

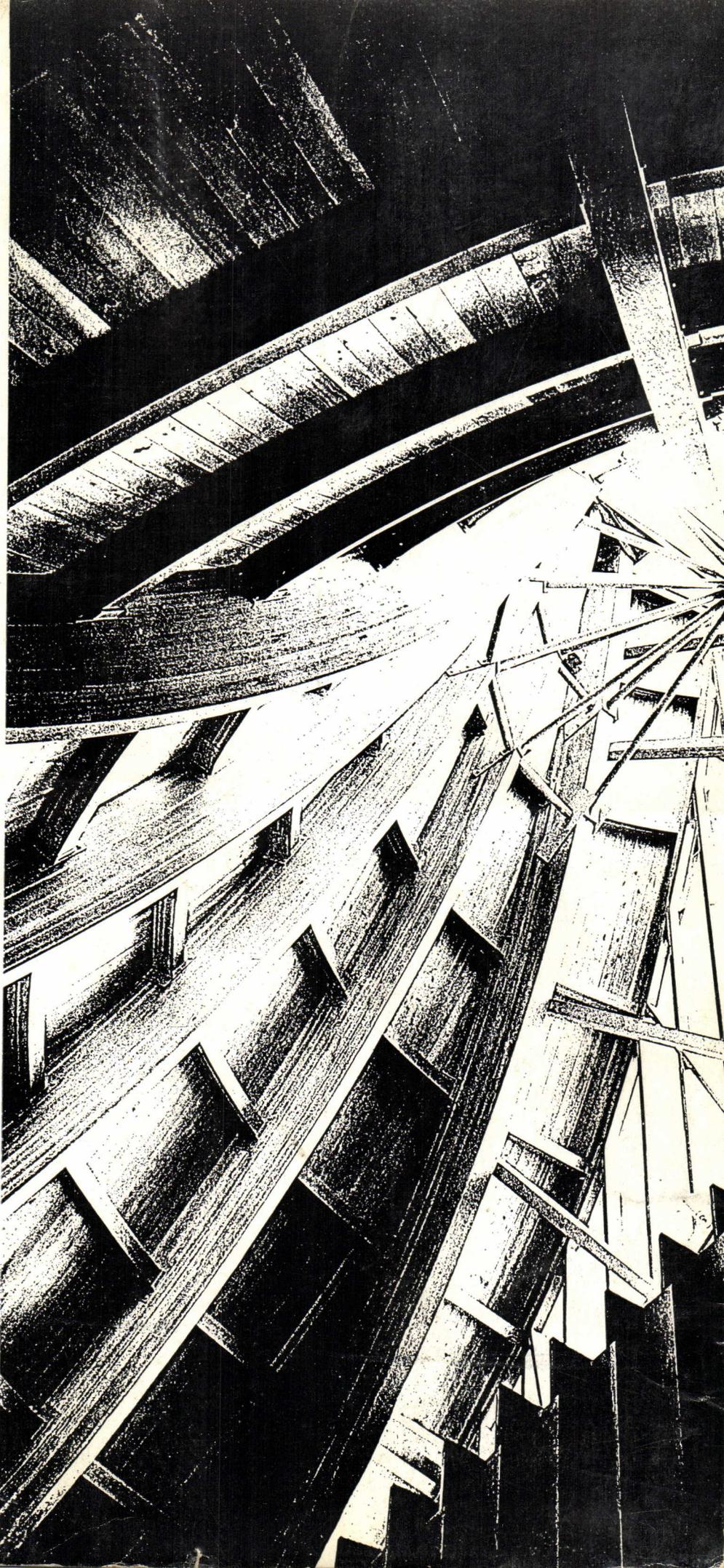


A · I · A

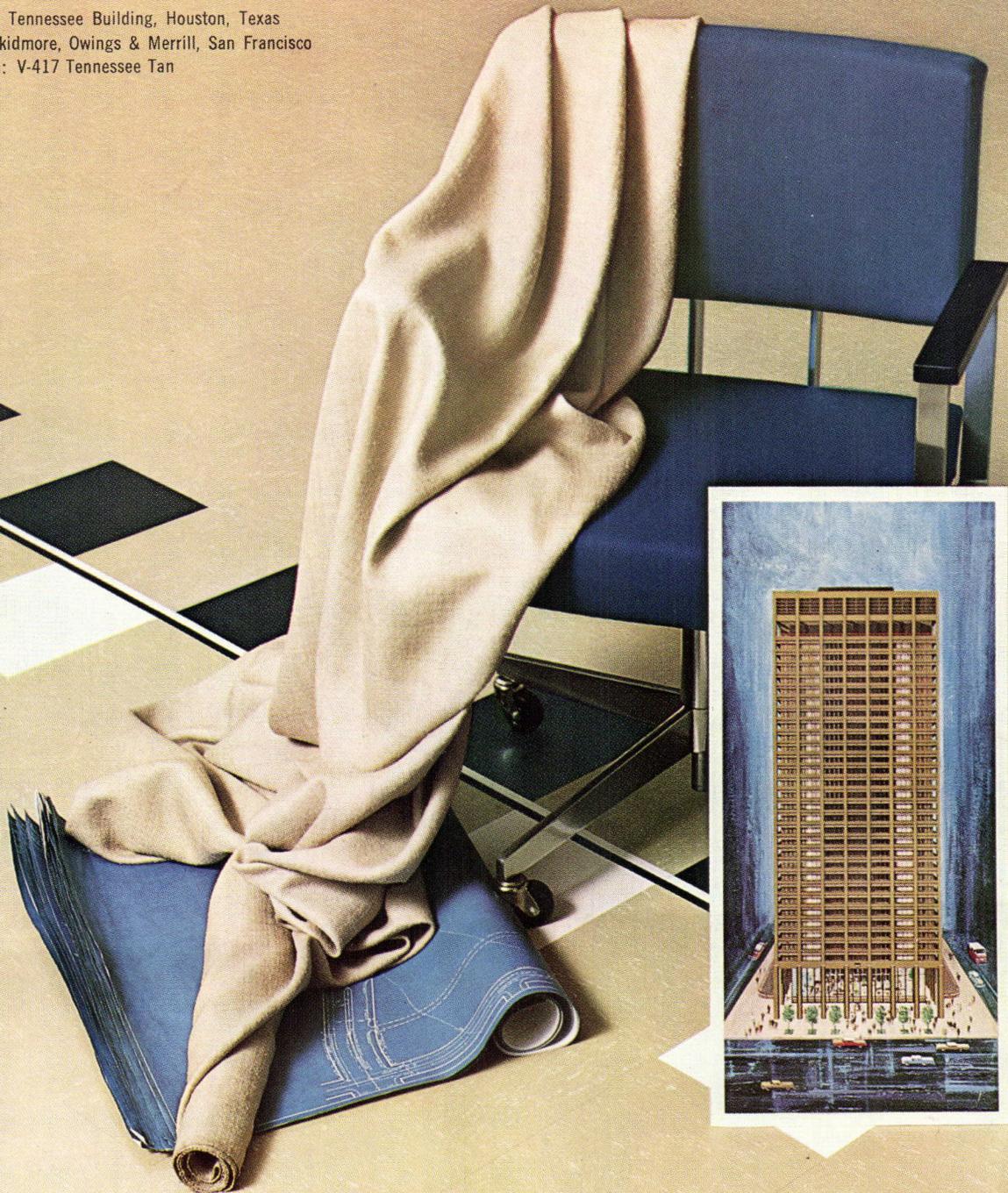
Journal

January 1964

Campus Traffic
Architecture of Worship
or Worship of Architecture?
Bendiner's Back Again



Installation: Tennessee Building, Houston, Texas
Architect: Skidmore, Owings & Merrill, San Francisco
Floor shown: V-417 Tennessee Tan



Creative styling: an inherent quality of Azrock floors. Azrock vinyl asbestos floors³² are carefully designed to coordinate with other interior surfaces and textures . . .

to relate effectively to any decor. Houston's newest prestige office structure is the 33-story headquarters for Tennessee Gas Transmission Company. Designed "to serve people," the Tennessee Building has floors of Azrock Premiere Series — the high-performance resilient flooring with patterning through the thickness of the tile — ideal for heavy-traffic areas. For styling and performance, there's nothing quite like Premiere.

an exclusive floor by **AZROCK**[®]

Consult Sweet's Catalog or write for samples. Azrock Floor Products Division, Uvalde Rock Asphalt Company, 591A Frost Building, San Antonio, Texas
*Also known as Vina-Lux



A · I · A

Journal

JANUARY 1964

VOLUME XLI, NO. 1

EDITOR

Joseph Watterson FAIA

MANAGING EDITOR

Robert E. Koehler

ASSISTANT EDITOR

James Bailey

ASSISTANT EDITOR-TECHNICAL

Marilyn E. Ludwig

ART SUPERVISOR

Josephine Bolt

EDITORIAL ASSISTANT

Katharine S. Godsey

ADVERTISING MANAGER

Mary H. Ranta

CIRCULATION

Jane B. Solt

The Journal of The American Institute of Architects, official organ of the Institute, is published monthly at the Octagon, 1735 New York Avenue, NW, Washington 6, DC, Ex 3-7050. Editor: Joseph Watterson FAIA. Subscription in the United States, its possessions, and Canada, \$7 a year in advance; elsewhere \$8.50 a year. Chapter Associate members, \$4, Students, \$3.50, Members of Associations of allied professions, \$5. Single copies \$1. Copyright, 1964 by The American Institute of Architects. Second class postage paid at Washington, DC. Change of address: notify the Octagon, giving both old and new addresses. Allow four weeks. Official address of the Institute as a NY Corporation: 115 E 40 Street, New York, NY. Printed in Washington, DC by Judd & Detweiler, Inc.



Opinions expressed by contributors are not necessarily those of AIA

AIA Journal

- 23 *John C. Parkin* FRAIC, FRIBA: The Responsibility of the Architect—To the Public and to the Profession
- 27 *Nana May*: Campus Traffic-Urban Design in Practice
- 31 *Robert H. Mutrux* AIA: Architecture of Worship or Worship of Architecture?
- 35 *Alfred Bendiner* FAIA: Through the Martini Glass
- 37 *Louis Rossetti* FAIA: Comprehensive Architectural Practice—Building Programming
- 42 *Leo A. Daly* AIA: The Architect in the Business World
- 48 *Robert H. Woody*: “Please, Mother, I’d Rather Sculpt It Myself!”
- 50 *Lyndon Welch* AIA: Who Is Responsible for Safety?
- 52 *Robert J. Piper* AIA: Budgeting Man-Hours for Field Administration of Construction Contracts
- 53 An Editorial from *The New York Times*
- 57 *Benjamin H. Evans* AIA: AIA Research Programs
- 59 *Walter T. Rolfe* FAIA: Research and the Architect
- 62 *Harold Horowitz* AIA: An Introduction to Research Methods for Architecture
- 66 Foam Plastics for Housing in Underdeveloped Areas
- 6 Editor’s Page
- 8 Letters to the Editor
- 12 *Robert J. Piper* AIA: Urbanisms
- 47 *William H. Scheick* AIA: Introductions and a Farewell
- 54 Library Notes
- 55 Books
- 74 Calendar, Necrology
- 75 News

COVER: House of Worship, United Church of Rowayton, Connecticut, designed by Joseph Salerno AIA. P. E. Guerrero photo



The American Institute of Architects

Board of Directors

Officers

| | |
|-----------------------|--|
| President | J. Roy Carroll Jr, FAIA, 6 Penn Center Plaza, Philadelphia, Pa |
| First Vice President | Arthur Gould Odell Jr, FAIA, 102 W Trade, Charlotte, NC |
| Second Vice President | Wayne S. Hertzka FAIA, 32 Fremont St, San Francisco, Calif |
| Secretary | Clinton Gamble FAIA, PO Box 2465, Ft Lauderdale, Fla |
| Treasurer | Robert F. Hastings FAIA, 3107 W Grand Blvd, Detroit, Mich |
| Executive Director | William H. Scheick AIA |

Regional Directors

| | | |
|------------------|---------------------|--|
| East Central | (Terms expire 1964) | James Allan Clark AIA, Henry Clay Sta, Box F, Lexington, Ky |
| New York | | Morris Ketchum Jr, FAIA, 227 E 44th St, New York |
| New England | | James Lawrence Jr, FAIA, 711 Boylston St, Boston, Mass |
| Ohio | | George B. Mayer FAIA, 616 The Arcade, Cleveland |
| North Central | | Julius Sandstedt AIA, 135 Market St, Oshkosh, Wis |
| Western Mountain | | R. Lloyd Snedaker AIA, 12 Post Office Pl, Salt Lake City, Utah |

(Terms expire 1965)

| | |
|-----------------|---|
| Northwest | Robert L. Durham FAIA, 1100 Denny Way, Seattle, Wash |
| South Atlantic | William Ernest Freeman Jr, AIA, 226 W Washington St, Greenville, SC |
| Michigan | Adrian Nelson Langius FAIA, 932 Westlawn St, East Lansing |
| Middle Atlantic | Charles M. Nes Jr, FAIA, 2120 N Charles St, Baltimore, Md |
| Gulf States | G. Scott Smitherman AIA, 1612 Fairfield Ave, Shreveport, La |

(Terms expire 1966)

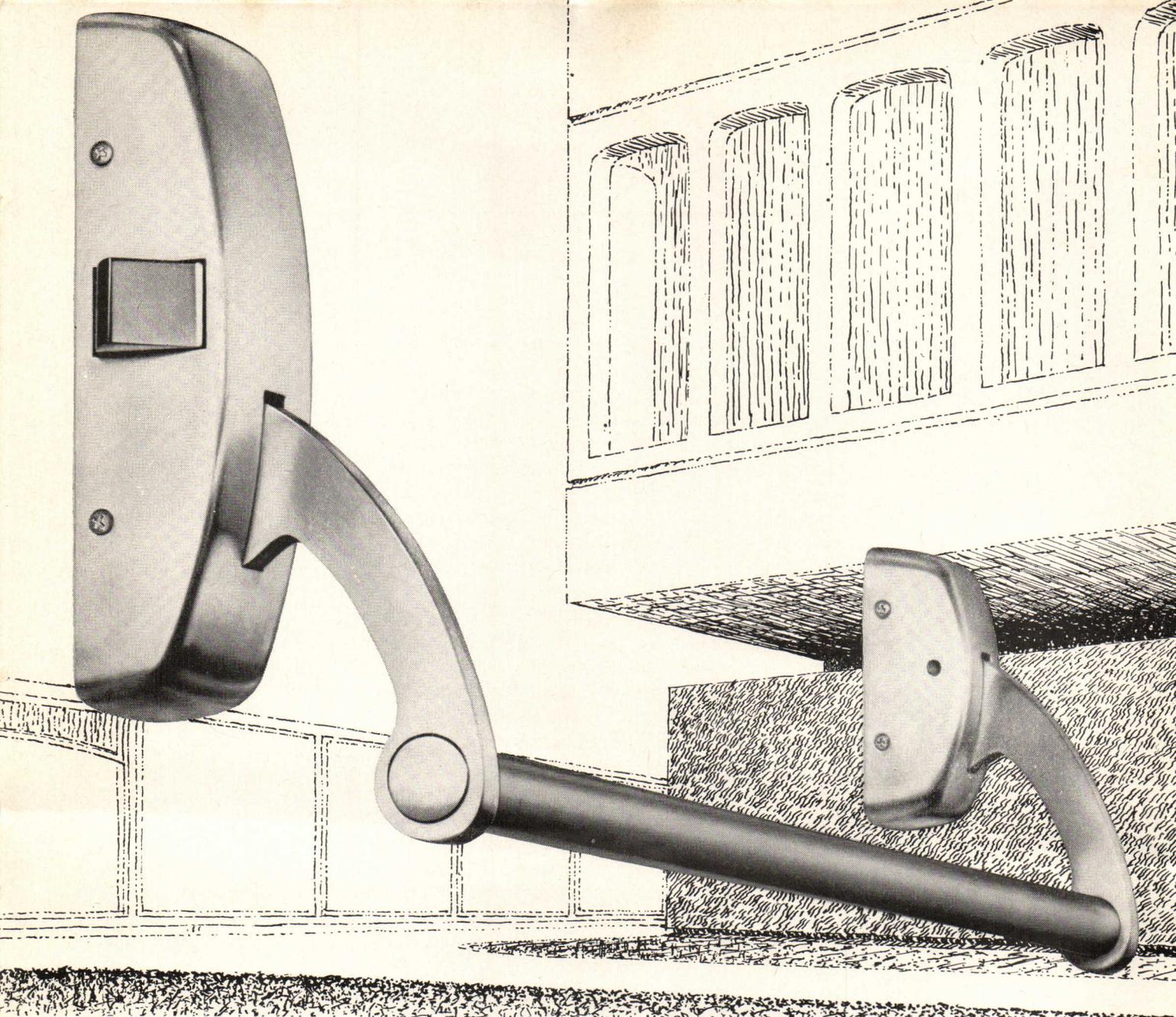
| | |
|----------------|---|
| Illinois | Albert M. Goedde AIA, 100 Signal Hill Blvd, East St Louis |
| Pennsylvania | Willard S. Hahn AIA, 7 S 7th St, Allentown |
| Florida | Robert H. Levison AIA, 425 S Garden, Clearwater |
| Central States | Angus McCallum AIA, 1221 Baltimore Ave, Kansas City, Mo |
| Texas | Llewellyn W. Pitts FAIA, 1872 Calder Ave, Beaumont |
| California | C. Day Woodford FAIA, 410 N La Brea Ave, Los Angeles |

Headquarters

1735 New York Ave NW, Washington, DC, 20006

| | |
|---|-------------------------------|
| Executive Director | William H. Scheick AIA |
| Secretary to the Executive Director | Mabel Day |
| Administrator, Dept of Institute Services | J. Winfield Rankin, Hon AIA |
| Convention | Dale Wharton |
| Pan American Congress 1965 | Rockwell K. Du Moulin AIA |
| Membership | Maureen Marx |
| Awards | Faynetta W. Nealis |
| Administrator, Dept of Public Services | Kenneth C. Landry AIA |
| Editor of the Journal | Joseph Watterson FAIA |
| Public Information | James Bailey |
| State, Chapter & Public Affairs | John Dawson AIA |
| Exhibits & Visitors | Alice Graeme Korff |
| Administrator, Dept of Professional Services | M. Elliott Carroll AIA |
| Research | Ben H. Evans AIA |
| Education | Maurice William Perreault AIA |
| Professional Practice & Urban Design | Robert J. Piper AIA |
| Architectural Building Information Services | Theodore W. Dominick AIA |
| Librarian | George E. Pettengill, Hon AIA |
| Historian | Henry H. Saylor FAIA |
| Controller, Dept of Business Management | W. G. Wolverton |

The above is intended to facilitate communication between the membership and the AIA Headquarters and is not a complete staff listing



Doorway to tomorrow: today's exit devices from Sargent

Here is safety and sculptured simplicity — Sargent 90 Series combine harmoniously with the most advanced architectural concepts . . . let you smoothly integrate design and safety in rim, mortise and surface or concealed vertical rod devices.

Solid good looks house Sargent's exclusive *chassis-mounted* unit construction. Four screws mount the rugged chassis of 90 Series devices directly to the door for easier installation. All components are built right on the chassis — simply remove the cover, and all parts are completely revealed for inspection . . . periodic maintenance takes only seconds. Doors open

with the slightest pressure, even under emergency conditions.

When you want attractive, really reliable exit devices, specify Sargent — your single source of responsibility for quality locksets, door closers and other safety hardware. See your Sargent hardware supplier, or write Sargent & Company, New Haven 9, Connecticut. In Canada, Sargent Hardware of Canada Ltd., Peterborough, Ontario.



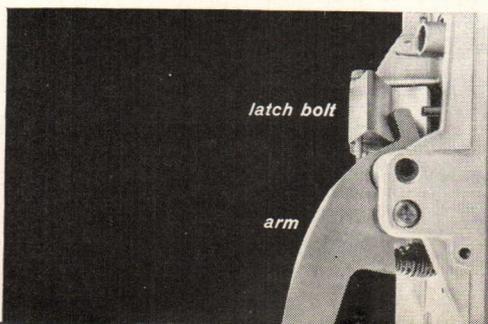
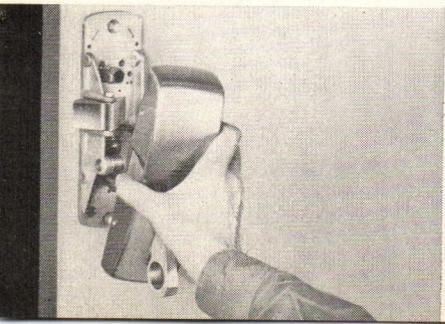
SARGENT

The newest fashion in a complete line of architectural hardware

exclusive chassis mount permits easy installation. inspection and maintenance.

only 2 moving parts for long, trouble-free service . . . no other device has such simple, direct leverage for Fulcrumatic balance, positive touch-opening.

available in all finishes, including aluminum, stainless steel. All UL Listed for Panic, plus Labelled Fire Exit Hardware.



Underwriters' Laboratories, Inc.
INSPECTED
FIRE EXIT HARDWARE
NO.
SARGENT & CO., NEW HAVEN, CONN.

Editor's Page

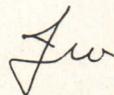
Visual Violence

These words are being written a week after the death of President Kennedy, a week that most good Americans have spent, I hope, searching their hearts, searching the heart of their country, to find out *what is wrong with us?* What *is* this malaise, this deep illness, that has been manifesting itself in our national life in recent years, increasingly during the past year or two, and now reaching its peak in the assassination of our young President, a man who stood out against all that is ugly and decadent in American life. It's no use trying to brush it under the rug by saying, "Well, obviously, the murderer had a sick mind." Of course the murderer had a sick mind, but he just happened to be the one sick mind that had the craft, the guile and the opportunity to pull off successfully the most heart-rending crime of the century. The country is full of such sick minds, and what has brought it about?

The increase in crime and violence, the rabid expressions of hate indulged in by the extremes of both left and right, the insane fear of Communism, the hatred, fear and violence shown by white men and Negroes toward each other, the increasing tendency of men to take the law into their own hands—all of this is in direct and startling contrast to our own mental image of ourselves, the rational, fair-minded, shrewd but idealistic, free American. We look at ourselves, and we look at each other, and we say "Not me." No, we, you and I, may not be sick—not yet, anyway. But we cannot escape our share of the responsibility for the sickness that has spread among us. This dread national disease, which can destroy all we have dedicated our nation to upholding, can be cured only by the efforts of each individual American, by being careful of every word and deed. It is so easy to contribute even ever so slightly to contempt for law and order by a sneering or slighting remark. Criticize we must, that too is the essence of America. But it must be open where it can be answered, honest so it can be evaluated, fair so it can be reasoned with.

There is most certainly a parallel, and can it be that there is an actual connection, between this disease and the ugliness, filth and squalor we put up with in our surroundings? If we are blind to bigotry, fear, violence, suspicion and hatred, perhaps we can be blind to litter, decay, sprawl and confusion. Can it be that the clap-trap and honky-tonk we all take for granted is a *visual manifestation* of the ugly vein of hatred, violence and resentment that runs like a hidden and slowly-burning fuse through all strata of American life?

Ugliness destroys, just as hate destroys. We must conquer both.



Four proven ways to make your public telephone installations both distinctive and functional

GET FREE EXPERT HELP. Just call the Public Telephone Consultant in the area where your building is to be erected. He's helpful, thorough, and loaded with ideas to help you make a design asset out of this important public service.

PLAN AHEAD. Provide for adequate yet attractive public telephone installations while you're still in the blueprint stage. Today's flexibility in color, materials, basic size and design allows you to plan public telephone installations that will reflect the same decor you designate for walls, floors and ceilings. Early planning makes it possible for our Public Telephone Consultants to analyze the telephone requirements of a particular building, and offer practical suggestions. Remember also that preplanned installations often eliminate the costs and delays of expensive afterthoughts.

ACCENT CONVENIENCE. Little comforts are an important consideration in planning any building for public use. Tenants, visitors, employees and casual traffic all require easily accessible and conveniently located public telephones. Our Consultants can help you select the proper locations in your particular building, based on its function, floor layout, and potential traffic patterns.

SPECIFY THE RIGHT NUMBER OF INSTALLATIONS. The logical number of public telephones can be predetermined for any building. In this area our Public Telephone Consultants are helpful, too—for they can predict with remarkable accuracy the number of installations your building will require.



BELL TELEPHONE SYSTEM

SERVING YOU

Letters

NCARB: Two Sides of the Coin

EDITOR, *Journal of the AIA*:

Your article "NCARB Basic Information" appearing in the August issue was most interesting. I am a great believer in the NCARB, so much so, in fact, that I took a written NCARB examination eighteen years after my state board examination, and after already being registered in three states.

There are three most significant points brought out in your article:

- 1 The NCARB has no legal status
- 2 Its purpose is to promote "uniform standards"
- 3 It works toward "standardizing and equalizing" examinations.

In its endeavor to carry out items 2 and 3 above, it is already greatly handicapped by item 1. Even though it has no legal authority to COMPEL, presumably it has authority to ADMIT or to EXPEL states which do not conform to items 2 and 3, or which create arbitrary restrictions making it difficult for technically qualified individuals in their efforts to secure registration. This letter, of course, does not pertain to states which have requirements exceeding NCARB standards, such as design for earthquake resistance. The observations contained herein apply only to states whose standards equal those of the Council.

Now that we have an NCARB to promote uniform standards, we should have to realize the greatest value of this organization, uniform cooperation and uniform policies in the different member states. While each state has a legal right to establish its own registration laws, if it is allowed to be a part of the NCARB the least that can be expected is to show applicants for transfer from other states the same consideration its own architects would receive when applying for registration elsewhere. To illustrate this point, three actual circumstances which took place a few years ago are listed in the following paragraph. The first situation, of course, is ideal. If the latter two conditions could not possibly happen now, it is a measure of how much we have progressed.

