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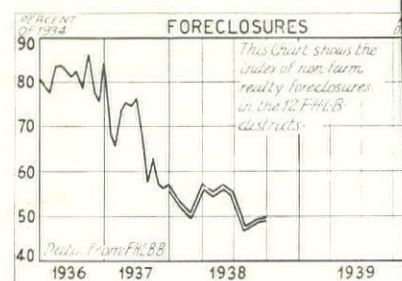
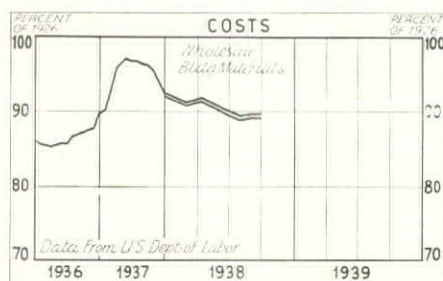
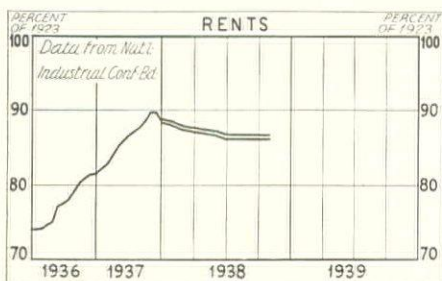
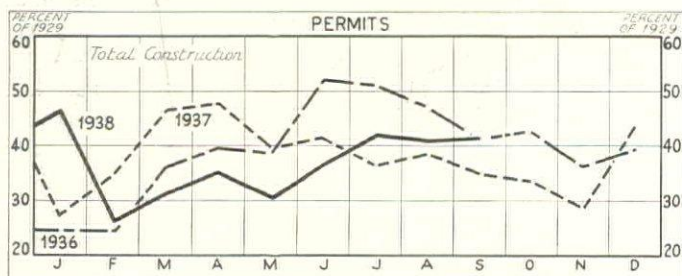
VOLUME 69—NUMBER SIX

# THE MONTH IN BUILDING

## PERMITS

(Source: U. S. Dept. of Labor)

	Monthly data			First nine months	
	Sept. 1938 (millions)	Comparison with Aug. '38	Sept. '37	1938 (millions)	Comparison with 1937
Residential . . . . .	\$ 86.3	- 1.0%	+61.4%	\$ 644.6	+11.7%
Non-residential . . .	47.6	+ 7.2	+ 8.3	392.2	- 3.1
Additions, repairs .	25.6	- 5.3	-17.4	239.5	-17.0
TOTAL . . . . .	159.5	+ 0.6	+24.2	1,276.3	+ 0.5



## CONTRACTS

(Source: Moody's Investors S)

	Monthly data			First ten months	
	Oct. 1938 (millions)	Comparison with Sept. '38	Oct. '37	1938 (millions)	Comparison with 1937
Residential . . . . .	\$112.7	+13.2%	+72.0%	\$ 799.0	-
Non-residential . . .	131.0	+42.5	+74.7	816.6	-
Heavy engineering .	114.0	+ 4.3	+85.2	890.2	-
TOTAL . . . . .	357.7	+18.9	+77.0	2,505.8	-



**VOLUME.** In an effort to present a more comprehensive picture of Building's ever-changing status, THE FORUM this month revises its analysis of construction statistics; includes, as well as comparatively monthly figures, cumulative totals of the year's permits and contracts and contrasts them with the corresponding figures of the preceding year (see above).

Most salient fact borne out by this month's statistics is that the dollar volume of permits for the first nine months of the current year has broken through the 1937 level by a small but significant one-half of 1 per cent—the first time since an unseasonal January volume of New York City permits swelled the national total beyond reason. Bolstering the total volume has been activity in the residential classification, which for the first nine months of 1938 stood 11.7 per cent above the corresponding figure of last year.

As of October, the cumulative volume of total contracts, whose fluctuations lag behind permits by as much as three months, was only 0.2 per cent shy of the 1937 level.

**IN-BETWEEN HOUSING.** After a talk with his housing lieutenants, President Roosevelt month ago called in the press, announced that he had found a loophole in Government's housing program and

that he planned to fill it. He noted that the U. S. Housing Authority was financing projects to rent at \$5 per room per month and downward, that the Federal Housing Administration was fostering projects to rent at \$10 and upward, that no one was supplying housing in between these rental brackets. Further presidential comments indicated that legislation might be proposed at the next Congress which would lure investment to construction of the lacking in-between housing. The bait: a guaranteed income of from 3 to 3½ per cent. The prey: individual investors who have \$1,000 to \$10,000 of cash on hand but who are afraid of Wall Street's securities.

Although the President emphasized that no such plan had as yet been devised, speculation was that it would approach the Lambert Plan in mechanics, but be stripped of some of its tax exemption features (see page 486). Meanwhile, the Lambert Plan, operating at Princeton, N. J., was housing low incomers at \$6.25 (plus heat) per room, was netting its sponsor a tidy 4 per cent return on his investment.

Prospect of further Government entry into the housing field prompted the Metropolitan League of Savings and Loan Associations in tri-annual conference at New York City last month to send to

President Roosevelt a telegraphic reminder that the Nation's savings and associations had for years been fulfilling at least half of his desire—a 3 per cent return on housing investments for small fry savers.

**ENTENTE.** "Widespread interest in mortgage lending is indicated by the recent entry into the field in New York City of several stock exchange brokerage houses, investment houses and over-the-counter dealers who have created special departments for the negotiation and sales of mortgages insured by the Federal Housing Administrator. The demand for these mortgages . . . is such that . . . upon purchasing the mortgages the investor must pay a premium of at least two points according to the last current quotation."—President Bernard Hogan of the Greater New York Savings Bank.

"Two-thirds of the market to which the building industry catered during the 1920's has now disappeared. In its place has come . . . a greater number of families who want houses . . . but can afford them only if they are low cost." I. Wilson Compton, Secretary-manager of the National Lumber Manufacturers Association.

"There is not and probably will not be any mass housing when applied to sep-

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Number 6

DECEMBER 1938

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# THE MONTH IN BUILDING

rate family houses (as produced in England). . . . To think so is simply construction manure."—President William H. Evans of Southern California's Building Contractors Association.

Such comments as these added some interest to the Construction Industry Conference of the U. S. Chamber of Commerce held at the Nation's capital in late October. What was more interesting was a Conference side-show where, for the first time, leaders of Building's Capital and Labor sat down together to talk about labor relations and their effect on construction activity.

No attempt was made to solve the labor problem in a day, but several noteworthy advances were made. Labor assumed a more approachable mood; the desirability of eliminating jurisdictional disputes was frankly discussed and generally agreed upon by both ends of the table; a plan was sought (but not found) for keeping Labor's wages and manufacturers' prices from going up. Since the view was taken that current wages and prices are not unreasonable, emphasis was placed upon their stability rather than their reduction. The fact that many wage contracts will expire at year-end lends significance to this phase of the discussion.

No wild promises and predictions came from the meeting. Its biggest achievement was establishment of Capital and Labor's "entente cordiale" or, perhaps, the unanimous adoption of a resolution requesting that the Chamber of Commerce call another and similar meeting in the near future. Meanwhile, Labor's leaders hash over the important issues at home, employers' representatives discuss the questions with their respective trade associations, and Building waits.

**FREAK TO INDUSTRY.** Some years ago spun glass was exhibited in small-time circuses and roving carnivals along with their retinue of freaks. Loud-mouthed barkers displayed to local yokels a fair damsel clad in a gown made "wholly and solely of glass." Spun glass was news.

Month ago, spun glass was again news. Two big-time manufacturers, Owens-Illinois Glass Co. and Corning Glass Works, announced that with seven years and \$5 million of research they had developed spun glass (which they now call fiber glass) from a carnival freak into a useful product for the construction, household equipment, electric power and refrigeration industries. And, the announcement was capped with the formation of Owens-Corning Fiberglass Corp., the appointment of Corning's President Amory Houghton as chairman of the board and Owens-Illinois' recently resigned Vice President Harold Boeschstein as president. Jointly financed by both parents but a corpor-

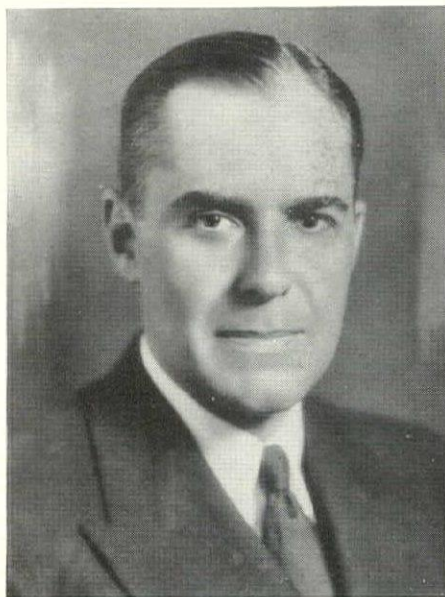


Chairman Amory Houghton

ate part of neither, the new corporation will produce a variety of fiber glass products, enter a field dominated largely by makers of organic textiles.

A glass rod of spider-web thinness is not much to look at, but a fabric of many such rods has a world of possibilities. Use of this lightweight, small-bulk, flexible material as electrical insulation will decrease the size of electrical motors. Being impervious to acids, it holds much for the manufacturers of batteries. As a temperature insulator, it may compete with long-established materials in refrigerator, stove and home insulation.

With one eye cocked on these and other uses of fiber glass, Corning and Owens-Illinois with the other eye look over the head of the new corporation, see a new U. S. industry.



President Harold Boeschstein

**EARNINGS.** Reflecting improved general business sentiment and increased building activity, in particular, third-quarter earnings of the manufacturers who supply Building's staples present a rosier picture than was painted in either of the preceding two quarters. While incomes of most companies are still far behind those of a year ago, seven stand out as bettering the 1937 record: Certain-teed Products, Highland Furnace, National Gypsum, Reliance Manufacturing, Stone and Webster and U. S. Gypsum.

A 1938-1937 comparison of the third quarter earnings of these and other companies follows:

Quarter ending Sept. 30	1938	1937
Acme Steel	\$ 110,007	\$ 305.84
Air Reduction	962,273	1,990.99
Allis-Chalmers Mfg.	505,160	2,644.53
Alpha Portland Cement <sup>1</sup>	109,866	353.12
American Cyanamid	875,031	1,391.63
American Radiator—Standard Sanitary	866,589	2,807.63
American Rolling Mill	556,994*	2,646.53
American Steel Foundries	543,533*	1,150.48
Bethlehem Steel	446,866	9,249.50
Briggs Mfg.	694,078*	886.64
Brunswick-Balke-Colender	602,488	641.02
Certain-teed Products	195,729	133.54
Continental Steel	192,360	258.89
Flinkote <sup>2</sup>	706,613	1,091.99
General Electric	4,371,300	13,370.39
Hercules Powder	741,501	1,246.81
Holland Furnace	640,632	633.05
Inland Steel	1,098,245	4,333.37
Johns-Manville	882,366	1,780.85
Jones & Laughlin Steel	1,958,810*	1,750.89
Lehigh Portland Cement <sup>1</sup>	487,232	1,289.99
Libbey-Owens-Ford Glass	850,586	3,216.69
Lone Star Cement	805,585	1,206.18
Masonite Corp. <sup>3</sup>	1,144,274	1,728.09
Minneapolis-Honeywell Regulator	355,505	199.90
National Gypsum	1,813,997	5,227.07
National Steel	481,623	1,114.33
Otis Elevator	465,596*	948.28
Owens-Illinois <sup>1</sup>	5,085,996	10,844.60
Reliance Mfg.	104,612	112.38
Republic Steel	2,387,556*	3,237.15
Revere Copper & Brass	539,801*	154.40
Reynolds Metals	225,915	581.17
Ruberoide	345,773	331.04
Stone and Webster	192,021	175.70
Timken Roller Bearing	217,097	2,756.24
Truscon Steel	280,993*	231.90
U. S. Gypsum	1,607,725	1,456.30
Wheeling Steel	606,908	1,230.19
Yale & Towne	175,522*	214.53
Youngstown Sheet & Tube	727,546*	3,586.49

\*Net loss.

<sup>1</sup>Year ending Sept. 30.

<sup>2</sup>40 wks. to Oct. 8.



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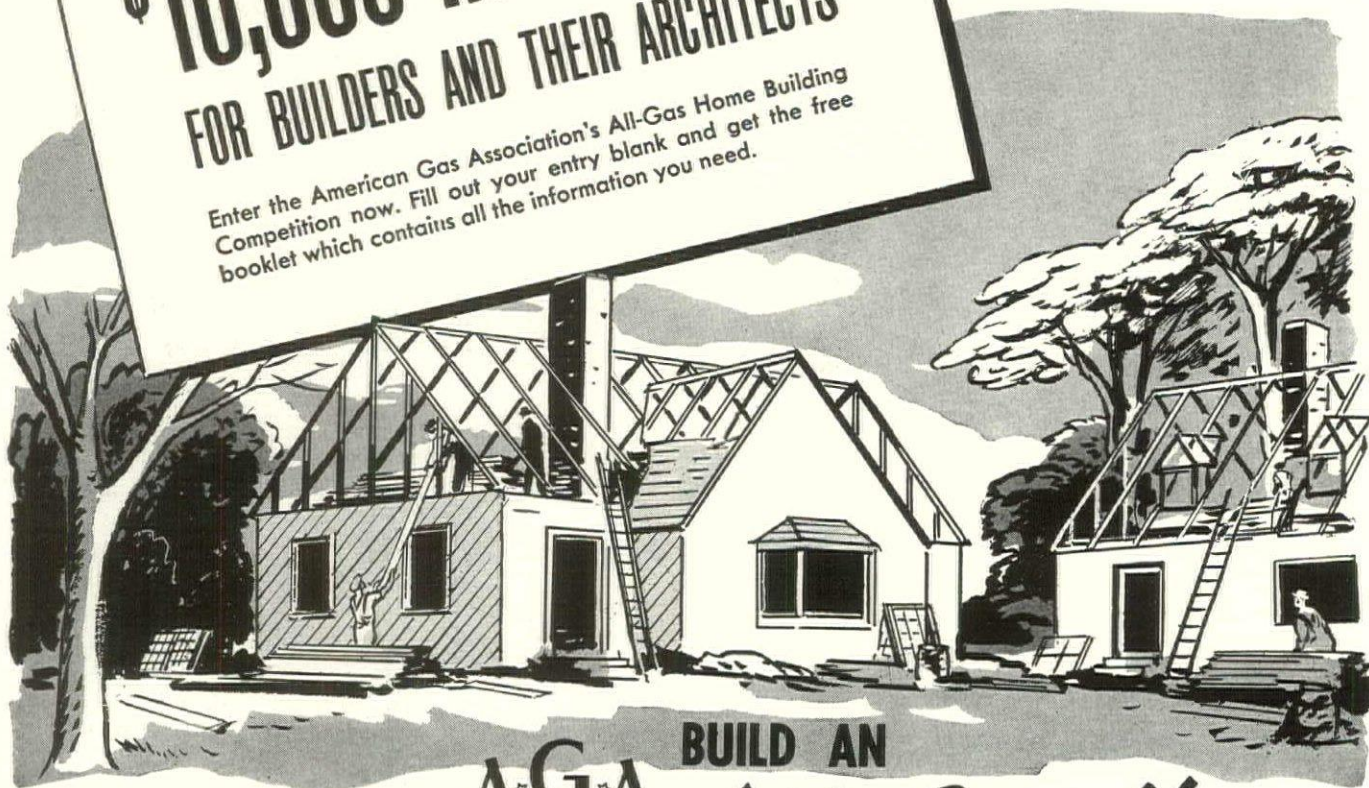
pearance to this use; they have durability; they are easily kept clean and attractive with a minimum of polishing; and best of all they are very moderate in price as good doors go . . . All types of color treatments are available and if you require something subdued and untheatrical, that is available, too. Let us send you our literature about doors.

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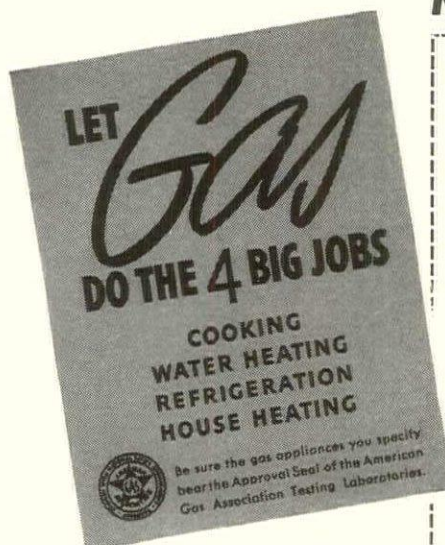
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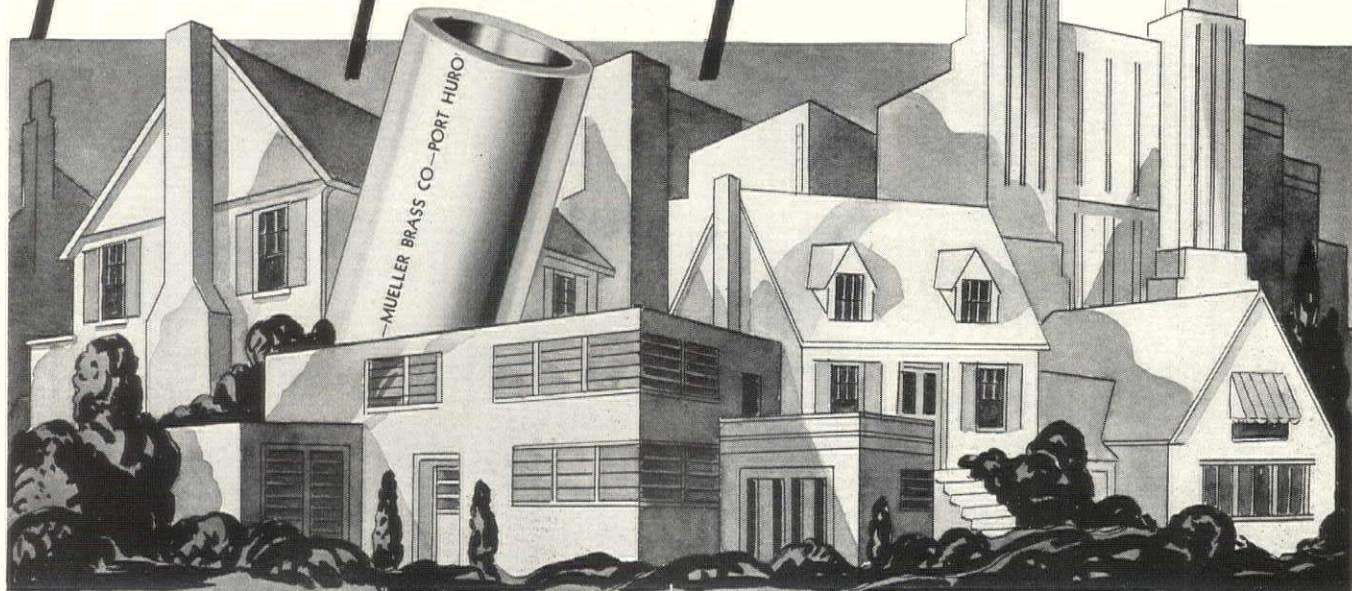
I wish to enter A.G.A. Builders' Competition. I am a builder ☐

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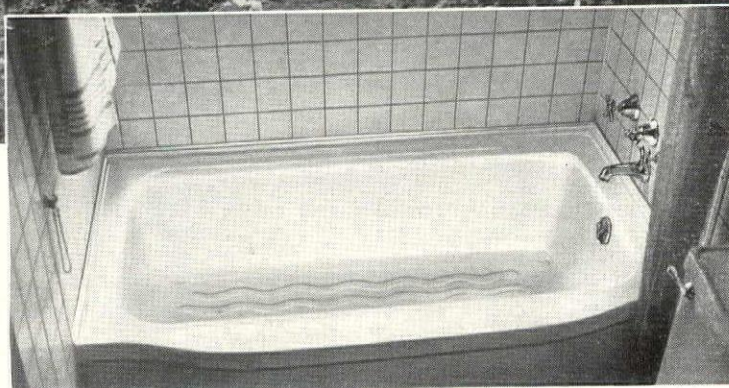
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*Photos courtesy Gunnison Housing Corporation, Inc.*



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# THE ARCHITECT'S WORLD

## HORIZONS



By Charles D. Maginnis

PRESIDENT OF THE AMERICAN INSTITUTE OF ARCHITECTS

Condensed from an address delivered in Symphony Hall, Boston, at the M.I.T. Commencement exercises, June 7, 1938

Architecture has always held an equality in the company of the Fine Arts. In its capacity to minister to the human need it has perceived no vulgar disqualification, but only another excellence, another nobility. It was by this beneficent function that its roots reached so deep into the life of the generations and won acceptance for it as the unerring witness of the past. In the service of that utility it has ever the especial gift of Architecture to find other satisfactions for the spirit through a gracious rendering of beauty. And it was by the enterprise of this imagination through the free play of racial temperament that the world has been enriched with so diversified and romantic a heritage.

If we would intelligently comprehend the present predicament we must recall that historically Art was largely the product of geographical isolations. In the symbolism of the atlas, Europe was a mosaic of definitive civilizations each of which shaped its architecture and the other elements of its culture with relative independence of its immediate neighbor.

Into that static world Science introduced the steamboat and the telegraph, and life began beating to a new tempo. The quick exchange of thought and the rapid movement of population soon made an end of our national privacies and there appeared out at us the revelation of all the wonderful things that had lain in dusty seclusion through the centuries. History lost its perspective, and the artistic ingenuities of the past were now thrust into our everyday consciousness. The architect killed himself to speak in many tongues and our streets were filled with echoes of strange societies. So accustomed did we become to the anomaly of it that we scarcely questioned why architecture was content to be an art of reminiscence. In our more thoughtful moments, it is true, we had an amused wonder that so confident a civilization could commit itself with complete unreserve to the inspiration of antiquity.

Dramatic modification was first implicit in the advent of steel from whose thin, nervous and amazingly capable genius sprang the skyscraper, the dynamic verticality of which immediately caught the world's imagination. As a responsible civic unit the limits of its validity are still a subject of controversy. In the tumultuous island of Manhattan where it has contributed so magnificent a drama, it is particularly notable that its orderly relation to a rational city organism is yet to be established. Early experiments in its design had sought more or less timid compromise with tradition, but an esthetic was finally found for it which expressed with complete felicity the presence of the strange anatomy behind the walls. In this achievement America made its first distinctive contribution to the architecture of the world. Here was an incipient modernism of our own, emerging out of indigenous conditions in a just relationship of architecture and engineering.



There are those who believe that we were on the way to becoming a temperate people when the advance was interrupted by the violent impact of Prohibition. Our architectural evolution appears to have encountered a like shock. We had paused in our progression at the completion of the skyscraper, not yet ready to admit the claims of other problems to so scientific an approach. We find ourselves now confronted by a philosophy of startling realism which, after a tender germination in America, is returning to us with passionate emphasis from Europe. This contemplates an architecture of complete independence of tradition which, deriving out of the properties of modern materials, shall be limited to a stark functional rationality. Its protagonists differ much as to its implications, but the most revolutionary of them has given us the disturbing dictum that the architect of tradition is damned and that the engineer is saved by virtue of the infallibility of his

mathematics. The mind of the engineer, it is held, is incapable of distraction, that of the architect is cluttered up with historic images. The one whose business it is does not produce architecture, the other unconsciously achieves it.

Our puzzlement extends as we remark the fortuity with which the philosophy is adjusted to the contradictory genius of the new media. These, for instance, obviously make for an embarrassing thinness of wall, so a principle is now proclaimed that architecture is not the walls but the modeling of interior space, though it is clearly the walls of history and not the space which have so intelligently survived. They do not lend themselves to monumental expressions, so the monument is dismissed as an archaic fashion. Their logic does not allow of the play of personality, so personality is now an invalidated idea and man is merely a mathematical unit of society.

Nowhere is this new philosophy more impressive than in the facility with which it disposes of the last forty centuries. We had been taught to look respectfully upon that accomplishment. Throughout that spacious history man fashioned the memorials of his intellectual and spiritual life in an architecture of poignant eloquence. What he built was particularly the proof of his high imaginings, for in building only could he find the worthy and enduring symbols. It is proposed to us that this precipitated loveliness shall henceforth lie a dead weight upon the earth. In a persuasion that the only world which matters began the day before yesterday, we are now to turn our back upon the past as a dumb and encumbering archeology.

Those of us who are confident that the past is not so easily dismissed are none the less content that it promises to rest more lightly on our generation. We have lived perhaps longer than we need have under the full burden of it. So accustomed had we become to the veneration of antiquity that we were moved even by our own illusions of it. In a discriminating

evaluation, however, much is perceived that is still pertinent not as invitation to apish reproduction, of which we have had enough, but as stimulus to new inspiration. Here pre-eminently is presented the claim to that classic system of order, refinement and sound proportion which, independently of rhetorical superficialities, will always be valid to an architecture of nobility.

Till now America has been comparatively inhospitable to the new realism. Time was when Europe thought us too materialistic for the sentimentalities of art. It is resentful now that we should seem to reject an artistic philosophy so tolerant of our published inadequacies. The Humanity with which we are acquainted is too tenacious of its lares and penates to settle down comfortably in the arid and antiseptic sitting rooms which are prescribed by the mechanistic domesticities. In New England, the impact with the Colonial tradition is filled with implication of tragedy. The Stuarts and Copleys, incapable of so cruel a condescension, would be forced to retire abruptly from daily intimacy to the protected gravity of institutions. And the exchange of our cherished highboys and winged chairs and other proud comfortablenesses for a furniture with an anatomy of steel-tubing is a violation which offends more than the pride of ancestry.

The measure of satisfaction which we are promised in the new architecture is coldly limited to a perception of the austerity with which it indicates its purpose. Form must not only derive from function but end there. No abstract or rhetorical felicity is admitted with which to veil the structural nudity. In this immediacy of expression, the hazard of ugliness is clearly not contemplated. Indeed, neither the word nor the idea is encountered in the new thesis, though ugliness may not be dismissed without dismissing beauty too. The functionalism of the past, for functionalism is no new idea, was a bigger principle which included the obligation to express the dignity of the interest behind the walls, a process that provided for a polite acknowledgment of the communal sensibilities. And beauty in architecture we know was never a mere millinery but an emotionalizing of form by an act of imagination. The Gothic Cathedral and the Greek Temple are supreme instances of a triumphant, almost abstract, beauty which arose out of perfect deference to structural rationality. It can only be assumed that the modern world is indifferent to this nobility, preferring less moving symbols of its consequence.

If architecture is still an art and not a by-product of engineering, beauty cannot be a dispensable interest. Is it conceivably beyond the scope of the new materials? We observe that steel, in its individual enterprise and under the sole government of mathematics can arrive at the ugliness of the railroad bridge. Subordinated to

architectural principles, it is capable of the nervous grace of the Eiffel Tower, of the spans across the Seine and over the great reaches of the Hudson, and we are familiar too with the faculty of concrete in the impressive realistic sweeps of Boulder Dam. But steel has the singular disability in that, with all its sinewy capabilities, it cannot make for interesting ruins, and ruins have their eloquent significance. The advocates of the new architecture, I believe, are not concerned about its survival. If it serve its day it is enough.

So far its largest gift is that stimulating influence by which it has brought to all design a thoughtful independence and a cleansing simplicity. In its protesting thesis one seeks for the exaggerated meanings and finds it not unlikely that in time it may be satisfied with more temperate use of its biting austerities. It would be enough, indeed, if they should come to signify that architecture in its readjustment with the past, had merely cast aside the trappings of tradition for a space to sit contemplatively in its skin.



Mere principles of mathematics acting on similar media must obviously come to the same conclusion at Boston or at Peking. One can only speculate on the degree to which national individuality will permanently submit to a uniformity which makes no acknowledgment of race, of clime, or geography. That nationality is still a persistent and passionate principle, the morning paper makes us only too uncomfortably aware. We may wonder also whether the thin artistic content of this technological system is adequate to the entertainment of two hemispheres.

After all, may it not be too confidently held that articulated masonry, which has so capably served the world till now, is banished with the rest of the archeologies?

## SMALL HOUSE PRACTICE

The Southern California Chapter, A.I.A., never an active sponsor of efforts to provide a special form of architectural service for the builder of the small house, recently looked into the Memphis Plan. As a result of a questionnaire sent by that Chapter to the architects of Memphis, *The Bulletin* of the Chapter summarizes their findings in part as follows:

### Southern California Speaks:

"The investigation indicated that the existence of one stock-plan setup engenders the formation of others. Some architects who are not included in the original 'plan,' or those who become dissatisfied with its operation, start competitive 'plan factories,' and soon the community is pervaded

Need we forget that our inherited beauty was wrought in bricks and stone of which the world has still a plenty?

Before consigning history to the wastebasket we need more assurance of modern competency. No doubt eclecticism has given us a surfeit of old sentiments and we did not wait for the moderns to reveal the humors of it. But if we now reject over a developing independence, the choice need not lie henceforth between an architecture of excessive imagery and one that has none at all. In Scandinavia we have impressive instance of an attitude which is making its own terms with modernity, while conserving the flavor of its picturesque traditions, a modernism of charm, of toleration, of independence.

We are not forgetful that architecture is a living art whose concern is to be manifest with intimacy the genius of its day. This must ever be the measure of its worthiness. In that enterprise we look for testimony of our ideals no less than of our realistic habit. We have found a vocabulary vernacular adequate to the topical challenges of modern realism. Are we then to relinquish the higher enterprise which is too poor to interpret? A few centuries ago Science took over the universe and relegated Religion to the level of a archaic emotion. Now, when signs are not wanting of a reconciliation of that momentous conflict, men are capable of the folly of reconstructing civilizations without the spiritualities. The vividness of these experiments will bring to us only more dramatically the significance of the frustration. Out of the bitterness of that experience men may well derive a new wisdom and a new authority. With restored faith in old sanctities he should bring now to the building a concept of order and justice more worthy of the spiritual destiny of which beauty in art is after all but the symbol of his eternal striving.

with the 'stock-plan' concept of architectural services and supported in the belief that normal architectural services are too costly.

"Evidently contractors and material men turn to the Memphis Plan as a source of stock-plan material, and after purchasing a set of plans, copy and cheapen them—then continue to use them without reference to the architect who prepared the original design.

"The statements in favor of the Plan for the most part, followed the usual pattern—the architectural profession 'owes it to the community,' 'has a duty to the small home owner who cannot afford, etc., although none of them explained why those members of the profession who can least afford it 'owe' something to the com-

unity, while those members of the profession who reject small residences and concentrate on more profitable work do not.

"Nor is it explained why small house architects, who render a constructive service in exchange for a modest living, have 'duty' to the small home builder which is not shared by the money lenders, material dealers, manufacturers and contractors whose annual income and profit from the small home builder are usually much greater than those of the small house architect.

"It is difficult to learn a great deal about such matters from a distance, but the data obtained are sufficient to show that the Memphis Plan is by no means the easy millennium that has been described. The opinions of the Memphis men are varied and contradictory, but the objections received contain enough conviction and information to indicate the danger embracing such experiments."

### Memphis Speaks:

Frazer Smith, who is widely regarded as the leader in the Memphis Plan, makes no claim that a panacea has been found. "It seems that the Southern California Chapter, A.I.A. has conducted a 'purge' of Memphis architects and published the results with comments and with the conclusions that our Memphis Small House Construction Bureau is a failure.

"Just now, it would seem that a statement is certainly necessary since the very conclusions drawn by the Southern California Chapter are not the facts at all.

"Because we believe the small house problem is a local responsibility in each community, we hold this to be purely a local solution to our own problem. We have never recommended it to any one else.

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"Quoting from our statement of purpose, addressed to the public:

"The Memphis Small House Construction Bureau, Inc., is an organization comprised of the mortgage finance and the construction industry of Memphis, for the purpose of establishing a dependable value in the small house field through carefully planned and supervised construction. Its service offered to the public is designed to assist, in every way, those who would build small houses.

"The houses offered herein are designed by qualified, licensed and registered architects of Tennessee for living in Memphis and immediate territory. By a special arrangement with the Memphis architects, the Bureau, through its resources, is able to make available to the small house builder this essential professional service. In general, such service covers complete plans, working drawings, details and specifications for the design to the owner's taste; a supervised construction and a cer-

tificate of proper construction—all in accordance with a specific routine outlined by the Bureau.

"It is intended that designs offered in its portfolio are for the purpose of selecting a house to be constructed under the regulations of the Memphis Small House Construction Bureau. These designs are not sold separately and will be furnished only in conjunction with architectural advisers and construction supervisory services by competent architects and other technicians operating under the service plan."

"Our Memphis Small House Construction Bureau is unique in one way. It has no central headquarters, no executive secretary, no paid employees. Its headquarters is in the office of each person or firm of the building industry. It belongs to everybody.

"It is not claimed that it was devised to solve the architects' problems any more than those of the mortgage lender, or material vendor; there is no selfishness outlined in its aims and purposes. Here, the Memphis architect is only one of the divisions of the entire building industry participating. He could have stayed out of the picture; can now withdraw and the world of small house construction would continue just as it has since the beginning. The licensed architects, unfortunately, were not the only vendors of architectural services here, so when our friend from Southern California discusses 'satisfactory methods of rendering architectural services for small houses,' he must consider the other sources, as well as other divisions of the industry, to say nothing of the public.

"The Memphis bureau was not 'devised by some of the Memphis architects.' (Statement from *The Bulletin* of the Southern California Chapter.) Two years ago, the mortgage lenders and FHA invited the architects to participate in a discussion of the small house problem. Later the balance of the building industry was invited in. It was evident that here, as elsewhere in America, some control of the small house industry was necessary. The mortgage lender, material vendor, contractor and guarantor mortgage agencies had problems they thought the private architect could, and should, help solve; not that we were indispensable in the plan, but rather that they gave us the first refusal. Similarly the mortgage lenders' association, the hard material vendors' association, lumbermen's exchange, etc., were extended the privilege and made their decisions. The Bureau was thus founded around the 'round table.' We have proved that the building industry's problems are only solved by that industry itself—locally. We do not contend that our plan will work anywhere else. We do think that if other communities would face their problems fairly across the table instead of employing some advertising agency, promoter, or

racket vendor, their solutions would be equally as successful.

"Here are a few observations on the first year's operations. When the Bureau started, 15 per cent of the small houses in Memphis and Shelby County had any part of architectural services. Today 95 per cent of all houses submitted to FHA (90 per cent of our small houses are financed through FHA) have plans and specifications by architects, and in most cases, some kind of supervision. Compensation for work performed under Bureau service is in proportion to a 15 per cent complete professional service fee. Fees totaling \$75,000 will be earned by local architects in the small house field this year through the Bureau. Lumberyard and sub rosa practitioners have been cleaned out.

"Once more, we do not recommend our ideas on the small house problem to anyone else, never have so recommended them, and do not intend in the future to recommend them to anyone else."

### Walter R. McCornack Speaks:

From an article in *The Octagon* for November, 1938:

"Now, the real issues are—how much longer can the profession stand aloof from the task of designing and supervising small homes and maintain a favorable place in public opinion; and second, how can it prevent the advance of governmental and other agencies into the field of architecture.

"All issues are sooner or later decided by public opinion and all groups engaged in service to mankind cannot long endure on a course contrary to fair and intelligent public thought.

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"The average citizen believes that the wants of the public should receive the thoughtful consideration of those engaged in service of any kind. The automobile manufacturers long since have sensed the desire of a great number of people to own a car and consequently we have the low priced car. . . .

"The architectural profession is sadly lacking in its contacts with the average citizen and finds itself handicapped in public understanding and sympathy with its objectives and its true worth. . . . We must find a means for reaching the people, rendering personal service as architects rather than have the output of our trained men reach the public in the impersonal way—by bureaus.

"A profession carries with it certain obligations for service—on a basis more clearly defined than one finds in the commercial fields. The obligations of the professional man are not to be measured by the financial benefits to be derived from his practice.

"All professions have definite obligations to the public and the failure of any

of them to recognize and accept those obligations will bring about governmental action.

"It is well that there is a division of opinion with respect to the small house problem at the moment, but it is essential that these differences should relate to the method of extending service to those of low income and not revolve around the profit to ourselves.

"It is obvious that no professional man can operate without profit, but somewhere along the line some means will no doubt be found to maintain a fair profit and at the same time reduce the cost to the consumer.

"The Housing Committee does not propose to ask The Institute to indorse a detailed plan applicable to every community. It believes that chapters and individuals should be free to act within the basic regulations of The Institute—but with the chief objective—service to all of

the home owners in the United States. When we have done that we shall have the long desired support of public opinion.

"A special committee under the chairmanship of C. Herrick Hammond, of Chicago, and consisting of six Institute members and three members of the Producers' Council, in cooperation with Governmental agencies, is undertaking a study of ways and means for finding a method for providing architectural service, including supervision, for the great mass of the American public who do not now have the advantage of such service.

"Building public confidence in the profession by extending architectural service to all the building public is a goal well worth all the hard work necessary to reach a conclusion.

"If we fail to prosecute this study we may find ourselves before Congress fighting for our existence."

## THE ROYAL ACADEMY EXHIBITION

Condensed from anonymous comment in *The Architect and Building News*, London, May 6, 1938

By way of getting a fresh slant on the Royal Academy Exhibition we took a foreigner to the private view. Not, to be quite candid, a real foreigner; we did take a real foreigner once, and all he did was to murmur "hopeless, hopeless," under his breath, and ask why the English lacked objectivity. Our fictitious alien was more courteous. He was willing to learn. And he asked the questions we hoped he would ask. Here is part of our conversation.

*Fictitious Alien:* What a beautiful exhibition!

*Ourselves:* We do not think so. We think it is dreary. All well-informed people in this country think it is dreary.

*F. A.:* I think so, too, but I wish to be polite.

*O.:* Of course.

*F. A.:* I wish to be polite; but I wish also to learn. Please show me the works of your most famous architects.

Scanning the walls we spotted a dozen likely frames—a Lutyens monument, a Baker church, a Cooper crematorium, a Curtis Green bank. . . . We indicated them to the alien.

*F. A.:* Magnificent!

*O.:* Nonsense; why don't you say what you mean?

*F. A.:* Because you English have artistic standards which I do not appreciate and I am confident that by those standards these designs are truly beautiful.

*O.:* That is absurd. Explain yourself.

*F. A.:* You are too brusque. Besides, I am afraid of the police.

*O.:* This is a free country, and you may say what you think. Indeed, you must.

*F. A.:* It is not easy, but I will try. You see, when I look at a new building,

my mind works like this. I do not say at once, is this a good building? I say, first, to what school does it belong? Then, is it a good school? Then, is the building a good example of its school? I believe that in architecture, just as in painting and music, a work is never autonomous; it is part of a *movement*, or it is nothing.

*O.:* Obviously. Taine elaborated that notion many years ago. What are you getting at?

*F. A.:* I am getting at this. I look at the designs of your academicians and I say to myself, what is there which unites these gentlemen in one Academy? To what school of ideas do they belong? What allegiance do they owe to tradition, to each other? For a foreigner, you know, these questions are really very puzzling. If your Academy has (as I cannot really believe) no loyalties, if it is not a school of design as it was in the old classical times, how can it keep the respect which your State and your public accord it? For I am bound to confess that some of the designs you show me, charming and original as they are, seem to be the product, not of a coherent school of designers but, if I dare say so, of individualists and amateurs.

*O.:* Come, come. You can't mean that.

*F. A.:* Oh, but please do not misunderstand me. Amateurs are very wonderful people. All the great revolutions in architecture have been made by them. Only what is strange is to find so many amateurs united—and in an Academy, of all places! Tell me, now, do your Royal Academicians admire each other's works; or only their own?

*O.:* That is an embarrassing question,

but you can be sure they are all very fair-minded people who know a good thing when they see it. In England you like to give all sides an inning. Fair play, you know. So our Academy is made up of artists who have very different views as to what art is about. Their views, mine, you, are far from definite, and the only thing they really agree about is that they dislike what is known as the modern movement.

*F. A.:* But you just said they were fair-minded.

*O.:* That is exactly why they don't like it. The modern movement, as you know, tends to eliminate individualism, so it gives the critic little or nothing to say, fair-minded about. It narrows the scope of the *connoisseur*. It is, of course, the movement they dislike, not individual buildings. Sometimes they even like the building of the modern school, but only so long as they see it as the product of an individual. Why, sometimes the Academicians even go modern themselves. Let me show you the works of Professor Richardson.

