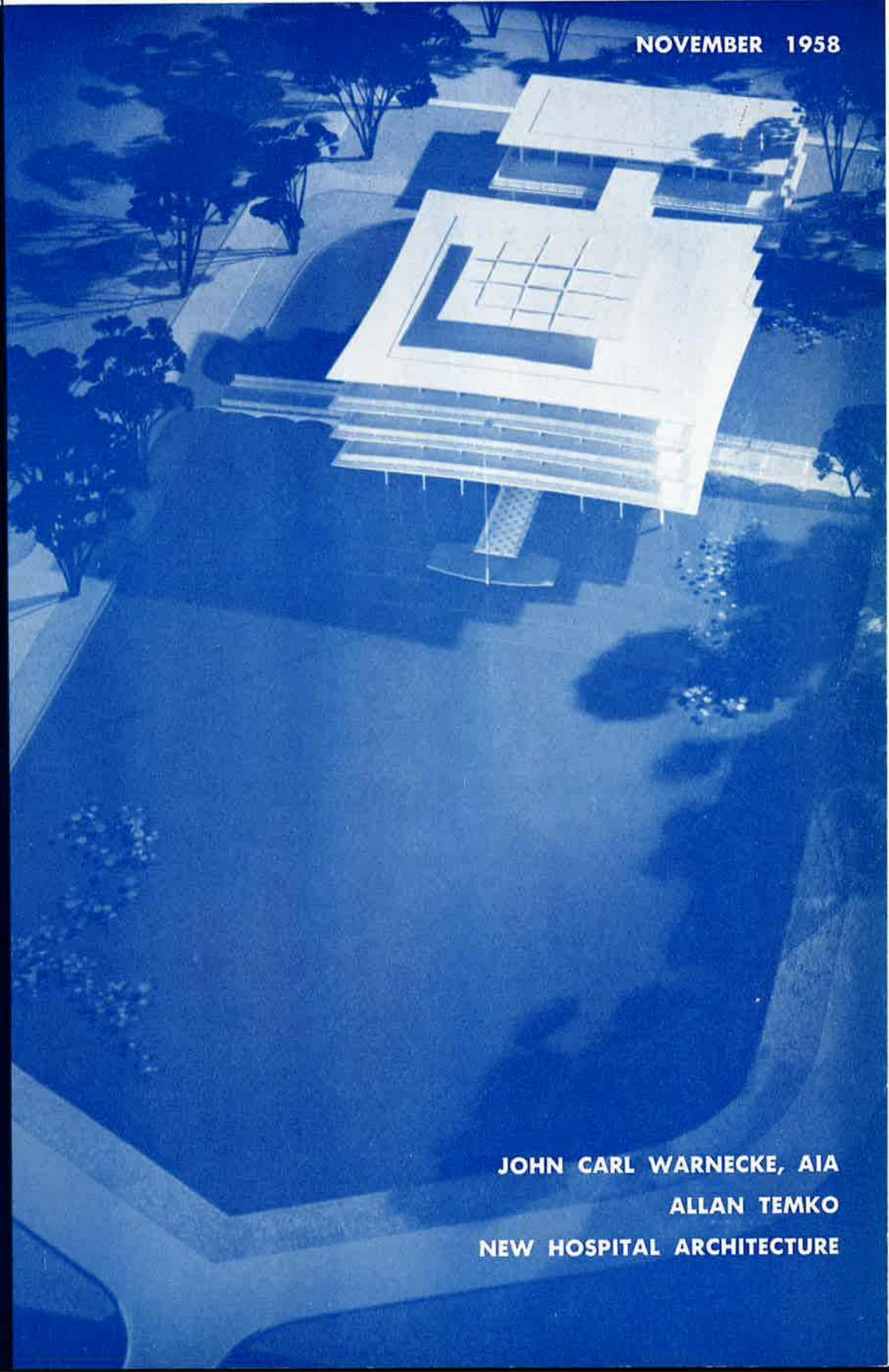


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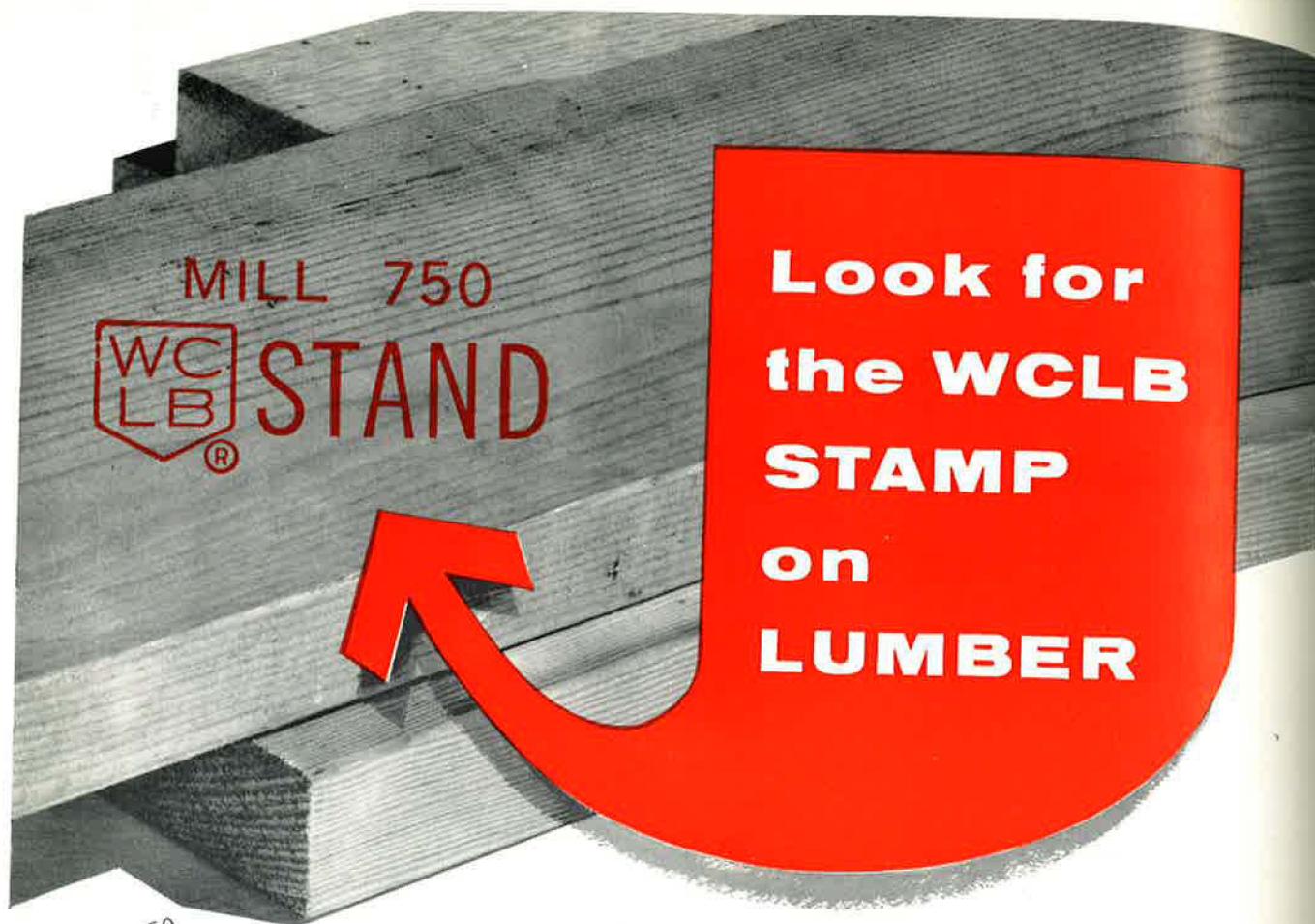
JOURNAL

of The American Institute of Architects

NOVEMBER 1958



JOHN CARL WARNECKE, AIA
ALLAN TEMKO
NEW HOSPITAL ARCHITECTURE



**Look for
the WCLB
STAMP
on
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in school building*



There is no justification for excluding beauty from the purely functional requirements of the school. A school is for education, which involves not merely learning facts but the inculcation of taste in the arts, including architecture. Marble is unique in its ability to provide beauty. Yet it is also most economical because of its extremely low annual maintenance cost. The complete story is told in a profusely illustrated booklet "Modern School Building" available at no cost by writing

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They are maintenance free except for cleaning. Will meet any reasonable budget both in the construction of the building and in its maintenance.

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AIA JOURNAL

of The American Institute of Architects

VOL. XXX, No. 5

NOVEMBER 1958

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The Cover photograph shows a model of the United States Embassy in Bangkok, Thailand, designed by John Carl Warnecke. Photo by Louis Checkman.

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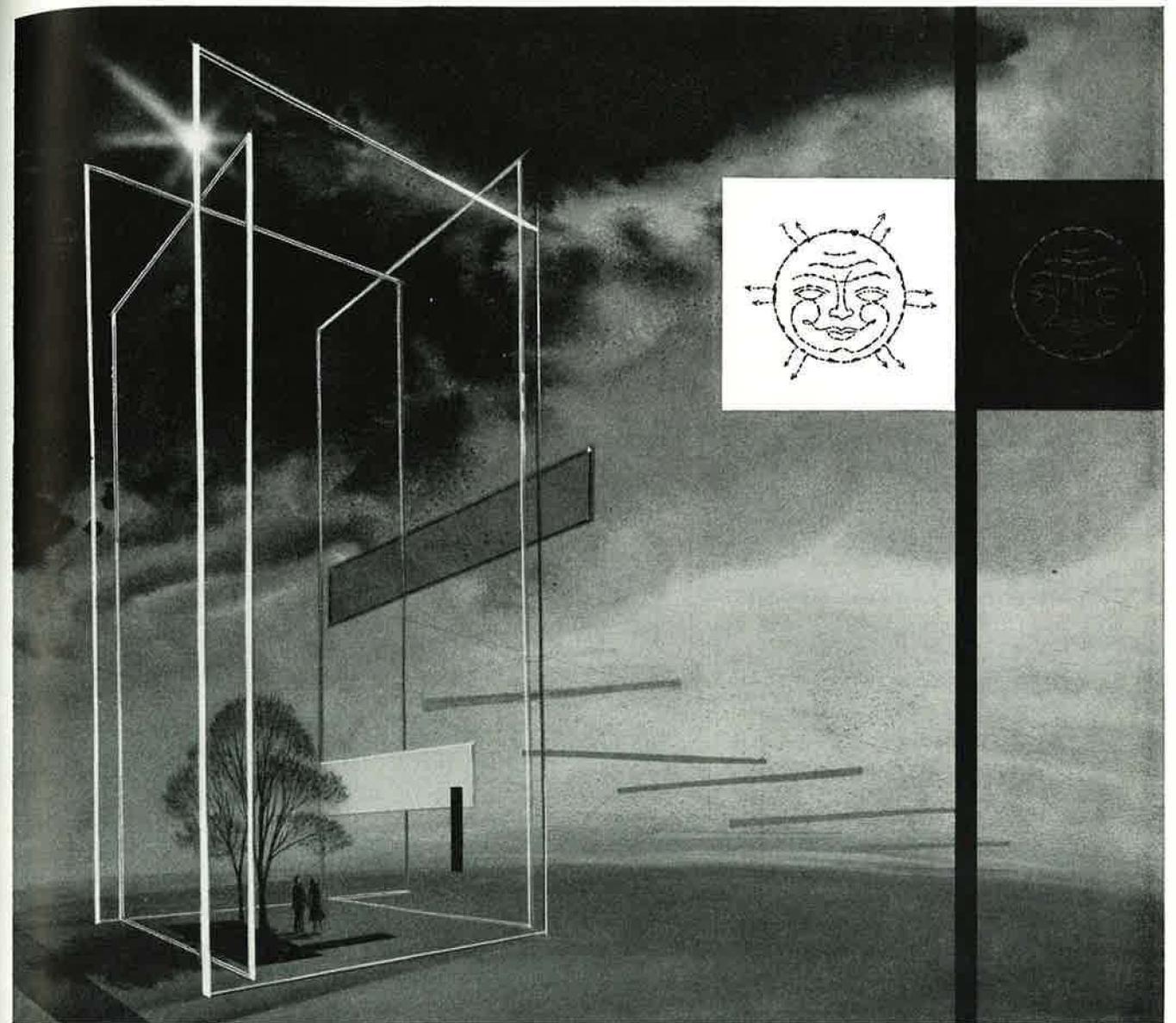
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A little light on the subject of Glass

There are few solid substances through which you can transmit light. It is this marvelous quality that gives Glass its dual function of protecting and illuminating buildings. The ability of glass to transmit light depends upon its composition, clarity and surface texture, which combine to provide any degree of light transmission from transparent to opaque. So, even if you wish to

design a building with glass that will obstruct the view, you can still find a type of glass whose composition and texture permit light to come through.

Pittsburgh Plate Glass Company specializes in making versatile glass products to meet every architectural requirement. Our staff of Architectural Representatives will be happy to discuss their many possible applications with you.

See Sweet's Architectural File—Sections 7a, 13e, 16a, 16d, 21.



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MEXICO ELEMENTARY SCHOOL, MEXICO, NEW YORK: Ketcham-Miller-Arnold, Architects. Stearns & Bergstrom, Inc., Tile Contractors. Facade is a fine example of the new tile approach to exteriors.

Wall of the principal's office echoes treatment of the exterior.

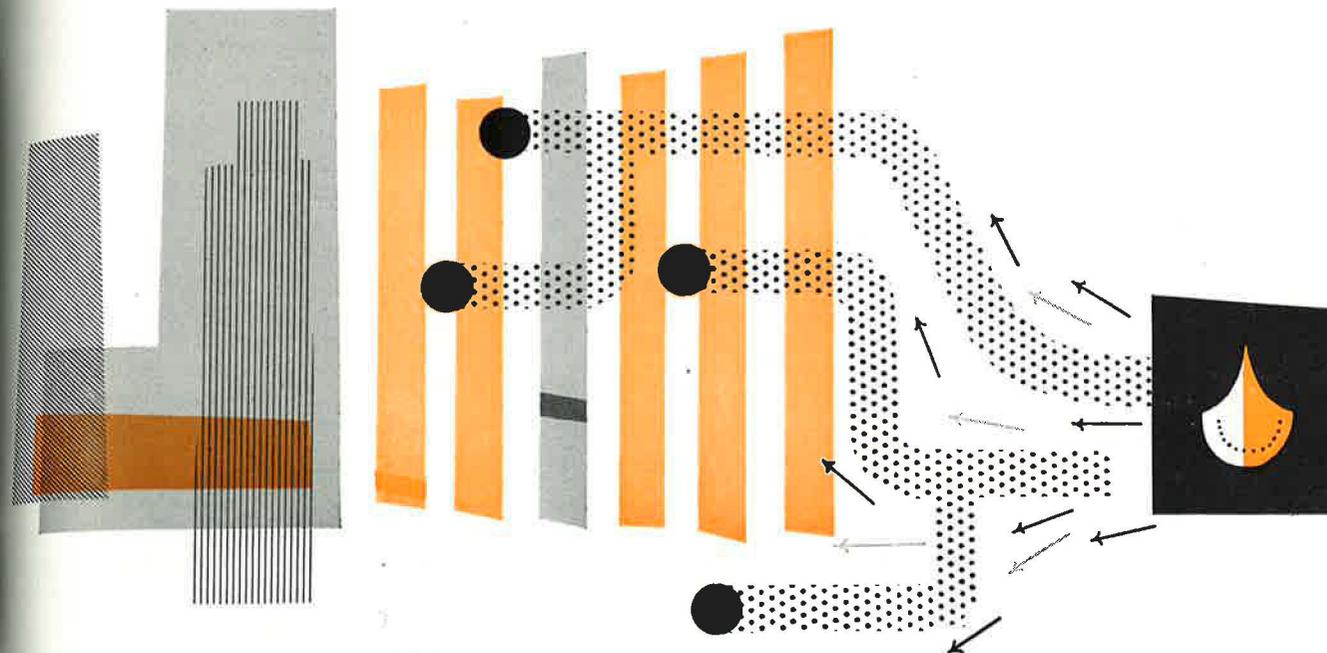
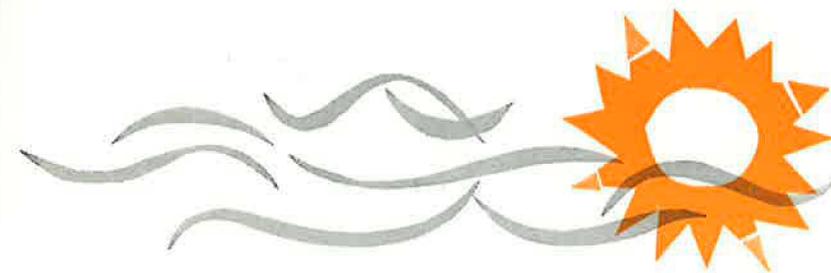
Tile increases in popularity with architects for use on outdoor as well as indoor walls. The architect for this school has made effective use of one of tile's advantages—random color. By avoiding a repetitive pattern, he has added continuity of interest to the ageless life of tile.

Our Design Department at Olean is experienced in developing details for special tile treatments, in conjunction with the architect's plans. We will be glad to assist you on your next project.

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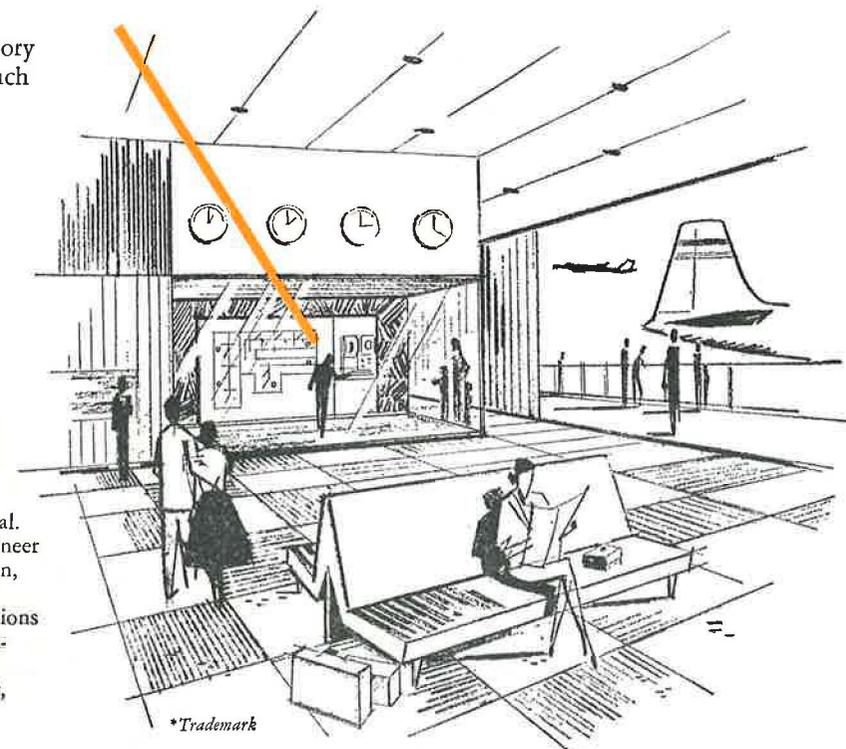
SUPERVISORY DATACENTER*

Starting point for centralized automation in buildings

NEW IDEAS that significantly affect building design are rare—and important. The Supervisory DataCenter control panel perhaps represents such an idea. For by completely centralizing air conditioning control, it shows the way to similar economy and integration of many another mechanical function. Conception, housing and installation of the DataCenter involve creative design factors that are of first concern to the architect. Your local Honeywell man has full details.

*Minneapolis-Honeywell
 Regulator Company*

Visualized at right is a DataCenter as it might be integrated into the design of a modern airport terminal. On public display, it oversees comfort, gives the engineer a constant picture of air conditioning system operation, provides major operational economies. For passengers, the panel might show weather conditions in major cities. A DataCenter similarly displayed is installed in the Queen Elizabeth Hotel, Montreal, Quebec. Architect: G. F. Drummond, Chief Architect, CNR; Engineer, N. S. B. Watson, CNR.



*Trademark

Letters to the Editor...

BOUQUETS

EDITOR, *Journal of the AIA*:

This is to congratulate you on the August issue of the *Journal*.

As a person who earns his living in the communication arts, I think it is outstanding.

We have recently become subscribers to your magazine, since we are public relations counsel for several architectural and engineering firms in the Chicago area. I must say that we find it a source of much helpful information.

ALBERT CARRIERE
President, Carriere and Jobson, Inc.
Chicago, Ill.

EDITOR, *Journal of the AIA*:

Mr. Grady Clay's "Plenty of Action" in the September issue was a refreshing piece. It is refreshing because it shows that we have more to build on and to inspire us in this country than we realize.

It is curious that his suggestions seem new to us. Fifty years ago they were an accepted part of the American Renaissance men such as Daniel H. Burnham, Thomas Hastings, Arnold Brunner and Charles Follen McKim turned to them instinctively. In more recent time so did Edward H. Bennett and Arnold Brown, Jr. It is one of the disastrous consequences of present day Picturesque Secessionism that they were forgotten and only now are being rediscovered.

He mentions the new parking garage in the Vieux Carré. It is more than a brick wall that conceals the automobiles; it is a traditional facade of New Orleans designed by the well-known firm of Koch & Wilson. They are also the architects of Brennan's Restaurant to be found in the same Vieux Carré. Richard Koch and Samuel Wilson, Jr., unlike so many, are unafraid of doing traditional work. Thanks to their courage and to their faith in the classical vision they are responsible for saving the heritage, at least architecturally, in New Orleans.

HENRY HOPE REED, JR.
New York City

EDITOR, *Journal of the AIA*:

I endorse your views in "The Editor's Asides" in the September issue of the *Journal*.

Cleveland's central section (through which I travel twice each day in pursuit of my bread and butter) is a disgrace—and a challenge to those who are supposed to be (and believe they really are) leaders in the never-ending struggle between progress and decay. I sincerely hope that your article will be a stimulant to the latter.

ALOYSIUS SCHUSZLER
Cleveland, Ohio

A CORRECTION

EDITOR, *Journal of the AIA*:

There is evidently a printer's mistake in my acceptance as it appeared in the August issue. On page 149 the two top lines of both columns are the same. The first line of the second column should read:

"... different countries; would give courses in languages . . ."

I wonder if it would be possible to have this correction noted in the next issue of the *Journal*.

JOHN WELBORN ROOT, FAIA
Chicago, Illinois

MORE ON CLEVELAND

EDITOR, *Journal of the AIA*:

Mr. William B. Tabler's convention address on Building Codes was in general very good. However, he reveals the typical architect's basic ignorance of the action of fire in buildings and of the reasons underlying code provisions. Transoms in hotel bedrooms are prohibited, not to prevent drafts, but to prevent smoke, heat and toxic gases from entering the rooms and killing the occupants. Also, doors to fire stairs open to the air (1) to provide quick escape from the fatal atmosphere within, and (2) more important, to prevent the stair tower from becoming smoke logged when doors are opened into it. Drafts are ordinarily not a serious problem, and a clean burning well ventilated fire is usually less danger-

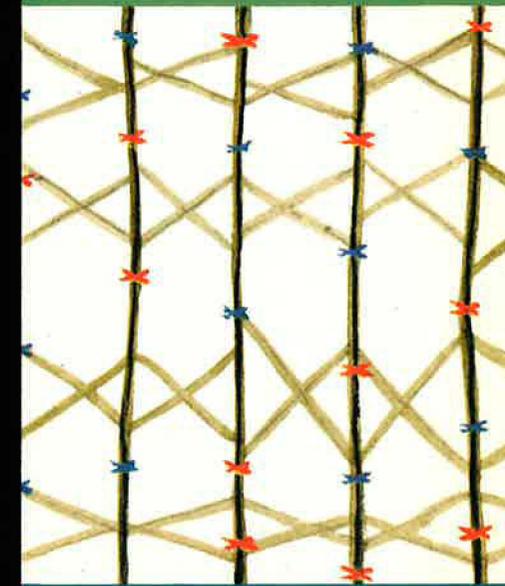
(Continued on page 10)

distinguished designers series



With bold and sure strokes, famed watercolorist Dong Kingman fashioned the sixth dramatically different design for Pomona Tile's "Distinguished Designer Series." Appropriately named "Fishnet" by the artist, this enchantingly Oriental creation subtly reflects Mr. Kingman's Hong Kong origins and training. Wherever flavor of the Far East is dominant, in commercial or residential construction, "Fishnet" ceramic tiles blend into the overall plans. Available in 4 1/4 x 4 1/4 modules; in satin or Perma-Glaze finish. See "Fishnet" at your nearest tile contractor or any of Pomona's showrooms.

"FISHNET" ... by DONG KINGMA



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North Hollywood | Phoenix
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homa City | Kansas City | St.
Louis | Chicago | Detroit
Arkansas City | Nashville

(Continued from page 8)

ous than a confined fire which gives off quantities of heat, carbon monoxide and other toxic and explosive gases.

The comparison between the Boston Statler and the Empire State Building is a little misleading since the Statler's patrons are in large public rooms where panic is an ever present factor, while in the Empire State the design of the building is such that a large number of tenants could never arrive at the exits simultaneously.

DONALD C. HEATH
Assoc. Professor of
Architecture, University
of Minnesota

EDITOR, *Journal of the AIA*:

Just to let you know that The Editor's Asides is enjoyed by your ex-friends and relatives in Cleveland.

Yesterday I sent Dick Outcalt a suggestion (he's the AIA Chapter President) that we take the lead in forming a planning association in which various portions of Cleveland would be assigned to various architects for study. Our Planning Commission could also do this job but it doesn't, besides this approach would give the Commission an organized local group to work with. This is the very least that we should do to gain a better city for ourselves.

This Association idea will not eliminate the many existing examples of poor housekeeping that you saw on your tour, however. We shouldn't even hope for that, if we are going to be realistic. I think there are just as many slovenly people in Shaker Heights as there are on St. Clair, it's just that in Shaker Heights the housewife can afford to hire someone to clean her house for her, and paint her house, etc. Unless you provide maids and maintenance men to serve each family in the depressed areas, you can't hope for improved housekeeping in a country like ours. We have too many people who are living-it-up (watching TV, playing cards, drinking away their time, reading lousy escapist magazines, gossiping) to hope that things will get better without subsidizing a

vener of beauty on our slum areas. And if I have a choice between a veneer of beauty and a genuine slum, I'll take the genuine product. If you must have immaculate streets, pretty houses, you will have to go to Norway, Sweden, or the Netherlands where the inhabitants are of common descedency. Perhaps in a hundred years we will have assimilated all of the various groups in this country into a blur of standardized behavior, and our slums will have become fairly attractive and our heights have reduced their standards accordingly. That, basically, is the struggle we face. Each individual struggles to earn *his* family's share of the wealth, and at the same time his conscience tells him to contribute some of his wealth to backward groups and to integrate with all groups. If we admit that it will eventually result in a single hybrid specie, with a standardized response to every situation, our approach to the future (and the present) would be very simple. We could begin forgetting about our family interests and concentrate on the economic integration of all groups. However, we can not accept the single specie concept, and will continue to cope with the conflicting interests that confront us.

But then, life is a struggle by definition.

HAROLD B. CAIN
Cleveland, Ohio

TO THE TECHNICAL EDITOR

EDITOR, *Journal of the AIA*:

This is to acknowledge with thanks and pleasure receipt of your four-page bulletin, "School Plant Studies."

Your editorial comments are like a breath of fresh air. I was very glad to read the thoughts of someone who has not lost sight of the forest because of the trees, while at the same time giving the "trees" their due value.

In short, let me congratulate you on a wonderful sense of proportion.

HENRY L. LOGAN
Holophane Co., Inc.
New York, New York

EDITOR, *Journal of the AIA*:

I have just finished reading your *School Lighting—From An Architect's Viewpoint* included in the recent *School Plant Studies*, and I wanted to pass on the word that I again enjoyed the manner in which you "fabricated" this speech and written presentation. Since I had the opportunity to hear this talk and have had the pleasure to read and re-read, let me say that it is both full of humor and seriousness. I have enjoyed it for both of these qualities. How often we forget the relativity of such things, and most certainly I agree with you that "the building is not an environment until you include the conditions within it and nearby."

RICHARD L. FEATHERSTONE
Birmingham Public Schools
Birmingham, Michigan

EDITOR, *Journal of the AIA*:

I have just read your paper on school lighting in the recent "School Plant Studies." My congratulations to you—if we can't stop people in this headlong rush to reduce everything to statistics, charts and formulae—we are all very certainly going to end up with cube shaped heads of pretty much the same dimensions.

It seems to me that your talk was extremely well put—soft enough to be palatable—but with some extremely solid meat—and whether or not you realize it, I believe that one sentence of yours summarizes more succinctly than anything I have read in a very long time our whole problem today: "selection and integration of design elements is still the creative task."

