

AIA

JOURNAL ^{2F}

of The American Institute of Architects

SEPTEMBER 1958

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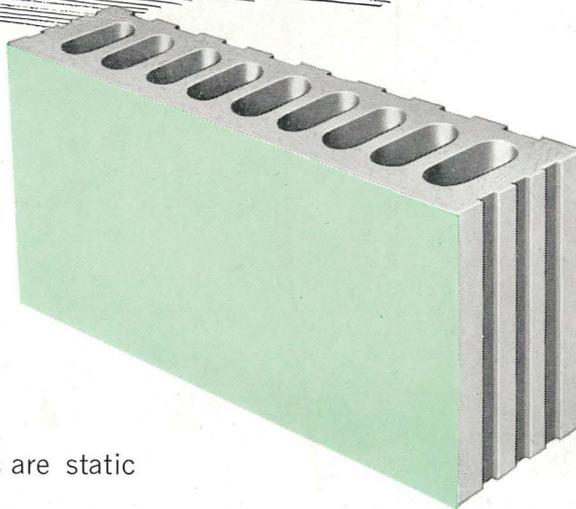


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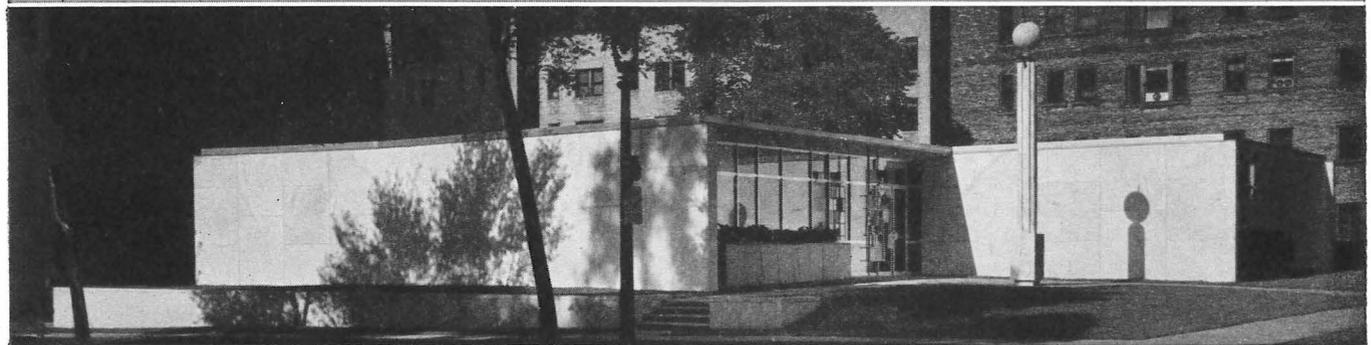
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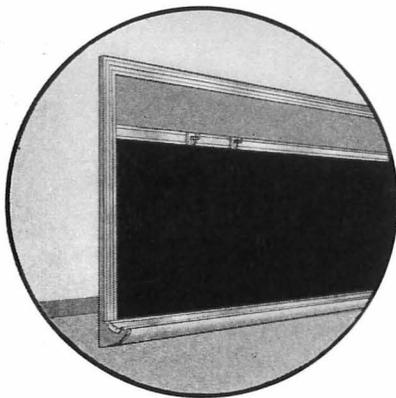
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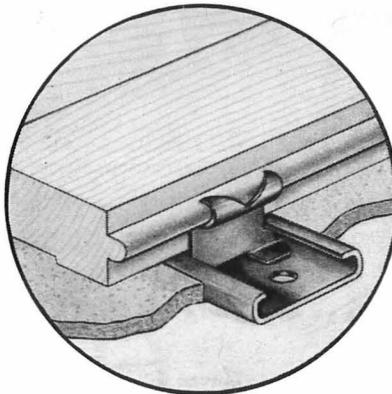
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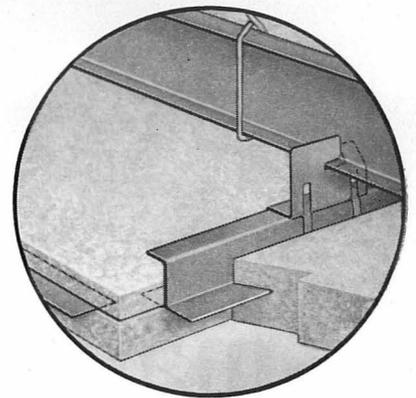
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AI A

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of The American Institute of Architects

VOL. XXX, No. 3

SEPTEMBER 1958

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COVER: Northland Shopping Center, Detroit—Victor Gruen, Architect

Photo by Ben Schnall

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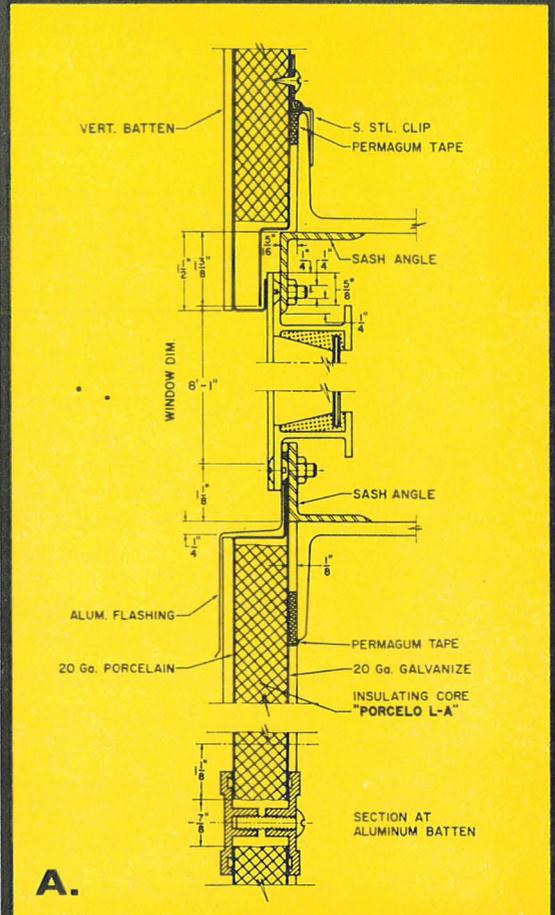
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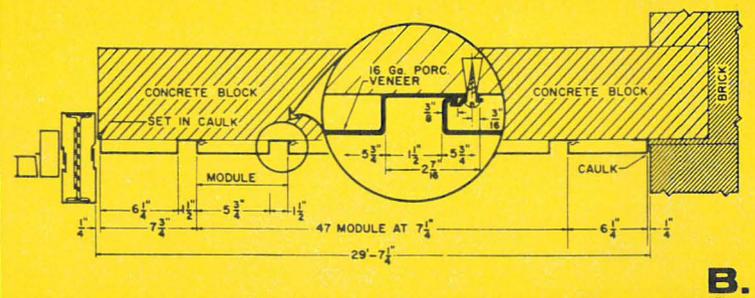
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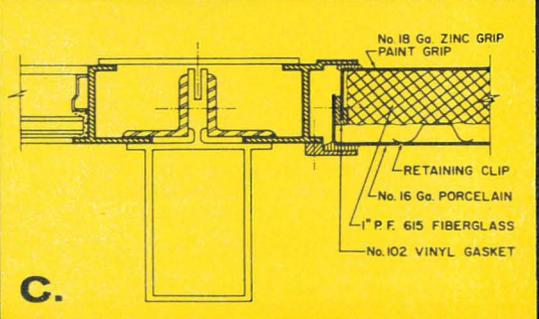
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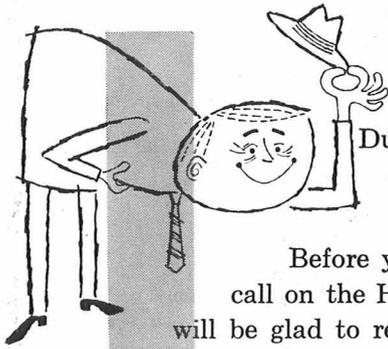
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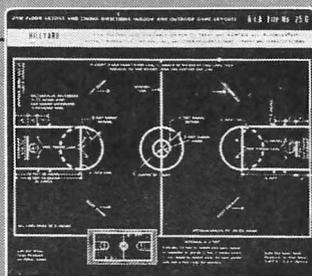
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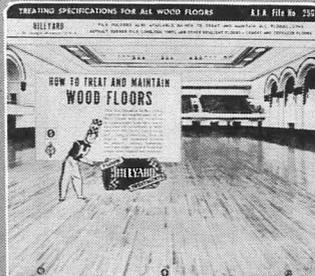
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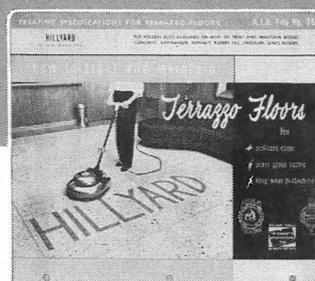


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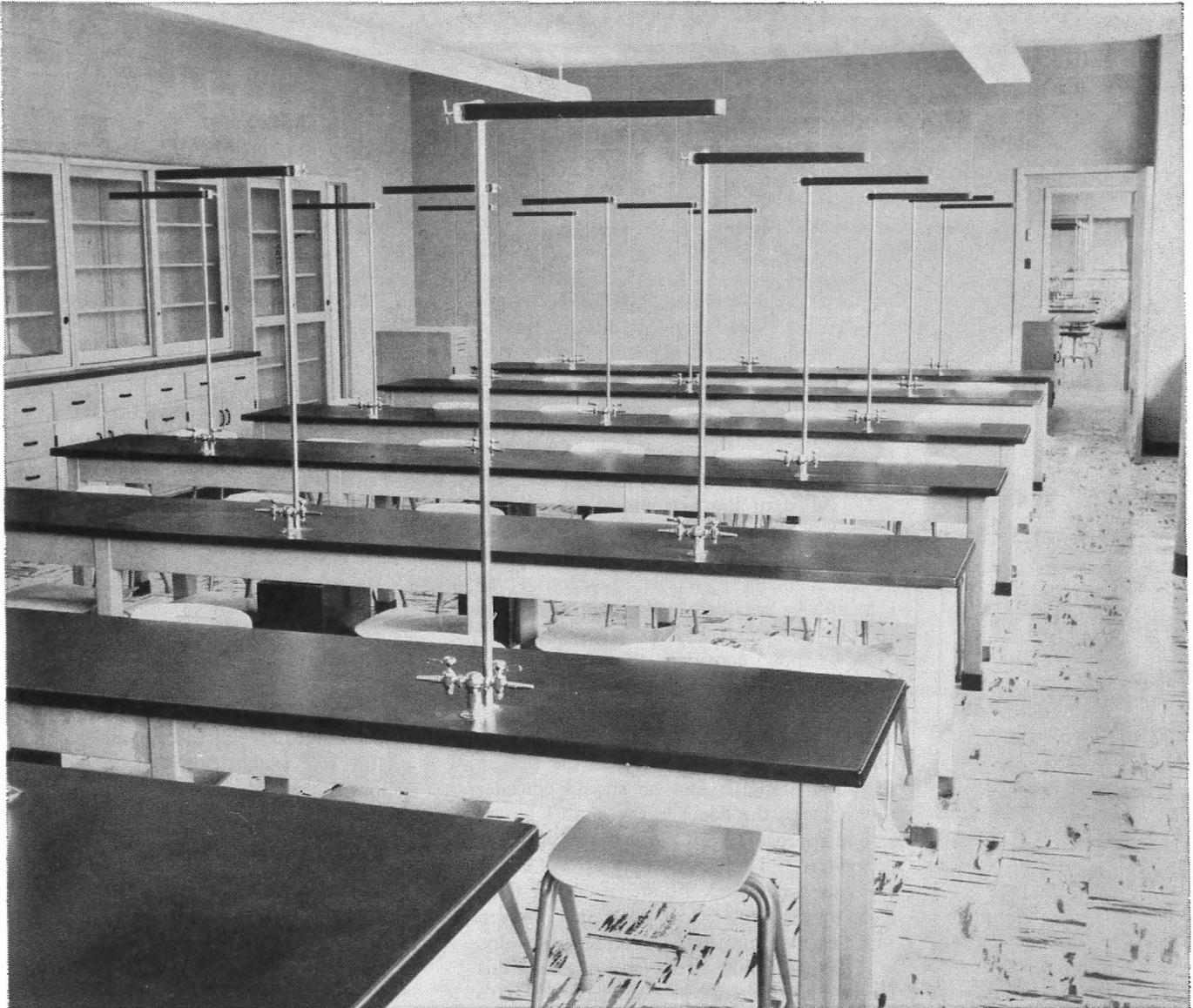
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Letters to the Editor . . .

THE EAST FRONT

EDITOR, *Journal of the AIA*:

The *AIA Journal* is to be congratulated upon the thorough, informative presentation of the controversy over the East Front of the Capitol.

No American—uneducated, architect or highbrow—can look at the Leslie illustration, cleverly placed as an introduction of Ralph Walker's article, without some personal thrill in the majesty of his government's workshop and a pride in its history and those great men who have made it for him.

If he studies it he will see how the forward thrust of the two wings enhance the central mass and great dome. He will also realize that if he brings this center forward he loses much in the composition which can only be regained by bringing the wings forward also, and at a great expense.

If he now considers the much talked about overhang of the dome, he would never know of it unless he had been told. And the reasons for it are a part of its history just as the use of iron was at the time a natural material. And he should consider that it keeps the dome in the picture longer as one approaches. It has a value, probably recognized. There is a sense of loss to the spectator when such a dome is cut off from view by the lesser, low projecting masses. The designer may have accepted it gladly.

If he puts himself in the place of his Uncle Sam he will probably say "What's all the shoutin' for? Let's do a good job of repairing. If the boys need more room to do their work in, give it to 'em where it costs less. I got me a darn fine Capitol and I like it."

The talk of changes may come somewhat from all of our contemporary architecture with its new materials and the fear of being "dated" by our Federal architecture. As a matter of fact, that style is the best we have had to date.

We are now experimenting with philosophies and forms of architecture. Most of our experiments are only cliches and it may be a century before, when two or three are

gathered together, they will all agree as to their surroundings.

There is now much to worry about and work over. It seems to me that it would be sensible to get at it and wait for a more propitious time for housekeeping improvements, beyond essentials. If we survive and have our wealth, we should be better equipped.

A. L. HARMON
White Plains, N. Y.

EDITOR, *Journal of the AIA*:

Quotes from Ralph Walker's article, "If this be sentiment . . ." in June's *Journal*:

"First, as to the architectural quality of the East Front. My personal reaction is that it is superb."

"He and some others he quotes said that a dome ought to sit in the center of the structure . . . I consider this abstract purism . . ."

"Nor does the cast iron dome bridging a wide void below disturb me."

"Painting does not disturb me."

Hush that cackle. Still that babble. Good Fellow Ralph has spoken.

DON NIXON
Decatur, Georgia

EDITOR, *Journal of the AIA*:

It was a good idea to publish both sides of the question concerning the extension of the East Front of the Capitol. Now it is quite clear that the problem is in good hands, that the solution is rational, and that the opposition should stop forthwith.

The case as presented by Mr. Walker was most surprising. Surely he knows that resorting to exaggeration (comparison with the nave of St. Peter's) and false analogy (wedding cake on unrelated table) constitutes an admission of a weak case. Pointing out that the Architect of the Capitol is not an architect is out of order, too, because he is acting more in the capacity of owner than architect.

When a public building ceases to serve as such and becomes a historical monument,

(Continued on page 10)

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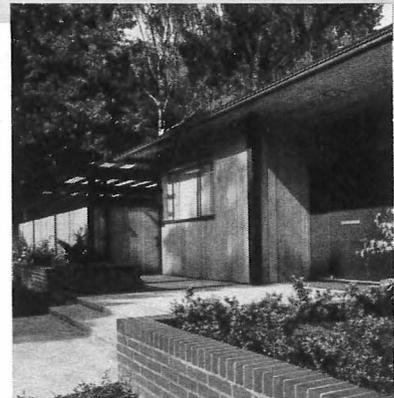
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(Continued from page 8)

then is the time to clamp down on alterations and additions. The great tradition of architecture, however, is that a building must serve its occupants without the encumbrance of makeshift accommodations. When this tradition can be applied to the Capitol with as little change in appearance as is contemplated, it behooves the AIA to give its support, not opposition.

I strongly urge that we close this book and let our fellow members proceed with their work.

H. ALLEN TUTTLE
Hawthorne, N. Y.

BUILDING MATERIALS ADVERTISING

EDITOR, *Journal of the AIA*:

Although the manufacturers of building materials spend very large sums of money on advertising, they make very little effort to keep architects informed as to new products and revisions of their standards. Such changes are constantly occurring, and we have to get the information from magazines, leaflets designed for the use of contractors and developers, and other sources. Thus we are put to much unnecessary bother, and we are never sure that our information is completely up to date.

For example, one large firm, a member, incidentally, of The Producers' Council, issued a new catalog three years ago. To get it, I wrote to both the national headquarters of the firm and its district office, with no result. Finally, at a Producers' Council exhibit, I talked to a representative of the company, and he got the catalog for me. The district office said it would put me on the mailing list for all revisions, but I have not received them, though several changes and new products have been advertised in magazines and Producers' Council bulletins since that time. To my mind, this is a deplorable neglect of opportunity on their part.

Surely it should not be too difficult for building product manufacturers to maintain a mailing list of architects specifying their products, and to send them information, in a form suitable for their use, on all new products and revisions of old ones. Perhaps

the AIA could influence the PC to have its members act along these lines. We receive great quantities of advertising material that is useless to us, being arranged for the use of commercial firms. It seems to me that if the money wasted in this way was more intelligently spent it would be very helpful both to the producers of materials and to us and our clients.

JOHN J. KLABER
Huntington, N. Y.

BRICKBATS

EDITOR, *Journal of the AIA*:

Since your friend Mr. Bendiner took such violent offense at my innocent repetition of his own characterization of his stuff as "hog-wash and drivel," in your *Journal* for July, I request that I be accorded equivalent space for a gentle reply to his partially inaccurate statements concerning me.

In the world of politics, when the Democrats make a speech over the radio or television, the Republicans are accorded "equal time" for reply. Why not a similar courtesy in the world of architecture (a much finer world)?

I suspect that your friend Mr. Bendiner would welcome one month without the job of filling two pages with his customary "hog-wash and drivel" (his phrase, not mine).

It is too bad that he wishes to change his Martini for a Manhattan and I hope that you will not permit him to do it. Some years ago, the late Bernard de Voto, wrote in *Harper's* ("Editor's Easy Chair"), that there were only two civilized drinks: — Martini Cocktail and Scotch and water. Get your friend to stick to his Martinis—they inspire more successfully than Manhattans do. And it is obvious that he often (and does not always get) inspiration.

I like the old cover better than the new, slick one.

COL. HARRY F. CUNNINGHAM, FAIA
Lincoln, Nebraska

EDITOR, *Journal of the AIA*:

Cheers to Charles William Brubaker who spoke his piece in the June issue of the *Journal*.

Words! Words! And more words!
. . . all fat, and no meat!

Par example—the article on School Lighting on pages 308-9 of the June issue—the real meat of that article could easily have been boiled down to half a column, instead of sprawling it over two pages! And even then it wouldn't have said much.

I haven't the time to wade thru reams and reams of words to get a paragraph or two of usable facts. And to quote that time-honored phrase once more: Pictures are worth ten thousand words. Let's have more pictures, more drawings at readable scale, and more usable information—and a heluva lot fewer words.

Result . . . The *Journal*, for my money, gets a quick look and goes into the "round file."

HAL HARRISS
Sanford, Florida

BOUQUETS

EDITOR, *Journal of the AIA*:

We are grateful to have had the opportunity to act as hosts for the 1958 Convention, and we are pleased to learn that our contributions were well received and helpful.

We have had many complimentary responses which make the months of planning very rewarding. We are appreciative of the cooperation we received from the Institute staff. Please extend my gratitude to all for their guidance and support.

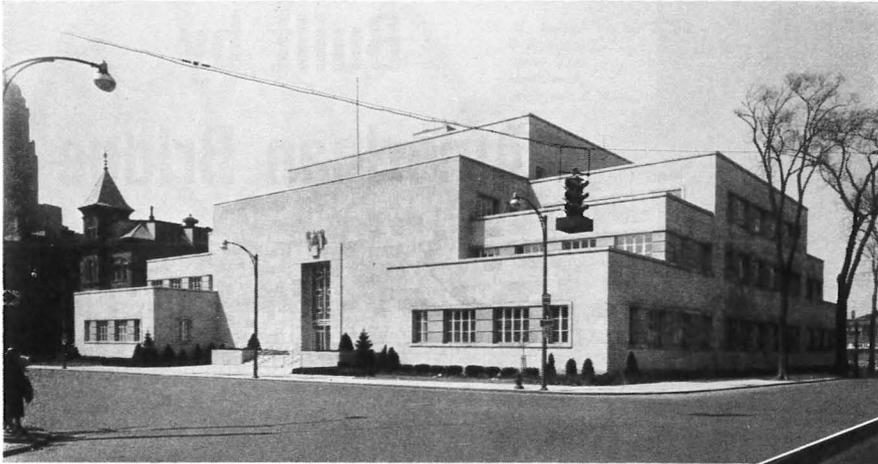
JOSEPH CERUTI
General Chairman,
1958 Host Chapter
Convention Committee

EDITOR, *Journal of the AIA*:

It is about time I said my thanks for a great week in Cleveland. I thought the Convention was tops, and I must say a little more in scale with my limited perceptive capacities than was the grand centennial last year. The whole thing was evidently well planned and organized, and it went off very smoothly indeed; I was glad to be there.

GLENN STANTON
Portland, Oregon

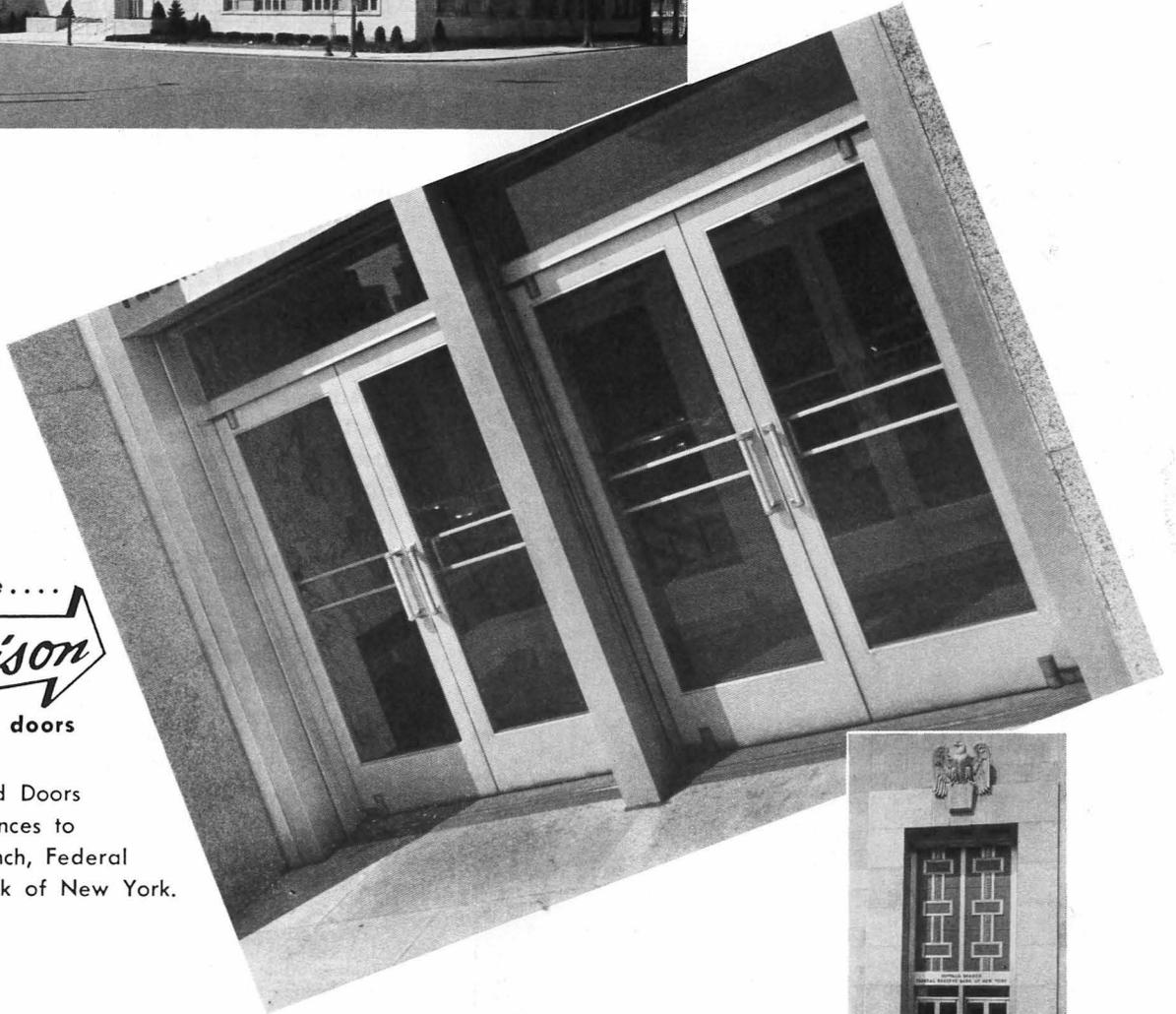
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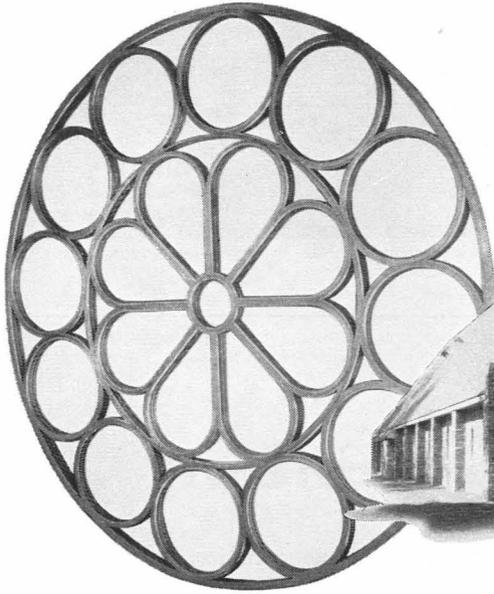
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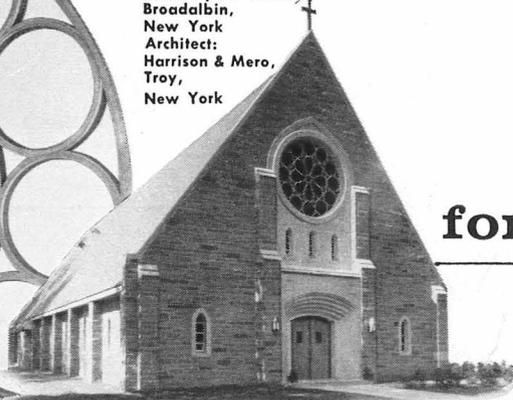
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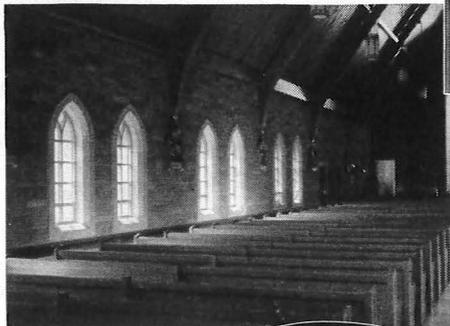
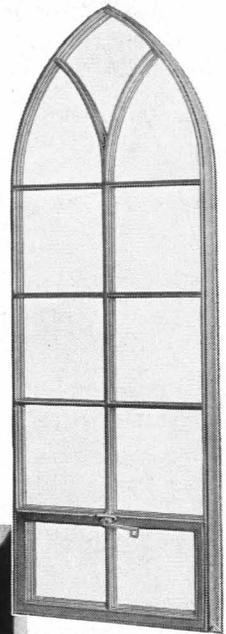
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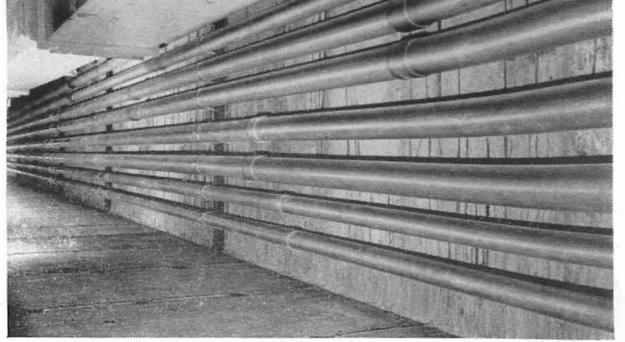
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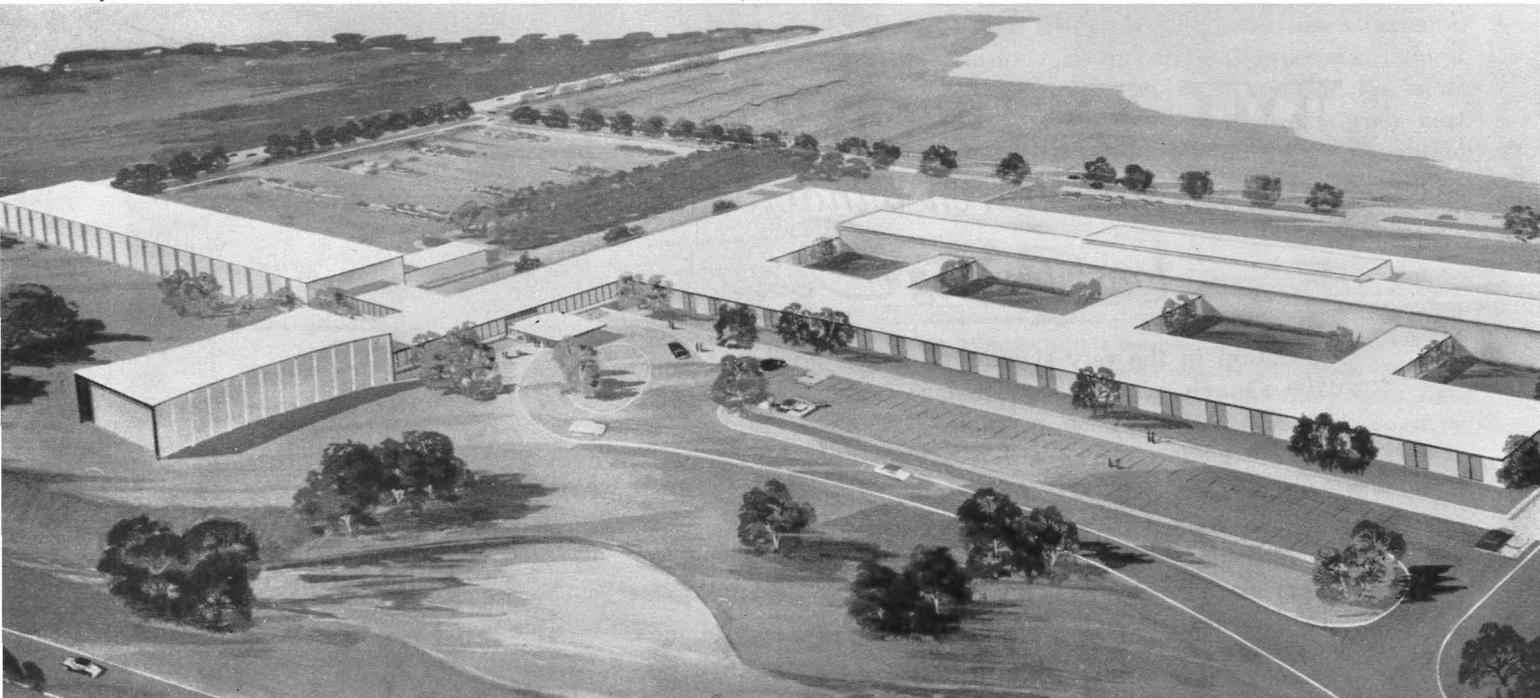
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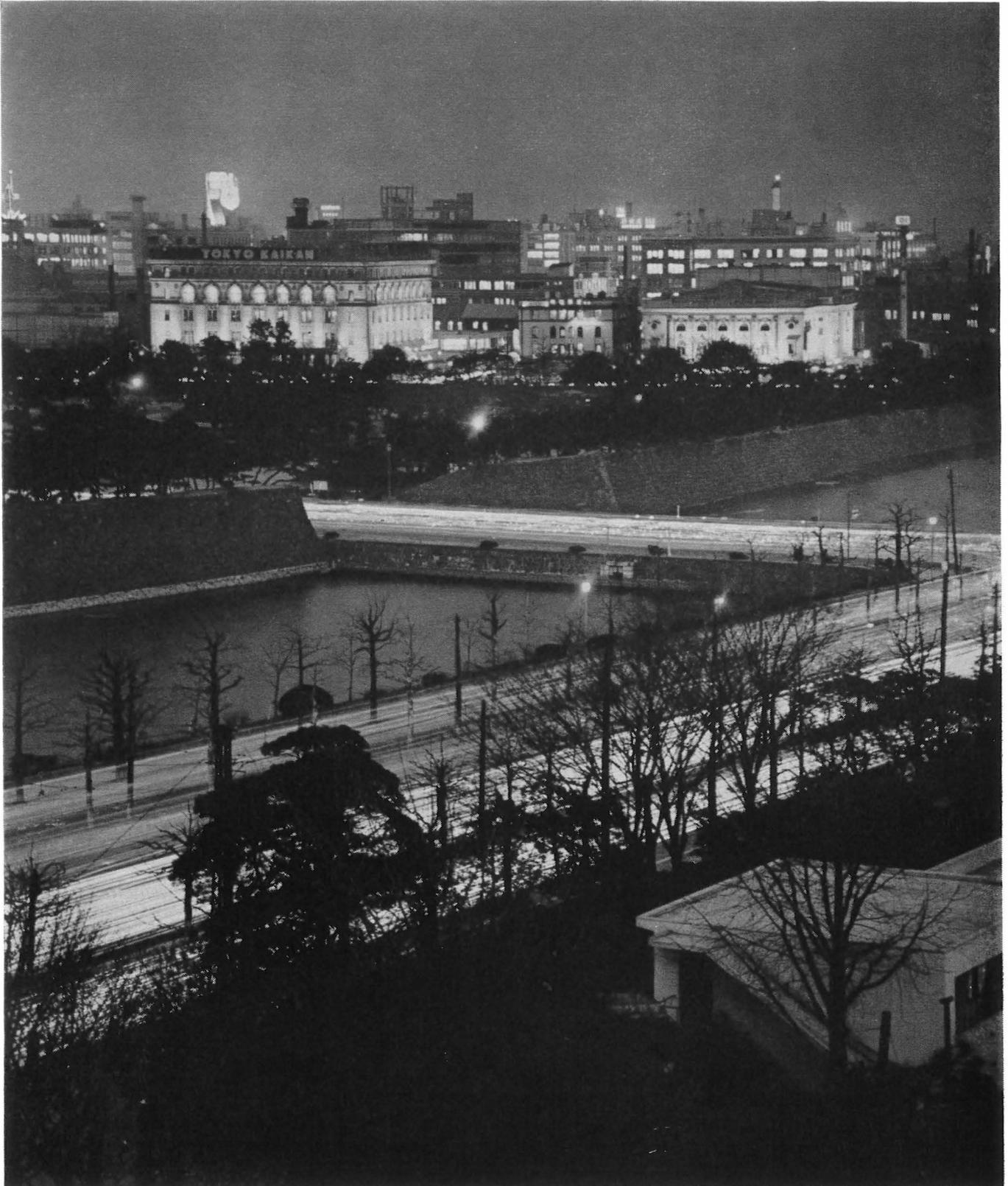
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JOURNAL

