: One of the more important sources of information for the AIA JOURNAL is to be found in the Institute chapters themselves. For the most part, of course, the task of covering local and/or regional events belongs to the component publications. Still, we can do a better job nationally by knowing what is going on in Des Moines, Baton Rouge and Phoenix, and occasionally an item comes across the desk which we like to share with our readers. The following is a case in point.

PR on a First-Rate Basis: The Seattle Chapter certainly got its money's worth in public relations when it brought Constantinos Doxiadis to the Puget Sound country last fall. The fruits of his two-day visit are documented in a booklet of advance publicity and followup press coverage sent along recently by Executive Secretary Joan Whinahan in the hope that its contents might prove helpful to other chapters contemplating such a program.

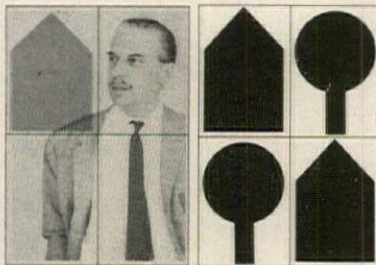
The success of the Greek planner's short stay, which "served as a springboard to chapter participation in an important local movement for needed regional planning," must be attributed to the Seattleites' own preplanned approach, with several committees (programs, decorations, boat trip, entertainment) meeting several times a week as the date of his arrival neared.

To give the event as broad a base as possible, the Seattle Chapter enlisted the co-sponsorship of the College of Architecture and Urban Planning at the University of Washington and the Washington State Chapter of Producers' Council, as well as the assistance of such groups as the Citizens Planning Council and the League of Women Voters.

Giving further support to the Doxiadis visit, with the blessing of the governor and the mayor, Sept. 27-Oct. 1 became designated as Urban Design Week. The busy schedule included a press conference, a waterfront cruise, a faculty luncheon, a talk before the students, a meeting with the Seattle Planning Commission and a major address at the Olympic Hotel banquet. The black-tie gathering of nearly 900 professionals, civic and governmental leaders packed the Grand Ballroom to the point that tables were set up on the stage.

The press coverage given this and the related activities would have heartened even the most hardened public relations man, with no less than two dozen individual stories and editorials published locally. And it is interesting to note that as late as May 11 reference was made to the chapter's sponsorship of the visit by one of the leading columnists in the *Seattle Times*.

Radio and television coverage likewise was excellent, and the interview taped at the 9:30 a.m. press conference was shown on all three local TV stations.



What did all of this cost? Receipts totaling \$9,040 (dinner reservations and contributions) covered all the expenses but \$1,842. However, the chapter was not far off its budgeted figure since it had allocated \$1,500 for the overall program. From any point of view, it was a most profitable enterprise indeed.

A Fitting Tribute: Another chapter contribution, of a completely different nature but just as equally rewarding, has come to our attention from Houston. There the new gymnasium of MacArthur Senior High School has been named after the late Lewis S. Maguire AIA, "giving honor to the man who has done so much as a professional in helping to correct some of the problems of this community." A wall plaque acknowledges this recognition, the kind that is seldom conferred on an architect by his client.

In paying homage to Mr. Maguire, the board of trustees of the Aldine Independent School District spoke of his "remarkable achievements" at a time when it was hard put for funds and cited in particular "a wonderful achievement in gym lighting" which the architect utilized in the MacArthur project and in three junior high schools. "This man . . . has gone a long way toward getting the community behind us," the board statement declared.

Aldine School District, in turn, deserves a tribute of its own.

Press & Building of Cities: A review of the Institute's calendar indicates that the popular seminar series devoted to an exchange of ideas between the profession and the press—the dailies in particular—will continue this fall. Syracuse, Washington, D.C., and Atlanta are set to have the symposiums.

Admittedly it is difficult to measure the impact of such a public relations device, but it cannot be denied that the press is devoting more and more space to the reporting of urban affairs and serving as a forum for the profession. Let's take a look at a recent example.

Building in Boston: Writing under his byline in the *Boston Sunday Globe*, Benjamin Thompson AIA, began by asking two questions:

"Why is the new architecture of our cities so monotonous?"

"Why does it seem to lack the variety and color of the past?"

The chairman of the department of architecture, Harvard Graduate School of Design, went on to say:

"These questions so often asked about architecture today are too often answered in terms of 'form' and 'materials.'

"I contend that form and materials are only the surface expression of life that is contained within. Variety of form can only result from a variety of life's happenings.

"So if many of our downtown buildings suffer from sameness, it is because of the sameness of what goes on inside (government, insurance, business, banking) and the sameness of the institutionalized thinking that has segregated offices 'from all other forms of life.'

"These large-scale complexes that pierce the hearts of our cities reflect the problems of the '60s, which may go down in history as the 'redevelopment decade.'

"If the monumental efforts seen in zoning, financing, laws and vast transportation networks are to preserve human life rather than stifle its spirit, there must be fresh considerations of what is meant by the human scale of things."

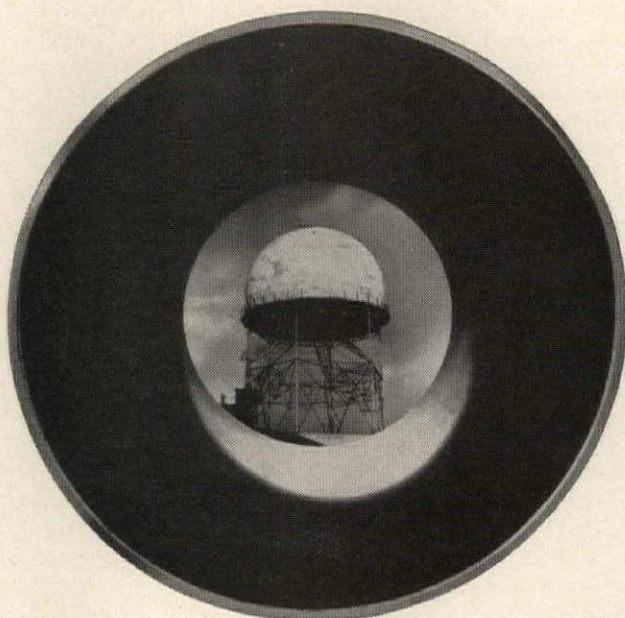
Taking Boston as a study of the human scale, Thompson found plenty of fault but ended on this optimistic note: "Even though the implementation problems of politics and financing, condemnation and legalities are enormous, I believe that Boston has the best chance of any US metropolis to carry through a significant new city plan."

ROBERT E. KOEHLER
Editor



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NEWSLINES

Denver Convention

Expands HQ Site, Backs Capitol Commission, Installs Nes and Elects Durham

Two buildings—one venerable, the other to be born—figured prominently in the 98th convention of The American Institute of Architects.

At the center of a convention drama was the historic Capitol of the United States; at the center of a historic convention decision was the Institute's new headquarters.

Delegates voted to expand the site of the latter through purchase of the Lemon Building next door to the present headquarters. Both buildings will be razed to provide an expanded site for a headquarters building larger than earlier envisaged.

And delegates voted for a resolution supporting proposed federal legislation that would create a Commission on Architecture and Planning for the Capitol, an action of considerable moment because of the

bill's indirect involvement with the controversial plan to extend the Capitol's West Front.

At an earlier session a resolution condemning the extension was tabled after undergoing an assault by Paul A. Thiry FAIA, a consultant to the Architect of the Capitol.

But Institute President Charles M. Nes Jr. FAIA, at a press conference on the convention's final day, said the Board of Directors' position of opposition remained unchanged.

With these and other matters to be weighed, with caucuses, theme sessions, workshops and other activities, delegates also had the responsibility of electing officers.

Nes as first vice president became president automatically. Elected to succeed Nes of Baltimore—and thus to become president next year—was Robert L. Durham FAIA of Seattle who faced opposition along

with these other successful candidates:

Samuel E. Homsey FAIA of Wilmington, Del., George E. Kassa-
baum of St. Louis and Harold Spitznagel FAIA of Sioux Falls, S.D., vice presidents; and Rex Whitaker Allen FAIA of San Francisco, elected to a two-year term as secretary. (Daniel Schwartzman FAIA last year was elected to a two-year term as treasurer.)

Among other criticisms leveled at the West Front resolution by Thiry

See the September AIA JOURNAL for a full report on the convention.

was one calling it a "real breach of etiquette and ethics"—an affront to architects working on the planned extension. Morris Ketchum Jr. FAIA of New York, whose term as Institute president ended with the convention, insisted, however, that it was the program the AIA regarded as "mistaken," not the architects.

Nes told the press the opposition to enlarging the Capitol's shape is an Institute position of three years standing.

He observed that the AIA Board report—approved by the Denver convention—included a statement on this stance and that the Board is thus endowed with tacit approval of its position.

George Vernon Russell FAIA of Los Angeles introduced the resolution supporting the Capitol architecture/planning commission bill. The bill was introduced in Congress between the convention's two business sessions.

Russell said his resolution in no way altered his position on the first session's tabling motion—to which he had given a second—but said the commission "could contribute greatly to the orderly development of Capitol Hill and would be a strong factor in the avoidance of embarrassing situations" similar to that which confronted delegates at the first session.

Nes, in discussing the tabling action with the press, said the West Front resolution was presented late in a long session when many of the

Continued on page 11

To Inspire Good Design Is Mission of Rockrise



President Charles M. Nes Jr., Ketchum, Mrs. Dodge, Weaver, Rockrise.

The Department of Housing and Urban Development will not impose design standards but will try to get "all the people with whom we come in contact to have an understanding of, a feeling for, good design."

This was a comment of HUD Secretary Robert C. Weaver as he introduced his two new advisers on architecture and art at an Octagon House press conference.

George T. Rockrise FAIA of San Francisco, the adviser on architecture, termed his appointment "a

tribute to the profession I represent." (See page 36)

Presented along with Rockrise, who will serve the department on a full-time basis for several months and then counsel as needed, was Mrs. Estelle Dodge, president of Estelle Dodge Associates of New York, who was named to study the use of works of art in urban redevelopment.

Mrs. Dodge said her purpose was not to create outdoor museums but to get people more actively involved in the use of art.

delegates had gone from the meeting.

The tabling, he said, cut off debate and thus a discussion of the issues. The delegates, he added, were obviously impressed with the argument that the resolution reflected adversely on West Front architects.

He said the AIA position was assumed before architects were engaged for the extension.

The Capitol commission, to consist of three architects, one landscape architect, a historic preservationist, an artist, sculptor and two members of the public, would, the resolution said, "render impartial counsel to Congress." This was a point advocated in the tabled resolution.

Thiry's speech was viewed as both a plea and a charge, as both reasoned and impassioned. In any case, it was moving.

He called the Capitol a "living building in which our generation will be represented"—a building of unfolding history and evolving change, one quite apart from structures valued for single historic episodes. He said a West Front restoration would result in a mere replica.

As for the Institute headquarters, delegates besides approving purchase of the Lemon property sanctioned the first of two approvals which would permit sale of the Octagon House to the AIA Foundation. The second such approval must be voted by the 1967 convention in New York.

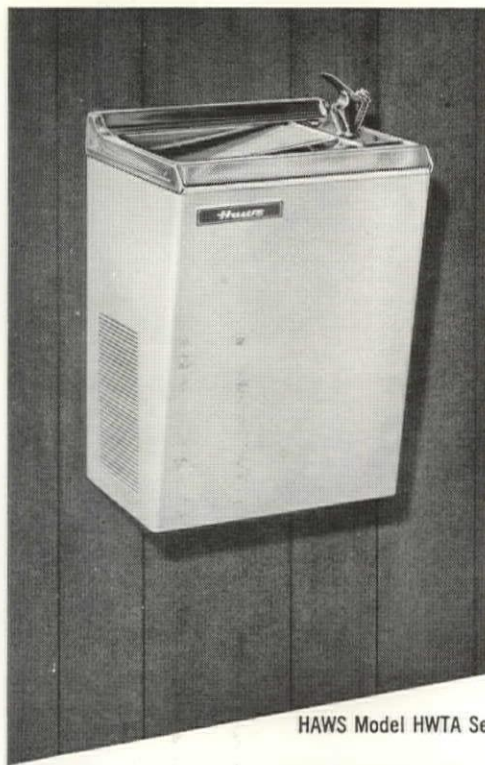
"We will accomplish a complete restoration of the Octagon House as a beautiful landmark," Nes said, "and a garden which states our principles for the inclusion of open space and natural beauty in urban architecture, and contributes to the scale and harmony of the architecture of the two buildings."

The price of the Lemon property is \$678,000 or \$60 per square foot. Its 11,240-square-foot site brings the Institute's total buildable area to 29,460 square feet.

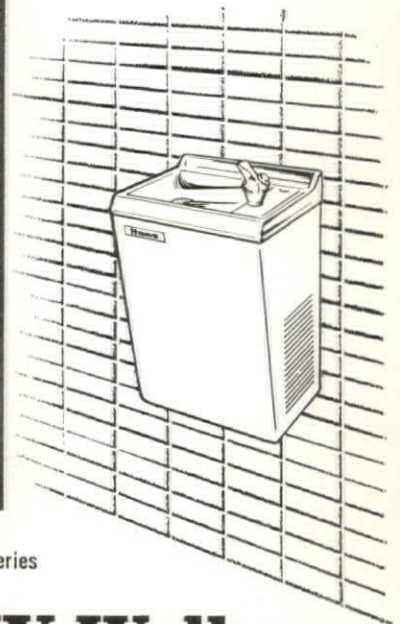
Nes said the appraised value of the Octagon is approximately \$600,000. He estimated that some \$350,000 will be needed to restore the house.

The votes on both the property acquisition and Octagon sale were unanimous. There were two dissenting votes on the Capitol commission resolution.

Continued on page 14



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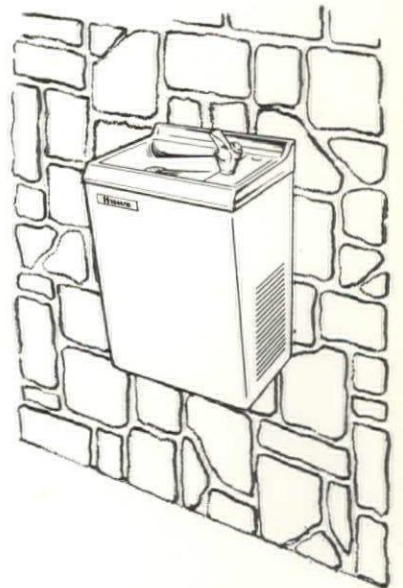


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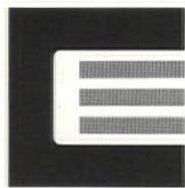
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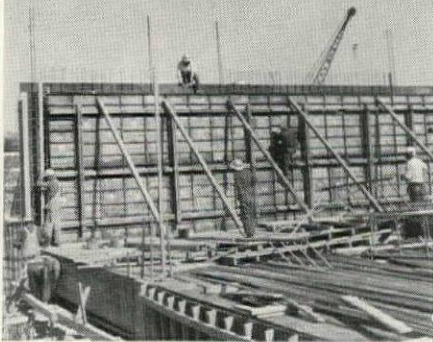
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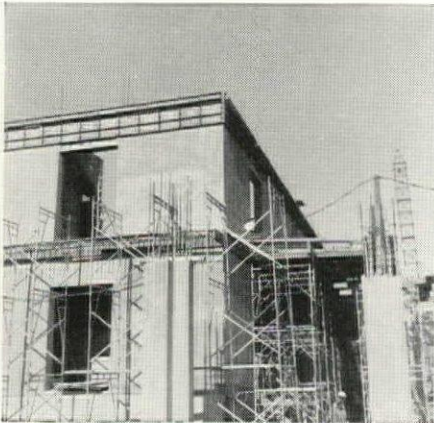


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Absolutely square in plan, the building has a broad verandah-like porch of concrete columns and roof on all four sides. The structure lent itself to the use of Symons Steel-Ply panels for all but a series of cross shaped concrete columns.

Once the foundation pilings were driven and capped, the job was ready for gang forming. Gang sections were 21' x 25'; separate gangs were made for the columns to be cast as pilasters. Double 2 x 4 walers at 5' centers, and double 2 x 6 strongbacks at 7' centers were used for support. Height of the library went to 80'-3".

Appearance of the walls above ground was a prime consideration, and the rigidity of Symons welded steel frames proved a major plus. As soon as the reinforcing cage was in place, the forms were dropped in, mated to the pilaster assemblies, and concreting operations began. Concrete was poured in about 5' lifts.

Symons forms may be rented, purchased, or rented with purchase option.



MORE SAVINGS WITH SYMONS

Circle 218 on information card

Newslines from page 11

Bill Requires Architect For Architect's Job

A bill requiring that the Architect of the Capitol be an architect is in the offing.

Rep. Thomas M. Rees (D-Calif.) said his bill would not affect Capitol Architect J. George Stewart. But he scored the West Front plans of non-architect Stewart.

Because of the scope of Capitol Hill work, Rees said, the "finest member of the profession" should fill the job.

Highlights of Convention Filmed for Chapter Use

Some of the spirit and inspiration of a national AIA convention will soon be available in animated form to Institute members who missed the Denver convention.

Half-hour films of the event are to be furnished free of charge to the 162 AIA chapters.

The sound movies are being produced and distributed, at no cost to the AIA, through sponsors, the American Cyanamid Co. and its Formica and Creslan Fibers Divisions, and Accessory Specialities, Inc., of New York.

Television Presentations Inc., a subsidiary of Sterling Movies USA, Inc., New York, will produce and distribute the 16mm motion pictures. Richard S. Stitt, AIA director of information services, will serve as technical adviser.

Modernization Winner Is Orput & Orput

The Rockford, Ill., firm of Orput & Orput is the winner of the first of a planned series of competitions to modernize older schools.

The award is a \$5,000 prize and a commission to modernize Chicago's Hyde Park High School, a \$2 million project.

Sponsored by the Board of Education of Chicago in cooperation with the Research Council of the Great Cities Program for School Improvement, the competition that was limited to Illinois firms was the first in a series to be held across the nation, according to a program source.

Monies to sponsor the competition were made available by the Research Council under a grant from

the Educational Facilities Laboratories to study problems and solutions of school modernization.

Second prize winner was Norman DeHaan Associates of Chicago. There was a three-way tie for third prize among these entrants, all of Chicago: Russell G. Moy, Raymond E. Watson and Terrence Lallak; Fridstein & Fitch; and George Hinds, Ezra Gordon and Jack M. Levin.

Competition Underway For \$22 Million Center

The program for a \$22.5 million architectural competition for a civic center in Birmingham, Ala., is now available.

Eight finalists will be selected, each to receive a \$5,000 prize, and from them the jury will pick the winning architect who will receive a \$25,000 first prize payable toward the commission which will be 6 percent of the construction cost.

Second prize will be \$15,000 and third, \$5,000. The two-stage competition is open to US architects licensed to practice at least four years.

If the winning competitor is not licensed in Alabama he will be required to associate himself with one who is, the association made by the winner and approved by the Birmingham-Jefferson Civic Center Authority.

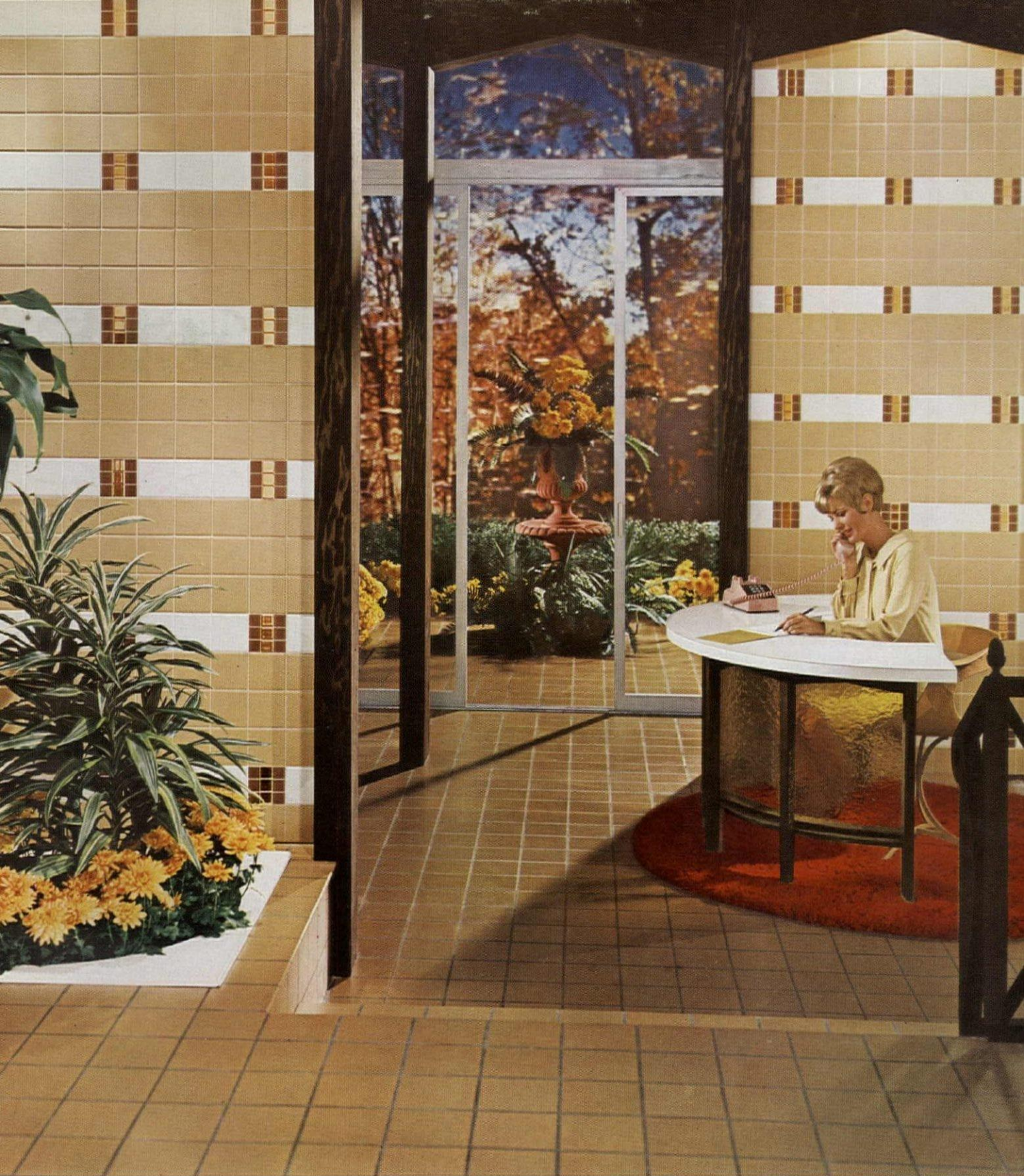
Alexander S. Lacy, chairman of the authority's board, said special taxes payable to the authority for financing the design and construction are already in effect and are adequate to finance the project. Construction of the center will begin as soon as the winning architect completes plans for the project, he said.

Registration closes Sept. 24 and Nov. 1 is the postmark date. Finalists will be announced about three weeks later and the second stage will begin next year with the announcement of the winner scheduled for April 3.

The center is believed to be unique since it will house theatrical, symphonic, operatic, ballet, sports and convention activities as a complex in one location.

It will consist of a 14,000-seat coliseum, a 3,000-seat concert hall, a 1,000-seat theater, a 100,000-square-foot exhibition hall, meeting rooms, restaurant, cafeteria and parking facilities.

Continued on page 16



WARM WELCOME. You can sense the warm welcome awaiting you in this friendly reception area. Here this feeling is achieved with glazed ceramic tile in rich, earth-tone colors, accented with white and gold Tile Gems®. The Murray quarry tile floor, extending into the patio, seems to make the sunny outdoors a part of the room. For stimulating design ideas with ceramic tile, send for full color Booklet 1100, "Ceramic Tile in Architectural Design." Write American Olean Tile Company, 2128 Cannon Avenue, Lansdale, Pennsylvania.

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Newslines from page 14

The jurors for the competition are Max Abramovitz FAIA of New York; John Carl Warnecke FAIA of San Francisco; Gyo Obata AIA of St. Louis; Harold Burris-Mayer of Boca Raton, Fla., director of the University Theater, Florida Atlantic University; and John Fernald of London, a fellow of the Royal Society of Arts who has directed more than 300 productions in England since 1921.

The professional adviser is William A. Briggs AIA. A copy of the program can be obtained from him at a cost of \$20. The address: Box 16038, Richmond, Va., 23222.

At a New York luncheon in which the competition was announced, Lacy said the center will answer a public demand for housing for Birmingham's "great cultural, sports and business activity."

The center's 23-acre site is being acquired through an urban renewal program under the Housing Act of 1965.

The center is expected to be in operation in 1971. In that first year authority officials hope it will pump at least \$8.5 million into the area's economy, drawing some 100,000 persons to conventions.

Urban Programs Director Named at Institute

The Institute's new director of urban programs is Andrew F. Euston Jr. of Washington, D.C.

Euston received bachelors of arts and architecture degrees from Yale University in 1956 and 1959, served as an associate in the New Haven, Conn., firm of his father, Andrew F. Euston Sr. AIA, and spent three years as an Air Force lieutenant.

His Air Force duties as hospital architect for the Office of the Surgeon General earned the commendation of David E. Bell, director of the Bureau of the Budget.

His contribution to design validation systems—an early application of the computer in architecture—has been applied by the federal government to its hospital construction programs.

For the past year Euston was with the Washington firm of Cooper & Auerbach, and for two years previously he worked in the office of W. H. Metcalf Jr. AIA, participating in the design of medical, housing and campus facilities.

At the AIA Euston will staff the national Committees on Urban Design, Collaborating Arts and His-

toric Buildings. He succeeds Paul D. Spreiregen AIA who has become program director of architecture, planning and design for the National Endowment for the Arts.

Human Values Defended At Aspen—Chaos, Too

A growing preoccupation of designers with the defense of human values in a technological society was apparent at the 16th annual International Design Conference in Aspen.

"I am quite aware that we do need planning, and research and objectivity and all those attitudes that prove we have an intellect and can use it," said Benjamin Thompson AIA, chairman of the department of architecture at the Harvard Graduate School of Design.

"I maintain it is needed," Thompson told the June meeting, "but it is not enough.

"It simply will not do the whole job. What is missing from our holy 'objective methodology' is an allowance for human sensibility. Today we live in a cool, cool time when there is almost a national phobia about expressing our private feelings, especially feelings about that obsolete quality called 'beauty.'"

The conference, which for the first time topped a registration of 700, at the same time yielded indications that traditional antagonisms between designers and technologists are evolving into mutual accommodation, even cross-fertilization.

Tomás Maldonado, director of the Hochschule für Gestaltung in Ulm, Germany, said designing and researching, notwithstanding their inherent differences, belong to the same kind of behavior, a behavior that has been called purposive or decisive, aiming at the attainment of a goal.

In some circumstances, he said, the "role of design and the role of research are practically inseparable."

Psychologist Richard E. Farson, director of the Western Behavioral Sciences Institute, urged conferees to concentrate on designing for the improvement of human relationships "so they can be more fun, more exciting, more romantic, more sexy, more intimate, more loving, more honest and more open."

Added Farson: "We need to remember that the fundamental element in designing a system is that

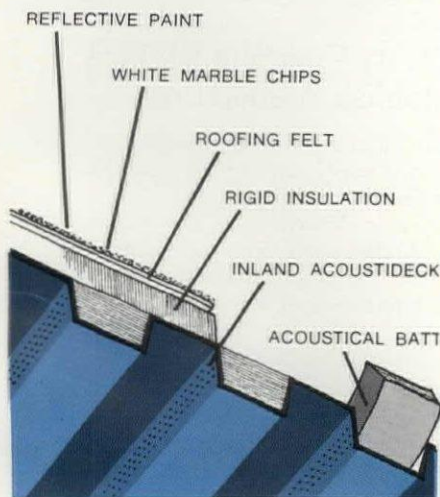
Continued on page 18

They go to great lengths in Tulsa to house expositions



Engineers and Architects:
David R. Graham and Associates, Inc., C.E.C.
Tulsa, Oklahoma, Engineers
Bert E. Griffin, A.I.A.
Architect

World's largest cable-supported roof— 404' x 1200' — is Inland Acoustideck®



Excessive noise in the Tulsa Exposition Center is entrapped in fiber batts through perforations in the vertical webs of the Acoustideck panels. Insulation over the deck is topped with asphalt-impregnated felt and then a layer of white marble chips. This is coated with a highly reflective white paint.

Talk about thinking big—there are 10½ acres of clear-span space under the Inland Acoustideck roof of the new Exposition Center Building on the Tulsa State Fairgrounds!

Structural framing of the building consists of two symmetrical cantilevered halves supported by steel cables. Principal structural members are shop-welded steel box columns and girders. Lightweight beams span between the girders.

Inland type N Acoustideck spans the 13'-10" between these beams. The inherent diaphragm action of the deck provides lateral bracing for wind loads, thus eliminating the need for extraneous X-bracing.

Acoustideck was a logical choice for this suspended roof system, because it weighs less than half of equivalent poured-in-place or precast construction—and carries normal loads over greater spans. The roof on the Tulsa Exposition Center is designed for a snow load of 20 psf. Because Acoustideck absorbs sound, it dampens the high noise level rampant in exhibit areas.

Acoustideck—with a protective two-coat baked enamel primer—is part of a complete line of Inland roof systems. See Sweet's, section 2i/Inl. Or write for catalog 248 to Inland Steel Products Company, 4127 W. Burnham St., Milwaukee, Wis. 53201.

Inland Steel Products



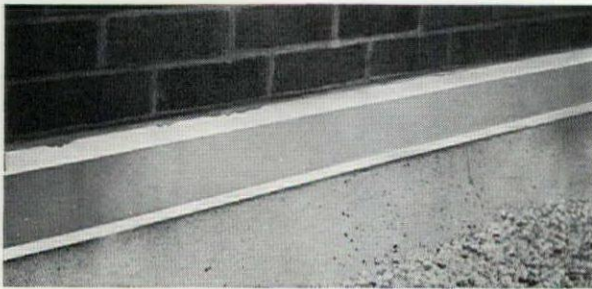
EP-59

For more technical data, circle 221 on information card

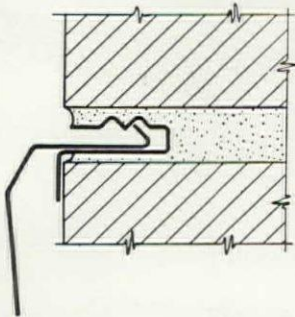


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① The thru-wall flashing was built in by the mason with the counter-flashing bent down at 90 degrees hugging the wall. When the mason installed the concrete cricket, he bent up the exposed face to get the flashing out of his way. ② Mason then hand-bent the flashing down again. ③ When the roofer came along, he again bent up the flashing to give him room to install his felt base flashing. Finally, the roofer bent the flashing down again, and by this time it was badly twisted, distorted and cracked.



Type B Cheney Reglet gives you this trim, neat appearance.

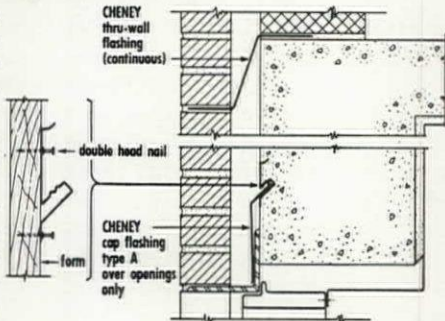


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Newslines from page 16

it must be self-renewing, self-determining, even self-designing. So we must make use of the people who are the components of the system as the designers of the system itself."

But to Gyorgy Kepes, artist, author and professor of visual design at MIT, Farson "somehow managed to create a feeling of Utopia but . . . left out the fact that tension and conflict are part of human life. Without them, men lack the stimulus to achieve their full potential."

Ben Shahn, this year's AIA Fine Arts Medalist, took the rostrum to plead for chaos. "I love chaos. It is a mysterious, unknown road with unexpected turnings. It is the way out. It is freedom, man's best hope."

Shahn said chaos does not exist in science where "all is order." But he said "thousands and millions of orders exist independently" and that the moment of impact between two such systems of order is the moment of chaos.

He predicted that the decisive conflict will be between omniscience, which he equated with tyranny, on the one hand, and chaos, or freedom on the other.

"I can't denounce order," he said, "but I can't accept it as an unqualified good. I can't accept chaos as an unqualified good, either, but the artist, in seeking freedom for himself, wants it for all society.

"I think it would be nice to make a pet of chaos, to give her a breath of fresh air and let her romp around in the planned society with which we are all so preoccupied."

Precast Concrete Makers Establish Association

An organization of manufacturers of precast architectural concrete has been formed.

Among objectives of the group, the Architectural Precast Association, is the preparation of a standard reference specification for quality control in the manufacturing, testing and erecting of precast concrete work.

The association also plans a guide specification for architects, engineers and specifications writers for use in project specifications.

Headquartered in Tampa, Fla., the association at present is made

Continued on page 22



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Utilizes lamps rated through 250 watts mercury or 620 watts (10,000 lumens) incandescent; constant-wattage, high-reactance, or constant-current ballasts; IES Types I, I-1 way, II, II-4 way, III, IV and V distributions; 3-inch and 7-inch mounting fitters; photocontrol accommodation for Styles A, B, C, and F units.

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Modern styling plus application versatility with 7 designs and choice of 9 decorator colors. All the distinctive covers are interchangeable with the uniform base style for varied decors. Pole top mounting for 3-inch diameter poles adds installation economy.

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(Scale: 1"=2')



Distinct, modern design combined with superior lighting performance. Available for mounting on 2-inch supports or davit poles with a 2-inch tenon. Furnished with a choice of 9 decorative colors.

SPECIFICATION

Available for use with 400-watt mercury lamps; IES Types, II, II-4 way, III, and IV distributions; photocontrol accommodation.

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(Scale: 1"=2')



Combines charm and styling of Early American whale oil lantern with efficient, controlled illumination. Constructed of cast aluminum, with shatterproof acrylic plastic refractor, for long lasting beauty and minimum maintenance. Available in black or white with gold finial, roof, and refractor clips.



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SPECIFICATION

Accommodates 100-watt mercury lamp and high-reactance ballast, incandescent lamps through 150-watts; mounts on standard 3-inch OD yard light post; available with or without photocontrol.

STYLED SUBURBANAIRE

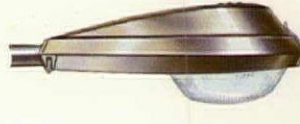
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Fresh, modern appearance plus economical, quality lighting. Features open refractor that reduces dirt and moisture accumulation. Mounts on 1½-inch pipe support. Available in a choice of 9 decorative colors.



SPECIFICATION

Utilizes 405-watt to 620-watt incandescent lamps and 100-, 175-, or 250-watt mercury lamps; high-reactance or reactor ballasts; IES Types I, I-1 way, II, II-4 way, III, IV, and V distributions; built-in photocontrol receptacle.



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SPECIFICATION

Available for use with 100-, 175-, 250-, or 400-watt mercury lamps; internally mounted constant-wattage, high-reactance, reactor or constant-current ballasts; IES Types II, II-4 way, and III distributions; built-in photocontrol receptacle.

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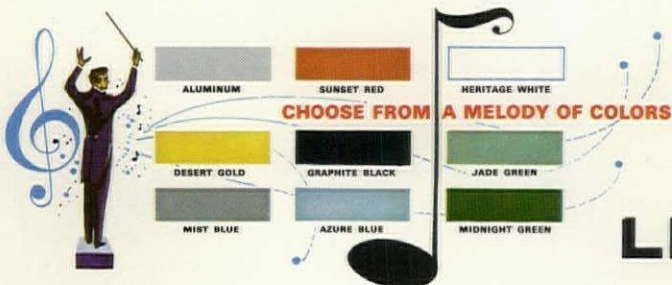
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Contemporary styling combined with application flexibility. Available in a choice of 9 decorative colors. For mounting on 3" OD pipe.



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Newslines from page 18

up of five Florida manufacturers. Membership is open to firms making precast concrete products, firms or individuals engaged in supplying materials or services used in the making, testing or erection of precast concrete work (industry member), and architects, engineers, specifications writers and others interested in precast concrete work (associate member).

The group's president is Jack

Plunkett, Pre-Cast Industries, Inc., Miami. Carl E. Shawver is executive director. The association's address: Post Office Box 5685, Tampa, Fla. 33605.

Diverse Group Produces Georgia UD Manual

The Georgia Urban Design Committee is making distribution of its "Georgia Urban Design Manual," a comprehensive book

on what should be done about cities and how to get it done.

The committee is made up of architects, planners, landscape architects, engineers, trade association representatives, economists, social scientists, artists and representatives of the Georgia Municipal Association and the Georgia Power Co.

"This manual is especially noteworthy because it is the product of so many diverse groups and individuals. It will be effective because it has broad backing," said Andrew Steiner, Atlanta city planner and committee chairman.

Kit Carson's Old Route Wins Design Award

The Scenic Highway Award of 1965 of *Parade*, the Sunday newspaper magazine, has gone to the California Division of Highways for a 16-mile section of Star Route 88, east of Sacramento.

The annual award designates the new highway which best embodies the principles of good design, beauty and utility.

Star Route 88 is a historic mountain-pass road sometimes called Carson Pass Highway. Kit Carson led Capt. John C. Frémont's exploring expedition over the route in crossing the Sierra Nevada into California.