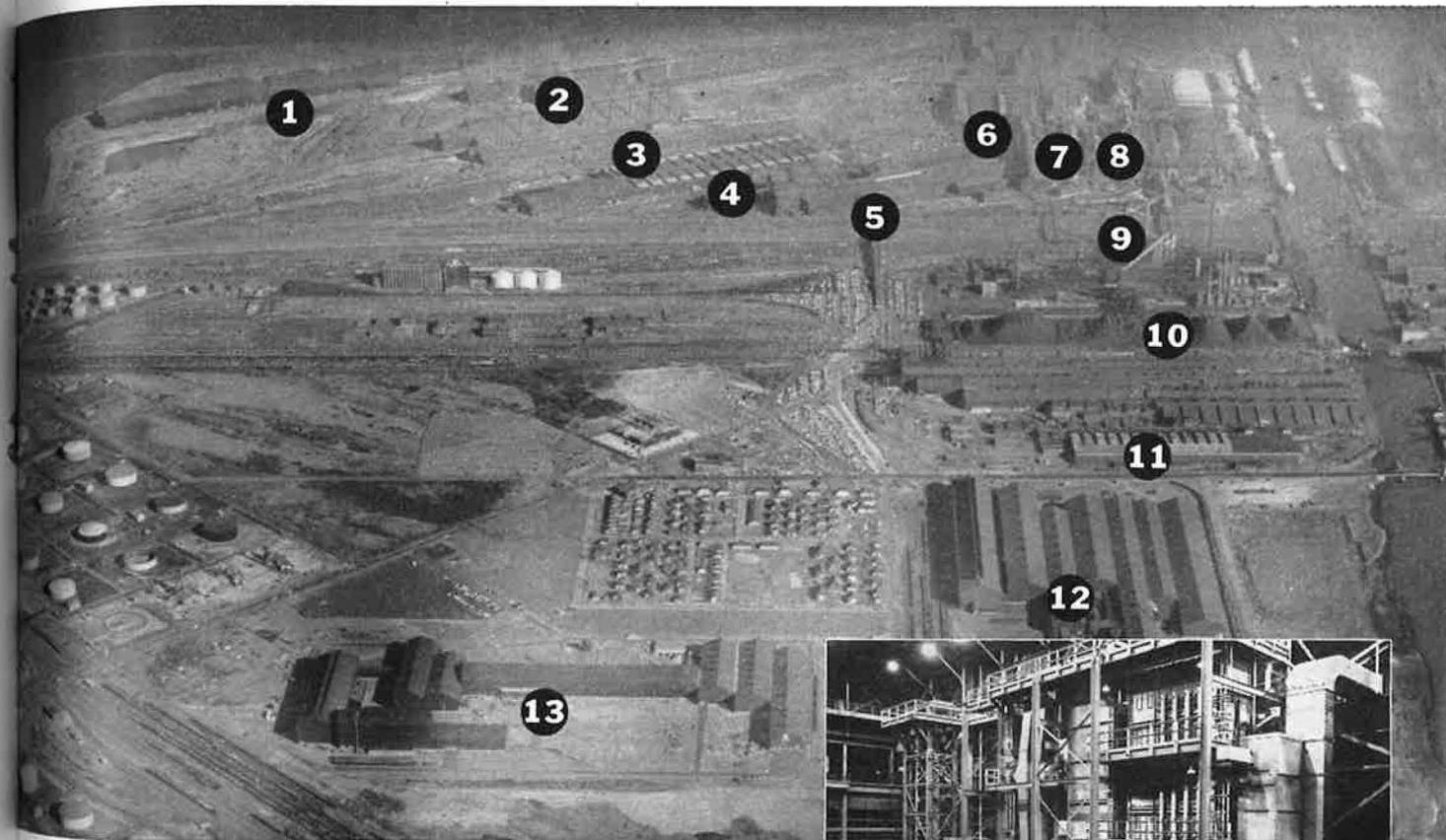
Please keep working at this as you have—for my own part the most effective thing I have accomplished to date was a recent suggestion to a psychologist that perhaps the rats used in a certain study which he was quoting very dogmatically—may possibly not have been entirely normal—perhaps even a little psychotic!

ANGUS MCCALLUM
Kansas City, Mo.

Birdseye view of the future...

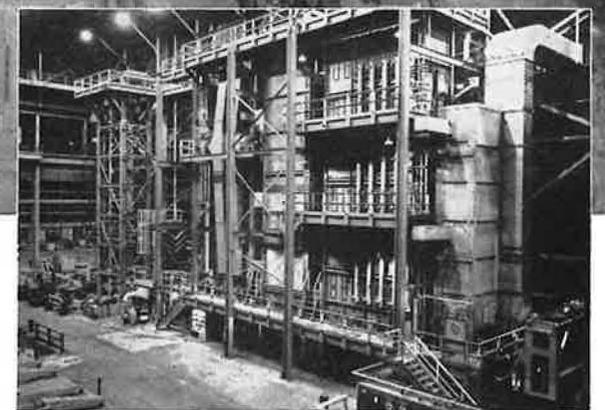
Youngstown's Expansion Program provides more quality steel for Mid-America

The hustle, the feel of the future and the booming spirit of expansion . . . this is the spirit of Youngstown. The birdseye view shows our Indiana Harbor facilities where we are putting this spirit to work in the Chicago area. In addition to our No. 2 Blooming Mill (2), No. 2 Open Hearth Shop (3), Merchant Mill (4), No. 1 Open Hearth Shop (5), Billet and Skelp Mill (6), Continuous Weld Pipe Mills (7), Blast Furnaces (8), Coke Plant (10), Strip and No. 1 Tin Mills (11), the Cold Reduced Sheet Mill (12) . . . our new No. 3 Seamless Tube Mill (1), our new (9) Sintering Plant (construction began in March 1958) and our new No. 2 Tin Mill (13) are shown. These last three expansions are pointed directly at the growing markets of the Mid-Continent. Like the pioneers who made America the great nation it is, Youngstown moves toward new horizons . . . new ways to supply your steel needs through quality products and friendly, efficient service!



Huge new Continuous Annealing Line in our No. 2 Tin Plate Mill, Indiana Harbor Plant.

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Manufacturers of Carbon, Alloy and Yaloy Steel, Youngstown, Ohio
PLANTS AT YOUNGSTOWN, OHIO AND INDIANA HARBOR, INDIANA

AIA Babe Ruth Baseball Team Menlo Park, California



In an effort to "infuse a little 'grass roots' public relations into the architectural profession," Peter Kump, AIA, of Menlo Park, California, has sponsored an AIA Babe Ruth baseball team.

Kump first became interested in the little league activities through his son. He felt that sponsorship of a team would be an excellent way to communicate with future clients and potential architects.

He felt also that an AIA-sponsored team might interest the boys in architecture and would wake up the town to the fact that architects aren't a bunch of stars-in-their-eyes artists—besides making a worthwhile contribution to the life of the community.

The organization of a baseball team is no small task, but the boys, ages 13 to 15, responded eagerly and in no time the AIA seal appeared on the sand lot.

Special uniforms were designed, equipment assembled and a coaching staff was

rounded up in time for the opening of the season.

The result of this enthusiastic effort was a team that walked away with the local championship and a trophy almost as tall as some of the players.

According to Kump, this is the first baseball team in the world to be sponsored by architects. The only disappointing fact was that so few architects from the area turned out to root for their own team.

However, with the good publicity the team received in the local press and in the *Northern California Bulletin*, there will undoubtedly be a better turn out among the architects when the season opens next spring.

The *Journal* offers its congratulations to Mr. Kump and his team of champions. What a great thing it would be if other individuals and chapters all across the country would follow Peter Kump's lead with activities similar to the AIA Babe Ruth Baseball Team.

W. N. L.

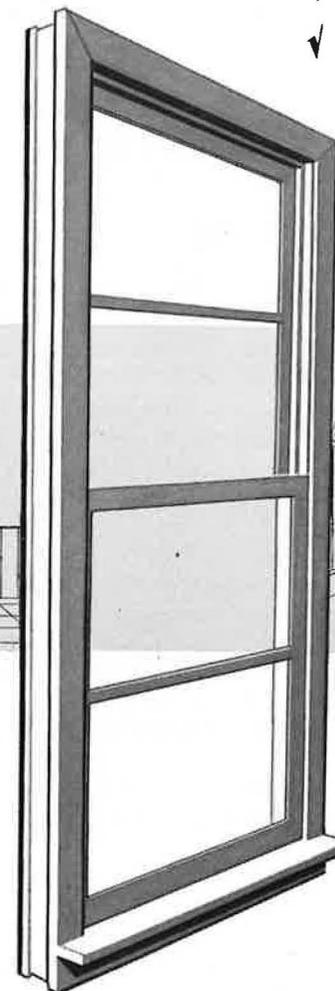
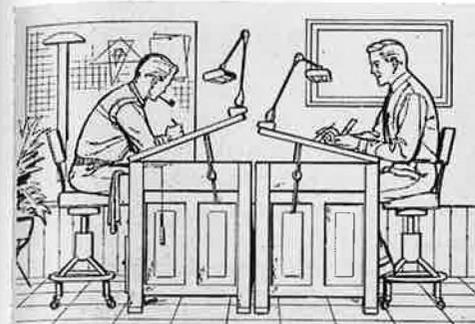


THE AIA BABE RUTH BASEBALL TEAM, CHAMPIONS OF MENLO PARK.

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↓ seasonal discomfort



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World's Largest Exclusive Weatherstrip Manufacturer

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NEWS

THE ILLINOIS INSTITUTE of Technology has announced the retirement of Ludwig Mies van der Rohe, director of the department of architecture.

Cited as one of the world's foremost architects, van der Rohe is one of the founders of modern architecture, and has been a major force in the development of modern design. Along with Wright and Le Corbusier, he has defined architecture for the technological age.

A naturalized American of German birth, he had established an eminent reputation as a practicing architect and as the last director of Europe's post-World War I Bauhaus school before he came to the United States in 1938 to direct what later became the architectural school of Illinois Institute of Technology.

Reginald F. Malcolmson, a native of Dublin, Ireland, has been appointed acting director of the school.

ARCHITECTURE WORTH SAVING, an exhibition of important buildings in various parts of the country recently destroyed, doomed or delivered, opened at the Museum of Modern Art on October 8 and will be on show until December 15. The purpose of the show is to demonstrate the rapidity with which America is losing much of its architectural heritage and to suggest what to save and how to save it.

The show was organized by the Museum in collaboration with the National Trust for



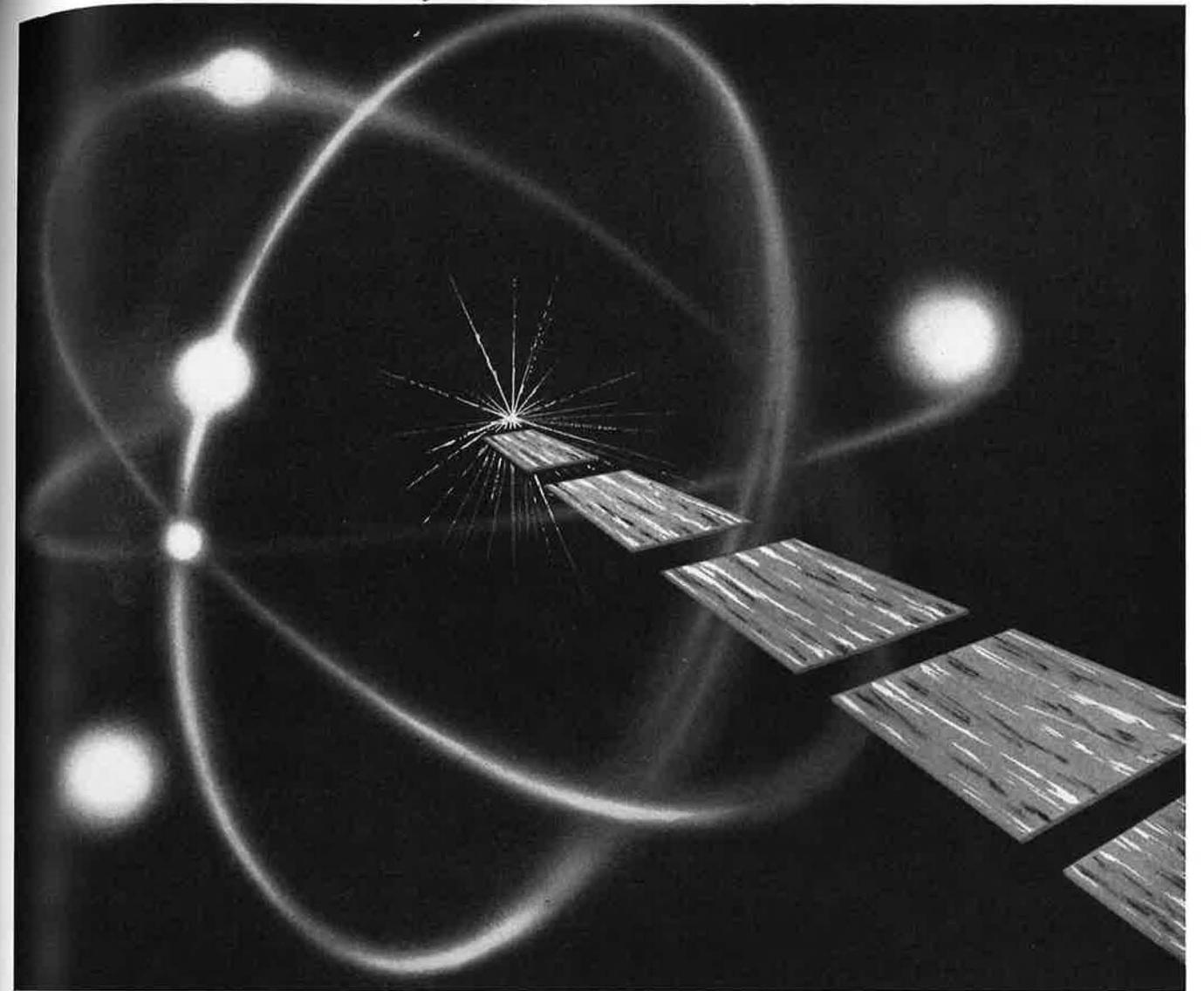
MEMBERS OF THE PRESERVATION COMMITTEE MEET AT THE OCTAGON.

Historic Preservation and the Architectural Forum.

This show is scheduled for exhibition in the Gallery at The Octagon in March, 1959.

ON SEPTEMBER 26TH the Committee on Preservation of Historic Buildings held a full meeting in the Board Room of the Headquarters Building. Chairman Earl H. Reed, FAIA, is at the extreme left in the photo above; third from left is Vice Chairman Charles E. Peterson of the National Park Service. Included are three who came to speak to the Committee: Miss Virginia Daiker of the Library of Congress toward the right; behind her is Cecil D. Elliott of the North Carolina State School of Design; and left of him is Dr. Richard H. Howland, President of the National Trust for Historic Preservation. Mrs. Helen Bullock, of the National Trust, also addressed the Committee.

Each Committee member reported on Preservation progress—or lack of it—in his territory. One of the most interesting stories brought out was the highly successful employment of students and young architects to make measured drawings of old buildings. Trained in contemporary design as they were, once they started digging into the old buildings and saw their rugged and honest construction, and the grace and good taste of their decoration, they built up great enthusiasm for the work, many of them continuing to carry it on as a hobby after their period of employment was over.



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AMERICAN ARCHITECTURE:

Down to Skin and Bones By ALLAN TEMKO

Mr. Temko is best known as the author of "Notre Dame of Paris" (1955), an absorbing story of one building and the culture which produced it. Here, Mr. Temko states that one style of architecture — nude of body, puritan in spirit — has swept the country in the last fifty years. Where did it come from, who builds it, what does it say? Reprinted from the Columbia University Forum.

Copyright 1958, Allan Temko.

MANY A BUSINESS EXECUTIVE, looking up from his copy of *Time* recently, must have paused to consider a statement attributed to the president of the Connecticut General Life Insurance Company. This gentleman, whose firm had invested some twenty million dollars in a new headquarters building, protested wistfully—in the manner of Jane Austen's Mr. Bennet, as if he expected no one to listen—that he would have very much liked a fireplace in his private office, but that Mr. Gordon Bunshaft had not permitted this homely touch. Since the building's cost included many expenses not ordinarily seen in a commercial construction project, such as a conspicuous outlay for sculpture, Mr. Bunshaft—chief designer for the architects Skidmore, Owings and Merrill—must have had other reasons than economy in mind when he denied his client the comforts of the hearth.

His main reason for refusing was in fact an esthetic one. A previous Bunshaft creation, Lever House in Manhattan, had been adversely criticized because of the traditional interiors of its executive suites; and Mr. Bunshaft was not eager to arouse similar criticism again. A fireplace, presumably, would appear illogical in a building otherwise heated (and cooled) by faultless modern engineering. A chimney, yielding wood smoke to the heavens, might mar the neat horizontal lines of a monument since selected by The American Institute of Architects as "one of the ten buildings in America's future." Quite

apart from the question of why precisely *ten* buildings must have foremost places in the future of this country, one may profitably ask what our future is going to be if its architecture is to be dominated by the style which is being increasingly associated with the name of Skidmore, Owings and Merrill.

The Connecticut Life Building, which stands in gracious rolling country near Hartford, is only one of many ambitious designs to come from a 1,000-man office which in recent years has achieved a prominence in American architecture comparable to that once enjoyed by McKim, Mead and White.

How far the taste of this country has progressed in a half-century, however, can be seen strikingly in the differences which exist between Skidmore, Owings and Merrill's Air Academy, now going up in Colorado, and the Columbia University campus, one of the largest projects executed by McKim, Mead and White. Compared with the clean, weightless optimism of the Academy, so modestly placed at the foot of the Rockies, the ungainly and impractical buildings which disfigure Morningside Heights come off rather badly. The University, in fact, might well have invited S.O.M. (the abbreviation current among architects) to design its new students' center, not only to be sure of getting a more handsome structure than Ferris Booth Hall promises to be, but also to provide a sense of historical continuity which is proper to the academic mind.

For the S.O.M. "style"—and it will be seen shortly that it is not their style alone—is distinguished, among its other virtues, by a perfection of proportion and a purity of line altogether classical, or neo-classical, in mood. Classical formalism does not necessarily require pilasters and pediments, and, in matters of pure modular design, the Connecticut Life Building and the Air Academy classroom structures are surprisingly close to the Palace of Versailles and the Court of the Invalides. Basically classical forms have merely been stripped of all decorative ornament; rigid proportions remain, but the rich surface texture of a Renaissance or a Baroque building is removed. No projecting cornice, no carved frieze, no elegant capital catches the light and plays with it. Instead, the building is sealed by an expanse of glass, held in a graceful metal skeleton.

The S.O.M. facade has the smoothness—really, the sleekness—of cellophane; and indeed, it has been called "packaged" architecture. The firm delivers visibly similar designs to Radnor, Pennsylvania, and Burlington, Vermont, and Monterey, California, with as little apparent effort as is spent distributing automobiles, refrigerators, and toasters.

The products all bear some resemblance to one another. All are the result of large-scale organization and modern technology. All make claims of virtually universal utility. An S.O.M. building, like an Edsel or a Toastmaster, can function almost anywhere in the United States, and in much of the rest of the world as well, in any size or model. As Frank Lloyd Wright remarked, these structures "are as good by the foot as by the mile." Moreover, S.O.M.'s favorite materials, like those of General Motors, are metal and glass, which are singularly resistant to human or natural imprint. They do not weather, as does stone or wood. They are insect-proof, and moisture-proof too if properly treated; and, like most industrial products of high quality, they take an infernally long time to wear out if they are not neglected.

As does an automobile, an S.O.M. building suggests that it has almost nothing to do, *personally* or *regionally*, with the people who use it. For, if the same basic structure is found suitable in cities as profoundly dissimilar as Chicago and San Francisco, there is the alarming implication that the occupants are as interchangeable as the buildings. Mr. Wright—and it is tempting to quote him often in this connection, for he has strong ideas on the subject—also speaks darkly of "boxation"; and in a sense these buildings resemble nothing if not ingeniously constructed boxes of steel and aluminum, in which smaller boxes are nested and called rooms.

All this, of course, cannot be laid exclusively, or even mainly, to the charge of S.O.M., who are responsible for comparatively few of the buildings which have provoked Mr. Wright's scorn. In truth, the "style" is scarcely theirs alone, and its history is already more than a century old. It dates back to Paxton's Crystal Palace in London (1851) and, earlier, to garden structures that were frankly hot-houses, as many skyscrapers would be today without their blinds and air conditioning.

In America the style has undergone an uneven development beginning with iron-front commercial buildings such as the chaste and unassuming structures of the St. Louis waterfront, or the old Harper & Brothers Building in New York. It reached an early culmination in the Chicago of Louis Sullivan, whose Schlesinger and Mayer Store (now Carson, Pirie, Scott) remains unsurpassed as an expression of what architects call cage construction. Mr. Wright himself, in the Luxfer Prism project of 1897, designed a facade in glass and reinforced concrete which he notes rather testily "has since appeared in many guises in many countries." In spite of the eclecticism that dominated US design in the succeeding decades, and resulted in "commercial classicism," the Renaissance palaces of McKim, Mead and White, and Neo-Gothic towers such as the Woolworth Building, the conception of buildings cloaked in glass remained alive in this country; Willis Polk's Hallidie Building in San Francisco (1917), for all its *art nouveau* embellishments—perhaps because of them—can match its lively and cheerful facade against anything going up near it forty years later, including the Zellerbach Building by S.O.M. and Hertzka and Knowles.

In Europe, a parallel movement was under way before the turn of the century. The sinuous iron and glass facade of Victor Horta's Maison du Peuple in Brussels was constructed in 1897, and the Glasgow School of Art by Charles Rennie Mackintosh, with its great oblong studio windows, in 1898-1899. Before 1914, in the work of Walter Gropius, appeared a succession of buildings that displayed veritable curtain walls of glass and metal and spiral staircases completely enclosed in glass, articulated with great precision and elegance. Here, at last, was a European *rationale*—quite distinct from the American—which took full advantage of the lightness and grace made possible by modern materials and technology, and employed them in restrained yet monumental combinations. But the exuberance of Wright's work, first published in Germany in 1910, was missing, as was the sheer poetic control of Sullivan. In their place appeared a new element of refinement.

Now, refinement is a dangerous thing. Gothic art perished in excessive refinement after a period of unparalleled structural vigor. For once refinement exists for its own sake, it becomes mannerism. In Gropius' early work, refinement was at its most spontaneous and imaginative. The robust massing of elements, the liberal display of brick and other warm materials, the free planes of the roofs, especially in the model factory and office building erected for the Cologne exhibition of 1914, reveal the *bonhomie* of pre-war Germany that was to vanish forever in the next four years.

AFTER THE WAR, in an exhausted and impoverished nation, construction resumed only slowly, and then on strictly limited budgets. But if few buildings were erected in fact, many soared upward in dreams. Among the paper architects of this period, none was more audacious than Ludwig Mies van der Rohe. He designed several all-glass skyscrapers, some of them circular in plan, some oblong, but all characterized by a totally transparent surface. Mies at last gave a name to this kind of construction. He called it "skin-and-bones" architecture.

The description fits. The structure was reduced—refined down—to its skeleton and outer surface. It became pure form. The curtain wall, as conceived by Mies, was the thinnest of skins: wherever possible it became glass, or else panels of exquisitely laid brick. The structural skeleton within, whether of steel or concrete, was as delicately calibrated as the building's size would permit. To dramatize the extreme slenderness of his pillars, in dwellings such as the famous Tungenhat House, Mies plated them with chrome. To make clear that his interior wall surfaces were no more than screens, he divided his open floor plans (directly inspired by Wright's Prairie Houses) with slabs of onyx or marble. These were the only touches of richness he allowed his ascetic creations, and they served mainly to emphasize the austerity of the whole. "Less is More," wrote Mies. Younger men throughout the world, including Gordon Bunshaft, were to take the maxim to heart.

"Less is More." The paradox is worth considering. Mies offered it without irony to a Europe and America surfeited with Beaux-Arts classicism. Western architecture, like an aged emperor, was overburdened with elaborate and heavy robes. Strip them away, Mies advised, strip away layer after layer, and then strip away more.

It is impossible to overestimate the importance of this moral asceticism in contemporary art and architecture. Mies is much less an heir to Cartesian logic, as his admirers would claim, than to the Puri-

tan tradition of the north. Piet Mondrian, whose rectilinear paintings have a good deal in common with Mies' rectangular buildings, shared the same tradition. The *mystique* of these men is as deep-rooted, and as dogmatic, as that of the Pilgrim Fathers. In European civilization it goes back at least to Saint Bernard of Clairvaux and the intentionally plain twelfth-century churches of his Cistercian Order. To accuse Mies' ideology of being foreign to this country is to misunderstand the powerful current in American thought which produced the white villages of New England and their steepled churches, as well as the sober frame dwellings of the Midwestern plains which Willa Cather knew. This tradition is alive today, as mystical and as arbitrary as ever, in the work of Mies' American-born disciple Philip Johnson.

Until 1937 Mies carried on in Europe, building only occasionally, and designing mostly on paper. Then, at last, he came to the United States.

For a man with very little actual construction to his credit, Mies was welcomed as a master builder in a country which had itself produced very little fine architecture during an entire generation. Other Europeans had prepared the way for him: Richard Neutra and R. M. Schindler, who had come in the twenties, and Walter Gropius and Marcel Breuer, who were teaching at Harvard. Mies, too, was accorded an academic post commensurate with his distinction. In 1938 he was named Director of Architecture at the Armour Institute in Chicago, which two years later became the Illinois Institute of Technology. In addition, he was given one of the most extensive commissions any modern architect has enjoyed. He was asked to design the Institute's campus, a project which after twenty years is still unfinished.

Enough has been completed, however, to have exerted an incalculable influence on recent American architecture. These low, interrelated oblong forms, whose smooth plane surfaces are unbroken by any projection, depend on proportion and fastidious workmanship alone for effect. The entire campus is organized on a standard 24-foot module, and Mies has gone to subtle lengths to give variety to the great bays of glass and of impeccably laid brick. As "skin-and-bones" architecture, conception and execution are faultless.

And yet there is something phantasmal about these geometrically perfect buildings. In their machined precision, they lack heart. A calm prevails which is not repose—certainly not the repose of an Oxford quadrangle or of Jefferson's University of Virginia—but which seems a willful indifference to human values. There is no softening of line or tex-

ture, but only endless repetition of right angles, and of steel, glass, and brick. The chapel, like the other buildings, is rigidly rectilinear, and indistinguishable from the laboratories. All, even the strict staircases, has been subjected to the same puristic discipline. Here is structural refinement carried to almost fanatical length, One yearns to see an irregular brick, but every brick is perfect. There is no surprise—one of the most lovable resources of architecture; there is only predictability.

MIES' INTRICATE architectonic game of chess has given way, in the work of several Americans, to checkers. The American conception has generally been less forbidding, and in Eero Saarinen's sensitively organized General Motors Technical Center of 1951, it has become almost hospitable.

A cheerfulness, in contrast to the monastic severity of the Institute, characterizes the Technical Center, which surely would never have been designed as it was, had Mies not tackled a similar problem a decade earlier. Through warm use of color, including lovely burnt orange and blues, and also thanks to a central lagoon as formally resplendent as the fountains of Versailles, Saarinen has humanized the rectilinear scheme. The idea for a cloister remains, but it would seem now to belong to merry Benedictines, rather than to grave Trappists. And a domed central structure, which might have given a note of coherence to Mies' Institute, as it does to Jefferson's University, provides the group with increased symbolic meaning as a research center.

Skidmore, Owings, and Merrill in their Air Academy have also made one significant departure from Miesian doctrine. The cadet chapel—a building which will stand at the center of the Court of Honor, and which has received considerable attention from Congress as well as from the public—will not be an oblong box. It is to be an expressionistic creation, meant to symbolize, against the incomparable background of the peaks of the Rampart Range, man's quest for the unknowable which persists, perhaps more strongly than ever, in this age of an expanding universe.

The proposed design reveals the full measure of S.O.M.'s technical adroitness. A line of tall, pointed tetrahedrons in shining aluminum, very much like a line of swept-wing fighters stood on end, provides the structural envelope of the chapel. The bays between these aspiring ribs of metal will be filled, from top to bottom, with glass. The resemblance to Gothic architecture is obvious. The folded aluminum structure recalls the action of flying buttresses, soaring upward from either side of a great nave, and at last achieving complete verticality in pinnacles and

spires. The interior space, with its immense sheets of tinted glass, suggests the Sainte-Chapelle in Paris. But Gothic aspiration, so confident as it lifts dynamically towards Heaven, so robust and masculine for all the openness of the stone frame, is here rendered nervous, brittle, rapid rather than triumphant, and lacking in sureness.

In another respect, too, the design is open to question. Like the Sainte-Chapelle again, the cadet chapel is divided into two levels. In the medieval structure, significantly, the upper room was reserved for the King, his family, and the court; the much less impressive lower room was used by retainers. The soaring main space on the upper level of the cadet chapel is reserved for the one thousand men who will attend Protestant services. Below, in rooms which are spacious, but which lack the drama of the upper church, are a Catholic chapel with a capacity of six hundred, and a Jewish synagogue seating one hundred. Would it not have been more logical to provide three separate buildings for the three faiths, each expressing its uniqueness, and at the same time a fraternal relationship with the others? This was done, with quiet charm, at Brandeis University, in three chapels arranged about a small pool by Harrison and Abramovitz.

Such are the human problems which remain in architecture, and which will always remain, no matter what technical facility a machine civilization gives to architects. One cannot help but wonder, thinking of the First Unitarian Meeting House in Madison, Wisconsin, whose winglike roof extends upward too, but with a gesture as tranquil as hands folded in prayer, what sort of religious structure Frank Lloyd Wright might have designed for the Academy. His chapel at Florida Southern College, in Lakeland, perfectly at home in the sun, with a monumental sense of permanence, but with a sense of quiet intimacy as well, in which light filters down beautifully through a lantern tower, may give some idea of the sort of building with which he could have provided the cadets. Yet a prophet, for all the lip-service that may be given him in old age, receives few tangible honors in his own country. Why Wright was never given a commission on the scale of the Air Academy by his fellow citizens and why he was not America's representative on the international panel of architects which designed the United Nations Headquarters are questions this nation should ponder.

Today, at eighty-four, this cantankerous sage is, in Lewis Mumford's splendid metaphor, "the Fujiyama of American architecture, at once a lofty mountain and a national shrine, a volcanic genius that may at any moment erupt with a new plan or a challenging architectural concept or a hitherto un-

imagined design for a familiar sort of building." To the "skin-and-bones" school of architecture, he opposes his own "organic" philosophy of architecture and life, for to him the two are inseparable. To the cellophane-package skyscraper, he opposes his Price Tower which grows from the Oklahoma earth as a tree, its central structural core a trunk, and its cantilevered floors, branches. Greenery, flowing over its balconies, provides it with leaves. Nevertheless this building, which takes such cognizance of the individual, is everywhere constructed "in the nature of materials." It makes use of standard parts, mass-produced by machine technology.

Perhaps justifiably, Wright is more celebrated for his homes than for his magnificent business buildings and churches. Here again, he is steadfastly opposed to the "skin-and-bones" philosophy. Rather than the glass-box residence, placed on stilts in the midst of nature as if it despised contact with the earth, such as Mies' Farnsworth House in Illinois, Wright has provided his clients, from the days of his early Prairie Houses until today, with an admirable feeling of shelter and local truth. Few of his houses could be moved to other sites without fundamental modifications in design and structure. His own Taliesin homes in Arizona and Wisconsin, placed in utterly different terrains, are quite naturally utterly different houses, each in harmony with its surroundings, hugging the earth, at one with it, sinking roots or shooting out tendrils in the manner of living

plants, on friendly terms with sun or snow, with the cactus or the oak.