In one case, an architect was granted reciprocity in another state without question, merely by the transcript of his home state's credentials. It is my recollection that it was cleared by the office help in the second state without even taking up the time of the Board. In another case, the certificate from a state of high standards was not good enough for another state, and for rendering only partial service on a very small job, the architect had to send pounds of material to be "examined"—possibly to create the impression that the standards of the second state were superior to those of the first. If so, how could the standards of one state be superior to those of another if they were both members of the NCARB,

whose purpose is to promote "uniform standards?" In the third instance, an architect sent his NCARB credentials to another state, but they had to be pigeon-holed until the Board could meet (at its regular scheduled meeting) to consider the matter, and the architect had to appear in person before the Board, none of whose members held NCARB accreditation themselves! It had been my understanding that one of the objectives of NCARB was to facilitate registration in other states promptly (on the basis of uniform standards) without the delay of waiting for the Board to convene.

These remarks in no way take exception to the NCARB and the magnificent work it is doing. On the contrary, the purpose of this letter is to ascertain if the NCARB cannot be strengthened to have some authority to deal with member states which receive all the advantages of the Council, yet do not show equal reciprocity to architects from other states. In matters of state registration, apparently architecture is not the only profession involved, and I have heard of one state where druggists won't fill a prescription if written by an out-of-state doctor.

When an individual's technical ability (as established by NCARB) is not good enough for him to qualify in a member state without a great deal of trouble, if at all, then it is time for somebody to seek the solution. And, while the troubles of other professions may be no concern of ours, and vice versa, it would still be interesting to ascertain if they are encountering difficulties in these same states also.

JOSEPH W. WELLS AIA
Auburn, Ala

EDITOR, *Journal of the AIA*:

With appreciation to Mr Wells for his complimentary interest in the work of the Council, and to the Editor for the opportunity of reviewing his letter prior to its publication, the following comments and information are provided in response to his observations.

Since the relationship of the Council to its member Boards is not widely understood, it is well to discuss this relationship when the opportunity is available.

As Mr Wells evidently understands, the Council has never been envisioned as an organization that would in any way compel any State Board to do anything since the Boards are a part of their state government created by and controlled by state law.

All of the State Boards, as well as the Registration Boards in the District of Columbia, Puerto Rico and the Canal Zone, have voluntarily applied and been admitted to membership. They joined in the work of the Council to be of greater service to the architects, future architects and, of course, the public in their state or political subdivision, and to facilitate the handling of reciprocal applications for well-qualified architects from other areas.

There would be many architects and other people affected if a member Board were expelled from membership in the Council. Therefore, some leeway,

Cont'd on p 10



Ellison now offers
completely concealed door controls

After many years of successful operation in their own installations, Ellison is now offering completely concealed, center pivoted door controls. These controls are to be known as No. 70 Double Acting and No. 71 Single Acting Door Closers and are compactly built for use in either wood or hollow metal doors without further need for external hinges or pivots.

The two speed adjustable operating controls are invisibly contained in the door heel and are easily installed in a wood door with either a shoe or kickplate. In a hollow metal door the closer is mounted without need for exterior reinforcement. The floor plate is mounted on the finished floor — requiring no recess.

Self-centering and hold-open devices are integral parts in the Ellison No. 70 and No. 71 Door Closers.

Literature available from

ELLISON BRONZE CO., Inc. • Jamestown, N. Y.

Letters Cont'd

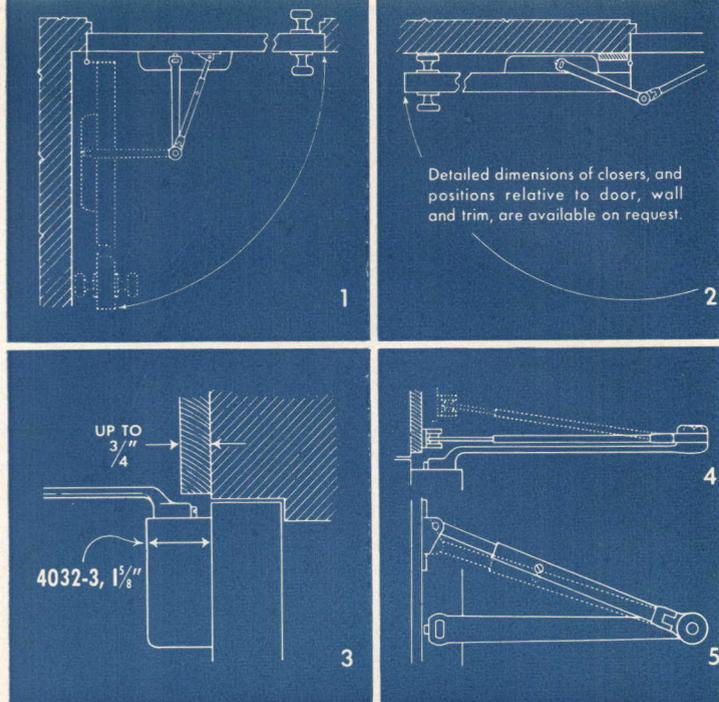
within acceptable standards, must be provided for variations in the procedures of the various member Boards, and particularly in regard to procedures which cannot in many instances be changed without a change in the state statute that governs the Board. Since the statutes are not enacted by architects, changes are difficult requiring careful planning and handling to assure that the end result is improvement rather than a weakening effect or a less workable statute. Among those engaged in other endeavors and who become involved in changing a law, there are still too many who do not fully understand the work of an architect to overlook the pitfalls that can be encountered in attempting to change registration laws. Still, they can be, have been, and will in the future be changed when the necessity exists, as evidenced by the changes that have occurred in many states over the years. The point is that it is at best a process requiring a lot of time because of the study and care involved.

The members of the various Boards are not merely state officials unaware of problems that would affect the profession. They are your fellow architects. Any architect has access to the members of a Registration Board and it is evident that architects are not timid in conveying difficulties to the potential sources of relief when they are encountered.

Mr Wells is right that there is a lot of variation in the amount of state collected data and reference material which individual Boards require to complete action on an application through NCARB. One of the projected studies now in preparation by the Council, and endorsed as very important by the Institute, is in regard to these requirements. We believe it will point out that not all of the member Boards take full advantage of the very comprehensive information no included in a Council application. During recent years NCARB has strengthened the total information included in a Council application. This has been done for the sometimes misunderstood purpose of providing to the member Boards as much pertinent information on the qualifications of the architect as can be expeditiously assembled under practical considerations. These more comprehensive and up-to-date records are rapidly paving the way toward a more uniform acceptance of Council applications as the Boards continue to gain confidence through their use. This will also help in a projected study toward a uniform state form for which the Council will seek approval by the member Boards and urge them to adopt. Several state Boards are already following the Council application form in changes to their state forms.

These studies, and the actions already underway, are for the purpose of establishing a closer uniformity. Additions to the Council office staff and changes in NCARB procedure are rapidly providing more time for the pursuit of such programs that will benefit all well-qualified architects whose clientele require an extension of the boundaries of their practice.

JAMES H. SADLER AIA
Executive Director, NCARB



Application Details

for No. 4033 SMOOTHÉE® door closer
shown on opposite page
(See diagrams above)

- 1 In corners a "Smoothée" takes less space than most doorknobs between door and wall
- 2 Degree of door opening possible depends mostly on mounting, type of trim and size of butt used
- 3 Arm of "Smoothée" is formed to avoid conflict with almost any trim
- 4 Joints in arm and shoe make it easy to vary height of shoe as needed for beveled trim
- 5 Power of closer at latch may be increased or decreased by simply reversing position of shoe

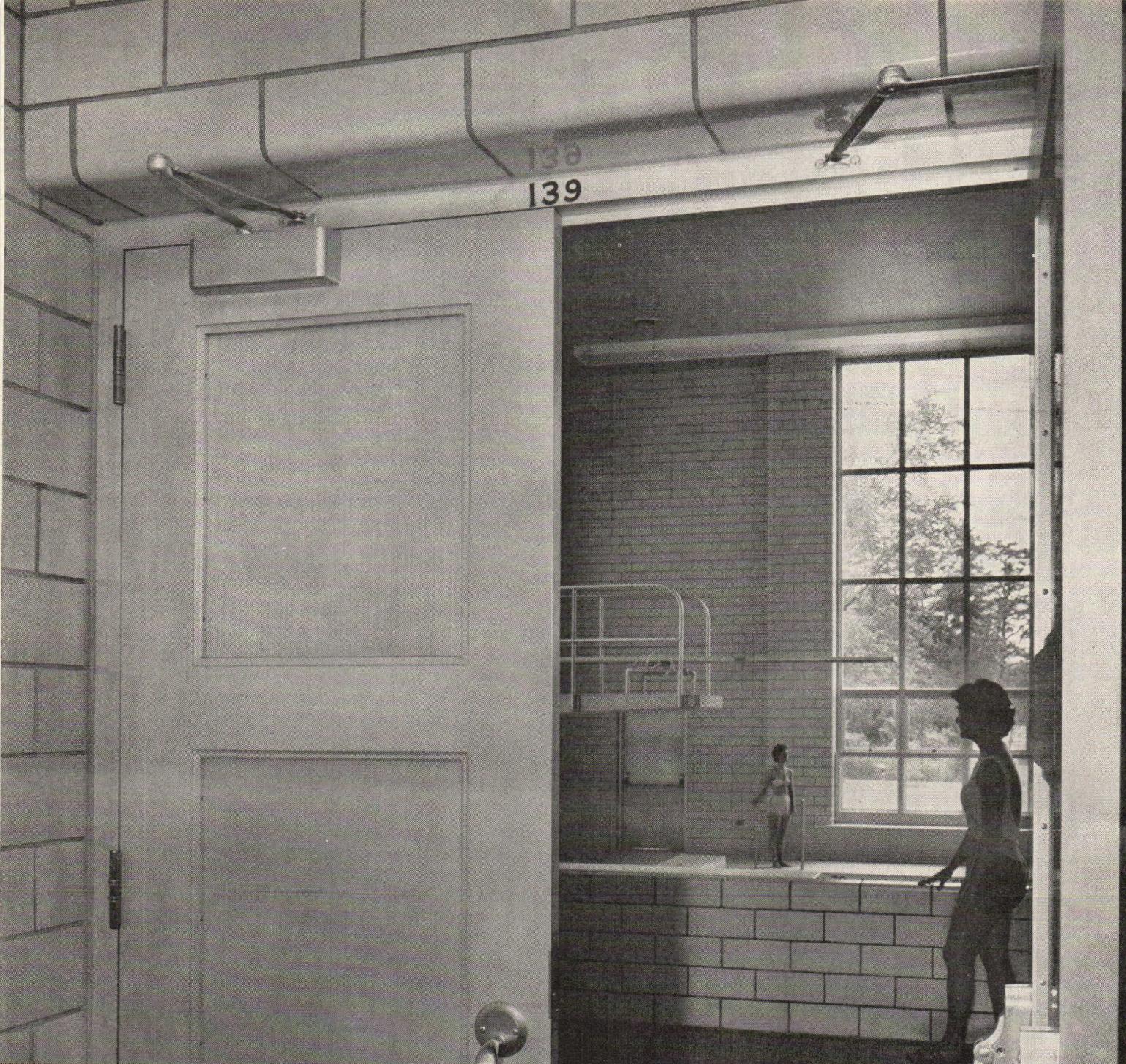
Comprehensive brochure on request—no obligation
or see Sweet's 1964, Section 19e/Lc

LCN

LCN CLOSERS, PRINCETON, ILLINOIS

A Division of Schlage Lock Company.

Canada: LCN Closers of Canada, Ltd., P. O. Box 100, Port Credit, Ontario



Modern Door Control by
LCN
SMOOTHEE® Door Closers

Herron Hall, Women's Athletic Building
Miami University, Oxford, Ohio

Cellarius & Hilmer, Architects

LCN CLOSERS, PRINCETON, ILLINOIS

Application Details on Opposite Page

Wood Paneling at its Best

Cabot's STAIN WAX

Stains, Waxes, Seals in One Operation



Architect: Green, Sibold &
Asso., Seattle, Wash.
Cabot's Ivory Stain Wax
on interior paneling.

This inviting interior gains much of its warmth and beauty from woodwork carefully selected and properly finished. The architect achieved the desired effect with cedar paneling and woodwork finished with Cabot's Stain Wax. End result — a pleasing, protective stain finish, enhanced wood grain, the soft lustre of a wax. Cabot's Stain Wax, easy to apply and economical, is suitable for all types of wood.

Cabot's Stain Wax
in **ELEVEN**
appealing colors,
WHITE and
NATURAL



SAMUEL CABOT, INC.
145 S. Terminal Trust Bldg., Boston 10, Mass.
Please send color cards on Cabot's Stain Wax.



URBANISMS

*A regular column by our specialist
on Urban Programs, Robert J. Piper AIA*

A President's Communities

A Community's Calamity

The world tensed, then wept, over the string of events that stretched between Dallas and Washington those few days preceding Thanksgiving 1963; but the calamity of that Texas town was somehow leavened by the grandeur of the world mourning its loss, and by our nation's response to the horror and challenge of that loss.

Monumental, man-made peacetime calamities score the life of every age, every nation, every city. A riot in Oxford, an explosion in Indianapolis, a nursing home fire in Ohio all spell civic disaster that lay and prey upon the hearts and minds of the surviving community—these no less than the heartache caused the free world by a mad assassin's gunfire. But the life-stream remains; having mourned, the community must rise from the ashes of calamity to respond to that life-stream and to impose upon itself an examination of conscience—to ask, where did we fail?

If personal hatreds or civic laxity or community indifference are the root of failures past, they must be recognized, challenged, overcome so they may not shape the future; if an honest mistake has been made, let there be resolve that an ugly lesson has been learned. A sense of its own strength can then be gained by the community, and from the depths of calamity can come a maturity and dignity the community had not known.

* * *

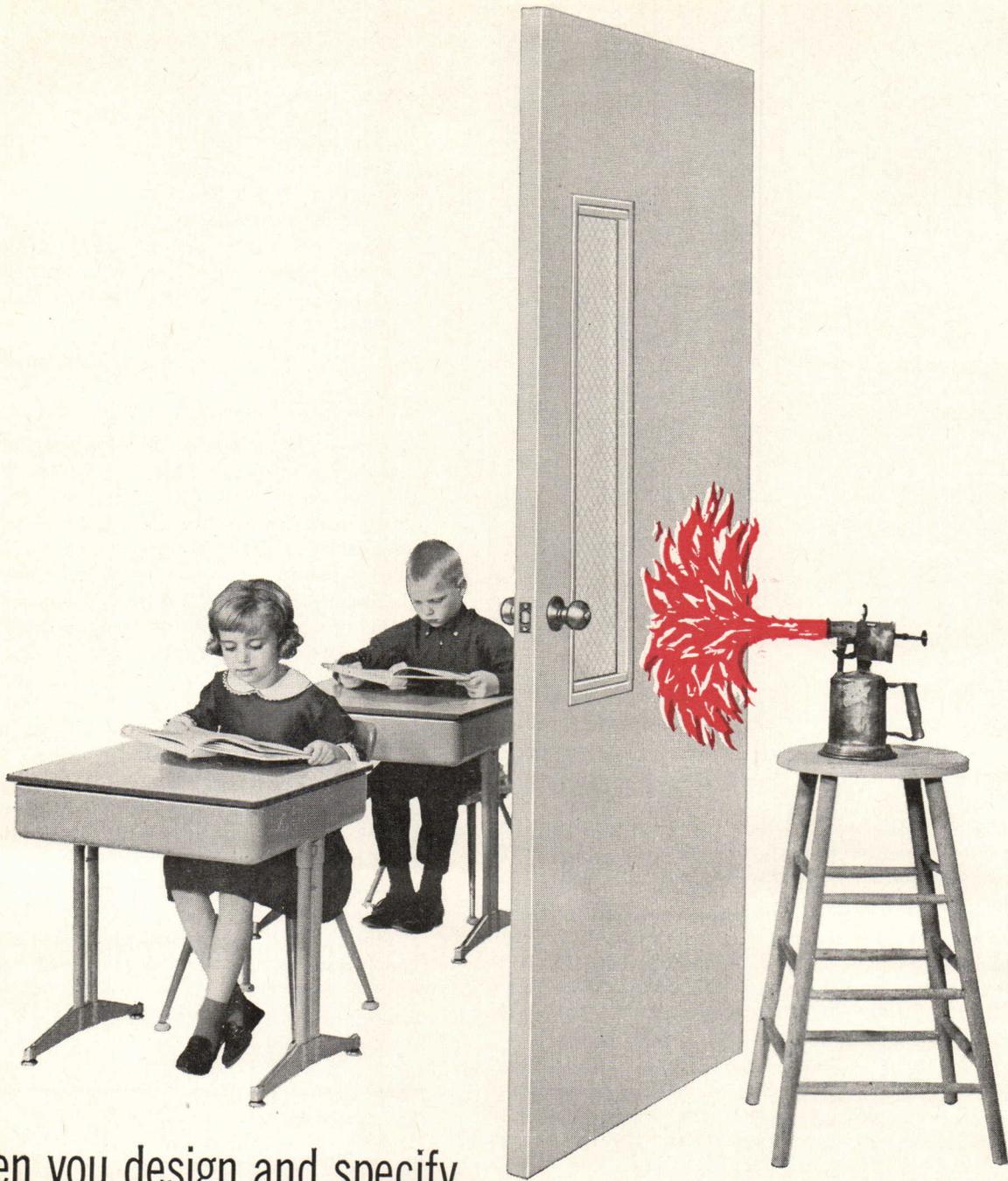
A Community's Burden

Every community harbors the calamity which can explode in moments from a compound of those tragedies it knows each day. The line separating calamity from tragedy is not easily comprehended; witness the assassination of a President or the murder of a patrolman, a bombing in Birmingham or a string of incidents in Little Rock, the Our Lady of Angels School fire in Chicago or a series of brush fires that skip across the suburbs of Los Angeles. Tragedy stirs the individual conscience, and calamity shakes the nation's, but the community has the burden of bearing both.

In its grief the community finds that it was ill-prepared to face calamity, or to recognize the portent of those tragedies it has accustomed itself to witness daily; that preaching of hate in small doses can build to assassination; that denial of equal rights to some can erupt in riot injuring all; that minor relaxations or negations of laws protecting public safety can

Cont'd on p 14

January 1964



when you design and specify...

you have more than a pencil in your hands

The difference between one door and another can be a lifetime.

Amweld designs and builds the kind of fire doors any father can specify with confidence.

The beauty of every Amweld fire door, packed safely in its specially designed protective carton, is more than "skin deep." Beneath the Clean Line styling and superior prime is the deeper beauty of maxi-

mum fire protection . . . a story the Underwriters' Laboratories' tests tell dramatically and well.

Amweld is the complete fire door line: both 1 $\frac{3}{8}$ " and 1 $\frac{3}{4}$ " thicknesses . . . "A" Label doors . . . "B" Label doors . . . "C" Label doors . . . many designs and hundreds of sizes.

It costs so little to include the very best. Please send for our Fire Door Fact File.

AMWELD[®] "clean line"
METAL DOORS AND FRAMES
 250 PLANT STREET, NILES, OHIO



(*†) Western Farm Bureau Life Building, Denver

EXPOSED AGGREGATES for PRE-CAST SURFACES

Successful use of this finish requires aggregates on which architects may rely for color, structural and bonding strength and impermeability.

The cost of exposed aggregate is but a small percentage of the cost per square foot of the finished product. Still, it is just as important to specify clearly what aggregates the architect is entitled to have in the work, as it is to see that the work is done by reliable manufacturers.

Colonna and Company of Colorado has been crushing Suprema Aggregates in the heart of the Colorado Rockies for 28 years. For the past 10 years it has specialized in crushing the following:

(*) *Suprema Milky Quartz*

| | |
|----------------------------------|-----------------------------------|
| <i>Suprema Siskin Green</i> | <i>Suprema Pink Granite</i> |
| <i>Suprema Black Obsidian</i> | <i>Suprema Light Gray Granite</i> |
| † <i>Suprema Flamingo Quartz</i> | <i>Suprema Garni Green</i> |
| <i>Suprema Blue Granite</i> | <i>Suprema Royal Spar</i> |
| <i>Suprema Paxi Gray Granite</i> | |

Recent installations in which Suprema Exposed Aggregates have been used are:

(*†) WESTERN FARM BUREAU LIFE BUILDING

Architects: Piel, Slater, Small & Spent Denver, Colorado
 Construction: Mead & Mount Construction Co.
 Denver, Colorado
 Mfg. by: Buehner Concrete Products Co.
 Denver, Colorado

MASONIC HOME CHAPEL, Fort Worth

Architects: Broad and Nelson, Dallas
 Mfg. by: McDonald Cut Stone Co., Fort Worth

For further information and samples, write to:

COLONNA & COMPANY OF COLORADO, INC.
 CANON CITY, COLORADO

Urbanisms Cont'd

bring violent and horrible death or injury to the unsuspecting or helpless in their midst.

We can hold no malice toward those communities that have been the stage for such calamities. History portends that in spite of all atonements they shall bear their burdens for generations. So that we may learn, let us pray that they will, in their self-examination, illuminate the source of error; for their burden is ours as well, lightened only by distance and the hinge of fate.

* * *

A Community's Hope

One Friday afternoon, Washington sharing its stunned disbelief with Dallas, and Seattle, and Lansing, and all the rest, lay stricken, numb, almost without hope. On the Monday next, Washington the embodiment of all the nation's communities, embraced millions of citizens from across our land and representatives of world's nations in a majestic final tribute to the man so aware of our community's hopes and so confident of their fulfillment.

The generation of political leadership encompassing recent national administrations saw the resurgence of the American community—not alone in its old profile as a potent political force, but as a center for cultural and educational attainment, for scientific and artistic innovation, for social experimentation, as well as a crucible for political and commercial refinement.

These remain the hopes for our cities. The violence and ugliness of civic tragedy and calamity jerk us from the smugness of what our cities are, but they cannot cloud our hope of what our cities can be. The late President would have asked nothing less than this. ■

Freedom Medal for Mies

"Teacher, designer, master builder, he has conceived soaring structures of glass, steel and concrete which at once embody and evoke the distinctive qualities of our age."

Thus read the citation for Chicago architect Ludwig Mies van der Rohe FAIA, the AIA's Gold Medalist in 1960, when he received the Medal of Freedom in a White House ceremony December 6. He is the first architect to be so honored.

The Medal is the highest civilian honor that the President can confer for service in peacetime. It may be awarded to any person who has made an especially meritorious contribution to 1) the security or national interests of the US, 2) world peace, 3) cultural or other significant public or private endeavors.

To the list of thirty-one recipients who had been previously announced by his predecessor, President Johnson added two posthumously: John F. Kennedy and Pope John XXIII. ■



A · I · A

Journal

THE RESPONSIBILITY OF THE ARCHITECT

—To the Public and to the Profession

JOHN C. PARKIN FRAIC, FRIBA

The author is design-partner in one of the best-known architectural firms in Canada, John B. Parkin Associates of Toronto, which has grown in its seventeen years from three persons to two hundred. The firm is somewhat unique in that it has from the very beginning offered the full range of design services, from furniture to master planning—"expanded services" long before the AIA invented the term

AS A CANADIAN, I may not be known to many of you. My remarks should be prefaced, therefore, with a bit of background, so they may be put into context. I should explain first, that I am design partner in a firm whose preoccupation is design at all scales, whether furniture or master planning; secondly, that the firm we formed almost seventeen years ago has been one of differing sizes, from three persons to two hundred; thirdly, that we determined at the outset to offer a full range of design services—"expanded services," but long before that term was in general usage. Finally, we did not set out to create a large firm as such—credit (or criticism) must be given to circumstance.

Our profession has always suffered an excess of destructive self-criticism. My remarks will not be interpreted, I hope, as the nihilism of yet another anxious architect who, with apparent enjoyment, like the flagellators of medieval Italy, flogs himself and his fellows publicly for his neighbor's pleasure.

My observations are directed four ways:

- 1 to ordinary architects—(you and me)
- 2 to *extraordinary* architects—(thou and thine)
- 3 to schools of architects—(they and "them")
- 4 and simply to architects—(us)

We have in Canada a small "mad" magazine satirizing the arts, to which I occasionally contribute. In a recent issue I suggested that the first law of architecture was that of "Brokerage." A young architect, in order to become a brand-name architect in his career, would always:

- 1 Broker the space inside walls and floors to engineers (structural, mechanical, and electrical)
- 2 Broker the space from floor to ceiling and from

wall to wall to interior decorators or to industrial designers or interior designers

3 Broker the space outside the walls—shorter distance—to landscape architects or, simply forget

4 Broker the space outside the walls—greater distance—to city planners or urban designers.

Thus, I claimed, the architect was left with the only element of importance and concern, the external wall surface, the architectural epidermis.

Here the architect may appropriately expend countless hours (time being no object) rearranging endless variations of wall and window pattern.

There are, of course, brand-name architects who have moved upwards through having moved inward, from architectural dermatology to architectural surgery. This higher professionalism ignores skin for entrails and the removal of them. In an astonishing number of cases the patient—or building—appears simply to die. The majority of architectural post-mortems reveals that the building had suffered from a widespread environmental disorder often of a hereditary nature, and having little to do with epidermis, entrails, or, in fact, any other surface or internal problem.

A jury of peers usually relieves the suspected offender of professional negligence inasmuch as he *had*, after all, operated under the direction of his "heart" rather than his head, or in absence of emotion, with an archaic technique untainted with consultative advice. Needless to say, *no* proper building can possibly be helped, by either intellect or specialist advice! Thus the professional practices his under-developed and under-achieving mysteries at the "small" cost of responsibility and at no risk to over-developed privilege.

The other important principle the younger architect must invariably follow requires strict adherence

Adapted from an address delivered to the Minnesota Society of Architects at Minneapolis in September

nothing to be desired. But its prime characteristic is its uniqueness, which is faint praise for a building which will say rather less for architecture as a whole than it will for its creator. This is symptomatic of a trend in which the worship of architecture has broadened to include the worship of its practitioners, and that a church should be famous or exciting as well as a place of inner communion.

There is an unwritten corollary to the broad challenge previously mentioned. The architect cannot be totally free, in the literal sense. If he were not governed by a deep sense of taste and discretion, his product, offered in a world of competition and advertising, would soon degenerate to the level of the amusement pavilion and the supermarket. In order to enhance its appeal at the temporal level, it has already bowed to the magnetism of novelty and the mesmerism of repeated brand names. The famous church at Assy in France has proven conclusively that an assemblage of great names in modern art may produce a museum, (or a monument to Père Couturier) but hardly an atmosphere conducive to meditation and the worship of God. And church architecture in the United States was invited into a new horizon when a building committee recently challenged a prospective architect with "Can you design us a church which will get into *Time* magazine?"