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The Esthetics of Plenty or Life Under the Cornucopia

JAMES M. FITCH

Professor Fitch thinks he knows what "esthetic standards" used to mean surveys a landscape piled high with Italian shoes, Danish chairs, Incan pots and Japanese screens.

Reprinted from the Columbia University Forum.

THE STYLISTIC DISTANCE between the geometry of the new Seagram Building in New York and the absurd vulgarity of this year's Buick automobile is a measure of the crisis in American design today. It would be hard to find another period in all history which presented such esthetic antitheses. For these two objects do not even belong to the same spectrum of design: one is an aristocratic affectation of poverty, the other a *nouveau riche* ostentation of wealth. One draws its forms from Procrustean concepts of mathematical order; the other from the paperback literature of spaceage warfare. And in between these poles, with no more apparent relation to each other than the constellations of the Milky Way, lie all the other artistic phenomena with which our landscape is littered—Tiffany glass and abstract-expressionist painting, wagon-wheel chandeliers and molded plastic chairs, Italian shoes and Danish furniture, Japanese screens and African sculpture, push-button electronic ranges and open-pit charcoal braziers.

There are some odd and contradictory forces at work among us.

One increasingly popular explanation for this parlous state of affairs, is simply that of our wealth: Our design is flabby because we are too rich. The corollary of this thesis is that our design would improve if we were poorer; art thrives only in a garret; artistic creativity requires the astringency of poverty. All this has a fine, mellow ring, but history, unfortunately, gives it no support. High levels of artistic accomplishment occur only in wealthy cultures. Far from being the enemy of artistic productivity, social wealth seems to be its indispensable base. But this proposition cannot be read backwards; great social wealth is no *guarantee* of great art. If it were, we would not face our present dilemma.

Perhaps we should phrase the question this way: If great wealth produced great art in fifth-century Athens, among the ninth-century Mayans, or in fifteenth-century Florence, why not in twentieth-century Detroit? Could it be that our problem is not wealth but the *conditions under which it is applied* to artistic production?

To ask the question is to answer it. Modern

industrial civilization has produced unparalleled social wealth. It has, at the same time, introduced several new and entirely unprecedented factors into the process of design. Only consider:

1. Industrial civilization, through mass production, has robbed all of us of first-hand knowledge of how any object is made or how it works. It has correspondingly crippled our ability to evaluate critically the object's practical or esthetic values. It has made the citizen into an ignorant consumer, the designer into a powerless, isolated specialist.
2. We have, at the same time, been given a more imperious command of tools for making things and new materials out of which to make them than Pharaonic Egypt, Augustan Rome, or Victorian London ever dreamt of. These tools, these materials confront us with properties, potentialities, and limitations of almost stupefying complexity.
3. Pre-industrial limits of time and space have been destroyed. We are exposed to the stimuli of the art and artifacts of all times and places. Into our unready laps is hurled a torrent of dazzling images and objects, ranging the whole world and the whole product of human history and pre-history.

Any one of these developments, taken by itself, would have an unsettling effect upon the esthetic equilibrium of a culture: taken together, their impact threatens to be disastrous.

ESTHETIC STANDARDS, in any period before our own, were strictly conditioned by what one might call the politics of handicraft production. The consumer of the artifact came face to face with its producer. This producer was, at the same time, the designer of the artifact. Under such circumstances, debasement of workmanship or irresponsibility of design was difficult: opportunity for the one and incentive for the other were greatly restricted. The consumer was literate in these matters; if the roof leaked or the shoe squeaked, he knew exactly where to find the designer-producer. Moreover, he was apt to know exactly what was wrong. In a pinch, he could probably patch a roof or make a shoe himself. At the very least, he would know what the craftsman ought to do and how he ought to do it.

Here was a happy situation for the designer as well. He knew intimately the limits and potentialities of his tools and materials. He shared the esthetic standards of the consumer. Any change or modification in design had to be worked out within these mutually acceptable limits. There was thus a

constant, personal, and lively interchange between them—a very fruitful relationship for both.

With modern mass production, this relationship is radically altered. Milton W. Brown, the art historian, has described the change most succinctly: "The producer, who is more precisely designated by the old-fashioned term *entrepreneur*, takes over one of the functions of the earlier consumer, that of ordering and paying for production. The craftsman becomes a designer whose function it is to create an object that can be mass-produced. The consumer is confined to the truncated function of simple consumption through the process of rejection or acceptance of the finished product."

Under such circumstances, both consumer and designer suffer: each becomes progressively more ignorant of the other's requirements and limitations. For the designer, surveys and market analyses replace the give and take of personal encounter. Less and less able to comprehend the complexity of modern technology, his design becomes more and more superficial, more vulnerable to the pressures of fad and fashion. And the consumer—removed by the same specialization from any first-hand knowledge of what he is buying—can only rely upon somebody else's word. He can only express his contentment (or discontentment) by buying, or refusing to buy. In real life it is difficult for this consumer to refuse forever to buy essentials—a house, a bed, a car: so he is forced ultimately to make his choice from available products, some or all of which may be unsuitable or unworthy. In doing so, he abdicates his power—first his voice in design, then his esthetic standards for judging design.

ONE OF THE CHARACTERISTICS of contemporary taste is its intense interest in the art forms of the pre-industrial past—folk, primitive, and prehistoric. The reasons for this interest are clear: these objects display a kind of "organic" unity of form and content, an acute respect for their materials, an integrity of line and color, which is in refreshing contrast to the sleazy eclecticism of so much of contemporary design. These objects are admired for their "honesty" and it is easy to assume that this is a direct expression of a poor and backward culture.

But the fact is that any culture which can produce a thrown pot, a woven blanket or a carved stool is already, by anthropological standards, an advanced and wealthy one. Nor are the admirable qualities of this art due to what V. Gordon Childe, the British archeologist, has called "a penury in raw materials." There was never any shortage of limestone in Yucatan, of potting clay in Etruria, or of wood in Japan. The "penury" confronting the primitive craftsman

lay not in the amounts of materials available to him but in their narrow range and variety.

In truly primitive societies, trade and transportation restricted artists and artisans to materials locally available. The desert peoples built of mud, the Siberians of skin and felted hair, the Melanesians of palm leaf and bamboo simply because that was all they had. Their energies and talents were focused on a very narrow range of materials and techniques: the unity and coherence of their designs express this fact. Though the commerce and technology of the Classic world greatly expanded the range of raw materials available in its centers, the employment of imported materials was largely restricted to luxury goods by the difficulties of transportation. For example, the import of ivory and silk, gold and tin, by the Roman empire did not free most Roman craftsmen from the necessity of working in local materials, nor Roman architects from building of local brick or stone. And while Roman technology was very advanced for its time, it served largely to produce increased amounts of traditional materials; waterproof cement was one authentic new material; small amounts of very expensive window glass may have been another.

Under such conditions, design could develop within a fixed palette of materials and techniques. Craftsmen were familiar with both its potentialities and its limitations as—from long exposure to it—were the consumers. Everyone's critical capacities were thus operating over an esthetic terrain which he knew well; and the rate of esthetic change was so slow that accommodation was relatively easy.

All this has been altered by modern industrial production. The sheer range of materials and techniques with which it confronts the designer is staggering. Mechanized transportation and communication have, for all practical purposes, made the material resources of the whole world available to him. He can use Italian marble, African mahogany, Javanese teak and rubber as easily as Alabama cotton or Louisiana pine. And this plenitude of known materials is, of course, the least result of the modern revolution; technology has also supplied the designer with an ever-widening range of synthetic materials: steel, concrete, glass, aluminum, magnesium, rubber, and the whole family of the plastics.

This vastly increased range of materials—natural and synthetic, imported and local—is not a luxury line. Such materials have become the basic stock in trade, often supplanting completely the older, more familiar materials. They are available everywhere, to everyone: not a craftsman or designer alive can be unaffected by their presence. Yet their presence is by no means fully understood. Their

physical properties are very complex and their esthetic properties are even more subtle and less explored. And they are dumped upon him in such an accelerating flood that the designer has little opportunity to explore and master them in either practical or esthetic terms.

Though the condition is probably transitory, some areas of the world are still "poor" enough in raw materials to enable us to observe the benign effect of such poverty upon design. For example, it is not accidental that the most brilliant use of reinforced concrete in architecture occurs precisely in those countries which have no steel or wood and plenty of sand and cement—Italy, Brazil, and Mexico. Nor is it accidental that in those design fields where metal is indispensable—e.g. typewriters, autos, trains, etc.—a metal-poor country like Italy leads the world. Here the high cost of metal *forces* responsibility in design; every ounce of material must be exploited to its fullest capacity. Anyone familiar with Italian auto body work must be struck by the extreme care and imagination with which the metal is manipulated. The elegance of the final form is arrived at directly through a responsible handling of its raw materials. It is almost unkind to compare these cars with their American counterparts. The metal out of which these 4,000 lb. monsters are built, and the gas with which they are propelled through the streets, are both so cheap that any design, no matter how preposterous, is perfectly practicable. Since neither economy nor efficiency of design are permitted him, the designer is forced into irresponsibility—as foot-loose and fancy-free with his forms and ornaments as any pastry cook.

THE TRAFFIC in raw materials has, of course, never been as culturally fructifying as the traffic in concepts and ideas. All societies, past and present, have always been subject to the cultural irradiation which follows trade. For artists and artisans the significant instrument of this irradiation is always the art form, whose visual stimulus is stronger than 10,000 words. Thanks to modern archeology, the flux of these stimuli from one culture to another can now be traced in all its richness and diversity. And it seems apparent that few designers have ever worked in absolute isolation from their neighbors: even in prehistoric times, the extent of cultural intercourse is amazing. Nevertheless, the designers of the ancient world worked under conditions quite different from our own. The Etruscans afford an excellent demonstration of this difference. This gifted people, because they possessed at Elba and Populonia, the largest metallurgical complex in the Mediterranean, were the focus of a lively commerce with Greece,

Phoenicia, and Egypt. The impact of the art and artifacts imported from these more advanced cultures is readily apparent in the development of Etruscan art. Yet the impact was always successfully absorbed and digested: The rate of irradiation from foreign design was never great enough to overwhelm the Etruscan artists. We may speak of Hellenizing or Orientalizing periods in their art, but the objects themselves remain Etruscan.

Though this irradiation was steadily to accelerate in Western history—witness the speed and thoroughness with which the idiom of the Italian Renaissance was stamped upon the whole of Europe during the sixteenth and seventeenth centuries—it continued to be more or less successfully absorbed by the cultures involved. Even as late as 1800, a balance was somehow maintained. The architecture of Boston, Philadelphia, or Baltimore, for example, was still a model of esthetic homogeneity at this time. Despite increasing trade with such exotic areas as Africa and Asia, despite a technological revolution by then already well advanced, architects and craftsmen were still confined to a narrow range of familiar forms (Greco-Roman and Renaissance), as well as to a very restricted list of traditional materials (wood, brick, stone, and plaster). All this has changed today: those same cities are now models of visual anarchy. And the change began precisely at this time, when modern technology—allied with modern scholarship—began to make available to American designers not only the world of contemporary art but also that of the past.

The development of travel and communication in the nineteenth century was shattering enough. The steamship and railroad, the cable and telegraph, the illustrated book and magazine, the photograph—all of these began to bombard the retina of the American eye with a dazzling range of stimuli. No Etruscan had ever been so bedazzled. And no man of the ancient world had ever been exposed to such unnerving influences as the art museum, the art critic, the art historian, and the archeologist. Their discoveries, like acid, ate away the very foundations of esthetic provincialism, introducing the concept of relativity into what had been absolute esthetic standards. Nor was this experience peculiar to the designer: on the contrary, literate and prosperous consumers were reading the same books, making the same tours, visiting the same museums. Esthetic standards had been, as the chemist would put it, “placed in solution.”

Contemporary scholarship continues the process, extending our literacy to unprecedented dimensions. We can be equally familiar with (and fond of) the paintings in the prehistoric caves at Dordogne

and those of Caravaggio, with the Japanese farm house and the Pompeiiian villa, with Incan cast gold and Victorian cast iron. And anthropologists and sociologists have dissolved another set of provincialisms: we can no longer reject a war club because it was once the instrument of a cannibal nor disdain a Mayan temple merely because of a difference of opinion over human sacrifice. The majesty of these accomplishments of scholarship is apparent; but their effect upon contemporary design is not always benign. To be sure, this cultural irradiation has invigorated giants like Wright or Picasso: we lesser men are often paralyzed. We are told, for instance, that Detroit designers, in styling the 1959 automobile, are turning for inspiration to “a pre-Incan vase . . . a Pennsylvania Dutch cookie mold, the leaf of a tropical plant . . . the art of Michelangelo and a wooden food grater from the Orinoco Indians”! Any of these images might, of itself, be beautiful, though their applicability to autos seems remote, their superimposition leads to anarchy.

To diagnose the sources of our present dilemma in design is, unfortunately, much easier than to prescribe the cure. The accomplishments of our industrial civilization are too real and too profound to relinquish. In the light of modern scientific knowledge, it is clear that the independent artisan cannot adequately feed and clothe and house the world: he cannot now and never could. We cannot very well outlaw new materials or proscribe new techniques: Penicillin and space ships are not produced by peasants. Least of all can we censor art or license museums, since these are among the noblest accomplishments of our culture.

It is, apparently, *ourselves* that we must change. And to accomplish this, we must educate ourselves—educate so much more profoundly than we presently do that the imagination boggles at the task. It is quite beyond the capacities of this writer to attempt the definition of what this new educational process might be: but where design is concerned, a few things are already clear. In a world of increasing specialization, where working hours are more and more devoted to the narrow and special, the rest of life must be devoted to mastering the broad and general. The deep but limited wisdom which comes from first-hand experience must be supplemented by first-rate theoretical understanding. And if industrialism has ruptured the traditional relationships between artist and audience, artisan and consumer, specialist and layman—then new and improved relations must be evolved to replace them. For an age which has split the atom, this should not be impossible: but a rocket to the moon will seem both simple and unimportant by comparison.

From the Executive Director's Desk:



Cameramen, Inc.

NOT SO MANY YEARS AGO a Secretary of the Treasury known as much for his pugnacity and ability to project himself into controversy as for his financial acumen, is reported to have warned his successor that the secretarial swivel chair had a very hot seat indeed. Actually I know of no Washington swivel chair whose seat is cool and refreshing. The temperature of the seats run, I would say, from somewhere in the neighborhood of 100 degrees to boiling point. Of course, the temperature is not constant.

The seat of the chair occupied by the Executive Director is no exception. It is also a swivel chair. However, it has a firm, straight back, and because the desk in my office, a table, is a handsome piece of furniture, my feet are always where they belong—on the floor.

Now warmth can be comforting, even stimulating, and heat can reach a degree that makes for acute discomfort. The heat is generated by complaint, castigation and contumely. Warmth is generated by rare acclaim. Brickbats and bouquets, undeserved or not, tributes to fame, notoriety or shame, all make for an exciting life. One learns not to make excuses, not to apologize, not to be coy, but simply to accept the showers of comment as part of the day's work and the life of a Washington semi-public servant (I almost said bureaucrat).

But of all the words that come our way, those which chiefly fascinate are unsolicited and quite often unmerited. It is especially the unmerited which fascinate. For instance, the other day on my way home I stopped at the corner drugstore, a famous Georgetown institution, and picked up my copy of the local paper, a delightful sheet gotten up in a nineteenth century format. It is devoted to George-

towniana—organic and inorganic. This time it associated Georgetowners with foreign ventures including the Brussels Fair.

As I read through the charming prose, I was both startled and flattered to learn that it was I who had picked the American architect to design the United States building at the Brussels Fair. Let me hasten to assure you, I did not even pick the people who picked him. I wish that I had had more of a hand in the matter. For whatever else is said of the Fair and the U.S.A.'s participation in it, our building is universally acclaimed as the most beautiful and outstanding building of all and a monument to American artistic genius.

I overcame an immediate inclination to write a letter to the editor, partly because unsolicited fame, especially undeserved fame, is pleasant; partly from sheer laziness. So I let the matter ride and thus relieved the actual selectors from those untoward repercussions that always arise no matter how worthy the cause and how splendid the result.

I am sure that the author of the article in the *Georgetowner* believed herself to be doing me a kindness, and in fact she had, for whenever since then I have been congratulated as the one who thought of Ed Stone, I can look properly embarrassed and murmur something about undeserved praise, softening my voice so that the hearer cannot really make out what is actually on my mind.

I was involved in the negotiations between the Department of State and The American Institute of Architects, which led to the establishment of a committee of the Institute picked by the Institute, which in turn acted as a screening jury for the State Department. However, negotiations are a part of the everyday life of an Executive Director.

I was infinitely more alarmed and definitely angered to learn that in testimony offered in hearings having to do with the extension of the East Front of the Capitol, not only the advisory members to the Commission had been approved by the Institute, namely myself, but also it had approved the architects engaged by the Commission.

Certainly, when questioned, no one would hesitate to say that the advisory members and the architects are illustrious, distinguished and competent. Nor would one hesitate to say that had the choice been left up to the Institute or to me, it is highly likely that there would have been some duplication of nomination.

As far as the establishment of committees is concerned, this is the Institute's recommended pattern. It is a *modus operandi* well calculated to achieve success and to offset, insofar as it is humanly possible to do so, the likelihood of bruised feelings, recriminations, and bitterness.

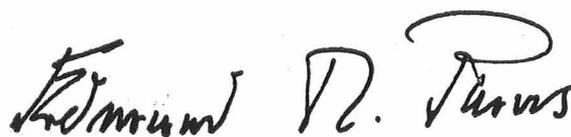
There are times when unsolicited and unmerited criticism or acclaim can reach heights of fantasy—and fantasy is more often believed than not. But it came my way, second- or third-hand, that I was responsible for the creation of the office of the Architect of the Capitol. I could scarcely believe my ears, for such rumor either bespeaks an immediate ignorance of American history or attributes to an Executive Director immortality and supernatural powers. (The office was established by George Washington.) As of interest, the following have held it: William Thornton, Benjamin Henry Latrobe, Charles Bulfinch, Thomas U. Walter, Edward Clark, Elliott Woods, David Lynn and J. George Stewart. I am both amazed and alarmed at the power and influence which rumor and legend attribute to the Executive Director's office. Flattering as it may be, such legends should not be encouraged. (Or should they?)

But a word or two about the office of the Architect of the Capitol, a position which I fear is generally misunderstood by the public and even by

members of the Institute. Despite what the office may have been when it was first established in the early days of the republic, it has long since come to be a custodial office. What it seems to amount to is the administrative and supervisory office of the Capitol property. And the Capitol property includes many things besides the building itself, such as the Supreme Court, the Library of Congress, the Botanical Gardens, the House and Senate Office Buildings and the District Court Building. The Architect of the Capitol is also charged, I am told, with the maintenance of these buildings, with the management and operation of the Senate and House restaurants and the page boys' school—a position, it can be readily seen, which few members of the architectural profession would find attractive and for which few would be qualified, except insofar as an architect, by virtue of his training and experience, is generally capable to undertake almost any office that comes his way.

The incumbents of the office, especially in recent years, have rigidly maintained a policy of engaging architects in private practice for any architectural work. This is something that should not be lost sight of in the controversy that has raged over the extension of the East Front, in which controversy the Architect of the Capitol has taken a leading part.

Now it can be urged that the title should be changed. The title, however, is historical. To change the title would require, I think, an act of Congress and one might hesitate before recommending such an action which would remove from the roster of federal office a position which seemingly honors our profession.



The Inter-American Planning Society Assembly

THE INTER-AMERICAN PLANNING SOCIETY will hold its second biennial General Assembly in Lima, Peru, next November. Technical themes of interest to planning professionals will be discussed. The program will be designed to give opportunities for participation by technicians in the fields of Economics, Soci-

ology, Anthropology, Architecture and Engineering. Another item on the agenda will be the evaluation of the work program of the Society. The meeting is scheduled for November 20 to 25. Additional information may be obtained from the Inter-American Planning Society, Box 1729, San Juan, Puerto Rico.



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Third Annual Teacher Seminar at Nantucket

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THE THIRD ANNUAL Teacher Seminar was held this year at Sea Cliff Inn at Nantucket, Massachusetts. Delegates from 35 schools of architecture in the United States and Canada assembled for the seminar on "The Teaching of Architecture."

The seminar, co-sponsored by the Institute, met "to consider the present challenge confronting the profession with an assessment of present strength and limitations as related to both philosophy and practice; to try to define new objectives; to explore how educational programs can and should contribute to these goals."

Harold Bush-Brown, FAIA, was chairman of the seminar. Also attending were Walter A. Taylor, FAIA, Director of Education and Research; and Buford Pickens, President of ACSA.

The five principal areas of discussion during the two week conference were (1) Philosophy and History with Albert Bush-Brown, Joseph Hudnut and William Letwin as speakers; (2) Architecture in Practice with Walter Kilham, Thomas Biggs, and Alexander Cochran; (3) Planning—Barclay Jones, Vernon DeMars and Grady Clay; (4) Techniques,

Harold Hauf, Robert Newman and Henry Pfister and (5) Design and the Visual Arts—Walter Netsch, Paul Rudolph, and Minoru Yamasaki.

The excellent balance of speaker personalities pointed up the validity of different approaches to teaching and each participant was influenced by the enthusiasm and articulation of both speakers and fellow participants.

The opinion was often expressed that the teacher seminars fill a real need, as there is little opportunity for an exchange of ideas among teachers. The frank discussions and the healthy difference of philosophy and methodology kept the atmosphere alive and vital.

Participants left Nantucket with an unsettled feeling—a feeling perhaps of dissatisfaction with their previous methods of teaching, yet reinforced with a greater frame of reference for self-improvement as instructors of architecture.

One of the outstanding events at the conference was the keynote address of Hugh Stubbins, designer of the Congress Hall in Berlin. Mr. Stubbins' address is reported on the following pages.—W.N.L.

The Challenge to Architectural Education

HUGH STUBBINS, AIA



PARTICIPANTS AT TEACHER SEMINAR HEAR KEYNOTE SPEAKER

TO OPEN the third annual Seminar on architectural education, it seems appropriate first to repeat the stated purpose of these discussions.

We are asked "to consider the challenge" confronting the profession today. We are asked to assess our present strength and limitations as related to philosophy and practice, to define new objectives and to explore how educational programs can and should contribute to these goals."

I shall attempt to state the question but shall leave any definitive answers for you to find—if you can—in the next ten days on this New England island. I should tell you at the outset that, although I was intimately involved with teaching for thirteen years, for the past five I have had no part in it, as my time has been completely consumed by practice and all the attendant necessities and obligations.

Therefore, being somewhat detached from the lecture halls, I hope that you will forgive my lack of consideration for the "smaller" details of administration, scheduling, budgets, etc., which are, of course, ever present with you in any consideration of change or new programs.

It would seem to be better to forget these things at this time and raise our heads for a good look around—to try to see where we are, where the world is taking us and what we should do, with complete disregard for any of the present real or imaginary obstacles. If we discover a worthwhile goal, then surely, ways and means can be found to reach it.

This even seems consistent with the philosophy of architecture, where the concept is the important thing and all the other labors are contributory to its realization. For certainly without a truly good conception, all these labors are in vain. I shall first try to appraise the state of the profession today, with an eye on what it might be forty to fifty years from now, and then ask some questions about architectural education.

It should not be necessary to remind you that, today, the architect lives and works in an orbit which encompasses the world of this century. Obviously much expanded over the past fifty years, this orbit—a word in common use recently—it continues to expand at an ever increasing tempo.

Is the architect of today prepared to keep pace with the accelerated development in every field and the opportunities and responsibilities that they present? Is the future architect being trained to take his proper place in such a society? Is he being prepared to do what we have not yet been able to do—to envision, to create and to help make a physical environment that will lift the spirit of the people? These are questions you must deal with.

When one considers the changes that have taken place during the past fifty years in construction techniques—in materials, in equipment, and mechanical devices, the trend is already indicated.

Were it not for the restrictions of building codes and labor unions, many of these things we can foresee would already be standard practice. There will be greater use of prefabrication and natural materials may be processed and used in ways not now envisioned. Equipment will become more integrated with structure and may even serve as structure. Greater precision in structural and mechanical design resulting in less waste, with increased use of electronics, wireless distribution of power and light, will give opportunities for more organic design of greater precision and beauty.

The practice of architecture has changed over the years. In 1900, one man could know practically everything required for architectural practice. Today, one man can be thoroughly proficient in only a limited area and consulting engineering services are essential. The percentage of building cost devoted to mechanical equipment alone is forty to fifty percent and increasing.

Many skills are required to build even the simplest of structures. More and more, it is becoming necessary for the architect to organize a competent and well-rounded team. In the future, unless this integrated team of experts is expanded and developed, the individual architect can only hope to specialize in one small phase of building or become a consultant.

Architecture is the only profession today where one individual may be personally responsible for hundreds of employees and millions of dollars' worth of building. Taxation and size alone may preclude this.

This is roughly where we find ourselves today. We are running, running all the time to catch up with ourselves as we are swept along at an ever-accelerated pace.

There seems to be little doubt that a challenge does confront the architectural profession. John Burchard and Albert Bush-Brown, in an article for *Harper's* called, "The Architect, More Needed Than Pitied," brilliantly asked and discussed the usual questions: "Is the architect against change?"—"Is he too expensive?"—"Is he competent?"—"Is he an artist?"

May I just quote three or four sentences from this very well-written piece which seem, to me, to crystallize the question?

"It has not always been true that those who have been the greatest artists have shown the greatest interest in professional codes, or in acting responsibility to their clients and the public. On the other hand, many very respectable architects, behaving at all times with the utmost propriety and even competence, have unfortunately not been artists at all.