*F. A.:* Who is Professor Richardson?

*O.:* A celebrated satirist and antiquarian. Also an eminent architect. Here is one of his works—a factory at Rushden.

*F. A.:* But it is very modern. It reminds me of the best work of the French school.

*O.:* Precisely. Now look at this church at Greenford by the same designer.

*F. A.:* Gothic!

*O.:* Yes, Gothic. And now take a look at this school in North London, also by Richardson. Modern again, with a subtle hint of the academic. Yet I could show you buildings by this same Professor that are faultlessly classical as anything by Dürer or Schinkel.

*F. A.:* Are all your Academicians as unaccountable as this one?

*O.:* Not quite. Most of them stick to something between neo-Grec and Georgian, adding a Dutch or Southern flavor to taste. A few of them, as you see, have a turn for the Italian Romanesque, while others are very keen on Sweden.

*F. A.:* But tell me, which of these distinguished designers is most admired by the young architects and the student body?

*O.:* None of them is very much idolized, to tell the truth, because the young enthusiasts are all for the modern movement, which, as I told you, is not welcomed in the Academy. The English patrons of the movement never offer the work at Burlington House.

*F. A.:* Why not?

*O.:* For three reasons, two of them good, one bad. The bad reason is that it is supposed to be rather grand to despise the Academy. The good reasons are these: first, that they would probably not go in, or, if they did, would be badly hurt. The second is that the tradition of presentation in the architectural room is discouraging. What do you think of it?

## EARLY DAYS AT THE ECOLE

Excerpts from an article on "The Beaux-Arts Institute of Design," by Mildred E. Lombard, in *Légion d'Honneur* for July 1938

F. A.: Not much. I do not see why the representation of dull architecture should be made an excuse for exhibiting indifferent water colours. Why do they not admit photographs?

O.: That is what we all want to know.

F. A.: I begin to think your Academy is a very curious institution. Who is responsible for the selection of the works?

O.: A committee of nine Academicians, including one architect. This year the architect was Sir Edwin Cooper, whose Diploma picture, the Port of London Authority building, you see over there.

F. A.: Ah!

O.: And now are you ready to go?

F. A.: Not just yet. I have hardly begun to look around. Now show me what architects are doing in London. I hear much about what is being pulled down. Your Georgian architecture is vanishing. What is taking its place?

O.: More Georgian; but usually with smaller windows, much smaller rooms, and considerably less attractive details. You will see quite a lot of it here. You may as well look at this model of Tower Hill. It is going to be tidied up, and Sir Edwin Lutyens wants to repeat the facade of Trinity House at intervals along the north side.

F. A.: That does not seem to me very much to the point.

O.: You are probably right.

At this point we were interrupted by a gentleman in a red and gold dressing-gown who informed us that the gallery was about to close. Our friend, supposing him to be one of the Academicians, asked him, amiably enough, whether he was for the Roman, the Gothic, the Swedish, or all three.

### EVEN THE BROTHERS ADAM

In a letter dated March 8, 1783, there is a bit of gossip which indicates that even with such eminent architects as the Brothers Adams, professional practice was not a bed of roses.

"A Special Jury is, I am told panelled to try, at the Assizes at Maidstone, an action brought by Lord Mahon against the Adamss, who had been employed to cover a house with their Patent Plaster that was to last for ever, but which dropt off in a very short time. Whether the cause will be heard before Justices Gould or Ashurst is not known, but if the former, his charge to the Jury is not likely to set the matter in dispute in the clearest light. Where the Defendants to chuse who should preside, it is not improbable that they might fix upon a countryman of theirs through whose interest they obtained that worst of all lotteries, the Adelpi bubble. And all the world will allow that the noble law Lord alluded to surpasses in *Law plastering* every one of our free Mason fraternity."

In the late nineteenth century, so few American colleges gave thorough courses in architectural training that the ablest and most ambitious young Americans, if they possessed financial means, turned inevitably for instruction to the recognized leading architectural school of Europe, the *École des Beaux-Arts* of Paris, which, for more than two hundred years since its founding by Colbert, minister of Louis XIV, had maintained a consistently inspiring influence on artistic and architectural study throughout the world.

Students in Paris joined an atelier, choosing at the time of entrance the one they preferred, and there worked in groups on assigned problems, the older assisting the younger, their work under the frequent criticism and supervision of a "patron," who was always a working architect of highest distinction. In addition to the stimulus of constant suggestion and criticism from the leading architects of France, student work was submitted several times a year to general competitive exhibitions on the assigned problems, in which all ateliers participated with a sense of rivalry as healthy as it was spirited.

From one American privileged to be a student at the *École des Beaux-Arts* in the eighties, Joseph McGuire, we have, in his charming unpublished reminiscence, "Before the Gay Nineties," an account of the workings of an atelier as it impressed a young man brought up in the American college tradition:

"M. Daumet graciously agreed to accept me as a pupil, and the next day he took me to the atelier and formally introduced me to my new associates. There were four ateliers in the school buildings and some three or four which maintained their own quarters on the outside, but the school standing of all was the same.

"M. Daumet was a member of the Academy and of practically all the other societies, and one of the most distinguished men in France, and a more soft spoken, modest and lovable man it would have been hard to find. His associate, M. Girault, was much younger, a man of brilliant talents, but with less charm than the elder.

"The atelier was then on the rue de Buci and consisted of two large rooms connected by a short wide passageway. All the windows opened upon interior courts. The rent and all expenses were assumed by the members, for it was practically a club. The Patrons were paid an honorarium and only visited the atelier once or twice a week for criticism and advice. Discipline was maintained by elective officers called *Massiers* and all the cleaning, rough work, pulling the *charrettes* (carts) loaded with drawings for exhibition and errands for the *Anciens*, was performed by new

members. The only furniture consisted of the drawing boards and stools. There was quite an extensive library of decrepit and stained books. The illumination was entirely furnished by candles stuck in empty beer bottles and two rusty stoves furnished what little heat we got.

"Absolute silence prevailed during the visit of the Patron. He proceeded from one board to another and delivered his criticism or advice to the benefit of all. If the Patron passed by a project without comment it was understood that the project was not deemed of sufficient merit to justify further development.

"The routine of work was oddly at variance with that of American schools and colleges. Every two months you went *en loge*, that is you entered a cell armed only with paper, pencils, paints and drawing instruments and were given a problem in architecture to work out. You could have no assistance and guardians patrolled the corridors to see that you received none. You generally got down to work about nine thirty o'clock in the morning and were given until five to finish. After taking a tracing of your solution you turned in the original sketch and departed. Nobody did much work for a week or so afterward, and this was the time you devoted to social duties, sketching trips or amusements. Gradually the atelier would fill up with men developing their sketches and making their careful *rendus*. As the time approached for the delivery of the drawings for judgment, the pace grew faster and faster until towards the end you were working not only all day but many of the nights and finally all night. The morning of the *rendu* was a time of wild disorder, shoutings, tense tempers and confusion until, about five minutes before the gates of the school were closed, the still wet drawings would be loaded into the *charrettes* and the wild rush through the streets would begin.

"The attitude of the members of the atelier towards each other was uniformly kind and helpful, and a Prix de Rome man would cheerfully drop his own work and devote an hour to embellishing with foliage and entourage the up to that time absolutely uninspired conception of a *nouveau*. In fact, it was generally understood that you learned more from the strong men in the atelier than you did from the patron."

The life of the atelier, however, was far from a constant grind, even when its activities were intense. The French students were capable of the hardest, most sustained effort, but, as Mr. McGuire writes, "they played equally as hard, and every so often during the day would drop all work and relax with some absolutely ridiculous mock trial, duel, or game. The

singing was practically unceasing. Among the numerous celebrations I recall the occasion when we spent all the afternoon erecting a pit out of drawing boards in anticipation of a grand *chasse aux rats*. One student brought over from America his celebrated terrier 'Dash' and the rest of us procured tremendous sewer rats. It was very exciting while it lasted and we were fortunately able to save the dog."

Outside the atelier, there was plenty of diversion. Nor, in spite of the constant competition, was there any real antagonism between students of different ateliers. In the social atmosphere of Paris, friendship flourished, and Americans from other ateliers joined their compatriots from the Atelier Daumet-Girault. In later years other ateliers became more popular among Americans, particularly the Atelier Laloux. Enthusiasm and community of interest were the only qualifications necessary for the joyous gatherings of the American students.

"What a congenial group this was," writes Mr. McGuire, "that for better than two years remained in intimate friendly contact. Occasionally a group of two or three might leave for Greece, Spain, England, or even for America, but in two or three months they would be back again as if drawn by invisible wires. They lived in the same houses, worked and played together, dined together, travelled and argued together and borrowed each other's books, tobacco and clothes and danced, dined, and visited together on the Right Bank.

"Their ages ranged from twenty-two to twenty-eight. Practically all were college graduates, and although few were wealthy, all had funds sufficient for their modest needs, and all were absolutely footloose and could do as they pleased, and somehow were never pleased to do anything unworthy or small. . . .

"After having had a club table at Duval's Les Deux Magots, Blots and various other restaurants we finally settled down in the entresol of the Café d'Orsay on the Quay d'Orsay, a very celebrated old restaurant where we occupied the same room from which Edward VII in his gay youth had been forced to escape by means of the window when the police raided the place. Here we would meet twice a day, sometimes only five or six, but generally a dozen and occasionally as many as twenty.

From those social gatherings at the Café d'Orsay came the impetus which led to the American Beaux-Arts. Discussion turned often to the condition of architectural teaching in America, to the crying need for radical change and the immense benefits which would result from the introduction of the Beaux-Arts methods. Desirous of keeping in touch with each other after their return to America and of organizing some sort of society for that purpose, the Americans were even more desirous of using that society to give

to their country something of the inspiration which the École des Beaux-Arts had been to them. "Not only did we want," wrote Whitney Warren years after, "to keep the old crowd together with all its joyous memories; we wished also to con-

tinue our teachings and traditions, to keep the flame alive and to hand on the torch to those who were to come after us in our own country. . . . At these meetings in the Café d'Orsay we made ardent vow to accomplish our high purpose."

## ARCHITECT, BUREAU AND CIVIL SERVICE

With the exception of ways and means of bringing about a unification of the architects in New York State, the recent Convention of the New York State Association of Architects dealt most vigorously with the conflict between private architect and governmental bureau. In an address on this subject Wesley S. Bessell spoke in part as follows:

"Many years ago we had what we called the Boston Tea Party. The reason was taxation without representation. Today we are faced with taxation and usurpation, and what we need is another Boston Tea Party to throw overboard packages of government bureaus.

"If the Federal Government is serious in its endeavor to start the wheels of private industry moving, why does it not cease usurping our functions, and distribute this architectural work over the country where it will help re-establish offices, help the men of the profession to make a living, and enable them to pay an income tax—that tax to be used in governing us and not to be used for the purpose of establishing more bureaus?

"The Government has usurped our profession, and now claims that its way is cheaper. By the same token would it not also be cheaper for the Government to become contractors? Would it not be cheaper for the Government to take over every business it has anything to do with, and then—without tax return, the Government could pay itself while all of us look on and do nothing?"

### Civil Service Speaks:

Quoting from a report of the New York State Convention from the news columns of *The Chief*, *The Civil Employees' Weekly*:

"The predominant note sounded throughout each session of the Convention was the small fees and little business of the private architects and how they should be increased.

"It has been the Guild's (Civil Service Technical Guild) policy to settle disputes by arbitration. To further this end, the Guild has been conferring with representatives of the Professional Engineering Society to solve the problem of private engineers vs. civil service engineers. As to the architectural association, there is apparently no need for cooperation, as shown by the stand they have taken.

"If the private architects want to test their legislative strength, the Civil Service Technical Guild, assisted by their parent bodies, the Civil Service Forum, and the powerful State Civil Service Association is prepared to meet the test.

"We are happy that they have had their Convention because their stand is now revealed. The Technical Guild can now proceed to complete its 1939 legislative program."

### One Union Speaks:

Excerpts from a press release by the Federation of Architects, Engineers, Chemists and Technicians:

"The charges that government bureaus and agencies of architects and designers were harmful to the architectural profession, made in the Convention of the New York State Association of Architects were criticized by the F.A.E.C.T. as superficial, incorrect and actually harmful to the best interests of architects today.

"Martin Cooper, F.A.E.C.T. legislative representative, pointed out that the ravages of unemployment among architects and engineers were greatly ameliorated by government agencies which alone have been able to carry out programs of public works and construction. 'It is a universally recognized fact,' Cooper states 'that without government aid, housing construction could never have become a reality. Private industry, while useful and helpful in many other ways, could not and did not want to undertake such developments.'"

"The charge that 'architects also find work they have been accustomed to is now being performed by federal, State county and municipal agencies and bureaus,' made by Richmond H. Shreve, director of the American Institute of Architects, was characterized by Mr. Cooper as 'typical of the last cry of the die-hards who would defend their own interests against the great tide of progress in the interests of the majority.'

"Government bureaus have not displaced private architects; they have utilized those who could find no place in private offices."

\* To which contention the architects undoubtedly agree; they have been seeking the privilege of *designing* these works, not *financing* them.—Ed.

# THE DIARY

Henry J. Saylor

*Monday, October 17.*—The recent Atlantic Coast hurricane seems to have added to new knowledge in this matter of the way of tall buildings. In the early days of the Empire State Building there was, I believe, a long pendulum which permitted accurate observations, but it has since been discarded as unnecessary. There never has been, of course, any likelihood that any hurricane that visited us could really endanger those tall structures. The factor of safety with which they are strengthened is far too large for that. Nevertheless, there remains the psychological effect of sway on the human being, and that cannot be disregarded. Up here in the top of Time & Life Building, thirty-third story, the hurricane seemed to us merely like an unusually hard driving rain. It was not until I went down to the street afterwards that the real force of the blow was evident. A revolving door in the west front had blown in. The whole front of a nearby bookshop had been blown out, and there was plenty to show that a real hurricane had gone by. I hear also that in at least two or three of the tall office buildings there was fainting, active sickness, and an approach to hysteria on the part of women employes. All of it induced by just that trifle excess in sway over the comfort point of the human machine.

*Tuesday, October 18.*—Hearing that Grey Wornum, perhaps best known over here as having designed the R.I.B.A. Building in London, had arrived on the "Normandie," I tried to see him. The best I could do was to get a note from him that he had just hopped over to study American taste in decorations for interiors in connection with his work on the new "Queen Elizabeth," and had barely alighted in New York before he was off again for London.

*Wednesday, October 19.*—New Jersey has some well defined ideas about how its professional men should conduct themselves. The State passed a law in 1934 prohibiting dentists from advertising prices or the character of their services. In upholding the law yesterday, the New Jersey Supreme Court held that "the practice of dentistry is not a business, but a privilege, and the practice thereof is subject to State regulation in the interest of the public. It is proper that the State

should take steps to prevent licensed dentists from resorting to the well known practice of charlatans and quacks." This is perhaps a straw in the wind indicating the public's attitude toward the conduct of not one profession alone, but of others.

★

*Thursday, October 20.*—Claude Bragdon was even more startling in a luncheon talk today at The League than in his writings on the relationship between beauty and mathematics. He had to condense the findings of years into a few minutes' talk, with the result not only of whetting his hearers' appetites for more, but of a convincing assurance. Not having time to lead us through all the steps he had trod, he could pour into our minds the concentration of evidence and conviction. If it is possible to put all this into a word, it is this: The marvelous intricacies and precise relationships of mathematics delight the human mind; graphic repetition of these relationships, whether obvious or largely submerged, delight the eye.

*Saturday, October 22.*—If you must use the Great Seal of the United States in your embellishment of public buildings, keep it off the floor. Someone inlaid a couple of aluminum reproductions of the Great Seal in the floor of the Newark Federal Building, with the result that the Boy Scouts threatened to encircle the emblems to keep the feet of pedestrians from defacing them.

★

*Monday, October 24.*—A lot of sculptors, both famous and budding, met tonight in Rockefeller Center to see the entries in a competition for a panel over the Associated Press Building. There were words of wisdom from A. A. Weinman, Leo Friedlander, Ulric Ellerhusen, John Gregory, Wheeler Williams, and Malvina Hoffman among others. In the remarks there appeared a general tendency to recognize the difficulties of achieving proper scale in sculptures on stark modern buildings. One contention of the sculptors, not fully satisfied in rebuttal by Leon Solon and Wallace Harrison—director of the competition and architect of the building respectively—was that no competition of this sort could be properly judged without close reference of the sketch models with a model of the building itself, or at

least a large part of it surrounding the sculpture's location.

*Tuesday, October 25.*—Architects are supposed to die poor. That tradition apparently had not gotten around to the late Arnold W. Brunner, one time president of The Architectural League of New York. The other day a tidy sum of about \$40,000 came to The League after Mrs. Brunner's death, for the establishment of scholarships in Arnold Brunner's name. A committee appointed to administer the fund had the happy thought, incidentally, that since there were enough scholarships in existence for the benefit of students, this one might be devoted to the good of the adult practitioner. This year's income, I believe, is to go in aid of efforts to unite the architects of New York State in one body.

The late John Russell Pope left a net estate of \$730,081. The value of his interest in his architectural firm was set by the appraisers at \$141,087.

★

*Thursday, October 27.*—Today may become a famous milestone in New York State's architectural history. For the first time a gathering of all the architects in the State was attempted. It was a small beginning, with a total registration of something over 250, but it was a start of what might conceivably turn out to be real unification of the profession in New York State, with a voice of its own.

*Friday, October 28.*—Out of a lot of learned papers read before the Convention of New York State architects two topics stand out pre-eminently as of greatest apparent interest to those who attended. One, the steady march toward bureaucracy in nation, State, county, municipality, with its devastating effects upon the private practitioner. Two, the need for welding together all the diverse sections and self-isolated groups so that the voice of the architect may be heard in public councils. Charles C. Platt sounded a popular note in pointing out that other branches of public and professional life were equally affected by the march toward bureaucracy, and that our interests and theirs could best be served by broad co-operative action.

*Saturday, October 29.*—The attendance dwindled rapidly today even with some

of the Convention's most important work ahead of it. Individuals began to cut for home or office. Three days probably was too long a period for a first convention, although with considerable time set aside for seeing the Cloisters, the World's Fair, and other current attractions, there were not many hours left for speeches and debate—and probably that was just as well too.

*Monday, October 31.*—Caught up with a lot of invitations to exhibitions today, most of which seemed to be for the purpose of displaying furniture and furnishings. The world of furniture design seems to be fully as much at sea as is architecture these days. When it attempts to copy the past it becomes merely banal; when it tries to avoid the past entirely it usually becomes merely ludicrous. I am sure I don't know the answer.

*Tuesday, November 1.*—Four men sitting on a wood pile today found a way of building new housing for New York in the congested slum areas. Hitherto it has been felt—and England's experience bears this out—that land could be found for low-rent housing only in the outskirts. A rather formidable hurdle had to be set up by the Housing Administrator, Nathan Straus, in fixing \$1.50 as the maximum price that could be paid per square foot for land in a slum clearance project. Land at that price is not to be had in the heart of Manhattan's slums. On the wood pile today, however, Nathan Straus, Senator Wagner, New York's Building Commissioner Alfred Rheinstein, and New York's Controller Joseph McGoldrick found a formula under which \$19,500,000 worth of new housing is to be built on New York's lower East Side.

★

*Wednesday, November 2.*—In spite of the rather truculent outburst through several voices at the recent State Convention of architects, there is a hint in the air of harmony between the profession and the Civil Service men. Around a luncheon table at The League today we were vehemently arguing this point, half of those present in favor of a belligerent attitude—"all or nothing"—the other half maintaining that possibly half a loaf is better than none. Argument from the latter point of view ran to the effect that it is perfectly natural that the journeyman draftsman, convinced that he never will become an independent architect, should have his eye always on the possibility of personal economic security. Civil Service work under a municipal, county, State, or federal bureau provides as much of such security as is in sight. This class is steadily and inevitably growing in numbers. It has a voice on the ballot far more powerful than the voice of the independent practitioner. Is it likely, therefore, that the bureau idea will fade? From the

viewpoint of the independent architect, is it better to go down in defeat fighting for a cause, than to attempt to find some middle course between the abandonment of the bureau aid for public works, and on the other hand, the steady diminishing of independent practice?

*Thursday, November 3.*—Today Henry Wright and I tried to tell a large gathering of savings and loan bankers something about the construction and design of the individual dwelling. The audience at least was polite and seemed to think it was learning something about a problem in which the banker in these last few years finds an important stake.

★

*Monday, November 7.*—Alvar Aalto, Finnish architect, struggled valiantly with a comparatively strange tongue in a lecture this evening on the architect's approach to a problem. Differing radically from LeCorbusier in his dictum that the house should be a machine for living, Aalto maintains that our greatest trouble has been that the house was just that, a machine. The way out of that, he thinks, lies through a process of humanizing the design. I was glad to see that Aalto also fears the deadly monotony of parallel blocks which are conspicuous in many of our site layouts for large scale housing. This chief among the architects of Finland has hope rather than fear in the prospect of progressive standardization, provided that standardization extends to comparatively small parts rather than the whole. His simile I thought particularly apt: Nature adopts complete standardization in the use of cells throughout the vegetable kingdom, yet with this use of duplicate cells she produces all the marvels of the floral kingdom.

*Wednesday, November 9.*—Frank Lloyd Wright at Williamsburg the other day said: "What has been done for you, or to you, here in Williamsburg has advanced our cause of modern, organic architecture greatly, but not in the way it was intended. . . . I have long ceased to take off my hat to our forefathers, seeing what a mess they left us." Answer by Miss Margie Hoskins, a member of the junior class at William and Mary: "Mr. Wright has some good ideas, but I still want that little white house with the picket fence when I say 'yes'."

★

*Friday, November 11.*—Henry J. Burden down from Toronto looking about for a few set pieces to embellish the biennial architectural exhibition of next February. The Canadian architects, and the public generally, seem to take their architectural exhibitions seriously. Held in the Art Museum, the exhibition is opened by the Governor General of the Dominion and attended by from 25,000 to 30,000 visitors.

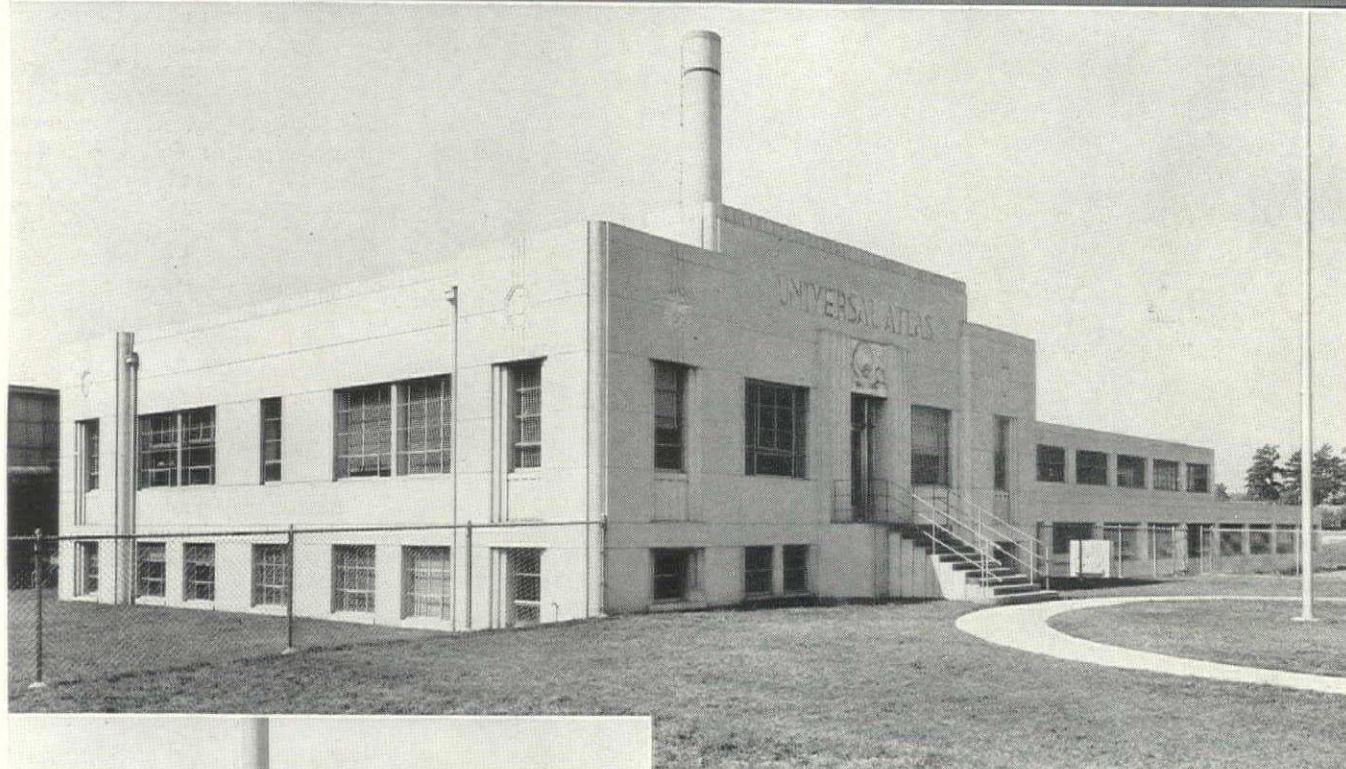
*Saturday, November 12.*—Some weeks ago I was talking with Howard E. O'Leary, who designs motor cars, regarding the puzzling matter of color. Fashions in automobile colors do not change rapidly. They do, however, vary geographically. Black has always led throughout the U. S., and curiously enough it fluctuates with the economic curve—people buy more black cars when times are not so good. In New England the buyers normally prefer black, dark grays, maroons, and dark blue. California goes to the other extreme, for here black has never led, the much lighter hues predominating. In the last five years the one outstanding development in automobile color is the introduction of aluminum powder, creating a metallic sheen to the finish. Recently in this group of metallic finishes, certain gunmetal shades have run as high as 40 per cent of the total production.

*Monday, November 14.*—News of personnel changes in the educational field probably should have considerable weight in our estimates of the course that architectural education is taking. Lawrence Kocher, long time editor of *The Architectural Record* and a strenuous functionalist, goes to Carnegie Tech. Miës van der Rohe assumes the direction of Armour Institute, to which Mrs. Ogden Armour has just given \$50,000. Harrison undertook some months ago to share his advanced ideas of design with the students at Yale, and now William Parsons, of Bennett, Parsons & Frost, Chicago, has been added to Yale's architectural faculty, specializing in town planning. At M.I.T. the moving of the Architectural Department from its original home on Boylston Street into the new home of the Institute in Cambridge, where it will be closely surrounded by engineering, has at least the possibility of some change in attitude.

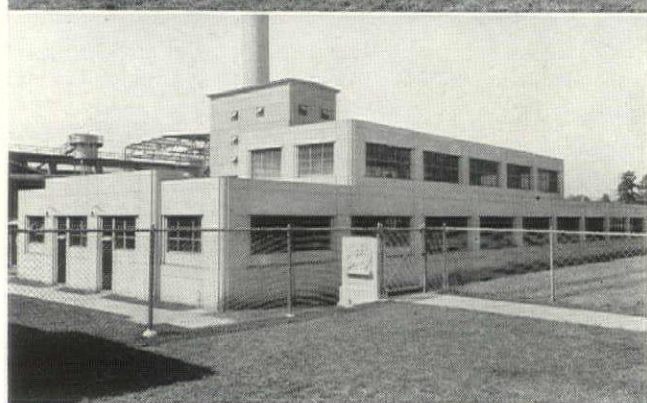
★

*Tuesday, November 15.*—It is interesting to speculate on just how much a accomplishment will be recorded as a result of man's sporadic efforts to control his nation's architecture. Mr. Hitler is prescribing what his nation shall build. There are strong forces in our own country that would prevent the City of Washington from having any important public building that does not conform to the classical style that has been established. And now Mexico is trying to see what can be done to keep modern architecture out of the Plaza da la Constitucion. It is a difficult task indeed, this attempt to stop architecture from writing the history of the people's building. Nor does it seem particularly worth the effort expended when one recalls that some of the most interesting and charming groups of the past vary widely in style and show unmistakably the onward march of building thought over a wide expanse of years.

# In which we Practice what we Preach



*Architectural concrete office building of the Leeds, Alabama, plant of the Universal Atlas Cement Co. Exterior surface was given a rubbed finish after the plywood forms were removed.*



*Machine shop and change house. A year's perfect safety record won us the P. C. A. Safety Trophy shown in the foreground.*

These views are of two of our new buildings at the Leeds, Alabama, plant of Universal Atlas. We think you'll agree that they are good examples of how architectural concrete may be used in constructing industrial buildings.

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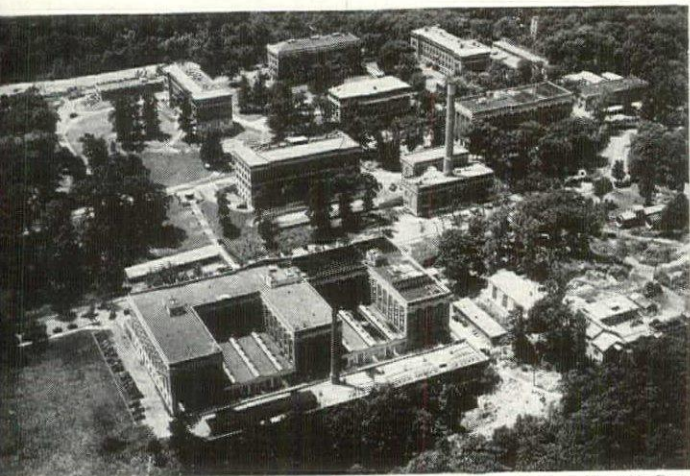
City \_\_\_\_\_ State \_\_\_\_\_

# Universal Atlas

## CEMENTS

# FORUM OF EVENTS

## BUREAU OF STANDARDS RESEARCH IN BUILDING METHODS



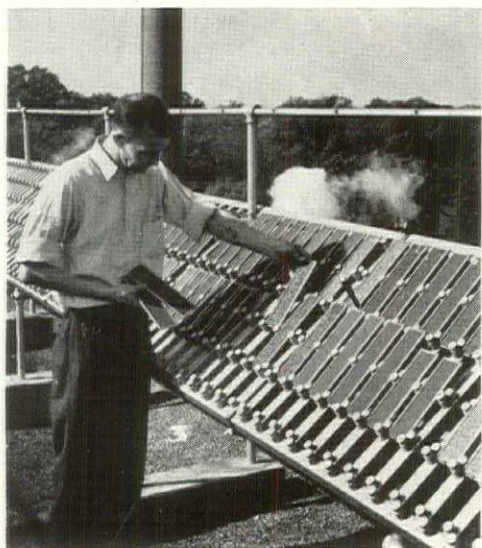
Part of the Bureau's 56 acres

*Army Air Corps*



A. H. Stang, H. L. Dryden, H. L. Whittemore

In sharp contrast to the dead hand of outworn building codes which retard the natural progress of building technology, the U. S. Department of Commerce, through its National Bureau of Standards, is now actively applying technical research in the building industry. With numerous federal agencies active in a broad building program, the need for authoritative information on materials and methods, particularly in low cost housing, brought about the appointment of a representative group to cooperate with the Bureau of Standards in technical research. Under the chairmanship of Harold D. Hymowitz, this group includes C. W. Chamberlain of the Procurement Division, Pierre Blouke of HOLC, Walter Junge of FHWA, Charles E. Mayette of PWA, Vincent J. Phelan of the National Bureau of Standards, George W. Trayer of the Forest Service, Capt. Elsmere J. Waters of the Quartermaster Corps, War Department. Conduct of the program is in the hands of a committee of Bureau division chiefs with H. L. Dryden as chairman and coordinator. General objective: "To furnish to Government agencies, the building industry, and the public, technical information from every available source on the engineering properties of building materials as incorporated in the structural elements and equipment of a house, with particular reference to low cost housing and including new materials, equipment and methods of construction as well as those already in use." Present law terminates the work by July, 1940, but program is likely to be extended. Findings are being recorded in printed reports.



Weathering tests of bituminous roofing

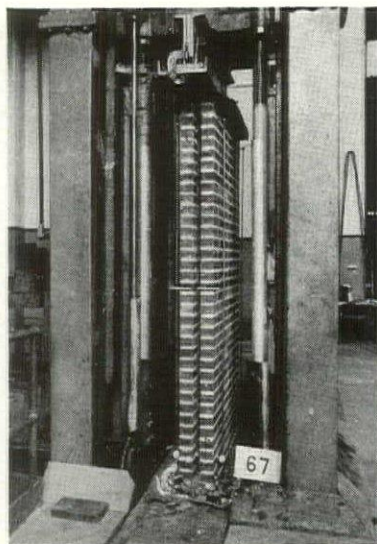


Abrasive test of floors

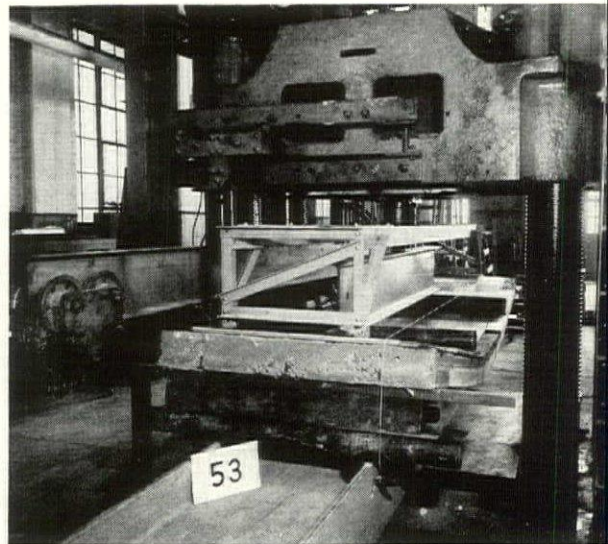
*Thomas D. McAvoy*



Impact test of cinder block wall



Brick cavity wall under compression



A floor after transverse

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\* Patent applied for

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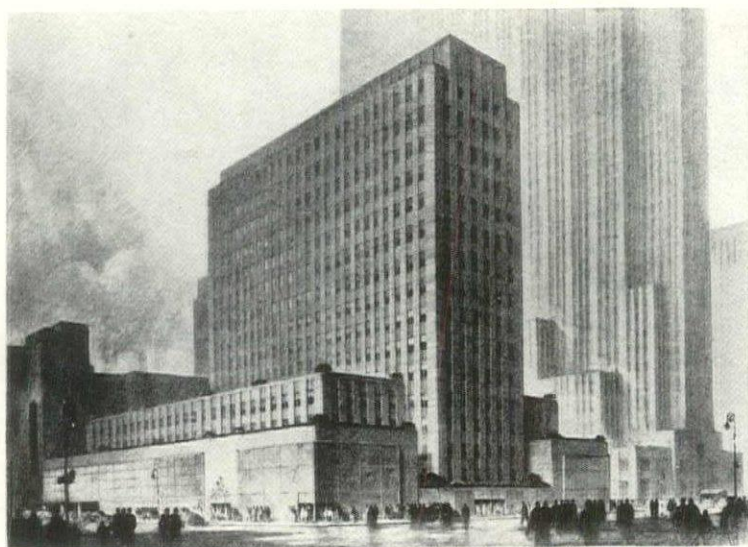
GALVESTON

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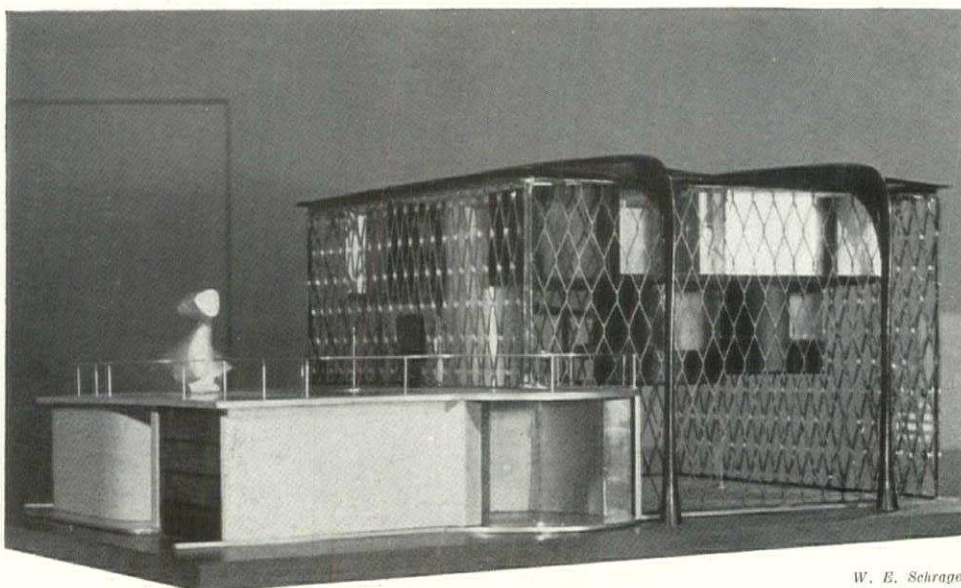
BUENOS AIRES

LONDON

# FORUM OF EVENTS



Newspictures



W. B. Schrage



**Now it can be seen.** With the excavation of a big hole in Manhattan's rock, the Holland House (above, left), young member of the Rockefeller Center family, the public gets a break. "Sidewalk Sunbathers' Club" is open to all, has dues, no "keep moving" by-law; there's even a slot-box for suggestions, shelter from sun or rain. Inspecting it at the moment are the members of Pittsburgh Glass Institute Competition (whose findings will be fully recorded on these pages next month) welcomed George J. Atwell, founder of the C. whose company is digging the big hole.

**A Work of Anticipation** is Paul Nelson's title for his suspended house, which the critic says borrows a swing motif from the jungle. It is "designed on a hypothesis that assumes a more perfect social structure wherein the development of the individual would be essential for collective culture. What looks like expanded metal lattice, the exterior wall is inoxidable metal, being, electrically welded, and supporting non-shatterable glass. The model must be seen to be appreciated—if then.

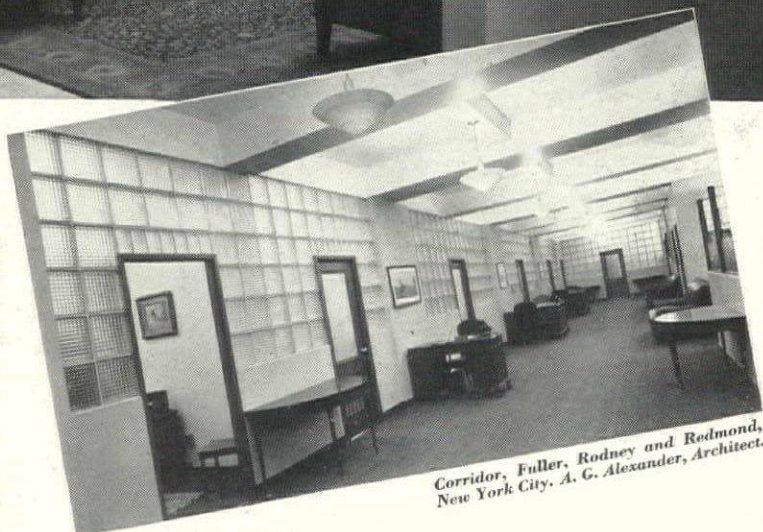
**Parking 1,000 Cars.** With Detroit's high per capita car ownership, her citizens would rather ride in their own than in the projected PWA subway. An alternative project for increasing employment is the double-deck parking structure, designed by Engineer James B. Steep and Architects Giffels & Vallet for Cadillac Square, just off the main retail business district. Possible changes in the local building code might bring the per car cost to \$15. Private capital may step in to build, turning the property over to the city within ten years.

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Corridor, Fuller, Rodney and Redmond,  
New York City. A. G. Alexander, Architect.