A panel of judges singled out five other highways for special mention: Interstate Route 495, Boxborough to Southborough, Mass.; Interstate Route 95, Fredericksburg to Woodbridge, Va.; Route 22-322, north of Amity Hall, Pa.; Interstate Route 85, from Route 98 to Route 51, Georgia; and Interstate Route 89 in the Bolton-Richmond area of Vermont.

The California highway has been improved and widened, but the route is as scenic as in Carson's day.

Prefabricators Misplace Emphasis, Council Says

Prefabricated houses will account for one out of every four single-family housing starts this year, predicts the Housing Guidance Council. And this presents prefabricators with a clear challenge to leadership.

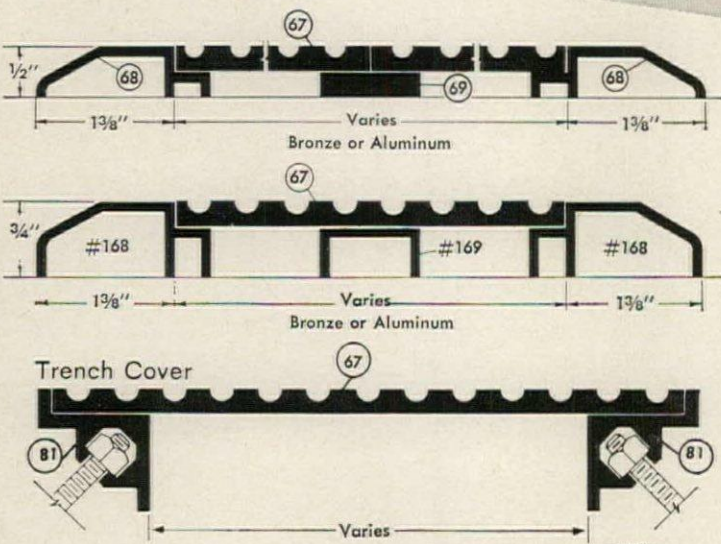
Fifty of these companies represent some three or four thousand builders across the nation and are in a position to control the design.

Continued on page 25

AIA JOURNAL

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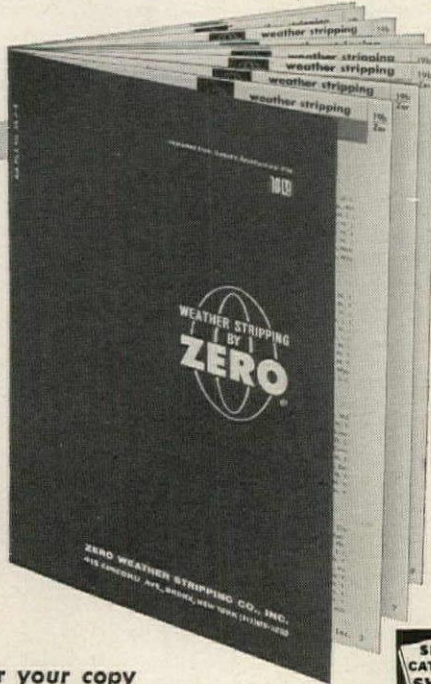
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construction, and materials offered to a large segment of the housing market.

While in a position to raise the standards and reputation of the entire housing industry, most prefabricators instead are obsessed with selling a mechanical technique that no longer needs selling, the council argues. It adds:

"Prefabricators call themselves 'home manufacturers' because they still fear the consumer resistance that was so strong a decade ago. We say that they can and should come out from under the alias. For the fact is that (with some regional exceptions) today's home buyer is not much concerned over the question of prefabrication, as long as the end product pleases him."

Open-Space Handbook Published by HUD

A detailed study of urban open-space land, including examples of programs, problems and issues, has just been published by the Department of Housing and Urban Development.

The department said the 154-page handbook is the first detailed study of open-space land and includes information on planning, land acquisition, financing and administration. It is designed for use by public officials.

education

Kahn in Chair Named After His Old Mentor

The Paul Philippe Cret Professorship of Architecture has been established at the University of Pennsylvania to memorialize one of the foremost architectural teachers of his day.

Louis I. Kahn FAIA, a student of Cret's, was named to the professorship. Kahn himself is regarded as one of the world's most influential teachers as well as an eminent architect.

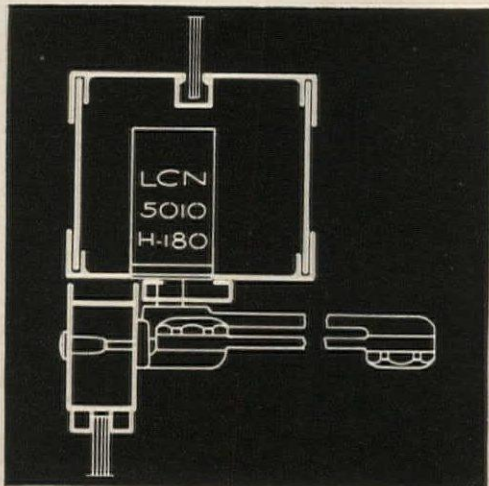
The chair, designated by the university's trustees, was made possible by a bequest under Cret's will. The will provided that the principal of his estate go to the university after the death of his wife, Mrs. Marguerite Lahalle Cret.

She had a life income from the estate until her death a year ago

Continued on page 28

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Detail at head for LCN overhead concealed closer shown in photograph

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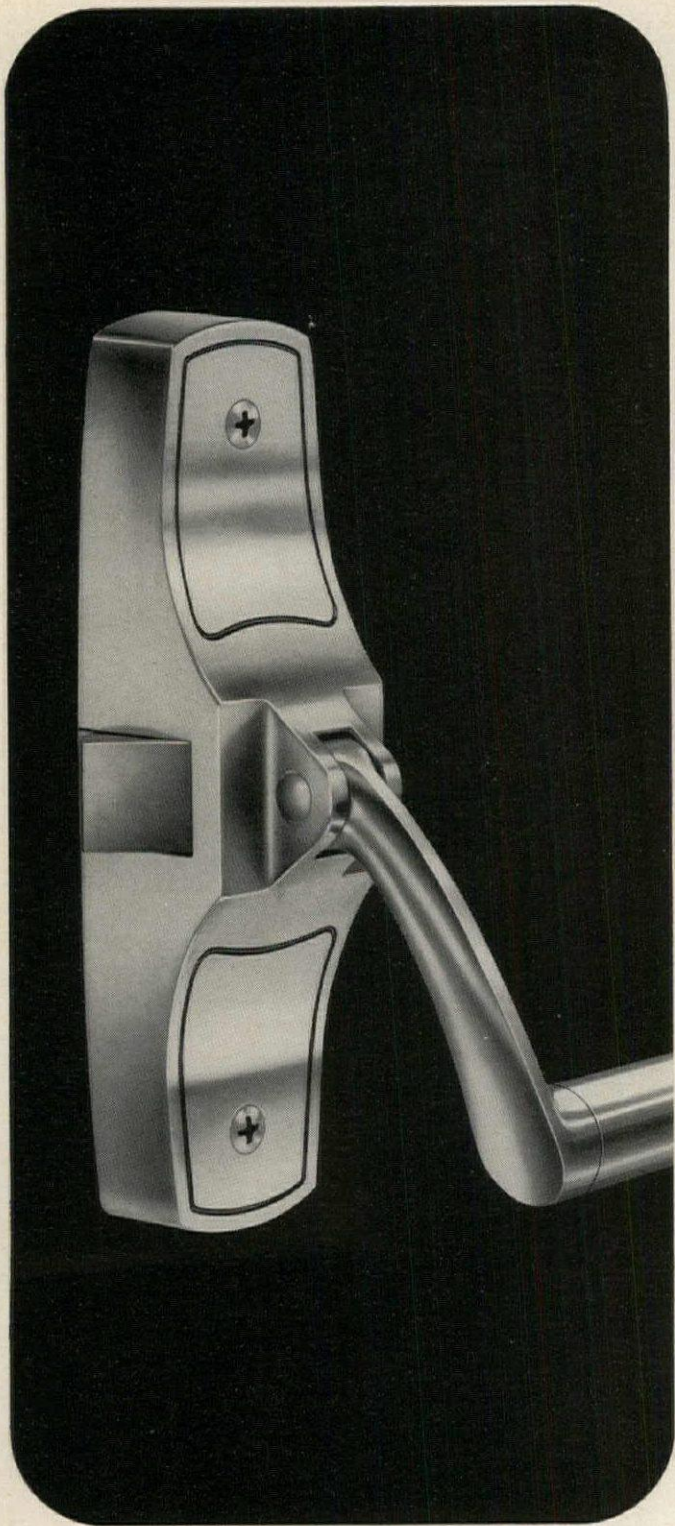
Full description on request
or see Sweet's 1966, Sec. 19e/Lc



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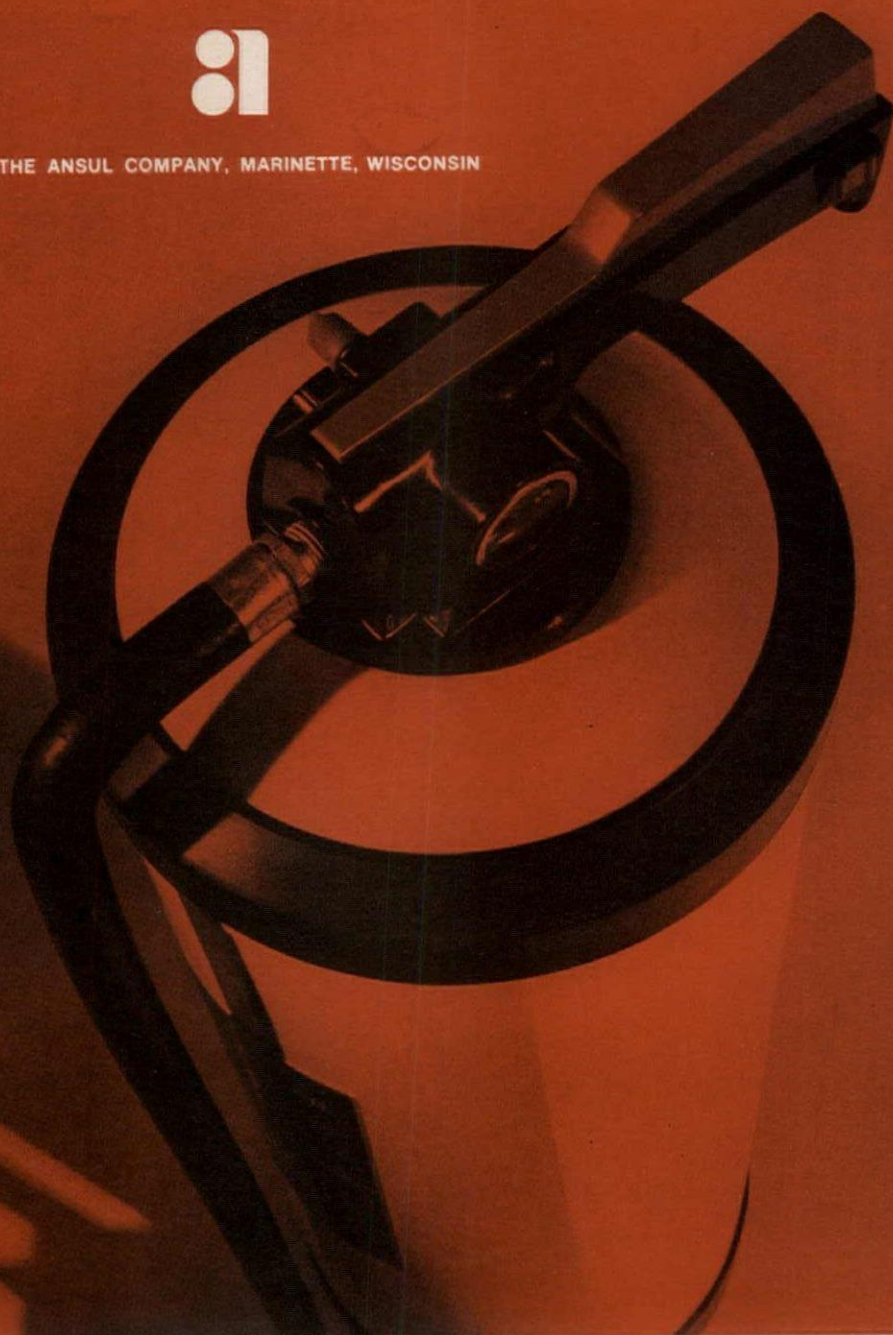
The ENSIGN'S Beauty is more than skin

deep. It's made of fiberglass . . . in fact, it's the world's first U.L. listed pressurized fiberglass water extinguisher. It will perform better, last longer and look better than the traditional metal water extinguishers. Nor will it dent, corrode or explode like the old-fashioned units.

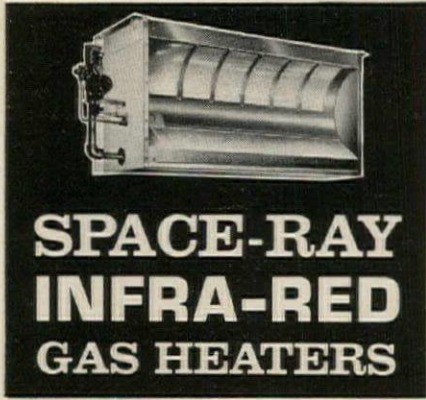
Write for our new brochure on the ENSIGN . . . or call your local Ansul Man for complete information. He's listed in the "Yellow Pages."



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radiant comfort heating
for industrial buildings



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MODEL W-60

UNEXCELLED FOR VERSATILITY

IN INSTALLATION

can be wall-mounted, or suspended from above, making it adaptable to a wide variety of heating situations — for most any plant layout.

IN APPLICATION

provide total comfort heat in industrial and commercial buildings — at fuel savings up to 50% — for complete plant heating, limited area, or spot heating.

The scientifically-designed heat emitter of the cabinet-type Space-Ray W-60 enables infra-red rays to be directed over a broader area of floor space than most flat-faced infra-red heaters (maximum intensity of the heating rays is 30° downward from horizontal). Model W-60 requires only a 3' clearance below heater, thus making it superior to most infra-red units when low hanging or mounting is desired.

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A.G.A.
Approved

Mount to the wall

or hang from above!

SPACE-RAY CORPORATION
306 W. Tremont Ave., Charlotte 3, N.C.

Circle 230 on information card

Newslines from page 25

at the age of 88. Cret died Sept. 8, 1945, at the age of 65.

► Cornell University will administer a project involving international cooperation between the United States and Yugoslavia, and the Universities of Chicago and California will contribute teaching staff.

The two-year project, announced by the university's Division of Regional Studies of the Center for Housing and Environmental Studies, is designed to provide the assistance needed for Yugoslavia to establish a permanent national planning institute.

► James Frazer Stirling of London and Robert Venturi AIA of Philadelphia have been appointed the first incumbents of the new Charlotte Shepherd Davenport Chair at Yale's School of Art and Architecture.

Yale University's President Kingman Brewster Jr. said they will share the professorship in architecture under an arrangement permitting each man to divide his year between teaching and practice.

UNANIMOUS

P. N. Brownstein, assistant secretary of Housing and Urban Development, speaking at a conference of the National Association of Home Builders on underground wiring in residential neighborhoods:

"Burial of the spidery lines . . . is possible today and today is when we should be doing it.

"Since I issued my underwriting letter last July (telling home builders to bury wires when feasible), I have been exposed to some debates. . . . In these debates I have yet to hear one person say that underground wiring was not more attractive. . . .

"I have yet to hear one person say he would prefer to have lines and poles."

City Planning Economics Is Subject of Guide

A new 40-page technical guide called "Economic Factors in Urban Planning Studies" is available at 35 cents from the Superintendent of Documents, US Government Printing Office, Washington, D.C. 20402.

A World Divided Drops In on World of Leisure

Leisure World in Monroe Township, N. J., is an ambitious undertaking ultimately to have a population of 50,000 oldsters.

Its symbol—not "leisure" but "world"—is equally ambitious. It is an all-steel, 9,200-pound unisphere.



The unisphere, 30 feet in diameter, was built in nearby North Brunswick. Being a big, big world, conventional forms of transportation were said to be costly in time and money, so the world was cut in two and airlifted—half at a time.

The globe will rotate above a pool of water surrounded by spotlights. Its continents are fiberglass.

Keystone Helicopter Corp. said it provided the fastest and cheapest transportation. ■

NECROLOGY

BAKER, JOHN P.

Lansing, Michigan

BOSWORTH, WILLIAM WELLES

Seine et Oise, France

CLEMENS, ROBERT W.

Houston, Texas

FRANKOSKI, THEODORE F.

Ross, California

GAILEY, J. HERBERT

Atlanta, Georgia

HAGER, JOHN WILLIAM, JR.

Birmingham, Alabama

KELLY, RUDOLPH L.

Peoria, Illinois

LYMAN, DUANE S.

Buffalo, New York

MC LAUGHLIN, THOMAS D.

Lima, Ohio

POTTER, RUSSELL S.

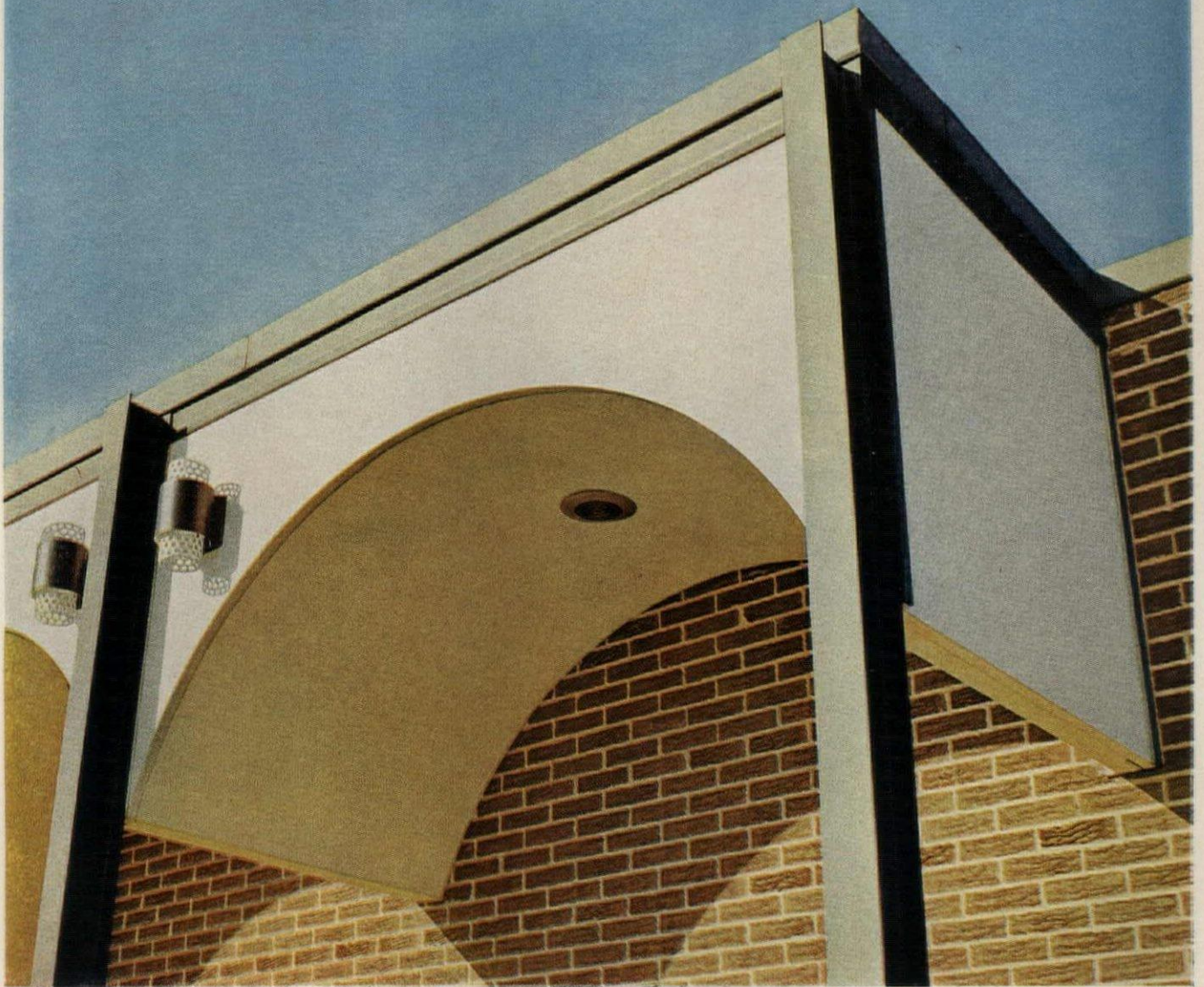
Cincinnati, Ohio

REBORI, ANDREW N.

Chicago, Illinois

No ten-million-year-old fault will weaken this "stone" arch.

It's Johns-Manville Colorlith.[®]



Panels of Meerscham White Colorlith form the arches for this modern bank. Colorlith has the same massive beauty as natural stone because it's made the same way. With one difference—Johns-Manville leaves nothing to geological accident.

Inorganic materials— asbestos fibers, cement, chemically resistant pigments—are combined with water under pressure and heat into a monolithic material that has all the strength of quarried rock—but none of the weaknesses. Composition and density are precisely uniform from panel to panel. There are no veins of weak-

ness, no planes of cleavage as in some natural stones.

In addition to white, Colorlith panels are available in a variety of solid



Western State Bank, Oshkosh, Wisconsin.
Architects: Sandstedt-Knoop-Yarbro, Oshkosh.

colors—and in the swirl patterns of Colorvein[®], and the random-particle designs of Colorchip[®]. Their beauty is constant from any angle because

the color goes all the way through.

Wherever you need exterior or decorative materials that offer timeless protection and charm—for masonry veneers, steel and wood facings, interior panels or furniture—design with J-M Colorlith, the "stone" that leaves nothing to chance. For your copies of free literature illustrating its many styles and uses, write to Johns-Manville, Box 111, New York, N. Y. 10016. Cable JOHN-MANVIL. J-M Colorlith is also available in Canada.



Johns-Manville

FLOOR PROBLEMS LIKE THIS START WITH THE CRITICAL 1% OF THE SPECS

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Whatever the special requirements of your floors . . . resistance to moisture, acids, alkalis . . . skidproofing, dustproofing, extreme hardening or smoothing . . . select the right product for the job from Grace. Look into performance-proven specialties such as Horn Clear Seal (4-way cure, seal, hardener and dustproof), Ferro-Fax ("iron finish" floor hardener), Thiopoxy 60 (extra rugged corrosion-resistant topping), Horn Polyurethane Floor Coating (outstanding durability and protection without waxing). And these are only a few of the many proven Grace flooring products that you can specify with total confidence.



And the new Grace Spec Kit makes specification complete, simpler and more accurate. A concise, central source for a wide range of specialty products, the Kit lets you select products quickly, spec out entire systems in minutes, actually write specs in a few words. It includes:

- (1) **Preprinted Specification Work Forms** for 45 major products. Simply tear out and fill in your brand choices.
- (2) **Ultra-condensed Product Selector Guide.**
- (3) **140-page Product Handbook.**

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THE RONZONE SCHOOL

first to employ the new plastic space

The first school to open its doors, following the "space versatility" concepts of SCSD*, is in Clark County, Nevada—not California! This first educational "space-age" building is Bertha Ronzone Elementary School, by Julius Gabriele, A.I.A., Las Vegas, a 46,700 sq. ft. structure completed July 21, 1965, 17 days ahead of schedule.

The key to the swift completion was Butler Space Grid™—the integrated structural-mechanical system developed by a consortium of national building component manufacturers**.

The unique Space Grid structural system achieves long-range performance advantages for all its mechanical systems. Advantages like integral support for the ceiling/lighting systems; extensive through-ceiling air entry and exhaust system allowing easy relocation of diffusers; and anchorage for movable partitions. Maximum rearrangement potential of partitions does not compromise these high environment standards.

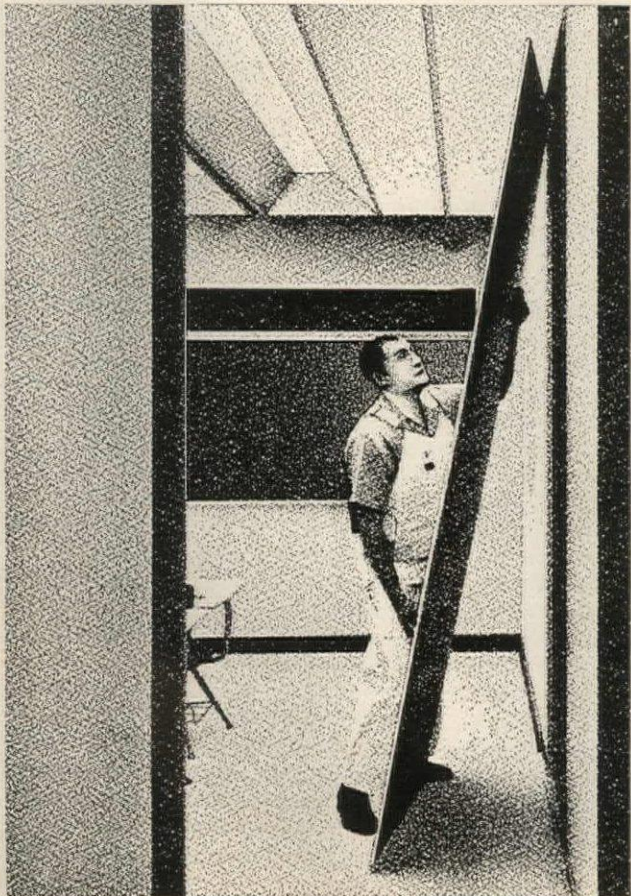
Space Grid offers many options beyond SCSD specifications, which make it applicable to a considerably wider spectrum of requirements and end uses. See Sweets File 2A/Bu. Or write Architectural Systems Department, Butler Manufacturing Company, 7601 East 13th Street, Kansas City, Missouri 64126.

*SCSD is the School Construction Systems Development project of the Educational Facilities Laboratories.

**Consisting of Butler Manufacturing Company, E. F. Hauserman Company, Lennox Industries Incorporated, Owens-Corning Fiberglas Corporation, and other cooperating manufacturers.

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SPACE GRID™ SYSTEM



A Spokesman for the Profession



It is significant that the appointment of a special adviser on design to the Secretary of Housing and Urban Development was announced by Robert C. Weaver at the national headquarters of the AIA.

The selection of George T. Rockrise FAIA establishes a new landmark in the importance of the profession's role in governmental affairs. To the individual practitioner of architecture, this appointment of an Institute Fellow is a reflection of high recognition of the architect as a force in urban development and city planning today.

As Under Secretary Robert C. Wood said at the recent AIA convention, "Architecture to me has always been distinguished by its flexibility . . . by providing a revolutionary response during periods of revolutionary change." From the early days of the formation of the AIA, the role of the architect has passed through varied phases, adapting to the needs of the citizenry. Today's architect no longer remains aloof of the problems of urban population expansion, city decay and chaos.

The architect has by necessity and choice become involved in the total environment of society. He no longer is concerned only with individual, isolated buildings. He has, in short, become deeply involved in human interaction, the economics of building and the social context of man in space, time and motion.

The profession does not consist entirely of designers. Some, such as George Rockrise, a fine designer in his own right, serve to clarify or to interpret for those who provide the power and financing. Secretary Weaver emphasized that his consultant would do no design but "would strive to make the depart-

ment more knowledgeable in the field."

This is a large order for any man, and our aid, effort and support go to the new consultant in this endeavor. Certainly, the accomplishment of acquainting the authorities, on the federal and local levels, of the importance of good design in itself would be a service of inestimable value to the profession.

President Johnson has pointed out, "We can introduce into all our planning, our programs, our building and our growth a conscious and active concern for the value of beauty. If we do this we can be successful in preserving a beautiful America." The fact that HUD is aware of the especial need for this "concern" for beauty and design is in itself a significant breakthrough.

This one department is the most important single element in urban building in our country. Our neighborhoods, our cities, our public housing, our urban renewal programs, our public facilities all fall within its realm.

The need and the challenge of providing a better environment is there, and the profession, if it hopes to continue to exist, must meet this challenge with a coordinated attack on urban problems and fulfill the need for planners, designers and other related professionals.

In his prepared press conference remarks at the Octagon House—a fitting place, indeed, tied as it is to the history of the profession and the federal government and the public as a National Landmark—Secretary Weaver stressed the role that architect Rockrise will assume in the departmental programs. "Our new adviser," he said "will greatly strengthen our efforts to stimulate and support communities as they improve the quality of the urban environment, replacing the clutter and disunity of the past with satis-

fying surroundings that are pleasant and inspiring."

As he spoke, Dr. Weaver reiterated his conviction that the federal government should never engage in setting design standards, in deciding what is or is not good design. Mr. Rockrise, he added, will be primarily working closely with the Assistant Secretaries to spearhead the department's drive to raise the quality of design throughout all of its programs.

"He will strengthen working relationships with top design groups such as the AIA and the American Society of Landscape Architects," the Secretary explained. "He will also direct the design awards programs and serve as the department's liaison with professional associations of builders and developers, with universities, research and development firms and with private groups on matters relating to design and esthetics."

Mr. Rockrise's first assignment will be to establish guidelines covering what the results of the HUD programs should be and to determine how to achieve these results.

A further aspect of his role will be to find ways and means of involving skilled professional people more deeply in federal programs. The AIA, as well as the federal government, is vitally interested in having an available reservoir of creative people qualified in architecture and the disciplines of urban design.

The profession in general and every AIA member in particular can feel honored that Mr. Rockrise has been appointed to this advisory position. For through his leadership, the architect will assume a new responsibility—that of a realist in a highly technical and complex, everchanging society.

THOMAS R. HOLLENBACH, AIA
Assistant Director
Governmental Affairs



A·I·A

Journal

An Oilman Talks Esthetics

*'If we fail to take action,
we may find ourselves
the only industry that ever
stopped growing because
of its own ugliness'*

BY STANLEY D. BREITWEISER

POETS AND PHILOSOPHERS for centuries have told us that "Beauty exists in the eye of the beholder."

It is obvious that all of us in the oil industry take great pride in our gaily colored signs, our bright neon lights and—when they are clean—our gleaming white stations. Some dealers also take considerable pride in decking out their stations with fluttering pennants, whirligigs and, more recently, tigers perched on top of tanks and dinosaurs. "We want everyone on the road to see us," they say.

And everyone on the road *does* see them. Unfortunately, getting back to my initial quotation, a lot of people who see them don't find them as inherently attractive as we do.

"But we're in the oil business, we're not concerned with esthetics," I can hear you saying. Now that's just my point. The oil industry must concern itself with esthetics or find itself at the mercy of local, state and—now—federal authorities who may not be sure of the spelling of the word but know they don't like the looks of service stations. The storm signals are up, and if we don't wish to





Century Center in Tulsa, "an important contribution to our marketing thinking": Murray, Jones, Murray, architects.

be caught in the deluge, we as an industry are going to have to mend our ways, and quickly.

None of you need to be reminded that the Highway Beautification Act bans billboards within 660 feet of the road along noncommercial sections of the interstate and major intercity highway systems, which total 265,000 miles. The act gives the Secretary of Commerce a voice in establishing billboard control standards even within industrial and commercial zones, which are expected to regulate size, lighting and spacing. Although state and local authorities will continue to have the right to establish industrial and commercial zones, approval of the Secretary will be required before any noncommercial area can be so rezoned.

This legislation directly affects the petroleum industry. On the one hand, all of us have an interest in making the nation's highways safe and attractive. As an industry we have already benefited from increased travel over completed sections of the interstate system. These modern high-speed roads stimulate auto travel by making it more pleasant and interesting. They also boost gasoline consumption since we all know that a car driven at 60 miles per hour consumes more than at 35 miles per hour.

As individuals, we appreciate these new highways as much as our neighbors. We enjoy the opportunities they provide for us to travel quickly and easily to other parts of the country. The stimulation given by these new highways to tourism and recreation benefits us individually and as an industry. Both as motorists and suppliers, we have a vested interest in the highway program.

On the other hand, if billboards are limited principally to service station premises, we have a problem of giving advance notice of where to buy our products. Billboard controls affect not only the advertising of our dealers but also our own national outdoor campaign.

Yet I believe the highway beautification program presents an unexpected opportunity for the

oil industry. For once, let us make a virtue of necessity. Before we are completely hedged in by signage restrictions, zoning limitations, etc., let's demonstrate responsible leadership as an industry rather than continue to fight what is a sure-to-be-lost, rear-guard action.

Now that we have the basic provisions of the billboard control law, I propose that our industry, as one of the biggest users of billboards in the country, pledge its complete cooperation. The state petroleum councils should work with state and local authorities; the American Petroleum Institute on a national basis should offer its assistance to Secretary of Commerce Connor.

Let's challenge our suppliers to come up with signs that meet the requirements of the act, that are visible but not defacing, that employ some of the new materials now available. In other words, let's face up to the fact that we are going to have to live with this legislation and, rather than dragging our feet or seeking to block its implementation, act constructively.

The auto industry has done just that in the months following passage of the law requiring certain safety features for cars purchased by the federal government. Not only did the manufacturers put many of these features on their 1966 models, but they also raised new car prices.

Now I'm not suggesting that we use compliance with billboard controls as an opportunity to raise gasoline prices. But I do believe we should respond gracefully and positively to this new law. In many communities our industry has a poor image among consumers. We should be seeking to improve the esteem with which we are held by the public rather than taking a negative viewpoint. Opposing highway beautification at this late date is like being against motherhood.

The legislation could very well be only the first

Adapted from an address given by the executive vice president of Cities Service Oil Co. before the annual convention of the Arkansas Petroleum Council.

in a series of steps that would affect and restrict our industry. As part of the highway beautification program, the federal government will compensate owners for up to 75 percent of the cost of screening junkyards from view of the highways. It does not take a crystal ball to foresee that legislation might one day be enacted requiring used car dealers and service stations to similarly screen or beautify their properties. And then we will have a far greater problem facing us than we have today.

The poor image that our industry has with many of our customers was pointed up by Mars Bogstahl, marketing operations manager of Shell Oil Company, to the American Petroleum Institute. A few quotations from the report, "The Storm of Zoning Restrictions Against Service Stations," underscore just how serious the situation is:

- "A city planner in Florida recommends that 101 service stations be considered nonconforming and recorded for loss of rights.
- "A midwestern town proposed a 'long-awaited law' to exclude service stations from shopping areas. Stations could not be built between two retail walk-in establishments.
- "An eastern town denies a permit on the grounds that 'a service station is detrimental to the health and welfare of the community.'
- "A southern city devises a service station limitation ordinance at the request of residents who 'pleaded with the city council to restrict the number of service stations.'"

The API has for a number of years worked with the American Society of Planning Officials and the American Institute of Planners, both of which have listed the recurring objections to service stations most frequently voiced by the public at rezoning hearings. These objections fall into three principal categories: esthetic, concerning the general appearance of service stations; operational, relating to station activities; and psychological, dealing with the more emotional complaints.

Among the principal esthetic objections cited by the planners:

1) Unattractive building materials—those porcelainized panels—and design, usually boxlike constructions.

2) Cluttered, gaudy advertising—pennants, banners, whirling propellers, flashing lights. This garishness is compounded when two stations are located side by side.

3) Junkyard appearance—storage of used tires, mufflers and damaged cars awaiting repair.

4) Overbuilding—one station is usually followed by two or three others in the same area.

5) Outdoor telephone booths and vending



Three Florida stations: Miami (top)—Michael M. Vaviloff, architect; Henry Dreyfuss, designer; Coral Gables (center)—Ferguson Associates, architects; Miami (bottom)—John E. Petterson and Frank H. Shufflin, architects; Dreyfuss, designer.



machines cluttering the property, especially when spotted along the station's road frontage.

6) Abandoned stations that become eyesores in the neighborhood.

Some members of our industry have recognized that we must face up to this situation and take responsible steps to cope with it. Based on their own survey they have proposed the following:

- 1) Eliminate unsightly operations
- 2) Participate in town planning
- 3) Enter into a public education program
- 4) Dispose of obsolete and closed facilities
- 5) Eliminate gaudy displays
- 6) Improve architecture and design.

While some of these suggestions may be difficult and even impossible to implement, taken together they add up to a recommendation for some soul searching by each of us as individual marketers and by the industry as a whole. The charges contained in the API report represent a serious accusation against our industry—an accusation that we must, if we are to continue to grow, meet with considerably more dexterity than we have demonstrated to date.

The National Association of Manufacturers at its last annual meeting discussed the progress made by industry in refurbishing our often badly scarred landscape. Business executives who participated in the White House Conference on Natural Beauty agreed that in the future the consumer will probably judge companies not just by the quality of their products but also by what they are, or are not, doing to preserve and restore our country's fast-vanishing natural wonders.

The White House Conference drew some 150 recommendations for action from the participating businessmen, lawmakers, architects and city planners. Acting on the principle of "enlightened self-interest," industry will doubtless eventually take the initiative in implementing these recommendations, but as one newspaper report predicted, "others will have to be legislated."

All of us, from time to time, see factories and industrial plants so landscaped as to be virtually an enhancement of the surrounding countryside. In such places as Williamsburg, Virginia, even the supermarkets have colonial store fronts.

Now what I am recommending is not that we all go colonial—you can imagine how odd a red brick, white-pillared service station would look in Tulsa—but I do strongly urge that we recognize that we have a problem on our hands and apply some of our sophisticated marketing techniques toward solving it. Let me be specific in illustrating what I mean by the latter.

In the fall of 1964 we opened in Tulsa the most modern service station in the United States

called Century Center. It was designed for customer convenience—a whole new marketing concept. It has fuel consoles instead of gas pumps, exotic floral displays, a handsomely decorated waiting lounge, a stone patio, etc. Its colors are bittersweet and butterscotch, or what we unsophisticated would call orange and brown.