That this is Romance, Wright is the first to confess. And like any strong emotion, Romance can be overpowering. His proposed "sky-city," a mile high, is not, as critics suggest, a delusion of extreme age, but a Goethean (some would say Wagnerian) yearning for the grandiose which has a long history. Wright thought of such a structure for the New York World's Fair of 1939.

If Mies and his followers have attempted to create an "anonymous" architecture which appears to be, and in fact often has been, designed by a committee, Wright has passionately refused to eliminate his own vigorous personality from his buildings. If we live or work in them, we find ourselves on close terms with a commanding presence—too close for many people. For those who wish to live by themselves, as much as possible on their own terms, and yet to enjoy the unprecedented technical wealth of our civilization, there must be some middle ground. This is the promised land of which Frank Lloyd Wright has been the chief prophet and it is up to the new generation of architects—Edward Stone, Eero Saarinen, Louis Kahn, Paul Rudolph, Harwell Hamilton Harris, Robert Anshen and Stephen Allen, and other men whose names are only now becoming familiar to Americans—to prove that this vision of the New Canaan is not a mirage, and that we shall not remain forever in an architectural wilderness.

The Cotton Mather Kids

To some Young Things, it would appear,
What's beautiful is what's austere.
Renaissance seems too rich a welter.
Their comfort's in an ice-cold shelter.
The classic French? Beneath contempt.
Not even Hepplewhite's exempt.
Man's heritage of subtle graces
Has come with them to utter stasis.

To wit, a startled architect
Most certainly did not expect
An accolade of youthful praise
From campers, wrapped in summer days.
"We love—but, man, we love," said they,
"That room!" "What room?" "Why, where we play."
They showed their pride. It's medium tall.
It's pine. There's ceiling. And there's wall

Four times repeated. Scale's quite good.
Nothing's the matter with the wood.
A lone victrola squatting there
Scarcely defaces the chaste air.
For standing, walking, sitting: floor.
Just floor. That's all. There is no more.
"It's dreamy. It's our favorite place!"
Ascetic pleasure lit each face.
If "little is more," as purists boast,
They figure nothing is The Most.

These are the Cotton Mather kids.
But what of their egos and their ids?
Will some wild night a flaming lust
For loveliness flare through their crust?
And will their too-long-sober soul
With bingey beauty rock and roll?

—ELISE JERARD

From the Executive Director's Desk:



Cameramen, Inc.

EVERY SPRING, sometimes even before that evasive season has climatically arrived, the elephantine parades of buses from all over the United States, jammed with outlandishly dressed school children, stream into the Capital city down every avenue. The parades are without end. School children keep piling in even after one would think they would be working on the farm, making extra money in the gas station, or baby-sitting. The invasion can be awe-inspiring. The outlandishness of dress becomes more exaggerated and less inhibited—the bare areas spread, sometimes charming on one sex, always repulsive on the other. The children's hegirlas are not the only variety. Other organizations find sufficient resources and enthusiasm to crowd the buses and make the journey to the American mecca on the Potomac. One certainly knows spring is here when the DAR hits town—that fascinating society founded on antediluvian concepts and nourishing a ferocious type of patriotism which comes pretty close to chauvinism—or would if the dear old DAR had not lost its bite.

No doubt there are many among the orchid bearers who are beginning to wonder a little, surely they must after a first-hand look at what service to the country really entails and what it means to those who serve alone—not in the military sense, but in politics and in that dedicated and enormous segment of our society, the career governmental public servant.

Presumably there is a sprinkling of architects among the millions of pilgrims—if not architects themselves, at least their wives and children. A fraction of the architects find their way to the Octagon. We welcome them—we wish more would come, and we hope those who do come get some idea of the magnitude and diversification of the activities of your organization.

This is not what I want to write about, but rather the reason why Washington draws the crowd and the impact of that reason upon the construction industry and the architectural profession.

Fundamentally and seemingly exclusively the business of the Capital city is government, and government enjoys great magnetism either directly to itself or indirectly by virtue of its appurtenances. All of us have studied government in school. We have read history. We even have a nodding acquaintance with political history. We use the phrase "political science" with perhaps a scant knowledge of its application. Those of us who can vote (a resident of the District of Columbia may not do so) may occasionally exercise the right of suffrage and feel that a decision has been made by him and that his duty is discharged.

We second class citizens of Washington read editorials, criticize, argue, but we cannot vote. However, our knowledge of government and politics is not to be underestimated. We continually see, meet with and talk to Congressmen, administrators and many career men of all kinds. We learn much about the United States, how it is run and by whom. (I can assure you that it never was run by a one-time governor of the State of New Hampshire.)

When I arrived in this city, knowledge of our country and its operation was juvenile, even foggy. Like many others, I was also impressed by the length of the corridors, the august titles—military, appointed and diplomatic—and the sleek automobiles of the governmental hierarchy (which cannot be distinguished from those of the diplomatic hierarchy except by the license plates).

I was impressed by the caste system and the snobbery (i.e., protocol, official or assumed). It took little time to learn that there is no such thing as a "big shot" in Washington. The President, I

am sure, would disclaim the classification with becoming modesty. It has been said the only "big shots" here are first-year Congressmen and conventioners. I was educated rather than disillusioned. I have come to have a more profound and deep-seated respect for those who govern and work for our country, a respect founded upon their dedication, knowledge, and downright ability.

Almost without exception your Senators, your administrative executives, the members of the Cabinet, and even the President himself—Americans all—are simple earnest men, trying to do their best in tasks which hold out little or no monetary reward. Slips and derelictions which would not be noted in private life, in civilian occupation, become grossly magnified in the public eye when the perpetrator lives in a goldfish bowl, where he is envied by the average citizen and subjected to continual harassment by his political opponents.

Too many people think of our government only in times of crisis, wars, controls, anything untoward which will affect our professional practice and the construction industry which it serves. We run to our government whenever we believe that our way of thinking is hampered. We look to our government as a refuge when the going gets really tough and when recessions set in.

Although the Executive Director of the AIA is not in government, he must work continuously with it. The business of any national society is people.

It is easy to be supercilious, to be cynically amused by the cartoons of Herblock, to plow earnestly through the pontifications of the pundits, nodding our heads in solemn agreement with Walter Lippmann's column—all the while not personally affected by its content. The basic premise of our country is sound and practiced. The United States of America is run by the people, just as The American Institute of Architects is run by its members. Occasionally an individual rises who, through his ability to turn a neat phrase (original or ghost written) enjoys a sufficiently powerful personality, will appear to be a leader. He may even constitute himself a rallying point of security. There are those who, through their personal courage, can instill confidence in the people and can set an example for the betterment of the citizens. We have had such people in the United States. I hope we will continue to produce them.

We are, however, now being taught to accept the composite man built up by staffs, public relations experts, ghost writers, coaches, policy recommenders, yes men, no men, trainers and publicity people. We are inclined to accept the composite man as the actual embodiment of the talents and

virtues of the heroes of our past history. In a democracy such as ours if these composite men can be drawn from the laity rather than from the ranks of the trained professionals, they seem to enjoy greater prestige in the eyes of the citizens.

In Washington one senses the difference between the trained professional career man and the gifted (or sometimes not so gifted) amateur. It is perhaps a good thing that we have the combination, for had we not we would not enjoy the system of checks and balances which is necessary for the safe-keeping and equilibrium of a democracy.

As a chief of staff for your organization, I find I enjoy a certain appreciation of the trained experienced career men. Although I admire the fortitude and intelligence of the amateur, I never can quite attach the degree of omniscience to him that I do to the professional, especially if the amateur has been catapulted into his position as a result of his contributions and labor for one of the major political parties.

I can profess no expert knowledge about state and municipal governments, but I suspect that there is considerable difference between them and the federal government. Probably there is a difference between state and municipal governments. I am not talking about tables of organization *modus operandi*, but about philosophic attitudes and relationships.

Do you look upon the President of the United States as you would upon the chairman of the board of your bank or the president of an industry, or a great private enterprise? Do you believe that the Cabinet of the United States is actually a board of directors assembled to discuss operational problems under the chairmanship of the top man?

As Chief Executive of the country, the President enjoys relatively more power than anyone else in a similar position in the Western world. But he too is subject to checks and balances. His Cabinet is not a policy-making body. It is the assemblage of the heads of the major administrative agencies of the country, each enjoying his own field of interest, his own prerogatives, and subject to the laws which established and maintain his department and to the administrative regulations which guide him.

Not all of the departments are line agencies. The Department of Commerce, for instance, is a sort of fact collecting agency. It bears slight resemblance in attitude, thought or responsibility to the Department of Defense which is another sort of operating agency, charged with the safe-keeping of the country, continually constructing, contracting and advancing. The Department of Defense administers a myriad of programs; the Department of Commerce administers nothing like as many. So it can be seen

that the heads of these two respective agencies have little or nothing in common which would enable them to discuss matters of mutual interest at a board of directors meeting presided over by the Chief Executive.

The Executive Office of the President has become highly organized and has expanded far beyond anything anticipated, even in the days of Mr. Truman. In operation it bears some resemblance to the military headquarters but on a far larger scale, and the number of agencies, bureaus, and individuals reporting directly to the Chief Executive seem to increase.

For the most part the heads of the major administrative agencies are gifted amateurs rather than career men. However, the Secretary of State, a most successful lawyer, has been in public life so long that he has become virtually a professional.

The Congress is the great monument to American democratic principle. It may be criticized and pilloried, it may be seldom praised, but, nevertheless, it probably is the greatest deliberative body in the world and, without question, our Senate is the most august body to be found anywhere today.

Jean Maunoury

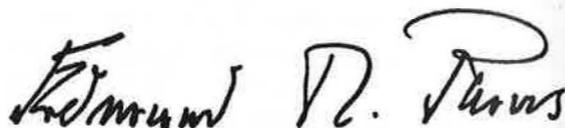
One of the Institute's most distinguished Honorary Fellows, Jean Maunoury, was killed in a tragic automobile accident on July 26th. M. Maunoury held the post of Architect-in-Chief of Eure et Loire, and Architect of Historical Monuments of the same area of France—which put him in charge of Chartres Cathedral. He was a Chevalier of the Legion of Honor (military) and a holder of the Croix de Guerre. He lectured on medieval architecture at the School of Fine Arts at Fontainebleau, and made lecture tours in many countries, including two in the United States in 1948 and 1956.

It is doubtless unique in modern times that M. Maunoury's father and grandfather also held the position of Architect of Historical Monuments, and that his son, Dominique, now holds the post.

As guardian of Chartres Cathedral, M. Maunoury was host to many American visitors, and he had many friends in this country. His aid was invaluable to the Institute in arranging for the acceptance of the window donated to the Cathedral by the AIA. He was made an Honorary Fellow in 1956.

It is truly a fearsome thing to appear before a committee of United States Senators for realizing that one faces men, each and every one of whom enjoys singular power and whether they are there as a result of political aptitude or because of their outstanding virtues, it makes little difference to the witness how they got there. They are there and they know they are there and they know their position. Any Washington-experienced hand knows this and that is why so often it is the amateur witness appearing for the first (perhaps only) time who seems more at ease than the seasoned witness who has come to respect in a very profound sense the men before whom he is appearing. To a lesser degree this could be said about the House of Representatives.

My subject, the architect and policies, still lies ahead. This article has become an introduction.



Sanford Goin, FAIA

The officers and members of the Institute have been shocked and saddened to learn of the accidental death on September 19th of Sanford W. Goin, FAIA, Regional Director from the South Atlantic District. As soon as he became a member of the Board of Directors last year, "San's" quiet wit and sound counsel won the affection and esteem of his fellow Board members.

Mr. Goin was active in many local affairs in Gainesville, Florida, where he had practiced since 1935. A Kiwanian, a Mason and a Presbyterian, he had been a member of the Gainesville City Planning Board and at the time of his death was a long-time member of the Alachua County Zoning Commission.

His AIA activities included most of the offices of the Florida Association of Architects, culminating in its presidency 1950-52, as well as the chairmanship of important committees.

The members of the Institute extend their deepest sympathy to Mrs. Goin and their four children.



JOHN E. TOOHEY

How we won the Battle in Montana

Mr. Toohey, a past president of the Montana Chapter of the AIA, is a partner in the firm of Cushing, Terrell and Associated Architects, of Billings, Montana. He is also a member for the Northwest Region of the AIA Public Relations Committee. In this frank and revealing article, he tells how Montana's architects overcame one of their most serious problems.

UNTIL JULY 1, 1957, Montana's architects were unknown to the public, in conflict with the engineers, and penalized by the State Legislature.

Today, all three of these serious problems have been largely solved. The story of how it was done is a story of good community public relations in action. I am telling it in the thought that members of the profession in other states and municipalities may profit from our experience.

Prior to World War II, architecture in Montana was virtually an unknown profession. There were perhaps six to ten architectural firms in the state doing all of the architectural work for the 560,000 people scattered throughout the 147,138 square miles of mountains and sparsely populated rural areas. The practicing architects of the state were scattered among the seven or eight cities or towns in the state with a population of over 10,000 people.

During the post-World War II construction boom, the position of the architect and his public began to change. Montana, like most areas in the country, experienced a heavy construction expansion, particularly in the educational and residential fields. Naturally, with the architectural work required, the number of architects in the state increased and the architect's contact with the public began to extend beyond the urban population immediately adjacent to his home.

With the large amount of architectural work readily available in Montana, the final result was pretty much as expected. An ever increasing number of owners became increasingly dissatisfied with the type of architectural service they received. Some dissatisfaction was a natural result of incompetence in the architect himself; some was due to the shortage of draftsmen. The architect would solicit more work than he could produce in the time he had contracted for. A large part of the dissatisfaction was due to improper supervision during construction. This lack of supervision was, I believe, brought about by two factors. First, a large number of the young architects did not have the background and experience in supervision which was desirable. Second, a large number of the jobs were located at a considerable distance from the architect's office, and it was "too inconvenient and too expensive" to give proper supervision. This situation was further aggravated by the fact that jobs were plentiful and many architects felt there was no need for building a reputation of competence that would result in repeat work.

With the increased amount of architectural work and new group of architects, it was only logical that the profession should attempt to establish stronger licensing and registration laws. Moreover, the engineers in the state (electrical, mechanical, structural, etc.) felt that the architects were per-

forming *their* work and they wanted to pass legislation which would force the public and the architects to hire registered engineers for all work.

PRIOR TO WORLD WAR II, the architects felt that the registration law of Montana was inadequate. And the state's Attorney General had found that the law was unenforceable because it did not include a description of what the practice of architecture consisted of.

Although this condition existed and all members of the Montana Chapter of the AIA were well aware of it, they were at a loss to do anything about it. The Chapter had very few active members, and there wasn't enough money or concentrated interest on the part of most Chapter members to establish an all out campaign against their opposition. Also, there was considerable controversy among the members about what should be done. There was support for the theory that the profession had run into so much opposition in establishing the existing law that any attempt to change it would lead the legislators to kick the law out completely, and the profession would be without a registration law of any kind.

In 1948 and 1949, Everett O. Terrell, President of the Montana Chapter, AIA, working with a few of the interested engineers in the state, spent a tremendous amount of time studying and analyzing the situation and, as a result, decided that the only possible solution to the problem was a joint legislative venture with the engineers in the state. It was thought by this group that by trying to present a joint architect and engineer licensing bill to the legislature, they would have enough prestige and influence to successfully pass the proposed legislation. However, when it came to a final vote in the Chapter, the bill was ruled out by the architects. It was felt by some that the architectural profession might lose some of its identity by being licensed jointly with the engineers.

During the legislative session of 1951, the architects were very hard pressed to defeat some proposed legislation by the electrical engineers, which, if it had passed, would have made it mandatory for all architects to hire licensed electrical engineers to perform all electrical work for architectural plans. Fortunately, the bill was defeated.

This, then, was pretty much the situation until the winter of 1952-53. The number of architects in the state was increasing each year and all seemed to have plenty of work. The architects and engineers were fighting among themselves, and, perhaps more unfortunate, the state, counties and cities, and even private owners, were becoming more dissatisfied with the type of architectural service they were

receiving. Also, due to the rumored or actual collusion between one of the architectural firms and some top state officials, the matter of architecture and architectural fees became a major political issue during the political campaign of 1952. Of course, the result of this was that the architectural profession suffered a terrific setback in its relation with the public.

As a result of the fee controversy, a "Little Hoover Committee," appointed by the previous legislature, recommended to the 1953 session that the state establish a maximum architectural fee of 5.3% for all types of architectural work. How the committee arrived at the figure of 5.3%, no one was able to ascertain exactly. They further strengthened their arguments by showing that most of the state architectural work had been done by one firm at a fee considerably higher than 5.3%. It was only after considerable time was spent in talking to and persuading the members of the House and Senate Committees that the proposed bill was amended to establish a sliding schedule. Although the architects were opposed to fixing their fees, they felt that the bill that was passed was much better than what had been originally proposed.

Fortunately, it was also during this period that the Montana Chapter of the AIA became better organized. Approximately 90% of the state's architects belonged to the organization. But like all architects everywhere, we were too busy trying to practice architecture in our own little private world, and too naive to realize that we were not qualified without professional guidance, to establish and set up a legal and public relations program that would lay the groundwork for a successful legislative program.

THE FACT THAT MONTANA was the only state in the Union in which the architects had their fees set by state legislative action was one of the constant reminders that, as architects, we were missing the boat. It seemed that, regardless of what the architectural profession did, it would invariably hurt us.

For our legislative program in the fall of 1954, it was decided that, so long as the profession was in such a poor light with the public over the fee schedule, we would be smart to let the situation rest.

We were a completely disillusioned group of architects. If it hadn't been for the perserverance of a small group of architects in Great Falls, the members of the Chapter would probably have decided that it was useless to attempt any further legislative work. However, as a result of the prodding from this small group, the chapter decided to make one final effort to amend or repeal the existing state fee schedule.

Upon the advice of our legal counsel and our public relations committee, it was finally agreed that the only way to successfully promote a complete legislative program was to start about a year in advance of the legislative session and lay out a complete public relations and legislative program so that it could be presented to the legislators *well in advance of the coming session*.

To put the program into operation, the gentlemen that had been largely responsible for the Chapter's action were put on the legislative committee, headed by chairman Kenneth K. Knight. Realizing the tremendous task which lay before it, the committee started preliminary work for the 1957 legislative year in the late summer of 1955.

The first thing the committee did was to obtain copies of every other state's (including the District of Columbia's) architectural registration law, and also the recommended Chapter fee schedule from all AIA Chapters as well as actual fees paid by all states for various types of buildings—schools, offices, hospitals, etc. This in itself was a huge task. But, thanks to the cooperation of the other states, chapters, and organizations contacted, it was soon completed. With the information assembled, it allowed the committee to make some interesting comparisons.

It was decided that a graphic comparison of the legislated fee schedule in Montana compared to the fee schedule paid by other states for complicated, ordinary, and simple types of buildings would show the type of comparison we were looking for. This comparison was plotted for Montana and all the states east of the Mississippi; Montana and all the states west of the Mississippi; Montana and the ten western states, and finally, Montana and the US average. Fortunately for our cause, the fee schedule as legislated was, in most cases, considerably below the fees of other areas for the design of the most simple structures. The average fee paid for ordinary and complicated building was, without exception, much higher than the schedule in Montana.

Next, a comparative graph of our chapter's recommended minimum schedule was prepared.

Perhaps the most startling thing which was illustrated by the graphic analysis of the legislated fee schedule was that it was not a straight or uniform line curve but had definite break-off points where the difference of \$1 in a bid price could mean several thousands of dollars in the architect's fee. Secondly, the graphic analysis pointed out that there should be considerable difference in the fee paid for preparing plans for simple, ordinary, and complicated types of structures.

All of these graphs, together with a description of the type of buildings included in each group and

appropriate other information, were assembled and printed in a sixteen-page brochure entitled "Architecture—Montana's Problem."

To be most effective, we decided this brochure had to be delivered by hand, and explained in detail, to every incumbent Senator and Representative, and every candidate for a legislative seat, at least one month before primary election time. Also, we decided to contact personally anyone else who might oppose us or be able to help us.

Naturally, this called for considerable money that we didn't have. We considered increasing the Chapter dues (which had just been increased from \$15 to \$35 the previous year) but decided instead to assess each corporate member \$100, each associate member \$50, and each junior associate, \$10.

At first glance, this may appear rather steep, but with the amount of work involved and the expense of preparing the brochure, entertaining various dignitaries, paying the attorney's fees for preparing the bills, lobbying, and other miscellaneous expenses, we felt that it would be better to have more money than we might need rather than take a chance on running short.

WITH FINANCING SOLVED, our next task was taking the information to the necessary people. The simple matter of distance was one of our most serious problems. Montana, with over 147,000 square miles, is larger than New York, New Jersey, Maryland and Delaware combined. Approximately one-third of the state is mountainous, with small, thinly populated mountain valleys. With 56 counties, and one Senator and two or more Representatives in each county, considerable travel was required to contact all of the incumbents as well as all candidates for the various offices.

To distribute evenly the cost and responsibility of contacting the necessary people, we divided the state into three basic areas roughly corresponding to the location of the counties and the number of architects in each particular area. Each of these areas had local organizations primarily formed to handle local architectural and AIA problems. Consequently, it was a simple matter to assign each architect in a given community a specific number of people to contact. In some areas it was possible to assign people where they had jobs under contract and would necessarily be in the immediate area. Every incumbent Senator and Representative, as well as all candidates in both parties, was assigned to some architect.

It was considered very important that all architects approach the public with the same basic story. To accomplish this, a general list of instructions was mailed to all architects. In addition, all members

were asked to become as familiar as possible with the brochure explaining the entire situation.

After contacting his man, each architect was asked to file a report of the interview, outlining the time spent, items discussed, material left with the candidate, and his apparent reaction to our problem. Made out in duplicate, one copy of this report went to the Chapter's attorney and the other to the Legislative Committee Chairman.

The purpose of the report was two-fold. First, it was a written record of those contacted and by whom; second, it gave the attorney and the committee some idea of the apparent reaction to the proposed legislation. All reports were carefully analyzed. In cases where unfavorable reports were received, further visits were made to find out why the person was opposed to our program. In most cases it was possible, by repeated contacts and by thoroughly explaining the entire situation, to show that our cause had considerable merit.

Fortunately, we had allowed ourselves plenty of time to do this. Had we waited until the Senators and Representatives were in session, and had dozens of other bills to consider, our task would have been hopeless and the legislators would have voted against our bill, if for no other reason than that they didn't know what it consisted of.

Once our preliminary job of contacting all incumbent legislators, new candidates and other important individuals was completed—our work had just begun. After the primary election, we knew exactly who all the candidates were for Senator and Representative, and we were able to concentrate our campaign on a smaller group of people.

And, by this time, the drafting of the proposed bills had progressed to a stage where we were able to explain them to the people interviewed. This was important because most conscientious people refused to commit themselves unless they knew exactly what they were talking about as well as being thoroughly familiar with the bill. Here again, the fact that the people were contacted when they weren't involved with a million other things was a point in our favor. They had time to talk and analyze the problem at hand.

We also had a pretty good idea of who were willing to help us, and who our opposition would be. Consequently, we worked doubly hard in trying to show the opposition that our cause was justified.

IT WAS ALSO during this period that the architects and the engineers were starting to resolve most of their mutual problems. After a great deal of preliminary work, rough drafts of the architect's registration bill were prepared, printed, and given to

the legislative committees of both groups. After the bills had been studied, the architects and engineers had a joint meeting where all differences of opinion were thoroughly discussed. It was felt by the majority of both groups that the problem of exactly where the break between the two professions should be was a problem that had to be solved by the members themselves, and should not be a matter of possible legislative confusion. As a result, the two groups united and presented companion bills in the lower house of the 1957 legislature.

After the bills were introduced in the House of Representatives, the actual work of lobbying began. Again, the most important task we had was to keep the legislators thinking about, and fully aware of, the contents of our bills. This was done in several ways:

- We talked to the legislators at every opportunity, explaining the bills and making sure that substantial data was available at all times.
- We prepared briefs of all the bills so that the legislators could review their knowledge of the bills without wading through the entire documents.
- We placed a new copy of our brochure "Architecture, Montana's Problem," on the desk of each member of the committee hearing our bills.

On the surface, we didn't seem to have any organized opposition—our biggest problem was to overcome the indifference of a large number of legislators. Most had no reason to vote against our bill, but very few would take a stand for us if any organized opposition developed. There were so many controversial issues requiring the legislator's attention, that at times it appeared our bills would fail because no one was particularly interested in our cause.

The climax of our campaign occurred the day of the hearing. We had mounted graphs from our brochure on large plaques. These were presented and explained to the committee by our attorney and several members of our legislative committee. They were supported morally by twenty-five to thirty architects and engineers who attended. The result was gratifying: The bill passed the House with only a handful of dissenting votes and went to the Senate.

The job of selling our three bills to the Senate was largely a repetition of the problems that confronted us in the House: First, keeping the Senators constantly informed of our problem and second, making sure that every member fully understood it. We had found out from our siege in the House that when anyone knew the full story behind our bills, he found no logical grounds for voting against them.

Here again, our success was due primarily to the efforts of five or six members of the legislative committee who spent most of their time out of their offices and in Helena selling the cause of the architects and engineers. In the Senate, our third major task was to convince the Senators that the rift between the architects and engineers had been closed and that we were presenting a uniform front. Very much the same procedure was used at the Senate hearing as at the House hearing. That is, we presented our problem verbally and illustrated it with our charts and supported the entire operation by having a large group of architects and engineers in attendance. All three of the bills passed the Senate with very few opposing votes.

All that now remained was for the Governor to sign our bills into law. Fortunately, during our original program of public information, we had carefully explained the entire picture to the Governor. Consequently, our bills were signed into law by the Governor and went into effect July 1, 1957. At last, after many defeats, the architects of Montana had been successful in a legislative program—thanks to the hard and diligent work of Kenneth Knight and his committee and the capable work of our chapter attorney, Alfred F. Dougherty.

NOW WE HAD a registration and licensing law which demanded competence of the architect; a law with teeth in it. We also had a new fee schedule recognizing varying formulae for three separate types of structures—designated as *specialized* or *complicated*, i.e., banks, hospitals, libraries, museums, residences, etc.; *conventional* or *ordinary*, dormitories, office buildings, and schools; and *utilitarian* or *simple*, armories, hangars, warehouses, etc. A necessarily complex fee schedule for each ran, respectively, up to 8%, 7½%, and 6½% for segments of the total construction cost.

Even after the bills had been signed into law by the Governor, the hard-working committee did not disband. The committee invited several of the Sena-

Appointments of Executive Director of R.I.A.C.

MAURICE PAYETTE, of Montreal, President of the Royal Architectural Institute of Canada, has announced the appointment of Robbins L. Elliott, of Ottawa, to the post of Executive Director of the R.I.A.C.

Elliott is a native of Wolfville, Nova Scotia, and assumes his new duties after eleven years of experience with the Federal Government. He was em-

tors and Representatives who had worked hard for our cause to an informal dinner party where they were publicly thanked for the time and consideration they had shown the architects. This, perhaps, was a small gesture, but it was something which is not normally done and I am sure that it had a salutary public relations effect for the architects.

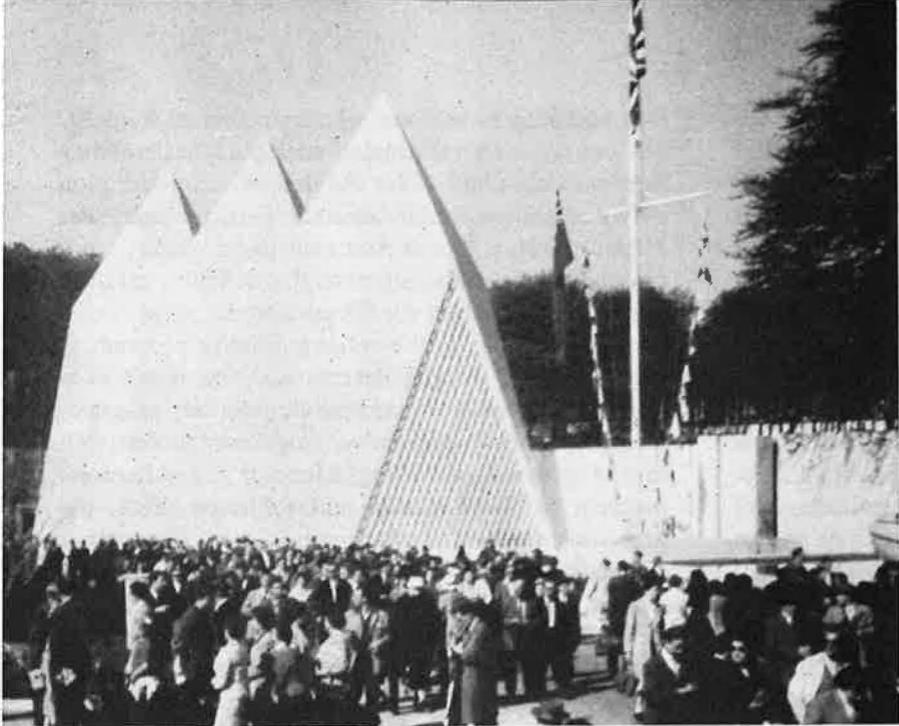
In summing up the entire legislative program, it might be said that its success was the result of a well-planned and executed public relations program. Not only was our legislative program a success, but in the process of selling Montana's architectural problem to the Senators and Representatives, the architects came in contact with a great many other citizens—people who would not, under normal conditions, ever hear the words "architect" or "architecture." Many more individuals began to realize that architects were *people* and that the service they were offering was a worthwhile investment.

To the architects in Montana, public relations has taken on a new meaning. They have actually been a working part of, and have seen the results of, a good community public relations program. From this experience, we have established five basic points which we feel are necessary for the execution of any successful public relations program:

1. A complete understanding of the problems to be solved and the results desired.
2. Competent professional guidance.
3. A thoroughly organized program designed to gain the results desired.
4. The enthusiasm and determination to carry out the planned program regardless of obstacles which will be encountered.
5. Careful attention to the premise that the public know and completely understand both sides of the question at issue. If your cause is a just one, and people understand it, opposition disappears surprisingly fast.