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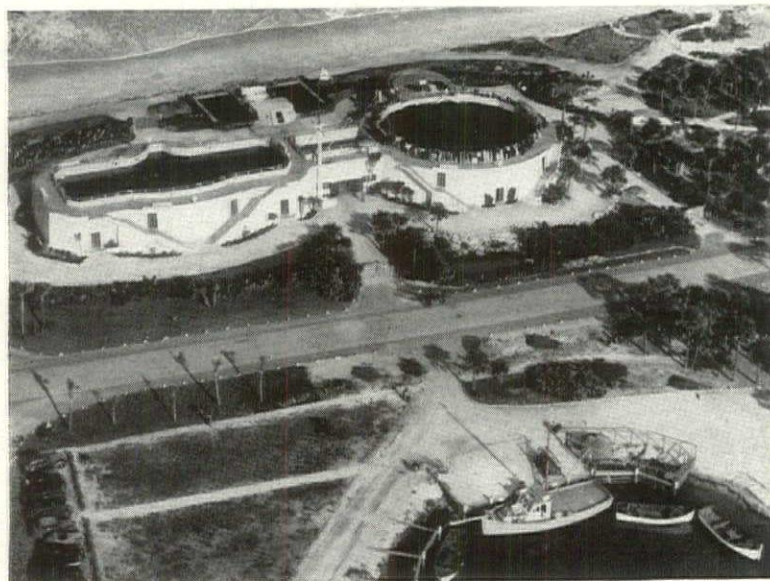
State

# FORUM OF EVENTS



Martin Harris

**Mr. and Mrs. Antonin Raymond**, who have come back to practice architecture in America after seventeen years in Japan. With them they bring an international reputation for their houses, churches, clubs, schools, factories, banks, furniture, textiles, and accessories.

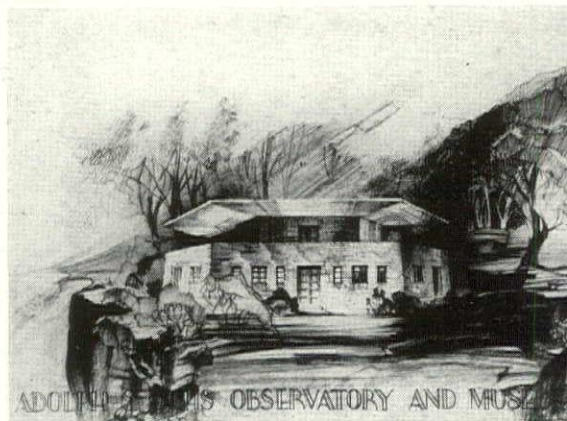


W. F. Gerecke

**Goldfish Bowl, Oversize.** Stopping the motor tourist on the new Ocean Shore Boulevard between St. Augustine and Daytona is this double oceanarium. Larger tank of the two is a polygon 100 ft. long, 50 ft. wide, 18 ft. deep. Through more than 200 portholes in the sides of the tanks the spectator may see and photograph many forms of marine life. Architects: John Walter Wood and Fred Henderich; engineer, M. F. Hasbrouck.



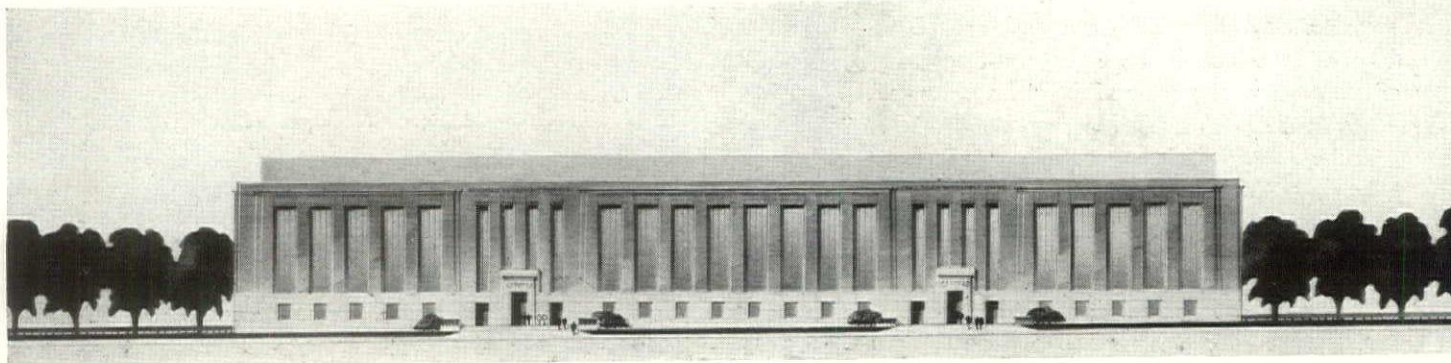
**Golf and Air Conditioning.** Six hundred holes of golf in four days and in eight cities across the continent was the marathon of J. Smith Ferebee, made possible through the fact that The Trane Co. wanted to broadcast with emphasis the message, "Buy air conditioning through your architect-engineer-contractor." Mr. Reuben N. Trane and Mr. Ferebee, taking off from Los Angeles.



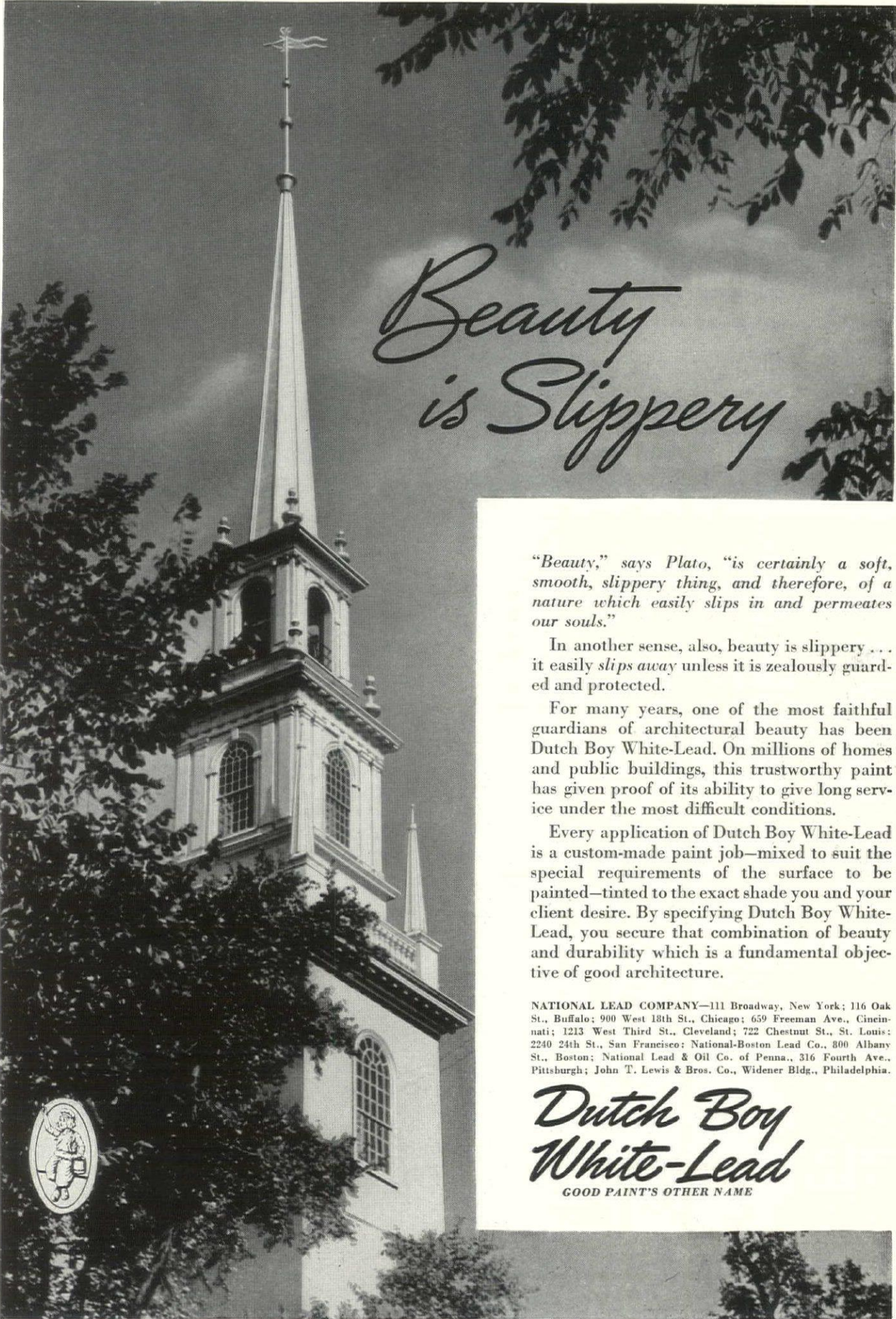
Wide World

**On Lookout Mountain.** A Museum Memorial to the late Adolph S. Ochs, publisher of *The Chattanooga Times* and *The New York Times*, will shortly be erected through the acceptance of the project by the National Park Service. Contributions and a bequest provide materials; some of the labor will be by Civilian Conservation Corps. Designed by the National Park Service with William Crutcher field as associate architect.

**Starting a New Washington Group.** Below, study for a projected building to house the offices of the Social Security Board and the Railroad Retirement Board, one of a group of structures to cost \$14,250,000 and to be built at Independence Avenue and the Mall in Washington. This is one of the last buildings in the design of which the late Charles Z. Klauder had a controlling hand, acting as consulting architect with the Procurement Division.



(Forum of Events continued on page 3)



# Beauty is Slippery

*"Beauty," says Plato, "is certainly a soft, smooth, slippery thing, and therefore, of a nature which easily slips in and permeates our souls."*

In another sense, also, beauty is slippery . . . it easily *slips away* unless it is zealously guarded and protected.

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# LETTERS

## Home Floor Show

Forum:

... As usual, Mr. Wright's design is the most "modern." Possibly his clients have "modern" ears so that the combined living and recreation room (like a club) can quite comfortably take care of a quiet chat at one fireplace, popping corn at the other, relaxed reading on the built-in settee, or idly playing the piano, with ping pong, radio, dancing or games in the recreation room portion. . . The dining room is very well placed for the floor show. That might also be said for the parents' bedroom,—without even the formality of arising; just move the screens. That's real comfort,—and quite "modern." And think what a remarkably quiet spot for early retirement.

It's really surprising that another unique feature was overlooked. Think of the opportunity afforded of a sliding floor panel in the guest bedroom upstairs, with a splendid view of the entertainment below,—of course, through a one way view glass panel. . .

H. A. HERZOG

Portland, Ore.

## Dear Diary

Forum:

Congratulations on the new home for The Diary. Good copy like good music belongs in a place like Carnegie Hall—or Radio City.

FABER BIRREN

New York, N. Y.

## Plus

Forum:

Please add my name to your subscription list for your new magazine PLUS and send me the bill.

IVAN RIGBY

Baltimore, Md.

To FORUM subscriber Rigby, appreciation for his interest, but no bill to him nor to 37,000 other FORUM subscribers who receive PLUS in this issue (page 433) as part of their FORUM subscription.—Ed.

Forum:

For God's Sake you guys, don't throw this thing into the waste basket before reading it. It's NOT an application for a job. I only want to say "thank you" very clumsily. . .

Though an artist and painter by passionate avocation, this writer . . . feels THE ARCHITECTURAL FORUM not architectural alone but a vigorously and ener-

getically alert, clever, open-minded, and splendidly managed forum for the art and culture of American living. . .

Of a very conservative turn of mind, perhaps, with regard to social and national philosophy and its practical implications, this unworthy scribe nevertheless now enthusiastically welcomes the addition of controversial-exploratory PLUS to the rich and stimulating pages of your magazine. The budding future has a democratic minority right to be discussed from your forum. That's only wise conservatism!

Thanks too, for inclusion of excellent ARCHITECT'S WORLD. THE DIARY is very enjoyable. Tell Frank Lloyd Wright, the Honorable and Revered One, that we love him, and, ("Diary," Nov. p. 23, Thurs. Sept. 15) that he need not worry about "futility of speech or . . . individual action." "The tide carries us on;" He is definitely a great force that makes tide come and go! I, and others I know, all persons he never heard of and need not hear of, feel the ripples or waves of his tide force-part several times a year! As for you, oh, most esteemed Editors, you erected yourself an unforgettable monument with your Frank Lloyd Wright issue, which is a jewel on our shelves. One does not have to agree slavishly with everything, to love, to admire, to understand, to be grateful for. . . !

MR. PENNY CENT

*Cromorist Painter and Secretary  
The Saline River Artists  
Harrisburg, Ill.*

P.S. Allow me to throw my chest out while adding, that the glorious name of penny cent, freakish as it may sound, is a true Americanism, a bold lightning shortcut to the 10-mile name of Robert Henry Penrod Centurion.

THE FORUM anticipates more comments pro and con PLUS, unveiled this month.—Ed.

## What This Country Needs . . .

Forum:

... In my opinion, the question of Low Cost Housing is a joke. The Government has been sending out so much literature for the lower third of the common people, but practically nothing is being done to help them. Most of the Government's low cost houses cost approximately \$1,500 per room. Builders find it practically impossible to build cheaply.

Vice President Marshall said years ago, "What this country needs is a good five

cent cigar." What I believe this country needs is a good livable house for \$3,000. . .

OTTO GRUPP, JR.

Croydon, Pa.

Let all FORUM subscribers consider themselves a Committee of One to report to the Editors meritorious examples of low cost single family houses. Such news will have prompt editorial attention.—Ed.

## Credit

Forum:

Because of my personal knowledge of the remarkable achievement of L. R. Dixon Company, general contractor of the Hollywood Turf Club, featured in October, I think I should call this project to your special attention. . .

When the Dixon Company took over this job, some foundation work had been done by day labor under another architect and the plans, which had to be revised were not complete when the work was started. As they proceeded the foundations and structural steel were under going revision but the contractor pushed the work full speed even under these conditions. He started in February and completed the entire project for the opening in June. At times there were a thousand workmen on the job. . .

This general contractor, Mr. L. R. Dixon, is one of the best in the country and his monuments will endure long after we have all passed away. He is still a young man but in a few short years he has built everything from a modest home to the great Olympic Coliseum. . . mention these facts to support my argument that general contractors are entitled to full credit for their works even when they are presented from the architectural standpoint. . .

F. J. CONNOLLY

Manager

*Associated General Contractors of America  
Los Angeles, Calif.*

Henceforth, THE FORUM will make every effort to mention the names of general contractors in connection with the major buildings it publishes.

While on the subject of the Hollywood Turf Club, credit should be given Royal Metal Manufacturing Co. which supplied the Club "Turf Chairs."—Ed.

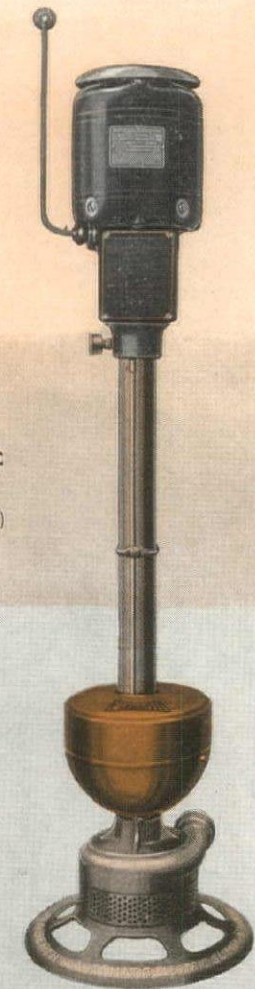
## Erratum

In publishing the Georges Wilmet house in its November issue, THE FORUM failed to state that Mr. Wilmet was the designer.—Ed.

# OUTSTANDING PERFORMANCE

*for removing  
seepage water*

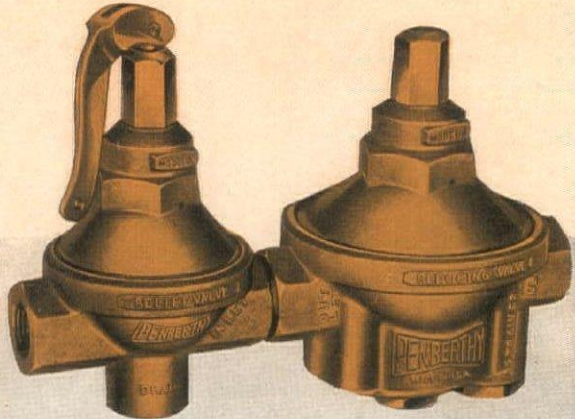
**PENBERTHY AUTOMATIC  
CELLAR DRAINER**  
(Water or Steam operated)  
Made in 6 sizes



**PENBERTHY AUTOMATIC  
ELECTRIC SUMP PUMP**  
Made in 6 sizes

Advanced and rugged design, copper and bronze construction throughout, and careful workmanship are responsible for the demonstrated superiority of these Penberthy pumps wherever seepage water accumulates. Leading jobbers stock Penberthy products.

*for modernizing  
hot water heating systems*



**PENBERTHY PRESSURE AND RELIEF CONTROL**  
Made in 3 Models



**PENBERTHY RELIEF VALVE**  
Made in 14 Models  
including Dead End Type

**PENBERTHY REDUCING  
VALVE**  
Made in 9 Models



Penberthy Hot Water Heating Specialties are constructed of high grade steam bronze. Their design and workmanship are also of exceptional quality throughout. Your jobber will gladly give you complete information and supply your needs.

PENBERTHY PRODUCTS

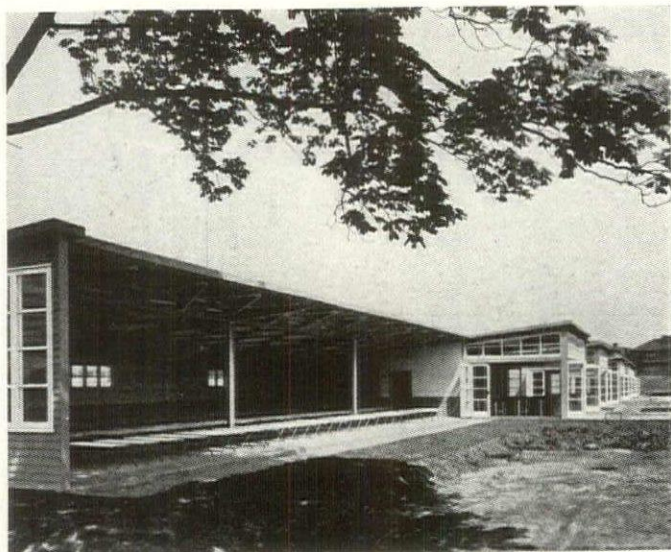


**PENBERTHY INJECTOR COMPANY**

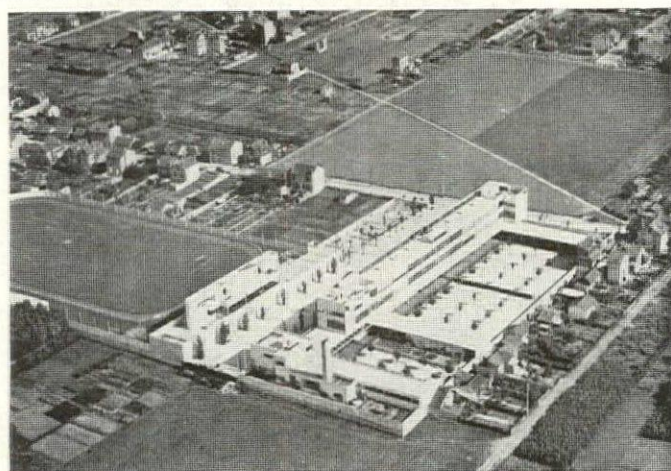
Manufacturers of QUALITY PRODUCTS Since 1886  
DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

# B O O K S

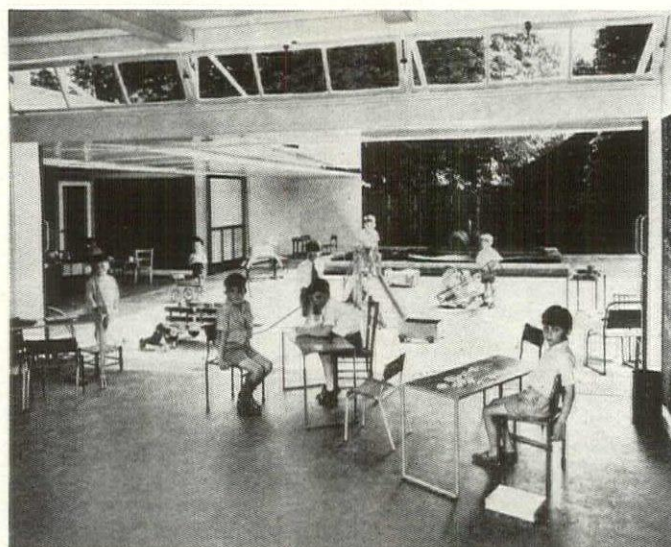
Modern architecture at its best: an outstanding reference book on schools from England.



OPEN-AIR SCHOOL, LANCASHIRE. HUBERT BENNETT, ARCHITECT



SCHOOL AT VILLEJUIF. ANDRE LURCAT, ARCHITECT



NURSERY SCHOOL AT DULWICH. SAMUEL & HARDING, ARCHITECTS

**THE DESIGN OF NURSERY AND ELEMENTARY SCHOOLS,** by H. Myles Wright and R. Gardner-Medwin. The Architectural Press, London. 120 pp., illustrated with plans and photographs. 9 x 12½. 12s 6d.

Compulsory education in England begins at the age of five and ends at fourteen; the present system provides three types of schools to cover this period: infant schools (ages five to seven), junior schools (seven to eleven), and senior schools. In addition, local authorities may provide nursery schools for pre-school children. The government's objective is eventually to provide separate buildings for each of these types.

This book covers the entire range of nursery and elementary schools, and the examples it illustrates are not only applicable to American practice, despite the differences between the English educational system and ours, but it also shows a great many instances of improvements over accepted U.S. standards of school design. The authors obviously hold no brief for traditional architecture, and to supplement their collection of modern English work they have included a number of excellent European examples. The result is a reference book which is unique in its field.

A number of factors are responsible for the high level reached in many of the new English schools. One is that the educational authorities, faced with almost insoluble problems in the reconditioning of obsolete buildings, are in favor of designs flexible enough to permit changes which may be required in the future. In such circumstances the modern architect clearly has a great advantage. Another factor is the growing influence of the young architects, many of whom are now getting school work. A third, indicated by the authors, is that England's school reforms have almost invariably coincided with England's wars, at which times alarmingly low averages of health and intelligence were discovered in recruits; the uncertainty of the past few years has again aroused the government's interest in methods of improving the quality of its future soldiers.

The material is divided into sections according to school types. Each section is illustrated by plans and photographs, and there is an impressive amount of additional data. In some cases a complete school is shown, but more frequently the illustrations have been selected to show a specific unit. Two of the schools shown in detailed form are illustrated at the left. Hubert Bennett's open-air school was built to accommodate 135 defective children from nursery to senior school age, and has classrooms which can be completely opened on three sides. The private nursery school at Dulwich, whose designers were formerly members of the London firm of Tecton, represents another effort to link the classrooms as closely as possible with the outdoor play areas. While a very small building, consisting of only two classrooms, an entry, and a kitchen, it is a very good example of thoughtful, conscientious planning. The text describes the various elements in the school plan, their lighting, heating, furnishing, ventilation, wall, floor and ceiling finishes, and equipment. Diagrams give furniture sizes for children of various ages, playground sizes, and other information. While in some instances the authors' recommendations do not fit American methods, most of the material is definitely usable. The book is not only well documented and beautifully presented, but it provides another strong vindication of modern architectural theory as applied in practice.

# DIRECTIONAL LINES IN LINOLEUM

➤ "steer" customers to displays



IN BACHELOR'S SHOP, Berkeley, Cal., the eye-catching floor is Armstrong's No. 25 Terra Cotta Linoleum, with inset of Canary Yellow No. 48.

## YOU CAN STEP UP THE SALES POWER OF STORE INTERIORS WITH COLORFUL FLOORS OF ARMSTRONG'S LINOLEUM

**H**ELP your clients to better business. Give them floors that invite customers to enter and subtly guide their steps to counters and displays. Example: this skillfully designed floor of Armstrong's Linoleum in the Bachelor's Shop, Berkeley, Cal., where the directional line is canary yellow on a field of terra cotta plain linoleum.

It's easy to plan sales-building floors with Armstrong's Linoleum. This flooring lends itself to almost any scheme your pencil can sketch. Trade-marks and other designs are easily reproduced from more than seventy distinctive colors.

Your clients will also appreciate the other practical advantages of Armstrong's Linoleum. Reasonable

in first cost, these floors are exceptionally economical to maintain. Their resilience makes for underfoot quiet and comfort. And they are long-wearing because the rich, clear colors run through the full thickness of the composition.

For full information, consult *Sweet's* or write to Armstrong Cork Co., Building Materials Division, 1203 State Street, Lancaster, Pa.

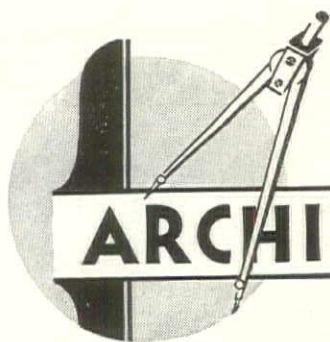
For commercial use, Armstrong manufactures the only complete line of resilient floors: Linoleum, Cork Tile, Rubber Tile, Asphalt Tile, and Linotile (Oil-Bonded). Therefore our Architectural Service Bureau is in a position to give you unbiased suggestions as to the best type for specific requirements.



RUBBER TILE • LINOTILE (OIL-BONDED) • ASPHALT TILE

*Armstrong's* **LINOLEUM**  
and **RESILIENT, NON-CERAMIC TILES**

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS

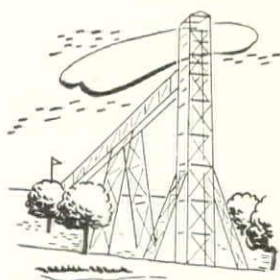


# ARCHITECTURALLY SPEAKING

by OTIS ELEVATOR COMPANY



Architects in the West have watched with interest the remodeling of the San Francisco building now called the Central Tower. The old Claus Spreckels Building (it was also known as the Call Building) now dominates the skyline with its six new floors and modern dress. The remodeling presented a tough problem to Otis engineers, for the work was carried on with two elevators in service all the time. The demolition of the old dome and the erection of the new floors was carried on simultaneously and successfully. The elevator modernization included changing the gearless traction machines to Otis Finger-Tip Signal Control with Unit-Multi-Voltage Control. The three machines were raised to serve the twenty-first floor, having previously served the eighteenth floor with two cars and the seventeenth floor with one car.



Most golfers—and particularly those who shoot over a hundred—will tell you that they play the game for exercise. But even a golfer can get too much exercise, so the Pittsburgh Field Club has installed an Otis Elevator to carry its members from the 17th green to the 18th tee, a vertical distance of 70 feet. This is undoubtedly the first elevator ever installed on a golf course. The installation consists of a steel tower connecting with a bridge structure about 270 feet long, running from the tower to the tee. The elevator has full automatic push-button control, with an automatic reversal arrangement so that as soon as the players have left the elevator at the upper level it will automatically return to the lower landing to receive the next group of passengers. This elevator is, incidentally, a fine example of the adaptability of Otis equipment.



We here in the United States are proud of the scope of our mechanical equipment—and apt to be a little smug about our superiority—so it's interesting to note the alertness of many foreign countries to new mechanical developments. For instance, would you guess that—after the United States and Canada—there are more Otis Signal-Control elevators in Brazil than in any other country? And that South Africa follows along closely? Brazil has 61 installations, South Africa 53, Australia 40, Japan 39, Great Britain 36, and on down to Peru, Puerto Rico, and the Philippine Islands, which have two each.



Perhaps you don't follow the ponies, but if you did we'd recommend that you become a member of the Argentine Jockey Club in Buenos Aires. Their new grandstand, the Hippodromo de la Plata, is the first structure of its kind with Escalator equipment. There are two 3-foot Escalators in the members' stand, serving between the ground and the second level of the grandstand. Of course, there are plenty of interesting Escalator installations in this country too. For instance, those which serve the patrons of the International Casino, New York night club. And those which carry passengers to the pier of the Italian Line, on the North River, New York City.



This residence, at Old Greenwich, Conn., is really two houses in one. One is a "Cape Codder" and the other is a "Salt Box." Each is a valuable Early American home at least 200 years old. Mr. Gale H. Carter is the owner. Architect: Chas. E. Kent, Heating Engineer: Chas. E. Scott, both of New York City.

Air conditioning is supplied by a "split" system, with approved Anthracite water-tubesteel boiler and approved Anthracite stoker.

## 20<sup>TH</sup> CENTURY HEAT in an 18<sup>th</sup> CENTURY HOUSE

● Mr. Carter searched all New England for perfect examples of 18th Century American homes. He found not one, but two—bought them, transported them from their original sites to Old Greenwich, Connecticut, where they were re-erected as an harmonious residence. These rare and valuable examples of fine architecture deserved the best, safest, and most dependable heat. Mr. Carter states why he chose Anthracite:

"I desired air conditioning to protect the rare old panelling and my antique furniture. I selected Anthracite as fuel because it is clean. I rejected oil because I don't like the dirtiness of oil smoke. It forms a film on the furniture, and furthermore, gets on the leaves of my old trees. Now that Anthracite can be handled conveniently and economically, it is much to be preferred."

When preparing plans for new homes or for modernizing old ones, remember that there were 7 reasons why Anthracite was selected as the fuel to heat this valuable, matchless architectural gem. With the whole field of

heating fuels from which to select, the owner of this "perfect home" chose Anthracite. With Anthracite, as with no other fuel, you can provide your clients with all 7 essentials of heating satisfaction. The wide variety of modern Anthracite equipment is described in a book which we will be glad to mail upon request. Anthracite Industries, Inc., Chrysler Building, New York.

*This Seal of Approval appears on Anthracite equipment only after it has passed the most rigid tests in the heating field.*



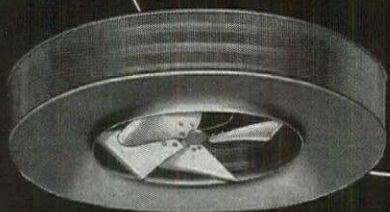
Save with  
*Pennsylvania* **ANTHRACITE**  
(HARD COAL)  
**THE ONLY 7 STAR FUEL**

# TRANE SETS THE UNIT HEATER PACE

TRANE

AIR<sup>™</sup>

Unit  
Heaters



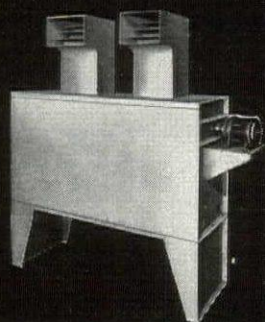
## PROJECTION HEATER

*Salvages Ceiling Heat*



## STANDARD PROPELLER TYPE

*Quiet, efficient Spot Heating*



## TORRIDOR—BLOWER TYPE

*Either belt or direct driven*

Trane engineering knowledge, in collaboration with Architects, Engineers and Contractors, enables us to offer the greatest line of Unit Heaters.

Trane manufactures a limitless variety of sizes and styles to meet your every requirement. Old-fashioned cast iron pipe coils and radiators—yes, and even ordinary unit heaters have passed out of the picture. Trane Unit Heaters, with their many advantages, are constantly broadening the field of unit heater application. Not only factories, and garages, but shops, offices, lunch rooms, dance halls as well. Any space is a prospect for some type of Trane unit heater. Only a line like the great Trane line can provide the exact type.

There are huge Trane Torridor Blower Type Units for the delivery of large quantities of heated air. There are Model "N" Propeller Type Unit Heaters which have solved heat problems in factories and commercial establishments the country over . . .

And, in the amazing Projection Unit Heater there is the most advanced development in years and years—for loss of heat, at ceilings, is now licked, and what was formerly wasted heat is put to work down at the floor level where it belongs.

The scope of installations of Trane Unit Heating Equipment is interesting information for every Engineer and Contractor. We urge you to write and ask for Unit Heater Bulletin No. S-327. In it you will find an answer for new building or remodeling requirements.

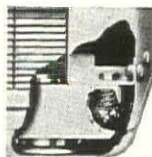


### FAN

New 4 Blade Fan. Balanced and formed to eliminate noise due to air friction.

### CRADLE COIL (Cut-Away Section)

Showing how coil is spring cradled in casing. Eliminates all stress and strain due to expansion.



Because of the exclusive Trane feature known as "Balanced Pressure" Trane Traps will withstand extremely severe operating conditions. A rupture due to pressure differences is a physical impossibility with Trane Traps.



### FLOAT TRAP

Equipped with the famous Trane balanced pressure thermostatic bellows that locks against steam and lasts indefinitely.



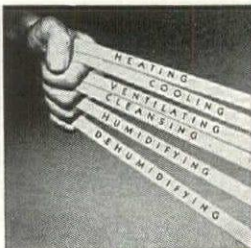
### FLOAT VENT

Extra large air capacity through 1/4-inch port. Float seals against water leakage. Bellows closes port against steam leakage.



### BUCKET TRAP

Designed for use with Blast Coils, Unit Heaters or at low points on high pressure steam lines to clear condensation and discharge air.



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# PITTSBURGH GLASS INSTITUTE *announces*

## THE WINNERS IN ITS 1938 COMPETITION FOR EXECUTED EXAMPLES OF THE USE OF GLASS IN ARCHITECTURE, DECORATION AND RELATED SUBJECTS

---

### GRAND PRIZE:

Edward D. Stone, Carl Koch, Jr., Associated Architects, New York City,  
for residence of Mr. and Mrs. A. J. Koch, Cambridge, Massachusetts.

**HOUSES** costing under \$12,000  
*Prize:* Harwell Hamilton Harris,  
Carl Anderson, Los Angeles  
*Mention:* Clarence W. W. Mayhew,  
Oakland, Cal.  
*Mention:* George Patton Simonds,  
Hayward, Cal.

**HOUSES** costing over \$12,000  
*Prize:* Edward D. Stone, Carl Koch,  
Jr., New York City  
*Mention:* Kenneth Day, Philadelphia  
*Mention:* Richard J. Neutra, P. Pfisterer,  
Los Angeles

**SHOPS** not more than two stories in  
height  
*Prize:* George Howe, Philadelphia  
*Mention:* Clarice Saymon,  
New York City

**STORES** three stories or more in height  
*Prize:* Nimmons, Carr and Wright,  
Chicago  
No mentions awarded

### THEATRES

No awards

### HOTELS, APARTMENTS

*Prize:* Harbin F. Hunter,  
Los Angeles  
No mentions awarded

### MANUFACTURING PLANTS

*Prize:* Albert J. Daniels,  
Shrewsbury, Mass.  
No mentions awarded

### SCHOOLS, COLLEGES, ETC.

*Prize:* Alfred Kastner,  
Washington, D. C.  
*Mention:* Richard J. Neutra,  
Los Angeles

### INSTITUTIONAL BUILDINGS

*Prize:* Victorine and Samuel Homsey,  
Wilmington, Del.  
No mentions awarded

### PUBLIC BUILDINGS

No awards

### DOMESTIC INTERIORS

*Prize:* J. R. Davidson,  
West Los Angeles  
*Mention:* Gregory Ain, Los Angeles  
*Mention:* Robert Hiden, Los Angeles

### COMMERCIAL INTERIORS

*Prize:* Walker and Gillette,  
New York City  
*Mention:* Amos Parrish and Co., Inc.,  
New York City  
*Mention:* J. R. Davidson,  
West Los Angeles

### ACCESSORIES

*Prize:* Reinhard and Hofmeister,  
New York City  
*Mention:* Gustav Jensen, New York City

*Grand Prize . . . \$1000*

*Individual Class prizes . . . \$100 each*

*Mentions . . . \$50 each*

---

The Pittsburgh Glass Institute offers its congratulations to the competitors who were selected for awards by the Jury composed of: Gardner A. Dailey, Architect, San Francisco; Albert Kahn, Architect, Detroit; William A. Kimbel, Interior Decorator, New York; William Lescaze (Chairman), Architect, New York; Raymond Loewy, Industrial Designer, New York; Paul R. MacAlister, Interior Decorator, New York; Competition Advisor: Howard Myers, Editor, THE ARCHITECTURAL FORUM.

May we thank again the many hundreds of architects, designers and interior decorators who, by their enthusiastic response, have made this competition such a notable success.

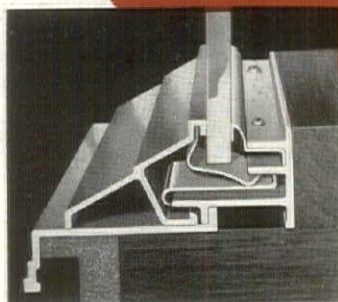
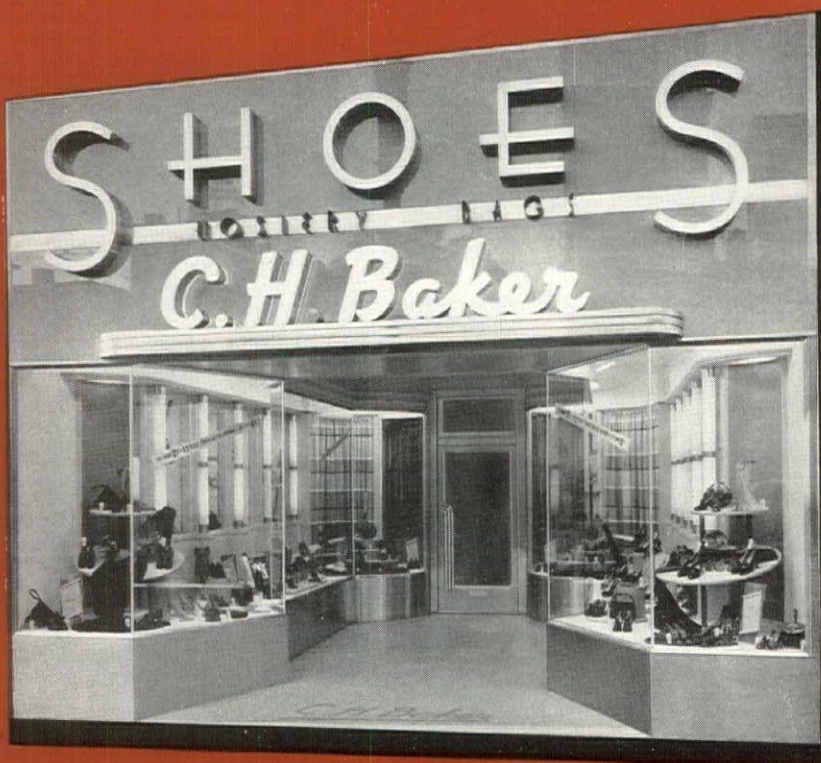
The premiated designs, together with the report of the Jury will be published in the January 1939 issue of THE ARCHITECTURAL FORUM.

**PITTSBURGH GLASS INSTITUTE**

# LIBERAL USE OF RUSTLESS METAL Makes Any Store Front Design More Effective

## ★ SEE ZOURI FOR:

- ✓ THE COMPLETE STORE FRONT INCLUDING—
- ✓ SASH AND BARS
- ✓ AWNING BARS
- ✓ ENTRANCE DOORS
- ✓ PILASTERS
- ✓ MOULDINGS
- ✓ METAL SIGN LETTERS
- ✓ PANELING
- ✓ ORNAMENTAL WORK



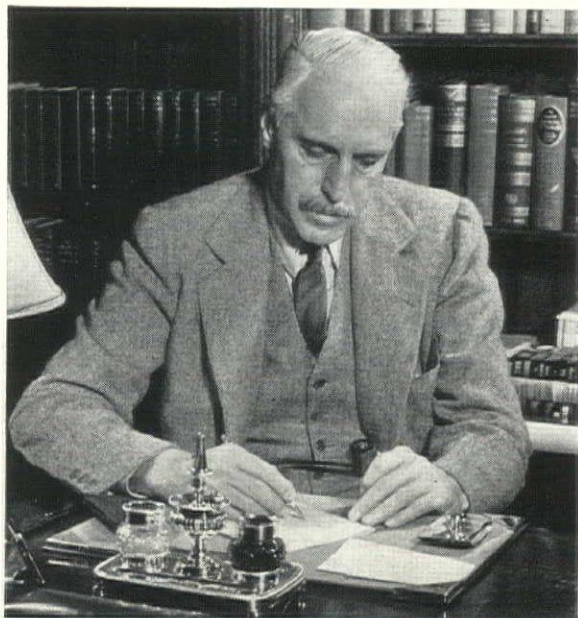
## Glass Protection

To be safe, plate glass must be handled and HELD with care! That's why the new ZOURI Extruded Sash and Bars as well as the famous Rolled Safety Key - set construction are designed to provide FULL CUSHION GRIP on glass. This important feature assures maximum protection against the danger and expense of glass breakage — protection vital to the satisfaction of owner and merchant.