Century Center was a guinea pig. We tried things out and we made some mistakes, but this new station has made an important contribution to our marketing thinking.

We have built another new neighborhood station in Tulsa in a high-income area, complete with landscaping which is lighted at night.

In recent months I have been studying new station designs submitted by architects in Tulsa, New York and elsewhere. We are going to build some prototypes that will bear little resemblance to the white porcelain boxes of the past. We will quit designing the same station for New England and the Southwest. We plan to regionalize our designs and, by utilizing materials indigenous to the area, localize our appeal to prospective customers. Instead of plastic and chrome over a layer of concrete, we are considering designs with lots of greenery and privacy fences. Some of the station designs I have seen even hide the pumps from the street, though this may be carrying sophistication a bit too far!

We feel that we are moving in the right direction in adapting station architecture to regional and local building styles. Some of our new stations in Florida will use cement screening. In Boston, they will be built of red brick and in the Southwest of pebbled concrete. With our new red trademark, we feel our customers will know that these are CITGO stations irrespective of regional architectural differences.

One of my good friends is an industrial designer in New York. While he would be the first to admit he has a vested interest in good design, he not infrequently makes the point that it will outsell bad design, other things being equal.

This piece of professional advice should give us, as individual oil marketers and as an industry, courage to pay greater attention to esthetics. Let us consider the billboard controls as a challenge and an opportunity for the oil industry to improve its public image. At the same time let us examine our stations through the eyes of our customers. The alternative, as already demonstrated by the Highway Beautification Act, is casting a long shadow over all of us. Through our disregard of public opinion we are inviting government regulation and control in the area of esthetics. If we fail to take action, we may find ourselves the only industry that ever stopped growing because of its own ugliness. ■

*Eleven projects in three categories—
Public, College/ University
and School—have been cited in
the third Library Buildings
Award Program, with only one chosen
for a First Honor Award.*

*The American Institute
of Architects joins the American
Library Association and
the National Book Committee in
sponsoring the biennial event.
This year's jurors were architects
Harold Spitznagel FAIA, chairman;
Ulrich Franzen AIA;
and George Vernon Russell FAIA;
and librarians Frazer Poole,
University of Illinois, Chicago Circle
Campus; Robert H. Rohlf,
Dakota-Scott Regional Library,
West St. Paul, Minn.; Virginia McJenkin,
Fulton County Board of
Education, Atlanta; and
Hoyt R. Galvin, Charlotte, N.C.*

1966 *Library Buildings* AWARD PROGRAM



PUBLIC LIBRARIES

First Honor Award

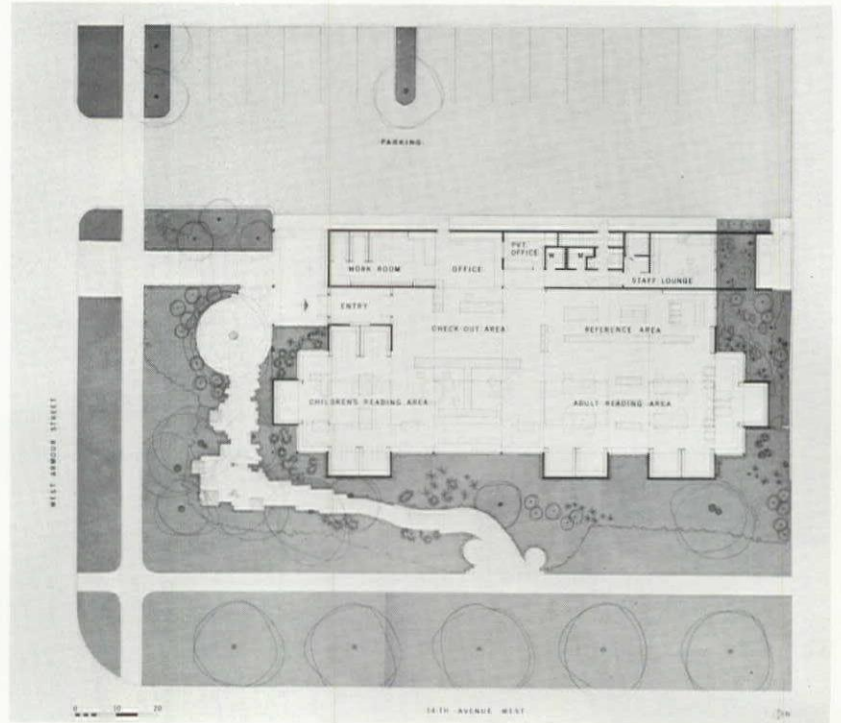
Magnolia Branch

Seattle Public Library
Seattle, Washington

Kirk, Wallace, McKinley
& Associates
Architects

Jury Comment

This relatively small and sensitively designed library presents a friendly and inviting face to its users. The plan is simple and well organized; the choice of native materials makes it a handsome example of Northwest regional architecture. The detail and textures are most satisfying. Its respect for the site contributes greatly to the successful solution of the requirements of the program.



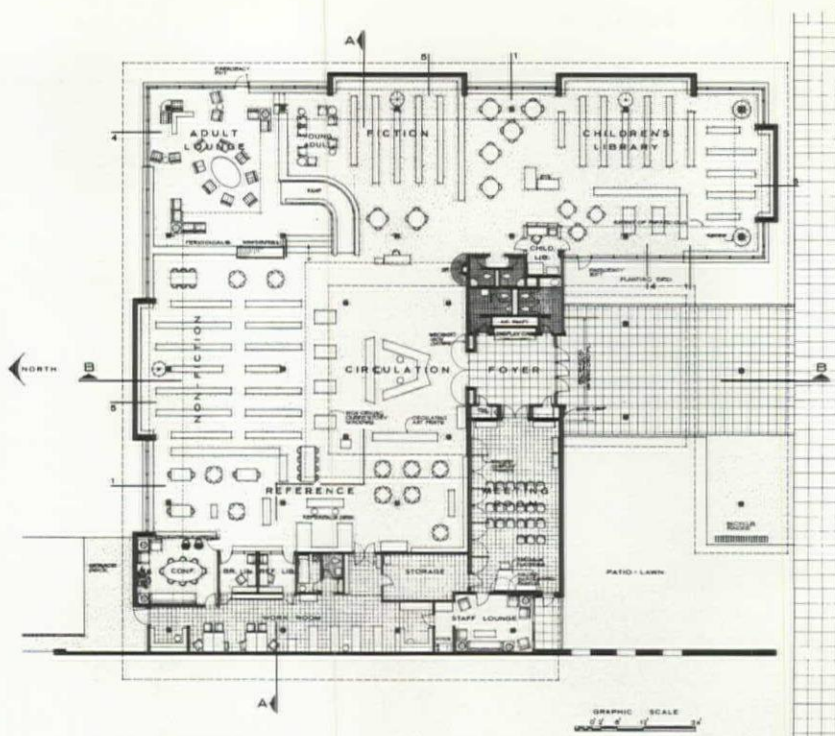
PUBLIC LIBRARIES

Award of Merit

Wilmot Branch

Tucson Public Library
Tucson, Arizona

Nicholas Sakellar & Associates
Architects



Jury Comment

This project is compatible with the arid, sunbaked surroundings. The large urban branch library provides an oasis for readers with a pleasant, functional plan, serving the mobile population.

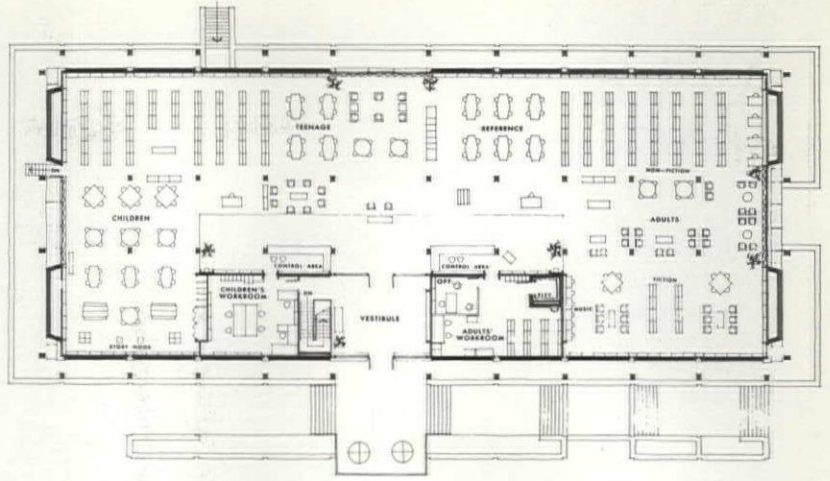


PUBLIC LIBRARIES

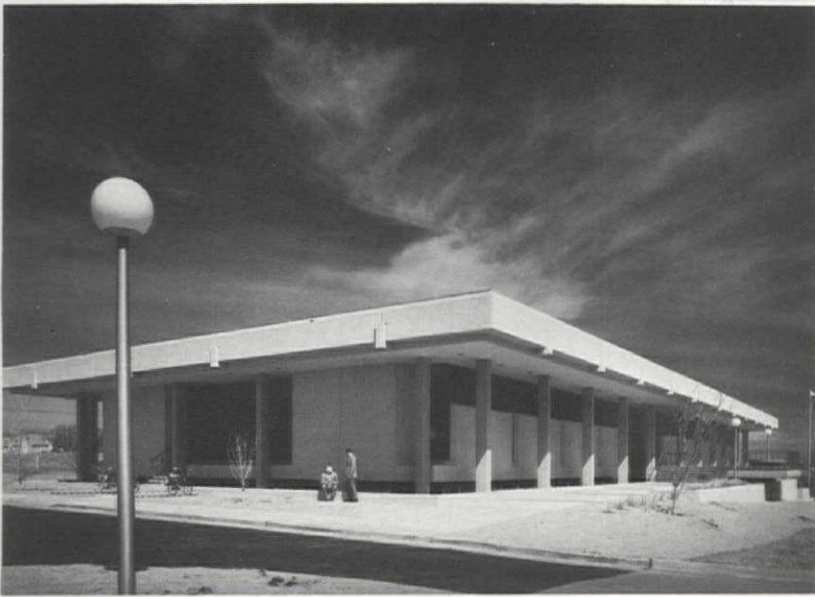
Award of Merit

W. Clarke Swanson Library
Omaha, Nebraska

Leo A. Daly Co.
Architects



first floor



Jury Comment

A well-organized, flexible plan which takes advantage of what would normally be considered an awkward site. The building houses several disparate functions in a logical, efficient arrangement. The interior provides good traffic circulation and control.



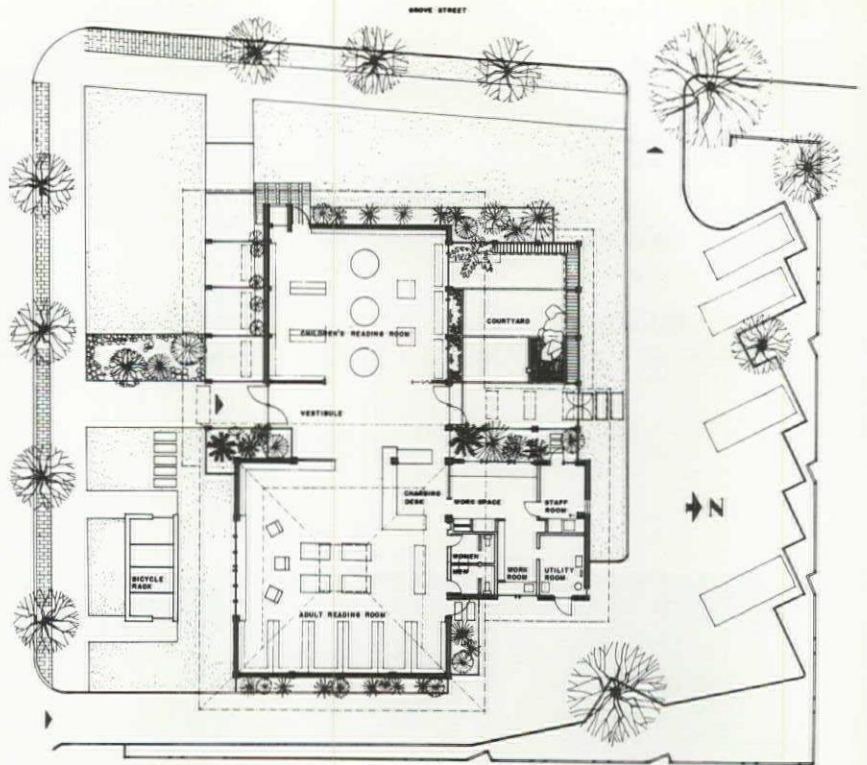
PUBLIC LIBRARIES

Award of Merit

South Branch

Berkeley Public Library
Berkeley, California

John Hans Ostwald AIA
Architect



Jury Comment

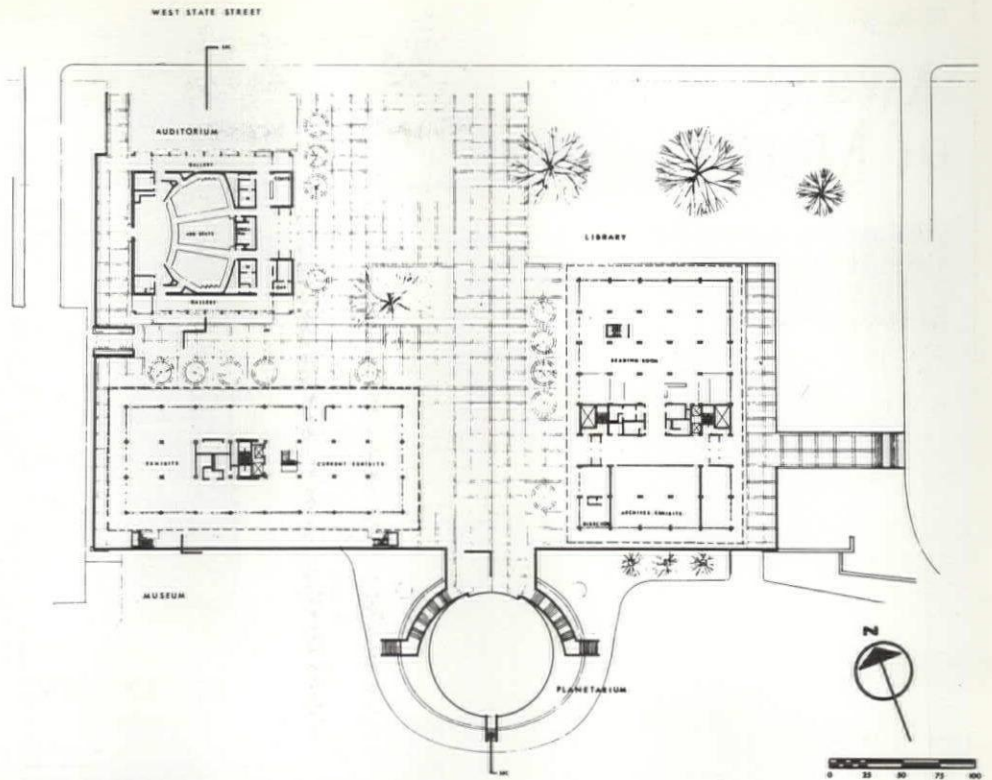
This building presents an ingenious solution within an extremely low budget. The plan is simple and straightforward, with imaginative use of economical materials. This is an efficient grouping of nonpublic functions with easily controlled exits to street and parking areas. The attractive court offers relief from the relatively stark interior. While a more ample budget allowing better illumination and higher quality materials could have been provided, the building solution represents an accomplishment within the restrictions.



Award of Merit

New Jersey State Library
Trenton, New Jersey

Frank Grad & Sons
Architects



Jury Comment

This library is a striking example of a simple solution to a complex operation requiring public service areas combined with a large resource collection, extensive interlibrary loan operations and prominent archive and exhibit areas.

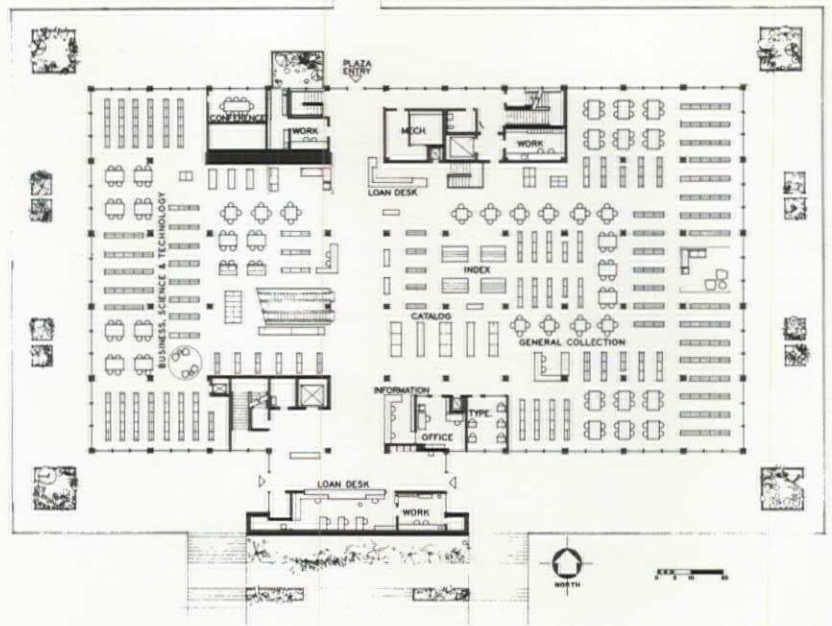


PUBLIC LIBRARIES

Award of Merit

Salt Lake City Public Library
Salt Lake City, Utah

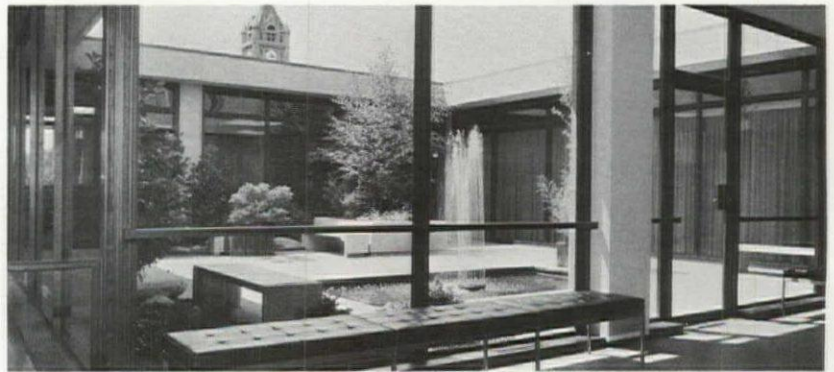
Edwards & Daniels
Architects



first floor

Jury Comment

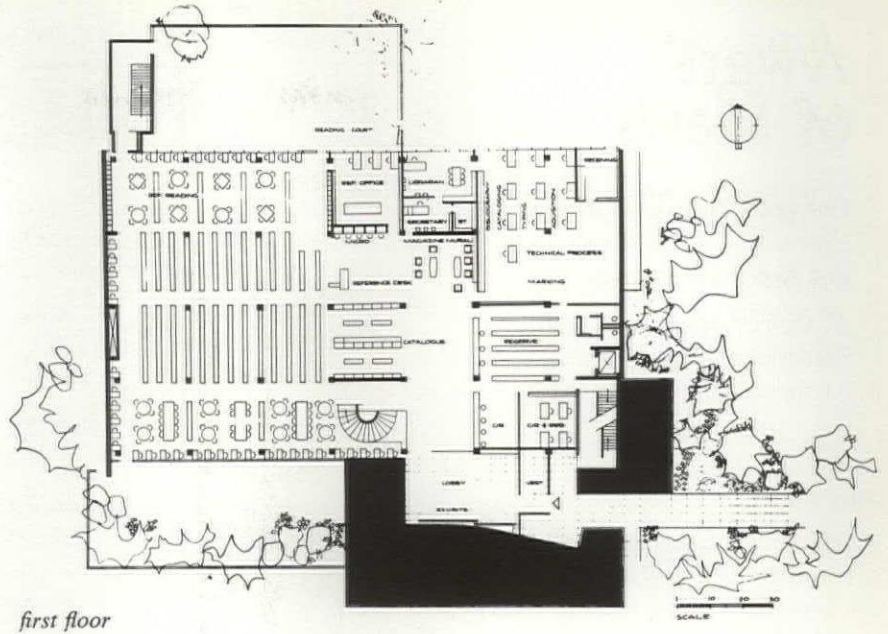
This design presents a good solution to the manifold problems involved in the design of a large central public library. Its functional characteristics do not override its pleasant intentions. The monumental quality of the exterior would in no way discourage a prospective user.



Award of Merit

Swirbul Library
Adelphi University
Garden City, Long Island, New York

Richard J. Neutra FAIA and
Robert E. Alexander FAIA
Architects



Jury Comment

This building was cited because of the degree to which it meets the functional needs of a small academic library and for the intimate character and attractiveness of the interior. The building permits later expansion (one of the requirements of the program), fits appropriately into its site and has an attractive reading court.



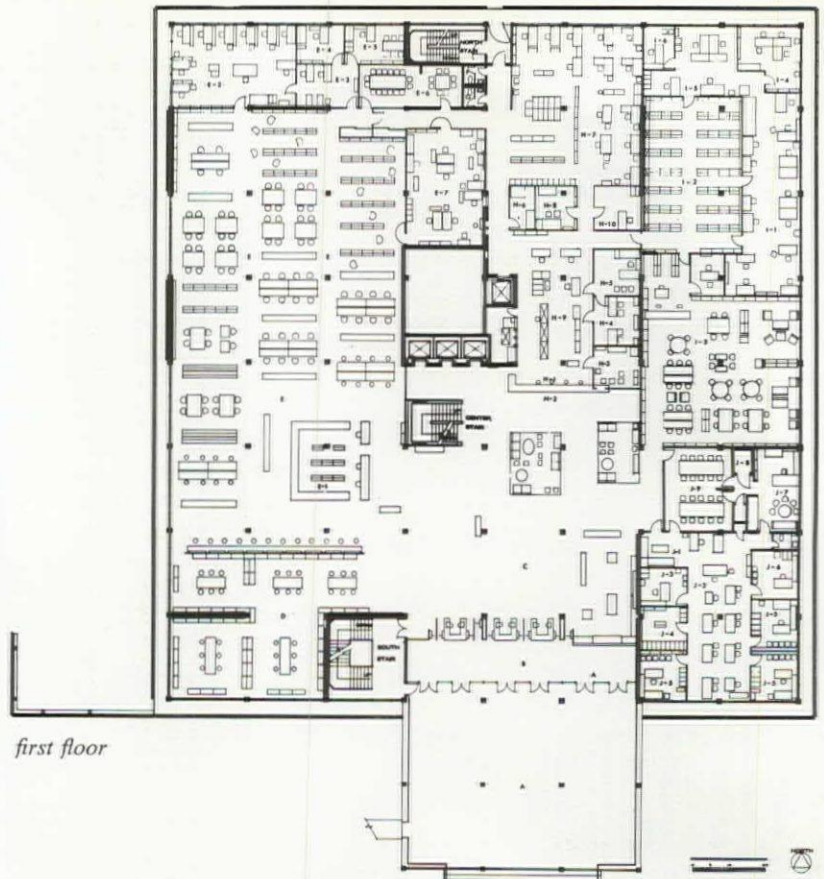
Award of Merit

University Research Library
University of California,
Los Angeles, California

A. Quincy Jones FAIA and
Frederick E. Emmons AIA
Architects

Jury Comment

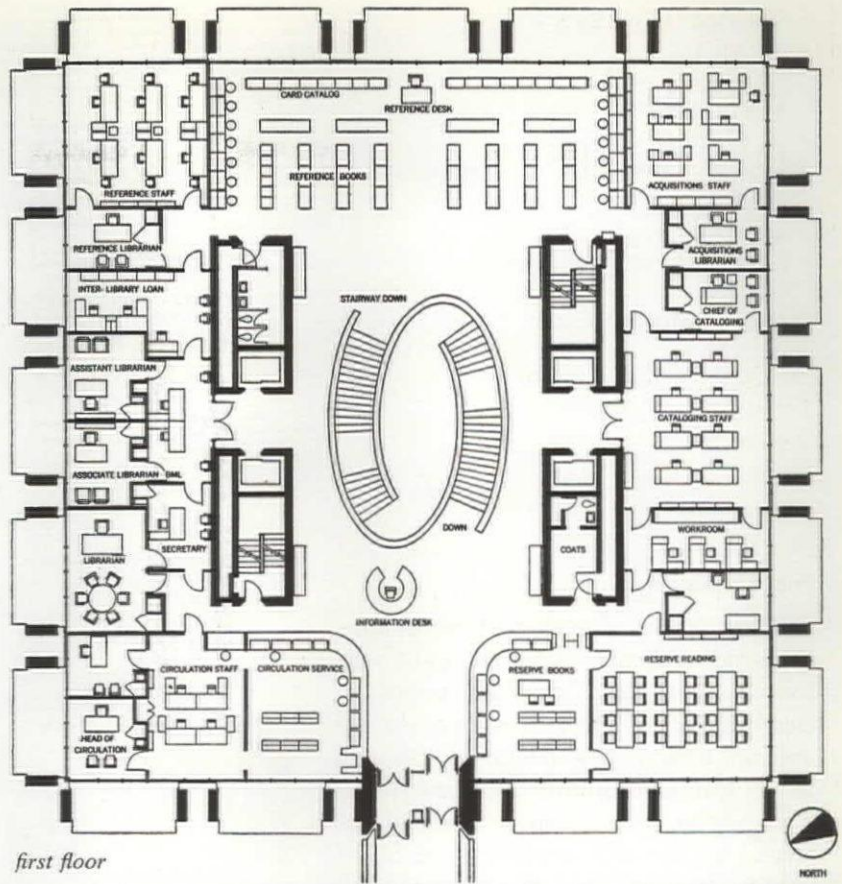
The complex functional requirements of a research library of such magnitude and the necessity of designing the structure for expansion have been met successfully. One of the difficult problems in this kind of library is the task of designing reading facilities and bookstacks so that the reader retains a sense of orientation to his location and has, as well, a comfortable and attractive place in which to study. These dual problems have been solved here. The exterior is both disciplined and restrained.



Award of Merit

Countway Library of Medicine
Harvard University Medical School
Boston, Massachusetts

Hugh Stubbins & Associates, Inc.
Architects



first floor

Jury Comment

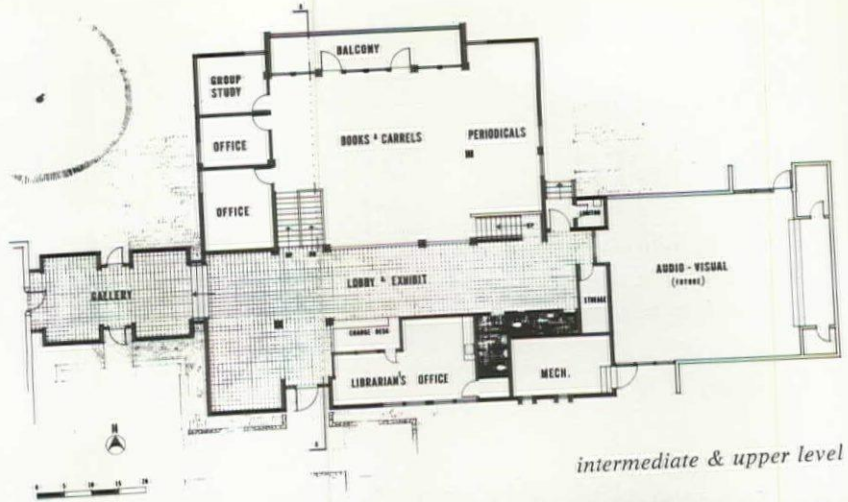
This building is an excellent solution to the difficult problem of designing a research library in a very limited area. The joint criteria of achieving an efficient relationship between various library functions and of providing for easy access to the book collections by users and staff were solved in a highly satisfactory manner. The need to unify the vertical building that resulted from the small site was effected through the use of an attractive and functional open central court running from top to bottom. The jury agreed that the curvilinear stair was not in keeping with the relatively bold architectural statements elsewhere in the structure.



SCHOOL LIBRARIES

Award of Merit

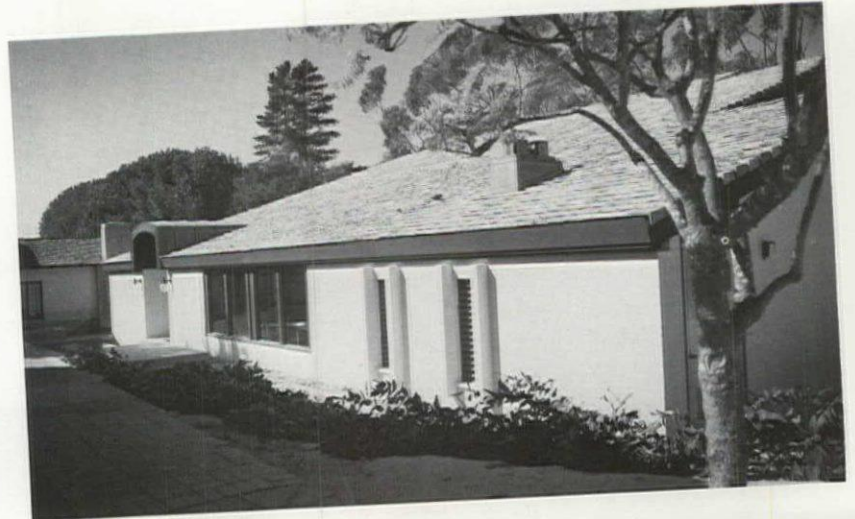
McBean Library
Carpinteria, California
Arendt/Mosher/Grant
Architects



intermediate & upper level

Jury Comment

This library reflects in a fresh manner the style and materials previously used for other buildings on the campus. It clearly indicates changes in instructional and new technological methods and serves as the learning resources laboratory. The arrangement of essential facilities increases the effectiveness of the use of the library. The jury recognized that many of the problems generated in public school libraries are not presented at Cate and that its configuration results from unique situations.





PREPARED BY PAUL D. SPREIREGEN, AIA, FOR THE COMMITTEE ON URBAN DESIGN

Lessons from Copenhagen: Part 2

Part 1 presented the development of the Copenhagen finger plan, which originated in 1947. It, in turn, initiated larger considerations for regional planning, a discussion concluding the worksheet.

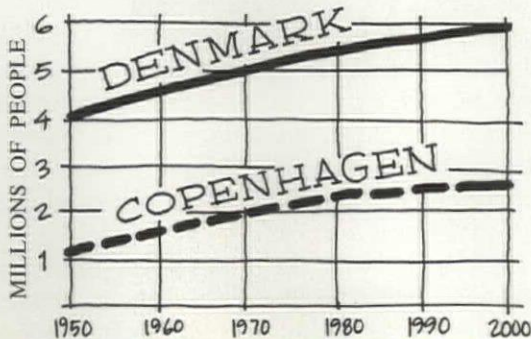
By 1958 IT WAS APPARENT that the assumptions of the finger plan needed reconsideration. As is often the case, the statistics on which premises were made proved conservative. Indeed, based on a continually growing industrial base, projections for the year 2000 were as follows:

- a) Denmark's total population: 6 million (a 1½ million rise from 1960)
- b) Denmark's rural population: 1 million (a ½ million drop from 1955)
- c) Denmark's urban population: 5 million (a 2 million rise from 1955)

Half of the urban population would reside in the Copenhagen region: a year-2000 population of 2½ million. When this assessment was made in 1947, Copenhagen's population was just over 1 million, national population being 4 million (Fig. 1).

It was clear that Copenhagen's growth could not be halted. To do that would mean to halt Denmark's industrial, economic and social progress. Later, perhaps, a national urban reformation might be achieved; meanwhile, Copenhagen's growth had to be planned for the sake of its efficiency and economic well-being. Of course, from a social

Fig. 1—Population growth in Denmark and Copenhagen



standpoint the large metropolis—or urbanized region—can have much to recommend it, if well designed. Naturally, good design is unquestionably a sound objective from a utilitarian standpoint as well, for the public happiness is directly related to a country's output and wealth.

The 1958 reassessment disclosed several major considerations, which were made more precise through statistical representation. Among these:

1) **RATE OF GROWTH**—This would reflect mainly on Copenhagen as a center of production, trade and administration. It would absorb half of Denmark's urban population increase, a growth of a million by the year 2000 (Fig. 2).

2) **GROWTH IN COPENHAGEN**—The increase in production, trade and administration involves two broad classes of workers: *secondary* and *tertiary* in economist's language, *blue-collar* and *white-collar* in journalist's language. The actual changes in numbers of workers do not respond identically to the growth of the industries employing them.

We are all familiar with the increasing efficiency of farm and other basic workers. In the United States, for example, from 1820 to 1950 the farm population decreased from over 70 percent of our population to about 20 percent (Fig. 3). As industry develops, the proportion of industrial workers also rises but reaches a peak. Certain production efficiencies mean more goods made by fewer workers. In the US the *proportional* peak for industrial workers was reached about 1920.

However, administrative workers do not show signs of decrease. Among their ranks are insurance men, policemen, politicians, teachers, secretaries, shipping clerks, TV announcers, etc. It is this population growth, a consequent step in industrial development, that creates the large metropolis.

3) **HOUSING DEMAND**—The change in population from primary to secondary (blue-collar) to tertiary (white-collar) work means a

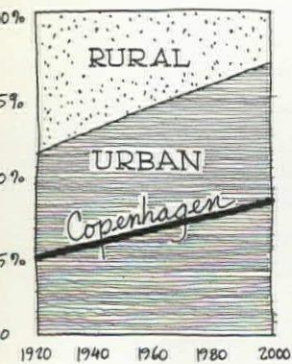


Fig. 2—Population change

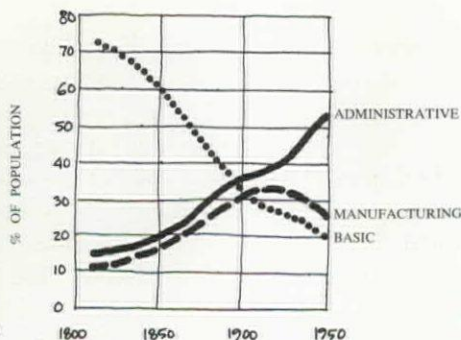


Fig. 3—US-worker composition

metropolis dependent on highly efficient communication and population well-being. The standard of living rises.

A brief arithmetic exercise shows what this means in land needed for housing. In Denmark, the average family size has been decreasing from $3\frac{1}{2}$ in 1930 to $2\frac{1}{2}$ at present. Thus, a population of $2\frac{1}{2}$ million needs 1 million dwelling units of all sorts, but with a strong preference for single-family houses, as here in the US. At present, Copenhagen has about a half million dwelling units; another half million are needed. Current Danish standards call for one-fifth to one-quarter of an acre per dwelling unit (of all sorts, averaged), and so 160 square miles of raw land are needed for residence, to which 40 square miles must be added for reserve, totaling 200 square miles. In a country as small as Denmark this is not modest (Fig. 4).

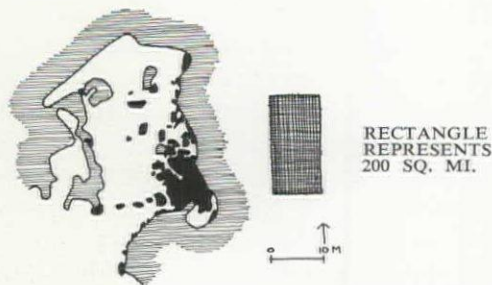


Fig. 4—Residential land needed by year 2000

4) AUTOMOBILES AND PUBLIC TRANSPORT—A similar mathematical drill brings precision to the impact of increased automobile ownership. In 1960 there were $1\frac{1}{4}$ cars for every 10 Danes (a threefold increase in one decade). Computations showed that by 1965 there would be two cars for every 10 people. By 1975 there would be three.

The rate of increase is less important than the simple fact that people are taking to cars and that more roads have to be built. But even more important is how and where cars can and cannot be accommodated. They cannot be accommodated in the center as a means of worker transportation without large-scale destruction of many of Copen-

hagen's present advantages. Public transit remains the obvious answer for the center.

However, roads can be built in the center and a limited number of related parking spaces *can* serve people who come to town in the evening or for some special daytime trip. The Danes observed that when car ownership in the US reached $3\frac{1}{2}$ cars for every 10 people, only a third of our workers went to work by car and, even then, only half our families owned cars. Of course, our cities were more compact in those days, and public transportation carried the lion's share of the load; but as cities grew and public transit fell into neglect, the picture changed. The Danes feel that it need not change, that public transit has obvious advantages for the trip to and from work.

On the other hand, the car is the best means of transit for recreational purposes, particularly for a trip out into the country. The center requires protection from excessive car traffic by discouraging it and offering a good alternative. The open countryside of Copenhagen cannot restrict cars or people; indeed, it is purposefully made accessible to them. Its protection lies in policy that prevents damaging intrusion while allowing access for recreation. For example, by allowing weekend cottages in a particular area but by preventing access which would allow daily commuting, one avoids the risk that the area would be used for all year-round residence and commuting. The area remains a recreational resource.

Other studies revealed the needs of industries, commerce and shopping. In sum, they led to the conclusion that a sound transportation system is a prerequisite of a modern metropolis. And the corollary to such a system necessarily was an urban form that could be served efficiently. In effect, they retraced the steps that resulted in the earlier finger plan, expanding the plans to satisfy Copenhagen's expanded needs. The result was a plan for two new urban sectors or corridors, in scale vastly larger than the earlier fingers.

