

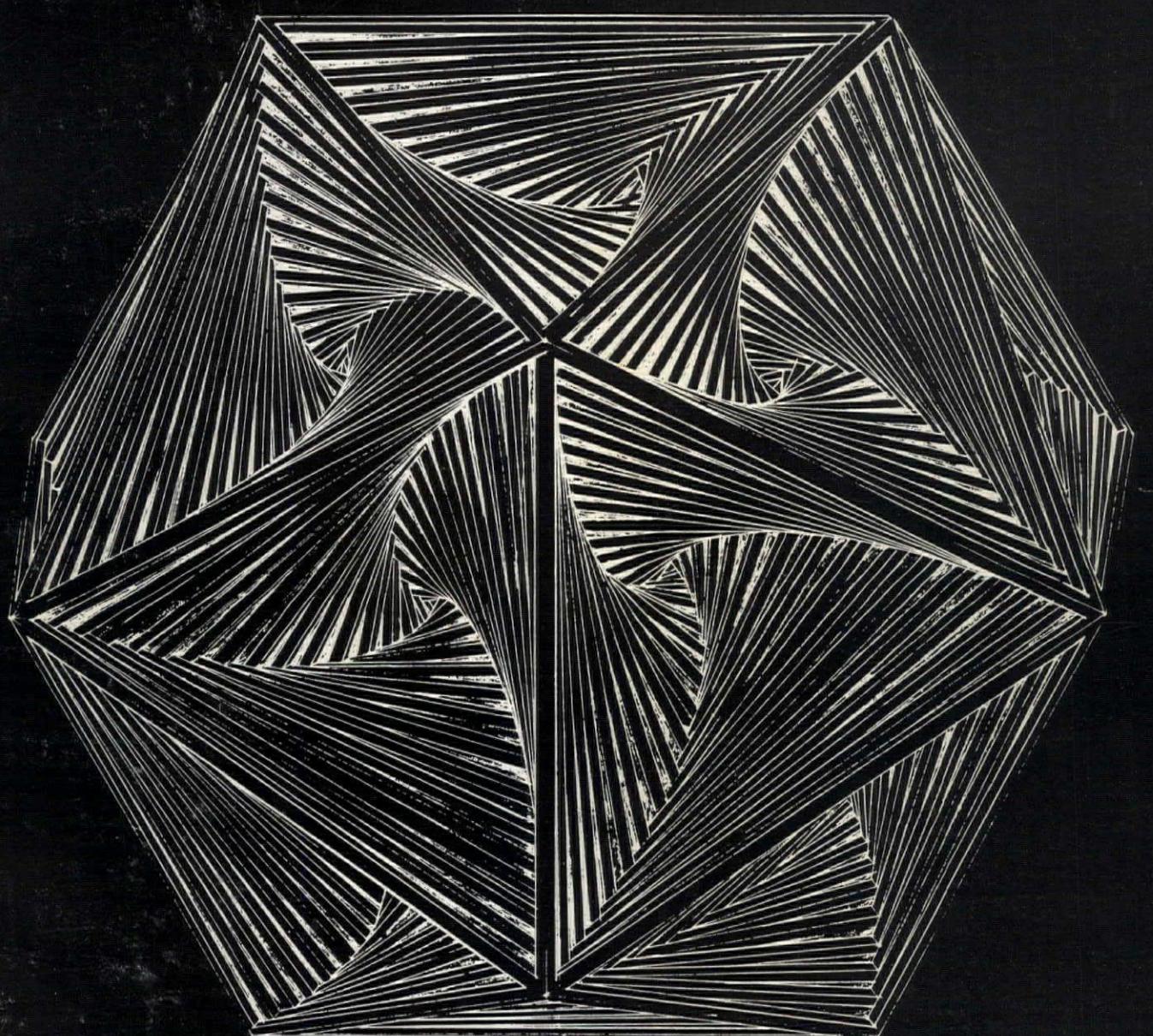


A · I · A

January 1965

Journal

1964 ROME PRIZE • MAN'S QUEST FOR IMAGERY IN THE CITY • DESIGN OF FINE WOODWORK





ST. THOMAS SCHOOL, Pointe Claire, Montreal, Canada. Marc Angers, Dufresne & Boulva, architects. Huge decorative panel over entrance is Ceramic Veneer in a carefully designed variety of sizes and colors. Spandrels on all elevations are faced with Ceramic Veneer units $21\frac{1}{2}'' \times 17\frac{3}{16}''$ in mottled divot green.



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JANUARY 1965

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- 23 **The AIA Headquarters Competition**—The concept submitted by the winning architects, Mitchell/Giurgola Associates
- 27 **The Meaningful City**—Denise Scott Brown explores modern man's search for personal symbolism in her illustrated exposition
- 32 **Rome Prize in Architecture**—A sampling from the portfolios of the three current winners reveals some provocative work
- 40 **Seattle's Art Commission**—Its short history, as told by Robert L. Durham FAIA, is a case study of architectural leadership
- 45 **Domesmanship**—With tongue in cheek and sketchbook in hand, M. R. Wolfe spoofs the academic in architecture
- 49 **Protestant Episcopal Church**—Seventeenth in a series of articles, this one by Martin Ray Young Jr., AIA, for the architect faced with planning a building for a faith other than his own
- 54 **Who Is Responsible for Safety?**—By relating his own code-writing experience, George Bain Cummings FAIA seeks an answer
- 56 **A Bitter Lesson in Vandalism**—Robert Zion ASLA packs a big message in this little essay on Penn Station
- 57 **"The Monumental Patrimony"**—Mr Preservation himself, Charles E. Peterson FAIA, gives a personal report on the Venice Congress
- 60 **Natural Light and the Museum of the Future**—Wilcomb E. Washburn, a curator at the Smithsonian, spells out some facts of life for anyone who designs (and visits) museums
- 65 **Design of Fine Woodwork**—In a straightforward manner, William T. Sutherland examines the use of wood in custom design
- 69 **Site Evaluation and the Soil Survey**—Architect John R. Quay tells his colleagues how to make the most of the soil map
- 6 **Editor's Page**—Some notes on our future with the President
- 8 **Executive Director's Memo**—Selling our product
- 10 **Octagon Observer**—News commentary from headquarters & afield
- 74 **Books**—Review of Gutkind's latest work, among others
- 78 **Letters**—Our readers have their say
- 81 **Calendar**—Dates and places for the profession to note
- 81 **Necrology**—Notices received at the Octagon during November

Cover: Study perspective for bronze sculpture, seven feet in diameter, for the plaza of the Alcoa Building in San Francisco, executed by Charles Perry (see 1964 Rome Prize, p 32)

LOOKING AHEAD TO FEBRUARY

Philadelphia City Hall: Monster or Masterpiece?

Few public buildings go up without acrimony, intrigue and political in-fighting. But the Daddy of them all is the famous City Hall upon which William Penn so serenely stands. In retrospect, the story of the agony and the ecstasy of its building is almost hilarious. Historian John Maass does the telling

Lessons in Regionalism from Indonesia

By studying the development of a contemporary architecture in an ancient culture exposed to twentieth century civilization, perhaps we can find a guide toward rediscovering a regionalism which seems to be lost in current American and European design. George A. Hinds supports his text with illustrations

The Octagon and Its Role in the War of 1812

The Institute's Librarian, George E. Pettengill HON AIA, reviews the facts and stories that led to the ratification of the Treaty of Ghent 150 years ago in the Octagon House, which was purchased by the AIA in 1899 at a cost of \$30,000

Urban Parking Lots: Are They Eyesores or Assets?

Residential neighborhoods are suffering from the effects of the post-war explosion of automobile ownership as well as downtown itself. William Keck AIA, with the help of sketches, gives some pointers on how to cope with the problem esthetically

A Look in Depth at Two Hospital Concepts

Two West Coast projects—Monterey Peninsula Community Hospital and Kaiser Panorama City Hospital—are analyzed from the architectural and administrative points of view in a roundtable discussion, sponsored by the AIA Committee on Hospital Architecture. Both designs, and the comments they produce, offer much food for thought

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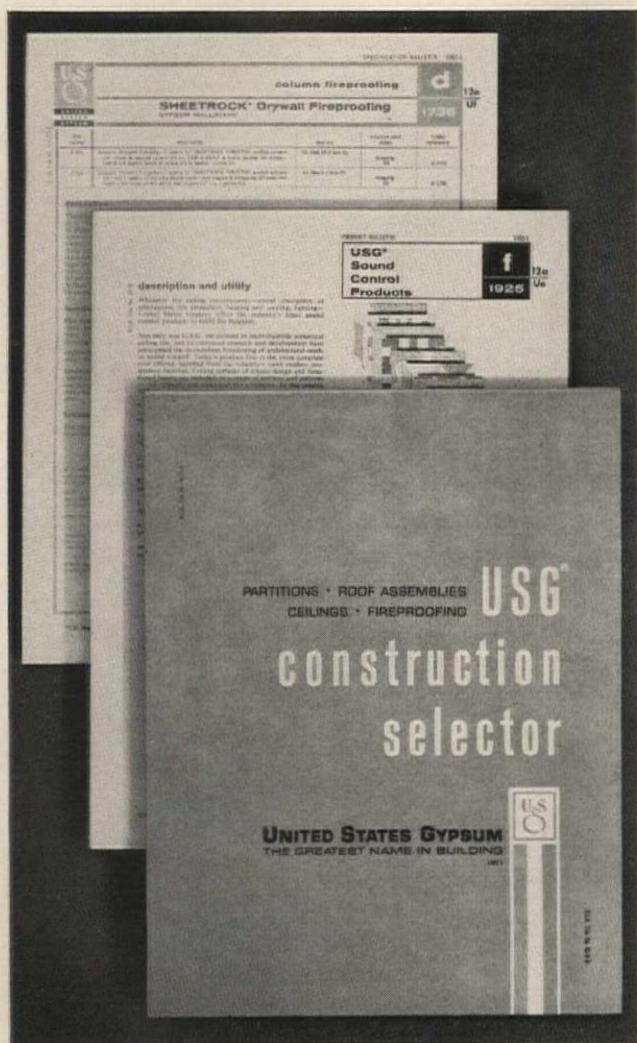
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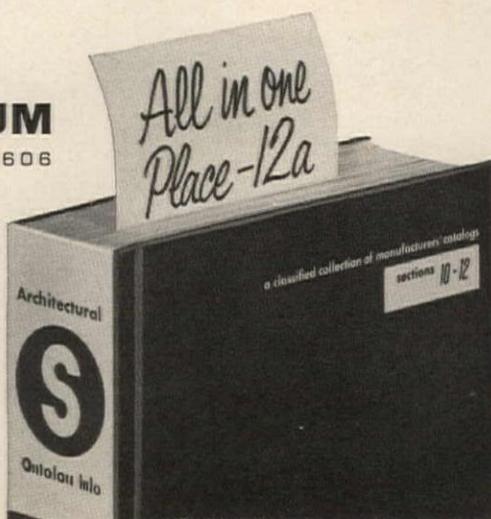
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Our Future with the President

WHEN President Kennedy was assassinated, most architects of the country, regardless of their politics, felt a double sense of loss, for it had gradually been revealed to us that at last we had a man in the White House who not only took an interest in better architecture and the planning problems of cities but actually started to do something about them. In these matters, Lyndon B. Johnson was an unknown factor.

In his now famous "Great Society" speech in May, delivered to the students at the University of Michigan, the President for the first time revealed some of his thinking and some of his intentions, in this direction. The pertinent portions of that speech were quoted on this page in our July issue.

Five months later, in Madison Square Garden in New York, the President said: "We do not want our cities to settle into a drab uniformity, directed from a single center. Each area must be free to choose its own path of development, whether it is to join cities together or to build entirely new metropolitan areas. This means experimentation with new forms of regional direction. It means developing a new set of relationships between the Federal government and the American city, and I intend to work with your local officials and to present a series of proposals designed to help meet the challenge of urban America. These proposals will discard a piecemeal approach to individual problems and deal with the total needs of a metropolitan area."

These are hopeful words indeed. But there are still stronger and more positive statements in an address delivered in Portland, Oregon, in September:

"Three changing forces are bringing a new era to conservation. The first is growing population. . . . The second is the triumph of technology. The bright success of science also has had a darker side. The waste products of our progress, from exhaust fumes to radiation, may be one of the deadliest threats to the destruction of nature that we have ever known.

"The third force is urbanization. More of our people are crowding into cities and cutting themselves off from nature. Access to beauty is denied and ancient values are destroyed. Conservation must move from nature's wilderness to the man-made wilderness of our cities. All of this requires a new conservation. We must not only protect from destruction, but we have the job of restoring what has already been destroyed . . . not only to save the countryside but, finally, to salvage the cities.

"We are the creation of our environment. If it becomes filthy and sordid, then the dignity of the spirit and the deepest of our values immediately are in danger. In the development of a new conservation I intend to press ahead on five fronts: First, we seek to guarantee our children a place to walk and play and commune with nature. The demand on our rec-

reational facilities is doubling each decade. We must act boldly or our future will be barren. . . . A national program of scenic parkways and scenic riverways is on the horizon. I hope, for instance, to make the Potomac a conservation model for our metropolitan areas. . . .

"Second, we must control the waste products of technology. . . . I intend to work with local government and industry to develop a national policy for the control and disposal of technological and industrial waste. Only in this way can we rescue the oldest of our treasures from the newest of our enemies.

"Third, we must increase mastery over our environment through the marvels of new technology. This means rapidly increasing emphasis on comprehensive river basin development. So we plan to cooperate at every level to develop the resources and to preserve the values of entire regions of this land. . . .

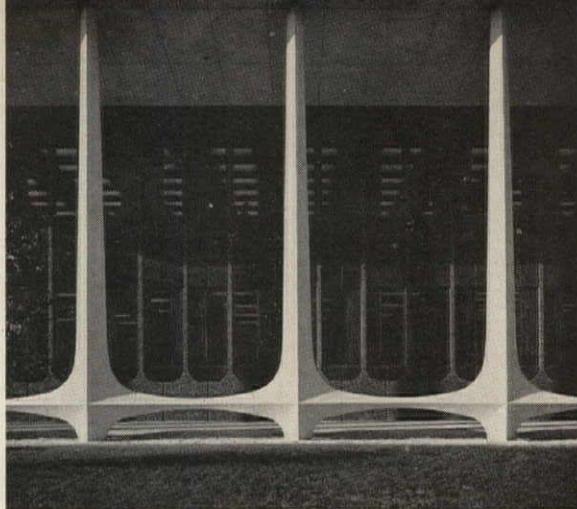
"Fourth, we must prevent urbanization and growth from ravaging the land. I will suggest, in cooperation with local government and private industry, policies for such prevention. Their goal will be to insure that suburban building, highway construction, industrial spread are conducted with reverence and with the proper regard for the values of nature. Fifth, we must conduct conservation on a global scale."

I think we can now rest assured that this President and his advisers have the problems of conservation and urbanization very much in mind, and that actions will follow these words. As a wind-up, let me quote Secretary Udall, speaking at a press conference after his first post-election visit to the LBJ ranch:

"We are now building this large interstate network of highways which, when finished, will be the finest and best highway network in the world. The President wants such a highway system. He feels at the same time that we ought to also have the most attractive highway system in the world. We have been doing very little work in terms of landscaping, of highway beautification, and he thinks that this ought to be a part of our national task."

In later conversation, the Secretary pointed out that the 1949 Federal Highway Act provides that 3 per cent of the cost of the highways may be spent on landscaping and beautification. This has never been taken advantage of—by now, it would have amounted to over \$100 million. In the future, that 3 per cent will be spent the way it was intended to be spent. Let us hope that this will be interpreted broadly, for "beautification" is not always the way to achieve beauty. In highway planning, the choice of a slightly more costly route will often conserve a great view and properly present it to the motorist, or conserve a forest or preserve a house or a village. That is achieving true beauty by natural, organic and sensible means.

J.W.



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WHEN members speak about what the Institute should hit harder, the subject mentioned oftenest is "public relations." This catchall phrase can mean anything up to a multi-million dollar advertising and TV program. Since we don't have a million bucks to spend on this commercial route to public relations, we must find methods within our means more suitable for a profession. Recent thinking on this subject evolved the phrase "public demand" as the label for one of our constant goals. The other is "better architecture."

Public demand for what? For architects? No, public demand for the *products* of architects—fine buildings and beautiful communities! When we study the advertising of a successful American company, we see that it first creates public demand for a product, then puts across the message that the public must depend upon that company for the best product of its kind. This concept guides our public relations planning. The Institute is the "company." Its architect members supply society with the product of architecture. The selling job is the AIA's concern.

The total target for our selling efforts is divided into these segments:

1) *The press* and other communications media, to be educated to give more space and better treatment to architectural news at national and local levels. The 1962 Columbia newspaper conference and subsequent regional seminars are a highly successful application of this principle. The final follow-through must be by the AIA member to his own newspaper.

2) *Potential clients*, to be reached directly with professional material demonstrating good buildings as the superior product of architects' services. These clients may be categorized into various groups of decision-makers who act upon the acquisition of buildings for private or public purposes. Last year 20,000 industrialists received a special article on industrial architecture and reprints of the AIA Honor Awards. The national Committee on School and College Architecture does a good job with groups representative of school clients.

3) *The general public*, divided into this generation (adults) and the next (students in school). This mass audience must be reached with movies, film strips, teaching tools and every device for favorable publicity. Results achieved through 1) and 2) are a part of this approach. The ultimate effectiveness of this campaign depends upon chapter efforts, using the tools developed by national programs.

To Sell Our Product

The 1965 public demand program is planned for significant improvement in the tools and procedures for public relations work. Its salient features include: Supplemental dues projects totaling \$50,000:

Press—More regional seminars for newspapermen. A new Columbia conference for TV, radio and consumer magazines.

Clients—Another article on industrial architecture to 20,000 business leaders.

Public—Issuance of the new movie on cities and architecture. A companion architectural exhibit and kits for community action. New teaching tools for giving elementary school pupils an introduction to the interesting "world of architecture."

Our public relations staff is now strengthened by the addition of a journalist. PR Counsel and staff are directed to achieve a big increase in publicity output, public relations tools for chapters and regional PR seminars.

The Institute's national committees are to be strongly oriented to public demand. Some of our committees do not realize the public relations value of what they do, but they can be shown. The building type committees especially have a great potential (in addition to their technical programs) for developing PR material for their respective categories of clients.

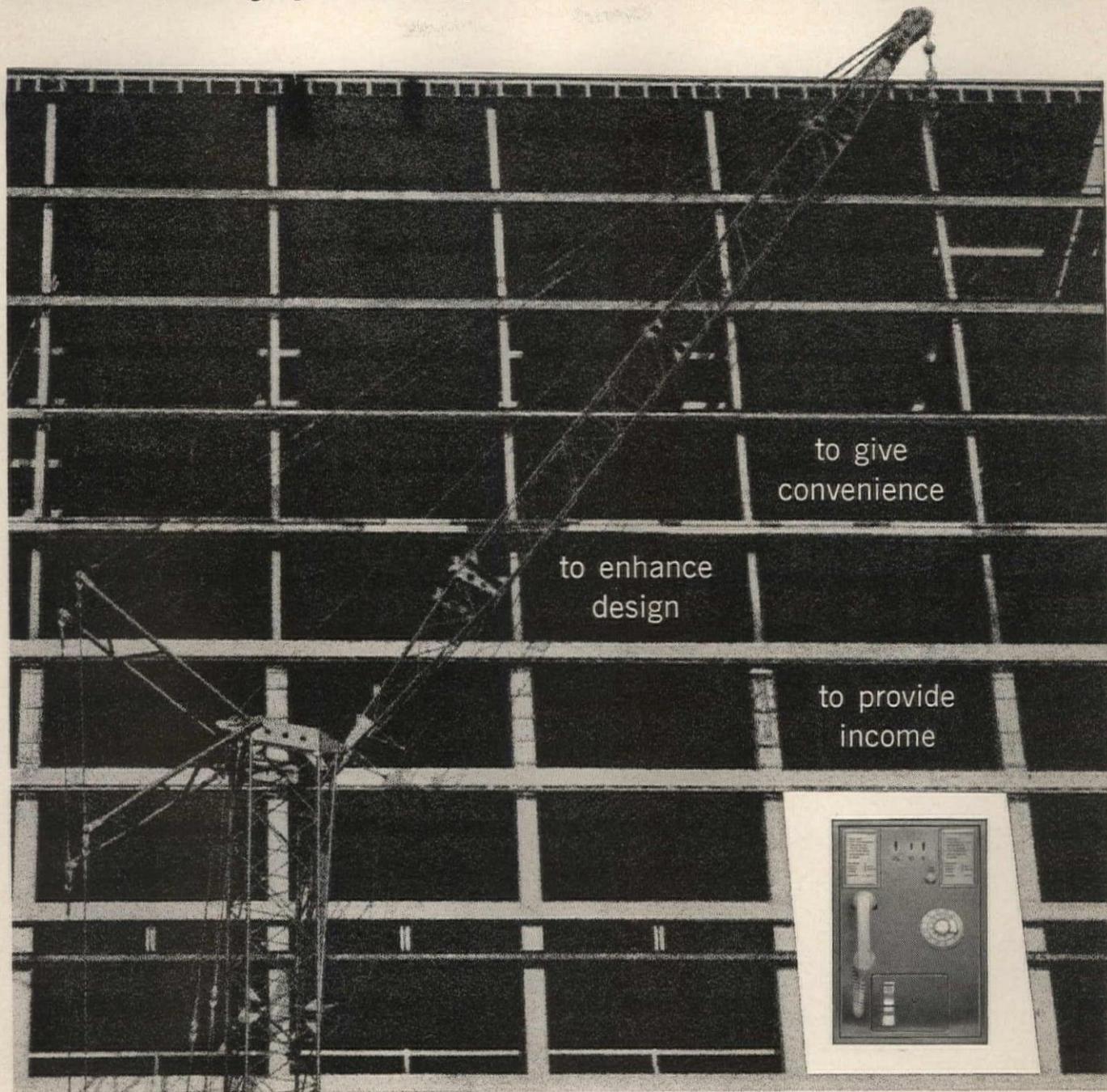
The War on Community Ugliness is planned as a grass-roots application of public demand work, employing the movie and other tools to strike home with the story of architecture to local civic organizations of laymen.

There is only one way to get maximum return on every dues dollar spent on public demand. This is through the multiplying factor of use made of public relations tools by the chapters and individual members. Architects are scarcely noted for inherent public relations talent. We are even inclined to look down our noses at our best natural salesmen as "promoters." If only we had 16,000 promoters!

A practical test of our national and local effectiveness is in the making for 1965. We will have the tools for the chapters to launch the War on Community Ugliness, which is literally a nationwide campaign to create public demand for better planning and design. There couldn't be a better time for it. We are aware of the public awakening to the challenges of many such statements as "God's Own Junkyard" and the "Great Society." A mighty ocean swell of sentiment for better architecture is in the making. Like the surfboard rider, we must catch the moment to ride the crest.

WILLIAM H. SCHEICK AIA
Executive Director

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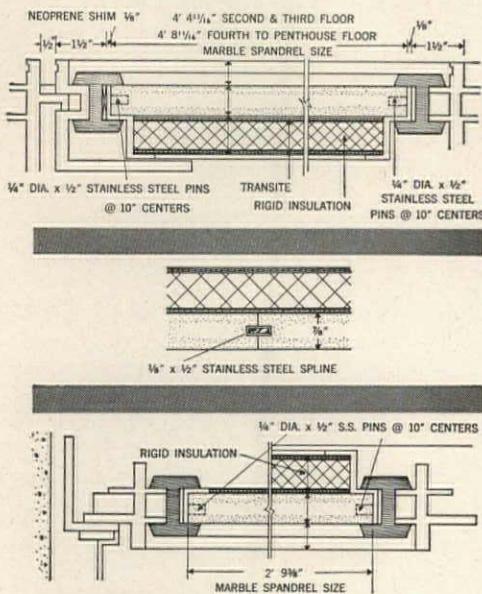
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See our color insert showing the
Blair Building, Chicago, on page 1.

OCTAGON OBSERVER

STUDENTS / Udall at the Forum

Addressing the 10th annual Student Forum in late November, Secretary of the Interior Stewart L. Udall challenged the coming generation of architects to overcome the "visual pollution" by concerning themselves with the total environment.

The 200-plus delegates who came to Washington, DC, from 67 schools heard this theme throughout the 2½-day meeting—from the welcome by Institute Executive Director William H. Scheick AIA through three panel discussions by the AIA Committee on Esthetics to the concluding remarks by First Vice President Morris Ketchum Jr., FAIA.

"No group will have more to say about the future of cities than you who are at present students of architecture," Secretary Udall declared. In summarizing, he said: "We need a new sensitivity. If we raise our esthetic values, we could have in this century a Golden Era in American architecture."

Executive Director Scheick explained the large goals of the Institute as being twofold: "to advance the profession in its capabilities and, beyond that, to advance architecture itself for the benefit of our civilization." He noted that the students are "entering the profession at a time when the most complex urban civilization in history is creating the greatest demands for building the world has ever seen. . . . Your generation has before it some terrific challenges, and to the creative mind challenges are synonymous with opportunities."

The Committee on Esthetics, represented by Chairman George F. Pierce Jr., FAIA, Houston; Arthur Q. Davis FAIA, New Orleans; George T. Rockrise FAIA, San Francisco; and Richard W. Snibbe, New York City, discussed the pilot design seminars which it has directed. These seminars are based on architects submitting conceptual designs of buildings under devel-



Pierce, Snibbe and Davis talk esthetics with students

opment in their respective offices to a panel of critics, much as students do in their design courses. The critique takes place at a chapter or regional meeting and is a closed session without the press or the public.

Institute President-Designate Ketchum advised the students that "whatever office you may work in, large or small, in the years you need to serve before getting

Cont'd on p 14



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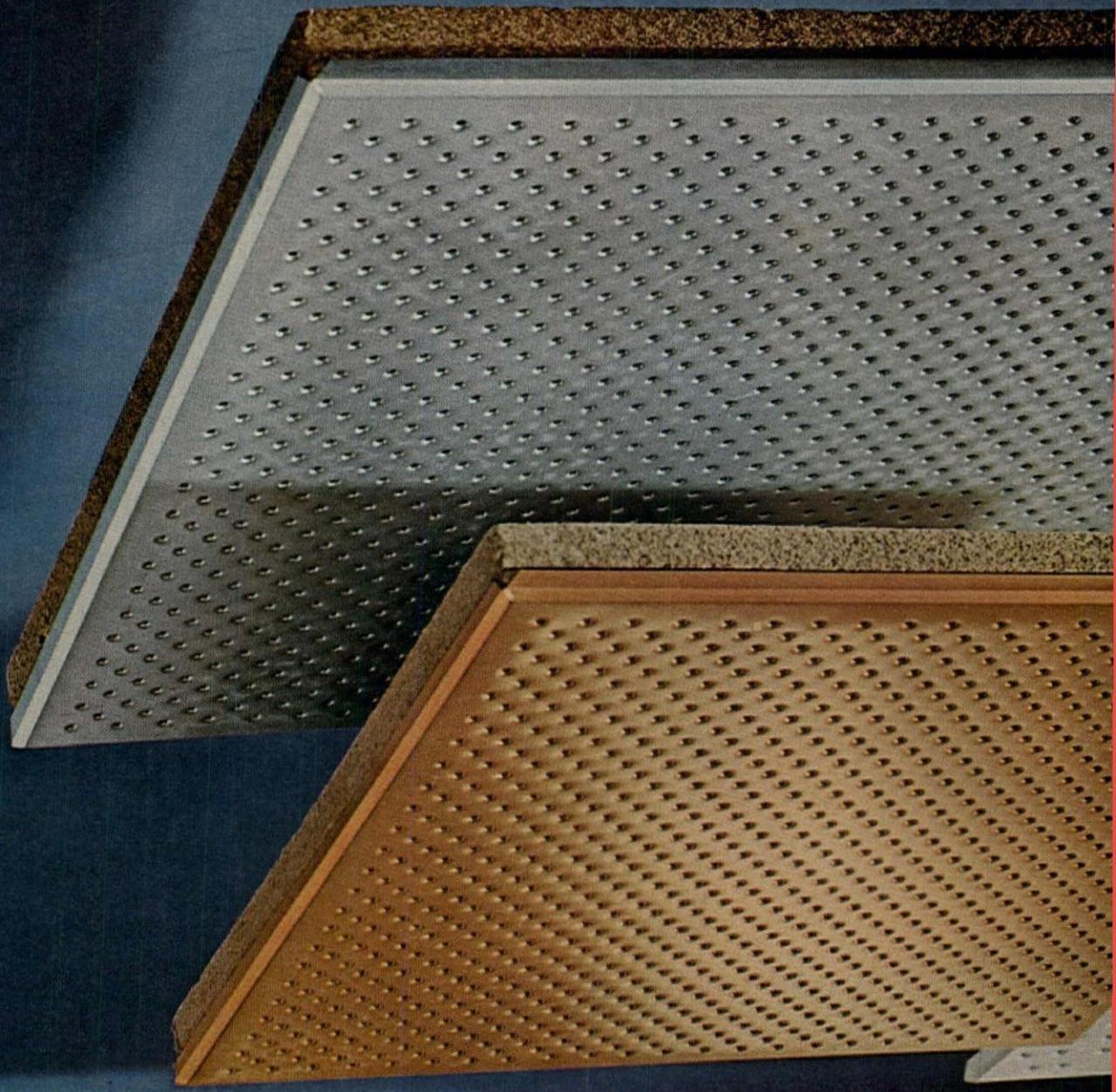
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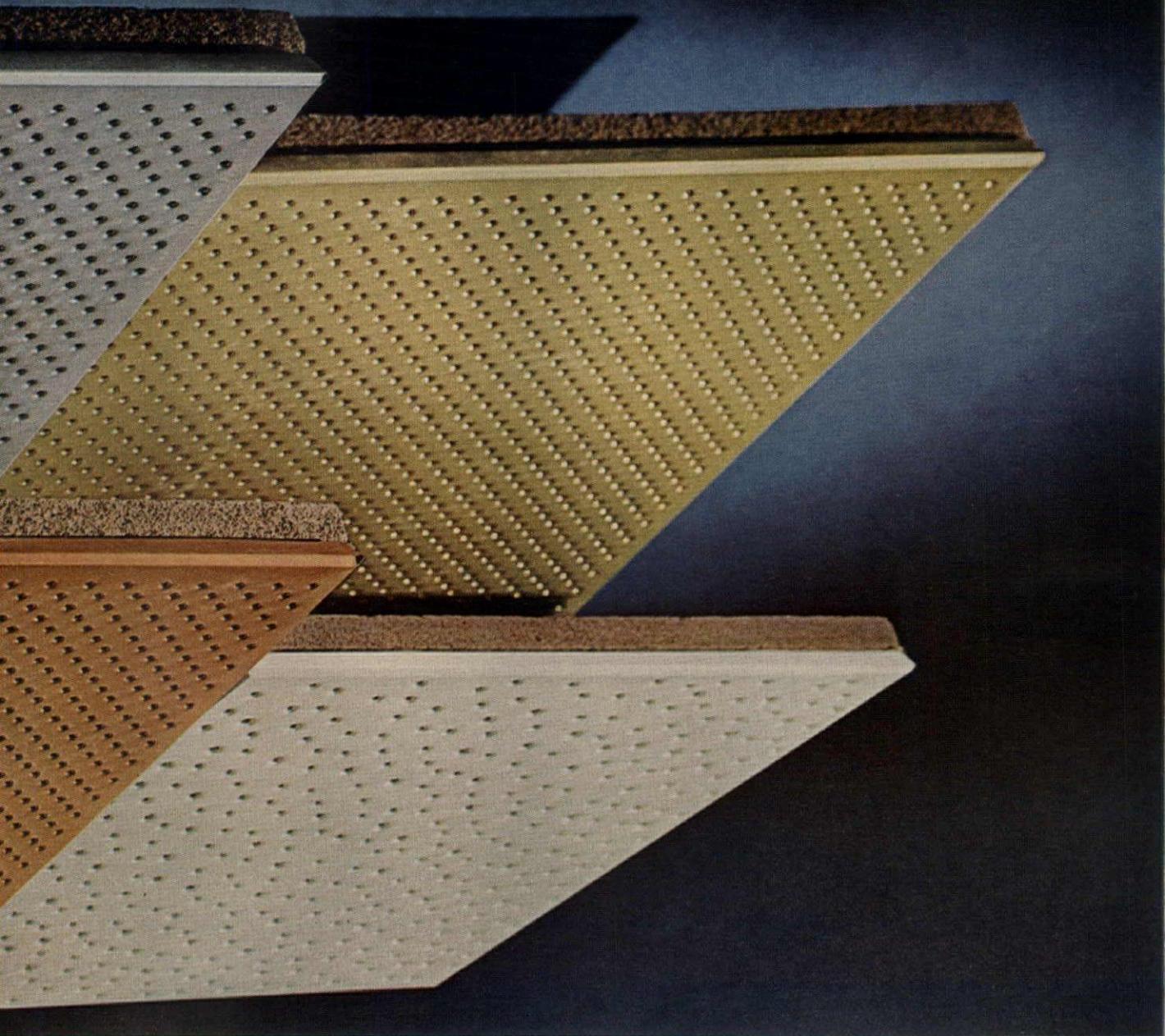
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your license, be sure that you learn everything you can." He went on to say: "Therefore, throughout your career, make professional and public service, under the banner of the Institute, a vital part of your lives. . . . Whether there will be a great architecture tomorrow depends on you; whether there will be a 'Great Society' depends on you."

Two business sessions of the Association of Student Chapters-AIA were sandwiched into the busy program. New officers are Kenneth Alexander, Pratt Institute, president; Jack Worth, Georgia Tech, vice president; and Mona Kamykowski, Catholic University, secretary-treasurer.

REYNOLDS PRIZE: Thirty-six schools are participating in the fifth annual Reynolds Aluminum Prize for Architectural Students, which is administered by the AIA. Three jurors—Norman C. Fletcher FAIA, Cambridge, Mass.; William Dow Gumerson AIA, Oklahoma City; and Dean Sidney W. Little FAIA of the College of Fine Arts, University of Arizona—will meet in mid-January at the Octagon to select the winner of the \$5,000 national prize.

PITTSBURGH PLATE PRIZES: Through the facilities of the National Institute for Architectural Education, Pittsburgh Plate Glass Co. is sponsoring prizes of \$500 each in three categories: historical, structural, and materials and methods. Deadline for submissions:

April 1. The company also is awarding prize money totaling \$2,700 in a special competition entitled "Hunters Point Area Design Study," solutions for which are due April 15. For details write the NIAE, 115 E 40th St, New York, NY 10016.

SCHOLARSHIPS / Alcoa Joins the Ranks

"Of all the major professions, perhaps the training of architects has suffered most from the lack of scholarship aid than any other," commented Dean Gibson A. Danes of Yale University's School of Art and Architecture upon learning that his institution was one of ten to benefit from the Alcoa Foundation scholarship program. "I would certainly hope that this far-sighted example will be useful for other branches of the building industry," he added.

The newly established program will provide a \$625 scholarship to each of these nine schools, in addition to Yale: University of California at Berkeley, Carnegie Institute of Technology, Harvard University, Illinois Institute of Technology, Massachusetts Institute of Technology, University of Michigan, North Carolina State University, University of Southern California and Stanford University. The private institutions on the list will receive an extra \$125 to administer the scholarships.

"We believe each school should have the greatest possible freedom in granting the scholarship," stated Dr Otis C. McCreery, executive director of the Alcoa Foundation.

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PLANNING / Enlivening Washington's Mall

Secretary Udall has unveiled the plan for the improvement of the Mall in Washington, which the National Park Service has had under preparation by Richard K. Webel FASLA since 1959. Architects will be critical of the plan for not being bold enough—not striking at the root of the problem: parking the thousands of cars and hundreds of buses which bring tourists to the city and clog and clutter the Mall and the Monument grounds.