"Are we businessmen? Are we professional men? Are we artists? . . . Not a handful will be all three. Since the most important thing about architecture finally is its quality as art, this will pose some questions for the people who wonder how to reface an America that admires change, that loves to build and rebuild, but worries about costs, demands high technical performance, and thinks it knows what art is."

The concept of an artist as one who exercises such freedom of choice that he is slightly irresponsible is possibly based on a fair amount of tradition and experience. If this concept is applied to the architect, then we are doomed.

Some beautiful buildings will surely be produced, but their impact on our environment will be small indeed.

Webster defines an artist as a person of special skill, talent or ability, or one who shows marked

idealizing and creative power in his craft. There is nothing here that intimates irresponsibility, nothing unrealistic.

If we agree that the important thing about architecture is its quality as art, then the concept of the artist or architect as "artist" must change. At least, he has to be a responsible artist and I can't believe that this is inconsistent with the results desired.

THE COMPLEXITY of modern life, the tempo of exploration, and the compilation of facts, theories and knowledge make it nearly impossible for one man, one architect, to ever know all he should know about design and building—to say nothing of the disciplines that impinge on the creation of the total physical environment. More and more other fields—real estate, finance, engineering, and business promotion are initiating and developing our physical surroundings. One only has to look with ones' eyes to see whether this is good, or not. America is not noted for the beauty of its towns and urban centers.

It is true, of course, that some architects are now concerned with community planning, much more than they were twenty-five years ago. Still, the large majority of the architects in this country are concerned mostly with individual structures and the impact of their efforts on our urban centers is obviated by a much larger proportion of commercial exploitation which is being permitted to compound the malignant growth of our communities. And yet beauty has even been recognized as a legal right. In 1954, Supreme Court Justice Douglas, in an opinion involving redevelopment, wrote:

"The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, esthetic as well as monetary. It is within the power of the legislative to determine that the community should be beautiful as well as healthy, spacious as well as clean, well-balanced as well as carefully patrolled."

Since we have allowed our man-made visual environment to get out of hand, what can we now do about it? We do not want to live in a dictatorship for good or bad so that our task is one of education and evolution and this has had much "lip service" in past years. Maybe some progress has been made, but it is not readily visible to the naked eye.

By training, by skill, and with his imagination, the architect should be peculiarly fitted to understand the broader relationship of the elements in our society and he should be involved in the total visual aspects of our civilization. To free himself from the narrower role of mere building design, he must first try to restrict his activities to those fields

in which he is naturally gifted, trained and experienced, and should work in helping other branches and related elements of our society, to shoulder their proper responsibility.

Even so, today, as a practical matter, architecture requires teamwork. There has been some talk of this too in recent years, but what is meant by this phrase? To me, "teamwork" does not imply design by committee or planning by vote. It does mean the necessity of more interplay, exchange of thinking and glimpsing of goals and coordination of effort between the structural, mechanical, electrical, financial, political and sociological proponents that bear on most large scale architectural or city planning projects today. Even though there is ample evidence of effective teamwork among some of these disciplines concerned with building, it has had little effect on the general public's understanding of what a better, more harmonious and beautiful physical environment can do for them. There has to be a demand and, somehow, this demand must be created.

During my two years of commuting to Germany, I was impressed by the fact that Europeans seem to be more conscious of their surroundings. They take a lively interest in new building development as well as the other arts. Most of the newspapers and popular periodicals regularly carry stories about new construction and art and the principal personalities involved; so that the average man on the street, and even the waiter in a restaurant, is interested in—and conversant with—these things which make up his environment.

Since this must be a process of education, why shouldn't we start in our universities? Wouldn't it be a good thing to broaden our professional curriculums? Just recently, Justice Felix Frankfurter, in an address, admonished both medical and law students to get out of their grooves and not to live so much within themselves and their books. This might be said to architects too. There is a growing awareness of the necessity of inter-dependence of the different professions and students of specialized disciplines should strive to become less insulated.

Narrow boundaries restricting the vision of the student of architecture must be widened. Any notion that the total end of architecture lies in perfection in the design phase, or the construction, or any other phase, alone, must give way to the concept of a student prepared to join with many professions and agencies for the uplifting of American physical and spiritual environment.

With the idea in mind that architecture will undoubtedly be practiced by a group of specialists, each responsible for a certain phase of this complex undertaking and presumably trained to synchronize

in all gears like a Mercedes-Benz, I am going to ask some questions that may raise your blood pressure.

Shouldn't structural engineers, mechanical and electrical engineers, be educated with architects? Not just in the same college, but in an expanded architectural curriculum? We have gone part way. In some schools landscape architects, site engineers, and planners are included.

Since all these disciplines should be an integral part of the whole, these people should be trained with special emphasis in the problems faced in construction. Why not call all these people "Architects"? If a breed of building specialist were trained, encouraged, and given professional recognition, we would be well on our way to establishing a real architectural team, capable of more responsible service in a broader field.

Here, let me interject another thought: Those men or women concentrating in what we now call "Architecture" should at least be required to have a liberal arts course of college level for at least three years before specializing.

This would be a start, but why not go farther than this? It should also be possible for business law, and other students, to work on case problems with architects to their mutual benefit in determining how projects are financed and promoted, with an eye to beauty as well as practicality.

The world of banking and business controls the purse strings of practically all building endeavor, therefore, why shouldn't the two spheres—and others—come together at an early age in our colleges and universities where a bond of sympathy and a broader understanding of problems can be established which could bear fruit—in fact, must bear fruit if the elimination of the ever-growing blight on our cities and urban areas is to be eliminated?

The growing importance and necessary consideration of today's buildings and city planning should be a natural, living, vital, ever-changing part of everyone's life. If this is to be brought about, it must be initiated by someone. Why not by us? Why not by the architects and the educators?

If we are going to raise the vision of the people above the squalor of accidental development, we must make a long term investment. This investment must be in education. A two-pronged attack is indicated: Development of an awareness in those not in our profession, and development of the skills, the knowledge and the conscience of professional leaders and technicians who can envision, inspire, and construct. It's up to us. Who else is trained to imagine what it could be like?—Who else is prepared to put the pieces together so that the results will be a whole fabric for a better life?



Greater Boston Chamber of Commerce

LOUISBURG SQUARE
BEACON HILL
BOSTON

Plenty of Action . . .

Suggestions for the City Square

GRADY CLAY

Real Estate Editor of the Louisville Courier-Journal and President of the National Association of Real Estate Editors, Mr. Clay has become a well-known speaker and writer on civic improvement.

The article below is adapted from his remarks at a joint meeting of the Engineers' Club and the AIA Chapter in St. Louis.

THE BEST BRAINS in the cities of America are engaged in a fifteen billion dollar gamble—a gamble that they know enough, can learn enough, and can design well enough to re-create a metropolitan civilization in America.

A gamble that they can retrieve the best from the old city, add to it the magic touches of "Title I," "Section 220," fast amortization, curtain walls, pigeon-hole parking, and somehow come out with Tomorrow's City—a finer, better place in which to live and love and learn.

Fifteen billion dollars' worth of new redevelopment and renewal construction is being planned for the next ten years. Most large cities have an impressive slice of it, already started or on the books.

My concern here is with one aspect of this fifteen billion dollar gamble—the parks, squares and plazas of American cities. I begin with Charlie Thompson.

Not long ago I stood one morning in the ancient and rundown Haymarket of Louisville, Kentucky, watching the steady procession of shoppers, farmers, peddlers, produce buyers, hawkers and pinhookers—the latter a highly skilled form of speculator—and plain drifters and grifters floating up and down the main drag of the Farmers' and Gardeners' Market.

As I stood watching the crowds, it soon was apparent that the center of the Haymarket that particular morning was a spavined, broken-down overstuffed living room chair—the kind of chair once dismissed by the Museum of Modern Art as a species of *Gargantius Americanus*—set up on the brick sidewalk. Alongside the chair was a charcoal stove made from a 55-gallon oil drum. Plumped down in the big old chair was Charlie Thompson, a huge fellow weighing perhaps 250 or 300 pounds who was running a flourishing business selling Christmas trees, and a constantly bantering conversation with every-

body in sight. They all knew Charlie. Across the street was the busiest restaurant in the neighborhood. Anybody walking from the Haymarket toward downtown Louisville had to pass by Charlie. His personality, like his stove, radiated warmth over a wide radius, and tapped some wellspring of feeling in nearly everyone who ambled down that crowded street.

Charlie Thompson was indeed the "vital center" of the Haymarket that morning, a human force who could be explained partly in terms of his strategic location, his possession of the only chair on the sidewalk, the only warm stove in sight, a hearty voice and a wide line of chatter as well as merchandise.

WHERE WOULD Charlie Thompson or the likes of him fit into the scene in tomorrow's Downtown? Where, in these new concrete prairies with outcroppings of soil, is there room for an impromptu conference around a warm fire, a couple of chairs out in the open? How long would it take, in the typical new civic center of the redevelopment project one sees on so many drawing boards today, for such a scene as Charlie Thompson's to be disrupted by the police?

The cities of the United States are in the midst of building and planning some fifteen billion dollars' worth of new urban renewal, title I, untitled, subsidized and unsubsidized projects, to be built during the next ten years.

The question I would like to discuss is: What kind of stuff are we going to get for all this money?

Since that cold morning when I met Charlie Thompson in Louisville's Haymarket, I have walked for more than 40 miles through the downtown districts of 12 large American cities, and a few small ones, seeking some answers to puzzling questions: "What makes a good city center? Why are some downtown plazas enjoyable, and others nothing but a damned bore? Why do some open spaces 'feel right' and others somehow lack any quality which makes the visitor want to return?"

During the past three months I have visited Indianapolis, Columbus and Cincinnati; Pittsburgh and Baltimore; Philadelphia; Savannah, Jacksonville, New Orleans, Chicago and Detroit, with occasional ventures into Outer Suburbia along the way. Also, during the past year, I have made a point of walking through the downtown districts of Boston and Cambridge, San Francisco, St. Louis and several small towns in Kentucky and Indiana.

Fortunately I enjoy walking, no matter how obscene the surroundings. Had it not been for this personal peculiarity—plus the fact that my recent trips for *Fortune* magazine gave me the chance to

become a part-time paid professional pedestrian—had it not been for these facts, all this walking might have been an onerous chore, a kind of penal pedestrianism.

For walking in downtown America is usually a bore, often dangerous and sometimes appalling. In spite of the occasional pleasures, delights, wonderful sights and stimuli, the overall impression I got from my trips is one of confusion, odd mixtures and stultifying drabness.

Even the isolated spots of great beauty often are remnants from an earlier generation—LaFayette Square in New Orleans, Rittenhouse Square in Philadelphia, Mount Vernon Place in Baltimore, and the quiet precinct of Louisburg Square in Boston. Yet often these too, suffer from the inroads of "progress." In LaFayette Square, the focal point for the old civic life of New Orleans, somebody's let loose those damned automobiles into the place. These monsters now stick their front ends—very much like a buck-toothed kid with a mouthful of shiny braces—into the very square itself, protruding over the curbing, and visually invading the green space. Where automobiles penetrate, the grass disappears, the ground becomes hard packed, the dust blows freely, and the essential feeling of a cool, green oasis in the middle of a hot steamy city is lost.

In city after city, great gaps have been torn in the urban fabric to accommodate the automobile. (And I must interject here that one of the real problems is probably psychological: Why is it that decent people become ruthless and selfish monsters when they drive automobiles? It seems to me that we have created a new kind of minority group of second-class citizens—pedestrians.)

In Washington Square, one of Philadelphia's finest, the whole southwest side has been ripped out for a parking lot, although I was assured that one of Mr. Albert Greenfield's new multi-story apartment hotels will someday close the gap. In Lexington, Kentucky, one of the finest urban scenes in America—lovely old Gratz Park, hardly three blocks from the 100 per cent location—has been cut open by the demolition of an historic house and its replacement with an asphalt parking lot. In Philadelphia they got rid of the famous "Chinese Wall" of the old Broad Street station. But the most prominent block in the place—between Penn Center and the City Hall—is a haphazard parking lot. Garfield Place in Cincinnati has completely lost its great quality of enclosure, once created by a fairly uniform group of old houses and commercial buildings. Half the enclosure has disappeared.

But such details as these—even if temporary—only begin to account for the overall sense of ugliness



Chamber of Commerce of the New Orleans Area

LAFAYETTE SQUARE, NEW ORLEANS

which pervades so many viscera of old walk-up apartments; the plumbing, fire escapes and chimneys exposed by the demolition of buildings which once concealed them mercifully from the public; the ugly backsides of industrial buildings, now thrown open to the public view by new parking lots; trash blowing down the gutters and collecting in the corners.

Among the worst contributors to these messy scenes were the utility accessories—the wild and senseless clutter of “things”: signs stuck up on repetitious and badly-designed utility poles; the junky assortment of “standby facilities” scattered around by various departments; the yellow salt boxes around Cadillac Square in Detroit, the other boxes that might contain almost anything; the distracting array of orange sanitation trucks parked in one of Chicago’s most conspicuous and neglected spots, the Chicago River’s lower level just west of Michigan Boulevard; those prehistoric-looking brown snow-removal machines which usurp the public space in Rayburn Plaza, directly across from Philadelphia’s City Hall and new Penn Center—some of the most flagrant instances of civic uglification I saw in my 40 miles of tramping. Who lets in these monsters? What blind man in bureaucrat’s clothing piles ugliness on ugliness and allows this kind of give-me-an-inch-I’ll-take-a-mile uglification?

Meanwhile, the traffic engineers are leaving a heavy wake of unsightly leftovers behind them as they cut through here, and slice through there, making space for new traffic routes. We can and must sympathize with their efforts, but the results are

often pretty awful to look at. In every direction, one sees these great “cut-throughs,” these slices cut out of the urban fabric to let the automobiles pour through.

And finally, as a part of my bill of particulars, let me say a word about parking lots and used car lots, the new and almost, universal background for the urban scene. Only in the Vieux Carré, the French Quarter of New Orleans, did I find a unity of civic and private forces allied properly against the automobile.

In New Orleans, they have concluded this about the parked automobile: Get the damn thing out of sight, *behind a brick wall*. Of course, brick walls are indigenous to the Vieux Carré, and since the Vieux Carré Commission has strong legal powers over the way things *look*, the Commission can enforce its wishes. And thus the parked automobile is not allowed to intrude itself upon the scene, but is well concealed.

Even the newest parking garage in the Vieux Carré has been concealed behind a traditional facade—an act of trickery which infuriates everyone who insists that all structures be “honest,” that form must not only follow but clearly reveal function, and that nothing, absolutely nothing, must be hidden. Well, they’ve hidden the parked automobiles in the Vieux Carré, an act which seems to me to add immeasurably to the charm of the place. The brick walls around the parking lots contribute to that feeling of intimate enclosure, which is one of the great qualities of these old streets.

And now a few unkind words for the tree butchers. Who let those fellows onto the scene—those ill-trained, ham-handed, chop-and-loppers whose mutilated patients stand in mute misery around so many squares? One of the worst sights available at the moment is the double row of sycamores down Garfield Place in Cincinnati, a handsome, formal space two block long. Its trees have been butchered, the ends of limbs lopped off and left to sprout tiny twigs from knobby stumps. Their appearance in wintertime is enough to give any tree-lover the shakes—as though a series of gaunt skeletons had been left with arms upraised, cut off at the elbows. And this happened directly in front of the old Cincinnati Club, whose members include some of the city's most sensitive and powerful men. Where were they when the butchery began?

The one thing that has continued to amaze me in these rich and powerful cities is that "men of distinction," the men who count, those who have influence, the men to know, should be willing to spend their working hours amid such squalor. The most fearful thought of all is that they, and all of us, have grown so accustomed to uglification, to drabness, to visual confusion that we may be—all of us—beginning to accept it as not only commonplace and expected, but as something "given," unchangeable, immutable.

I should like to report that during my recent trips I talked to many architects, city planners, engineers, landscape architects and allied contributors to the *new* urban scene, and *they* are neither accus-

tomed to squalor, *nor* reconciled to it. *They* are determined that a new kind of city can and will emerge from what we see around us today.

The answers lie somewhere between Mellon Square in Pittsburgh, Mount Vernon Place in Baltimore, Union Square in San Francisco, and those 23 ancient city squares in downtown Savannah, Georgia. There are answers aplenty in Rittenhouse Square (incidentally, a square bordered by one of the best-designed parking garages for an urban setting seen in all my travels).

STILL MORE ANSWERS lie among the ancient and lovely cities of Europe, where American architects and planners are traveling with camera and sketch pad, on fellowships and "on their own," to learn the lessons of history.

In every major city you will find plans for converting downtown open space into pedestrian precincts—the last count I saw was 88 cities now working on, or tentatively considering, variations of Doctor Victor Gruen's Fort Worth formula for sick cities.

These answers inevitably hinge on that thing called *human scale*, a phrase which recognizes that cities should be designed for the people who must live in them, work in them, pass through them, and eventually die in them, to be buried no doubt in Suburbia.

If I have a thesis, it is that the *human experience* is the most important ingredient of the successful City of Tomorrow—and that the only way I know of to judge the qualities of this experience is to get out, walk, and look.

Once you begin to walk and look—and this requires retracing your steps time and again, surprising yourself at what you missed the last time—you begin to recognize that the present big American city has become an inhuman wilderness, a hot asphaltic desert in summer, an endless series of windy canyons in winter. The city lavishes billions on air-conditioning the interiors of its stores, of soothing the troubled breast of the matronly shopper with soporific Muzak—then ejects her, pell-mell, into a street full of noise, dirt, confusion, clutter and anxieties. The typical downtown street provides little change of pace, no shift in the scenery, and few small, intimate places where man or matron can really feel at home, calm and rested.

Jules Schick, Photography



RITTENHOUSE SQUARE, PHILADELPHIA



MAIDEN LANE, SAN FRANCISCO

A. Gerald Ratto, Photography

NORTHLAND SHOPPING CENTER, DETROIT



The human scale, it seems to me, has been allowed to triumph in three vastly different shopping environments which I have visited recently—all of them environments of relative financial success. They are Northland shopping center outside Detroit; Maxwell Street in South Chicago; and Maiden Lane, in San Francisco.

All of them have this in common: They cater to the man, woman, and child *on foot*. (Another Detroit shopping center caters even to the cripples, for Old Orchard center provides wheel chairs for those who need them.)

At Northland, the automobile is absolutely, and I mean positively, prohibited from entering the inner precincts. Here the pedestrian is truly king. In Maxwell Street, Chicago, the sidewalk display-racks overflow out into the streets, taking up two entire traffic lanes, and leaving only a narrow squeak of two lanes for automobiles. And in Maiden Lane, San Francisco, they put up the chains in mid-morning, and no vehicles are allowed except for emergencies.

All three of these shopping streets nearly surround the pedestrian with merchandise—stuff to be looked at, felt, compared, studied—and usually well protected by canopies and awnings from rain and snow.

Of course Maxwell Street in Chicago is European in its origins, and still strongly European in its accents and habits. It is a Sunday morning regional

shopping center for as many as 25,000 people of European descent, a great market center and social meeting ground.

The “action” in Maxwell Street is direct, aggressive and unmistakable. You can hardly walk a half-block without being verbally assaulted for your gross stupidity in refusing to buy every bargain in sight. In Northland, things are more discreet. The merchants take out their aggressions on the management, which has provided handsome sculpture, fountains, trees, benches, and plenty of show-window space for merchandise. There’s Muzak in the air too—and my only criticism is that you can’t get away from the damn stuff.

Maiden Lane in San Francisco is quite another kettle of fish—one of the finest small shopping streets I’ve ever seen in this country. It began as a back-alley, full of cribs and bagnios catering to the sailor trade. Today it’s crowded with high-fashion shops catering to the mink stole crowd. Here you find architect’s offices, quality men’s clothing stores, the famous Morris Shop designed by Frank Lloyd Wright, and a wide variety of tiny but fascinating shops.

And most important, Maiden Lane is chiefly reserved for pedestrians. During certain hours of the day, no vehicles are permitted except for emergencies. They put up the white chains across the entrances to Maiden Lane, and you can enjoy yourself in comfortable, peaceful, appealing surroundings.

Now, I AM NOT SUGGESTING that Maiden Lane, or Maxwell Street, or even Northland be lifted up bodily and set down in the midst of Chicago's new Fort Dearborn Project, or in the middle of the St. Louis Civic Plaza or on the Louisville waterfront. Nor do I maintain that the pushcart peddler is the indispensable man in tomorrow's central city redevelopment project.

Yet I *am* convinced that tomorrow's new redeveloped central areas, Civic Centers, Medical Centers and all the rest of its new spaces, its parks, squares and plazas, should offer a wide variety of *action*, as well as a real *change of pace* for the human being, that they include the quiet places, a place of peace and contemplation. Each of these, in its own way, is essential to the creation of a new Downtown on the human scale.

Ever since my recent walking tour people have been asking me "Which downtown square did you like best?" I have two answers: Jackson Square, in New Orleans, and also Savannah, Georgia, a city distinguished by 23 downtown squares, by all odds the finest collection of such small, human-scaled open spaces I have ever seen.

I would recommend to all architects, engineers, city planners and just plain tourists that a half-day invested in Jackson Square, New Orleans, should be a "must" on the agenda for re-designers of the City of Tomorrow.

Jackson Square has just about everything—plenty of action, an enclosure on three sides formed by some of the nation's finest 17th and 19th century architecture; a touch of the jungle in its exuberant trees, flowers, and untrammelled foliage; a fascinating variety of alleys, courts, streets and little plazas through which you proceed by way of the Vieux Carré, into Jackson Square itself.

First, a word about "action." The essential ingredient here is the tourists. Jackson Square is to me the perfect example of the necessity for attracting tourists to tomorrow's downtown. The tourists are the gay and giddy element in the Jackson Square scenery. I was surprised at the high percentage of Latin Americans.

When you consider that business, trade and professional conventions have developed into one of the major industries of America you can no longer afford to write off "tourists" as an important part of your community's downtown scene.

G. E. KIDDER-SMITH's fine book, "Italy Builds," offers many lessons for our own Cities of Tomorrow. He's speaking of the tourists at the Piazza Umberto I in Capri:

"This piazza is not just an open space where people come merely to shop or post a letter; it is, unknown even to its citizens, an open-air non-stop theater with its stage at one end and a properly

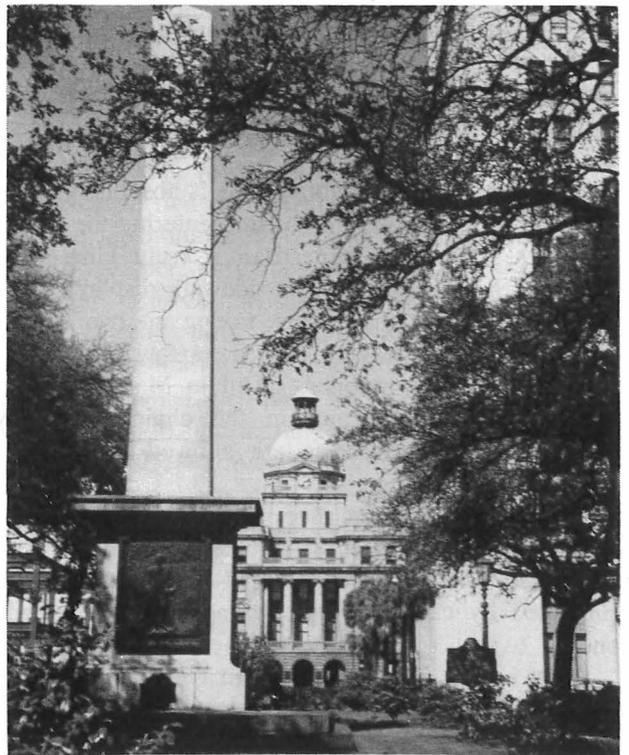
Chamber of Commerce of the New Orleans Area



JACKSON SQUARE, NEW ORLEANS

JOHNSON SQUARE, SAVANNAH

Savannah Chamber of Commerce





Italian State Tourist Office

possible to attract Americans to outdoor cafés in the United States. There seems to be a current mythology about sidewalk cafés. “Practical minded” men say “That’s all right for Europe but it won’t work here.” May I suggest they go to the Café du Mond across from Jackson Square, a happy, gay spot both night and day, crowded with local citizens as well as tourists?

This mythology about American non-eating habits is in for another rude shock. This story from Southdale shopping center near Minneapolis, which opened about eighteen months ago, is a case in point. Before the opening, no tenants could be located to manage the sidewalk café which the architect, Victor Gruen, provided in the enclosed mall at the center of the shopping center. Therefore—I suppose for “kicks” and to lend atmosphere to the joint—the management ran it, with the help of a caterer. After three days of crowds that simply flooded the café, the caterer said “Give me a lease.” But he was too late. Already, the potential had been spotted by a visiting restaurateur one day earlier. As a result, this “un-American” café has been consistently filled since the day it opened, and stays busy from early morning until the center closes at night.

So much for eating outdoors. Now a few words about merely *being* out of doors. In most cities, this means being on the sidewalk—either standing window-gazing, walking from here to there waiting for a traffic light, bumping into people. (Most of us pay involuntary tribute to the crowded conditions of city sidewalks when we say “I was downtown today and bumped into an old friend of mine.”)

Outdoor comfort has hardly been thought of in designing most cities. Or as G. K. Chesterton says: “We thought of it, but didn’t think *much* of it.” Perhaps I’m just embittered after my experiences at walking through rain and slush, through wind and snow, through the most valuable square mile in 12 cities. In tomorrow’s cities—these future downtown redevelopment projects, these new central-city shopping centers—I believe every pedestrian has a right to expect such essentials as radiantly heated sidewalks to melt the snow and slush; canopies overhead to keep out the hot sun or the pelting drizzles; and radiant electric heaters, such as those which are set up around the tropical patio of Brennan’s restaurant in New Orleans. I was there on a chilly January day, but these heaters, placed on the wall, poured down a beneficent warmth on us all, adding real comfort to the place.

shaped auditorium facing. The actors are the fantastic crowd of bizarre tourists each striving to outdo the other, each arrayed in his private peacock features, the brilliance of which is accentuated by the black clerical gowns of the priests visiting the cathedral behind. When these gorgeous birds tire of the perambulating, they continue their see-and-be-seen pleasures in the ‘auditorium,’ the convenient cafés whose myriad round tables, gay with awnings, practically fill the square. This minute piazza is the key to the secret of today’s Capri, and is Italy’s outstanding exposition of what a few strategically handled square feet of open space can produce in sensitive hands.”

While Jackson Square may lack some of the qualities of the Piazza Umberto I, it does have its tourists, its pushing throngs of tourist-conventioners—the latter a wild breed who inevitably jazz up the joint. While I was there the whole place was being hopped-up by some Shriners, in a tiny diesel locomotive with a loud air horn, contentedly circling the square.

Furthermore, Jackson Square is proof that it is



NORTHLAND SHOPPING CENTER, DETROIT



EASTLAND SHOPPING CENTER, DETROIT

Alexandre Georges

And I would further suggest to all doubting Thomases that they stand in front of the new curtain-air-door, 33 feet wide, at the Lazarus Department Store in Columbus, Ohio. I discovered that shoppers were walking blocks out of their way to enjoy the pleasure of standing out front, protected from rain and snow by a canopy, and revelling in the warming flow of 60,000 cubic feet per minute of warmed air flowing out of the doorway. This struck me as exactly the *kind* of environmental conditioning that must be practiced lavishly in the new city centers for the maintenance of simple, human comfort.

And now for a moment, let us consider the vital center, the reference point, the crossroads, the place where the people of your city and mine instinctively congregate on great and important occasions—on VJ day, on Hallowe'en, on New Year's Eve.

Is there such a place in every town, in every neighborhood? My own findings were pretty disappointing. Most of the downtown districts I've seen lack a real reference point—a place where you feel that you are right in the center of things—a place where you know you can stand around and everything important will happen close by, where Everybody who's Anybody will come walking down the street. Such a place is a kind of re-fueling station for local patriotism; a reference point for strangers and natives alike; a true coming-together place.

But mostly, all we see are rectangular street intersections with a drug store on one corner. Is *this* the Vital Center? We need more outdoor equivalents of such indoor meeting places as "Under the clock in the Biltmore" (Manhattan, of course), or "By the eagle at Wanamaker's" (in Philadelphia).

And in such vital centers there must be plenty of elbow room—for people to walk freely, sit comfortably and even to lie on the grass. Some puritanical police forbid grass-sitting. Some of them won't even let people lie full length stretched out in the sunlight. When I was in San Francisco's incomparable Union Square, I was glad to see that in that compact place, there was still room for people to sit and stretch on the grass.

Actually, the police supervision and maintenance of downtown open spaces must be a special sort. For one thing, upkeep must be perfect: one piece of loose newspaper blowing across the square destroys the whole scene. One pulled flower attracts other flower-vandals. Every broken plant must be replaced at once. A dab of this and a patch of that kind of flower or plant is worse than none at all. In order to be effective, flowers and plantings must be large-scale, colorful to the point of dazzling, and extravagant by ordinary standards. This is no place for dribs and drabs, for tiny, piddling planter beds, easily forgotten and certainly overlooked. Anyone who has seen hundreds of square yards of tulips in full bloom in Union Square, San Francisco, on a lovely April day will know what I mean.

THIS BRINGS ME to another thesis: that in planning tomorrow's city, today's planners must bring in *all the arts*. I have mentioned flowers, and hasten to add a word about the magic qualities of sculpture. No doubt sculpture is the last thing that many a chamber of commerce would dream up to improve downtown business. But I would suggest that they take a trip to Eastland Shopping Center in Detroit.

"We learned our lesson in Northland," said one of the architects in Detroit. "We put all the sculpture up out of reach in Northland. But in Eastland, we've brought it all down to earth, down where the kids can climb on it." In short, the finest collection of "feelies" in North America! A granite hippopotamus plunked right down in the plaza for kids to climb on. A reclining lion, propped up with a foolish grin on his face, looking down at a shiny bronze mouse perched on his belly. A huge frog ready to spring into a fountain. A stainless steel sculptured screen, used as a space-divider between plazas. Just to watch the youngsters playing on these sculptured pieces is a sideshow in itself.

What visitors to Florence, Italy, can forget the overpowering presence of the great white marble gladiator, his left hand grasping the hair of a fallen opponent, as he raises his eyes toward some distant emperor, awaiting the thumbs-down signal? This unforgettable figure towers majestically above the Piazza della Signoria, one of several dynamic statues which transform this great open space. Who has ever passed through Indianapolis without being aware of the towering pinnacle in Monument Circle?