The Urban Sector Concept

Two urban sectors were proposed, each with 250,000 people or the equivalent of 100,000 dwelling units (Fig. 5). Their number corresponds to the anticipated population increase in the next decade. Meanwhile, the finger program would be completed where feasible (Fig. 6). The sectors would be directed to the west and south, unlike the almost omnidirectional fingers. This followed the same locational logic arrived at earlier. However, the order of magnitude of the sectors brought new requirements.

The fingers, with their 45-minute maximum travel time, could function on a daily commuting basis with central Copenhagen for shopping, enter-

tainment, jobs, etc. The sectors were too large for that. Although they could be connected to central Copenhagen by high-speed rail and motorway, they required their own public and commercial facilities to satisfy daily needs. Further, they would have to have their own internal public transit, in addition to a full-blown automobile circulation system. A transportation net within the sectors, as well as one to connect them to central Copenhagen, was in order (Fig. 7).

In studying the appropriate size of the new urban sectors, several independent approaches led to a happy resolution. A town of 250,000 can support a good internal transit net. It also furnishes an ample population to support a major rail

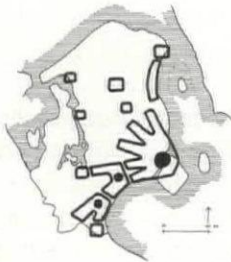
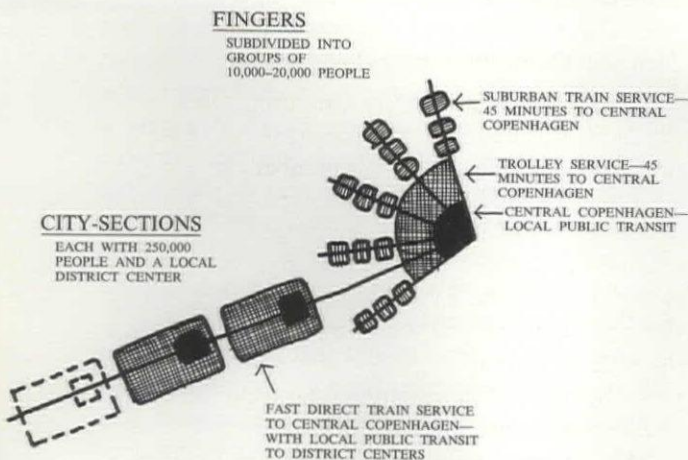


Fig. 5—Urban fingers, sectors in Copenhagen region station with good service to other cities. A population of 250,000 also constitutes an ample market for a regional shopping and commercial center as well as high-grade cultural facilities. (Vällingby, Sweden, was planned for 100,000; Reston, Virginia, will have 70,000; and Columbia, Maryland, will have 120,000. All three are satellites dependent on large existing metropolitan areas.)

In short, everything pointed to the creation of a new urban sector of 250,000 in a decade, followed by a second such sector and then a third. It was also logical to begin these sectors along existing transportation routes, this supporting the earlier choice for westward urban expansion. That, in

Fig. 6—Fingers and sectors schematically



short, was the new plan. Within it, moreover, was a considerable number of secondary advantages.

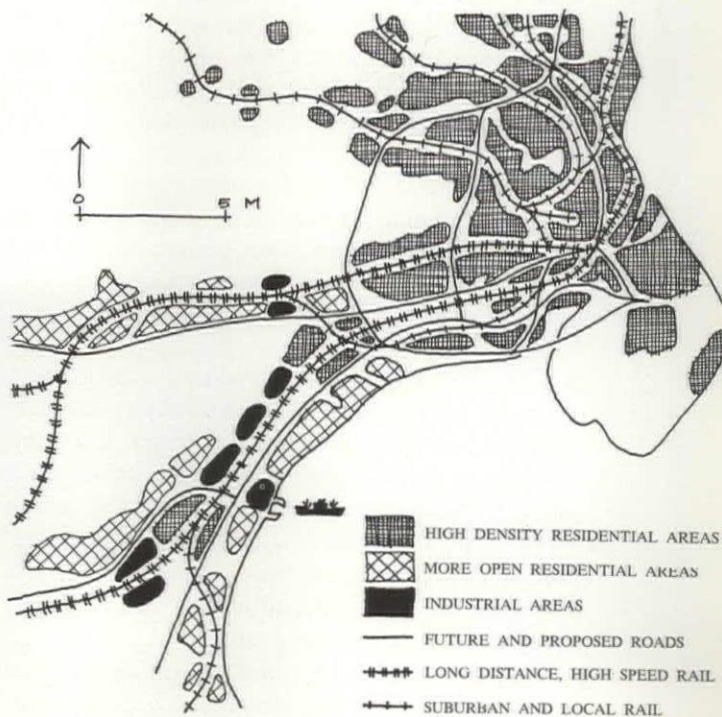
Comprehensive traffic planning reduces travel time and distance. It saves money, relieves congestion, widens the job market and aids industry. With proper constraints on the use of open space, it preserves a proper balance between truly open and urban land. It relates production and commerce to its international market. The proportionate cost of travel is diminished, allowing greater choice of spending. By minimizing central city traffic, its existing and proposed street system can handle ultimate flow there.

The plan itself widens employment opportunities and the availability of cultural, shopping, recreational, social and entertainment facilities. Large markets, large labor supply and industrial production are linked together in an integrated whole. Open spaces are brought closer to the central city and kept close to new development. Industries can share technical services and can be grouped to minimize the harmful effects of noise and fumes. Heavy traffic can be kept away from residential areas. Small industries can, of course, be located within or near residential areas, some utilizing nearby female labor. The Copenhagen plan foresaw 20 percent of the labor force working in industry which would, in turn, occupy 10 percent of the land.

Some Points of Deliberation

The location of the two new urban sectors was confirmed by several factors in addition to land

Fig. 7—Sector land use



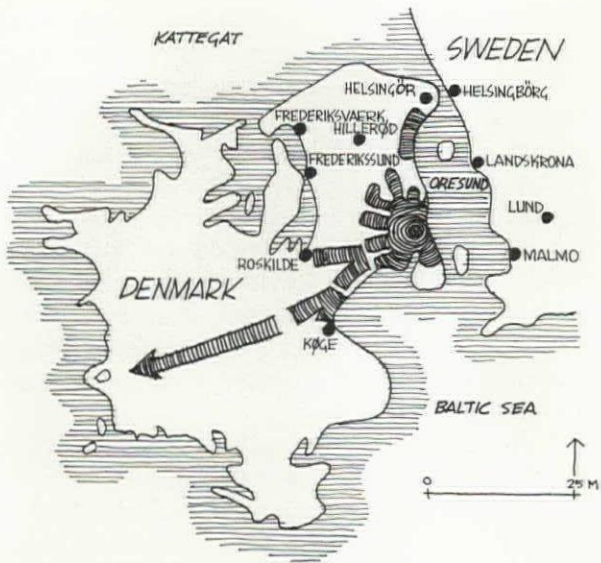


Fig. 8—The sector plan

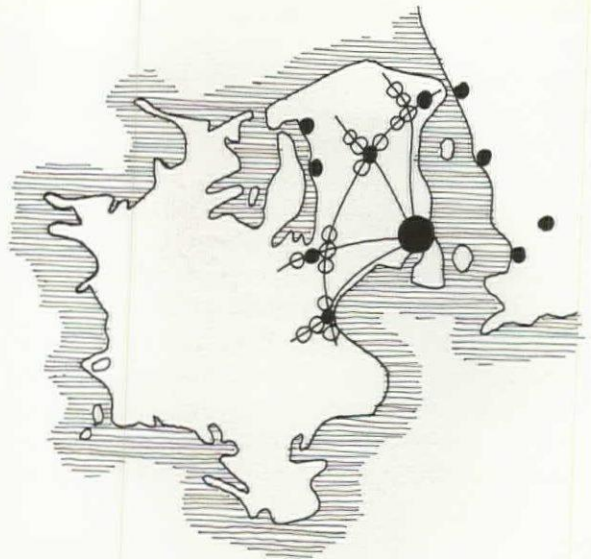


Fig. 9—An alternative—satellite centers

availability (Fig. 8). The west sector would, in effect, be a link between old Copenhagen and its westward hinterland. The southwest sector, hugging the coast, would be a link toward northern Europe. Both would branch from an intermediary linear spine. The further extension of this spine would form additional urban sectors. The coastal sector would be developed as a harbor, relieving the pressure on Copenhagen's existing port and diverting much trucking traffic from the old city.

At present Copenhagen is ringed by six secondary market towns: Koge, Roskilde, Frederikssund, Frederiksværk, Hillerød and Helsingør. These lie at a distance of 20 to 30 miles from central Copenhagen. It was decided not to try to enlarge these towns by concentrating the new development around them. That would have made them prone to the same forces of decay that have plagued so many other cities. It was thought wise to let them remain as they are. On this point opinion was divided, for with careful planning it is conceivable that the old market towns could be successfully enlarged (Fig. 9). The argument for this action was the preference people demonstrate for an existing center over urban pioneering.

Further Discussion

The 1947 finger plan introduced a major new phase of planning for metropolitan Copenhagen. It led to legislation two years later but, more important, to debate and consequent action ever since. In 1958 it was reassessed, and the debate was expanded. Obviously, it is impossible to report all of its highlights here, and obviously, too, not all of the decisions and actions can be traced in detail or be considered successful.

That the plan has received worldwide attention is evidenced by a recent discussion between Constantinos Doxiadis and Hans Blumenfeld.* Doxiadis questioned the period of planning as being shortsighted, offering 100 years rather than 40 as an appropriate planning interval. Doxiadis also questioned the finger and sector form, feeling that an entirely new center should be developed inland, to the southwest of central Copenhagen (Fig. 10).

Blumenfeld, on the other hand, contended that vision is no less essential in planning, but that any plan has to be based on reasonable certainties. He also acknowledged that the "certainties" are alterable. Hovercraft vehicles could effect a major change, for example. So could the construction of three bridges between Denmark and Sweden across the sound which separates them, a reasonable likelihood indeed. Blumenfeld now feels that the present focus of metropolitan Copenhagen—at the city's traditional heart along the sound—cannot be destroyed. He foresees a regional city which is, in fact, a city around the sound embracing both the coast of Denmark and Sweden (Fig. 11).

In 1965 the issue of overall concept and direction was brought into further scrutiny by a competition held for the residential development of the island of Amager. To many it seemed that Amager should be used industrially as a transport terminal for air and water. As a challenge to the idea of residential development of Amager, a group of Danish and Swedish planners posited Amager as an international jet port as well as the locale of a new harbor for Copenhagen.** A road link would bridge it to Sweden as well as central Copenhagen. A new harbor was shown on the northern part of Amager Island (Fig. 12).

This latest suggestion and that of Mr. Blumenfeld are strikingly similar from a conceptual standpoint. Both show the coasts of Denmark and Sweden as an enormous urbanized ring of develop-

**Ekistics*, April 1963, pp. 188-196, and February 1964, pp. 75-85.

***Ibid*, April 1966, pp. 247-249.

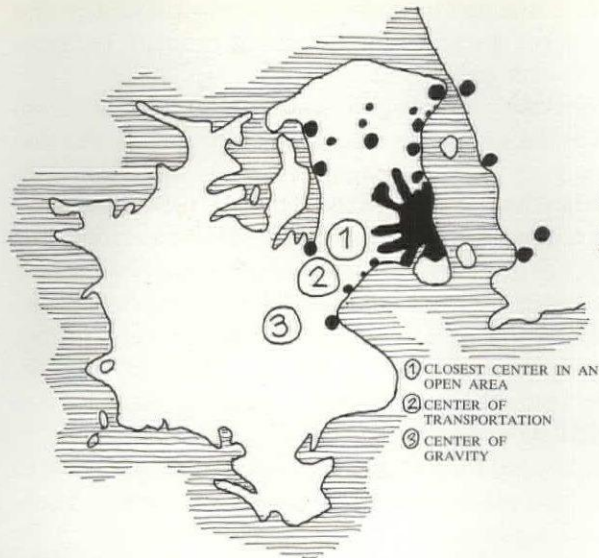


Fig. 10—Proposal of Doxiadis

ment, with either lateral urban corridors or outlying satellites around the ring. In this sense, Doxiadis' proposal of a new center might materialize as one of another adjuncts to the Danish-Swedish ring. The essence of these latter two proposals is to pose a larger area of planning, embracing both Denmark and Sweden.

Questions of form aside, this history of debate at all levels—political, public, professional and theoretical—is exactly what should be going on in every city in the world. The surprising thing about this story should be that efforts like it are few.

The Role of Urban Design

For architects, the lesson of this experience is that it is necessarily replete with questions of urban design. None of the questions or problems could be answered independent of physical design considerations of breadth as well as depth. One can readily draft a list of specific areas for physical or urban design study. In addition to participation in debates at all levels, it would include:

- 1) Overall implications of transportation on urban form
- 2) Determination of buildable and nonbuildable areas from a scenic and recreational standpoint
- 3) Design studies of center-city redevelopment
- 4) Design studies of corridors
- 5) Design studies of corridor subsections, down to neighborhoods
- 6) Special-area design studies: complex center-city projects, air rights, vertical zoning, multi-level and multiuse projects
- 7) Housing designs
- 8) Weekend-house colony prototypes
- 9) Public transit facilities design
- 10) Transport terminals developed with commercial and office clusters

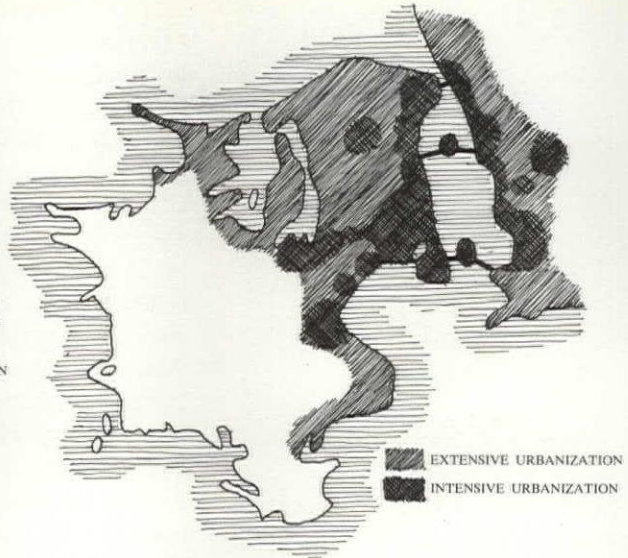


Fig. 11—Proposal of Blumenfeld

- 11) Visual and physical design surveys
- 12) Village and neighborhood design
- 13) Industrial complexes
- 14) Outdoor urban hardware and furnishings
- 15) Construction and production programming
- 16) Computer programming.

Of course, the list can be extended considerably; the main point, aside from the inseparability of design and planning, is the great array of possible projects that involve architects.

The next step in reconsidering the physical form of this area might well be to take the ring notion and subject it to the same physical design scrutiny that the 1947 finger plan and the more recent sector plan received.

The Copenhagen plan is far from a *fait accompli*. It is far from having won complete political support or action. But it has done much to shape opinion and inform political debate. Here the Copenhagen experience raises the question as to whether planning is a matter for politics or technics—but that is another story.

For our purposes as designers, Copenhagen will serve as a model for study for a good while. ■

Fig. 12—A most recent proposal by the Danish Institute of Central Planning and Rune Bengtson of Lund



Overhead with Design

BY
RICHARD A. MOORE

ACCRETION OF THE WIRESCAPE is the result of an originally temporary and expedient system. Obviously never intended to be permanent, distribution systems have increased to the point of being too difficult and too expensive to replace. As population and constructions increase, requiring additional service, the wirescape has become more complex and increasingly unattractive. It looks temporary, and in fact it is temporary—wooden poles, wooden crossarms and wires which are constantly being replaced as the requirements for service change.

An expanding need for electrical service usually means that the supplier simply goes back and hangs more or bigger lines on temporary poles, increasing the dependence on the temporary system. In short, the growth and development of power distribution systems has been as uncoordinated, haphazard, poorly planned and ill-conceived as the environmental functions they serve.

Recognized as a temporary solution, it is obvious that the time has arrived when this system is becoming intolerable, not only because it is inherently ugly but because of its increasing conflict with the land use patterns. Overhead distribution systems have always conflicted with trees and their growth, and that in itself is becoming more serious; but now the systems conflict with anything that has a visual function—traffic lights, store windows, buildings,

signs, scenery, etc. I would suspect that the system's cumulative and chaotic complexity has grown to the point that in many instances it actually conflicts with itself.

The whole consideration of electric service is not separate from the total consideration of the objects and people served. For too long utilities have been treated as separate entities which could go anywhere and do anything to provide the required service. Reanalysis of the real problem is necessary. From a naive standpoint, the problem seems simple. Have the electrical service installed where it is needed. This requires advance information in these areas: 1) the amount of service required; 2) the routes available for distribution; 3) the specific destination(s) of the service. All of these require and seldom receive extensive and coordinated planning well in advance of installation.

There is a critical need for a closer working relationship between those involved in land planning and service utility planning. Traditionally, land planning is done with an awareness that the utility systems come in, but relying on the utility agencies to work it out. Planning done by the utility companies usually has been confined to a concern for efficiency within tight parameters and limited flexibility. Land planning and utility planning have become almost separate processes.

Consistent and constant replanning of the required service as it relates to the normal development of the land is of primary importance. Planning has traditionally been concerned with the objects within the landscape such as buildings, streets, etc., and little consideration has been given to the areas remaining. These have been ignored as spaces, their potential attractiveness destroyed by unsightly objects thoughtlessly placed in the landscape.

This indicates a need for re-examination of the easement system. Easement restrictions are generally too inflexible to allow good solutions to the problems. In existing urban areas, for example, it would probably be difficult to achieve new open spaces for easements, but buildings could be utilized to conceal wiring. Integration into the existing landscape is always the best solution.

In design, the influence of utility distribution is already enormous. A great deal of effort is made to reduce the cost of utility service. Since utilities have tended to be inflexible in their choice of systems and hidebound in their techniques and applications, land planning has attempted to conform to their systems in order to achieve a working solution. Distribution systems could influence and help the determination of land development from a positive standpoint rather than from a negative one. This again requires a cooperative design effort. None of the power companies, to my knowledge, have land planners or designers on their staffs to work with them on power distribution. A professionally creative and imaginative person could work toward development of distribution systems integrated into the environmental framework rather than the purely technical and expedient solutions used today.

Distribution people refuse to accept the fact that trees grow. It might be perfectly all right to have the wires over the trees when they are young. When they become old enough, the wires could be moved below the basic canopy. Necessary trimming of the trees could then be from the bottom as it should be, maintaining their essential quality and minimizing the ugliness of the wires. Misshaping the tops of trees below power lines destroys the entire visual experience and emphasizes the latter's incompatibility with the total environment. If nothing worse, this is poor public relations.

The design of distribution equipment needs serious attention. There is no reason why a transformer has to be the ugly object it is. A simple improvement such as a fiberglass shell would greatly enhance its appearance. If the transformer could be redesigned to be more attractive, so much the better.

The pole's one-point connection with the ground is inherently unstable because of the eccentric load; therefore, most poles lean. The supports themselves should be approached as a design problem to provide greater stability. The result might be a larger support but more attractive. Even large transmission towers can be very beautiful when integrated with the total landscape. They are sculptural elements within the landscape.

There is something inherently ugly about disorder. It is the obvious disorder of power distribution that is ugly. There is nothing inherently ugly about a wire or a pole. It is the way they are haphazardly put together that is visually chaotic and offensive to the senses of people.

In many downtown areas, wires run down the sidewalks. The same service could be provided by running the wires on top of the existing buildings behind parapets. We have airconditioning and other service equipment on the roof of a building, why not have the wires? Sewers and water systems have the advantage of working best underground, although they are no less disorganized and inefficient. Electricity has exposed its gross disorder, and anything grossly disorderly is offensive.

Some of the technological developments which may or may not have been investigated affect the problems created by the present wirescape and their sources are:

1) The amount of voltage necessary to operate the modern home. It is a deadly cycle: 110- and 220-volt service, and 110- or 220-volt appliances. We need to investigate the possibility of reducing voltage needed by the redesign of electrical appliances. Landscape lighting is 12 volts and autos function on 12 volts, but there are no houses on anything lower than 110.

2) Use of transistorized appliances to reduce voltage. A radio can operate on 1½ volts. Razors use 6 volts. Cooking and other functions using mass heat production could be improved by re-examination of the actual requirements of the services performed rather than producing appliances for the voltage provided. If we could reduce the voltage required, underground wiring would be more feasible. It is possible that a whole subdivision might be put on a lower voltage system.

3) Provision of electrical distribution within buildings, bridges or any structure on the landscape should be investigated. Is there any possible way of introducing current within the members of structures, either carrying electricity or carrying conductors?

4) Miniaturization of transformers.

5) Bundling of wiring for ultimate service requirements to eliminate stringing an additional wire every time someone needs additional service. This, of course, would necessitate planning.

6) Armored conduits through which wires could be projected.

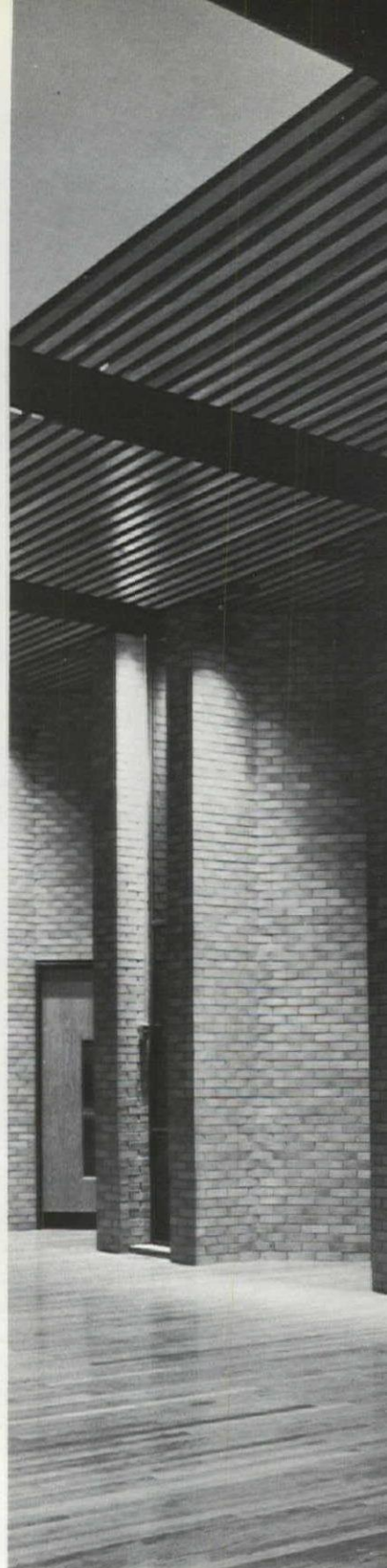
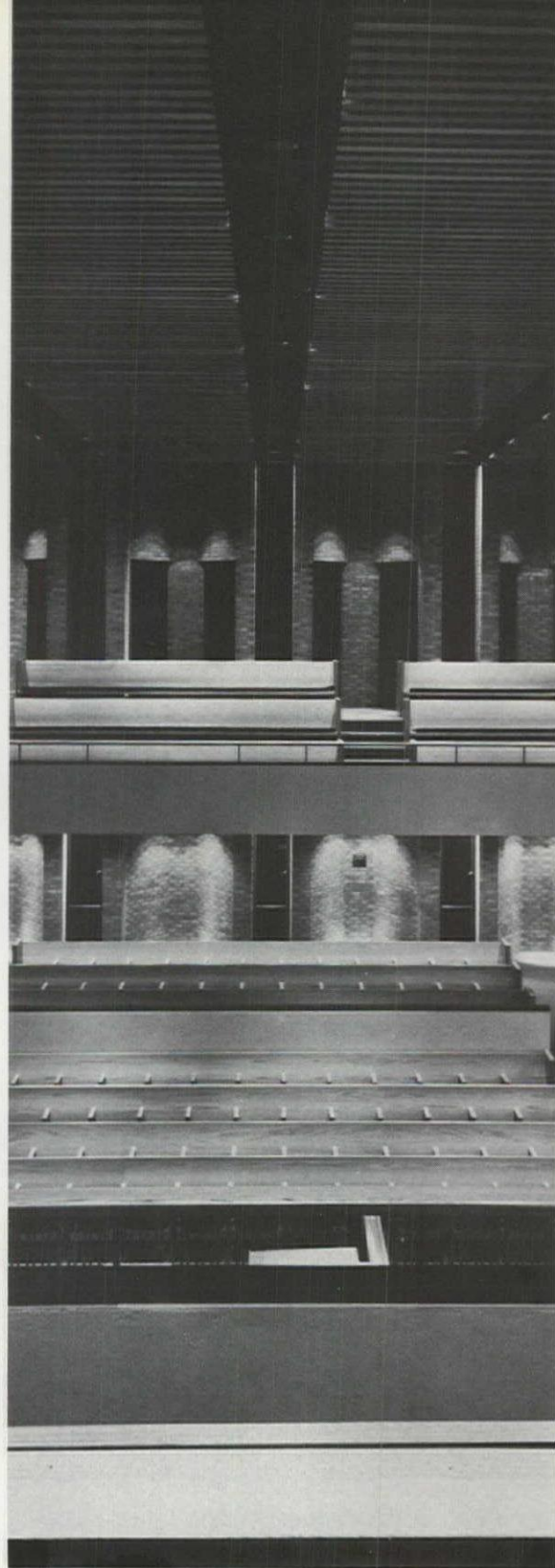
7) New wiring or wire hanging techniques.

8) Solvent conductors.

The above are only a few possibilities from a broad re-examination of technology, which is long-range and overdue. ■

The wirescape must become an integral and positive force in the perception of our environment. Such a necessary and beneficial service should not destroy but instead contribute to our daily sensory experience.

A paper presented by the head of the department of landscape architecture, School of Design, North Carolina State University, before a conference on underground residential distribution sponsored by the Tarheel Electric Membership Association.



THE **Lighting Consultant** AS A MEMBER OF THE TEAM

BY SYLVAN R. SHEMITZ

The role of the lighting consultant, as a specialist in this field explains, is to follow the architect's lead in terms of his fundamental design concepts and to integrate lighting within that framework.

WHEN A PHOTOGRAPHER walks in to shoot a building or space that we have lighted and leaves his lighting equipment in the car, we know we have not only created the lighting balance that is comfortable to live in but have revealed the architecture just as it had been intended by the designer.

All too frequently a structure superb in conception does not achieve the desired result because of poor lighting. It shows up beautifully in a magazine because it was relighted by the photographer, his equipment adding the effects that make the building appear in publication as it should in reality.

With accelerated professional demands, lighting is another speciality that the architect, as captain of the team, may not have time to master in detail. As he turns to consultants to help solve problems in site, landscape and traffic, the same "specialist" arrangement can be made for lighting.

The architect who regards light merely as a cosmetic is on a certain route toward an unsuccessful design solution. And the lighting consultant who understands his job is far more than a cosmetician or a decorator. The creation of an effective and efficient lighting system requires far

more than a fixture salesman, an esthetic electrician or a walking reference work filled with statistics and footcandles.

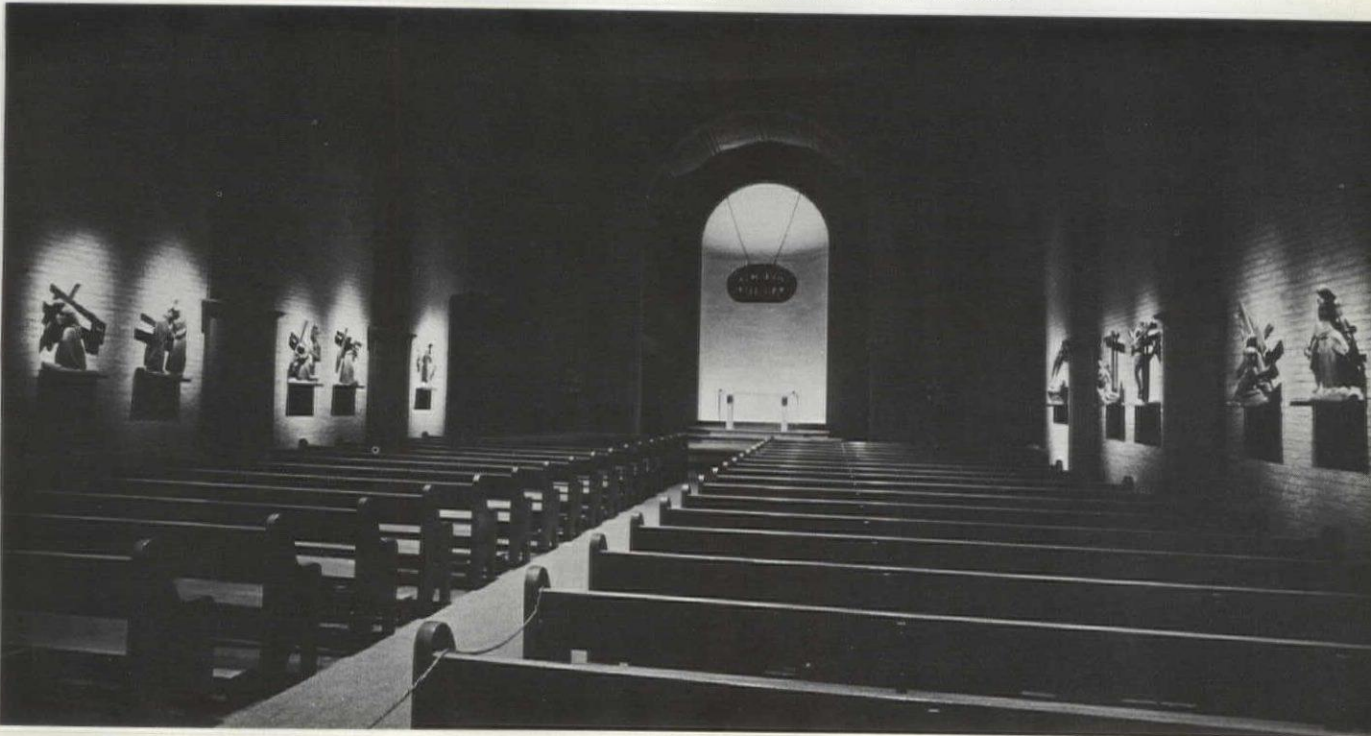
To do his job, to help provide the services required by the architect, the lighting consultant should be employed at the initial stages of the design process. If consulted early enough, he can prevent costly mistakes. At this point, too, the consultant's cost is more readily worked into the fee structure. (He may work on a flat fee or on an hourly rate.)

It is desirable that the architect arrange a meeting between his client and the lighting consultant. Once he is indoctrinated as to the aims and benefits to be derived by use of this specialist, the client will realize that the architect is bringing together a team that will best benefit the project.

The lighting consultant can perform an essential role even at the most preliminary stages of design. His understanding of sky brightness, of glare and orientation to natural light can help determine a structure's configuration and siting. His knowledge of louvers and other sun-control devices can possibly improve a building's fenestration. As the job progresses, he is able to provide information on such subtle technical details as the choice of light transmission of glass.

There is no reason why a handsome piece of architecture should disappear at night. In creating a suitable night lighting system, the lighting consultant must do far more than merely locate poles

Two projects on which the Shemitz firm has consulted—Congregation Agudath Sholom (across page) in Stamford, Connecticut, designed by architects Davis & Brody, and St. Thomas More Chapel (below) at Yale University, remodeled by architects Davis, Cochran & Miller—demonstrate lighting as both an art and a science.



and select appropriate fixtures. The success of the system depends on his specialized knowledge of shadow and form and especially of color.

A wall of dark textured brick requires a differently colored light than what is needed to illuminate a wall of pale concrete. The night lighting of a piece of architecture closely parallels the lighting of a piece of scenery on a theater stage. Light of the wrong color—or more accurately the wrong mix of colored lights—can make even the most sculptural building appear flat and two-dimensional and dull.

Ideally, the lighting consultant should be asked to work in close proximity with the designer. A coffered ceiling, for example, can serve as both a functional member and a lighting unit. Through the installation of lamps, the coffer may become a reflector and/or a baffle. But before the coffer can be utilized in such a manner, it should be dimensioned for the accommodation of standardized lamps.

In the design of entrance and lobby spaces, the lighting consultant's knowledge is particularly valuable. While a lobby presents the first impression of a building's interior, it must be designed as more than a showpiece, for it functions as a sort of spatial bridge between the outside and the artificially illuminated inside.

The writer recently was asked to comment on a large and handsome lobby planned for a building not yet constructed. Three walls were to be faced with a deep red brick carefully selected for its rich texture and warm color. The floor was to be a dark and expensive quarry tile. Recessed lighting units framed a pattern on the lobby ceiling. In plan and rendering it promised to be a rich and splendid space.

The architect, however, stumbled into a common trap from which no simple rearrangement of lighting units could rescue him: The inability of the eye to adapt from the high brightness of the daylight exterior to this nonreflective interior would cause the latter to appear dark regardless of the quantity of light. The dark brick of the wall might possibly be replaced with a material of higher reflectance value. The floor might possibly be designed to reflect rather than to absorb light. The recessed ceiling fixtures might possibly be replaced with visible lighting so that the room's size and proportions would be immediately apparent or give direction to the user.

An architect who thoroughly appreciates the possibilities of lighting, or who is able to establish a close and productive relationship with the lighting consultant, is often provided with a new—and sometimes wholly unexpected—palette of shade and color. A lighting system, thoughtfully designed, can provide a balance of architectural harmony and counterpoint. Fixtures can be placed to cast the clearly defined shadows required to reinforce the play of solid and void of a formal rectilinear structure. It is also possible to complement a rectangular composition with circular puddles and parabolic patterns of light that provide counterpoint rather than harmony.

Because of his specialized knowledge, the lighting consultant is capable of playing a thoroughly flexible role on the architect's team. In designing a conduit network or a lighting fixture or a sun-control device, he is able to participate in the planning of a more efficient and indeed more expressive architecture. ■

The author is the principal in the West Haven, Conn., firm of Sylvan R. Shemitz & Associates, lighting consultants.

Eight Steps Taken When the Author's Office Is Part of the Design Team

1) A principal of our office meets with the architect to make a complete study of the design of both the space and form of the structure. From this there evolves an understanding between consultant and architect as to what kind of effects are available through lighting, both artificial and natural.

2) The architect then prepares preliminaries and forwards them to the lighting consultant for schematic lighting plans and details. In our office these preliminaries are then studied by a lighting design team: illuminating engineer, industrial designer and the principal.

3) An integrated lighting approach is evolved that satisfies all of the design parameters. We prepare perspective sketches to illustrate this approach as well as elevations and plans in rough to test its feasibility and to develop alternatives.

4) When preliminaries are completed, we call upon the architect for review and criticism.

5) Working drawings are prepared and, when requested, an estimate of costs for equipment and installation is provided.

6) Constant contact is maintained with the electrical engineer to see that final electrical drawings tie in with our plans and specifications. Our job captain works to produce the job within the specified time and maintains liaison with the architect's job captain.

7) All shop drawings are reviewed as they are presented.

8) The installation is reviewed to make sure that all plans and specifications have been followed correctly. Where flexible lighting is involved, we supervise focusing, aiming and beam orientation.



Editor: *Marcus Whiffen, College of Architecture, Arizona State University, Tempe.* **Contents:** *Architectural Criteria and French Traditions by Peter Collins; The Vancouver Experiment, Stage 1, by Henry Elder; Technical Information by Eric Pawley; A Book Review by Patrick Horsbrugh.*

Architectural Criteria & French Traditions

By PETER COLLINS
McGill University

It is notorious that our present age, for all the lip service that it pays to structural and economic considerations and the sanctity of the program when it theorizes about architecture, tends to give undue weight to pictorial or sculptural criteria when it judges individual buildings. Photography and the illustrated press are sometimes blamed for this. Mr. Collins, in an address to the annual meeting of the Province of Quebec Architectural Association, shows that the trouble has deeper roots, which reach back three centuries to the establishment of the French Académie de Peinture, Sculpture et Architecture in Rome. He points out that the so-called "beaux-arts" system in France, far from being characteristically and traditionally French, is essentially Italian, and suggests that the Quebec Provincial Government's Report on Architectural Education may well be a major factor leading to a revival of a truly French tradition in architecture—and in France itself.

THERE CAN SURELY BE no more frustrating a profession than that of architecture. Disappointments and difficulties inevitably occur in every liberal profession; and presumably the relationships between doctors, patients, pharmacists and hospitals, or between lawyers, litigants, notaries and tribunals, are no easier than the relationships between architects, clients, manufacturers and contractors.

But such day-to-day annoyances are something we all accept because we can understand their origins. Moreover, it may well be that the ultimate joy of creating a successful building far exceeds

the fleeting pleasure experienced in curing the sick or winning a case in the Supreme Court.

Nevertheless, there is a much more fundamental and subtle frustration which afflicts the architectural profession, and it alone—a frustration which we seem incapable of dealing with, partly because it is so deeply rooted, but mainly because few persons have really tried to understand its origins. For it goes back at least two centuries, and is, in fact, an irreconcilable conflict between the standards to which we pay public homage and the standards to which our consciences really subscribe.

Every conscientious architect knows that he is under a moral obligation to produce for his client a building which amply fulfills certain stated needs and is constructed with due regard to economic efficiency. He also knows that the enormous effort he devotes to creating an emotionally effective and appropriate architectural environment must be conditional upon the scrupulous observance of these functional and structural requirements.