But aside from that, the plan has many merits. Starting at the western end: The plan removes the traffic circle around the Lincoln Memorial and creates a "Court of Honor" in front of the Memorial, overlooking the Reflecting Pool. It includes the previously announced plans to tunnel Interstate 695 under the Memorial grounds and to provide a limited amount of tree-screened parking (60 or 70 cars) north and south of the Reflecting Pool. However, the traffic pattern here does not seem well adapted to the heavy flow of commuters' automobiles over Memorial Bridge.

The Washington Monument is provided at last with a proper setting for its base, and east of it, through the elimination of 15th Street where it now crosses the Mall, the plan provides for a concealed visitors' gallery, hidden beneath the slope of the ground, with its turfed roof and 200-foot-long glass wall, where tourists can await their turn to go up in the Monument, and have a broad view of it at the same time. Fourteenth Street is placed underground where it crosses the Mall; 12th Street is already underground; Seventh, Fourth and Third Streets will still cross at grade.

A new square, L'Enfant Square, is created south of Constitution Avenue, between the Museum of Natural History and the National Gallery, on the axis of the Archives building. This will be a true urban square, with an underground café, fountains, and outdoor sculpture exhibits and concerts. Other such areas are planned elsewhere fringing the Mall—for example, south of the western end of Constitution Avenue, where the dreary World War I Navy buildings stand now.

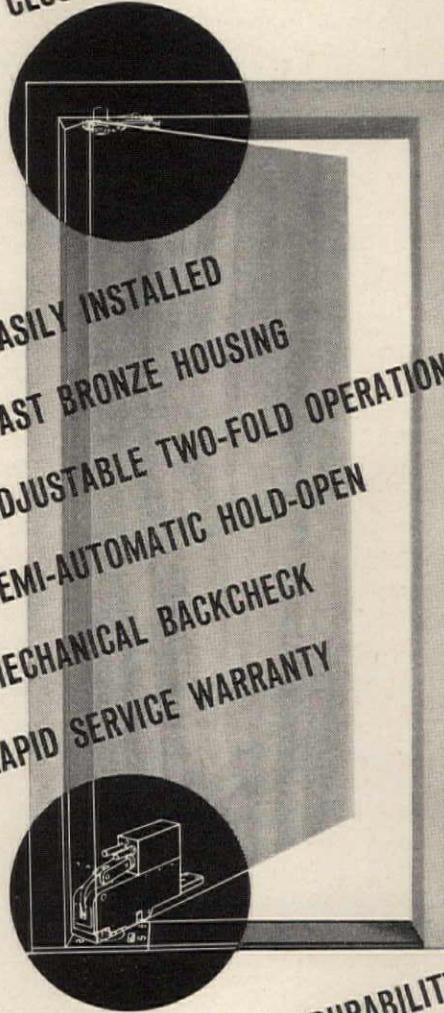
Although the plan abounds in human comforts and gaieties, such as kiosks and cafés, fountains and play areas, those who fear the Mall itself will be cluttered with hotdog stands and carousels are wasting their worries. All such activities are confined to the fringes of the Mall and are well screened by trees and planting.

"There is no finality to this plan," said landscape architect Webel. "Strict care is needed to prevent any unwanted intrusion on the monumental serenity of the Mall." Secretary Udall told the press after the presentation of the plan that means must be found to close to general traffic the east-west drives that flank the Mall on each side. He had previously announced plans—or hopes—for a system of little minibuses to carry tourists around the monumental core of the city for a nickel or so a ride. So the new plan is a good beginning, subject to many improvements and refinements in the future.

Cont'd on p 16

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COMPETITIONS / Arts Center for California

January 30 is the registration deadline for an AIA-approved two-stage competition to select an architect for the design of the proposed University Arts Center at the University of California, Berkeley. The author of the winning entry will be awarded either the architectural contract or a \$25,000 cash prize; each of the other six finalists will receive \$5,000.

The jury will consist of AIA members Lawrence Anderson, Boston; Gardner A. Dailey FAIA, San Francisco; Ralph Rapson, Minneapolis; and Regents Dorothy B. Chandler, Los Angeles, and Donald H. McLaughlin, San Francisco. For details write Eldridge T. Spencer FAIA, Professional Adviser, 251 Kearny St., San Francisco, Calif. 94108.

PEOPLE / Honor Awards Jury

The AIA has selected five members to serve on the jury for its 1965 Honor Awards program, the nation's highest professional recognition for architectural merit.

Judging the entries at the Octagon March 3-5 will be Willis N. Mills, FAIA, Stamford, Conn., chairman; Nathaniel A. Owings FAIA, San Francisco; Donald H. Lutes, Springfield, Ore.; Robert G. Cerny FAIA, Minneapolis; and Philip Johnson, New York City. Charles M. Nes Jr., FAIA, Baltimore, the 1964 jury chairman, will act as adviser.

Awards will be announced during the Institute's 1965 national convention June 14-18 in Washington.

CAPITOL GROUP TAPS THIRY: No newcomer to the Washington, DC, scene, Paul Thiry FAIA, Seattle, has been appointed an architect member of an advisory group to the Architect of the Capitol, replacing the late Henry R. Shepley FAIA. Currently serving a six-year term on the National Capital Planning Commission, Thiry is immediate past chairman of the Institute's Committee on the National Capital and was a member of the President's Advisory Council on Pennsylvania Avenue.

DEATHS / Catherine Wurster

A woman who contributed to the housing legislation of this country from its inception, Catherine Bauer Wurster died November 22 while hiking on Mount Tamalpais near San Francisco. She was professor of city planning and associate dean of the College of Environmental Design at the University of California, Berkeley, where her husband, William W. Wurster FAIA, was dean emeritus. A memorial fund has been set up in her name at the University.

Mrs. Wurster's book "Modern Housing," published in 1934, was the pioneer American study of social policy and architecture of government-sponsored housing. She was an adviser to President Roosevelt, wrote a chapter in the report of President Eisenhower's Commission on National Goals and was currently a member of President Johnson's task force on urban problems.

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Construction Details

for LCN overhead concealed door closer installation shown on opposite page

The LCN series 2010CP closer's main points:

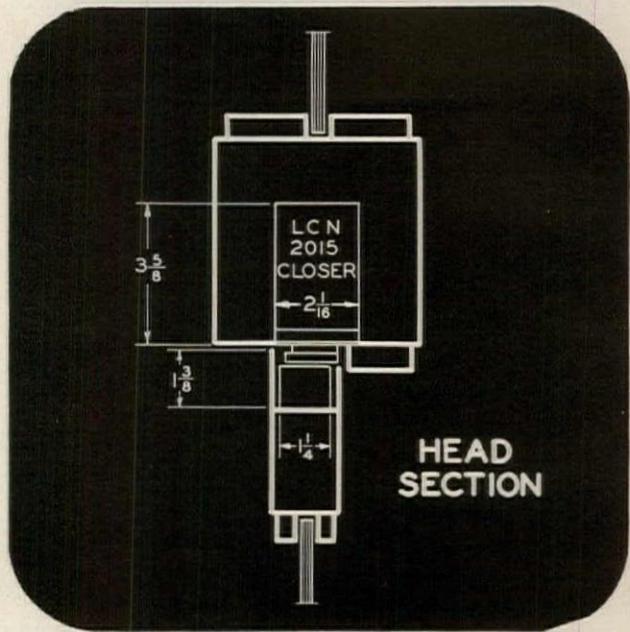
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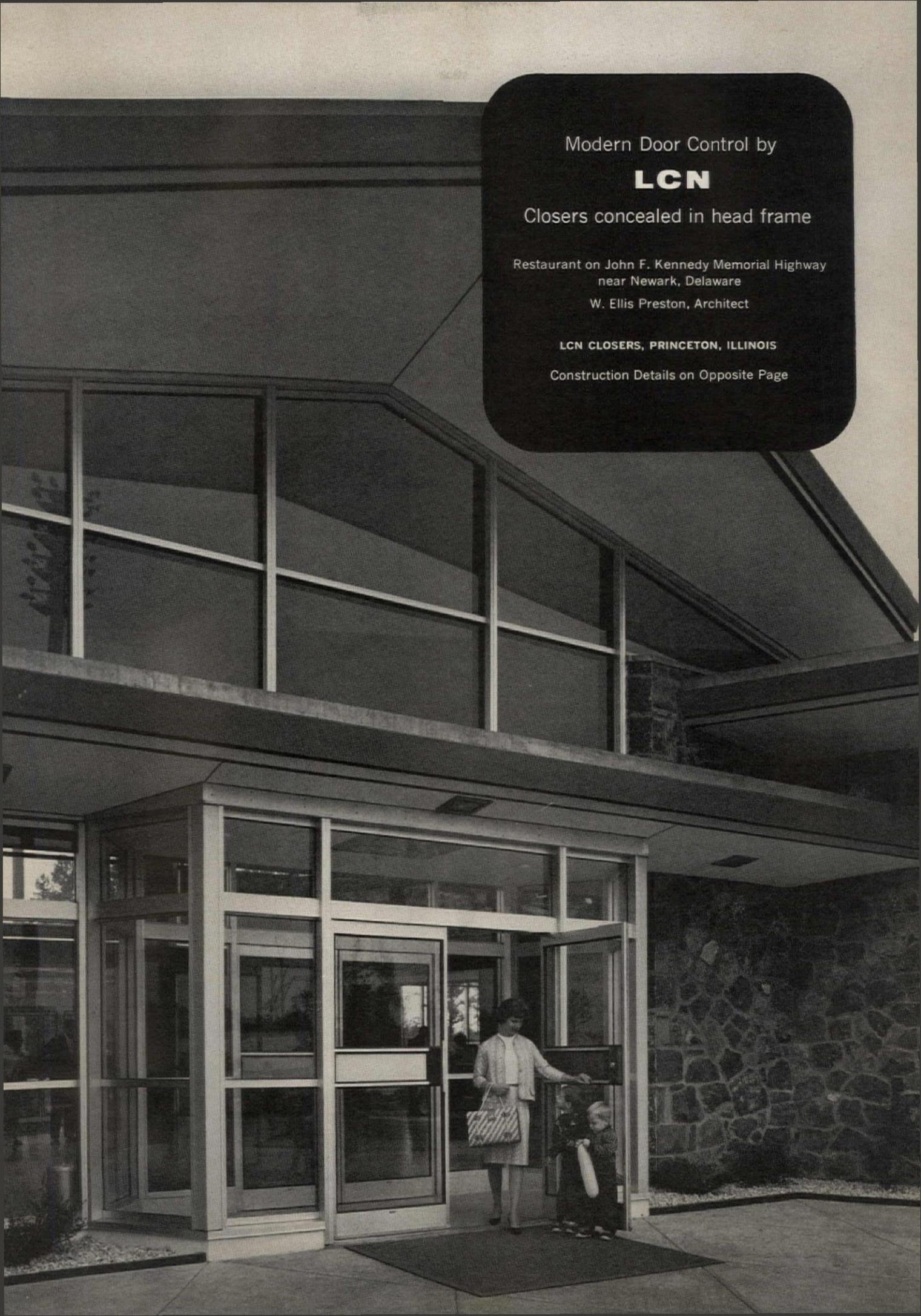
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Construction Details on Opposite Page

EDUCATION / Dudley to UCLA

George A. Dudley, dean of the School of Architecture at Rensselaer Polytechnic Institute, has been appointed first dean of UCLA's new School of Architecture and Urban Planning, which expects to open in the fall of 1966. It will be housed in the Dickson Art Center when that building's present occupant, the Department of Art, moves into a new home currently under construction.

Dean Dudley went to the Troy, NY, campus in his current post in 1962 and in the same year became a trustee of the New York University Construction Fund. He is also planning coordinator for the state capital complex in Albany and chairman of Rensselaer's Long-Range Planning Committee. Under Wallace K. Harrison FAIA, director of planning, he served as secretary of the board of international consultants for the design of the United Nations headquarters in New York City.

ALL FOR FINE ARTS: F. Donald Clark, dean of the University of Oklahoma College of Fine Arts, has been elected chairman of the newly organized National Council of Fine Arts Deans. "Membership is open to deans or directors who administer schools, divisions or colleges of fine arts which offer degrees in two or more areas," Dean Clark points out. Architecture is among the arts included by the Council.

REGARDING A REGENTS PROFESSOR: Known for his work in environmental technology, Henry Wright, New York City, will join the faculty of the Kansas State University College of Architecture and Design in February as a Regents Distinguished Professor, the second to be so named. The first, a molecular physicist, came to the Manhattan campus this fall under an appropriation made by the state legislature directly to the Board of Regents in an attempt to attract outstanding educators to Kansas institutions. Currently a visiting lecturer at Cornell University, Wright has spent 18 years as an editor and has been teaching since 1955.

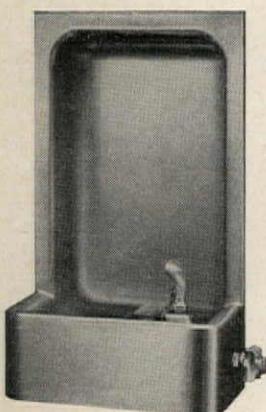
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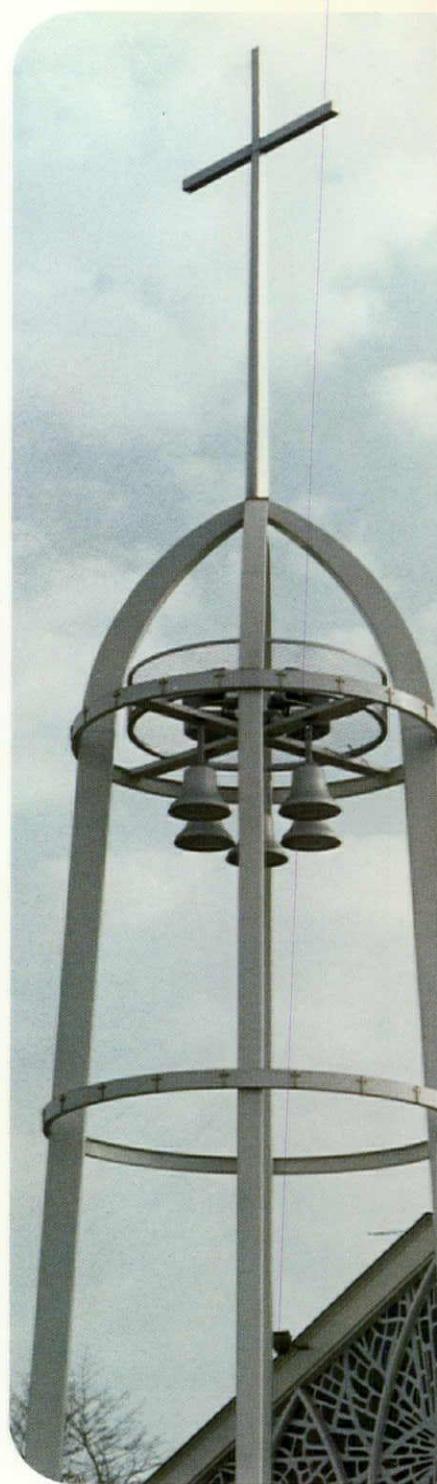
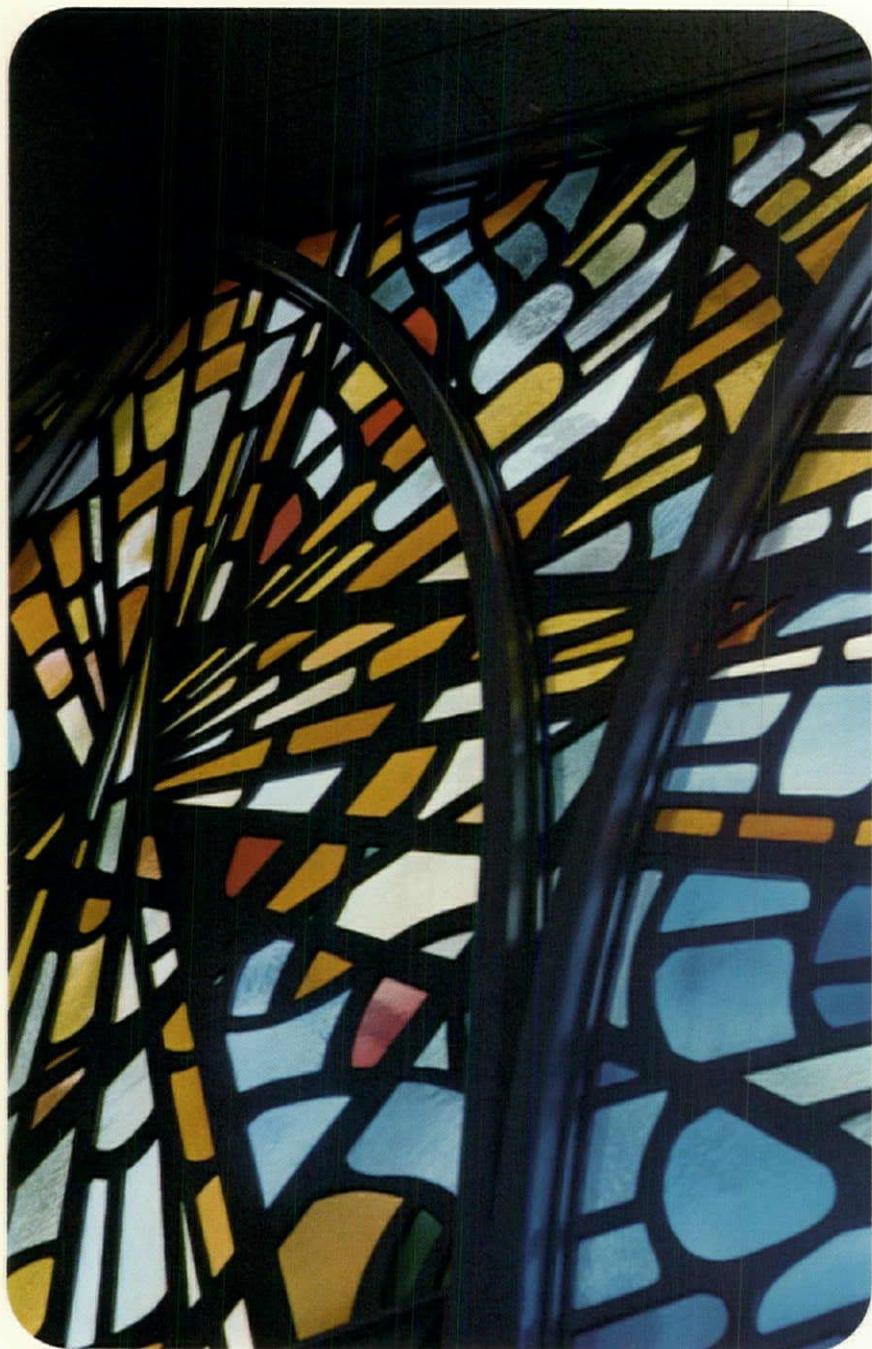
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What modern architects know about Gothic architecture that Sir Christopher Wren never dreamed of.

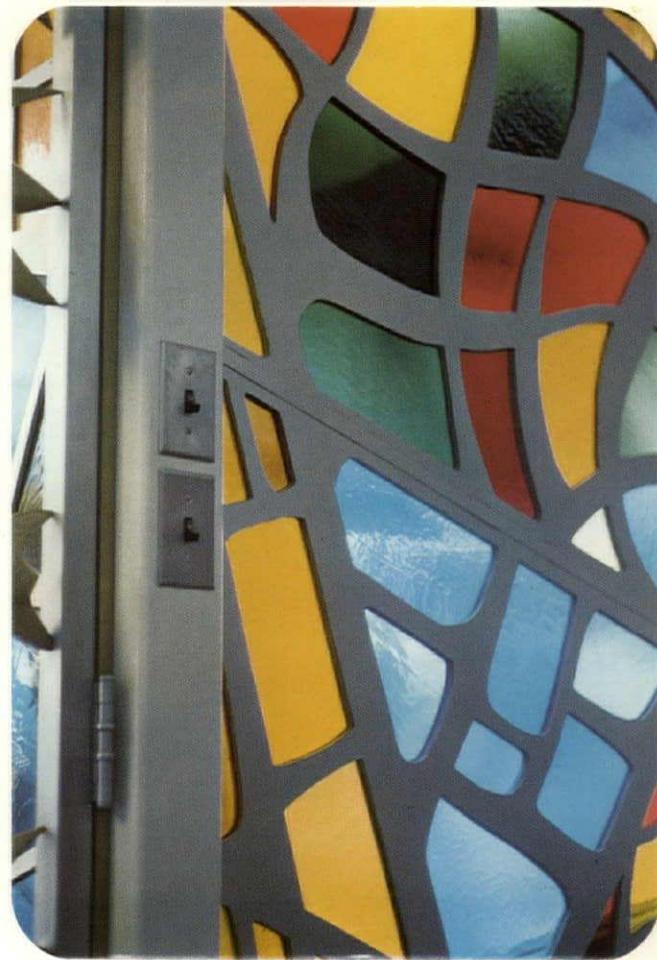
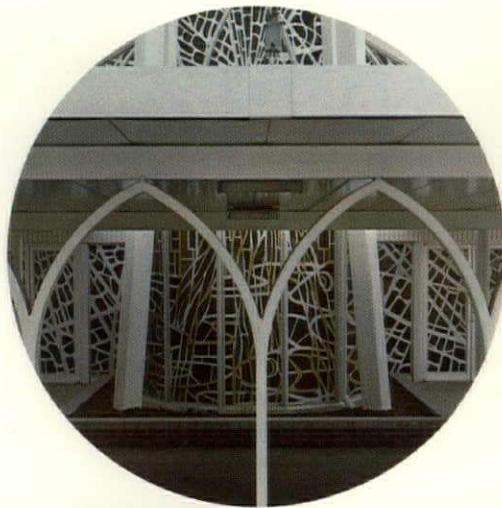
In Christopher Wren's day, strength required bulk. Nowadays, a variety of steel shapes has changed all of that. One of the most versatile is hollow structural tubing, so attractive it is often left exposed, so strong it resists bending stresses in several directions. Used as posts, beams, columns, rafters, and mullions, hollow structurals can also double as conduit and drain housing.

Nicholas J. Fiore (AIA), of Altoona, Pa., has used hollow structurals for years. Probably his most striking application is in St. Benedict's Church in Geistown, Pa. This is the largest church in the Altoona-Johnstown Diocese, a column-free edifice highlighted by a neo-Gothic narthex, a bell tower, and a stained glass front—all framed in hollow structurals.

Fiore used hollow structurals at the front narthex because it was the best way to support the roof with lace-like traceries. In the bell tower, the tubing not only gives trellis-like form, but functions as wire conduits for the bell and P. A. systems. Exposed hollow structurals for mullions framing the stained glass windows help support the vestibule roof, also carry wiring. Besides obvious aesthetic advantages, Fiore designed with hollow structurals for economy. On the tower alone he halved the cost of an alternate brick design. This helped him bring in the over-all bid \$50,000 lower.

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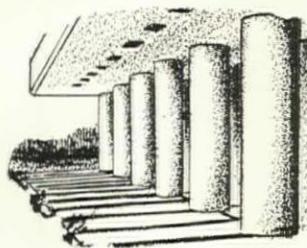
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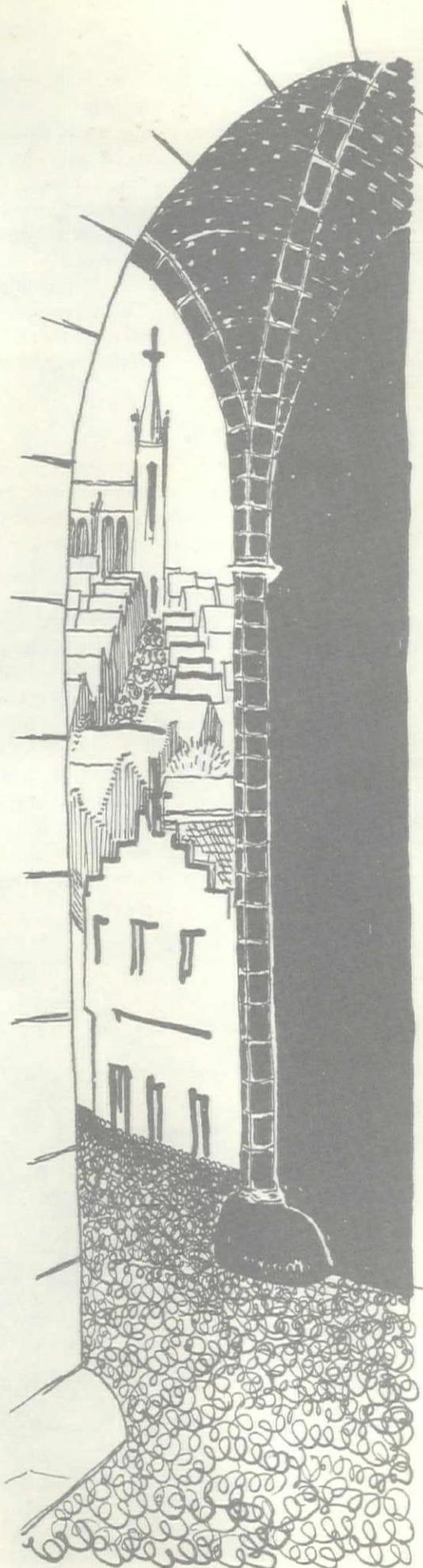
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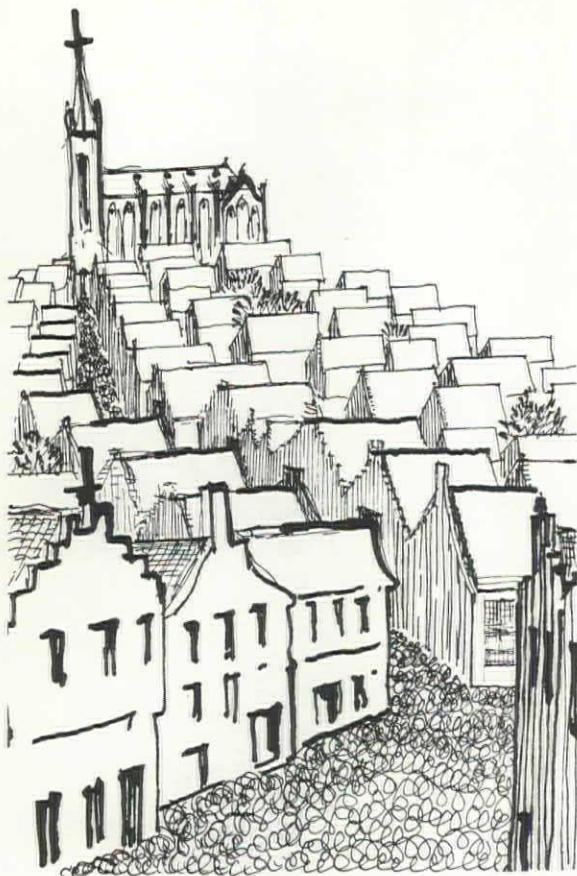
Sketches by the author

The Meaningful City

BY DENISE SCOTT BROWN

An assistant professor of city planning at the University of Pennsylvania, Mrs Brown explores modern man's search for personal symbolism. Her exposition is an abridged version of a chapter from "Design and the Landscape," a book now in preparation, edited by John B. Frazier

IMAGINE yourself at the gateway to a northern European medieval town. Entering on foot, you leave sun and green for the deep shadow and restriction of the stone archway and emerge on the other side with a feeling of having truly arrived. From here a road rises and gently curves; lines of gables appear above the blocked ground view, leading the eye upward toward the church steeple. Along it houses crowd for space, walling the line of movement. Their hanging upper stories further restrict the street, so that along its length there is no great variety or contrast of space but rather



a gentle modulation of one shape into another. The scale is even and human. There are no marked differences between buildings; the burgher's house, warehouse, hospital and old people's home look much alike.

At the market square, where the main routes converge, are found the large, corporate buildings—guild halls, a market hall, a few inns. And beyond, but glimpsed through the arcades of this square, sits the great Gothic church, its stature accentuated by the narrowness of the space around it, like an eagle in a canary's cage.

From the church steeple you can see the whole town. Below lie the cloister and the market square, the ornate roofs of the larger buildings and, beyond them, the pitched roofs of the town houses. All roofs have the same pitch, all are covered with the same tile. Pause, and ponder upon the beauty of "order with variety," and then upon the clarity of the town; note its distinction from the surrounding country; its walls and gateways which say "you have arrived"; the visible differences between main and secondary streets; the immediacy of the relationship between houses and streets.

Imagine, in the same spirit, visiting an American city. This time you will need an automobile for there is no coming to terms with the architecture of expressway and overpass without it. Towers and cranes flash by, bridges and ramps, slag heaps and junkyards; rail tracks, lines of lights, water tanks; old factories, marshalling yards, warehouses; a bridge; a long, quiet pause over the river;

reflections in the water and a view of the city; a thousand crystals and a million lights.

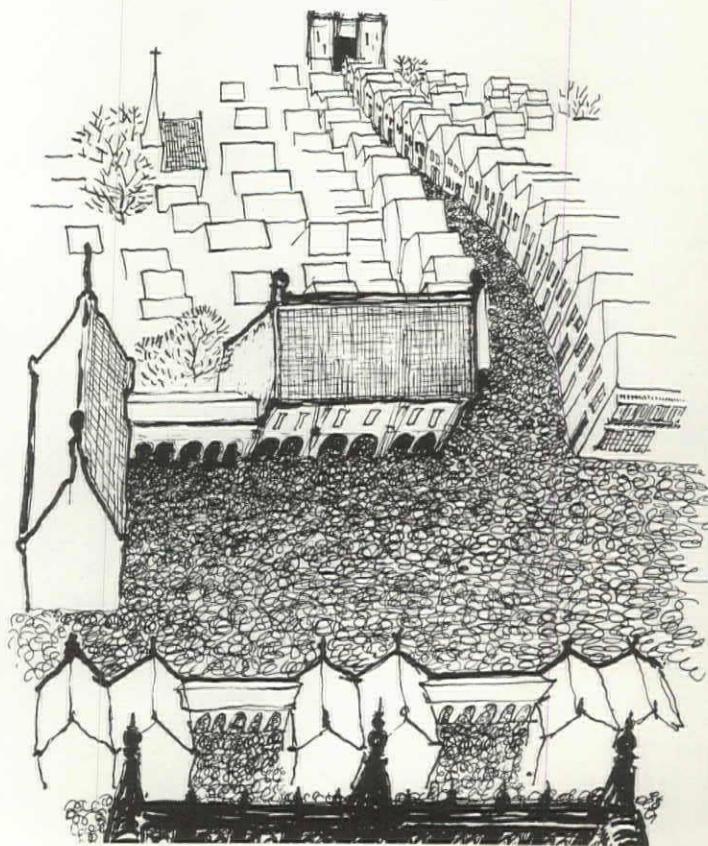
Descend into it; through fringe areas, immigrant areas, slum areas; grid streets, old buildings, fire escapes; store fronts, slums, squalor; then taller blocks, skyscrapers, canyon streets; gray walls, windows, sign posts; red lights, traffic congestion, *slow down*—*where do we go from here?*

What is significant in our experience in these two cities? What do they have in common and what makes each an expression of itself? What meaning or message is each trying to give us as we pass through it?

Perception and Meaning

Although there has been, in recent years, much study and discussion of perception in cities, of the "image of the city" and of what makes city form "imageable" to citizens and why,¹ relatively little attention has been paid to the problem of understanding the meaning which is given by the perceiver to the object perceived. This building with a high, pitched roof and steeple is a church, but these pitched-roof buildings set in open grounds away from the heart of the city are suburban houses. These closely spaced row houses must be near an area of high demand. I understand from the increase in the density of buildings which I pass as I travel this road that I am headed toward the city, not away from it.

Our interest lies in what we *understand* from what we perceive: how the "messages" given us



by streets and buildings as we move through the city tell us about the city; help us to know and use it, and understand its *meaningful order*.

We sensed this meaningful order in the medieval city, but did it exist in the American example? There is a condition called *agnosia*, in which the individual perceives with his senses but cannot give meaning to what he perceives. Approaching the city, he sees a fork ahead but cannot discern which is the bypass and which the main road to town. He sees a large, ornate building which could be a bank, a beer hall or a parking garage. To turn left off an expressway he must first turn right. In short: Are the messages given by the American city (and we have tried to point out that they do exist) so disordered and chaotic that city dwellers, to all intents and purposes, become sufferers from urban agnosia? Even if, through our increased knowledge of perception, we understand what makes for "imageability" in the city, is there any value to imageability without "meaning"?² How can meaning be conveyed by a city?

Messages

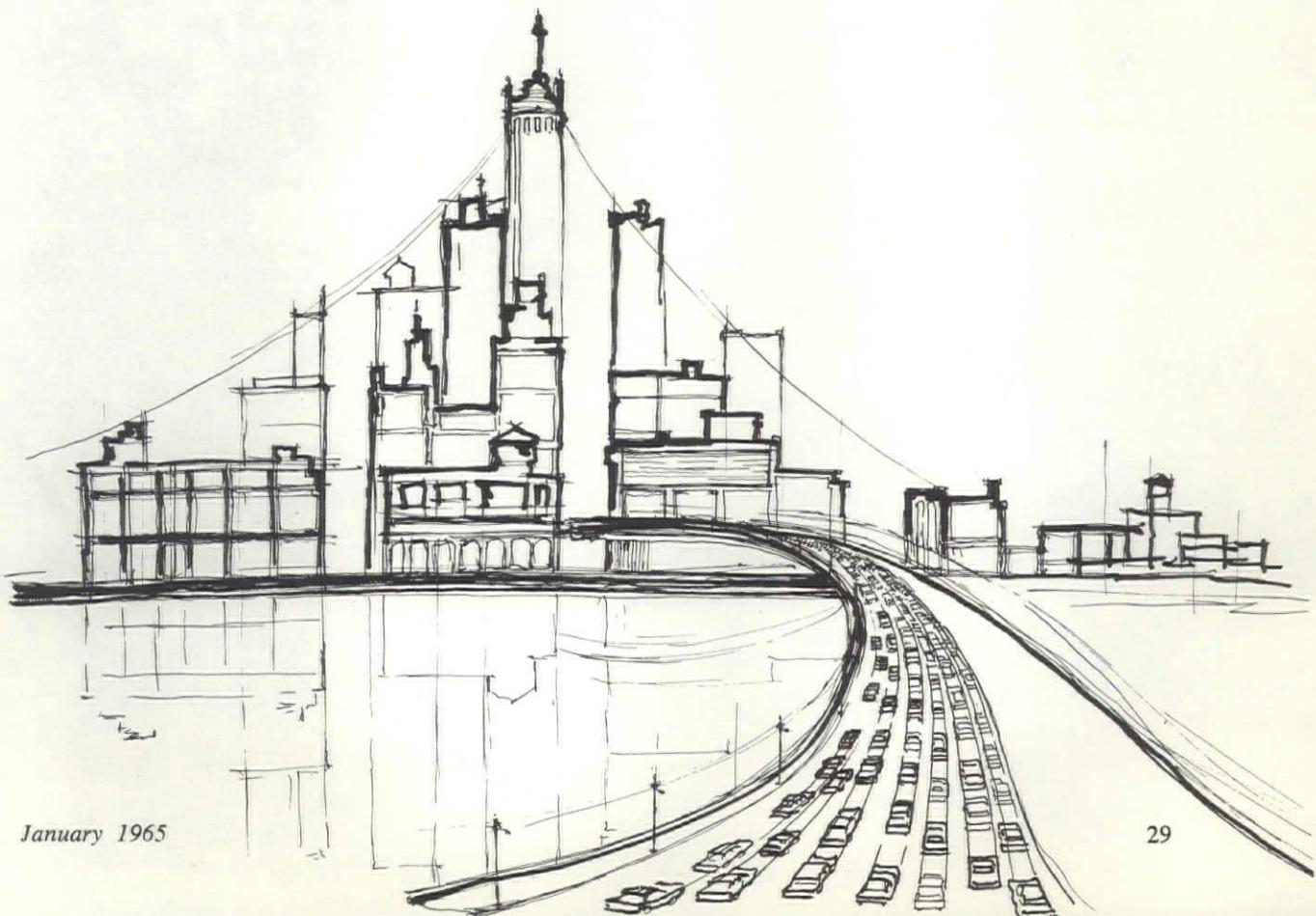
Let us examine the city as a "message system" to discover the nature of the messages it can give. These messages may exist on many levels. They may be *functional*, helping citizens to find their way and in general to go about their daily business; or they may be expressions and *symbols* for the citizen and for others, of aspects of his civilization—its cultural values and aspirations, its mys-

ticism and philosophy, its institutions, its technology. The messages may be *general* ones, meaningful to all citizens, or *specific* to some groups, or *personal* and individual. But usually these levels are all interwoven.