Cincinnati's Fountain Square has long been the scene of a local ceremony, commemorating the days when the square was a truly functioning market place. Last year, Mayor Charles P. Taft took part in reviving the annual "flower sale" on Fountain Square, the 87th year of such a sale, this one run by the Federated Garden Clubs of Cincinnati.

This ceremony—the kind of "action" which I believe essential to preserve the heart of the city—takes place near one of the finest sculptured fountains in the center of any city I visited. Fountain Square itself is a masterpiece of urban design—410 feet long, 120 feet wide, a raised platform in the midst of busy streets, with a balustrade around it, two flagpoles at either end, and in the center, the Davidson-Probasco Fountain. Let this fountain be a lesson to us all, because they never shut the water off except when the temperature goes below freezing. And they keep the lights underwater well lighted day and night.

Other types of festivity which vitalize a city's central area are the parade, the political speech, the formal outdoor presentation which, I trust, will not be abandoned in favor of a watered-down version performed inside a TV studio!

In Philadelphia, the Mummer's Parade on New Year's Day always swings around the great baroque City Hall. St. Patrick's Day parades in New Orleans have traditionally ended at the Cathedral on Jackson Square. In Cleveland, the Public Square has been the scene of many presidential speeches. In Savan-



Italian State Tourist Office

PIAZZA DELLA SIGNORIA, FLORENCE

nah, Johnson Square was the place where the secessionists held their rallies before the Civil War—(and if they should do it again, it will certainly be in the selfsame Johnson Square!)

But many a civic tradition has been allowed, through neglect, to be moved indoors, or discontinued, or worse yet, moved to the suburbs. Hence many a downtown square has been divested of its lifeblood—action, the crowd, festivity, gaiety, lots of people.

It takes all kind of people to make a successful city center, a successful park, plaza, mall, or civic space. It takes rich and poor, rough and smooth, young and old, feeble as well as agile. The most fascinating places are those where different currents of life come together, to swirl and eddy. Where tourists flow, as I have said before, excitement is sure to follow. Squares close to the city's "skid-row" have their own special quality. Open places in the high-fashion district are almost always spic and span—but often deadly dull. It is those great mixing bowls where divergent streams of life pour in that we find the most interesting of all.

Conversely, the dullest place in town is usually the new Civic Center, with miles of concrete, grass and keep-off signs. This goes for the old civic centers too. But the new ones, it seems to me, are far worse. They're bigger—thanks to Title One Redevelopment money, for one thing. The Civic Center—or at least some of those I've seen in person, as well as on the drawing boards—is likely to become the Horrible Example No. 1 of 20th century planning. It is spacious, with long vistas. It is expensive, and requires considerable excavation to develop. Its dominant colors are grass green and

limestone or marble or granite white. In short, it has many of the qualities of a well-tended cemetery.

Where are the people? All tucked away neatly in cubbyholes inside great buildings. Afraid to stand around on grounds that are completely out of scale for the human being. Once they come outside, there's no *threshold*—no comfortable transition zone between indoors and outdoors. No little shop to duck into, the closest delicatessen blocks away. You eat at the antiseptic cafeteria, or you walk several blocks for lunch.

After looking at many of the new plans, I begin to wonder if we aren't trying to design cities with all the bureaucrats over here in one compound; the merchants and shoppers 'way over there in another precinct; a big crowd of artists, musicians, teachers and do-gooders stuck off to one side in something labeled "Cultural Center," all the sick people and medicos tucked away in a compartment called "Medical Center," and the whole package neatly wrapped up with a long, spiraling ribbon of concrete called "circumferential expressway system."

This is not the kind of city I hope to see. And the conclusion I would draw from the squares, parks and plazas that wore out my last pair of shoes is this:

THE CITY OF TOMORROW should certainly be more than a collection of buildings and open spaces. It will be a great complex of activities. And I am convinced that city planners, engineers, architects and

landscape architects should be thinking about those activities as an integral part of their designs. They must be helping to arrange those activities—not merely providing spaces for them.

If this means long-drawn-out meetings to persuade the County Judge to hold Court House Door sales outdoors in the new civic center, then do it. If it means the automobile salesmen should be invited to open their next annual display in front of the new City Hall, well and good—and you should help 'em arrange the show, if necessary. If this means searching your entire state for a merchant to set up a tourist-getting shop on a new downtown plaza, it's worth the searching. Here, in the middle of a great civic space, is a great opportunity to provide civic bulletin boards, displays of local products, services and art of the widest variety.

All this adds up to a new kind of civic planning, which should include festivals, shows, "action" of every sort. And if this means that a redevelopment area should be expanded to include such action, then expand it.

In short, much of the gaiety, vitality, and human variety that once pervaded the old market squares can and must be re-introduced into the new downtown plazas. The pedestrian must once again be king of all he surveys, and afraid of no onrushing automobile. In this direction, I think, lies the path for the planners, architects and engineers of tomorrow's downtown.

Supplication

Oh Lord, give me a client who,
With ample cash and trusting heart
And admiration for my art,
Will give my competence full due
And let me see the project through
Without intrusion on his part.

And help me to avoid mistake
Of costly error or omission,
Whose folly would arouse suspicion;
(The kind I all too often make!)
Oh, Lord, I beg, for pity sake
That I be spared from such perdition.

And let the lowest bidder be
An upright and an honest man
Who is a noble artisan,
Who will in all defer to me
And thus avoid catastrophe
To me and to my cherished plan.

And with the job at last completed,
When by my efforts I have won
My client's blessed benison;
When all my bills have been receipted,
Leaving my exchequer depleted,
Oh, Lord, give me another one!

RALPH MITCHELL CROSBY, AIA



Planning the Facilities to Meet the

Educational Needs of Our Democracy

N. L. ENGELHARDT, SR.

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OUR COMMUNITIES CONSTANTLY CHANGE. The momentum comes out of educational progress with its impact upon a free people. Freedom stimulates the inventive, encourages the ambitious, and excites the intelligent and educated to higher achievement. Our people are gradually but definitely accepting certain underlying principles that assure democracy's ultimate success. They believe in the rights of all individuals for a maximum of educational opportunity; they recognize that education might be adjusted to the gifted as well as the less privileged; they have discarded time and age limitations to educational growth, and have created for education high status in all community planning.

The education acquired by the American people has sharpened many desires, has created new life perspectives, and has promoted the persistent urge of more education and the most meaningful education for their progeny and those of oncoming generations. The people see education in brighter and more understanding focus. They want schools that will enhance their communities, that will beckon to all individuals and groups seeking advancement or attention to special problems and that give assurance of superior community living conditions in their broadest implications.

Every citizen has acute awareness of what changes three decades have brought to the communities in which human beings gather, the places in which they live, the structures in which they work,

and the mass institutions which serve their welfare. It seems that what man builds gives way in time to satisfy changing criteria. The railroads are yielding to airports and airways, the old highways are surrendering to auto thruways and parkways, population is leaving congested city centers for what was once the open country, industry may no longer tie its destiny with waterways and railways but seeks locations which the automobile and its big brother, the truck, may serve. The impact of the automobile age upon human living has not yet attained its full significance. The jet age, now in its infancy, promises even greater influence upon how we solve the ever present problems of living, bringing up families, earning the wherewithal and doing the other important things which keep us well, adjust our attitudes, extend our lives and maintain constructive roles to the satisfaction of fellowman and our Maker.

The criteria serving other generations in the planning of schools have been fully as much displaced as have those of home, factory, and store. The school of today planned in the manner of those three decades ago finds little welcome and probably less approval by the present generation. No longer is the school just another commission in the architect's office. The educational project of today rises out of vastly improved concepts of community planning and assuredly a much wider and longer association with many more citizens participating in the planning.

Building to Fit America's Needs

TODAY'S SCHOOL PLANT is the people's house. It is not a prize item chosen out of a feudal society's antiques, as was sometimes done in years past. It is built around the people's desires, needs and hopes for their children. Therein must be built security for the nation. There must be inspired the creative contributions to an already significant human legacy. In such a center are engendered the influences and the skills to build enduring and powerful forces that make for the best type of American community. The building of such a school is not dictated by a single person, school superintendent, architect, or Board of Education president. It emerges out of open, publicly approved democratic processes.

Schools Belong to the People

IN THE PLANNING certain underlying principles must be recognized by all. Schools belong to the people. They pay the bills. They are entitled to early and continuing participation in the school planning processes. In our form of society the people themselves have a right to decide the kind of educational organization that will be advanced for their children, and the kinds of schoolhouses that should be built to meet the demands of the organization. All the implications of the people's decisions should be told them at every step as planning proceeds. In helping plan for the future, citizens should be encouraged to familiarize themselves with the constantly growing literature on modern day school planning which is coming from state, national, and local citizens' groups devoted to this problem. To think and plan merely in terms of "when they attended school" reflects seriously on the intent and integrity of citizens so doing.

Teacher Should Assist in Planning

LIKE CITIZEN PARTICIPATION, teacher participation in the planning process is equally imperative. To be sure, the teacher who plans may not always be the teacher who utilizes a facility. The teacher as an individual, as well as a member of a group of fellow instructors, insists upon consideration of underlying philosophy, teaching method, and administrative practices. Most teachers and departmental groups will seek more floor area than the community may wish to buy, but such an area, once defined in terms of educational need, can always be altered with such need preeminent in mind. Participating teachers may have hazy notions about architects' plans and may not be able to read them. Perhaps any teacher participation ought to be preceded by a few hours of training in the meaning of architectural symbols and the reading of plans.

Equipment Planning

Requires Early and Thorough Attention

PERHAPS THE MOST SEVERE criticism that can be levied against school planning is that most of it begins with the assumption that equipment can be considered an aftermath of planning and need play very little part in the original determination of areas and spaces. Ignoring equipment, or paying little heed to its character, in the earliest stages of planning is against all logic. Equipment influences methods of teaching. The placement of fixed equipment in school buildings fifty years ago has in many cases frozen classroom procedures and erected roadblocks to curriculum advancement.

The majority of serious educational problems associated with equipment is usually by-passed or ignored. The tempo of learning has speeded up, the curriculum has been expanded, important courses of study content have been rapidly moving down to lower age levels, the materiel of instruction has changed with the times, and the media of teaching have increased in number and kind. In today's school the character of the equipment and its bearing upon the teaching and learning processes have assumed new importance. As progress is made equipment adaptations must follow in higher degree the work and needs of the teacher.

School Building Planning

Is a Long, Arduous Process

SUFFICE IT TO SAY that extensive participation in planning by citizens and teachers, as well as school officials and others, should be initiated long before the building is to become a reality. Involved in such planning are the creation and acceptance of a well-defined and approved community pattern, the recognition that all citizen groups wherever they live are accorded equal consideration in the planning, the underlying philosophies and aims are clearly known to all citizens, and the emphasis upon economies to produce the maximum of return from educational as well as other community bodies is stressed from beginning to end. Throughout the planning steps student groups should be encouraged to participate with the hope that in such labors would be found the kind of citizenship instruction which would help to continue this kind of service over the lifetimes to come.

The Long-Range

School Building Survey

ANY COMMUNITY which launches an individual school building project without a comprehensive community plan for all future educational projects will find itself stymied as have been the older con-

gested cities. The story over the decades has been a sordid one for schools in many places. Little advance acquisition of sites has been the rule. When the need for a school arose an unreasonable site, or a most inadequate one, was the answer. High school sites of 10 and 15 acres were selected with emphasis upon providing for a few athletes only. The recreational and athletic needs of girls were often entirely ignored. During recent years school boards have learned to buy land in advance. This was especially easy to do in many of the newly created suburban communities as well as those lying remote from congested centers. If such early site determination and acquisition are not activities in which boards of education in these newly forming communities are engaged, the errors, deficiencies and excessive costs incurred by older communities will again be repeated. There are very few communities in the United States which have in years gone by bought land for educational purposes in excess of need. Wherever this has been done, the community has found such extra purchases to be very satisfying investments.

The Acquisition of Enough Land At the Right Locations is Crucial

THE ARCHITECT'S FUNCTION is to help communities get enough land for education. The land should be in such amounts and of such quality that on such expanses may be erected the permanent, flexible, and attractive structures planned to serve the community over all time to come. Certainly there will come a time when land is even more expensive than it is today and there may even come a time in this country when the population increases will tend to crowd our educational centers to pitifully inadequate sites if they are not chosen long in advance. The purchase of enough land can insure the community's investment in school plant far more than any other form of insurance device. In the last analysis, the cost of land tends to be a small part of the total cost of an educational project. Community after community has already learned its lesson and throughout the nation high school sites of 50 to 100 acres actually exist. For junior high schools many sites of 20 to 35 acres can be found in enterprising school districts, while as for elementary schools sites of 15 to 25 acres are no longer rare.

The Schools of Tomorrow Will Serve the Greatly Expanding Needs of our People

NEVER BEFORE in American history has such profound and intensive attention been given by so many people to the needs of education as has developed during recent years. The educational or-

ganization will more often than ever before include junior colleges beyond the high school. Our best judgment today is that such junior colleges should be independent units. They should have their own campus of many acres, their own curriculum, their own administration. It is far better to give our youth training in such institutions than in those which penalize for misdirection of their efforts. The offering should be such as to encompass the wide needs of human endeavors. In the years to come the junior college will help extensively to care for the multiplying college and university enrollments for which America offers such limited provisions today.

Equally needed are extended provisions for adult education. The cultures of America must be made secure as well as our safety. Adult education tends to make a mature nation even more so. It gives greater depth to happiness, greater possibilities to creative achievements, extended opportunities for those denied at lower ages, and the widespread understanding that music and the arts, literature and painting, writing and creating material things, strengthen human beings and give enrichment to living.

The Size of Schools

IN OUR CITIES, both large and small, are to be found many schools so large that few, if any, human beings can be found who have the skill to administer, to supervise, and to carry on the most constructive and realistic program possible for the youngsters involved. For fifty years competent leaders and teachers in many high schools have protested vigorously against buildings with huge enrollments. Teachers have claimed that such schools dwarf and automatize the individual teachers and pupils. They say a human being becomes a cog in a vast machine. In large schools pupils and teachers lose their identity, which is certainly not consistent with democracy's aim. The nervous strain on them is too great, say teachers. The physical and emotional strain on children can become exceedingly serious barriers to their progress.

Large schools assume an institutional character. The wear and tear upon the human being tend to diminish creativeness and to reduce the effectiveness of the teacher relationship to the pupil. This is true of school after school and this will continue to be true of school after school built in decades past. The remedy against excessive size can be readily found. Elementary school buildings with a maximum of 600 enrollment can be well served by trained and professional principals. Here educators can do the job which is to be expected, namely, of giving care and attention to each individual child, arranging

proper placement in the educational program, and providing special adjustment for individual needs, as they appear. Such schools can well be integrated with the homes of the community. They can become true centers of community life.

Huge Junior High Schools Defeat Their Educational Purpose

JUNIOR HIGH SCHOOLS of 750 can be made very satisfying schools. As enrollments increase in any branch of secondary education beyond 1,000 students, it may be advisable to use the administrative device which has been adopted extensively in the recent two or three years. In new high schools today divisional groups are being formed whereby 400 to 500 students are provided for separately for most of their activities even though the total school enrollment may be 1,500, 2,000, or more. This plan, which does not follow any one single design, is called the "school within a school" plan. It is not an entirely new idea but its values are now being discerned. It provides all the advantages of the small school, which are many, as well as the advantages of the large school which are also many. It makes for the possibility of more extensive curriculum expansion. It is an easy way to plan for the future extension of the school. The guidance problem is more successfully cared for in the smaller school, while the leadership advantages sought in every secondary school may be more fruitfully distributed among the student body.

"Schools within a School"

THE SIZE PROBLEM of the elementary school can be easily solved by starting new projects when the optimum has been reached. The size problem of the secondary school, junior as well as senior, presents greater difficulties. Without doubt, future enrollments in the senior branch will rise to the point where the comprehensive secondary school will be caring for ninety per cent of the high school's potential enrollment. Large sites, with the first units well planned and with opportunity for expansion securely guarded, will make almost any kind of a secondary school program secure if it is based upon the needs of individuals, the expansion of the curriculum, and professionally developed teaching methods which do not pay too much of a tribute to the fallacy of past disciplines. The best American high school is still the comprehensive high school.

Giving the Guidance Program the Area It Deserves

EDUCATION WITHOUT GUIDANCE can be likened to the hunter traveling through strange forests with-

out a compass. Slowly guidance has come into its own. Involved in this work is the opportunity to know each student well. Frequent conferences, individually and in groups, and contact with and education of parents of children are required. Provision for making contacts with representatives of higher institutions must be considered. Developing a program for each student, requiring study of literature, and giving assurance of proper contacts are in the picture. Guidance requires a trained personnel with devotion to the service every hour of the school day and beyond. At least ninety per cent of all high schools planned today lack the proper provision for making this service produce the returns that society seeks.

What is the Wisest Use of Large Spaces?

TODAY'S PLANNERS must make possible high percentages of utilization of all areas, especially the 5,000, 6,000 and 10,000 square footages. One cannot expect the taxpayer to buy schools at \$12.00, \$15.00, or \$20.00 a square foot if utilization of large areas is reduced to a third or a quarter, or less, of the school day. Planning a cafeteria on the single criterion of serving a third or a quarter of the school's enrollment will not produce the wisest nor the most satisfactory use of space. Today schools are being developed which make for eighty to ninety per cent of utilization of cafeteria areas. The huge high school auditorium, long the *bête-noir* of school administrators, must evolve into a facility or a group of facilities that truly serve definite and accepted educational goals.

On the assumption that basketball will always be the prevailing indoor sport interest of American people, our gymnasiums have been built. The huge arena has been tailored to fit the standard court with its surrounding spectators' bleachers. This emphasis on a single facility has tended to limit the opportunities for body building, recreation and healthful sports competition for the large percentage of high school enrollments. As a result, the opportunities of serving all children so they might have healthy minds in healthy bodies have been unwisely by-passed. The provision of enough land for many sports, the more skillfully developed interrelation between the use of the indoors and the outdoors, and the recognition that many other sports have even greater advantage than basketball, are points that need greater emphasis in school planning.

Integration with Community Recreational Planning

NEWLY DEVELOPING COMMUNITIES will find it advantageous budget-wise to unite site planning for community recreation and schools. School sites may

well serve in the dual capacity. The duplication of facilities by two separate administrations is financially indefensible. Driver-education is a rapidly burgeoning function which is more advantageously developed through such a joint relationship.

Recent Progress in Elementary Planning

THE COMBINATION of citizen-educational-architectural planning for elementary schools has brought forth superior and economical structures for children of the elementary grades. It is not to be assumed that further progress cannot be made in the elementary field. The best types of elementary school planning today far outshine the institutional efforts of years ago. Today's outstanding schools are liveable, attractive centers in which the most wholesome kind of human relationships can be practiced and programs of learning can be made fruitful. Contrary to today's over-emotionalized criticism of elementary education, the superiority of today's teaching and learning can be readily demonstrated.

Secondary Schools Must Meet Today's Challenge of Change

THE AVERAGE HIGH SCHOOL of three decades ago has become ill-fitted for today's secondary school program. New secondary school centers, of which there are thousands in the early stages of planning, will take new shape and form. They will have their interiors better functionally developed to meet the demands of education's promise to our youth. No classroom, and no laboratory, in tomorrow's school should seek merely to imitate those of the past. Slowly, but surely, the creation of functional laboratories for all subject matters of teaching is affecting the academic as well as the special subject areas. The advent of new teaching media has already begun to get professional recognition. The multiplication of new devices from the field of communications will certainly not leave teaching untouched for teaching itself is outstanding in importance in the field of human communications. In foreign languages alone, the readily repetitive process of machine learning cannot be forever ignored. The motion picture in its various forms has already contributed much to the rapidity and the volume of student learning. Television, now going through extensive, exploratory experimentation, will assuredly affect the very nature of our school facilities as has already been demonstrated in outstanding new secondary schools throughout the nation.

One pays his respects to that form of teaching, now in its passing era, characterized by textbook assignment, student memorization and subsequent re-

hearsal to teacher. One looks forward to acquisition of knowledge through widely improved, devisive methods. There flows encouragement to student in the utilization of that knowledge for constructive and creative activity on his part. Not only the natural sciences but the social sciences, mathematics, language and our own literature will continue to be taught in groups, but the opportunities for the unusually capable student of moving rapidly forward into areas beyond the current curriculum must be provided for. Likewise, the pace of the slow learner cannot be that of the strong. Today as yet relatively few of all of our high schools have the research, experimentation, and creation facilities for individual students or small groups interested in contributing even beyond what the world has yet achieved. There is little special provision for the slow. Let's no longer discount the power for growth that lies within many an American high school student, be he of high or median intelligence or of delayed maturity.

The Library is Destined for Significant Adjustment

IN MOST SCHOOLS the curriculum laboratory as such has not found its place. The library may still be under the domination of those who consider books as the only sources of knowledge. The library in all its new implications is to be used. How best to use it and its rapidly expanding teaching materiel is one phase of high school planning which it would be extremely profitable to explore. With the growing discovery and production of new materials, and the impact of industrial arts upon homes, factories, shops, and the community in general, delving into the curriculum, the equipment and the expectancy of industrial arts, will assuredly bring important results.

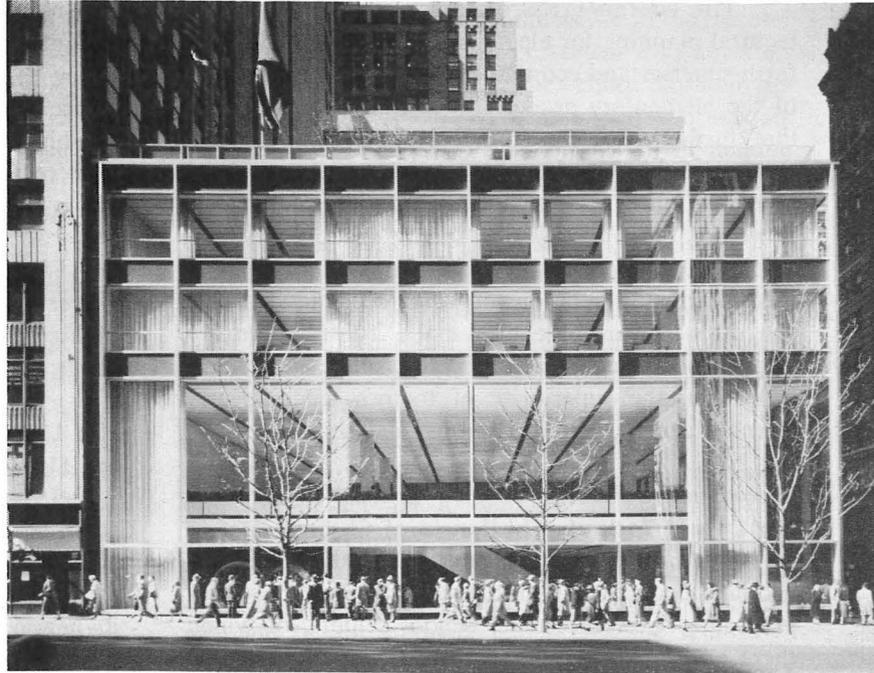
Departmental areas in the secondary school have been, in a considerable sense, in ruts. Perhaps the character of their physical facilities have kept them there, and perhaps not. Discussions with hundreds of school committees and their citizen allies have left the impression that the American people seek definite improvement in the secondary school. No area of its instruction appears exempt. The question is: What should we teach, how should we teach so that our youth may be best prepared to play their role in this new world age? The people's dissatisfaction will find its answer in new kinds of functional school centers which the architects will design with the cooperation and participation of educator and layman. In our society, educational centers may be listed as among the most meticulous to plan and build. To the degree that these ventures become education-worthy, to that degree will our society build itself more firm foundations.

FAVORITE FEATURES OF RECENTLY ELECTED FELLOWS

GORDON BUNSHAFT, FAIA

Partner in Charge of Design, Skidmore, Owings and Merrill

MANUFACTURERS TRUST COMPANY
FIFTH AVENUE BRANCH
NEW YORK CITY



Ezra Stoller

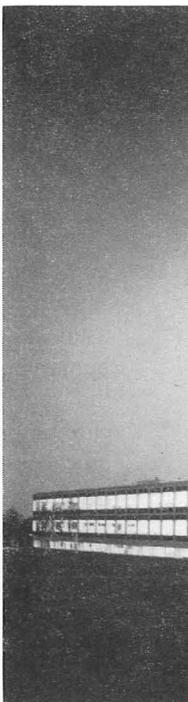


Ezra Stoller

REYNOLDS METALS COMPANY
RICHMOND, VIRGINIA



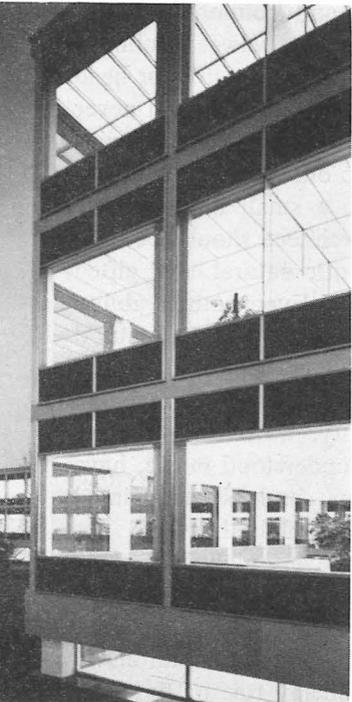
H. J. HEINZ COMPANY
PITTSBURGH, PENNSYLVANIA



CONNELLY

LEVER HOUSE
NEW YORK CITY

Paul Berg—St. Louis Post Dispatch



Ezra Stoller

GENERAL LIFE INSURANCE COMPANY
BLOOMFIELD, CONNECTICUT

through the MARTINI GLASS:

DEAR BOSS: I got a letter saying it would be interesting if you pitched toward the stuff we have to read in the Architectural Magazines today.

I have been trying to read about Architecture and it is very difficult. I can draw and I may be able to tell stories but I cannot read. First, I listened attentively to that complete course of Berlitz School Interpretation of Architecture on a free record titled "Conversations Regarding the Future of Architecture." You all must have it and if you haven't heard it lately, please go home and fall asleep over it. Here are the giants Kump, Bunschaff, Saarinen, Johnson, van der Rohe and Neutra shepherded by John Peter. We have here probably the finest collection of practicing Architects in America and they talk about Sullivan and Frank Lloyd Wright, and a couple of others. I offer my copy free to anybody who can stay awake through the whole thing, with the exception of school children who are fed this pap and have to pass an examination.

I now, also, have sinusitis from the dust of books which I have taken down and scanned for this—Vitruvius, Sullivan, Frank Lloyd Wright, George Howe, Ralph Walker, Paul Cret, Breuer, Horace, Livy and Palladio, Vignola, Scamozzi and Ruskin. I have read at the theories of Louis Kahn, Thomas Creighton, Hubertus Junius, Douglas Haskell and the late lamented John Knox Shear. And now I will quote a few of these gems for you in addition to Goethe, Schelling and Medam de Stael's old saw about Architecture being frozen music. First, by an unknown Greek, "To build many houses is the readiest road to poverty." "To talk of Architecture is a joke till you can build a chimney that won't smoke" as translated from Aristophanes the Birds. "No Architecture is so haughty as that which is simple," John Ruskin. "Old houses mended cost little less than new before they're ended," Colley Cibber. "That was a happy day before the days of Architects and before the days of builders," Seneca.

"Clearly to grasp the significance of the fusion of the inorganic and the organic into a single impulse and expression of man's will, the idea must steadily be held in mind that the rigid geometric form is considered as a container of energy upon which a germinal, liberating will, imposed by man's free choice, intelligence and skill, the plant organism derives its impulse from the seed germ and in its



growth develops sub-centers of further growth. The seed germ may thus be considered also a container of energy, forming of its own will sub-centers of energy in the course of its functioning development toward the finality of its characteristic form. The expression of its identity . . ." The Awakening of the Pentagon by Louis Sullivan.

And now to go on to the modern figures derived from the Sullivan germ, I will read you one by Looie Kahn. "The column," says Kahn, "should be the significant punctuation of Architectural space. It was a great Architectural event centuries ago when the walls parted and columns became. You should not invade the space between columns as partition walls. It is like sleeping with your head in one room and feet in another. That I will never do." I love to read this quotation by Vitruvius over several times before I go out to war with a new client about an alteration to a small house: "One who professes himself an architect should be well versed. He ought to be both natural and gifted and amenable to instructions. Even natural ability without instruction or instruction without natural ability cannot make the perfect artist. Let him be educated skillfully with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understood music, have some knowledge of medicine, and be acquainted with astronomy and the feeling of the heaven."

Of course I read this one every night." Furthermore it is the art of building wherein esthetic and construction not only approve but prove each other. In organic sense such building is as much an entity of the human spirit as that of any tree or flower is of the ground. A natural human circumstance possible only to the complete Architect. There never

will be too many of them. He's the master of the elements, earth, fire, air, light and water, space, motion and gravitation are his power. The sun his brush, his sincerity the heart of humanity, he of all men must see into the light of things and know their honor," Frank Lloyd Wright.

When you add it all up, there is little more to say about Architecture and Architects. The sad truth is that the last generation had all the Bad Taste and the generation before had Everything and was perfectly wonderful. We are striving to produce something which will be revered long enough to let somebody see it standing fifty years from now.

Through all this mass of published work and looking at the pictures, I have gleaned a couple of things about making an Architect safe and secure in the eyes of his fellow practitioners and the general public. First, he should be alive and talking his head off at ninety, and second, he should look like an architect. If you think about it, most of the good ones dressed and looked like caricatures by Beerbohn, or photographs by Steiglitz or Steichen.

No deep dark philosophy was ever accepted from a gent with a crew cut or a "Hickey Freeman" pressed suit. I wonder what became of that movie of the architectural philosophers of the one hundredth anniversary of the AIA? Most of the minds pictured wore heavy glasses, berets and wavy locks and were talking broken English through big smelly pipes.

They had pictures taken of their wonderful hands sketching lally columns with Six B pencils.

With these flamboyant effects, people will listen in rapt attention to the most incomprehensible guff.

There is another charming attribute to develop and that is rudeness; and also, one shouldn't be too direct and clear. That's for simple folks like engineers, bricklayers, clients, and bankers who have to build the things which then turn out to be the masterpieces of the incomprehensible statement.