Yet at the same time he is constantly being reminded by architectural periodicals, by the reports of competition juries, by art critics and by art historians that the principal merit of really important designs is usually assessed by reference to the exciting and novel appearance of drawings, models and photographs. Hence many architects must be asking themselves, in the words of Pier Luigi Nervi: "Why, in competitions and architectural periodicals, do unbuildable projects, or projects buildable only at a cost out of all proportion to their function and purpose, become progressively more numerous?"¹

¹ *UIA 1965 Congress Handbook*, p. 43.

If the editors of architectural magazines or the judges of international competitions were inexperienced in practical architectural problems, the answer to Nervi's questions would be only too easy. But clearly they are not, and the dichotomy must therefore be psychologically far more complex than most of us appreciate.

Sydney Opera House

Before attempting to analyze the evolution of this dichotomy, I should like to illustrate the present situation by reference to what *l'Architecture d'Aujourd'hui*, in 1962, called "the two greatest projects won in international competitions in recent years," namely the Sydney Opera House and the Toronto City Hall.

Joörn Utzon's winning design for an opera house for Australia was first published in February 1957—a few months before the manuscript of my history of reinforced concrete was completed. I did not mention the scheme in this book, partly because I had only seen small photographs of the drawings exhibited in Australia but mainly because the book was subtitled *A study of Auguste Perret and his Precursors*, and hence any project designed after Perret's death seemed irrelevant. However, this did not prevent the critic of the *Times Literary Supplement* from scolding me severely because, he said, I had unblushingly refrained from commenting on the type of structure exemplified by what he called "the billowing spinnakers of the Sydney Opera House."²

The term "billowing spinnakers" is worth noting, because not only had a somewhat similar description been given in *l'Architecture d'Aujourd'hui* of September 1957 ("un ensemble de coques, qui ne sont pas sans rappeler des voiles gonflés par le vent"³) but is to be found in the jury's report, which refers to "an interlocking series of shell vaults which fit as naturally into the harbor as the sails of its yachts."⁴

Now, if we consider the criteria by which Utzon evidently won this competition, we cannot help but be struck by the emphasis placed by both the jury and later eulogists on purely superficial sculptural qualities of the drawings. Sigfried Giedion tells us that the dominant personality on the jury was Eero Saarinen (who, incidentally, studied sculpture in Paris before taking a Bachelor of Fine Arts degree at Yale); and according to Giedion, *it was when looking through the projects which had already been eliminated that Saarinen became convinced of the virtues of Utzon's scheme. He then returned to the jury with it and said: "Gentlemen, this is the first prize."*⁵

Yet in July 1959, Nervi asserted, with reference to Saarinen's TWA Terminal and Utzon's opera house that "both these buildings are eloquent ex-

amples of the most open antifunctionalism in statics and construction."⁶ More recently, the stage director of the Royal Opera House in London asserted, after seeing the Sydney building under construction, that "it is completely useless as a permanent home for opera, ballet or drama."⁷

Whether the shell vaults of Utzon's opera house, as redesigned by structural engineers, will or will not harmonize with the yachts in the harbor remains to be seen. But since the cost, originally estimated at \$12 million, is now conservatively estimated at \$75 million, it seems, in retrospect, that the Australians would have been wiser to have held an international competition for a yacht which would harmonize with, say, the Théâtre des Champs-Élysées, or some other reinforced-concrete opera house of proven efficiency.

Of course, the stage director of the London Opera House may be proved wrong, and the residents of Sydney may well eventually consider the monumental qualities of the building worth an extra \$63 million; but since the authorities do not even expect the building to be completed before 1969, it seems premature for Sigfried Giedion to hail it (as he did in August 1964) as the most significant work of architecture by an architect born after World War I,⁸ or to announce that the forthcoming fifth edition of *Space, Time and Architecture* will devote a whole chapter to this architect whom he considers one of the greatest creative geniuses of his generation.⁹

Toronto City Hall

A somewhat similar, though less dramatic story, can be told of the Toronto City Hall. When it was decided to abandon the existing city hall and hold an international competition for an entirely new one, the most influential member of the jury was again, by a curious coincidence, Eero Saarinen, and the winner was again, by an even more curious coincidence, a Scandinavian who had never visited the country or seen the site. In this case, however, two-fifths of the jury was less accommodating, and these members submitted a minority report to the effect that although they were unanimous in regarding the winning design as the most *original* in conception of any of those submitted, *they did not consider either that it suited the site or answered the program.* Moreover, they added that "the form of construction proposed for the office towers is probably the most expensive which could be devised."¹⁰

² *Op. cit.*, June 12, 1959.

³ *Op. cit.*, No. 73.

⁴ *Architects' Journal*, issue of Feb. 7, 1957, p. 200.

⁵ *Zodiac*, No. 14, pp. 39 ff.

⁶ *Casabella*, No. 229, p. 4.

⁷ *Montreal Star*, March 6, 1965; weekend supplement, p. 2.

⁸ *Zodiac 14*, loc. cit.

⁹ *Ibid.*

¹⁰ Published *Synopsis of the Competition (1959)*, Appendix A, p. 8.



Now, although their first two criticisms are of most relevance to my present theme, their final remark is of particular interest in view of Nervi's previously quoted criticism of "projects buildable only at a cost out of all proportion to their function and purpose." We all know that the aspect of Viljo Revell's winning scheme which won the greatest professional acclaim was the ingenious structural device of the multistory offices whereby "the towers have been treated as reinforced-concrete shells stiffened by the floor slabs."¹¹ Admittedly, these crescent-shaped floors, each cantilevered from the inner face of the vertical curved shells, were not the ideal shape for administrative offices, but at least the system was imaginative.

It is instructive to note, therefore, that this expensive and (as the minority report of the jury pointed out) visually meaningless structural system was abandoned once the prize had been awarded, and the structural system actually built was in fact nothing more than an ordinary reinforced-concrete frame against which the dramatic curved blank wall now hangs as simply a decorative and obstructive screen.

In such circumstances, therefore, it seems reasonable to ask why it is that our profession, as a body, seems to acquiesce so supinely to a convention whereby the architects most highly honored in public are so often those who most systematically disregard their clients' physical needs and financial resources. Undoubtedly clients themselves—especially corporate clients—must be apportioned some of the blame; for whereas most clients would accept without argument the contention that a meal in a luxurious restaurant must inevitably cost more per calories than a meal consumed in a suburban snack bar, they will not as readily accept the argument that a first-class building is unlikely to result when maximum speed and cheap ingredients are imposed as a basic condition of the contract.

However, even if all our clients were generous and understanding, I think the basic frustration and dichotomy would still remain because, essentially, it is not due to outside causes but to a conflict which has evolved slowly within the profession itself during the last two to three hundred years.

For it was exactly three centuries ago, in February 1666, that J. B. Colbert, superintendent of buildings, arts and manufactories to Louis XIV, established in Rome the Académie de Peinture, Sculpture et Architecture. That he should have done this is not surprising since, as a former protégé of Cardinal Mazarin (a naturalized Frenchman of Italian origin, whose real name was Giulio Mazarini), he naturally assumed—perhaps correctly—that all the best artists at that time came

from Italy. Moreover, as an idea, it was extremely praiseworthy, since by instituting this "academy," he not only established generous scholarships to enable talented young painters and sculptors to study abroad but also enabled them to live together under the direction of a French painter of acknowledged talent who was to supervise their behavior and help them in their research.

Unfortunately, however, the scheme, as put into effect, inflicted two crucial disadvantages on the development of architectural theory. First, the *pensionnaires*, as they were called, were inevitably subjected to the current Italian philosophical tradition whereby (as Michelangelo's friend Vasari expressed it) "the art of drawing is the common father of our three arts—architecture, sculpture and painting."¹² Second, there was a tendency to concentrate either on graphically reconstituting archaeological specimens or on elaborating purely imaginary projects for which no program was required.

"Deleterious Effects" of Rome

However, the injurious effects of treating architecture in Italy like painting and sculpture (arts in which problems of function and structure clearly have little relevance to the assessment of artistic talent) were initially of little importance, since to begin with few French architectural students ever went to Italy, and it was not until the mid-18th century that the annual architectural *Grand Prix* (established in the Statutes of 1717) was considered as automatically entitling the winner to spend three years in Rome.

Until then, architectural students were trained mainly in architects' offices, for when, in 1671, an Academy of Architecture was founded in Paris, it had no relationship whatsoever with the existing didactic Academy of Painting and Sculpture established there 20 years earlier. Admittedly, the Academy of Architecture included a professor; but he only lectured for four hours a week, and for the first 35 years was either an engineer or a mathematician. Moreover, by the Statutes of 1717, the number of students was limited to 28, i.e., one student per academician, with the exception of the professor, who was allowed six.¹³

It was thus in about 1763—a date engraved in the heart of every French-speaking Canadian—that the French architectural tradition, which had

¹¹ *Architecture d'Aujourd'hui*, Feb./Mar. 1962; vol. 100, p. 54.

¹² It is interesting to note that the unscholarly and inaccurate substitution of the term "beaux-arts" for the Italian term "arts of drawing" has been specifically traced by Lionello Venturi to Charles Perrault, who was Colbert's secretary. Even so, the term "beaux-arts," as a collective word uniting painting, sculpture and architecture, did not become current in France until after the mid-18th century; and it was not officially accepted into the French language until the 5th edition of the *Dictionnaire de l'Académie Française*, published in 1798.

¹³ *Procès-Verbaux de l'Académie d'Architecture (1671-1793)* (edited by H. Lemonnier); Vol. iv., p. 346.

evolved gradually and rationally for seven centuries from the medieval building practices of master-masons, was first undermined, and the deleterious effects of the Academy in Rome first asserted themselves. These effects may be summarized briefly as follows:

1) The keen competition for what had now become the lucrative *Grand Prix de Rome* caused the programs to become more and more elaborate and the projects more and more grandiloquent. Indeed, the persistence of this tendency is strikingly exemplified in the *Grand Prix* competition for 1965, entitled "An Institute for the Study of Contemporary Architecture." Here, as during the last 200 years, only the vaguest indications are given regarding the site ("a wooded slope facing south on the banks of Lake Geneva, with an average slope of 10 percent, measuring 1,500 feet by 1,000 feet), and it is interesting to note that the second prize was won with a design consisting basically of a gigantic inverted Boulléesque pyramid standing on its point *à la Niemeyer*.¹⁴

2) The students' desire to prepare for this lucrative annual competition prompted the professor of architecture in Paris, in 1763, to institute monthly medals whereby these monthly programs and projects inevitably became miniature versions of the *Grand Prix* approach to architectural design.

3) The method of architectural training instituted in France tended to be copied abroad, as for example in Russia. But since the French system had been radically modified in the manner just stated, Catherine the Great thought fit to unite painting, sculpture and architecture in one establishment. Thus, when in 1765 she founded the academy in St. Petersburg, it was called the *Académie des Beaux-Arts*.¹⁵

It is possible that, despite the radical philosophical changes which were transforming French thought in the second half of the 18th century, French architectural traditions might have survived the Italianate *arti del disegno* influences emanating from Rome. But unfortunately the revolutionary government of 1793 not only suppressed all the Academies; it allowed dictatorial power to fall into the hands of the most fanatical Italophile of the age: Antoine Quatremère de Quincy—sculptor, art-critic, antiquarian, politician, and passionate believer in the philosophical unity of the "Fine Arts."

Quatremère de Quincy

To study even superficially the architecture-related activities of this powerful personality, it would be necessary to summarize large sections of René Schneider's splendid but lengthy biography. Sufficient to say here, that when in 1795 the Institut de France was founded out of the

débris of the old Academies, it was made to include a *Classe des Beaux-Arts* which eventually, in the reorganization of the Institut in 1816, became the *Académie des Beaux-Arts*, Quatremère de Quincy being appointed perpetual secretary. The effect of this reorganization on French architecture will be obvious. Not only were painting, sculpture and architecture taught as one discipline, but the juries for the *Grand Prix* in architecture were composed of the entire Academy, i.e., the architects on the jury were invariably outnumbered and outvoted by the painters and sculptors combined.¹⁶

After Quatremère de Quincy's death in 1830, a number of distinguished French architects of the "Rationalist" school, such as Labrousse, attempted to reform the system; but the "beaux-arts" establishment was by this time too well entrenched to be dislodged. In 1865, a group of dissident architects founded the *École Speciale d'Architecture* which a) was independent and b) had decided to model its curriculum on the newly formed Institutes of Technology being established not only in France (i.e., the *École Centrale*) but also in Switzerland and Germany (i.e., the *Technische Hochschulen*) and the United States.

Yet at this same time Charles Blanc, an art critic and editor of the *Gazette des Beaux-Arts*, was publishing in installments his famous *Grammaire des Arts du Dessin*: a book which expresses in telling phrases the most ingrained "beaux-arts" doctrines, especially the one so often attributed to Le Corbusier, i.e., the notion that works of architecture are pure creations of the mind—"pures créations de l'esprit."¹⁷ Since Charles Blanc was eventually made minister of state in charge of the administration of the *École des Beaux-Arts* in France, it is clear that not many changes to the system were likely to be made in the 19th century.

The System Survives

Even in the 20th century, the system has been warmly defended, as for example by Albert Louvet (the architect of the Grand Palais in the Champs-Élysées) who asserted in a book on the architectural profession, published about 50 years ago, that the basis of architectural education should remain what he called *le programme de grande rhétorique*.¹⁸ Moreover, the teachers in Europe who rebelled during this era against the

¹⁴ The winner of this prize was a pupil of M. Lemaesquier, and the humorous aspect of this will be apparent to all readers of the 3rd edition of *Vers une Architecture*; for M. Lemaesquier was there singled out by Le Corbusier, with particular venom, as having been the jury member responsible for swindling him out of the prize for the League of Nations competition, through "beaux-arts" prejudice.

¹⁵ *Ibid.*, Vol. vii., p. 236.

¹⁶ *Procès-Verbaux de l'Académie des Beaux-Arts* (edited by M. Bonnaire), Vol. i., pp. 52-53.

¹⁷ *Op. cit.*, p. 106; cf. *Vers une Architecture*, Part III.

¹⁸ A. Louvet, *L'Art d'Architecture* (n.d.) p. 113.

¹⁹ This was of course a very old Teutonic ideal, as is apparent from Gottfried Semper's *Praktische Aesthetik* (2 vols., Munich 1863).



then-current architectural forms often made matters worse, as for example Walter Gropius, who, after profiting from an excellent education at the Berlin Technische Hochschule, not merely became director of an Academy of Painting, Sculpture and Architecture, but united it with a School of Arts and Crafts to found his famous Wagnerian Bauhaus.¹⁹

The value of such unrealistic academic projects as, say, "an Institute for the Study of Contemporary Architecture on a 32-acre lakeshore site in rural Switzerland" is clearly widely accepted in France among the older generation of architects. But all those who attended the UIA Congress on architectural education in Paris last summer must have been struck by the electrifying effect of the Quebec Provincial Government's 1964 Report on Architectural Education (a report which clearly benefited preponderantly from the wisdom and experience of Jean-Paul Carlhian, of Boston, who was a member of the Commission) on Parisian architectural students. For whereas three centuries

ago, Boileau could justifiably reproach France with being too easily influenced by Italian mannerisms, French thought during the past century seems, in Europe, to have surrounded itself with a cultural barrier which excludes all external influences; and it is now as unusual to find a foreign book on architecture translated into French, or foreign-born and foreign-trained professors teaching architecture in a French institution, as it is to find locally born and locally trained professors teaching architecture in Canada.

However, since the Quebec Provincial Government's report was printed in the French language, its effect on France's educational system is likely to be quite revolutionary; and whereas, in the past, the Province of Quebec has recruited most of its French-speaking architectural teachers from the École des Beaux-Arts in Paris, the day is probably not far distant when France will import its most stimulating architectural teachers from among graduates of l'Université Laval and l'Université de Montréal. ■

Stage 1: An Adventure in Ideas 1962-65

The Vancouver Experiment

BY HENRY ELDER

University of British Columbia

Experiments in architectural education, involving a course or a design year, have been described in these pages before. The Vancouver experiment, so to call it, is on a different scale; it involves a whole curriculum and a whole school, the School of Architecture of the University of British Columbia. Most teachers of architecture in North America have been aware for some years that something essentially different is going on at UBC, and many of them have had their curiosity and interest further stimulated when the director of the school, Henry Elder, has had the floor at ACSA meetings. Here he describes and discusses, for the first time in print, the aims, progress, problems and philosophy of the school.

IT IS USUAL for schools of architecture in North America to have a program of learning lasting five years, students being admitted directly from senior high school. The School of Architecture at the University of British Columbia, Canada, departed from this pattern in 1961, substituting a three-year course in architecture following a university background in either arts or science. In

fact, some 75 percent of the present students have a bachelor's degree.

The school is known to be experimental—which really means that it has refused to accept the normal approach to the education of the architect, pursuing instead new and untried methods whereby students can develop greater understanding of what architecture might be. Thus, the school has been holding in question much of what is now considered as "architecture," even what the architect does and how he does it, but in doing so new problems have arisen which so far are without solution.

This paper does not set out to present a method of educating an architect, nor does it suggest that the Vancouver school has found the whole meaning of architecture. Instead, it aims to record certain trends and unsolved problems that have occurred since 1961. This is in the form of an interim report on stage one of this experiment in architectural education—or "An Adventure in Ideas."

No mention is made of graduate training or architectural research. Such an omission should not be misconstrued to show a lack of interest at this level of academic pursuit. The school under-

takes both graduate training and research, and it is hoped at a later date to issue a separate paper on this subject.

The School of Architecture at UBC came into being in 1946, following spirited representations by a few people with vision who saw a need to prepare for future demands in a rapidly developing province and an increasingly busy profession. The school produced graduates over the years who, for the most part, were absorbed into British Columbia and the neighboring provinces of Alberta and Saskatchewan. The school did not become large—it now has 94 students—although by the late '50s it became obvious that the accommodation provided by the university was inadequate and steps were taken to provide a new building for architecture, planning and fine arts as part of a Fine Arts Center. At the same time much soul searching was taking place to find a policy of architectural education, and by 1962, when the new building was opened, a new program had been defined and introduced.

The new three-year program based its objectives upon a sense of academic maturity set by the general educational program of the University leading to either a BA or a BS degree. At the same time, certain prerequisites were required in the form of mathematics, physics, English, art history and fundamentals of design. This idea was new to the West Coast of North America.

The task of developing a new program and building a new home for the school took much of the energy of the first director of the school, Professor Fred Lasserre. It was ironic that Lasserre died as the result of an accident in England in 1961, and he never saw the building nor experienced the new program. The present director was appointed in 1962.

The historical background is only part of circumstances that combine to form a unique situation for an experiment in education. Canada does not have a system of accreditation of schools of architecture. Each province claims autonomy and the right to develop its own program of education. With this freedom comes great variety and a sense of responsibility as each province organizes its own licensing laws for the conduct of the profession.

Vancouver, the home of the University of British Columbia, is geographically isolated from the remainder of Canada by mountains, while to the south its neighbor has a different political outlook. Vancouver is the largest port on the West Coast and, in consequence, a considerable cultural exchange takes place through shipping, particularly with the Orient.

An experiment in architectural education in this location was most opportune.

The Attitude of the School

The attitude of any place of learning to a discipline which by nature is both highly theoretical and intensely practical cannot but reflect a divided loyalty. It must suffer the complaints from those in practice when theories and objectives prove impractical, and it must tolerate derision from other disciplines when practical ideas are shown to be nonacademic. And yet a school of architecture must take sides and make its intentions known. The Vancouver school has since 1962 stated its loyalty to its name—a "School of Architecture." And this is not necessarily the same as a *school for architects*. By such a stand it is hoped that a means may be found to understand what architecture could be in the future and to discover methods whereby the findings could reach reality. It is thought that not only will a new type of architecture emerge but also a new type of architect.

The school sets out to be part of the university and to develop an academic program in learning; it calls upon the highest intellect in both student and teacher.

The attitude of the school toward architecture should be mentioned. There has been a growing awareness that, due to the influence of specialization, the field of architecture has been narrowing, and is in danger of continuing to do so. The school envisions architecture as a complete environment in which man pursues his purpose in life; the architect is therefore the person responsible for the creation of the environment. That building is part of architecture is obvious; to think of building as architecture is a fallacy. There is a need to increase the field of study to embrace many disciplines, but how many or of what character is not known. To widen the field means increased complexity, but not necessarily will the process of learning be more complicated. This, then, will be an objective.

The Attitude of the Profession

The attitude of the profession to the Vancouver school cannot pass without comment. Some praise, others condemn. Such a division is to be expected, for any form of experiment calls into question many ideals and much experience.

For the most part the profession shares our worries about the future of the profession itself. It sees with much less certainty the growing decadence in architecture. The profession is painfully aware of the increased complexity of its tasks and, with a sense of urgency, seeks men equal to the demands being made upon it. At this point the school is failing in its responsibilities, for in three years of architectural education it is not possible to go further than to develop the intellect



to face problems and make decisions. It is certainly not desirable, nor practical, to place old heads on young shoulders.

The school is also aware of the great changes that are taking place in the realm of communication and, in consequence, must make its students equal to the challenge of the future, for much of the profession is now occupied undertaking tasks that a machine can eventually perform. The schools in training their students must be aware of such circumstances for, unless flexibility of mind is developed, there are grave dangers of redundancy of personnel in the years ahead. This does not mean that the profession is without a problem at the level of assistants; it does mean that the school is uncertain in which direction it should go. As will be seen later, it views the situation from a different point of view. In the meantime, it is suggested that the profession should concern itself with developing a form of organized internship in which the skills and methodologies are continued to a more practical level than the schools can undertake.

Architectural Education

Formal education for the architect is still in its infancy. Very few schools are more than 30 years old. In general, their objective is clear and precise: to produce architectural assistants, all of whom are capable in the art of "design." However worthy such an objective may be, it has a tendency to produce a situation which is static. Providing that society also remains static in its demands, there is no serious problem. But when changes do take place, as they are now doing at an accelerating pace, the architect is faced with new problems without previous solution and an ever-developing technology demanding more scientific knowledge.

The result is to be seen in a confusion of effort and a compounding of ignorance. It would appear that the schools are still too inexperienced to be able to understand the true values of change and its effect upon education. Furthermore, the extensive knowledge of the practitioner, born of experience, exists in protective isolation, with the result that a body of knowledge so essential to a profound discipline is not being built.

and these were seen as a general pattern used by architects in creating architecture (Diagram 1).

This pattern, consisting of a series of steps, has been born of experience, and when repeated often

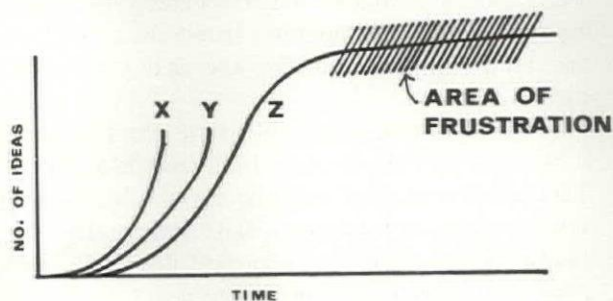


Diagram 2

enough adds to competence and ability. It is tantamount to the development of skills. On this account few architects can produce profound architecture prior to the age of 40 or 45.

The pattern is simple and appealing to the architect as long as the "real" world is intimately involved and the emphasis during training is upon the "how to do it." However, the educator is concerned more with the "why it is done" and the hope that profound architecture may be produced at a somewhat earlier age. Thus, the pattern shown in Diagram 1, valid only in general terms, can be developed into a more suitable pattern, as seen by the educator (Diagram 2).

It will be observed from the diagram that the series of steps (A through F) are linear in pattern, that is, one follows upon another. It will also be seen that a number of "barriers" have been introduced. These may need some explanation. The creative mind is frequently faced with circumstances that make further work difficult—in some cases quite impossible. The times when such circumstances occur appear to relate directly to the linear pattern.

And yet, if the learning process is to be successful, the barriers must not only be penetrated, but this must be done with much vigor. It is possible that these barriers are valid steps in themselves, but at the moment little is known about them. They do occur, however, when decision-making is essential; and this observation may be important. What becomes apparent is that when a barrier is reached—and not penetrated—it is accompanied by a considerable loss of time, mental confusion and despair. It is as if the energy required to push through the barrier is built of simplicity of thought and clarity in intent—as though it were necessary to bring together all the multifarious bits and pieces, parts and ideas, and place them in some concentrated simple order for further inspiration.

Not all students are aware of these barriers; some pass through them with ease. But should barrier after barrier be met unsuccessfully, the



Diagram 1

The Vancouver school was mindful of the situation described above and became alarmed. In consequence it directed its energies toward the virtue of change rather than change for its own sake. The fundamentals do not change, however,

student seems inevitably to fail, although he may prove himself most able and worthy in his ability to handle the steps themselves. When a barrier is met without penetration, the student will concentrate his attention on the step before, spending his time wastefully pursuing irrelevances, or he may jump the barrier to find the next step quite meaningless.

As far as the steps themselves are concerned, it is possible that the mature mind may hold their linear quality in question. It is claimed that as far as the student is concerned, the linear pattern is valid until such time as it is proved unsuitable for a particular approach to a problem; then the mature student may invent a pattern suitable to his own methods of working. The intent behind the pattern is to provide a basis for problem solving and then communication of ideas. The steps may be explained further, as follows:

Step A—The Vancouver school contends that the presentation of a problem to students under the title of a “church,” “school,” “house,” “theater,” etc., is to accept a problem with a previous solution for minor improvement. It is claimed that each problem must be placed in context in order that the creative mind may draw inspiration from a wider field. Thus, the interest lies in “religion” rather than church, “learning” rather than school, “living” rather than house, “performance” rather than theater. The “field” is therefore an area in which many similar problems may be found, and it is so large that limits have to be fixed in order to make definitions. To the new student this task is at first exceedingly difficult, for in awareness of his own ignorance the situation is overwhelming. It is here that much discussion is to be found, formed from many differences of opinion on many matters, some of which may be unrelated to the purpose of the exercise.

The main task, however, is to seek out the problem and place it within its own context. This step is so important that should either the problem itself or its context cease to have significance during the exploration, the whole purpose of the exercise may be lost through the creative mind becoming disconsolate to a point of inactivity. The student with an analytical turn of mind enjoys this step immensely, for it gives him untold opportunities to use his talents.

Step B—This is concerned with defining the problem and then preparing a program. There is a need to define the problem in simple and concise terms, for in so doing the nature of the challenge becomes evident. To be ambiguous is to court confusion in the steps to follow. The problem arises from the “unknowns,” but the unknowns cannot be stated until the “knowns” are known. The architect is not particularly efficient in this

operation, for unlike the scientist he sees little purpose in committing himself in case he later wishes to change his mind. A great weakness has been found at this point: It is possible that an architectural problem just cannot be stated in precise terms—or even that it should not. This is an area of considerable concern, for due to the absence of knowledge the architect is apt to frame his problem around those things which are understood in wholly quantitative terms and neglect the qualitative matters which mean so much to profound architecture.

There is a growing need for the architect to develop a precise program as part of the process of problem-solving. Its purpose is that of a working tool, and it defines the problem in terms of the method to be employed in pursuing solutions. Thus, if a computer is to be used, the program must be framed in an appropriate manner for the machine. At the other end of the scale, if great uncertainty exists, or the manner in which the architect works cannot be controlled, the program may be vague or even not exist at all. However, it should be borne in mind that the program is rapidly becoming essential in problem-solving owing to the increasingly complex nature of architecture. Sometimes it is a means of communication between the architect and the client, and therefore is an instrument in the act of creation.

Step C—Whereas the previous steps have been concerned with analytical procedure, this step relates to “formative” thinking. In other words, its objective is to bring together the many parts into a unified whole, or form. This is the step that is enjoyed most by the creative architect, for it is essentially creative in itself. Although schools lay great emphasis upon this step—and much time is devoted to it—it must be admitted that little is known about the manner in which it behaves. In the absence of understanding, schools of architecture have developed an approach to teaching its mysteries by exposing the students first to small problems and then, by successive stages, to those of great size. At the end of this experience it is assumed that the student will be able to “design” and cope with both large and small problems.

The author does not share this opinion. There is every reason to believe that the procedure of going from the small to the big is born of the trade approach, i.e., doing in preference to thinking. In architecture all problems are complex; the place for living is just as complex as the place for worship. The Vancouver school has therefore been concerned with the development of the knowledge of problem-solving and the need to simplify rather than admit of complexity. It has been found that the mind of the architect can hold but few things at one time during his search

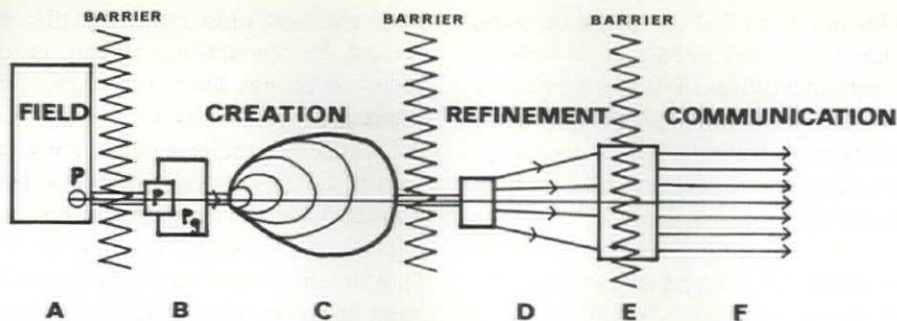


Diagram 3

for solutions to problems, and it is doubtful if he is different from others in this respect.

Apart from "problem approach," another important part of this step is the stimulation of ideas and the development of concepts. It appears that both ideas and concepts are born through challenge; the greater the challenge the more magnificent the idea. From ideas are developed concepts, eventually the concept reaching the stage of reality when it is capable of being understood by others (Step D). The development of ideas and concepts is the major task of the teacher, but he has but little influence over their origin. It appears that the number of ideas and concepts that a problem may produce will increase as involvement is experienced by the student, but there comes a time when ideas come but slowly. The school has been interested in this phenomenon, and from observation it seems that a pattern exists (Diagram 3).

In the diagram the continuous curve (Z) shows that, following the upsurge of ideas, a period of fewer ideas and "frustration" is reached. For the most part we avoid entering into this area of frustration, for it is fraught with difficulties and unpredictable results. Within the first part of the curve, the ideas coming with increasing rapidity are, for the most part, uniform in character and arise directly out of the problem; therefore, the teacher derives some satisfaction in response to his teaching methods.

It will be noted from the diagram that two further curves (X and Y) indicate that the time taken for ideas to form can be shortened. This may occur through experience, or even by setting problems which have a similar intent. For example, should a series of problems dealing with traffic circulation follow closely upon one another, the results (in terms of ideas) will be accomplished in a shorter time.

Yet it is the "original" idea that is of interest—the idea usually created in the period of frustration, for here the student holds in question all his knowledge and therefore rids himself of preconceptions. The Vancouver school has been taking students into this area of frustration by setting

problems which have no precedent. It is claimed that the experience is painful but in the end amply rewarding to both student and teacher.

The place to be occupied by the real world of practical thinking in the process of concept development is not understood. That there is a need is without doubt, otherwise the idea is valueless; but what part it plays, and when it plays its part, are serious questions to be mentioned later.

Step D—The previous step (C) can be influenced only slightly by the teacher, but once the student has made a commitment by declaring his solution (or solutions) to a problem, every encouragement can be given for its development. The barrier between Steps C and D is perhaps the most difficult to penetrate. To some extent what is produced as the solution(s) will always be a shock. For instance, there is an analogy to the birth of a baby, for until it arrives the mother never knows quite what to expect. But the nature of the solution should be seen in terms of development, modification and refinement. It is perhaps unfortunate that, due to ignorance, so much time is spent on steps prior to Step D, so that the full value of refinement is seldom realized.

Step E—This is in fact the culmination of the exercise in problem solving as seen through the eyes of the academic world. Its purpose is to reach a conclusion in a manner by which comparison can be made between the original need to be satisfied and the adequacy of the solution.

Step F—Concern here is with communication and defining responsibilities in the practical achievement of architectural ideas. Communications, to be effective, must be made in the language of the recipient. Although a science of communication is in the making—and it will no doubt have a serious effect upon the architect—the present methods of communication depend in no small measure upon experience and skills. This is of major concern to the practicing architect, for much of his labor and time is involved at this level. To the school—sympathetic towards the practitioner's point of view—the teaching of skills is of minor interest.

It is as if Step F is important in being the divid-

ing line between the teaching and practice of architecture. The school cannot emulate the conditions in an office, although most of its teachers are practicing architects. A solution to this problem might be found by requesting the profession to cooperate by the introduction of a system whereby each first-year architectural student is "adopted" in an office so that he may learn firsthand those methods concerning the practice of architecture which the school cannot teach.

There are, however, certain aspects of this step which remain to be pursued at an academic level. The theory behind communication lies at present in the hands of other disciplines which find its application pertinent to their endeavors. It is essential that the theory be applied to suit the particular circumstances appertaining to architecture. The relationship between the means of communication—be they drawings, specifications, contracts, etc.—are all too nebulous to be efficient, with the result that variations in office practice are great. Most of this is an area for the future, for this type of work needs considerable research before it can be of use either to the teacher or to the architect.

Environment for Learning

If an emphasis is to be placed upon the need for creating an environment for man, it can be expected that students too will become concerned with creating their own environments in which to work. The Vancouver school encourages students to build enclosures in the studio so that they may experiment at their own level of interest. In brief, each student is entitled to about 40-50 square feet of floor area with a general layout designed by each year for that part of the studio occupied.

This freedom has been allowed for three years, and each year has seen a somewhat different approach to the creation of environments. Some general observations may not be amiss at this stage:

a) In creating an environment, a student will bring those things which to him are important. Therefore each "booth" has its own character and identity.

b) The degree of order—or chaos—within the environment varies considerably. It appears that when a student is highly creative there is a tendency toward a chaotic environment for his own use. This observation is not unique, for it has generally been accepted that an artist will live in cluttered surroundings. It does appear however that the feeling of chaos is in the eye of the beholder, for all too frequently a student has refused to admit that he is working in chaos. He claimed he knew where everything was, and became aware or annoyed when his things were taken or even added to.

c) Although the environments are allowed to remain for an entire academic year after being built, some of them constantly change. When group work is involved, there is an obvious need for rearrangement in order that students may work together. It appears that the need for change is of importance if the student is to be stimulated in his efforts.

It should be noted that an interesting theory has been advanced that architecture, like all forms of art, serves a purpose in inspiring its occupants. Inspiration under these conditions consists of the beholder constantly finding new things in his environment and being compelled to seek further for still more. It is suggested that a building that says little more than its obvious system of construction or its underlying geometry fails to inspire, because it says what it has to say in a minimum period of time, leaving nothing to the imagination.

In such circumstances, architecture is valuable not for what it says but for what remains unsaid.

It is hoped that the stage following this "adventure in ideas" will be the preparation of an organized experiment in architectural education. It has become clear that, although there is much validity in the process outlined in this note, there is a need to know much more about the steps involved so that academic time can be wisely used. If more time were available, it could be spent with effect in the areas defined under Steps D and E.

The biggest problem lies in the area of formative thinking in which many parts are brought together to make an architectural solution. It appears that, in this era of specialization to which we belong, each subject is in itself one of specialist interest and can exist in its own right. Even "design" has found isolation and can exist independently of technology; this is disastrous. Apparently, few want this, least of all the teacher. Attempts to impose technology upon design seem to be ineffective, i.e., in terms of architectural results.

It is hoped that in the years ahead the approach to architectural design wherein there is an emphasis upon philosophy—or the reasons "why"—will be equally successful in the field of technology. Experiments already carried out in the teaching of structures indicate that this may be a valid assumption when extended to other fields. There is certainly a need to explore principles in all technical subjects in order that means can be found for them to become less complicated and more inspirational within the design process.

It is hoped that the next three years will see results of experiments in architectural education at the Vancouver school. Should they fail, a contribution will have been made to knowledge. If they succeed, a more profound architecture may result. ■



'A Commerce with Disorder'

Information, Technical

BY ERIC PAWLEY

University of Southern California

The information explosion confronts architects and teachers with problems no less tough and no less pressing than those resulting from the population explosion. Here Mr. Pawley describes techniques for use in the "commerce with disorder"—a phrase he borrows from Brewster Ghiselin's The Creative Process—and proposes that the schools should collaborate in employing them. The article is based on a paper given at an ACSA Western Region meeting held at the University of California, Berkeley, last October.

ALFRED NORTH WHITEHEAD once wrote that "tradition is warped by the vicious assumption that each generation will substantially live amid the conditions governing the lives of its fathers and will transmit those conditions to mold with equal force the lives of its children. We are living in the first period of human history for which this assumption is false . . .

" . . . in the past the time span of important change was considerably longer than that of a single human life. . . . Today this time span is considerably shorter than that of a human life, and accordingly our training must prepare individuals to face a novelty of conditions."¹

Along with change as a way of life which we must educate ourselves to face, we are confronted with exponential increases in the volume of information. If someone undertakes a search for specific information in the area of science and technology during the last five years it means, according to a recent study,² review of the titles of 70,000 articles a year in 1,100 periodicals (350,000 titles in five years) or about 1,000 manhours to screen titles alone without assurance of appropriate or relevant content. The National Library of Medicine information system (MEDLARS) handles, by means of computer tape memory, some 2,500 journals with deep indexing based on agreed-upon subject headings from a thesaurus which is revised and published annually.³ The Engineers Joint Council (with nearly 600,000 engineer members of the associated engineering societies) has published a thesaurus of 10,000 agreed-upon engineering terms for indexing.⁴ The architectural profession should

have been on board among the private cars at the beginning of the ride on that train. Now we can dismount, find a hitching post for our camel and see if we can borrow a caboose.