Thus the walls round the medieval city defended its citizens from enemies, but they show us today the importance of defense in medieval life; for they are so big that they dictate the over-all form of the city. In addition, they strongly set the city apart from the country. Entering the gateway you know life within and without the walls was completely different—and understand thereby something of what escape to the city meant in a feudal society. Compare this with the automobile approach to the modern city, where city boundaries are not visible and one becomes aware only gradually that one is approaching a city, through the build-up of density along one's path. Again, the cathedral at the center of the medieval city with its high steeple and great size relative to the structures around it, clearly shows the prominence and power of religion in medieval life. The skyscrapers at the centers of our cities express the workings of the nineteenth century transport-technology (the railroad having disgorged its thousands of commuters at one point, the city had then to accommodate them at walking distance from that point) and yet

¹ S. E. Rasmussen, "Towns and Buildings," University of Liverpool Press, 1951; K. Lynch, "The Form of Cities," *Scientific American*, April 1954; K. Lynch, "The Image of the City," Technology Press and Harvard University Press, 1960

² D. A. Crane, review of "Image of the City," *AIP Journal*, May 1961



they express also certain laws of economics within our society, for city skylines seem almost to trace the curves of the graphs of intensity of demand for space around central points.

The Message-Giving System

What aspects of the city give messages, and by what means?

The first and most obvious is the city's system of *heraldry*—its written and graphic signs. In the medieval towns where few people could read, much use was made of visual symbolism for city signs. Today, although modern traffic signals use this method extensively, and barbers still have striped poles, and although our society has no dearth of visual symbols nor lack of ability to respond to them—as a flourishing profession on Madison Avenue has shown—we have tended to neglect picture imagery for written signs. In general it may be said that positive use is not made of visual symbols, and that the systems of signs and signals in American cities come close to anarchy.

However, the city has other ways of helping us to understand it—ways which are more integral and pervading than heraldry and more rightful to the planner's moulding.

We can tell a great deal from its *physiognomy*: that is, the sizes and shapes of buildings and the spaces around them; their architecture; the textures and patterns of their surfaces, indoors or outdoors. Thus we noted strong physiognomic differences between the main and secondary streets in the medieval town; and in our own gridiron cities differences between streets can be sensed, if not through differences in width and alignment, then through the nature of the buildings along them and, particularly, of the movement upon them. Our society has liked to site an important building alone with a large space to set it off. The hovels huddle right up to the walls of the European cathedral, but the American state house or art gallery stands alone, closing the vista of avenue or parkway; and, with its Greek portico or golden dome, is distinctly recognizable as a building of civic importance.

Architectural elements and architectural styles may in themselves have symbolic meaning. Until recently, banks and insurance companies built heavy Greek or Roman buildings to show your money was safe. Now that modern architecture is respectable, they are as likely to build glass and steel boxes—taking care nevertheless that the great concrete safe holding your money will be reassuringly visible. And, from the sublime to the ridiculous, a "diner" must look like a train; give it Greek columns, and we shall be lost.

There is one other way in which the city gives

messages, and that is by the *location patterns* of its buildings and spaces. The important civic building is placed at the end of the axis or on an eminence; the market square and cathedral on the main crossing at the center of town. Often, the location message depends on a known relationship between a street intersection and a type of building. Even in a strange city you know where to find the "corner store," and, more recently, we have become accustomed to finding shopping centers at major highway interchange points.

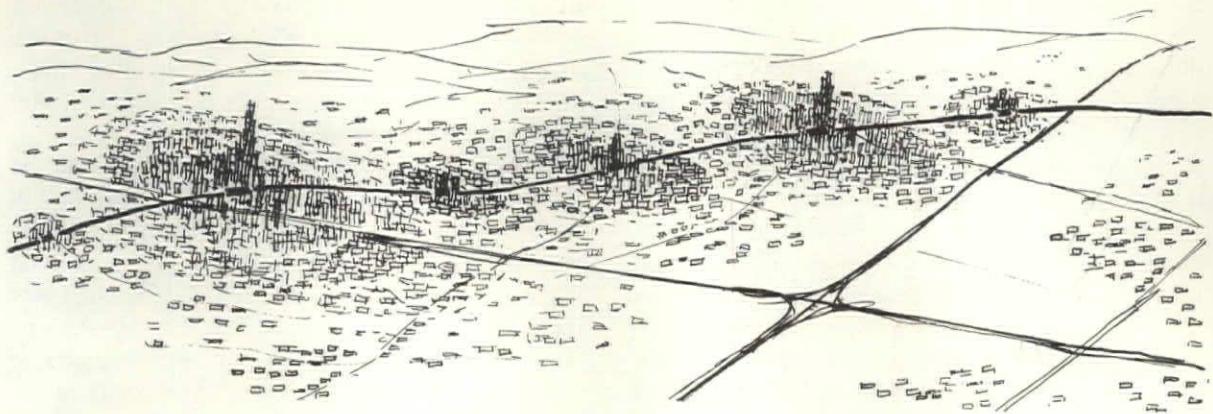
Modern Messages

To sum up, we have seen that there are three basic media for conveying messages in the city: heraldry, physiognomy and patterns of location.³ We have illustrated our thesis by examples of messages in the medieval city and in the modern American city as it is today with its legacy of symbolism from the nineteenth century and earlier. However, the great difference between the two examples is that while the symbolic messages of the first form some meaningful and imageable whole, those of the second are latent, do not emerge wholly and do not alleviate the condition we have called urban agnosia.

What are these latent factors which exist around us to be recognized and put into a system of modern messages to convey a modern city order? They will have mainly to do with the new *relationships* which are forming between parts of the city as a result of the social and technological changes of the twentieth century.

For example, we have shown how the peaks of activity, building density and land values at transit stops are a result of the nineteenth century railroad technology. A very different relation of traffic volume to land value and building intensity must emerge with the automobile, and has not yet emerged in a comprehensible form, though there are almost as many concepts of what this form should be as there are urban theoreticians.⁴ Similarly, the clear relations between walls, houses and halls of the medieval town or between the indus-





trial sectors, slums, "downtowns," parks and "institutions" of the Victorian city, have broken down in our time, since "linkages" can now be made by telephone, and electricity allows factories to spread horizontally instead of vertically, and highways and trucks allow them to follow their workers to the suburbs. Again, although we do not know where these changes are leading, we may have some idea, and can identify some of the factors concerned. Of these, perhaps the most important is movement.

The crux of the problem of city form today seems to lie in the automobile and in our need to understand more fully than we do what should be its place in modern life, and in the city and what should be the relation between movement, especially automobile movement, and perception in the meaningful city.

Movement and Meaning

Are imageability and understanding possible at the scale of the whole metropolis? Certainly, if, as we move through it, we use our memory to relate the perceptions made at different points in time and space.

A road gives us messages as we move along it. The kinds of message given vary with the physiognomy of the road and with the type of movement. Our memory combines sequential messages into more or less meaningful wholes which help us to comprehend a larger area than we can see. But this process is vastly simpler if we are able to discern a structure, and particularly a *rhythmic* structure in the sequences. If architecture is frozen music, urban space perceived in movement is melted music. That is, one's experience when time

and memory are added, is directly comparable to a musical experience.

An aimless walker or a shopper receives a very fine grain of staccato stimuli. He can perceive the detail all around him, but at the same time encompass within his vision the broader range and scale of the larger environment. The walker who is going somewhere finds orientation and pleasure in the combination of small beats into larger and larger. He senses first the quiet tip-tip-tip of railing and balustrade, intimately related to his own scale. This is picked up by the larger beat of porch and portico, then enlarged by the passing of individual town houses, into a firm boom-boom, linking him with the scale of street and traffic.

Traveling a fast commuter line, small-scale detail perception gives way to broad impressions and strokes and general awareness. As we pass from stop to stop we may feel a rhythm of crescendi and diminuendi in activity, sense thereby an hierarchical distribution of nuclei and, behind this, the law relating their sizes to their distances apart.

Rhythm is therefore an important part of the meaningful environment; the more so as its repetitive quality makes it predictable, and especially because the complex rhythmic orchestrations of the city can communicate beyond the purely visual senses, to the deeper unconscious and reflex levels of human perception.

Thus, streets act not only as channels of movement but as "channels of communication and intelligibility." They give utilitarian information about the environment and, as in music, use rhythm to link themes and subthemes; inversions, variations and counterthemes; codas, repetitions and recapitulations into an ordered and esthetically satisfying whole, and make of the city a work of art: for once we talk of city form as a "meaningful whole" to be perceived on many levels and to be "understood" through symbolism, we are very much in the world of the artist.

We have looked at two cities to understand through them something of perception and of the

³ In passing we should note that we are ignoring the aural, olfactory, tactile and vestibular aspects of perception almost completely. Although these are all important and at some point may be decisive in what we perceive (and especially in what we remember) in a city; they are less susceptible to conscious guidance and design—unless, that is, they reach "nuisance level."

⁴ See particularly D. A. Crane's "The City Symbolic," *AIP Journal*, November 1960; "The Dynamic City," *AIA Journal*, May 1960; Louis Kahn's "Toward a Plan for Midtown Philadelphia," *Perspecta II*, Yale University; "Team 10 Primer," *Architectural Design*, December 1962

messages a city can give and the way in which it can give them—laying special stress on movement, for its importance in the city in our time. In so doing we have gained some knowledge of how the citizen is given information useful to him in “getting about.” But we have surmised too that this is not the only level of meaning which the city may convey, nor is it the one which gives to the Roman citizen, or the New Yorker, his pride of citizenship. For these most important yet least tangible aspects of the Meaningful City, we must search further, in realms which are less certain.

It is certain that “the unique relationship between the open area of the square, the surrounding buildings and the sky above create a genuine emotional experience, comparable to the impact of any other work of art.”⁵ But this is only a beginning. We must try to identify the bases for this emotional experience in the forms of the city and the symbolism and meaning they hold; and we must extend this concept to include not only single urban spaces but the whole metropolis.

A Modern Image

What is the image of today’s city? The medieval city had its walls and its cathedral. Is our image merely an inheritance from the past overlaid by a disorder of unrelated individual adaptations—beautified perhaps by the fountains and flowerpots of the urban cosmetician? Where are our counterparts for the ancient civic places and the finite, understandable over-all form?

What are our symbols? We have already shown that the question of symbolism is a difficult one. The Japanese gardener, the Indian dancer, the Gothic builder could work secure in the knowledge that each formal element of his art had a symbolic meaning, known and honored by all. There would be no thought of questioning the ancient traditions, and there would be no gap, as we know it today, between “artist” and other people. In a time of great cultural unity “when a period succeeds in developing its natural culture and when this culture is supported by a long tradition, works of the highest quality can be produced by anonymous artists as well as by distinguished ones.”⁶ At the other extreme, the Roi Soleil and his despotic imitators could ignore the society around them and build whole cities based on their own symbolism.

In an age when the city is “designed” for the most part by the thousands of individuals and agencies which build in it, we have not yet found a philosophy of planning which encompasses the “Thousand Designers” and the professional planner, helping their separate decisions to complement and augment each other. We do not lack for vision-

aries; but so far their monuments, in London, India or Brazil, have failed to convince us. We do not lack for symbols, but our efforts to use them are unsubtle and heavy handed. In the planning offices of most cities even this much is not achieved, and the situation goes by default.

Yet the important symbols of the age should be the prime form-givers to the meaningful city. Will the form-givers for our cities be the parts of the movement system, and should they be? If so, what is the gateway to the modern city? Is it the highway interchange, the airport or the subway station? How must these be conceived and designed to fulfill this function? If the deepest meaning of the city in any age is the augmentation of the individual being through his association with others, then where is our meeting place? Where would a great city give civic honor to a great man? Where is the space worthy of his greatness? What is our cathedral? Would the central position of our city hall be a desirable thing if for most citizens it symbolized “what you can’t fight”?

And, for the individual, what is the meaning of “home” in the city? What makes the city “mine”? What gives to a group of town houses a larger identity, so that the individual unit does not feel like a slice of life, held in suspension between two party walls, through which the wind whistles?

The Final Image

We have talked till now of general symbols common to many people as groups or as individuals. But here is one man’s vision of the city:

By nights when the yellow salamanders of the El bend all one way and the cold rain runs with the red-lit rain. By the way the city’s million wires are burdened only by lightest snow; and the old year yet lighter upon them. When chairs are stacked and glasses are turned and arc lamps all are dimmed. By days when the wind bangs alley gates ajar and the sun goes by on the wind. By nights when the moon is an only child above the measured thunder of the cars, you may know Chicago’s heart at last.⁷

This is what the city may mean for one individual among a million city dwellers. This is the final result, the true nature and meaning of cities and perception. But no one can “design” it. Such personal symbolism and imagery grows with age and increasing richness upon the base of a much more public and general symbolism common to a group of people. Our need is to find that good base upon which subsequent encrustations of meaning and association can form as richly and with as much individual variation as the talents of the population permit—to find that order within which variety becomes meaningful, and the changing whole intelligible and beautiful. ■

⁵ P. Zucker, “Town and Square,” Columbia University Press: 1953, p 1

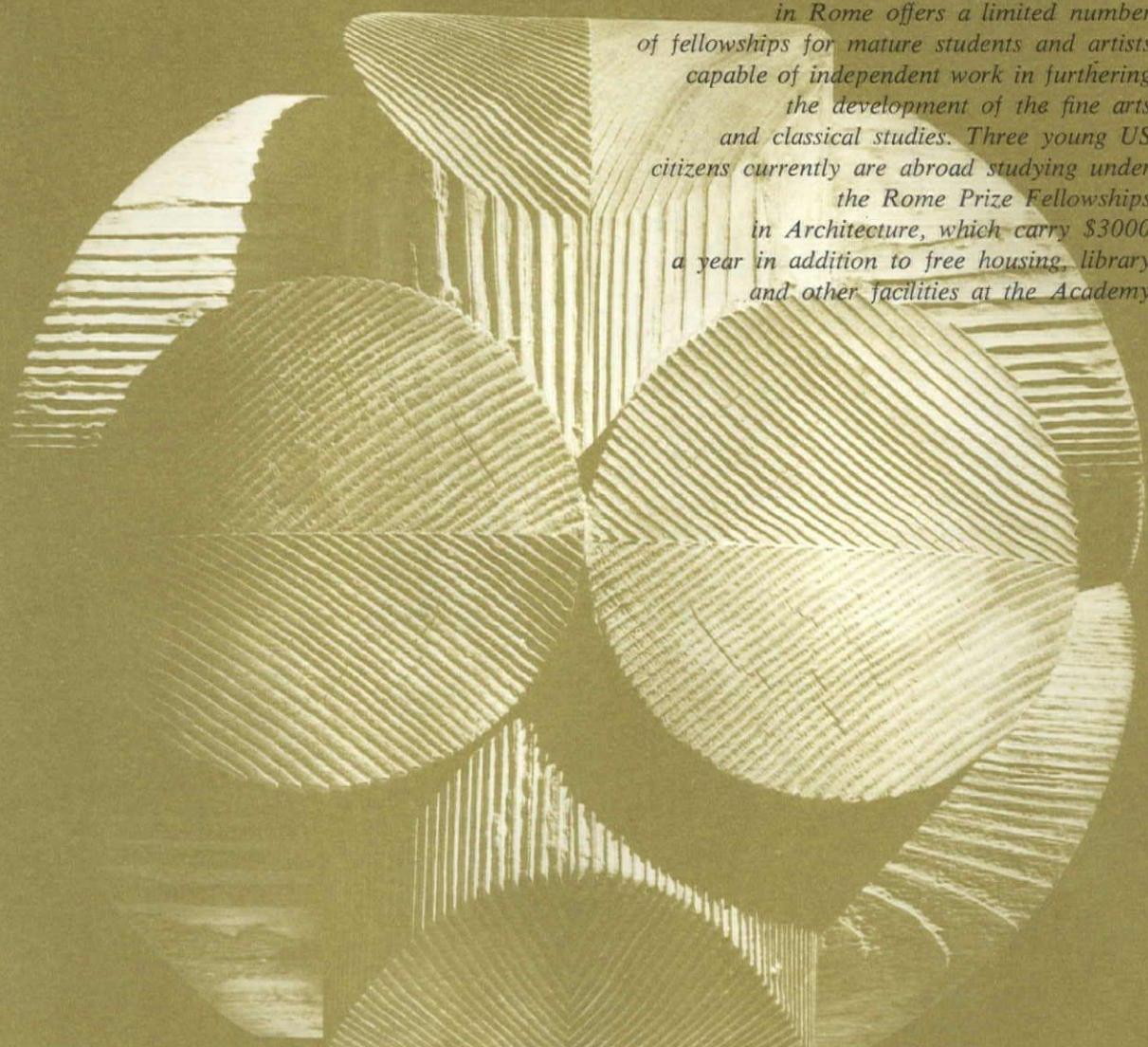
⁶ S. Giedion, “Space, Time and Architecture,” Harvard University Press: 1940, p 156

⁷ N. Algren, “Chicago: City on the Make,” Doubleday, NY: 1951, p 86

1964 ROME PRIZE

A Selection of Work from the Winners' Portfolios

Founded in 1894, the American Academy in Rome offers a limited number of fellowships for mature students and artists capable of independent work in furthering the development of the fine arts and classical studies. Three young US citizens currently are abroad studying under the Rome Prize Fellowships in Architecture, which carry \$3000 a year in addition to free housing, library and other facilities at the Academy.



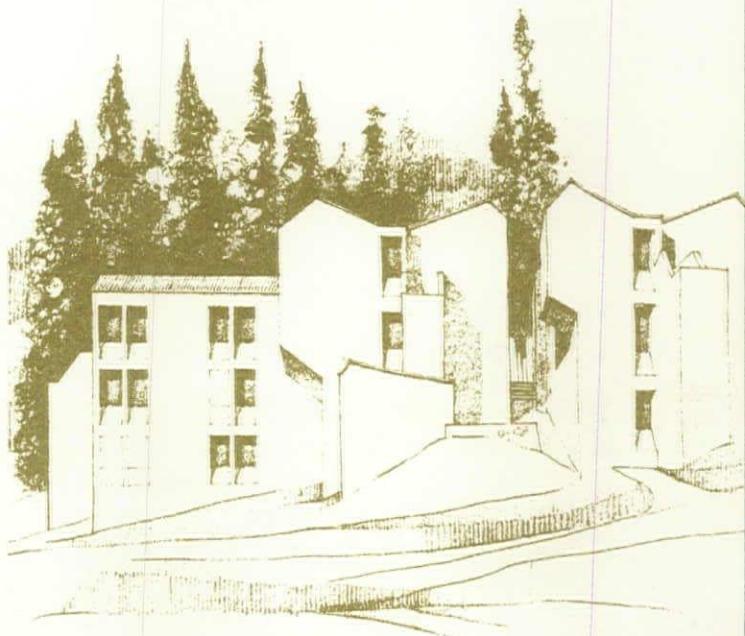
Mr Perry, who received his Bachelor of Architecture from Yale University in 1958, has been working in the office of Ernest J. Kump Associates, Palo Alto

1964 ROME PRIZE CHARLES PERRY

MORLEY BAER



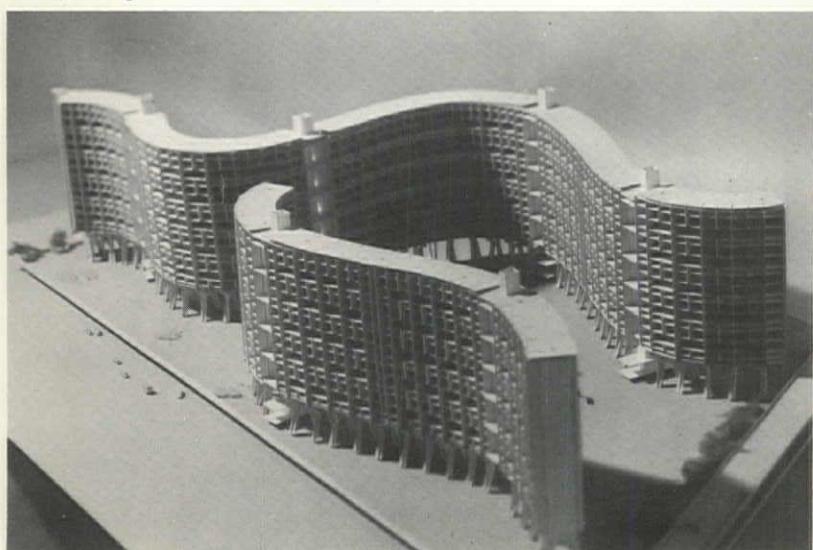
"Casini #2," redwood sculpture two feet in diameter

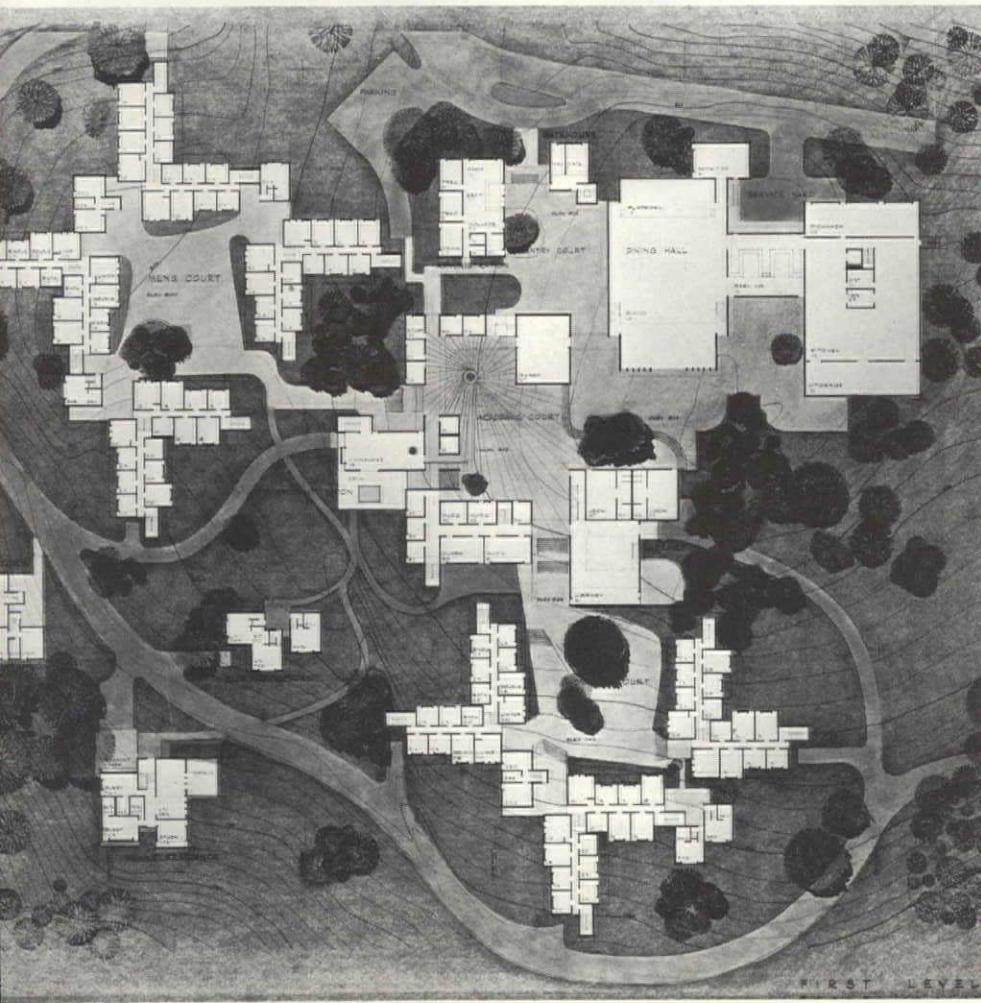
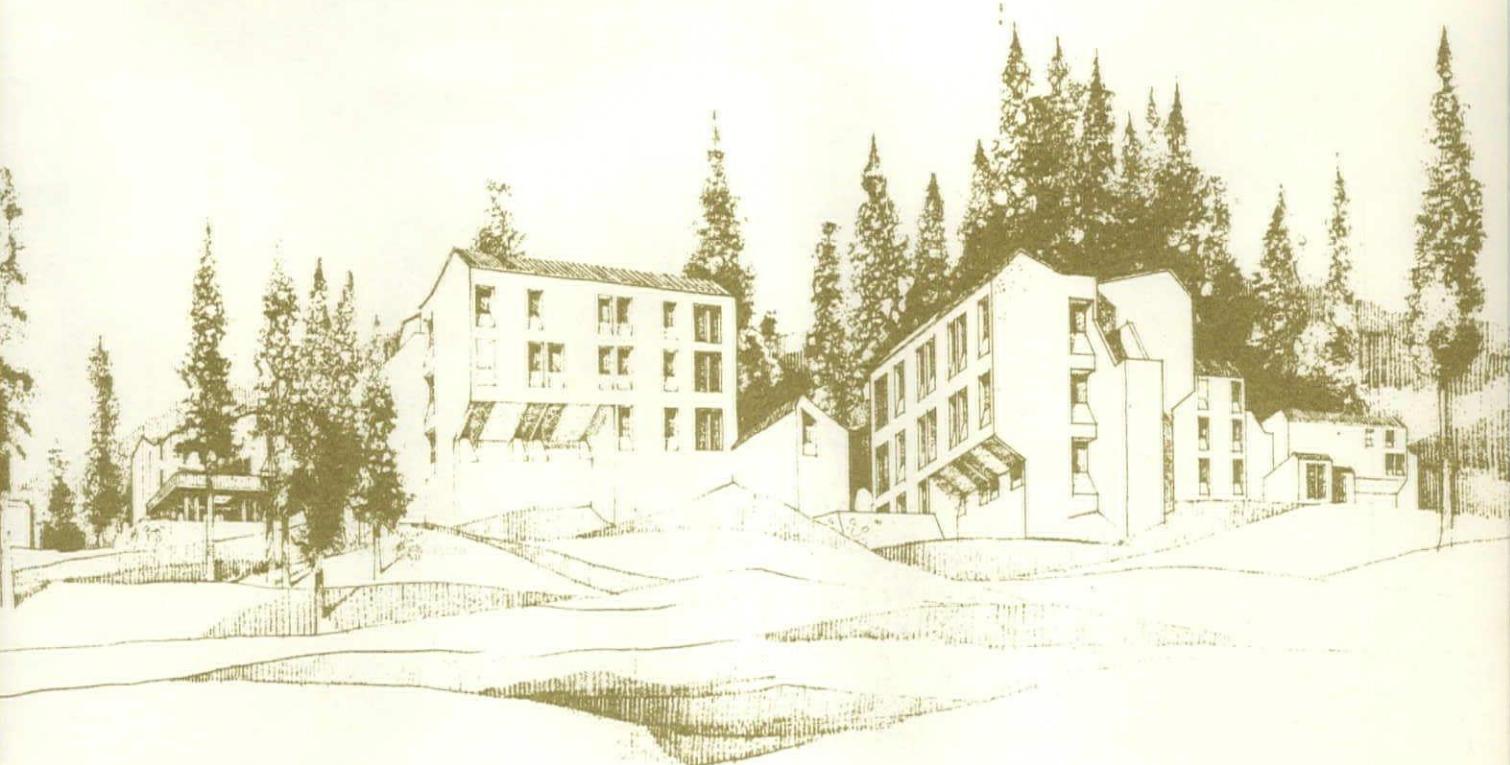


MORLEY BAER

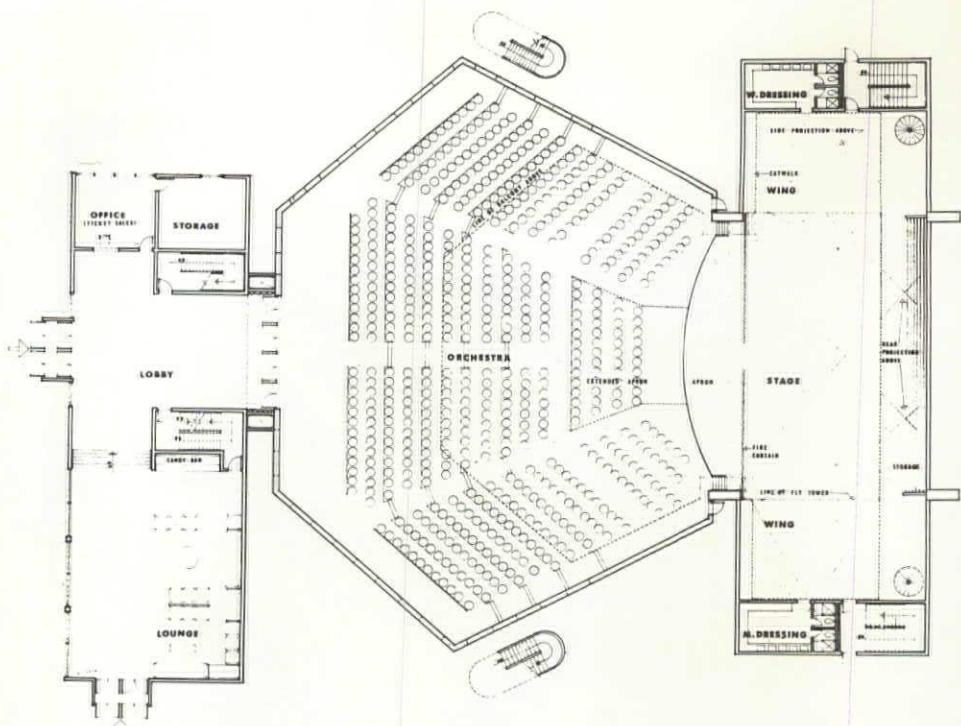


Two San Francisco projects involve the Golden Gateway Redevelopment (1,600 units) done as a student thesis and a newsstand designed in the office of Skidmore, Owings & Merrill



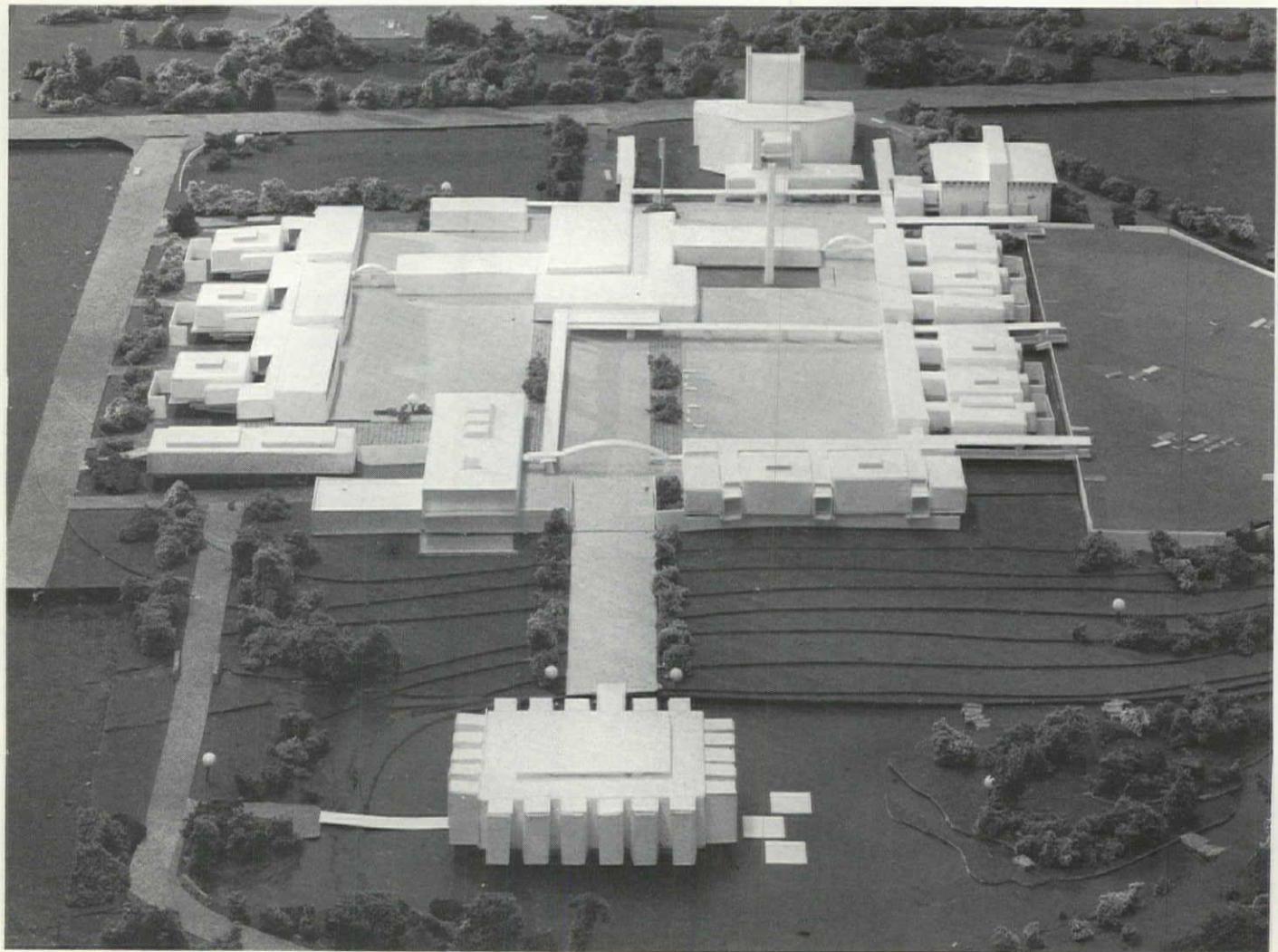


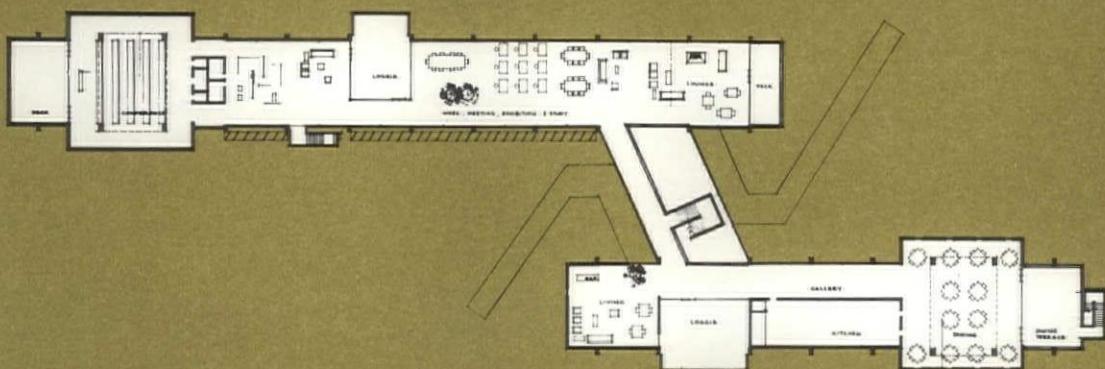
Residential College No 3 for the University of California at Santa Cruz, designed by the Rome Prize winner while employed by Ernest J. Kump Associates, will be built to house 350 students in six-to-eight-man suites