It is not difficult to imagine a time when several denominations which formerly graced the village green will group themselves around the communal parking area, sharing a symbolic existence with the shopping center; each denomination, with its own assortment of attractions, inward and outward, will vie for the Sunday shopper's attention without conflicting with more mundane pursuits. This full use of land, particularly in the Megalopolitan section of the country, would certainly not be frowned upon by town planners, nor the institutions which specialize in financing religious institutions.

It is possible, on the other hand, that in time a broader, more elevated outlook will establish itself, and that the church building will reclaim its rightful dignity in our day. Perhaps a generation of collaboration among the architect, the spiritual leader and the congregation may yet bear fruit in the form of another great period, not reminiscent nor retrospective, but an architecture worthy of the worship of God. The future is as broad as the horizon of man's imagination and the breadth of theological interpretation. The architect may yet measure the depth of his vision by producing "something of what the Church believes" and "new forms to achieve an honest expression of faith" along the road suggested by Swami Vivekananda, who said, in his *Bhakti-Yoga* ". . . all the various sects of the various religions are the various manifestations of the glory of the same Lord." This all-embracing philosophy may carry an immediate message to us all, architects, pastors and laymen, and presage a far broader view of religion than our 240 sects can now boast. It certainly presages an all-permissive architecture which is bound to be perpetually stimulating. There will be many good churches, each one perhaps an

embodiment of the enigmatic "many mansions" referred to by St John, but how this heterogeneous procession will look in the panorama it is impossible to predict.

However, accompanying the fanfare of new and startling designs, each a jewel in its own right, is the nagging suspicion that we are not on the right track. Over the adulation of our peers and the flattering pronouncements of our denominational clients is the persistent echo of a phrase which theologians treat with utmost delicacy, but which is universally recurrent. It is the question of the unity of the Church, a subject which the late Pope John listed as one of the five major points to be considered by the Council in Rome, and to which he referred to with the prayer "ut unum sint" on his deathbed. Pope Paul VI, likewise voiced a plea for the "recognition of the mystic body of the sole Catholic Church" in the homily delivered at his coronation.

Unity as a contemporary term is an abstract theological concept, more a basis for current controversy than a reality, yet the mere thought of a unified Church must strike a strange chord in the heart of the architect. If there was once one Church, and one way to build it, will there be one way to build the united Church? The challenge to the architect is obvious and inevitable. If there will be a physical structure to express the unified beliefs and aspirations of our time, the architect must take the lead in its form and message. The cathedrals of the thirteenth century were not only the product of the age, but a tribute to the genius of Hugues Libergier, Pierre de Montereau, William of Sens and other individual architects.

An old French saying suggests that by combining the choir of Beauvais Cathedral, the nave of Amiens, the facade of Rheims and the spires of Chartres, one would achieve the perfect Gothic cathedral. The assumption was that this fusion of visual and structural qualities would produce a great church is a novel archeological hypothesis, and nothing more. It is the culmination of the worship of stones and surfaces, the apotheosis of architecture for its own sake. But it may have a contemporary application. What would it take, today, to design the perfect church? Would it be possible for one, or several, of today's architects to design an equally perfect house of God, which everyone, regardless of race, color or creed, would attend?

Suppose the architect set out to follow literally the directive of the Rev Sutfin. Could he be totally free, free of constraining ritual, free of outworn tradition, free of the learned and biased advisor, free of the influential campaign contributor, and above all, free of himself? Could he grasp the fact that neither the Bishop, nor the pastor, nor the assembled multitude is his real client? If he were, the product of his unfettered genius might (as it did once before) far transcend the myopic demands of the denomination which engaged him.

The results of this approach could not fail to be tremendously inspiring. The pages of history lie open, bare and beautiful, waiting to be written. What will they contain? ■



THROUGH THE MARTINI GLASS

Since Al Bendiner is at this moment flat on his back in the hospital, we can only presume that this was written in that very un-Venetian position. However, we're delighted to have him back as a Journal contributor—and many thanks to President Carroll

WE WERE SITTING IN PARIS MUNCHING un croissant between the two of us and I was dreaming of the good old days when my great-grandfather's first cousin once removed by the Cossacks from Buda to Paris, was bullwhipping a lot of Italian stone-choppers who were carving the great equestrian groups now crowning the triumphal "Arc du Carrousel," when my reveries were interrupted by the mailman blowing that damn brass trumpet in my ear.

I love the French, as has often been asserted here and if we allow them the bomb atomique it will probably be a beautiful thing, all decorated with garlands, fleur-de-lys, cupids and other charm which will make it a worthier tribute to land on the moon than some harsh projectile labelled "Sputnik 6" or "Kilroy is here." But the one thing they ain't learned yet is sweet horn blowing.

Well, it was a letter from J. Roy Carroll, President of the AIA, stating that he would consider his whole term in office a great success if only he could get me to return to the fold and write the "Martini Glass" again for the *Journal*.

Well, I love Mr J. Roy Carroll so much that when I heard he was going to be president of the AIA in May, I took a boat right away to Venice, knowing that the USA was in good hands without any need of help from me for maybe a year.

For, after all, Jayroy is from Philadelphia, where I am from and we have the best of everything: the best city planner, the best school of architecture, the genius in architecture of the twentieth century and it ain't even over yet, the guy who gets all the medals, to say nothing of the orchestra, pepper pot and brotherly love. So with all that well taken care of, there seemed no great need for my talents to rest hidden and fallow under a Franklin

tree when Venice and Paris lie waiting aid in city planning, architecture and scientific knowledge.

I went. Did they appreciate my sage advice and offers to get them out of their mess? No, hell, no! They kept saying, "Grazie, grazie."

Venice, what a mess! Since I was first there thirty-five years ago, it hasn't improved one smidgin and what with all the modernism swirling around them, they not only don't care but also certainly don't want no help from foreigners and that includes everybody who isn't a Venetian.

Venice is land's end for city planners and you can sit in Harry's Bar and see them fished out of the Grand Canal every couple of days, except Harvards which they let drift out to sea with the dead cats and the Coca Cola bottles.

Venice as city planning goes is noodle-headed. Any schoolboy knows that Venice is St Mark's, a gondola ride and sending post cards, and the Venetians make it hard for you to get around. What is so simple is that if they just ran a speedway from Mestre across the lagoons, clover-leafed it over St Mark's, with a stopoff turnout, then straight across to the Lido, you could see the whole business and be out of your pants and into the Mediterranean in no time flat.

But as it is now, you can zoom across from Genoa on a superhighway so you don't have to bother with the old clichés like Milan, Vicenza, Verona and Padua, but give it the gun and there you are at the garage in front of the Grand Canal.

But all the time you saved is now exasperatingly spent getting your baggage into a gondola and arguing with the union boss about paying the three dollars just to be poled up to the hotel dock, which is a half-hour away. But the Italians have learned something about tourists and that is the "rate card" which is written in English and loaded with government stamps, police permits, union labels. It says clear three dollars. You pay it right there to the boss, who is dressed like an Italian citizen but no more moustaches.

Then he leads you to your gondola which is already loaded with your baggage at a flat rate and tip extra. You get handed down by two old crocks with rings in their ears and you can't go without a couple of hundred lire for them. Then your gondolier poles you out. You size him up and he is movie-camera perfection and all around you a thousand other tourists are taking his picture on your three-dollar investment. A king-size gondolier wears a kid's straw hat with a red ribbon floating off the back. He has a brown make-up even though he is plenty dark and his manly form (gotten by being an iron puddler in the winter) is sheathed in a tight blue-striped skivvy shirt and skin-tight blue pants.

While you are giving him the once-over, he is checking you and your wash-and-wear wife and your crummy baggage and looking at the name of your hotel and sniffing and figuring he won't get much of a tip and he can sneak you off the main drag and up a couple of back canals and be rid of you and be back for a classier load. As an old taxi driver aficionado, you realize this and say "Avanti!" like an old

Berlitz grad and the gondolier says "Okeh boss," and twists the pole so the gondola takes a mighty heave forward and sideways, washing half the canal scum into the gunnels, and wrenching your back muscles.

If you don't get mad at that point and say "Porco dio!" which you never learned in school, you have won half the battle because you can relax and let come to you what has been going on for generations and is without question the greatest single example of perfect traffic jamming without cops, guides or lanes. It is superb maneuvering and timing and in three weeks of watching I never saw a single crash, smash, scratch or an argument. And you must realize that traffic consists of not only shiny gondolas but also vaporetas, traghetas, fruit barges, garbage scows, ocean liners, motoscoffos and rapidos, Coca Cola tows, prowl boats, tug boats, speed boats and single-oared shells practising for the races. All these active nightmares produce swells and turbulences which ain't nothing like the home movies you saw at your travel agent's come-on party. Of course, backing up all this is a lot of architecture which you can buy picture postcards of later and the whole is bathed in the most glorious light which nobody sees cause they all look like blind nells with sun glasses or cameras screwed to their eyes and clicking away like machine gunners instead of looking at the place they came all this distance to see, I think. Finally your gondolier gets tired of poling and cuts a corner, waits for the traffic light to change and you are in the peace and quiet of a side canal, with nothing to mar the serenity but sixteen lines of wet wash strung across and dripping on you, forty housewives dumping slop buckets out of the fourth story window, work barges crowding you just enough to scare you, and boys on the bridges spitting into the breeze.

At last you are back in the Grand Canal and there is the landing step of your hotel awash. The boys pull you in close with olde barge hooks. Tip. The six porters of baggage each lift one piece of baggage. Tiptiptiptiptip. The hotel manager, the concierge, the head waiter, your old waiter, the bus boys, the upstairs maids, the laundress, and the house girls are all arrayed to greet you and you greet them and then you remember to turn around. There, profiling against Santa Maria della Salute and smiling that pepsodent smile, is your private gondolier, with his hat in hand looking shy and hurt and almost too regal to be tipped. So, you hand him a bill because the whole terrace is watching the performance. The gondolier utters a howl of pain, as if you were publicly humiliating him and keeping his wife and sixteen kids from eating. He looks at the bill as if he never saw anything so small. He looks at you. You look back at him and are about to reach for another when the head waiter leans over and says, "You gave the bastard too much." From there on in, Venice is your baby and as an old hand said "It costs more but you get your money's worth."

Armed Bender

Comprehensive Architectural Practice: Building Programming

LOUIS ROSSETTI FAIA

In the past often performed sketchily, if at all—or left for clients to perform for themselves—building programming has now become an essential phase of comprehensive architectural practice, a phase that can point the way toward improved professional services in the design and construction phases

*Need for building
programming*

Building programming, in actuality a primary phase of an architect's service, is often romantically discussed, but in practice almost invariably leaves much to be desired.

Today, when crash projects are so prevalent in many endeavors of architectural development, building programming obviously has become even more significant. Accelerated design schedules need not have a detrimental effect on programming. In fact, architects can often perform crash design efforts without impairment of the quality of their efforts, by judicious assignment of staff. Programming can be staffed in a similar way if it is given the same high priority. Of course, this will only be possible when the necessity for programming and its importance as a phase of project development have been conveyed to the owner. A glorified definition will hardly suffice.

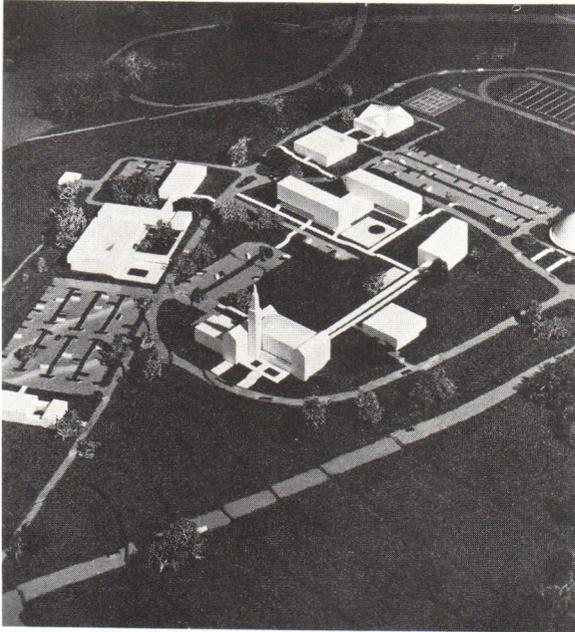
*Program and master plan
for a college*

Perhaps an illustration or two will serve to demonstrate the widespread need for programming and how it is performed. Within the past two years, the author's firm was retained by two clients whose end goals were varied, but for whom programming was essential. One example that will illustrate such an assignment was a commission for the programming and master planning of a new campus for a college in New York State. The starting place for the study was the academic requirement for a twelve-building complex to accommodate an increase in the student body to 1200 from a present enrollment of 600 students. The report on the study was broken down into three major divisions:

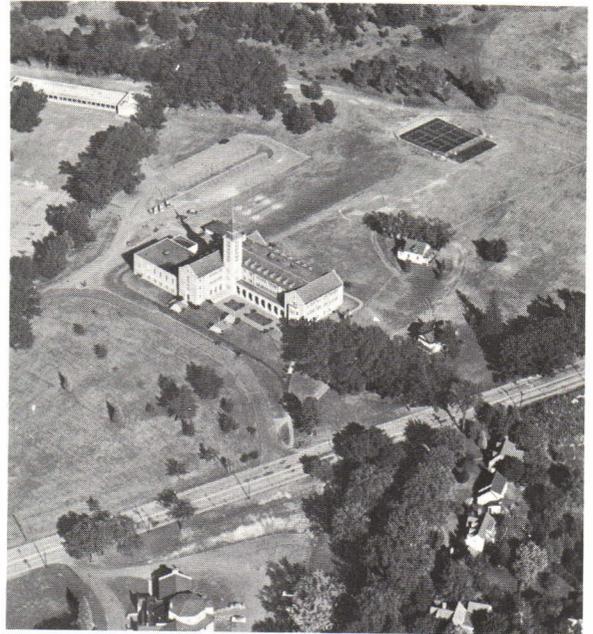
- 1) Objectives of master plan
- 2) The proposed master plan
- 3) Development of master plan

The report on the studies of all of these divisions were to be supported with scale models, delineations, area plans and recommended floor plans. The objectives of the studies were:

- 1) Facility requirements and occupancy
- 2) Space requirements



Proposed campus master plan based on complete programming studies



Campus at time of programming and master planning studies

- 3) Site characteristics and potential
- 4) Traffic and parking
- 5) Review of previous recommendations
- 6) Space requirements for various phases of construction
- 7) Master plan studies for the whole campus, based on various projected phases of construction
- 8) Engineering studies for master plan site work and main utilities distribution for various construction phases
- 9) Engineering evaluations of heating plant arrangements
- 10) Schematic concept studies of all buildings in plan.

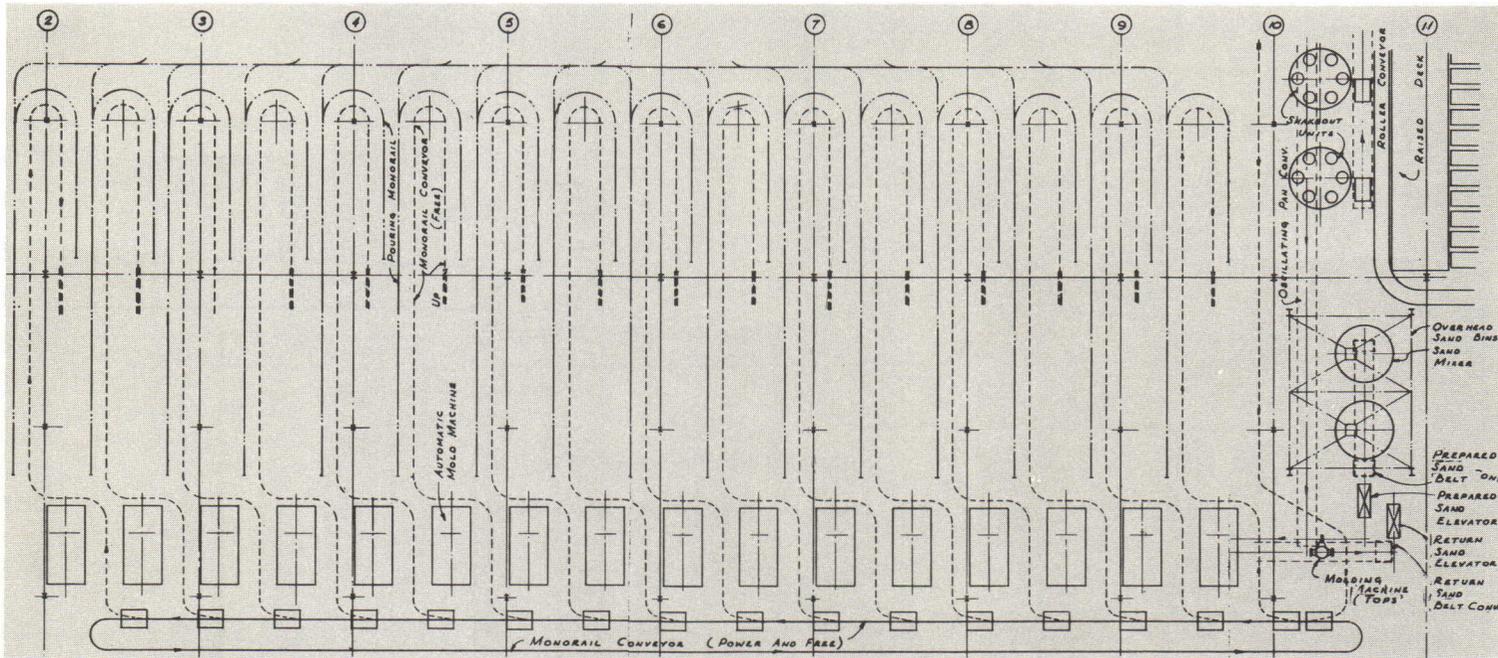
Finally, each of the buildings had to be assigned to one of three construction phases. Selection of the construction phase for each building was based on the urgency of the need for it and the capital budget outlay it required. Soil investigations were made. Traffic patterns and parking areas were established, to avoid a "sea of cars." The topography of the site was to our advantage in this regard, since the campus is rolling, bounded by golf courses and fine residences.

In the programming for this college, more than just a cursory look was given to costs. A complete budget was determined for each stage of construction. These budgets included the costs of structures, site work, utilities, fees, furnishings and other contingent requirements. The cost data was then transcribed to construction schedules and area breakdowns.

In a second instance, a leading foundry operator asked for a program and master plan for production consolidation along with more extensive administrative and employee facilities than those generally found in the foundry field. The first step was an analysis of the owner's basic requirements. The results of the analysis were put in a report covering such phases as:

Importance of costs

*Program and master plan
for a foundry*



Layout of foundry production lines based on programming studies

- 1) Production requirements
- 2) Production methods
- 3) Economics of the facility
- 4) Conceptual design and estimates of construction and equipment
- 5) Site factors
- 6) Equipment specifications

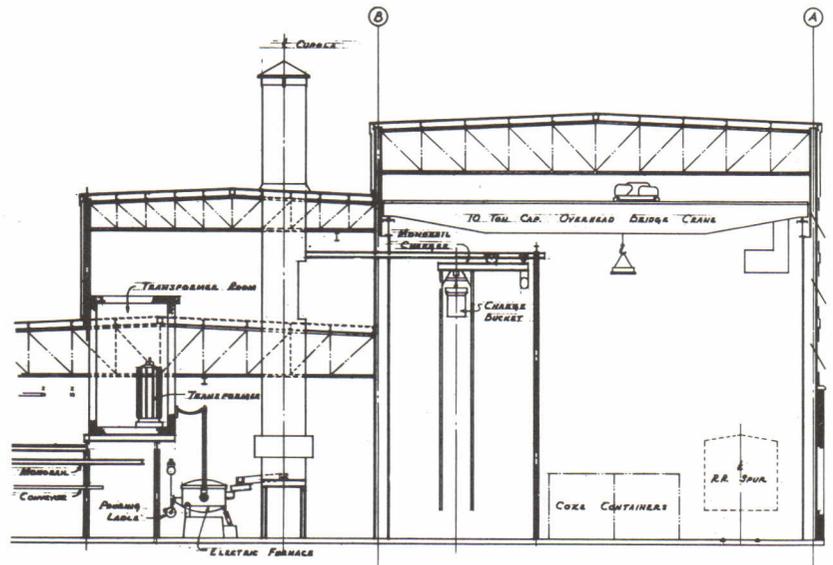
Preparation of definitive specifications

Definitive specifications were then prepared for much of the major equipment for the foundry and subsequently submitted by the owner to manufacturers for bidding purposes. These clear specifications made it possible for each of the bidders to save considerable money in the preparation of his bid. Of even more importance was the fact that the owner received objective and realistic quotations. This phase of architectural services provided a second benefit; it eliminated what is referred to by so many in the equipment field as "free engineering."

Programming may be performed by personnel in architectural offices

To reiterate a point made earlier, in both of these projects, the programming was conducted by key personnel of the architectural firm, with the management of the firm taking an active role in all phases of the work, including field visits and personal supervision. The same procedures are followed on design assignments. Programming, because of its nature, deserves and requires the same sort of concern as design; indeed, perhaps even greater concern is needed in programming. Design may be performed by specialists who have had training and experience in certain areas. Programming, if it is to be tailored to the best interests of clients, is an area in which there are few fully qualified practitioners.

How then can the talent for programming be nurtured in architectural offices? Selected staff members should be given the opportunity to participate in programming assignments, not in the



Section of foundry building showing facilities for production

delineation or schematic phases alone, but in all of the areas of costing, scheduling and field investigations. Some knowledge of programming can be acquired by extracurricular training; and this should be encouraged in architectural offices. The time so expended, even though it may not be reimbursed for in all instances, will inevitably add to the scope of architectural services and help insure a continuation of successful practice. Also time spent in this way can provide an uplift in the morale of those who hope to make their marks in the profession.

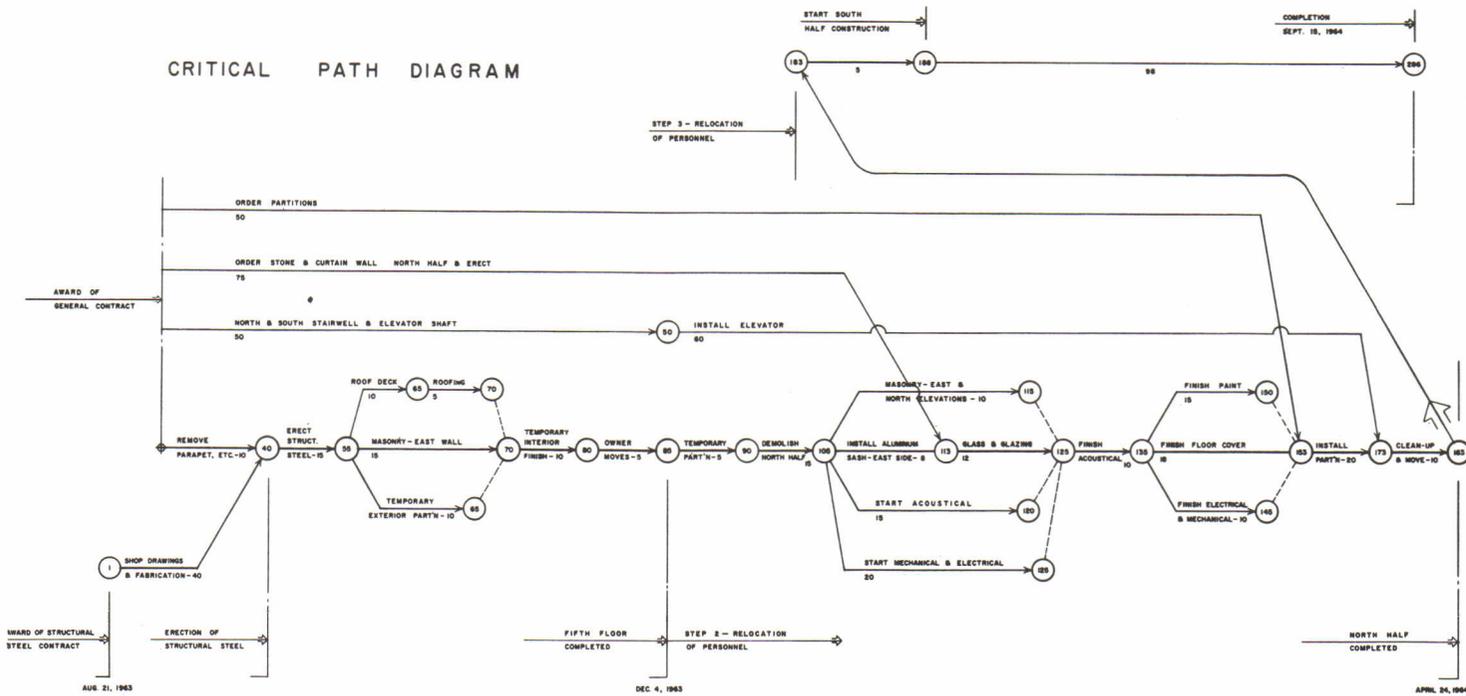
Two other practices are important as adjunct services to a complete programming effort—plant layout and scheduling.

Plant layout services

Plant layout is the "veteran" of all services adjunct to programming, if a significant portion of a firm's volume consists of industrial assignments. Qualified personnel in this area of project development are quite scarce. No degrees are conferred in plant layout; it is a talent that must be nourished. In the author's firm, approximately twenty-five per cent of the industrial projects call for plant layout. However, the availability of this service is made known to each plant owner.

Even though the plant layout may be prepared by his own staff, the owner feels more secure when he knows that the building design is being developed with a full understanding of the operational aspects. On such projects, our plant layout engineers are often called upon to provide staff consulting services to the design group. The fact that only twenty-five per cent of our projects require plant layout services in no way makes such efforts simply an appendage to other services. In recent years, in our firm, projects requiring plant layout services have kept a staff up to twenty persons busy over periods of long duration. Such a department is as important as any other in any architectural and engineering practice in which industrial work is important.