Important to architects and builders is the modern demand for more attractive store fronts. That's why store front designers are turning to the liberal use of ZOURI Rustless Metal — for its life and lustre, for rich lasting beauty, and for interesting lines and contrasts. Zouri offers a complete line of store front construction in either rolled or extruded metal. In most cases striking effects may be obtained by the use of standard sections,

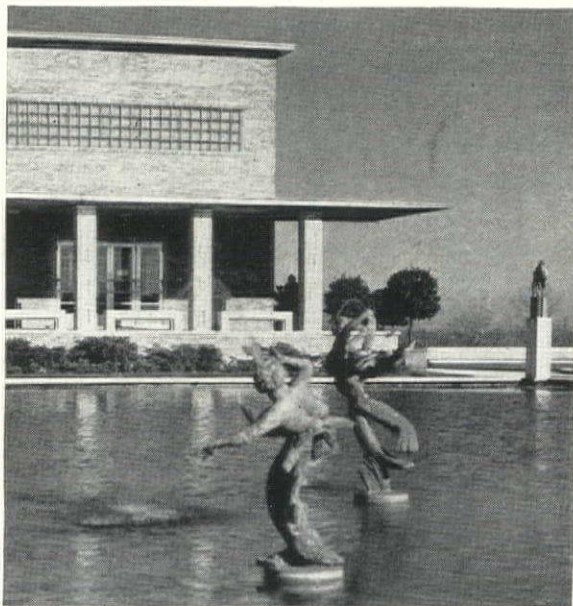
which are carried in stock. In others, ZOURI fabricates special architectural metal work in aluminum, bronze or stainless steel—to face the entire front with modern metal, to produce doors or metal letters in harmony with the store front design, or to satisfy any modern demand. A 14-page catalog is at your disposal in SWEET'S. See your ZOURI distributor or write direct to ZOURI STORE FRONTS, NILES, MICH., for full size details.

# ZOURI STORE FRONTS

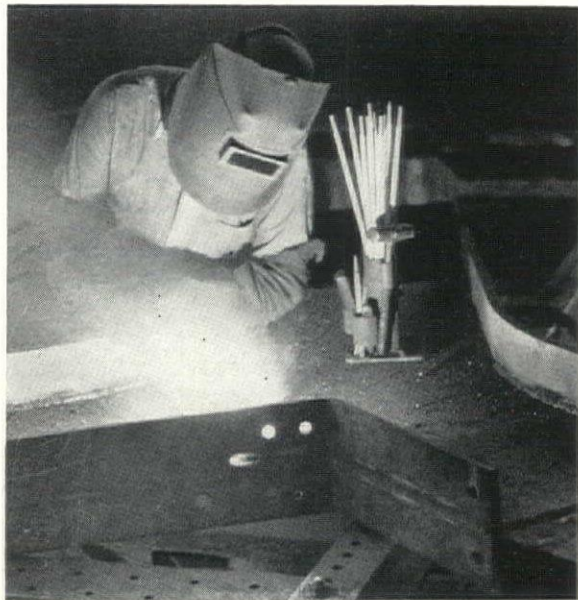


*Eric Schaal—Pix*

**MAN OF THE MONTH** . . . not inhibited, 100 per cent inhabited (page 486)



**BUILDING OF THE MONTH** . . . from father to son to Milles (page 418)



**PRODUCT OF THE MONTH** . . . Martians who work in whispers (page 471)



## INSTITUTE OF SCIENCE BUILDING, CRANBROOK

CRANBROOK ARCHITECTURAL OFFICE: ELIEL SAARINEN, ARCHITECT

WHEN the first buildings at Cranbrook Academy were completed, they attracted countrywide attention for the refreshing manner in which they met the problem of educational buildings. Omitting any consideration of the masterly handling of a large plan, Cranbrook was of immediate importance because it demonstrated beyond the possibility of refutation that Collegiate Gothic was neither the ultimate, nor even a particularly good expression for U. S. academic architecture. In the buildings that followed there was no repetition, but a steady development toward simpler forms, with new materials used wherever they seemed suitable. Typical of this later work is the Institute of Science building, devoted to research in the natural sciences.

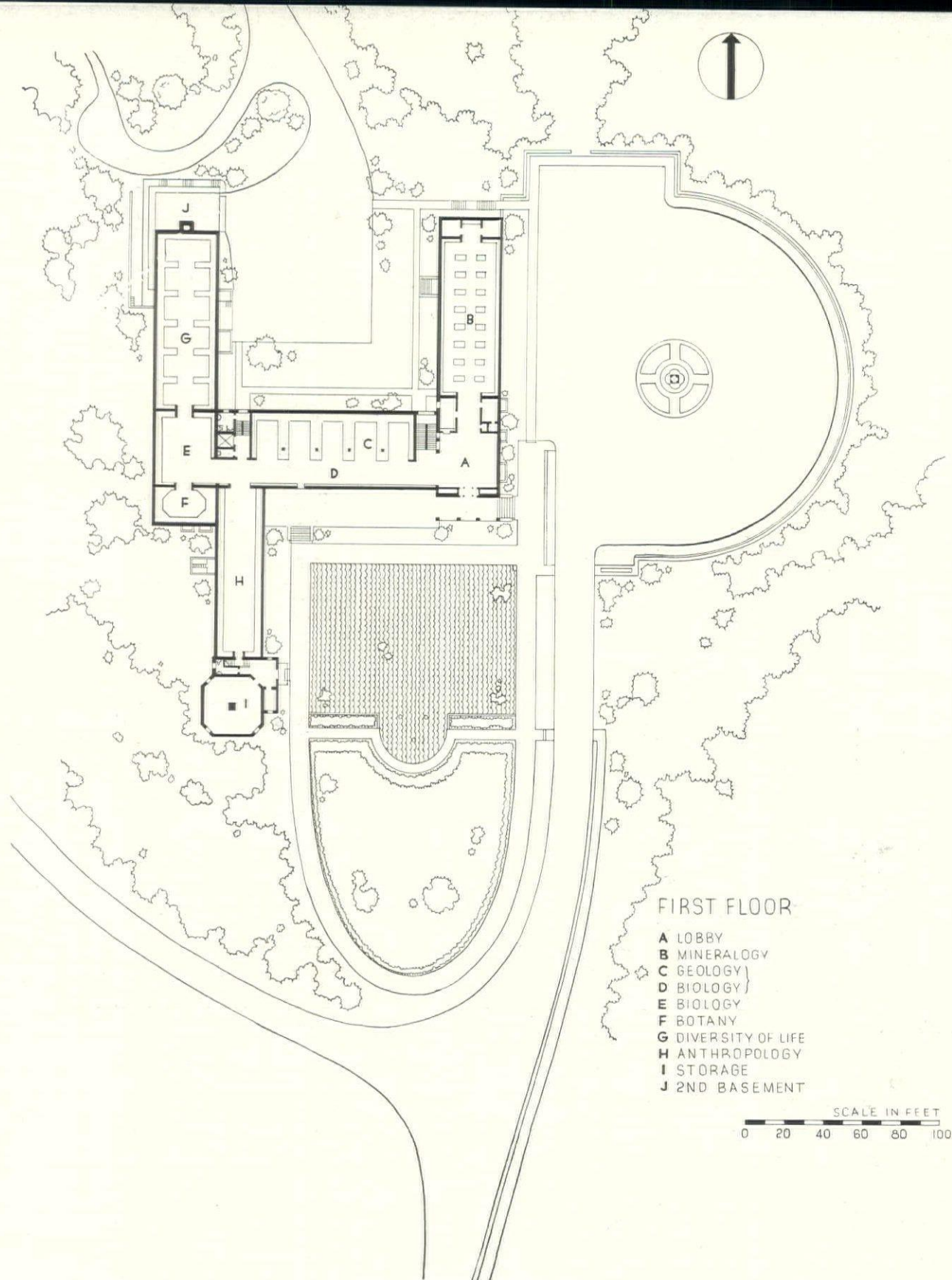


## ACADEMY, BLOOMFIELD HILLS, MICHIGAN

*Asken Photos*







# INSTITUTE OF SCIENCE BUILDING, CRANBROOK, ARCHITECTURAL OFFICE

ELIEL SAARINEN, ARCHITECT

Asymmetrical in plan, it has a large entrance porch at the southeast corner, adjacent to the driveway and reflected in the pool whose playful sculptures are by Carl Milles. The museum character of the first floor is expressed on the exterior, its blank walls relying entirely on the texture of the brickwork for their effect. The offices, classrooms, and laboratories on the second floor are lighted by regularly spaced windows and by walls of glass block.

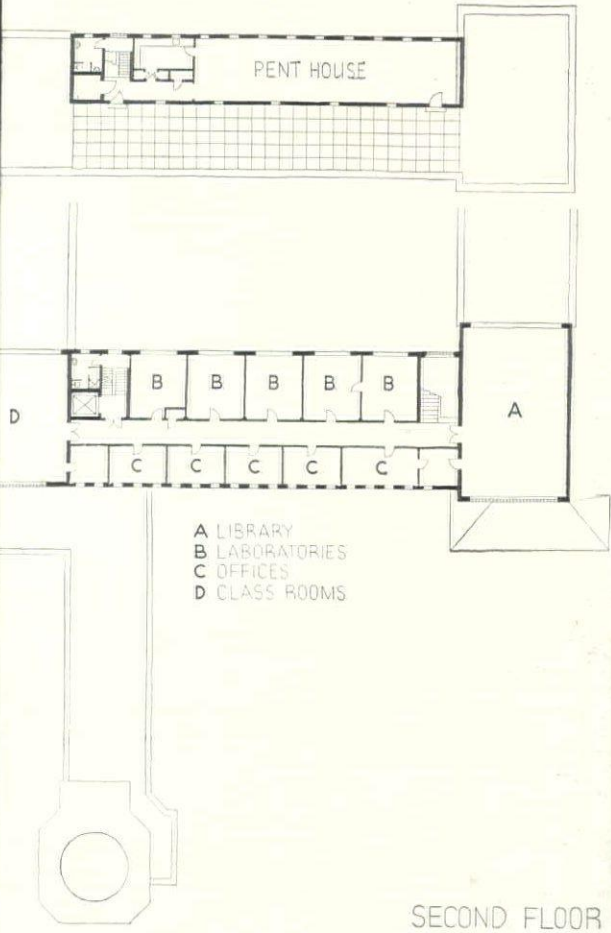


ENTRANCE LOBBY

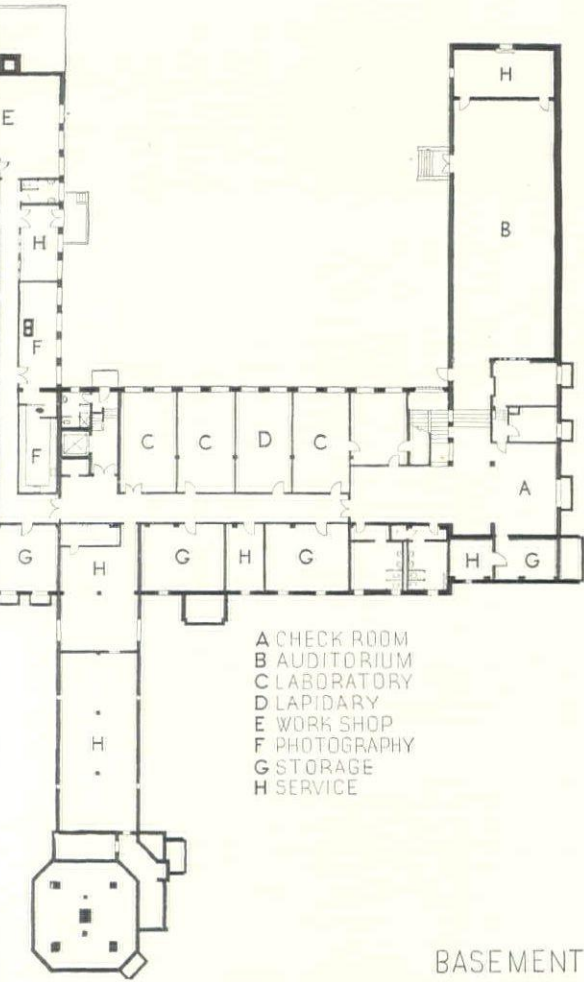
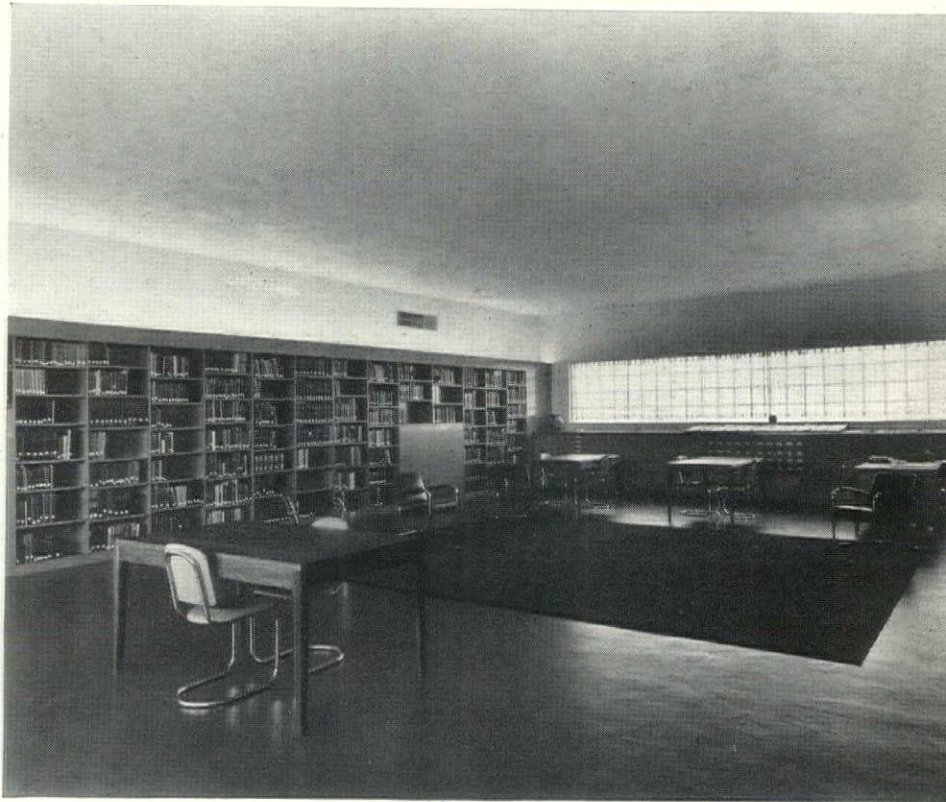
#### MINERALOGY



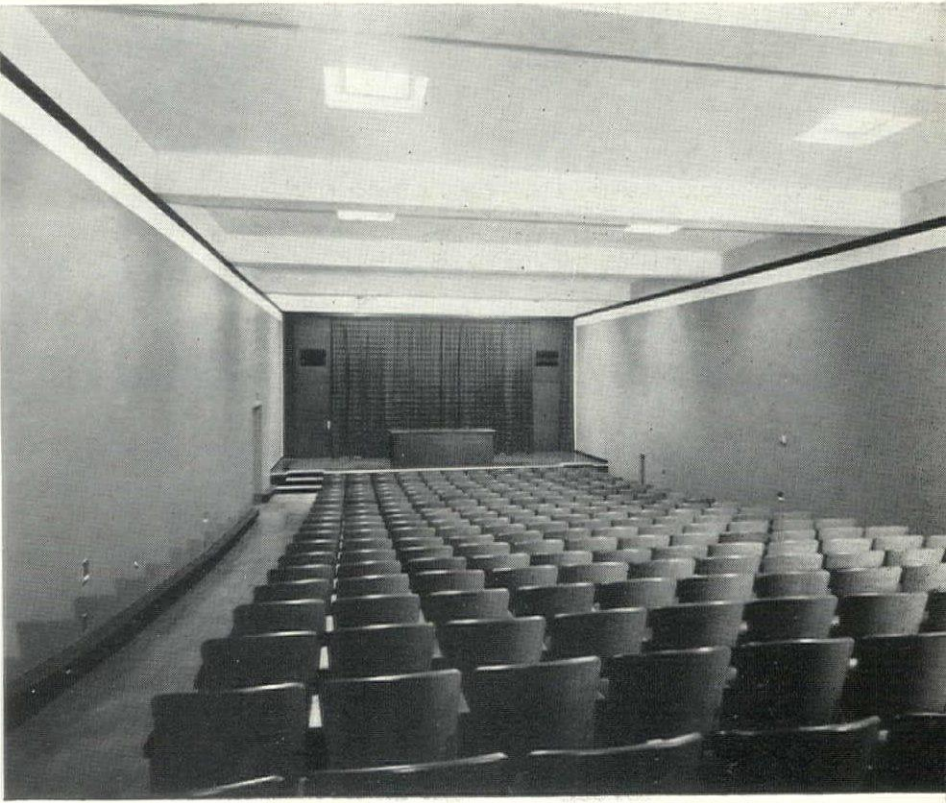
Interiors are reduced to the simplest possible terms, with all interest concentrated on the exhibits. Even more than the exterior these rooms suggest the impersonal, detached nature of the sciences for whose study the building was erected. The rear view of the building shown on page 424, is an excellent illustration of the completely three-dimensional character of the design.

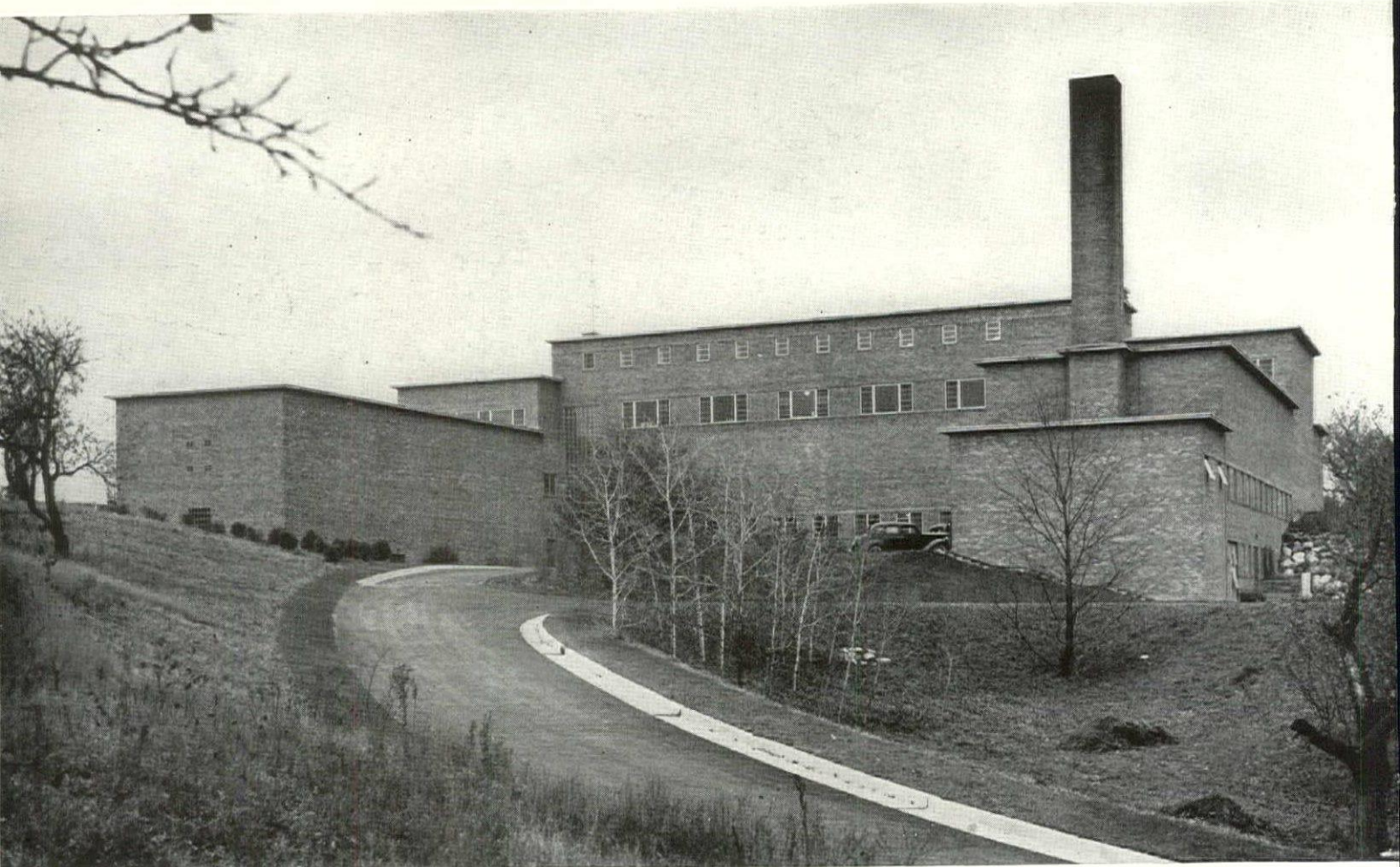


LIBRARY



AUDITORIUM





NORTH ELEVATION

**CONSTRUCTION OUTLINE:** FOUNDATIONS: Concrete wall footings. Waterproofing—membrane around basement walls.

STRUCTURE: Exterior walls—4 in. face brick with 8 in. and 12 in. hollow brick backup. Interior partitions—hollow tile and brick. Floor construction—reinforced concrete.

ROOF: Built-up, gravel surfaced, 20-year bond.

SHEET METAL WORK: Flashing and gutters—copper. Ducts—galvanized iron.

INSULATION: Roofs—Celotex Corp.

WINDOWS: Sash—aluminum, double hung, Kawneer Co. Glass blocks—PC, Pittsburgh-Corning Glass Works.

FLOOR COVERINGS: Basement and first floor—black terrazzo. Upper floors—gray linoleum.

FURNISHINGS: Museum cases—Art Metal Construction Co.

WOODWORK: Interior doors—flush. Exterior doors—oak and aluminum.

PLUMBING: Hot and cold water pipes—copper.

HEATING: Direct and indirect. Boilers—Kewanee Boiler Corp. Coal stoker. Thermostats—Johnson Service Co. Hot water heater—General Electric Co. oil fired boiler.

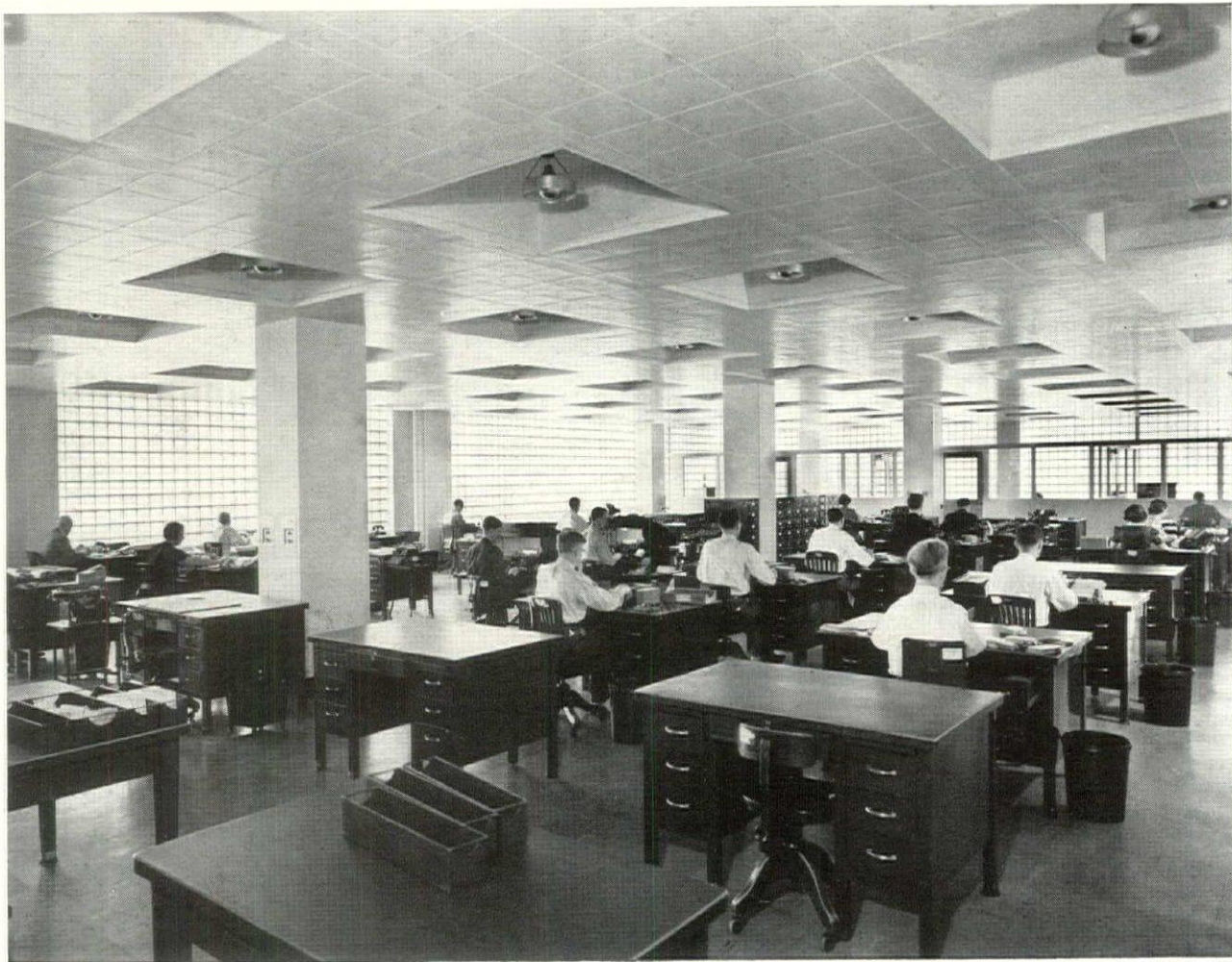
# DETROIT EDISON COMPANY SERVICE BUILDING

ARCHITECTURAL DIVISION,  
The Detroit Edison Co.



*Manning Bros.*





NATURAL LIGHT

Manning Bros.

AN important factor in the design of the Edison Company's new building was the almost universal requirement of large unobstructed spaces. Most of the offices, the repair shops, drafting room, sales and demonstration rooms and many of the services fell into this category. As a result the building more closely resembles the typical loft structure than an office building.

The structure is of standard concrete beam and slab construction up to and including the first floor; above it is of structural steel. The floor slabs are of cinder ash concrete, developed by the Detroit Edison Company, which makes use of the fine ash and crushed cinders from its own boilers. It is claimed that this material has greater plasticity and about three times the elasticity of standard concrete. Another innovation was the use of concrete block made with ash from the Cottrell precipitators used in the company's powdered fuel plant; the blocks are used for permanent partitions, inner facing of out-

side walls, have a finish somewhat like polished slate, and are said to be suitable for painting.

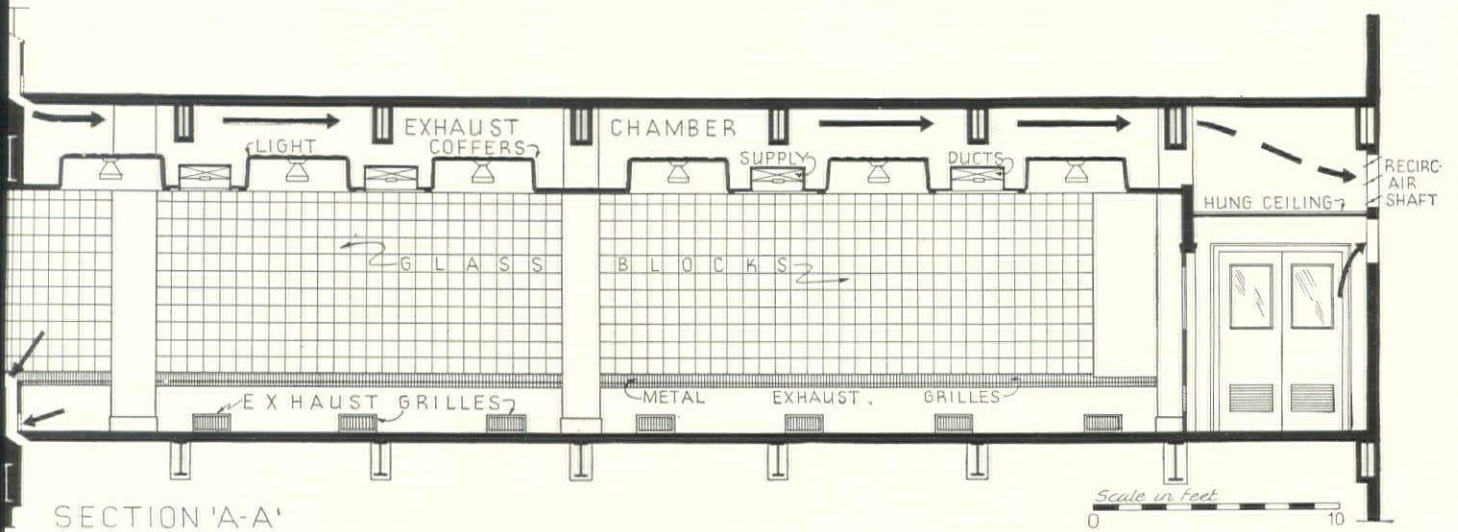
One of the most interesting features of the building is the ceiling design, which takes care of the conditioned air supply, acoustical treatment and the high-intensity lighting installation in a remarkably efficient and attractive manner. Plaster coffer about 4 ft. square and 15 in. deep take the lighting fixtures, each of which uses nine 300-watt lamps. Air is introduced into the rooms through the perforated metal ceiling.

The glass block is set in stone frames with an aluminum angle used at the exterior head section. As a result the materials requiring painting are few, and within easy reach. The glass block has a special cutting designed to reduce glare without too much loss in light transmission; the heat loss is said to be about that of a double window. Cubage: 3,139,000. Area per floor: 29,800 sq. ft. About 82.5 per cent of total area is usable.

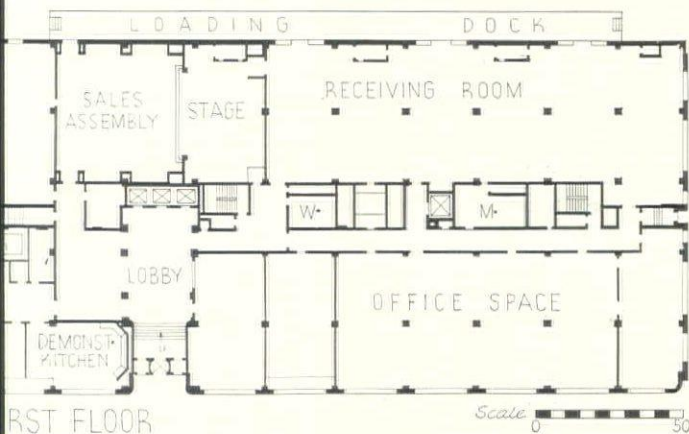


ARTIFICIAL LIGHT

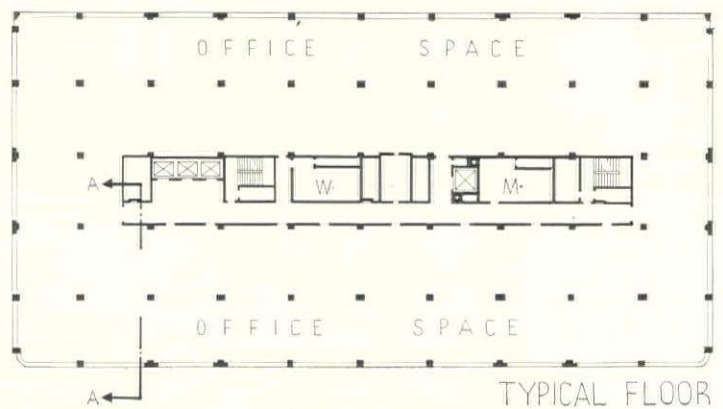
INSTALLING CEILING COFFERS



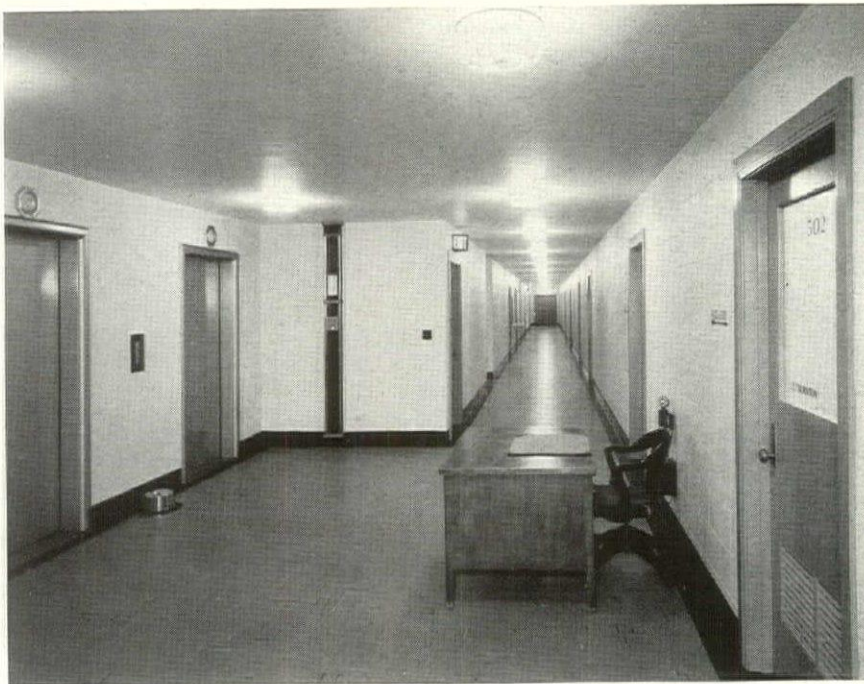
SECTION 'A-A'



FIRST FLOOR



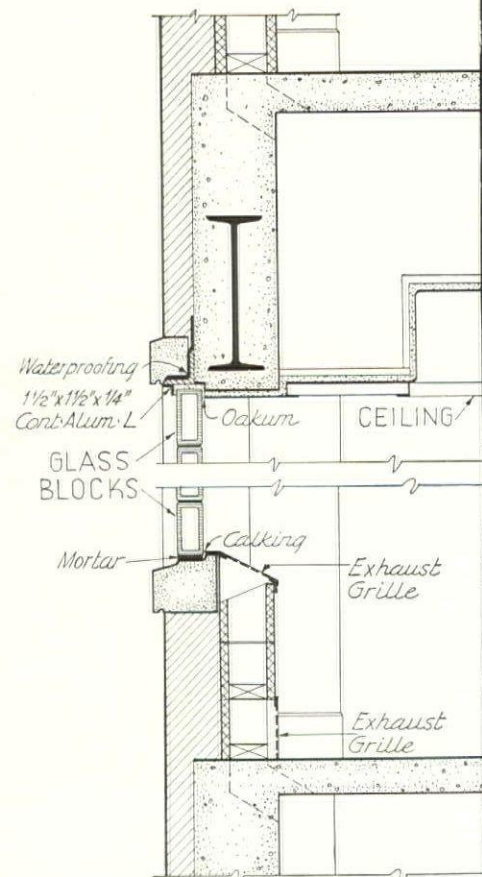
TYPICAL FLOOR



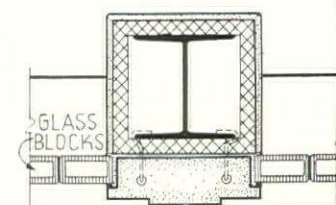
HALL



AUDITORIUM



SECTION THRU WALL



PLAN OF PIER

## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—4 in. face brick, Hydraulic Pressed Brick Co., 4 in. common brick, J. A. Mercier Co.; inside finish—4 in. Cottrell block, The Detroit Edison Co. Interior partitions: Fixed—Cottrell block; movable—flush steel, E. F. Hauserman Co. Structural steel—The Bethlehem Steel Co. Lobby walls—2 in. Terra Cotta facing, Federal Seaboard Terra Cotta Co. Floor construction: Flat slab—reinforced light-weight cinder concrete, The Detroit Edison Co. Ceilings—suspended metal lath and plaster. Furring—Calumet Steel Co. Lath—Consolidated Expanded Metal Co. Plaster and acoustical tile—U. S. Gypsum Co. **ROOF:** Covered with 4-ply tar and slag, Johns-Manville. **SHEET METAL WORK:** Flashing—copper, inter-locking thru-wall, The Cheney Co. Ducts—galvanized steel, American Rolling Mill. **INSULATION:** Roofs—2 in. cork, The Armstrong Cork Products Co. Tunnel ceiling—1 in. Insulite, The Insulite Co. Sound insula-

tion—perforated metal and mineral wool, Perfatile, U. S. Gypsum Co. Ducts— $\frac{1}{2}$  and 1 in. air acoustic sheets, Johns-Manville. **WINDOWS:** Aluminum casements in rest rooms, Hope's Windows, Inc. Glass— $\frac{1}{4}$  in. plate, double strength, quality A. Glass block—8 x 8 in., Owens-Illinois Glass Co. **ELEVATORS:** Three passenger and one freight elevators, Otis Elevator Co. **FLOOR COVERINGS:** Shops, offices and corridors— $\frac{1}{8}$  in. asphalt tile; trucking areas— $\frac{3}{16}$  in. asphalt tile, David E. Kennedy. Lobby—dark Travertine. **WOOD AND METAL TRIM:** Trim—wood and metal; tin clad, J. Brodie & Son, Inc. Interior doors: Flush type—wood, red gum, Pon McFate Co. Hollow metal—Metal Door & Trim Co. Exterior doors—aluminum, General Bronze Corp. **HARDWARE:** Butts—The Stanley Works and Oscar Rixon Co. Latch sets—Yale & Towne Mfg. Co. Door closers—Norton Co. and Oscar Rixon Co. **PAINTING:** Interior: Walls—3 coats lead and oil. Trim—1 prime coat, 2 coats synthetic enamel. All paints by Acme White Lead & Color Works.

**ELECTRICAL INSTALLATION:** Wiring system—3-phase, 4-wire network. Switches—single pole toggle type, Hart & Hegema. Fixtures—special plaster coffers; coffer lantern holders, Edwin F. Guth Co. Underfloor duct system—Walker Bros. **PLUMBING:** Drinking water tank—Central Boiler Works. Sprinkler system—Viking Sprinkler Co. Toilet fixtures—Standard Sanitary Mfg. Co. Equipment of demonstration kitchen: Wood wall cabinets—Coppes, Inc. Steel cabinet sink and counter tops—Whitehead Metal Products. Steel cabinet sink counter tops—Art Metal Construction Co. Dishwashers, refrigerators and ranges—General Electric Co. and Westinghouse Electric & Mfg. Co. **AIR CONDITIONING:** Filtered, humidified, dehumidified, heated or cooled air supplied to zoned office areas from central fan room. Filters—Independent Air Filter Co. Heating and cooling coils—McCord Radiator Co. Refrigerating equipment—Carrier Refrigeration Co. Fans—American Blower Co. Thermostats—Taylor Instrument Co. Hot water heater shell and tube heat exchanger—American District Steam Co.