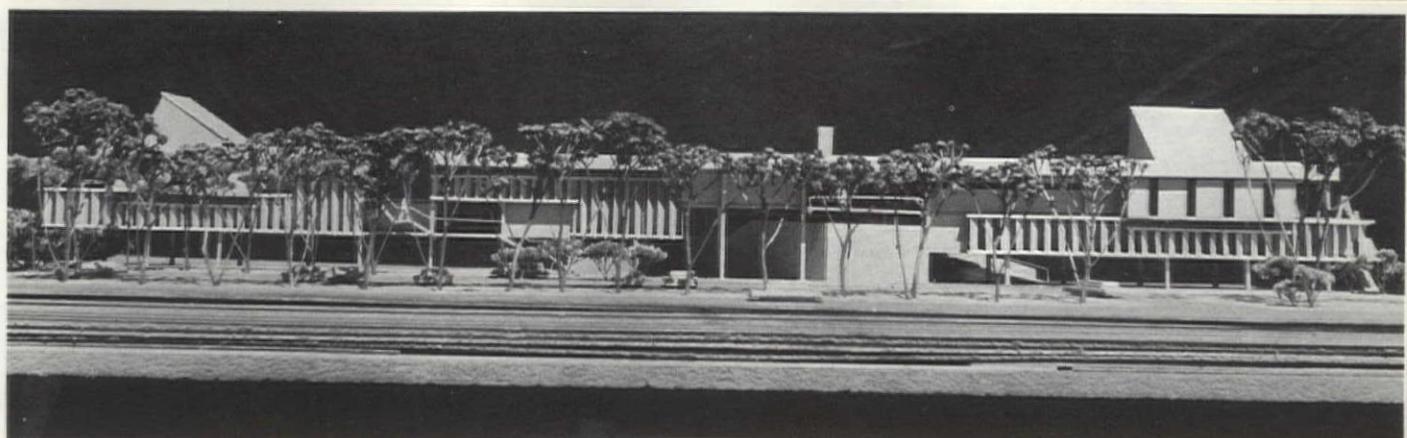
1964 ROME PRIZE THEODORE LIEBMAN

Mr Liebman was awarded a Bachelor of Architecture from Pratt Institute in 1962 and a Master of Architecture from Harvard University. He has been employed by the Boston Redevelopment Authority



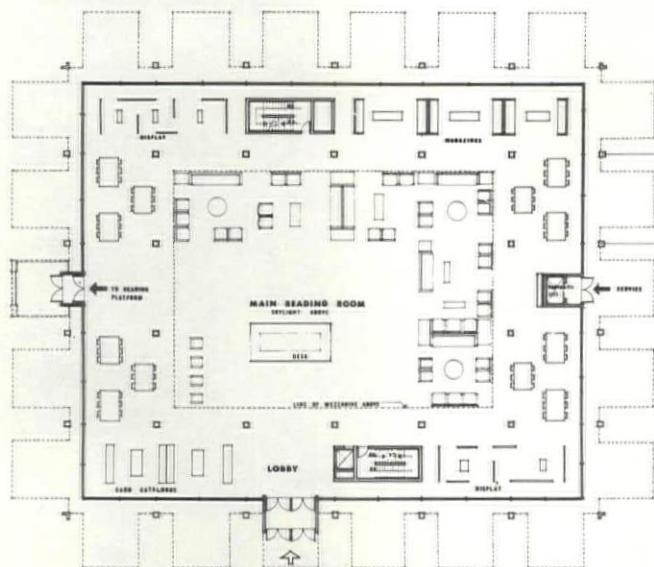


Upper Level Plan

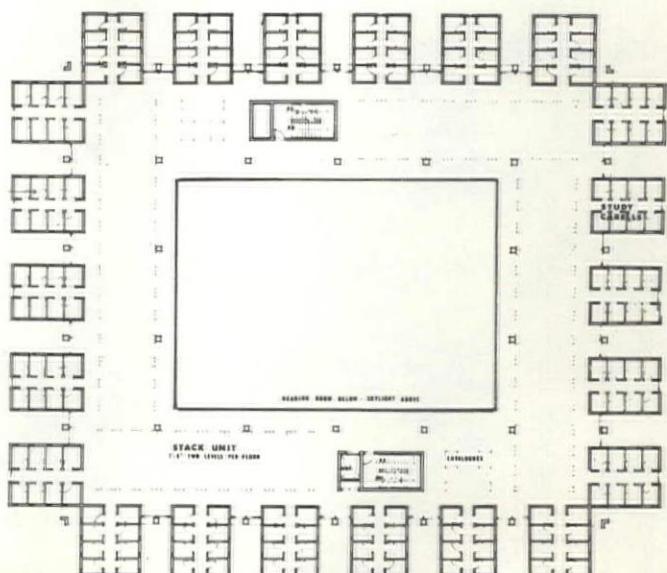


Conferencee Center, a project in the master's program at Harvard, is designed as a meeting place for a group of architects where their professional problems could be discussed during work and recreation. The site is on the New Jersey shore

Main Floor Plan



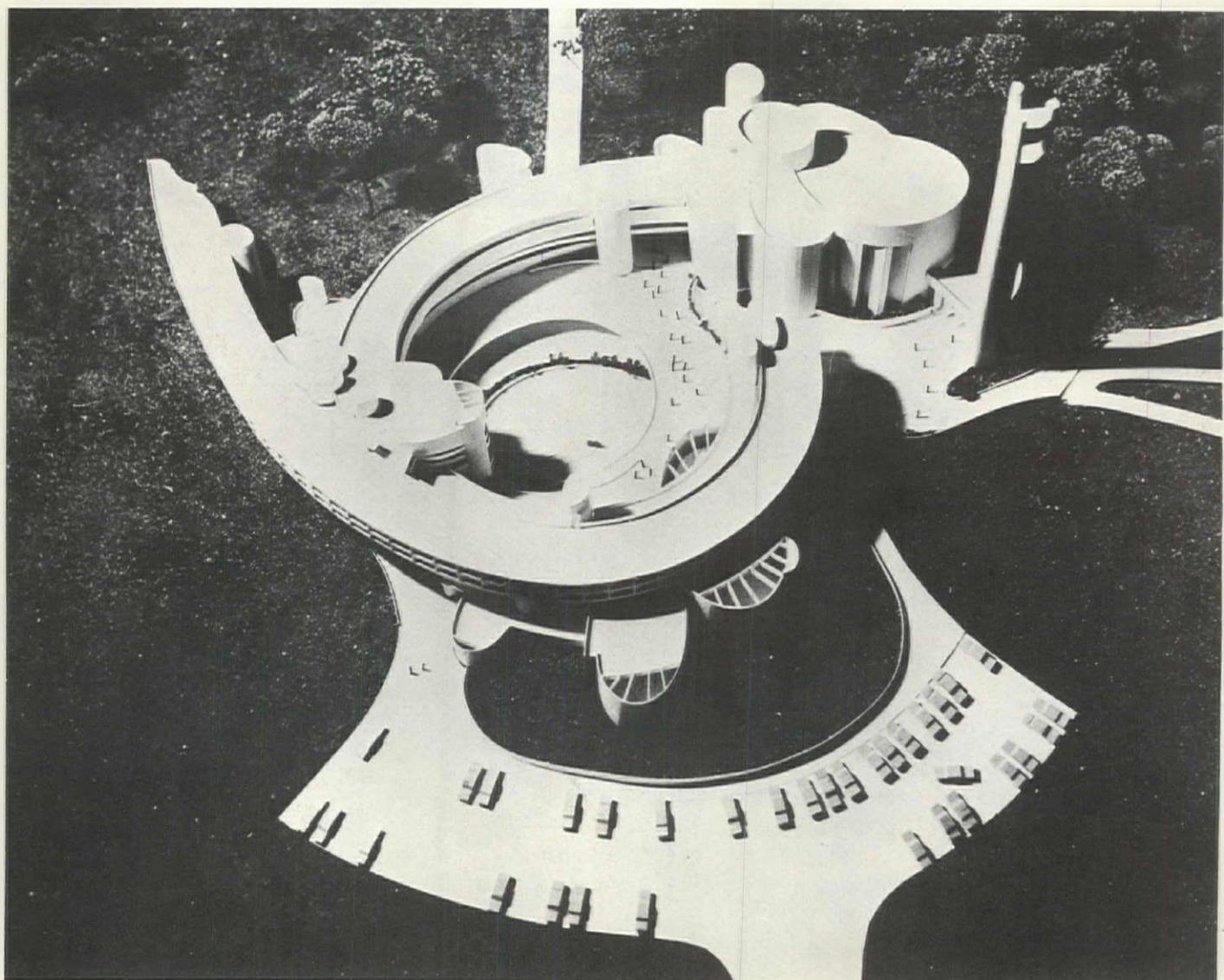
Typical Floor Plan

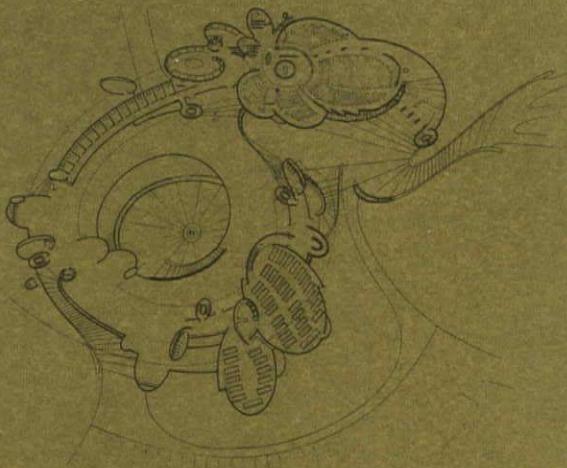


In this collaborative thesis problem, Union Junior College with an enrollment of 600 students requires expansion to four times its size. Wings are developed from the existing structure and from academic and science quadrangles. The theater building (across page) is to be shared by the students and the community. The library design (below) provides individual study spaces for the commuting students

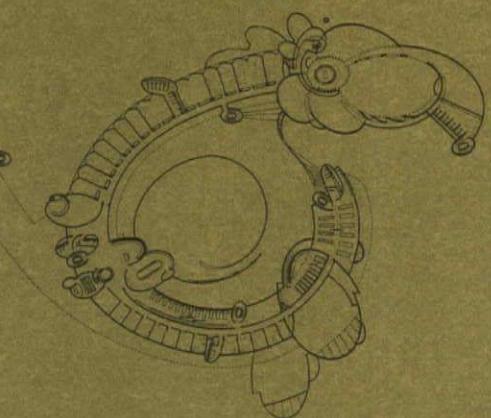
Mr Mittelstadt earned a Bachelor of Arts *cum laude* from the University of Minnesota in 1959 and a Bachelor of Architecture from Yale University in 1964. While studying at the latter, he worked with Paul Rudolph AIA

1964 ROME PRIZE ROBERT MITTELSTADT

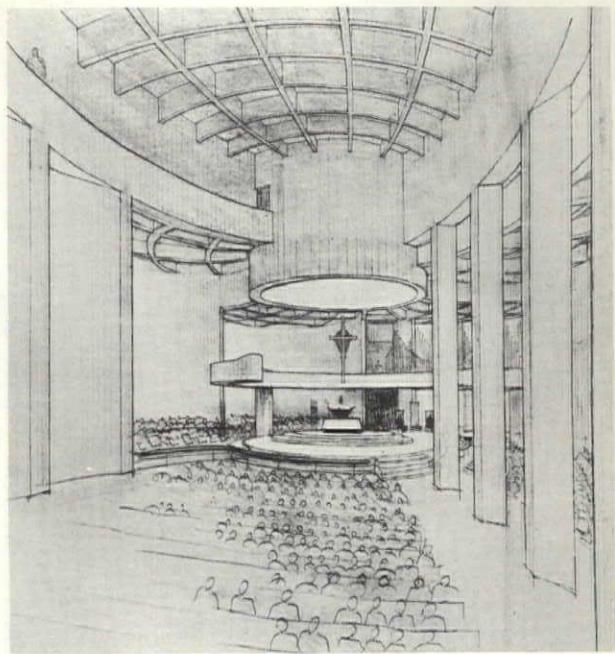




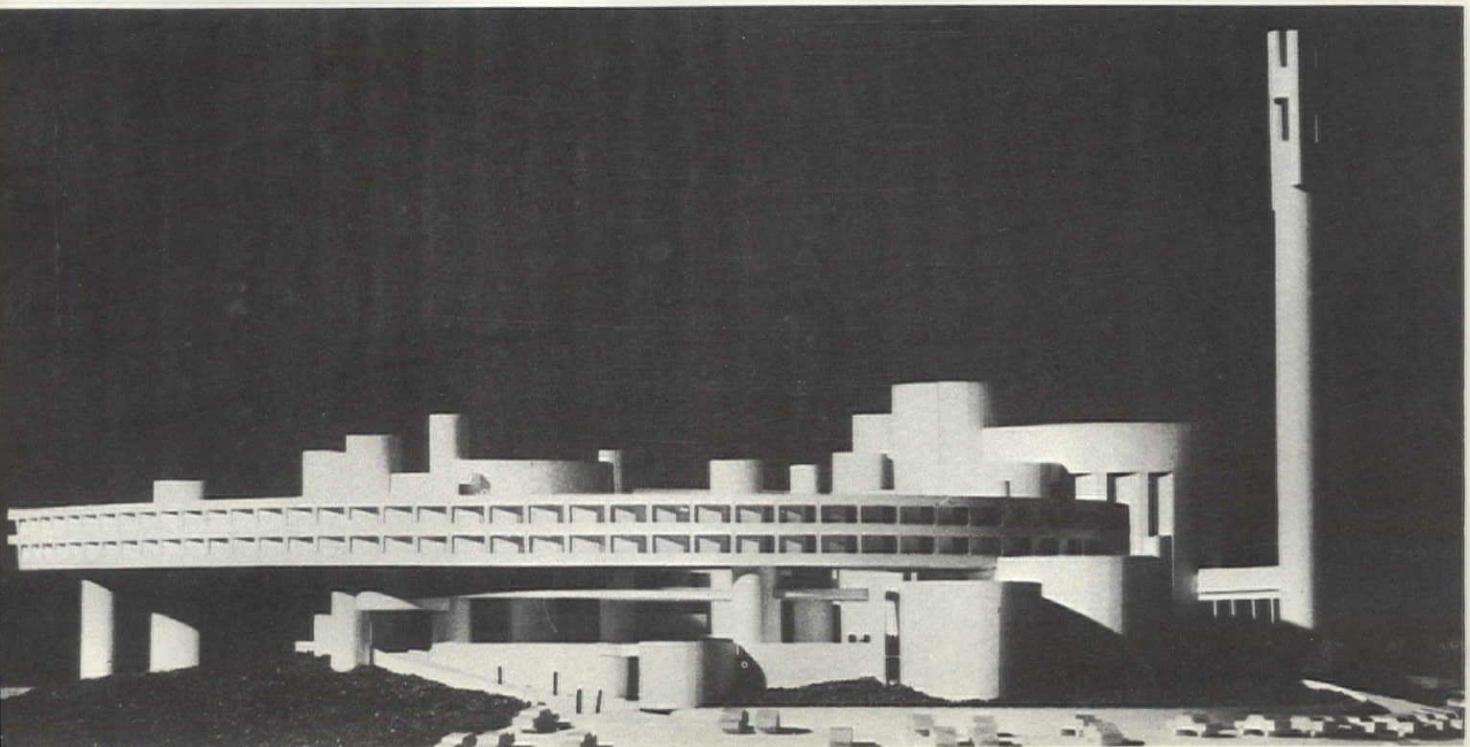
First Floor Plan



Second Floor Plan



Program for St Mary's Abbey, Morristown, New Jersey, involves only the Benedictine monastery, which includes the main dining facility for the monk-operated Delbarton School and the church. Concept provides a complete and separate environment for the monks, while relating functionally to the public elements and visually to the surrounding natural elements. The lifted dormitory wing allows views from the cells and from the main cloister level; the curved-wall vernacular attempts to unify the diverse requirements in the monastic community. In the church, the main source of illumination comes from a large skylight



A CASE STUDY OF ARCHITECTURAL LEADERSHIP

THIS STORY begins with an architect. It is the story of a city, Seattle, given a strong surge toward urban thoughtfulness and esthetic aspiration by citizen volunteers laboring with and through city government. The story hasn't yet been finished, but the experiences during eight years seem to indicate that the civic leadership that architects are prepared to offer can be expanded manyfold by joining forces with kindred souls.

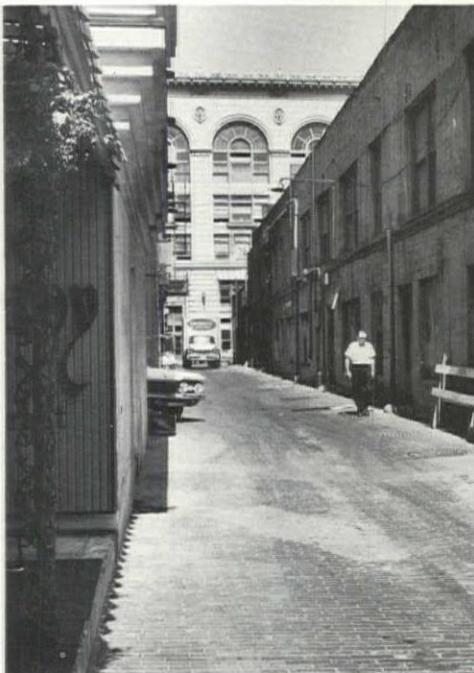
It is told here because The American Institute of Architects, through its Committees on Esthetics, Collaborating Arts, Urban Design and Historic Preservation, assisted by the Committees on Exhibitions and Public Affairs, has declared "War on Community Ugliness" in order to help achieve "a great environment for a great America." This is not to be conceived merely as a negative "anti-ugliness" campaign but as a positive continuing crusade for better communities which are within the creative ability of the citizens and the design professions.

The splendid report produced by the combined efforts of the Georgia Chapters of the AIA, the American Society of Landscape Architects and the American Institute of Planners entitled "Improving the Mess We Live In," as well as the many practical projects being produced by AIA chapters, demonstrate clearly that our country is ready for action now. Noteworthy new urban design projects can be seen in many American cities and can be compared with the significant contributions of our ancestors. One tool now available for chapter use is the establishment of "municipal committees on urban environment and culture." In Seattle this action has become accomplishment.

The Seattle story began when John Stewart Detlie AIA, past president of the chapter, met with a few friends to discuss marshalling the esthetic forces of the city. The initial gathering also in-

Seattle's Municipal Art Commission

BY
ROBERT L. DURHAM FAIA
Chairman
Commission on Architectural Design



cluded a landscape architect, a drama professor, a painter, a newspaper critic and a few others. Out of this bull-session was born Seattle's Allied Arts, a congress of all those associations in the city interested in culture and beautification, and including the local chapter of the AIA. The significance of this step was clearly felt a few months later when the officers of Allied Arts called on the City Council for the establishment of a Municipal Art Commission. By this time Allied Arts numbered in its membership some 20,000 potential voters. The reception given the calling committee was quite different from that which probably would have been given to a group of architects. After a brief study, the request was granted even though initially it was operated on a quasi-official basis.

The May 1955 ordinance establishing the Commission was a one-page affair creating a group of ten members as advisors to the City Council —no salary, no power, no office. The membership was made up of a painter, a sculptor, a musician, a writer, two architects, one landscape architect and three laymen. In 1964, eight years later, it

is generally recognized that the entire cultural climate of Seattle has been affected by this humble beginning. After one year, a more comprehensive ordinance was passed by the City Council (printed verbatim on p 43).

In 1959 the then mayor of Seattle, Gordon S. Clinton, stated, "The increasing influence of the Art Commission in the official family of our city government is a mark of the growing maturity of our city and a tribute to the caliber of leadership exhibited by Commission members. It was your group that suggested in 1957 that trees and shrubs be taken from the freeway right-of-way for landscaping the World's Fair site. By following this suggestion, the Exposition has gained mature trees

and made a substantial saving. The Commission's suggestion that Mark Tobey be honored by the city is another example of its alertness and imagination. We look forward to continued cooperative effort between the Art Commission and city departments so that, as our city grows, we can continue to apply the yardstick of beauty as well as utility to its development."

The Municipal Art Commission is charged with advising the city government on projects which will or should beautify Seattle and add to its cultural vitality. The Commission does its work with the City Council, the Mayor and the city departments in reviewing plans for new improvements from the standpoint of assuring good taste and a regard for Seattle's often threatened natural beauties. As the Planning Commission admonishes, "The right things in the right places," the Art Commission forwards pleasantness and quality of design in all of these "right" things.

At the same time the Art Commission works with civic organizations, individuals and business concerns expressing official municipal support for the so-called "amenities" which enrich urban life for people: more and better music of various kinds, live theater, better art and literature, and the fostering of a physical and cultural environment which pleases the eye, uplifts the spirit and prods the flowering of all native talents.

As it happens, three out of four of the Commission's chairmen have been architects, and much of the study committee work has been contributed by members of our profession. For assignment of work the Commission has generally been divided into small subcommittees somewhat as follows: landscape and architecture; underground wiring; billboards and signs; historic sites; performing arts; civic arts; painting, sculpture, literature and graphic arts; and public information.

Three general principles guide the Commission:

1) The principle that the development of the beauty of the city is the normal function of city government in providing for the general welfare. Constant attention to the processes that contribute to the beauty of a city is the soundest civic business, for beautiful cities the world over have been permanent attractions for tourists through the ages.

2) The principle that public funds expended for civic projects should be spent to insure beauty as well as utility. Beauty is seldom a matter of price, and ugliness which robs the people of their

due is too expensive. To expend public funds to inspire is as necessary for human happiness as to expend public funds for amusement or recreation.

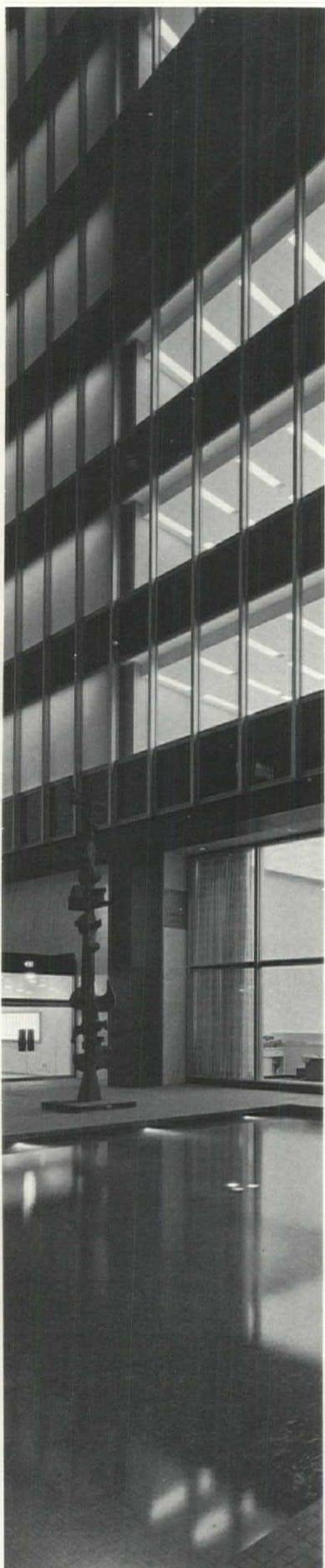
3) The principle that plans for civic beautification and cultural advance must be coupled with deliberate action to insure progress. Some recommendations are needed immediately; others require slower or phase action. Our city must proceed, for time is not on our side. Many American cities have been ruined through lack of a positive program or the lack of the means or organization to act.

Two types of action are recommended to the City Council: First, arrest the process that corrode the beauty of the city or impede the development of Seattle's cultural resources; second, inaugurate definite and positive projects to enable the city to move forward in every cultural way.

In its first annual report the Commission recommended among others the following actions: 1) The establishment of a Seattle Medal of Honor for distinguished achievement, 2) The establishment of a Seattle "Festival of the Arts," 3) The promotion of the rhododendron as the city flower, 4) An inventory of the city's works of art, 5) The selection of architects and artists by competition, 6) Publicity of the city's comprehensive plan, 7) Street beautification, 8) Representation in planning for the World's Fair in Seattle, 9) A unified street tree planting program, 10) Protection of vistas and viewpoints, 11) Development of waterfronts, landscapes and fountains, 12) Parkway lighting, 13) A percentage budget for art in public buildings, 14) Review of plans of utilitarian structures, 15) Preservation of historic buildings, 16) Gateways for the city, 17) Tax support for the city's symphony orchestra, 18) Facilities for a municipal theater, 19) New design for the city's stationery.

Looking backward, the Commission has thus far failed to accomplish many of its goals. Nonetheless, it is significant how many battles have





been won. Architects found that it is quite a different thing to call on the City Council in a committee augmented by bankers, writers, garden club officers and well-known patrons of the arts. At times, requests in line with Art Commission goals found their way to the Mayor's doorstep by devious routes stemming back to Allied Arts and its 20,000 constituents.

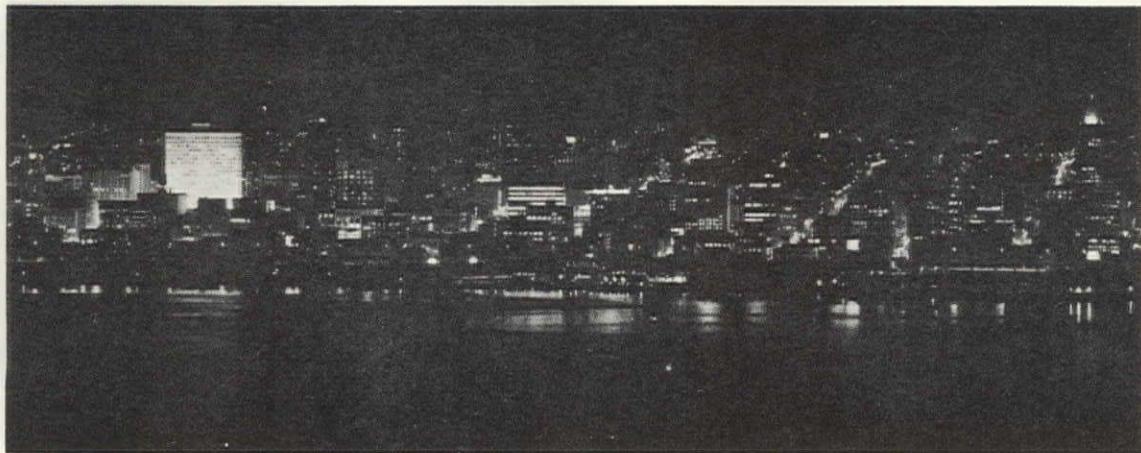
Probably the greatest break for the success of the Commission came through general press interest, and especially because of the interest of the city's leading music and art critic. Louis R. Guzzo of the *Seattle Times* has covered almost every meeting for eight years. Hence, a day or two after each Commission meeting, thousands of citizens were reading about the latest arguments, victories and defeats in the field of esthetics.

"Commissioners Promote Interest in Good Design," "Beautification Isn't an Idle Word," "Let's Stop the Engineering Handouts," "Beauty and Utility Should Wed, Have Children" were some of the titles of the generous space given to Art Commission issues.

"Agencies of government and private industry, too, must be encouraged to hire competent professionals to design anything from a letterhead insignia to a twenty-story building. Mediocre craftsmen may keep the cost down at the outset, but they prove to be more expensive in the long run because their products won't stand the test of time," wrote Guzzo. This is the architect's basic story, spoken in public hearing, finding its way to the people through the daily paper. We architects can't do any better.

Other significant factors have, no doubt, added to the success in Seattle. For one, the major effort put into the planning of the Seattle World's Fair has hastened cultural maturity in this city, only a little over a hundred years old. The establishment of the Central Association, a pooling of the strength of downtown property owners, created another and significant voice for an improved urban environment. Here again architects were in the background but pushing hard in the right direction. When the goals of the Art Commission (obviously "do-gooders" to a city councilman) begin to be echoed by hard-shelled, hard-headed businessmen, action eventually starts.

And it has started. At the end of four years the Commission set up a six-year target: 1) Establishment of scenic drives, 2) Inventory of scenic lookouts, 3) Central business district enhancement including downtown parks and rehabilitation



An ordinance establishing the Municipal Art Commission of The City of Seattle and prescribing the duties and functions thereof.

BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:

Section 1. There is hereby established a Municipal Art Commission to act in an advisory capacity to the city government of the City of Seattle in connection with the artistic and cultural development of the City. Such Commission shall consist of seventeen members to be appointed by the Mayor subject to confirmation by a majority of the City Council. At least three shall be lay members, and the others shall preferably include two members from each of the following arts and professions: painting, sculpture, music, literature, architecture and landscape architecture, and two members learned in the historic or architectural traditions of the City. The Mayor shall solicit suggested nominations for such appointments from architectural, art, musical, literary, educational, museum and other cultural organizations for the non-lay members.

Section 2. Previous appointments to such Commission for one-, two- and three-year terms with one-third of the terms expiring each year under Ordinance 84162, as amended, are hereby confirmed and hereafter all appointments shall be for three-year terms, provided that any vacancy shall be filled for the unexpired term.

Section 3. Members shall serve without compensation from the City, or from any trust, donation, or legacy to the City for their services as such members; but this limitation shall not preclude a member or his firm receiving compensation from the City under contract or otherwise for services rendered outside his duties as a commissioner.

Section 4. The Commission may organize and elect a chairman annually and adopt such administrative procedures as are necessary to accomplish the purposes mentioned in Section 1. City officers and the staff of city departments may consult and advise with the Commission from time to time on matters coming within the scope of this ordinance, and the Commission may likewise consult and advise with such officers.

Section 5. No work of art shall be contracted for or placed on property of the City or become the property of the City by purchase, gift, or otherwise, except for

a museum or gallery, unless such work of art, or a design or model of the same as required by the Commission, together with the proposed location of such work of art shall first have been submitted to the Commission for its recommendation to the city government. The term "work of art" as used in this ordinance shall comprise paintings, mural decorations, stained glass, statues, bas-reliefs or other sculptures, monuments, fountains, arches or other structures of a permanent or temporary character intended for ornament or commemoration. No existing work of art in the possession of the City shall be removed, relocated or altered in any way without being submitted to the Commission for report and recommendation.

The Commission shall have similar authority and duties to those stated in the first paragraph of this section with respect to the design of buildings, bridges, viaducts, elevated ways, gates, fences, lamp standards or other structures erected on or to be erected upon land belonging to the City and concerning arches, bridges, structures, and approaches which are the property of any corporation or private individual and which shall extend over or upon any street, avenue, highway, park or public place of the City.

The Commission with the assistance of the City Building Department is authorized to prepare and maintain a roster of sites and structures in Seattle of historic significance and may recommend to the City Council measures for the preservation of any structure on said roster, including the withholding of a demolition permit for a reasonable time, with the consent of, and with due regard to the rights of the owner thereof.

Section 6. The Commission shall decide any matter submitted to it involving an expenditure of less than one thousand dollars within fifteen days after submission, and upon any other such matter within thirty days after submission. If it fails to do so, its recommendation shall be considered unnecessary.

Section 7. The Commission may advise with owners of private property in relation to the beautification of such property; and anyone contemplating the erection of any building or the making of any improvement thereon may submit the plans and designs or sketches thereof to the Municipal Art Commission for advice and suggestions for which no charge shall be made by the Commission.

of Pioneer Square, 4) Landscaping of the central freeway, 5) Utility pole reduction and undergrounding of new utility wire installation, 6) Billboard regulation, 7) Waterfront development, 8) Fountain construction.

With Seattle's effort to perpetuate the World's Fair site as "Seattle Center" by removal of temporary buildings, the installation of permanent landscaping, and the conversion of Paul Thiry's Coliseum to a 15,000-seat arena, many of the eight points previously enumerated by the Art Commission were accomplished in one seventy-eight acre area. The view from Seattle's revolving restaurant high atop the Space Needle now affords one a look at a completely landscaped complex as conceived by landscape architect Lawrence Halprin.



Progress is being made on billboard control, underground wiring and waterfront development. Few cities can boast so many new fountains as can Seattle. For the first time in recent years, a major street tree planting program took place between the retail shopping core of the city and the World's Fair site.

Perhaps one example will serve to show how the effort of only three architects can be multiplied to achieve success. When the new freeway was laid down over Seattle's topography, thus wiping out 5,000 houses, the landscaping subcommittee of the Art Commission requested the State Highway Commission, through the Seattle City Council, to provide adequate landscaping. After months of patient work, the group finally began to convince the state engineers that the state's preliminary proposals for landscaping were less than desirable. "Instead of small pretty shrubs, we need a reforestation project," stated the subcommittee. While this was going on and due to the same pressure, two outstanding architects were retained for design consultation on freeway structures. The final result is that Sasaki, Walker & Associates have been retained as consultants to the state for what may be two or three million dollars worth of landscaping that would never have been included without the dedicated work of the Art Commission.

Plans for all city structures with the exception of the public schools come before the Art Commission for review and recommendation to the City Council. The most significant part of this procedure is that plans for utilitarian structures must by city ordinance be brought by each city department for review. Details of railings down to the shape and spacing of basic supports are all

part of the review procedure. This means, of course, that the products of our best-known architects must also be brought before the Commission for review. Such a procedure is not without its birthpains, but, nevertheless, a new consciousness has been engendered in city departments on the necessity for the selection of the best qualified professionals available for the design of all public structures.

During the last two years the Institute has placed a major emphasis on the increasing demand for programs which will overcome urban ugliness. The AIA Committee on Esthetics was established and with Institute funds, a series of seminars on esthetic responsibility have been held throughout the country. Significant contributions have been made by some chapters to this over-all program. A pilot study of "Design Concept Seminars" is still under study to determine procedures for undergirding our responsibility as architects to create better design on the projects we do.

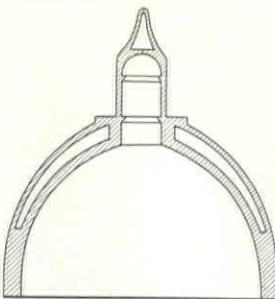
The time has now come to take the fight to the cities and towns of America through chapter action. This is not to suggest that they have not been diligent in fighting urban blight, nor that architects have been ineffective in contributing to the appearance of our American cities. However, there is reason to believe that the tide is now turning and that there are more and more civic leaders who have become aware of the immense need for protection of our countrysides and, by adequate planning, creation of more attractive and livable urban areas.

The Institute, through its Board of Directors, Commissions and Committees, is continuing to establish procedures and tools for use on the national scene in this all-out war on ugliness. The real strength of the Institute, however, lies with each member and through teamwork by the AIA chapters. What has proved to be an effective technique in Seattle appears to be practical for any metropolitan area.

Even the city councilmen agree that the Art Commission is a useful tool for democratic leadership. One councilman, not noted for his past support of Commission aims, recently returned from Europe saying, "You know, we ought to get busy and save some of our historic buildings." The use of art commissions in American cities may prove to be a potent tool for chapter use.