CRITICAL PATH DIAGRAM



Critical path schedule for auto manufacturing plant modernization

Scheduling services

Scheduling—particularly the critical path method (CPM)—has been much discussed of late. General contractors, the Federal government and many industrialists are putting the method to effective use. More architects should do so.

One of our design concepts that was recently accepted by an automobile manufacturer included a suggested construction schedule based on the CPM diagram shown above. The project involves the complete modernization of an existing headquarters building. The study of project scheduling will make possible the continuation of administrative work with a minimum of shutdown. In this instance, the owner spent as much time on the schedule as he did on the design concept. This owner was concerned with work output in the building during construction; he had no apprehensions about the ability of our firm to maintain his corporate image in the design of the refurbished building. Our concern about the work output in the structure may have been the key for his giving us the go-ahead signal on the project.

Training for CPM services

Care should be taken in the selection of a person in the firm to be trained in CPM or in a similar scheduling method. Knowledge in design should be coupled with a practical understanding of field conditions. Once a person has been trained, he can then provide in-house schooling for others of the staff.

What then is building programming? What does it encompass? How is it practiced? Obviously it is a needed growth service for the smaller or newer architectural firm and an expanded service for the larger, longer established organization.

The present article has by no means been an attempt to discuss the whole important area of programming. Perhaps it does bring to the fore the broad scope of programming skills needed if the owner is to receive proper architectural services and if the architectural profession is to deliver those services.

The Architect in the Business World

LEO A. DALY AIA

In order to practice effectively today, architects must be able to perform their professional services within a business environment, for businessmen

Not less, but more

Whether he realizes it—or likes it—or not, today's effective architect is an entirely different kind of professional practitioner than he would have thought possible during his years of university training. Client needs have expanded dramatically in the past fifteen or twenty years. Because of this there is a diminishing market for the services of the architect who ignores changing trends, who fails to acquire the competence to handle new requirements or who remains unresponsive to the need for satisfying the increasingly complex demands of his clients. The plain truth is that the always challenging profession of architecture has also become a lively business. It is not that the architect need be *less* of an *artist*; rather, the challenges of his environment compel him to be *more* of a *universal man*.

Because the architect is in fact a professional, the practice of architecture tends to be held in high regard by the business community. This does not mean that all practicing architects inspire the same degree of confidence among businessmen. Clients, by and large, are business-oriented, whether they are corporation executives, institutional administrators or government officials. Such clients expect businesslike associations and reasonable returns on their investments in the architect's professional services. To win their confidence and obtain desirable commissions, the architect must share their concern for the practical considerations characteristic of the business world. The architect who yearns to live alone in a dream world unpeopled by clients who expect rigorous acceptance of the standards of modern business practice resembles a surgeon who never performs an operation or a teacher without students.

Complications in architecture parallel complications in world

As life and living, commerce and finance, education and government have become more complicated, so has the practice of architecture. Because some in the profession elect to remain

aloof from the main stream of massive change, competition from nonprofessional sources has flooded into the void. Hand-wringing, brooding or expressions of bewilderment are no substitute for recognition that such competition flourishes because it provides a range of services that the businessman-client wants and finds familiar. Enterprise is a welcome talent in any marketplace. And the architect-entrepreneur wins his commissions with the services he offers.

Historically, the practice of architecture has never been without its pitfalls, but it is a good deal harder to bring an appreciative smile to the client's face today than was the case only a few years ago. A few years back it was a rare architect who even dreamed of being asked for his advice on market analysis, financing, land assembly, programming, insurance or taxation. Now this is not at all uncommon. For example, a school board has promotional problems; the board favors the design and construction of a new school. The pupil population is skyrocketing. What can be done to obtain a favorable outcome in an upcoming vote on an enabling bond issue? The board is composed of a group of public-spirited private citizens who are convinced that the new school is a community necessity. But how, they ask, can they convince their fellow citizens that the funds should be forthcoming?

The architect can; he should; and he often does. Knowledge of school population growth projections, residential building trends, likely street construction, techniques of issuing bonds and amortizing public debts and types of structures best suited to particular communities represent part of the architectural firm's services. The architect can give professional counsel on the preparation of promotional materials that will clearly explain both the community requirement and the program for financing the project, that will contribute to the success of the bond issue and that will facilitate timely construction of the school. Residual effects of such services are the enhancement of the image of the profession and the improvement of the architect's chances of being selected for future commissions.

*How architects can cope
with the new needs*

In order to cope successfully with the diversified demands that are commonly placed upon him today, the architect may either obtain specialized assistance from outside consultants or he may enlarge his own firm to include the increasingly comprehensive range of services that so many clients now require. It would appear that the lion's share of such work will go, more and more, to the firms which are expanding their staffs and services, especially to those firms whose personnel have learned how to talk the language of the executive or administrator with confidence born of experience. A fairly recent phenomenon seems to be that many clients prefer to turn to a single firm for services that they were once satisfied to receive from several sources. The practice of many architects has been developed accordingly. In any event, architects whose practices have survived since World War II have had to make decisions with respect to the comprehensiveness of their services.

*Need for continuing
attention to the market
for architecture*

The laws of economics apply to the architect as they do to all mankind. Consequently, the architect must keep an attentive

eye upon his market if he is to make sure that his personal services remain in demand. As demand changes in scope, the architect must review the quality of his own product. Quality, however, is a product of courage, energy and aggressiveness as well as talent and good taste. The astute architect advances the interests of the architectural profession generally when, by his diligence and ingenuity, he succeeds in fulfilling his client's expectations by supplementing skill in design with whatever peripheral services may reasonably be required. The mutual respect between client and architect that can develop from comprehensive practice may, in fact, result in greater freedom for architectural design. Indeed, those architects who recognize the conditions of the times and engage in comprehensive practice find themselves better equipped to insist upon standards of esthetic excellence and, in this way, make important contributions to the restoration of quality in architecture.

The architect who understands the importance of remaining within the budgets, of controlling costs and of adhering to deadlines is not going to lose friends among his clients. If, in addition, his firm qualifies as a source of prudent advice on such matters as real estate acquisition, zoning ordinances, site planning, financial procedures, business law, economic feasibility or the engineering disciplines, the architect can earn for himself an extra measure of esteem. If a client can see in his architect a man with managerial ability, a man with esthetic values who is at home in the business world and conversant with other professional fields, the increased confidence of that client is likely to cause him to give his architect a greater degree of freedom for creative expression in design. On the other hand, the architect who expects to prosper in professional practice, without providing the broadened services that once might have been called fringe activities, is likely to find his world of design a world of continually contracting horizons.

*Need for participation
in the life of the community*

It is mostly by the things that the individual architect says and does—and by the range of his personal participation in community life—that he and architectural practice in general become known to clients and the public. Without active participation on a broader scale than that usually expected of those in other pursuits, the architect may fail both to fulfill the role for which he was trained and to project the image of professional competence which is basic to popular confidence in architects.

*Need for explanation of
architecture to those
outside the profession*

There is much in the press and in popular literature about science, industry and government and about some of the professions. But, frankly, even the well-read executive finds little about architecture or the men of architecture in the course of his normal reading. Nor can the younger generation readily find much information about architecture. Splendid books are available about virtually everything else, but it is next to impossible to think of good books about architecture which might be appropriately recommended to an interested young man. The point is that architecture is little-known and poorly understood by most people who otherwise are literate, competent and well-informed about the world around them. This being the case, the architect has some high hurdles to overcome if he is to advance his profession and

make his own practice and particular talents known to those who need his services.

Expanded professional responsibilities

Most architects will readily acknowledge that they have a professional responsibility to make real contributions to the world around them. For most, this contribution is properly confined to limited geographic areas. However, if he is to be a comprehensive man truly, an architect certainly will have to participate in activities beyond the confines of his own office. He will have to undertake useful services for his community. There is little doubt that the extent of his involvement in community life will be, in a significant proportion, a measure of the effectiveness and impact of his entire career. The need for community participation is great. The opportunities are many. The work is demanding. The returns in terms of personal satisfaction and community recognition can be rewarding beyond the belief of those who have resisted taking the plunge.

Who, other than the architect, is under a greater obligation to make a generous contribution of his time and talents to his fellow citizens? With a sound academic training, a sense of good order, an intimate knowledge of the arts, expertise in design and planning and the experience of daily contact with the practical problems of private and public clients, the architect is a welcome addition—and can make important contributions—to an inviting range of activities which reflect the academic, institutional, intellectual, artistic, civic, charitable and even the financial and public service life of the community. Many thoughtful architects do involve themselves constructively in the lifestream of their communities. Too many others retire after graduation to dead-end streets where they spin dreams about clients who they are sure will inevitably learn of their unexercised architectural talents.

Need for better communication with the public

There once was a day when even great kings went to their barbers for delicate and painful surgery. Today, some clients choose to assign commissions to dealers who have about as much professional relationship to architecture as does a barber to modern medicine. There were compelling reasons for an ailing king to look to his barber for relief in a time when serious surgery was an unknown element in the practice of most physicians. Today, however, when architectural practice is unequalled in its potential, when the challenges of coherent environmental design are the concern of a great many thoughtful men, it is a failure in communications, rather than deficiency in talent, that prevents the services of some segments of the architectural profession from being utilized to solve the needs of the building public.

Role of the architect as creator and manager

By virtue of his training in the building arts and sciences, the architect, traditionally, has considered his role to be that of the creator of living and working environments. This tradition remains at the very heart of current practice. Responsive to the demands of changing times and new managerial practices, the architectural profession is now equipped to supplement the familiar basic services with a range of business-oriented skills. A profound respect for design and a pervasive concern for esthetic values must remain as the inspirational core of modern practice. For these are qualities that signify the professionalism of architects; and they dignify

the agency relationships between clients and architects. These are qualities that responsible clients admire and need. Through comprehensive services, the architects have an unparalleled opportunity to earn the respect of clients, acquire control of projects and provide clients with quality architecture.

The new architect faces a practical problem which is not unlike that of a company executive who must somehow convince the buying public that his product now is better, that something new has been added. Clearly, the architect engaged in comprehensive practice can point with pride to the fact that—in his case—something new has been added. The market has demanded changes in architectural practice. Aggressive members of the profession are responding. To the basic services of design, production and supervision, comprehensive practice adds the managerial analytical, fiscal, promotional or operating elements that serve to satisfy the client's particular needs from conception to completion. This is the organizational pattern for which the businessman has been—haltingly, perhaps—searching. Within his own company, the businessman has become accustomed to pinpointing authority and responsibility—and he has become accustomed to control. In his agent, the architect heading a comprehensive firm, the businessman sees a professional who also can effect control. This elevates the role of the architect to a level from which he can organize and coordinate; no longer is he solely a designer railing at arbitrarily imposed limitations on his creativity. Neither will he be a broker frantically reconciling conflicting interests. Rather, through delegation, he will be the possessor of the authority of his client. Comprehensive services qualify him to be entrusted with this authority. Authority leads to control. Control gives the architect the power to administer and create.

Coordinating authority, based on client confidence, is the cornerstone of comprehensive professional practice. The major problem in this, right now, is for the effective practitioner to make the expanded character of his practice known in the marketplace. This matter is of critical importance to all, not only to the larger firms which retain permanent staffs of personnel experienced in both professional and related services, but to all architects. There never was a better public advertisement for an architect's work than a fine building set in a gracious environment. Unfortunately, the design of an admirable building is only one of the helpful ingredients of an effective practice. To keep work coming in these days, the architect must enter the marketplace and make a case for his professional talents. Even within the reasonable constraints of professional standards, too many architects fumble the opportunities they have to market their services. Otherwise, how to explain the costly buildings all over the nation which are being constructed without the services of architectural firms? How to account for the fact that some professional firms manage a full roster of clients and a high business volume while other talented practitioners have to struggle to keep themselves profitably occupied?

The architect must continue as custodian of the public's esthetic values, but if he wishes to remain solvent, he must make his new comprehensive role recognizable in the marketplace.

*Need for acceptance of
authority and responsibility*

*Comprehensive architectural
practice must become
known in the marketplace*



Introductions and a Farewell

THE MAINTENANCE of a top-flight headquarters staff is a never-ending job. My policies regarding staff are well-known: energetic men and women of proven capabilities and experience with AIA affairs, who collectively represent the national geographic scope of AIA membership. A staff of this quality is itself a target for recruiters (doggone it) and vacancies are created when men like Matt Rockwell and Eric Pawley are offered attractive opportunities elsewhere. This same quality also enables me to make promotions within the ranks to our top administrative posts. Occasionally, the establishment of a new service creates a new job.

It is a pleasure to use my page this month to introduce three men who have joined our staff since February 25, 1963.

Robert Cowling AIA joined the staff on February 25 to develop the technical production of the third edition of the Building Products Register and related ABIS programs under the direction of Ted Dominick. A University of Illinois graduate from Rockford, Bob Cowling is serving as Technical Secretary. Following architectural practice in Rockford, he served as Associate Planner of the Rockford-Winnebago City-County Planning Commission from 1962-63.

John Dawson AIA took on the job of Head of State, Chapter and Student Affairs on June 17, filling the vacancy created when Elliott Carroll was promoted to Administrator of the Department of Professional Services. As a result of administrative changes on October 1, John is now Director of State, Chapter and Public Affairs which adds to his responsibilities the headquarters activities in legislation. John hails from the University of Michigan where he was Assistant Professor of Architecture and very active in chapter affairs. From 1953-55 he served with the Army at Fort Belvoir, Va, where he taught courses in construction drafting to Army, Air Force and Marine personnel.

Ben Evans AIA became Director of Research Programs on August 5 as part of a move to expand and strengthen AIA research activities. The position

of Research Secretary, from which Eric Pawley resigned to go to the University of Southern California, has been discontinued. Marilyn Ludwig, Assistant Editor-Technical for the *AIA Journal*, is a key member of the research staff which will be amplified with project aids. A Texan of the classic tall variety, Ben



L: Cowling

R: Dawson



L: Evans

R: Gervais

has been a member of the architectural faculty at Texas A & M College since 1952 and coordinator of architectural research since 1958.

Now it comes time to bid a fond farewell to a much-loved and admired staff member who resigned at November's end after thirty-seven years of service. In carrying out the heavy and sometimes complex routine of membership work, Miss Florence Gervais became known to almost every corporate member. But beyond that, Flo performed two unusual and important assignments and thus should be specifically commended for her service to 1) the Judiciary Committee in preparation of unprofessional conduct cases and 2) to the Jury of Fellows in preparation for their annual selection. It seemed particularly appropriate, therefore, when she was made an Honorary AIA member at the 1963 convention. Both the headquarters staff and the Executive Committee joined in farewell parties for a lady who has done the Institute proud in every way. w.h.s.



*Wait,
he's almost under us now!*

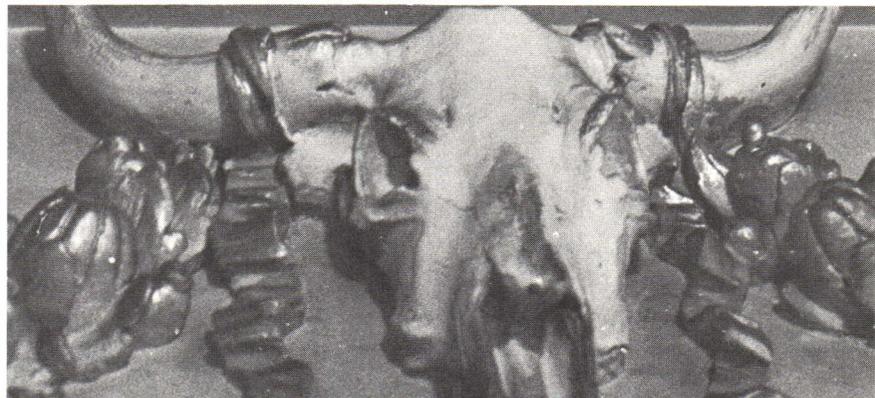
“Please Mother,

It's mine. T'isn't. T'is. T'isn't. T'is. T'isn't



Photographs taken by Robert H. Woody in Salt Lake City, and originally published in *The Salt Lake Tribune*. Captions also by Mr Woody, who will be remembered as the author of “Salt Lake City—Its Second-Century Plan” in the *April Journal*

Drought? You shoulda been here in '34



I'd Rather Sculpt it Myself!"

T'is, T'isn't. T'is, T'isn't



Please, has anybody got a Bufferin?



All I asked for was a nose bob



Hey, Androcles, you got the tweezers?



My lord, what a night!



Who Is Responsible for Safety?

LYNDON WELCH AIA

(The AIA Journal invites comments on this subject)

*so unlucky
that he runs into accidents
which started out to happen
to somebody else*

—ARCHY'S LIFE OF MEHITABEL

ARCHITECTS HAVE BEEN CHALLENGED in court to answer for injuries or death resulting from alleged negligence in enforcement or administration of safety precautions during building construction. Although many such episodes end without penalty to the architect, it is plain that in the general run of cases the courts are prepared to hold him liable for personal injuries or death resulting from negligence or error on his part during design or construction of a building. Even architects, it must be remembered, are not immune to human error.

The early [court] decisions in America followed the English rule, regarding the architect or engineer [as a] quasi-arbitrator not liable for negligence in making decisions. In modern times the pendulum is slowly swinging away from the English rule and our early cases.—GIBSON D. WITHERSPOON

"When is an Architect or Engineer Liable?"

What is worse, contact with the courts seems to be degrading to any profession. Because of the traditional adversary system of our courtroom procedure, any party to a dispute is bound to be given a most unflattering treatment by the attorney for the opposing side. The threat of the law even induces a certain reluctance on the part of the architect to take a responsible part in discussion or formulation of safety recommendations since it seems likely that these recommendations may act to his detriment in a court of law if it can be made to appear that he failed to observe or was imperfectly acquainted with a recommendation which had the apparent endorsement of his profession. No sensible man presents his adversary with the gift of a weapon.

In multiple dwellings three or more stories in height hereafter erected each of the windows required to light each public hall or part thereof shall have at least twelve square feet of glazed area of which five square feet shall be available for ventilating purposes.—MICHIGAN STATE HOUSING CODE

Many codes and standards are written so that in whole or in part they prescribe exactly what is to be done without being clear as to what is accomplished by doing it. Codes of this type have the undeniable virtues of being direct, unequivocal and easy to administer. To oppose such a code may subject an architect to abuse as a flouter of authority, a smart-aleck, a trickster or a dreamer, yet in good conscience he must often oppose it.

Most codes of the explicit type very properly describe their requirements as "minimum" and by establishing a floor but no ceiling attempt to retain a degree of flexibility. The minimum requirements quickly become also the "maximum," however, because the written rule is an inexpensive substitute for judgment and because bare compliance with the rule is a protection in court and with the public.

The rules become rigid, therefore, and many situations inevitably arise which are not tailored to the rule. Nothing is lost except money if the rule demands more than the situation justifies, but a hazard to life or health may result if it demands less. Rarely is the rule written so as to make clear the purpose behind the rule and to encourage judgment in its application.

Codes of the explicit type become obsolete as living and working habits change and as our technology improves. Occasionally a building official, bound by virtue of his office to go by the book, will tell an architect, "If you do it that way, it will be cited as a violation, but you can probably get it through the appeal board." The implication is that the appeal would not be necessary if the official were allowed to use his judgment. New standards are constantly being written to cover new situations, and may be adopted, modified or ignored according to the needs and interests of each municipality. It is small wonder that the architect experiences difficulty in familiarizing himself with all the standards which may conceivably apply to his work and in selecting those which actually do apply in each situation.

Then began a prolonged display of myopic ineptitude on the part of officialdom. . . . Until at the very end nobody in the city government who was involved in the case seemed capable of seeing that what was called for was not mechanical law enforcement, but compassion and common sense.—*TIME*, August 2, 1963

Thus it becomes questionable, if not actually unwise, for the architect to give unqualified endorsement of building codes, standards and the like, unless they spell out performance and results without specifying the methods of obtaining the results, and unless his profession has an effective degree of control over their formulation and amendment. This attitude of caution may easily be mistaken for an attitude of unconcern about safety to life and property. What irony! Safety to life and property is the cornerstone of every state registration act and is the concern of every practicing architect.

Responsibility's like a string we can only see the middle of. Both ends are out of sight. —*CASUALS OF THE SEA*.

Accidents of all kinds (including automobile accidents) are the fourth largest cause of deaths in the United States, preceded only by heart disease, cancer and cardio-vascular disease. Between Pearl Harbor and V-J day more people were killed in accidents than were killed in service. Nevertheless, mortality from accidents has declined from a peak of 88.1 per 100,000 in 1936 to 55.1 per 100,000 in 1961.

The improvement is attributable to a continuing program of accident prevention, beginning with the tabulation and analysis of the circumstances of accidents of every description. Accident prevention approaches fall into two general categories; control of human factors and control of environment. Examples of the first are safety and education programs such as those sponsored by the Red Cross and the National Safety Council. Examples of the second are control of air pollution, fire prevention measures and emergency lighting for passageways and exits.

Accidents will occur in the best regulated families.—*DAVID COPPERFIELD*

Nearly thirty per cent of accidental deaths involve the home, and fire is the leading cause of accidental deaths in the home for persons of all ages from one to sixty-four. Above this age and among infants, more deaths result from falls. Nevertheless, so many accidents occur in the home that it seems to indicate the need for more architect-designed homes. Proper concern for fire safety, adequate lighting and safety under foot might develop a residential environment as hazard-free as the modern school, hospital or public building. Safety in any environment is, of course, a relative rather than an absolute term. Design should provide for the greatest degree of safety consistent with other essential func-

tions, but this cannot be perfectly effective without intelligent procedures in the construction and use of the building.

Men should be taught to think in terms of preventing accidents and taught not to take unnecessary chances. Legislation cannot do this.—*AGC MANUAL OF ACCIDENT PREVENTION*.

The Associated General Contractors of America have taken a responsible position on safety in preparing and distributing to their membership the AGC Manual of Accident Prevention as well as pamphlets, posters and films stressing safe construction practices. Architects and engineers have recognized their concern with safety through activities of their committees, articles in their professional magazines and participation in the work of other organizations concerned with safety in buildings such as the National Safety Council, the Building Research Institute, the National Fire Protection Association, and other groups responsible for the formulation of building codes. The architect sets himself the requirement of designing a building which will be safe for its intended occupancy; however, he cannot accept responsibility for safety of the workmen or public during construction since this is properly the charge of the contractor, who has direct control. On the other, hand, manufacturers and suppliers of materials, equipment and machines may not be sensitive to the requirements of safety unless required to install their product in the building. Occasionally, a building owner may skimp on supervision of safety provisions which cost him "extra" money. Even the occupants of a building through ignorance or recklessness may overload its floors, overcrowd its elevators, or store inflammables in areas not designed for them. Each and every person involved in the design, construction and use of a building contributes to its safety or lack of it according to his understanding or his ignorance of the problem.

Who then is responsible for safety in buildings? as imposed by design? during the construction process? and during occupancy?

SELECTED BIBLIOGRAPHY

Hazard-Free Houses for All; Bulletin No. Cl.1, Small Homes Council, University of Illinois, Urbana, Illinois .15

School Fires, an Approach to Life Safety; Committee on Fire Research, Building Research Advisory Board, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, Washington 25, DC

NFPA Handbook on Fire Prevention; Crosby-Fiske-Forster, National Fire Prevention Association, Boston, Massachusetts

Safety Education Data Sheets; Schools and College Division, National Safety Council, Chicago, Illinois (Over 80 data sheets available on various subjects)

Survey of the Law of Building Codes; Charles S. Rhyne, American Institute of Architects-National Association of Home Builders \$2.00 ■

BUDGETING MAN-HOURS

for Field Administration of Construction Contracts

ROBERT J. PIPER AIA

*Commission on Professional Practice, William W. Eshbach AIA, Chairman
Committee on Office Procedures, Daniel Schwartzman FAIA, Chairman*



THE AMOUNT OF TECHNICAL STAFF TIME to be allocated to field administration of construction contracts is not always determinable by formulas and schedules; the nature and extent of the construction work being performed at any one period often obviates the timing and extent of the architect's visits to the project site. In some cases, however, the provisions of the owner-architect agreement may require that the architect state the total number of visits or hours he plans to devote to field administration. And in the more common cases the architect simply needs to know the number of hours of field administration the work will require so that he can budget this technical staff time.

A number of budgeting approaches are available. They assume an owner-architect agreement similar in its provisions to AIA Document B131. This agreement form, the Standard Form of Agreement Between Owner and Architect on a Percentage Basis, indicates that 20% of the architect's basic services are to be performed during the general administration of the construction contract phase.

Analysis of work records reveals that this 20% portion of the architect's basic services can be further delineated as 10% for office administration, ie, shop drawing and sample review, applications and certificates of payments, change orders, etc; and 10% for field administration, ie, the actual time spent to, from and on the project site.

How many man-hours does this 10% for field administration represent? The following approaches

suggest answers. In illustration, a project of \$1,000,000 construction cost and a 6% architect's fee are assumed; the architect's total fee thus equals \$60,000; 10% of this, or \$6,000, would then be allocated to field administration of the construction contract.

Multiple of Direct Personnel Expense Approach

\$4/hr represents an average wage (direct personnel expense) for the architect's technical personnel engaged in field administration. Multiplying direct personnel expense (MDPE) by a factor of 2½, to cover overhead and principal's share, is a method commonly used to arrive at total compensation due the architect. Applying this method to the question posed above we have:

$$\frac{10\% \text{ of total services}}{\text{MDPE}} = \frac{\$60,000 \times .10}{\$4/\text{man-hours} \times 2\frac{1}{2}} = 600 \text{ man-hours for field supervision}$$

Factor of 100 Approach

The above relationships can be expressed in a formula that simply states that the man-hours budgeted for field administration will be a number equal to the architect's total fee divided by a factor of 100, thus:

$$\frac{\text{Total fee}}{100} = \frac{\$1,000,000 \times 6\%}{100} = \frac{\$60,000}{100} = 600 \text{ man-hours for field supervision}$$

This is an empirical formula derived from the experience of a number of practitioners through analysis of their office and field cost records over a number of projects. As an empirical formula its importance is that it confirms the findings under the

first approach discussed above. This approach has been employed in some owner-architect agreements using language similar to the following:

"The Basic Fee resulting from the Basic Rate includes a total number of hours for field administration that is to be computed by dividing the Basic Fee in dollars by the factor one hundred. Any additional field administration, when approved by Owner, will be paid for by Owner on the basis of two and one-half times the salary-plus-normal-benefits of principals or employees involved."