Information Communication

It is essential that our language and information procedures be compatible with those of the other design professions and, so far as possible, with certain other disciplines which are becoming more and more important to us. We must be concerned with the total process of information communication, a process "which begins the moment a piece of information is recorded and ends when that information gets into the hands of the right person at the right time."⁵ This means a release of creativity for the men to whom we turn to solve problems in this complex world.

It should be remembered that documents and information are two different things. Several sophisticated systems will get the document in your hand that may have in it the information you want. But a system that gets you just the document is not as good as one that puts the finger on the information. This takes deep indexing, which man must do. The machine cannot read our books for this purpose.

The size of this information problem as well as developments in information-handling techniques place new burdens on the student. He must learn a great deal more about each subject—obviously there is more to know—and he has to learn more about how to keep in touch with it than the students of any previous time. It may be that we shall have to learn a lot more about computers just to find the information we need to solve other problems.

Information Design

There is another problem, and it is one that comes very close to architects. In fact, some of the best people in the field have been architects. This is *information design*. Many who work with

¹ Original source untraced to date; quoted from a speech by Secretary of State Rusk.

² Harvey Mudd College, Claremont, Calif. *A Joint College/Industry with Automata* (Washington, DC: Council on Library Resources, 1964).

³ MeSH (Medical Subject-Headings).

⁴ *Thesaurus of Engineering Terms* (New York: Engineers Joint Council, 1964). This edition is out of print; a second edition will be ready about 1967.

⁵ From a leaflet describing KAS (Knowledge Availability System) at the University of Pittsburgh.

technical information today are convinced that we are in an information crisis. Old methods are inadequate—old methods of collecting information, of presenting it, of storing it and old methods of finding it and using it. All wrong! The concept of the library and worship of the book and the “word” must change to that of the *information center* with a great deal more indexing in depth for all kinds of material. Beyond this idea, however, there is this other basic need—the need for information design.

James Joyce referred to the inadequacy of sequential words as “ABCD-mindedness.” Sigfried Giedion, in an address before the UIA in Mexico referred to our “world of correlative events.” Marshall McLuhan and Edmund Carpenter have called attention to the inadequacies of print technology.⁶ How can we best approach such a world or universe of technical information? The assemblyline in industry—CPM and PERT⁷—and computer technology recognize it with networks of multiple parallels. A recent news item reports that MIT is planning a facility with 52 input/output stations linked to a central computer which will service some 200 persons at the 52 stations “simultaneously” by time-sharing.⁸ Man does well, in a complex experience, with the added ability to filter his channels, consciously or unconsciously, so that his resultant output has that quality we attribute to individuality (good or bad). No man, however, can work unaided with scores of channels.

Two Uses of Language

We must realize first, in approaching any universe of information, that there are two major uses of language. One is as a treasury of words containing the literary culture of the past in every period and region and similar attempts to record the quality of the present. The other use (and it is my heresy to believe that this should and will be a minor one) is the function of recording and making available another kind of communication: information.

Words are often not as good as the more quickly comparable patterns of tabular or graphic presentation. Such words as may be needed are perhaps better considered to be in “quick-technical-american” rather than in “good English.” Symbolic notations, diagrams, charts and graphs, maps, drawings and photographs, tables of figures or arrays of facts in their briefest comparative pattern may be far more usable at the drafting board than pages of descriptive prose. I proposed several years ago that architectural students be given a course in “Creative Typewriter” that would really explore its potential, but no one has done it. The architect works most often with

graphic relationships—engineers and financiers with rows of figures. This, incidentally, is a basic distinction between analog and digital computers.

A few far-seeing men have worked in this field of information design. Notable among them are Otto Neurath, a Viennese, the inventor of Isotype, a copyrighted form of graphic statistics illustrated in his remarkable book *Man in the Making* (long out of print). Next I should certainly place K. Lönberg-Holm, a Danish architect known to many of us, long-resident in our country who, with his designer-associate Sutnar, made parts of Sweets Catalogs and other product literature into excellent examples of information design. Then we might mention commercial designers, advertising artists and typographers by the score who have learned how to seize the interest, to program the viewer’s eye into a quick pattern which gets the information across. In posters and advertising this is visual persuasion, and in its course no end of psychological tricks are played upon us, often “out of awareness.”

Where does the eye first rest when it hits the page, or rather the two-page spread, which is in the visual field? How can the effective machinery of design—repetition, balance, color, contrast, etc.—be started up in support of the idea, which may or may not need words to convey the message or information? These are some of the concerns of information design. If a graph is indicated as the best way of reporting a trend, what is the best scale? What are the coordinate units? You can lie (or mislead) with statistics most easily by changing scales or reference dates. In this market of ideas, this is the air in the package. Although our world is one of correlative events, we still learn how to handle it by sequence, and information design must rely on the most careful study of sequence and focus of attention. Lönberg-Holm and Sutnar were past masters of this art.

The Information Center

I have mentioned an information center, which is a rather vague term. I want to clarify it. It should include not only the functions of a library and service departments for books (we still have them with us), periodicals, vertical file and audiovisual materials, perhaps some teaching aids (charts, models, Munsell tree, color aptitude tests, etc.) and a number of other things which have to be taken care of somewhere. It might well include the functions of event-preparation: visiting lecturers, seminars, exhibition planning and services for exhibitions. These include a lot of correspondence, unpacking, labels. Finally, preparation for

⁶ *Explorations in Communication* (Boston: Beacon Press, 1960).
⁷ Critical Path Method and Program Evaluation and Review Technique—bar charts for scheduling.
⁸ *Industrial Research*, October 1965. See also *Intrex*, recently published by MIT, which gives a description of this exciting project.



publication of reports in various media and distribution of completed research studies. These are all part of information.

We need an architectural program for this space, a prototype analysis recommending areas needed in an architectural school, relationships of equipment and the staff to run it. This is a program of design data and information for the combination in one facility of all these new approaches to information-processing, storage, access—for students, faculty and local design professionals.

Such information centers in any of our schools could be operated only with collaboration between a number of schools of architecture. If, for instance, one school undertook to index in depth an area like color or some other sector of design information and then exchanged that information with the other schools, receiving in turn references to the material they had indexed in depth, then we would begin to build up a bank account of knowledge for all of us, a savings account in a true sense of the word. Such exchanged references would tell what was available and where, and just what was in the original document. It would no longer be limited to author and title but would include an abstract and a certain number of key words or descriptive terms indicating content.

When you go now to look up something, what happens? You plow through the typical library card catalog. You find perhaps five cards listing books which may help you. A couple of these are dated 1887 (and your problem is really 1987). You make out a call slip for the books remaining. One, it happens, is in the office of a professor who outranks you; one is stolen, and the library policy is not to pull cards for two years when a book is stolen; the remaining treasure is yours. It may or may not contain relevant information. From the library card you really can't tell very much about what is in that book. If you know library card techniques, you can tell the size of it, the number of pages, from the cross references some idea of the fields covered. The reference may or may not have its own index, and these vary greatly in quality. And how about pamphlets, proceedings of conferences, reports from engineering experiment stations, etc.?

Indexing in Depth

On a visit to the University of Michigan, I found that a graduate course in the History of Education in the United States had developed a bibliography, a mimeographed list of authors, titles and index numbers. In front of the list, however, were a number of key words or categories of deep indexing: *religion, race, teachers*. . . . There were also some dates by *decades* and a list of terms which indicated the kind of document:

textbook, popular periodical, biography, statistical works; and then a list of regional indicators: *northeast, southwest, rural*. Supplementing this mimeo list was a deck of punched cards, ordinary IBM cards, one for each key term.

This is an example of deep indexing. If you were writing a paper on rural teachers in the south, you take the three keyword cards—*rural, teachers, south*—and superimpose them. This brings together the coordinates of the references which have the information you are looking for, and you can see light through only the holes which are aligned. In this case there are two references in this bibliography which have information on rural teachers in the south. You know that right away!

If you want to refine the search further, you can put an early date-card 1900-1924 on top of the other three cards. It blocks all the holes. You know right away that this bibliography has no information on your subject. This is an intermediate technique. The only machine work was punching the cards. It does not require expensive machinery for finding the material. There are many variations of this "peek-a-boo" system on up to plastic sheets with 10,000 holes in them in place of the 1,000 punch locations in the typical card. Some of these more expensive systems would be useful in a university context, with satellite stations in different information centers in the schools on campus.

Another intermediate system uses marginally notched cards, again to get coordinates for the information. A long needle is put through the edge of a bank of these cards, and when you shake the needle the cards that are notched fall out. This is good up to about 1,000 cards, but with mechanization it can be expanded greatly. If the universe of knowledge you are working with is limited to one project or one small area of information, this kind of thing may be very useful. I have an anthropologist friend who carries the narrow sort of these cards in his pocket. These have a blank field in which he notes a reference, a quotation, a graph or even sticks on a clipping or photograph. His secretary notches the thing in the proper locations and throws it in the bank (box). The cards *do not have to be put in a special place* in the bank—they are put in at random and put back at random after use. The needle will shake out the ones that are notched for any location.

Proposal for Action

Both of these intermediate card systems require man-hours of deep indexing, at least for agreed-upon keywords which then must be assigned to each reference. I have talked with faculty and librarians in architectural schools in Minnesota,

Michigan, Texas, Ohio, California and Massachusetts about the idea of dividing up this task of deep indexing. It is a lot of work, but there is a great deal of interest in it. I think that if we can get a certain number of schools working on it, eventually we would each have a bank of information which we could then use in any way we wished locally for our own programs. As a pilot study we might start requiring that each master's thesis be deep-indexed and then swap keywords and abstracts with all schools that wish to partici-

pate. It is also possible that an important preliminary step might be a conference which would bring together people for discussion of the real information needs of students, faculty and practicing architects. A recent book comes right out with it by saying that "any concept of a library that begins with books on shelves is sure to encounter trouble."⁹ What are the architectural implications? ■

⁹J. C. R. Licklider, *Libraries of the Future* (Cambridge, Mass: MIT Press, 1965).

Review: Upgrading Draftsmanship

Architectural Drawings. Helmut Jacoby. New York: Frederick A. Praeger, 1965. \$13.50

This is not a generation of distinguished draftsmanship, and it seems that skilled delineation is temporarily discredited. Yet I doubt if history will show that the form and features of current architecture have been much helped by the wayward abstractionism of the painters and sculptors, which seems to have encouraged architects to imagine that they too can abandon precision and indulge in obscurities.

This book, coming when nothing very significant on the topic of deliberate graphic representation has been produced for a long time, may lead to higher standards of drawing and a rejection of the slovenly scribbling that has so hampered both the development of design and the appreciation of the art of architecture. Not only does it demonstrate the value of drawing as a means of intensifying the powers of observation and the sheer joy of looking; it emphasizes the values of material and of detailing that have so long been ignored.

A brief introduction is provided by Claudius Coulin, of the Technical University of Stuttgart, in which the aims and standards of the artist are established. It is a pity that more quotations from the artist (who was trained as an architect) are not included.

Jacoby's drawings are based upon convictions that warrant discussion in any pictorial treatise that sets out to "interpret the technical imagination of the architect for the layman," and which is also intended to influence drafting towards more sensitive design and representation. His reference to color is of particular interest; one could wish that more space were devoted to his observations on this subject, for more perspectives are spoiled by coloring than by any other factor. He is concerned, also, with tones and the illusion of the third dimension, and his experiences in the problems of reproduction are of special value.

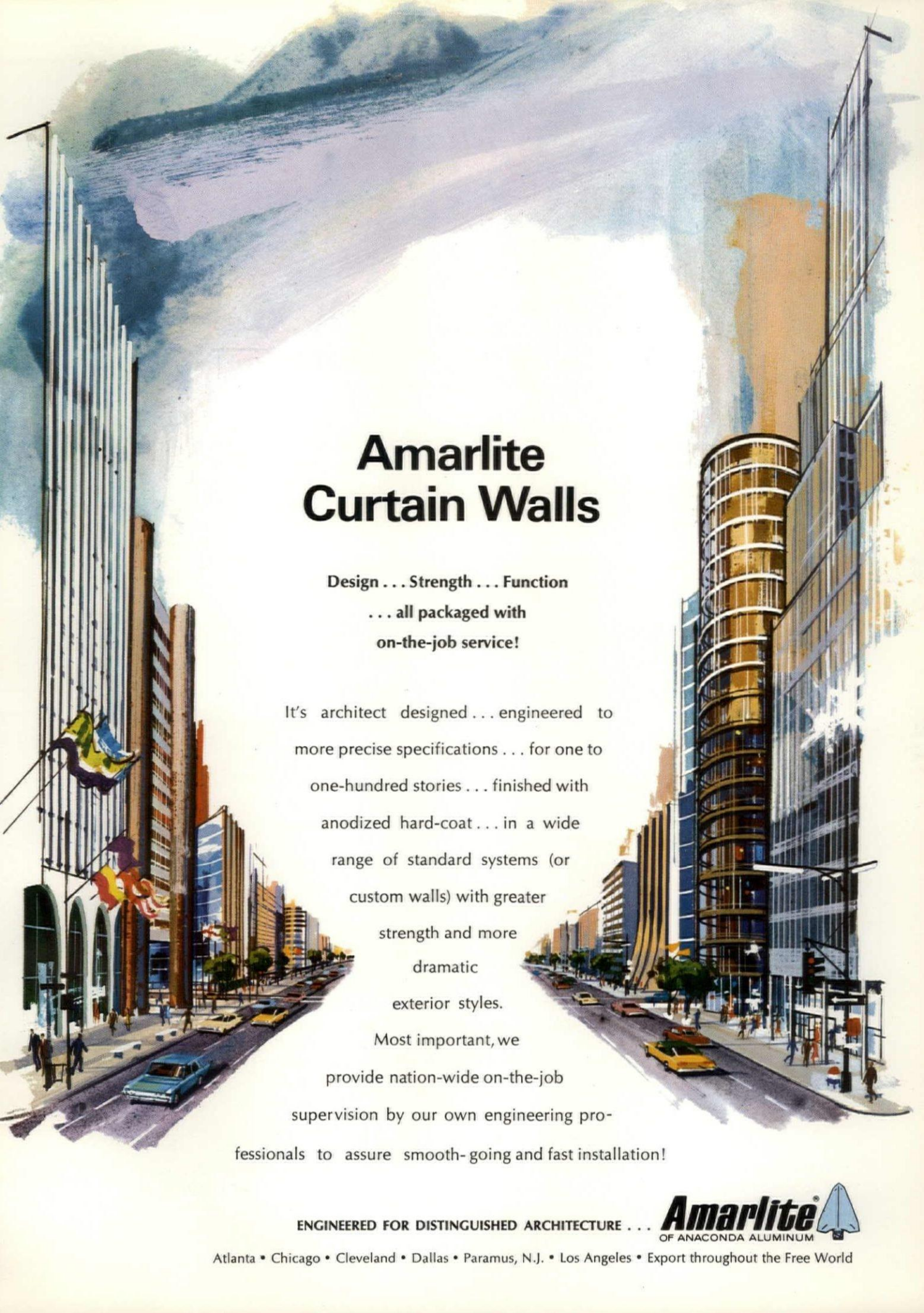
The isolation of the supplementary text is un-

fortunate. It would have been better if each illustration had been accompanied by an explanatory caption, so that the whys and wherefores could be read in conjunction with the image. This form of demonstration seems to me to be especially desirable for students, whose retentive capacity is too limited to last for more than a few pages. An explanation of intention, process and production is essential if the book is to be not merely casually examined by students but actually used, as a stimulating work of reference.

Jacoby's "striving for unity" is the outstanding characteristic of his work, and his success endows all the structures shown with a common quality of sturdy repose that is obviously not altogether theirs. His "unity" falls short, however, in the fussy stylized foliage and stiff formalized figures (which are so much better in the rougher sketches). Nor is he well served in the design of the book. The slim sans-serif type has to fight for its life against the glaring surface of the high-gloss paper; the combination gives a "hard" impression that is wholly out of sympathy with the message to be conveyed. The choice of paper is especially unfortunate when small half-tone drawings are swamped by the blank white areas such as contest pages 68-69 and 70-71, where an entirely brilliant page overwhelms the tonal value of a whole-page sketch, while the artist's sensitivity to color is nullified by the arrangement for page 59, where the too-small rendering swims for survival in a sea of virulent white. The whole-page color illustration of the Boston Government Service Center, on page 103, is better in that there is no white to rob the tones and colors of their vitality.

There is no doubt of the value of this timely book in the classroom, the office, the studio and the study. In any future edition, changes should be made in paper, layout and typeface, and the text expanded from hints to arguments.

PATRICK HORSBRUGH
University of Texas

An aerial, watercolor-style illustration of a city street. The street is lined with modern buildings, including a prominent one with a curved, glass-enclosed tower. Several cars are visible on the road, and pedestrians are walking on the sidewalks. The sky is a mix of blue and white, suggesting a bright, clear day.

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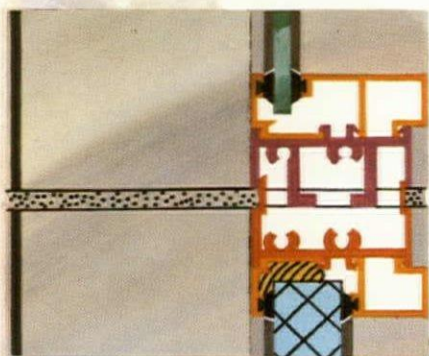
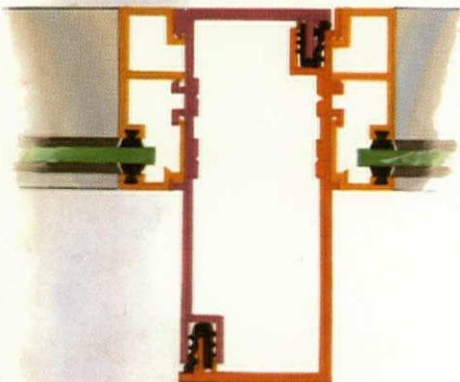
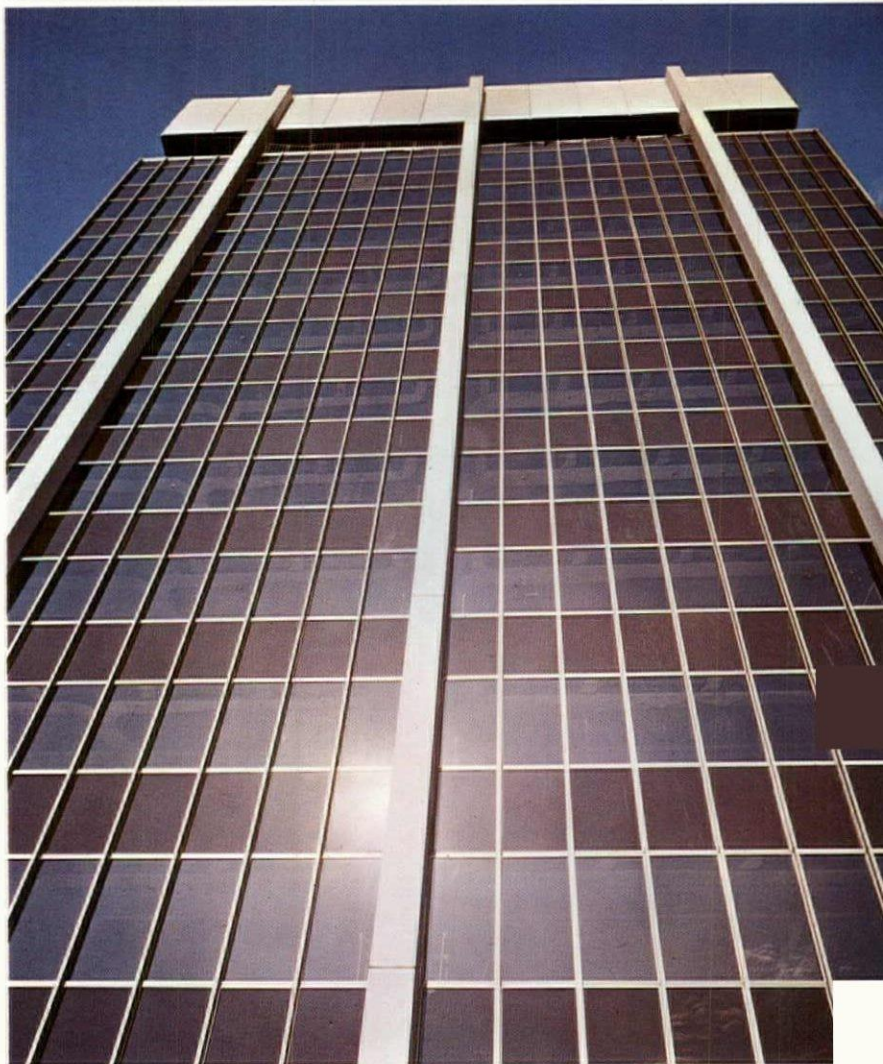


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800 System Curtain Wall expands due to extreme summer heat . . . contracts due to severe winter cold . . . all expansion and contraction takes place within the module, both horizontally and vertically.

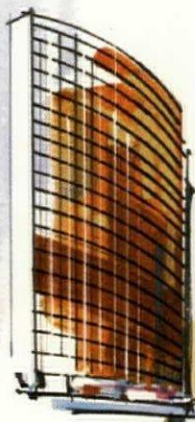
The curtain wall vinyl joint seal adjusts itself to the pressures of the "moving" wall modules . . . keeping pressure right and the wall weather-tight!

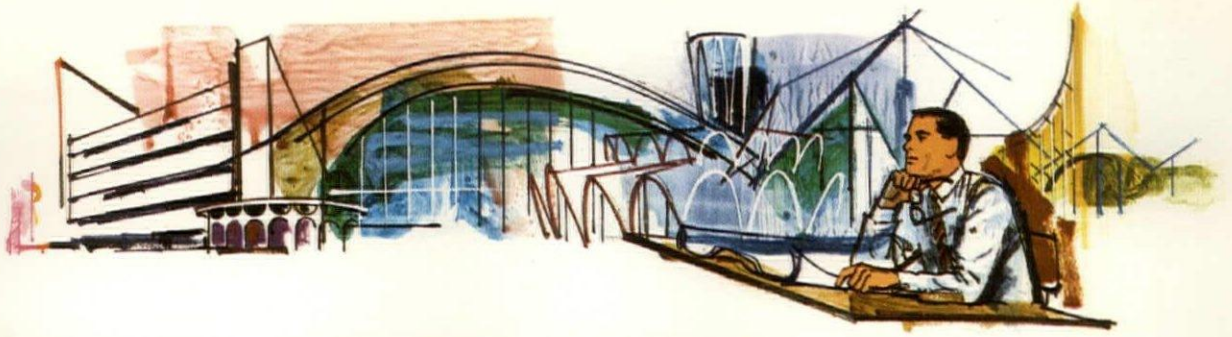
**Amarlite 800 System Curtain Wall
is Architect-designed to keep buildings dry...**

Every fabrication precaution has been taken to keep water outside of Amarlite 800 System walls.

However, if moisture should penetrate this seal, it is automatically trapped within the extruded members of the curtain wall structure, and drained to the outside again. All of these features are achieved without sacrificing the smooth profile lines of the system.

800 System internal drainage . . . employs every horizontal as a drain to a vertical . . . and every vertical is a downspout. Specify our 800 System. It gives you a choice of mullion depth of 3" to 7" . . . providing a wide range of strength and dramatic exterior design.

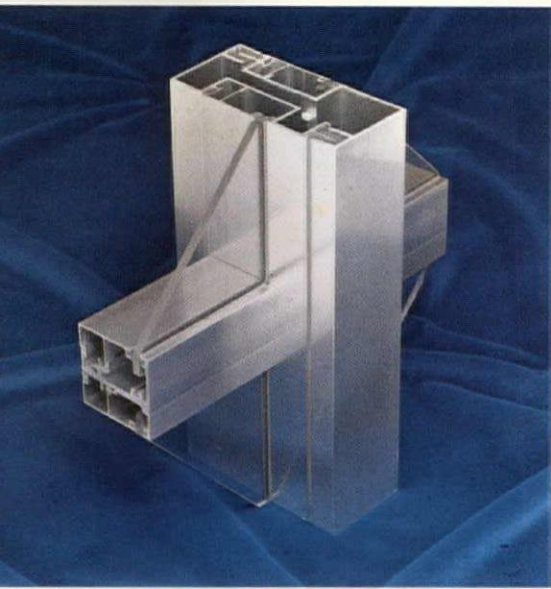




Next time you set your mind to dreaming... think of Amarlite Curtain Walls!

Here, you'll find a team of aluminum manufacturing professionals who can turn architect's dreams into realities! So, create what you will . . . we can build it! We can deliver! ■ We'll work with you on any size job . . . an industrial, commercial or monumental custom concept! And, if one of

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Amarlite 808 . . . is a heavy duty flush glazed version of the 800 System.



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Ratchet Drainage . . . traps water within an extruded member that has no opening to the building interior, and drains it outside. Ratchet holds itself tight . . . up, down, and around . . . with a full length ratchet-tight grip!



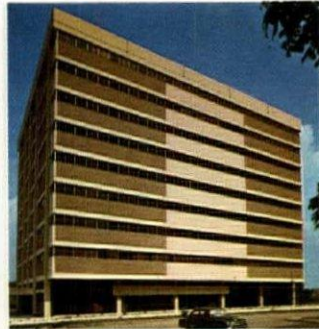
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Here, with pride that shows . . . we engineer aluminum for distinguished architecture. It's aluminum that sings with the freshness of functional design . . . systems of versatile curtain wall . . . windows — a complete line with our exclusive weather-tight Vault Action design . . . a complete line of all tubular Slide Action windows . . . and the handsome fronts and entrances that give ground floor stores trim beauty!

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IVEY TOWERS, ATLANTA, GEORGIA
ARCHITECTS: AEGK & ASSOCIATES

Entrances

A.I.A. FILE 16-E



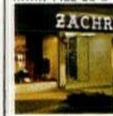
Curtain Walls

A.I.A. FILE 17-A



Store Fronts

A.I.A. FILE 26-D



Windows

A.I.A. FILE 16-E



LaPorte

A.I.A. FILE 16-N



Sliding Doors

A.I.A. FILE 16-N

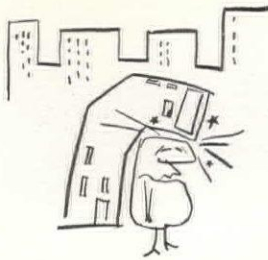


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Derf Struck Dumb

Adapted from a talk given by Fred Bassetti AIA at the 50th anniversary of the founding of the College of Architecture and Urban Planning, University of Washington.

MY NAME is really Ittessab Derf, and I have saucered here from Mars under the Fulbright exchange program to study building methods and education on your planet. Your leader has asked me to comment briefly on Learning and Building from an outerspacer's point of view.

This I do gladly, but it is not easy since the general standard of building design in your cities is so low as to strike one dumb. I have been asking myself how this has come about and what might be done to regain the high design standard of earlier times here on Planet No. 3.

To an outerspacer, the first surprise is that with great self-denial you lay your cities out to the automobile's pleasure. You give accom-

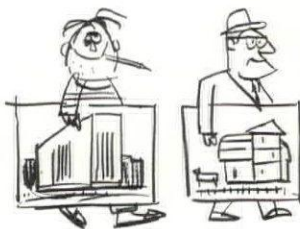


modation next to the great signs whose advice you follow in whatever you buy. Your old buildings seem often to serve their purpose very well, as do the buildings in the countryside that your growers of food keep their animals in.

These are usually beautiful, but what we outspacers ask is why you use your best architects for these structures you call barns while the poorest ones are put to design your cities?

The new city buildings set one's, ugh, teeth on edge. In the main,

they lie. They sometimes try to say they are built of marble when they are really made of metal covered with concrete. They usually hide their well-shaped bones and sinews, their nerves and arteries, under a slick skin that affects an artificial simplicity. They let in the heat and glare of sunlight—your proximity to the sun is quite fierce—and force you to waste energy drawing that same heat outside the building. The side of your tall buildings toward the sun usually looks exactly like the side away from it.



To an outerspacer, this also means that most of your new buildings are without interest after the first glance, but I realize that this must please your taste since you give to these buildings your highest honors.

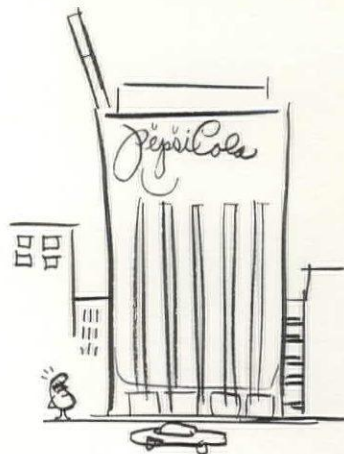
A building maker from our planet asks himself how this strange state of things has come about and is unable to understand it. Though he cannot help directly, he can say a little about a place to teach master builders as it is arranged on Malecandra—you call it Mars.

You earthlings assign five of your years for students to learn to shape buildings. A Martian teacher would give the equivalent of the first two years solely to the study of materials. He would have the college buy 10,000 bricks and have the young people spend the first month making only floors in every possible way. Then the students would take a month for plain walls and two months for walls with window and door openings. Another two months would go for exploring arches,

vaults and other ways to cover space using only this one material.

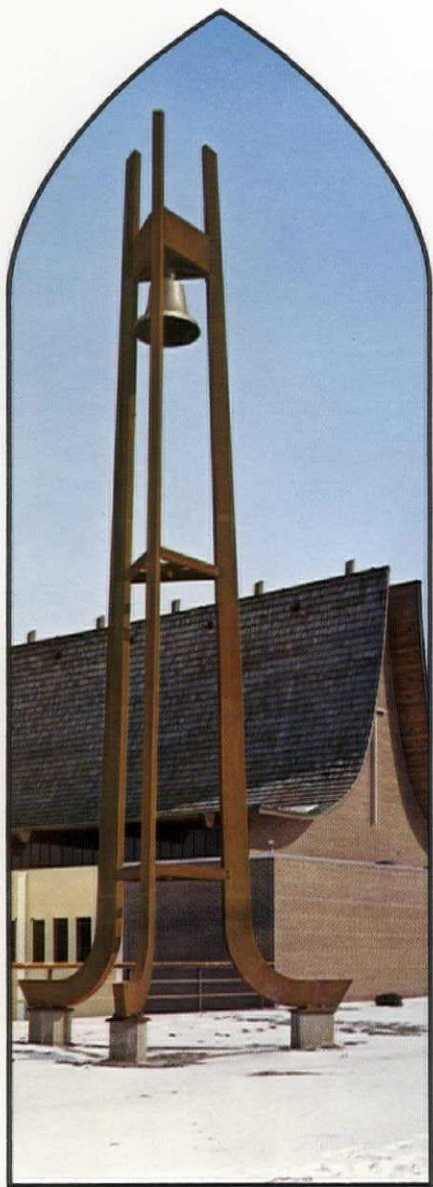
Then the teacher would buy wooden sticks, boards and sheets and shingles and give half a year to learn how they are used. He would do this with all basic materials, with stone, with concrete, with metals, and with something we call ardnacelam. The students would learn how stone has grain, how concrete is finished, how metals are worked and how ardnacelam is . . . well, no matter.

The school would buy a forge and a small foundry and with their own hands the young ones would heat a bar and beat it into a baluster. They would learn that when you flatten it out it grows wider and that when you bend it the profile changes ever so slightly. After a month or so of heating, hammering, filing, twisting and cutting the metal by hand, the student will never allow himself to use the material falsely. And he will never confuse the proper use of one material with that of another. The natural use of building materials should be automatic for the rest of his life.

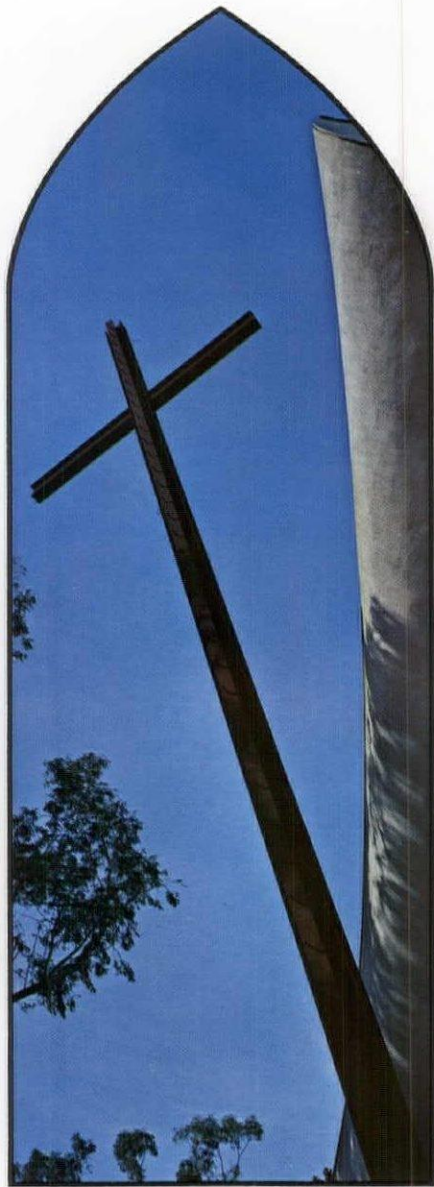


After two years of personal, hand-intimate study and work with materials and the basic methods of their use, we would turn the stu-

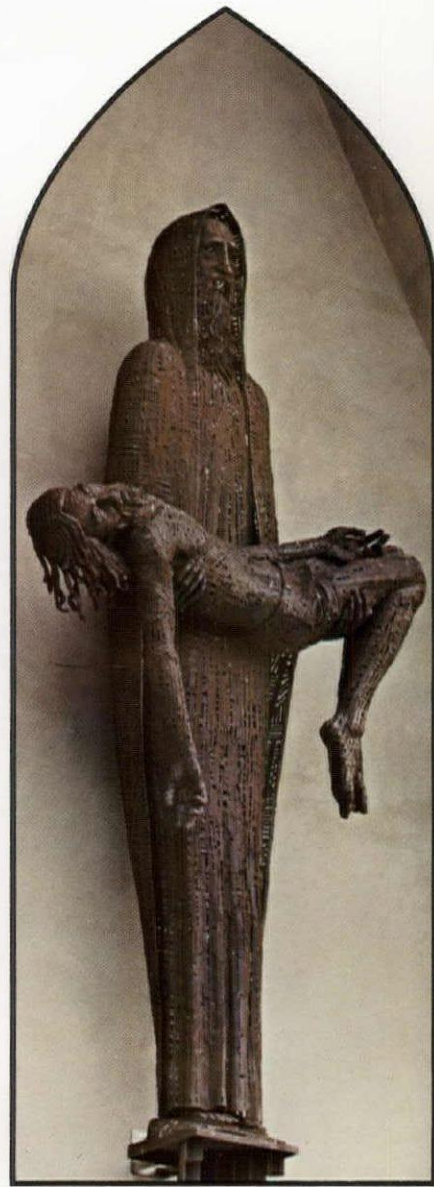
Continued on page 88



*Our Savior's Lutheran Church, Eau Claire, Wis.
Designer/Structural Fabricator: Phoenix Steel Corp.
Eau Claire, Wis.*



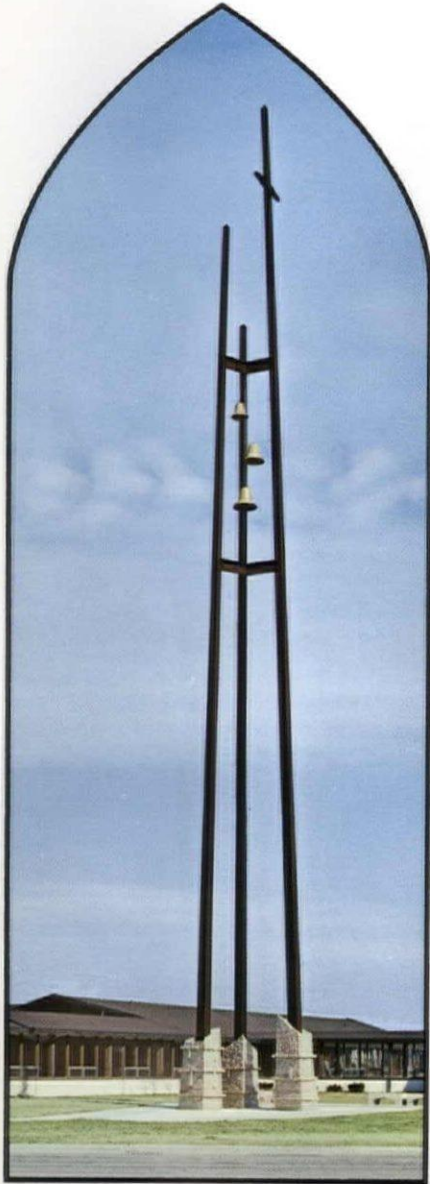
*Loyola Jesuit Retreat House, Portland, Oregon
Architect: Moloney, Herrington, Freesz, and Lund,
Seattle, Washington*



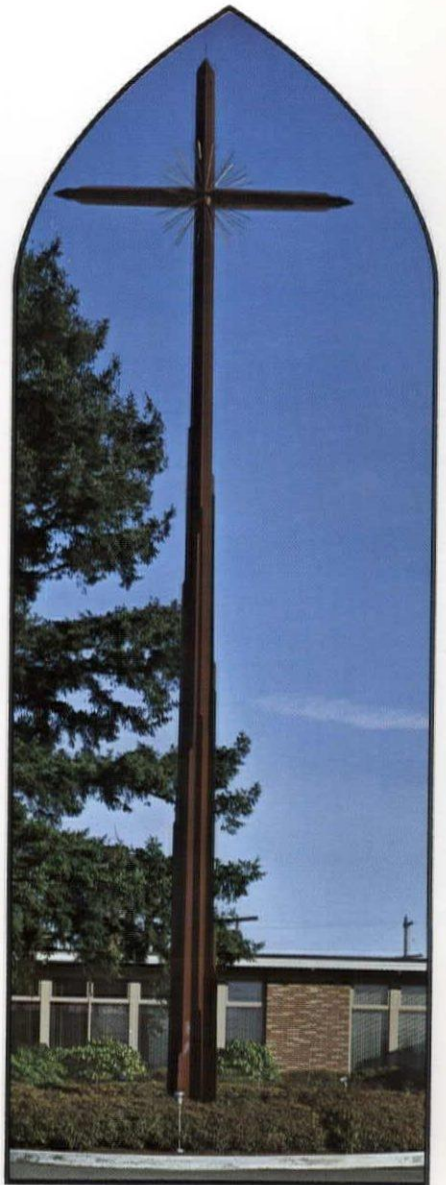
*Hockessin Methodist Church, Hockessin, Delaware
Sculptor: Charles C. Panks, Hockessin, Delaware*

How to look your Sunday best

The brand of steel is COR-TEN. It was described by the late Eero Saarinen as having, unlike other man-made materials, "a beauty that only nature can impart." As USS COR-TEN Steel weathers, it forms a dense, tight, textured oxide coating that seals out corrosion. The longer it ages, the better it looks. Bare COR-TEN Steel is being used with outstanding success in low and high rise buildings, towers, even sculpture. It needs neither paint nor maintenance, and it maintains its structural integrity indefinitely. For full information about availability and architectural uses of USS COR-TEN Steel, contact our Construction Marketing Representative through the USS sales office nearest you. USS and COR-TEN are registered trademarks.