The Seattle Ordinance which appears on the preceding page is but one example to be made available for local action. ■

Photo credits: p 40—Central Association of Seattle; p 41—Chas. R. Pearson (upper left), Central Association; p 42—Chas. R. Pearson (Harold Balazs sculpture before reflecting pool of Norton Building: Bindon & Wright, architects; Skidmore, Owings & Merrill, consultants); p 43—Art Hupy; p 44—Chas. R. Pearson (George Tsutakawa fountain in patio of Seattle Public Library: Bindon & Wright, architects; Decker, Christensen & Kitchin, associated architects)



DOMESMANSHIP

BY M. R. WOLFE

*Chairman, Department of Urban Planning
University of Washington, Seattle*

*With tongue in cheek and sketchbook in hand,
Professor Wolfe directs his spoof at the academic
in architecture and urban design*

ONE may notice that the third person is used here—as is proper in dispassionate intellectual inquiries. This is just one of the guidelines in the process of an academic establishing his creativity. In other words, certain postures of the ritual dance must be maintained by the university instructor who lives under the publish-or-perish guillotine. You see, this article is intended to satisfy two ends: secure a publication (this is the way we say it: "He has seventeen publications"); and write it in a field of interest which is really quite indefinable—which clearly makes this a research effort.

It is only fair to warn the gentle reader about other things to watch for. Protocol requires many trappings of the academic article, consequently a normative end result, ie, fiddling around with establishing standards, is considered quite pedestrian. On the other hand, a paper which studies method is quite in order. To seek a substantive end result is really quite gauche, but orientation to the methodological, to repeat, hits the mark, particularly if the coining of new terms is involved. Too, above all, one must be iconoclastic; deride all the commonly accepted premises in the field yet be self-deprecating at the end by noting all the facets that were not considered or needing further study. Finally, remember that this is the footnote culture and although this paper fails in that regard, normally, profuse, documentative, illustrative, editorializing and citation footnotes are really indicative of scholarship. I have it on good authority that professorial promotions depend on footnote quotas and the breaking of footnote sound barriers.

The stage must also be set here for discussing a specific subject as well as the rules of the game; therefore, here go some assumptions (or better, "hypotheses"). First, we conjecture that there is some human comfort in a recognizable thing (the associational idiom); second, a qualitative judg-

ment may be brought in by consideration of taste (over and above recognizing something, it may or may not appeal to a particular esthetic); third, recognition and taste may be combined by examining contemporary townscapes. The question arises as to how to get at elements of cultural continuity and an evaluation of the city as an artifact short of organizing a monumental research effort. Since this cannot be done in this era of space, speed and specialization, one puny indicator reflecting all these things must be defined which is: a) universally recognizable, b) prevails historically and c) so located that it constitutes a physical landmark with perceptual attributes inherent in it.

These requirements lead us nicely to a new finding—a premise henceforth to be called the Landmarkian Postulate. It goes like this: The architectural Dome amidst its original or eclectic classic paraphernalia which tops a public or quasi-public building and which is located as a focal point is the one urban element meeting the conditions cited above. It is ubiquitous and universal—it may be found everywhere; it spans the life of contemporary civilization from the Romans through the Renaissance to the era of the ranch house. It reflects power whether built for gods, kings or the corporation. (Examples: temples, churches and the modern sexed-up cemetery; the palaces, state houses and homes of the tycoons; the money house—savings, credit and insurance offices, the campus library and the company headquarters.) It occupies a place in the city that makes it physically distinctive. It may be seen towering over lesser buildings, or even though it may be towered over, it remains equally prominent in contrast as the only building able to withstand the forces of economic obsolescence as the curtain walls mushroom around it.

One can often tell time by it, pigeons love it and it certainly is a staple of the tourist bus tour. It is singularly distinguishable in meeting the test of the urbanistic in that it is an anachronism today and it does not arise from the vernacular. This edifice was plunked down as a reminder of our pseudo-intellectual and technological prowess.

To make the point clearly, graphic methods must be resorted to; therefore, among these words



FIGURE 1



FIGURE 2

are a few sketch examples—a very random sample, using a very limited universe. The reader must pair these impressionistic sketches (which is, obviously, an idiot way of saying that the research construct uses case study and control examples). By doing this, the first two exemplify and extrapolate a Renaissance image. In the Piazza del Popolo (fig 1) of Rome exists the prototype of the ornate public buildings flanking an open square. An entrance to the city is also represented, complete with twin churches articulating the square and the "crow-foot" radiating avenues. The emphasis on vistas, combining linear and terminal forms of space is part of the carefully contrived set. It is just a matter of time and cultural transference that produces the capitol image (fig 2, State House, Olympia, Washington; it could be in Providence, Columbus, etc; St Louis, San Francisco and the like if city halls are included). Here is the temple, modified again, behind the fir trees of the Northwest. The wonderful gimmick here is that if one looked long and far enough this physical form could be found on the tundra, in the desert, in the jungle and in the interests of projection (double meaning), we can anticipate similar findings on the moon by our astronauts.

Another urban focal point epitomized is in Florence (fig 3) with the street scene terminated by the dome and campanile of the cathedral. Compare this with Pasadena (fig 4), the Florence of the West Coast. (With its latter-day patrons of the



FIGURE 3

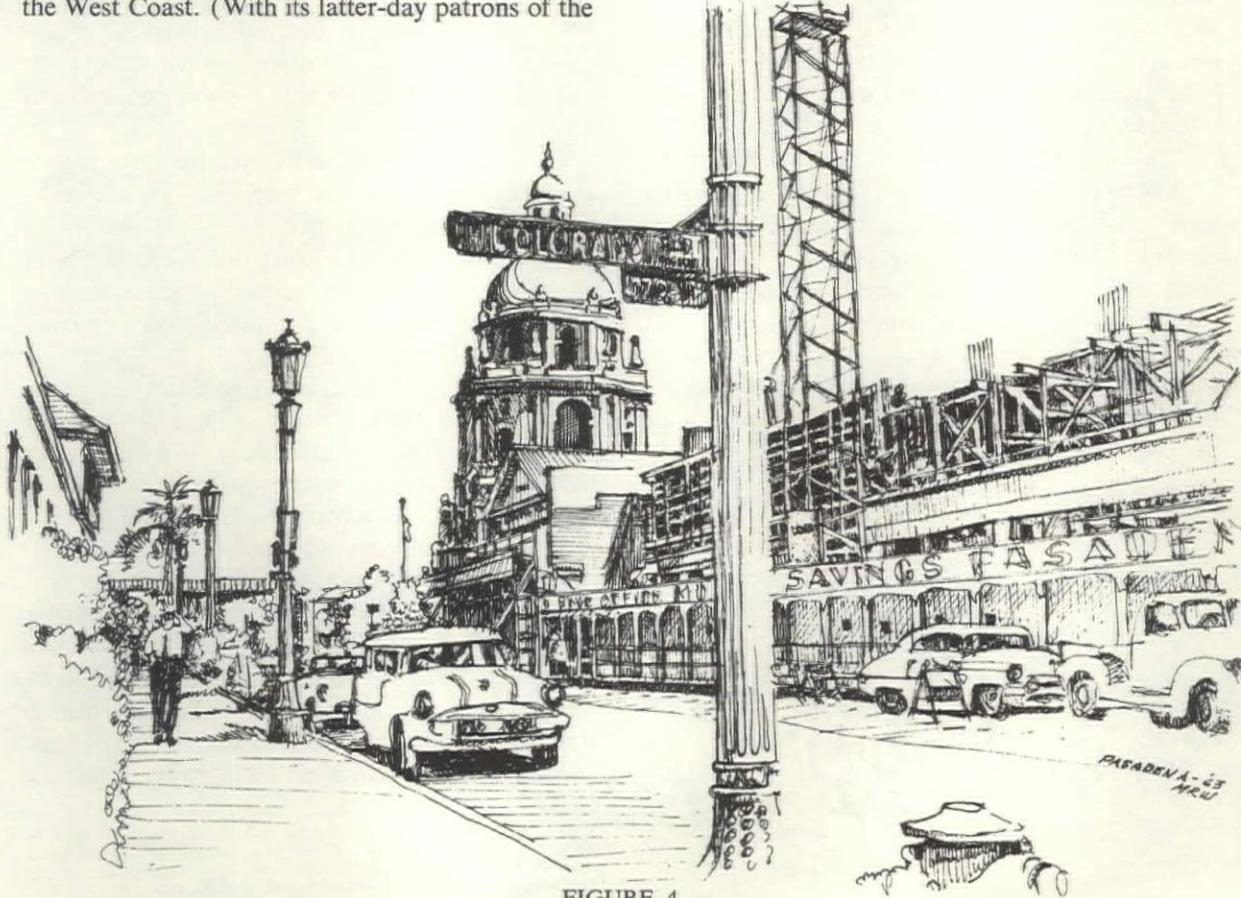


FIGURE 4



FIGURE 5

arts, the seat of learning, etc. Who are the latter-day Medicis?) The City Hall dome, somewhat jazzed up again to meet the sun boosters, play and retirement idiom, once more is matched by a campanile (this time a construction tower) which is more permanent than one supposes at first blush. A "space extensive" scene is being made space intensive like the Italian Florence example, by the building of a new office structure. Incidentally, however, the question comes up as to whether this is being done with concern for the Landmarkian inference of the grand dome or not.

The common element in the last two depictions (figs 5 and 6) is in the locale of Boston. What is more nostalgically American than the Bulfinch-designed State House? What more carefully sited; what more fostering of the landmark implication and emphasizing cultural continuity in brick and stone? Of the other (fig 6), what is more carefully sited than the gas station? What more nostalgically American than the Roman temple with gas pumps? What more fostering of the landmark

tradition but with the thought also extended to many towns? The idea of mass-producing a pre-conceived design idea which when put out in various communities would be singularly identifiable and insure cultural and visual continuity is so meaningful as to choke up those contemplating it. Above all, you see, the particular landmark—the gas station—could be observed wherever one went—ah, the security of it all!

What comes out of this overview?

1) Physical domesmanship is too important to leave to the Domerer

2) Mental domesmanship implies that people are incurably sentimental incompetents, but really only pop artists see the truth

3) To the precious: Don't knock the buildings of the entrepreneur, the eclectic or the romantic; who's to say what'll be discovered later as beauty in the form of "folk art"?

In any case, I herewith deprecate this effort by noting that the Gestalt theory was not brought in or even obliquely referred to; unfortunately game theory and computers were not used, which marks this as intellectually neolithic, and no syndromes were discovered or attached to any group although the temptation to discuss a "dome syndrome" lurks close. However, since the writer possesses an academic tenure rank already, he may indulge in such pontification without the usual scholarly substantiation, as a momentary respite from the development of a massive, definitive, all-encompassing esoteric tome on the subject.* ■



FIGURE 6

* Here is the place for explanation and citation of the work in progress, a certain amount of bewailing of the lack of research funds for the humanities liberally sprinkled with references to foundations bearing the name of automobiles, steel fortunes and Mama Fed.



Commission on Architectural Design
Robert L. Durham FAIA, Chairman

Committee on Religious Buildings
Kenneth E. Richardson AIA, Chairman

A Guide for Planning Church Buildings of the Protestant Episcopal Church

BY MARTIN RAY YOUNG JR, AIA

The seventeenth in a series of reports prepared by the AIA Committee on Religious Buildings intended to serve as guides for the architect faced with planning a building for a faith other than his own

THE Protestant Episcopal Church in the United States (the Episcopal Church) is an extension of the Church of England and came into being at the time of the American Revolution. The Episcopal Church is a part of the one Church begun some two thousand years ago when Christ commissioned His Apostles to carry the Gospel into all the world under the guiding power of the Holy Spirit.

As early as the third century Christianity was in Britain. By the sixth century, invading tribes of Angles and Saxons had almost extinguished the British Church, but a remnant survived. Joined by a mission from Rome, the Church gradually converted the barbarian invaders. After twelve centuries English churchmen found it necessary to resist encroachments and claims of the Papacy, and finally refused to tolerate them. Communion between the English Church and the Papacy was broken in the sixteenth century. Many reforms took place, made necessary because it was felt the essential Christian faith in the course of fifteen centuries had become obscured and overlaid with erroneous additions. This was a reform from within which in no way interrupted the continuity of the Church or broke any of its connecting links with the earliest days.

The Episcopal Church is at once catholic and protestant, primitive and reformed. It is catholic and primitive in that it has preserved the faith and order which in the early days were taught everywhere. It is protestant and reformed in that it did away with what it considered to be certain abuses of the Middle Ages, and to this day it protests the error of what it holds to be unwarranted and unscriptural processes.

Traditionally the Church has provided regular services of worship, baptism, teaching, confirmation, marriage, burial and has ministered to other needs of its people. Traditionally the Church has had the lay order (the people) and the clerical order (the bishops, priests and deacons).

In the beginning the ancient Church had bishops (the Apostles) and people. The people ministered to each other and to those outside the church. The bishops were the shepherds of these flocks. As the Church grew it needed and trained assistants for the bishops, the priests. Further developments added a third order, the deacons, to assist the priests. From the earliest days, and surely influenced by the rabbinical tradition, professionals in the church have been scholars. With the vocational demands of the present day this custom becomes more demanding.

Meantime the laity, which in the Middle Ages had become mere spectators and those unto whom the clergy ministered, is emerging as a body of participants and ministers.

Basic Beliefs

The Church maintains that the Holy Scriptures are the ultimate rule of faith. Its statements of doctrine are the Apostles' and the Nicene Creeds and the Thirty-nine Articles of Religion. Its position rests upon the four foundation stones of the Chicago-Lambeth Quadrilateral, namely, the Historic Episcopate, the Holy Scriptures, the Creeds and the two major sacraments (Holy Baptism and the Holy Communion). The Book of Common Prayer is the official formulary and standard of worship.

Worship, as set forth in the Book of Common Prayer, developed in several forms commencing with the sacrament of Holy Communion, which had its beginnings in the early Church. Morning prayer and evening prayer have emerged from the daily offices of the monks at the time when they, almost alone, made up the Church. The sacrament of Baptism, which began as a corporate action, became through the ages a private affair. However, it now assumes the early corporate nature.

Whereas the universal use of the Book of Common Prayer would seem to make the worship in each church the same, there are marked degrees of difference in liturgical expression among them.

Strict interpretation of an ancient rubric that only confirmed Episcopalians may receive Holy Communion has changed in many parishes to include members of other communions who have been

baptized and confirmed, there being a growing consciousness that it is the Lord's Table and not the exclusive privilege of its parish members.

Church Government and Sequence of Authority

The central authority of the Protestant Episcopal Church in government is the General Convention. This body is composed of the House of Bishops and the House of Lay and Clerical Deputies, the latter elected by the diocesan conventions. There exists, however, a unique interdependence among all the parts. The General Convention depends solely for its existence upon the constituent dioceses. Even its House of Bishops, short of becoming one exclusive missionary body, may not perpetuate itself for it is the people and clergy who elect a diocesan bishop. The worshipping unit of the Church and its principal source of dedicated people and money is the parish, yet this basic unit depends upon a bishop to confirm its members and ordain its priests and uses a prayer book authorized only by General Convention.

PARISH CHURCHES: the local church or congregation consists of the following:

1) *Rector*: spiritual leader and presiding officer who must be a priest

2) *Vestry*: directors of the parish corporation, whose powers are temporal only. Vestrymen usually head the various operating committees of the parish

3) *Senior Warden*: appointed by the rector, acts as first vice president of the vestry and is concerned usually with pastoral and worship matters; he is called the "rector's warden"

4) *Junior Warden*: appointed by the vestry, acts as second vice president of the vestry and is concerned usually with properties and finance. He is called the "people's warden"

5) *Clerk*

6) *Treasurer*

7) *Department of Education*

8) *Altar Guild*: women devoted to the preparation and care of the altar and the preparations for sacramental functions of the church

9) *Men's and Women's Service Groups*

10) *Boys' and Girls' Service Groups*

11) *Sexton*: the custodian principally responsible for the readiness of the church for worship, etc.

The parish elects the vestry, and the vestry elects the rector. The rector has sole charge of the spiritual concerns of the parish, subject to the godly counsel of the bishop; and he governs the use and control of the church and church buildings. The rector is elected for life and is removable by the bishop only. The parish elects delegates to the diocesan convention. Wardens are ex-officio delegates.

MISSIONS:

1) *Rector*: the bishop who also holds title to the mission property

2) *Vicar*: the rector's appointed representative who functions like the rector of a parish but is answerable to the bishop

3) *Bishop's Warden*: a member of the mission chosen by the bishop to serve as its lay leader in charge of temporal matters

4) *Bishop's Committee*: laymen elected by the

people of the mission with the bishop's approval who serve more or less as a vestry

Missions have their beginning with a nucleus of Episcopalians who wish to serve in the establishment of the Church in an area not served. A diocesan mission is organized and sponsored by the diocese, a parochial mission by a parish. Where it is a parochial mission, the rector, wardens and vestry of the parish replace the bishop in the outline structure indicated above. Missions, although requiring financial aid, contribute token support to the diocese and, through it, to the national and world Church. As soon as a mission can maintain itself and give substantial support to the diocese, it petitions the diocesan convention for parish status. Once a parish, it may call its own rector, and the sponsor transfers to it title to the property.

DIOCSE: the working unit of the Church is the diocese. It is composed of the bishop or bishops and not less than six parishes.

1) *Bishop*: a priest elected by the diocesan convention subject to the approval of the standing committees of a majority of all the dioceses and a majority of the bishops having jurisdiction and is consecrated by other bishops. He is also called the diocesan and the ordinary

2) *Diocesan Convention*: consists of the bishops or bishops, the clergy within the diocese and laymen elected by the parishes and missions

3) *Cathedral*: the parish which is the seat of the bishop. Although he is rector, the administration, similar to a parish, is in charge of a dean and chapter. The latter includes the clergy of the cathedral called canons and designated laymen of the staff. The Board of Trustees includes the bishop, the dean and laymen elected by the diocesan convention

4) *Standing Committee*: composed of clergy and laymen elected by the diocesan convention

5) *Diocesan Council*: composed of laymen and clergy elected by the diocesan convention and some appointed by the bishop. It advises the bishop on financial and property matters

6) *Departments*: several in number carry on the work such as education, missions and ministry

7) *Commissions*: advisory bodies appointed by the bishop to assist the standing committee or the council on marriage, preaching, architecture, etc

8) *Chancellor*: legal counsel to the bishop

9) *Diocesan Institutions*: may be hospitals, schools, social agencies.

The bishop is the administrator and spiritual leader of his diocese. He presides over the diocesan convention. He ordains deacons and priests. He regularly visits all parishes and missions and confirms baptized persons. Should he be unable to carry all of the work of a large diocese a bishop suffragan or bishop coadjutor may be elected (same procedure). The suffragan assists the bishop, has limited authority and does not succeed the bishop. The coadjutor normally succeeds the diocesan.

The diocesan convention meets annually and elects delegates to the provincial synod and to the General Convention. It legislates its own canons but conforms to certain canons of the General Convention.

Deaneries are divisions of the diocese chaired by a constituent rector or vicar appointed by the bishop. These bodies serve to assist the bishop and diocesan departments in carrying out the work and in disseminating information.

MISSIONARY DISTRICTS: areas not organized on a voluntary and self-supporting basis are constituted by the General Convention as missionary districts. Its organization parallels the diocese in most respects.

PROVINCE: a regional group of dioceses and missionary districts.

Synod: governing body of the province consisting of the bishops and elected lay and clerical delegates from the dioceses and districts. The synod has no jurisdiction over its constituent dioceses or districts but implements such programs as concern them mutually and it elects members of the National Council.

GENERAL CONVENTION: the central authority as heretofore indicated and consists of a House of Bishops and a House of Deputies. It meets triennially and its will is carried on between conventions by the National Council.

1) *Presiding Bishop*: the chairman of the General Convention and the National Council is elected by the House of Bishops. Except as chairman, he enjoys no more authority or respect than any other bishop

2) *House of Bishops*: composed of all the bishops of the church. It meets annually and at its own will may issue interpretations of doctrine and pastoral letters. It elects its own officers, it elects missionary bishops and is the final authority on doctrine

3) *House of Deputies*: it is composed of the elected clergy and lay delegates from the dioceses and missionary districts

4) *National Council*: is concerned primarily with missionary work of the Church, domestic and overseas. It is composed of four bishops, four priests and eight laymen elected by the General Convention and one member each elected by the provincial synods. The National Council offices are in New York City.

Buildings for Worship and Service

TYPES: Church buildings are constructed for worship and education, which functions are essentially interrelated. Provision must be made for administration, probably separate fellowship activities and related facilities. Consideration should be given to the accommodation of several types of worship services (see prayer book) and to the specific nature and work of the parish or mission. Few missions remain so permanently: most of them become parishes and, with the change in status, little change occurs in function. Sizes vary, although the trend is to not exceed a membership of 250 families.

A cathedral is a parish, usually larger, and its only functional difference as a church is the permanent bishop's chair in the sanctuary. A cathedral complex quite frequently must accommodate more extensive activities than a parish. As a central or metropolitan church it may provide for social service, cultural activities, youth programs and interchurch (or interdenominational) functions on a much broader basis. It may house the diocesan convention. Paro-

chial schools provide facilities closely like public schools but should express a religious character.

MANDATORY REQUIREMENTS: There is no one sacred form or arrangement of space for any building. There is no one sacred form for any piece of church furniture; there is no one sacred spot for it to occupy; the materials of worship and the space they occupy must serve the purposes of worship and never become ends in themselves. Therefore, any size, shape, position, color or material that helps turn man's mind to the realization of the presence of God is not only permissible but desirable, especially when it brings into the use of worship the contemporary discoveries and the experiences of man in every field of endeavor.

SUGGESTIONS FOR PLANNING:

1) *Worship Space*: the Catholic tradition holds the sanctuary to be the altar area enclosed by the communion rail; the place of the clergy (where not within the sanctuary), the presbytery; and the congregation's area, the nave.

a) *The Altar* is the worship center and should dominate. The altar should be close to 39 inches high, 30 to 36 inches deep and not less than 6 feet wide. There are many acceptable forms, the table being predominant: the altar stone and crosses traditionally incorporated in the top are not required generally.

b) *Communion Rail* should surround or extend on three sides of the altar where possible.

c) *Aisles* should be adequate for processions which are a worthy and unique tradition in this church. A generous provision of aisle width may seem to require excessive floor space but is a valuable means of providing a sense of graciousness and flexibility not otherwise attainable.

d) *Seats* should be comfortable and well-spaced to accommodate both access and kneeling. Three feet is a minimum. Kneelers should be positioned for a relaxed vertical posture of the worshipper. Provide adequate racks or shelves for hymnals, etc.

e) *Font* for Baptism is of great importance. Its historic placement in a separate building or very symbolically in the entrance to the church favors private ceremony. The growing desire for a corporate Baptism like the early Church (within the body, before the congregation) indicates a central location, unless the congregation will proceed to the bay or building where the font is. A modest font near the sanctuary will not interrupt sight of the altar. Depending on its location, a cover (sometimes ornate) may be desirable and a font is often metal-lined (nonferrous) and drained, but not to the sewer. The prospect of a returning interest in partial immersion raises additional problems.

f) *Credence Table* or shelf affords a place for the elements for Holy Communion and should be 16 to 21 inches deep, 24 to 40 inches wide and about 39 inches high. It is located convenient to the altar in a less congested area. One should also be provided near the rear of the main aisle.

g) *Pulpit* location and proportions are of vital importance as the preacher must see and his congregation must see and hear. The position of the

pulpit must not intrude between any worshippers and the altar. It may be located at either side of the main axis.

h) *Lectern* supports a Bible, available for reading at all times. A lectern is not mandatory, however.

i) *Presbytery*: seating must be provided for clergy and acolytes. Prayer desks are essential for the clergy; cushions are adequate for kneeling acolytes and may suffice under certain conditions for clergy. New concepts perhaps provide no seating within the sanctuary except for a chair introduced for the bishop when he is present. The ideal presbytery may be the fourth side of the altar. Clergy may sit with the congregation, an arrangement of considerable merit in the simplest scheme or in the more modest building.

j) *Choir* location and size depend largely on the nature and desires of the parish. It should be in a separate bay if conceived as a functioning unit but not between the congregation and the altar. The seating requires more space than for the congregation and proper music ledge. Kneelers are required. Each member should see the organist or director without the use of mirrors.

k) *Organ*: the console should be so located that it relates properly for choir direction and so the organist may see the whole service of worship and the principal entrance doors. A small mirror or mirrors may serve well for the organist but large mirrors must be avoided.

l) *Sound System*: except in a small church, some sound amplification is advisable. For the clergy the preferred equipment is a microphone concealed on the person. Any amplifying system should be designed so that the sound seems to come from the location whence it originates, not from above or behind or beneath the listener.

m) *Acoustics* (see organ) properly considered will enhance the worship environment of the smallest church. For larger ones, expert advice is imperative.

n) *Lighting* is essentially critical for both clergy and congregation. In the Episcopal services all must be able to read hymnals and prayer books. The Bible on the lectern must be easily read. The action of the liturgy must be seen and well may be emphasized. The preacher must be seen. There are occasions such as Maundy Thursday and Christmas Eve when low lighting is desirable.

Related spaces are important adjuncts to worship. The working sacristy should be placed near the sanctuary. The priest's sacristy and acolytes' robing room are usually adjacent. An ambulatory, a corridor or covered walk connecting the sacristies with both sides of the nave, is desirable.

o) *Working Sacristy* is the service area in which the altar guild works. Ample counter space is required and to be more useful the piscina or sink should be located toward one end. The piscina should drain to a dry well, not into a sewer. Appropriate cupboards are required for Communion vessels, wine, and candles. Properly designed storage for vestments, altar cloths, frontals and palls requires much spaces; some may be laid out in drawers, some may be hung. All sacristies are locked and certain cupboards within.

p) *Priest's Sacristy* in a small church must be

large enough for two or three clergy to robe in; for larger churches a separate robing room for visiting clergy is preferred to an overly large room. Lockers or closets should be ample. If the priest's vestments are kept here adequate provision is required. A deep layout counter is desirable. Provide the priest with a table for the register of services and shelves or cupboards for one or more large Bibles, hymnals and prayer books. A private toilet is required.

q) *Boys' Sacristy* is a robing room for acolytes. Provide space for four to six, with lockers for vestments and coats. Depending upon the general plan, the boys may use a toilet room located elsewhere. In this general area avoid traffic congestion and provide reasonable privacy for priests and boys.

r) *Choir Room*: A robing room for the choir, providing space and lockers for anywhere from a dozen to 25 or 30 men, boys and women, depending upon the size of the church. There should be convenient access to both men's and women's toilets. In a large church, a separate room should be provided for choir practice; in a small church the parish hall is usually used. Nearby should also be ample space for the music library.

s) *Narthex*, the church vestibule, should be of generous size: late-comers remain here during prayers: people leaving stop to speak to the minister and to other people it is a fellowship area. Generous doorways are desirable and sound insulation. At least in certain climates, coat and hat racks should be available; also umbrella-holders. First-aid equipment and toilets should be available near this space.

t) *Porch* or courtyard with some shelter extends the size of the narthex and affords an atmosphere of welcome. Rather than leaving abruptly people tend to linger and speak together.

2) *Administration* office area should be accessible, close to the church for security reasons. An Episcopal church is frequently unlocked.

a) *Business Office* should afford space for functions similar to those of the business world.

b) *Reception* space with capacity for three or four persons waiting is desirable. This space may serve as the church library which in this way is supervised by the office and introduces good reading to members and visitors.

c) *Rector's Study* should be ample for small conferences and must be sound insulated for the protection of persons in need of counseling. This room should have dignity. It will house the rector's own books and confidential files. He should have a private toilet and coat closet. The rector should be located in a quiet wing, preferably near his sacristy.

d) *Assistants*, if any, should be provided with like accommodations and cannot work effectively in joint quarters.

3) *Christian Education* is involved with teaching at all levels, preschools to old age. It may be limited to weekly or semiweekly classes, it may be a full-time parochial school week days and a Sunday school.

a) *Age Groups* generally divide as follows:

Preschool

Primary (grades 1-3*)

Junior (4-6*)

Junior high school
 Upper high school
 College (or young adult)**
 Young married people
 Adult** Senior adults (occasionally)
 b) *Visual Aids* should be provided for in all units
 c) *Chapels* for church school use are not required
 d) *Day School* (parochial school), which some parishes provide, makes available a larger teaching facility and extensive playground, greatly affecting the nature of the total plan, and must be a part of the program when the site is selected
 4) *Parish Hall* is the traditional Episcopal multi-purpose room which houses general meetings, dinners, dramas, lectures, dances and special activities for youth and adults. Many such halls are made available for cultural activities of the neighborhood. Storage must be provided for chairs, tables and other special equipment. Some churches provide for athletic activities. Kitchen facilities are essential.

Glossary

Acolyte: Young man or boy who serves at altar
Anglican: Characteristic of the churches which are in communion with the See of Canterbury (Church of England)
Ambry: A wall-cabinet (recessed or attached) for the safekeeping of the sacrament reserved for the sick, and the oils blessed for special uses by the clergy. If an ambry is used an ambry light should be provided
Baptistry: Space where Baptism takes place and where the font is located
Canon: The title given to a priest who serves with the dean at the cathedral. Also, canons are the laws of the Church (second meaning)
Cassock: The basic garment of ordinary people in the Middle Ages. It is now the basic garment of the Church, over which a white surplice is worn
Cathedra: Chair or throne of a bishop in the cathedral. A bishop's chair is provided in the sanctuary of any church when he is present
Chalice: The traditional cup (grail) for the wine
Chalice Veil: A square of cloth designed to cover the pall, paten, purificator and chalice when "vested." It should be large enough to reach the altar on all four sides
Chapter: The clergy and certain designated laymen of a cathedral staff
Curate: An assistant or trainee; the first commission of a deacon
Deacon: The lowest of the three orders of the ministry
Dean: The dean is the priest in charge of a cathedral; although the vicar of the bishop he has authority similar to the rector in a parish.
Dossal: A curtain which may be hung back of an altar

East: The altar end of a church or chapel, regardless of actual position by compass
Elements: The water, bread and wine used for the sacraments

* Those usually found to include a greater number
** Those found to be larger in some parishes.

Epistoler: The bishop, priest, deacon or lay reader who reads the Epistle

Eucharist: Another term for the sacrament of Holy Communion

Eucharistic Lights: Two candles provided on the altar or on the stands nearby

Footpace: The platform upon which the altar stands; also called the predella

Frontal: The drapery which may be used for the altar

Litany Desk: Similar to a prie-dieu from which the litany is read; it stands in the nave

Mensa: Literally, table; the surface of the altar

Offertory: The action in the liturgy which involves the bringing up of the alms and the oblations and their presentation at the altar

Orders (Holy): The three orders in the ordained ministry: bishops, priests and deacons

Paten: The silver or gold plate for the bread

Piscina: A sink in the sacristy from which the drain goes directly to the earth rather than through the sewer system

Prie-dieu: A prayer desk which combines book rest and kneeler

Sanctuary Lamp: the ever-burning lamp or candle which may be in the sanctuary, symbolic of the burning light of Christ

Sedilla: A fixed grouping of seats for the clergy

See: The locale from which the bishop exercises jurisdiction; hence, the place geographically where his cathedra is put

Surplice: A white vestment worn over the cassock

Tabernacle: A free-standing locked repository for the reservation of the sacrament, ordinarily placed upon the altar, if required at all

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*Commission on Professional Practice
Daniel Schwartzman FAIA, Chairman*

*Committee on Building Codes
and Disaster Studies
George Bain Cummings FAIA, Chairman*

Who Is Responsible for Safety?

BY GEORGE BAIN CUMMINGS FAIA
*Past President
The American Institute of Architects*

MAN AND boy, my generation has witnessed the birth of modern building codes in the United States. I remember the expression of national horror when 600 persons lost their lives in the Iroquois Theater fire in Chicago in 1903, and the resultant clamor for regulations to prevent the recurrence of such a tragedy. In the following year the city of Baltimore was swept by a conflagration which destroyed millions of dollars of property values, although no lives were lost. And promptly the insurers of risk and the spreaders of loss rallied to prepare a building code of which resistance to fire was the purpose. Thereafter, one of the courses included in the curriculum of architectural schools was "Fireproof Construction."

It has seemed that we have had to await disaster and public shock before taking adequate measures to lessen the possibility of such occurrences. In 1908, nearly 200 children lost their lives in the Collingwood School fire in Cleveland. In 1911, the Triangle factory fire in New York City claimed 145 lives and two years later in the Binghamton overall factory fire, 35 fleeing workers were grilled on fire escapes. These events gave birth to the industrial code of the State Department of Labor. Locking the stable door after the theft of the horse!

We learned of a new source of danger when the Crile Hospital fire suffocated 124 people in Cleveland in 1929. And, in the early 1940's, 200 people lost their lives in the dance hall fire in Natchez and nearly 500 were sacrificed in the Cocoanut Grove fire in Boston. I say "sacrificed" because their death opened our eyes to the fact that no

matter how safely a building may be planned, barred exit facilities make such planning futile.

Then came the series of hotel disasters—the LaSalle Hotel in Chicago, a smaller hotel in Dubuque, and the Winecoff Hotel in Atlanta, all in 1946, causing an aggregate of 200 deaths. And in 1949-50 the loss of 77 lives in the Effingham Hospital fire and of 40 lives in the Davenport Hospital fire focused attention on conditions we should have anticipated and could have prevented. And to each of these stimuli we reacted belatedly by writing building regulations.

So, time after time, we have been reminded by shocking disasters that a building is indeed a lethal thing: persons may be incinerated if it burns, or be suffocated by noxious fumes if inadequately ventilated, or be crushed in its collapse, or poisoned by polluted water supply or faulty sewage disposal, or electrocuted by a faulty electric system, or injured fatally on stairs. And out of sad experience we stiffen our building codes.

Circumstances of Time and Place

I call attention to the factors of time and place as relating to building safety that introduce variables to be reckoned with.

In the early 1950's a two-story school building in Cheektowaga (near Buffalo) burned and several children lost their lives. The fire occurred at a recess period when the school was empty except for one classroom in which the loss occurred. In the same year a four-story school building in Albany burned during a school session, and every child was safely evacuated.

I have mentioned the overall factory fire in Binghamton, in which the loss of life was great. In the 1940's the "Moon block" burned. It was a

four-story building of "ordinary" construction, occupied by stores on the first floor and by several families in apartments above. Because the Moon fire occurred in daytime when there were no occupants in the apartments, there was no loss of life. If it had happened in the dead of night, 40 people might have lost their lives. And if the overall factory fire had occurred at night when there were no employees present, not a life would have been lost.

On May 20, 1946, a military airplane struck the Empire State Building in New York City, doing great damage to and within the building. But because it was Saturday and therefore there was little activity in the building or on the surrounding streets, the loss of life was slight. Had the disaster occurred on a busy weekday, the occupants of the building and people in the streets below would have been killed in droves.

These examples show that in code writing we must be alert to the maximum conceivable hazards of time and place.

How the NY State Code Was Prepared

My own experience in code writing begins in the period 1932-34. A Building Code Commission was created in Binghamton, charged with preparing a new code, and I served on the executive committee. The code was written by an architect and was based largely upon the Underwriters' code of that period. It was a specification type of code. Then in 1949 I was appointed a member of the New York State Building Code Commission, serving for the 10 years of its existence. The law creating the Commission established its directive as follows:

The state building construction code shall be designed to effectuate the general purposes of this article and the specific objectives and standards hereinafter set forth:

1) To provide reasonably uniform standards and requirements for construction and construction materials, consonant with accepted standards of engineering and fire-prevention practices.

2) To formulate such standards and requirements, so far as may be practicable, in terms of performance objectives, so as to make adequate performance for the use intended the test of acceptability.

3) To permit to the fullest extent feasible, use of modern technical methods, devices and improvements which tend to reduce the cost of construction without substantially affecting reasonable requirements for the health, safety and security of the occupants or users of buildings.

4) To encourage, so far as may be practicable, the standardization of construction practices, methods, equipment, material and techniques.