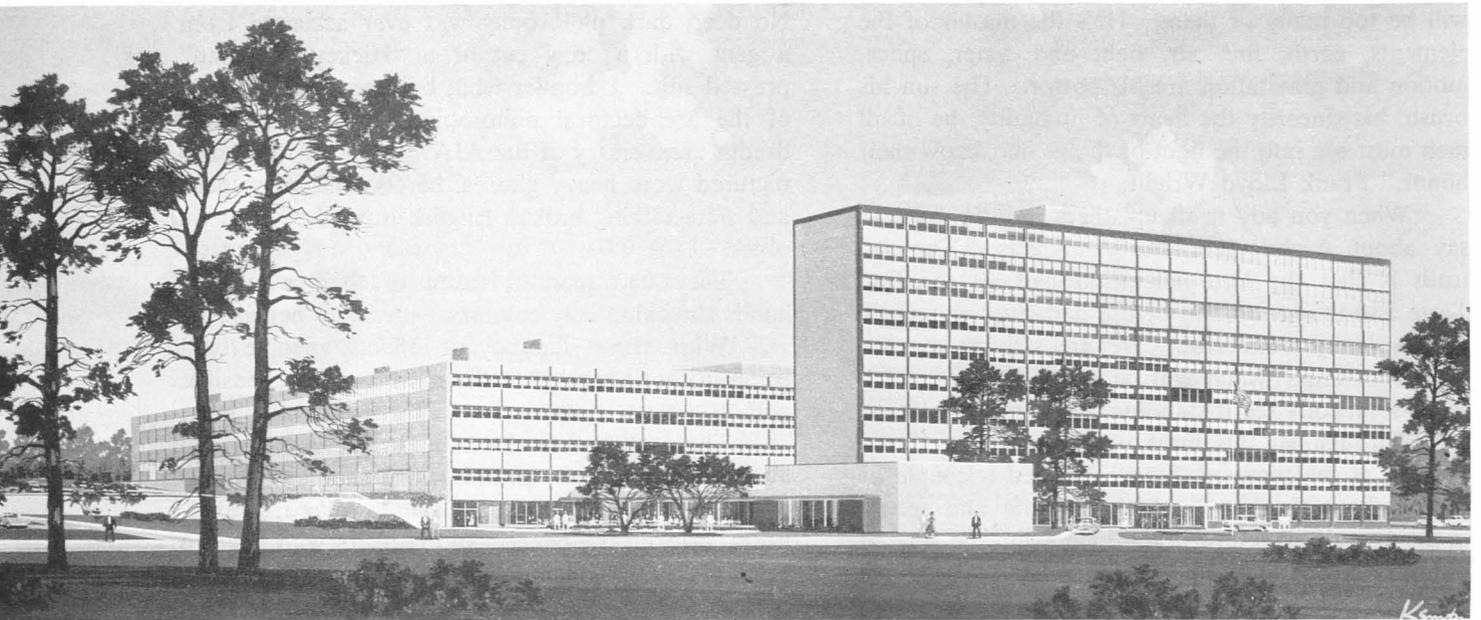
Arquid Bendamer

Church Repairs—Nothing New

MR. GEORG LOBER reported at a meeting of The Fine Arts Federation of New York that the care and restoration of statues and monuments, now one of the Art Commission's responsibilities, is not peculiar to our time but has had its prototypes. In the course of research he discovered a bill rendered by an artist who was employed to retouch an old church in Belgium. The bill amounted to \$67.30. The Church trustees, however, requested an itemized bill, and the following was duly presented, audited and paid:

Correcting the Ten Commandments	\$5.12
Renewing Heaven, adjusting stars, touching up purgatory, and restoring lost souls	7.14
Brightening up the flames of Hell	3.06
Putting new tail on devil and doing several odd jobs for the damned	7.17
Putting new stone in David's sling and enlarging the head of Goliath	6.13
Mending the shirt of the prodigal son and cleaning his ear	3.39
Embellishing Pontius Pilate and putting new ribbon in his bonnet	3.02
Putting new tail on the rooster of Saint Peter and mending his comb	2.20
Repluming and regilding left wing of the Guardian Angel	5.18
Washing the servant of the High Priest and putting carmin on his cheek	5.02
Taking the spots off the son of Tobias	10.30
Putting earrings in Sarah's ears	5.26
Decorating Noah's Ark and putting head on Shem	4.31
<hr/>	
TOTAL	\$67.30

Submitted by
E. JAMES GAMBARO, FAIA



BUREAU OF OLD AGE AND SURVIVORS INSURANCE BUILDING, BALTIMORE, MARYLAND

Meyer and Ayers;
Fisher, Nes, Campbell & Associates
Associated Architects

GSA's Design and Construction Program:

A Half-Billion Dollars Worth of Buildings

L. L. HUNTER, AIA

Assistant Commissioner for Design and Construction, Public Buildings Service

MORE THAN HALF a billion dollars' worth of construction is today on the drawing boards of private architects retained to design public buildings for General Services Administration.

In all, probably 150 architectural firms—large and small, specialists and generalists—are engaged in GSA design work under the supervision of Public Buildings Service. Actually, there are a few more than 125 design contracts in effect, and the larger number of firms reflects our reliance on joint ventures for special tasks.

The contract imposes upon the architects complete design responsibility. This responsibility is accompanied by indoctrination in a design policy which is economic in character. Designers are accorded substantial freedom to work within the economic criteria which, with the usual space and equipment requirements, govern public projects with cost

limitations which have all the force and effect of law.

Within these economic guidelines, however, the architect is encouraged to employ to the full his originality and imagination in solving design problems. In view of the cost limitations, it might well be said that there is indeed a high premium on architectural ingenuity.

At the outset architects are fully advised of the controls established by cost and design criteria. This is done in design meetings in which we pin-point as our goal the construction of buildings with the required facilities on the most economical, practical, and esthetically acceptable basis.

There are no fetishes to side step. In choosing reinforced concrete or structural steel, for instance, architects have been advised to select the more economical framing material, within the range of availability, and support the selection with cost studies.



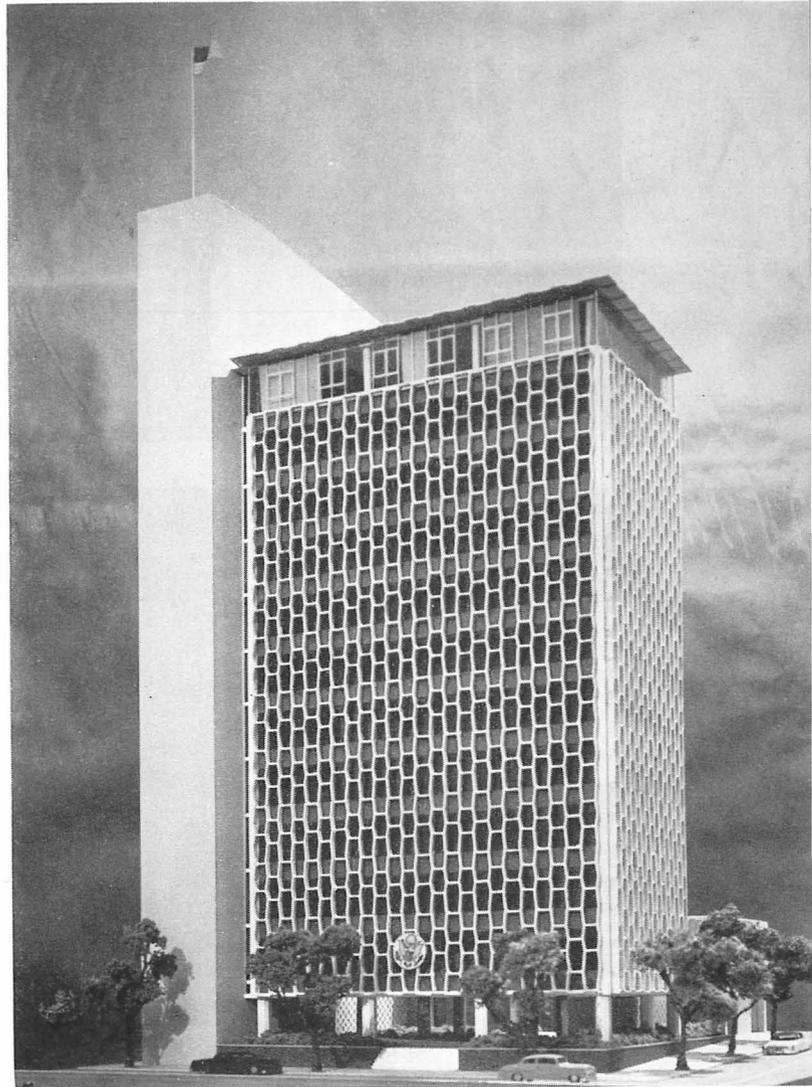
U.S. POST OFFICE AND COURT HOUSE—OMAHA, NEBRASKA
 Steele, Sandham & Steele;
 Henningson, Durham & Richardson;
 Kirkham, Michael & Associates
 Architects - Engineers



FEDERAL OFFICE BUILDING NO. 9—WASHINGTON, D. C.
 Hellmuth, Obata & Kassabaum, Inc.
 and Loebel, Schlossman & Bennett
 Architects

In selecting architects for our design work, we seek the greatest participation consistent with the standards of the architectural profession. Architects are invited to submit information and exhibits attesting their training and work. Formal questionnaires are furnished to be filled in with uniform data and returned with whatever supplementary material interested architects may desire to offer.

For projects of a local character—for instance, a Federal building to house a Post Office and other local offices of Federal agencies—the questionnaires are circulated under a covering letter to all registered architects within the general area of the project. Each circularization area stays within state boundaries. As a general practice, the size of the area depends upon the size of the registration list. In states where lists are large, a single metropolitan center or several counties may make up the area. Conversely, where

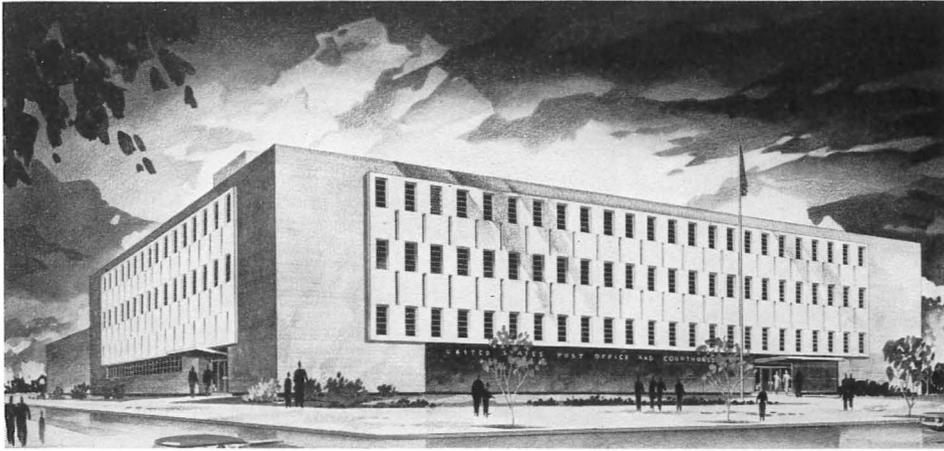


U.S. MISSION TO THE UNITED NATIONS BUILDING—NEW YORK
 Kahn & Jacobs
 and Kelley & Gruzen, Architects

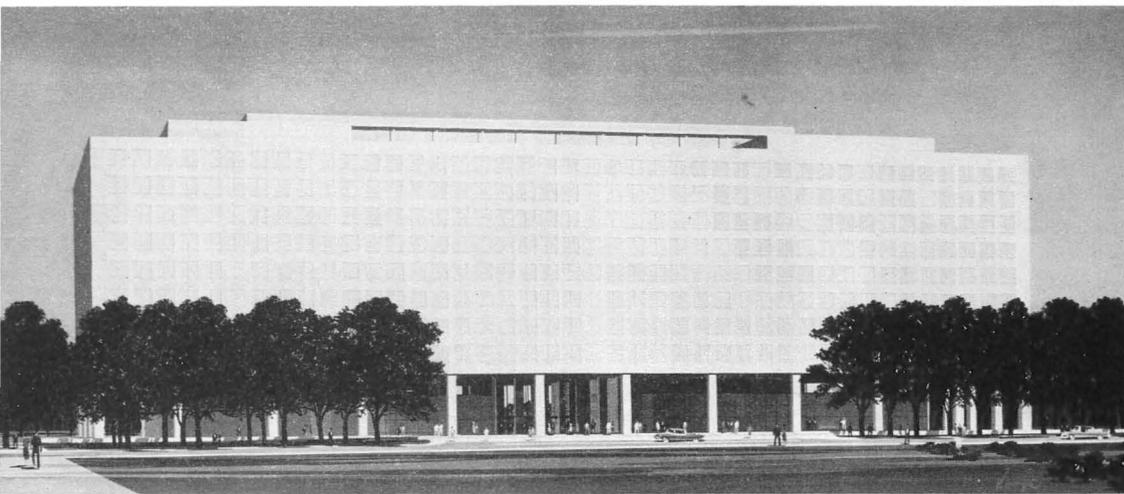
lists are smaller, all the architects in the whole state may be canvassed.

For projects of national significance, usually buildings of major character in Washington, D. C., we vary our practice of selecting architects of wide reputation throughout the nation.

Candidates are evaluated on the basis of their submissions. The resulting recommendations, prepared by a review board with professional experience in architecture and engineering, becomes the basis for selection of and negotiations with a firm or an association of firms for a specific design task. Design conferences cap the selection and set the design work in motion. As the architects go through the successive steps of diagrammatic, tentative, intermediate, and final working drawings, consultation is renewed with the PBS staff architects and engineers primarily to insure adherence to the project criteria.



U.S. POST OFFICE
AND COURT HOUSE
BRUNSWICK, GEORGIA
Abreu & Robeson, Inc.
Architects & Engineers



FEDERAL OFFICE
BUILDING NO. 10A
WASHINGTON, D. C.
Carroll, Grisdale
& Van Alen,
Architects
Holabird & Root
& Burgee
Architects &
Engineers

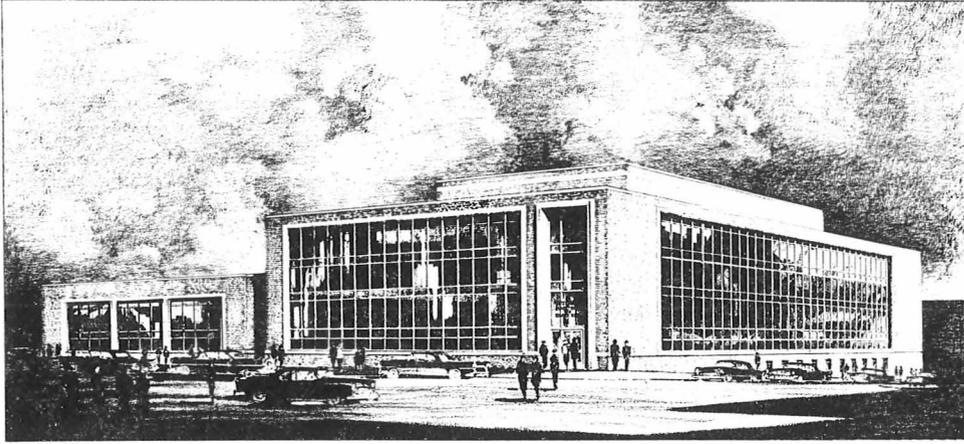
THIS IS THE WORKING BASIS on which architects are presently going forward with design work for GSA projects which range from the new State Department Building, officially an extension to the existing building, with an over-all cost of \$56,000,000, down to small border stations costing about \$200,000. The projects include Federal buildings of all sizes from coast to coast—Post Offices, Court Houses, Custom Houses, and Federal Office Buildings. Frequently buildings combine postal, court, and office space, each with varying requirements which range from the industrial-type operations typical of postal work-rooms to environments calculated to enhance the majesty of a Government of laws. Hospitals, laboratories, libraries, and penal institutions occasionally crop up in the flow of projects and frequently require us to mobilize architectural talent with special design qualifications.

The end product is plans keyed to architectural appropriateness, economy in construction, operation, and maintenance for buildings with an estimated construction cost of \$565,000,000. In addition, planning authority presently in the offing is expected

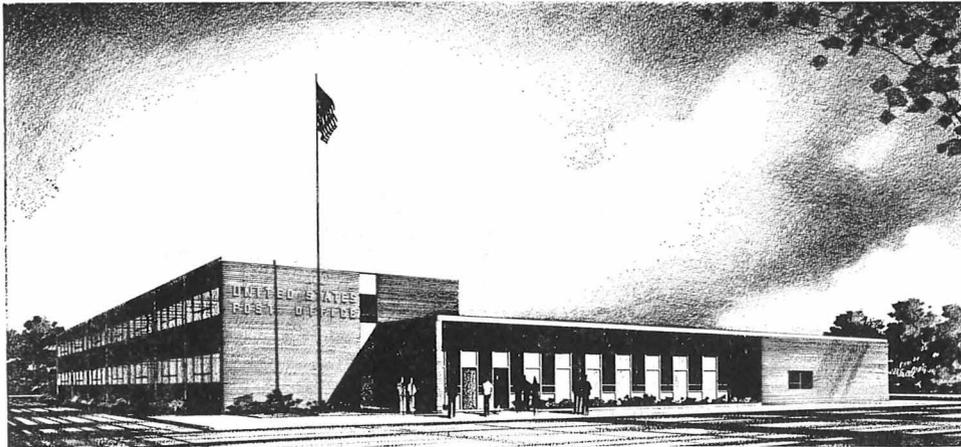
to add \$600,000,000 to the volume of construction for which designs will be required.

Today's volume of work is probably the heaviest that Public Buildings Service has carried in the century and a quarter since its lineal ancestor, the Office of the Supervising Architect, was founded as an arm of the Treasury Department in 1836. Its first task was the design and construction of the Treasury Building in Washington, D. C., under the direction of Robert Mills, whose designs were a highwater mark in the Greek Revivalist movement.

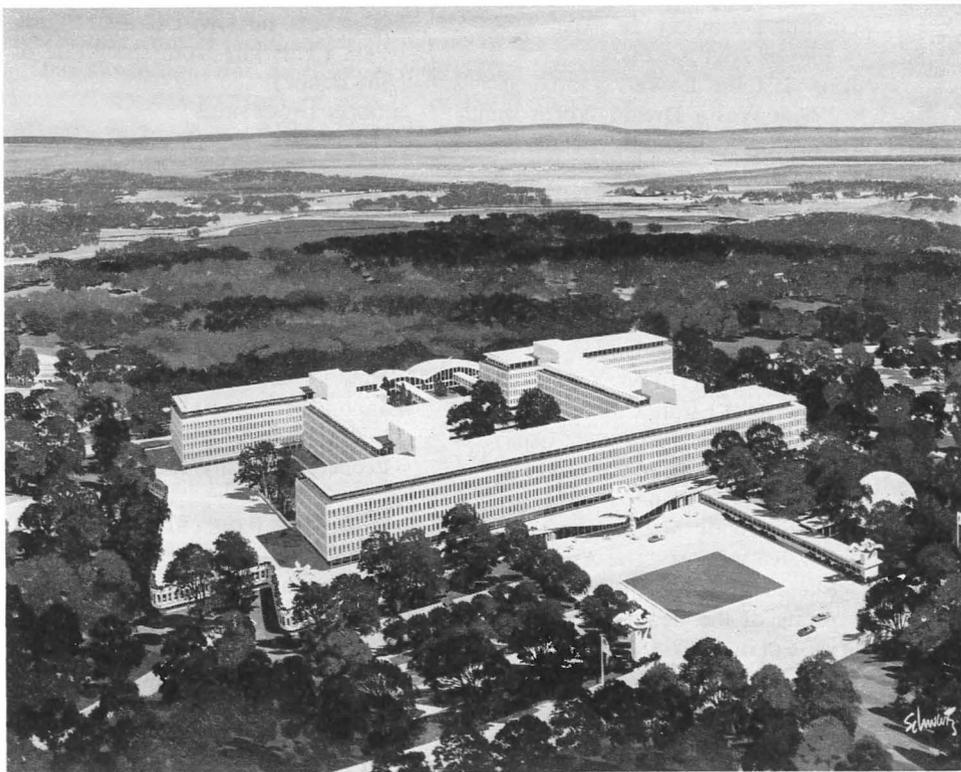
Present-day designs, untingered by classic Grecian forms, achieve nonetheless much of the classic simplicity and dignity which are the enduring hallmarks of the best of the Mills' period. By and large, the designs are worked in simple lines, with an orderly sense of balanced masses, which are characteristic of contemporary trends in architecture. The accent is on the functional not only in designing each building strictly to its use, but also in the employment of the materials and equipment which modern technology has perfected for the construction of the efficient building of the present day.



U.S. POST OFFICE
AND COURT HOUSE
JAMESTOWN, NEW YORK
Beck & Tinkham;
Duane Lyman & Associates
Associated Architects



U.S. POST OFFICE
SISSETON, SOUTH DAKOTA
Harold Spitznagel
& Associates
Architects



CENTRAL INTELLIGENCE
AGENCY
LANGLEY, VIRGINIA
Harrison and
Abramovitz, Architects



Library Notes

Gifts to the Library—January 1 to June 30, 1958

- AMER. INST. OF SOCIAL SCIENCES
"Portrait of an American Labor Leader, W. L. Hutcheson" by Raddock
- LOUIS AXELBANK
His article "The Architect's Education in Mechanical and Electrical Services of Buildings"
- MRS. A. H. BEMIS
Six books, on MS article from the library of her father Guy Kirkham, FAIA
- ALFRED BENDINER, FAIA
"Five Sins of An Architect" by Solomon Gargoyle (pseud.)
- CALIF. COUNCIL OF C.E. AND LAND SURVEYORS
"City Planning: A Basic Bibliography" Bestor and Jones
- A. J. CAPELLE, AIA
"Dictionary of Architecture" by Nicholson
- DONALD R. COCHRAN, AIA
"Rediscovered Drawings of the Architectural Competition of 1832 for the Construction of Girard College" by E. N. Cooper
- THEODORE IRVING COE, FAIA
One book
- ERNEST ALLEN CONALLY
His "Andrew Johnson Homestead at Greenville, Tenn."
- COOPER UNION LIBRARY
"Contemporary Architecture and City Planning in West Germany" by Werner Hebebrand
- S. R. COPE
Sixteen issues of *Forum*
- THOMAS H. CREIGHTON, AIA
Six issues of *PA*
- EDMOND P. CROCHERON
Through his daughter Mrs. Lucia C. Goodenough, 50 drawings of 4 buildings by Hunt and Hunt
- ROBERT D. CROMPTON
His article on "James Thackara"
- HARRY F. CUNNINGHAM, FAIA
Three volumes
- T. HOWARD ELLIS, AIA
Claxton Street Renewal Project
- I. T. FRARY
His "Early American Doorways" and "Early Homes of Ohio"
- E. JAMES GAMBARO, FAIA
Nine Brooklyn Chapter Bulletins
- GOVERNMENT OF GREECE, Information Department
"Greek Calendar Customs" by Megas
- WALTER GROPIUS, FAIA
Booklet on Presentation of Hanseatic Goethe Prize of 1956
- MR. AND MRS. AUGUST WATKINS HARRIS
His "Minor and Major Mansions in Early Austin" (2 volumes)
- HOOVER INST. ON WAR, REVOLUTION AND PEACE
"The Public Positions and Distinctions Conferred on Herbert Hoover"
- CLARENCE E. HOWARD
One volume
- JOHN J. KLABER, AIA
Seven books, six pamphlets, a collection of photographs
- ERNEST LANGFORD, FAIA
His "The First Fifty Years of Architectural Education"
- WALTER NEIL LETSON
"Magical City" by Bailey
- DAVID B. LINDSTRUM
His article on "Landmarks—or Tomorrow's Parking Lots"
- GEORGE I. LOVATT, JR., AIA
File of AIA *Journals*
- JOHN T. CARR LOWE
"That Was a Dream Worth Building" by Stellmann
- DONALD H. LUTES, AIA
Three pamphlets on planning with which his office was connected
- RICHARD W. MACASKEY, AIA
Samuel Sloan's copy of James Dallaway's "Discourses Upon Architecture in England"
- MYRON L. MATTHEWS, FASA
Dow Real Estate Calculator
- METROPOLITAN PLANNING COMMISSION, SHREVEPORT, LA.
"Shreveport Plan"
- JOHN FREDERIC MURPHY, FAIA
Twelve vols. of "The Architectural Sketch Book" (This gift from the estate of the donor)
- MISS EDITH O'CONNOR
"Sketch Book of the Architectural Assoc. of Boston"
- HAROLD OSBORN
Six albums of photographs collected by his grandfather, Robert Griffith Hatfield, Treasurer of the AIA 1860-1879
- EDWARD PARMITER
Dolmetsch "Anthologie de l'Ornement"
- RICHARD W. E. PERRIN, AIA
Article on "Octagon House of Linus Dewey"
- PHILADELPHIA CHAPTER, AIA
"The Beginnings of Philadelphia" by Grant Simon
- PIRELLI S.P.A.
"Nuova Sede Pirelli in Milano"
- PRATT INST., SCHOOL OF ARCHITECTURE
"An Investigation of the Small House"
- ULYSSES FLOYD RIBLE, AIA
Air Pollution Foundation of Southern California, Report No. 22
- ROYAL SWEDISH EMBASSY
"Industria International"
- HENRY H. SAYLOR, FAIA
"Spanish Missions" by Hallenbeck
- MISS AMELIA STEVENS
Through Ellis J. Potter, AIA. Drawing of chapel by Richard M. Upjohn
- G. P. STEVENS
His paper "How the Parthenos Was Made"
- FRANCIS P. SULLIVAN, AIA
Two vols. through Delos H. Smith, FAIA (This gift from the estate of the donor)
- THOMAS INDUSTRIES
Inspiration Lighting-Architectural Binder
- RALPH WALKER, FAIA
His "The Fly in the Amber" and "Perspectives"—Voorhees, Walker, Smith and Smith
- SAMUEL WILSON, FAIA
"A Century of Architecture in New Orleans"
- WORLD CONF. ON PRESTRESSED CONCRETE, INC.
Proceedings, July 1957
- BOOKPLATES HAVE BEEN RECEIVED FROM
Lucas E. Bannon, AIA; Burnham Library of Architecture; Harry F. Cunningham, FAIA; John Harbeson, FAIA; Walter Neil Letson; Matthews M. Simpson, AIA; Francis P. Smith, AIA; Edward Steese, AIA; Carl C. Tallman, AIA; Frank W. Woods, AIA.

BOOK REVIEWS

TOWN-BUILDING IN HISTORY. By Frederick R. Hiorns. 443 pp. 7¼" x 9¾". New York: 1958: Criterion Books, Inc. \$15.00

A great many books have been written about the history of city planning and city building during the past forty years. Many of these books are well documented and well illustrated and are to be found on the shelves of the libraries of architectural and city planning boards. What "Town-Building in History" contributes to this collection is an extraordinary sympathy with the details of historical European city planning. No other part of the world is considered with the exception of a brief and uninterested pass at the United States in Section V.

Mr. Hiorns has obviously spent much time himself visiting medieval Italian and French towns and the cities of the early Renaissance both in England and on the continent. The illustrations are profuse, the maps excellent and the text extremely complete. It is regrettable that frequently the photographs are some of our familiar old clichés and that Mr. Hiorns did not avail himself of some of the most recent material, e.g., the illustrations for the Roman Port of Ostia are way out of date, references being to an RIBA Journal of 1926. What has been found about Ostia in recent years has been well documented and mapped and the one map published from a nineteenth century restoration plan of 1861 is certainly not adequate. However, this type of criticism is perhaps too carping since there is a great deal of interesting and unusual material throughout the book. Anyone interested in a compendium of the "Bastide" towns in France, England and Flanders will find this perhaps the most fascinating part of the book. There is an extraordinary story in the fact that in medieval times the monarchs were able to build so many new towns, well planned and purposeful. On the other hand, Mr. Hiorns, although he refers to the "Bastides" while talk-

ing about present-day planning in Britain, fails to bring his book up to date on today's new towns and new town policy from 1947 on.

Section 5, "The Industrial Age and Its Results," is completely inadequate and a curious little hodge-podge. Section 6, "The Present Day in Britain," is equally amorphous and out of date. In fact, it is difficult to know why Lewis Mumford permitted himself to be quoted on the back flap of the dust jacket, "The author has considerable insight into the modern development of cities and their problems, a very full assimilation of recent material, and sound critical judgement." The fact is that the author's selection of material seems to have stopped 20 years ago and it is evident that he is out of his *métier* in the world of modern planning, despite his clear and proper sympathy with the inhabitants of the nineteenth century slum.

Under the circumstances, therefore, I can recommend the book highly for those who wish to become cultivated in the historic building of ancient and medieval cities and for those persons interested in the architectural exercises of the town planners of the Renaissance and the town planning exercises of the architects of the Renaissance.

Finally, it is to be remembered of course, that this is a very English book but it is a book written by a very cultivated, articulate and charming Englishman whose approach is both that of a well-trained and intelligent man and also one with a broad taste in our cultural heritage of European cities and a generous critical faculty. For these very important reasons, among others mentioned above, the book is commended to the attention of American architects and city planners.

CARL FEISS, AIA
ON ART AND ARTISTS. By Auguste Rodin. 252 pp. 9½" x 6". New York: 1957: Philosophical Library. \$6.00

Reissue of the book first published in 1912 and long out of print, of the talks collected by Paul Gsell and

translated from the French by Mrs. Romilly Fedden.

Rodin's observations on the old masters, on modeling, movement, beauty, and realism in sculpture are recorded in the form of dialogues. Descriptions of his working methods are especially valuable. The current rediscovery of Rodin's sculpture brings a renewed interest in this enormously creative artist, whose devotion to nature and incessant study of the human form, coupled with his masterly gift for modeling, produced the incredibly alive bronzes so highly prized today.

A new introduction by Alfred Werner includes a biographical sketch and numerous halftone illustrations serve to refresh one's memory not only of the long-familiar monumental pieces, but also of his powerful wash drawings which now rank high on the contemporary scene.

E. V. H. FERBER
National Gallery of Art

SOME ACCOUNT OF THE SINGULAR BEGINNINGS OF PHILADELPHIA. By Grant Miles Simon. 52 pp. 10" x 14". Philadelphia: 1957: The Philadelphia Chapter AIA. \$2.50 by mail.

This commemorative volume was issued by the two sponsoring organizations on the occasion of two centenaries—the opening to the public of Carpenters' Hall and the founding of The American Institute of Architects. There are 18 lithographs of historic Philadelphia buildings with accompanying descriptive text. The buildings are depicted as they would have appeared in the past, unimpaired by their present surroundings. The period shown ranges from about 1700 to about 1870. Among the well-known structures included are Independence Hall, Carpenters' Hall, Christ Church, The Philadelphia Exchange and "Gloria Dei." In addition to the large lithographs there are a series of smaller vignettes of other noteworthy buildings.

An attractive presentation of the landmarks of one of our most historic cities.

G.E.P.