*St. John's Episcopal Church, Celina, Ohio
Architect: Wright & Gilfjelen, Celina, Ohio*



*Pacific Lutheran Theological Seminary, Berkeley, Cal.
Architect: Leeje & Ehrenkrantz, San Francisco, Cal.*



United States Steel: where the big idea is innovation

dent to studying other influences on building. First would come that of climate. The student would live in the open, in a tent, in a cave; he would experience every mood of the



weather, particularly in his own planetary locale.

While learning about the influence of wind and rain, sun and fog, heat and cold, the young person will also experience the influences of terrain. For this he must tramp up and down hills, traverse them

endlessly in damp and dry climates, in desert, crater, rain forest and savanna. He will study how the effects of climate and planet movement have shaped the ground so. And he will do the same in suburb and city which are equally important factors of influence on the design of buildings.

During all this period our Martian teacher would show his charges how they should interpret and describe what they are doing. At each stage they would draw and write about it so that at the end of their three-year introductory period they would feel an intimate relation between drawing and doing; each would be natural and each would be fully understood as the corollary of the other.

Now and only now would we consider our students ready for the subtly difficult phase of learning that includes the design, first of the elements, then of whole buildings and then of groups of buildings.



During all of this later period the study of people would be of central concern—how they see, how they feel, their likes and dislikes—a most necessary study for a building environment that furthers your civilization.

This has been possible in the past in some places here on Planet No. 3, I am told, Athens and some medieval towns being first examples. And it is now the case on my own planet where building lies and livability denials do not exist. May it prevail once again on No. 3. ■

Soviet Cabin Fervor

THE RUSSIANS are making a mistake in their eagerness to “erase the past and build anew,” says a recent architectural graduate of Texas Tech who spent half of last year in the Soviet Union.

“When the Soviets repudiated their heritage of pre-Revolutionary architecture, calling it decadent, they negated the entire spectrum of styles and cultures which had in their turn, exerted influence upon it,” said Anatole Senkevitch Jr.

Senkevitch called the emergent Soviet architecture “faceless and uninspiring” because of its uniformity, and he added that uniformity may be due as much to an imposed social autonomy and lack of architectural expression as it is to the need for economy in construction.

Senkevitch was chosen by the US Information Agency to serve on the staff of the exhibit, “Architecture USA,” which toured Russia May through October.

“The curiosity shown by Soviet citizens concerning the American way of life was overwhelming,” he said. “They were hungry for enlightenment and seemed to consider American architecture a reflection of our environment—of its nature as well as its potential.”

Because of his Russian parentage and his fluency in the language, Senkevitch feels he came closer to

understanding the “Russian personality” than do many visitors to Russia.

His parents were natives of Kiev. They left Russia in 1919 during the revolution and went first to Sophia, Bulgaria, and then to Beirut, Lebanon, where they lived when Anatole and his sister, Luba, were born. The family immigrated to the United States in 1949 and joined relatives in Brownsville, Tex. In 1955 all became Americans.

As a member of the exhibit staff, he explained the display to visitors, elaborating upon the approach and basis and standards of American practice. When not so engaged, he visited with architects, educators and students or went sightseeing.

Senkevitch said he was surprised at the freedom given the American delegation in sight-seeing and picture-taking. Crediting this to the tourism industry, the delegation member commented, “The Russians realized they had to give the tourist essentially what he wanted to see.”

For his part, Senkevitch found riding trains “a delightful way to mingle with the people and see the countryside.”

“Evidence of Russian life before 1917 is still to be seen in the charming log cabins which dominate the landscape,” he said. “In Moscow, particularly, these log structures stand next to modern, though by no

means more beautiful, apartment buildings.

“The Soviets are embarrassed by the presence of these old buildings, structures which represent some of the most exquisite Russian wooden architecture. The intricate carvings, details and ornaments in these buildings are primitive in nature but outstanding in character and effect. The most heated objection to them seemed to be that they were not ‘modern’ and therefore not competitive with or representative of contemporary achievement.”

One of the “most beautiful, fascinating and least-known cities of the world,” was the way Senkevitch described Leningrad. “An architectural mecca, it remains unchanged at the center, or the ‘old city’ where new buildings are forbidden. A periphery of modern buildings, called the ‘new city,’ has been built around the edge.”

Tourism has sparked the restoration of landmarks destroyed by war or allowed to fall into disrepair. War, by the way, is something the people by no means want, Senkevitch said.

“We in this country cannot begin to imagine the blight which lay in the ruins of this war-torn country.”

Senkevitch found widespread use of women in industry and the professions. A third of some 11,000 architects are women, he said. ■

If you plan ceilings, you should see this film.

NECA has prepared a film which shows how the integrated ceiling has given you new freedom in interior design. You are free to design a ceiling that heats, cools, lights, communicates, controls sound and beautifies just the way you want it to. Then you can depend on a qualified electrical contractor to install it—and guarantee its performance, too.

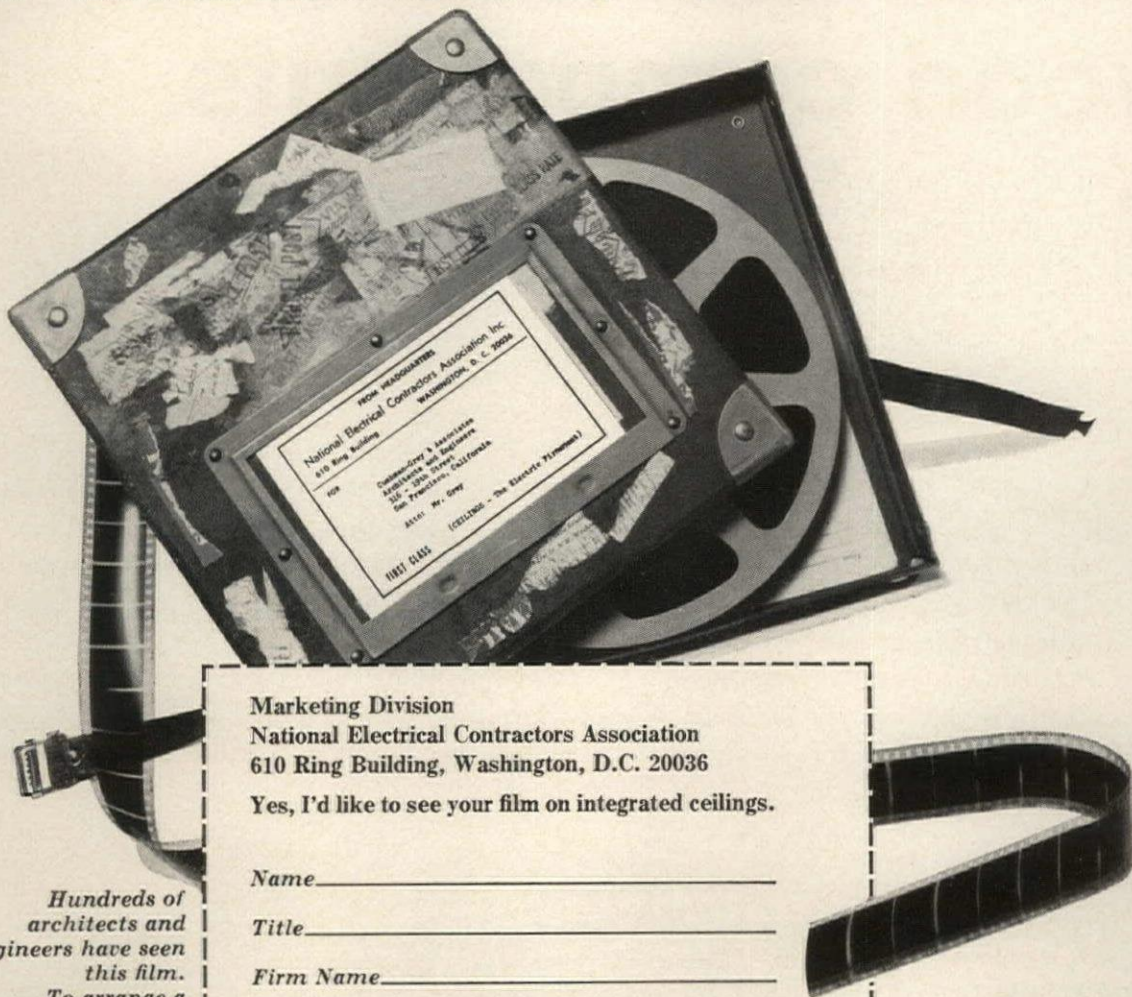
Why an electrical contractor? Because most of the functions of an integrated ceiling are powered or controlled by electricity . . . and electricity is the electrical contractor's business. He has plenty

of experience in coordinating the efforts of carpenters, sheet metal men, plasterers, plumbers, heating and refrigeration men and other specialists—and has available to him established and recognized procedures through which jurisdictional questions can be settled without delaying the job.

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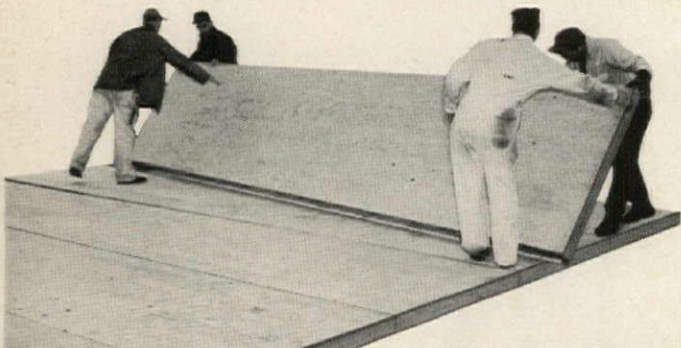
*Hundreds of
architects and
engineers have seen
this film.
To arrange a
showing, fill out
and mail
coupon today.*

The hurry-up school.

Queensboro Community College. 22 buildings. 62 days from footings to completion.

How?

Plywood components.



This new college in New York City couldn't have opened its doors to 1600 students last January without plywood stressed skin panels. According to the contractor's architectural consultant, the plywood component system was the best possible solution to the tight schedule — less than three months

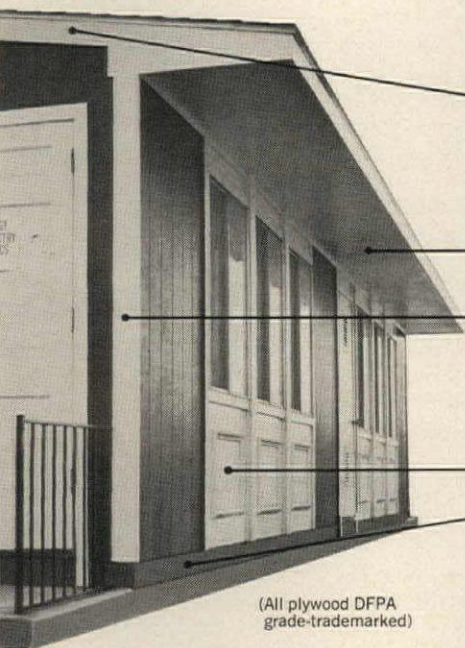
from plans to finish. The panels were used for floors, walls and roof.

The 22 buildings were prefabricated in Tulsa at the rate of one a day. Panels were prepainted, then trucked or piggy-backed to New York. Floor components are 24 feet long, the full width of the building. Roof panels span 12' 6", and are supported by a ridge gluelam, 7" by 17 $\frac{7}{8}$ ".

On-site finishing consisted largely of installing carpet, furniture, plumbing, and equipment. Actual site work took just over two months.



Queensboro Community College, Queens, New York City / Owner-Lessor: CIT Educational Buildings, Inc., New York City / Fabricator and Contractor: Southern Mill Fabricators, Inc., Tulsa, Oklahoma / Architects: H. A. Tucker, Tulsa; and M. J. Goodman, consulting architectural engineer for CIT



ROOF PANEL
4' x 15' x 4 1/4"

Top: shingles over
3/8" C-D plywood
Bottom: 3/8" MDO
plywood

SOFFIT: 3/8" B-C
plywood

WALL PANEL
4' x 8' x 4 1/4"

Outside: 3/8" textured
plywood
Inside: 3/8" B-C vinyl
covered plywood

3/8" MDO plywood

FLOOR PANEL
4' x 24' 6 1/4" x 4 5/8"

Top: 5/8" Underlay-
ment grade plywood
Bottom: 3/8" C-D
plywood

(All plywood DFPA
grade-trademarked)

The 18 classroom buildings are 24x40; the library, faculty offices and rest rooms are 24x32.

This is another example of the way plywood components can provide simple, good-looking structures

in a hurry. But they're also versatile enough to solve sophisticated design problems involving unusual shapes such as curved roofs, folded plates and space planes. For more information on plywood components and other plywood building systems, send the coupon

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BOOKS

The Hidden Dimension. Edward T. Hall. Garden City, New York: Doubleday, 1966, 201 pp. \$4.95

The design and proper use of space are important issues in architecture, and therefore anthropologist Hall's writings about the psychological meanings of space should be of special interest to architects. His newest book concentrates on examining the influence of space on human behavior.

The ideas Hall presents are based both on other researchers' studies of animals and man, and on the author's own observation



and field work in many cultures. He gives particular attention to the factors that determine how much space people feel they need, as well as to the ways in which different kinds and amounts of space communicate meanings to people. An indication of the interest that many architects have begun to take in the ideas of Hall and other behavioral scientists, as applied to architecture, is the enthusiastic reception given Hall when he addressed the AIA convention in Miami in 1963.

The materials assembled for readers of *The Hidden Dimension* provide a fascinating continuation of ideas expressed in Hall's articles and talks, and in his earlier book *The Silent Language* (1959). The latter dealt with the problem of communicating effectively with other people, especially people of other cultures. It emphasized that the spoken language is only one means of communication and that people get messages across to each other in many ways that do not involve words. Often these silent messages, unknown to the speaker, are discordant with the meaning he is trying to communicate verbally. This causes confusion in the message system, leading frequently to misunderstanding, frustration and bad feeling.

Hall points out, in both his books, that the responses of people to nonverbalized messages occur within the integrating framework of their culture. Thus, the underlying theme of each is "the structure of experience as it is molded by culture . . . those deep, common, unstated experiences which members of a given culture share . . . and which form the backdrop against which all other events are judged." Man's spatial behavior, perceptions and preferences form a silent language, which typically is one of hidden dimensions of a culture. Each culture has a language of space and certain conventions for the use of space. The language of space powerfully influences man's behavior, at both conscious and unconscious levels. But until recently these spatial perceptions and preferences, and the reasons for them, have been little studied.

In his writings, Hall is concerned both with the professional reader for whom a specific knowledge of human behavior is invaluable and with the layman reader who wishes to understand more of the world around him. He expresses the hope that his formulations about space will furnish some practical guidelines to architects and city planners.

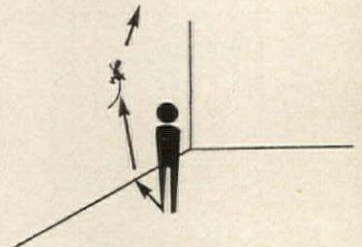
There are perhaps two main reasons why the ideas expressed in his latest book are of importance to architects. First, Hall has made a sustained effort to show the applicability of his thinking to architectural problems. Beginning with studies of rats living in an overcrowded situation, he has shown, for example, that the same breakdown of behavior that occurs in a rat colony can also be found in humans, when they are subjected to excessively crowded living conditions. Thus the architecturally oriented reader will find a useful translation of research studies into his own terms. A second reason, which accounts for the interest of this book to architects, is that they themselves are realizing more and more that social scientists, who are concerned with the relationship between space and human behavior, can provide guidelines which will help architects respond more sensitively to human needs.

Hall raises many interesting questions about space, and in the course of his book he suggests

some answers. One question that he asks is how space may be effectively utilized, especially nowadays when there is a decreasing amount of free space per person. He also asks how space can be designed so it communicates what one wants it to communicate. For example, how can a business office, embassy or urban renewal project be designed so it communicates messages and feelings, both to users and viewers of the building, that are consistent with its purpose?

Because of biological similarities between animals and man, Hall begins with a description of several studies of how animals utilize space, including studies which document the effects of overcrowding on animal behavior. Territoriality is an important concept here. One of these studies consists of Calhoun's experiments, in which rats were deliberately overcrowded in pens until gross distortions of behavior occurred. Calhoun invented the term "behavioral sink" to describe the behavioral outcome of collecting animals together in unusually great numbers. Calhoun explains, "The unhealthy connotations of the term are not accidental; a behavioral sink does act to aggravate all forms of pathology that can be found within a group."

Hall next discusses how man perceives space not only through his eyes but also through his ears, nose, skin and muscles. People thus respond to space complexly; in terms of a combination of visual and auditory space, olfactory space, thermal space and tactile space. To point up the significance of auditory space, Hall describes the situation of a chair-



man of a committee who was very unpopular with the committee's members. An architect, hearing of the difficulty, suspected that part of the problem lay in the environment where the committee held its meetings. The meeting room was next to a busy

Continued on page 96

Precast concrete panels ... for the designer who wants to design



CREDITS: Salt Lake City Federal Building, Salt Lake City, Utah. Architect: Snedeker, Budd, Monroe and Associates, Salt Lake City. Engineers: Desert Architects and Engineers, Salt Lake City. General Contractor: Robert E. McKee General Contractor, Inc., Santa Fe, N. M. Panels by: Stylecrete, Inc., Salt Lake City.

TODAY'S ARCHITECTS have more freedom than ever before to really *design* a building. Two kinds of freedom.

One is the freedom you get from a client when he says—as he so often does today—“go!” The other freedom is equally important: it is the *release* that comes with the versatility of concrete. Now you can go because concrete permits it.

Precast concrete panels are a breeze in point. Design them. Sculpt

them. Color them. Let them make light and shadow work for you. That's what the architects did on the new Federal Building in Salt Lake City.

The entire exterior of this building above the second floor consists of over one thousand precast concrete panels made of Trinity White Cement and Rose Quartz aggregate. A truly spectacular effect . . . and as practical as it is handsome.

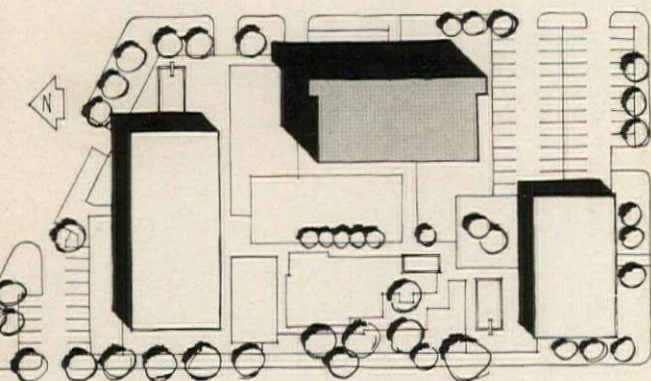
Trinity
White
PORTLAND
CEMENT



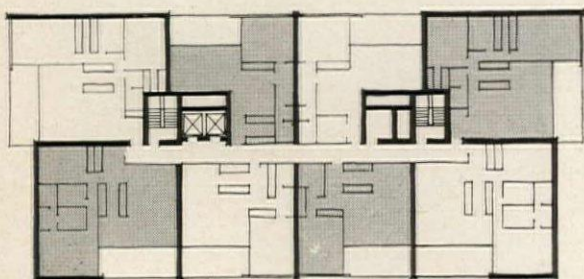
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THE CONTEMPORARY BRICK BEARING WALL

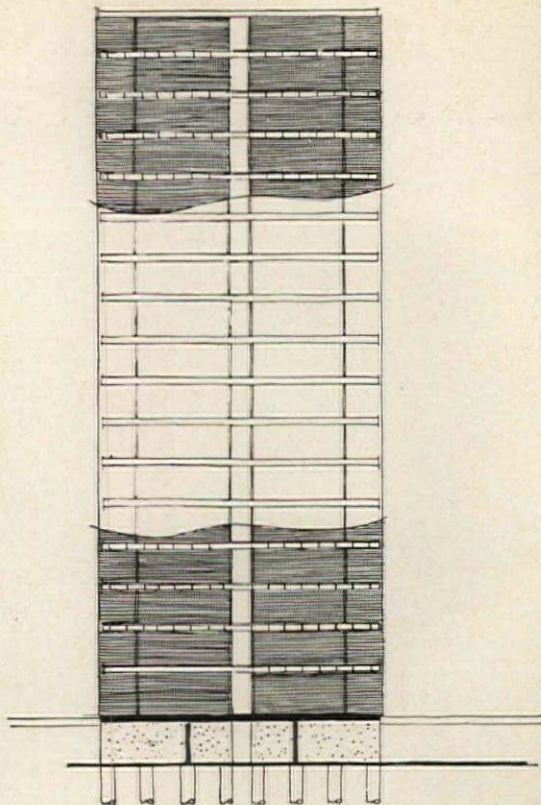
designed by E. A. Anderson, AIA,
and Peter Looms, AIA



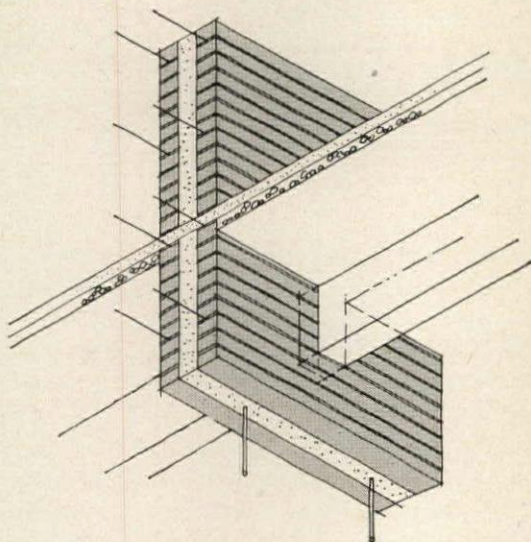
Park Mayfair East is the third building in Denver's only high-rise apartment complex. The first two buildings (one seven stories and the other eight stories high) are bearing wall structures. Park Mayfair East was originally designed as a 14-story structure with a steel frame. Bids on this original design showed that the steel structure, because of the additional fireproofing that was needed, would cost more than a masonry bearing wall structure. In addition, the owner's previous experience with bearing wall buildings showed the significant advantages of masonry bearing walls acting as sound barriers between apartments. Other desirable advantages which masonry bearing wall design offered were speed of construction and low maintenance.



Redesigned as a 17-story, masonry bearing wall structure, Park Mayfair East contains 130 apartment units. The structural system consists of 11-inch-thick (two wythes of brick plus a grouted cavity) reinforced brick masonry walls and a precast concrete floor system. Brick bearing and shear walls, shown in this floor plan in heavy lines, are arranged to provide natural resistance to lateral as well as vertical forces. Apartments are separated by 11-inch brick walls which provide exceptional sound control (sound resistance of 58 decibels).



A partial section of an interior bearing wall shows the building structure. The floor system is of precast, prestressed concrete slabs spanning between bearing walls. Spans range from 30 to 40 feet. The floor system is also an effective sound barrier (52 decibels). The bearing walls are founded on reinforced concrete girders supported on concrete piers drilled into bedrock.



This detail shows the precast and prestressed concrete slab framing into the bearing walls. Only the legs of the slabs bear on the walls, and the typical bearing distance is four inches. The 11-inch bearing walls have a full-grouted collar joint, with grout consisting of a mix of portland cement, sand, and pea gravel. Vertical and horizontal reinforcing is sized and spaced as vertical loading conditions dictate. The slabs, averaging eight feet in width, are finished with concrete topping. At intervals, this topping carries through the bearing wall and contains reinforcing to insure diaphragm action. The sand-finish, light-brown brick are laid in a running bond. ASTM Type S mortar, with a strength of 2,500 psi, is used.

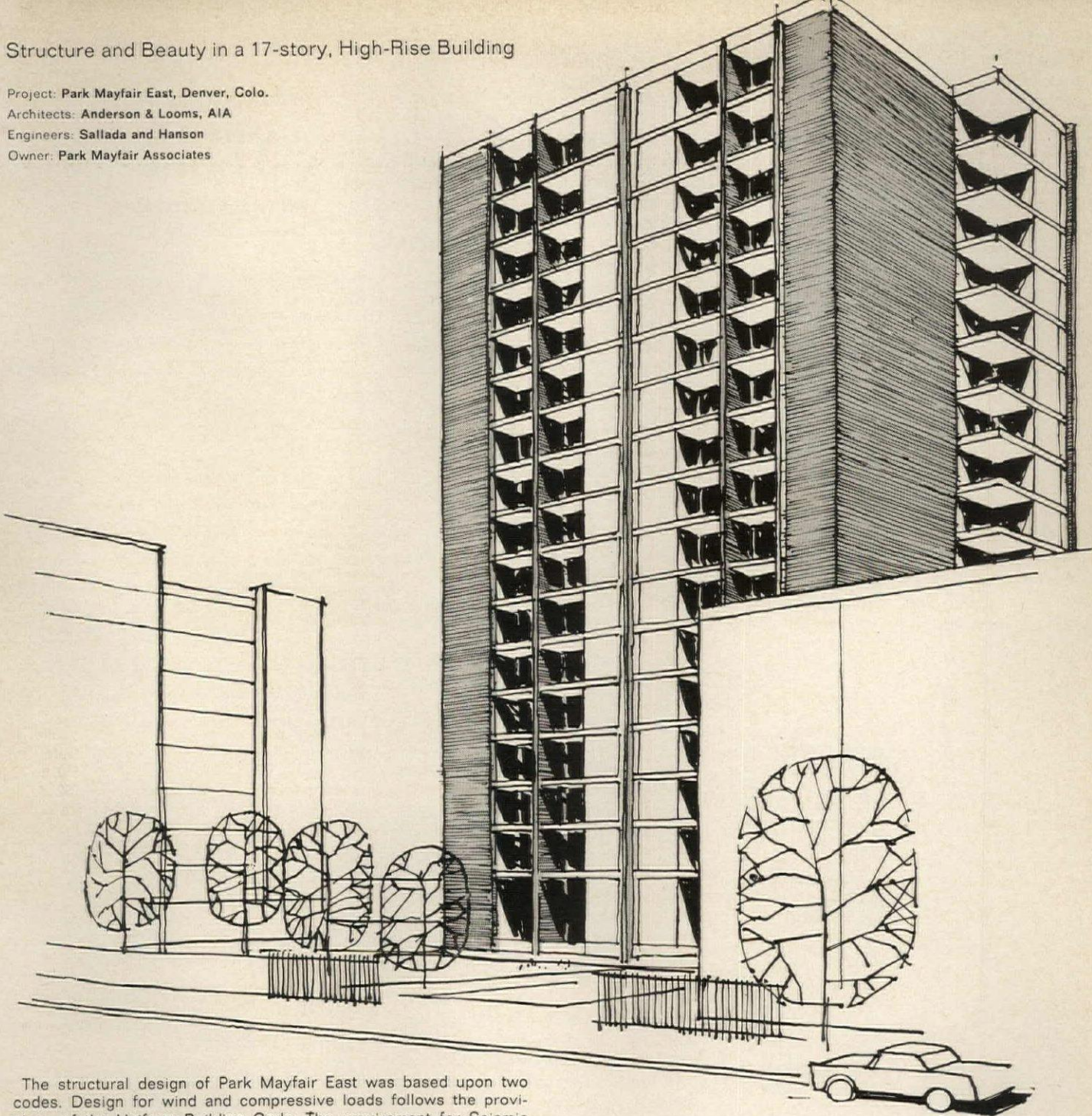
Structure and Beauty in a 17-story, High-Rise Building

Project: Park Mayfair East, Denver, Colo.

Architects: Anderson & Looms, AIA

Engineers: Sallada and Hanson

Owner: Park Mayfair Associates



The structural design of Park Mayfair East was based upon two codes. Design for wind and compressive loads follows the provisions of the Uniform Building Code. The requirement for Seismic Zone One earthquake design is included in the new Denver building code.

The total height of the building is 164½ feet. Modern brick bearing walls were a practical answer to the design problems of Park Mayfair East—including height, seismic zone requirements, and other strict code provisions.

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And
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scpi

For more technical data, circle 238 on information card

Books from page 92

street where traffic noises bouncing off the hard walls and floors made it difficult to hear. When this auditory interference was eliminated by suitable architectural modifications, the nervous strain and problems of hearing were eliminated, and complaints about the chairman practically ceased.

Both the notions of thermal space and tactile space are important for the architect because these help him determine the distinction between optimum space utilization and crowding. Hall shows that, in reality, a very poor measure of the space a person needs is given by the amount of space which a person's body occupies. The reason for this discrepancy is that the temperature, the activity the people are engaging in and other factors are strong modifiers of people's space needs. The process



by which people decide if they have enough space can be both interesting and unexpected for building planners. Hall cites the case of a woman who had occupied a number of different-sized offices and who found that each provided a different spatial experience which resulted in different responses on her part. It turned out that the way she judged whether the office was large enough depended on whether her chair hit the wall when she pushed it back from her desk. Thus, an architect, using the traditional square footage criterion, would have had a hard time providing her with the space she needed.

Hall has coined the term "proxemics" to refer to man's use of space—specifically, space as it

is derived from one's own culture. Thus, the four types of distances which he names and describes in detail may be thought of as cultural norms for the space required by certain types of activities. These norms are comparable in significance and utility to the physical standards, such as the height and width of doors, which are already common items in the architect's kit. As Hall describes them, the four spaces are: *intimate*, a distance for love-making, wrestling, comforting and protecting; *personal*, ranging from 18 inches to 4 feet, a distance appropriate for husband and wife together at a party but not for two strangers; *social*, ranging from 4 feet up to 12 feet, a distance for ordinary social interaction in a home or office; and *public* from 12 feet to about 25 feet, a distance often used by a single person in speaking to a small group, as with a teacher lecturing to a class of students, or a politician speaking to an audience.

It may be seen that these types of distances, which are based on observation of both animals and man, actually represent four zones of involvement. These in turn represent four types of territorial behavior, each of which depends on the relationship between the interacting creatures and their feelings and activities. Hall's classification of distances provides a new way of thinking about man's spatial requirements. In addition, it should not be forgotten that man often sees certain spaces about him as an extension of his personality.

Hall concludes by talking about the implications of his findings in dealing with the vast problems that architects and urban planners face in our growing cities, torn asunder by increasing chaos and dehumanization. He argues that many of our urban centers have developed lethal behavioral sinks and that city design is mostly sociofugal so that it drives people apart.

Clues to solutions have already been provided in the work of Hall and others. Will architects, and the society for whom they are design spokesmen, respond?

RICHARD MYRICK
BARBARA MARX*

Continued on page 98

*The reviewers are part of the Space and Learning Behavior Research Project at George Washington University.

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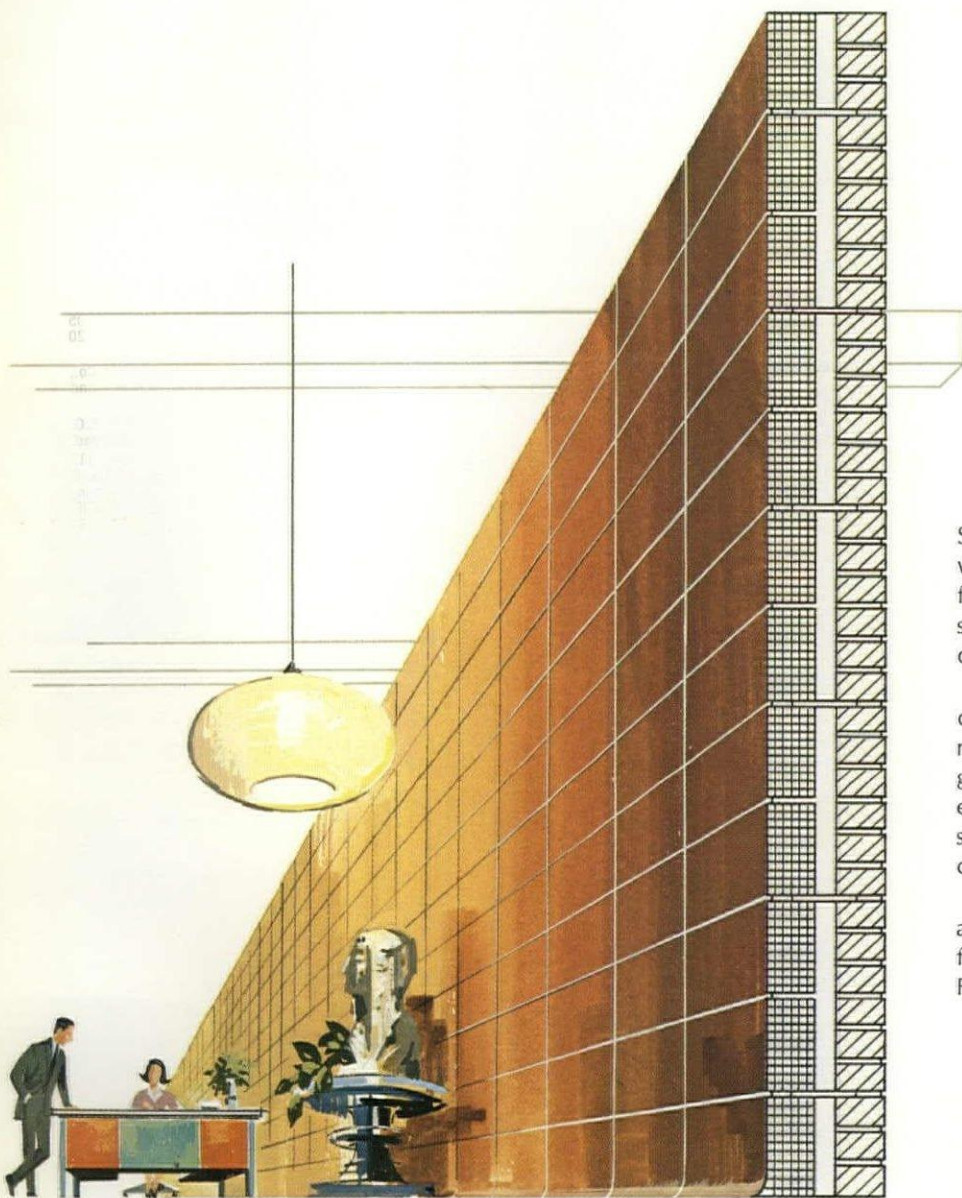
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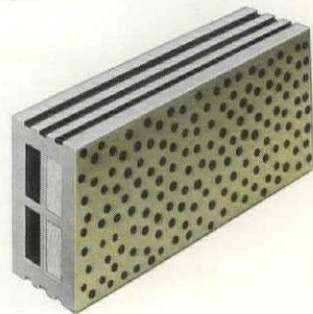
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Books from page 96

Man in Metropolis: A Book About the People and Prospects of a Metropolitan Region. Louis B. Schlivek. Garden City, New York: Doubleday, 1965. 432 pp. \$7.50

This book is a commendable endeavor to take *The Regional Plan of New York and Its Environs* of 1929 and the more recent *New York Metropolitan Region Study* organized by Harvard University Graduate School of Public Administration and to relate the research of these documents to real people who live in the region and take part in its processes. The author's object is "to illustrate how intimately the structure of the region affects the lives of those who live within its borders." In order to see how the structure of the region influences people and their performances, he studies a series of individuals in depth: a truck driver, a secretary and a garment manufacturer are among them.