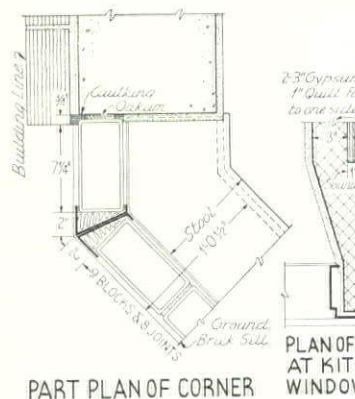
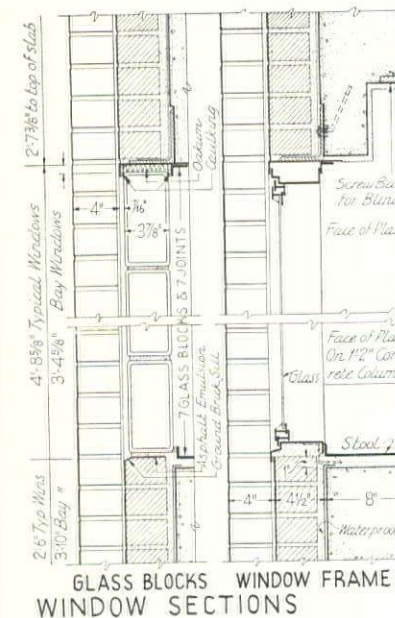
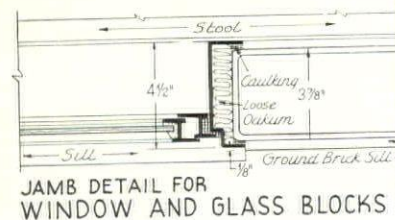


*Robert M. Damora Photos*

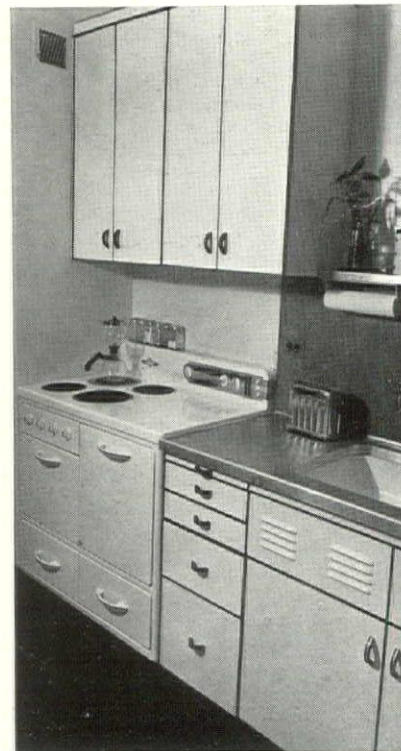
FREDERICK L. ACKERMAN, ARCHITECT

RAMSEY & SLEEPER, ASSOCIATES

APARTMENT HOUSE 25 EAST 83<sup>RD</sup> STREET, NEW YORK CITY



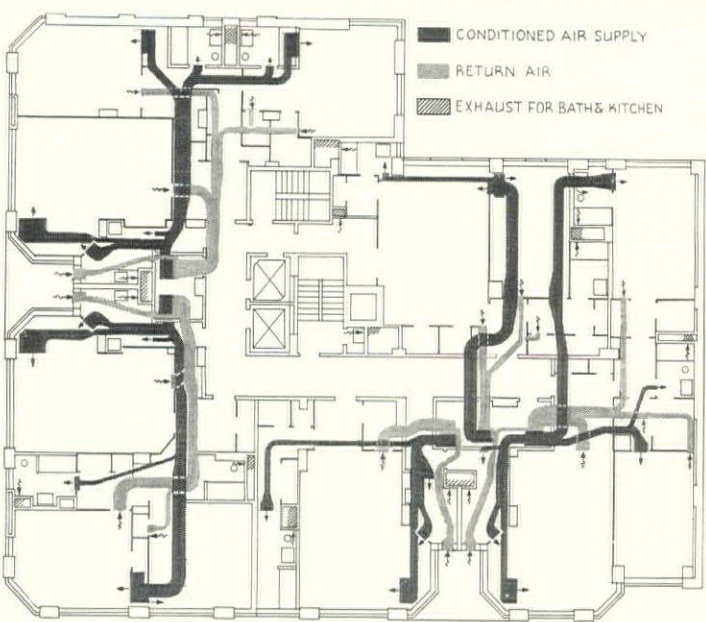
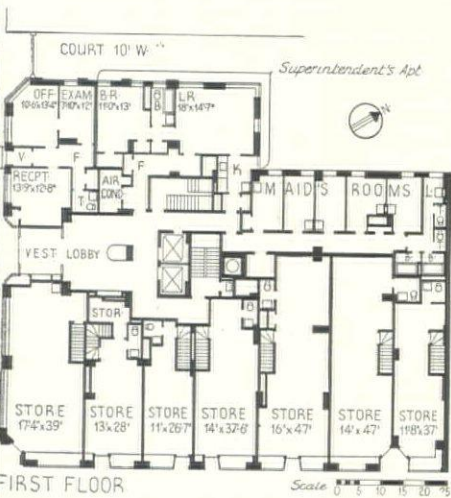
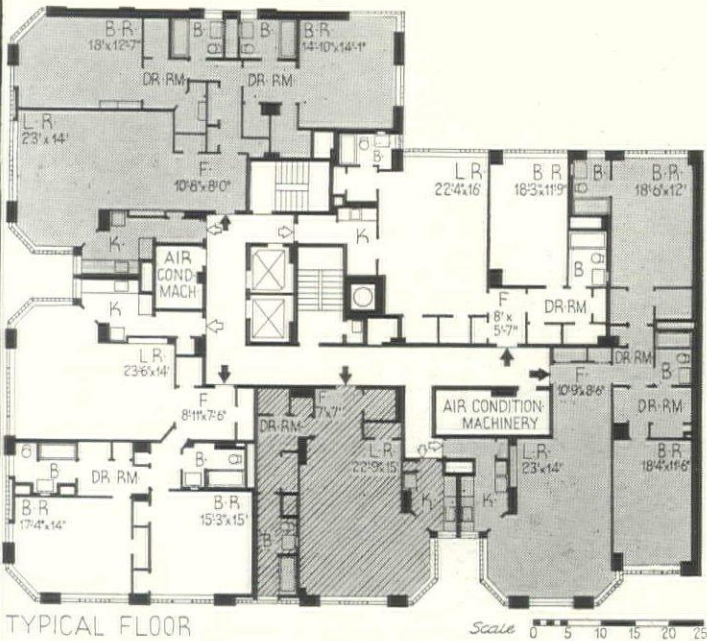
#### COOKING



BUILT to provide arrangements for living in units of two, three and four rooms, this apartment house is one of the few erected within the last few years which shows any important changes from standard practice. The entire building is air conditioned, and glass block admits a sufficiency of natural daylight; the windows open the rooms to the view, and were required by the building regulations. The omission of radiators from exterior walls, and the need for concentrating conditioning spaces at the center of the building presented problems whose solutions are illustrated in the plans and details. In addition to the technical excellence of the building, its external appearance deserves comment. Completely expressive and admirably organized, it is a distinguished addition to the growing list of good modern work in the apartment house field.

# APARTMENT HOUSE NEW YORK CITY

FREDERICK L. ACKERMAN, ARCHITECT  
 RAMSEY & SLEEPER, ASSOCIATES



**AIR CONDITIONING:** All rooms in all apartments are completely air conditioned and provided with filtered, heated, humidified, and cooled air. Tenant has complete control of air conditions in apartment by winter thermostat, humidistat, cooling thermostat, and summer-winter switch. Entire system specially designed by Sullivan A. S. Paterno, Mechanical Engineer. Apartments have individual fresh air intakes. Exhaust air from kitchens and bathrooms is discharged at the roof mechanically, and not recirculated. Air heated by steam and cooled by water; water is cooled by Freon gas compressors and cooling tower. Apartments equipped with independent unit air conditioner located in air conditioning room on same floor. All equipment, such as unit conditioners, steam pipes, chilled water pipes, drain lines, and humidifying piping is exposed in air conditioning rooms, can be easily checked and repaired, and is accessible only to the apartment employees through the public halls. There are no pipes or equipment in any of the apartment rooms.

EATING



LIVING



DRESSING



SLEEPING



## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—4 in. face brick, parged against 12 in. reinforced concrete walls, concrete 8 in. at window spandrels. Inside—plaster on concrete. Interior partitions—gypsum block and clay tile between halls and apartments, 2 in. solid lath and plaster inside apartments; clay tile at baths. Columns—reinforced concrete; same thickness as exterior wall on street fronts. Floor construction—2-way flat concrete slabs, girders at partitions and in minor spaces. Ceilings in living rooms—treated for acoustics with Limpet, Acoustical Installations Co.; in other rooms plaster. Kitchens, baths, halls, foyers and dining alcove ceilings—suspended on metal lath. All ducts concealed in ceiling furring.

**ROOF:** Concrete flat slabs and promenade tile over fill and Barrett Co. 20-year built-up roofing.

**SHEET METAL WORK:** Flashing—lead covered copper except some fabric. Ducts—galvanized iron.

**INSULATION:** Roofs—1 in. of Limpet blown on ceilings under all roofs, Acoustical Installations Co. Sound insulation: Between apartment walls—3 in. gypsum block with 1 in. Cabot's Quilt, Samuel Cabot, Inc., attached to one side. Ceilings of Public Hall—¾ in. U. S. Gypsum Co.'s Acoustone D.

**WINDOWS:** Sash—J. S. Thorn Co.'s standard weight casements finished with Parkerized

treatment. Glass—3/16 in. crystal sheet flat drawn. Glass blocks—Insulux 8 x 8 in., Owens-Illinois Glass Co.

**STAIRS AND ELEVATORS:** Steel stairs, colored cement treads, Master Builders Co., Elevators—1 passenger and 1 service having unit multi-voltage duplex collective control with buzzer for attendant, Otis Elevator Co.

**FLOOR COVERINGS:** Lobby—terrazzo. Public halls, kitchens, halls, closets—asphalt tile, David E. Kennedy, Inc. Living rooms, bedrooms and dining alcoves—cork tile, David E. Kennedy, Inc. Bathrooms—rubber tile, Hood Rubber Co.

**WALL COVERINGS:** Bathrooms—ceramic tile around tubs. Part of entrance lobby—Formica, Formica Insulation Co.

**FURNISHINGS:** Linoleum kitchen counter tops and cabinets—Murphy Door Bed Co.

**WOOD AND METAL TRIM:** Door bucks and trim—steel, World Steel Products. Flush doors inside apartment—wood, Hardwood Products Co. Hall to apartment doors—hollow metal, World Steel Products. Elevator doors—Superior Steel Door & Trim Co.

**HARDWARE:** Locks—Reading Hardware Corp. Knobs—Catalin, W. C. Vaughn.

**PAINTING:** Interior: Walls—Lithopone wall flat, Keystone Varnish Co. Ceilings—casein, Muralo Co. Trim and sash—enamel, Devoe & Reynolds Co. Exterior sash—aluminum paint, Devoe & Reynolds Co.

**ELECTRICAL INSTALLATION:** Building completely electrically equipped, no tenant meters. Frigidaire Corp. electric ranges and

refrigerators, Marr electric bathroom radiators, Caldwell low wave radio and television receiving system, Loeffler inter-communicating house telephone. Westinghouse Electric & Mfg. Co. No-fuse apartment panel, Bryant Electric Co. receptacles and switches.

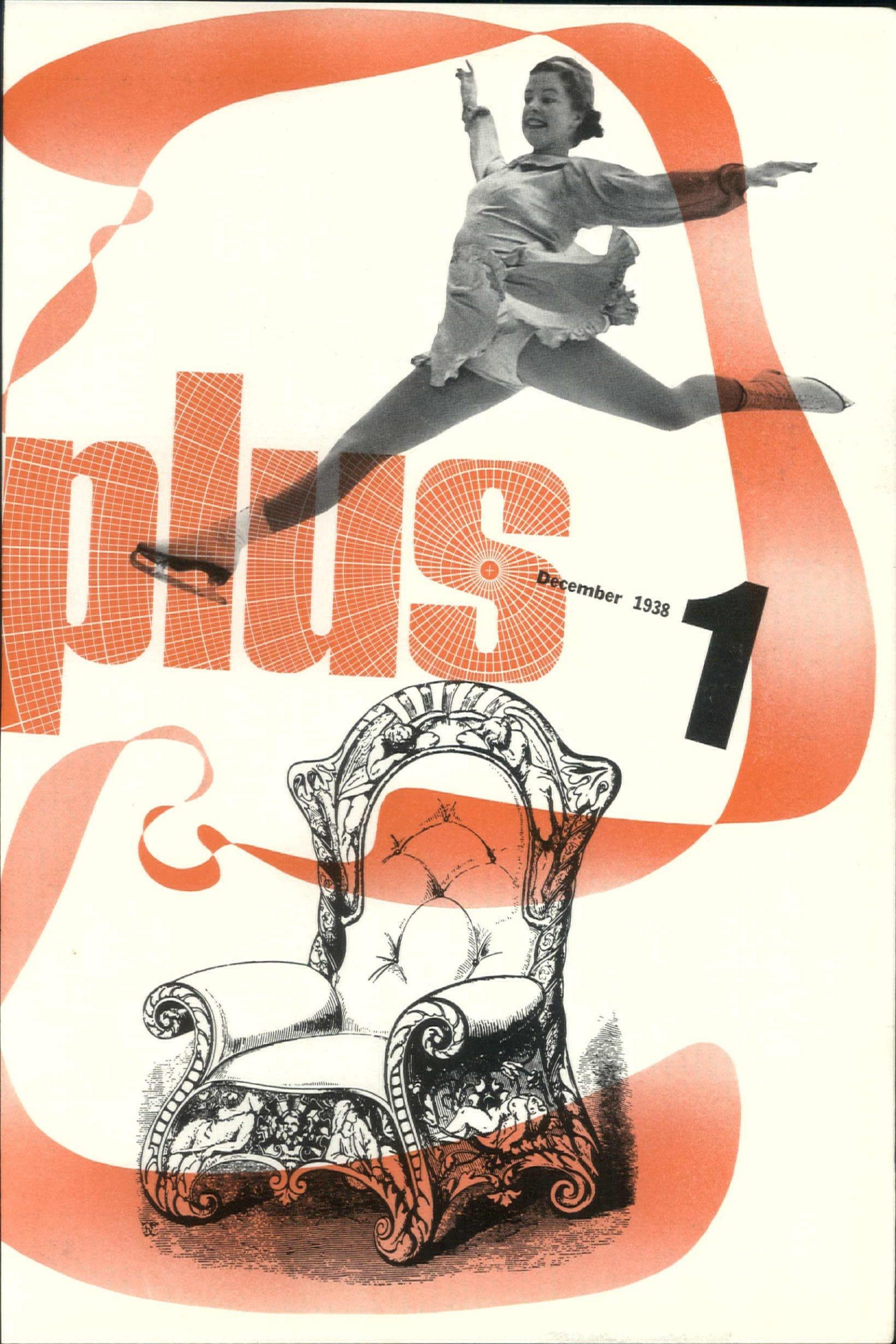
**PLUMBING:** Soil pipes—cast iron, Cent Foundry Co. Waste and vent pipe wrought iron, A. M. Byers Co. Water pipes—85 per cent red brass, Bridgeport Brass Co. Valves—Jenkins Bros. Hot water tank copper lined, Patterson Kelley. House traps—Dover Boiler Works and Worthington Pump & Machinery Co. Sump pump—Go Pumps, Inc. Pipe covering—Johns-Manville Toilet fixtures—Crane Co. Bath tubs—special low type, Standard Sanitary Mfg. Co.

**AIR CONDITIONING:** The principal parts of the air conditioning system were made up of the following manufacturers: Compressors and circulating pumps—Worthington Pump & Machinery Corp. Cooling tower—Marine Co. Unit conditioners—Trane Co. Air conditioning controls—Johnson Service Co. Registers and grilles—Tuttle & Bailey Mfg. Exhaust fans—American Blower Co. Boilers—H. B. Smith Co. Oil burners—The Empire Engineering Co. Heating specialties—Barnes & Jones. Valves—Jenkins Bros. Insulation material—R. A. Keasbey Co. Preheating and chilled water—National Tube Co. Pipe, drainage—A. M. Byers Co.

**SPECIAL EQUIPMENT:** Mail chutes—Currier Mail Chute Co. Venetian blinds—aluminum slats, Chicago Venetian Blind Co.

**PLUS** • In all the controversy that has revolved around the subject of modern architecture, one small fact has often gone unobserved: Modern, as with all architecture today, has its extremists, its moderates, and its conservatives. Far from being a reflection on the movement, however, this lack of unanimity bears testimony to its strength and long standing • The chief indication of Modern's vigor is its dynamic, highly controversial quality, and it is not necessary to look far back to see that the revolutionary developments of yesterday are the commonplaces of today. And so, presumably, for tomorrow • Because extreme minority opinion can so quickly become majority fact, because out of the "wildest" theories often come the most vital ideas, and because THE FORUM in name intends to remain a forum in fact, PLUS now appears to add opinion, exploration and new controversy to reporting • To PLUS and its editors, THE ARCHITECTURAL FORUM offers its best wishes—and a free hand.

THE EDITOR



# plus

December 1938

1

# plus

orientations of contemporary architecture

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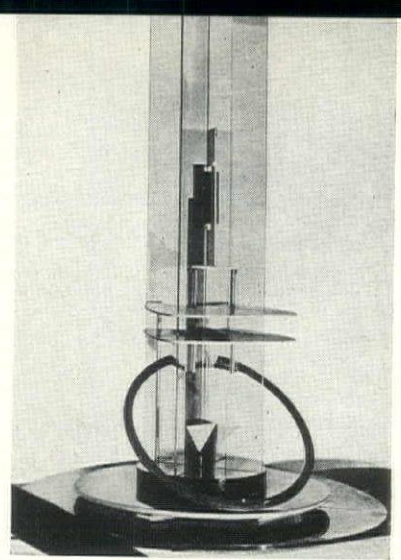
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## Collaborators:

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**1**  
No. December 1938 **+**



Construction 1923

BY N. GABO

## TOWARD A UNITY OF THE CONSTRUCTIVE ARTS

*In its present state the relationship between architecture and art cannot be clearly defined. Nevertheless this problem is not an insoluble one. Certainly it is not a problem peculiar to our period alone, but one that has arisen many times in the history of architecture and art. It seems to me to have been quite satisfactorily solved in the past; why, then, should not our own generation find its solution for our own time?*

*Architecture was always the product of a highly developed state of society. Only in those periods of human history which attained a high social organization and social consciousness was there an exactly defined architecture. The period in which we are now living has anything but an exact or definite social organization or consciousness. Architecture, as well as art, has always passed through two stages of development: the stage of ideas and the stage of achievement. To reach the stage of achievement, art and architecture need the collective encouragement of a society; they are the expression of a collective mind. On the other hand, to be effective ideas in art and architecture need a latent ideal. The architecture of our time has not yet reached the stage of achievement, we are still living today in the stage of ideas. **The key to the solution lies in the question of what our ideal is.***

*Even a superficial survey of our time would convince us that the ideal of art and architecture can be no other than the ideal which animates the whole spirit of our intellectual researches. These researches are directed toward finding a way out of the obvious state of spiritual and social anarchy in which we now live. Our towns are overcrowded, our streets are narrow, our dwellings are decayed: we would be heading for a hopeless pessimism if we were not aware that, from the beginning of the twentieth century, the younger generation of architects and artists has been indefatigably striving and working for a remedy and release from the unfortunate inheritance of the preceding century. It is even possible to state that they are not working in vain for they have succeeded in reaching a clear ideal which is leading them in a straight and constructive direction. This ideal is to create a dignified frame for a more perfected social and spiritual life conducted and based upon stable universal principles.*

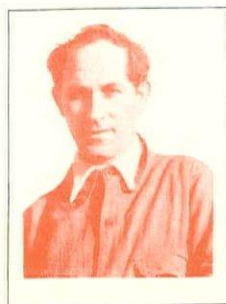
*The younger generation of artists, the "abstract and constructive artists" have exactly this ideal. There is no difference between the ideal of a **constructive art** and the **constructive functional architecture** of today. It is clear that this is the point from which to set out on a search for the answer*

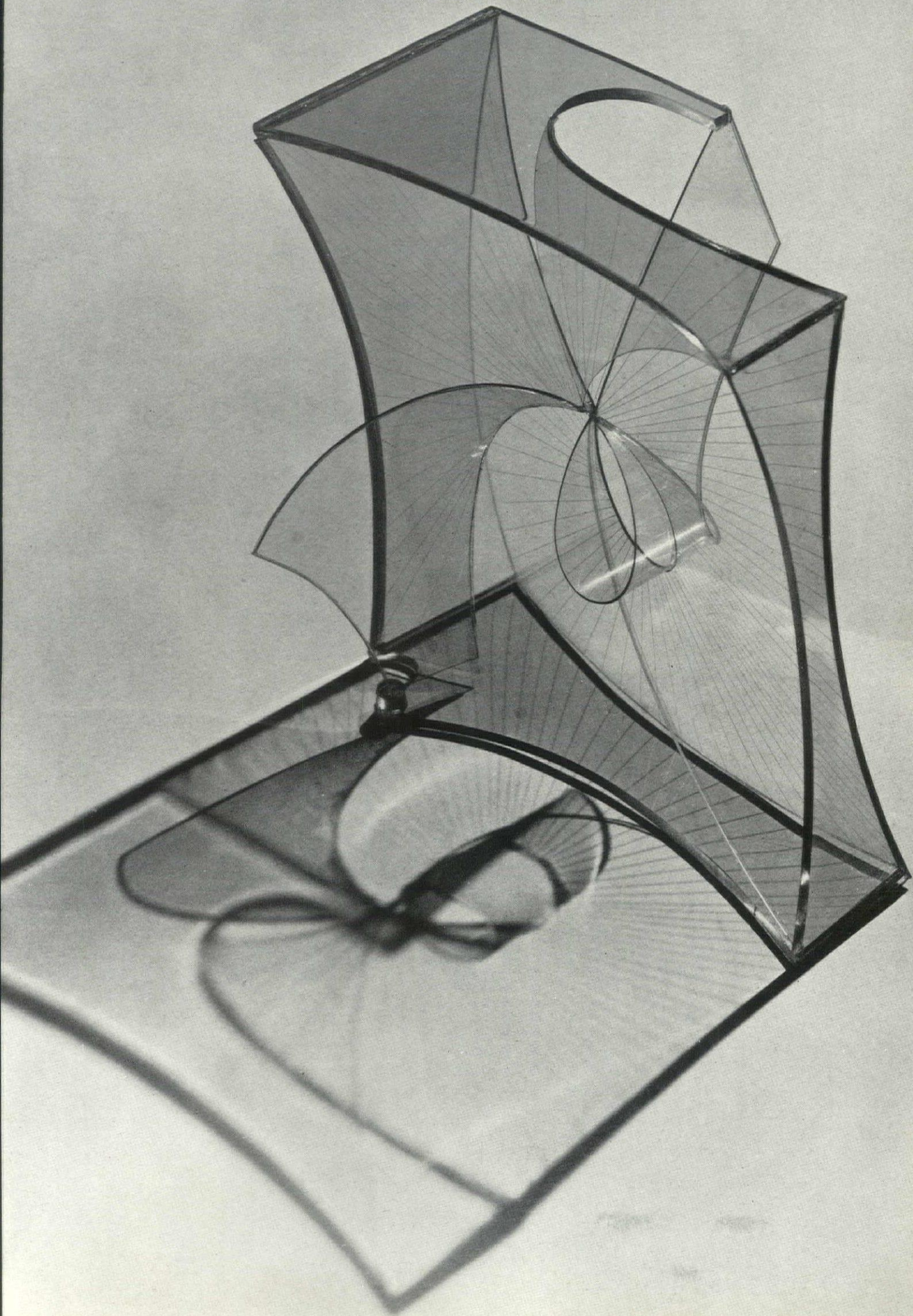
to the question: *"What is the relationship between art and architecture today?"* We must avoid the mistake made by our predecessors who considered art as something to be applied to architecture. The relationship between constructive art and constructive architecture is by no means that of adaptation, since neither one should serve the other. History offers many illustrations to prove that such a point of view is erroneous. Such a relationship is a sign of degeneration in art and architecture. For instance, the clear exemplification of the last century when architecture was architecture in name only, merely a conglomerate of more or less complicated, more or less naive, planless, disconnected buildings of an occasionally decorative stylishness, or a deliberately skillful ugliness. All this stylelessness, planlessness and ugliness was not the fault of the art and architecture of that century but the fault of a styleless, planless and ugly time when no one knew what he wanted and everyone felt that he knew more than the other because someone was supposed to have known it before. Such a period could not possibly produce architecture; it could only produce a supreme instance of how architecture should not be done. It is no wonder that the inner contact between art and architecture at the end of that century completely disappeared.

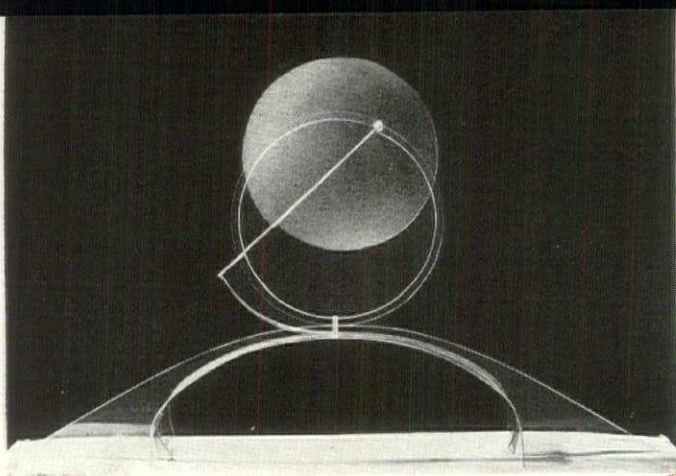
There are other examples that show the true relationship between art and architecture. When we look at the epochs which have left us great architecture we see a complete unity between the two. A caryatid in the Erechtheum, the statue of Athena in the Parthenon, the Sphinx in front of the pyramids, are as truly architecture as any purely architectural building is sculpture. A fresco of Pompeii, an ikon in a Byzantine temple, or a sacred image in a Gothic church, is as much a part of the wall on which it is placed as the wall itself is part of the image. It was not deliberate intention which brought the art and the architecture of those epochs to such a unity, but the guiding spirit, the constructive ideal of their time which enabled the artists and the architects to arrive at this accord.

Likewise in our time, a contemporary architectural construction, *constructive architecture*, is not intended to be a formalistic enterprise with a design to fit a chosen volume or form. A piece of constructive architecture must be an organism fully grown from within. It is above all a construction in space, erected from the inside, devised and organized according to the inner dynamics of all the events and all the forms of action connected with the life of that organism. The constructive architect plans his edifice from a central inner point where the most essential part, the human body, is placed. From this point all the vital projections radiate toward the exterior. *Constructive sculpture* bears the same characteristics for it is a manifestation of the same concept of space. A constructive sculptor no longer tries to force his images into a given, static scheme. He tries rather to materialize the images of his inner impulses, projecting them from one vital central point in space and making them radiate toward the outside in an open, free and unlimited volume, so that the final lines of these projections form the organic skin of an imaginary organism.

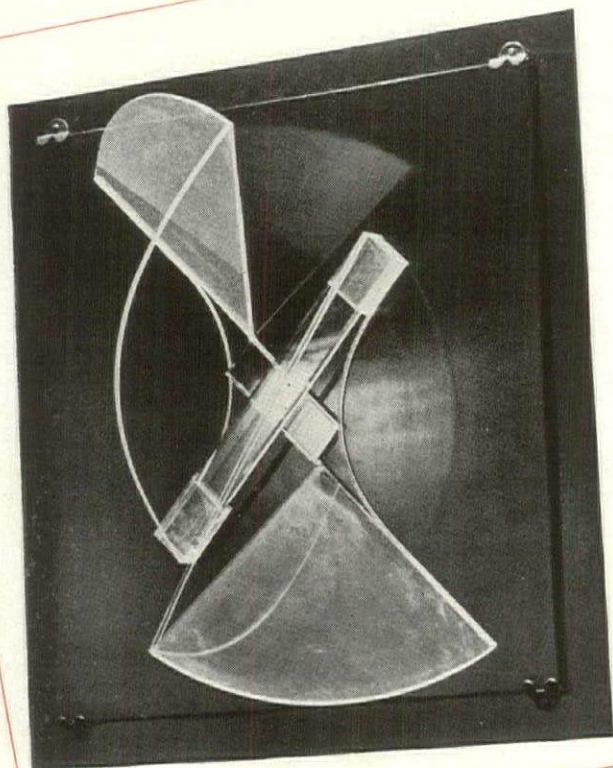
Since there is a basis for a common spirit in present day art and architecture, we can be confident that these two artistic disciplines have every chance to advance hand in hand. Furthermore, the constructive architecture of today cannot ignore the necessity of art or consider it as a superfluous element. One of the most important bases of the constructive architecture is its pure functionalism. But function in architecture has esthetic as well as material and technical aspects. A building is more than a dwelling place; it exists in space and, as such, it acts in space and has an influence on the emotions of the human beings. As soon as the constructive architect, who is a *consistent functionalist*, realizes this esthetic function of his architecture, a close cooperation between constructive artists and architects will become inevitable.





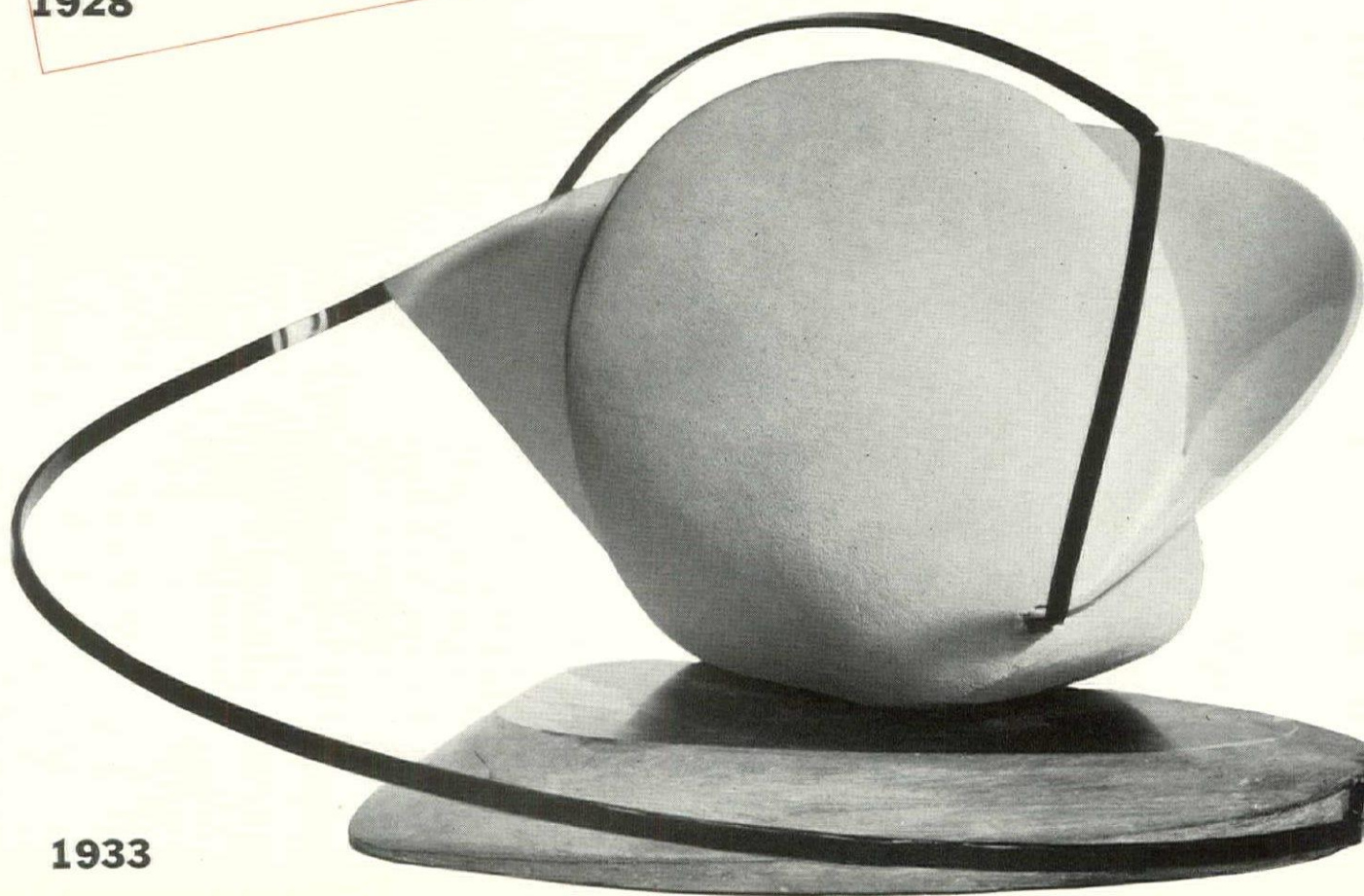


**1925**



**1928**

**Constructions in space**



**1933**

# CAN



# EXPOSITIONS

# SURVIVE?

By Dr. S. Giedion

Our whole way of living has become dependent upon industrial production. This is true as regards the forms of contemporary life as well as the earning of our livelihood. What made the industrial development possible? Industrial development only became possible after the abolition of guild restrictions. The corporations (guilds) originated as a protection to citizens against the feudal system. Each guild had a well fixed administration and definite regulations. At first there were but few guilds: for example, in Paris of the thirteenth century, there were about a hundred. But the guilds grew rapidly in number. The reason for this was the increasingly complicated division of labor as well as the interest the state had in founding new guilds, whose privileges were only granted by the king after the payment of very high taxes. The exclusiveness of the guilds continued to grow. Merchandise, composed of materials which belonged to the sphere of more than one guild, could only be furnished by masters who were members of the particular guilds producing the component parts. The public was entirely in the hands of the guilds. The producers could raise prices ad libitum. New inventions not born in the spirit of handicraft but based upon new scientific discoveries, could either not be made known at all or only under a variety of guises. Due to their complicated mechanical manufacture, the new processes cut more and more into the rights of diverse guilds. The difficulties which confronted the inventor of printed wallpaper in the last years of the eighteenth century are typical.

**March 17, 1791** "La proclamation de la liberté du travail."

This means that every French citizen is given the right to select a profession, his work or a trade according to his desires and can pursue it wherever he chooses. It is in the proclamation of the liberté du travail—the freedom of trade—and in the almost simultaneous granting of a protection of patents (1790-1791) that the development of industrial production on the continent lies. England had long ago taken the lead. Its revolution had been over in the seventeenth century and with the revolution the power of the guilds had also been broken. In the middle of the eighteenth century public opinion already violently demanded also the formal abolition of the guilds by Parliament, since they were harmful to the development of industry and since they were also a contradiction to reason as well as to liberty, to which every English citizen had a claim. Through such measures England was in an advantageous position for an incomparable industrial ascent which could not be rivaled during an entire century.

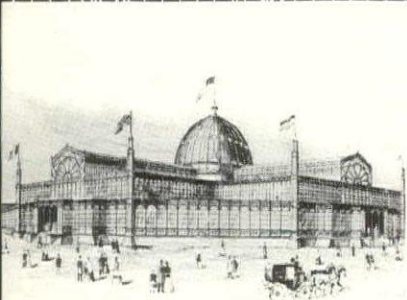
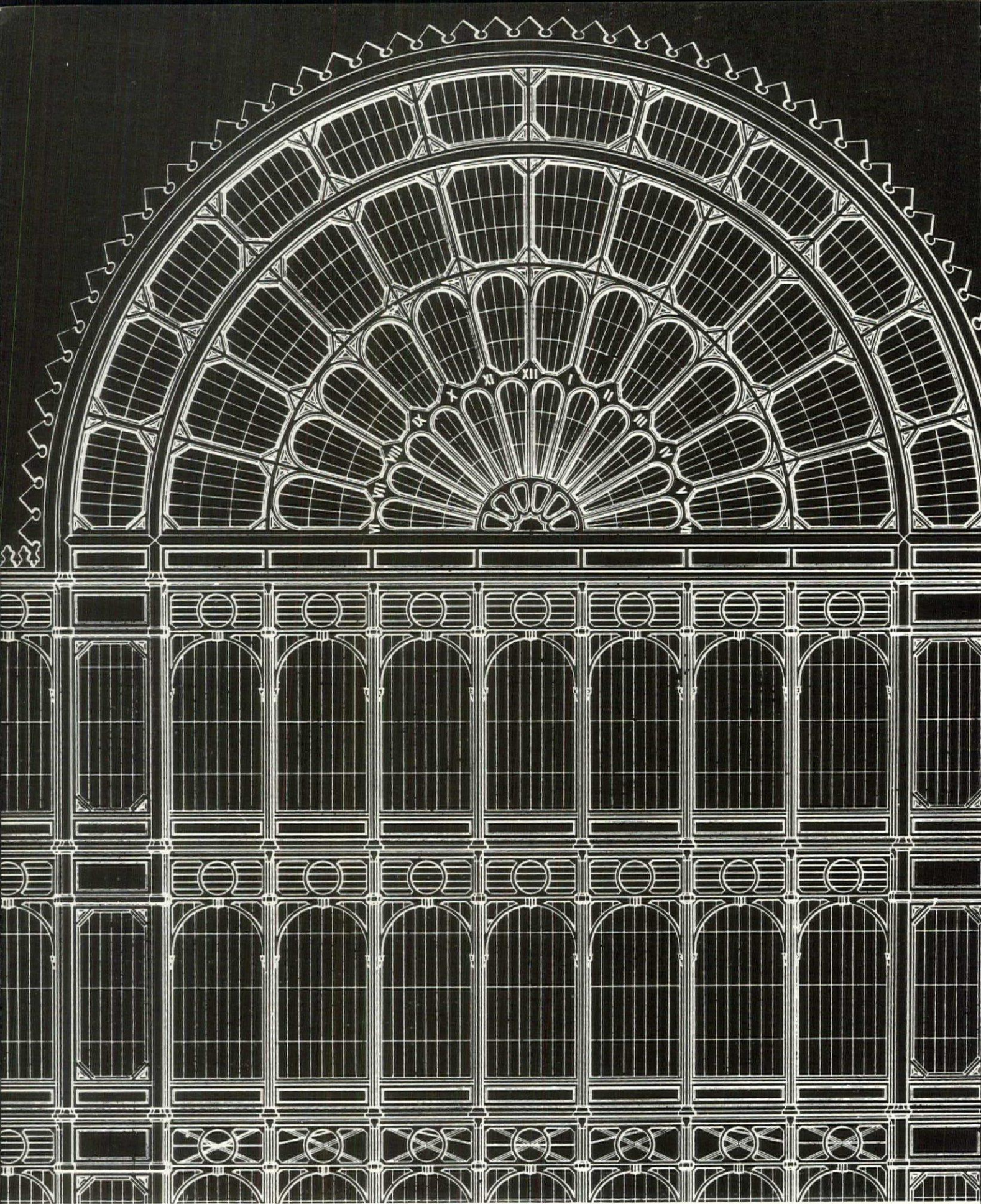
The first "Exposition des produits de l'industrie" on the Champs de Mars in Paris was opened in September 1798. It was more than nine

years after the abolition of guild restrictions that the first industrial exposition was organized. What formerly was suppressed and discouraged was now furthered and well cared for, namely, industry and invention: "Ces arts n'avaient pas pu encore se développer à cause des entraves sans nombre. Mais la liberté les vengerait . . . Sous l'égide de la liberté, les arts utiles étaient appelés à un brillant avenir." A truly new spectacle was to be offered to the people and this was to occur in the same place in which all national festivals had taken place since the beginning of the revolution, namely, in the Champs de Mars. Only a few weeks earlier the Laocoon, the Venus of Medici and the Apollo of Belvedere were exhibited here. General Bonaparte had brought them back from Italy. The "première exposition des produits de l'industrie Française" was supposed to fill out the last days of the sixth republican year, which was to end September 21.

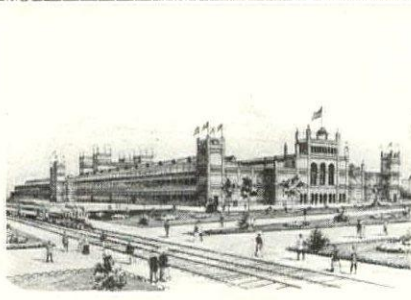
The extent of this enterprise, which was the beginning of that vast movement of exhibitions during the nineteenth century, was rather modest: 110 exhibitors. This exhibition not only contained articles of luxury but also articles of daily use, such as watches, safety-locks, wallpapers, textiles, cotton-threads produced by machinery, etc. The principle of the exhibition, of placing products, industrial products, in the foreground, which was developed here for the first time in history, held undisputed significance for more than a century. The high festive character was likewise maintained as long as the great expositions remained an event and a focus which were able to influence the development of industry.

Eleven expositions were organized in France from 1798 to 1849. In their development, and the slow but steady conquest of each branch of industry, one can discern the beginning of our present-day tendencies. Number of participants: in 1798—110; in 1806—1,122. They are followed by the Napoleonic wars.

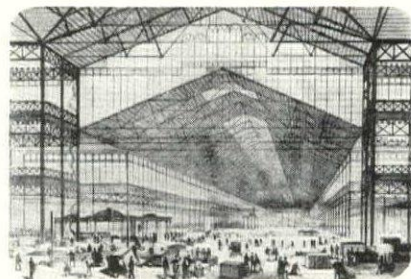
**Exhibitions of World Trade and Industry.** A condition for the national exhibitions of industry as arranged especially in France during the first half of the past century was the official abolition of the compulsory obligation to belong to a guild. A condition for World Exhibitions (or Universal Exhibits as they were at first called) was the principle of Free Trade. There was no reason for lining up the products of the whole world unless these products could be bought the world over, unchecked by customs barriers, contingents, import or export prohibitions. In the form it took at that time, Free Trade was the product of the liberal conception of economy: free communications, free trade, improvement of production and performance through competition.