Project Representative Approach

Article 3.4.4 of AIA Document B131, September 1963 Edition, specifies that "If more extensive representation at the site is required, the conditions under which such representation shall be furnished and a Project Representative selected, employed and directed, shall be agreed to by the Owner and the Architect and set forth in an exhibit to this Agreement." Such an exhibit must stipulate the relative portions of the project representative's salary-plus-normal-benefits that are to be paid for by the owner and by the architect. The project representative approach is useful here. It was largely developed from an analysis of field experience records of those projects requiring a full-time project representative. It assumes that when the project construction cost reaches a certain stipulated figure, say \$5,000,000, the architect will supply the full-time project representative at no extra cost to the owner; that as the project construction cost falls below this figure the owner reimburses the architect for the representative's salary-plus-normal-benefits in proportion to the stipulated figure.

Thus, the exhibit mentioned above might include the following language:

"When authorized by the Owner a Project Representative acceptable to both Owner and Architect shall be engaged by the Architect at a salary-plus-normal-benefits satisfactory to, and paid by, the Owner upon presentation of the Architect's monthly statements.

"When authorized by the Owner the Architect will engage this representative as a full-time Project Representative. Should the cost of the work be \$5,000,000 or more, this full-time Project Representative will be paid by the Architect in full. Should the cost of the work be less than \$5,000,000, the Owner shall reimburse the Architect for that portion of the representative's salary-plus-normal-benefits as the cost of the work is in proportion to \$5,000,000."

If a five-day work week is assumed this provision will require the architect to budget 8 man-hours/week/\$1,000,000 project construction cost for field administration during the construction phase of the project. The stipulated figure (\$5,000,000 in the case cited) may vary in various areas of practice in which case the man-hours/week/\$ of project construction cost would, of course, also vary.

Professional Policy

Neither the architectural profession nor the AIA has any policy, other than that indicated in AIA Document B131, on the amount of technical time to be budgeted for general (office and field) administration of the construction contract phase of the architect's services. Nor is any policy implied by the above materials. The Committee on Office Procedures welcomes comments on its studies. These should be addressed to the Director, Professional Practice Programs, The American Institute of Architects, 1735 New York Avenue, NW, Washington, DC, 20006 ■

An Editorial from *The New York Times*

UNTIL THE FIRST BLOW FELL no one was convinced that Penn Station really would be demolished or that New York would permit this monumental act of vandalism against one of the largest and finest landmarks of its age of Roman elegance. Somehow someone would surely find a way to prevent it at the last minute—not-so-little Nell rescued by the hero—even while the promoters displayed the flashy renderings of the new sports arena and somewhat less than imperial commercial buildings to take its place.

It's not easy to knock down nine acres of travertine and granite, 84 Doric columns, a vaulted concourse of extravagant weighty grandeur, classical splendor modeled after royal Roman baths, rich detail in solid stone, architectural quality in precious materials that set the stamp of excellence on a city. But it can be done. It can be done if the motivation is great enough, and it has been demonstrated that

the profit motivation in this instance was great enough.

Monumental problems almost as big as the building itself stood in the way of preservation; but it is the shame of New York, of its financial and cultural communities, its politicians, philanthropists and planners, and of the public as well that no serious effort was made. A rich and powerful city, noted for its resources of brains, imagination and money, could not rise to the occasion. The final indictment is of the values of our society.

Any city gets what it admires, will pay for, and, ultimately, deserves. Even when we had Penn Station, we couldn't afford to keep it clean. We want and deserve tin-can architecture in a tin-horn culture. And we will probably be judged not by the monuments we build but by those we have destroyed. ■
© 1963 by The New York Times Company. Reprinted by permission

Library Page

THE USES OF CLIMATE: Social scientists suggest that three fundamental factors have determined the conditions of civilization—racial inheritance, cultural development and climate. Writers, ancient and modern, have contended that man is profoundly affected by climate, and Vitruvius viewed man's adaptation to climate as an architectural principle. He wrote: "If our designs for private houses are to be correct, we must at the outset take note of the countries and climates in which they are built. . . . Designs of houses ought . . . to conform to the nature of the country and to the diversities of climate." (*Ten Books on Architecture*. Cambridge, Harvard Univ Press, 1914, p 170)

Is climate a creative condition for contemporary architecture, however, when technological developments discipline the temperature whether the building is in the tropics or in the tundras? Must the forms and functions of architecture reveal a response to the external climatic conditions? How can climate be used creatively by the architect? To what extent is climate a discipline of design?

Authors of three recent books consider the environment of architecture and assert that climatic conditions ought to be the controlling considerations in such matters as site selection, orientation, building materials, foundations, use of color and shape of buildings.

Victor Olgyay in "Design with Climate; Bioclimatic Approach to Architectural Regionalism" (Princeton Univ Press, 1963), states that, despite the difference in climatic conditions in the United States, there is a heedless and wasteful uniformity in architecture brought about primarily by technological advances in house heating and cooling. Mr Olgyay quotes Walter Gropius: "True regional character cannot be found through a sentimental or imitative approach. . . . But if you take . . . the basic difference imposed on architectural design by the climatic conditions . . . diversity of expression can result . . . if the architect will use the utterly contrasting indoor-outdoor relations . . . as focus for design conception." (*Scope of Total Architecture*, New York, Harper, 1955)

Climate control, says Mr Olgyay, requires a synthesis of several sciences. The biological sciences are called upon in defining the measure and aim of requirements for comfort; meteorology is considered in an understanding of existing climatic conditions; and the engineering sciences are drawn upon in the attainment of a rational solution. With such help, the author contends, the results can be synthesized and adapted to architectural expression. Part 1 of the book is given over to "climatic approach," and includes such topics as the effects of climate upon man, bioclimatic needs and factors in the weather. Part 2 is an "interpretation in architectural principles," and here are considered site selection, sol-air orientation, solar control, environment and building forms, wind effects and air flow patterns, and thermal effects of

materials. Part 3 is concerned with "application," and the two chapters are on heliothermic planning and architectural application to community layouts with specific interpretations given for four areas: Minneapolis, the New York-New Jersey area, Phoenix and Miami.

In David Oakley's "Tropical Houses; a Guide to Their Design" (London, Batsford, 1961), the statement is made that both the art and practice of architecture demand essentially the same of a designer in the tropics as elsewhere. Although the design principles are universal, Mr Oakley contends that their application in the tropics raises problems of performance and detail. Among the structural design considerations Mr Oakley discusses are earthquake-resistant design, hurricane-resistant design, termite-resistant design and building upon clay soils. He analyzes such topics as solar radiation control, cooling, building materials and siting. He points out that this is an interim stage in the process of organizing a body of knowledge on the problems of building in warm climate countries. Additional research and study are necessary, and often the architect is called upon to make technological decisions well in advance of the adequate knowledge upon which to base them. Throughout the book the author refers to available works, one of his objectives being to provide perspectives against which published references may be studied and appraised.

Recently published is "Grammar of Architectural Design, with Special Reference to the Tropics," by Miles Danby (London and New York, Oxford Univ Press, 1963). Mr Danby explains the grammar of architectural design, describing the basic factors on which the creative process of design depends. He discusses space, color, texture and pattern, proportion, scale and climate in relation to the prevailing social and economic factors of architecture.

Another related book, older but still most useful, is Jeffrey E. Aronin's "Climate & Architecture" (New York, Reinhold, 1953). Mr Aronin advises the architect to make the most of climate, learning to use it rather than building in opposition to it. Mr Aronin applies technological knowledge about climate to the design and orientation of cities. For hot temperature climates he suggests an abundance of green areas, pools, etc; the positioning of buildings for shading each other; the provision of narrow streets to restrict the sun; the elimination of hot exhaust gases. And for colder cities to retain warmth he recommends the use of massive, heat-retaining materials; the utilization of heat from artificial sources for productive purposes; the snuggling of buildings against one another; and preventing escape of heat.

In the view of Vitruvius, "We must amend by art what nature, if left to herself, would mar." Today the architect can join his art with science in the uses of climate in a manner Vitruvius never dreamed of.

The books mentioned here are available on loan to corporate members at the usual service charge of fifty cents for the first book and twenty-five cents for each additional book requested at the same time.

MARY E. OSMAN

Book Reviews

The Quiet Crisis. Stewart L. Udall. New York, Holt, Rinehart and Winston, 1963. 209 pp illus 6½" x 9¼" \$5.00

This is really a very important book. It could very well turn up on the best-seller list in a few weeks—let us fervently hope that it will (this review is written before the date of publication), for that will give it a much better chance of fulfilling its mission. The book is important to every American, and it is doubly important to every American architect—for today's architect must know his country as never before; it must be part of his creed to cherish and preserve its resources and its beauties. Thus Mr Udall's book is required reading for all conscientious professionals, as well as for all those who love their land.

We have a Secretary of the Interior who is truly dedicated to this land, in its most earthy sense, and he is sounding the alarm to arouse us to the crisis which has been quietly brewing for a hundred and fifty years, and will soon bring us to a state of barrenness and deprivation if we do not take action. No more eloquent plea for conservation of the resources and beauties of our country has been written in modern times. No more absorbing and moving story of the exploitation and spoliation of the plains and the mountains, the rivers and the wildlife of this great continent could be written.

From Thomas Jefferson to both Roosevelts, from the tidewater farmlands of the colonists to the lumber and railroad empires of the far west, Mr Udall tells the story of the step-by-step "winning" of the west and the wasting of half of what was won. Following blindly the "Myth of Superabundance," of land, timber and material resources, all men, from the pioneer with his axe in his hand to the railroad baron with his grant to thousands of square miles in his pocket, pushed their way west, cutting, plowing, filling, bridging, burning, wasting.

Even from the beginning there were a few voices of caution, words of warning—the land policies of Jefferson, the beginnings of wisdom in the writings of George Perkins Marsh, the beginnings of action in the leadership of Carl Schurz and John Wesley Powell, of Gifford Pinchot and John Muir. But only today are we learning to listen—yet still today, we do not stop and heed.

Not since Bernard De Voto's "The Course of Empire" has this reviewer read a book which so filled him with a deep and nostalgic love for the vast stretches of his own land, which most of us never actually see, unless from the air. The story of waste that lies behind us shames us; yet now, there being little more virgin land or forest to despoil, we foul the air and pollute the water.

We do have great national forests and preserves, and their story is told here too; we are belatedly protecting the bison and many other vanishing species of wild life; we are beginning to show a national con-

science; but we have a long, long way to go before we develop the wisdom and land-and-people relationship that the Indians had—those "primitive savages" as we called them, whom we have all but destroyed too.

"In recent decades we have slowly come back to some of the truths that the Indians knew from the beginning: that unborn generations have a claim on the land equal to our own; that men need to learn from nature, to keep an ear to the earth, and to replenish their spirits in frequent contacts with animals and wild land. And most important of all, we are recovering a sense of reverence for the land."

Mr Udall moves through his story of the heedless and deliberate waste of a beautiful and fruitful land with fervor and passion, but in the last two chapters, when he talks about the present and the future, one has the sense of being let down—the passion has diminished or become exhausted, and there seems to be little in the way of positive proposals for the future. But any reader of the newspapers knows that our Secretary of the Interior has by no means given up. From his high office he is constantly fighting to conserve, to preserve and, where possible, to restore our natural heritage.

And besides all the above, this is a handsome little book, with twelve pages of excellent color photographs of mountains, prairies, forests and rivers, and twenty pages of fine black and whites. J. W.

Design of Research Laboratories. Nuffield Foundation. New York, Oxford University Press, 1961. 211 pp illus 8½" x 12" \$7.20

This study is based on the work of the famous British Nuffield Foundation Division for Architectural Studies, under the direction of Richard Llewellyn Davies FRIBA.

Evolutionary history of the laboratory as a building type is followed by a review of current practice, including site-planning and surveys of spaces and services. Special problems considered include noise, vibration, fire and safety. Appendices give cost data for eight recent labs and comprehensive technical information on materials and finishes.

Typical Nuffield research approach studies time and motion in use of space as well as dimensions of equipment and buildings. Lighting and color analysis, with emphasis on daylight, seems sophisticated in its moderation, compared with the American practice of blasting everything with high-intensity fluorescent. The issue of spectral quality, however, is not considered in adequate detail. References throughout indicate sources and directions for additional study. E.P.

A Guide to Modern Architecture. Reyner Banham. Princeton, NJ, D. Van Nostrand Co, Inc, 1962. 155 pp illus 7½" x 8" \$6.75

A man of strong individual opinion regarding modern architecture expresses it in a lively way. He says that "modern architecture has been murdered by its apologists, so careful to prevent its misinter-

pretation that they failed to represent it as anything but an unlovable and unlovely moral example." However, he has great hopes for its acquiring a following largely because of its "immediacy."

He strays from the main current of modern architectural thought to delve back into its beginnings around the turn of the century. His Britishisms enhance the sprightliness for the American reader and his seeming lack of inhibition contributes freshness.

Marginal comments are written in a manner that seems to be an aside to the reader; as if he is being more intimately informed.

The author's concern with the integrity of the architect makes him more than a casual observer of a building. He ponders whether Louis Kahn's laboratories at the University of Pennsylvania are architecturally honest. "Should something so very monumental be made out of anything so transient and changeable as services, here today and obsolete tomorrow?"

Architectural integrity arises again in his evaluation of J. J. P. Oud, one of the founders of the *Stijl* (a magazine that helped make the abstract art movement aware of itself at an international level). Oud's craftsmanly mind was repelled by the magazine's esthetic extremism and he was one of the first to resign, he notes.

His selections of top-notch buildings are sometimes obscurely-known ones, but ones that "struck him powerfully." He ranges over the world to find them, picking those with widely differing characteristics and a high degree of architectural individualism. A reader, be he architect or layman, will be interested in what this critic has to say—though he acknowledges he is not the voice of authority and that he has been told to "sit down and shut up."

LINDA BISER

Improving the Mess We Live In—A Report by the Urban Design Committees of the Georgia Chapter AIA, Georgia Chapter ASLA and Atlanta Section AIP. Drafting and editorial contribution by Robert and Company Associates, Atlanta. Coordination and layout by Andrew E. Steiner AIP, ASSOC AIA. 125 pp \$2.00

Reviewed for the *AIA Journal* by Matthew L. Rockwell AIA, AIP

Some months ago when I was writing the Urbanisms column for the *AIA Journal*, I commented upon the very excellent study prepared by the Georgia Chapter AIA entitled "Visual Survey and Design Plan." At the time I said that as architects we must do more than highlight the problem, which this study had done. I said further "We must involve ourselves in the minutiae of the accomplishment."

Since that time the Georgia Chapter has done just this. It has continued its work in cooperation with the American Society of Landscape Architects and the American Institute of Planners to develop their new report entitled "Improving the Mess We Live In." Under Andrew Steiner's chairmanship the

joint committee has made a far greater contribution in this second report than in the first. Their "minutiae" include statements from the so-called perpetrators of visual offense, the local power companies. The company spokesman puts the blame rightly where it belongs. He says, "The company, like other utilities, is very sensitive to public opinion. . . . Reliable electric service is a necessary ingredient of modern living. The public . . . has become accustomed to paying a very reasonable price for this service. The reasons for the facilities being installed overhead rather than underground are both technical and economic. . . . If the American people want something, experience has shown they are willing to pay for it. The question is 'Will the average customer be willing to pay from three to five times as much for electric service in order to eliminate overhead wires on the streets?'"

Here we have direct statements that it is not enough merely to call for an improvement—that we must also be willing to pay the increased costs for having it. Throughout this new report runs the concept that the creators of the offensive environment will improve their part just as soon as the public demands it.

The section on signs and billboards disappointed me in not going further. The excellent appendix, for example, includes no excerpts from existing ordinances for sign or billboard control and I think until we can see how bad some of the ordinances are we won't attempt to change them.

On the other hand the section on service stations is very good. So are the sections on commercial areas and landscaping. But it is in the section on art where I feel that the import is so courageous it may be from a long-term point of view the most significant part of the study.

The design professions working together in Atlanta have abandoned the lip service techniques which many of us have felt adequate until now. Their words and graphics have meaning not only to Atlanta but to all of us who would like to help fill the vacuum which has followed our recent statements of alarm as to the state of our environment.

The Annual of Architecture, Structure & Town-Planning. Calcutta, Publishing Corp of India, 1962. Vol III

The annual contains a number of interesting articles with informative materials not readily available elsewhere. There are articles on town planning in Dacca, Burma, Islamabad, Rajasthan, and the Middle East. The volume contains a section on the works of Felix Candela successfully augmented by illustrations and drawings. Among the provocative articles are those by Kenzo Tange on "Architecture and the City," by Richard Neutra on "Design a Human Issue," and by Philip Johnson on "Actual Theater Design." In addition there are a variety of articles ranging in subject from solar energy for space cooling, to an account of architectural education in various Oriental and African countries and a description of the Asian Games Center in Djakarta.

AIA RESEARCH PROGRAMS

BENJAMIN H. EVANS AIA

Director of Research Programs

Commission on Education, Donald Q. Faragher FAIA, Chairman

Committee on Research for Architecture, Herbert H. Swinburne FAIA, Chairman



"We architects attach to the word [research] a surprising variety of definitions as it relates to the work of our profession. Webster's Dictionary at first isn't helpful: '1 Careful search; a close searching.' But then: '2 Studious inquiry; usually, critical and exhaustive examination or experimentation having for its aim the revision of accepted conclusions in the light of newly discovered facts.' That seems much better."

—JOHN LYON REID FAIA (writing in *Architecture Plus*, published by the students of the Division of Architecture, A&M College of Texas, in 1960)

FOR MANY YEARS, the architectural profession has been attempting to develop a definition for research as it relates to architecture. Such definitions have no particular significance in themselves, but they do tend to reflect the unanimity or lack of unanimity within the profession. Certain definitions, some very old and some stated only recently, are beginning to be reasonably well accepted throughout the profession. Webster's Dictionary says research is investigation or experimentation, aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws.

Even this definition has changed slightly since John Lyon Reid referred to his dictionary way back in 1960 (note quotation). Walter Rolfe, in his article "Research and the Architect," defines the term research as it relates to design procedures. Harold Horowitz, being an old hand at the research game, doesn't bother to define it at all in his article "An Introduction to Research Methods for Architecture," allowing the entire article to explain research by example.

At the AIA-NSF Conference on Research for Architecture in 1959, the phrase "research for architecture" was adopted as more meaningful to the profession since the phrase "appeared to offer freedom for individuals in other disciplines to contribute research to the development of architecture; and freedom for architects, themselves, to move outside the usual lines of architectural practice in exploration of problems of concern to them."

But if research is viewed as any studious inquiry

which in the long run provides new "tools" for use by architects in the design of human environment, we can at least agree that such research is valuable to the profession and should be encouraged.

And encouraged it is! With renewed spirit, the AIA Committee on Research for Architecture is wading into the sea of apathy and indifference that surrounds the research concept within the profession. The Committee and the research staff are devoting their most serious thought and most sustained effort to develop, implement and lead a comprehensive and effective program of organized research in architecture; to enlist all possible means and agencies to join in a concerted campaign to expand the boundaries of architectural knowledge; to secure ample and continuing support for the conduct of such research to the end that the profession can better fulfill the environmental needs of the people.

The carrying-out of these objectives requires functions in several areas: promotion of research; dissemination of research results to the profession; assistance in the location of funds for research; and the education and development of qualified research personnel.

There are those who say that practically no one in the architectural profession is doing any research. There are those who say that our architectural schools are performing practically no research. On the other hand, there are those who proudly point to all sorts of research activities within the profession and proclaim these efforts as extraordinary. Such viewpoints are all correct, depending on what standards are used as a basis for evaluation. Most everyone will agree, however (not everyone, but most), that the profession needs more research, needs research of a higher caliber and needs a more intensive kind of research.

To get this increased research activity, the profession must have more qualified architect-researchers, more research organizations and more funds for financing research. Of these three necessities, the most significant and most demanding one is the need for more qualified researchers. Without qualified people, there is no research, and it is to this need that the

AIA's Committee on Research for Architecture will first apply its efforts.

Good architects by their very nature and education, have the basic qualifications necessary for doing research. Research (except for the most basic intellectual variety) is primarily a process of defining a fundamental problem and then developing a solution, or several solutions, with logic and imagination. Did you think that imagination was the province of the architect, alone? Of course not. Any researcher who has produced anything of value first had the imagination to envision a solution, which he could then prove scientifically.

Most architects are not aware that they possess these magical characteristics. Many times they are awed and dismayed by the very word *research*. Consequently, too few architects have any knowledge or experience in research methods and techniques, and this is decidedly a restricting factor. Many of our architectural schools have recognized the need and have the desire for research programs to enhance and support their educational programs, but they can't get these programs going for lack of qualified personnel. There are other restricting factors sometimes, of course, but personnel is the biggest problem.

Many of our architectural offices would like to have on their staffs someone who is research-oriented and can survey and evaluate the results of current research projects. Some of these architects are finding it feasible and possible to secure funds from clients to research in detail certain complicated aspects of a forthcoming design commission. Again, the big problem is lack of adequate qualified research personnel.

Consequently, the AIA Committee on Research for Architecture is carefully studying the ways and means for providing the necessary education and experience to those in the profession who need and want to get into research. Since the profession is even shorter on qualified teachers, such education will, no doubt, lean heavily upon instruction from researchers of the more mature areas of science such as physics, anthropology, sociology and medicine.

Concurrent with these expressed needs for qualified research personnel, there appears to be a lack of understanding among the major portion of the profession, as to the need for research and the rewards that it must and will ultimately bring. While research is most often employed to solve pressing problems, it can and should be used to forestall future problems by looking beyond the present needs. It is somewhat disconcerting to realize that although architects have been designing buildings for thousands of years on the basis of "commodity, firmness and delight" we have so very little scientific knowledge of what these items are and how they can logically be achieved.

In an article in the May 1958 *Architectural Forum*, "Needed: A Building Science," David Allison states the situation rather well. "Of all the forces which could be put upon architecture to change it for the better—to turn it toward a profession of Leonardos—the force of research promises to have the most significant and lasting effect."

Thus, a second objective of the Committee is to help bring some awareness of this potential to the

profession, through the *AIA Journal* and by whatever other means may prove fruitful. The several articles in this issue, devoted to research, are intended for this purpose. In succeeding months, other articles will appear. Comments as to your interest and the appropriateness of the material will be welcomed.

Part of this potential will be realized as the results of research projects now under way, and those recently completed (such as the one described in this issue), are presented in the *Journal* and through special publications. Unfortunately, most of those who are doing research cannot afford to distribute copies of their reports to the entire profession and, consequently, the results of their efforts go unnoticed by the majority.

Because the research activities that do exist within the profession are not all well known, the AIA, in cooperation with other groups such as the Building Research Advisory Board and the Association of Collegiate Schools of Architecture, has begun a survey intended to establish, with a high degree of reliability, the scope and nature of these activities and the manpower resources that are available for research. The architectural schools will be asked to cooperate by supplying details concerning their research operations.

Chapters, regions, architectural firms and private research institutions employing research architects will also be included in the survey.

While there is a considerable amount of related research, of significant value, being conducted in areas outside architecture, the first part of the survey will be directed toward the profession itself. Hopefully, the survey can be continued, after the first phase, to investigate those areas of research outside the profession which can contribute so significantly. Such work as that reported at the 1963 convention by Dr Edward Hall, relating to how living organisms organize the personal space around them, and the work of various electronic data-processing specialists in applying computer technology to office practice, certainly have an influence on architecture and should be made known to the profession. Such related research work, however, is given second priority to that within the profession itself. Information on the extent of participation in research by architects will assist immeasurably in helping the profession plot its own needs and future course. The survey will provide encouragement and recognition for those currently engaged in research. Hopefully, once the profession, the building industry and other organizations are made aware of the activities of these people and of the value of their work, interest, support and financial sponsorship will be increased significantly.

Further support and encouragement will be sought by AIA, in cooperation with ACSA, through a series of architect-researcher work conferences, wherein those who are engaged in research can meet and exchange ideas and compare problems, and those who are interested in getting into research can get acquainted with some of the techniques and methods used by the more successful groups.

The Octagon research staff will be available for consultation and discussion within reasonable limits,

wherever such help can be fruitful. Sometimes evaluation and analysis from outside can be stimulating and beneficial.

The Committee on Research for Architecture visualizes AIA's position with regards to research as that of a catalyst. AIA should not and will not attempt to establish a research organization and conduct research at some central headquarters, but rather will act as a medium for stimulation and encouragement of other research organizations providing such supporting services, like those herein described, as can be undertaken with the personnel, resources and finances that are available. As the program matures, the extent of resources available will no doubt be increased to meet the need and demand.

At the AIA-NSF Conference on Research for Architecture in 1956, there was a high degree of unanimity among those present—including men from other disciplines as well as practicing architects and men already engaged in architectural research—that there is a basic area of architectural research that deserves major attention now.

It is important for architects to declare their concern for this research, to speed the development of appropriate research techniques, and especially to open the way for qualified research men to find a career of respected service within the profession. Such specialization is not specialization at all, but a broader cut across the art and science than that professed by most office practitioners.

The profession is faced with somewhat of a dilemma. On the one hand, research is too often considered an esoteric activity for physicists, engineers, etc, and not an appropriate function for "artistic" architects. On the other hand, research is often "a good thing to do now-a-days" and everybody should get into the act. Such diametric attitudes must be resolved. To some extent, they are being resolved as the profession grows and matures in its attitudes.

Research uncovers the facts—that is science. Architecture makes use of the facts—that is art! "Architecture should definitely . . . retain its strong art ties and its traditionally humanistic orientation. Among other reasons . . . too great a swing in professional ideology toward science would not be appropriate or healthy for a field with the rich historical heritage that characterizes architecture." (Donald Foley, University of California at Berkeley.)