His method was to use *Anatomy of a Metropolis* by Edgar M. Hoover and Raymond Vernon (the first of Harvard's nine-volume report) as his "Baedeker" in exploring the region's job market, and then to meet the people at their jobs, to follow them to work and home again through the transportation system, to observe their behavior and to become acquainted with them, their families and their neighborhoods.

The book is a reasonably successful endeavor to relate the structure of a place to people. And the whole idea is tremendously intriguing. Although the story of the lives of a few people who live within a great metropolitan region is interesting, Schlivek has not contributed any new insights into the urban process. He is a photographer and film maker and illustrates his book profusely. Although esthetically appealing, the photographs do not add a great deal to the text and somehow fail to translate either the story of the people or the processes of the New York metropolitan region.

Le Corbusier et son atelier rue de Sèvres 35; Oeuvre complète 1957-1965. Edited by W. Boesiger. New York: Wittenborn, 1965. 239 pp. \$18.50

When Le Corbusier was 42 years old, a young architect, Willy Boesiger, and his friend Oscar Stonorov, edited his *Oeuvre complète 1910-1929*, which was published by Hans Girsberger in Zurich. So prolific and of such genius was Le

Corbusier that seven volumes have been required to bring his work up to 1965. It is almost impossible to believe that one man could accomplish so much. The seventh volume, now published, includes such diverse projects as Chandigarh, Harvard's Visual Arts Center and the Monastery Sainte-Marie-de-la-Tourette at Eveux.

Le Corbusier once said of this series, "I had determined the contents of the books: there was to be no flattery, no literary explosion, nothing but flawless documentation." And so the series has continued. Happily, however, this seventh and last volume includes a tribute written by Niemeyer in 1963, two years before the death of Le Corbusier. Niemeyer says, "What an untiring struggle to maintain a work which is already almost no longer his but the patrimony of all humanity!" These seven volumes afford an amazing record of an amazing man—"Le Corbusier whose work has surpassed the frontiers of Europe to invade America, Asia, Africa and the Orient with the irresistible force of his genius."

An Introduction to Parish Church Architecture, AD 600-1965. Thelma M. Nye. London: Batsford, 1965. 111 pp. \$3.75

The characteristic features in style and construction of Medieval, Renaissance, Georgian, Victorian and 20th century English parish churches are demonstrated in this little book with nearly 200 specially prepared drawings and accompanying lucid factual text. The book bears out that form follows function in that liturgical changes are reflected in the architecture. It also indicates that every so-called "style" is a transition from its predecessor and a transition to its successor.

An Introduction to English Architecture. Frank Hoar. London: Evans Brothers, 1964. 255 pp. 35 shillings

The author, a practicing architect and lecturer at the University of London, is also well known for his drawings and cartoons, some of the latter having appeared in *Punch* and other journals under the name Acanthus. He brings his talents—knowledge of subject matter, ability to write lucid prose and drawing skill—together in this volume, written and illustrated for the layman and the student of architecture. His purpose is to enable one

Continued on page 102

Temperature and Humidity Control Provided by Electric Heat Pump System Helps Preserve Library Books



ORANGE, CONNECTICUT—The choice of a space conditioning system is particularly important in the design of a library building, says architect Eben Woolley, because book bindings can be seriously damaged when the climate indoors is too hot or too cold, too dry or too humid. A system that provides for the proper control of temperature and humidity, so vital to the preservation of books, will, of course, also provide a superior level of comfort for the occupants of the building, the architect points out.

Thus, in designing the Public Library in Orange, Connecticut, Mr. Woolley, in collaboration with consulting engineer Frank DeFelice, made a thorough study of various types of space conditioning systems—flame fuel as well as electric. As a result of their study, the architect and engineer recommended that an electric heating-cooling system be installed because an electric system would

automatically provide the desired temperature and humidity control. The library's building committee approved their recommendation and a ten-ton, air-to-air split electric heat pump system with 45 kw supplemental resistance heat was selected.

The two-story building of Colonial brick is located next door to the Town Hall and across from the Village Green. The heat pump is installed in a partial basement and the first and second floors are given over to library facilities. To allow maximum wall space for book shelves, the ductwork was installed through the window sills.

Over the years the library has become so popular with residents of the town that expansion of the building is now being contemplated.

Is he satisfied with the recommendation he made back in 1961? "I must be," says architect Woolley, "because I have since converted a 200-year old house I own in Vermont to electric heat."

SEE REVERSE SIDE FOR DETAIL INFORMATION

1 CATEGORY OF STRUCTURE:

Public Library

2 GENERAL DESCRIPTION:

Area: 3,600 sq ft
 Volume: 32,300 cu ft
 Number of floors: two
 Types of rooms: library facilities, office, meeting room

3 CONSTRUCTION DETAILS:

Glass: single
 Exterior walls: 4" brick, 6" block with 1" fiberglass (R/4) in 2" cavity, 3/8" fiberglass batts (R/13) in dormer walls. U-factor: .14
 Roof or ceilings: asbestos shingled roof. Ceiling has 6" fiberglass batts (R/24). U-factor .039
 Floors: partial crawl space plus slab; 6" mineral wool insulation in crawl space and 2" styro-foam perimeter.
 Gross exposed wall area: 2,485 sq ft
 Glass area: 433 sq ft

4 ENVIRONMENTAL DESIGN CONDITIONS:

Heating:
 Heat loss Btuh: 85,000
 Normal degree days: 6,000
 Ventilation requirements: 800 cfm
 Design conditions: 0°F outdoors; 70F indoors
Cooling:
 Heat gain Btuh: 44,500
 Ventilation requirements: 800 cfm
 Design conditions: 75F dbt, 95F wbt outdoors; 75F, 40% rh indoors

5 LIGHTING:

Levels in footcandles: 100
 Levels in watts/sq ft: 3.6
 Type: fluorescent and incandescent

6 HEATING AND COOLING SYSTEM:

One ten-ton electric air-to-air split heat pump with 45 kw three stage supplemental resistance heat.

7 ELECTRICAL SERVICE:

Type: underground
 Transformer connection: wye
 Voltages: 120/208v
 Metering: secondary

8 CONNECTED LOADS:

Heating & Cooling (10tons)	55 kw
Lighting	13 kw
Water Heating	1 kw
TOTAL	69 kw

9 INSTALLED COST:*

General Work (including plumbing & mechanical)	\$42,000	\$11.67/sq ft
Electrical (Total)	13,000	3.61/sq ft
TOTAL	\$55,000	\$15.28/sq ft

*Building was completed November 1961

10 HOURS AND METHODS OF OPERATION:

Monday through Friday 9 a.m. to 9 p.m.; Saturday 9 a.m. to 5 p.m.

11 OPERATING COST:

Period: 6/13/64 through 6/11/65
 Actual degree days: 5,945
 Actual cost: \$1,380.24*
 Actual kwh: 55,460*
 Ave. cost per kwh: 2.49 cents*
 *For total electrical usage. Of the above figures, 36,398 kwh were for heating and cooling at a cost of \$655.16 at 1.8 cents per kwh.

Billing Date	Demand	kwh*	Amount*
7/13/64	19	3,000	\$ 82.69
8/11/64	22	2,820	78.19
9/11/64	21	2,820	79.45
10/9/64	21	2,760	81.63
11/10/64	20	3,600	99.27
12/10/64	39	7,980	176.11
1/12/65	31	6,920	157.75
2/10/65	26	7,680	171.21
3/12/65	32	6,360	148.95
4/12/65	21	5,280	127.75
5/12/65	21	3,360	92.43
6/11/65	21	2,880	84.81
TOTAL		55,460	\$1,380.24

*For total electrical usage.

12 UNUSUAL FEATURES:

Duct work was installed through the window sills to allow maximum wall space for book shelves.

13 REASONS FOR SELECTING ELECTRIC HEAT:

The library building committee wanted a modern heating-cooling system to protect the library's books and provide maximum comfort for library visitors. The cleanliness, ease of operation and flexibility of the electric system were added reasons for its selection.

14 PERSONNEL:

Owner: Orange Public Library, Inc.
 Architect: Eben Woolley, AIA
 Consulting Engineer: Frank DeFelice
 General Contractor: Fred Smith
 Electrical Contractor: Joseph McNellis & Sons
 Utility: United Illuminating Company

15 PREPARED BY:

George E. Carter, Commercial Sales Manager,
 United Illuminating Company

16 VERIFIED BY:

Eben B. Woolley

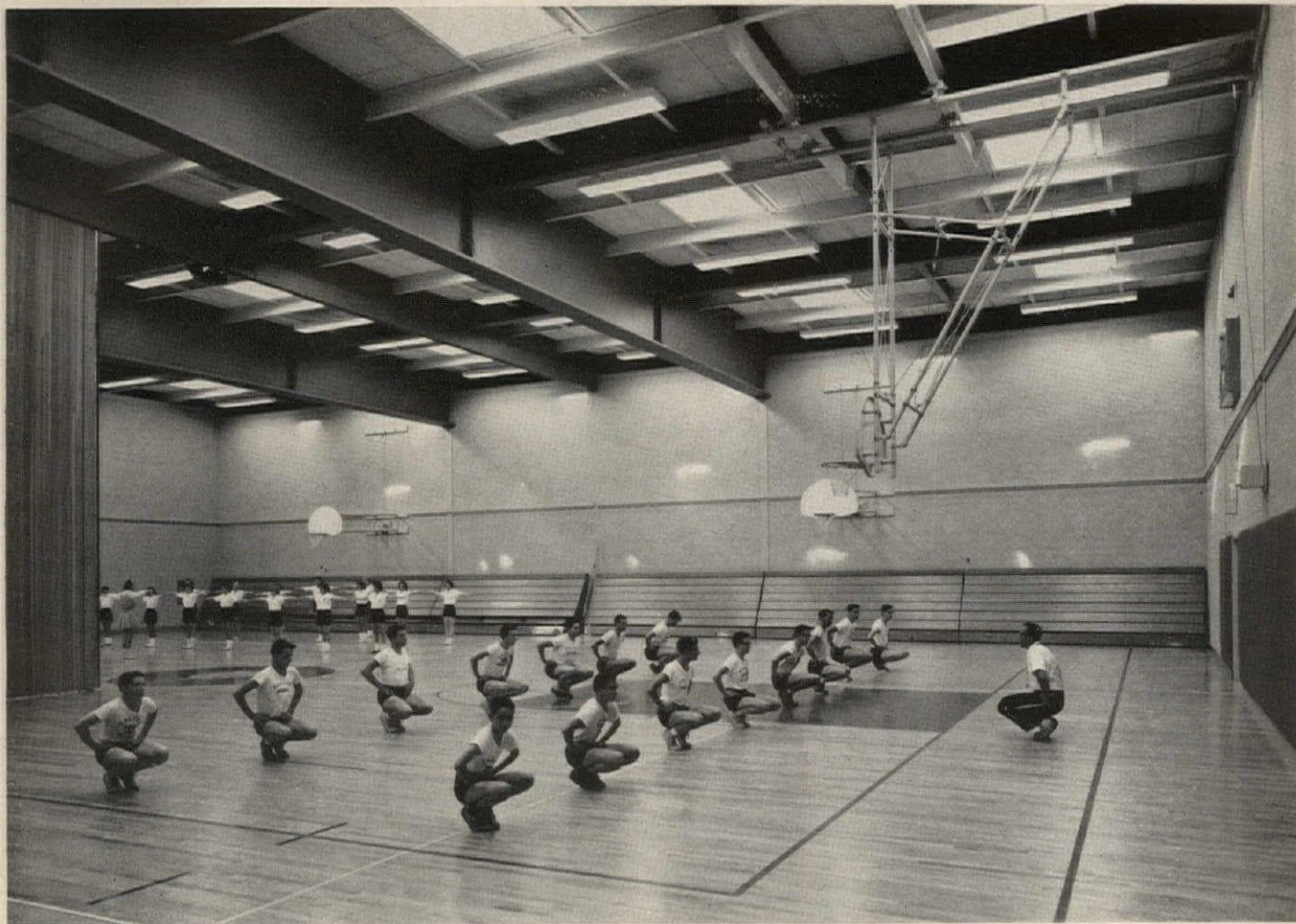
Eben Woolley, AIA

The Consulting Engineers Council USA, has confirmed the above categories of information as being adequate to provide a comprehensive evaluation of the building project reviewed.

NOTICE: This is one of a series of case histories of buildings in all structural categories. If you are an architect or consulting engineer; an architectural or engineering student; an educator; a government employee in the struc-

tural field; a builder or owner, you may receive the complete series free by filling out the strip coupon at the left and mailing it to EHA. If you are not in one of the above categories, you may receive the series at nominal cost.

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Books from page 98

to assess and judge the rapidly changing contemporary architecture against the background of varying styles of past centuries.

Hoar hopes that with increasing interest by the public there will develop a keener appreciation of architecture. He wants a "new architecture" that is as essentially English in character as the yeoman's cottage of Tudor times, and blessed with a beauty and a balance that reflect the spirit of what is still one of the most fortunate and envied countries in the world." Indeed, few countries can equal England's "treasure house of fine buildings," and its history provides interesting reading.

World Architecture Two. John Donat, editor. New York: Viking, 1965. 218 pp. \$15

Those who liked *World Architecture One* will be even more pleased with its successor. It presents 40 exceptionally vital buildings, projects and planning ideas. The text is stimulating and extremely quotable—particularly Macy Du Bois' comments on Canadian architecture, David Mackay's "The Rape of Spain," Esko Lehesmaa's remarks on Finland and A. d'Alpoim Guedes' pithy notes on "flabby deaf and dumb buildings" in the section on South Africa. Ten photographs are well executed and lavish.

World Architecture Two maintains the same basic form as its predecessor, but Donat states that the editorial policy is more stringent in order to "show more about less." Countries represented in the second issue, which were not in the first, include Ireland, the USSR and South Africa. Among the countries omitted are Mexico, Brazil, Israel, the Netherlands. There is no comment by the editor as to criteria for inclusion or exclusion. We are only told that 30 countries are now represented by contributing editors, and about half will publish contributions in each issue.

Andrea Palladio. With a new introduction by Adolf K. Placzek. N.Y.: Dover, 1965. 110 pp. \$10

In recent months a large number of the architectural classics have been offered in reprint facsimile. The present volume makes available Isaac Ware's translation of Palladio's *The Four Books of Architecture*, one of the most influential of these classics. Originally issued in 1738 with the intent of offering better reproductions of the original illustrations than those in

the earlier translation by Giacomo Leoni, it has been relatively less accessible, undoubtedly due in part to the priority of the other work.

The present facsimile is accompanied by an introduction by Placzek, Avery librarian, who comments briefly on the importance of Palladio's work and the attributes of this particular version.

The Galveston That Was. Howard Barnstone. New York: Macmillan; Houston: Museum of Fine Arts, 1966. 224 pp. \$12.95

Once Galveston was the biggest city in Texas and, probably more than any other Southern city, enjoyed a post-Civil War prosperity. Whatever happened to stunt its growth, the bright prospects which seemed so shining have faded, and its once glorious array of 19th century architecture is now in sad decline and soon will be erased forever.

Fortunately, the leadership of the Museum of Fine Arts in Houston decided that it should make a record of the architectural achievements of Galveston before this expression of past accomplishments was wiped out and forgotten. To achieve this purpose the brilliant talents of photographers Henri Cartier-Bresson and Ezra Stoller were obtained, and their documentation is stunning. The text by architect Howard Barnstone is a worthy accompaniment.

College Hill: A Photographic Study of Brown University in Its Two Hundredth Year. William Gerold. Providence, R. I.: Brown University Press, 1965. 141 pp. \$5

Here is a photographic essay of Brown University's physical being for nearly 200 years. Good and bad, old and new, are combined to make a compelling study of one institution's architectural heritage. The photographs by William Gerold are stunning. Carl Bridenbaugh contributes a breezy and pleasantly sentimental introduction.

Architecture Worth Saving in Rensselaer County, New York. Bernd Foerster. Troy, N. Y.: Rensselaer Polytechnic Institute, 1965. 207 pp. Price not given

Published with the support of the New York State Council on the Arts, this is the second architectural conservation study of a New York county made under its auspices.

This follows closely the format of the first volume on Onondaga County and should prove equally successful. Although such a catalog is an important first step towards the preservation of a community's architectural heritage, it is but a first step, for there are many other problems to be solved. But such a worthy presentation should go far toward stimulating an interest in and desire to solve these other problems.

Furniture in Britain Today. Dennis and Barbara Young. New York: George Wittenborn, 1964. (unpaged) \$10.50

This book's purpose is to present a comprehensive survey of some of the best furniture produced in Great Britain over the past three years. The authors find that there are Italian, Scandinavian and American influences, and yet throughout there will be found interesting new furniture which is essentially British. The text is in English, French and German. There are copious illustrations.

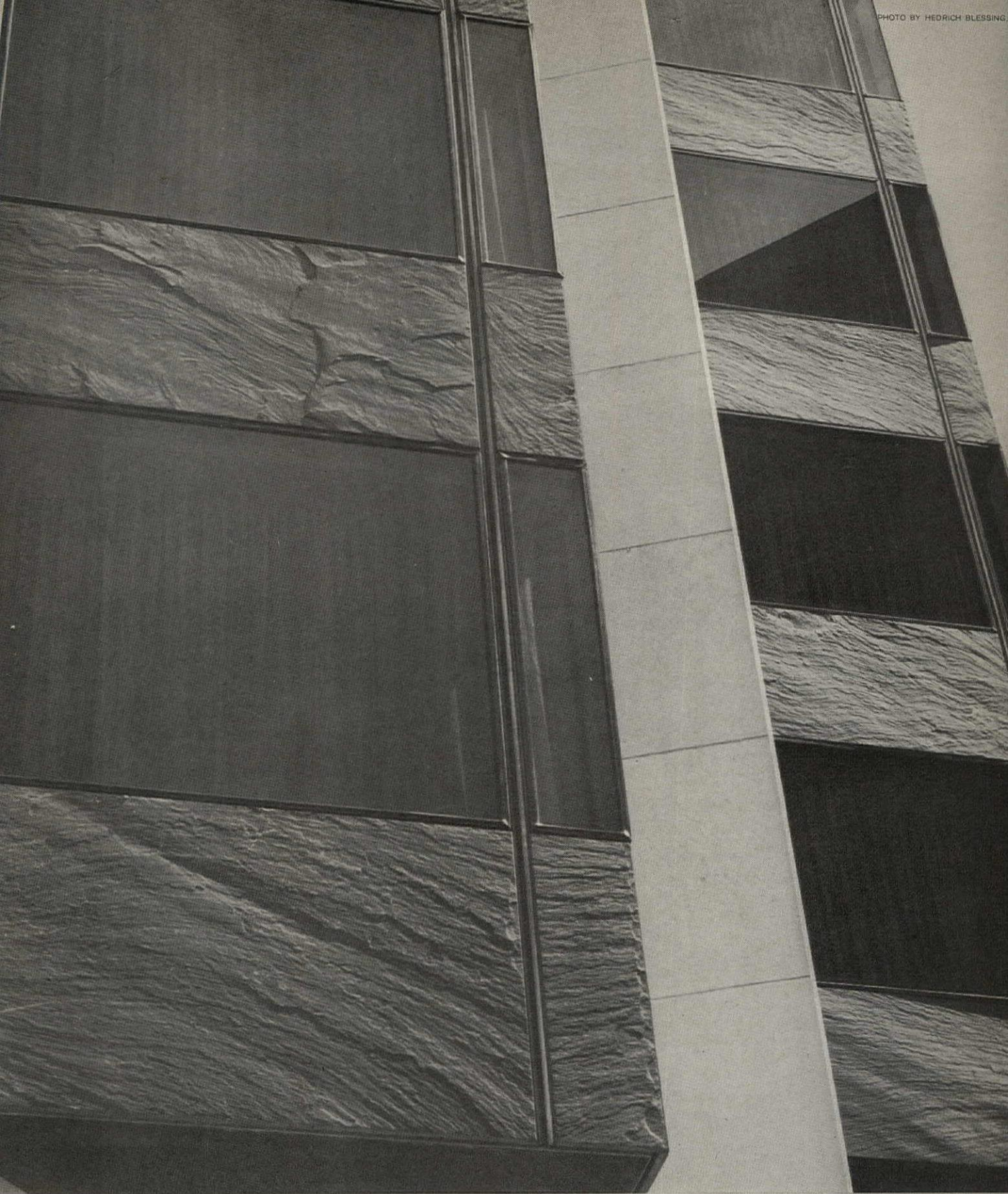
A History of Classical Architecture. Bruce Allsopp. New York: Pitman, 1965. 215 pp. \$10.95

The author is an architect, and an architect's view of architecture is different from that of an art historian or an archaeologist. It is not surprising, then, that this book begins with a chapter on the significance of columns. Allsopp is keenly interested in architectural traditions, whether he is discussing a Greek temple or a Roman house. This story of classical architecture from Minoan architecture, to the domed mosques of Islam is exceedingly readable, filled with insights into Greek and Roman life and thought as reflected in their architectural expressions.

La Arquitectura Colonial en Venezuela. Graziano Gasparini. Caracas: Ediciones Armitano (American distributor: Wittenborn, New York) 1965. 379 pp. \$30

The author, an architect and member of the faculty of architecture and urban planning, Universidad Central de Venezuela, is well known as an art historian and is the author of a number of books on pre-Columbian and colonial architecture in South America. His most recent work, here presented, is a comprehensive survey of colo-

Continued on page 106



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CALENDAR

National

- Aug. 14-18:** American Institute of Planners National Conference, Hilton Hotel, Portland, Ore.
- Aug. 13-14:** Society for College and University Planning First Conference, Portland State College, Portland, Ore.
- Sept. 25-30:** Prestressed Concrete Institute Annual Convention, Rice Hotel, Houston
- Sept. 27-30:** Producers' Council Annual Meeting, Waldorf-Astoria, New York City

AIA Regional and State Conventions

- Sept. 8-10:** New Jersey Society of Architects, Essex and Sussex Hotel, Spring Lake
- Sept. 14-16:** North Central States Region, Radisson Hotel, Minneapolis
- Sept. 29-Oct. 1:** Illinois Council, Ramada Inn, Campaign
- Oct. 5-8:** Florida Association of Architects, Deauville Hotel, Miami Beach
- Oct. 6-9:** California Council, Monterey County Fair Grounds, Monterey; East-Central Region, Brown Hotel, Louisville, Ky.; New York State Association of Architects, Whiteface Inn, Lake Placid
- Oct. 7-9:** New England Region, Sturbridge Village, Mass.
- Oct. 12-15:** Western Mountain Region, La Fonda Hotel, Santa Fe, N.M.
- Oct. 13-15:** Architects Society of Ohio, Carrousel Inn, Cincinnati; Louisiana Architects Association, Jack Tar Capitol House Hotel, Baton Rouge
- Oct. 20-22:** Pennsylvania Society of Architects, Hotel Hershey, Hershey
- Oct. 24-26:** Northwest Region, Benjamin Franklin Hotel, Seattle
- Oct. 27-29:** South Atlantic Region, Queen Charlotte Hotel, Charlotte, N.C.
- Nov. 2-4:** Texas Society of Architects, Texas Hotel, Fort Worth
- Nov. 3-5:** Central States Region, Lassen Hotel, Wichita, Kan.

AIA Committees and Related Meetings

(At the Octagon unless otherwise noted)

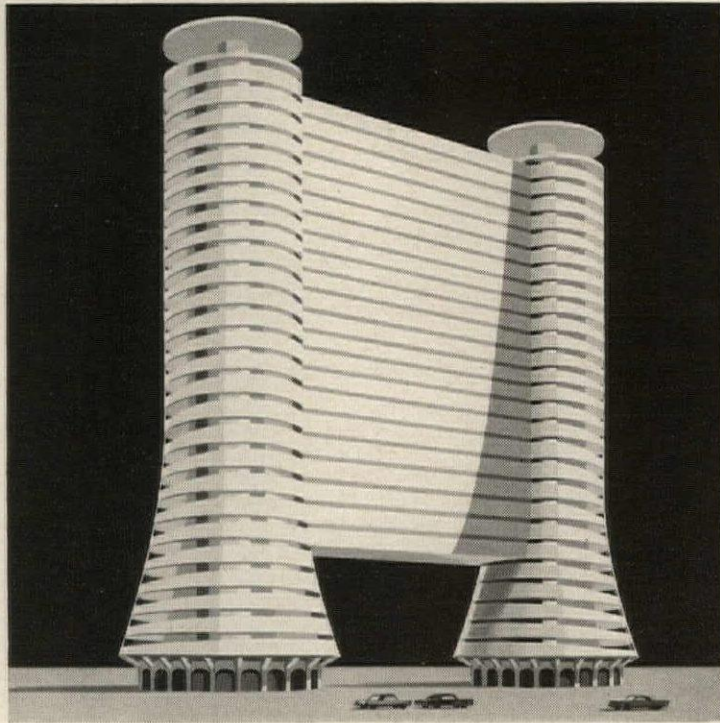
- Aug. 13:** Building Construction Coordinating, Greenbrier, W.Va.
- Aug. 18-20:** Documents Review
- Sept. 9-10:** Building Construction
- Sept. 16:** Interprofessional Commission on Environmental Design
- Sept. 16-17:** Specifications
- Sept. 19-20:** Health Environment
- Sept. 19:** National Construction Industry Arbitration Committee, New York
- Sept. 26-28:** Board of Directors, the Abbey, Fontana, Wis.

International

- Sept. 21-23:** International Conference on Space Structures, London

Competition

Two-stage competition for \$22.5 million Birmingham, Ala., civic center, open to US architects who have been licensed to practice at least four years. Program available from William A. Briggs AIA, professional adviser, Box 16038, Richmond, Va., 23222. Cost: \$20. Registration closes Sept. 24 and postmark date is Nov. 1. ■



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LETTERS

Applause on Two Counts

EDITOR:

To the confused environment in which we all work, the AIA JOURNAL is making a refreshing contribution with its clarity, dignity and direction.

On another level, the Architects Information Service is further evidence of a good idea well executed.

JOHN W. GRIFALCONI, AIA
Director

Neighborhood Environment
Program, Syracuse University
Syracuse, N.Y.

Response from the Redwoods

EDITOR:

We have read with interest Ansel Adams' opinions on the "Conservation of Man" in your June issue. While we applaud his art sense, we do take basic issue with a statement regarding the people of the redwood region of north coastal California.

Mr. Adams says, "The people of the redwood country howl down the proposed redwood national park on the basis of job loss. Yet, at the present rate of cutting, there will be few jobs remaining within a decade, and the land will be devastated for all time."

In the first instance, the people of the area are not against a park or responsible park expansion; indeed, they have advanced, in addition, their own plans for park and recreation growth, the two not being the same thing. Redwood ecologists and foresters have disavowed the claims made by Mr. Adams and others.

Recently Francis H. Raymond, chief of California's Division of Forestry and responsible for 38 million acres of land, made this statement:

"Recently some dire predictions have been released by proponents of more and larger redwood parks about the economy of this county [Humboldt]. I cannot subscribe to these pessimistic claims that it soon faces violent economic and social adjustment because of overly rapid depletion of an alleged acute timber supply. Rather, because of its vast timberlands, high forest growth potential and enlightened and improved management brought about by modern tree farming, I firmly

believe that Humboldt has excellent prospects of enjoying a healthy and substantial timber economy in perpetuity."

Actually, the people of this area are neither dogs nor wolves nor a mob as Mr. Adams suggests with his word "howl," but they are Americans who ask in reasonable terms that facts be substituted for emotionalism. Surely architects, who understand the meaning of structure and the beauty of truth, can appreciate this.

DON CAVE
Chairman, Redwood Park
and Recreation Committee
Eureka, Calif.

Transit Section Wins Favor

EDITOR:

The special section on "Cities on the Move" in May with its focus on urban transportation was both a timely service and an excellent report.

My committee work for our local chapter on urban development and rapid transit was given new insight and support in an authoritative and concise review of the problems of the future. My classes in city planning and transportation also found this to be useful as a summation of the total scope of worldwide attention and the encouragement of new thinking for a problem of this immense complex nature.

CARL A. NEIDENGARD
Professor of Engineering
California State College
Long Beach, Calif.

EDITOR:

I noted with considerable interest the very thorough treatment mass transportation received in the May issue.

Also, I can't pass up this opportunity to say the JOURNAL stands out like a beacon in the fog of architectural journalism.

C. H. MAC MAHON JR., AIA
Bloomfield Hills, Mich.

EDITOR:

Congratulations on your May issue. It is extremely important to keep this subject in the air, and you did a fine job with it.

LOUIS J. BAKANOWSKY
Cambridge Seven Associates, Inc.
Cambridge, Mass.

PHOTO CREDITS: Library Bureau, Division of Sperry Rand Corp.—cover adaptation; Mel Chamowitz—p. 41; Hugh N. Stratford—p. 45-46; Manley—p. 48; Julius Shulman—p. 49, 54 (top right); Karl H. Riek—p. 50; Maris-Ezra Stoller Associates—p. 51 (top); Gil Amiaga—p. 51 (bottom); Marvin Rand—p. 54 (left); Louis Reems—p. 55; David Hirsch—p. 64; David Fitch—p. 65.

Books from page 102

nial architecture in Venezuela, including civil, religious and military structures. The book is profusely illustrated with really splendid photographs, many in color, made by Gasparini.

Jacques Boyceau and the French Formal Garden. Franklin H. Hazlehurst. Athens: University of Georgia Press, 1966. 137 pp. \$7.50

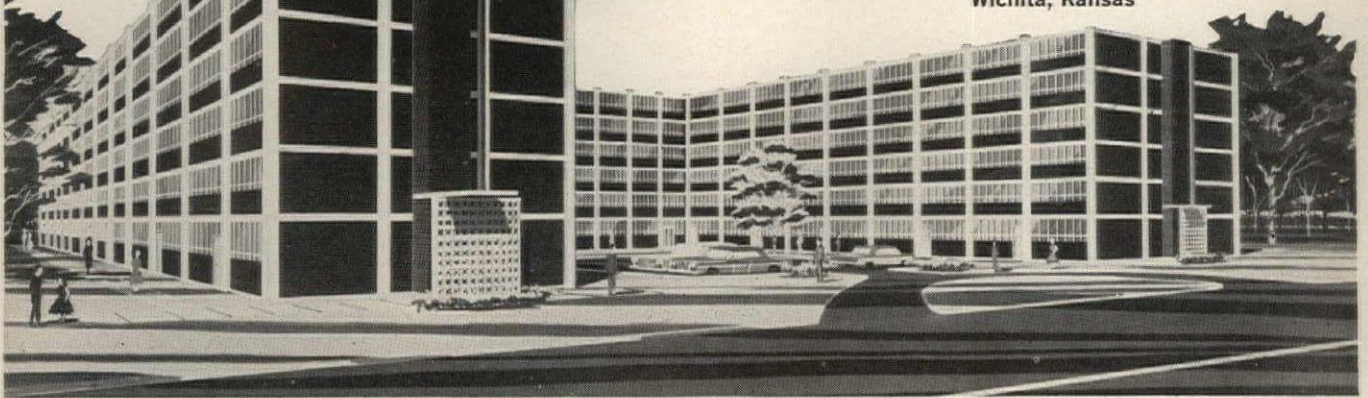
Recently several publications have appeared dealing with André Le Nôtre, Louis XIV's superb designer of gardens. According to this book, Le Nôtre owes a great debt to his predecessor, Jacques Boyceau de la Barauderie, who first established the essential rules for formal garden art in France in the 17th century and made of landscape gardening an honored profession.

Before Boyceau, gardening theory was concerned with its utilitarian aspects; he for the first time in France approached gardening as an art form. His highly intellectual treatise, *Traité du Jardinage*, published posthumously in 1638, is at the same time philosophical, practical and esthetic in approach. Hazlehurst's concern is with the origins of the French garden in the 17th century, and he finds in Jacques Boyceau a vitally significant figure in the development of French garden art.

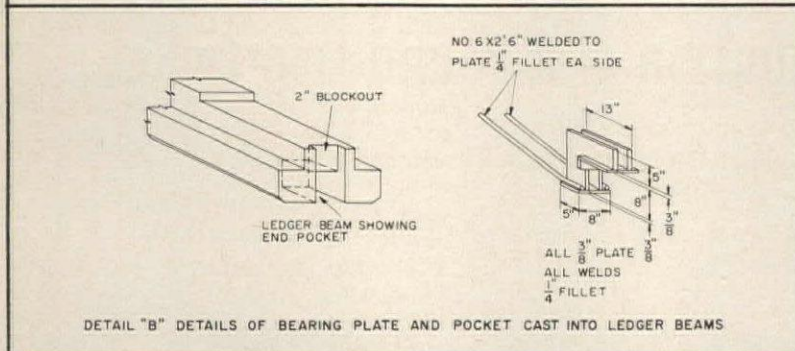
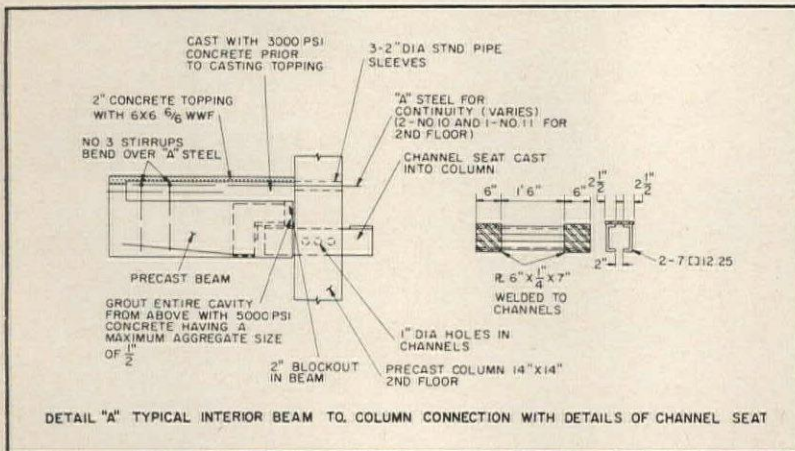
English Country Houses: Early Georgian, 1717-1760. Christopher Hussey. London: Country Life, Ltd., 1965. 258 pp. \$20.20

This volume is an enlarged and revised edition of Hussey's first volume of his trilogy on Georgian houses. The series *English Country Houses* was initiated in 1955 with the publication of the previous edition of this volume. The purpose is to show by specific houses, which could be regarded as still in use, the development of English domestic architecture. In the present volume 34 houses are considered. Since 1955 new evidence has been unearthed about some of the houses described, and this material is incorporated in the new edition, with a section added on Wilbury Park in Wiltshire, a revised introduction and new photographs. Certainly, Hussey can speak authoritatively on any aspect of Georgian domestic architecture. Sir John Summerson called the work "a classic" and "an impeccably good book." ■

Wheatshocker Hall, Wichita State University, Wichita, Kansas
 Designers: Einstein Associates, Skokie, Illinois
 Architect: Burke and Kingdon, Wichita, Kansas
 Owner and Contractor: University Housing Construction, Ltd.
 Project was a joint venture of the principals of S & L Engineering Co.,
 Glenview, Ill. and Seldin Construction Co., Omaha, Nebraska
 Consulting Engineer: Ross H. Bryan, Nashville, Tennessee
 Prestressed Concrete Fabricator: United Prestress Company,
 Wichita, Kansas



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Detail A shows an exterior 2nd floor column connection—two spandrel beams framing into an exterior column. The exposed channel seat will carry a floor girder. This pocket type connection (Detail B) provides quick erection and alignment with firm bearing. Since bearing is above the center of gravity of the beam, any tendency of the beam to rock or rotate is reduced. Standard sleeves of 2" dia. are cast into the column to permit the placing of continuity steel.

For this particular connection, two #6 and one #7 bars are required to carry the negative moment at the support. No welding is required and the grouted joint and in situ concrete provide a rigid, fire-resistant structure. In this application the compression resulting from the negative moment will prevent any spalling which might occur under the edge of the steel seats.

Originally designed in steel, Wheatshocker Hall was built with precast, prestressed concrete because the owner, who also was the contractor, determined that both time and money could be saved.

Only 52 working days were required to erect the complete structural system of this six-story, 172,000 sq. ft. dormitory, housing 900 students and 20 apartments for faculty and married students.

The structure is made up of 230 columns precast in three-story sections, and 720 ledger beams which span the columns and support 1600 Mono-Wing floor slabs. Each floor, composed of mono-wings, was covered with a 2" topping of poured-in-place structural concrete, reinforced with 6x6 6/6 welded wire fabric.

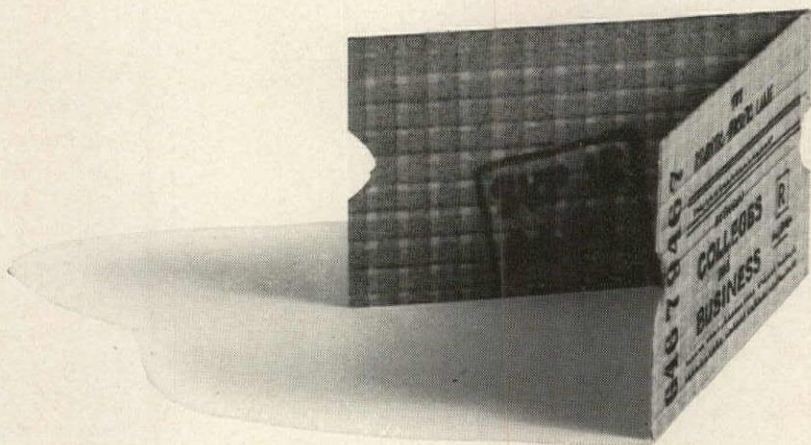
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