THE EDITOR'S ASIDES

THE CONVENTION was a great success, and the Host Chapter outdid itself in furnishing entertainment, hospitality, transportation and other amenities to the visiting members and their wives, and to the officers and staff of the Institute. They showed us all the beauties of Cleveland and its lovely suburbs, as well as something of the industrial side of the city—its life-blood.

Now, having said that, I hope I won't sound ungracious when I sound off a bit on the *other* side of Cleveland—which our hosts naturally just whisked us by—in fact, I suspect that they whisk by it themselves. Furthermore, as a native Clevelander, I feel free to say what I like about my home town—even though it has been thirty-five years since I lived there.

The entire east side of Cleveland proper (I can't speak for the west side, I've never been there! The twain don't meet, you know) is one of the worst urban messes that it has ever been my displeasure to see. The southern part of it was that way thirty-five years ago, now the blight has engulfed the whole area. I am referring to that part of the city bounded by the lake on the north, Gordon and Wade Parks on the east, the downtown section on the west, and as to the south, I don't know. It probably stretches all the way to ultimate open country. This trip I saw it as far south as Woodland Avenue, which was far enough.

Friday afternoon, after the convention was officially over, I rented a Hertz car and stole off, to seek out some of the scenes and memories of my childhood, and to try to find and photograph what might be left of some of the buildings which I could remember that my father designed during the early 1900's. The handsome residential neighborhood of Euclid Avenue was already declining during the twenties, but the section north of it contained most of the best homes in the city. Those fine houses have been all now either (1) torn down to make room for parking lots or ill-placed and shoddy

business buildings, or (2) taken over by slovenly tenants, or (3) converted into rooming houses or tenements.

Now this in itself is nothing unusual—it is happening to cities all over the country. But the dreadful thing about Cleveland's east side is the hopeless, sooty dreariness of it all. Miles of streets lined with houses where people once lived with a certain degree of grace, now become an ugly, dirty squalor where nobody could live decently even if he knew how. The trees are still there—at least on the side streets—the open spaces and yards are still there, and most of the same houses are still there. What has been taken away? True, there must now be a higher density of population, and the new population is doubtless one which doesn't know how to live with grace. But they could be given a chance to if their homes had not been allowed to deteriorate and their neighborhoods to degenerate into their present dreary state. Think of the decrease in property values, to say nothing of the depression of the human spirits—thousands of them!

Cleveland is spending great sums reclaiming its east side lake front—although it is still not in a condition where it can be used and enjoyed by the ordinary people of the city, except in a few spots. The city was cleaned up and done the best job it could with its long-neglected Mall—that poor orphan that was conceived in Uncle Dan Burnham's "City Beautiful" day and then abandoned after birth and rendered meaningless by the insistence of the Van Sweringens that the Union Station be placed on the Public Square instead of at the head of the Mall. Cleveland has developed a wonderful ring of circumferential parks, and its plans for its cultural center around the Museum of Art and the universities are magnificent.

Now somebody, some civic group, some investors—perhaps the Cleveland Chapter—should turn their attention to that rotting core within the center of the city itself. It is crying for a huge redevelopment

plan, a scheme which will gradually recreate it into a gracious place to live again—not necessarily with the aim of luring back into the city the more well-to-do former residents who long ago fled to the Heights, although that might be a by-product, but primarily with the aim of making this vast area into a series of neighborhoods which are fit for the present inhabitants to live in.

Many architectural schools undertake planning projects no less ambitious than this. Suppose I toss this suggestion to the school at Western Reserve: A sociological study of existing conditions in the east side, followed by a study of traffic flow *through* it and *in* it (two separate things), leading toward an overall plan for complete redevelopment. It would serve to focus public attention on the blight that has hit the city.

I suppose by now I will have lost all my friends in Cleveland, and even my relatives there won't speak to me. But just let them *walk*, not ride, for ten or twenty blocks on, let's say, St. Clair Avenue, through the dreary rows of dirty and for the most part unnecessary old buildings, the noise, the confusion and the glare—and perhaps some of them will think I'm not such an ungrateful visitor after all!

EMIL LORCH, FAIA, former Dean at Michigan, sends me the following quotation from Ernest Hocking, Professor Emeritus of Philosophy at Harvard: "We must progress; and nowhere more than in architecture. We have already progressed from meaningless ornament to functionality. Now we must progress from Function alone to Function-with-Symbol. Function is for those inside the building; Symbol is for the greater multitude who only see it in passing but have to see it, and pick up its speech with the eye. If, like the UNB, it speaks 'tall-box' it might as well say nothing. Take up the flag of a vocal architecture, rich in symbol!"



FROM A STUDY of unit floor area construction costs in 37 eastern States, Mr. Kaplan has reported that buildings cost 75 percent more in 1956 than they did in 1947 while nationwide cost indexes based on the cost of materials, labor, wages, and overhead have increased only about 40 percent during the same period.

Eleven western States were not included in this analysis but it is doubtful that their trends would cause any significant variation in these figures.

The bar graph illustrated on page 54 shows the rise in cost of various building types:

Hospitals and institutional buildings led all other types of buildings with more than 100 percent increase in the cost per square-foot of floor area over the 10-year period while the increase in square foot costs of one family dwellings remained approximately parallel to the nationwide general cost rise. Of special interest is evidence that the much-maligned cost of educational buildings has risen less than that of all other building types excepting dwellings and religious buildings.

Obviously many factors combined to drive the unit costs of buildings upward during this period. In spite of the fact that the design approach has been more utilitarian in the last ten years, exploiting structure and materials to satisfy esthetic requirements instead of embellishment, the inclusion of new mechanical services has likely been fundamentally responsible for driving the costs upward.

Mr. Kaplan points to the increasing tendency to provide air conditioning in the initial construction, a more widespread acceptance of fluorescent lighting, better roof and wall insulation, more attention paid to optimum orientation for climate control, and more generous installation of automatic controls in heating, ventilation, electrical and plumbing systems in all building types.

Costs would probably have risen even more had it not been for economy measures which have been ef-

fectured during the last ten years. Standardization of construction materials through modular design has produced noteworthy savings in materials and installation costs. Acceptance of factory-built component parts has reduced on-site labor costs. The lowering of ceilings has reduced the unit cost per square foot of floor area. The general adoption of acoustic treatment of ceilings and walls, increased and versatile electrical services, and the updating of outmoded standards or codes for materials and installations probably have not added substantially to the increased costs although they have added to the intrinsic value of buildings.

This report notes an index rise from 89 to 174 in *commercial buildings* during this period and was stated to be influenced by the desire to promote favorable public relations, while increasing the flexibility of use. "Purely functional design has been modified with esthetic features to relieve the monotony of boxlike appearances. With a view to maximizing the versatility of commercial buildings, innovations such as the movable wall and the electrical raceway replaced the stationary partition and the traditional wall outlet. These cost-increasing developments were illustrative of a trend which was not offset by any apparent cost-saving steps peculiar to commercial structures.

"The outlays for *educational buildings* were raised from 94 in 1947 to 155 in 1956 by factors such as campus-type buildings, radiant-panel heating systems, larger gymnasiums, built-in inter-communications systems, more cafeterias and lunchrooms, provisions for future expansion, and a greater proportion of high schools which are normally more expensive than primary school buildings.

"*Hospital and institutional buildings* reflected more sharply than any other category the high price of scientific progress. This category registered a 102 percent increase during the 10-year period. With advances in methods of medical diagnosis and treatment and with the trend to more outpatient treatment and less con-

Trends in Building Costs*

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*Abstracted from his article in the May 1958 issue of CONSTRUCTION REVIEW of the Office of Construction Statistics—U.S. Departments of Commerce and Labor.

finement, hospital facilities have become more and more complex. Some of the major developments along these lines were the central oxygen supply piped into each room, the recovery room, built-in diagnostic and treatment equipment, decentralized feeding facilities, durable wall and floor finishes, more elevators, elimination of bed wards, elaborate plumbing layouts, lead shielding for X-ray devices, and chapels.

"Public buildings experienced a somewhat modest increase of 66 percent in value per square-foot of floor area. Aside from being influenced by the factors which affected almost all types of buildings, those built under public sponsorship reflected an atmosphere of relative austerity resulting from the chronically tight financial situation characterizing most governments. The replacement of monumental design with functional architecture and the elimination of gingerbread are credited with having shaded costs.

"The price trend for *religious buildings* indicates comparative frugality with respect to other types of buildings. The cost of churches has

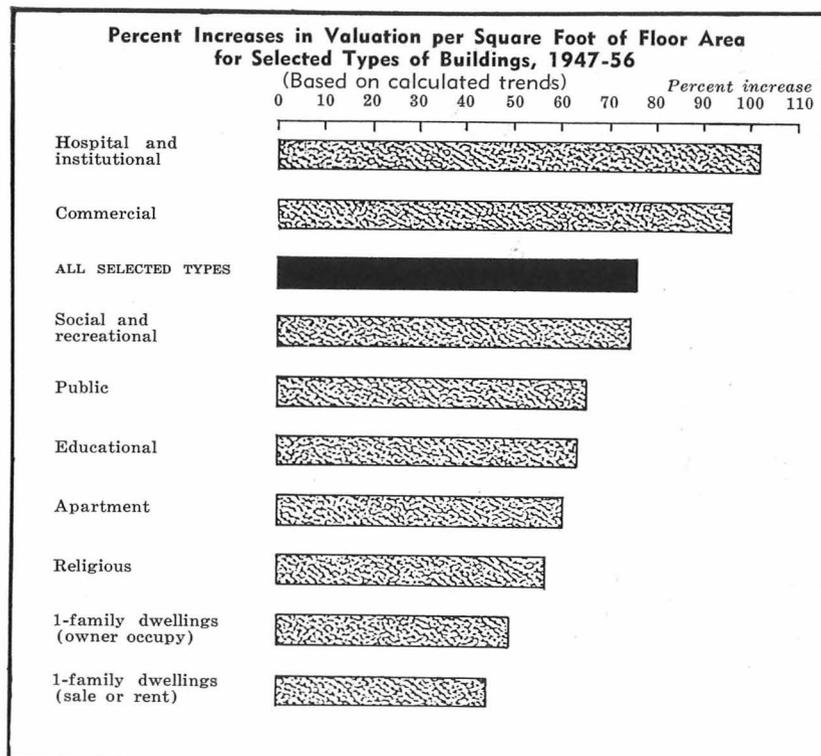
been effectively controlled with the acceptance of contemporary functional design and by the limiting of embellishments to a focal point, such as the altar, instead of the entire structure. The aspects of austerity resulted in a relatively modest trend in cost from 93 in 1947 to 147 in 1956.

"In the case of *social and recreational buildings* which showed a 75 percent increase, several innovations stand out as contributing causes of higher costs. During the period under study, these structures were built with more and more specialized facilities, such as bowling alleys, handball courts, showers, and lockers, which provided greater outlays. Furthermore, since this type of building was designed largely for spectator purposes, the clear and unobstructed view became a desired goal. The attainment of this objective was made possible by the clear-span type of construction which may have added somewhat to the financial burden.

"Of all building types, the *dwelling* unit came closest to having cost savings offset the expense of added

features. Terminal trend values ranged from 140 for 1-family dwelling (sale or rent) to 152 for apartment buildings. Lending itself to mass production, the new house was most susceptible to the typical cost-cutting techniques of American industry. Among the gains made by homebuilders were the application of business management principles to the extent of improving production engineering, the shortening of erection time, the decline in the percent of profit, the manufacture of component parts, the application of mechanization, the precutting and prefinishing of materials, the development of systems of roof framing such as trusses which permit nonload-bearing interior partitions, and modular dimensioning. These economies came close to paying for such features as built-in appliances and airconditioning, improved plumbing and wiring, better quality windows and doors, double-glass window panes, additional closets, fireplaces, more masonry, and expanded cabinetry of more expensive materials.

"The relationship between regional and building type dispersions indicates that the forces operating to raise the value per square foot of floor area were more closely associated with categories of building construction than with purely regional characteristics. The increases in value per square foot during the 1947-56 period represented, in many cases, growing initial construction expenditures which will ultimately result in greater durability and substantially reduce operating and maintenance expenses. The increasing popularity of aluminum is a commonplace example of this consideration. Furthermore, the rising outlays frequently made possible the more efficient and productive use of buildings. The installation of air-conditioning, with its beneficial effect on worker efficiency, illustrates the wisdom of this kind of investment. The upward trends can, therefore, in significant part, be viewed as reflections of the tendencies to *improve the quality* of construction, provide space having *greater utility*, *minimize deterioration*, and *reduce use-obsolescence*."



Source: U. S. Department of Commerce, Office of Construction Statistics.

ARCHITECTURE HAS BEEN aptly characterized as both an art and a science. The natural presumption, perhaps, is to infer from these terms that the portion of the creative building process which involves esthetics should be termed art, while the body of technical information which represents building technology lies in the field of science. However, from both the vantage points of the architect and engineer, this arbitrary judgment might justly be considered, as a Supreme Court Justice once said of another subject, a "pernicious over-simplification."

The fact is that there is a good deal of art in the complex process of arriving at the selection and use of building materials so as to combine sound economy with those other two criteria for good building, good engineering and esthetics. Our building technology expands rapidly. It has never been a simple study, and even the most experienced architects and engineers have had over the span of many years to rely, occasionally, on "guesstimates" rather than exact and authoritative information. The reason for this has not been a lack of interest in economy, but rather the lack of authoritative data on building costs and, inevitably, the counter-claims of producers of materials and equipment. Admittedly, it is difficult and often frustrating to arrive at the truth. Yet truth is what the professional man, architect and engineer, seeks in contemporary building.

It is the purpose of this report to serve the building professions in their search for truth in establishing sound principles of economy in the selection and use of building materials for exterior walls. The methods of economic analysis used herein are sound and well-documented. It is hoped that the reader will find in them information which will be of help to him in meeting the challenges of planning man's physical environment in today's complex society.

Building for business needs presents special problems to the designer. The profitability of rentable space is a paramount consideration of the client. The economic consideration is of the utmost interest to the mortgage banker, understandably, because he is investing heavily in a market in which the return is slow and the risk is high.⁽¹⁾ As

(1) "Stabilizing Construction" by Colean and Newcomb, McGraw-Hill Book Co., 1952, page 35.

The Ultimate Cost of Building Walls

CLAYFORD T. GRIMM, P. E. AND JAMES G. GROSS

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The Journal presents this article as the viewpoint of its authors and their Association. Our chief interest is in the methodology of their approach and analysis, which is admirable.

In an early issue we expect to present a similar analysis prepared by representatives of the Metal Curtain Wall Division of the National Association of Architectural Metal Manufacturers, setting forth on a comparable basis the costs of curtain wall construction.

Theodore Crane, Professor Emeritus at Yale states in "Architectural Construction," "The problem is to select a type of wall construction which fulfills the desired functions at the least ultimate cost."

In general, the nature of building materials is such that cheapness and true economy are mutually exclusive. Real economy is obtained by seeking the lowest ultimate cost, including initial purchase price, plus operation and maintenance costs attributable to the wall. First cost and annual costs of building walls are sometimes inverse functions of each other. It is for this reason that a study of building economics is necessary. The lowest ultimate cost of a building is, of course, determined by selecting components having the lowest combination of initial costs, maintenance and operating costs. Thorough analysis is the only method by which economical selection may be made with any degree of accuracy.

As an aid to the design profession the application of economic analysis will be demonstrated herein by a

consideration of building walls in which the following cost factors are involved:

- Value of money
- Depreciation
- Price increases
- Income taxes
- Initial construction cost
- Cost of supporting the walls
- Space occupied by the walls
- Speed of erection
- Air conditioning costs
- Heating costs
- Maintenance expenditures
- Illumination costs
- Salvage value
- Insurance rates
- Real estate taxes

Each of these items affects the cost of ownership, some much more so than others, and it is important, therefore, to know which of these exert the greater influence. Time and talent may be spent trying to reduce the cost of supporting the wall by reducing its weight when the same amount of effort would be more productive, if more attention were given to air conditioning costs. Having in

mind the relative order of magnitude of these cost factors will be of considerable assistance to the architect faced with the problem of creating a beautiful, safe and wise investment for his client.

The Department of Engineering and Technology of the Structural Clay Products Institute undertook a study to determine analytically the effect of each of these cost factors. The report titled "THE ULTIMATE COST OF BUILDING WALLS" has been published and is available from the Structural Clay Products Institute, 1520 18th Street, N. W., Washington 6, D. C. This article summarizes the findings of that report.

As a demonstration of the method employed, three typical exterior wall types will be scrutinized and credits or charges made for each cost consideration. It should be emphasized that these figures are based on estimates. Many assumptions are built into the calculations. If the assumptions used in this paper do not agree with the reader's experience, he is invited to apply that experience to the problem at hand.

Present Value

EACH COST ITEM and its frequency must be determined and expressed in comprehensible terms. Confusion is avoided when initial and operating costs are expressed in the same terms. This may be accomplished in one of two ways.

Initial cost may be amortized over a period of time and the annual amortization payment added to the annual costs of maintenance and operation. Because these annual payments are unequal, perhaps off somewhere in the distant future and are a series of payments rather than a lump sum, they are vague and not so comprehensible as a demand for an immediate cash outlay.

Conversely, all future costs may be converted to a "present value" and this sum added to the initial erection cost. In estimating the value of income-producing property to a prospective owner, it is best to express all future expenditures in terms of their present value. The owner then has an equivalent initial cost, which includes in one figure the first cost of construction and the present value of all future costs. A task group of the Federal Construction Council, an association of United States government construction agencies, has used and suggested the

TABLE I
Description of Building

1. Type	Office
2. NBFU Classification	A
3. Length	200 ft.
4. Width	100 ft.
5. Height	120 ft.
6. Number of Floors, plus basement	10
7. Story Height, S	12 ft.
8. Gross Floor Area, plus basement	200,000 sq. ft.
9. Gross Cubic Content, plus basement	2,400,000 cu. ft.
10. Gross Exterior Wall Area, above grade, A_g	72,000 sq. ft.
11. Frame	Reinforced Concrete
12. Bay Length	20 ft.

TABLE II
Wall Design Assumptions

Wall Type	Wall Design Assumptions		
	A	B	C
	Masonry Cavity Wall	Metal Panel Wall	Double Plate Glass Wall
1. Basic Material	Wall	Wall	Wall
2. Window Area, Percent	0	0	100
3. Wall Thickness, in., Y	10	6	3 ⁽⁴⁾
4. Wall Height, Floor to Floor, ft., S	12	12	12
5. Wall Weight, lbs. per sq. ft., P	65	16	7
6. Fire Resistance, hrs.	4	1	—
7. U Value, BTU's/hr./sq./ft./°F	.12	.12	.55
8. Color	medium	medium	clear
9. Interior Artificial Illumination, hrs. per year, L	2000	2000	1000

(4) Includes venetian blinds.

present value method of analyzing wall costs.⁽²⁾

The present worth of a future expenditure is the sum which may be secured today in exchange for the promise to make the specified future payment or series of payments. When the value of money (e.g., the interest rate) and the payment timing are known, the present value of future expenditures may be computed easily from interest tables.⁽³⁾

Everyone who has purchased government bonds has used the present worth concept. The present value of a \$100.00 Series E Bond is \$75.00, that is when the interest rate is 3%, the present worth of receiving \$100.00 nine years and nine months from now is \$75.00. From the government's point of view, the present

value of making a \$100.00 expenditure 9.73 years hence is \$75.00 when money is valued at 3%.

Design and Cost Assumptions

THE PROBLEM STUDIED HERE is the method of selecting the most economical exterior wall. The building described in Table I is used as an illustration. The three wall types defined in Table II are studied. The present worth calculations used are based on the cost and financial assumptions shown in Tables III, IV and V. While the data presented in these tables are typical, they are used only to illustrate the calculation method. When possible, current local costs should be obtained for a particular project.

Since the usual purpose in an economic analysis of building walls is to compare two or more wall types, it is not essential to the conclusion that the basic cost data be absolutely accurate. So long as the percentage error is approximately the same for the data on each wall type, it will not seriously impair the accuracy of the relative ultimate cost of the walls.

(2) Building Research Institute Technical Reprint No. 5, April 1956.

(3) The present value method of economic analysis is fully explained in the published literature, notable among which is "Principles of Engineering Economy," by Eugene L. Grant, published by the Ronald Press Company in New York. The Financial Publishing Company, 82 Brookline Avenue, Boston 15, Massachusetts, publishes detailed present worth tables in a book entitled "Financial Compound Interest and Annuity Tables."

TABLE III
Cost Assumptions

<i>Wall Type</i>	<i>A</i>	<i>B</i>	<i>C</i>
1. Initial Cost			
a) of wall per sq. ft., C_w	\$2.30	\$6.00	\$6.40 ⁽⁵⁾
b) of building per cu. ft., C_c	1.50	1.61	1.62 ⁽⁵⁾
c) of building per sq. ft., C_f	18.00	19.35	19.50 ⁽⁵⁾
d) of building, C_b	$3.6 \times 10^{(6)}$	$3.87 \times 10^{(6)}$	$3.90 \times 10^{(6)}$
2. Salvage Value, per sq. ft. of wall, C_s	.16	.80	.57
3. Maintenance Cost per sq. ft. of wall and frequency, C_m			
a) cleaning exterior	.07 every 35 years	.02 every 8 years	.02 every 3 months
b) cleaning interior	—	—	.02 every 3 months
c) cleaning blinds	—	—	.02 every 3 months
d) pointing	.50 every 35 years	—	—
e) caulking	—	.06 every 8 years	.06 every 16 years
f) painting interior	.03 every 4 years	.03 every 4 years	—
4. Fire Insurance Rate per \$100.00 value, I_r			
a) building	.06	.08	.08
b) contents	.18	.20	.20

(5) Includes venetian blinds.

TABLE IV
Related Design & Cost Assumptions

1. Concrete Costs:	
a) superstructure	\$80.00 per cu. yd.
b) foundations	\$35.00 per cu. yd.
2. Air Conditioning:	
a) initial plant cost, M_g	\$.10 per BTU of hourly capacity
b) power cost, E	\$.02 per KWH
c) power input per ton, G	2 KW
d) wall orientation	average of N, E, S, & W
e) design temperature at 4 p.m. on 40°N. Lat.	
exterior, t_d	95°F
interior, t_i	74°F
diurnal range, t_r	20°F
f) summer degree-days, per year, K	500
3. Heating:	
a) initial plant cost, M_h	\$.02 per BTU of hourly capacity
b) fuel cost, C_h	\$.10 per therm (100,000 BTU)
c) design temperature	
exterior, t_o	0°F
interior, t_i	70°F
d) heating degree days per year, D_d	5000
4. Illumination:	
a) power cost, E	\$.02 per kallowatt-hour
b) lamp replacement cost	\$.04 per watt
c) design level	45 foot-candles
d) illumination, foot-candles per watt per sq. ft. of floor area, W	15 foot-candles
e) normal lamp life, L_1	8000 hrs.

TABLE V
Financial Assumptions

1. Value of Money, i	6% per annum
2. Anticipated Useful Life of Building, L_b	50 years
3. Depreciation Rate on Building, D_b	2% per year
4. Anticipated Useful Life of Mechanical Equipment	20 years
5. Depreciation Rate on Mechanical Equip., D_g & D_h	5% per year
6. Anticipated Average Annual Rate of Price Changes, f	
a) income taxes	none
b) real estate taxes	+ .02
c) mechanical equipment	+ .0377
d) combined heating plant maintenance and fuel	+ .033
e) combined air conditioning plant maintenance and electricity	+ .02
f) maintenance on walls	+ .0377
g) electricity	+ .01
h) insurance	+ .01
7. Total Equivalent Income Tax Rate, T	57% of profit
8. Real Estate Taxes	
a) ratio of assessed value to market value	.75
b) tax rate	4%

Calculation of Ultimate Costs

In order to facilitate the necessary calculations, fifteen nomograms have been prepared. Each step in the operation is described in Table VI.

Space is provided in the table for entering the variables in the left-hand column and recording the answers in the right-hand column.

TABLE VI
Calculation of Ultimate Wall Cost

Project No.	Cost Analysis
Project Location:	By Whom:
Wall Type Studied: Masonry Cavity Wall	Owner:
Percent Window Openings: 0	Tax Payer: Yes No
Date:	
1. Initial Wall Cost per Sq. Ft., C_w	\$2.30
2. Cost of Supporting Wall, C_h ;	
a. Wall Wt., lbs/Sq.ft., P ;	65 lbs.
b. No. of stories in building, F ;	10
(Enter Fig. 1 with "wt." proceed horizontally to "story" curve, drop down to read cost, C_h)	\$.26
3. Floor Space Occupancy Charge, C_{fw} :	
a. Wall thickness, in., Y ;	10 in.
b. Initial cost of building \$/Sq.ft. of floor area, C_f ;	\$18.00
c. Fl. to Fl. height, ft., S ;	12 ft.
(Enter Fig. 2 with "thickness," proceed vertically to "bldg. cost" curve, proceed horizontally to "fl. height" curve, drop down to read cost, C_{fw})	
Note: If the entire building site is not occupied, enter zero here)	\$1.25
4. Total Initial Wall Cost, C_t ;	
(Enter sum of items 1, 2 and 3 here)	\$3.81
5. Total Initial Wall Cost Less Depreciation Tax Credit, C_d ;	
(Enter Fig. 3 with amount shown in item 4 above, proceed horizontally to curve, and drop down to read C_d . Note: If owner is tax exempt, enter zero here)	\$3.12

6. Salvage Credit, V_{ps} :
- a. Present salvage value, C_s : \$.16
 (Enter Fig. 4 with present salvage value, proceed horizontally to curve, drop down to read V_{ps}) \$.01
7. Speed of Erection Credit, V_{po} :
- a. Cost of Bldg. in millions of dollars, C_b ; \$3.6
 b. Construction time saved by use of this wall type in weeks 0
 c. Gross exterior wall area in thousands of sq. ft., A_g ; 72M sq.ft.
 (Enter Fig. 5 with "bldg. cost," proceed vertically to "time saved" curve, proceed horizontally to "wall area" curve, drop down to read V_{po} . Note: If the owner is tax-exempt, enter zero here) 0
8. Total Credits:
- a. Item 6 \$.01
 b. Item 7 \$.00
 c. Sum \$.01
9. Total Initial Cost Less Credit:

No.	Item	Tax Payer	Non Tax Payer
a.	Item 4, C_t	×	
b.	Item 5, C_d	\$3.12	×
c.	Less Item 8	.01	
d.	Difference	3.11	

..... \$3.11

10. Heat Gain Charge, V_{pg} :
- a. Summer degree days, K ; 500
 b. Electric power costs/KWH, E ; \$.02
 c. Design exterior temp. °F, t_d ; 95°F
 d. Diurnal (6) temp. range, °F, t_r ; 20°F
 e. 1/2 item 10d, °F; 10°F
 f. Item 10c less item 10e less 70°F; 15°F
 (Enter Fig. 6 with "degree days," proceed vertically to "power cost" curve, proceed horizontally to "temperature" curve, item 10f above, drop down to read annual operating cost)
 g. Annual operating cost (from Fig. 6), 1000 X_g \$4.00
 h. Initial Cost of air conditioning plant per ton of refrigeration, M_g ; \$1,200.00
 i. Heat gain through wall, BTU's/hr/sq.ft. from ASHAE Guide, H_g ; 1.23 BTU's
 (For taxable operation enter Fig. 7 with "annual operating cost" from Fig. 6, item 10g above, proceed vertically to "plant cost" curve, proceed horizontally to "heat gain" curve, and drop down to read V_{pg} for taxable operation. If owner is tax-exempt use Fig. 8) \$.17
11. Heat Loss Charge, V_{ph} :
- a. Winter degree-days, D_d ; 5000
 b. Plant operating costs per therm (100,000 BTU), C_h ; \$.15
 c. Interior design temp; °F, t_i ; 70°F
 d. Exterior design temp; °F, t_o ; 0°F
 e. Temp. diff; ($t_i - t_o$); 70°F
 (Enter Fig. 9 with "degree days," proceed vertically to "cost" curve, proceed horizontally to "temp. difference" curve, drop down to read annual operating costs, X_h)

(6) Diurnal temperature range is the average difference between the daily maximum and minimum temperature for the hottest summer week.

- f. Annual operating costs (from Fig. 9), 1000 X_h ; \$2.57
- g. Initial cost of heating plant per therm of capacity, M_h ; \$2,000
- h. U value of wall, BTU/hr/sq. ft./°F;12
- i. Heat loss per sq. ft. of wall area per hr., $U(t_i - t_o)$, BTU's; 8.4 BTU's

(For taxable operations enter Fig. 10 with "annual operating cost" from Fig. 9; item 11f above, proceed vertically to "plant cost" curve, proceed horizontally to "heat loss" curve, drop down to read V_{ph} for taxable operation. If owner is tax exempt, use Fig. 11) \$.39

12. Maintenance Charge, V_{pm} :

No.	Item	Present Cost Per Sq. Ft.	Frequency Years	V'_{pm}
a.	Cleaning	\$.50	35	.065
b.	Caulking			
c.	Pointing	\$.07	35	.009
d.	Painting	\$.03	4	\$.074
e.	Total, V_{pm}			\$.148

..... \$.15

(Enter Fig. 12 with present cost of maintenance operation, proceed horizontally to "frequency" curve, drop down to read V'_{pm})

13. Insurance Charge, V_{pi} :

- a. Fire Insurance rate on building (or contents) with wall type under consideration, I_r ; \$.06
- b. Costs of building (or contents) with wall type under consideration in millions of dollars, C_b ; \$3.6
- c. Gross exterior wall area, sq. ft., A_g ; 72,000
- d. (Enter Fig. 13 with "rate," item 13a above, proceed vertically to building cost curve, proceed horizontally to wall area curve, drop down to read V'_{pi} . Note: If building owner pays insurance premium on the building contents, use Fig. 13 also) \$.28
- e. Fire insurance rate on building with wall type producing lowest insurance rate, I'_r ; \$.06
- f. Cost of building with wall type producing lowest possible insurance rate, C_b ; 3.6
- g. Enter figure 13 and proceed as before. Enter V'_{pi} here; \$.28
- h. Item 13d less item 13g equals V_{pi} ; 0

14. Real Estate Tax Charge, V_{prt} :

- a. Real estate tax rate, R_t ; 4%
 - b. Total initial cost of wall per sq. ft., Item 4 above, C_t ; 3.81
 - c. Ratio of assessed value to market value, V_t ;75
- (Enter Fig. 14 with "rate," proceed vertically to "cost" curve, proceed horizontally to "ratio" curve, drop down to read V_{prt} . Note: If the owner is tax-exempt, enter zero here) \$.78

15. Total Charges:		
a. Item 10 above17	
b. Item 11 above39	
c. Item 12 above15	
d. Item 13 above	0	
e. Item 14 above78	
f. Total		\$1.49
16. Total Ultimate Cost:		
a. Item 9 above	3.11	
b. Item 15 above	1.49	
c. Total ultimate cost per sq. ft. of wall area, V_{pu}		\$4.60

Cost Comparison

WHEN ONE CONSIDERS the number of variables upon which these calculations depend, it would be coincidence if the total present value of all costs and credits incurred by wall A were exactly \$4.60 per square foot as indicated in Table VII which summarizes all of the costs previously computed for the three wall types. The best that can be obtained by such an analysis is an intelligent estimate of the relative ultimate cost of the wall types considered. While the total costs may not be absolute values, the relative costs of the walls provide a very accurate basis for comparison. The purpose of an economic analysis is to permit the designer to base his judgment

on something better than "hunch," as was explained in the introduction.