World's Fair New York 1853



World's Fair Philadelphia 1876



Preparation of Displays



Cataract in the Machinery

**London. The First World Fair.** Hardly two years after the greatest French National Exhibition of Paris 1849, the Exhibition of World Industry was opened at the Crystal Palace in London's Hyde Park on May 1, 1851. At once the number of exhibitors increased fourfold. How was it possible to create that gigantic organism, for which no precedent and no experience existed, within such a surprisingly short period? The English themselves were surprised by their success. The event may be explained partly by the fact that the development of more than half a century of industrial work had matured suddenly and was ready for a performance of such proportions. It is evident that even in a country of great caution and tenacity, developments can occur by leaps and bounds. But this is certainly not a satisfactory explanation. There was a force behind that exhibition's formation that accomplished things that had never been done before.

Unlike the French exhibitions, initiative and financing came from purely private sources. The principle of the exhibition was to be: to line up world production for comparison, stimulation and instruction. It followed, in outline, the last French exhibition and included: 1) Raw materials, 2) Industrial equipment: Machinery and Inventions, 3) Finished products, 4) Art (Applied art and sculpture, but no paintings).

The genesis of this first great exhibition permits a deep insight into the courage and spirit of enterprise in the years preceding and after 1850, although it is impossible to give a detailed description of it in this summary. Briefly, the exhibition was held under the patronage of Prince Consort Albert. Sir Henry Cole, expert and official, cooperated with him. Gottfried Semper, a young German architect who had left Germany because of his political convictions, worked with Sir Henry Cole.

What were the aims of the exhibition aside from increased exports which resulted precisely a year later? The Prince Consort replied to that in 1850: "None will doubt that we are living in a most remarkable period of transition, laboring forcefully toward that great aim indicated everywhere by history: the union of the human race . . . Gentlemen, the exhibition of 1851 shall give a vivid picture of the stage at which humanity has arrived in the solution of that great task."

A competition for the building of the exhibition was without result in spite of 233 entries. In May 1850 the prize jury itself worked out a project—a brick structure with a large domed hall—which was also ruled out. Then a contractor submitted the project of a garden builder, Joseph Paxton (1801-1865). After its construction contemporaries declared that "this Crystal Palace will mark a new style in building, a revolution in architecture."

The fact that a project of such extraordinary audacity was not shoved aside as fantastic gives us an insight into the power and self-confidence of that period. The promoters began work without a business-like contract, without any down-payment, or any legal obligation on the part of the Commission. Building time: survey begun—end of July 1850; construction started—end of September 1850, opening—May 1, 1851.

The impression: "We see a fine network of lines without any clue by means of which we might judge the distance from the eye or the real size . . . All material mass seems to disappear . . . It is sober economy of language if I call the sight incomparable, fairylike. It is a Midsummer Night's Dream in the clear midday sun." (Lothar Bucher, 1851.) What was exhibited? Everything then judged to be of interest in the domain of culture. New industries seemed to have fallen out of the clear sky. Extra-European culture appeared for the first time next to European culture. Applied art productions from China and India stood out next to European products like an appeal to esthetic integrity. On the one hand perfected pieces and a knowl-

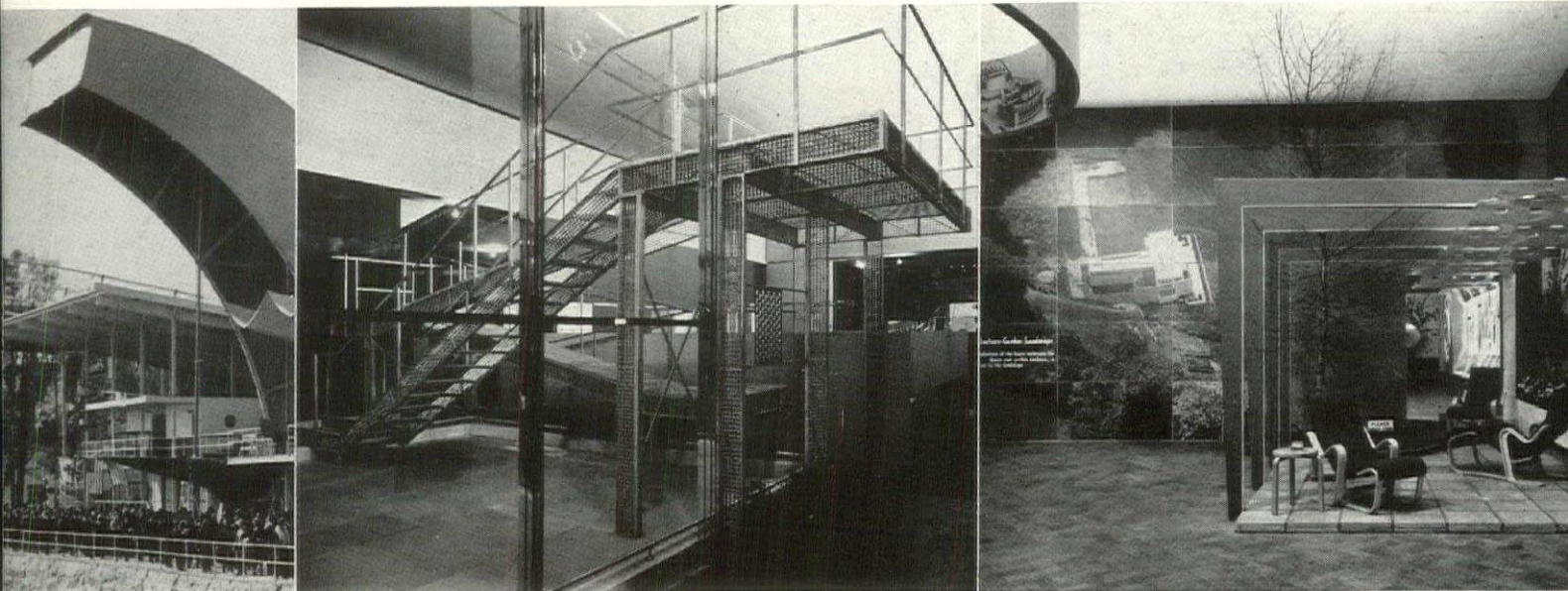
edge of the laws of color composition and the use of materials, produced with "a few simple tools," the most primitive instruments and, on the other hand, industrial possibilities of a yet unknown extent and at the same time perplexity and uncertainty as to their use. Contemporaries recognized this disparity immediately and expressed it clearly: "When English industry wanted to create a pretentious show-piece, it was done by exaggerating to the extreme a style of decoration that was already considered to be in bad taste." From that contrast between exotically artistic and industrially unsound products, it became clear to a Gottfried Semper that an ornamental disguise was not the solution and that the development of form was more important. Many roundabout ways were tried until after five decades a thoroughgoing reform became effective. But the picture of a man who had been thrown off his balance and was therefore as little able to find his own pattern of living as he was to find a form for the objects surrounding him, was for the first time fully recognized in London, 1851.

**Paris.** At the time of their prosperity, between 1851 and 1889, the great expositions with their quickly built and quickly dismantled buildings are at the same time the best exponents of the architecture of that period. They become experimental stations for new industrial building methods. The history of iron construction and the history of expositions was written simultaneously. The whole domain of human labor was to be included, all parts of it, and embraced all phases and periods: agriculture, industry, machines (shown in action), raw materials, finished products, arts, applied art. Still, each exhibition has its own individuality, but it is impossible to trace that chapter in detail within the limits of this survey. However, there are no more important or more revealing events that could testify to the character of that epoch. The history of expositions became the history of a tradition upon which our very being is based—materially as well as spiritually.

The principle of exhibitions remains the same: Industry is being observed most scrupulously, as it changes from year to year, from decade to decade, increases, enlists new help and resources. At the same time an account is rendered of the modifications and trends in the building and furnishing of the house, from building materials to tableware. For France 1855 meant a stimulus for increased industrial development. The Palais de l'Industrie with its span of 48 meters (160 ft.) may have surpassed London 1851 in boldness of construction, but the monumental steel encasing of the building later (London 1862, Chicago 1893) becomes an unfortunate example.

The **Paris Exhibition of 1867** occupies a singular position. Napoleon III appointed as its director the engineer and economist Frederic Le Play, an outstanding expert on European labor conditions, who previously had traveled for a quarter of a century all over the continent from England to Russia. He largely determined the program and the form of the exhibition, as well as the organization of the building. In its form the building was intended to symbolize the globe. The form of the Champs de Mars forced the circle into an oval with the long axis of 500 meters (1,667 ft.) and the short axis 386 meters (1,283 ft.) respectively. Within the concentrically arranged spaces all countries contributed to special themes!

In the high innermost gallery—arts; in the following narrow gallery—applied arts (printing); in the third gallery—furniture and other household equipment; in the fourth gallery—clothing, textiles and related industries; in the fifth gallery—raw and finished materials; and finally in the last covered gallery, which had a span of 35 meters (117 ft.) more than twice the size of all the others—all industrial machinery. On the park side, in the exterior open gallery, surrounded by a projecting roof (an architectural innovation), food-stuffs, fresh and conserved, and restaurants were accommodated. A



Stockholm exposition 1930 by Gunar A. Asplund. Exposition of the German Werkbund in Paris 1930 by Prof. Walter Gropius. Exposition of the "Mars" group, London 1938.

tenth group, distributed over all parts of the Exhibition, must be ascribed to Le Play's influence. Its title was: "Objects which shall especially serve the improvement of the physical and moral standards of the nations..." A methodical collection of low-priced furniture, clothing, foodstuffs from all parts of the world was included, as well as model apartments for factory workers in town and country, the progress of education, etc. At that period France led Europe for the last time. The success of the exposition could not be questioned. The number of visitors was more than twice that at the first London and Paris enterprises of this kind. Its size was four times that of the Exhibition of 1855, and instead of the deficit of that time, a profit of 2,300,000 francs was made.

**Philadelphia.** Important because of the first appearance of America as a factor in the field of world trade. Not an imitation of Paris or London. A new principle is put into effect: The division into pavilions, a principle that was followed afterward in Chicago 1893, in Paris 1900, and from then on regularly. The reason is the increasing scope and specialization of industry which demands segregation into single buildings. All buildings at this exhibition still preserved a sympathetic and primitive colonial style and, with the exception of the Art Pavilion, were built of iron, glass and wood.

**Paris.** At this exposition the whole Champs de Mars was taken up by the main buildings. This led to an extension beyond the Seine river and the erection of the Trocadero. The exposition was to show the world that France was carrying on in spite of the defeat in 1870.

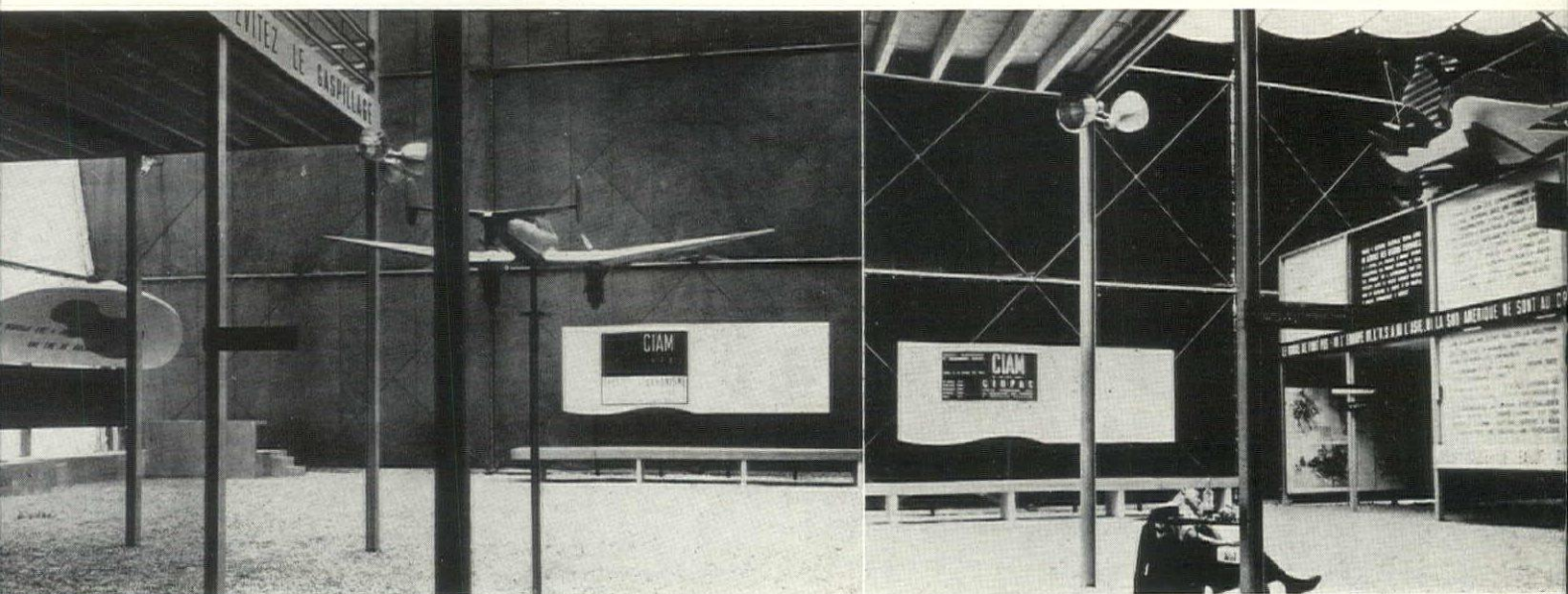
Eiffel had his hand in the huge glass-covered buildings with their projecting blinds. The great halls of machinery which stretched back at a right angle to Eiffel's projecting hall, introduced a new principle of construction and anticipated 1889. "The acme at this time was contributed by the Orient with the art of Japan and China." (J. Lessing, 1878.) Stronger than ever before, eastern products of ancient handicraft were placed side by side with cardboard pianos and those characterless luxury pieces from the cabinet makers of Faubourg St. Antoine. New methods were shown by England. "The English are beginning to form their objects purely according to mod-

ern principles of construction. After having rid themselves of the memory of older traditions. . . ." (Lessing, 1878.)

**Paris.** Constructively progress from 1878 to 1889 was so tremendous that visitors were stirred to the utmost by the boldness of the Eiffel tower and the Halle des Machines. The 300 meter (1,000 ft) tower, built in 17 months, and the Galerie des Machines with a length of 420 meters (1,400 ft) and a span of 111 meters (370 ft) attained a standard which has since been unexcelled. 1889 is the culminating point and the end of the development.

This time again, the program was not devised by architects. It remained, as it should, in the hands of theoreticians. Sociologist and Ex-Minister Jules Simon was responsible for the theme section of the exposition—"The History of Labor and Industry" (L'Histoire du Travail). He well knew that it would be a mistake to stress enlightenment: "The visitor does not come to study science; while he does not dislike instruction through entertainment, the main thing he is trying to find is distraction and relaxation." (L'Exposition de Paris 1889, vol. III, p. 98.) The bazaar, the street in Cairo took the place of serious oriental participation. The success of the "Rue du Caire" with its donkeys imported from Egypt competed with the success of the Halle des Machines. In 1900 that "Rue du Caire" became a medieval village "Vieux Paris" and will be part of a town even in 1937—"Quartier Regional."

**Chicago.** Whoever saw the great buildings of 1889, not bound by time and taste, must have been full of hopes. Prophetic words were spoken: Here come new times, a new era is dawning. Fundamentally Frantz Jourdain and Octave Mirbeau, who spoke these words, were right. But not for the moment. The Chicago World's Fair of 1893 consciously turned away from the spirit expressed by the great constructions of 1889. Not Eiffel's spirit dominated the "marble" pavilions on Lake Michigan, but the spirit of the Paris Academy. Nobody would have expected a "Halle des Machines" behind the cupola of Santa Maria della Salute, combined with a palladian portico and the facades of the Place de la Concorde. The influence of this exposition upon American city architecture can hardly be overestimated.



Paris Exposition of 1937. Pavillon des Temps Nouveaux by Le Corbusier. Project for a museum of popular education.

**Paris 1900** meant the end of World Expositions in their customary sense. Industry had become a matter of course: it is no longer a sensational feature for exhibitions. Besides, it has become so specialized and is covering so much ground that it cannot be confined into the frame of a single exhibition. The "Palais des Machines" of 1889 still stands, but its interiors are altered, and a hall has been added, the "Palais de l'Electricite," where artificial waterfalls are illuminated electrically at night. Electricity on a grand scale is the theme of this exhibition.

The main part of the exposition is situated on the now classic Champs de Mars. The Esplanade des Invalides is added and the two are connected by the Street of the Nations. Its palaces are built in the style considered nationally significant for the exhibiting country. Germany is represented by late medieval town halls, other countries by Baroque and Renaissance buildings. Outside the city, in the Vincennes forest, agriculture and forestry are shown. The system of pavilions has become prevalent, as in Chicago 1893. A new building material is being used—reinforced concrete. But it is no longer apparent. It is hidden by the stone facades of the Grand Palais and the Petit Palais.

Decadence usually seems to be connected with signs of fatigue. The decadence of expositions is demonstrated by an indifference which surprised contemporaries. Big industry led the way. In London 1851, Paris 1867, Philadelphia 1876, Krupp's giant guns were the sensation. When Berlin, after 1900, intended to hold the first German World Exposition, it was this same Krupp who declared that he "needs no exhibition publicity and that therefore the organization of such an exposition must be regarded as useless and without purpose." The exposition was not held.

**Special Exhibitions.** The Period that follows is one of specialized exhibitions. They had been in existence all through the century, but now these shows, appealing to certain groups only, occupy the front rank. The International Electricity Exhibitions of Brussels of 1925, Barcelona 1927, International Fur Exhibition, Exhibitions for Health and Hygiene, Press Exhibition (Pressa, Cologne) and others. In addition there are annual showings by those industries appealing to the public at large. Again Paris is the center:

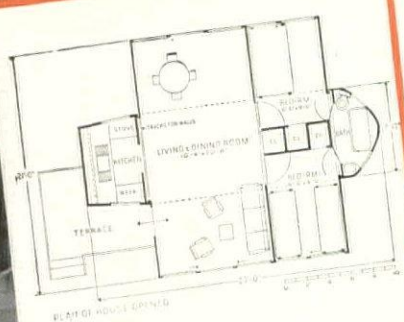
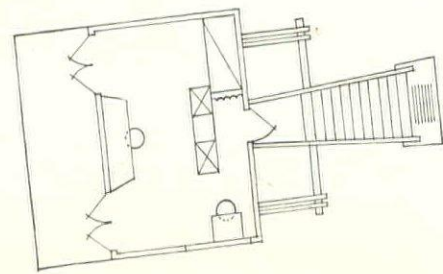
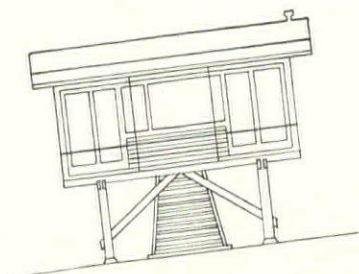
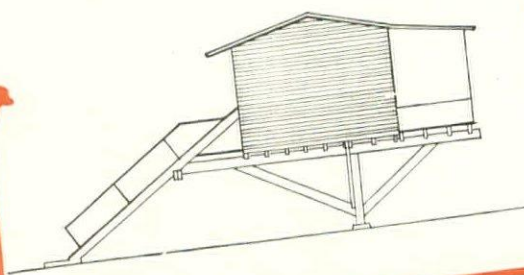
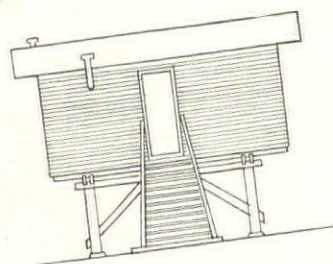
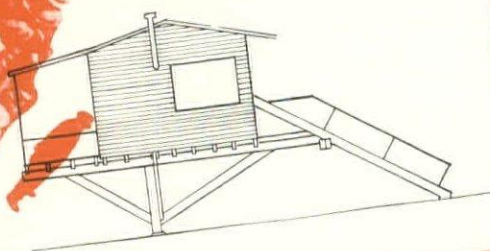
Salon de l'Automobile, Salon de l'Aviation, Salon du Radio, etc. Since the World War, Trade and Sample Fairs became more and more popular.

**New Beginnings.** As soon as industrial production lost its eruptive power, a need was felt to make up for the neglect in the treatment of human problems. It began at the periphery with an improvement in taste. After the London exhibition of 1851, Semper tried, with good examples, to readjust the taste of the industrialists which had completely grown out of bounds. Various slogans were distributed until around 1900 a definite reform was noted in the field of applied art: The individual and the time were to be harmoniously united. It is clear that applied arts in this connection interest us because they are closely allied with the private surroundings of man. The need for new forms appears first in the small object, the piece of furniture, the house, then in the organism of the community and the general mode of living. That is the point we have arrived at today. For example, the repeated attempts of the Darmstadt art colony after 1901 are more important than the entertainment provided by the various industrial exhibits shown at World Expositions after 1900.

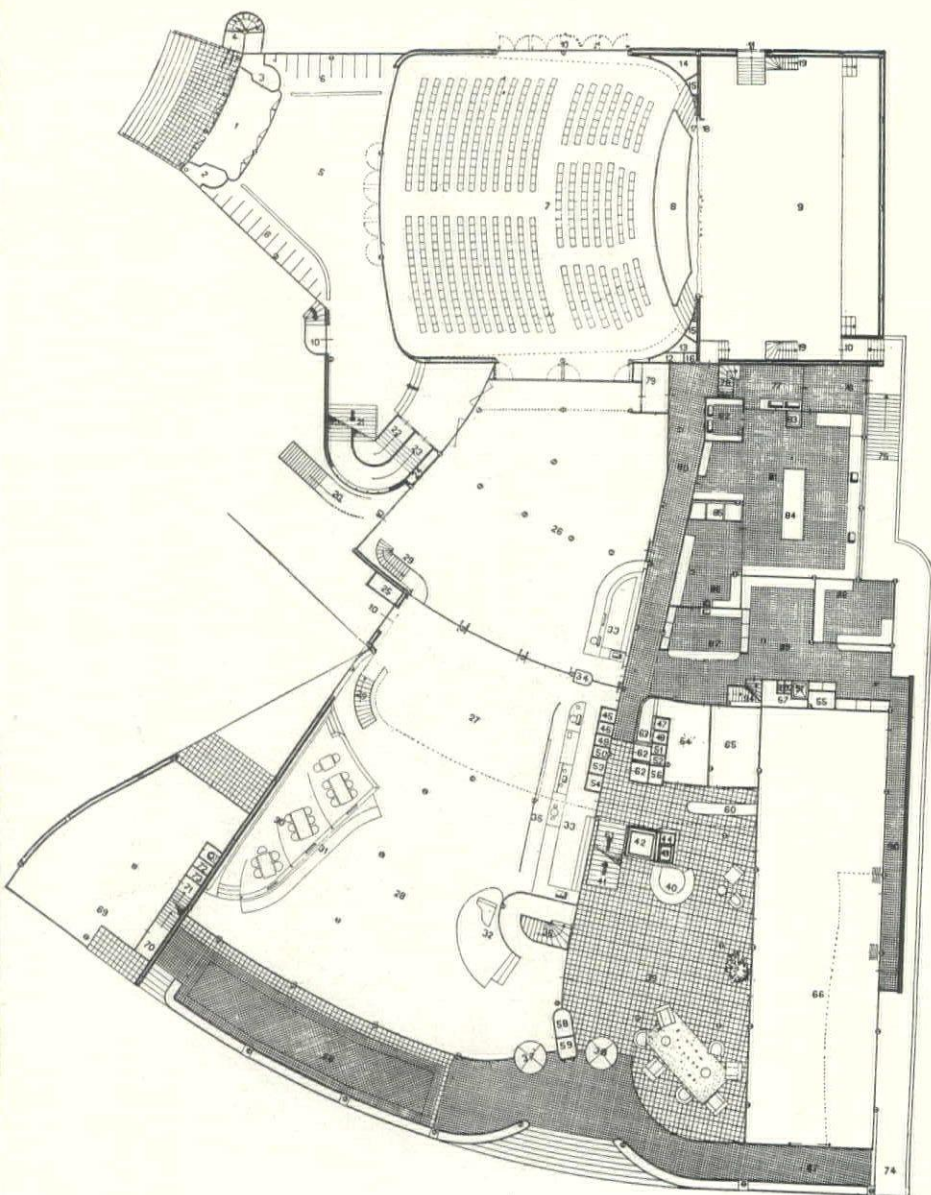
Darmstadt 1901; German Exhibition of Applied Arts, Dresden 1906; the foundation in 1907 of the "Deutsche Werkbund" and its two most important events, Cologne 1914 and Stuttgart 1927; the Swedish Exhibition, Stockholm 1930—all these are steps toward giving form and backbone to our present-day uncertain way of living. The next stage in this development is clear: The problem of harmoniously uniting man and time cannot be superficially treated. We must from now on tackle the modes and standards of living in their entity.

Do exhibitions still possess vitality? An entirely new type of exhibition, corresponding to changed circumstances, is developing. Fragments of it will be found in three sections of the Paris World Exposition of 1937. That type of exposition is no longer interested in a "thematic" alignment of production. It very consciously takes as a starting point the needs and desires of man, subjects everything to that principle. Because the question that touches peoples and nations most deeply today is not: "How and how much can we produce?" but "How can we manage not to lose control over production?"

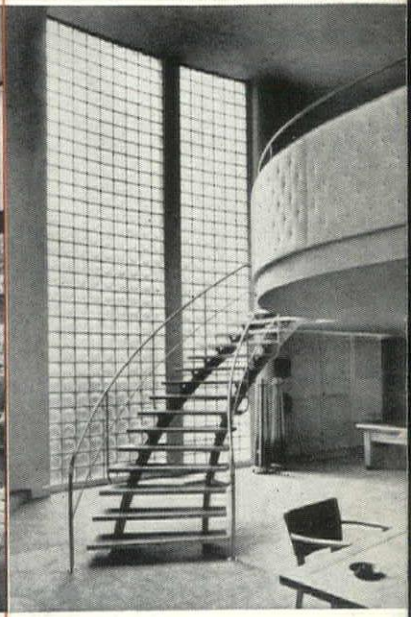
# habitation

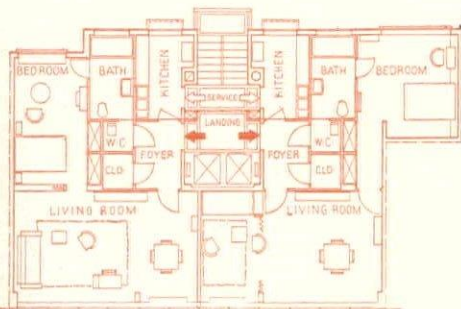
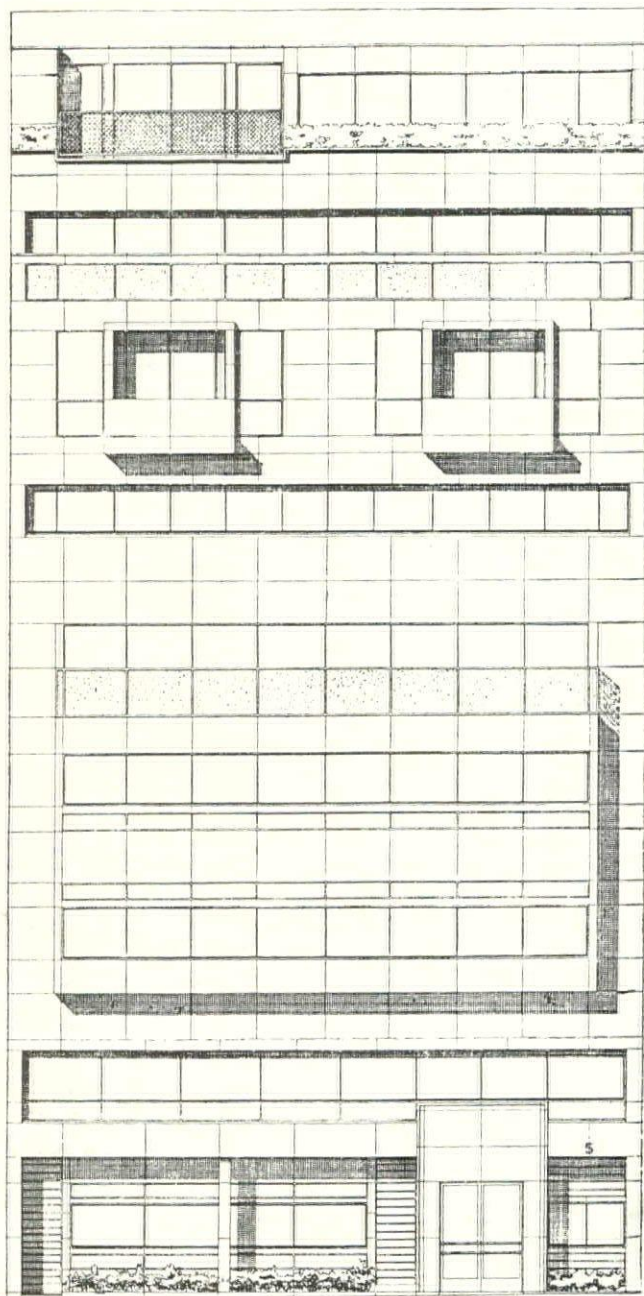


Project for a folding mobile house by Alfred Clauss. Wood cabin in Bergen designed by H. Elte.



The Hotel Gooiland and the Avro broadcasting station were the last contributions of Duiker before his death. Its open plan, rooms with terraces overlooking a raised garden, its wide unobstructed view permitted by the fan-shaped exterior court and a happy fusion of the outdoors and the enclosed spaces are characteristic features of this building.





# **APARTMENT HOUSE IN PARIS BY JEAN GINSBERG AND FRANCOIS HEEP**

Present obsolete system of city planning often reduces urban architecture to a facade problem. A typical example is the above building with fifteen two-room apartments facing street and court. Here partitions and openings are designed to give a certain illusion of space.

# FLORIDA,

particularly the southern part, was the scene some twelve years ago, of one of the wildest land booms in this country's history. Today

it is solidly established as one of the great U. S. resort centers. Miami, the largest city in this area, has a yearly influx of tourists equal to its permanent population, and it has gone to great lengths to cater to their comforts and whims. Nowhere is this mixture of big-city and resort-city character more clearly reflected than in its architecture. Without previous architectural tradition, South Florida towns at the close of the last century were built of wood

in a modified jig-saw style.

With the building of the great Flagler hotels in Miami and Palm

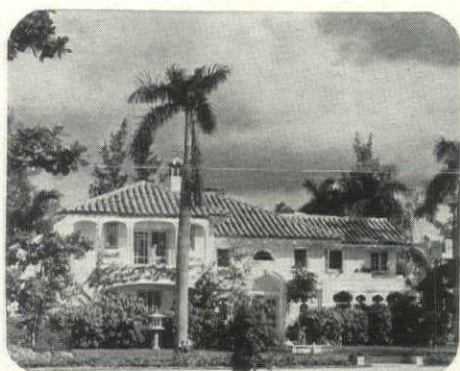
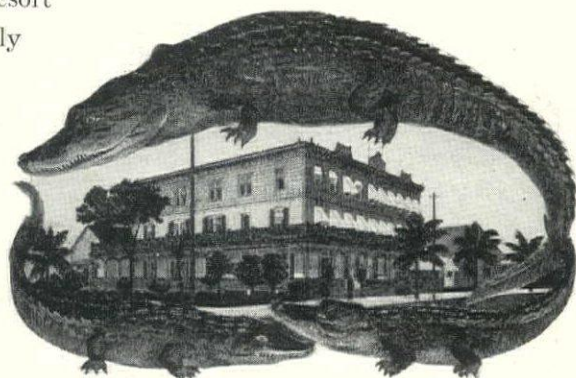
Beach the resort character of the region was established, and as tourists began to come in from all parts of the country, the expression of their heterogeneous tastes came with them. Pictures of Miami in 1920 show some of the results: left-over Victorian Gothic and Romanesque; traces of Southern Colonial; Renaissance revivals brought in by Stanford White and others; the prairie style from the Middle West. Others introduced even more exotic forms. Upon this hodge-podge descended the boom and the new vogue for

"Spanish." Addison Mizner in Palm Beach was probably the greatest influence, although his costly and painstaking antiquarianisms were only for the very rich. The average building used stucco on frame with as much pseudo-Spanish detail as the owner could afford. More

enterprising developers varied the scene with Dutch, English, French, Italian, even Chinese "villages" which consisted of groups of five or

six houses. The collapse of the boom left South Florida prostrate, and the depression which followed drove all thoughts of resorts from the minds of former tourists.

When building began again, about four years later, new building laws provided a sounder basis for construction, but the resort character remained and today the fad is "modern." It is a modern that is far too often a mere grafting of a new type of skin on the same old frame, and as such will probably follow its predecessors. In the growing understanding of the nature of modern planning, however, there is the basis for an architecture in Florida that is both local in character and contemporary. The examples on the following pages illustrate the best of the present work in and around Miami, and indicate the probable future trend.

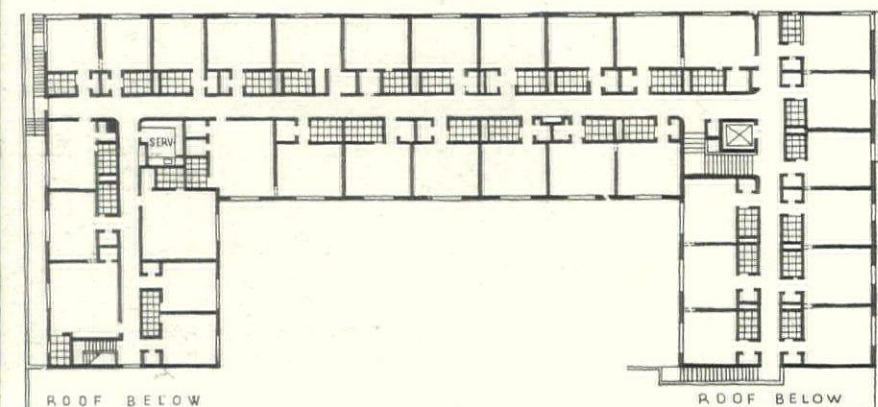
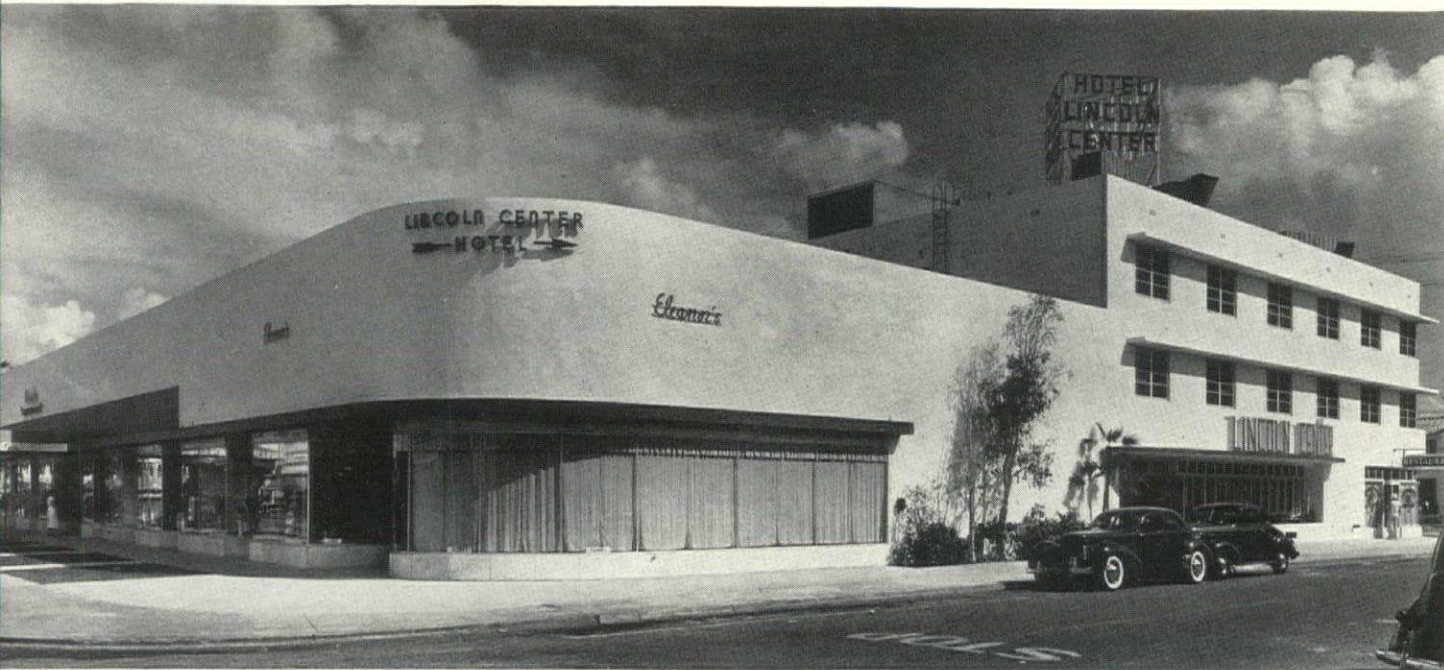




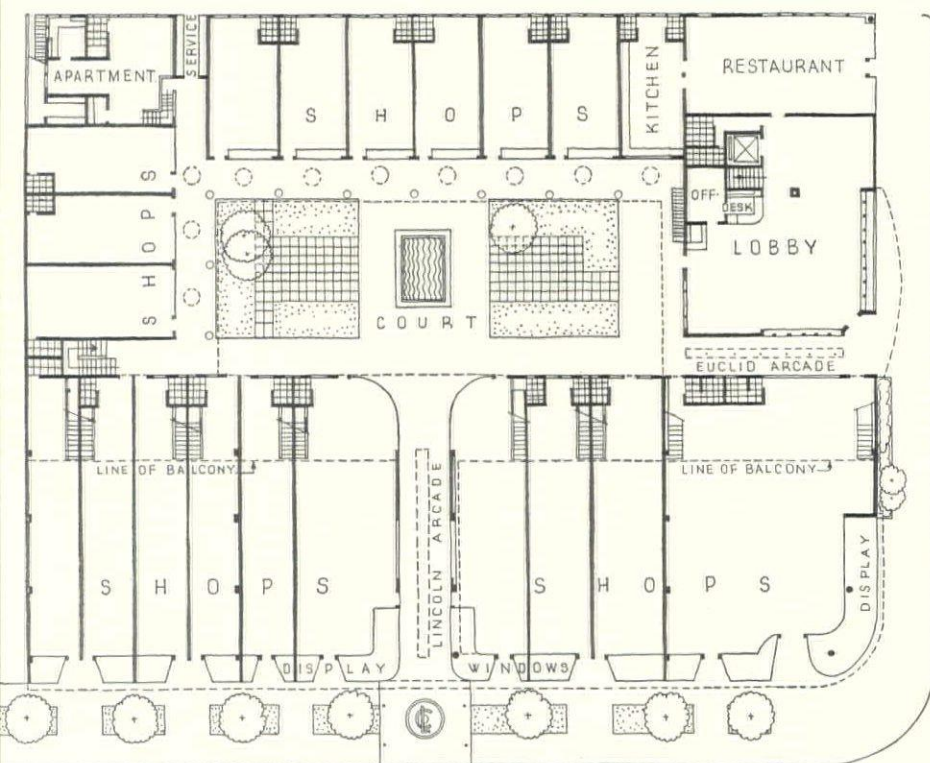
INTERIOR COURT

Samuel H. Gottscho Photo

THE most valuable shopping street in Miami Beach is the location of this building. In explaining their solution, the architects state that "the depth of the lot and the demand for small shops makes the shopping court a highly practical feature. As the site is only four blocks from the beach the hotel is financially feasible, although it could not be as expensively constructed as those on the ocean front. It was given a side entrance because of the greater value of the shops facing on Lincoln road. Provision has been made for two additional floors of business offices over the shops, these offices to be reached by elevator from the arcade."



TYPICAL UPPER FLOOR



FIRST FLOOR

SCALE IN FEET  
0 10 20 30 40 50

## CONSTRUCTION OUTLINE

**FOUNDATIONS:** Reinforced concrete piling and grade beams. Waterproofing—Sec Integral for concrete, stucco and mortar, Sec Mfg. Co.

**STRUCTURE:** Exterior walls—reinforced concrete skeleton with filler walls of 8 x 8 x 16 in. concrete blocks, stucco outside, wood furring with rock lath and plaster inside. Interior partitions—wood frame with rock lath and plaster; some 4 in. concrete block. Structural steel—Bethlehem Steel Co. Floor construction—(1st) reinforced concrete slab with terrazzo; remainder—wood joists. Ceilings—plaster on rock lath.