5) To eliminate restrictive, obsolete, conflicting and unnecessary building regulations and requirements which tend to increase unnecessarily construction costs or retard unnecessarily the use of new materials, or provide unwarranted preferential treatment to types or classes of materials or products or methods of construction.

This is a fair statement of purpose, which has universal application.

On the Commission of five, all but one was an architect and/or engineer. One member was Walker Lee, long identified with BOCA. Our first step was to enlist the consultative services of the men most highly regarded as expert in the field. We assembled a technical staff competent to do the work and called in the most expert people from all over the country to advise on specific matters. Early in our work we solved the major problem of the performance type of code—tilling into the code that which can have universal application, while at the same time giving enough of particular application to make the code interpretable and enforceable. We accomplished this by supplying illustrations of acceptable performance in an advisory manual for the assistance of code users.

We studied disasters and hazards of all conceivable kinds and profited by the reports of their causes. And, of course, we consulted with the trade groups to glean from their experience and technical knowledge. So, in the course of time, was created the New York State Building Construction Code which is presently in use in all but the largest cities (Syracuse is the largest city presently using the Code) and the smallest rural communities of the state. (The acceptance of the Code is a local municipal function, voluntarily exercised and relieved of the usual necessity of complete publication before acceptance.) The fourth and concluding section of the Code was promulgated in 1958. The work of the original Code Commission was transferred to the Building Codes Bureau in the State Division of Housing and Community Renewal in 1959.

How Codes Are Applied

Architects are prime users of codes. They realize that codes are expressed in terms of minimum requirements for safety and that very often minima must be exceeded in order to secure proper results. Within those guidelines he designs better, stronger, more safely, as his judgment dictates. He contributes to public safety in this and in many other ways in which codes are concerned—sometimes by authoring, amending or revising and by assisting in the proper enforcement.

How Codes Are Enforced

And this is the Achilles heel of the matter. I will cite one instance—a glaring example:

In the late 1930's a large apartment house was being constructed in the Bronx section of New York City. It was well along toward completion and the masonry and steel for the elevator penthouse were being erected when a collapse occurred in that area and some workmen lost their lives. Everyone directly concerned was indicted and

found guilty—including Rutkins, the architect. His case was appealed to the highest court, but judgment was confirmed. Subsequently, the State Board of Examiners of Architects was asked to recommend revocation of Rutkins' license. Here is what was ascertained in the hearing we conducted in the matter: Rutkins had been retained only to draw plans and write specifications for the building, and nothing further. He was not retained for nor permitted to engage in supervision or inspection, or even to review shop drawings. We found his structural design was competent and proper. We found that the cause of the failure lay in an error in a steel erection shop drawing which Rutkins had had no opportunity to check. The notation as to the level of a spreader beam under the reaction of the elevator sheave beams carried the wrong sign. The spreader was therefore placed in the wall above instead of below the sheave beams, and while the masonry was still setting up, the collapse occurred. We rendered a verdict exonerating the architect and lamenting the vicious system of competitive speculative building, which precluded the payment to the architect of a proper fee for adequate professional service.

As a result of this disaster, an ordinance was passed in New York requiring the services of a competent registered professional to supervise construction for all projects of any magnitude.

But this matter of improper or inadequate enforcement is something we have to consider in our concern for safety.

There has recently come to my attention an attempt by a code enforcement authority to disclaim any responsibility for passing upon projects submitted by architects or engineers. This is a

matter of proposed legislation for the City of Los Angeles. It reads as follows:

Nonresponsibility of the City

Neither the City of Los Angeles nor any department, nor any board, commission, officer or employee thereof shall be held liable or responsible for damage or injury caused by or resulting from the issuance of any permit, or the making of any inspection made under the provisions of this Code.

This appears to be a bold-faced attempt to excuse possible dereliction of duty by municipal officials. It would not be in the public interest.

So now to sum up the matter, is not *everyone* responsible?—the owner, the architect, the builder, the code enforcement officer, the workmen and subsequently the occupant and user of the building, and in fact everyone to whom entrance is permitted, not forgetting that ownership may change and original usage altered, nor forgetting the passerby. Must we not all be regardful of hazard and careful of our conduct? Is not the Golden Rule a better precept than that implied in the Code of Hammurabi? Do we not nourish our consciences on the idea that we *are* our brother's keeper, that "noblesse oblige" applies to our profession?

And only if our consciences are clear on this point can we live with ourselves and sleep at nights.

"But you were always a good man of business, Jacob," faltered Scrooge, who now began to apply this to himself.

"Business!" cried the Ghost, wringing its hands again. "Mankind was my business; charity, mercy, forbearance and benevolence were, all, my business. The dealings of my trade were but a drop of water in the . . . ocean of my business!" ■

A Bitter Lesson in Vandalism

BY ROBERT ZION ASLA

Pennsylvania Station is now being wrecked, but its loss can help us in the fight ahead to save other such landmarks. Nothing can be accomplished without public enthusiasm; to get public support, the public's imagination must be captured. Public



ignorance of the true greatness of Penn Station was, more than any other factor, responsible for its destruction. Those who knew said too little about the architectural qualities of the building, the

spaces it created, the materials and workmanship that went into it. The public was asked to save Penn Station, but never convincingly told *why*.

It would not have been difficult to conceive of public uses for Penn Station. For instance, it could have housed the greatest transportation museum in the world, with spaces large enough to exhibit complete locomotives and airplanes. The glass-and-steel-roofed concourse, converted into a great palm garden, might have been lined with shops and cafés to give us our own *galleria*.

The bitter lesson for New York and for all communities is that the public is the most vital factor in preservation. Imaginative use of landmark buildings must first be communicated to the public, and its interest and enthusiasm aroused, if we are not to lose our heritage to indifference. ■

"The Monumental Patrimony"



*Isola di San Giorgio Maggiore,
home of the Giorgio Cini Foundation*

BY CHARLES E. PETERSON FAIA
*Member, AIA Committee on Preservation
of Historic Buildings*

AS THE representative of The American Institute of Architects I was privileged to attend the II International Congress of Architects and Technicians of Historical Monuments held in Venice May 25-31, 1964. It was my first visit to that city.

Venice

The new Marco Polo Aeroport, like those of Washington, Philadelphia and Boston, was dredged up onto a salt marsh at the water's edge. From it—in the hazy distance toward the Adriatic—could be seen the domes and campaniles of the fabulous city. A fast run in a glassy new bus took us through fields of wheat and poppies, hamlets full of people dressed in their Sunday-best, past the oil refineries of Mestre and over a cloverleaf to the long brick arch causeway across the lagoon into Venice. There automobiles are allowed a mere beachhead—a big crowded square called the Piazzale Roma. Here one seeks out the motor launches and is soon afloat among the endless rows of faded palaces. In some happy though mysterious way (no one speaks English) the boat landed at the foot of the little street, all of four feet wide, a mere slot between tall buildings, where I was expected at a hotel selected by Cooks' agents of the Congress.

As the sun goes down the swifts take over the Piazza San Marco from the pigeons who, after all, must begin their work again at 4 AM. In front of the cathedral an armed color guard with feathers in peaked hats and a bugle attends the lowering of the flags—two of Italy and the red flag of Venice—into large green wooden boxes. Three orchestras fiddle away hopefully, each to a large entourage of tables and chairs—too early in the season to be filled. Darkness comes down. Toward midnight, except for a few impromptu bursts of song and the passing of spike heels, the city goes to bed. Then all is quiet (there must be an ordinance against electronic music) except the gurgling and sloshing of water against the boats under the windows and an occasional splash of falling stucco as the city tries to steal back to the sea from which it sprang so many years ago.

The Congresso

In 1957 a similar congress had met at the Palais de Chaillot in Paris, under the patronage of UNESCO and the French Ministry of Education, with two hundred delegates from twenty-five nations. To Venice over six hundred came from sixty countries all over the world. The management this time was the Department of Fine Arts and Antiquities of the Italian Ministry of Education. Professor Piero Gazzola, an architect of Verona, arranged the program, which headquartered in the Giorgio Cini Foundation on the Isola

di San Giorgio Maggiore (named for the saint who speared the dragon).

In the 1950's the Fondazione had taken over this island, restored its Benedictine monastery and the great church by Andrea Palladio, and in the old buildings opened a cluster of schools and other cultural activities. All of this was attractively landscaped and is seen to great advantage from the Piazzetta across the water. Count Cini was present at the Congress and was warmly applauded for his magnificent gift to Venice and the world.

The handful of Americans present were Mrs W. Randolph Burgess of Washington for the National Trust, James Marston Fitch of Columbia, Mrs Rollen Jensen of San Francisco and Venice, Charles W. Porter III of the National Park Service, Edouard Sekler of Harvard, Christopher Tunnard of Yale, Barbara Wriston of the Chicago Institute of Fine Arts and the writer. Two dozen British were there, with citizens of the Commonwealth from as far as Australia. Several Iron Curtain countries from Poland to China were represented. The majority were delegates from Italy and France and civil servants of one government or another. There was no doubt that it was a highly professional gathering.

The three official languages were Italian, French and English. Simultaneous (or almost simultaneous) translations were relayed through earphones. I tried hard, but I must confess that I didn't get much out of the papers. The English translator had a difficult accent and little or no acquaintance with the subject at hand. We must look forward to them as published to evaluate these contributions.

As to the subjects considered, many of them were more or less irrelevant to American restoration problems. The pathology of stone masonry, understandably, was one of the great subjects. (We have generally recognized only "brick disease" over here). The microscopic sections of sick stone appeared ominous indeed and were vaguely reminiscent of the lectures on the more unsanitary aspects of unmarried love that used to be given country boys on entering college.

Exhibitions concerning Venetian buildings were to be seen on every hand; those offered by foreign countries were shown together at the Grassi Palace. The American exhibit was given a place of honor by the front door, but it was not the most impressive. I noted displays from Greece, Turkey, Thailand, Luxembourg, Portugal, Ireland, Tunisia, Colombia, Republica Araba Unita (Egypt), Mexico, Malaysia, Norway, Denmark and Cuba. At that point the bells rang and visitors were put out in favor of the customary two hours for lunch. One institution that caught my eye was the Mutual Households Association, Ltd. (23 Haymarket, London, SW1) which has plans to share large

country houses that the former owners could no longer maintain as a menage for one family. That organization may have something to offer Americans with the problem of maintaining great Victorian mansions.

Entertainment by the Venetians contributed greatly to the Congress and was outstandingly generous. The elegance of these occasions (footmen in knee breeches and silk stockings) was somewhat shaded by the manners of the delegates at the buffet tables. The American tradition of a disciplined (if impatient) line awaiting food was outdone by the law of the jungle. A respected American colleague told me that she was able to avoid a personal famine only through cunning developed over years of Methodist church suppers.

The Charter

One of the most tangible products of the Congress was a set of precepts which I have dubbed "The Venice Charter." It was introduced at the last minute and passed, though not unanimously. I have been unable to get an official translation; the one offered here was made later from the French version by our own State Department and fussed over a bit by me.

No one with whom I have consulted seems to know how to exactly translate Article 12. In discussing the fine points of restoration theory the English language itself presents semantic problems even among those born to it.

None of these precepts is particularly new or unusual, except perhaps the finality of that outlawing total reconstruction (Article 14). It was rumored that the Cloisters in New York City and the lately rebuilt stoa on the Acropolis at Athens (accomplished by American money) were repugnant to Europeans. At one point Dr Porter found himself on his feet attempting to defend the former. Some of my colleagues were inclined to write off the attacks as an Italian Communist plot. At this point one of the discussants brought up the reconstruction of the great campanile in the Piazza San Marco which had to be entirely rebuilt after it collapsed in 1902. Reconstruction is said to have been made from measured drawings by Herman Louis Duhring, a University of Pennsylvania architectural student abroad on a traveling fellowship shortly before the unfortunate event. No one in Venice would confirm or deny this bit of lore.

ICOMOS

As in all conventions, the Back Room Boys were busy at work plotting the future. In this case it was a small ad hoc "Working Party" making plans for a permanent organization to facilitate historic preservation throughout the world by the exchange of ideas and publications. Professor G. de Angeli d'Ossat of Rome served as president and

The Venice Charter

Article 1 The term "monument" shall refer not only to a single architectural creation but also to its setting. A monument is inseparable from its environment and the history to which it bears testimony. Consequently, one attaches the value of a monument to large architectural complexes as well as to modest works that have acquired cultural and human significance with the passing of time.

Article 2 The preservation and restoration of monuments is a discipline calling for all the fields of science and technique that can aid in the study and safeguarding of the heritage.

Article 3 The objectives of the preservation and restoration of monuments are to safeguard both works of art and the testimony of history.

Article 4 The preservation of monuments is always facilitated by using them for a purpose beneficial to society. Their use for such a purpose must not change their conformation or their decoration. It is within these limits that one must plan and that one may authorize any modifications made necessary by the evolution of usage and custom.

Article 5 First of all, the preservation of monuments requires constant maintenance.

Article 6 When traditional techniques prove inadequate, a monument may be reinforced by using any modern preservation and construction technique whose efficacy has been shown by scientific testing experience.

Article 7 Restoration is an operation to be employed only in exceptional cases. Its purpose is to preserve and show the esthetic and historical value of the monument. It shall be based on respect for the original—or for authentic documents—and stop where hypothesis begins. Beyond that all construction considered necessary to complete an architectural composition shall be recognizable as of our time.

Article 8 The elements used to replace the missing parts should be harmoniously incorporated into the whole, but at the same time be distinguishable from the original parts in order that the restoration may not falsify the record of art and history.

Article 9 The contributions made by all eras to the erection of a monument must be respected since unity of style is not an objective to be achieved during restoration. When a structure consists of several stratifications, the removal of an overlying layer is justified only in exceptional cases and only provided the elements removed are of no interest—since the design exposed to view is a thing of great historical, archeological, or esthetic value—and provided its state of preservation is considered satisfactory. Judgment on

the value of the elements in question—and the decision concerning what is to be removed—may not rest solely with the instigator of the project.

Article 10 Additions may be permitted only in so far as they do not interfere with any of the essential parts of the structure, its traditional setting, the balance of its design and its relation to its surroundings.

Article 11 The removal of all or part of a monument cannot be permitted unless the safeguarding of the fabric requires it or reasons of great national or international interest justify it.

Article 12 The safeguarding of a monument implies the safeguarding of the traditional setting; additions, removals or repairs may not, then, change the relations of size and color.

Article 13 Whether urban or rural, the sites that bear testimony to a particular civilization, an historic event or a significant development must be given special care in order to keep them intact and to insure that they are kept clean, in good repair and put to good use. Consequently, any architectural or other element that would jeopardize their balance or scale must be avoided or removed.

Article 14 Excavation work must be carried out in accordance with the regulations defined by the UNESCO Recommendation of 1956 concerning archeological excavations. Steps shall be taken to clean and repair the ruins and to do whatever is necessary for the permanent preservation and protection of the architectural elements and objects uncovered. Furthermore, every effort shall be made to provide a better understanding of the monument exposed to view without distorting its meaning. However, all reconstruction work must be prohibited *a priori*; only anastylosis may be considered, that is to say, the reassembly of existing but dismembered parts. The conformation of the whole shall always be recognizable and shall represent the minimum necessary to provide the proper conditions for the preservation of the monument and to reestablish the continuity of its forms.

Article 15 Preservation, restoration and excavation work shall always be accompanied by the preparation of specific documents in the form of analytical and critical reports illustrated with drawings and photographs. Every phase of the work of clearing, strengthening, reassembly and integration, as well as the technical and other elements specifically involved during the work, shall be included in these documents. These documents shall be placed in the files of a public agency and made available to researchers; their publication is recommended.

Professor J. O. Brew, Harvard archeologist, was a very active vice president. The work was much facilitated by another archeologist—Honolulu-born Dr Hiroshi Daifuku of UNESCO, Paris, who served as translator. Earlier drafts of statutes to establish a permanent International Council of Monuments and Sites—ICOMOS for short—were carefully polished up in two sessions to which the writer was fortunate enough to be invited.

The statutes were submitted to the general session of the Congress on the last day—May 31—and adopted without dissent. They define the aims of ICOMOS and propose cooperation with other organizations, especially the International Centre for the Study of the Preservation and Restoration of Cultural Property at Rome. Its sovereign body is to be a General Assembly guided by an Executive Committee of twenty-six active professionals. Membership will consist of individuals and organi-

zations, both private and public. A good many persons immediately signed up at five dollars per year. Some UNESCO support is hoped for as well as gifts and bequests. Finally, the official languages are to be English and French.

The group was invited by Senora Rivera de Coronel to convene the General Assembly for the first time at Mexico City in 1966. The invitation was warmly applauded.

In recent years the United States has contributed heavily to cultural exchange programs all over the world. But for reasons I have not been able to learn, this country does not participate in those relating to the preservation and restoration of old buildings. Of all the things we could learn from Mother Europe it is the care of what they like to call "the monumental patrimony." We in this country are only beginning. It's time we leave the sand lot and work toward the Big League. ■

Natural Light and the Museum of the Future

BY WILCOMB E. WASHBURN PhD
*Curator, Division of Political History
Smithsonian Institution*

"It is time for the museum to be redesigned from the inside out, without reference to the past or to the present, without slavish acceptance of existing methods of admitting natural light"

IS NATURAL light obsolete for museum purposes? When I hear the frequent and confident assertion that it is obsolete, my gorge rises almost as much as when I hear paens of praise for a modern, flexible, "twentieth-century" all-bus system advocated as superior to an outmoded, "nineteenth-century" rail system in handling the problem of the movement of people in the modern American city.

The confidence with which museum directors and designers have dismissed natural light from their thinking reflects, to some degree, Western man's constant challenging of nature and his cultural disinclination to accommodate himself to it. The faith in the ability of man to outdo nature in the field of lighting is well expressed in "Light, Vision and Seeing: A Simplified Presentation of Their Relationships and Their Importance in Human Efficiency and Welfare" by Matthew Luckiesh.¹ In a section entitled "Challenging the Sun," Mr Luckiesh, in a typical passage discussing the increasing efficiency of lamps, writes: "But this is not the end. By following nature's textbook we shall duplicate the good features of nature's light and lighting. And that is not the end. We shall improve upon nature by applying light and lighting specifically for our artificial world. Still this is not the end."²

In a conference of museum and gallery directors on the subject of "Planning Museums and Art Galleries," held in Bristol, England, in 1962, J. B. Harris, of the Ministry of Public Building and Works, questioned "whether any advantage can be gained by trying to use natural lighting as a working illumination" and quoted approvingly the architect Sir Hugh Casson's talk at the Museums Association conference in 1961 to the effect that "it may be wiser to exclude daylight completely so that the strictest control can be kept over the lighting of the exhibits, and real daylight should be used only occasionally for the visual relief of visitors who might otherwise feel uncomfortable if shut off from the world outside."³

Design specialists, as might be expected, are the most outspoken in ignoring or condemning natural light. For example, James Gardner and Caroline Heller assert that "Daylight is rarely satisfactory as exhibition lighting: it is too temperamental in cold climates and too brilliant in tropical climates; in any climate it changes direction and quality throughout the day. If there is any choice in the matter, it is really desirable from a display point of view to have a building with no windows so that all illumination is under control."⁴

The current trend to shut out natural light is illustrative of one of the great failures of much of our modern architecture: to wit, the failure to relate

A paper presented at the annual meeting of the American Association for State and Local History and the Society of American Archivists held in Raleigh, North Carolina

¹ New York: D. Van Nostrand Co., Inc. 1944. The author was director, Lighting Research Laboratory, General Electric Co., Nela Park, Cleveland.

² *Ibid.*, p 49

³ *Museums Journal*, London: Museums Association, Vol LXIII, Nos 1 and 2 (June-Sept 1963), p 36. Casson's paper appears in *ibid.*, Vol LXI, No 2 (Sept 1961), pp 99-105.

⁴ "Exhibition and Display," New York: F. W. Dodge Corp., 1960, p 88

buildings to their environment. This problem has been discussed at length by such architectural leaders as Paul Rudolph and its terrifying implications have been argued persuasively by such city planners as Constantinos Doxiadis. The museum architect has, in particular, failed to relate the process of object-viewing in museums to the environment of natural light with which man is blessed. Cost and performance factors, based on existing technological knowledge, seem to force the architect into this position, but much of the problem is caused by the architect's willingness to capitulate to such conditions and his unwillingness to seek alternatives that could relate the natural environment efficiently to the lighting requirements of the museum.

The fault, or virtue, of excluding natural light from the museum must rest with the museum director as well as with the architect and his lighting and design consultants. Perhaps the director simply accepts the advice of his architect. Perhaps he positively demands a light system that he can control with precision. Perhaps he relishes a system which allows him to create attention-getting "effects" more easily than with natural light.

Recently I observed a painting which had been done with the vigorous strokes and heavy paint accumulations of some of the modern school. At one point paint projected one-quarter of an inch. The lighting—artificial—was provided by high-powered spots from above and close to the canvas, a manner of lighting consistent throughout the room. The result was the creation of a series of secondary areas of varying shapes and colors, created in the shaded portions under the variously projecting bits of paint. Here was a new painting, in effect created by the placement and intensity of the lights, which could be varied at will by shifting the locations and varying the intensities (why not the color?) of the lights.

The museum director who fancies himself an impresario tends to demonstrate his control both of the dead artist and of the living sun by his manipulation of statuary. It is possible to create dramatic highlights and shadows on even the most pedestrian sculpture and to give effects that do not exist in the clear unspotted light of day. Compare, for example, the appearance of mid-nineteenth century romantic American sculpture, much of it produced in Italy, much of it glorying in its smooth snow white finish, in a dark corridor under the glare of ceiling spotlights and, by contrast, in a gallery off an open courtyard. Such sculpture was meant to be seen under conditions approximating the latter example, not the first. Yet one finds too frequently that just the opposite practice prevails.

I suspect that much of the preference for artificial light is not only the result of the specific advantages it seems to convey, but also because of the willingness of architects, museum directors and design men to follow practices in other seemingly related fields. Too often those concerned with constructing museums have merely adapted techniques of lighting and display developed for other—usually commercial—purposes without realizing that these techniques are frequently inappropriate to the pur-

pose of a museum. Sometimes museum displays have merely introduced used-car dealer or department store lighting. The high-powered, "point" lighting of a used-car dealer's lot has its own purposes: to sell second-hand cars, particularly at night, to an audience which is often dazzled by the sparkling reflection from point sources of light on highly polished automobile bodies. Museum-goers should be as suspicious of a museum director who uses light for special effects—unless they can be justified for valid reasons—as car buyers should be wary of a high-powered used-car dealer.

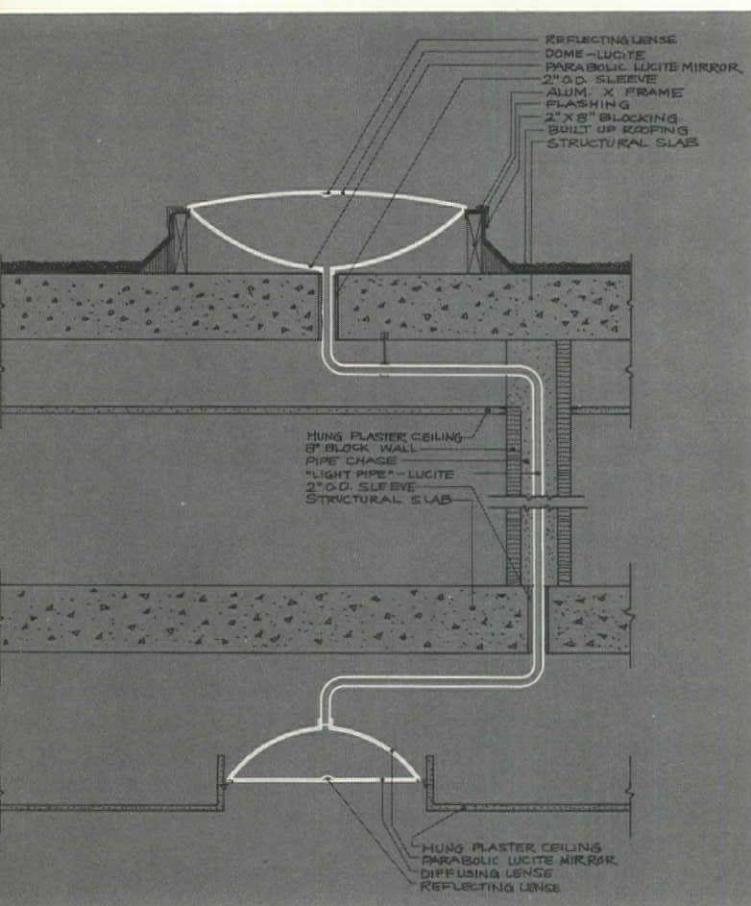
We are all aware, of course, of the destructive nature of light on most classes of museum objects. We are also all aware of the space-consuming, expensive, inadequate and, indeed, nerve-wracking qualities of existing technology for receiving and distributing natural light within a museum. Laurence Vail Coleman, in his "Museum Buildings: Volume I: A Planning Study," has given an excellent summary of the strengths and defects of existing natural lighting systems.⁵ But is it not a confession of failure, or at least acceptance of existing architectural conventions, to eliminate natural light because it requires greater effort to control than artificial light? Why cannot natural light be controlled as effectively as artificial light and at the same time provide more, better, safer and cheaper light? A modern building need not allow natural light to stream through windows or skylights with only curtains, blinds or filters of one sort or another to control, direct and diffuse the light.

What are the requirements of an ideal natural lighting system for a museum, and are these ideals attainable? Natural light should be as available in a museum as water from a faucet or cool air from a duct. It should be capable of being introduced into the viewing area from above, behind and from each side of the viewer in varying proportions depending upon the object being viewed and the wishes of the curator. It should be capable of being regulated in intensity, but allowed to vary in intensity in accordance with the nature of the material being lighted and the esthetic principles of the curator in charge. It should be so diffused and so directed to the object that glare and reflection are minimized. Finally, it should be capable of being redirected with exhibit changes.

Instead of admitting light passively into a building by means of a series of windows or through a skylight or into an interior courtyard, why cannot the light available be captured by a series of reflectors which can transmit to the exhibit surfaces a higher proportion of light than will fall naturally on them? By allowing for the shifting of the reflectors, the light, whether from the early morning sun or late afternoon sun or general overcast, can be controlled and shifted to provide good viewing conditions on any exhibit surface at any time.

Not only can light be reflected and redirected in straight lines, but it can be collected, focused and redirected in curved paths, literally "around corners,"

⁵ Washington: American Association of Museums, 1950, p 73-99



Award-winning scheme uses piped natural sunlight

in tubes through the "guts" of a building. Certain internal surgical instruments demonstrate how light can be made to reflect totally as it passes through a bundle of fibers even though the fibers are bent to any configuration.⁶

This practical example, and the theoretical principle involved, have been carried one step further by David Wight, a senior student in the Yale University School of Art and Architecture, in a winning design for a 1963 competition sponsored by the Du Pont Company requiring creative use of Lucite. Wight's design uses a reflecting lens and rods of Lucite acrylic resin to conduct piped natural sunlight throughout a low-rise building. (Effective transmission of light is related to the distance over which it must travel; distance, therefore, is a prime limiting factor.) An unusual "light collector" focuses as much light as possible on the head of the light-conducting rod. A similar component picks up the light from the conducting rod and redistributes it about a room not otherwise open to daylight.⁷

Surely there are other methods of collecting, directing and controlling natural light that would put it into a better competitive position with artificial light. Take

another example, the "shoemaker's window" of the eighteenth century. The shoemaker's window is a glass globe (supported by a stand) which, when filled with water, acts as a lens to concentrate light on one spot. Such globes were used by numerous craftsmen in the eighteenth and nineteenth centuries and are still used by lacemakers, shoemakers and engravers in some parts of Europe today. Late in the day, or even at night, using a candle as a light source, these globes provided effective light for the precision work required by the craftsman.

What I am suggesting is merely that the discussion about natural light be removed from the plane of existing technology to that of its potential use. I am shocked when I see that the means of controlling natural light have still not progressed much beyond the devices used in the Renaissance and earlier. Venetian blinds and fine mesh cloth are still the principal means of controlling natural light in museums, with various forms of tinted and treated glass playing an increasing, though inflexible, role.

Of course many new museums have adapted natural light with great efficiency. Outstanding in this regard is the Municipal Museum of Amsterdam, the Stedelijk, whose two-story new wing devoted to temporary exhibits, constructed about 1954, is in the form of a box with glass walls. The exhibits are mounted on movable panels standing in the floor area. Natural light floods the exhibit areas and can be controlled by ceiling to floor blinds. A French critic, writing in 1956, said that he did not believe that there was an exposition hall in the entire world more ideal, or better adapted to the modern spirit and to the flexible use of space.⁸

Two other European museums make imaginative use of natural light. The Museum of Capodimonte (sketch across page), in Naples, reconstructed after World War II, installed glass skylights through which the light is efficiently controlled and diffused prior to its admission into the upper galleries.⁹ The Museum Cultural Center at Le Havre, which was awarded the 1962 R. S. Reynolds Memorial Award,¹⁰ utilizes a floating sunscreen of aluminum louvers to keep direct sunlight off its skylighted glass roof.

Philip Johnson's building at Dumbarton Oaks to house the Robert Woods Bliss Collection of Pre-Columbian Art is another brilliant achievement in the subtle use of natural light. Natural light enters the exhibit rotundas from all sides and is controlled by curtains and by dense outside vegetation. Soft interior lights reflect off the solid domes that cover each exhibit rotunda. No attempt is made to dramatize the sculpture in the manner of some "show" museums by plunging the surrounding area into darkness and creating areas of shadow and light on the sculpture by means of powerful spotlights.

⁶The writer is indebted to Carroll B. Lusk, lighting specialist at the Smithsonian Institution, for this suggestion, in response to a request for a method of piping in natural light to a museum. Mr. Lusk also noted the reference to the use of such a method appearing in *Lucite Spectrum* cited below.

⁷The plan is described in *Lucite Spectrum*, a Du Pont trade publication, Vol. I, No. 2, pp. 11-12, from which the above sketch is reproduced. Mr. Wright is continuing to work on projects involving more efficient methods of collecting and distributing natural light.

⁸ Michel Seuphor, "Un Musée Militant," *L'Oeil, Revue d'Art Mensuelle*, Lausanne, Switzerland, No. 19-20 (July-Aug 1956), p 35. For brief description of the new wing see *Museum Notes, Museum, UNESCO quarterly review*, Vol. VIII, No. 2 (1955), pp 133-34. For more detailed discussion, see Roberto Alois, *Musei: Architettura-Tecnica*, Milan: Ulrico Hoepli (1962), pp 131-36.

⁹ For details see Bruno Molajoli, "The Museum of Capodimonte, Naples," *Museum*, Vol. XII, No. 3 (1959), pp 165-188, which includes cross section reproduced here. For more detailed discussion see Alois, *Musei: Architettura-Tecnica* (1962), pp 203-220.

¹⁰ AIA JOURNAL, June 1962, pp. 88-91.

Nevertheless, all four museums do little more than admit natural light directly into the viewing areas, with simple methods of reducing the intensity of the light. One wishes, for example, that Johnson had dared make the domes over the exhibit rooms at Dumbarton Oaks translucent as he did the interior segments of the building which contain potted plants. Could not such domes have been provided with technical controls that would diffuse and control the natural light as readily as the artificial lights are controlled under the metal domes of the exhibit rooms? Of course, artificial lights need still to be provided for night openings.

The Kestner Museum in Hannover, Germany, imaginatively incorporated into its new structure the facade of its old bombed-out predecessor. But its handling of light, both artificial and natural, varies from outstanding to atrocious. In some galleries, natural light is admitted through glass domes on top of the building which can be opened to allow a sight of the sky. These domes throw a changing natural light on the classical sculpture and ceramics in the galleries. But one can often find oneself eyeball to eyeball with a dropped spotlight, unnecessarily competing with the sun, or, in other parts of the museum, hardly perceiving Roman busts because of the strong back lighting from uncontrolled window openings.

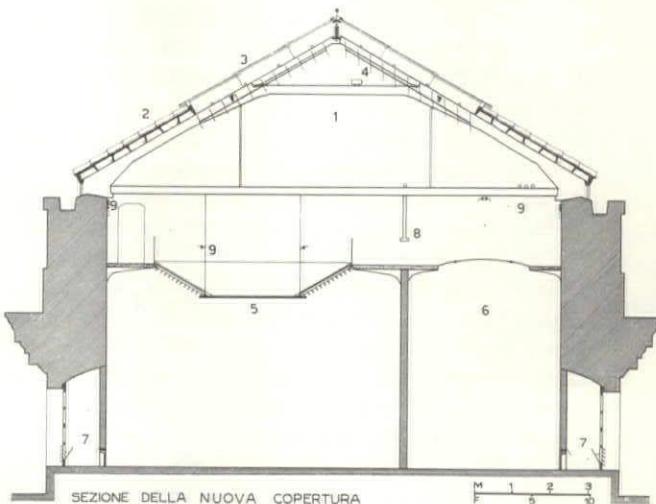
It may well be that history and technology museums can utilize artificial light without violating the integrity of the utilitarian objects on display. But I wonder if this is possible for an art museum or any museum where the light in which the object was made is inextricably intertwined in the esthetic theory with which it is viewed. What we need is a more scientific measure of the physical ease or difficulty of seeing all portions of an object because of the shadows cast by the light (a measurement that could be made in footcandles per separate unit of surface); a measure of esthetic variation (perhaps demonstrated, rather than measured, by photographic comparisons of an object under several types of lighting); and a measure of the apparent dullness or brilliance of nearby objects more or less brightly lighted. In sum, what is needed, difficult as they may be to create, are measures that will help us determine the extent to which our esthetic pleasure in, or rational comprehension of, an object is affected by the lighting it receives.

One of the strongest apparent reasons for replacing natural lighting systems with artificial systems is that on particularly dark days natural light is insufficient to give a proper illumination to many objects on display. This was the principal reason natural light was completely eliminated in the recent renovation of the Hall of Life in the Sea and in the Hall of Dinosaurs and Other Reptiles of the Natural History Building of the Smithsonian Institution. In the one case, the natural light that formerly came in from the skylight was replaced with artificial lights, giving off a pale bluish color, but coming from the same position and giving a generalized illumination to the hall. In the other hall, an attempt has been made to illuminate the major specimens with directional lighting from above while keeping the area above the

displays unlighted and the viewing areas comparatively so. Neither of the two halls, in their initial form, seemed satisfactory to me, though they pleased others. The "coolness" of the "Whale Hall," which was sought by the designers, seemed dead to me, and indeed, in the words of one friend, "sick."

The blue glow that initially suffused the hall helped one get below the surface with the plunging whale, but one instinctively wanted to get out and rise to the sunlit surface. Whether the process of learning is enhanced or hindered by such lighting is a matter for the psychologists to decide. I noted that relatively few visitors came to the hall and they stayed only a short time. Perhaps they felt the same discomfort that I felt and, like me, were reluctant to stay in the hall long enough to be either entertained or educated. The lighting of the hall has more recently been changed to a more durable "white" light. Natural light is still excluded, but one no longer feels trapped in the huge hall.