Nonetheless, architects must take the lead in stimulating development of the new knowledge needed for the profession. Herbert Swinburne FAIA, Chairman, AIA Committee on Research for Architecture, sums up the essence of the situation: "The architect by virtue of his position and training is the only professional with a full perspective of society as it relates to needed changes in its environment. He is called upon to change the world continuously and is working with such people as planners, engineers and economists. He is in the best position to assume leadership in his field since he works simultaneously in theoretical conception and practical execution. Shouldn't research establish, for all architects, those methods which will help them assume leadership in their communities?" ■

RESEARCH AND THE ARCHITECT



WALTER T. ROLFE FAIA

Commission on Education
Donald Q. Faragher FAIA,
Chairman

Committee on Research
for Architecture, Herbert H.
Swinburne FAIA, Chairman

"We know much less than we need to know about man and the total environment he has created, as well as his own responses to this environment . . . His emotional, mental, and physiological reactions to temperature, hearing, seeing, distance, space, color, traffic, proximity to neighbors, density, and more, deserve investigative attention."—JOHN LYON REID FAIA in *Architecture Plus*, 1960

IN THE SCIENTIFIC AND RESEARCH INSTITUTIONS OF America, the form of intellectual investigation called research falls into two categories: pure and applied.

Pure research is that type of original study and investigation that is sought simply for the sake of intellectual exploration with no immediate practical use in view. For instance, the researcher might be studying the chemistry of certain unrelated materials and discover in the process the peculiar behavior of a by-product that later is identified as penicillin. The applied researcher, however, is usually more interested in expanding creative ideas into the fields of manufacture, construction, or other practical use.

Both forms of research are essential to each other and to us. Pure research is usually associated with scientific laboratories, foundations and educational institutions that have reasonably adequate funds for carrying on this type of study without the element of time, budget, or immediate results being of major concern. In the field of applied research, time, budget and results become very important. There is always the implied threat that if the research study is not done soon, someone else will do it and do it better. This urgency has its merits. For instance, the very great necessity for, and the possible tragedy of, a super-bomb has also helped to harness the atom for peace—a far greater contribution.

The need for both forms of research in architecture becomes obvious to anyone who has been long associated with the profession and other research programs. Many kinds of research go on each day in the quiet confines of the laboratory or research

Reprinted with permission of the author from *Texas Architect*, June 1961

center. Often little is known about them until the more dramatic announcement of unusual results becomes public information. What the public is not told is the often-repeated trial and error, study and re-study, careful weighing of facts and findings, and then, possibly, the accident and dramatics of sheer original discovery.

More of both research methods, pure and applied, are particularly needed in practice today and in the future. America is noted for its research-mindedness. Our profession has an equally great opportunity to contribute to a real need in a country already mentally prepared for it.

Research in Architecture Is Unique

Since architecture is a creative, imaginative art as well as a science well-threaded with engineering and other co-professions, it enjoys a unique position in our age. It is used by practically everyone, and its research program would affect most of us.

All architects who have some design talent feel that each thing they do is, at least to some extent, an original. Many give serious time to studying what has been done in the hope they may discover an original solution to their new problems. Often, however, what is erroneously believed to be original research becomes merely a search through the archeological cemeteries of the present and the past. One well-known architect once told me, "I am not interested in the archeology of the past. I am interested in creating an exciting archeology of the future."

Therefore, research as defined herein is the imaginative creative contribution to freshness and originality in architectural and engineering thinking, particularly as it applies to the practice of architecture. It assumes the broad design concept that includes functions, esthetics, engineering and all the arts allied to architecture.

Architectural research is, therefore, a kind of invention—a creation of something "original in the art," as patent attorneys refer to the essential claim that can be protected in a patent case. Architectural invention goes beyond the gathering of information and ideas and applying them in new situations. It is the creation of completely new ideas, concepts or approaches to the solution of a part or all of architectural problems. It is architectural design in its finest form—and broadest concept.

In this era of the profession, therefore, there is an unusual and entrancing opportunity for the profession to assume a new leadership in bringing the fruits of its imaginative minds to a much improved architectural environment. The architects' education is of such a nature as to make the problem approach a natural one. Their training and experience allow clear thinking from problem, program and premise to conclusion. This does not mean that all architects can, will or should be research-minded. It does mean that in the architectural profession there is a vast treasure of intellectual talent not being properly used by the profession in the public welfare.

The limits of practice, such as budgets, specific programs and more specific clients, often prevent

doing the type of research we have in mind. Rarely does complete freedom come to the architect to do a completely original work. A part of the reason is his timidity. Another part is his conscience telling him he cannot experiment at the owner's expense.

However, many architects would welcome the opportunity to explore new contributions without the usual limitations of practice. This kind of research is that opportunity. If architects make known their interests—their abilities—and their availability, they may be pleasantly surprised at the latent opportunities that can exist for them if this research opportunity is developed.

Research of the character we are describing is often a conjunctive effort, fusing several professions at the same time. The original thinking of one professional group can well be the spark that sets off highly original and valuable thinking of another professional group. There is no more interesting human experience than bringing together groups of highly-skilled people to execute conjunctive programs of research study.

Such careful, and often long, investigation requires funds in serious amounts. Several national foundations are interested in certain aspects of these potential studies.

The problem of foundations is often one of built-in slowness due to their administrative structure and the very great number of requests they receive for funds. The advantage of the private company or corporation is generally one of greater speed in making decisions. They, of course, usually have a much more direct interest in applied research because they are aware of the good public-relations value in making a contribution in their field, and the proper profit that results from such leadership.

Adequate fees are essential. Distinguished research requires distinguished minds. Any project usually requires more time than anticipated. It also absorbs the intellectual interest of the alert-minded. In fact, it is hard to terminate original study. Therefore, architects must not be timid in negotiating for adequate fees, or they will find their research is absorbing valuable time they must spend to provide sufficient income for their practice to remain solvent.

We have always felt, in our firm, that before beginning any project we should refresh our minds on the best answers to similar problems that have been done to date. Also, in order to be imaginative and in some degree original it is important to know what you are trying to be original *from*. Often the researcher will feel that he is doing independent and original research, only to find later that somewhere someone else had done before him the thing he thought was original. Our own routine research studies for projects of practice have taken us all over this country and abroad to find fundamentally what was good in the architectural solutions we were studying. We were interested in what could be improved in similar new projects. We often learn a great deal from our clients, after our projects have been translated into physical environment and used by them for a time, by asking them how we could better solve their specific problems in future proj-

ects. This approach is routine to sound practice and is probably rather common in this county.

However, as a reversal of these procedures, we were recently asked to do a research study in the educational field that presented almost completely the opposite approach. No owner existed and we could write our own program. We felt that such a study could be made and that it was the kind of research needed. Since it was somewhat new to us, we defined our own ground rules for doing it as follows:

- We should be completely free to study the problem from the teaching and curriculum point of view, rather than from what had been done in the past.
- We should have no preconceived ideas as to the outcome of the study. It might well be a very different kind of building or buildings.
- The results should be compared with existing facilities commonly used.
- The findings should be made public as a matter of common knowledge in the public welfare.
- This study would imply no endorsement of the policy or product of the client, any more than would occur with any manufacturer or product on any routine project.
- We should be commissioned as we would on any other architectural project, the scope of the research study should be carefully defined, and we should be paid an adequate fee for the research.

Throughout this research experience we were pleased to find a very cooperative attitude on the part of the client. Having now experienced the entire chronology of the study and the press release of the research findings, we find little in the procedure that we would change if we were to start all over.

Challenge to the Profession

It seems logical that all research-minded architects should make their talents available for the various studies they can do, and for which adequate funds can be made available. The profession should heed this challenge or the leadership in doing this kind of original research in the profession will pass to someone else who will accept the challenge and the opportunity to fill any vacuums that exist. This research need was just as apparent over two decades ago when the Institute's Committee on Education recommended at the Cincinnati convention that a division of Education and Research should become a part of the basic structure of the Institute. Later this idea and opportunity was studied and refined to become a vehicle for helping the profession make such research contributions. The AIA Foundation was created to serve as a vehicle for coordinating and aiding such research. Although it is still young, the Foundation can be made one of the most important features of our creative profession.

Ethical Implications and Authorship

Since this type of practice places the architect in a different role from the more traditional one, it is important that he develop a professional attitude of encouragement to those who are interested in making such research studies and findings.

Authorship for such creative thinking should certainly be allowed the architect, and he should sign his work just as he does any other creative work he produces. There is no question of authorship when a publisher underwrites the printing of a book expecting to make a profit from it. Our professional should be allowed the same freedom in research.

The profit motive in industry is an integral part of the capitalistic system. It is one of the forces that makes our country great and it is also the incentive that will make funds available for original study. When the need is obvious, these funds are forthcoming in a hurry. So long as the ground rules are clear and well defined by the profession within its own code of ethics, we have found the national leadership of the profession in full accord with the thought that such contributions by architects should be encouraged on a highly professional level.

All well-established research institutions are generally agreed in their thinking that the distribution of findings should be made public in the best interest of all. All of the research studies we have made have followed a natural pattern of public information just as soon as the findings were completed. This process will almost automatically take care of itself. If an idea has original flavor and apparent merit, the client will immediately wish to make it known through appropriate public-relations channels.

The twentieth century has opened a whole new vista to the free world. More scientific contributions have been made in the past century than have been made up to the beginning of that century. The scientific point of view has played a leading role in the last few decades in America toward significant discoveries and original research results.

During this period of time the architectural profession has had to attempt to emerge from its somewhat archeological past into this highly competitive scientific age. Some architects, among other creative people, have properly taken the leadership. There remains a still greater opportunity for other architects to use their imaginative minds in a practical way for all of us. Architecture of the twenty-first century based on the scientific gains of the twentieth century can be unlike anything ever done before in the history of the world—and very pleasantly so. It is the responsibility of the profession as a whole to guide its talent toward this specific and fruitful goal. The architect is qualified by education, experience and creative intellect to bring it to pass. In a free society he is allowed to think as he pleases about whatever challenges him most.

The hazard is that without the pressures and forces of need and demand being acutely brought to his attention, he may tend to believe that others will do his thinking for him, or that he cannot do it at all. The choice is in his hands. His temperament, his enthusiasm, his inner personal drive and his creative ability alone will determine whether he is capable of meeting this challenge of his profession—his country's greatest environmental need. Creative research will produce more original and inspiring architecture and fewer mediocre reproductions. ■

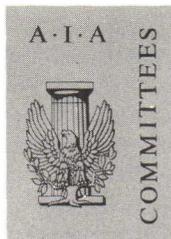
An Introduction to RESEARCH METHODS FOR ARCHITECTURE

HAROLD HOROWITZ AIA

*Supervisory Architect,
Office of Institution Programs
National Science Foundation*

*Commission on Education,
Donald Q. Faragher FAIA, Chairman*

*Committee on
Research for Architecture,
Herbert H. Swinburne FAIA, Chairman*



"In school, students of my day usually regarded 'research' as the act of searching a certain set of books with the objective of finding a pattern of mosaics, a motif, the treatment of an axis or the development of a facade."

—JOHN LYON REID FAIA
in *Architecture Plus*, 1960

RESEARCH FOR ARCHITECTURE has been discussed frequently at meetings and in the publications and journals of the profession. The education of architects to undertake research and to utilize effectively the results of research by others has not received the same detailed consideration as the definition of architectural research, scope and relationship of subjects to be included, or the responsibility of the profession to initiate and support research. It is my belief that the need for specific education in research methods and training for effective application of results is one of the central problems in advancing the present level of research for architecture.

Architects have been conducting research on a broad range of problems for many years. Some have distinguished themselves as accomplished scholars; others have become noteworthy consultants in such different fields as product development and restoration of historic buildings. However, the number of architects conducting research is very small compared with other important professional groups, and these architects trained themselves or acquired their skills through working with research people in other disciplines and study in non-architectural curriculums. There does not seem to be any evidence to indicate that the potential percentage of architects with the capability to do research is less than is now found in such fields as medicine or engineering. This suggests that something essential is lacking in the education of architects, which impedes the development of the small but important group of students who have the aptitude to make their greatest contribution in research for architecture rather than its practice. Reinforcing this idea is my frequent contact with practicing architects who are not acquainted with recent research results, sources, indexes and are unable to locate efficiently or interpret research data which would be very useful in their regular work. This gap in the education of the practicing architect reflects, undoubtedly, the same lack of an essential element of education that is responsible for the very limited number of architects engaged in research.

During the past several years, I have discussed my view of the need for specific training in architectural research methods with faculty members of a number of schools. We tend to agree that intensive training in research methods should be reserved for the graduate program. There is less agreement on whether an introduction to the subject should be included in the undergraduate curriculum. I have maintained that it should be included, because only in this way can all students receive some insight into research procedures so that they may decide whether they wish more intensive training; in any event, they should be able to apply research results in their future professional work. Counter-arguments are generally concerned with whether research methods warrant a high priority among the other subjects that have been proposed as additions to the curriculum, and with the practicability of offering an introduction to research methods in the short time available in an already-crowded undergraduate program. Following a discussion of this subject, D. Kenneth Sargent

FAIA, Dean of the School of Architecture, Syracuse University, invited me to his school as a visiting critic, to test some ideas for an introduction to research methods with the fourth-year design class for two weeks in January 1963. The balance of this article describes the program that was given and some observations on its success.

The Program

Ten class periods of three hours each were provided for this experimental introduction to research methods for architecture. The class consisted of twenty fourth-year students.* The work was divided into four parts: a series of general lectures (which took most of the first three periods), two assignments and a quiz.

Topics covered in the lectures were: the architect's need to be familiar with research methodology (special commissions, research problems in connection with design, research specialization as a career, access to current research data and ability to interpret them adequately, intellectual satisfaction of research, service to the public and profession); definition of research and science; research contrasted with design; research as a kind of problem-solving; definition and scope of architectural research. Lectures also covered identification of persons and organizations conducting research for architecture and building; the subject matter now being covered; the division of responsibility for research in the United States and in other countries; instruction in the use of the indexes, bibliographies, abstract journals and guides that provide access to research information in the literature; instruction in the use of BRI's Building Science Directory; and discussion of the role of professional and technical societies in obtaining information on research in progress or not publicly reported. There was instruction on setting up a systematic search for information, discussion of setting up and conducting research (definition of the problem, formulating a hypothesis, limiting variables and testing of the hypothesis), and discussion of the interpretation of results in relation to data and methods employed in the research.

Each student was assigned a problem during the first class period, and was asked to develop a detailed program for solving it and to prepare a written report. During the second week each student reported orally to the class on his research program. Discussion by his classmates followed. The second assignment consisted of research reports which were distributed to the class, read, reported orally and discussed. The twenty different research problems and reading assignments were selected to bring a wide range of subject matter and methodology to the class.

* The twenty students who participated in this program were: David S. Baker, Robert S. Berman, Roger E. Brown, John D. Carter, Stuart Cohen, David G. Cooper, William A. Couch, Ian H. Gordon, Robert Greenberg, William J. Houghton, Richard P. LaCroix, David J. Moro, John F. Mowry, John L. Patterson, N. Stewart Quarty, Donald W. Strong, Frank M. Warr, Jerold M. Weisburd, Stephen V. Winsten, and Daniel C. Wright.

Research Problem Assignments

Each of the twenty students in the class received a different research problem, for which they were told to develop a proposed method of solution. The twenty problems were especially prepared for simultaneous use in presenting a broad range of subject matter, and offering an opportunity for the class to explore many different methods of conducting research. The assignments were given to the students at random during the first period of the program. The lectures that took up most of the first three periods provided background information on solving such problems, and the fourth and fifth periods were devoted to individual discussion and criticism with each student.

A report was termed satisfactory if the student had defined a central aspect of his problem, formulated a reasonable hypothesis and proposed a logical sequence by which the hypothesis could be tested.

The problems were presented in a form which would be readily understood in terms of the students' experience. (The decision to select three of the twenty problems and their solutions, rather than reproducing the entire group here, was necessitated by space limitations; unfortunately, this precluded giving an indication of the full range of subject matter covered.)

The three problems and the way they were approached by members of the class follow:

Problem: A national association of building contractors engaged in the remodeling of existing commercial and industrial buildings has commissioned your firm to collect data and analyze the causes and national trends in the demolition of structurally-adequate buildings. The results are to cover the country as a whole and, hopefully, point out to the association a number of areas where specific research projects will help to improve their methods and lead to expansion of their business.

Many of the contractors believe that one reason for the demolition of structurally-adequate buildings is that architects do not explore the possibilities for remodeling at lower cost than demolition and new construction, because of lack of knowledge and personal prejudices against working with an old building rather than developing a design in a fresh structure. If it can be established that this is true, then the contractors would undertake a program to demonstrate that existing structures can often be remodeled with great architectural success and also to develop specifications, standards and technical information that will be useful to architects in such work.

Your task is to test the assumption that either lack of knowledge or prejudice rather than good and valid reasons are among the principal causes for decisions by architects to demolish and build new in preference to remodel existing buildings.

- What would constitute such a test?
- How should the study be carried out?

This problem was assigned to Robert Greenberg who described its central aspect as, "People in the United States are 'progress' minded and oriented; hence there is a great tendency to discard the old

and start anew." His hypothesis was simply that decisions not to remodel are often made arbitrarily, without significant study. He then set up a program of interviews and surveys which would provide the data to support or refute this hypothesis. The results of such a program would probably reveal wide differences in actual practice and, depending on the distribution of cases, would present a very complicated set of data to be analyzed.

Problem: A local manufacturer-contractor of vitreous enamel finishes for concrete masonry walls has engaged your services as a consultant in a marketing problem. It seems as though your client has been caught in a dilemma, and needs advice on the proper specimens of his work to present to architects. The sprayed-in-place finishes permit unlimited color combinations through the use of opaque, transparent and spatter coats of material in building up the final finish. For the purpose of selecting a specific finish, however, architects generally seem to make their choice from the limited number of specimens presented to them in a sample case. They may also reject the use of this type of finish because the right color didn't happen to be present in the sample case. Your task is to improve on the sample case in a way that will permit architects to fully appreciate the range of color and texture available and to specify the desired finish correctly.

- What hypothesis can you propose to help solve this sample case dilemma?
- How could it be tested?

John L. Patterson Jr approached this problem by proposing a portable photographic aid which could project several images over each other on a self-contained screen, consisting of a roller with a number of different-textured areas. By manipulation of several films projected simultaneously on the roller screen, a great number of finish effects might be simulated. Having described the features and use of the device, he then proposed a program of laboratory and field tests to determine the correlation of the finishes selected through its use with the selections made using actual vitreous enamel finishes. A high degree of correlation would demonstrate the practicability of his proposed device.

Problem: In a recent survey of apartment dwellers, the principal complaint was the lack of privacy. Oddly, the complaints seem to be most frequent in the newest apartment buildings, suggesting that there may be some basic fault with current design philosophy or construction methods. Your office designed one of the buildings that the survey indicated is unsatisfactory with respect to the tenants' sense of privacy. To recover your prestige after this embarrassing event, and to indicate the firm's open-mindedness and aggressive search for new knowledge, it has decided to conduct a research project to study the basis of a sense of privacy.

Preliminary discussion with your associates suggests that there are many factors to be considered, such as sound transmission, odors, vision into other units, sense of identification with one's own unit, individual personality characteristics, etc. You are to set up a program for a research project to be

reviewed at a meeting of the partners of the firm.

- What hypothesis will you propose and how may it be tested?

After thinking about this problem, N. Stewart Quarty decided that its central aspect was the satisfaction of the apartment dwellers in their relationships with their neighbors rather than quantitative deficiencies in the structural and mechanical aspects of the construction. He suggested several hypotheses in his report, and selected for his proposed project one involving a series of tests to determine whether the differences in the interactions between neighbors from rural areas differed from those of families originating in urban areas. His hypothesis was that less privacy is needed between families originating in rural areas, due to tendencies toward friendlier relationships and greater mutual interests. A program for interviews and observations was suggested for obtaining data, and it was felt that the results might lead to a better understanding of the problem and improved criteria for apartment-building design.

As time did not permit the students to search the literature on their assigned problems and become familiar with research already done or in progress, their work was simplified in that they could use many hypotheses and research methods which had been tried and discarded in actual research. To illustrate: Student Quarty was unaware that a hypothesis very similar to the one he advanced was recently studied at the University of Sydney. The results just reported (Sutcliffe, J. P., and Crabbe, B. D., "Incidence and Degrees of Friendship in Urban and Rural Areas," *Social Forces*, October 1963, pp 60-67) indicate no significant correlation between urban or rural origins in the incidence of friendly contacts. For the purposes of the program, however, it was not felt that the students' work needed to be valid research but rather that they recognize *how* basic architectural problems can be defined, hypotheses formulated and studied.

Class Response

The introduction to research methods was the last portion of the term in the fourth-year course in architectural design. In this term, all of the problems are given by visiting critics. After spending most of the semester with a succession of distinguished practicing architects, whose programs were all design problems, the class responded to the introduction to research methods with a mixture of curiosity about research for architecture and a strongly expressed hostility toward the application of the ideas of "science" and "research" to architecture and design. The students most vocal in their displeasure expressed the view that research and the scientific method were approaches that paralleled the intuitive development of design solutions by creative people. They were sure that the intuitive approach was best. The class seemed to have little confidence that scientific methods and research could be of help to the designer. However, the class as a whole was attentive and conscientious about the work assignments. Some of the best work on the assignments was actually done by members of the "hostile" group of students, but they did not admit to a change of opinion on

the matter when the program came to a conclusion.

To help evaluate the student response to the program, two non-graded questions were added to the final quiz. Nineteen of the twenty students in the class answered these questions.

Question 1: What is the most important idea or information you learned in the program?

7 students—Information on the scope and availability of data on current research.

4 students—"I will be able to improve my design decisions."

3 students—Information on procedures for setting up a research program.

1 student—"Research can help determine the validity of an architectural philosophy."

1 student—"I learned a lot about architectural photogrammetry (subject of one of the reading assignments) and plan to go further into it."

1 student—"I enjoyed the chance to gain experience speaking before the class."

1 student—"I learned that it is possible to find research results, anything can be proved or disproved by using proper data and methods, and that there are opportunities for jobs doing research."

1 student—"I learned that research methods were more scientific than I thought. I can see that such methods may be useful in organizing thinking in general. I already find myself more skeptical of conclusions contacted in reading and conversation and wonder how logically they have been derived."

Two students whose replies to this question were tallied as part of the group of seven, elaborated their answers with the following observations:

"Before this course I had no idea of the many different kinds of research, but now I realize that research is going on in all fields and that in some way the architect will find a need for this research."

"I wish this design-research program could be held before fourth year for it could have aided me in my design long before this. It will prove useful because now I will be able to more easily find the requirements of people. 'Graphic Standards' is the bible of the draftsman, whereas, total research, [as] we have learned is the bible of the architect."

Question 2: If the program were longer, what additional subjects or projects would you like to have?

9 students—Actually do a research project.

1 student—Actually do a research project but as a separate course on the graduate level.

1 student—More detail on the presentation and interpretation of research results.

1 student—"I would like to spend a great amount of time studying and evaluating 'The Image of the City' (one of the reading assignments)."

1 student—Would like a separate course, not part of the design program. Half of the term would be devoted to instruction and half to an actual project.

1 student—More intensive study in fields of particular interest to the individual students.

1 student—More practice in locating information.

1 student—Would like to visit places where research is done.

1 student—More emphasis on interpretation of reports.

1 student—No more, unless it can be made interesting.

1 student—Course should be given in third year.

Evaluation of Program

It is difficult to judge the value of such an introduction to research methods without sufficient time to determine whether the instruction has enhanced the students' ability in their subsequent studies and work out of school, or led some students into research work. It was fairly obvious that the students found themselves in contact with a new set of ideas. Most members of the class were interested in their assignments and thought the material presented would be useful. Several students expressed the desire to continue to study some uncovered research areas.

The program did not develop entirely as I had hoped; the attempt to illustrate the broadest possible scope of research through the use of twenty different reading and problem assignments was too ambitious for the available time, and it was not possible to discuss in depth and obtain a thorough understanding of any of the specific research methods covered. However, I regard the program as being a success and no longer have any doubt that a period of time as short as two weeks can be used effectively to introduce undergraduate students to research.

Research Report Reading Assignments

(The following list of twenty-three research reports were grouped into twenty assignments of one or two each. The students were asked to summarize their assignments in an oral presentation to the class. Particular stress was placed on recognition of the hypothesis and the methods used in the research.*)

Borchers, Perry E., Jr., "Architectural Photogrammetry, Choice of Station and Control, a Three-Dimensional Record of Byzantine and Baroque Architecture," *AIA Journal*, June 1962, pp 99-112

Beyer, Glenn H., "Housing and Personal Values," *Agricultural Experiment Station Memoir 364*, New York State College of Home Economics, Cornell University, July 1959, 43 pp

Schjodt, R., "Measurement of Human Reaction to Hardness of Floor Covering," *ASTM Bulletin No 247*, June 1960, pp 53-6. Also see discussion in *Materials Research & Standards*, February 1961, pp 102-3

Hanes, R. M., "The Long and Short of Color Distance," *Architectural Record*, April 1960, pp 254-6, 348 and Handler, Benjamin, "Needed Research on the Effect of Buildings on Human Behavior," *New Building Research*, Fall 1960, Building Research Institute, Publication 910, National Academy of Sciences—National Research Council, 1961, pp 13-18

"Horizontal and Vertical Circulation in University Instructional and Research Buildings," University Facilities Research Center, Madison, Wis, November 1961, 20 pp

Cont'd on p 66

* The author would like to express his appreciation to Miss Fern L. Allen, librarian, for her invaluable assistance in assembling this material.