**ROOF:** Flat built-up with gravel top, Certain-teed Products Corp.

**SHEET METAL WORK:** Flashing—copper. Gutters, cornices and leaders—20 oz. hard copper. Ducts—galvanized iron.

**WINDOWS:** Wood casements in lobby with Win-Dor operators, The Casement Hardware Co.; remainder—wood, double hung with Pullman Mfg. Corp. balances. Glass—Libbey-Owens-Ford Glass Co. Store front material—Desco extruded sections, Detroit Show Case Co.

**ELEVATORS:** Equipment by Otis Elevator Co.

**FLOOR COVERINGS:** Hotel rooms—carpet. Restaurant, kitchen, etc.—linoleum. Bathroom floors—tile, Robertson Art Tile Co.

**WALL COVERINGS:** Structural glass in baths, remainder plaster. Real estate office—Texbord, Celotex Corp.

**WOODWORK:** Trim—cypress. Interior doors—(hotel rooms) Tropical louver type; others Rezo, M. & M. Woodworking Co. Exterior doors—mahogany with glazed Desco molding, Detroit Show Case Co.

**HARDWARE:** Supplied by Schlage Lock Co.

**PAINTING:** Hotel rooms—colored plaster. Sash—white oil paint. Exterior walls—waterproof paint, Somay Products.

**ELECTRICAL INSTALLATION:** Switches—Westinghouse Electric & Mfg. Co. Fixtures—some by Kurt Versen. Floodlights—Curtis Lighting, Inc.

**PLUMBING:** Soil pipes—cast iron. Hot and cold water pipes—copper. Toilet fixtures—Briggs Beautyware, Briggs Mfg. Co. Hot water heater—York Oil Burner Co. automatic with Minneapolis-Honeywell Regulator Co. controls. Water cooler—WS-16 electric with bubbler and glass filter, Westinghouse Electric & Mfg. Co.

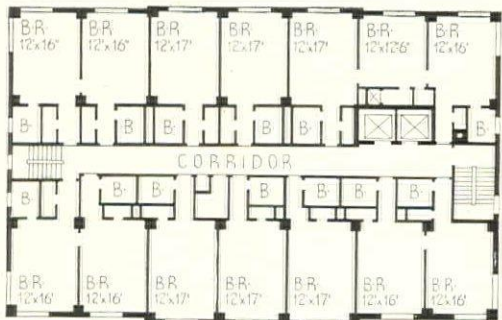
**HEATING:** Hall, corridors and lobby—gas steam radiators, James B. Clow & Sons.

# FLORIDA THE TIDES HOTEL, MIAMI BEACH

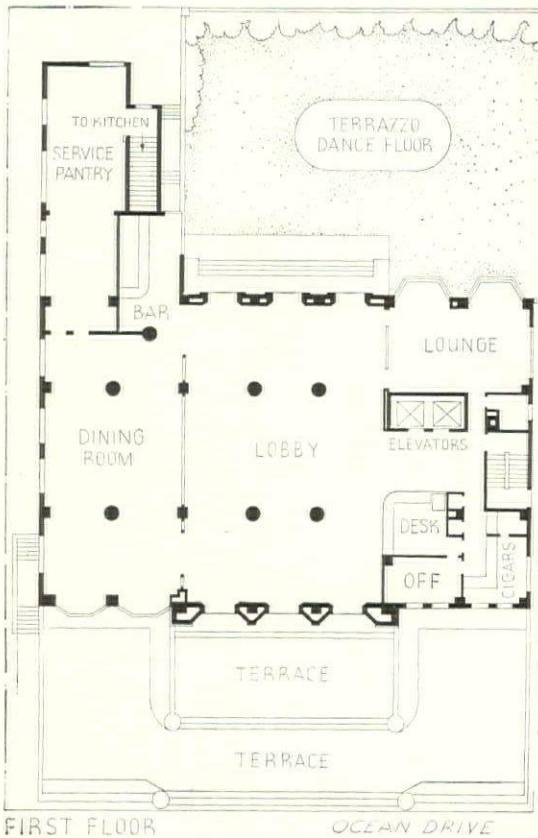


Samuel H. Gottscho Photos

THE Tides Hotel is a good example of the prevailing style trend in Florida as applied to the numerous establishments of this sort which have been erected for tourists. The night view above shows a simple mass, adequate fenestration, and a characteristically imposing entrance. It will be noted, from the other illustrations, that the “modernistic” touches to be found in most recent Florida work are by no means absent here; they have been definitely subordinated, however, to the well-organized general design.

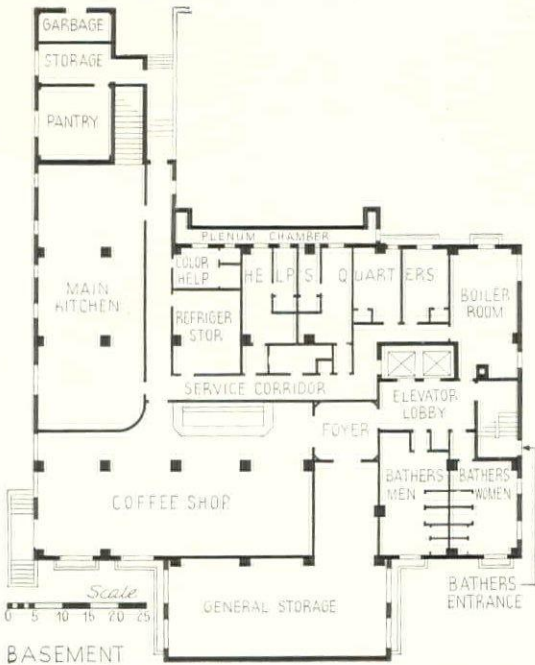


TYPICAL FLOOR

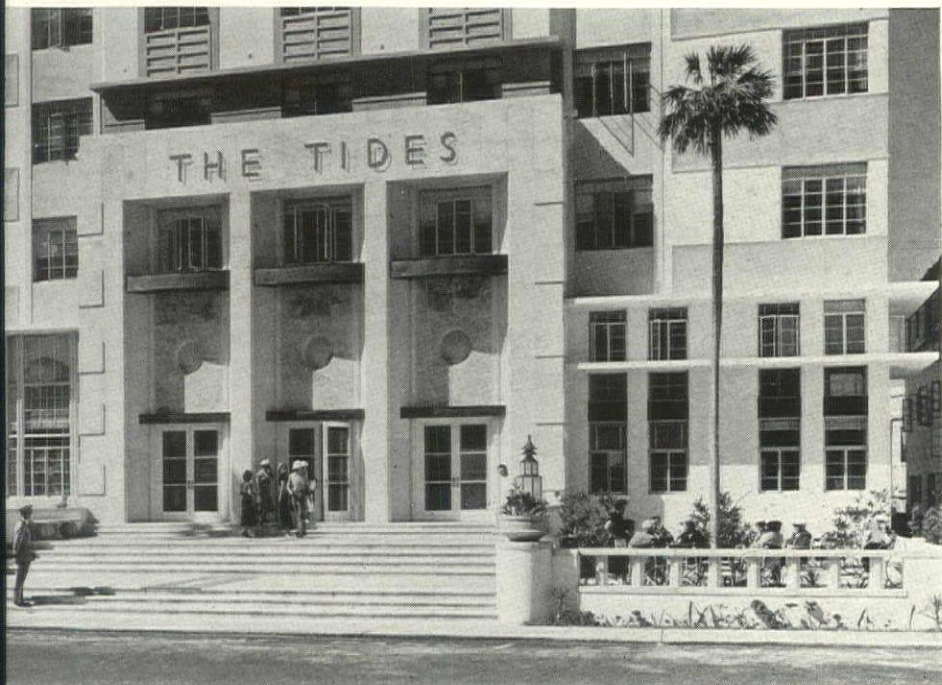


FIRST FLOOR

OCEAN DRIVE



BASEMENT



LOBBY

## CONSTRUCTION OUTLINE

**FOUNDATION:** Wood piling, reenforced concrete pile caps, concrete tie beams. Waterproofing—concrete floors waterproofed integrally with Crystex.

**STRUCTURE:** Reenforced concrete frame, exterior curtain walls concrete block, stucco outside; furred 1 x 2 in. cypress creosoted strips inside. U. S. Gypsum Co. rock lath and Red Top plaster. Interior partitions—gypsum block; baths and stairs—terra cotta tile. Floors—Monolithic concrete. Ceilings—generally unplastered.

**ROOFS:** Bonded, 5-ply built-up roofing, The Philip Carey Co. Decks—covered with promenade tile.

**GLASS BLOCKS:** By Owens-Illinois Glass Co.

**WINDOWS:** Light-weight steel casements, Bliss Mfg. Co.; casement operators by H. S. Getty Co., Inc. Glass—quality A, double strength, Libbey-Owens-Ford Glass Co.

**FLOORS:** Lobby and public spaces—Terrazzo. Bathrooms—ceramic tile.

**FLOOR COVERINGS:** Bedrooms and halls—carpet.

**WALL COVERINGS:** Bathrooms—tile wainscot.

**WOODWORK:** Trim, cabinets and exterior doors—cypress. Interior doors—fir.

**HARDWARE:** Supplied by Schlage Lock Co.

**PAINTING:** Interior: Ceilings—Texolite casein, U. S. Gypsum Co. Trim and sash—enamel, Benjamin Moore & Co. Exterior walls—colored lime wash waterproofed with Gable-tite.

**ELECTRICAL INSTALLATION:** Wiring system—steel tubing, National Tube Co. Switches—toggle, Bryant Electric Co. Fixtures—Ruby Lamp Co.

**KITCHEN EQUIPMENT:** Range—Malleable Steel Range Mfg. Co. Refrigerator—Davidson Refrigerator Co. Dishwasher—Hobart Mfg. Co. Ventilators—ILG Electric Ventilating Co.

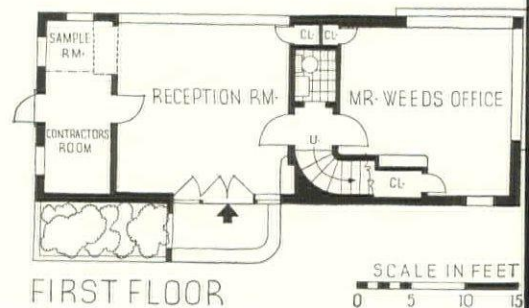
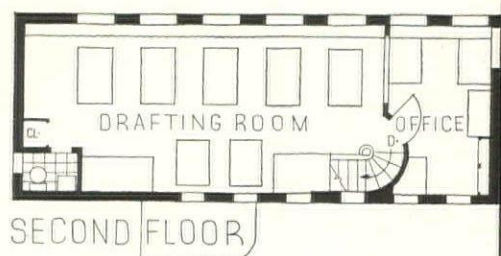
**BATHROOM EQUIPMENT:** All fixtures—Kohler Co.

**PLUMBING:** Soil pipes—Emory Foundry Co., Water pipes—Fretz-Moon Tube Co. Pumps—Goulds Pumps Co.

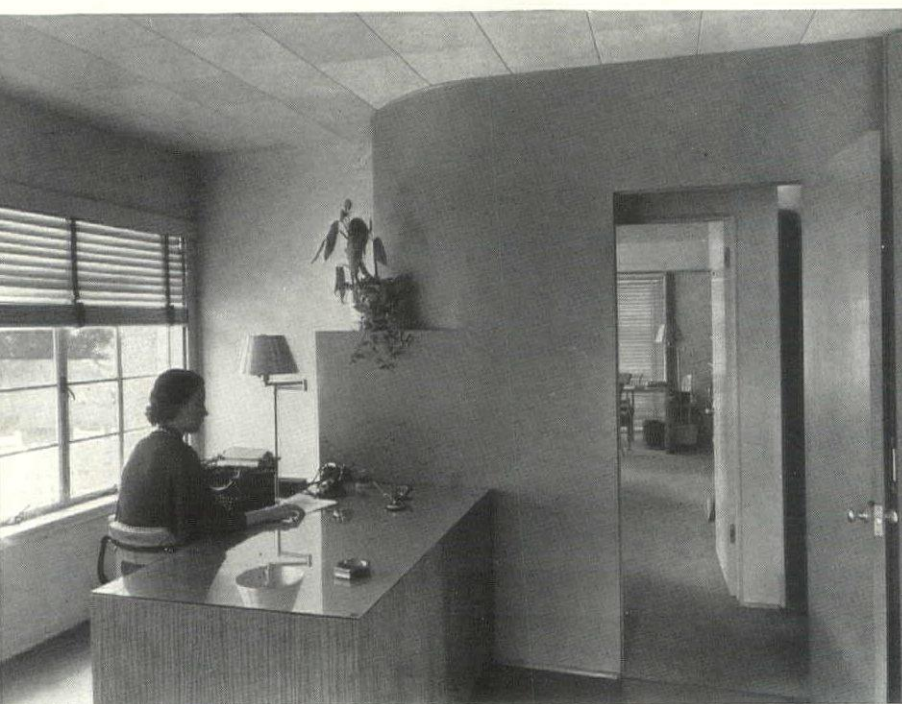
**HEATING:** Only in public spaces and corridors by unit heaters—Pittsburgh Gasteam Radiator Co. Hot water heater—York Oil Burner Co.



Samuel H.



THIS building was designed to house a small architectural office which employs about ten draftsmen during peak periods. Provisions for a future library and additional private offices have also been made. The unusual exterior was the result of several factors: the architect wished his office to indicate the general character of his work, and it is located in an area which when developed will be primarily residential.



## CONSTRUCTION OUTLINE

**FOUNDATIONS:** Spread footings of reinforced concrete.

**STRUCTURE:** Exterior walls— $\frac{3}{4}$  in. stucco, 8 in. concrete block; inside— $\frac{2}{4}$  in. wood furring,  $\frac{3}{4}$  in. lath and plaster, frame partitions plastered both sides. Floor construction—(1st) reinforced concrete slab on fill; (2nd) wood joist, pine sub-floor, oak finished floor. Ceiling—Temlok insulating tile, Armstrong Cork Co.

**ROOF:** Ten-year bonded tar and gravel.

**SHEET METAL WORK:** Flashing—16 oz. soft rolled copper.

**INSULATION:** Roof—4 in. Red Top insulating wool, U. S. Gypsum Co. Sound insulation—1 in. Temlok insulating tile on ceilings, Armstrong Cork Co.

**WINDOWS:** Residential steel casements, Campbell Metal Window Corp.; wood double hung and sliding sash. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Screens—integral with steel sash. Glass blocks—6 x 6 in., Owens-Illinois Glass Co.

**FLOOR COVERINGS:** General office and lavatory—linoleum. Private office, stairhall and stairway—carpet. Drafting room and 2nd floor office—oak.

**WALL COVERINGS:** One wall of general office Masonite Corp. Presdwood, painted; one wall of private office  $\frac{1}{4}$  in. cork board; remainder—painted plaster.

**FURNISHINGS:** General office: Desk, tables and cabinet—special design; benches and chairs—Thonet Bros. Private office—all furnishings special, East Coast Millwork & Fixture Co.

**WOODWORK:** Trim—wood. Doors—flush type, Rezo, M. & M. Woodworking Co.

**HARDWARE:** Interior and exterior—Russell & Erwin Mfg. Co. Push rods and pull bars—Seymour Art Metal Corp.

**PAINTING:** Interior: Walls—Velumina Wall Hide, Pittsburgh Plate Glass Co. Trim and sash—DuLux enamel, E. I. du Pont de Nemours & Co. Exterior walls—Sec waterproofing, Sec Mfg. Co.

**ELECTRICAL INSTALLATION:** Wiring system—galvanized steel tube, 30 per cent Para rubber covered wire. Switches—tumbler type with Bakelite plates. Fixtures—Kurt Versen. Electrical space heaters used throughout, Thermador Electric Mfg. Co.

**PLUMBING:** Soil pipes—standard weight cast iron. Hot and cold water pipes—copper tubing, Type M. Toilet fixtures—Briggs Beautyware, Briggs Mfg. Co.

**AIR CONDITIONING:** Provision made for future installation of Chrysler Air-Temp complete air conditioning system.

# FLORIDA THE GOLDWASSER SHOP, MIAMI BEACH



Samuel H. Gottschalk Photo

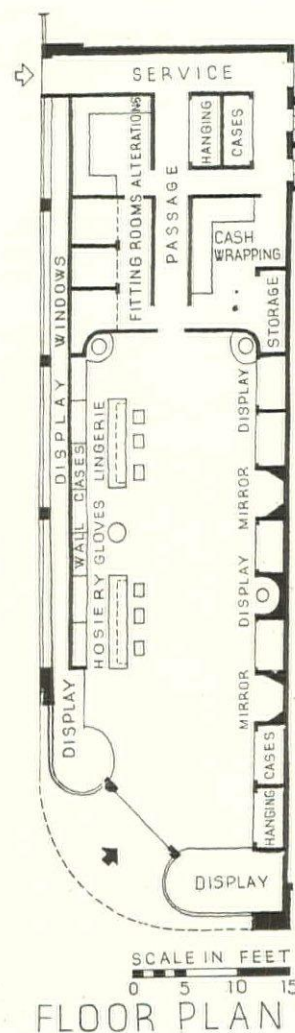
## L. MURRAY DIXON, ARCHITECT

**L**OCATED on fashionable Lincoln Road, the Goldwasser shop occupies the corner and a large portion of one wing of this store building. The nature of the merchandise on sale, in this case women's apparel, is well suggested by the design of the building, whose large windows, carefully controlled signs, and general air of luxurious simplicity are in complete harmony with their function.

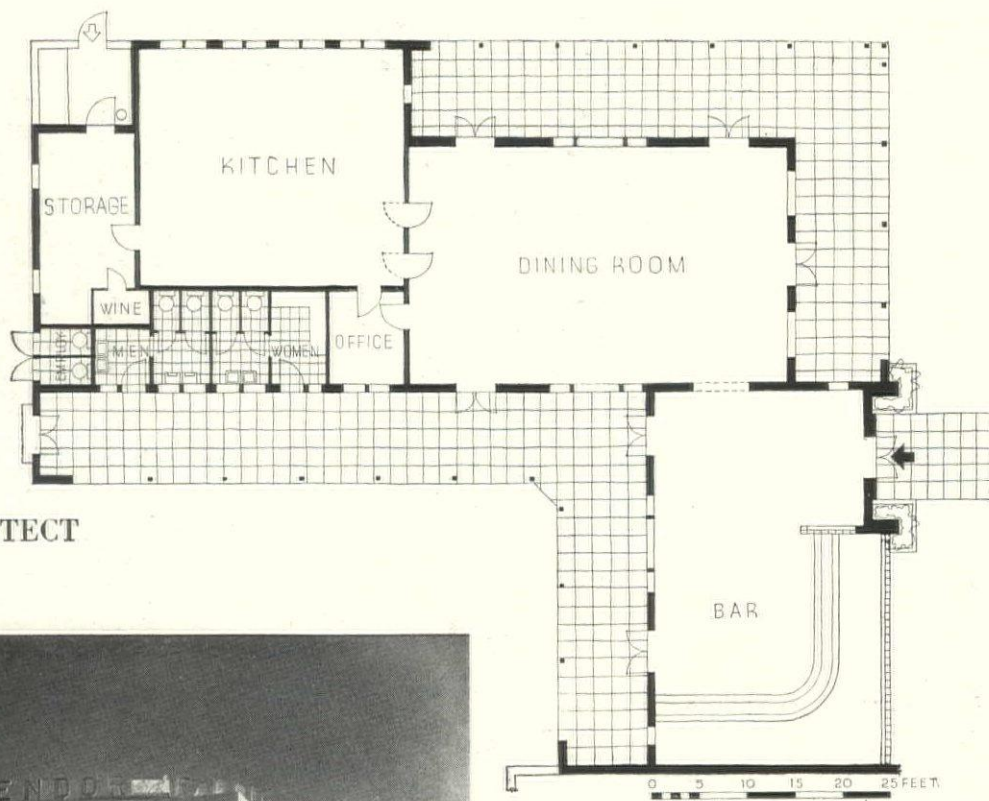
### CONSTRUCTION OUTLINE

**FOUNDATIONS:** Precast concrete piling.  
**STRUCTURE:** Steel skeleton construction, exterior curtain walls of 8 in. hollow concrete blocks, precast Terrazzo blocks set as stone for exterior, furring, lath and plaster for interior finish. Interior partitions—wood studs, sheet rock lath and plaster. Floor construction—concrete slab supported on grade beams, Terrazzo finished flooring. Ceiling—plaster.  
**ROOF:** Wood rafters, wood sheathing, 10-year bonded felt and gravel, Philip Carey Co.  
**SHEET METAL WORK:** Flashing—copper.

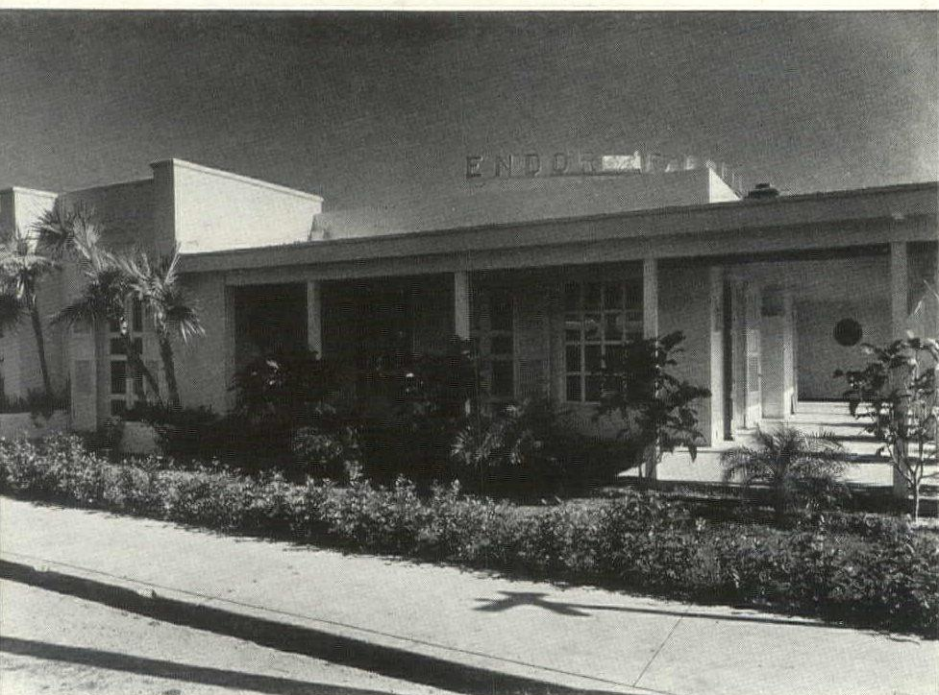
**WINDOWS:** Store front construction—Desco, Detroit Show Case Co., extruded aluminum.  
**FURNISHINGS:** By National Show Case Co.  
**WOOD & METAL TRIM:** Trim—magnolia. Interior doors—Rezo stock flush, M. & M. Woodworking Co. Exterior doors—mahogany.  
**HARDWARE:** Supplied by Sargent & Co.  
**PAINTING:** All material by E. I. du Pont de Nemours & Co.  
**ELECTRICAL INSTALLATION:** Wiring system—conduit, Center Tube Co. Switches—Hart & Hegeman. Fixtures—Ruby Lamp Co.  
**PLUMBING:** Soil pipes—cast iron, Crane Co. Cold water pipes—galvanized steel. Hot water pipes—copper. Toilet fixtures—Crane Co.



# CORAL CLUB, MIAMI BEACH



RUSSELL T. PANCOAST, ARCHITECT



BUILT expressly for two well-known entertainers, this bar and restaurant was designed to create a pleasant, intimate atmosphere, and was provided with terraces which allow the seating capacity to be doubled when necessary. The architect states that he attempted "to suggest the tropical location without staged effects, and in a contemporary manner." The highly successful interior is briefly but adequately explained by "tired of chromium modern."

## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—concrete blocks stuccoed outside; interiors—plastered and furred with 1 x 2 wood strips. Structural steel—I-beams with exposed wood joists and wood casing on beams. Floor construction—quarry tile, 3 x 9 in., laid herringbone pattern, B. Mifflin Hood Co.

**ROOF:** Gravel and 10-year built-up rag felt, Johns-Manville.

**WINDOWS:** Sash—wood, double hung and stationary. Glass—Libbey-Owens-Ford Glass Co. Screens—bronze, stationary. Glass blocks—Owens-Illinois Glass Co.

**FURNISHINGS:** Reed furniture in bar and loggias, solid wood in dining room.

**HARDWARE:** Supplied by Schlage Lock Co.

**PAINTING:** Interior walls and ceilings—paste paint, E. I. du Pont de Nemours Co. Exterior walls—lime and cement with Somay water-proofing—Somay Products Co.

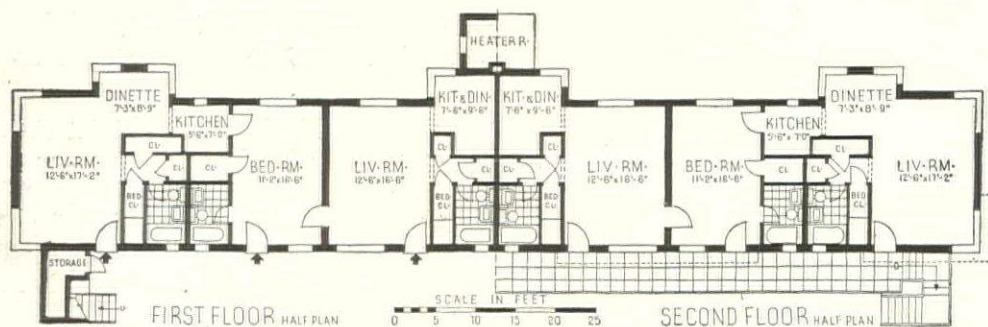
**ELECTRICAL INSTALLATION:** Wiring system—conduit, steel tubing. Floodlights—General Electric Co.

**PLUMBING:** Toilet fixtures—Crane Co. Hot water heater—Ruud Mfg. Co.

**VENTILATION:** Exhaust fan—American Coolair Co.



Samuel H. Gottschalk



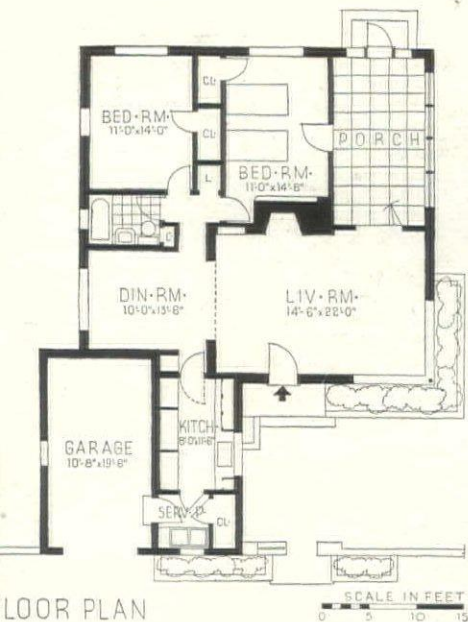
ROBERT G. JAHELKA, ARCHITECT

THIS two-story apartment building is one of the most common of the residential types in Miami. Built as a rule on 50-foot lots, there are hundreds of similar structures, varying only slightly in plan, general appearance, and size. The example illustrated here, one of the best of its kind, is of particular interest for its flexibility in plan. The use of a balcony for circulation on the second floor, with separate entrances to each room, makes it possible to furnish apartments in many combinations from a single bedroom and bath or living-bedroom, kitchen and bath to larger suites without the necessity for alterations of any kind.

## CONSTRUCTION OUTLINE

**FOUNDATION:** Reinforced concrete spread footings with concrete slab at first floor.  
**STRUCTURE:** Exterior walls—certified concrete blocks and stucco; inside furring, U. Gypsum Co. rock lath and plaster. Interior partitions—wood studs and plaster. Second floor construction—wood joists.  
**ROOF:** Wood joists and sheathing, 15-year bonded roofing, The Philip Carey Co.  
**SOUND INSULATION:** Temlok, ½ in., between 1st and 2nd floors, Armstrong Cork Co.  
**WINDOWS:** Sash—Crittall-Federal, Inc. Glass—double strength, quality A, Libbey-Owens Ford Glass Co.  
**FLOOR COVERINGS:** First—Terrazzo; 2nd—oak. Bathrooms—tile, Robertson Art Tile Co.  
**WOODWORK:** Trim, cabinets and exterior doors—cypress. Interior doors—fir.  
**HARDWARE:** Supplied by Schlage Lock Co.  
**PAINTING:** Interior: Walls—flat wall paint. Floors—(1st) wax; (2nd) 1 coat filler, 2 coat shellac. All paints by E. I. du Pont de Nemours & Co.  
**ELECTRICAL INSTALLATION:** Tubing and switches—Bryant Electric Co.  
**KITCHEN EQUIPMENT:** Range and refrigerator—General Electric Co. Sink and cabinet—Sears Roebuck Co.  
**BATHROOM EQUIPMENT:** All equipment by Crane Co.  
**PLUMBING:** Soil pipes—standard weight cast iron. Hot and cold water—copper steel, National Tube Co.  
**HEATING:** Hot water system. Boiler—National Radiator Corp. Oil burner—William Oil-O-Matic Heating Corp. Radiators and grilles—Modine Mfg. Co. Valves—Crane Co. Booster pump—Bell & Gossett Co. Hot water heater—Bell & Gossett combined with their heating system.

# HOUSE FOR ROBERT F. SMITH, COCONUT GROVE



ROBERT F. SMITH, ARCHITECT

THE combination of modern features with those of the more conventional southern houses is to be seen in most Florida small houses of recent years. A case in point is this one-story residence. Convenient in plan, it groups the bedrooms and bath around a small private passageway, has living and dining rooms of adequate size, and provides a generous porch for year-round outdoor living.

## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—concrete block, stucco surface; inside furring and plaster. Interior partitions—wood frame and plaster. Floor construction—oak throughout except kitchen and bath.

**ROOF:** Two layers of 30 lb. felt and No. 90 white plate surfaced felt.

**WINDOWS:** Sash—steel casement, Vento Steel Sash Co. Weatherstripping—Chamberlin Metal Weatherstrip Co. Glass— $\frac{1}{8}$  in. plate, Pittsburgh Corning.

**WOODWORK:** Trim and cabinets—magnolia. Doors—Rezo slab type, M. & M. Woodworking Co.

**HARDWARE:** Supplied by Yale & Towne Mfg. Co.

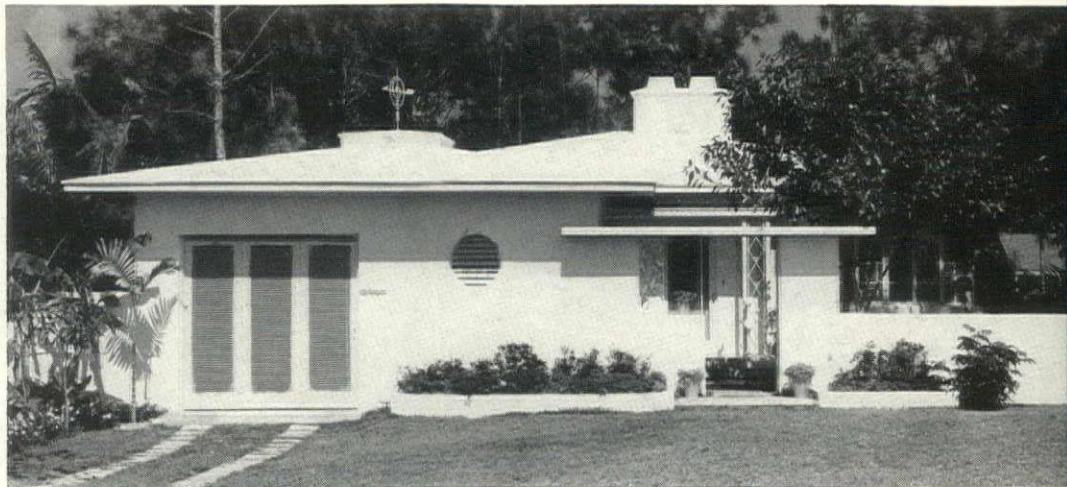
**PAINTING:** Interior: Walls and ceilings—Benjamin Moore & Co. Floors—1 coat filler, shellac and varnish. Sash—enamel, E. I. du Pont de Nemours & Co. Exterior walls and roof—waterproof paint, Sec Mfg. Co.

**KITCHEN EQUIPMENT:** Range and refrigerator—Westinghouse Electric & Mfg. Co.

**BATHROOM EQUIPMENT:** All fixtures by Standard Sanitary Mfg. Co.

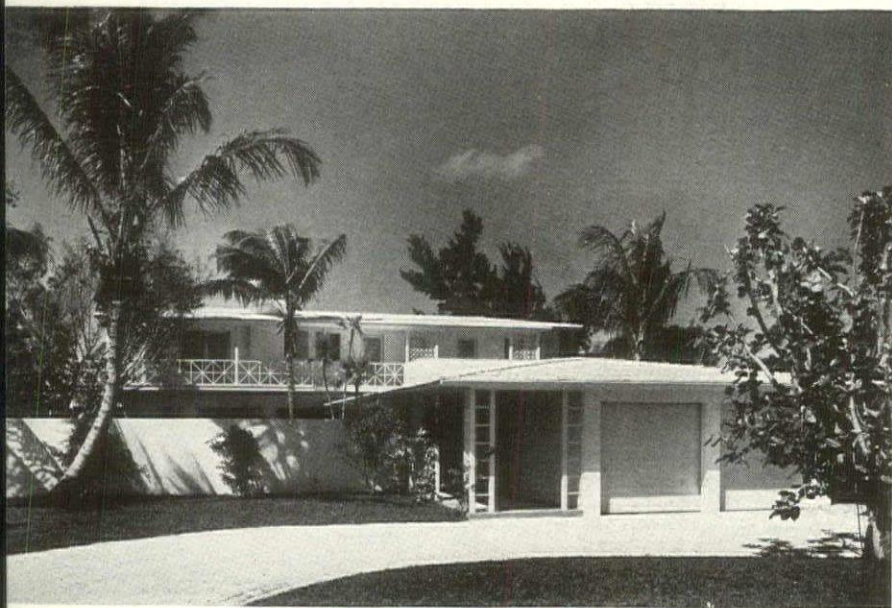
**PLUMBING:** Hot and cold water pipes—steel, A. M. Byers Co.

**HEATING:** Solar Water Heater Co. system for hot water, 80 gal. tank located in chimney; wood burning fireplace in living room, wall heater in bathroom. Kitchen and bath mechanically ventilated by fan located in garage.

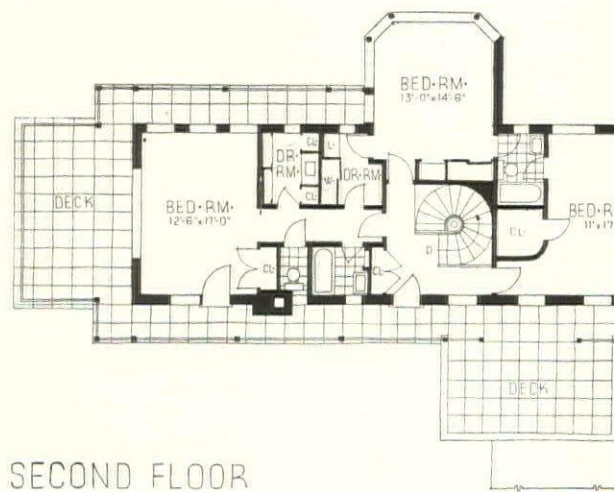


Gerecke—Pan American Photos

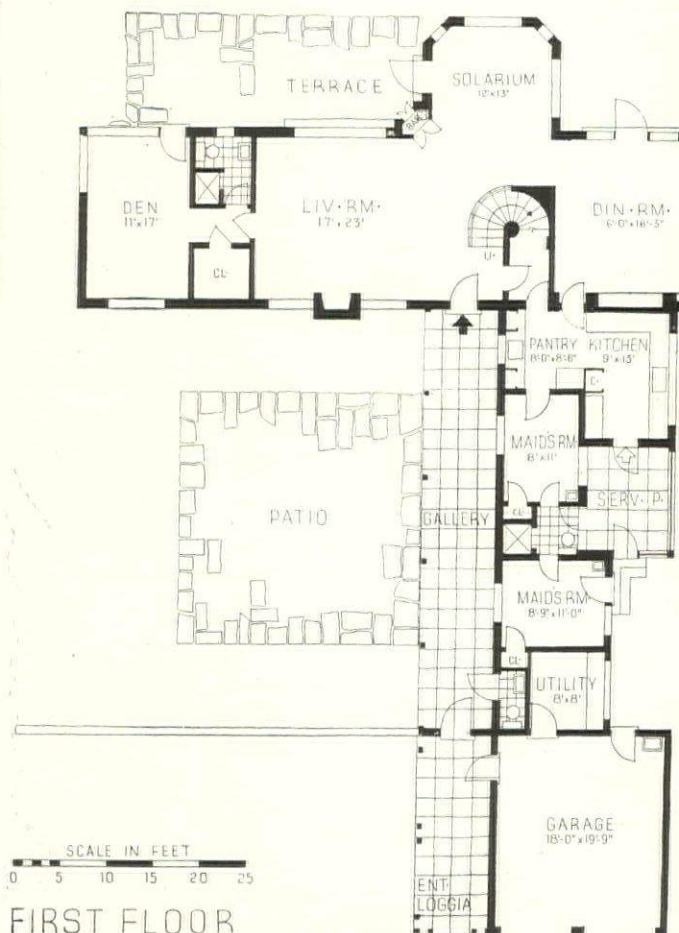
# FLORIDA HOUSE FOR I. R. EDMANDS, MIAMI BEACH



Samuel H. Gottscho Photos



SECOND FLOOR



FIRST FLOOR

THE trend in modern domestic architecture in Florida, as already noted, is to combine features of both traditional and modern types. The clients in this case wanted a modern house, but something less uncomfortable than examples they had seen in Europe. Chief of the problems presented was the existence of a view on one side of the property and the prevailing wind from the other. The result was a long, narrow plan, with the major rooms extending the full width of the house and the service wing runs along the north property line.



LIVING ROOM



SOLARIUM

## CONSTRUCTION OUTLINE

**FOUNDATION:** Precast concrete piles, reinforced concrete grade beams and slab, waterproofed with Sec, Sec Mfg. Co.

**STRUCTURE:** Exterior walls—reinforced concrete frame; 8 in. concrete block curtain walls,  $\frac{3}{4}$  in. waterproof stucco for exterior finish; interior  $2\frac{1}{4}$  in. wood furring,  $\frac{3}{4}$  in. plaster; wood stud partitions with plaster finish. Second floor construction—wood joists, suspended sub-floor,  $\frac{1}{2}$  in. Homasote Co. board, asphalt tile, plaster ceilings.

**ROOF:** Wood rafters, wood sheathing covered with 30 lb. saturated felt and 85 lb. slate surface saturated felt; Ludowici-Celadon Co. light-weight Bermuda white interlocking single tile. Decks—15-year bonded tar and

gravel roof and wood slat sectional floor.

**CHIMNEY:** Cement brick with terra cotta lining; Heatilator fireplace, Heatilator Co.

**SHEET METAL WORK:** Flashing, gutters and leaders—16 oz. soft rolled copper. Ducts—26 gauge galvanized Armco Ingot iron, American Rolling Mill Co.

**WINDOWS:** Residence type steel casements, Campbell Metal Window Corp. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Screens—18 mesh copper, integral wood sash.

**FLOOR COVERINGS:** Living room—cement tile. Bedrooms and halls—asphalt tile. Kitchen and bathroom—linoleum.

**WOODWORK:** Trim and cabinets—magnolia. Doors—flush cell type Air-Flo, Huttig Sash & Door Co. Garage doors—J. G. Wilson Co.

**HARDWARE:** Russell & Erwin Mfg. Co.

**PAINTING:** Interior walls and ceilings—Velumina Wall Hide, Pittsburgh Plate Glass Co. Sash—enamel, Pratt & Lambert, Inc.

**ELECTRICAL INSTALLATION:** Wiring system—galvanized steel tube, 30 per cent Para rubber covered wire. Switches—Tumbler.

**KITCHEN EQUIPMENT:** Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink—Standard Sanitary Mfg. Co. Cabinets—Oxford Cabinet Co.