In this analysis each wall type was assumed to occupy the entire facade. For all practical purposes when wall C is combined in any proportion with walls A or B, the average cost of the assembly may be computed by interpolation between the two wall costs on a straight line basis. Although this is not a precise calculation, it offers a very reasonable solution. For example, if the glass area is 30%, a composite wall of masonry and glass would cost \$8.71 per gross square foot. That is, $.7 \times 4.60 + .3 \times 18.29$ or \$8.71. Similarly, a metal and glass wall with 60% window area would have an average cost of \$14.12 per square foot.

TABLE VII
Present Value of Ultimate Costs
 (Per Sq. Ft. of Wall Area)
 FOR TAXABLE OPERATIONS

Cost Item	Masonry Cavity Wall	Metal Panel Wall	Double Plate Glass Wall
1. Initial Wall Cost, C_w	\$2.30	\$6.00	\$6.40 ⁽⁷⁾
2. Support of the Wall Charge, C_h	.26	.06	.03
3. Charge for Floor Space Occupancy, C_{fw} ⁽⁸⁾	1.25	.81	.41
4. Total Initial Wall Cost, C_t	3.81	6.87	6.84
5. Less Depreciation Credit, V_{pd}	.69	1.23	1.23
6. Less Salvage Credit, V_{ps}	.01	.05	.04
7. Less Illumination Credit, V_{pi}	none	none	1.59
8. Less Early Occupancy Credit, V_{po}	none	.14	.14
9. Total Initial Cost Less Recovered Costs	3.11	5.45	3.84
10. Heat Gain Charge, V_{pg}	.17	.34	8.00
11. Heat Loss Charge, V_{ph}	.39	.39	2.32
12. Maintenance Charge, V_{pm}	.15	.17	2.62
13. Insurance Charge, V_{pf} ⁽⁹⁾	none	.12	.12
14. Real Estate Tax Charge, V_{prf}	.78	1.39	1.39
15. Present Value of Ultimate Cost	4.60	7.86	18.29
16. Relative Ultimate Cost	100%	171%	398%

(7) Includes venetian blinds.

(8) Entire site occupied.

(9) For building only, not including contents.

Table VIII may be used to facilitate the calculation of composite wall

costs for walls with any per cent window opening.

TABLE VIII
Comparison of Ultimate Costs of Composite Walls

1. Ultimate Cost of Composite Basic Wall:

a. Ultimate cost of basic wall, psf, masonry:	\$ 4.60
b. Ultimate cost of window, psf	\$18.29
c. Per cent of window openings, psf	30%
d. Ultimate cost of composite basic wall, psf	\$ 8.71

(In Figure 15 plot item 1(a) above on right scale and item 1(b) above on left scale. Connect these two points by straight line. From the point of intersection of this line and the vertical line representing 1(c) above proceed horizontally to read the ultimate cost of the composite wall. Record answer in line 1(d) above. If two composite walls are to be compared repeat this process and record the data below)
2. Ultimate Cost of Composite Alternate Wall:

a. Ultimate cost of alternate wall, psf, metal panel	\$ 7.86
b. Ultimate cost of window, psf	\$18.29
c. Per cent window openings	60%
d. Ultimate cost of composite alternate wall, psf	\$14.12
3. Difference in Ultimate Cost of Composite Walls, psf (Difference of items 1d and 2d)

	\$ 5.41
--	---------

TABLE IX
Present Value of Ultimate Costs
(Per Sq. Ft. of Wall Area)
FOR TAX EXEMPT OPERATIONS

<i>Cost Item</i>	<i>Masonry Cavity Wall</i>	<i>Metal Panel Wall</i>	<i>Double Plate Glass Wall</i>
1. Initial Wall Cost	\$2.30	\$6.00	\$6.40 ⁽¹⁰⁾
2. Support of the Wall Charge	.26	.06	.03
3. Charge for Floor Space Occupancy ⁽¹¹⁾	1.25	.81	.41
4. Total Initial Wall Cost	3.81	6.87	6.84
5. Less Depreciation Credit	none	none	none
6. Less Salvage Credit	.02	.13	.09
7. Less Illumination Credit	none	none	3.70
8. Less Early Occupancy Credit	—	—	—
9. Total Initial Cost Less Recovered Costs	3.79	6.74	3.05
10. Heat Gain Charge	.32	.67	15.60
11. Heat Loss Charge	.82	.82	4.89
12. Maintenance Charge	.33	.39	6.09
13. Insurance Charge ⁽¹²⁾	none	.30	.30
14. Present Value of Total Cost	\$5.26	\$8.92	\$29.93
15. Relative Ultimate Cost	100%	170%	569%

⁽¹⁰⁾ Includes venetian blinds.
⁽¹¹⁾ Entire site occupied.
⁽¹²⁾ For building only, not including contents.

The cost given in Table VII may be applied to an office building having 72,000 square feet of gross wall area, 40% of which is glass. Is it really worth \$140,000.00 to use a metal rather than a masonry wall? Is a glass wall worth \$690,000.00 more than a masonry wall with 30% windows?

All of the preceding calculations have assumed that the owner pays income taxes at a 57% rate. However, about one-half of the non-residential, non-farm, building dollar volume in 1957 was spent by owners who do not pay taxes, e.g., schools, churches, public buildings, defense construction, associations, etc. The cost of building walls to these owners is considerably higher, because the government does not help pay the bills. Table IX shows the costs and credits for each item, when the owner does not pay taxes. Note that an all glass wall is 146% (2.46 times) more expensive than a masonry wall with 30% windows.

The authors do not propose, at this juncture, to enter into a discussion of the relative public relations or publicity values of various types of building materials, although it seems to be a temptation afflicting all of us today to "read" public relations benefits into whatever type of construction we happen to favor. It is our view that advice of this type

should come, not from designers and cost experts, but from competent public relations counsel. We succumb to the temptation only enough to venture the thought that it is not the material, but its use, which will provide an effect leading to good public relations; and that the most expensive material will not necessarily create that effect.

As stated initially, three elements are necessary for the proper performance of building walls: esthetics, engineering and economics. Walls should be economical, but they should also contribute to the beauty and safety of man's environment. No attempt has been made here to consider the very important aspects of architectural and engineering design which are not directly related to economics. The economics of safety factors in structural design has not been considered, since under the law of building codes little latitude is left to the designer in this regard. Sound resistance, suitable strength, impermeability, vapor resistance, acoustics, color, texture and form are all important factors. To place too much emphasis on any one facet of the problem is to invite failure. A balanced approach will ultimately provide the best solution. To sacrifice esthetics for economics is poor architectural practice, but the converse is also true.

Reference Material — Figures 1-15

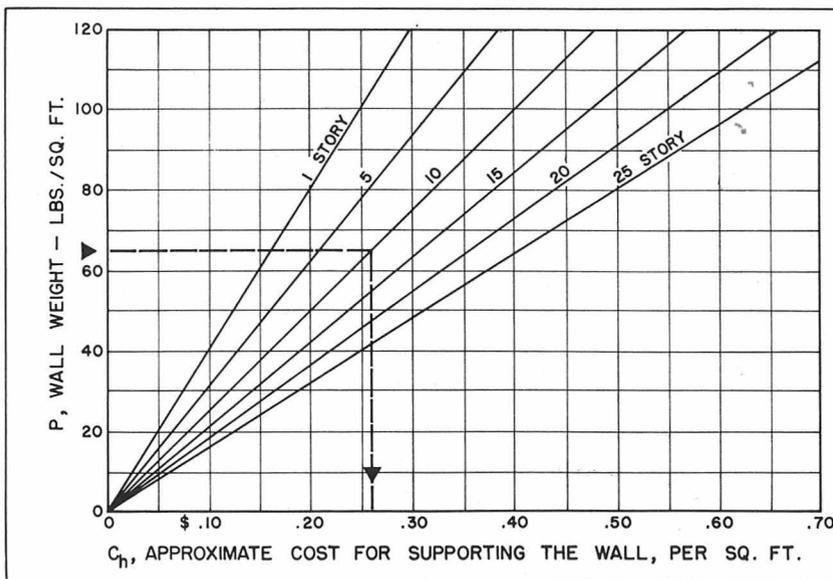


FIGURE 1

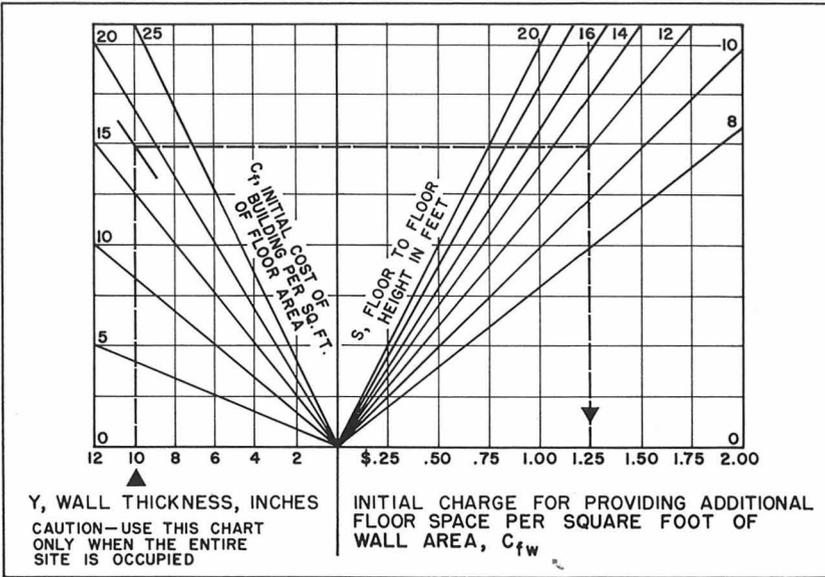


FIGURE 2

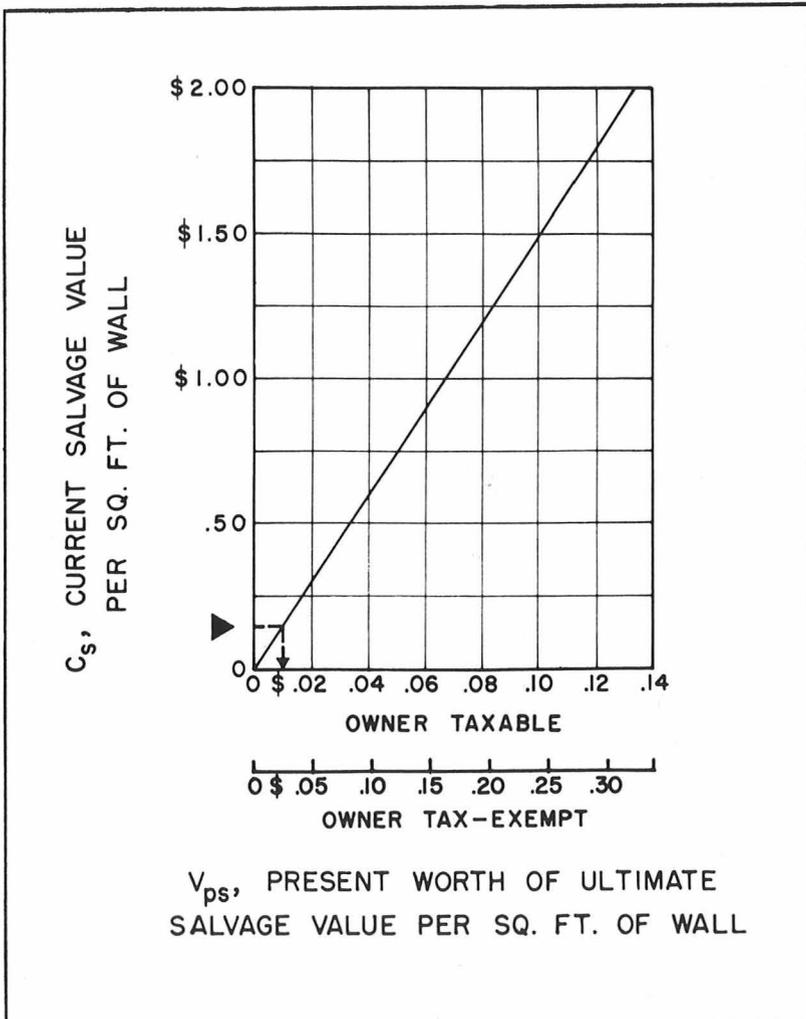


FIGURE 4

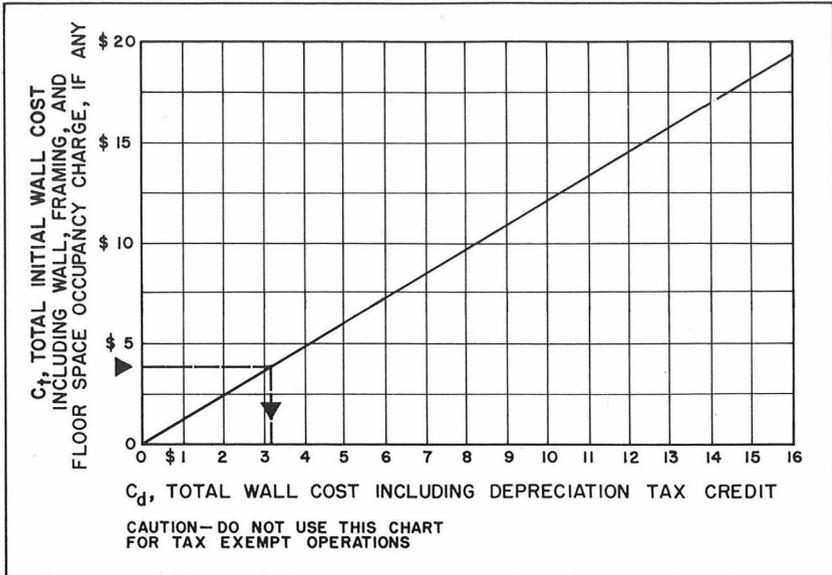


FIGURE 3

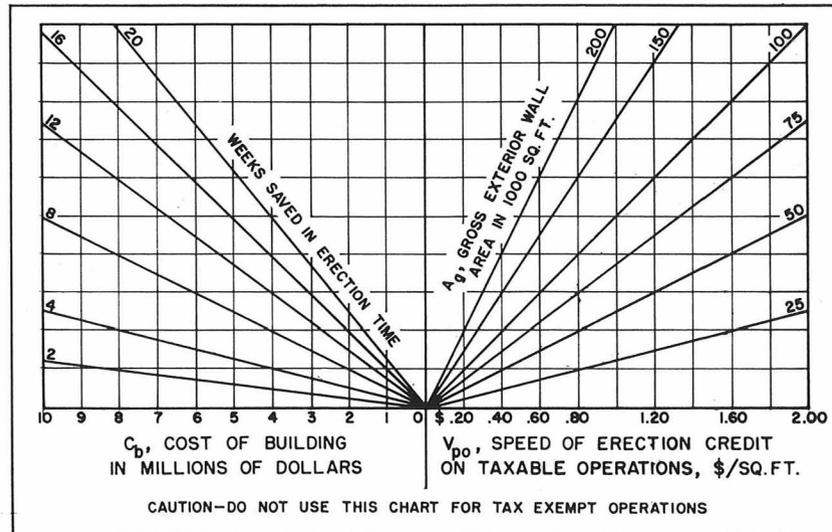


FIGURE 5

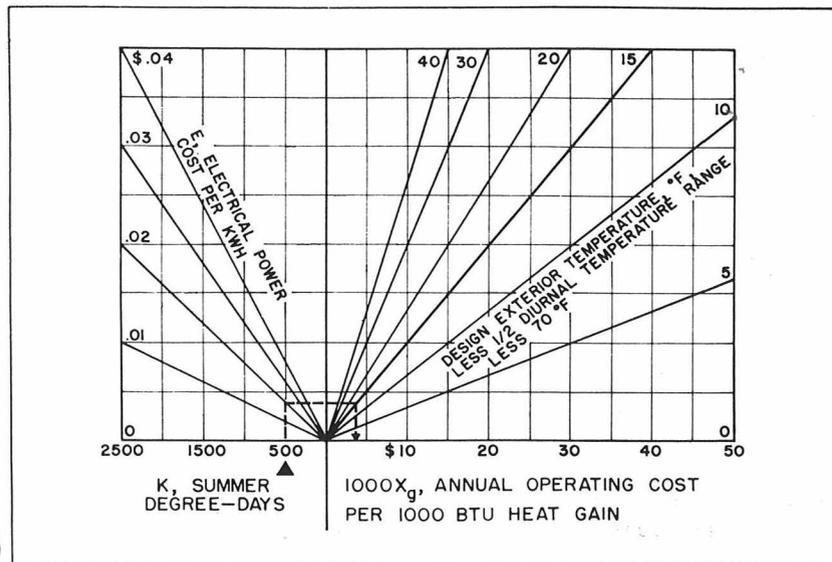


FIGURE 6

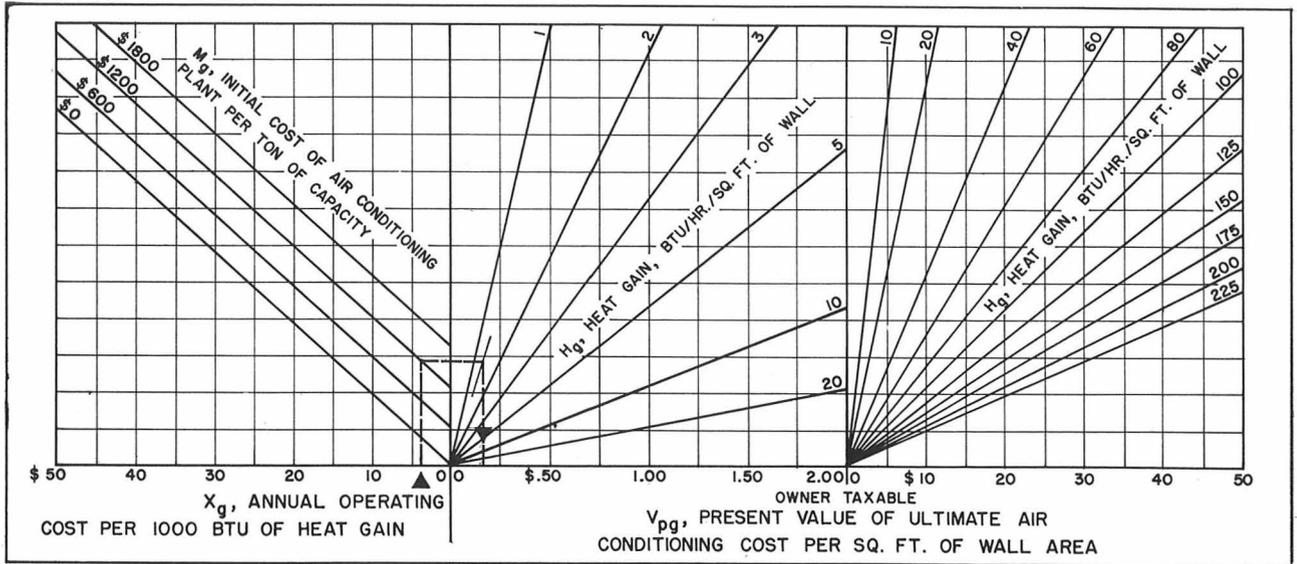


FIGURE 7

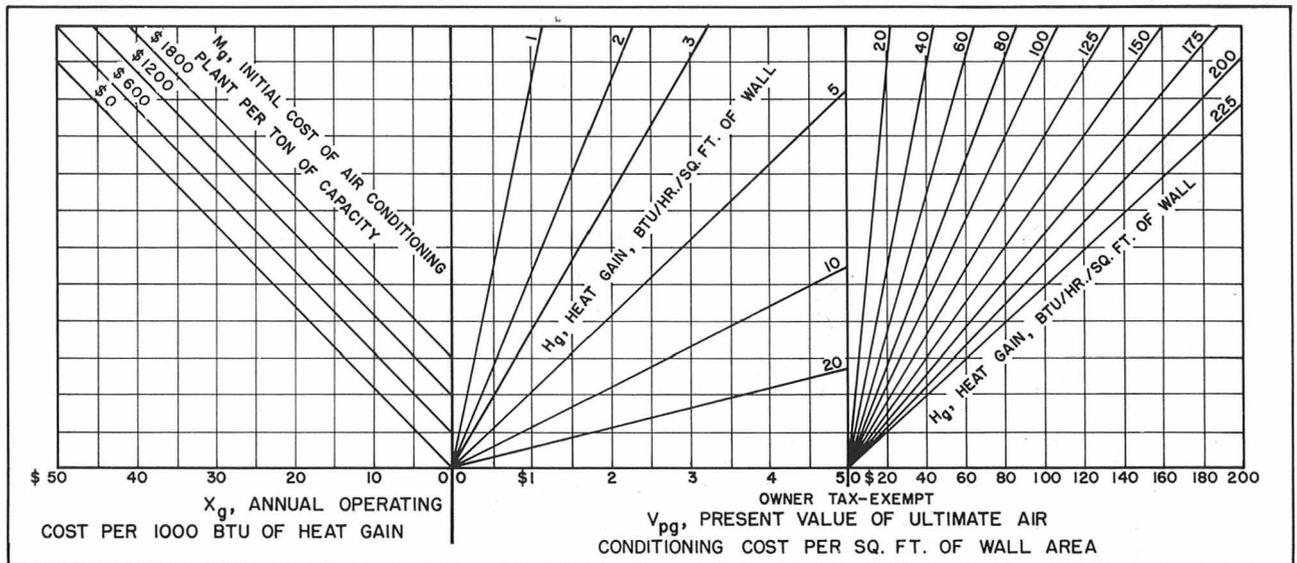


FIGURE 8

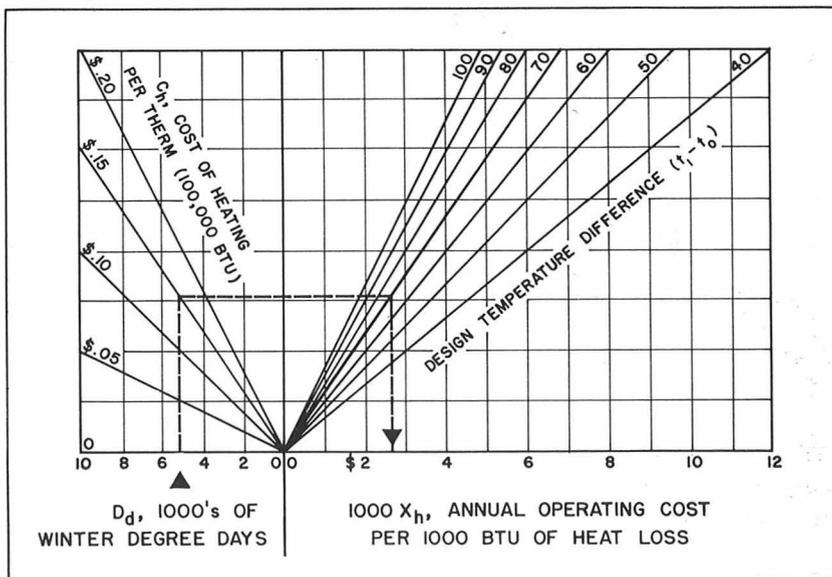


FIGURE 9

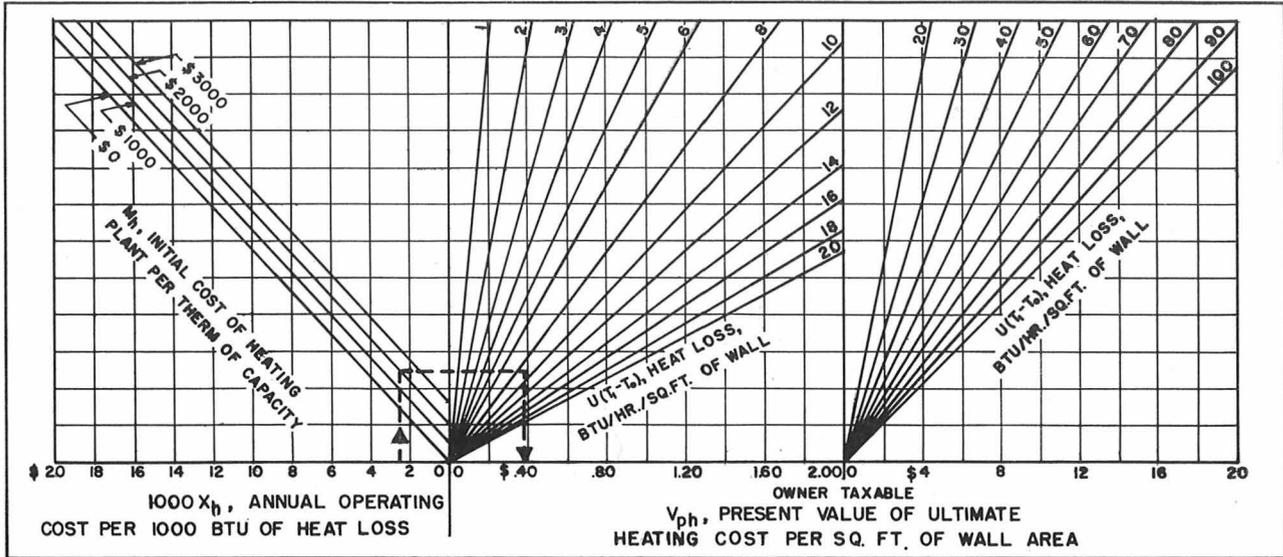


FIGURE 10

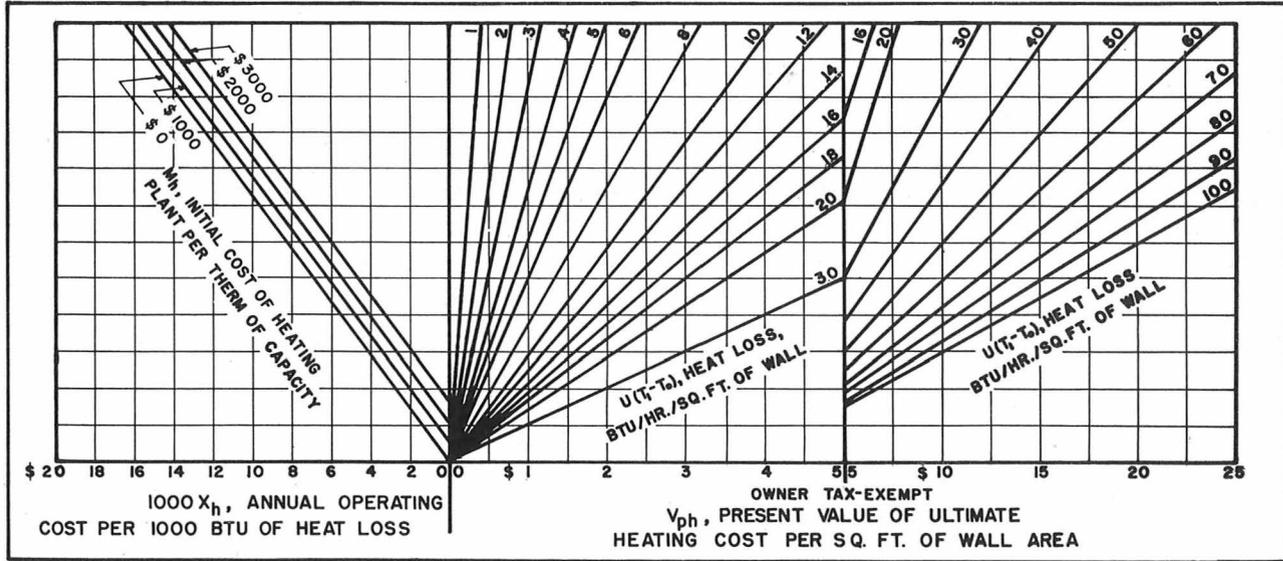


FIGURE 11

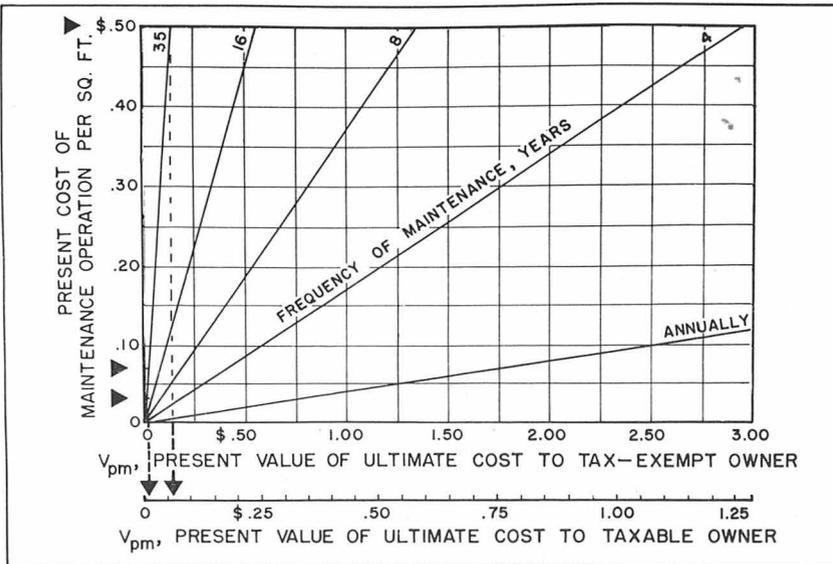


FIGURE 12

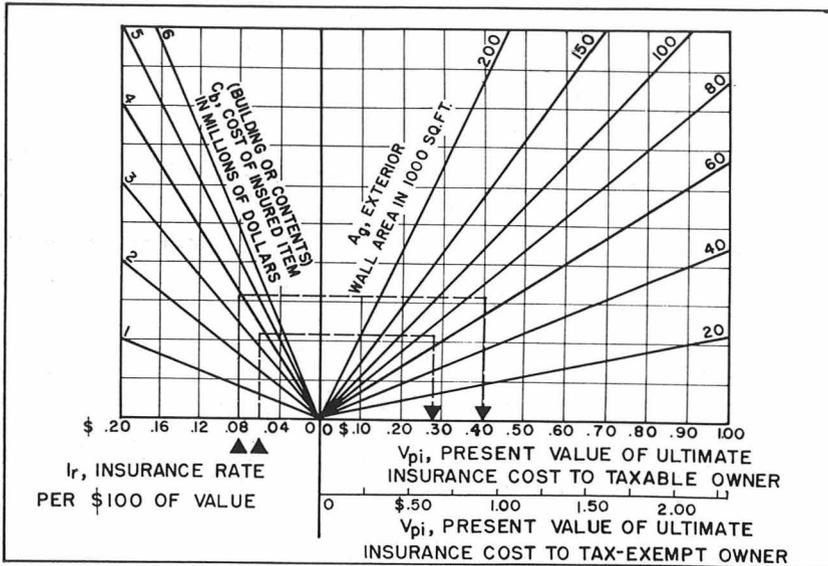


FIGURE 13

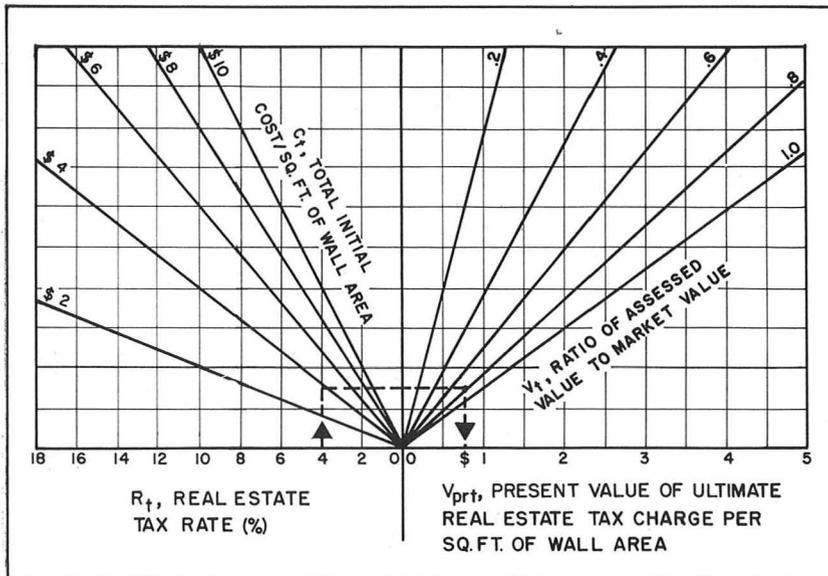


FIGURE 14

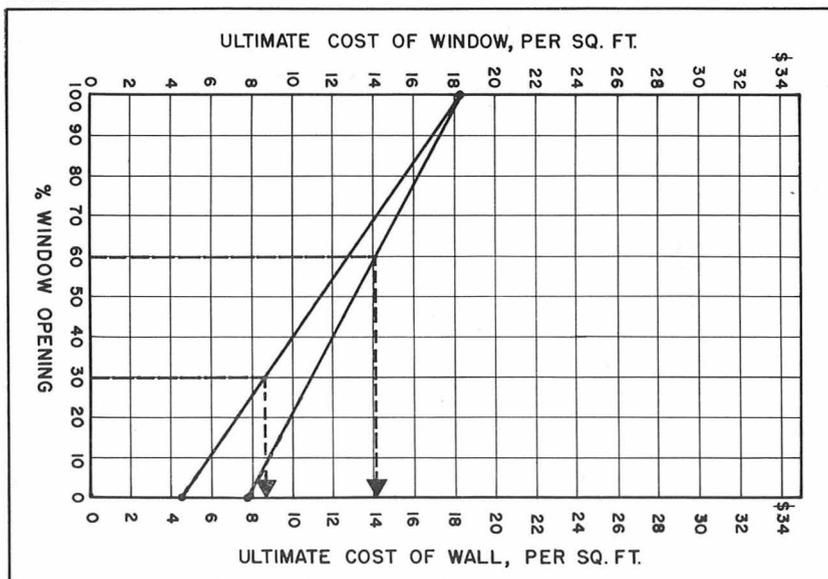


FIGURE 15

aluminum

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September: Seminar on Regional Planning—Development of Cities and Industries, Tokyo, Japan.