Cullen, William C., "Wind Resistance of Asphalt Shingle Roofing," *New Building Research*, Fall 1960. Building Research Institute, Publication 910, National Academy of Sciences—National Research Council, 1961, pp 33-42

Wagner, W. G.; Evans, B. H.; Nowak, M. A., "Shelter for Physical Education," Texas Engineering Experiment Station, A & M College of Texas, College Station, Tex, 1961, 57 pp

Rawson, Mary, "Property Taxation and Urban Redevelopment," Urban Land Institute, Washington, DC and Melamed, A., "High-Rent Apartments in the Suburbs," *Urban Land*, Urban Land Institute, Washington, DC, 20:9, pp 1, 3-8, Oct 1961

Bain K.; Faegre, M. L.; Wyly, R. S., "Behavior of Young Children Under Conditions Simulating Entrapment in Refrigerators," *Pediatrics*, 22: 628-47

Koppes, W. F.; Green, A. C., "Potential Economics in School Building Construction," University of the State of New York, State Education Department, Albany, NY, 1958, 51 pp

Wyly, R. S.; Eaton, H. N., "Capacities of Stacks in Sanitary Drainage Systems for Buildings," NBS Monograph 31, National Bureau of Standards, US Dept of Commerce, Washington, DC, 1961, 52 pp

Winnick, L., "American Housing and Its Use: The Demand for Shelter Space," Wiley, New York, 1957, 143 pp

Rodwin, L., "Housing and Economic Progress," Harvard University Press and Technology Press, Cambridge, Mass, 1961, 228 pp

Lynch, K. "The Image of the City," Harvard University Press and Technology Press, Cambridge, Mass, 1960, 194 pp

McFarland, R. A.; Domey, R. G., "Human Factors in the Design of Passenger Cars: An Evaluation Study of Models Produced in 1957," NAS-NRC Publication No 773, Washington, DC, 1960, pp 565-582 and

McCullough, H. E.; Farnham, M. B., "Space and Design Requirements for Wheelchair Kitchens," Bulletin 661, Agricultural Experiment Station, University of Illinois, Urbana, Ill, 1960, 47 pp

Hauf, H. D.; Koppes, W. F.; Green, A. C.; Gassman, M. C., "New Spaces for Learning," School of Architecture, Rensselaer Polytechnic Institute, Troy, NY, 1961, various paging

Powell, F. J.; Robinson, H. E., "Measurement of Effect of Moisture on Heat Transfer Through Insulated Flat-Roof Constructions," Special Technical Pub No 312, ASTM, Philadelphia, 1961, pp 35-66

Fishburn, C. C., "Effect of Mortar Properties on Strength of Masonry," National Bureau of Standards Monograph 36, US Department of Commerce, Washington, DC, 1961, 45 pp

Boone, T. H.; Hermach, F. L.; MacArthur, E. H.; McAuliff, R. C., "Conductive Flooring for Hospital Operative Rooms," *Journal of Research of the National Bureau of Standards*—C, Washington, DC, 63:2, Oct-Dec, 1960, 16 pp

Beyer, G., "Economic Aspects of Housing for the Aged," Research Report No 4, Center for Housing and Environmental Studies, Cornell University, Ithaca, NY, 1961, 59 pp ■

FOAM PLASTICS

for Housing in

*A Report from the Architect
University of Michigan with
Benjamin H. Evans AIA*

THIS IS A CONDENSATION of a report on a study conducted by the Architectural Research Laboratory of the University of Michigan, sponsored by the Agency for International Development (AID) of the US Department of State, to explore the feasibility of using plastics, particularly foam plastics, for low-cost housing in the underdeveloped countries of the world. The project director was Stephen A. Parakevopoulos, associate professor of architecture. Other members of the faculty participating in the project include Harold J. Borkin, research associate, Robert M. Darvas, structural consultant, and C. Theodore Larson, project consultant.

Although the report contains five sections ranging from the housing problem through project scope, observations and recommendations, an approach to structure and next steps, only the first two sections are described here. These sections contain the essence of the problems to be solved and a suggested approach to solving them.

What makes this research report so significant, particularly coming from architects, is the idea that the housing problem, once primarily conceived of as an architectural problem, is here approached as an economic, social and industrial problem—better houses not by building cheaper houses, but by increasing the abilities of the people to pay for their housing.

The Architectural Research Laboratory at Michigan is continuing the study through a second grant from AID. The possible implications for tomorrow's architecture can only be surmised, but without such foresighted thinking the profession might indeed get behind the times.—BHE

Underdeveloped Areas

*tural Research Laboratory,
an introduction by*

In every country where population has been increasing, there is a severe shortage of decent housing. Traditional building techniques and housing policies are inadequate in meeting this ever-increasing demand. The problem is even worse in areas where there are no satisfactory building materials readily at hand, or where no local building industry has yet come into being.

If building industries are to be established for the underdeveloped areas, what form should they take? Obviously they should not have the built-in inadequacies of the traditional type building activities that have evolved in the more advanced countries. On the contrary, they should be able to produce an ever-increasing quantity of dwellings offering an ever-higher quality at less and less cost to the consumer. At the same time they should help to raise the national standard of living by boosting the economy of each developing country through increased industrial productivity.

Short-Range vs Long-Range Approaches

AID and the other international assistance organizations are faced with the immediate problem of helping millions of people obtain shelter. Besides lacking suitable building materials and an effective industrial organization for the production of dwellings, underdeveloped countries have a housing problem that is further complicated because the people who are to obtain such basic shelters do not constitute a housing market. In most cases the people have no money to pay for shelter. Their housing, therefore, has to be provided by their governments

at the lowest possible unit cost, and the available funds stretched in order to satisfy as many people as possible.

Too often a housing project is undertaken because of political expediency or for humanitarian reasons, and its potential as a capital-producing resource is overlooked. No country with a shortage of capital or credit can afford to do this. *In other words, the shortage of housing should not be thought of as a national liability but as an opportunity to develop a new asset for the national economy.*

The housing problem in each developing country should therefore be broken down into two distinct aspects: 1) the demand for an immediate improvement in family living conditions and 2) the need for a long-range development of an up-to-date building industry. Both aspects have to be considered together, as investments to advance the country's economy.

The objectives of the short-range activity should be the immediate creation of an environment that will provide better health for as many people as possible and thus enable them to become more productive in national development.

These emergency efforts should be viewed as transitional expedients which are needed in order to educate and prepare the people for a higher standard of living. At the same time, by creating a longing for higher standards, there is also created an incentive for the increased accumulation of savings which is necessary in the development of an national economy.

Any immediate improvements in living conditions, in a society which still has a primitive building technology, should be made with a minimum capital investment. To encourage a primitive system of homebuilding with large-scale expenditures is to negate what should be the primary long-range housing objective in a developing society—the creation of a housing market sufficient to sustain the introduction and development of industrialized facilities and services capable of producing housing of an increasingly desirable type at a price that can be met by a steadily-rising level of national income.

Approaching the housing problem as an integral part of the total problem of national development means that housing must be viewed as a means for raising the national productivity and the national income, as well as providing a rising standard of living for as many people as possible.

In many countries, great reliance is still being placed on the development and use of traditional materials and methods of construction. Generally these are primitive in nature. In recent years, for example, often in response to the requests of local governments, much well-meant effort has gone into the development of hand-operated machines that will produce a superior type of mud brick. Dwellings constructed of such "improved" building products still represent a relatively low standard of living. As short-term efforts such projects consume far too much capital for the value of the end result, and the

long-range industrial capability of the country is not at all appreciably increased.

The economic fallacy of the traditional building approach to the housing problem has also been fully demonstrated in the numerous attempts to use housing as a means of solving the local unemployment problem. Unskilled labor is put to work, to be sure, and the more backward the house-building techniques, the larger is the number of unemployed persons who can be kept busy. The output of new housing remains small, however.

There must be an introduction and development of new production and marketing techniques. An up-to-date building industry and an up-to-date housing market, in the true industrial sense, will have to be created in each country if up-to-date dwellings are to be continued. This approach will probably result in the creation of entirely new forms of housing and kinds of construction never before imagined.

Innovation as Means of Development

Too often the available resources of a country are evaluated on the basis of their immediate applicability. Too often, a lower-standard imitation of what has already been established in a more advanced country is accepted as the immediate housing goal. This approach tends to perpetuate underdevelopment; it does not stimulate new development of a dynamic sort.

Means should never be confused with needs. Keeping a clear distinction between stating the problem and finding a solution is important. For instance, if electric power is deemed necessary for housing in a particular country, it would be shortsighted to think only of conventional generators and power lines; the use of fuel cells may be a more desirable solution even though they have not yet been introduced for housing use in even the most advanced countries.

Any innovation should be considered for development use, particularly if it holds the promise of being more efficient and less costly to install, operate and maintain. Many technical possibilities have not yet reached the marketing stage in the more advanced countries because they come in conflict with established codes or drastically upset the traditional way of doing things.

In cases where a technical possibility has not been fully developed, it would be to the advantage of a less-developed nation to contribute to the innovation's further technical development by becoming an area for any needed field testing. The collaborating nation would itself benefit directly from such experience by building up within its own boundaries a new set of national resources. Instead of being a mere recipient of foreign aid from others, it would become an active participant in a collaborative system of international development.

At the same time, this would be to the advantage of any company interested in the innovation for eventual marketing in the more advanced countries. Even in its present stage of development, the innovation may be far better than anything that a less advanced country has available. Thus, by using a de-

veloping country to perfect the innovation in order to meet higher standards of performance, the company should be able to find an early market for its product, gain invaluable experience from such field application, and at the same time, through the spirit of enlightened self-interest contribute a great deal toward international development.

The notion that underdeveloped countries are good second-hand markets for obsolete equipment and production facilities should be discouraged. On the contrary, it should be a guiding policy that research on a broad and intensive scale is necessary in order to obtain a full understanding of the needs of each country and to establish an order of priority in the development of its resources for the sake of both national and international growth and development. The products whose introduction should be particularly encouraged are those which represent the most advanced efforts of the more advanced countries and which offer great promise for the future growth of all countries.

The resources of a developing country should likewise be viewed in a different light. The utilization of national resources must take into account the resources, both human and physical, which are available in other countries. The existence of certain raw materials within a country should not mean that these materials must be used to the exclusion of materials from outside the country, unless this is to the advantage of the nation's total economy.

For example, in connection with housing, the prevalence of wooded areas might suggest the development of a structural timber industry. However, from the viewpoint of the total economy, it may be more desirable to use the wood for the development of paper or other synthetic products.

This choice of alternatives in the use of national resources is often overlooked in the development of housing in the emerging countries. The thought usually is that since something is there, it must therefore be used. The possibility of doing something else that will be more beneficial in the long run thus becomes obscured by the force of a first impulse.

Usually quality in housing has been associated with permanence. If a dwelling could be constructed so that it would last for many years, this has always been considered desirable; whereas, if the structure were designed so that it could be disposed of without great effort or cost, it has generally had the stigma of inferiority by being called "temporary."

Technology has made it possible for buildings to be constructed so they will last indefinitely, far beyond their useful life spans. Today, in the United States and other industrially-advanced countries, there are many examples of urban blight because of their durability—it would cost more to tear them down than they are worth on the open market. Making sure that any new housing can be easily removed when it becomes obsolete and before it turns into a new urban slum is clearly part of the housing problem confronting the newly developing countries (as well as ourselves).

In a service society, which ours is rapidly becoming, the standards of quality shift from an em-

phasis on permanence of products to an emphasis on the availability and progressive improvement of services. The introduction of new products usually permits a more rapid improvement of a particular service industry, especially if such products have limited life spans and are easily disposed of when no longer wanted. An example is the service industry which assures the customer a continuous supply of disposable razor blades and throw-away facial tissues. Although the items are ephemeral, the supply is continuous and this continuity in service is characterized by increasing quality and decreasing cost. This concept of continuous change should not be overlooked in regard to housing. Housing that may be acceptable at one time will almost certainly become less desirable at a later time. The dwellings should therefore be designed and built in such a way that they will not stand in the way of further progress but can be readily removed as they become obsolete and undesirable.

Origin of Feasibility Study

In 1960, having come to the conclusion that the use of traditional building materials and techniques alone could not resolve the housing problem, housing officials in the International Cooperation Administration (AID's predecessor) decided to investigate the possibilities offered by such new materials as the plastics.

At first only the feasibility of using polyurethane foam in spray application as a roofing material for basic shelter programs was considered. However, subsequent discussions with the architectural research staff at the University of Michigan led to a growing belief by all concerned that the various plastics may have more far-reaching implications in resolving the housing problem than had originally been anticipated. It was therefore agreed that the feasibility study should be expanded. Instead of merely investigating one material, one production technique, and one type of application (roofs), the study was set up to encompass various plastics, various production techniques and a wider range of application possibilities (conceivably even entire structures). It was also decided that the materials should be explored not only for their potential use in any short-range shelter improvement programs but, more importantly, for their potential contribution toward the resolution of the long-range housing problem.

The Plastics and Their Advantages

In recent years, while the cost of traditional building materials has been going up (or at best remaining steady), price curves for many plastics have been sloping sharply downward.

Because of their synthetic chemical composition, many kinds of plastics can be produced which will meet very precise specifications and conform to a vast variety of requirements and conditions, very often without great change-over costs in production. The quality of the end product can also be largely controlled in the laboratory, where the prevailing attitude is always to seek to find a better product through research and experimentation.

Production of low-density plastics (foam plastics) at a reasonable cost, in addition to providing an excellent kind of insulation, has opened up new possibilities in the construction of dwellings, as illustrated by the imaginative Camp Century experiment.¹ This experiment also revealed the interest of the plastics industry in the building field and its willingness to contribute resources and know-how when presented with a specific building project involving the application of plastics. Besides offering advantages in terms of global logistics and such other virtues as ease of fabrication at low investment cost and light weight, it is believed that their proper selection and use will eventually result also in much lower building costs.

Being a synthetic product, the plastics require industrial facilities for their manufacture and processing. Industrialization will therefore be promoted in any country where markets can be created for the various types of plastics. Countries most likely to benefit industrially from such development are those which have natural resources, such as oil, or by-products and wastes resulting from other industrial production that can be utilized in making either the plastics or the plastic building parts.

The main industrial advantage offered by the plastics is their wide variety of possible uses, ranging all the way from tableware and small toys to large structural components. This versatility in turn assures a great diversification of markets. If production facilities can be created for the building market, potentially the largest, the output would be ample enough to take care of all the other markets (clothing, textiles, furniture, household furnishings, containers and equipment of all sorts), all of which present equally pressing needs in the newly developing countries.

This diversification of markets should make the use of plastics rather attractive to companies interested in investing in the underdeveloped countries. Even if the existing housing market is not large enough at the outset to absorb an output of building materials sufficient to insure low unit costs and a reasonable margin of profit immediately, a plastics fabricator could stay in business by producing mattresses or any of the other aforementioned consumer products which are needed in most of the emerging countries and for which there is already a large market demand. Through the production and sale of allied products, the plastics fabricator should be able to write off a large part of his initial capital investment which would allow him to produce building materials at lower unit costs, thus contributing toward the industrial development of the country, which in turn will help to create a much larger housing market for the future.

It is a cardinal belief of the project staff that much more can be achieved in the emerging countries if housing is not seen as an independent quantity and the building industry is not treated as an inde-

¹ A successful experiment by the Army Corps of Engineers, at Ft Belvoir, Va, in the use of foam plastics for shelters at Camp Century, Greenland.

pendent factor; for both must be considered as parts of an integrated industrial development embracing all the resources of a nation.

Procedural Analysis

At the outset the project staff was faced with a complex problem of analysis. The time allocated for the feasibility study (six months) was rather short, and the choice of plastics rather extensive. The study had been set up with an emphasis on foam plastics, but the first matter requiring consideration was the question: For what particular housing applications should the use of a particular plastic be judged to be feasible? Many approaches were discussed, and it was finally decided that the most promising would be to start with the objective of industrially produced housing—the development of a system for the production of total dwelling units.

Since the project objective was not the production of a house, but an investigation of materials for their potential application to housing, the shelter aspect of a unit was abstracted, and the end product for investigation became the structural system.

Since relative cost is an important project consideration, it was also decided that foam plastics should be investigated for their effectiveness when used structurally to the fullest extent possible. Besides offering the advantages mentioned in the preceding section, as their density decreases, so does their cost when measured in volume. This fact did not necessarily mean that the lowest-density foams would produce the most economical structures, but it did indicate that, in order to achieve maximum economy in a total dwelling unit, the density of structural materials would have to be considered.

The next decision was that any foam plastic selected for study should be considered, not as a substitute for other building materials, but as a new material to be used in developing an entirely new end product whose shape and appearance may conceivably differ from anything that presently exists. It was further agreed that the project staff members should divorce their thinking from any traditional or preconceived ideas of house form and approach the problem of structure from a purely analytical point of view, without any specific application in mind. Only after a theoretical structure has been developed as a result of analysis should its possibilities for adaptation to house design be explored.

It was also agreed that after the various kinds of foam plastics had first been investigated for their possible use in creating a total structural system, and if the study did not show this to be feasible, then they would be investigated individually for their possible use as non-bearing elements in the design and construction of dwellings.

Assuming that certain foam plastics could create total structural systems, a new set of questions then emerged: Which plastics could create such structures? Could they be used alone or would they have to be used in conjunction with other plastic or non-plastic materials? If conjunctive materials would have to be used, what should be their functional relationship to

the foam plastics? Having thus stated the technical objectives and established specific lines of inquiry, the project staff proceeded to answer these questions by exploring the physical properties of various foam plastics and their methods of production.

The project is deeply indebted to the plastics industry for its encouragement and assistance, and for the many courtesies that the staff has received. In brief, collaboration with industry has involved an exchange of information (often privileged), a supply of experimental materials, access to laboratory facilities and general assistance in development work. Most important, the project staff has been kept fully informed of developments usually referred to by industry as new "breakthroughs."

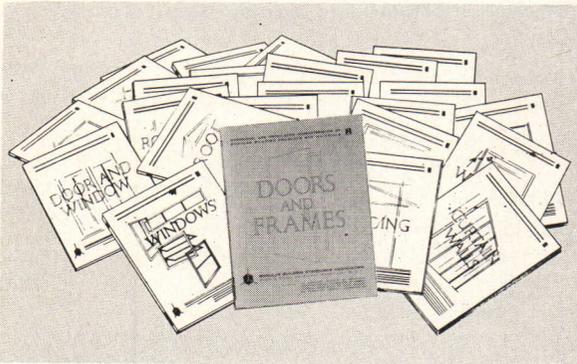
Materials Investigated and Work Performed

The course of research was determined by the decision reached during the stage of procedural analysis, which established foam plastics as the basic materials to be investigated for structural use. The extension of the investigation to other materials has been primarily for their potential use with foam plastics as surfacings, or as fillers, reinforcements or joining materials. Besides gathering data on the physical properties of foam plastics, investigation also included various methods of producing and fabricating foam plastic products, (casting and molding, spraying, laminating, extruding, vacuum forming), as well as the various kinds of equipment involved in both the production of the plastics and fabrication of plastic parts.

Since most plastic producers have an interest in polyurethane foam (ranging from production of one to all of the several components), this is the material to which the staff has given most study. Besides being able to do this through industry cooperation, staff members have had the opportunity to produce a variety of samples utilizing polyurethane components. Similar experience was also acquired through production of samples utilizing epoxy components.

During this experimentation, special attention was given to the possibility of processing the foams so that they create their own skins (plain or with some reinforcement). There are, of course, other plastics in high-to full-density form which could be used in combination with these foams to provide a protective coating or structural skin. However, it may be advantageous in underdeveloped countries if the same plastic can be used in both high and low densities; thus the investigation focused on the possibility of using the same plastic for both core and skin.

A major part of the work has been investigation of how foam plastics can be applied in buildings and other related products. This investigation covered building materials (primarily sandwich panels), products such as refrigerators, trucks and boats, and experimental structures and other applications. As a result of this study and analysis of the materials at hand, various ideas have emerged as to how plastics can be used structurally in different ways, by taking into account their properties as well as their methods of production and possible ways of erection. ■



Modular Publications Series Launched

AIA members were among more than 40,000 individuals in the construction industry to receive the pilot issue of a new publication series initiated by the Modular Building Standards Association.

Although copies of the individual studies are priced at \$2.00 per copy, MBSA plans to distribute each issue of the entire series of twenty-four studies without charge to members of its four founding organizations, The American Institute of Architects, Associated General Contractors, National Association of Home Builders and the Producers' Council.

Release of "Doors & Frames" represented a major step in the progress of the Modular Building Standards Association since its activation five years ago. Its work up until this time had been concentrated around the developing of comprehensive technical reference publications for the conversion of architectural offices to the use of modular dimensioning. A recent textbook entitled "Modular Practice," developed by the Modular Building Standards Association, has been acclaimed as a "double-barreled" text because of its usefulness to personnel in architectural offices, as well as satisfying instructional needs of students of architecture. A third useful purpose of the book has been to establish modular drafting conventions on a uniform basis throughout the US for consistent interpretation by architects, contractors, engineers, suppliers and all others in the building industry.

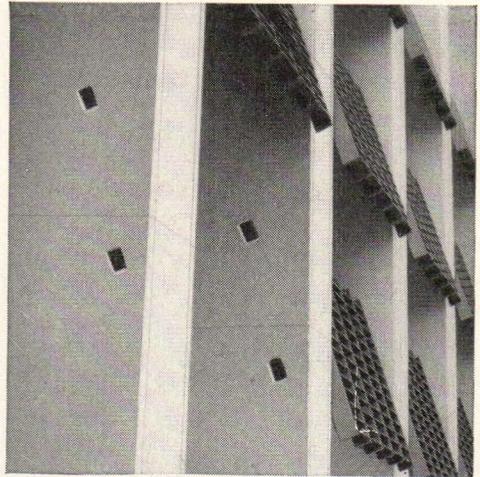
Publication of "Modular Practice," by John Wiley and Sons, coupled with visual aids and reference materials available from MBSA, signaled completion of the educational development phase of MBSA and enabled the association to then concentrate on activities which would lead to direct application by architectural offices.

The new Dimensional Standards Series is aimed at helping architectural draftsmen detail modular products and materials into the working drawings of building projects. The first issue, "Doors & Frames," illustrated three basic types of doors (wood, steel and aluminum) installed in five typical types

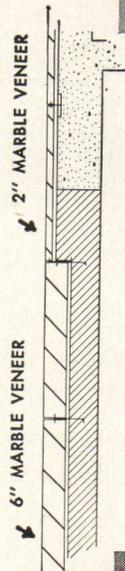
Cont'd on p 76



COVER STORY ON Select White Vermont



Square holes were pre-cut in the marble slabs to take the bolts for the stainless steel aluminum grids.



Atlanta Tile and Marble installed veneers of 2" and 6" thicknesses on the south wall, specified by Naess and Murphy for strength and insulation.

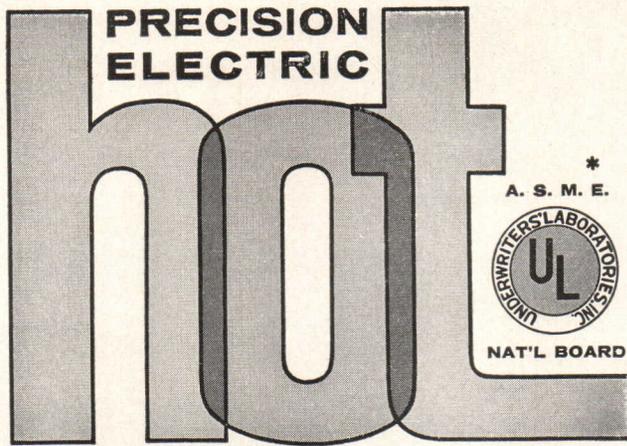


You can park at ground level in the shade at the Miami Herald. And in case of a storm, water can sweep through this area, with no damage to the building.

VERMONT MARBLE CO.

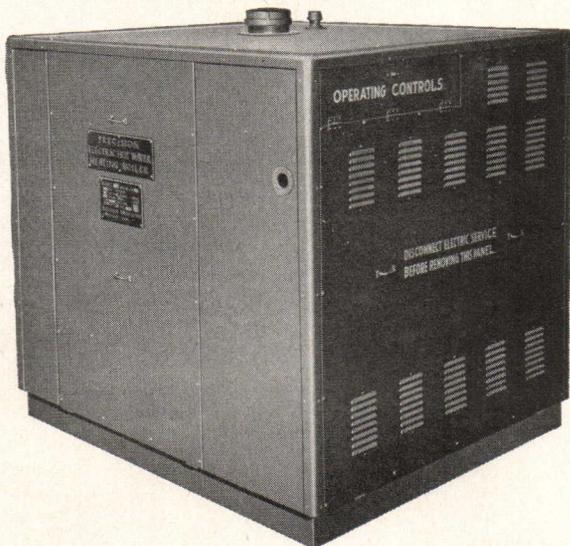
*World's leading producer and fabricator
of foreign and domestic marble.*

See our color insert showing the Miami Herald Bldg. on page 1.



**WATER AND STEAM HEATING BOILERS
... to 2,500,000 BTU OUTPUT**

Complete packaged unit shipped ready for installation.



*
**THE ONLY ELECTRIC BOILER FOR CENTRAL HEATING
... LISTED BY UNDERWRITER'S LABORATORIES.**

All Boilers meet the requirements for the ASME Boiler and Pressure Vessel Code. Nat'l Board inspected.

Ideal for year-round air conditioning when used with water chiller. Conversion easily accomplished where other fuels are now used. Suited for domestic, commercial and industrial uses, including homes, churches, motels, apartments, hotels, office buildings, hospitals, snow melting, and domestic hot water supply for large users. Equipped with modulating controls for commercial and industrial applications.

STEAM BOILERS, Models A-1 through Z-8, furnished for any steam pressure under ASME Power Code, upon request.

For full information, see Sweet's Architectural File or write:



400 NORTH FIRST STREET • NASHVILLE 7, TENNESSEE



News Cont'd

of wall construction. The typical details illustrated in the soft-bound reference publication reflects sound construction practices developed by industry technicians. All details are in such form that alternate methods of installation or trim can readily be accommodated. The suggested details are of greatest value wherever the desire exists to use stock or standard products.

Manuscript on the second issue will cover the subject of "Windows," and is nearing completion. Release of this study is scheduled for February.

Among MBSA's continuing activities, such as responding to inquiries for informational literature on modular practices, the association will be continuing its Modular Dimensioning Seminars. These seminars are one-day, workshop-type informational meetings, held in various cities throughout the US. Instructors are Prof. M. W. Isenberg of Pennsylvania State University and Prof. R. S. Van Keuren of Syracuse University. The seminars are oriented to the informational needs of architectural offices interested in converting to modular drafting as a uniform office procedure. Approximately three hundred architectural firms have converted to modular drafting as a result of this one MBSA activity alone. Individuals from other segments of the building industry are welcome to attend any of the sessions, and can receive announcements of locations for future seminars by writing the Modular Building Standards Association, 2029 K Street, NW, Washington, DC 20006.