As a result of conscientiously observing these five points, the architects of Montana are well on their way to walking in step with their public.

ployed with the former Reconstruction and Supply Departments and with the Department of Public Works. From 1949 to 1955 he was Executive Assistant to Hon. Robert Winters, Works Minister in the St. Laurent administration. Appointed Assistant Director of Property and Building Management in 1955, he became Director of Personnel in 1956, a position he vacates to join the R.I.A.C.



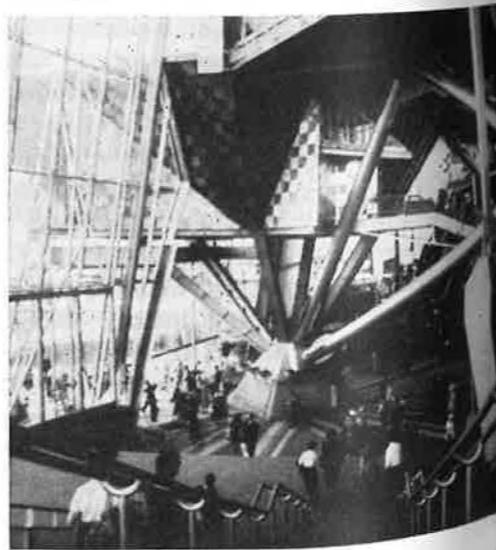
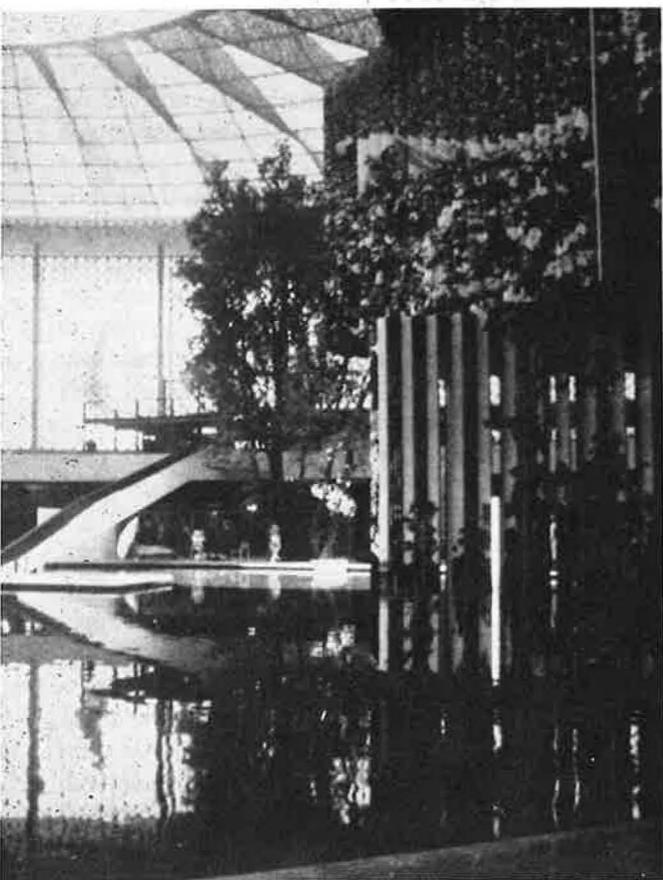
The "chapel" part of the British pavilion displays the inventive thinking of the British. It is breathtaking and dynamic. The exterior is a stark white form punctured with pieces of stained glass which give textural quality to the sides. The interior is rich and austere with the only light coming through the stained glass windows. The rest of the British exhibits are a series of mazes which force you through areas which are not always interesting. The philosophy of the British building was to control the traffic pattern in order to avoid congestion.

A breezy and purely personal critique of the Brussels Fair by a young Philadelphia architect.

Feet, Architecture and the Brussels Fair . . .

JACK A. THALHEIMER, AIA

LEFT: The rat-like maze of the British Pavilion was far removed from the luxurious space of the U.S. Pavilion. The old saying "Run into the roundhouse, Nellie, they can't corner you there," works to the advantage of the person who wants to explore the building, and not be forced down a direct path. It is true, however, that a person without special interests would not know which way to go or what to see first. From a propaganda viewpoint this might be dangerous. BELOW: Many architects, particularly the French, feel that the expression of structure is attractive. The interior of the French Pavilion shows how structure has overpowered the display.

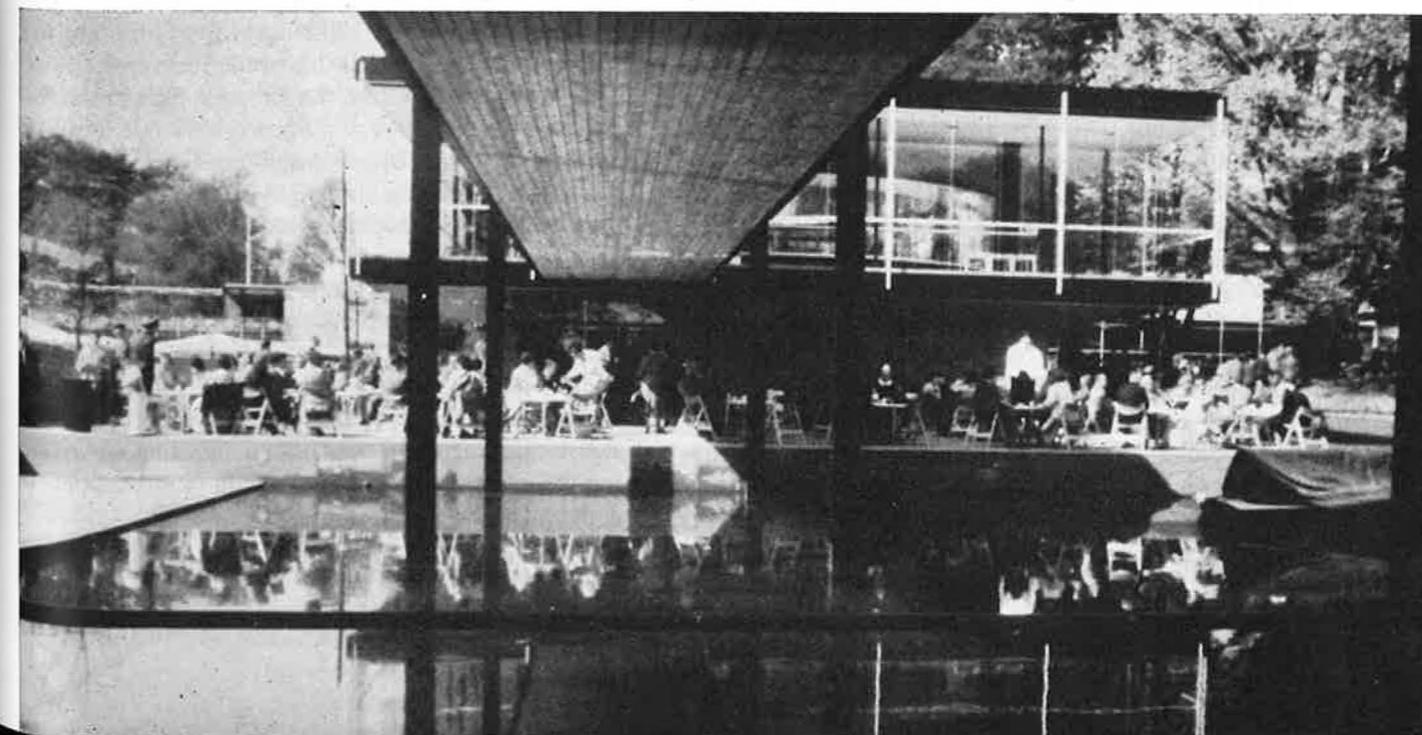


IF ASKED TO WRITE in twenty-five words or less "I went to the Brussels Fair because . . ." I suppose I would answer that "As an architect I am constantly looking for new ideas, and the touting of the Fair by press, radio and TV managed to arouse my curiosity." (I see that this is twenty-six words, and I guess I am now ineligible to win the prize.)

Besides my inquisitiveness, I had another reason to visit the Fair. I have been appointed chairman of a Bicentennial Committee to plan a celebration for Philadelphia in 1976. Naturally, I wanted to meet with people abroad and get their views on the current Fair, as well as seeing it for myself.

But before I actually discuss the Fair, I would like to tell you the reactions of my wife and myself, as a couple travelling by car en route to the Fair. We were amazed by the lack of interest in Europe, and especially in Belgium. Driving from Copenhagen down through Germany, we found little interest, and no banners, posters—or, worst of all, no country-to-country road maps. When we drove through Belgian customs, neither the customs officials nor the first gas station had maps to the Fair. This was accentuated by the lack of maps (printed in English) regarding the Fair and its buildings. At

Above Right: Esthetically the Russian Pavilion is not worthy of comment. The building, although much has been said of its prefabrication, is merely a Penn Station with displays set five feet on center with an occasional drape and much too often repeated propaganda slogans. Right: Possibly the finest single space within the Fair was the Vatican building, rich with simple form, stained glass and "atmosphere." It is not cluttered with displays proving that a little done well is far more expressive than a busy, crowded space. Below: The Germans have carried the Bauhaus thinking to the epitome, and have built a beautifully scaled and crisply detailed building.





least, this was the case in late May. Apathy is the only fitting word to describe the general feeling in Europe toward the Fair.

As a golfer, I am fortunately accustomed to walking four miles at a clip. My wife and I spent three days walking—from breakfast to dinner, and still did not have a complete picture of the Fair. This does not mean seeing everything, but merely getting a taste of each country. Walking and planning must surely go together, when thinking in terms of one human being's capacity to endure. There is no doubt about it—the overall planning of the Fair was its greatest shortcoming.

The unifying devices which would have tied the Fair together as a design entity were not visible. Interesting paving materials, lighting, or signs utilized as tying elements were lacking.

The Italian design magazine *Domus* offers an interesting comment which I think is worth quoting: "As to architecture (of the Fair), provisional as it is, it teaches us nothing that we did not know already. This exposition, whose slogan is 'Man in Progress,' this forerunner of future civilizations which it wishes to anticipate by at least twenty years, offers few surprises in building."

There are really two distinct styles shown at Brussels, the screen and grillage, or uniform treatment (i.e., the American pavilion), and the converse—the expression of the structure, as exemplified by the French pavilion. I personally feel that the latter is a distracting form. If anything unites the architecture at Brussels, it is that structure *is* architecture. No new trend emerges. And the only way a visitor can get a complete view of the Fair is by riding an aerial tramway, which gives an excellent view of all rooftops, but is hardly the proper manner in which to "see" a fair.

Who deserves the gold star for the best building? Edward Stone, by a long lead. He has designed a majestic pavilion for the United States, certainly the outstanding structure, in the richest setting.

The German pavilion is a magnificent piece of Bauhaus architecture with all the refinements possible. Where can they go from there?

As most readers undoubtedly know, the Russian pavilion was shipped in pieces from Moscow; this might be a logical reason for its design, but the aesthetics suffered severely. It looked like New York's giant Penn Station—with machinery added.

I am, however, more concerned with criticising the *plan* of the Fair grounds, and its *theme*, not its architects. The comparison would be as though an architect created a beautiful tree when the forest is inferior.

Over the past few months, I have been receiving press clippings about the Fair. None of them discuss it in overall terms; most of the articles deal with the high cost of hot dogs, and the fashion models parading in the United States pavilion. Taking the last first, who cares about the models unless you can see them in the flesh? As for the hot dogs, Dorothy Kilgallen, the columnist, said that a hot dog is an American innovation for baseball and football stadiums; when removed of this allure, it becomes just a weiner, and the Europeans know what a weiner looks and tastes like.

The other clippings dealt at length with the American versus the Russian pavilion, which might be subtitled "or who is winning the cold war!" George V. Allen, Chief of USIA, after he visited the pavilion at President Eisenhower's request, returned with the word that *he* liked the Fair.

I am not being partisan, but I liked the content of the American pavilion, too. I had expected that "big car" feeling. Instead we feature the cultural side of our nation which many Europeans didn't think we possessed. When I was studying in France a few years back, I was exposed to the general European point of view that Americans are materialists, first, second, and last. But our pavilion, with its emphasis on painting, photography and sculpture, presents the cultural rather than the material. Assuming you like the intent, the pavilion is successful in its goal. Those who criticized were obviously not satisfied with this view of America.

The atom, symbol of the Fair, is of course, a sub-microscopic thing. And the Atomium is a positive enlargement of a form, which, when enlarged, is no longer graceful. The absurdity is the hot dog souvenir stand on which this whole form rests.

Why did they have the Brussels Fair in the first place? If there was a purpose, it is not clear. I would guess that Brussels had the Fair to promote Brussels. What was the origin of any fair? A place for people to get together, enjoy each other's company, show off the wife's preserves, or proudly display the finest cow of the year. The whole idea was to show off the best to your friends and neighbors.

We have a lesson for 1976—if we apply it. There should be a reason to hold a fair, other than the anniversary of our country. While the Brussels Fair was interesting, there was not enough that was exciting or memorable. See you in Philadelphia in eighteen years!



Let's Put a Bang in the Curriculum

ROGER ALLEN, FAIA

It is with a shout of joy that the Editor welcomes back to the erstwhile dull pages of the Journal (apologies Al, but look what he says about you) the deadpan sage of Grand Rapids.

WHEN I READ, some months ago, Mr. Alfred Bendiner's opus in Harper's magazine entitled, "When Frank Lloyd Wright Got the Medal," I decided to hang my typewriter up on the wall (over crossed erasers) and retire from any further analyses of architects or architecture, on the principle that one cannot improve on perfection.

I should have clung to this resolution, regardless of its devastating effect on posterity—which hasn't done anything for me lately, anyway—had not Professor Hugo Zuchinni visited Grand Rapids. The eminent educator's visit was in connection with the pursuit of his avocation. Twice a day for six days a week he gets shot out of a cannon on behalf of the Clyde Beatty Circus. Formerly he got shot out of a cannon on behalf of the Ringling Brothers-Barnum and Bailey Circus and I often wished I could be half of Ringling Brothers-Barnum and Bailey Circus. Preferably a ticket-seller with a fast double shuffle at counting out change. But R.B.-B. and B. became allergic to the smell of canvas and now confine their activities to such areas as Madison Square Garden, although a garden is not precisely what springs to mind around elephants, if you ask me.

Let us return to the point, however reluctantly.

In the intervals between high velocity projections of his art, Prof. Zuchinni confided some fascinating facts about himself to a reporter. A reporter for the opposition paper—not the one I write a column for—so I can speak freely. He said, for instance, that in his capacity as a human shotgun slug, he attained a velocity of 200 miles per hour. I

view this statement with suspicion. When did he ever get shot 200 miles? I am not as credulous as my wife believes me to be. My wife (Mrs. Allen) insists that I am too inclined to let one and all tell me all kinds of stuff without remarking "That's a big fat lie" when it is.

However, the Professor also remarked that his hobbies were art and architecture. Aha, now we're getting to it.

Is it possible that getting shot out of a cannon twelve times weekly has a provable tendency to incite the shootee to superb achievement in the field of architecture? Should a course in which the students make like a large caliber bullet be included in the curricula of our schools of architecture?

Frankly, men, the answer is maybe yes, maybe no. We simply do not have enough data. This must be seen to. I will be glad to see to it, in an advisory capacity only, as my medical man is of the opinion that black powder fumes will have no ameliorative effect on my sinuses. This does not surprise me; neither does anything else.

I have made inquiries and it would be easily possible, with a moderate grant from the Ford Foundation, to construct an exact facsimile of the cannon from which Prof. Zuchinni so rapidly emerges. We could then shoot some architects out of this interesting weapon and study their reflexes. On second thought, the Rockefeller Foundation should be in on this. Also Blue Cross. Naturally, a test group of architects should be large enough to provide reliable data. One hundred architects would be a nice round number. I have already undertaken the drudgery of compiling the list of architects, myself. Took a lot of blue pencilling to get it down to one hundred, as I have lost too many jobs lately.

Frankly, and I regret to report this, I have not had the cooperation a man should be able to expect from my colleagues in this fascinating scientific experiment. For instance, on explaining, with my usual dignified eloquence, the whole process to one architect—who by a quaint coincidence happened to be on the honor list of one hundred—he insisted on asking a lot of tedious and irrelevant questions. Such as "What kind of a net you going to use?"

What net?

I never even mentioned a net.

Anybody for gunnery practice?



The United States Embassy in Bangkok

— the Story of its Design

JOHN CARL WARNECKE, AIA

The following article by Mr. Warnecke, telling how he arrived at the form for the new Embassy, was the basis of a talk he gave before the Association of Student Chapters of the AIA at the Cleveland Convention.

THE STATE DEPARTMENT'S foreign building policies require that embassies be functional, sympathetic to surrounding architecture and in harmony with the culture and traditions of the countries in which they are built. Therefore, in the fall of 1956, having been awarded a State Department contract to design the new US Embassy in Bangkok, following a briefing in Washington, my associate, Denis Beatty, and I left San Francisco to study at first hand the cultural traditions and building techniques of Thailand.

On the trip over we made an outline of what we hoped to accomplish during our stay:

1. To meet the American Embassy personnel and to see the compound of the present Embassy which will also be the site for the new building.
2. To go over the physical requirements of the new Embassy with the Ambassador and his staff.
3. To study the functions of the building.
4. To meet with local architects, contractors, sub-contractors and artisans to learn the methods of local construction and to study the conditions of the site and the climate.
5. To study the historical and contemporary architecture of Thailand.
6. To study the people.

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By accomplishing these six points we hoped to be able to design a building that would symbolize America to the Thais and that would recognize the site and the climate and rich cultural heritage of Thailand. The final design would then be a blending of both cultures and, it was hoped, would establish a character entirely of its own.

BEFORE BEGINNING the official part of the trip, we spent some time in Tokyo and Hong Kong to gain a broader knowledge of Asia. Subsequently, Mr. Beatty and I went to Cambodia to visit the ruins of the ancient Khmer capital of Angkor, and then on to the more recent ruins of Ayudhya, the former capital of Siam.

It was interesting for us to note that the present capital of Thailand, Bangkok, is one of the newest of Oriental cities. It is less than 200 years old with a history paralleling that of our country. I would like to quote from the book "Siamese White" by Maurice Collis, in which he states "Ayudhya was a city untouched by European thought or ways—a mart of the fabulous Orient with an extravagant atmosphere of its own. It was the seat of a strange king and a fantastic court. The directors of the East India Company, in the 17th Century, stated it to have been as great a city as London. It was larger than Paris, with poor houses, magnificent pagodas, an admirable river, a huge population and countless boats. The King's palace was like a town apart—great and magnificent, many of its buildings and towers being entirely gilded."

Ayudhya remained the capital of Siam until 1767 when it was sacked and almost completely destroyed by the Burmese, never again to be rebuilt. Today it lies in picturesque ruins.

As a result of this invasion, the Siamese moved out and began to rebuild their capital forty-five miles to the south in Bangkok, in an almost identical pattern to the former capital city of Ayudhya.

"The above description of Ayudhya gives a picture of Siam of all times—as it was in A.D. 1350 and 1690 and as may still be seen in modern Bangkok today—magnificent beauty and squalor all happily and naturally mingled together."

OUR FIRST GLIMPSE of Thailand from the window of our Pan American Clipper was of fields of brilliant chartreuse stretched beneath the bright tropical sky. But as I looked toward the sun the green fields suddenly became a mirror of reflections and I realized that we were flying over flooded rice fields. Laid out

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methodically every few miles between the rice fields are parallel lines of water highways crowded with small boats. These waterways stretched into the distance as far as the eye could see. Clinging to the narrow banks were clumps of trees and small villages which became more numerous as we neared the capital. Upon landing we saw a tall, bell-shaped pure white stupa silhouetted against the blue sky. This was our first exciting view of Bangkok.

Historical tours were arranged through the many fabulous temples and palaces of the area but aside from the official arrangements, we found that our own contacts enabled us to get beneath the tourist facade and to make a more personal appraisal of the country.

We were met in Bangkok by Admiral Abhakorn of the Thai Navy who is a close friend of Denis Beatty's father, Admiral Beatty, U.S.N. (Ret.). Admiral Abhakorn arranged a trip down the river in a naval yacht where we had front row seats for one of the most spirited naval maneuvers that we had ever witnessed. Within a few yards from our yacht depth charges threw up sprays of sluggish, muddy, river water while a demonstration of rescue operations was enthusiastically carried out on a nearby gun boat supported by helicopters. For reasons never made clear to us, torpedoes were thrown into action for a grand finale and almost made a direct hit on the Admiral's flagship from which we were witnessing the lively display.

This happy atmosphere in which throngs of gay people on land and in small craft on the river participated with much gusto was further enlivened by the introduction of huge decorative floats, music and a liberal sprinkling of flowers. It became a regular Mardi Gras.

After being thus assured that the fleet is definitely an active force in Thailand, we made a more relaxed trip up the river to Bangkok. Admiral Abhakorn, I learned, is the grandson of King Monkut of Thailand, most recently celebrated in Rodgers and Hammerstein's "The King and I." The Admiral's father founded the Thai Navy and is today revered as a deity in the "Temple of the Reclining Buddha" in Bangkok.

Another highlight of our trip was a dinner party given for us by Princess Mom Kobkaew Abhakara, the small and beautiful wife of the former Regent of Thailand. She is a representative of the blending of East and West in Thailand. Although she has no children of her own, she has adopted, reared and educated a large number, many of whom are children of the court. At the present time she has twenty-two children who live with her under her supervision. In this respect her household resembled the scenes from

"The King and I." She is also one of the best women golfers in Bangkok and one of its leading social figures.

All of the thirty guests had the same last name as they were all her relatives. The party was held at her home which is located on the edge of a *klong* or canal. Japanese lanterns were strung from the trees on the lawn. The men wore white tropical suits and the women were dressed in their rich native colors but in Western style dresses. White herons nested in the dark green rain trees that stood on the edge of the wide green lawn.

Some of the older children helped serve the curries and tasty kebabs, and after dinner a Thai orchestra performed on a little mound of the lawn. A boy and a girl danced in jeweled costumes with all the beauty and precision of the Thai classical dance. Later we walked down to the *klong* where the traditional display of fireworks was set off in our honor.

This was the season of festivals in Thailand which follows the monsoon season. A full moon rose high over the trees and we were invited to take part in one of the most popular of all Thai celebrations—*Loy Krathong*, the floating of light in a leaf cup. We were all given baskets filled with jasmine, wild orchids and gardenias. A candle and incense stick were placed in the center. We were told to light the incense and the candle and then carry the basket down to the water's edge and set it afloat. Gradually dozens of small candle boats were drifting slowly down the *klong* which was bright with the reflection of the full moon. Everyone watched until his basket disappeared from sight for it is believed that if the candle still glows as the basket drifts out of sight, you will be forgiven your sins for a year.

The connotations of this beautiful celebration gave us an opportunity to discuss with the other guests many of the religious and philosophical attitudes of the country which later were important to us in selecting certain of the design approaches for the Embassy. It was through personal contacts such as this that we came to know more of the Thais.

BANGKOK IS A MODERN oriental capital. It is its fabulous architecture that makes it unique from all other cities of the Far East. The temples and other religious buildings are the most vivid expression of the local architecture. The rich colors are in strong contrast to the subtle art of Japan with its soft, subdued tones. There is a dazzling beauty in Thai architecture found in its porcelain, mosaic towers and mammoth sculpture and the bright gold leaf of

the Buddhist stupas. Thai architecture is basically masonry or wood with a rich overlay of color. Carved wood beams are hand painted in gold and blue with gabled roofs overlapping each other with brilliant red, blue, green and yellow tiles. The many palaces and the "solid gold" and "emerald" buddhas all represent the richness which is a part of the Thai way of life—a life that reflects the rewards of peaceful pursuits.

One of the most important aspects of Thailand is that it is a land of artisans. This term is little used in the West and as a profession is almost unknown. We watched a young man one afternoon carefully carving by hand a wooden frame to be used for cement forms. I was impressed with his skill and asked him where he had been trained. He replied that this was a family trade passed down from one generation to the next. His father had taught him the art just as his father and learned from his grandfather. A large segment of the population is trained in this way in all fields of art and can be hired as a laborer's rate. The availability of such skilled artisans is very evident in the local architecture. The striking teak gables of the temples are some of the best examples of this native craft.

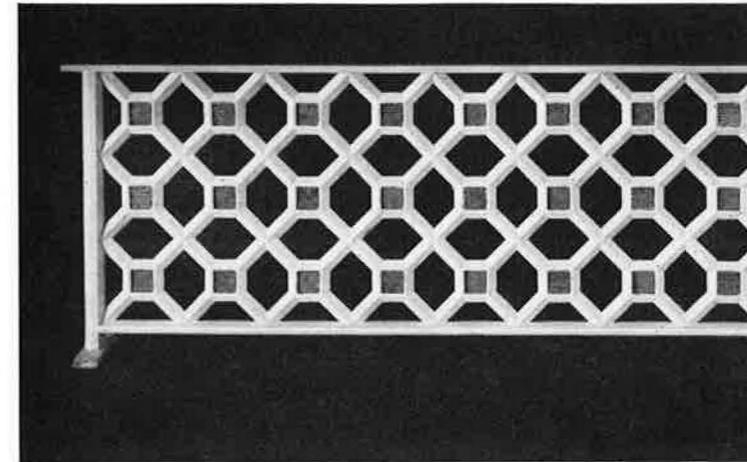
Another aspect of Thai architecture that impressed us was the relationship of the *klongs* to the buildings. Almost all dry land in Bangkok has been obtained by dredging and filling and the building of dykes. A *klong* is the general name for any waterway made as a result of these dredgings and can be either a canal or a lake. These waterways often serve as the chief means of transportation. Bangkok has well paved streets for automobiles, street cars, tricycle and pedestrian traffic, but in addition it is, like Venice, permeated by water. The advent of Western technology brought the motor to the small boats of Bangkok and the noise and congestion on the *klongs* equal any "main street" traffic in the West. On account of the penetration of water throughout the city, Bangkok is alive with reflections. All the color and beauty of the architecture are twice-present. The sensitive use of water as a design element in architecture has a long-established tradition locally. Angkor Wat is mirrored in a broad moat. A singular monument at Angkor is the little *Prah Neak Pean* which is a tower in the shape of a huge lotus. It stands—floats—in the middle of a lake on a circular base of stairs that lead down into the water. More recent, the little Summer Palace north of Bangkok is likewise situated in a lake. It is a small cruciform pavilion topped by a central spire and stands on a base on posts with a balustrade of delicate wood filigree. It is one of the architectural jewels of Thailand.

Contemporary architecture in Thailand is mostly an offshoot of the international style as a result of Thai students who studied in Europe and America and then came home to try to apply this style to their own setting. Their office buildings of concrete have box-like, solid walls which are constantly disfigured by mildew common to an area like Bangkok with its humid climate. Because of their nature the religious buildings are constantly maintained against this problem but public building maintenance proves much too expensive.

Much of the present architecture of Thailand is now under the direct supervision of the government civil service because of these unadapted examples of the international style. The government has attempted to force the traditional architecture to house activities for which it was never intended and has ended up with a watered-down version that is quite lacking in any real regional character. A further look at government buildings with local architects convinced us that we ought not to pursue this direction.

We found some of the best Thai architecture among private residences. We backtracked to homes that had been built twenty-five to fifty years ago. Most of them are two-story structures which make important use of lawns and gardens in their general design. The ground floor is usually of marble or tile penetrated by columns which support the second floor. This main floor is almost level with the lawn and completely open to the outside. Most entertaining is done on the main floor while a private living area is duplicated upstairs for the family. Both of these areas are ventilated by large ceiling fans. The upstairs quarters also have large windows covered only by shutters without glass or screens. The stairway is the only connecting link between the two floors and provides both security and privacy for the family. These residences are fine expressions of the integration of space from indoor to outdoor areas.

Encouraged by this discovery, we continued to seek out older buildings. Almost hidden from the road in this same area I found an old hospital which had been built before the introduction of the international style. Once again I found a design which was successfully adapted to the site and climate. In particular I noticed the large roof overhangs, the floating balconies and the details of beautiful, pre-cast concrete railings of modular design. The overhangs kept sun and rain off the flat wall surface. The whole building had an attractive, lacy feeling. Here I saw the possibility of creating the main elements of design with the technique of modern flat slab concrete construction which could give an even lighter feeling to this concept of design.



MODEL OF THE BALCONY RAIL WITH BLUE AND GOLD TILE INSERTS.

We decided to combine these better features of the residential architecture and those of older buildings such as the hospital with certain subtleties of the religious buildings, developing from one a general structural plan and from the other certain design details and color schemes. Thus we found our point of departure.

THE PRESENT US EMBASSY is located in a residential area. Rain trees surround the flat site which is bounded by *klongs*. This compound will also be the site for the new building.

The new building will provide facilities for the American Ambassador and over 250 members of the diplomatic and consular staffs. In addition, the total site will be developed to obtain enough area (dry land) for parking requirements for both the US Embassy staff and the USIS staff. Miscellaneous other structures, such as a medical-commissary unit and a warehouse unit, will be developed at a later date.

On account of the low bearing value of the soil it became necessary to place the building on piles. Because of this need and since the land immediately under the building had no value for support it was an obvious decision to raise the building up on its columns. This was a coincidence of Thai traditions and modern design concepts of the West.

This situation permitted that the ground all around the building and under it be excavated. This was done in order to obtain fill to eliminate the several, high maintenance *klongs* scattered over the site and to provide parking for some 300 cars. Esthetically this solution was all we could hope for, and fortunately it also proved to be the most economical treatment of the site. (To have filled all the *klongs*

with borrowed fill would have cost a considerable amount more.) The lake was given a shape which is reminiscent of the lotus petal, one of the most recurrent motifs in Oriental design and ornament.

The lake will also provide the free space which is important for the dignity of any building and which is desirable for the security of this government building. The limits of the open space will be formed by a screen of rich, green rain trees.