September 17-19: Producers' Council, Inc., 37th Annual Meeting and Chapter President Conference, DuPont Plaza Hotel, Miami, Fla.

September 21: Mexican Architecture Seminar Tour. For illustrated folder write to T. H. Hewitt, 2413 Driscoll St., Houston 19, Texas.

September 25-27: Seventh Annual Conference, Western Mountain District, Continental-Denver Hotel, Denver, Colo.

October 2-4: North Central Regional Conference, St. Paul, Minn.

October 5-8: Gulf States Re-

gional Conference, Buena Vista Hotel, Biloxi, Miss.

October 9: Third Architects Tour of Japan. Additional information from the Far East Travel Service, 365 E. First Street, Los Angeles 12, Calif.

October 9-11: Annual Forum, Pennsylvania Society of Architects, Galen Hall, Wernersville, Pa.

October 9-12: Northwest Regional Conference, Harrison Hot Springs, British Columbia, Canada.

October 15: New York District Regional Conference, Rochester, N. Y.

October 15: New York State Assoc. of Architects, annual meeting, Powers Hotel, Rochester, N.Y.

October 15-19: California Council, AIA, annual convention, Monterey, Calif. California-Nevada-Hawaii Regional Conference will be held as a part of this convention and will meet on October 17.

October 20-24: National Safety Congress and Exposition, Chicago, Illinois.

October 22-24: Architects Society of Ohio, 25th Annual Convention, Sheraton-Gibson Hotel, Cincinnati.

October 29-31: Texas Society of Architects, Annual Convention, Hilton Hotel, San Antonio, Texas.

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

Necrology

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ADDEN, WILLARD P.
Wayland, Mass.

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So. Pasadena, Calif.

BOAK, HENRY
Mamaroneck, N. Y.

BOOTH, EDWIN W.
Salisbury, Md.

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CASALE, JAMES E.
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GEE, FRED FONG
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HALBERT, WILLIAM C.
New Rochelle, N. Y.

HANSEN, ANKER F.
Memphis, Tenn.

HUNTER, NORMAN
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LAWRENCE, WILLIAM H.
Jamaica Plain, Mass.

LEEDS, EDMUND I.
Newton, Mass.

LEVY, EMILIO
New Orleans, La.

MCDONALD, JOHN
Omaha, Nebr.

MESSING, ARTHUR H. H.
Grosse Pointe Farms, Mich.

MORRISON, ROBERT B.
Playa del Rey, Calif.

PLATT-JOHNSON, GUY
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McDonough, New York

Supplement to Engineering Bulletin No. SE-205 dated 10 April 1956

National Homes Corporation
Lafayette, Indiana

TECHNICAL BIBLIOGRAPHY

Following are available from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Asphalt Insulating Siding—Commercial Standard CS216-58.

Office of Technical Services, U. S. Dept. of Commerce. 5 3/4" x 9", 9 pp, 10¢

Covers minimum requirements and lists for asphalt insulating siding to be used in building construction, including definitions, labeling, installation, and a means of declaring compliance with the Standard.

Wood—Colors and Kinds, Agricultural Handbook No. 101.

Forest Service; U. S. Dept. of Agriculture. Oct. 1956. 7 3/4" x 10 1/4", 36 pp, 50¢

Describing and illustrating 18 native hardwoods and 14 native softwoods, with Glossary.

Technical Data on Stainless Steel Curtain Walls of Recent Buildings. Study No. 1, Curtain Wall Research Project, June 1957.

School of Architecture; Princeton University; Princeton, N. J.

This study, sponsored by the Committee of Stainless Steel Producers, American Iron & Steel Institute, includes a chart showing in detail "Technical Data on the Use of Stainless Steel in 41 recent buildings, with photographs and details of curtain wall construction in 6 important structures.

Incinerator Standards

Incinerator Institute of America, 420 Lexington Ave., New York 17, N. Y. 1958. 8 1/2" x 11", 8 pp, 25¢

Presenting a set of Standards for incinerators of various capacities, developed after consideration of the recommendations resulting from a study of problems of the industry by

the Research Division of New York University, College of Engineering.

American Standard Brass Fittings for Flared Copper Tubes. ASA B16.26-1958.

The American Society of Mechanical Engineers; 29 W. 39th St., New York 18, N. Y. 8 1/2" x 11", 7 pp, \$1.00

The fittings covered by this Standard are designed for a maximum cold water service pressure of 175 lbs. per square inch gage.

Metal Grating Handbook

Metal Grating Institute, Suite 759, One Gateway Center, Pittsburgh 22, Pa. 1957. 8 1/2" x 11", 28p, \$1.00

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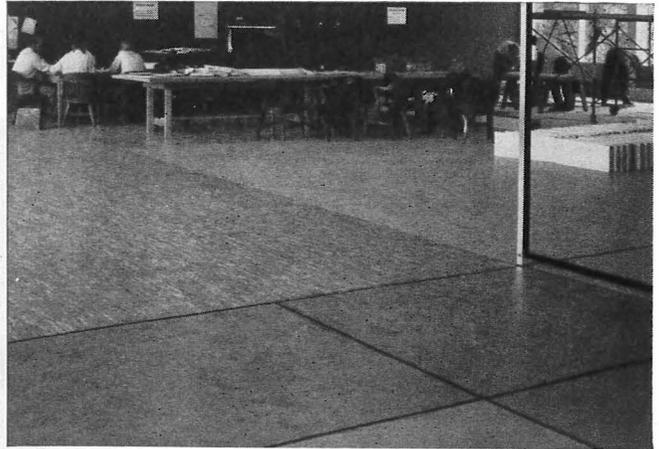
In the mock-up the architect can test various types of materials under strictly controlled conditions, which may exactly simulate those of the finished building. He can also investigate the interactions of different combinations of structural and design elements. With resilient floors, the architect might, for example, analyze physical properties such as indentation resistance under specific loads. And he might compare the effects of different lighting systems on one particular floor styling.

Pretesting design concepts

The architect can also test his ideas about design and plans "on the job." And it's a good opportunity to explore new approaches. Using a full-scale mock-up offers obvious advantages over planning on paper or in small models and eliminates wasteful trial-and-error procedure in actual construction. With resilient floors, this phase of testing could be a matter of comparing different colors and styles; of working out custom designs in tile or sheet goods; of experimenting with underlayments.

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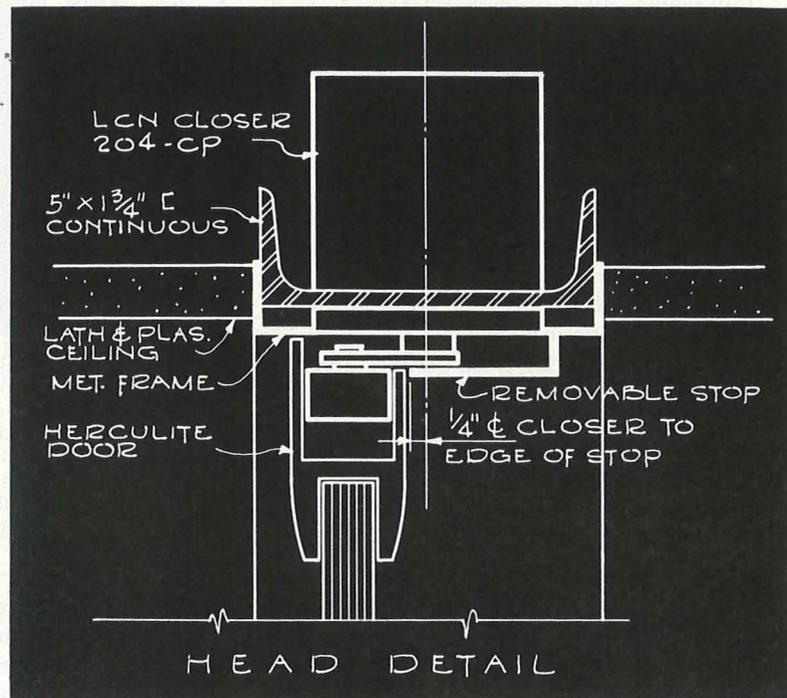
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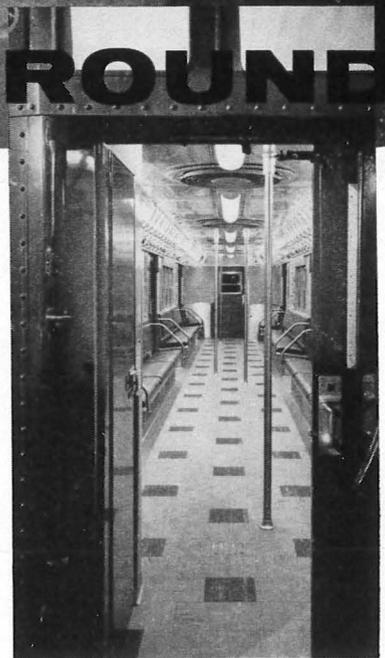
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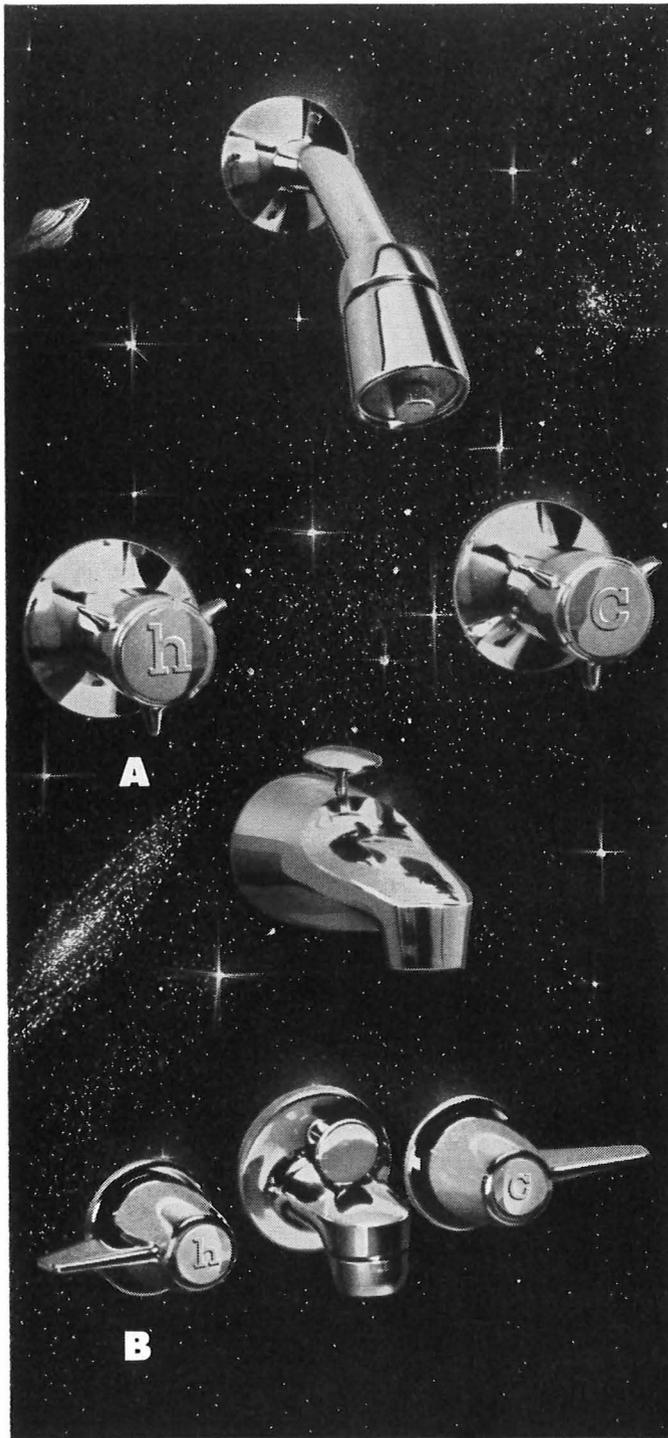


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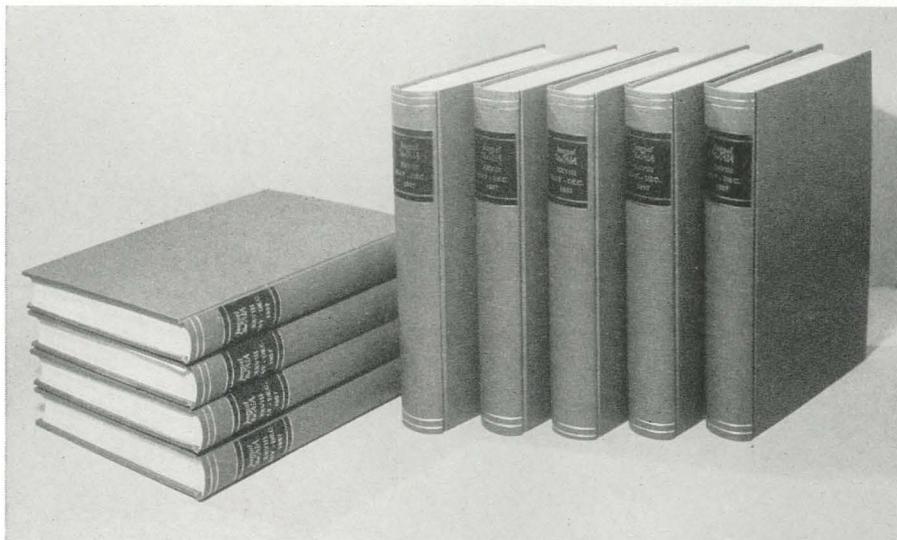
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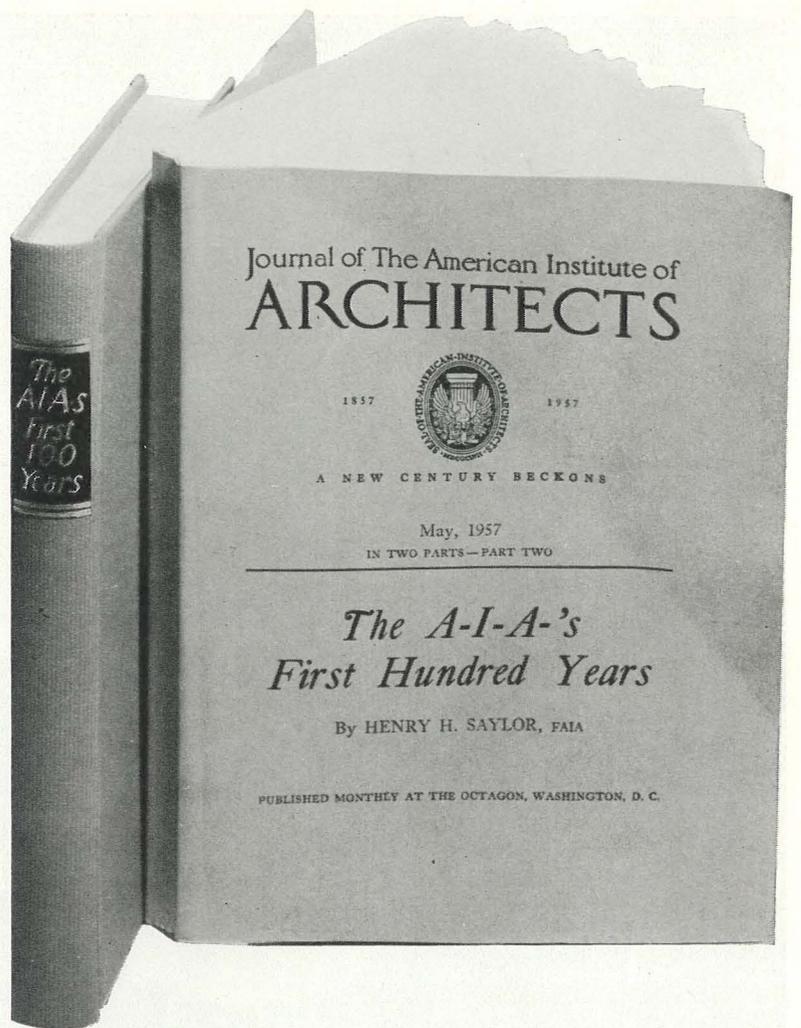
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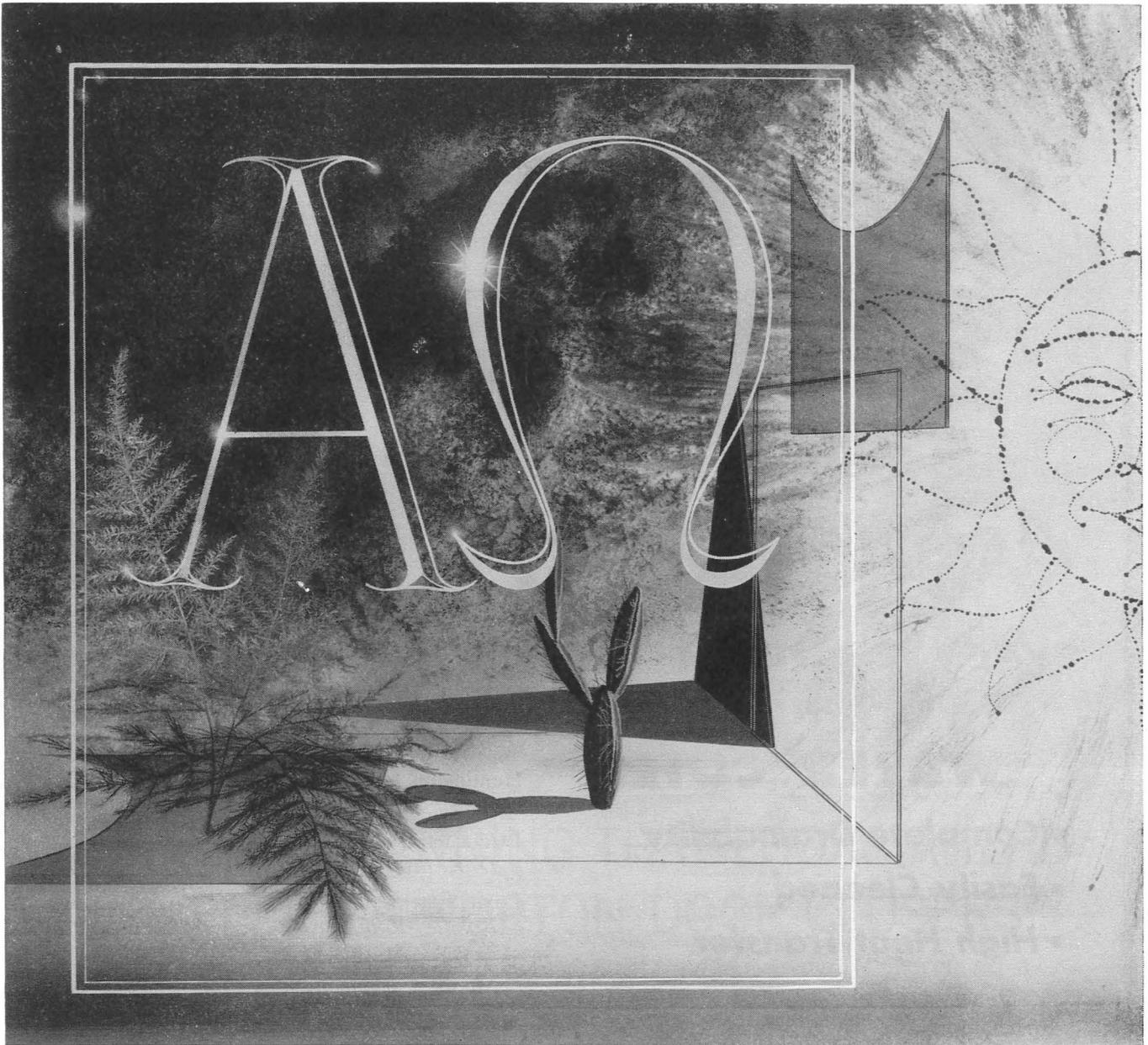
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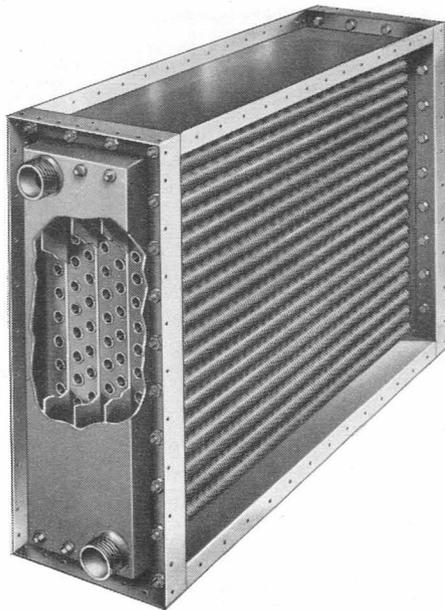
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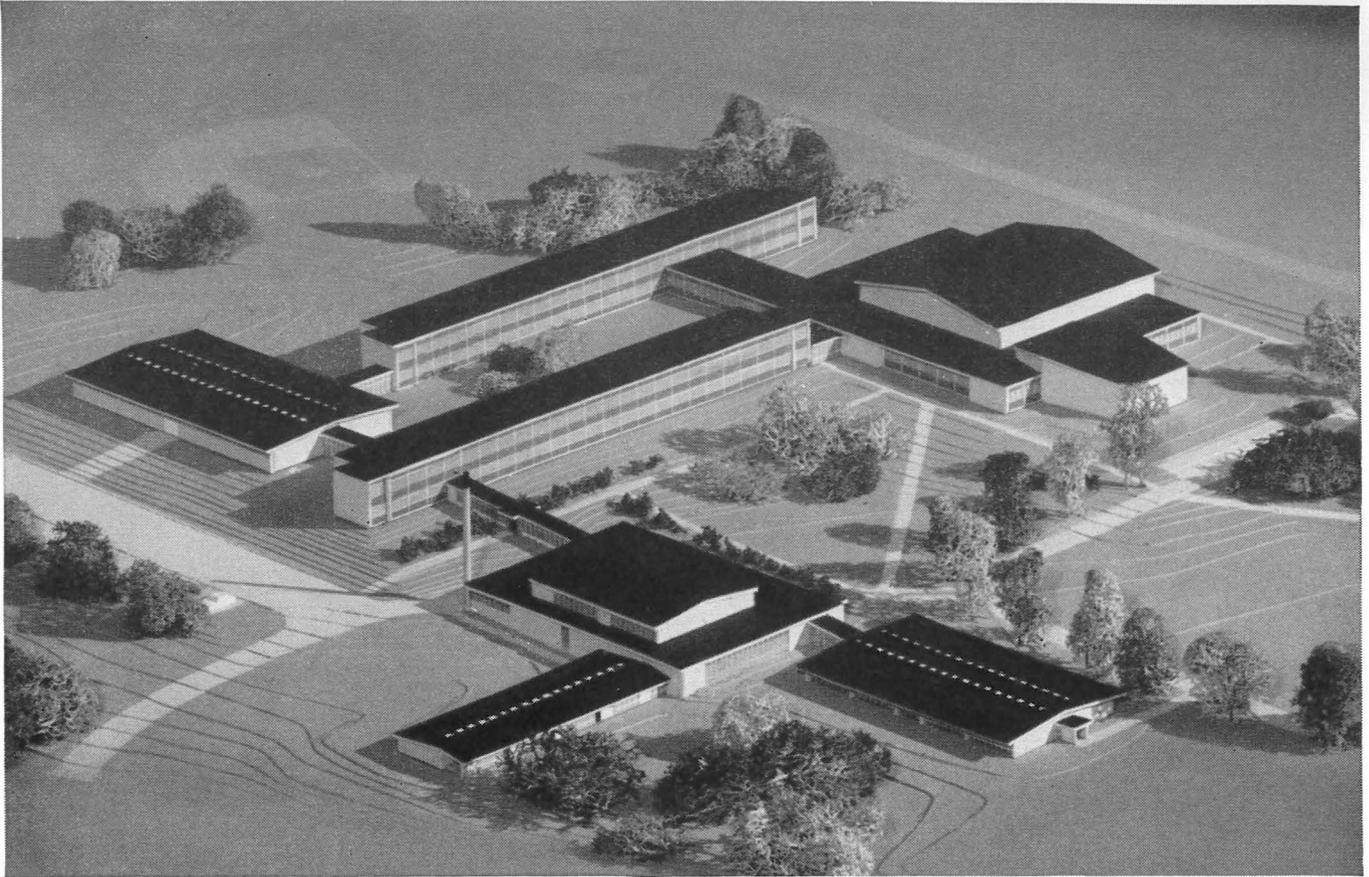
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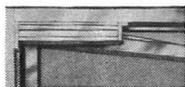
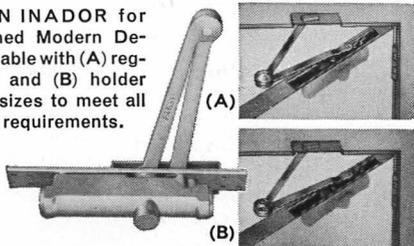
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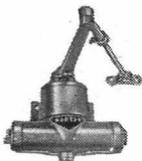
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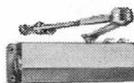
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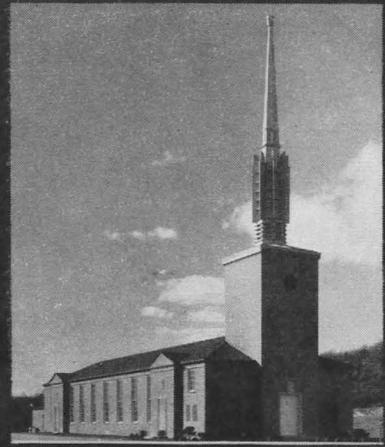
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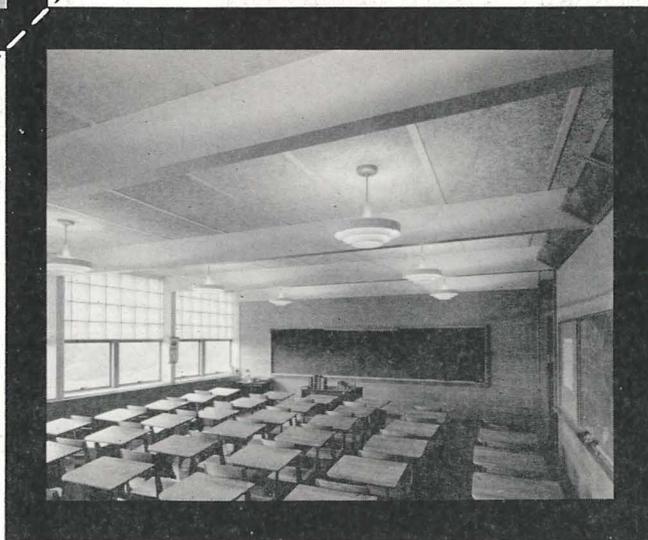
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