Applied to an art museum the loss of natural lighting is even more serious. I am informed that the John and Mable Ringling Museum of Art in Sarasota is in the process of having its windows walled up and its light sources cut off in order to allow for the installation of airconditioning. Airconditioning is fine for both paintings and visitor, but is it a value to take precedence over natural light? I have detailed



Cross section of the Museum of Capodimonte's National Gallery: (1) reinforced concrete truss; (2) tile roofing on reinforced concrete joists; (3) iron and tempered glass skylights; (4) metal shutters; (5) ceiling with perimetric windows; (6) ceiling made of opaline plastic material; (7) ventilation system; (8) opening of centralized dust-suction plant; (9) technical equipment

some of the tests by which I believe the quality of light in a museum should be judged. But there is an even more important value that is sacrificed when one excludes natural light. That is the infinite variety of natural light in all its moods, from blazing summer noon-day sun, to gloomy winter stormy day. I realize that this variety which I cherish is regarded as a menace by engineers.¹¹ Perhaps the engineers can

¹¹ N. S. Brommelle and J. B. Harris, "Museum Lighting Part 2: Artificial Lighting and Museum Display" *Museums Journal*, Vol LXI, No 4 (Mar 1962), p 259

convince us that an artificial system will be preferable to certain natural conditions, such as excessive sunlight or excessive gloom, but let us remember that it is possible to be satiated with an ideal. Man seeks variety and finds it hard to accept a steady diet of perfection, whether it be religious or technical.

Under controlled lighting conditions we are doomed to miss the exaltation of seeing Van Gogh's painting "Wheatfield with Reaper," in the skylighted gallery of the main building of the Stedelijk Museum in Amsterdam, suddenly and subtly change with the appearance and reappearance of the sun through the clouds of Holland. Should the viewer be content with a consistent artificial light, whatever its spectral composition, provided by an engineer or museum director for seeing this painting? Perhaps, but I would prefer to see how the painting changes under natural light, whether or not it is the same light under which the painter worked. Some painting and some sculpture were designed to be seen inside cathedrals under artificial "point" illumination. For such works of art, equivalent artificial illumination seems perfectly justified. But for the great bulk of paintings and sculpture a shifting natural light, whether or not it is, in character, similar to the light under which the painter painted, is preferable to artificial illumination, even that which attempts to duplicate the principal type of light under which the painting was painted.

One of the most basic human instincts is the desire to avoid being shut away from the natural environment. Lighting engineers, peeved by this perverse elemental reaction against their neat schemes, have tried to solve the problem by leaving glimpses of natural light in corners, at one end of a gallery or elsewhere. They speak of the necessity to give "relief" to the visitor and a sense of the possibility of "escape" from the ideal world they have constructed for him. If the human instinct to escape from such a world is so strong, may it not be that the world is not so ideal after all? It would be an interesting experiment to determine whether piped-in natural light in an enclosed space satisfies the primal urge of man for relationship with nature, or whether he will have the same dissatisfaction evident under artificial lighting conditions. The museum must create the feeling of relationship to life rather than to death. That relationship requires an elemental connection with the sun, the source of all life. The museum builder can ignore this primal urge only at his peril. A mausoleum is still a mausoleum, no matter how many lights have been placed in it.

In an age in which it is technically possible to provide more daylight within a building than ever before, it seems to me a dangerous trend that museums are progressively walling themselves up in artificially lighted caves. I suggest that the trend is a particularly dangerous one when the museum has to compete with buildings close to it which bring the light of life into their innards. The State of North Carolina will, in my opinion, be faced with this problem when it builds its new \$3 million museum and archives buildings adjacent to Edward Durell Stone's new State Legislative Building at Raleigh.

Stone has made brilliant use of natural light in that building. Approximately 90 per cent of the lighting is provided naturally. Great numbers of visitors are entering the building for the pure pleasure of being there. The building serves its special institutional purpose of providing a meeting place and office space for the Senate and House of Representatives of the State of North Carolina without depriving the individuals within the building of their instinctive need for a relationship to the light and life of nature. It is very possible, and it would be very embarrassing if it happened, that people would be more attracted to look at "nothing" in the Legislative Building than to look at the most significant, dramatic and educational objects that the State can offer in an adjoining building constructed according to modern museum principles of excluding, to the greatest extent possible, natural light.

Of course, I do not exclude a proper "mix" of artificial and natural light. Given the inadequacies of existing technologies, given the variability of the seasonal conditions, it is often not only a necessary but an ideal solution to use such a mix. Many a practical museum man is delighted to use both, whatever his philosophical predispositions concerning the theoretical superiority of daylight or artificial light. I am perfectly prepared to accept artificial lighting when natural light falls below a certain minimum intensity, for example.

It is instructive to note that those countries having the greatest museum treasures and the longest artistic traditions feel least compelled to dress up their objects. One can learn much from the museums in Greece, for example, whether he visits the National Museum in Athens, or a small museum such as that at Argos. He will perhaps be unable to find any electric lights or novel display arrangements. But he will see the objects that form such an important part of our cultural heritage, and he will see them well.¹²

The essence of museum presentation is to have a cultural object to see (not to have a "product to sell") and to be able to see it well, clearly, without distortion and with the esthetic pleasure or intellectual understanding which the object demands. Too often our museums have fallen into display clichés in presenting the objects they possess. Worse, they are other people's clichés. The museum has purposes different from the private dwelling, the commercial office building or the department store. Yet it has too often been repeating the lighting and display clichés, to say nothing of the architectural form, of these other institutions.

It is time for the museum to be redesigned from the inside out, without reference to the past or the present, without slavish acceptance of existing methods of admitting natural light. I venture to predict that museums can be built that display more objects better and cheaper than any existing. A museum has two great assets to begin with: the objects and the natural light to illuminate them. I think they should be brought together. ■

¹² Interesting discussions of Greek museums include Hans Möbius, "The Reconstruction of the Athens National Museum," *Museum*, Vol XII, No 2 (1959), pp 90-94, and Jean Miliadis, "The New Acropolis Museum in Athens," *ibid*, No 1 (1959), pp 104.

The Design of Fine Woodwork

BY WILLIAM T. SUTHERLAND

The author is the director of the Architectural Woodwork Institute and has contributed numerous books and articles in his field. He is an Honorary Associate of the Middle Tennessee Chapter AIA

DESPITE promoters' belief to the contrary, enlightenment by no means requires one to be "positive" to have a program and make converts. In the most important matters such as design prerogative, persuasion is an offense. But presenting the truth about a material and showing the conditions and connections of its object—"if-then"—is possibly a service. We can apply this same touchstone of cost and condition to every material, inasmuch as all have their limitations and advantages.

Herein I shall attempt to give some of the advantages and limitations in the use of wood for custom designs. Both sides of the if-then equations will be given, even when they point to limitations. Promoters have long equated limitations with inferior product images. I feel that this is an error in addressing any educated group—certainly in addressing a professional group continually harassed by five-color brochures which are often more pretentious than informative.

Due to its workability, flexibility and availability, wood is almost the only material that can economically be used to produce one-of-a-kind, custom-designed items of unlimited variety. As such it holds a unique place in the opinion of creative architects who prefer to do their own designing, rather than depend upon catalog designs.

The one principle upon which almost all psychologists agree is that

we change our behaviors, briefly or permanently, only as we change our seeing; only as we accommodate within our awareness hitherto unperceived or unaccepted aspects of reality. I hope to expand and deepen your awareness concerning the use of wood.

Since almost all construction work is highly competitive, even the most dedicated will fail if they attempt to provide materials or workmanship more costly than those which the architect clearly and precisely specifies. Therefore, we should be concerned and alarmed by vague woodwork specifications which encourage the marginal to take calculated risks of "getting by." If they are allowed to get by because the specifications are so meaningless as to be unenforceable, then the honest and competent woodworker is denied the work, and abstractly worded specifications perpetuate incompetence.

The Authority of the Nature of Things

This is the authority willingly obeyed by all genuine, informed artists, architects and craftsmen—by all who know that the way of strength is not that of ruthlessly imposed power, or that of holding fast to unexamined and fiercely defended beliefs, but of yielding to the nature of the materials in which they work. Obedience to the nature of things, insofar as this nature has been persuaded to reveal itself, is the mark not of subservience but of honest humility in the face of reality.

The nature of wood is that it is a fibrous material which shrinks as it dries and swells as it absorbs moisture. Wood absorbs or loses its water depending upon its own moisture content and that of the sur-

roundings.* The resulting change in moisture content causes dimensional changes in the wood, which, if uncontrolled, cause most of the difficulties encountered in the manufacture of woodwork made from solid members or those glued for width or thickness. Failure of architects and woodworking detailers to recognize and design to this natural characteristic has caused more failures in fine woodwork than all other factors combined.

Even the most expensive woodwork is sometimes ruined because the designer disregarded the nature of wood and used wide lumber for raised panels, interior cornice members, trim, casework and ornamental items, and also used solid, thick wood for doors and moulds. It is true that museums offer many fine examples of large wood carvings from ancient cultures, which still appear sound. Being an amateur sculptor as well as a woodworker, I have carefully examined hundreds of such carvings. I have never seen a single large wood carving that did not have large checks, although most had been filled to present a solid appearance to the casual observer. These carvings checked as they dried, although many of them were stress-relieved by removing the interior wood through a rear opening. Most of the drying occurred, of course, when the carvings were first placed in heated buildings.

All of these shrinkage difficulties inherent in the nature of wood may easily be overcome if the designer will abide by the following simple rules for interior woodwork:

- If at all possible, limit the width of solid or glued-for-width members as follows:

* Forest Products Laboratory, Circular 239

DATA AFFECTING SELECTION OF SPECIES FOR ARCHITECTURAL WOODWORK

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|-------------------------------|---|---------------|---------------------|---|---|--|---|--|
| Species | Color of heartwood; descrip. of figure | Relative cost | | Hardness approx. average (highest— hardest) | Ability to stay in place—rel. shrinkage (lowest—least) | Nail/screw- holding ability (highest=best) (given as nail/screw) | Max. defect- clear surface (highest grade) sq. in. | Approx. max. length available in quantity |
| | | Wood | 3/4" GIS plywood | | | | | |
| ash, nat. | grayish-brown; conspicuous | 96 | 157 | 1320 | 6.2 | 1700/4000 | 630 | 13' 8" |
| basswood | creamy-white to brown; faint | 90 | 145 | 410 | 7.4 | 900/2100 | 630 | 13' 8" |
| birch, sel. red | reddish-brown; faint | 168 | 186 | 1260 | 7.4 | 1700/4000 | 567 | 11' 8" |
| birch, nat. | reddish-brown and white | 145 | 157 | 1260 | 7.4 | | 630 | 13' 8" |
| cherry | light to dark reddish-brown; faint | 168 | 183 | 950 | 5.7 | | 384 | 9' 8" |
| cypress, red (lim. supply) | yellow-brown; conspicuous | 102 | rare | 510 | 5.0 | 1125/2700 | 1044 | 15' 8" |
| fir | reddish-brown; conspicuous | 66 | 75 | 710 | 4.0 | 1375/3300 | 1044 | 15' 8" |
| gum, pl. red | reddish-brown; faint | 115 | 151 | 850 | 7.9 | 1700/4000 | 567 | 11' 8" |
| gum, pl. nat. | whitish-brown; faint | 74 | 139 | | | 1700/4000 | 630 | 13' 8" |
| gum, qtr. red | reddish-brown; faint (except in fig.) | 133 | 168 | 850 | | 1700/4000 | 567 | 11' 8" |
| mahogany, trop. | light to dark red; medium | 141 | 197 | mod. | 4.0 | | 630 | 13' 8" |
| maple, hard nat. | light reddish- brown; faint | 117 | 191 | 1450 | 7.6 | 1900/4000 | 630 | 13' 8" |
| maple, soft nat. | light reddish- brown; faint | 99 | 168 | 950 | 5.8 | 1250/2900 | 630 | 13' 8" |
| oak, pl. red | gray-brown, flesh tinge; conspicuous | 107 | 200 | 1300 | 6.6 | 1700/4000 | 630 | 13' 8" |
| oak, pl. wh. | gray-brown; flesh tinge; conspicuous | 135 | 212 | 1400 | 7.2 | 1700/1000 | 630 | 13' 8" |
| oak, rift wh. | gray-brown; con- spicuous straight | 213 spec. | 235 cuts | 1400 | | | 384 | 9' 8" |
| Phil. mahog. | light to dark red; medium | 127 | 151 | moderate | 4.0 | | 630 | 13' 8" |
| pine, northern | cream to red- brown; faint | 110 | 151 | 380 | 4.8 | 900/2100 | 1044 | 15' 8" |
| pine, sugar | light creamy brown; faint | 110 | 151 | 380 | 4.5 | 900/2100 | 1044 | 15' 8" |
| pine, western (Ponderosa) | cream to light red-brown; med. | 100 | 102 | 450 | 5.9 | 900/2100 | 1044 | 15' 8" |
| pine, yellow | light red-brown; conspicuous | 66 | rare | 690 | 6.2 | 1375/3300 | 660 | 15' 8" |
| poplar | light to dark yellow-brown; faint | 90 | 148 | 540 | 5.7 | 900/2100 | 630 | 13' 8" |
| redwood | cherry to deep red- dish-brown; medium | 96 | 148 | 480 | 3.5 | 1125/2700 | 1044 | 17' 8" |
| walnut, Amer. | chocolate brown; faint to med. | 302 | 249 | 1010 | 6.2 | 1500/3500 (approx.) | 384 | 9' 8" |

Cols 2, 5, 6, 7—all data taken as averages from "Wood Handbook 72," published by Forest Products Lab, in approximate form.

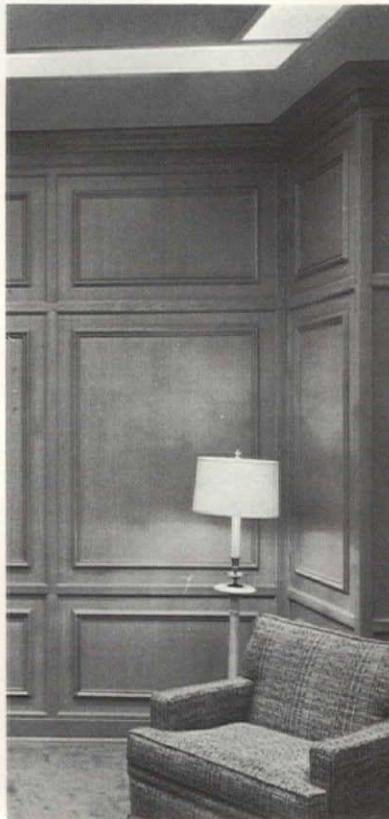
Cols 3, 4—applicable waste figures included for wood; none for plywood. All relative wood costs related to Ponderosa pine at 100; all related plywood costs to fir at 75. Same relating factor being applied to both wood and plywood except as noted. Both wood and plywood are as normally available; that is, plain-sawn wood and rotary-cut plywood. Relative total cost of any item made of one or another species cannot be accurately predicted, due to labor factor and portion of wood to plywood.

Cols 8, 9—taken from AWI Quality Standards Lumber Table. Applicable only to wood—not plywood. Note that figures in Col 8 are for highest grade (AWI Premium). Middle grade (AWI Custom) will have approximately 75% of clear surface shown; lowest grade (AWI Economy) will have approximately 50%. Glueing for width is allowed for rift oak, white birch, and walnut wider than 4 1/2" and for all hardwoods wider than 7 1/2". Glueing for thickness allowed for all hardwoods thicker than 1 1/16". Col 9 lengths are true of all grades; however, softwoods may be obtained on special order approximately 2' longer if quantity is sufficient. Running trim items will be furnished in lengths which average 2' less than those shown in Col 9.

CHARLES RENEGAR



BOB GRANNIS



BOB GRANNIS



Details from buildings designed by architects Emmons H. Woolwine (left) and Brush, Hutchison & Gwinn

Hold to a maximum width of $7\frac{1}{4}$ " all wood species whose relative shrinkage is less than 5 as shown by Column (6) of the preceding table. Hold to a maximum width of $5\frac{1}{4}$ " all wood species whose relative shrinkage is more than 5 as shown by the same table.

b) Use plywood instead of solid lumber wherever wide flat members occur. Even if the edges of such members are molded, use plywood for the flat portion and glue on the molded solid wood.

c) If wide solid wood members must be used, provide for their movement in the design and always allow like members to move together. As an example, plywood and lumber members should *not* be combined as case body members: the lumber members will move in width while the plywood will not.

d) Glue for thickness all hardwoods whose final thickness exceeds $1\frac{1}{16}$ " and all softwoods whose thickness exceeds $1\frac{3}{4}$ ". Such practice allows the use of superior quality material and eliminates the possibility of checks, such as honeycomb, which are caused in drying thick members.

e) Never allow woodwork to be stored or installed in any part of a building where humidity conditions will not be maintained at a level no higher than that level expected when the building is in use.

f) Insure, through inspection, that job-made joints are satisfactory *when made*. Movement of wood is frequently blamed for imperfections that, in reality, are caused by faulty joints.

Under this factor, the if-then equation becomes: "If you recognize the nature of the wood and design to it—then the final results will give permanent satisfaction."

Grading Terms Used to Specify Architectural Woodwork

Another factor in the use of wood is the relatively common practice of using lumber association grading rules to specify architectural woodwork. These rules were *not* designed for such use. These rules are based upon the premise that each board will be cut into smaller pieces and that defects can be eliminated during cutting. While this premise is valid for lumber cut into smaller pieces in the furniture industry, in architectural woodwork

the designer is interested in the entire exposed surface, even when it requires the use of a full board. Even the highest association grades allow defects which would not be allowed in even average quality woodwork. Sapwood is not a defect in even the highest grade of most woods. For these reasons, the woodworker must cull defects from even the best lumber association grades in order to obtain the proper surfaces. The largest possible board clear of all defects varies sharply between species, as do the limitation of defects in larger boards. Test 100-1 of the Quality Standards published by the Architectural Woodwork Institute is the only grading system in existence designed specifically to grade wood for architectural woodwork.

Columns (8) and (9) of the preceding table are taken from test 100-1 of these standards. This is only a small part of the total test. Column (8) lists the maximum square inches free of all defects for the *highest* grade (AWI premium grade). The middle grade (AWI custom) will have approximately 75 per cent as much clear surface, and the lowest grade (AWI econ-

omy) will have approximately 50 per cent as much clear surface. Defects which are allowed in boards of greater surface measure are also sharply limited by grade. Gluing for width is allowed for rift oak, white birch and walnut wider than 4½" and for all other hardwoods wider than 7¼". Column (9) lists the maximum lengths available in any sizeable quantity in all grades. Running trim lengths will average 2'-0" less than those in column (9).

Specification terms such as "best of grade and kind," "A grade" and "clean" are commonly used by specification writers who are too mentally lazy to be definitive. Such relative and meaningless terms encourage marginal woodworkers to take the calculated risk that anything will be accepted by such a vague architect.

Under this factor, the if-then equation becomes: "If you use lumber association grades or vague abstract terms to describe grades of architectural woodwork—then you can expect to get woodwork that is not equal to your intentions. Further, it will be received too late to allow remanufacture and lead to endless arguments. If you use AWI Quality Standards, then everyone concerned knows what is required, and you know it is available."

Grading Terms Used to Specify Architectural Plywood

The third factor for discussion concerns the use of architectural plywoods. Frequently, only the species is specified, no type of cut or core is given, and either no grade is given or some reference is made to Commercial Standards; not only are several grades given in Commercial Standards but the standards themselves are *minimum* standards designed primarily to cover stock plywood rather than the finer architectural plywood. Effective quality control of this type of work requires that specifications for plywood include the following:

a) *Accurate veneer description (species and type of cut)*. Species selection depends upon both color scheme and function, while type of cut determines the grain figure.

b) *Type of core desired*. Type of core is determined by the function of the panel, and it is recommended that particle-board cores be used wherever panel movement must be held to an absolute minimum.

c) *Type of sequence matching desired (if matching between panels is desired)*. This is determined both by the effect desired and the funds available. The most economical

sequence matching is that made from warehouse sets, while the most expensive and finest is that known as blueprint matching, in which each individual panel is perfectly matched with adjoining panels and is made for specific location.

d) *Type of veneer matching within the panel*. This is determined primarily by esthetics and the type of figure for the species used. All normal plywood is made from what is known as running match, while what is known as balanced match is used only for the finest work. In most all cases, book matching at the joint is assumed.

It should be noted that factors a) and b) above also apply to flush doors.

The if-then equation under this factor becomes: "If we spell out precisely what plywood we want in clear and precise terminology—then (and only then) we have every chance of getting it from competent woodworkers."

Specifications for Workmanship

The fourth factor for discussion is the language used to specify workmanship. It is here that mental laziness declares itself by the evasive, abstract and meaningless language used. Examples are abundant: "tight joints," "smooth surfaces," "well glued," "substantially made and suitable for a good finish." Such wording might give a false sense of pride to an uninformed client but should be a source of embarrassment to all thoughtful men. (If you judge by words, the architectural world is much alive to the desirability of producing and maintaining standards. Not a day passes without some reference to this sacred duty. Carrying it out is another thing. Here, few are incompetent in the abstract, but the lack of clear notions and express demands produces the same effect as incompetence. Specifications sometimes amass words in order to produce bulk, but in the land of practicability, to ask precisely what these words mean is an invasion of privacy.)

Such abstractions blur the mind and foster the substitution of inferior materials and workmanship. It is possible to define quality by reference to concretely-worded standards such as those of the Architectural Woodwork Institute. As an example, in such standards surface smoothness requirements are spelled out by degree of sanding, quality is measured by reference to nationally recognized hallmarks, and joinery tolerances are

established by the use of feeler gauges whose thickness is given in thousandths of an inch.

Perhaps the most glaring example of poor woodwork quality resulting from vague specification (or weak inspection) is the lack of proper sanding on fine woodwork where machining marks (small cross-grain corrugations) are evident on all cross-lighted surfaces.

While it is admittedly difficult for specifications on workmanship to be this definitive in and of themselves, it is a relatively simple matter to incorporate by reference nationally recognized standards into specifications to obtain exactly the quality desired and eliminate all chance of disagreement as to compliance with specifications. Further, the standards state that in any conflict between the standards and those in the specifications and/or plans, the architect shall have the option as to which applies.

The if-then of this final factor becomes: "If your woodwork specifications are definitive concerning materials and workmanship, either through incorporation of the provisions of an accepted standards, or by reference to such standards—then competent woodworkers will see that you get what you want and the incompetent will be gradually eliminated."

For most species of wood used commercially, the preceding table gives data on the eight most relevant factors affecting the selection of species for architectural woodwork. Although information given is the result of rather complete research into available data and is as specific as possible, attention is directed to the footnotes. In particular, I wish to call attention to the fact that the relative prices of plywood are for warehouse stocks of the cheapest cut, rather than to custom plywood, the price of which varies sharply with the rarity of the face veneers. I have compiled the data in a comprehensive table in the hope that it can be rapidly used by the architects to minimize many of their problems.

The quality standards referred to on these pages are available from the Architectural Woodwork Institute, 1808 West End Building, Nashville 3, Tennessee. These standards were developed in response to a nationwide survey of architects. Inasmuch as they establish enforceable and accepted standards in concrete terminology, they have won the highest prizes offered by architectural groups for such literature. ■

An architect tells his colleagues how to make the most of the soil map

Site Evaluation and the Soil Survey

BY JOHN R. QUAY

A NEW site-evaluation tool is available to architects, site planners and urban planners interested in refining their technique in this important area of responsibility. It is the detailed soil map with soil interpretations for urban uses. The soil maps with interpretations are prepared mainly by soil scientists of the US Department of Agriculture, Soil Conservation Service, in response to public demand.

Agricultural agencies have been making inventories of the nation's soils for over sixty years, recording their findings on soil maps and interpreting them for farmers and ranchers. It is now realized that the same basic physical and chemical properties of the soil that influence their use for crops, pasture and woodland also determine their adaptability for different kinds of urban uses.

In the past, soil scientists have been concerned mainly with the effect of soil properties on crop production and gave little thought to the effect of different kinds of soil on basements or septic-system leaching fields. With urban-use interpretations, present-day soil maps can indicate the suitability of any segment of any parcel of land for both corn and houses, oats and roads, strawberries and ponds.

For persons charged with making on-the-spot land-use decisions as well as those engaged in long-range planning, urban-use interpretations of soil maps represent a definite technological advance. Unlike most such advances, the benefits come without direct cost to the architect or planner. The National Cooperative Soil Survey is conducted by the Soil Conservation Service in cooperation with other

Federal, state and local agencies and is supported in the main by Federal funds.

Where an urban planning project requires the completion of extensive surveys within a relatively short period of time, local organizations may need to share the costs of the surveys.

Many of today's architectural commissions involve not only the design and construction of individual buildings but a complex arrangement of main and auxiliary structures with their required services. Some of these installations are above ground and clearly visible. However, there is a marked tendency among today's designers to conceal or camouflage required mechanical services. Thus, many of these services are placed underground. Of course, everything installed above ground later gains support either on or in the soil.

Slippage, depth to rock, depth to water table, bearing strength, frost heave, flooding hazard, corrosion potential—these are a few of the many conditions that affect the design, construction and cost of buildings and accessory structures. The soil survey not only shows where these items are problems but also rates their severity.

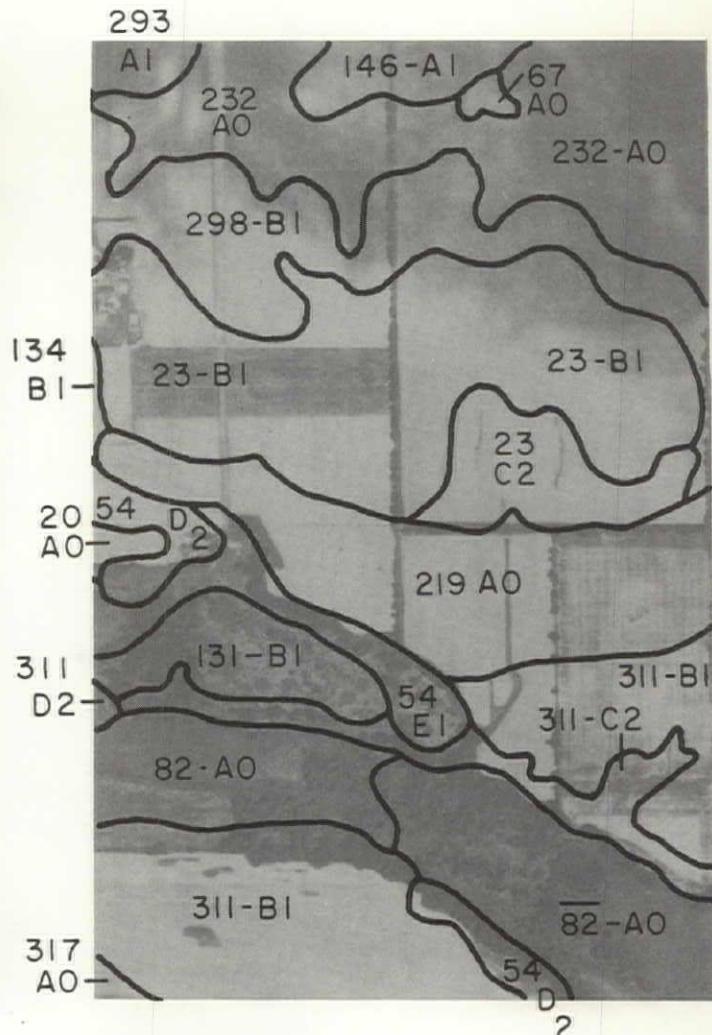
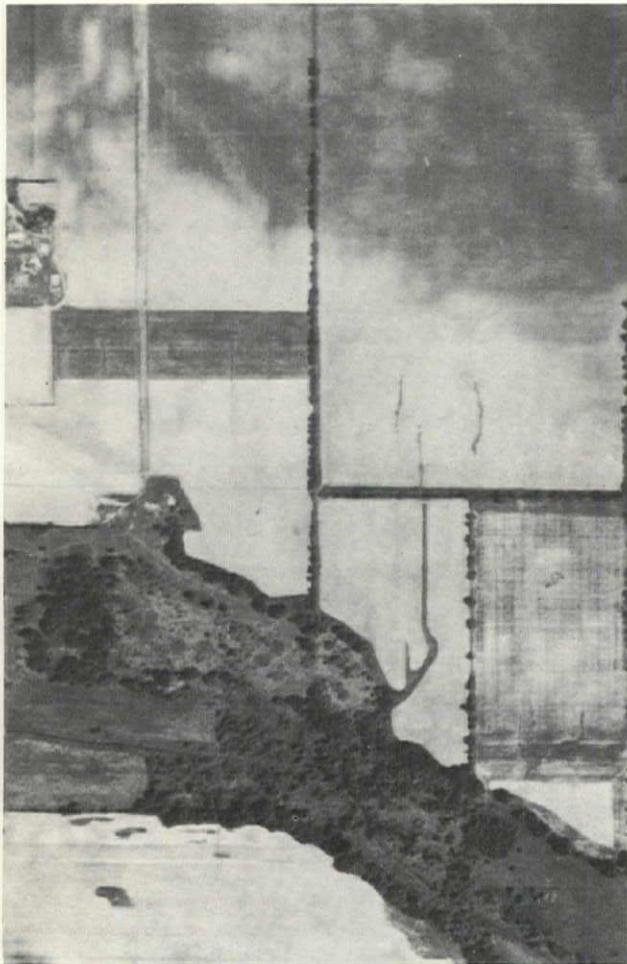
When viewed on any given day, environmental conditions can be misleading. This is particularly true with water in and on the soil. For example, evidence of good surface drainage might not reveal a problem of flash floods. Water tables fluctuate and can be altered by ditch construction located away from the site or by tile installations not known to be present. Because the soil survey emphasizes environmental conditions throughout all four seasons and not just a condition that existed on one date, the designer is able to get from it a

realistic evaluation of the range of difficulty that can be expected. Where controlled stream gauge recordings have not been made, soil survey facts can be used as a substitute. Even where flood records have been kept, the soil map will supplement these records by showing the areas subject to flooding and by indicating depressional or other areas not on main drainage channels which are nevertheless subject to varying degrees of flooding or wetness.

Most architects, planners and designers would agree that not all land is suitable for building purposes and that some of the urban landscape should be retained in a natural or semi-natural state. However, in the past it has been extremely difficult to distinguish between those areas best suited for development and those that are only marginal or poorly suited.

The tendency to ignore soil conditions is pronounced in areas where the record of land ownership is based on a grid survey system and where there is not enough variation in topography to force the designer to take site differences into consideration. It must also be admitted that in some cases the architect-client relationship favors the traditional treatment of land as if it were a homogeneous material with no interrelationships with other environmental factors.

Few metropolitan areas present uniform soil conditions. For this reason, there are both problems and opportunities for the architect whose project allows some flexibility in land-use and structure arrangement. Imaginative site planning can sometimes turn apparent liabilities into assets. The architect has a responsibility to investigate soil conditions before embarking on the design phase of his work so



The soil survey map shows kind of soil, steepness of slope, and degree of erosion. For example, in the designation "23-B1," the soil-type is indicated by (23), steepness of slope by (B), and degree of erosion by (1). Soil-type indicators are given in map key. Degree of erosion and slope in percent are as follows:

DEGREE OF EROSION

- + DEPOSITION
- 0 NO EROSION
- 1 SLIGHT EROSION 7-14" TOPSOIL REMAINING
- 2 MODERATE EROSION 3-7" TOPSOIL REMAINING
- 3 SEVERE EROSION LESS THAN 3" TOPSOIL REMAINING
- 4 VERY SEVERE EROSION - GULLIED
- 5 DESTROYED LAND

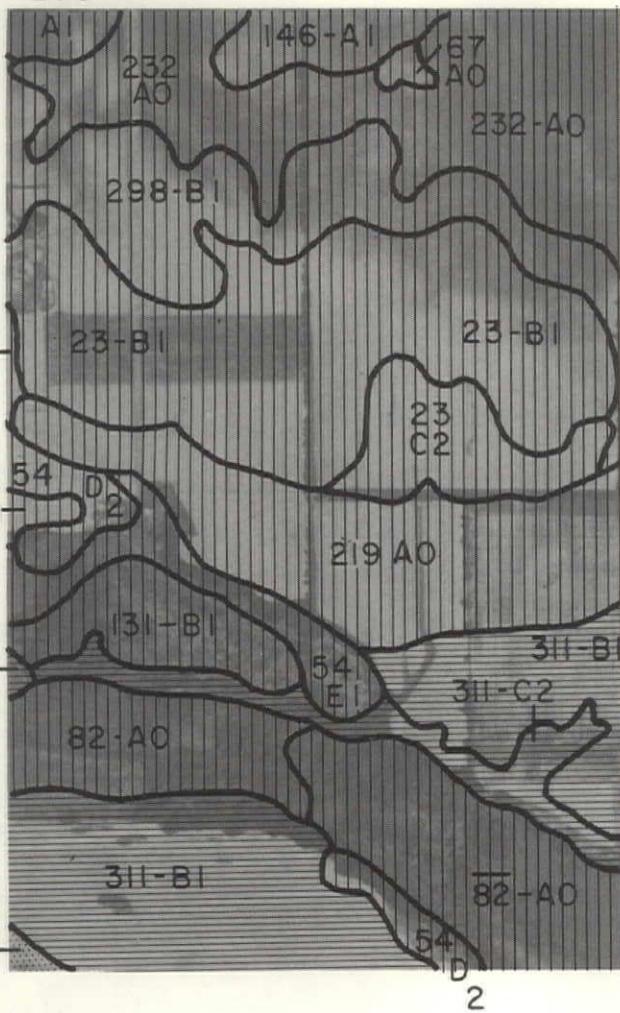
SLOPE IN PERCENT

- | | | | |
|---|---------|---|---------|
| A | 0-1 1/2 | E | 12-18 |
| B | 1 1/2-4 | F | 18-30 |
| C | 4-7 | G | 30 PLUS |
| D | 7-12 | | |

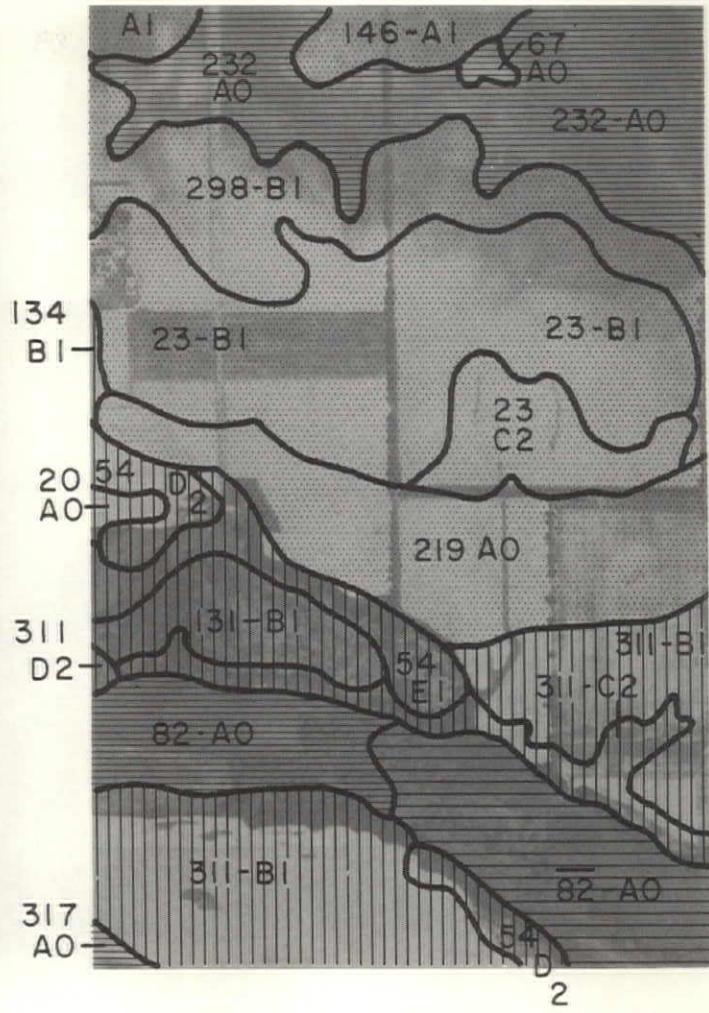
SOIL SURVEY MAP

| | |
|-----|---------------------------|
| 20 | WOODLAND FINE SANDY LOAM |
| 23 | BLOUNT SILT LOAM |
| 54 | PLAINFIELD SAND |
| 67 | HARPSTER SILTY CLAY LOAM |
| 82 | MILLINGTON LOAM BOTTOM |
| 146 | ELLIOTT SILT LOAM |
| 131 | ALVIN FINE SANDY LOAM |
| 134 | CAMDEN SILT LOAM |
| 219 | MILLBROOK SILT LOAM |
| 232 | ASHKUM SILTY CLAY LOAM |
| 293 | ANDRES SILT LOAM |
| 298 | BEECHER SILT LOAM |
| 311 | RITCHIEY SILT LOAM |
| 315 | CHANNAHON SILT LOAM |
| 317 | MILLSDALE SILTY CLAY LOAM |
| 330 | PEOTONE SILTY CLAY LOAM |