The building will be a three-story structure raised over a ground floor space from which two bridges will reach across the water, one from the rear for pedestrians and one from bank to bank continuous through the ground floor space for automobiles, permitting the loading and unloading of passengers in a protected area. The wide roof overhang and the floor slabs which project beyond the building core forming wide balconies will be a protection against rain and sun. There will be no walls to mildew or to soak up heat. In fact, these wide overhangs so protect the building that it was possible to sheathe it in glass. The occupants will have complete visual freedom and will look into the crowns of the rain trees past the delicate balcony rails.

The building also has a central air well which is protected from above by a clerestory roof slab. The air will breeze into the open ground floor space and form its own movement up and out through the building. This natural respiratory system will cool the building greatly. To enter this space with the subdued light that will penetrate the glass enclosed core will be to enter an oasis, a refuge from the tropical day. In addition, the office spaces will be air-conditioned, but the actual load that the machinery must carry will be measurably reduced.

The curve of the wide roof overhang and the

balconies may suggest the concave ridges of the temple roofs. It is a "design line" which has numerous instances of expression in Thai art.

The motif for the pavement on the bridges, in the ground floor space and in the lobbies was found in the Marble Temple in Bangkok. This fine monument has in its inner courtyard a pavement of pink and blue granite laid in a simple and a very beautiful geometry. It is, incidentally, so smooth that it reflects the white columns, the orange glazed tile roofs and the gilded gables as were it a surface of water—in true Thai fashion. The Embassy pavements will be made of an excellent pressed marble chip tile which is produced locally.

This geometry was further used for the design of the balcony rails. These will be precast and will have inserts of blue and gold tiles in the design. They are also made locally and are quite inexpensive.

The color scheme of the Embassy is a tropical one and is thoroughly Thai. It is a white structure accentuated with bright blue and gold.

The Embassy will function as a highly efficient American office building. Its interiors are flexible spaces with a minimum of circulation necessary because of corridors around the central well. Everything that is required for an American building will be provided. It has been designed to take advantage of American engineering and building techniques as well as Thai conditions.

To a Thai coming into the clearing among the rain trees the US Embassy may remind him of the little Summer Palace north of Bangkok. If seen on the night of the *Loy Krathong*, when the fluorescent ceilings are lit and this brightness is floating on the lake, then the Embassy will become a glittering lotus petal.

A New Subscription Offer for Laymen

THE *Journal* announces another change in its subscription rates, for group subscriptions under certain conditions.

Member of art associations, art museums, civic planning associations, or other such cultural groups, may subscribe to the *AIA Journal* at the half-price rate of \$2.00 a year. However, such subscriptions cannot be handled individually, direct from the members, but should be through the sponsoring organization.

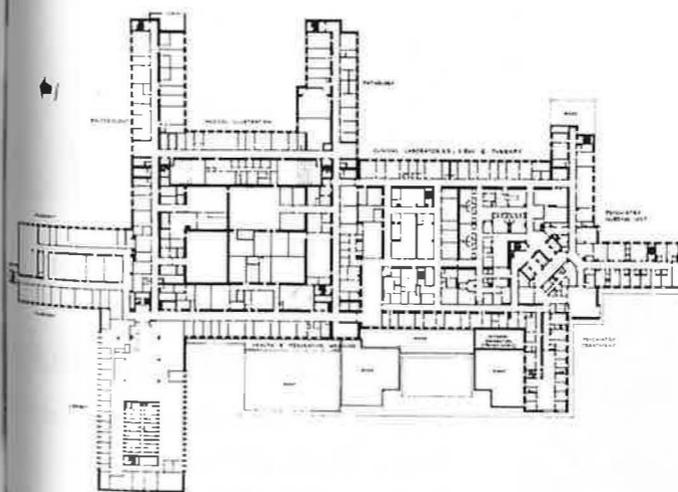
Any association wishing to take advantage of this offer for their members should write to the Editor. Furthermore, the Editor requests readers to call this offer to the attention of the director or other official of their local art museum or association.

The *Journal's* circulation among non architects is increasing, and we have many evidences that our articles are of interest to any person interested in the arts or in planning in general.

Exhibition of New Hospital Architecture

THE DESIGNS SHOWN ON THE FOLLOWING PAGES are from an exhibition of new hospital architecture shown at the gallery of the Octagon from October 20th through November 16th. Members of the AIA Committee on Hospitals and Health selected the work of twenty-one firms from the recent showing of the American Hospital Association in Chicago. Designs of two new interesting hospitals in the Washington area were also included in the showing—the Southeast Washington Hospital by Sherlock, Smith and Adams; and Chestnut Lodge (mental hospital) of Rockville, Maryland, by Satterlee and Smith.

This is the fourth exhibition of contemporary hospital building at the Octagon since 1954. The showing opened with a large reception to members of the profession, Federal and District hospital officials and other friends of the Institute.



Medical Center West Virginia University

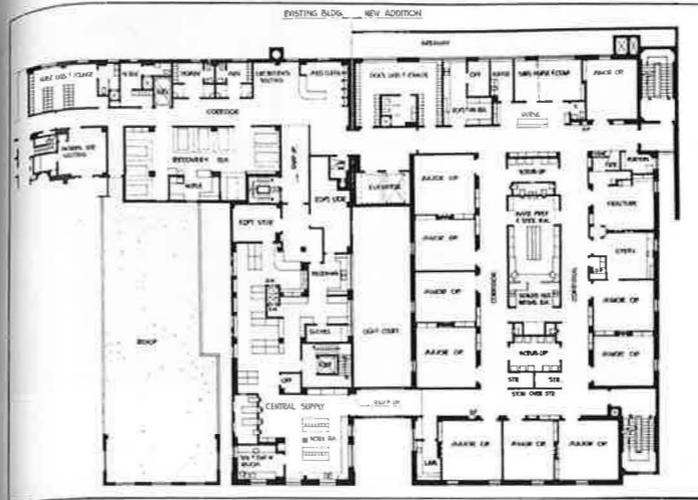
Morgantown, West Virginia
C. E. Silling & Associates Architects
with Schmidt, Garden & Erickson Associate Architects
Hospital Consultants James A. Hamilton Associates





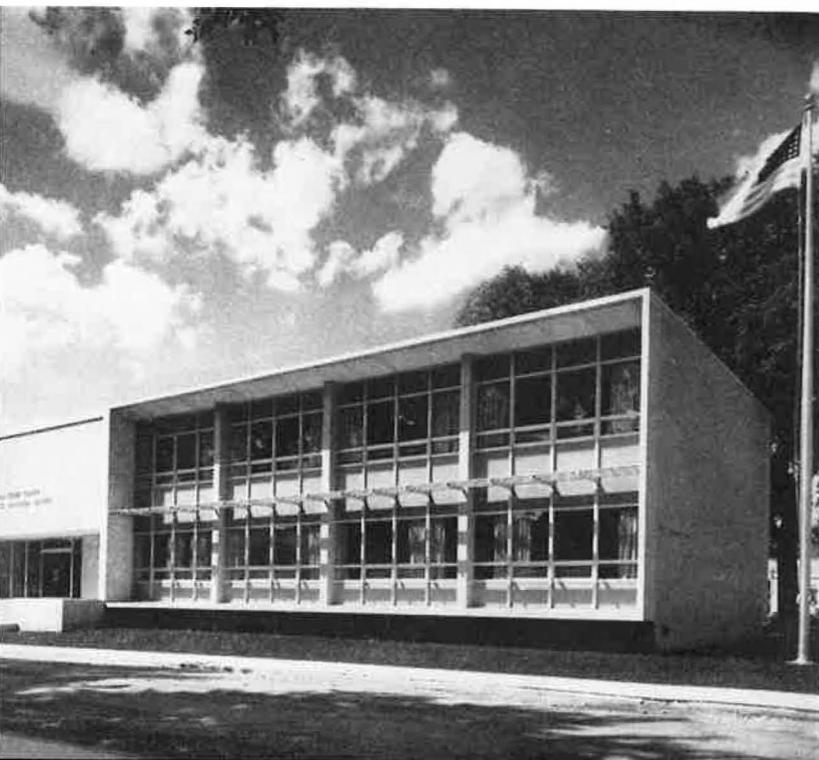
Greater Bakersfield Memorial Hospital

Bakersfield, California
Stone, Mulloy, Marraccini & Patterson, Architects



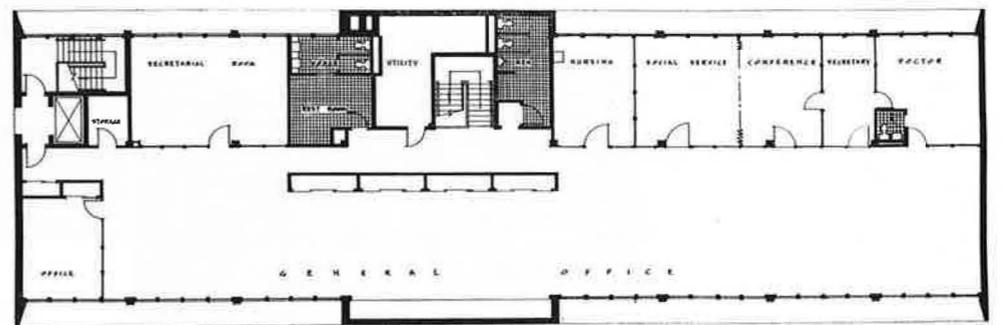
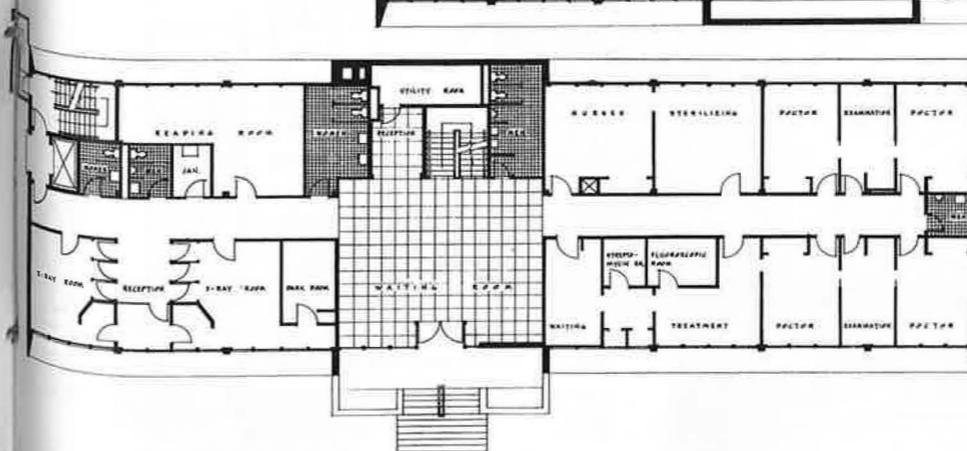
St. Francis Memorial Hospital, San Francisco, California

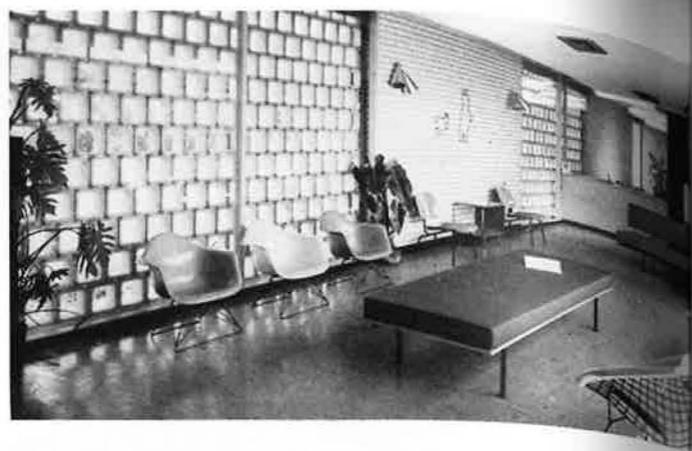
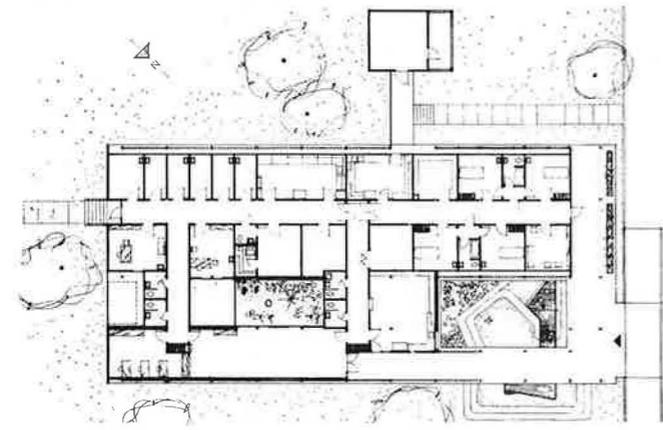
Frank W. Trabucco, Architect



Medical Clinic and Survey Building

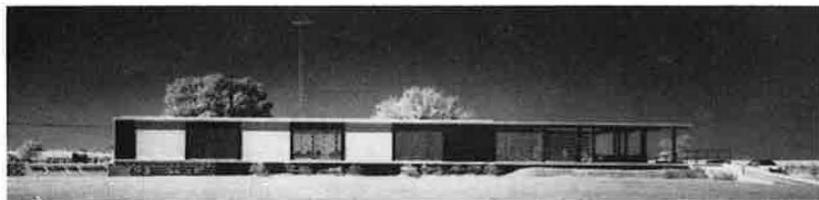
Cook County Tuberculosis Sanitarium District
Forest Park, Illinois
Lundstrum & Skubic, Architects





Sako Clinic for Children

Raceland, Louisiana
Curtis & Davis, Architects



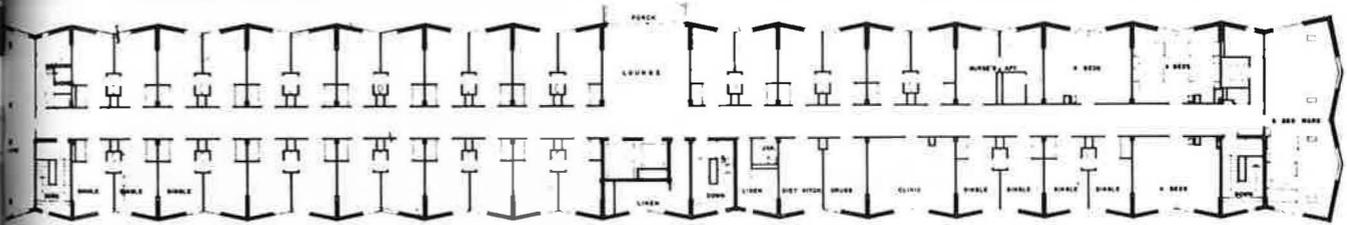
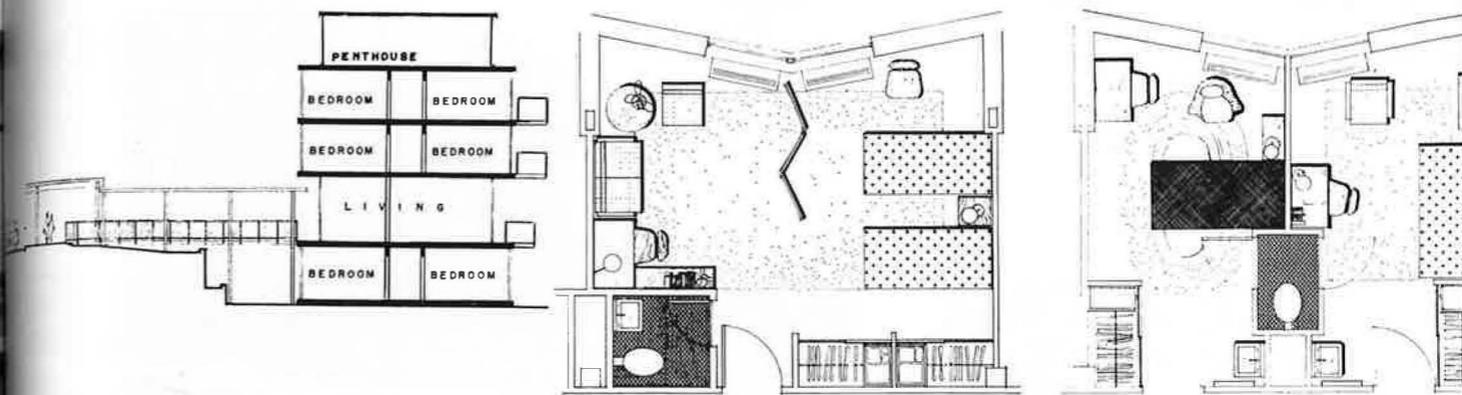
Rehabilitation Center for Vanderburgh County

Evansville, Indiana
Greubel & Saletta, Architects



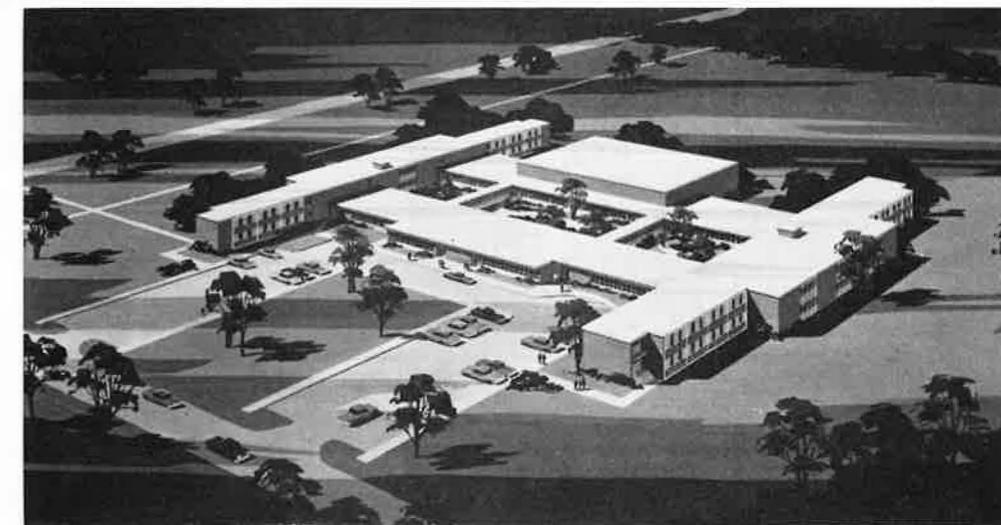
Good Samaritan Home for the Aged

St. Louis, Missouri
Hellmuth, Obata & Kassabaum, Inc., Architects



Acute & Intensive Treatment Center (Mental)

Central State Hospital
Indianapolis, Indiana
Fleck, Quebe & Reid
Associates, Inc., Architects



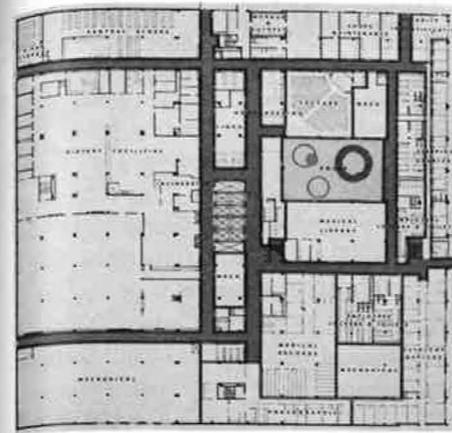
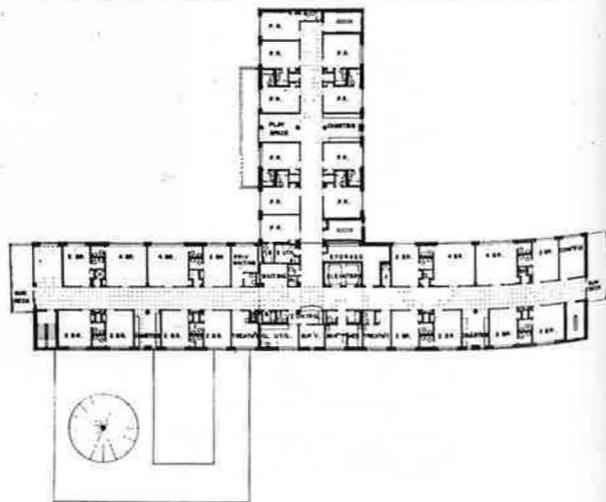
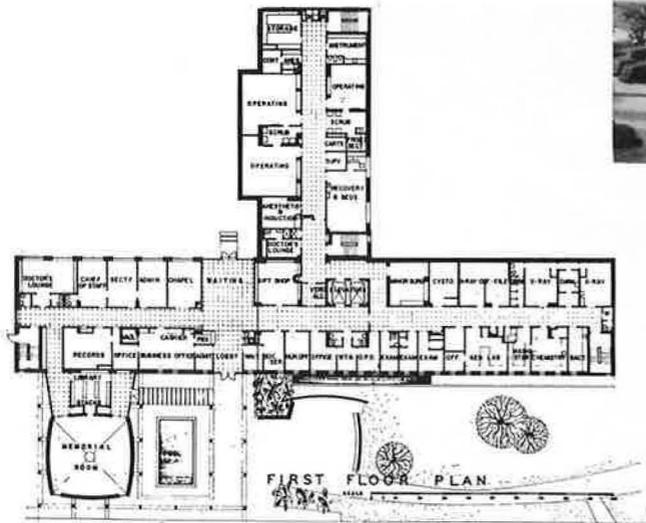
*Valley Presbyterian
Hospital, Van Nuys, California*

Pereira & Luckman, Architects



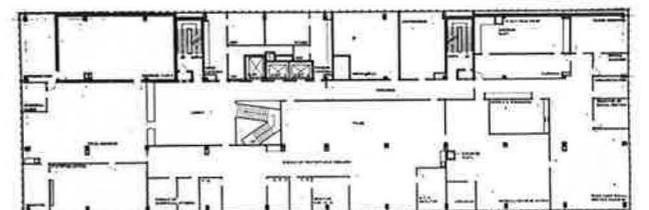
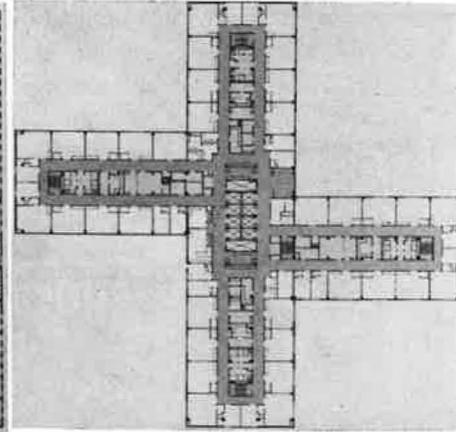
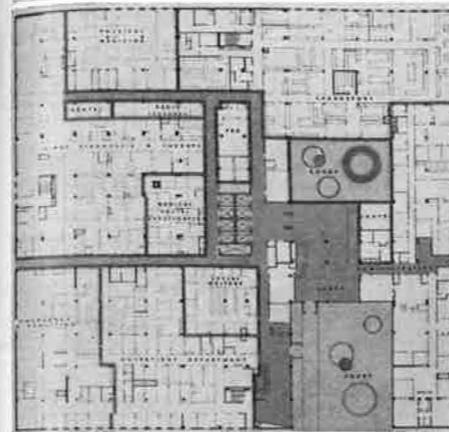
*Henrietta Egleston
Hospital for Children*

Emory University, Atlanta, Georgia
Abreu & Robeson, Inc., Architects



Wayne County General Hospital

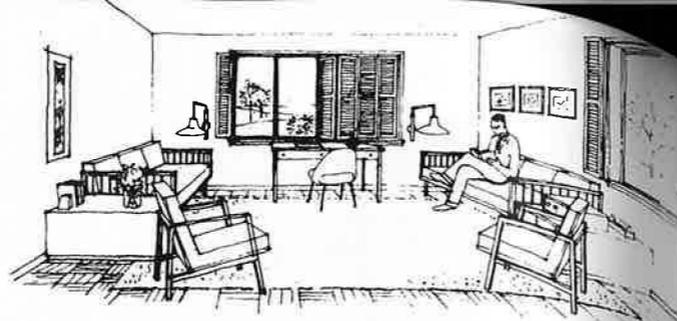
Eloise, Michigan
Smith, Hinchman & Grylls, Architects



Public Health Center

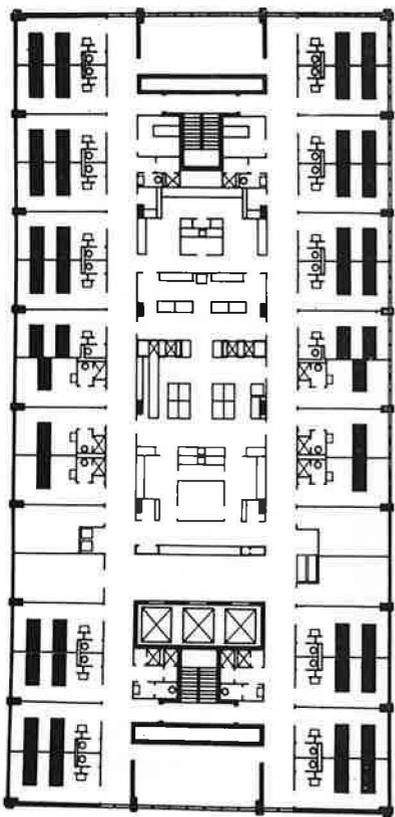
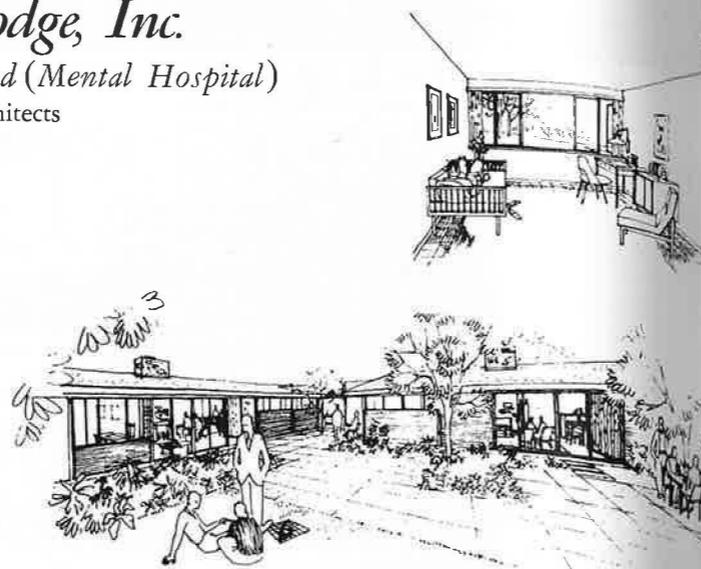
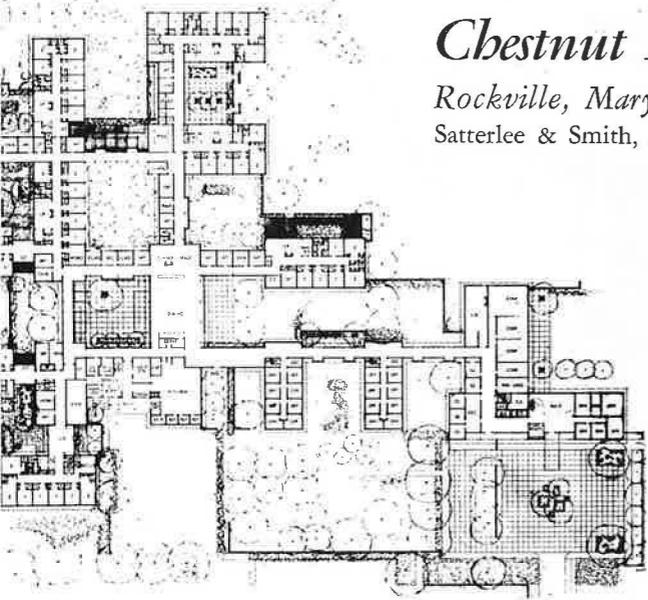
Minneapolis, Minnesota
Thorshov & Cerny, Architects





Chestnut Lodge, Inc.

Rockville, Maryland (Mental Hospital)
Satterlee & Smith, Architects



Southeast Washington Hospital

Washington, D. C.
Sherlock, Smith & Adams, Architects

ONE SIMPLE FACT continues to nullify both the efforts of the road engineers and the arguments of those who insist that our road system must everywhere be enlarged to cope with modern traffic: the fact that the more road-space you provide the more motor-cars arrive on the scene to take advantage of it, so that from the point of view of congestion you are back where you started. This is a problem America in particular is having to face today, but America is postponing acknowledgement of the fallacy that the building of roads can by itself outdistance the manufacture of motor-cars, by building roads, allowing them to be flooded with motor-cars, and then building more.

Which she has the space to do. We have not; if we follow the same policy, the time will quickly come when the road-space occupied by motor-cars, moving or stationary (mostly stationary), will take up so much of the total that all territorial development will come to a standstill.

So what about an alternative policy to that which encourages more motor-cars: one which discourages them as energetically as possible? This essay is an examination of the arguments in favour of such a policy. It may sound like a completely reactionary policy, but it is not. It would be reactionary if it represented a retreat from the frontiers that progress has pushed forward on society's behalf, or if it was motivated by a wish to pretend that motor-cars hadn't come to dominate the social and physical scene—that is, by nostalgia for the peaceful days before motor-cars happened.

But planning to make any phenomenon (including the motor-car) an asset, not a menace, to society is progress rather than reaction, and the one thing we can say about the way we have allowed the motor-car, which came into being as no more than a useful contrivance, to acquire its present disproportionate influence on our lives, is that it is the negation of planning. What we have to examine is the fallacy that the multiplication of the private motor-car is one of the given factors that planners must accept and plan for. It is not. Motor-cars are simply an artifact of our time, which society can employ in great or small numbers, according to how they suit society as a whole.

There is a clear parallel between planning for motor-cars and planning for houses. In each case the idea of planning in the interests of the community—especially the community without much expendable ground-space—involves bringing into a closer relationship units which without planning scatter themselves too widely, in order to create cohesion. In the case of housing we try to progress from separate villas swarming out into the countryside to a

Man in a Hot Tin Box

J. M. RICHARDS

Mr. Richards made his startling proposals in a recent issue of the Architectural Review of London. We think they are worthy of a wider reading in the USA.

more organized pattern of terraces, squares and the like, and of blocks of flats, thereby freeing ground-space for other purposes. The private car, spreading itself more widely than our available ground-space can afford, is surely the exact equivalent of the single villa, and the equivalent of bringing houses into more compact groups is perhaps to make more use of public transport, but that parallel we must discuss in a moment.