Walter Taylor Dies

The unhappy news of the death of Walter A. Taylor FAIA has just been received at the Octagon. From 1946 until 1960, Walter was Head of the Department of Education and Research at the Institute Headquarters. He left the AIA staff to become Professor of Architecture and Director of the newly-formed School of Architecture at Ohio University, Athens, Ohio. A man of great personal charm as well as scholarship and all-around ability, he will be greatly missed by his many friends in the profession all over the country.

• John I. Rogers FASLA, Chief of Planning and Construction for the Michigan State Department of Conservation and immediate past president of the American Society of Landscape Architects, died in Lansing of a heart attack November 12 at the age of 59.

French Honor Forbes

At a quiet little ceremony on December 3 at the Chancery of the French Embassy in Washington, John D. Forbes, Hon AIA was awarded the Order of the Academic Palms of the French Government. Mr Forbes is a member of the faculty of the Graduate School of Business Administration at the University of Virginia and is currently President of the Society of Architectural Historians. The distinction was awarded to him in recognition of a lifetime of inter-

News Cont'd

ests and activities on behalf of the life, art and architecture of France.

Church Architectural Conference

Architects, artists, clergymen and building committees will pay particular attention to structure and design philosophy during roundtable and seminar sessions when this year's Church Architectural Conference is held April 7-9 in the Sheraton Hotel, Dallas.

Mexico's Felix Candela will speak on "Structural Form in the Service of Eloquent Architecture," while Edward A. Sövik AIA, of Northfield, Minn, will complement this theme with "The Faith Our Forms Express."

The annual exhibition of current architecture together with displays of arts and crafts and commercially produced components will be offered during the three-day meeting.

The Dallas Chapter AIA is sponsoring the conference, which is an annual joint contribution of the Church Architectural Guild of America and the Department of Church Building and Architecture of the National Council of Churches. Inquiries concerning the program or entrance into the architectural exhibition should be directed to the Executive Secretary, Church Architectural Guild of America, Room 1004, 1346 Connecticut Ave NW, Washington, DC, 20036.

The UIA Review

Readers of the AIA Journal are urged to subscribe to the UIA Review, the official publication of the Union Internationale des Architectes. It is published in Paris bi-monthly, with text in both English and French. It carries not only current UIA news and information, but articles and photographs covering some of the most interesting recent buildings in all parts of Europe—in fact, in all parts of the world. An additional feature which should be of interest to many is the schedule of coming UIA meetings and advance information on international competitions.

Foreign subscriptions are 20 new francs, or \$4.00 a year, for six issues. Subscriptions should be sent to the UIA Review, 15 quai Malaquais, Paris 6°.

The Final Report of the Sixth Congress of the International Union of Architects, which drew 2000 members to London in July 1961, features three main papers by Pier Luigi Nervi, Henry Russell Hitchcock and Jerzy Hryniewiecki. The report is available in either English or French at \$10.50 per copy through the Cement and Concrete Association, 52 Grosvenor Gardens, London SW 1.

The first issue of House and People, a quarterly bulletin for home owners, will be published this month by the Housing Guidance Council, Washington, DC. It will offer practical ideas for enjoying, maintaining and beautifying today's homes. Among the contributors will be Herman H. York AIA Jamaica, NY.

Cont'd on p 78

a completely automatic electric stairway



Precision Automatic Electric Stairways are used in:

- AIRPORT CONTROL TOWERS
- SCHOOLS LIBRARIES
- HOSPITALS LABORATORIES
- BETTER RESIDENCES
- BOTTLING PLANTS BANKS
- INDUSTRIAL PLANTS

The Precision Automatic Electric Stairway does not take up valuable working space. By flipping a simple Toggle Switch, the stairway glides silently into ceiling above.

DESIGN — The sweeping curves of the hand rails against the straight lines of the stairway's heavy stringers and wide, heavy treads, give this fully automatic electric stairway a classic promise of the future in function and design. Available in wood or aluminum construction.

OPERATION — Simple AIRCRAFT steel cable and dual pulley engineering principle assures stairway of stopping in either up or down position at exactly the right place. Instantly reversible. Safe and sure performance. Operates entirely on lifetime sealed ball bearings. Solid, clean-cut design and completely automatic operation, puts the Precision Electric Stairway years ahead in appearance and functional convenience.

For full information see Sweet's Architectural or Light Construction File or write:



400 NORTH FIRST STREET • NASHVILLE 7, TENNESSEE

**Burlon*

BURLAP



A LIFETIME WALL COVERING

TUFFIE—"The Burlap for Walls"—Bonded Super-Quality Burlap Laminated to Paper and Metal Foil—The Most Economical Wall Covering Ever! Luxurious, incomparable for walls, ceilings, offices, institutions, corridors, dining areas, reception rooms . . . keeps rooms cool in summer, warm in winter—free from dampness and noise. Lifetime because BURLON can be painted or sprayed years later for new decor effects, never losing its texture or wall lining benefits. Easy-to-hang-and-clean BURLON comes in 12 decorator-choice solids, coordinated 2-tones, beautiful scenics and exotic patterns, all 38" wide. See BURLON at our decorated showrooms or write for nearest distributor in U.S.A.

Distributed by These Fine Wholesalers

MARGO WALLPAPER CO.
890 Utica Avenue
Brooklyn, New York

WOOD-DAVIS CO.
6316 Northwest Highway
Chicago, Illinois

THE JAY WISE CO.
5020 Delmar Blvd.
St. Louis, Mo.

LILYAN CORTEZ
3800 N. Miami Ave.
Miami, Florida

**UNION IMPERIAL WALLPAPER
& PAINT CORP.**
6001 Reisterstown Rd.
Baltimore, Maryland

VOGUE PAINT & WALLPAPER CO.
20001 W. Seven Mile Road
Detroit, Michigan

PIONEER WALLPAPER CO.
3955 N. Broad Street
Philadelphia, Pa.

BREWSTER WALLPAPER
351 Congress Cor. "A" St.
Boston, Mass.

WINDSOR WALLCOVERINGS, LTD.
1901 Tenth Ave.
Brooklyn 15, N. Y.

ENTERPRISE-CALIFORNIA WALLPAPERS
1935 Bay St.
Los Angeles 21, California

Manufactured by:

VAN ARDEN FABRICS, INC.
New York 13, N. Y.

*BURLON is the trademark of Van Arden Fabrics, Inc., for its superior quality 100% jute burlap.

News Cont'd

Preservation: Tokyo Too

Demolition of Tokyo's Reader's Digest Building only a little over a decade after its construction has been termed "tragic" by *The Nikkan Kensetsu Tsushin* (Daily Construction News). For its design, Antonin Raymond FAIA, won the Institute of Japanese Architects' Medal in 1951.

The notable structure will be replaced by the larger Palace-side Building, to be designed by a young architect, unnamed by the newspaper.

"It is said that sometime ago The Reader's Digest made an inquiry at Mr Raymond's office about the cost of demolishing the present building, and also the cost of constructing a new building," the newspaper said editorially. "But somehow Mr Raymond was not among the architects who were invited to submit drawings in a so-called 'assigned competition' (although in fact it does not even deserve that name)."

The daily went on to say that "it is tragic to think that Josier Condor's Mitsubishi No 1 Building (now called Higashi No 9 Building), Frank Lloyd Wright's old Imperial Hotel and now Antonin Raymond's Reader's Digest Building, which are the three typical architectural masterpieces in Meiji, Taisho and Showa Eras respectively, and all of which ought to be preserved as part of our architectural heritage, are destined to vanish sooner or later because of the commercial nature of buildings, or the value of land on which they stand."

BRI States Position

The Building Research Institute has reaffirmed its leadership role in a statement regarding its position in the current debate on the status of building research and development in the US.

"What the building industry needs is not a new organization," said BRI President Leon Chatelain Jr, FAIA principal in Chatelain, Gauger & Nolan, Washington, DC, referring to the proposed National

Building Alliance. John Eberhard, Consultant, Office of Science and Technology of the US Department of Commerce, made the proposal at the recent National Construction Industry Research and Development Conference sponsored by the US Chamber of Commerce.

Mr Chatelain went on to explain: "The Building Research Institute, founded in 1952 under the National Academy of Sciences-National Research Council and incorporated as an independent technical society in 1962, stands ready, willing and able to provide the focal point for the stimulation and conduct of needed research and development in the building industry on the broadest possible scale.

"With increased support from the building industry and greater participation in Institute activities, BRI could then assert its natural leadership role in the field of building research and development," he continued. "With more than a decade of experience and a membership which understands the problems of the building industry, BRI is the logical organization to act as the focal point for building research and development. In fact, it embodies the same groups as proposed for a National Building Alliance. BRI can and will work effectively to secure the cooperation of all segments of the industry through its diversified membership," Mr Chatelain emphasized.

BRI membership is representative of all segments of the industry. It includes architects; engineers; consultants; manufacturers and suppliers of building products and materials; contractors; homebuilders; building owners, operators and managers; financial institutions; insurance companies; private research and testing laboratories; trade and consumer publishers; scientific, technical and professional societies; labor officials; trade associations; colleges and universities and individual educators; libraries; government departments and individual government officials; and organizations and individuals in eighteen foreign countries.

As stated in its Bylaws, BRI's basic objective is to promote, in

the broadest sense, the advancement of every aspect of the science of building and buildings, the systems and services, and all the arts, technologies and practices which it comprises, through the collaboration of individuals and organizations in all sectors of the industry and professions associated with building to the end that better building and buildings will be provided for the general welfare of mankind.

On the Campus

• Philip Newell Youtz FAIA, Dean of the College of Architecture and Design at the University of Michigan, has been appointed a Benjamin Franklin Fellow of the Roay Society of Arts, a category of membership instituted in 1959 to commemorate the American statemen's association with the organization.

• Charles Warren Callister, who lives and practices in Tiburon, Calif, became the University of Colorado School of Architecture's first "Architect in Residence" when he went to the Boulder campus December 3-21.

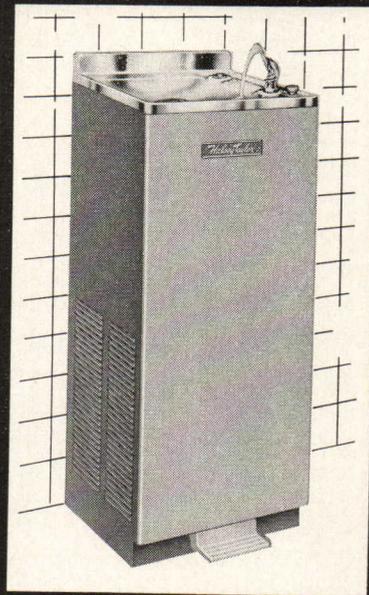
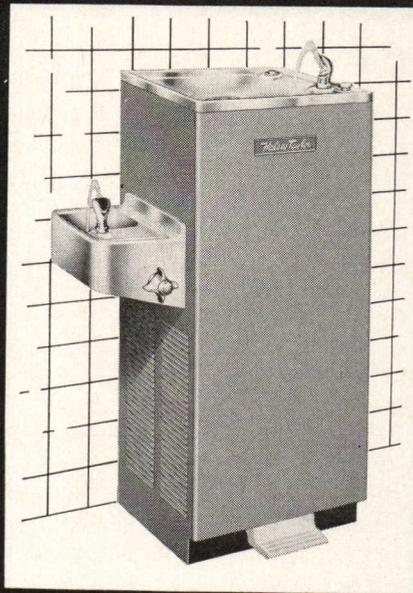
• Ned A. Bowman, Department of Speech and Theater Arts, University of Pittsburgh, is interested in adding to his personal collection of materials relating to modern theater architecture—drawings, blueprints, manuscripts, tearsheets, clippings, programs, bibliographies, etc—and he'll pay postage and handling charges.

• Forty college teachers of engineering will attend a Summer Institute in Structural Engineering at Oklahoma State University June 8-August 7 through a \$60,200 grant by the National Science Foundation. Interested applicants should contact Dr James W. Gillespie, Institute Director, OSU, Stillwater, Okla, 74075.

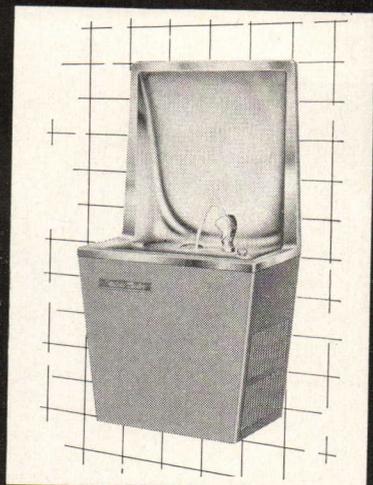
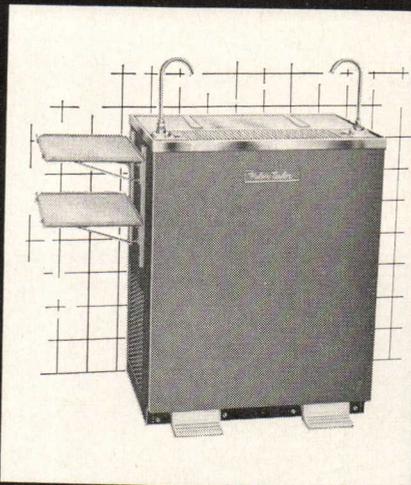
Asides

• Among recent orders for bound volumes of the *AIA Journal* worthy of mention was one from the University of Nigeria, requesting all copies since 1944.

They're all so different



yet they're all the same



...they're all Taylor-made

You're looking at just a few of the many coolers in the complete Halsey Taylor line for '64. The two-level model, ideal for serving adult and child alike. The Wall-Tite, a space-saver that also eliminates unsightly plumbing connections. A cafeteria type, designed for use in school and factory dining facilities. "The Architect", a recessed Wall-Mount, with a stainless steel contoured top of unusual styling. Yes, you get more in '64 with Halsey Taylor.

The Halsey W. Taylor Co., Warren, Ohio

Write for latest catalog, or see
Sweet's or the Yellow Pages

Halsey Taylor

See the Fountains and Coolers of Today in "The School of Tomorrow" in the Hall of Education at the New York World's Fair

264



San Francisco's Palace of the Fine Arts, designed by Bernard Maybeck

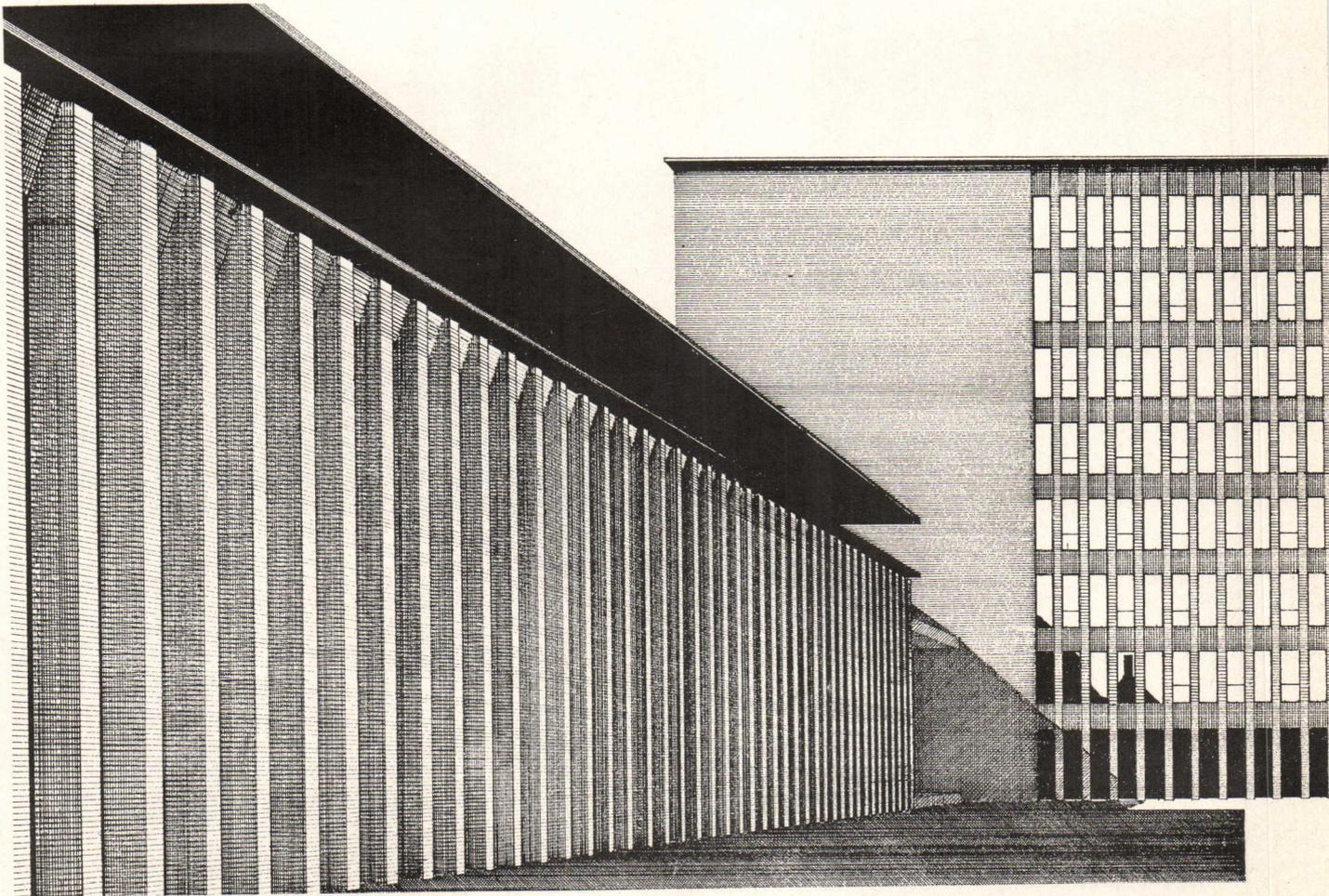
Photographer Seeks Home for Collection

Clarence J. Laughlin, author of the book "Ghosts Along the Mississippi," (Crown Publishers, 2nd Ed, 1961), is attempting to locate a museum or institution which will negotiate with him for a collection of his photographs.

The collection, begun in 1936 consists of over 14,000 sheet film negatives and approximately 20,000 prints. It is divided into two major phases: a) historical and architectural and b) non-historical and non-architectural, which, in turn, are divided into twenty groups. Many of the groups contain important source material on the architecture of nineteenth century America, particularly in the lower Mississippi Valley, and a good portion of the original subjects have been demolished. In many cases his negatives and prints are the only existing records. Since Mr Laughlin is one of the foremost architectural photographers in the country, the majority of the photographs are of great beauty.

The entire collection will be disposed of intact and will not be turned over to an individual as such. The institution awarded the collection will be that which "best meets the several and simple stipulations" which the photographer feels would be "fair and necessary." He will gladly outline these stipulations to any institution by correspondence.

Mr Laughlin wishes to dispose of the collection



at this time as his business frequently takes him away from New Orleans for extended periods and in case of fire, he has no one to oversee its removal from the Upper Pontalba Building in the French Quarter. The building is not fireproof, he has no insurance. Mr Laughlin narrowly missed losing the entire collection last year when a fire started in the unoccupied apartment below his.

Each of the negatives (mostly 4" x 5") in the collection is enclosed in a glassine bag bearing a number and usually a title. The numbers run from 1 to 14,000 consecutively, regardless of subject matter. These numbers correspond to handwritten notebooks relating date of exposure, place, date of material and other observations. Several thousand of the negatives have not been printed due partly to lack of sufficient time. However, the photographer has felt that the value of the material in these groups is so great that the most essential thing was to get as many *negatives* as possible while the subjects were still in existence.

The mounted and unmounted prints range from 8" x 10" to 16 x 20 cm and bear, on the reverse side, the negative and batch numbers showing when the print was made.

A recent trip to Chicago, when on commission of the Chicago Historical Society, has resulted in nearly 1,000 additional photographs of that city



Evergreen Plantation near Edgard, La

which have been added to the collection.

A list of books and periodicals in which his photographs have appeared and an outline of the material available can be obtained upon request to serve as a gauge to the value of the historical aspects of his collection. Interested institutions may write Mr Laughlin at 627 Decatur St, N.O. 16, La.

He also has a personal library of 15,000 books and 15,000 magazines on contemporary literature and the visual arts which he would like to dispose of. A sample list may be obtained from Mr Laughlin.



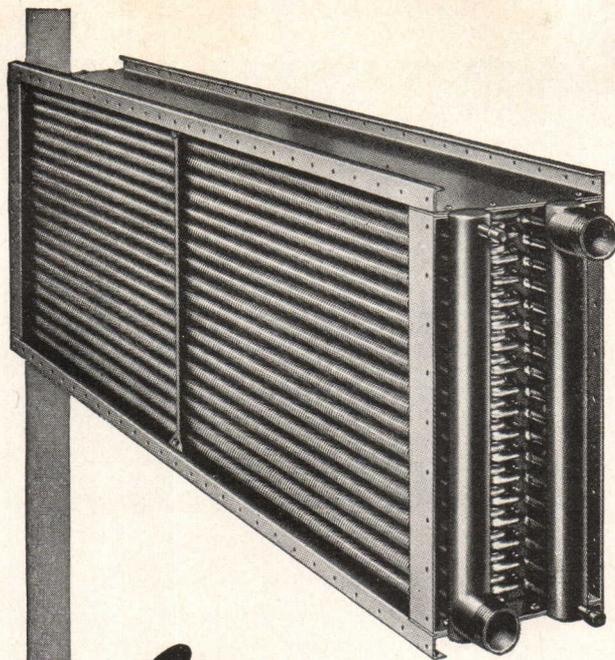
Today's Brick Bearing Wall offers Elegance

Using eight-story brick bearing piers,
the architect found the elegance often
expressed in simplicity.

F. L. Smidth & Company Administration Building,
Copenhagen, Denmark
Palle Suenson, Architect

**STRUCTURAL CLAY
PRODUCTS INSTITUTE**

1520 18th Street, N.W., Washington, D.C. 20036



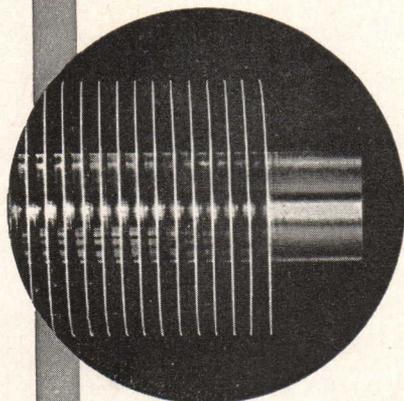
AEROFIN

**Smooth-Fin Coils
offer you:**

**Greater Heat Transfer
per sq. ft. of face area**

**Lower Airway Resistance
— less power per c. f. m.**

Aerofin smooth fins can be spaced as closely as 14 per inch with low air friction. Consequently, the heat-exchange capacity per square foot of face area is extremely high, and the use of high air velocities entirely practical. Tapered fin construction provides ample tube-contact surface so that the entire fin becomes effective transfer surface. Standardized encased units arranged for simple, quick, economical installation.



*Aerofin is sold only
by manufacturers of
fan system apparatus.
List on request.*

AEROFIN CORPORATION
101 Greenway Ave., Syracuse 3, N. Y.
ENGINEERING OFFICES IN PRINCIPAL CITIES

INDEX TO ADVERTISERS

| | |
|--|-----------|
| Mary H. Ranta, <i>Advertising Manager</i> | |
| Edwin B. Morris Jr, <i>AIA</i> | |
| Aerofin Corporation | 82 |
| <i>Richards & Weiss, Inc</i> | |
| Amarlite Corporation | 20-21 |
| <i>Chuck Shields Advertising</i> | |
| American Telephone & Telegraph Company | 7 |
| <i>N. W. Ayer & Son, Inc</i> | |
| Amweld Building Products | 13 |
| <i>Ted Berndt & Associates, Inc</i> | |
| Armstrong Cork Company | |
| Floor Division | 3rd Cover |
| <i>Batten, Barton, Durstine & Osborn, Inc</i> | |
| Azrock Floor Products Division | |
| Uvalde Rock Asphalt Co | 2nd Cover |
| <i>Glenn Advertising, Inc</i> | |
| The William Bayley Company | 83 |
| <i>Wheeler, Kight & Gainey, Inc</i> | |
| Blumcraft of Pittsburgh | 22 |
| Samuel Cabot, Inc | 12 |
| <i>Donald W. Gardner Advertising, Inc</i> | |
| Colonna & Company of Colorado, Inc | 14 |
| <i>Taube-Violante, Inc</i> | |
| Douglas Fir Plywood Association | 16-17 |
| <i>Cole & Weber, Inc</i> | |
| Ellison Bronze Company | 9 |
| <i>Griffith & Rowland</i> | |
| Josam Manufacturing Company | 15 |
| <i>Allied Advertising Agency, Inc</i> | |
| LCN Closers | 10-11 |
| <i>Harris, Wilson and Walt, Inc</i> | |
| Monarch Metal Weatherstrip Corp | 18 |
| <i>Wm. John Upjohn Associates</i> | |
| Norton Door Closer Company | 73 |
| <i>Erwin Wasey, Ruthrauff & Ryan, Inc</i> | |
| Pittsburgh Plate Glass Company | 2 |
| <i>Ketchum, MacLeod & Grove, Inc</i> | |
| Precision Parts Corporation | 76-77 |
| <i>Buntin, Crook, Harmon & Smith Advertising</i> | |
| Sargent & Company | 5 |
| <i>Hepler & Gibney, Inc</i> | |
| Sonoco Products Company | 19 |
| <i>Bennett Advertising, Inc</i> | |
| Structural Clay Products Institute | 80-81 |
| <i>Henry J. Kaufman & Associates</i> | |
| Tab Products Company | 74 |
| <i>H. M. Leete & Co, Advertising</i> | |
| The Halsey W. Taylor Company | 79 |
| <i>William Cohen, Advertising</i> | |
| Van Arden Fabrics, Inc | 78 |
| Vermont Marble Company | 1 & 75 |
| <i>Chambers, Wiswell & Moore, Inc</i> | |