293



293

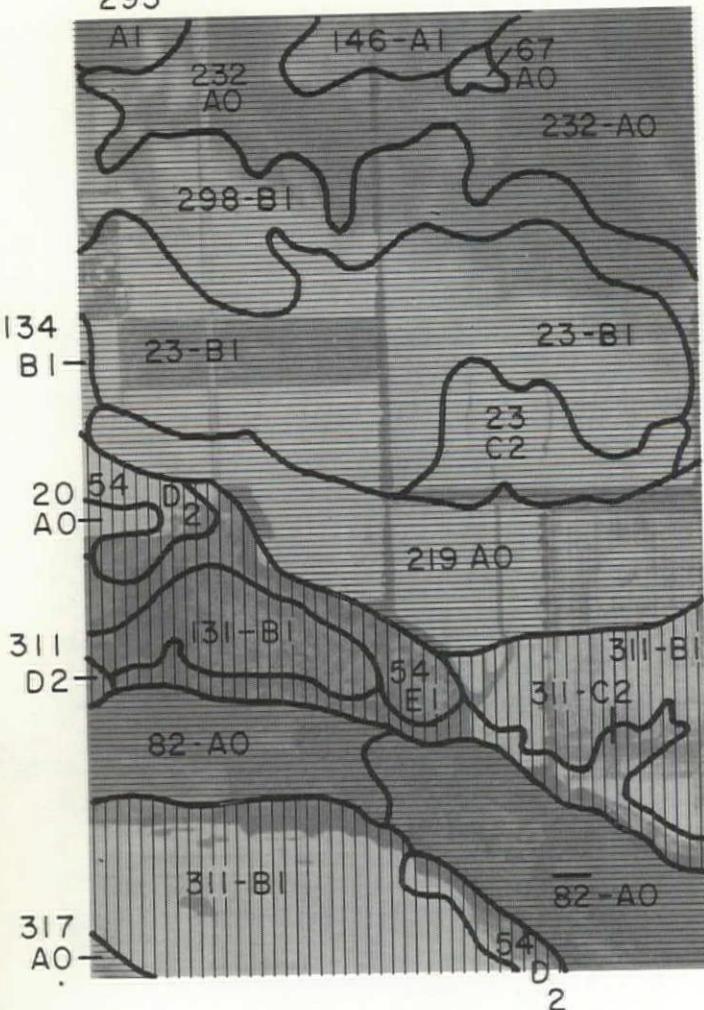
**DEPTH TO ROCK**

| | |
|--|-----------------------------|
| | 55" + BELOW SURFACE |
| | 36"-55" BELOW SURFACE |
| | 20"-36" BELOW SURFACE |
| | 10"-20" BELOW SURFACE |
| | LESS THAN 10" BELOW SURFACE |

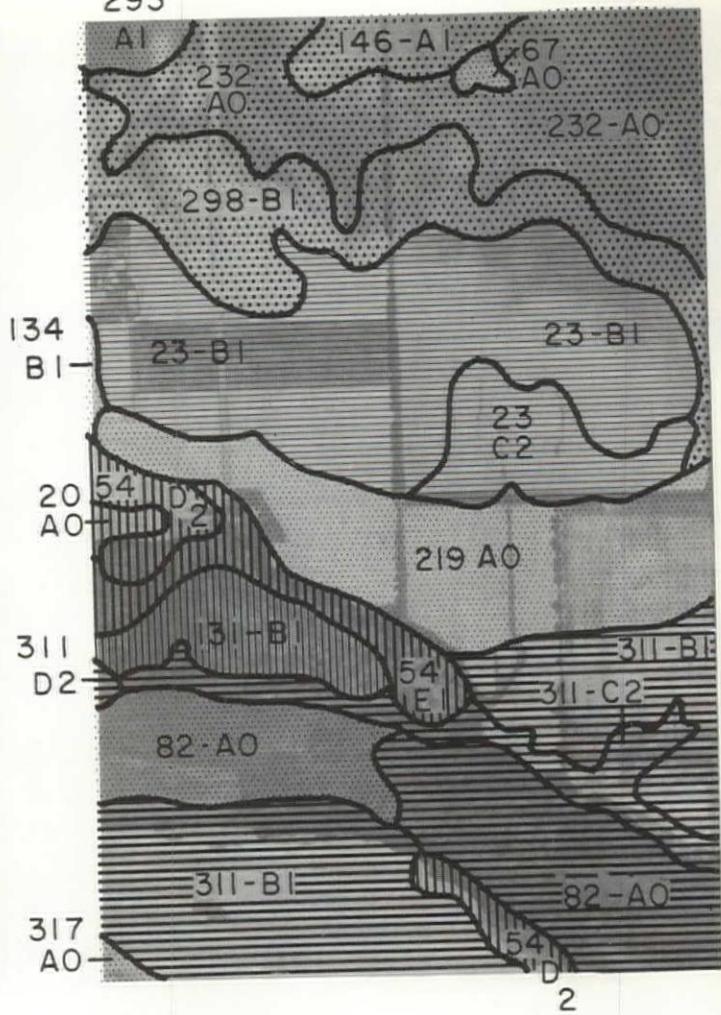
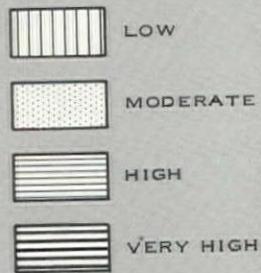
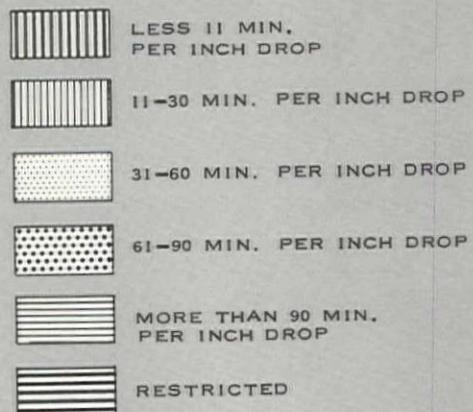
DEPTH TO WATER TABLE

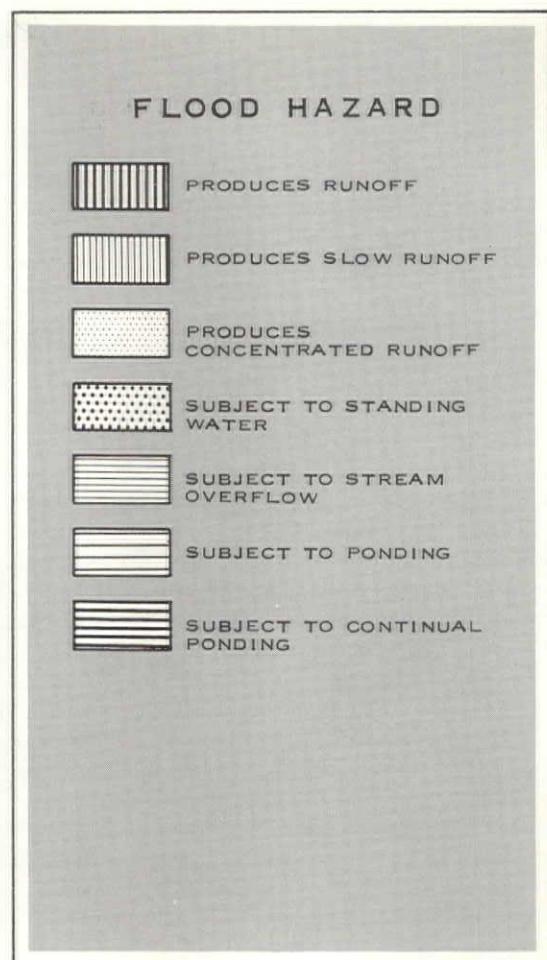
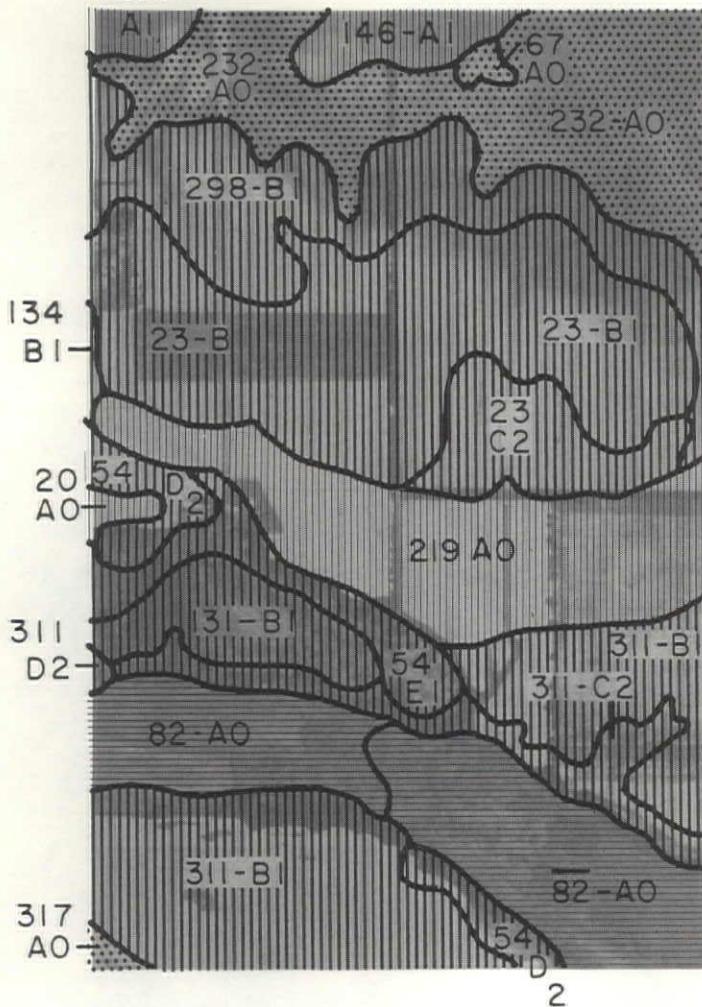
| | |
|--|--|
| | 3' - 0" + BELOW SURFACE |
| | 1' - 0" TO 3' - 0" BELOW SURFACE |
| | SEASONALLY LESS 1' - 0" BELOW SURFACE |
| | PERENNIALLY LESS 1' - 0" BELOW SURFACE |
| | CONTINUALLY LESS 1' - 0" BELOW SURFACE |

293



293

**FROST HEAVE****PERCOLATION RATE**



that he can advise his client of the alternatives. Obviously an industrial client with requirements for underground liquid storage tanks should know when selecting a site how close he will be to bedrock and the usual elevation of the water table. He should also be informed about conditions that will present costly construction or maintenance problems. Detailed soil surveys will provide the answers. Even when there is no alternative to the use of an unfavorable site, the soil survey can indicate areas where inherent problems will be least severe.

Sanitary waste disposal is another soil-related problem that the soil map can shed some light on. Any facility designed to dispose of liquid waste through a subsurface leaching system is going to be greatly affected by the nature of soils through which the effluent must pass. Soils that have high water tables, slow percolation rates, or are subject to periodic inundation from surface runoff are certain to present operational problems.

The list of difficulties that can be averted or lessened goes on and on. Roads or driveways planned

to traverse areas with soils having high shrink-swell properties and high frost heave characteristics can be expected to have a short life or higher-than-average maintenance costs. Native and foreign plants used in landscaping are often doomed to failure from the start by reliance on the "green thumb" rather than knowledge of the soil.

The accompanying soil map is a sample taken from Wesley township in Will County, Illinois, just southwest of the city of Chicago. It has been interpreted to show, 1) depth to rock, 2) depth to water table, 3) frost heave, 4) percolation rate and 5) flooding hazard. These are but a few of the more than 75 interpretations that it is possible to make from one soil map. Of these 75 interpretations there are possibly 15 or 20 that would be of special interest and value to the architect on any single project. Relative importance depends on the type of project and the kind of soil in the area under consideration. Soil slippage, for example, is not the problem in Florida that it is in Seattle.

Some of the more common interpretations that can be made from

one soil map, in addition to the above, are: landscape slope; engineering soil classification (AASHO and Unified); mechanical analysis; soil corrosion characteristics; erosion hazard; surface water runoff characteristics; tree, shrub and grass planting guides; sand and gravel sources; depth of topsoil; soil compaction characteristics; soil slippage; suitability for pond or lake sites; and bearing strength for lightly loaded structures.

Another excellent feature of the modern soil map is that it is made directly on a scaled aerial photograph. This greatly simplifies the designer's task of locating the different soils areas either in the field or on the drafting board.

Evaluation of site suitability can be based on scientific data, not guesswork, thereby aiding the architect or planner in arriving at a more factual, creative design. Thus, for the first time in the history of architecture and urban planning, site development can be put on a truly scientific basis. Gray zones of understanding and judgment disappear and are being replaced by the fine lines of the soil map.

BOOKS

International History of City Development—Vol 1, Urban Development in Central Europe. E. A. Gutkind. Free Press of Glencoe 491 pp \$17.95

Professor Gutkind has most assuredly undertaken one of the most monumental tasks of modern times. This is the first of an eight-volume series which will ultimately include all of the countries of the world and most of the world's cities. No such comprehensive work has been attempted before—there are studies of the settlement of various countries, countless descriptions and histories of cities and towns, many books, articles and reports on many urban problems. But today, with cities everywhere in the world overwhelmed by the impact of new forces—to say nothing of an expanding population, local and national histories have lost their meaning.

There is a need for a synthesis of the growth of cities on an international basis, from the earliest cities of 5,000 years ago to the present day, for this is the end of an era in city growth, an era in which cities were limited in size and in conception, as man's vision was limited. As the twilight of cities, as man has known them for millennia, spreads over all countries, it is necessary to begin a new chapter in the history of human settlement. This demands an insight into the development and destiny of cities which can only be gained by an understanding of cities of the past and of the disintegrating forces of the present. Hence this great work.

This first volume contains a lengthy introduction, which serves as an introduction to the entire work. Each future volume, as does this one, will then have a chapter on, first the land, then the historical background, then the rural settlement and finally the urban settlement, tracing the development—in this case—of the cities of ancient Europe from neolithic times, through the Roman settlement, the Middle Ages and down to the nineteenth century.

Then follows a city survey which, in this case, covers about seventy cities, some quite briefly, some in considerable detail, but invariably the original *raison d'être* of the city is pinpointed, then its successive stages of growth—and sometimes abandonment—the expansion of its walls, and of its influence, and the impact on the city of the changing philosophical concepts from the Middle Ages to the Baroque period, and the changes in social, political and economic life.

Each city is illustrated with eighteenth century engravings of birdseye views, old maps, modern air views and scenes of streets and market squares. Just to look at the book is absorbing—but it is much more than a picture book.

Sometimes the author is a bit exasperating, for he has a way, in speaking of a city of perhaps some particular interest to the reader, of slipping rather glibly past dates, sliding over centuries in a sentence or two, and then swinging back again, leaving the reader a bit bewildered.

Dr Gutkind is, as most readers would know, resident professor at the Institute for Urban Studies at the University of Pennsylvania. Fellow of the Royal Geographical Society and a member of the British Town Planning Institute. He was trained in architecture, city planning, sociology and history, and has worked on large projects and held a government post in England and on the Continent, and is the author of many books, the second most recent of which is "The Twilight of Cities," 1962.

J.W.

Laboratory Planning. James F. Munce. Washington, DC, Butterworth, Inc, 1963. 360 pp illus 6 1/4" x 10" \$15.00

The aim of this book is to present the laboratory as an expression of functional architecture. An historical background of the laboratory is briefly described, and there are chapters on service, structure and fabric which underline the difficulties which the architect has to surmount, bearing in mind the safety of the personnel.

On Growth and Form. D'Arcy Wentworth Thompson. New York, Cambridge University Press 1961 (abridged by J. T. Bonner). 346 pp illus 5 3/4" x 8 1/2" \$5.95

The essence of one of the great classics made available inexpensively in one-third the length of the earlier two-volume edition. Thompson, recognized during his long career as a great scholar in the classics, in mathematics and in natural science, was justly admired as well for his literary style. The analysis of biological processes from their mathematical and physical aspects would hardly seem a vehicle to literary fame but this book (and in the careful abridgment his wording has not been changed) has been characterized as "... a discourse on science as though it were a humanity," and "... the finest work of literature in all the annals of science that have been recorded in the English tongue."

Critics have noted Thompson's disregard of biochemistry and his special attitude toward heredity without real disparagement of the book's value. The mathematical analysis of bio-morphology—the science of living form (with a glance at other natural phenomena: bubbles, splashing drops, snow crystals)—is lucidly presented in text and in line-drawings of great fascination for anyone with a design-sophisticated eye.

ERIC PAWLEY AIA

Environmental Technologies in Architecture. Bertram Y. Kinney Jr and Howard M. Sharp. Englewood Cliffs, NJ, Prentice-Hall, 1963. 788 pp illus 6" x 9" \$16.00

The point of view of this book about architectural design and building equipment is that a building should meet the physiological and psychological needs of its occupants. It emphasizes that a building should link equipment with architecture and fundamental human needs. There are five major sections dealing with thermal and atmospheric environmental control; acoustics; sanitation and lighting; analysis of electrical machinery; and power distribution.



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LETTERS

More About Standard Plans

EDITOR:

I would like to make some observations on your School Plant Study entitled "Why Standard Plans Don't Work" in the September issue.

In reference to the comment received by the 1951 committee from the New York State Education Department and its reconciliation from the statement in the brochure on standard plans, it should be noted that the brochure was not a document of that Department. We generally try to follow the letter of the law, and thus it was circulated to the schools through the Department, but basically the development of these plans was not its responsibility.

Your comments regarding New Jersey lead me to believe that someone fails to realize that legislative bodies at times are not particularly interested in what state boards of education or other groups (even the AIA) think.

I do not believe in standard plans, but I would have to say that the educational space provided in many of the plans developed as a result of legislative action in New York State would allow a much broader program than many of the plans which are presented accompanying articles in national professional, educational and architectural magazines.

Basically it is my belief that the general public and people in legislative bodies do not understand the tremendous amount of work and knowledge necessary to develop plans and specifications for buildings. They think it is a simple task. Your publicity should be aimed at the general public so that this concept will be better understood.

BASIL L. HICK

Division of Educational Facilities
Planning
State Education Department
University of the State of New
York, Albany

Office Practice: Pro and Con

EDITOR:

You certainly deserve a compliment for the excellent October JOURNAL. It is truly a "document" on AIA office practice and has therefore been earmarked in our office as a manual to be kept for future reference.

RAY S. FEBO AIA
Cleveland, Ohio

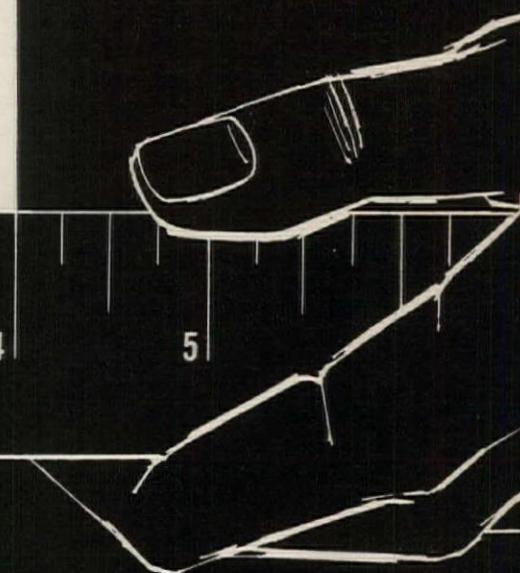
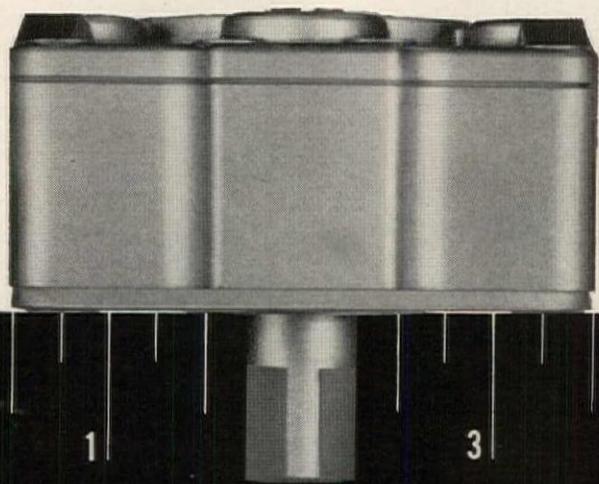
EDITOR:

I hate to take a negative tone in connection with anything to do with your excellent publication, but I must register my surprise—more surprise than pleasure—at a new format that characterized the October issue. I hope that this is only a temporary aberration, having to do with the special issue on professional practice, for surely it is a considerable

Cont'd on p 78

Dependable rack-and-pinion door control

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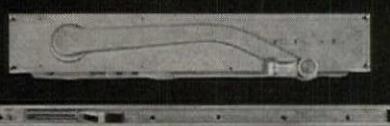
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Letters Cont'd

come-down from the very high esthetic standards that have characterized the format of the JOURNAL in the past years. I can't really understand why you should have made a change at all. Is it just change for change's sake? I hope you are not subscribing to the idiotic principle which was used as the title for Raymond Loewy's autobiography "Never Leave Good Enough Alone" and that there is some explanation of this most unfortunate lapse of taste.

Don't get me wrong. Mr Spreiregen's sketches are amusing, eye-catching tidbits for the kiddies that he must have tossed off in his spare time, while the red and white format is Klassy and Kute. The whole layout might have served as the upgrading of one of our really low-grade periodicals; but for the JOURNAL it is a distinct come-down.

ROBERT C. WEINBERG AIA

New York, NY

EDITOR:

The October issue impressed me greatly. It must have been a prodigious job and should prove of enormous value because it presents in a single package the current thinking on the complex problems of office practice.

WALKER O. CAIN AIA

New York, NY

To Each His Own

EDITOR:

In reference to your Editor's Page for October, I submit several unpopular viewpoints: 1) Are we sure that high density is bad, or as bad as suburban isolation? 2) Cultural defects are not cured by low-density city planning. 3) Urbanization is reality in suburbia; 4) Let's learn from the past, not long for its return. 5) The Wild West, Grandma's pumpkin pie and the self-sufficient small town died at the birth of the Model "T" and were buried by the New Deal.

J. HENRY CHAMBERS

Architect

Akron, Ohio

Convention Issue Is Praised

EDITOR:

Your August JOURNAL is worth a good deal of praise from any one of us concerned with a better life for a better man in a better world. Please be sure that our elected representatives on state and national levels, the students, the educators, the clergy, the lawyers, the builders, the consumers read this thought-provoking document, and please make certain that I understand it all and that I follow up on my obligation to learn from the learned.

EDWARD MAHLUM AIA

Seattle, Wash

We Take a Bow

EDITOR:

Your magazine is far above the other publications in my opinion. I find every issue enjoyable and informative.

ROY E. BERGER

Architect

Des Moines, Iowa

QUOTES / Stanton on Design

CBS' Dr Frank Stanton, upon accepting the Michael Friedsam Medal of the Architectural League of New York for 1964, declared that "respect for superior design seems to me a minimum essential of effective communications and constructive human relationships." His eloquent plea to the profession and to the public included these provocative thoughts:

"I do not think that we can be narrow about this or falter by persuading ourselves that good design might matter in some cases but not in others. It is senseless to be concerned about great institutional architecture and then rush tastelessly into the building of offices, stores, factories and laboratories, where we are more continuously served by good design and punished by bad than anywhere else, except possibly our homes. It is folly to strive for excellence in the substance of a publication and then be indifferent to its appearance. It is witless to preserve carefully the fine artifacts of other times and then surround ourselves with the misshapened and unsightly in our own day.

"I have never felt it to be a matter of corporate altruism for a company to erect its buildings or print its publications or manufacture its products in accordance with high standards of design. The company merely acts in its own self-interest. More is derived of time and effort spent in congenial surroundings than in ugly ones. More attention is invited by the well-designed publication than by the haphazard one. More hospitality is extended by the purchaser, however utilitarian-minded, to the beautiful object than to the ungainly one. Few communities are so lost that they do not welcome the attempt to better their appearance and resent the callousness that respects the eye of those upon whom it is dependent—employees, stockholders, customers, the community—ultimately benefits most of all itself."

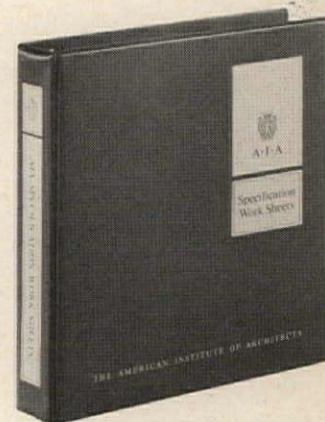
An interesting postscript: Dr Stanton has announced the appointment of Louis Dorfsman to a newly

established position, Director of Design, which will encompass all printed materials, advertising and promotion for CBS and CBS News.

CONCERNING THE CHURCH: Among architect-bylined articles which have come to the AIA JOURNAL's attention appeared in *Your Church* for July-August. In discussing "Architecture and Church Music," I. William Ricciuti AIA of New Orleans declared:

"How fortunate would be the architect who has designed a fine church which well provides for the spiritual and material needs of the congregation and who finds this work enhanced by services given solid cohesion and spiritual depth by good music. A congregation singing an anthem of some intellectual content; or, in a liturgical church, chanting with a leisurely flow of undisturbed prose rhythm; a sensitive organist playing the

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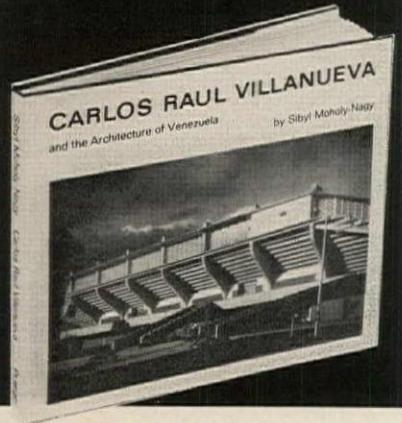
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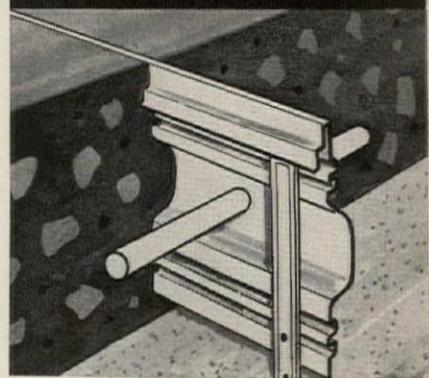
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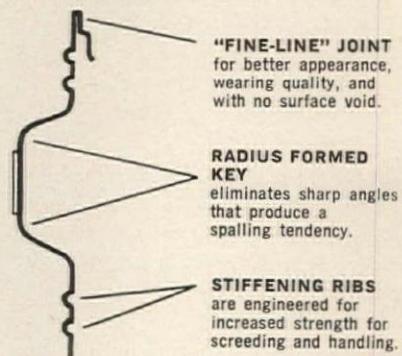
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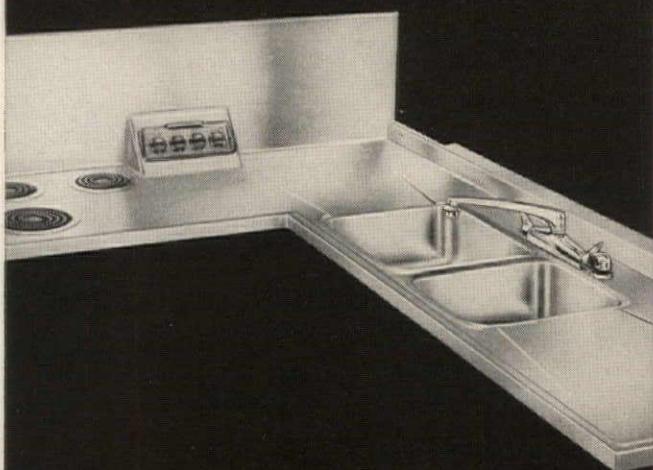
CALENDAR

- Jan 12-15: AIA Board of Directors, Washington, DC
Feb 2-4: SPI Reinforced Plastics Division Conference, Edgewater Beach Hotel, Chicago
Feb 9: Building Industry Conference, Brown Palace Hotel, Denver
April 27-29: Conference on Church Architecture and Architectural Exhibit, Pick-Congress Hotel, Chicago
June 9-11: ASCE Specialty Conference on Wood (one session co-sponsored by AIA), Pick-Congress Hotel, Chicago
June 11-12: NCARB Annual Meeting, Sheraton-Park Hotel, Washington, DC
June 14-18: AIA Annual Convention and XI Pan American Congress of Architects, Sheraton-Park Hotel, Washington, DC
June 27-30: ASLA Annual Meeting, Statler Hilton Hotel, Hartford
July 2-3: UIA General Assembly, Paris
July 5-9: UIA World Congress, Paris
AIA Regional and State Conventions
March 17-19: Michigan Region, Statler Hilton Hotel, Detroit
March 24-27: Gulf States Region, Biloxi, Miss
Aug 18-21: Northwest Region, Glacier National Park, Mont
Oct 6-10: California Region, Yosemite National Park
Oct 14-16: Ohio Region, Atwood Lake Lodge, New Philadelphia
Oct 21-23: Pennsylvania Region, Hershey
Nov 17-20: Florida Region, Jack Tar Hotel, Clearwater
AIA Committee and Related Meetings
(At the Octagon unless otherwise specified)
Jan 11: Committee Chairmen and Commissioners
Jan 13-14: Reynolds Architectural Students Prize Jury
March 10-11: Reynolds Memorial Award Jury
April 2-14: Jury of Fellows

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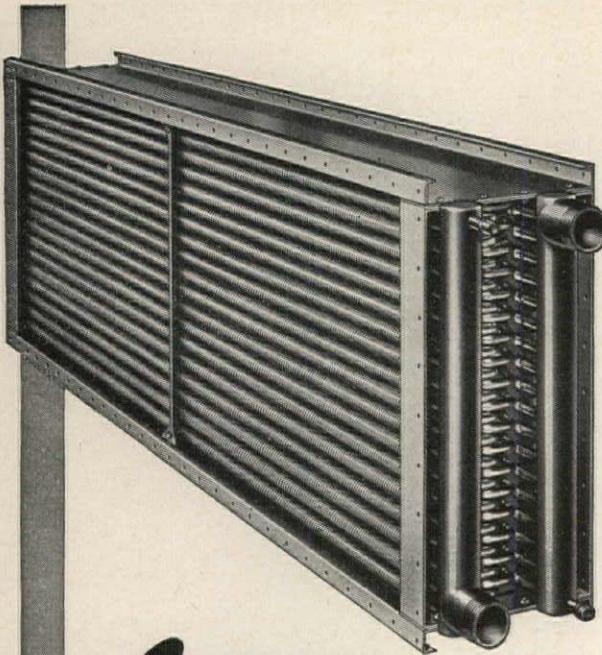
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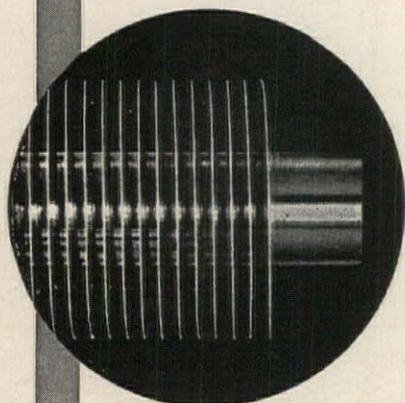
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INDEX TO ADVERTISERS

| | |
|--|-----------|
| Aerofin Corporation | 82 |
| Richards & Weiss, Inc | |
| Amarlite Division | 75 |
| Anaconda Aluminum Company | 75 |
| Chuck Shields Advertising, Inc | |
| The American Institute of Architects | 79 |
| American Telephone and Telegraph | 9 |
| N. W. Ayer and Son, Inc | |
| Armstrong Cork Company | 2 |
| Building Products Division | 2 |
| Batten, Barton, Durstine & Osborn, Inc | |
| Armstrong Cork Company | 3rd Cover |
| Floor Division | 3rd Cover |
| Batten, Barton, Durstine & Osborn, Inc | |
| Azrock Floor Products Division | 4th Cover |
| Uvalde Rock Asphalt Company | 4th Cover |
| Glenn Advertising, Inc | |
| The William Bayley Company | 14 |
| Wheeler, Kight & Gainey, Inc | |
| Elkay Manufacturing Company | 81 |
| The Biddle Company | |
| Ellison Bronze Company | 15 |
| Griffith and Rowland | |
| Federal Seaboard Terra Cotta Corporation | 2nd Cover |
| Persons Advertising, Inc | |
| Halo Lighting, Inc | 19 |
| Stern, Walters & Simmons, Inc | |
| Jahn Concrete Forming Method | 80 |
| Steven Skibo Advertising | |
| Johns-Manville Corporation | 12-13 |
| Cunningham & Walsh, Inc | |
| LCN Closers, Inc | 16-17 |
| Harris, Wilson & Bauer, Inc | |
| Mayco Manufacturing Company | 83 |
| Dunne & Associates | |
| Miracle Adhesives Corporation | 83 |
| Cayton Advertising, Inc | |
| Mo-Sai Institute | 7 |
| David W. Evans & Associates | |
| Norton Door Closer Company | 77 |
| Connor-Sager Associates, Inc | |
| Ohio Lime Company | 78 |
| Ty Advertising | |
| Frederick A. Praeger, Inc | 80 |
| Denhard & Stewart, Inc | |
| Precision Parts Corporation | 76 |
| Bunting, Crook, Harmon, Smith, Inc | |
| Sloan Valve Company | 11 |
| Reincke, Meyer & Finn, Inc | |
| Sonoco Products Company | 22 |
| Bennett Advertising, Inc | |
| The Halsey W. Taylor Company | 18 |
| The Bayless-Kerr Company | |
| United States Gypsum Company | 5 |
| Fulton, Morrissey, Inc | |
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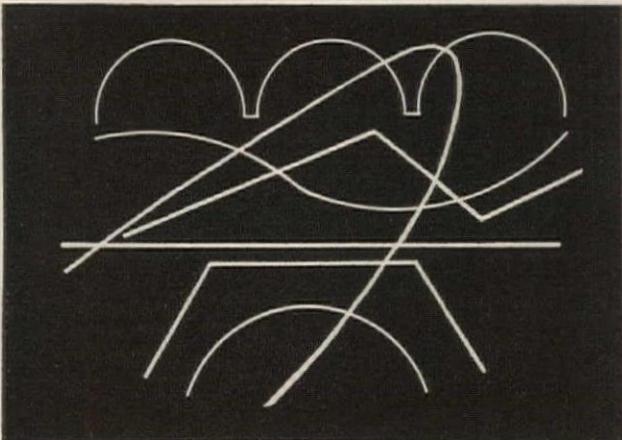
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