Just as with houses, it is for society, and the planners to whom society entrusts the task of providing whatever controls it is willing to accept, to decide how far the individual motor-car should be allowed to spread. Planners, as we have found, can do little more than indicate to society what alternatives to existing practices there are. They have shown up the imbecility of allowing little houses to be scattered everywhere, at the whim of the house-owner but to the detriment of the community and, as a result of the public beginning to accept their arguments, we are at last building more compactly and passing legislation that helps us to insist on everyone doing the same. The planners could, and should, also show up the imbecility of allowing free rein to the individual motor-car, so that society can take action. It cannot, however, act effectively until ordinary people understand what the fight is against. The trouble about the motor-car is that it has been elevated from a con-

venient piece of machinery into a social symbol, and we have thus let it get outside the system of control by means of which we normally ensure that our various machines are our servants not our masters.

We have lost any judgment about the relative value of motor-cars compared with the difficulties they create, because over several generations they have been built up as the yardstick of individual success and as the best creators of self-esteem, and have thus been given an inflated social and psychological value that has no connexion with their utility as transport machines. This has come about through several causes. One is the habit of regarding motor-cars as a symbol of prosperity. Another is pressure from the motor-car industry, which to keep itself prosperous has to persuade the public of the importance of not only owning a motor-car (or several motor-cars) but of getting a new model each year, with the result that, anyway in America, the discarded motor-cars, the space they take up and the visual squalor they engender, are becoming almost as much a problem as parking the ones still in use. America, however, having space to spare, has hitherto been able to absorb this multiplication of motor-cars. Europe cannot, and the fact that it tries to do so is one of the most destructive examples of Europe's recent tendency to imitate American ways because of the glamour of American prosperity and because of its admiration for America's creative energy, whether American ways suit home conditions or not.

BUT THERE ARE DEEPER and more personal reasons than these for the all-pervading, uncritical, cult of motor-car ownership. The act of driving a car is one of the few outlets available to most people for their need to exercise personal power and assert their individuality; it is sometimes even an outlet for their sense of fantasy. Skill in driving and roadmanship, allied with the glamour of the superior vehicle, enable the ordinary person to express his innate sense of craftsmanship. Connoisseurship of cars and driving has indeed a mystique about it that is to some extent esthetic in origin.

But such a mystique is irrelevant to the proper role of the motor-car. It is a long time since the individual operation of machines in a factory became out of date. If only from the point of view of conservation of energy, the introduction of power looms, power presses and the like was one of the biggest moves forward out of the handicraft era. The fashion for individual motor-cars for urban use, often glibly described as an essential ingredient of our mechanized world, is in fact just the opposite: a retreat into the handicraft era. Nor can it be regarded as a very advanced form of social organization when the time

and energy of the occupant of each unit of what is, in effect, a mass migration city-wards every morning, is separately taken up by the task of propelling that unit. It is utterly primitive and wasteful, especially when the units are situated almost head to tail, as constantly happens. One really powerful unit at the front of the queue could pull them all, making what used to be called a 'train' before our fairly well organized transport system allowed itself to be fragmented; not, I repeat, in the interest of efficiency but as a means of relieving the psychological frustration I have just described. The degree of waste is indicated by the fact that one person riding in a private car occupies, on an average, seventy square feet of roadspace, whereas each person in a bus, even when it is only half full, occupies seven square feet. And this is in addition to the waste of energy involved in everyone doing his own driving. Of course some people enjoy driving, even when it's the same traffic-bound journey every day, but surely the need for an outlet for the personality such as driving provides could be provided in some other, less anti-social, way.

The obvious corollary to all this, and the process that would do most to bring about the desired result (though it would have to be accompanied by a psychological process of dispelling the glamour of the private motor-car) is the improvement and *reglamorization* of public transport. Public transport has been vulgarized and made squalid by bad conditions and obsolete equipment. If my parallel between housing and transport is accepted, not only do people have to be educated to prefer public transport in exactly the same way as they have to be educated out of their prejudices in favour of isolated villa ownership, but the process must compete with difficulties equivalent to the resistance to flats that was created by flats becoming associated with obsolete slummy tenements. Public transport suffers from the same associations. But this can be put right by showing how comfortable, efficient and glamorous it can be—and adventurous. There are no end of possibilities: the mono-rail is a typical example. And to experiment with them should appeal to the idealist in us, because the ultimate aim is one of social betterment, not one of social fragmentation like the improvement of individual motor-cars and the provision of more facilities for them.

The task must be to put across the idea that public transport provides the proper means of getting in and out of cities and moving about inside them; not by the use of compulsion—measures like forbidding private cars to come nearer in than the suburbs would not work at present because they run too much contrary to popular desires—but by per-

suading people that organized transport, like organized anything else (from athletic competition to orchestral music) is that much further along the road to civilization than unorganized. It is no valid objection that it gets more and more difficult for public transport to pay its way. There are plenty of other public services that society as a whole has to provide for its members because they are considered necessary, even though they don't balance their budget internally: the sewage system, for example, or the health service—to say nothing of the Royal Navy. It is a matter of balancing the cost of a good public transport system against the cost of all the wasted effort and wasted time that our present over-use of private transport creates. We don't complain that the sewage system doesn't make profits and that therefore we would be justified in dealing with sewage as individuals.

If public enthusiasm for public transport were engendered by such means, what a difference would immediately be shown in our towns and cities. Their street-pattern, on which their architectural character depends, and which is nowadays condemned as inadequate, would be found to be perfectly adequate; there would be no need to destroy and disrupt them by road-widening schemes or blast them open with new highways. The parking problem with all its frustrations, would disappear. We would no longer need to view our town architecture across a foreground of vehicles.

The privately owned car would still of course have its place—for private journeys and especially for travel in the country (the equivalent of the country cottage). But the gregarious human being could surely—at least it is worth trying—be persuaded to make travel to work and about his cities (which are after all, an expression of his gregariousness) a co-operative effort, and take pleasure in doing so. Provision of the means of doing so would be far more worth while than expensive and unnecessary multi-storey and underground car-parks, which spread the very disease they are designed to cure. But let me repeat, this remedy cannot be forced on the community. In its present mood it would only interpret criticism of motor-car worship as an attempt to put the clock back. First of all the false glamour of the motor-car must be destroyed.

Perhaps the tide is already turning. There are signs that our failure to deal with the motor-car sensibly, and stop the havoc it is causing to the

shapeliness, habitability and the very existence of our cities, is already causing people to question the validity of the assumption that all planning must make way for the motor-car instead of, sometimes, the motor-car for planning.

MR. LEWIS MUMFORD, writing recently in the *New Yorker* on the subject of the motor-car, suggested four necessary measures to 'prevent it from making city life first unendurable and finally impossible': improving public transportation within the city; re-planning both central and residential neighbourhoods to encourage pedestrian movement and restrict motor-car access; designing smaller cars and restricting the use of huge cars within the city; and relocating industry and business on the edge of the city to encourage cross-city traffic to take the place of the daily ebb and flow from outside.

These are all useful ideas, on which planners are already working with varying degrees of success. But unless the validity of multiplying privately owned motor-car is itself questioned, their success will never amount to much. Mr. Mumford's analysis implies this, although he does not draw the only possible conclusion (that the passion for having a private motor-car to play with is a form of social disease—or at least an irritant symptom of social disease) when he ends with the unanswerable statement that 'the main issue is that the right to have access to every building in the city by private motor-car, in an age when everyone possesses such a vehicle, is actually the right to destroy the city . . . our highway engineers, in defiance of the lessons the past should have taught them, are butchering good urban land as recklessly as the railroad builders did in laying out their terminals and marshalling yards. But the notion that you can free the motor-car from all restrictions in the city without devastating the city's living spaces is a delusion that will probably cause a lot more damage before it dies.'

But perhaps destroying the city is one of the things our time is content to do; perhaps the city is an out-of-date conception. One would be happier in accepting this if there were any signs of some other organism being evolved to replace it—something that would facilitate, not discourage, social contact—something that did not involve every member of society spending more and more of his life shut up by himself in a hot tin box.

On the Track

From: *Industrial Bulletin of Arthur D. Little, Inc.*,
February, 1958.

TECHNOLOGY AND INNOVATION are so thoroughly associated in our minds with the "new" that we often overlook the role of science in helping us to understand the "old." Such a contribution has been made by acoustical research in rediscovering the classic art of church organ building.

Shortly after the turn of the century, Albert Schweitzer, along with some contemporary organists and musicologists, was accused of "hearing things" when he claimed that the music of Bach and classic organ literature in general sounded better on "old" organs built in Bach's time than on the then "modern" instruments. In his book "Out of My Life and Thought" Schweitzer describes how he traveled around in a valiant attempt to keep churches from consigning their old organs to the fires of "progress." In the years since, the joint efforts of a few organ builders and acousticians have demonstrated that Schweitzer was not "hearing things"; their studies of some of these old organs have led an increasing number of organ builders to return to the basic technology of the eighteenth century in the construction of contemporary church organs.

Until about seventy-five years ago, organs differed from those familiar to us in our churches today in several important respects. The wind which supplied the pipes was produced by a man, or in large organs of the time, by several men, pumping bellows; today, the wind supply is provided by electric blowers. The keys were once connected to the tabs at the base of the pipes by thin wooden rods called trackers, but electricity transformed the organ keys into switches, which open the tabs at the base of the pipes by means of an electromagnet. As a result, the console no longer had to be placed directly under the pipes and was put wherever it seemed convenient.

After electric blowers were developed, it became possible to make organs with many registers or sets of pipes; as more pipes were added, the wind pressure was increased and the pipes were designed to play louder. Research has shown, however, that when air at low pressure is blown through an organ

pipe, the basic tone produced has a greater number of harmonics—that is, "overtones" or partial tones at regular intervals above the sounding note—than when the same pipe is played at a higher wind pressure. It is these elusive harmonics which give basic tones much of their character and which account for the differences between harsh and pleasant sounds. Scientific analysis of these harmonics, in new and old organs, has shown that Schweitzer and his friends were not the victims of historically influenced fantasy when they claimed that the tone of old organs was richer and fuller.

Starting a Note

One of the crucial characteristics of musical sounds is the manner in which they begin and end. When an organ pipe is played at pressures no greater than those necessary to play other wind instruments such as oboes or bassoons, the sound begins slowly, with a slight hissing noise or lisp, and when stopped tends to fade rather than cease abruptly. At higher pressures, both starting and stopping are abrupt, and the difference can be readily seen on a cathode-ray oscilloscope. Thus, acoustical research has explained why the flute register sounds like the real instrument on one organ and a teakettle at full boil on another.

Along with low wind pressures, builders are beginning to favor a return to tracker, rather than electric, key action, to permit direct control of the pipe. The organist can thereby vary the speed with which he attacks each note—impossible with electric action since once contact is made the pipe speaks with uniform speed.

Another surprising rediscovery is the improvement in sound produced if an organ is set out in the open in a church and enclosed with a wooden case. Seventy-five years ago, most builders housed the organ in cases that were almost free-standing and self-contained; for all their decoration, they were designed along the lines of a large cupboard. Within these cases the various divisions or groups of pipes were placed in self-contained sections so

that the pipes were surrounded on all but the front side by wood. With such an arrangement, the wood of the case tends to produce a sympathetic vibration; the effect is rather like that on the violin where strings vibrate over what is essentially a box. The organ case also tends to direct the sound out into the church, permitting clarity and richness of tone. In classic instruments, with their individual cases, the visible pipes always sound, but many of the pipes seen in our churches today are merely for show or to cover a hole in the wall, and the organ sound is at best muffled.

Such facts, substantiated by measurement, have enabled contemporary builders of classic style organs to persuade church architects to stop putting organs in separate organ chambers and bring them back into the open where they can be heard in their full beauty. Thanks to acoustical research, we can now describe musical sound accurately enough to help us plan for the results which in Schweitzer's early days could only be tested by the educated ear.

SHARP FOCUS

A GUEST EDITOR (1) has called for more and better architectural criticism. In the furtherance of this commendable objective the next steps should be to clear away some of the underbrush and endeavor to establish some kind of guides for the breeding, care and feeding of architectural critics.

To facilitate the acceptance of architectural criticism we will somehow first get the profession generally to recognize that aesthetics of architecture is or can be a rational field of analysis and evaluation and to distinguish between the evaluation of that which is created and the much more difficult task of analyzing the creative process.

We should begin now to try to save ourselves and the public from the kind of "precious rubbish" which is poured out in too great quantity purporting to analyze painting, sculpture, music and literature: "the rhapsodists and crusaders, the uplifters, non-compi and mad-maps have infiltrated art, run away with it to their dream world and are having a gorgeous time laying down the law to us vulgarians and rough diamonds. Freedom of speech has been transmogrified by them into a sort of zombie who can talk only in their jargon." "We need some icy-

minded persons about; hard, brutal chaps who can look 'genius' in the eye without swooning."

"They consider themselves qualified to issue their verdicts by the mere fact of their 'sensitivity' plus a protracted perception of whatever branch of art."

"'Mystic intuition' is the sole authority for their verdicts they concede." (2)

If we are going to encourage the development of a breed of professional amateurs, let's realize what we are in danger of getting, while trying to avert it:

"The almost incredible cockiness, the apparently unshakable assurance of these absolutist critics may amaze the more logically-minded man; but it shouldn't, for it's exactly those characteristics which have been and always will be the stock in trade of the mystic, whether he happens to be a horoscopist, a palm-reader, a spiritualist medium or an absolutist critic. He must reek certitude." (2)

It was suggested that the ideal critic would not be a professional architect. It would be safer for our fate to remain in the hands of architectural editors than to be at the mercy of lay critics, if we are to judge from what has happened in the fields of art and music criticism.

We ordinary professionals who have training and experience and know what architecture involves, who have experienced the birth-pains of creativity may not be permitted to discuss our own creations:

"He (the critic) is alone, on the authority of his own knowledge, taste, and intelligence, the sole guardian of art and its magic portals." (3)

Critics develop a degree of infallibility which is not surpassed in the field of religion.

". . . In the last analysis it is that intangible, unprovable, but felt element of quality that is the final basis for judgment." (4)

"There is of course no answer to it except another person's equally intangible, unprovable judgment that it's bunk." (1)

It should be a bedrock essential that the critic be trained as an architect, whether or not he practices, in order that he may have a "feel" for architecture. Otherwise, even though he has a wide factual knowledge of architecture, he may turn out to be the equivalent of the "musicologist" who has been defined as "someone who knows all about music and hates the sound of it." This critic should have some if not all of his training in a professional school of architecture, for at least one reason; his vocabulary should be professional and the lay public should learn to think and talk in architectural vocabulary rather than to have a new and exotic vocabulary forced upon both the architects and the public.

BASES OF "AESTHETIC" VALUE JUDGMENTS*			
I	II-a	II-b	III
FUNCTIONAL	ROMANTIC HISTORIC	ROMANTIC MELODRAMATIC	FORMAL
utilitarian economic logical practical	memory fashion cultivated	sensational cultivation not required immediate impact	optical geometric
NON-EMOTION INTELLECTUAL NON -	EMOTION ASSOCIATION AESTHETIC	INDUCING NON - INTELLECTUAL AESTHETIC	NON-EMOTION AESTHETIC timeless
	ANALOGIES IN PHILOSOPHY		
PRAGMATISTS	ANALYSTS		LOGICAL POSITIVISTS
TYPICAL ARCHITECTS			
Gropius	Williamsburg	Wright, LeCorbusier (Bonchamps)	Mies, LeCorbusier (early work)

*Based on Richards, Ogden & Nash and on Ackoff

Fig. 1

If this architectural critic were to have his basic training as an art historian the following perversions or inadequacies would probably result:

The critic will tend to perform posthumous psychoanalysis upon the architect and will purport to find in his architecture evidence of all kinds of Freudian disorders and the slightest bit of gossip about his personal life will be taken as prima facie evidence.

The architectural critics so trained will try to transfer from the fields of painting and music concepts and vocabulary which do not apply to architecture.

He will tend to find his "absolutes" in only one area of the spectrum of esthetic satisfactions. (See Fig. 1).

Unless he has some training in building tech-

nology he will tend to ignore or misinterpret structural factors or will tend to glamorize and exaggerate their significance.

The critics of painting and music can perhaps get along with color reproductions and recordings but the architectural critic should be so conditioned that he would not think of attempting to criticize architecture without actually experiencing it personally in full scale, four-dimensional space-time reality.

The properly educated architectural critic will not indulge in cult-hero-worship, and he will not patronize or shush the man in the street who says "I don't know about architecture but I know what I like." Our ideal critic will be catholic enough in his own taste and understanding to know that laymen will call architecture "beautiful" for several different kinds of reasons (Fig. 1), and the critic will make the effort to explain the different bases of judgement, and to anticipate varied reactions to the same example.

Unless we can have some agreement on a rational basis of judgement and a vocabulary which includes so far as possible the terminology which is historic and accepted in the profession, we will simply have more confusion and a delay in arriving at the desired objective of good architectural criticism, intelligible and enjoyable to laymen as well as architects.

W. A. T.

- (1) Dean FitzPatrick *Jour. AIA*, April 58 p—
- (2) Shaw, T. L. "Precious Rubbish"
- (3) Hyman, S. E. "The Armed Vision"
- (4) Gardner, Helen "Art Through the Ages"

Frustration

How sadly are the Architect;
Him hardly have no fun at all.
He sit in office all day long
And bite he nails and think, "What gall
Have client wanting me to make
Big house for he and all him kids
For only little bit of cash;
God, how him howl about them bids!"

How sadly are the Architect
When him ain't get that cushy job.
Ain't hardly much for he to do,
So him just sit alone and sob,
Then slink to tavern 'cross the way,
And on the bar-keep's neck him cry;
Him drink martinis—maybe scotch,
And then him go home plenty high.

How sadly are the Architect,
And how him feeling awful sick
When draftsmen all knock on he door,
Him cry, "Why Friday come so quick
When I don't got no cash for pay?
Oh, what a nasty, horrid life!"
Him go and hock what all he got,
And then go home and beat him wife.

How sadly are the Architect;
Him sometime make mistake on plan;
Him leave out stairs or maybe roof,
And client put he on the pan
And say, "Why Architect so dumb?
Oh, why him got so stupid head?"
Poor Architect, him sadly are
And shoot heself and make he dead!

RALPH MITCHELL CROSBY, AIA

NOVEMBER 1958

Mr. Hummel is Assistant to the President of Portland State College, Portland, Oregon. A layman who obviously "likes architects," we thank him for his views.

I Like Architects!

ERRETT HUMMEL

I LIKE ARCHITECTS. Just offhand I can count fifteen that I know on a first name basis and there are more than that that I nod to pleasantly and casually when we pass—this I suspect puts the number I know far above the number known by the average man on the street. I like these architect friends of mine, they wear well as individuals and in numbers I find their company pleasant.

On the other hand, I find that my other friends harbor a hesitant attitude where architects are concerned. Architects are to them an unknown lot, a small isolated group who do mysterious things, perhaps necessary and vital, to the production of living and working space, but they are thought of as a group who stubbornly insist on their own views and are said to usually charge too much for their services.

And so my dilemma: Do I sit passively by and let snide remarks pass, or do I spring to the defense of these men who are my friends? So far I have defended them and their work—but I find it is an uphill task that generally ends with the topic getting too hot to belong in polite society and it is dropped by mutual consent while the conversation shifts to some safe subject like Senator Wayne Morse vs President Eisenhower or why did the Giants move to San Francisco.

What is the answer? Over many years I have learned the value of the work accomplished by and the conscientious attitude of these professionally trained and dedicated men. They serve, just as do lawyers, dentists, teachers and physicians; but the average layman contacts them so infrequently, and usually only when some seeming error is apparent in a house or plant, that the kudos and bouquets they deserve more often are omitted.

Foremost as a cause for this situation I place the limitations of time. The limited numbers of architects in any given geographical area means that fewer folk contact these men than meet other business or professional workers. The average small city of five to eight thousand will have a dozen lawyers, a similar number of physicians, a number of dentists, numerous ministers and a bevy of teachers, but the same city is fortunate to be the home of one or two architects. Even if these one or two architects devote

fully as much of their time to public affairs as do other professional men, the types of services that their training insures the public still will not become generally known. How then to find the time to acquaint my friends with how the architect serves society?

I am not a public relations expert (if I were I perhaps would be an architect rather than a teacher), nevertheless I am convinced that the architectural profession must:

(1) Seize the opportunities that exist in every region today because of our population growth and shifts, to be a part of every public planning group that meets—and *participate*. Perhaps the local AIA should assign or apportion these meetings to conserve the time of members, but only when the public sees the interest and abilities of architects will they grow to say "Let's ask them." I have attended dozens of community planning meetings for school plants where location, zoning, community traffic, utilities, costs and similar topics were discussed and decided. At these meetings I have found doctors, lawyers and shopmakers voicing opinions—but never once an architect. Is this professional modesty, or are you afraid your colleagues will accuse you of soliciting business. Why?

(2) Show the average "little" man and his spouse that buildings are made, not in spite of their suggestions, but as near their wishes as codes permit. Here I find that my friends have no concept of the term "building code" and know nothing of the limitations these often impose on their dreams of having the kitchen located where the exhaust fan would blow into their neighbor's window. Your work is often considered negative or repressive, rather than helpful and inspiring.

(3) Finally—and most important—I believe you can show, if you try, that my fellow laymen will save dollars if they use your services. Savings in maintenance and the avoidance of future costly structural alterations are the result of proper planning. Do folks know you would plan for them as individuals, or do they feel you would just draw a house for a family of five?

Anyway, I still like architects!

Library Notes

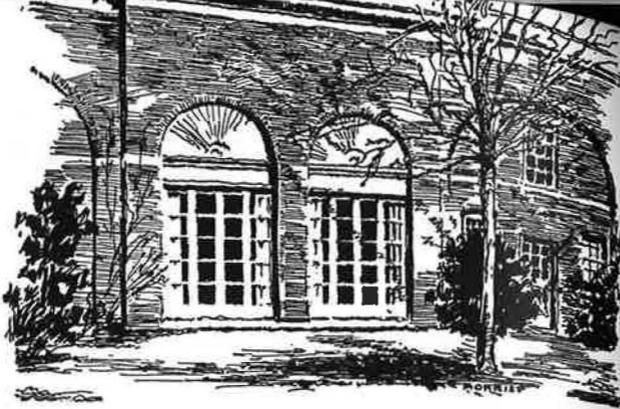
WHERE WOULD YOU LOOK for a book on Moorish pierced screens if you did not have one on your own shelves? This question faced an AIA member recently. He turned to the AIA Library and much to our pleasure we were able to produce one which he borrowed on the Library Loan Service. This is perhaps the most unusual request in connection with an actual commission we have received. But your AIA Library has been used in connection with a variety of other architectural assignments—some routine and others on the unusual side.

For a southern member with a request from a client for a dwelling patterned after a Swiss Chalet, we supplied two Swiss books on chalets as well as a volume on the chalet in America. A local member with a commission for a residence in the Louis XV style made extended use of several books on this subject. Books on the Byzantine style have been borrowed on several occasions, and volumes on a Chinese garden shelter and design elements for a Chinese restaurant.

But do not think that the use of the library is only for the unusual or the out-of-the-ordinary. There have probably been more requests for books on churches than any other subject. Some half-dozen volumes on churches have been in circulation almost constantly. These are the books depicting the traditional church, for despite the trend to modern about which so much is written, the Library has been made increasingly aware that there is still a demand for traditional. Nor is this true alone in the church field, for it applies also to the residential. Requests for books on the French provincial style have come from all parts of the country. And when a layman comes in looking for inspiration on houses he more often than not asks for something traditional in preference to the contemporary.

Among other building types for which there has been considerable demand and on which the Library has supplied material are auditoriums, fire houses, libraries, motels, prisons and swimming pools. A year or so ago we had a request for data on schools for the blind. We had no book material on this subject so we approached some authorities in the field who supplied us with considerable data we passed on to the member.

Books lent by the Library cover nearly the entire range of architectural topics from site planning to details, from cost estimating to supervision of construction, from bandshells to bridges. But books are not borrowed with just a practical use in mind. We have lent books on the history of architecture, on esthetics and the theory of architecture,



on the architecture of foreign lands and we are even prepared to lend a novel or so, with architects as characters.

Naturally, lending books is but one phase of the Library's work and you may have used the Library's reference service. From the questions of just two days might be noted the following: Title of a book by Starrett on skyscrapers; why the Ohio State Capitol has no dome; where to secure a copy of the Virginia Chapter fee schedule; what national building codes we have; a list of articles on curtain wall construction. Or you may have benefited indirectly through a query to some other Octagon department answered from the Library's resources or through a *Journal* (or *Bulletin*) article based on use of its facilities.

However you use it, it is your AIA Library and here to serve you. And you don't have to live in Washington to do so. Most of the loans noted above were made to members living throughout the country. It is simple to borrow—any corporate member in good standing may do so—write a letter telling us what you want, a specific title if you know it, or the specific subject you want. Just be sure to define your subject request as much as possible—just as you expect your client to furnish a detailed program of his needs, so your librarian can serve you better if you will be specific, i.e., don't ask for Moorish architecture in general when you really want Moorish pierced screens.

There is a small service charge made on loans to cover postage and wrapping costs. If you are requesting books by title, please send the necessary remittance with your request—fifty cents for the first volume and twenty-five cents for each additional. Stamps, cash or a check to the AIA are acceptable. If requesting by subject we will send a memorandum.

The Library publishes an accession list noting new acquisitions, presently distributed to about 1200 members. Any member may secure it regularly on request. Short lists of books on special subjects appear on this page from time to time, and as opportunity offers, special bibliographies will be issued. If not already a library user why not resolve to become one?

GEORGE E. PETTENGILL, Librarian

BOOK REVIEWS

THE EXPLODING METROPOLIS

By the Editors of *Fortune* (196 pp. 7" x 10½". Illust. Garden City, N. Y.: 1958: Doubleday & Co., \$3.95) is a book which should be—and undoubtedly will be—widely read by architect, official and citizen, bringing to their attention with emphasis the decay of our cities and the blight of our countryside. Our reviewer, Carl Feiss, AIA, architect, planner and urban renewal consultant, has served on many planning boards, taught planning, and written many articles on the subject in current periodicals.

By Carl Feiss

The subject matter is a series of six articles first published during 1957-58 by *Fortune* magazine. The topic of the writers is the American city, its quality, its size, its purpose, its people and its automobiles. The authors are William H. Whyte, Jr., Francis Bello, Seymour Freed Good, Daniel Seligman, and Jane Jacobs. All are experienced journalists, and Mr. Whyte, as editor, has written the most material. Jane Jacobs of the *Architectural Forum* is well known to most architect-readers. For some curious reason the editors played down the contribution of Grady Clay, the brilliant young real estate editor of the *Louisville Courier-Journal*, whose work appears on page 166 of the book, but whose name does not appear in the table of contents. All authors are demonstrably able to tell a good story and some of them make specific constructive recommendations well worth considering.

The quality of the book is good. It suffers as do all compilations from lack of continuity but the individual articles are stimulating and worth reading. The colored illustrations as they appeared in *Fortune* were excellent. They suffer materially in half-tone. Gordon Cullen's sketches came out the best but even they lack incisiveness with the exception of those which were done in black and

white to begin with. These are, of course, very good indeed. However, the material might be considered as seriously under-illustrated and it is unfortunate that *Fortune* or the publishers did not supplement the original illustrations with photos or additional drawings to emphasize important points contained in the subject matter. All too frequently one feels that the journalists assume that the reader is as familiar as they are with specific places or problems which are mentioned in their articles.

If you did not read the *Fortune* articles as they came out, you should read the book. Much of what is said is challenging and controversial and nearly all of it is interesting. However, it is a reading book and not a looking book.

Journalists make good reading when they are good journalists. This is a book of good journalism on cities. It does not pretend to be complete nor is it complete, but it is stimulating and challenging. However, the compilation of good journalism does not necessarily make for a complete book. This "Exploding Metropolis," particularly in its 95-cent Anchor edition should get wide distribution. It undoubtedly will be used and should be used in schools where civics are taught, as background for civic group meetings, and for a wide variety of other popular purposes which are directed towards the better education of the citizen on the problems of his community. However, since the articles are so individual one almost wishes that the format had been changed to that of a looseleaf notebook into which future essays published by *Fortune* and other important periodicals concerned with urban growth could be inserted.

One of the reasons why architects should read this book is because all too frequently they are not familiar with many of the facets of urban growth today and are not themselves sufficiently persuaded that there is a role for them to play not only as

practitioners but as citizens in their communities. From this standpoint, this is an extremely persuasive book and I cannot be too emphatic in my feeling that it should be read by the "doubting Thomases." Of course, I recognize that no one wants to admit that he is a "doubting Thomas" but on the other hand, if any reader of this review is skeptical of the importance of the problem or rather the importance of his own relationship to it, I am certain that these nasty and exciting statements will help him over his mental hump.

Daniel Seligman's "The Enduring Slum," the fourth article in the book, is a convincing and terrifying story. William Whyte's "Urban Sprawl" is a challenge on the question of the conservation of open space inside and outside the cities. Since writing this article Whyte has become so intrigued with the problem that he now has prepared (but not yet published) an important statement on "Development Rights" which is a supplement to and a very important one to his fifth article in the book. Jane Jacobs, who wrote the sixth article "Downtown is For People," also became so intrigued with her own ideas that she persuaded the Rockefeller Foundation to give her a grant to write a book on the subject of the human use of cities. She has just obtained a leave of absence from the *Architectural Forum* to do this.

If the authors themselves became so excited about the subject matter of their own articles that they persuaded themselves to continue on, perhaps there could be no better recommendation for the book.

The "Exploding Metropolis" is a useful polemic full of vital challenging ideas for the architect. You will have to dig to find them but they are there. The one major deficiency in the book is that there is no satisfactory summary of design ideas and concept. This chapter will have to be written by the architects and planners of America and inserted in your copy when it is published.

URBAN SOCIOLOGY. By Egon E. Bergel. 558 pp. 6" x 9½". New York: 1955: McGraw-Hill Book Co. \$6.50

Mr. Bergel, a professor of sociology at Springfield College, has prepared a comprehensive textbook on urban sociology in which he treats the subject with equal emphasis on both words. Urbanism is conceived as a way of life rather than a form of habitat, and sociology as a concern with human beings living together and oriented to each other.

Among the large number of topics with which the book deals might be mentioned location of cities; functional types; races and nationalities; immigration; urban religion; urban recreation; death and diseases; crime; slums; and finally housing, planning and community organization. These latter chapters may well have the most interest for architects, but the entire book is an interesting and provocative survey of problems affecting our modern urban civilization. Much relatively inaccessible material has been included. G.E.P.

AIR CONDITIONING. By Willis R. Woolrich and Willis R. Woolrich, Jr. 392 pp. 6" x 9". New York: 1957: The Ronald Press Co.

A textbook for students, professional engineers and architects, stressing the cooling problems in hot-humid and hot-dry climates. The psychometric processes are thoroughly covered, as are radiant cooling and current methods of refrigeration.

STRUCTURAL DESIGN IN METALS. By Clifford D. Williams and Ernest C. Harris. 672 pp. 6" x 9". New York: 1957: The Ronald Press Co. \$8.00

This second edition of a widely used textbook has been extensively revised to incorporate new materials and new examples reflecting the latest design methods. Recognition is given to the increasing use of metals other than steel, such as aluminum and its alloys, and to the concept of structural design employed in aircraft work.

THE HUMAN FIGURE. By John H. Vanderpoel. 144 pp. 6½" x 9¼". New York: 1958: Dover Publications, Inc. \$1.45

Well-known for many years to every architect or artist who ever studied in a life class, this paperback reprint of this great classic is very welcome. It is still unrivalled for its clear and detailed presentation of thousands of fundamental features of the human body. The 430 pencil and charcoal drawings and the accompanying text tell the artist what to look for and serve to open his eyes anew.

THE CLIMATE NEAR THE GROUND.

By Rudolf Geiger. 516 pp. 5½" x 8¼". Cambridge, Mass.: 1957: Harvard University Press. \$6.00

Dr. Geiger is Professor of Meteorology and Director of the Meteorological Institute at the University of Munich, thus eminently qualifying himself to write on the subject of climate and its effects on man. The book deals with the climate of the lowest two meters or so of the atmosphere, where nearly all life exists, showing how the earth's surface, acting as the principal receiver and emitter of radiation, causes the climate near it to contrast sharply with the large-scale climate and to obey different laws. The effects on the microclimate of exposure, kind of soil, plant cover, the works of man, and other conditions are fully described.

SHOPS AND STORES, Revised Edition.

By Morris Ketchum, Jr., FAIA. 264 pp. 8¾" x 11½". New York: 1957: Reinhold Publishing Corp. \$15.00

The first edition of this book was published ten years ago. Much has happened in its field during those years. The author, internationally known for his work in the field of store design, has completely rewritten the chapters on "The Department Store," "Central Shopping Districts," "Drive-In Shops and Stores," and "Shopping Centers," and an entirely new chapter on color has been added. The book is a valuable tool for architects and designers working in this field.

HOUSING: A Factual Analysis. By Glenn H. Beyer. 382 pp. 6½" x 9¼". New York: 1958: The Macmillan Company. \$8.95

The author of this pocket compendium is Director of the Housing Research Center and Professor of Housing and Design at Cornell University. His book seems to cover all important aspects of housing and its related fields: urban, suburban, ex-urban and rural dwellings; public and private housing; multiple dwellings and one-family homes. The titles of a few of the chapters will indicate the scope of the book: Cities and People, The Home-Building Industry, Home Financing, Housing Design, Housing and Neighborhood Standards, Urban Renewal, History of the Government's Role, Future Need and Housing Research.

The book is enlivened, and extra emphasis is given to special points, by amusing pen drawings by Zevi Blum. It is unfortunate that the half-tone reproductions of photographs are so poor. However, the book should be a valuable guide to any architect interested in housing—and what architect isn't?

BASIC REINFORCED CONCRETE DESIGN: Elastic and Creep. By George E. Large. 540 pp. 6" x 9". New York: 1957: The Ronald Press Co. \$7.00

Planned for use as a textbook, illustrations are liberally included in this second edition, as well as procedures for solutions of typical problems. Practicing architects and structural engineers will find this book an excellent reference for reinforced concrete design.

Each of the thirteen chapters has been written by a different author—each an authority in his field. Basic concrete properties are covered, as well as beam and column design, continuity, building framing, flat slabs, footings and retaining walls. Creep, shrinkage and temperature movement are also included. Ultimate strength design by Charles S. Whitney and pre-stressed beam design by Dr. Eugene Freyssinet are independent comprehensive chapters.

THE EDITOR'S ASIDES

YESTERDAY AND TODAY, October sixth and seventh, there has been a committee meeting going on upstairs in the Board room of the Headquarters building that may well turn out to be one of the most important meetings that busy room has seen. The new Committee on the Profession is holding its second full meeting.

I sat in and listened for a couple of hours yesterday, and talked with the Committee members at cocktails last night in Ned Purves' new home. Cornering Jim Hunter, of Boulder, Colorado, the Committee's vigorous and versatile Chairman, I asked him to give me a nutshell statement of the objectives of the Committee. Jim said that now, while we're on the top of the pile and everything is "going good," is no time to sit back and think what a good Institute we've got. Right now is just when we should be ruthlessly examining it to see if it is really fulfilling its function as stated by its founders 101 years ago.

The Directive from the Board of Directors under which the Committee is operating states that "The next major objective (of the Institute should) be the establishment of the Institute as the comprehensive, authoritative force and voice of the architectural profession and a dominant factor in the construction industry in the United States." As a step toward attaining that end, the Committee on the Profession was created and instructed to make a thorough study of many aspects of the Institute and its operations—such as the relation of the AIA to education (from the cradle to the grave), and to accrediting and licensing; the kind and extent of services that should be rendered by the Institute to its members and the public; and the relation of the Institute to other professional and non-professional groups concerned with the building industry.

Other Committee members include Vincent Kling of Philadelphia, Hugh Stubbins, of Cambridge, Mass., Herbert L. Beckwith of MIT, Frank R.

Slezak of Kansas City, and Perry B. Johanson of Seattle. Their discussion touched on just about everything, exploring every activity of the Institute, and seeking every possible means to extend and expand its authority and its influence. Every man at the table is well-known for being prolific with ideas—and ideas and argument flowed freely, good, bad and magnificent. Each of them has come to the meeting table primed with six months of thinking and absorbing of information, ready to toss his thoughts into the arena for discussion. They doubtless have many meetings ahead of them, and it will be not only interesting but of vital importance to the Institute to see what ultimately comes out of them.

ALL THE ABOVE makes one ponder the status of the architect today. All the great architects of the past—and the lesser ones too, in their way—were *Master Builders*. They contracted, or accepted a command, to build a building for a client. They bought the stone—supervised its quarrying in fact, hired the labor, hovered over the work like a mother hen and personally saw it through to completion. So with Senmut, so with Michelangelo, so with Wren, and so even with the "amateur" architects of our own eighteenth century, such as Thomas Jefferson. That touch is lost today, and understandably so, for what single man could personally design and supervise the vast amount of technical and mechanical equipment that goes into a building today?

Yet in that loss, something else has been lost, too—or is in danger of being lost: The prestige of the architect. We fuss so much today about the ignorance of the public of the architect and his work—in the public eye he seems to have been reduced to little more than the man who "draws the blueprints." He is no *Master Builder*, designing all, overseeing all, deciding everything.

Parallel with that loss of position a new concept has arisen: the "Building Team." When this term was first

broached by one of the architectural magazines it was much decried by members of the profession. It seemed to deny the architect his natural position of leadership—yet I sometimes wonder if the architect hasn't abdicated that position in favor of the promoter. Maybe the concept of the *Building Team* isn't so bad—as long as the architect is its leader. The design professions *must* retain their leadership, and architecture is the leading design profession. A team is certainly necessary to design and supervise the erection of one of today's complex structures, but a team must have a captain.

So that brings us around the circle. Perhaps these two concepts, the *Master Builder* and the *Building Team*, can be reconciled. Perhaps the answer is that each architect's organization must be organized to furnish the *full* and *complete* service that is required nowadays—even the small office. Let's see what that would include: Knowledge of available sites and advice in site choice; familiarity with methods of financing and assistance in finding the money; surveying the client's needs—his existing setup, if any; preparation of schematic area studies and site layouts, even flow charts if necessary; preliminary cost estimates that mean something; preliminary plans based upon the schematics; and then on through the usual routine of working drawings and supervision, but with much more thoroughness than has been customary in many offices and finally, landscaping and complete finishing. Coupled with this, the practice of taking bids may be abolished (except where required by law on public projects)—at least on large buildings—in favor of picking, with the client, a contractor at the very beginning, who will then work as a part of the team, furnishing cost estimates in at least two stages of the process and advising on materials and processes. If all this is done by the architect, then and not until then will he be entitled to be called the *Master Builder* again.

Jim

Color in Architecture:

IN THE GOOD OLD DAYS when there were traditions in architecture, the way of the architect was simple and direct. All he had to do was to enter his master's shop as an apprentice, spend the years necessary to absorb the style of the day—Greek, Roman, Renaissance or whatever—and then he was qualified to establish his own practice. If, during his lifetime, he was able to add some refinements in design or construction to the current sum of knowledge, he died happy.

Color had its place in the style of the day, obedient to firm, unquestioned traditions which were based upon decorative, that is, eye-pleasing principles. Today, tradition has disappeared. Now, new programs of requirements demand new solutions in design. New services and standards of comfort, circulation and economy call for new systems of construction in new materials. I need only mention elevators, central heating, water supply and sewage disposal, electric lighting, telephones and airconditioning to indicate the complexity of contemporary design which was unknown to previous ages.

FUNCTIONAL COLOR

In her role as handmaiden to architecture, color has become increasingly complex. The only sure guide

through the intricacies of coloring modern buildings lies in functional color, for the classic decorative approach no longer suffices. Functional color means planning color to do a job—to respond to the intentions of the architect and to reinforce his design.

From scientists like Chevreul, Luckiesh, Judd, Evans and Nickerson, we have learned that each hue of the spectrum, plus its variations in brightness and saturation, will welcome, repel, stop, turn aside, enliven, depress, make tasks easier or more difficult, or otherwise direct the actions of people for whom buildings are created. Yet it is a curious fact that a functional scheme results also in good architectural decoration, just as the streamlining of an airplane results in an esthetically pleasing form.

To fully accomplish its mission, functional color must be founded upon the well-known phenomenon of human vision. One may argue the nice philosophical point as to whether color exists where there is no eye to see it, but we are on firm ground when we declare that all color impressions depend upon what happens to them in the human eye and brain.

For example, at the New York World's Fair I had a Golden Circle at the entrance adjoining the Long

Island Railroad station. Here buildings gleamed in masses of yellow, orange and white. The station was a long train shed, lit only by high strip windows. I glazed those windows with transparent blue-violet. Consequently, visitors became conditioned during their walk through the blue-violet atmosphere (though color constancy made them unaware of it) to see yellow-orange on anything. When they emerged into the Golden Circle any experienced the after-image upon yellow and orange buildings, the comments were most gratifying.

At the Cardinal Restaurant in New York, I played after-image in reverse of the Fair. I had an immense, vaulted, dimly-lit dining room painted in midnight blue. The lobby was in orange, brilliantly lit. As a result, couples swam into the dining room in a visual atmosphere strongly reminiscent of the famous Grotto at Capri.

SIMULTANEOUS CONTRAST

Simultaneous contrast is an old friend which works for me all the time, but could work against me if I were careless.

A bank in New York has a large room containing handsome round fat columns, formerly painted in raw "institutional tan." People complained that the room was hot in

JULIAN GARNSEY

A noted color consultant, Mr. Garnsey has been a frequent speaker at AIA meetings. This article is adapted from his remarks at the 27th Annual Meeting of the Inter-Society Color Council, March, 1958, Washington, D. C.

summer, but construction forbade installation of air conditioning. By changing the walls to light gray-blue-green and the columns to pure white, I solved the heat problem. Everyone agreed that the room felt cooler. And, as a by-product, the lady tellers looked rosier and prettier against the blue-green background than before. Even the president noticed this and I took credit for the improvement.

The young lady who goes to a dance and wishes to be noticed will wear flaming red-orange, the most advancing of colors. If she wears pastel blue, she might just as well stay at home and watch TV. I use this phenomenon of apparently advancing or retreating colors in less dramatic situations, but it is still useful.

If I have long corridors, I shorten them by introducing advancing colors at the ends and in the elevator lobbies. Conversely, to add length to a city church on a restricted lot, I use misty blue in the sanctuary.

In spite of the reasoned calculations which underlie functional color, one runs up against color prejudices on the part of architect or client, which defy reason. These may result from aberrations in the construction of the eye or from conditioned reflexes, such as when a person who has been punished in childhood by being put to bed in a

green room may hate that color all the rest of his life. These prejudices may be defeated by adroit use of visual phenomena.

The architect for the San Diego Art Museum definitely disliked blue. But for good reason, I wanted blue in the panels of the ceiling in the Great Hall. The architect did not. Well, then, could I have turquoise blue-green? He thought that would be OK, but forgot that the heavy moldings around those panels were to be solidly gilded. He had his blue-green but simultaneous contrast pushed the panels over toward the blue. Both of us were satisfied.

LIGHT

In speaking of color, I am not unmindful of light, which is both the parent and twin of color. My interest in light takes two directions:

- as variation in brightness
- as an influence on colors upon which it falls

We are all aware that brightness attracts humans as the candle does the moth. Accordingly, progressions in brightness can guide people as you desire and can direct attention toward the focus of a design.

For instance, in the side windows of a church, the order of brightness of stained glass should always lead up to the sanctuary. This makes an

excellent argument for designing a master lay-out of the windows for the stained glass artist to follow. Also, the spectral order of hue-brightness should be observed, for it is based upon a basic natural relationship. Thus a progression from violet through blue, red and green to yellow will seem satisfactory because it responds to nature's method.

I do not include the East window in this scheme because too great brightness there creates glare, which is disturbing to the congregation. However, if the East window turns out to be too bright, it can easily be cured. I had that problem at the Mudd Memorial Church of University of Southern California. With the architect's permission, I painted over the outside of the window with gray, dust-colored paint and rubbed it off with stiff burlap. Then each small pane had a clear spot in the middle but shaded off to the leads in each direction. This gave the same effect as 500 years of accumulated dirt which I had observed many years before to be the main cause of the beauty of the side windows in Reims cathedral.

Architects pay too little heed to the effect of light falling upon their colors. They choose colors under the cold north light of their drafting rooms and are surprised at the changed relationships which occur colors appear under incandescent or fluorescent lights. I had an experience with the Corn Exchange Bank in New York where plum-colored walls and a café-au-lait ceiling, not to mention the complexions of staff and customers, had taken on unforeseen cold hues. The reason was that the lighting contractor could not believe that I really meant 2800° tubes, and had installed 4500s.

COLOR IN SCHOOLS

When most of us graduated from high school we received, along with the diploma, a pair of spectacles. Ten or more years of close application to visual tasks under insufficient light had taken their toll of our vision. Today school rooms are flooded with light right back to the interior walls. In color, the sickening tans, creams and browns, out of the same pots as for State prisons,

have given way to delightfully varied hues in pastel tints.

The principal of one of my elementary schools told me that her teachers have to send the children home at five o'clock. The kids prefer to play in their colorful surroundings than in their homes, which are no doubt on the drab side! Gay accents among the pastels are not forgotten. Lally columns shine in vermilion, lemon yellow, rich blue or turquoise. Doors and casings are less intense but still richer than the walls. Variations in hues of doors identify different wings of a building, or separate buildings in a campus plan. Attention is paid to color preferences of differing age groups. Little children in early grades may prefer clear, primitive colors but greater age brings growing sophistication which fancies less saturated hues. You may infer that schools of twenty to fifty rooms require many colors, but you would forget the beneficences of simultaneous contrast. A warm gray will take on the complement to adjacent walls and appear different in each location. The same is true of all other colors. By clever interchanges, monotony is avoided at no extra cost.

PSYCHOLOGY OF COLOR

A primary resource of the colorist lies in the psychological connotations of colors.

Yellow, the sunlight color, suggests brightness, liveliness, good cheer. In the Federal Reserve Bank of Boston, girl employees complained about working in a poorly lit gray room whose windows opened upon a dingy light shaft. When the room was painted yellow, the illumination stepped up and the light shaft changed to light green, the same girls asked to be assigned there.

The excitement of *orange*, which induces action and attracts attention, persists even in grayed variations like salmon. If you have two committee rooms, side by side, and of exactly the same dimensions, one painted grayed salmon, the other in grayed blue-green, the same committee will accomplish more work, finish sooner and estimate that time has gone more quickly in the salmon room than in the blue-green one.

Red tightens nervous tension, increases the heart beat and is the world-wide warning of danger. It also happens to be the universal favorite of women. Pure red is infrequent in architecture because its power is likely to throw a scheme off balance, but the roses, coral, peach, orchid, lilac, find a place in sophisticated schemes.

The association of *violet* and *purple* with mourning in the Occident (though not in the Orient) limits their use in our buildings. But who can forget the wonderfully dramatic effect of purple light streaming across Napoleon's tomb in the Invalides? That's true functional color.

Blue, the universal favorite of men, is the psychological antithesis of red. Because of its quality of apparent retreat, it is used in architecture to push surfaces back. By no accident were domes and vaults in the Renaissance nearly always painted blue. No other hue would help them soar and float so effectively.

The most conservative of hues is *green*, which demands no emotional response whatever. Surfaces treated in green stay put and cause no disturbance in a color scheme.

I offer the following suggestions as gleaned from the color firing line:

- any system for color coordination of materials should be simple enough to be understood without considerable explanation — definitions by location on chromaticity diagrams will not work
- there should be a closer correspondence in color between the products of various manufacturers of comparable materials—a lovely gray-blue-green in brand A is a harsh normal green in brand B and in brand C a dull, muddy green
- exact color matches between dissimilar materials are not worth trying for
- there should be more exact conformity between samples and products supplied

To my mind, the secret of harmonious, appropriate, functional color lies in the man behind the scheme. No system has yet been invented that supplants an experienced, talented eye and mind.

SCHOOL PLANT STUDIES

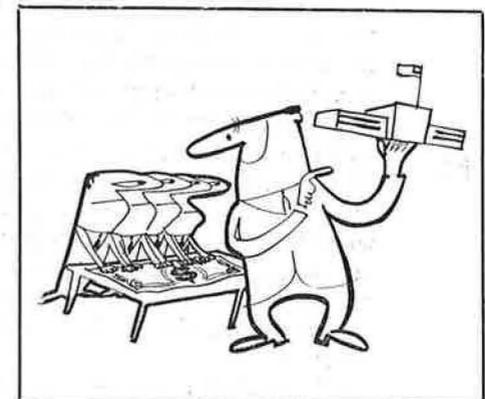
SCHOOL BUILDING COSTS

E. W. Dykes, AIA

- UNITS OF MEASURE
- OUTSIDE INFLUENCES
- METHODS OF SAVING

THIS IS THIRTY-FOURTH OF A SERIES OF PAPERS PREPARED BY MEMBERS OF THE AIA COMMITTEE ON SCHOOL BUILDINGS, & BY SELECTED SPECIALISTS, TO MAKE LAYMEN AWARE OF SCHOOL BUILDING PROBLEMS & TRENDS & TO STIMULATE DISCUSSION. THEY ARE NOT INTENDED TO BE DEFINITIVE LAST WORDS & CARRY ONLY THE AUTHORITY OF THEIR RESPECTIVE AUTHORS. THE SERIES WILL BE EDITED BY THE COMMITTEE & ISSUED BY THE AIA DEPARTMENT OF EDUCATION & RESEARCH UNDER SPONSORSHIP OF THE AMERICAN ARCHITECTURAL FOUNDATION. MANY NEW SUBJECTS ARE BEING WORKED ON & CONTRIBUTED ARTICLES ARE WELCOME. WIDE-SPREAD DISTRIBUTION TO LAYMEN & EDUCATORS IS MADE OF THESE NON-TECHNICAL ARTICLES IN REPRINT FORM.

(one copy each issue free—additional copies 10¢ each)



Cartoons by Thomas Hutchens. Mr. Hutchens was also the cartoonist for the AIA film "A School for Johnny."

SCHOOL BUILDING COSTS

From a talk given at the Spring 1957 meeting of the Ohio School Business Officials Association by E. W. Dykes, AIA*

We are all aware that unprecedented sums are now being spent for school building construction. Since almost all such buildings are financed from public money, it is inevitable that controversy over construction costs will arise. Mountains of misinformation are available on the subject. I think I can show the error of some of this talk by throwing certain items of controversy into their proper perspective.

First, let's look at some of the most popular methods of measuring school building construction costs:

- cost per student
- cost per classroom
- cost per cubic foot
- cost per square foot

UNITS OF MEASURE

The *cost per student* unit reflects not only structural costs but educational program costs as well. Its usefulness is restricted, however, because the layman is generally unaware of these distinctions. Used in conjunction with cost per square foot, the per student unit indicates rather clearly differences in program. Cost per student can be used only for complete buildings, as additions rarely include a complete complement of all necessary rooms.

The *cost per classroom* unit is the most widely misunderstood of all the units. It is confusing because the other three are used in connection with actual costs per unit of measurement while the classroom cost reflects also the costs of corridors, boiler rooms, cafeterias and other rooms essential for a complete educational program. Obviously, the unit means absolutely nothing unless one knows what the other rooms are in a particular building under discussion.

I have seen a simple classroom addition compared with the national

average on classrooms. This simple addition did not include the costs of other rooms so the figures were favorable. An interested taxpayer upon reading these statistics would rush to excoriate his own school board who then turns to the architect and so on down the line until the thing is settled. Since it is not feasible to include an explanation each time the classroom unit of measure is used, this measure is next to meaningless.

Cost per cubic foot has long been one of the popular units of measure in building costs. It is far enough off the mark that I suggest its use be limited to a controlled body. For example, if the height of an 8' high room were increased to 10', 20% would be added to the cubage but perhaps less than 5% to the cost. Unless the use of the room demanded the increased height, very little would be added to the usefulness. Total construction bill would be up but cubage cost would be down. An architect who sticks close to minimum heights in order to cut costs comes up with higher costs per cubic foot than an architect who pays no particular attention to the lower ceilings. To compare costs on a cubage basis would be unfair.

The *cost per square foot of usable space* method gives a good indica-

tion of the size of a building, whereas cubage does not. However, it does have serious shortcomings. A room 20' x 30' containing 600 square feet costs so much per square foot to build. If this room were divided into two rooms by a wall down the middle, the square area is the same but the cost goes up. Divide it again—again the cost rises without changing the area.

A few years ago in our office we had a building in which the square foot cost was quite high. It baffled us until closer examination showed a very high ratio of wall areas to total areas. We devised another form of estimating which we have found to be more accurate—the *cubic foot of wall* method. We squeeze all the air out of the building and get a unit price for the unit volume of material in it. This method is unworthy of widespread use because it would require a lot of explaining to get everyone to measure in just the same way.

This business of measuring, incidentally, also causes difficulty in comparing jobs measured by different people.

I do not place a lot of faith in any method of measurement. Yet we all must have one to guide us as we design our buildings. In our office we have settled on cost per



WE'VE LICKED WINTER CONSTRUCTION.

* Mr. Dykes is a partner in the firm of Lawrence, Dykes and Associates of Canton, Ohio.

square foot method and use cubic foot of wall method as a check. From this discussion we can conclude that unless you really know what is being measured in a building, the unit methods of comparing cost are unreliable.

OUTSIDE INFLUENCES

Comparisons of building costs from different areas are of little real value, since local competition, taxes and labor conditions affect prices greatly.

Competition may increase costs as much as 10%. When there are more contractors than construction, contractors sometimes take a building at just a little bit over cost to hold their crew together and to cover regular overhead costs.

Also, since winter is a poor time for building, many contractors cut costs so they can get a job at the start of the new season. Some builders introduce innovations in material handling and cut their office overhead, so they can afford to be the successful bidder.

Although school administrators are interested in the lowest school costs possible, they should also be interested in the contractor making a profit on the job. Then they can be more particular about finishes and correction of little defects in the building than if the contractor is working on a very close margin.

High local taxation is likely to affect bids. Federal taxes account for about 25% of school costs, but they are uniform throughout the country.

Restrictive labor practices can have a strong affect on costs. The superintendent of a New York suburban school told me about having movable partitions put up in his office. The workmen, who lived in the metropolitan area, arrived on the job about 10 or 10:30 and put their tools away at 2:30. They charged a full day's work on the basis of portal-to-portal pay! To some extent such practices happen in all organized areas throughout the country. It is a situation which is difficult to alleviate; nevertheless, it must be dealt with.

METHODS OF SAVING

In Ohio, school buildings represent about 10 cents of the educational dollar; the balance is used for the educational program. So if we cut building costs 10% and in doing so add nothing to maintenance and operation, we gain nothing but a few more headaches and an unsatisfactory building. I'm not one to sneer at a 10% saving if it is real saving, but let's look at the various methods and see whether so-called savings are real savings after all. Some fall into the class of half-truth and the whole truth casts a different light.

The first money saving item to consider is a *master plan* for building construction. This means purchasing building sites well in advance of the time they will be needed, and preferably large enough to take care of expansion.

The *building levy* is a most remarkable way of saving money and should be considered by every area which has sufficient taxable property to make it feasible. Interest represents over 3% of the educational dollar. Why not eliminate it?

The *educational program* itself can cut costs. I would venture to say that 95% of the educational program can be carried on in the self-contained classrooms because classrooms are the heart of the program. I do not know what would happen if only the classrooms and a minimum of other facilities were built, but the tremendous difference in building costs cannot be overlooked. I do not necessarily recommend such a thing but I think it should be a matter of serious study for a community which finds itself underhoused and with low taxable values.

If the *size of rooms* were kept to a minimum, a definite saving would result. However, increase in cost is not directly proportional to increase in area. Some studies I have made indicate that a 20% increase in area using the same number of rooms results in an overall increase of 5% to 10%. Since education is the end result desired, the ratio of dollar per "ounce" of learning is better.

Complete plans and specifications are good insurance since they result in the lowest possible bids. If docu-

ments are complete and show all items to be constructed or included without weasel phrasing, the bidders will put in the figures exactly as they see them and adequate inspection will insure that the owner get precisely the building for which he is paying. This minimizes changes which cost more than if included originally.

Pre-planning of additions is another way of saving. It might even be well to pay the architect for the preliminary planning of a complete building although working drawings are ordered only for the part to be built immediately. The first structure will be somewhat more expensive because of heating plant and other facilities sized for the future building, but thousands of dollars will be saved when the addition is made. This is not only a saving but results in better planned school buildings.

Insurance rates may soon eat up whatever savings are made in construction. For example, exposed steel may increase the insurance premium. The architect should be instructed to check on any items which require more insurance and to figure how long it would take for the extra cost of insurance to overbalance the savings.

We claim there is little difference in cost between *one- and two-story buildings*. In our office two-story schools have average 3.2% less than one-story ones. My feeling is that the one-story buildings are educationally superior, and, as a taxpayer, I am willing to advocate their use despite the slightly higher cost. Stairways, which cost more than other space, are eliminated, and also the maintenance problem of washing second-story windows.

The *use of standard plans* is another way of saving that many school boards suggest. On identical sites and at the same period of time, use of a stock plan possibly would result in some savings. But an attempt to adapt a standard plan even slightly, often results in more cost than the architect's fee. Also, advances in school building design cease when such a plan is used.

"*Shaving*" materials is another

TABLE I
Variations in School Building Construction Costs Resulting from Use of Materials of Different Quality

	Contract price	Cost per sq ft	Difference per sq ft %	
Using best materials for good maintenance without regard to cost	\$304,180	\$13.46		
Actual cost	285,800	12.58	.88	6.5
Using lowest limit maintenance items	277,400	12.22	1.24	9.2
Using lowest limit maintenance items & omitting certain program items	259,488	11.42	2.04	15.2

popular method of saving. But some things must not be compromised. We believe that heating and ventilating systems must be of top design. Good seeing conditions are absolutely essential although the fixtures themselves may vary in quality. The walls, windows and roof must be able to withstand the elements. A bonded roof will sometimes leak long before the bond runs out!

Using the Charles M. Watson School in Massillon, Ohio, as a case study we see what savings can be made by downgrading materials and omitting certain program items. (tables 1 and 2) However, the desirability of these savings begins to fade when one considers the probable increase in maintenance cost and headaches, and the lack of proper teaching facilities.

It has been our experience over the years that no one specific item will save a great deal on building cost. It is the intelligent savings in a number of places and the pre-planning of buildings that save expense. Small savings in materials can result in higher maintenance operation and a limited educational program. Don't be penny wise and square-foot foolish.

TABLE 2
Decrease in Construction Costs Resulting from Substituting Materials and Omitting Certain Program Facilities

Proposed change	Actual cost	Decrease in cost per square foot of building	Decrease in cost per square foot of material or unit
Replace galvanized windows with painted steel	\$ 450	\$.121	\$.019
Omit painting of boiler room piping	75	.0036	
Omit silicon waterproofing	450	.0685	.019
Omit Durowal reinforcing	650		.028
Use asphalt tile instead of terrazzo corridors	2,800	.80	.124
Use vinyl tile instead of terrazzo corridors	650	.186	.028
Omit vacuum cleaning system for chalk trays	3,023		.133
Omit glazed tile in corridors	800	.70	.035
Omit glazing angles (76 lights)	152	2.00 (each)	.006
Omit 10 corridor tackboards	1,650	1.85	.073
Omit all wardrobes, teachers storage & sink cabinets	5,300	180.00 (each)	.232
Omit side coiling partition between cafeteria & gym	4,700		.207
Omit acoustic in classroom	250	.10	.011
Omit skydomes	3,000	300.00 (each)	.132
Omit metal shelving cabinets	3,000	300.00 (each)	.132
Omit painted window vents	-112	2.80 (each)	.005

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TECHNICAL BIBLIOGRAPHY

***FHA Mortgagees' Handbook**
Federal Housing Administration,
Washington 25, D. C. 6" x 9", \$1.00
A new and up-to-date edition ar-
ranged for convenient reference, and
to be kept current with future re-
visions or additions.

Location and Space—Economy
A general theory relating to indus-
trial location, market areas, land
use, trade, and urban structure, by
Walter Isard. Published jointly by

* Available from Superintendent of Docu-
ments, U.S. Government Printing Office,
Washington 25, D. C. (Stamps not accepted.)

the Technology Press of Massachu-
setts Institute of Technology and
John Wiley & Sons, Inc., New York,
1956. 350 p. diagrs., 6" x 9". \$8.75

Prof. Isard, with teaching experi-
ence at Tufts, Harvard, M.I.T., and
the University of Pennsylvania, has
written a study whose "basic objec-
tive is to improve the spatial and
regional frameworks of the social
science disciplines, particularly of
economics, through the development
of a more adequate general theory

of location and space economy." A
highly technical study, the author
does not intend that the general
theory presented will be of any great
utility for handling specific problems
of reality, although he plans a sec-
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TECHNICAL NEWS

acceptability of products

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B. Old American Lok-Tab Asphalt
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B. The Old American Roofing
Mills
Division of the Ruberoid Co.
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New York 36, NY

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B. Mule-Hide Master Seal Shingle
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B. The Lehon Company
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Lapped Siding

Homasote Company
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The American Stained Shingle Co
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Sheathing
Barrett Division
Allied Chemical Corp
40 Rector St
New York 6, NY

Ammo Studgun and Fasteners
Ammo Products, Inc
1100 20th Street NW
Washington, DC

Supplement to Engineering Bulletin
No. SE-216 dated 20 March 1957
Empire Homes Corporation
Beech & Woodland Streets
Louisville 11, Kentucky

Engineering Bulletin No. SE-232
Shop Fabricated Wood Trussed Unit
Construction
United Trussed Roof Co, Inc
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CALENDAR

October 20-November 16: Exhibition of new Hospital Architecture, The Octagon.

October 30-November 2: Annual Meeting of the National Trust for Historic Preservation, New Orleans, Louisiana.

November 10-14: Meeting of the Board of Directors, AIA, Clearwater, Florida.

November 20-22: Florida Association of Architects, Miami Beach, Florida.

November 24: Chamber of Commerce of the United

States, National Committee on Metropolitan Growth, Sheraton-Park Hotel, Washington, D. C.

November 24-26: Fourth Annual Student Forum, The Octagon, Washington, D. C.

December 3-4: Conference on Architecture for Adult Education, Purdue University, Lafayette, Indiana.

March 13-23: Middle Atlantic Regional Meeting, Greenbrier Hotel, White Sulphur Springs, W. Virginia.

April 18-25: Historic Garden Week in Virginia, sponsored by the Garden Club of Virginia.

Necrology

According to notices received at The Octagon between August 8, 1958 and September 29, 1958

- CONKLIN, CHARLES W., Mansfield, Ohio
- GOIN, SANFORD W., FAIA, Gainesville, Fla.
- GUSTAFSON, WILLIAM A., Richmond Hill, N. Y.
- HAINING, DAVID W. B., SR., Atlantic City, N. J.
- HAMPTON, H. W., Huntington, W. Va.
- HANKER, WILLIAM J., Memphis, Tenn.
- HULL, EMMETT J., Jackson, Miss.
- JONES, WILLIAM H., Melrose, Mass.
- LORENZ, JOHN A., Webster Groves, Mo.
- PRATT, CARROLL H., Brooklyn, N. Y.
- SHAW, RICHARD, FAIA, Boston, Mass.
- WALLACE, TODD B., Laconia, N. H.
- WEIRICK, RALPH, Orlando, Fla.

EDUCATION

The Rensselaer Polytechnic Institute School of Architecture, Troy, N. Y., has announced its visiting lecturers on its Alcoa Foundation Series for the current academic year. During the Fall Term, Josef Albers, Professor Emeritus of Design, Yale University, Fred N. Severud, Consulting Engineer, and Carl Feiss, Planning and Urban Renewal Consultant, will deliver lectures, and R. K. Thomas, Sculptor, will be Visiting Critic in Design.

William B. Tabler will speak in February at the opening of the second term, and Minoru Yamasaki will criticize the preliminary theses presentations of the Fifth Year class in March. Additional lecturers for the Spring Term will be announced at a later date.

The Alcoa Foundation Lecture Series was established at Rensselaer in order to bring prominent architects and men eminent in allied fields to the campus for lectures, consultation, and criticism.

MEMO

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At its meeting in Houston, Texas on November 28th, 1956, the Board of Directors accepted and adopted the Committee report.

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ARCHCROSTIC III

DEFINITIONS

- A. To determine precisely; bring out the limits or outlines of (2 words).
- B. Pasadena architect, 1868-1954; with his brother: fathers of the cottage style, represented in A.I.A. centennial publication, received 1952 A.I.A. special citation (full name, 3 words).
- C. A tonal process resembling lithography in which a chalk drawing is transferred to a copper plate for intaglio printing (3 words).
- D. Made somewhat different; varied.

WORDS

2 82 148 75 33 176 208 12

102 27 83 187 215 61 21 168 182
126 41 178 207 111 32 144 158

134 24 202 109 5 123 209 94 157
72 62 170 14 120 48 205

107 70 191 118 58 28 10 86

INSTRUCTIONS

To solve this puzzle you must guess twenty-seven words, the definitions of which are given in the column headed Definitions. Alongside each definition there is a row of dashes—one for each letter in the required word. When you have guessed a word write it on the dashes, and also write each letter in the correspondingly numbered square in the puzzle diagram. Black squares indicate ends of words; if there is no black square at the right of the diagram, the word carries over to the next line. When all the words are filled in, their initial letters spell the name of the author and the title of the work from which the quotation was taken.

1	H	2	A	3	K	4	G	5	C	6	F		7	P	8	E	9	J	10	D			
12	A	13	Q	14	G	15	G	16	K				17	J	18	G	19	S		20	M	21	B
		23	F	24	C			25	J	26	O	27	B	28	D	29	R			30	J	31	S
33	A	34	Q	35	I	36	L	37	K	38	M	39	G			40	M	41	B	42	K	43	S
45	O	46	P	47	H	48	C	49	T			50	K	51	M	52	E	53	Q	54	R	55	P
57	F			58	D	59	H	60	I	61	B			62	C	63	K	64	N	65	M	66	S
68	Q	69	J	70	D	71	P			72	G	73	J			74	F	75	A	76	O	77	G
79	T	80	H	81	J	82	A	83	B			84	R	85	M	86	D			87	M	88	Q
		90	P	91	G	92	P	93	R	94	G	95	I	96	H	97	F	98	J			99	P
		101	R	102	B	103	F			104	M	105	K	106	Q			107	D	108	S	109	C
111	B	112	G	113	J			114	G	115	F	116	E	117	I	118	D	119	Q	120	C	121	G
		123	C	124	L			125	S	126	B			127	I			128	K	129	S	130	N
132	H	133	M			134	C	135	Q			136	E	137	K	138	M	139	O	140	R	141	P
143	N	144	B	145	R			146	I	147	F	148	A			149	R			150	P	151	S
153	G	154	M	155	E			156	Q	157	G			158	B	159	R	160	O	161	K		
163	O			164	S	165	H	166	K	167	E	168	B	169	N	170	G	171	G			172	Q
174	M	175	L	176	A	177	F	178	B			179	H	180	I			181	T	182	B	183	O
184	P	185	H	186	N	187	B	188	M	189	F	190	K	191	D	192	P	193	M			194	R
196	O	197	M	198	G	199	H	200	I			201	L	202	C			203	G	204	T	205	C
207	B	208	A			209	G	210	Q	211	P	212	M	213	F	214	E	215	B				

DEFINITIONS

- E. The section that lies midway between the nodal points of a vibrating medium; a loop.
- F. Famous cromlech at Avebury (Wilts).
- G. Brother and partner of B (given and middle names only).
- H. A method of forming stonework with recessed joints, principally employed in Renaissance buildings.
- I. Central feature of F (2 words).
- J. The technical mastery of an art; a taste for the fine arts, especially the taste of a dilettante.
- K. Greek paradise; no relation to Ebbets (2 words).
- L. A narrow and retired space.
- M. Contemporary mode of design (lay expression, an anathema to the profession, 2 words).
- N. French verb meaning to flee, escape (past participle without reflexive pronoun).
- O. Age or period of F.
- P. Phenomenon, useful in design, of perceiving things differently than would be normal for a visual stimulus (2 words).
- Q. Achievement of he who read Cecil Woodham-Smith's 1954 documentary book (3 words).
- R. The beam or lowest division of the entablature which extends from column to column.
- S. Boston architect, first A.I.A. president of 20th Century (full name, middle initial).
- T. Excessively free from doubt or error (2 words).

WORDS

67 116 214 8 167 52 136 155

6 97 23 147 213 57 103 177 74
189

114 18 198 112 4 121 171 39 91
203 15 77 153

59 152 1 199 96 132 165 80 179
47 185

146 35 110 127 95 56 117 60 180
200

9 81 131 25 30 73 113 69 17
98

37 105 3 128 166 42 190 50 137
63 161 16 122

36 201 124 175

197 104 20 65 174 85 188 138 40
212 154 38 87 193 51 133

169 64 186 130 143

76 183 163 142 196 45 26 160 139

115 141 92 44 211 90 7 55 192
195 184 150 46 99 71

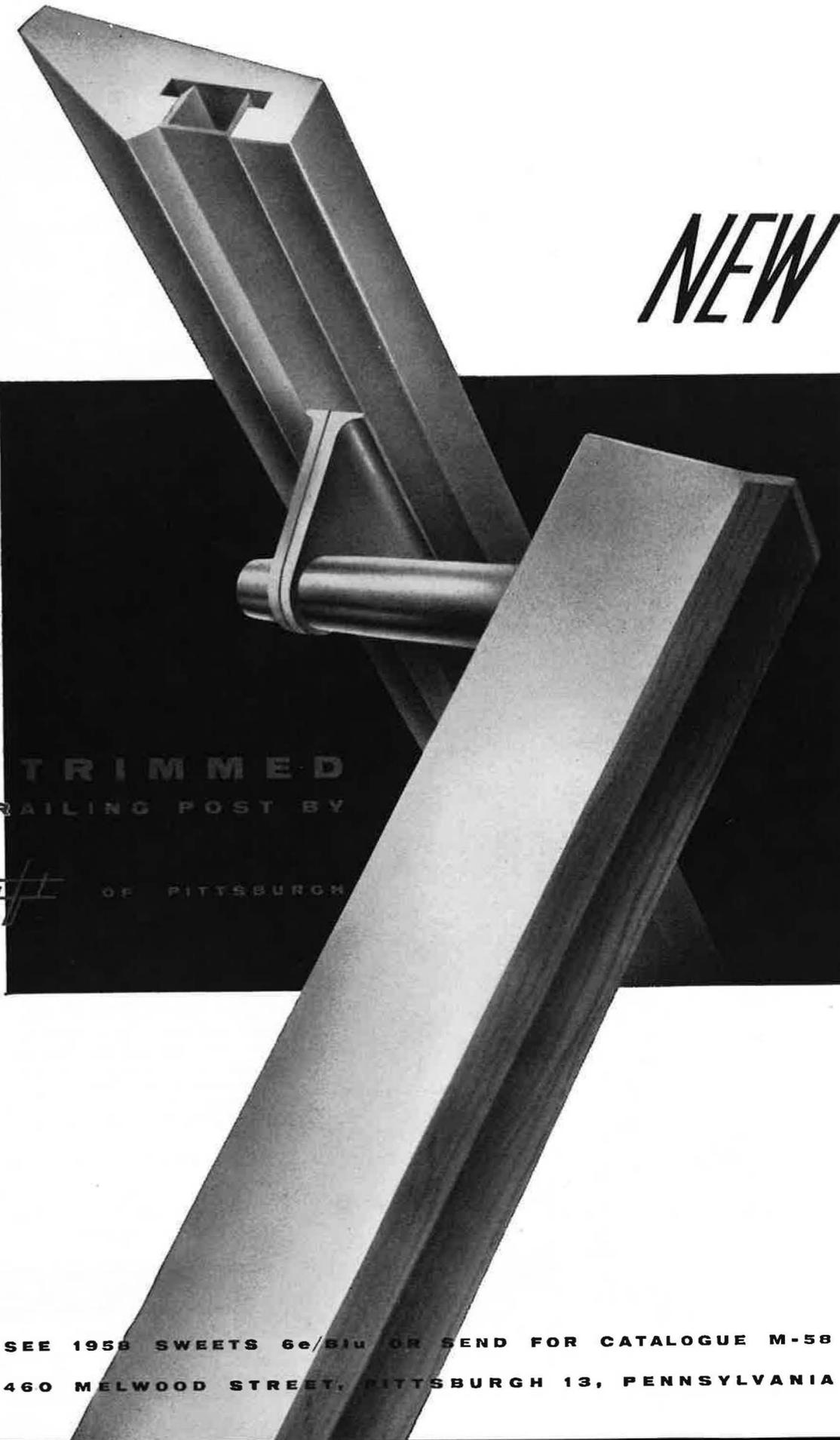
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145

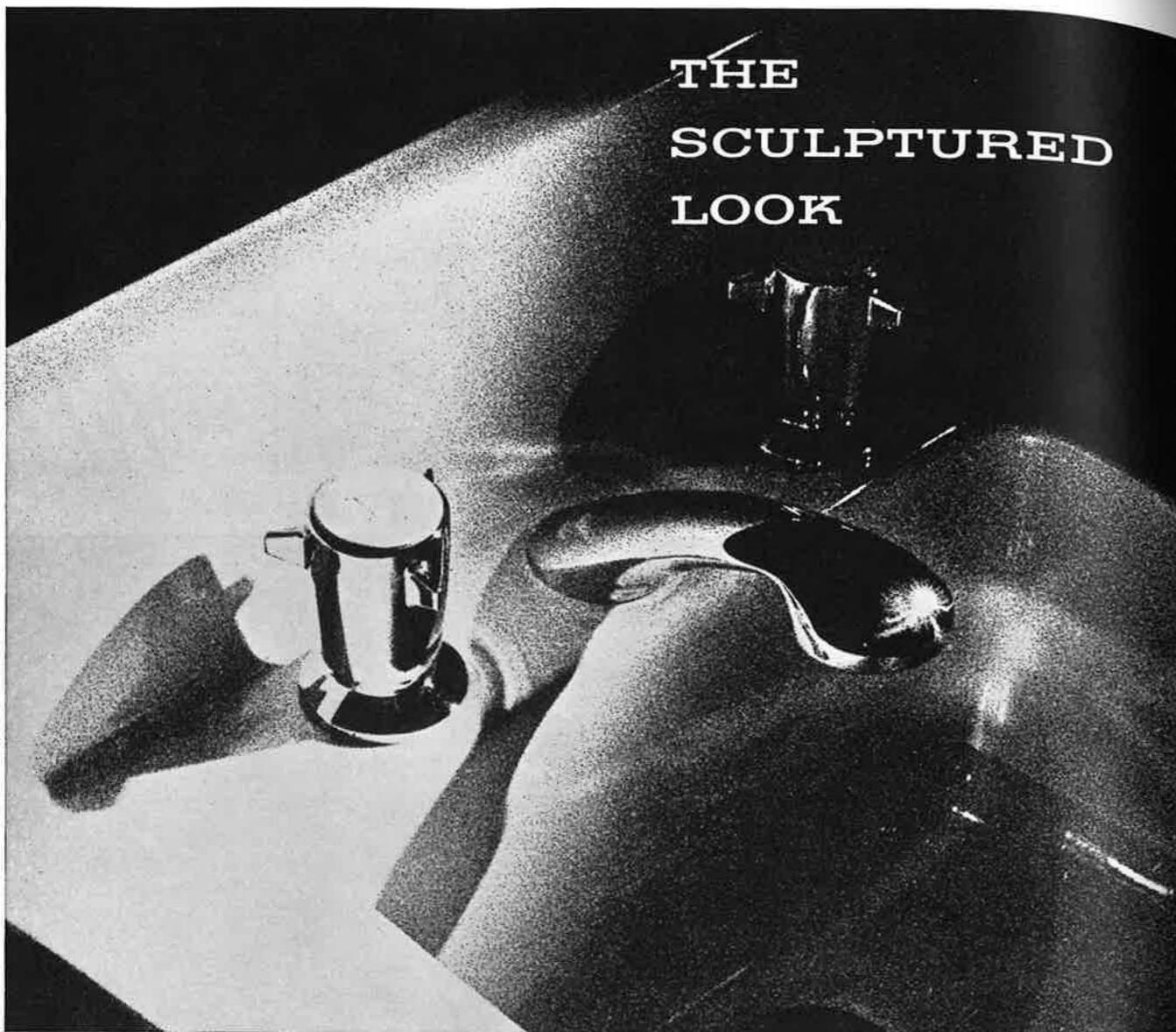
66 129 11 19 78 162 31 164 206
108 125 151 43 22

181 204 173 49 79 100 89

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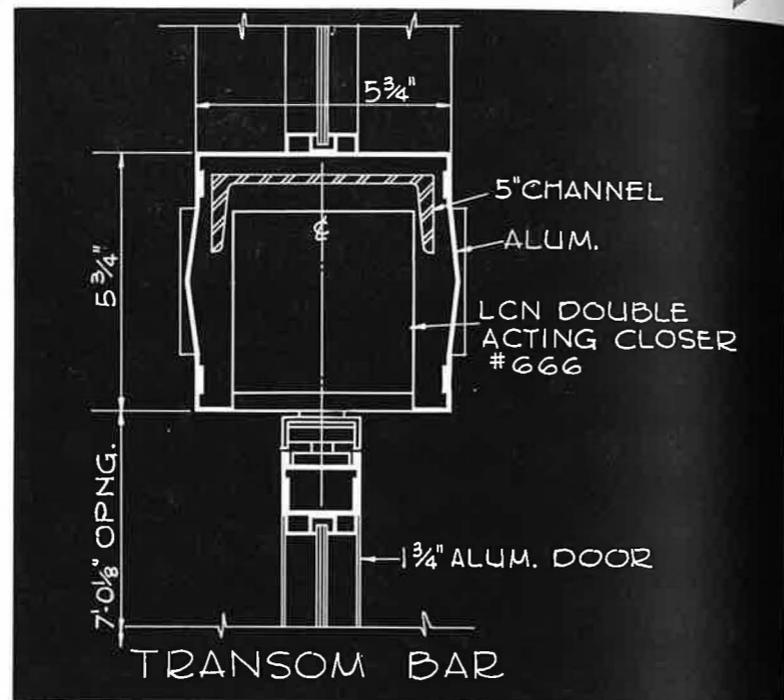
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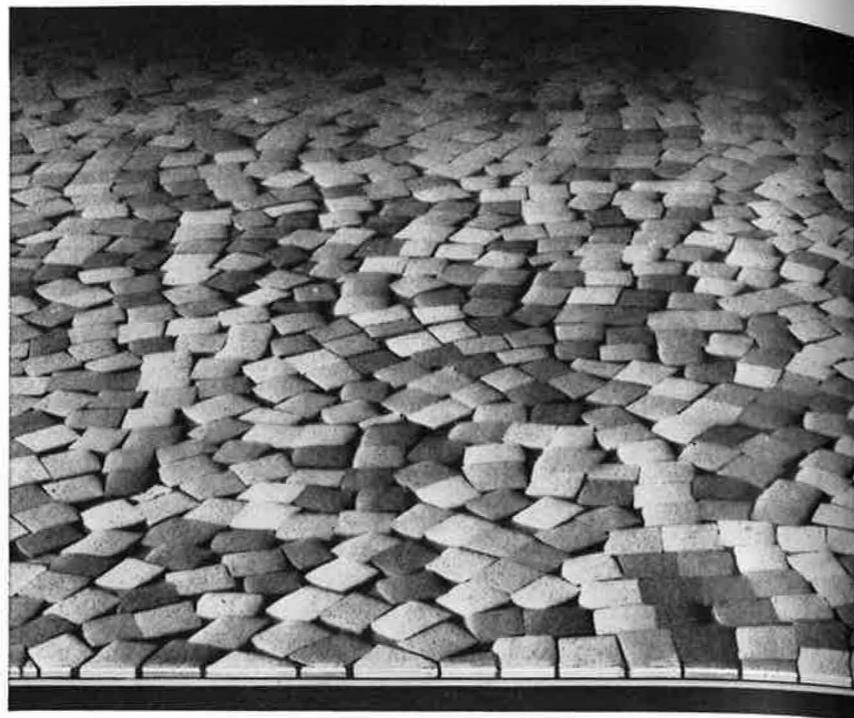
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Close-up photograph shows how the translucency of the grouting gives a three-dimensional look to an actually smooth surface. The color chips in the foreground are about 50% larger than actual. The white line is the alkali-resistant Hydrocord Back.

Remarkable new kind of sheet vinyl floor for universal use

Of great importance to architects is a new, heavy-duty Armstrong floor which makes use of translucent vinyl in a different and interesting way. Called the Tessera Series in Armstrong Vinyl Corlon, it utilizes the mosaic principle. Colored vinyl chips, exactly simulating the tesserae used in hand-crafted mosaics, are set into a bed of translucent vinyl. As you can see from the photograph, the three-dimensional effect of "Tessera" is very striking. While the chips appear to float, the surface of the floor is, in fact, smooth, assuring easy and economical maintenance. Because "Tessera" is made of the finest quality vinyls, it is exceptionally resistant to grease and alkalis, indentation, and abrasion. It also has excellent dimensional stability. In sum, "Tessera" will give prolonged trouble-free service, even under the most severe daily use. The over-all thickness is .090", with a .058" wearing surface, comparable in performance to heavy gauge or Battleship Linoleum. It is available in seven colors, in 6' widths, and costs between 60¢ and 80¢ per sq. ft. installed.

A universal flooring material

"Tessera" will meet the decorative and functional requirements of every interior: commercial . . . institutional . . . residential. And since it comes with the exclusive, alkali-resistant Armstrong Hydrocord Back, "Tessera" can be used below and on grade as well as above grade. This feature enables "Tessera" to be used safely even on lightweight aggregate concrete slabs, except where excessive moisture renders the use of any resilient floor questionable.

An interesting technical advance

Even from just the technical point of view, the development of "Tessera" is noteworthy. Previously, floors made with translucent vinyl (or technically speaking, unfilled vinyl) tended to shrink considerably due to the instability of the vinyl. To prevent this, fillers, such as asbestos, are used in many vinyl flooring materials. This, however, eliminates the translucency of vinyl . . . its depth effects . . . its light refractions. Now that Armstrong research has perfected the technique of using translucent vinyl in dimensionally stable floors, the decorative potential of resilient floors is greatly broadened.

Architectural-Builder Consultant services

For assistance in making the best flooring specs for your clients, and for solving technical problems, contact your Armstrong Architectural-Builder Consultant. Because Armstrong makes all types of resilient floors, he can offer unbiased recommendations. He can also call in for you the services of the Armstrong Research and Development Center and Bureau of Interior Decoration. Phone the Architectural-Builder Consultant at your nearest Armstrong District Office or write to Armstrong Cork Company, Floor Division, Lancaster, Pennsylvania.



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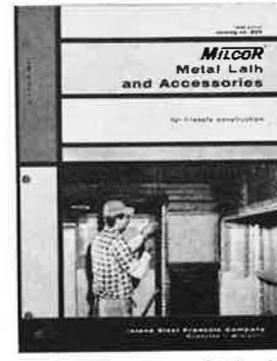
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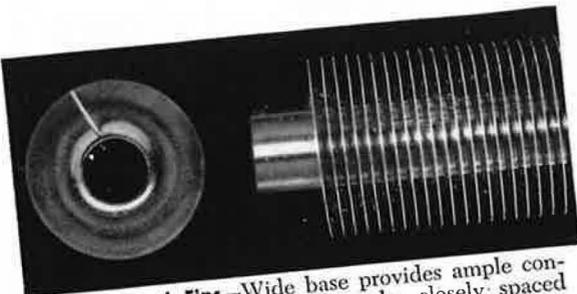
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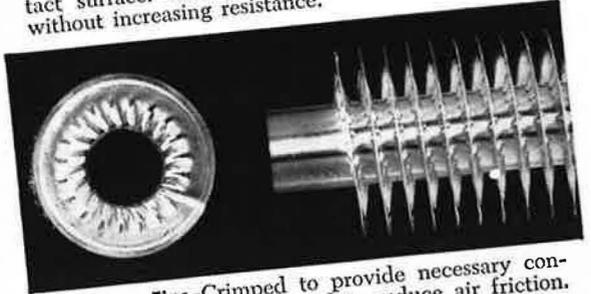
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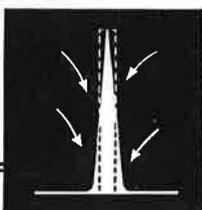
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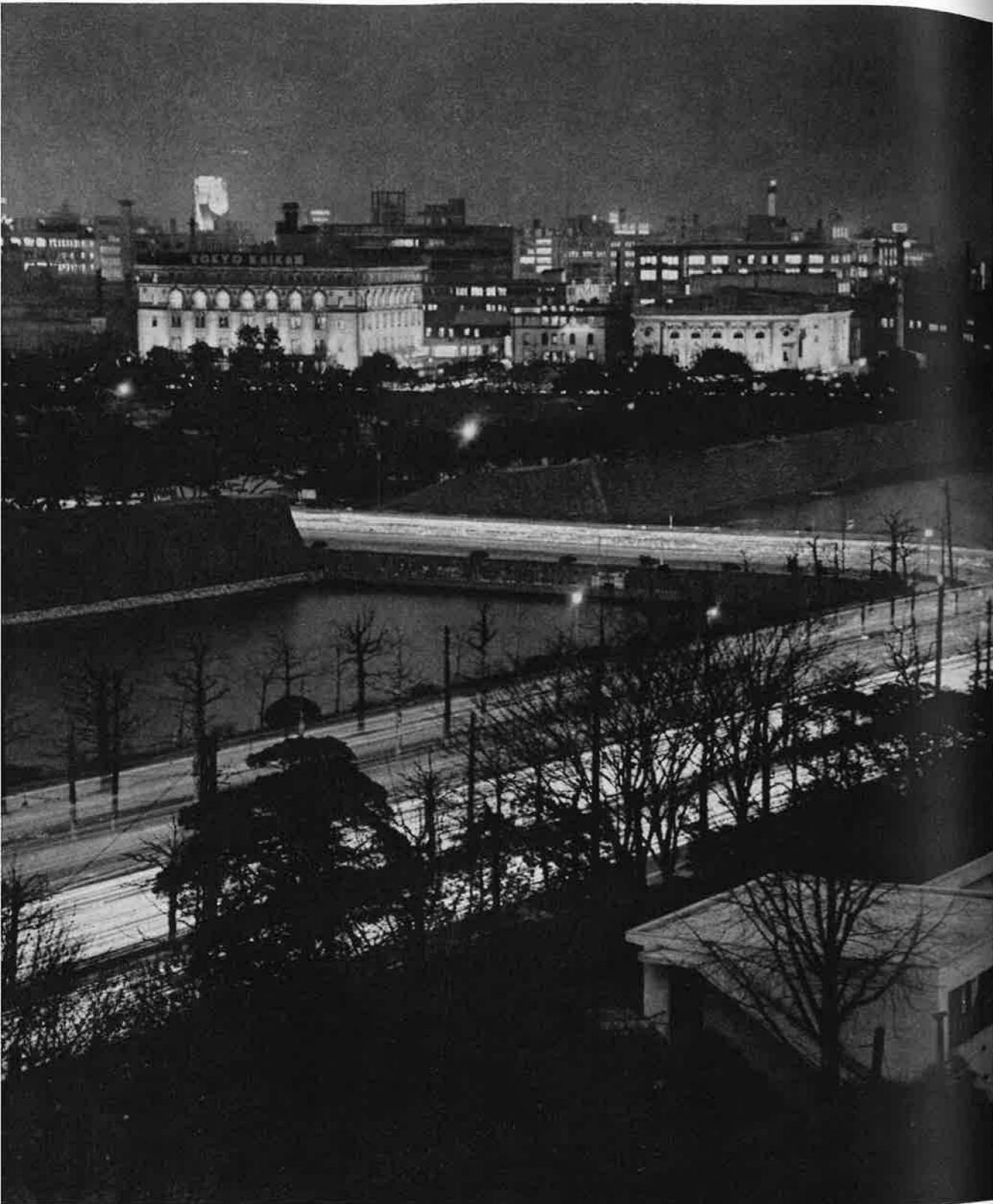
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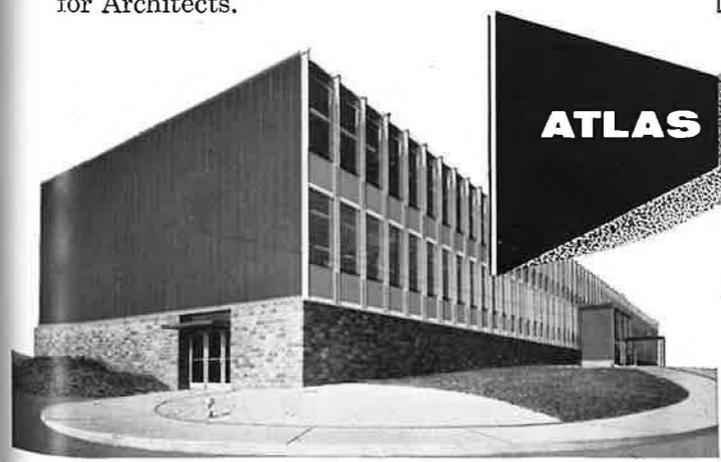
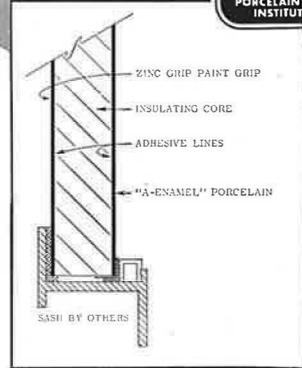
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