**BATHROOM EQUIPMENT:** All fixtures by Standard Sanitary Mfg. Co., except Speakman Co. shower.

**PLUMBING:** Soil pipes—standard weight cast iron. Hot and cold water pipes—Type L copper tubing, Revere Copper & Brass, Inc. Water heater—Automatic Electric Heater Co.

**HEATING:** Electric heaters in all rooms, Thermador Electric Mfg. Co.

## FLORIDA HOUSE FOR ALVIN GREIF, RIVO ALTA ISLAND

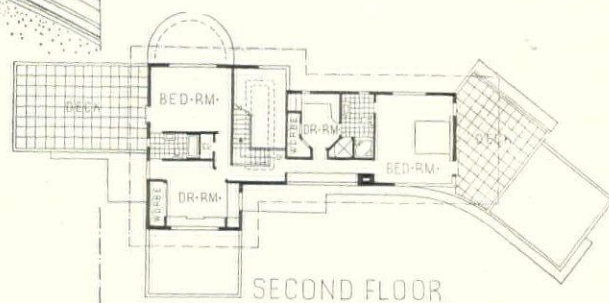
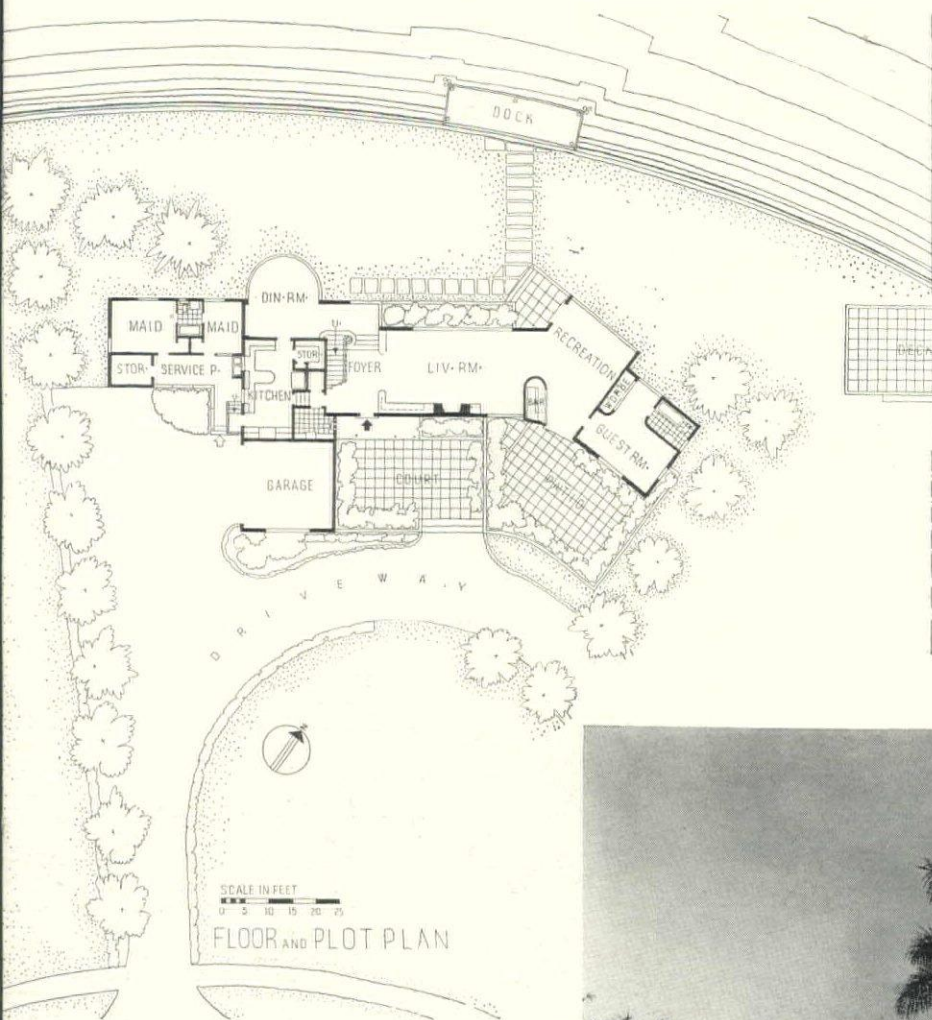


DINING ROOM



STAIR  
HALL

THE merits of the open plan in the Florida House cannot be questioned, and its advantages are well illustrated here. View and ventilation are both provided for in all important rooms, and the living possibilities of the dining-living-recreation room arrangement are obvious. The placing of the recreation room was conditioned by the view, although one might, on this basis, question the location of the guest bath. The exterior shows the typical plain surfaces and low-pitched roof, the latter being white as a means of insulation. Ample terraces on both floors give full opportunity for outdoor living.



STREET



GARDEN



Samuel H. Gottsche Photos

## HOUSE FOR ALVIN GREIF



IGOR B. POLEVITZKY,

T. TRIP RUSSELL, ARCHITECT

### CONSTRUCTION OUTLINE

**FOUNDATION:** Walls—reinforced concrete piles and grade beams. Waterproofing—concrete, stucco and mortar integral, Sec M Co.

**STRUCTURE:** Reinforced concrete skeleton concrete block filler walls, steel window lintels. Interior partitions—frame, plaster on rock lath. Floor construction—wood joists, oak strip flooring. Ceilings—plaster on rock lath. **ROOF:** White shingle tile over main portion. Ludowici-Celadon Co. Decks—two plies of fir covered with red quarry tiles laid in sand.

**SHEET METAL WORK:** Flashing—16 soft rolled copper. Gutters cornices and lead —20 oz. hard copper. Ducts—galvanized sheet iron.

**INSULATION:** All ceilings—metallized rock lath, U. S. Gypsum Co.

**WINDOWS:** Sash—steel casement, galvanized, Campbell Metal Window Corp. Glass—double strength, Libbey-Owens-Ford Glass Co. Screens—copper in stainless steel frames.

**STAIRS:** Treads and risers—precast terrazzo slabs.

**FLOOR COVERINGS:** Main rooms—carpet, Mohawk Carpet Mills. Kitchen—linoleum. Bathrooms—vitreous tile, Robertson Art Tile Co.

**WOODWORK:** Trim—magnolia. Interior doors—Rezo 1¾ in., M. & M. Woodworking Co. Garage doors—J. G. Wilson Corp.

**HARDWARE:** Russell & Erwin Mfg. Co. **ELECTRICAL INSTALLATION:** Wiring system—wire and cable, 98 per cent pure copper.

Switches—Westinghouse Electric & Mfg. Co. **KITCHEN EQUIPMENT:** Range—Magic Chef.

gas, American Stove Co. Refrigerator—General Electric Co. Sink—Standard Sanitary Mfg. Co. Cabinets—Nappanee, Coppes, Inc.

Ventilating fan—ILG Electric Ventilating Co. **BATHROOM EQUIPMENT:** Fixtures—Standard Sanitary Mfg. Co. Accessories—T. Charles Parker Co. Shower door—G. Ketcham Mfg. Corp.

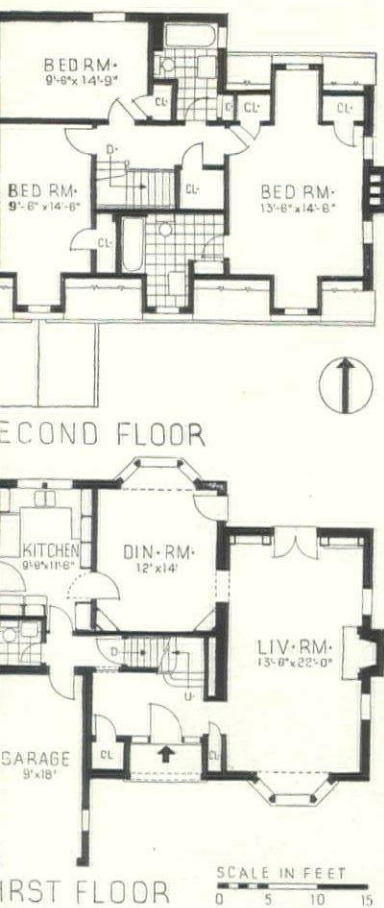
**PLUMBING:** Soil pipes—cast iron. Hot and cold water pipes—copper.

**HEATING:** Electric heater, 1,000 watt Mark in baths and two dressing rooms. Radiators—Gastean, James B. Clow & Sons. Hot water heater, Solar Water Heater Co.



LIVING ROOM—RECREATION ROOM ABOVE

# HOUSE FOR FRED C. STILES EVANSTON, ILL., WHITE & WEBER, ARCHITECTS



Hedrich-Blessing Photos

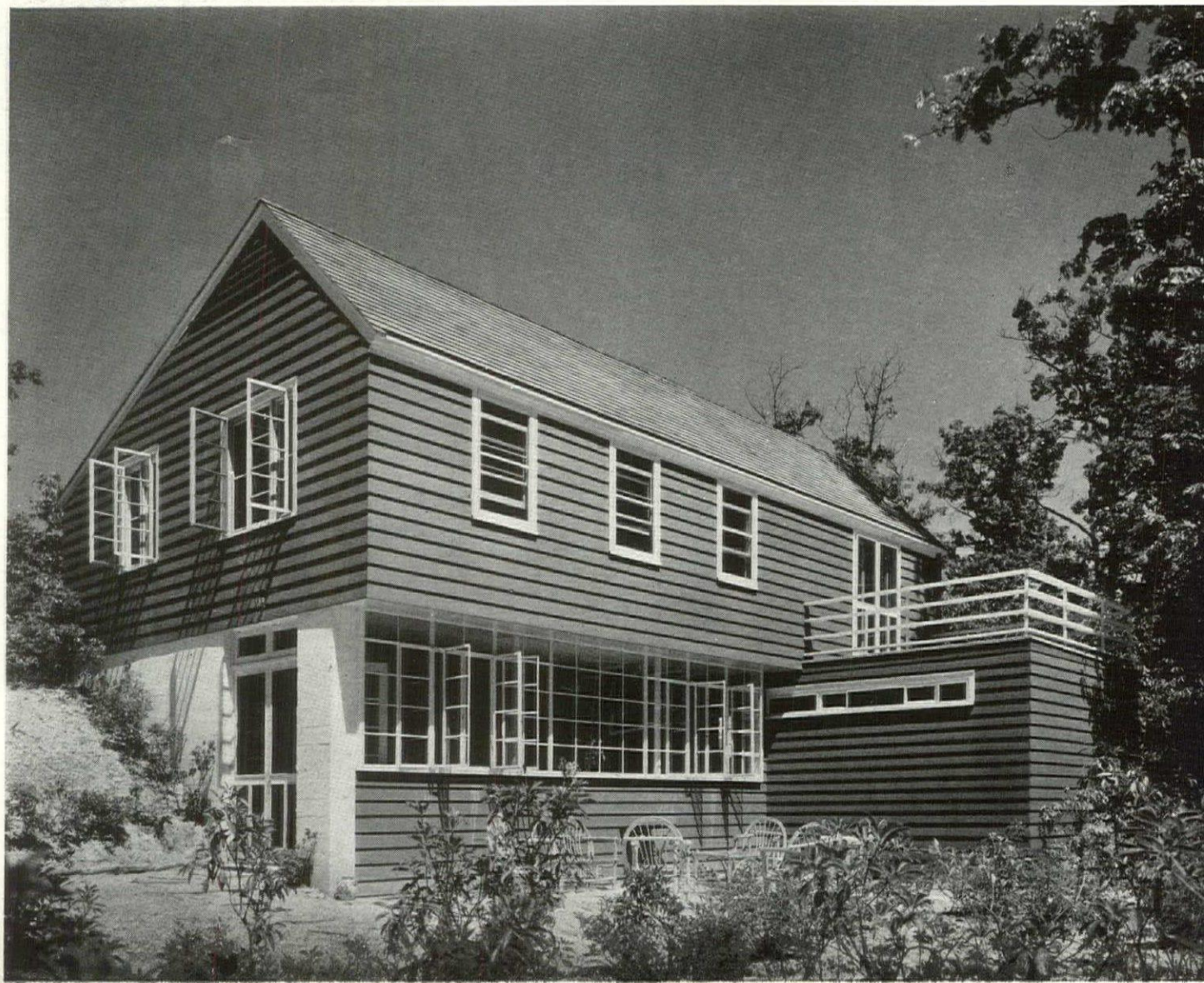
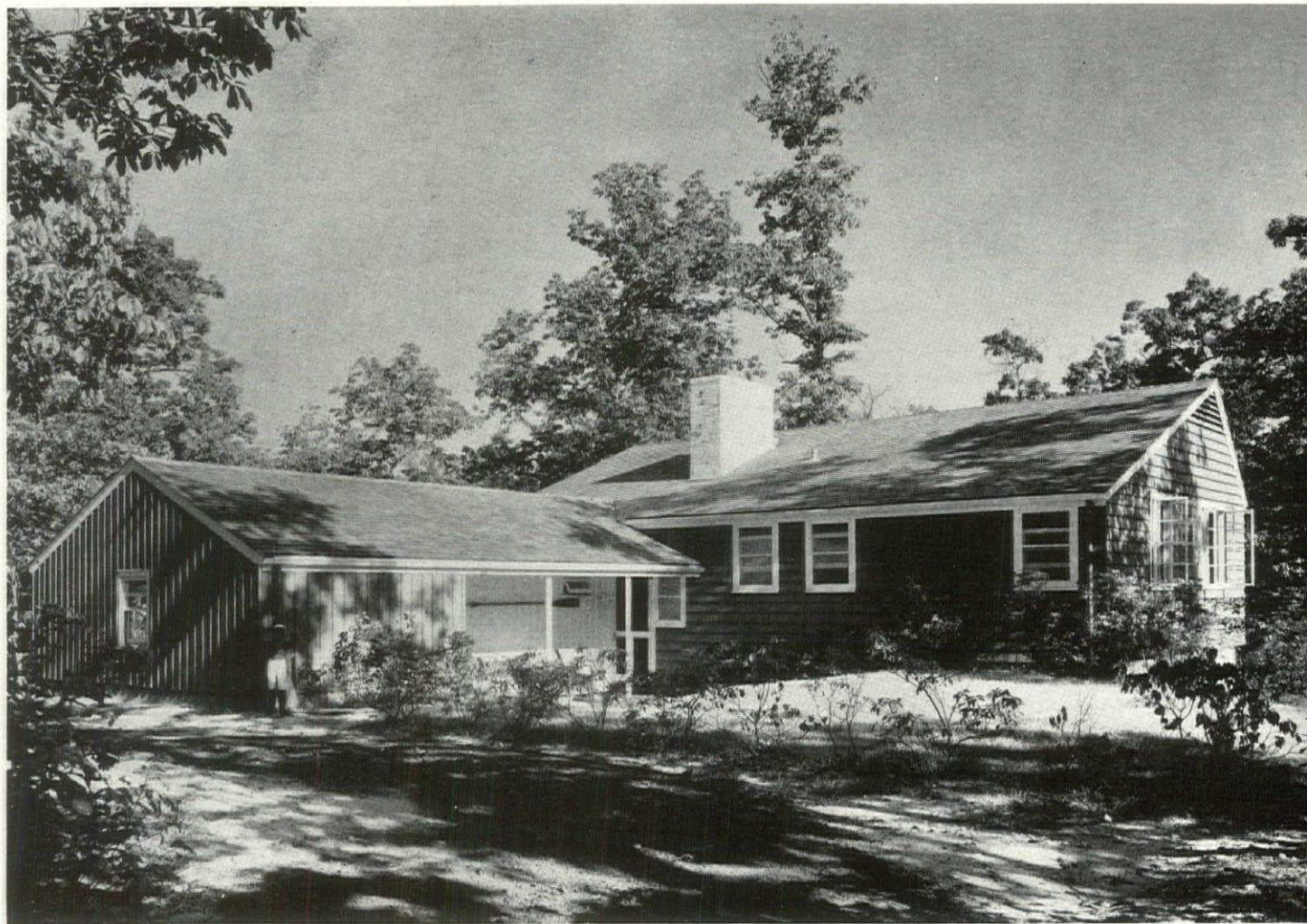
A CONVENTIONAL small house, economical in its use of space and planned for convenient circulation. Its most successful features are the generous entrance hall, connection of the garage to this hall, location of the lavatory, and the placing of the dining room where it overlooks the rear garden. Some of the difficulties that arise where a one and a half story scheme is used are apparent in the second floor plan, whose irregularity is a necessary result of the docked ceilings and dormer windows. Cost: \$11,000.

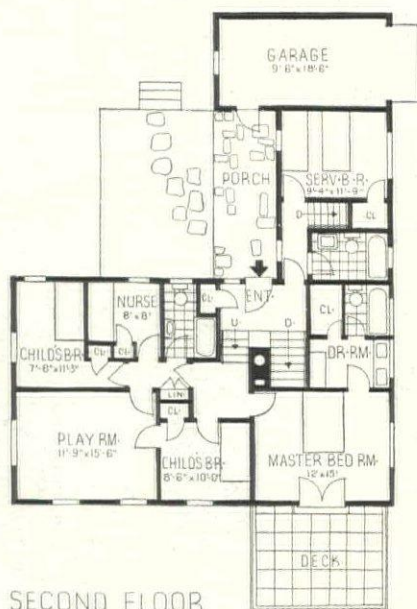
## CONSTRUCTION OUTLINE

**STRUCTURE:** Wood frame construction with brick veneer.  
**ROOF:** Covered with wood shingles, Seattle Cedar Lumber Mfg. Co.  
**INSULATION:** Walls—Silvercote, Specialty Converters, Inc. Ceilings second floor—Red Top, U. S. Gypsum Co.  
**FLOORS:** Generally red oak. Kitchen and bath—linoleum. Entrance hall—brick.  
**WINDOWS:** Wood double hung. Glass—quality A. "Lustra," American Window Glass Co.  
**HARDWARE:** Special design, Colonial brass, Sargent & Co.  
**PLUMBING:** Fixtures by Standard Sanitary Mfg. Co.  
**HEATING:** Sunbeam forced warm air system, gas fired, Fox Furnace Co.

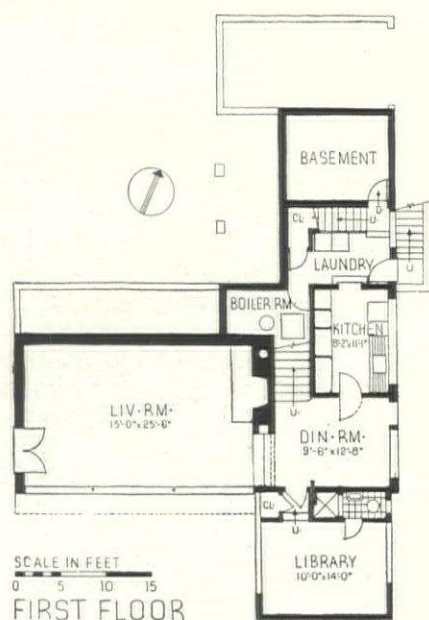
HOUSE FOR J. W. OUTERBRIDGE,

HUNTINGTON, LONG ISLAND, N. Y.

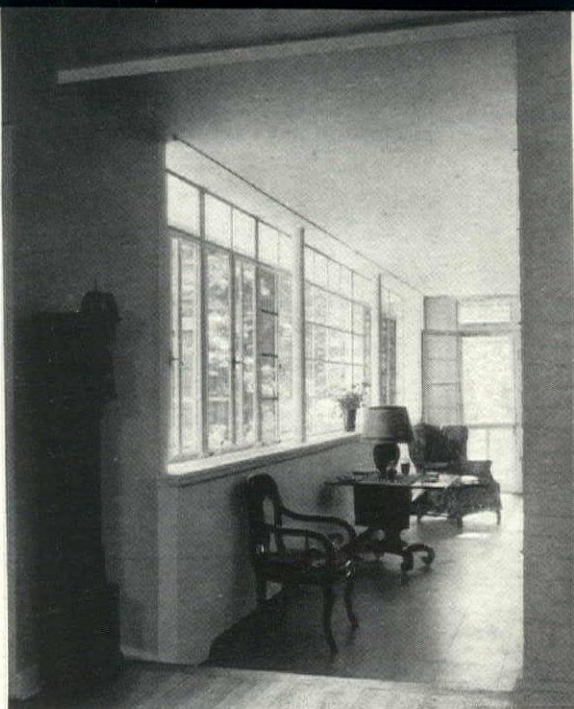




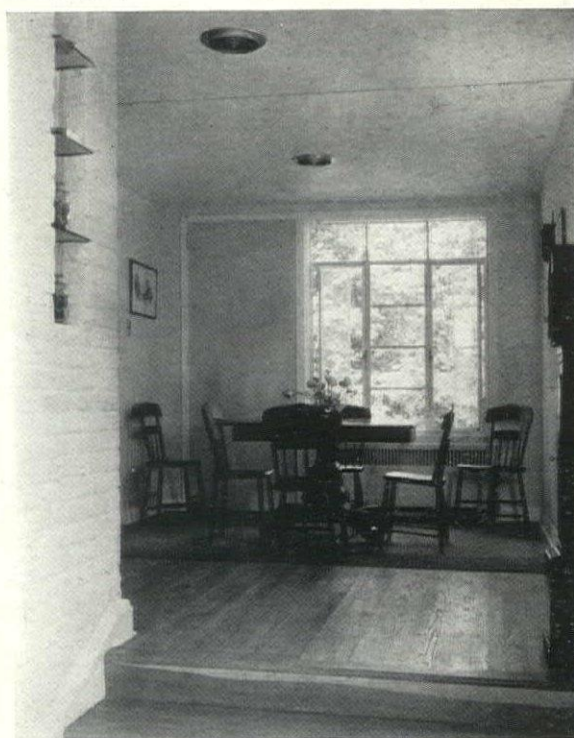
SECOND FLOOR



FIRST FLOOR



LIVING



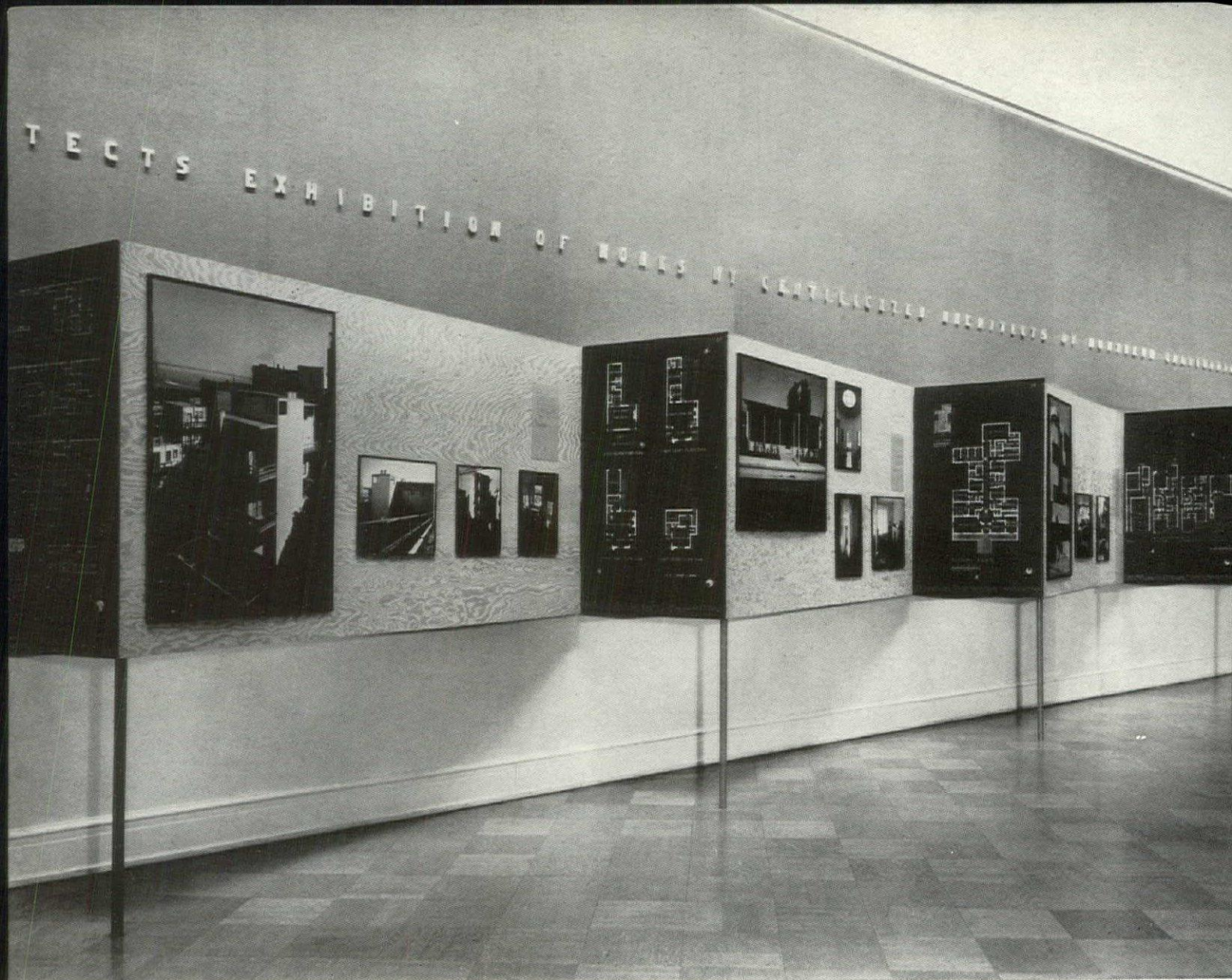
DINING

Charles E. Knell Photos

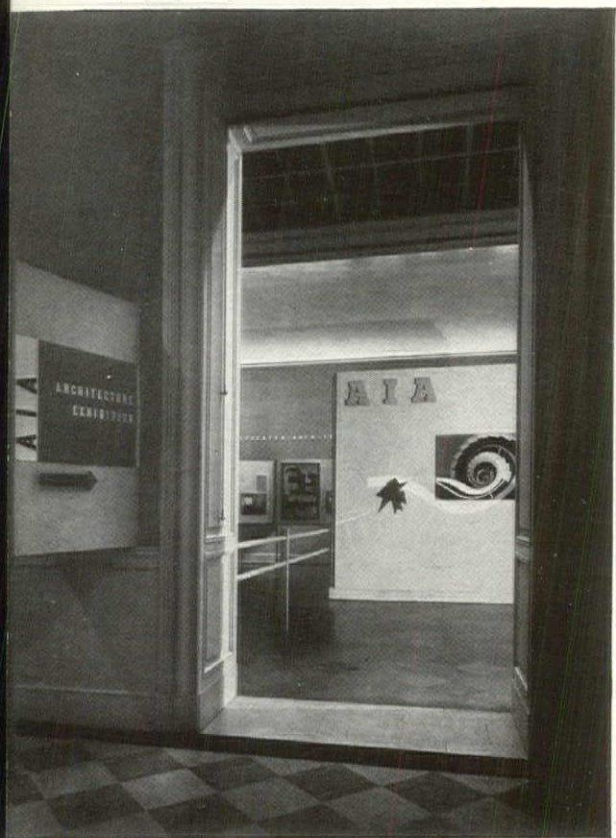
THE impact of modern ideas on traditional house forms has already produced a number of examples whose significance, as part of the contemporary trend, should not be underestimated. These architectural hybrids have been most common in California, where a whole school of younger architects is rapidly developing a modern, regional domestic type. This new house in Long Island suggests that the same can be done in the East. Based on familiar precedent it shows that the advantages of modern planning and fenestration can be provided in a manner which will not offend the conservative client. The plan is particularly well studied on the upper level where children, parents, and servants are given ample space and privacy. On the floor below the arrangement shows equal care in planning. A major feature is the living room window, which runs from wall to wall and up to the ceiling; the overhang provides needed protection against the summer sun. The designer eliminated the need for shutters as a decorative accent by painting the walls dark and the trim white, a 200-year-old device which is as appropriate today as ever.

## CONSTRUCTION OUTLINE

**STRUCTURE:** Exterior walls—clapboard, 15 lb. felt, sheathing, studs. Ecod lath and plaster, Reynolds Corp. some rooms finished with Homasote, Homasote Co. Floor construction—wood. Ceilings—Homasote, Homasote Co. **INSULATION:** Outside walls and attic floor—4 in. rock wool, Johns-Manville. Weatherstripping—Accurate Metal Weather Strip Co. **WINDOWS:** Double hung, Curtis Companies, Inc.; casement—Hope's Windows, Inc. and Anderson Corp. Glass—single strength, Pittsburgh Plate Glass Co. **FLOORS:** Living room—asphalt tile, Thomas Moulding Co. **WALL COVERINGS:** Library—birch plywood, U. S. Plywood Corp. Bathrooms—Marlite, Marsh Wall Products Co. **WOODWORK:** Trim—stock, Curtis Companies. Interior doors—Rezo flush, M. & M. Woodworking Co. Garage doors—Rol-Top, Kinnear Co. **ELECTRICAL INSTALLATION:** Cables—Bryant Electric Co. Fixtures—Lightolier Co. and Gruber Bros. **KITCHEN EQUIPMENT:** Range—Westinghouse Electric & Mfg. Co. Cabinet—Curtis Companies. **BATHROOM EQUIPMENT:** All fixtures by Standard Sanitary Mfg. Co. Cabinet—Jenkins Mfg. Co. **HEATING AND AIR CONDITIONING:** Hot water with circulator, H. A. Thrush & Co. Radiators—H. B. Smith Co. Oil burner—Delco Frigidaire Corp. Hot water heater—Taco Heaters, Inc.



## AIA EXHIBIT OF ARCHITECTURE, SAN FRANCISCO



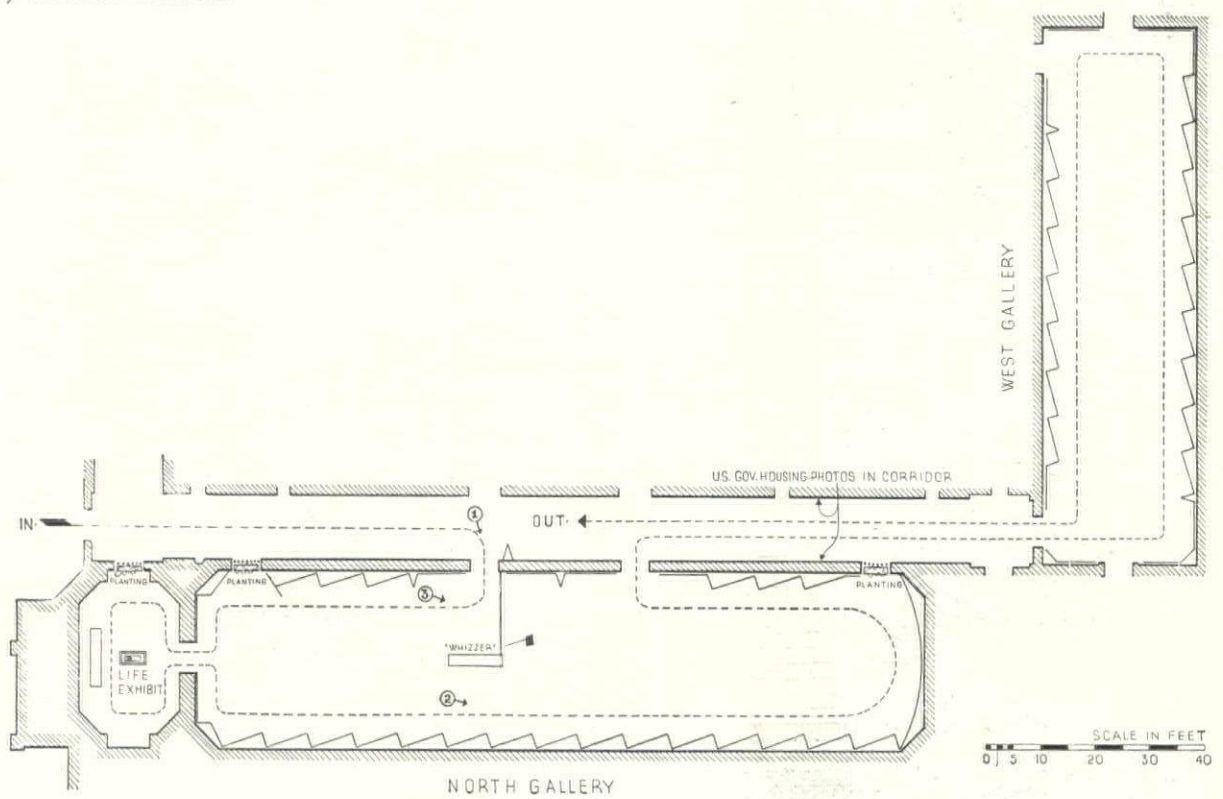
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MOST architectural exhibitions are more remarkable for what they are not than for what they are. So familiar is the tasteless collection of small mounted photographs in the average exhibit of architecture that the San Francisco Museum of Art refused to release any space for this show until it was convinced that it would be properly designed and of a nature to interest the general public. The result, under the direction of Ernest Born, was far more than a properly designed exhibition. Inspired in its simplicity, it consists of a series of plywood panels laid out on a sawtooth plan, with a blueprint, caption, and photographs illustrating each job. A definite layout for each section was made, and photographs of the proper size were ordered: a complete reversal of the usual practice of fitting together whatever available material there might be. Not the least important outcome of the exhibition is the fact that the public, popularly supposed to have no interest in architectural shows, came in such numbers that the closing date was postponed for two weeks.



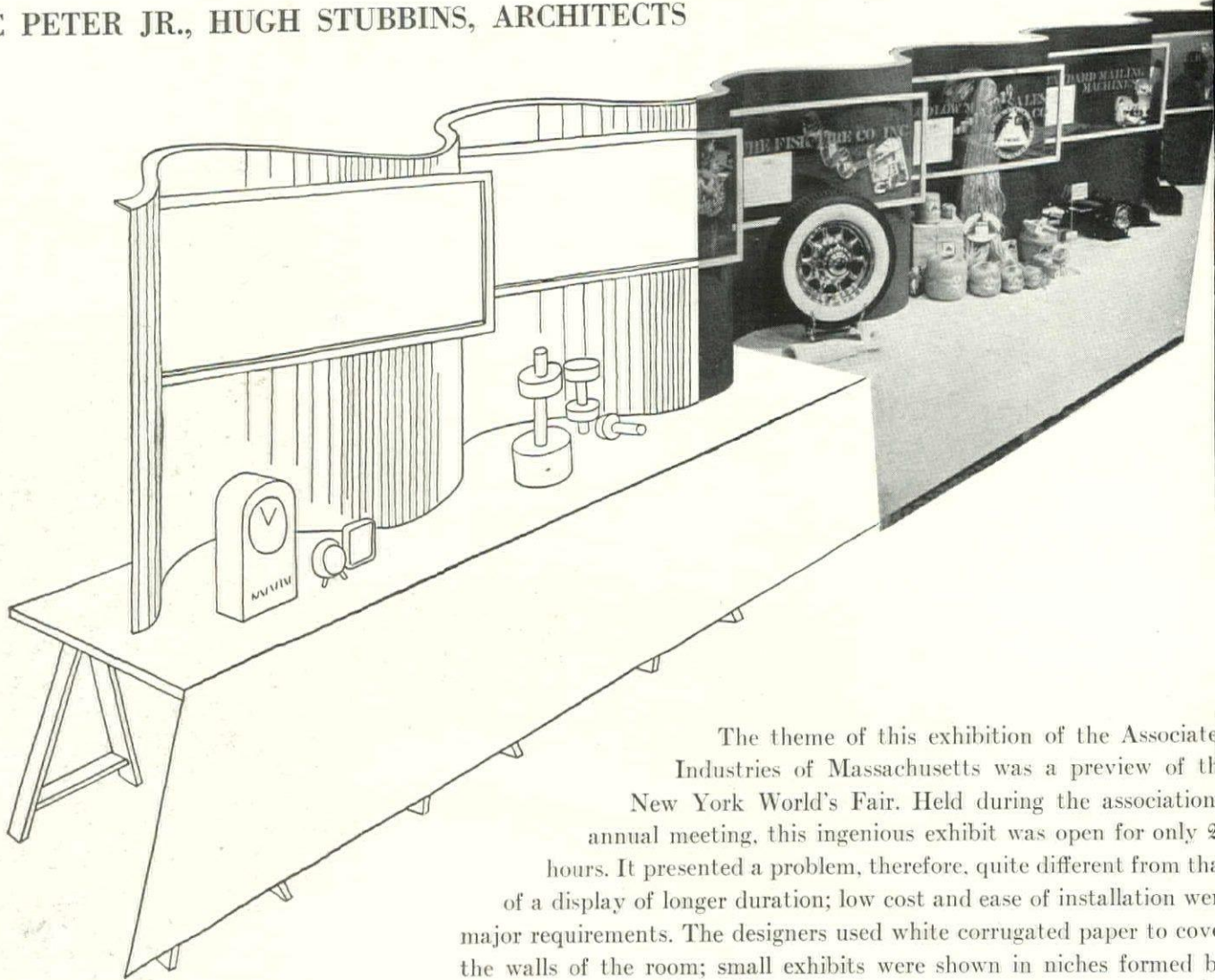
ERNEST BORN, ARCHITECT

3. Esther Born Photos

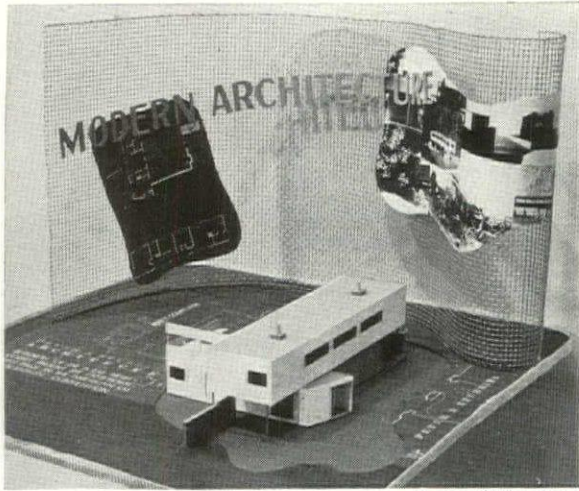
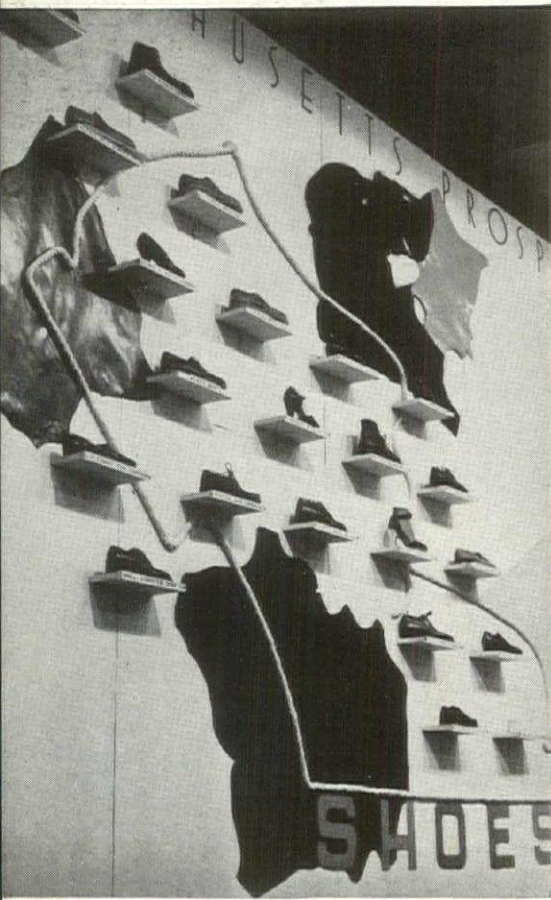


# INDUSTRIAL EXHIBIT, BOSTON, MASS.

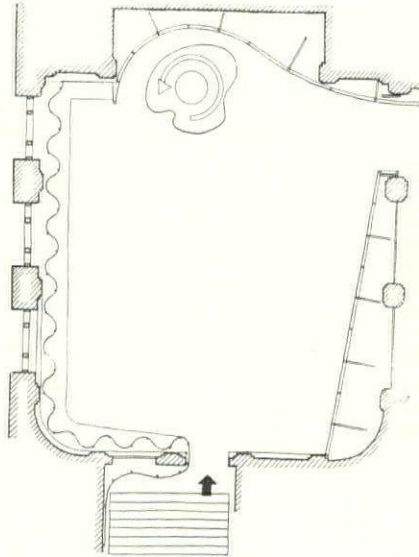
MARC PETER JR., HUGH STUBBINS, ARCHITECTS

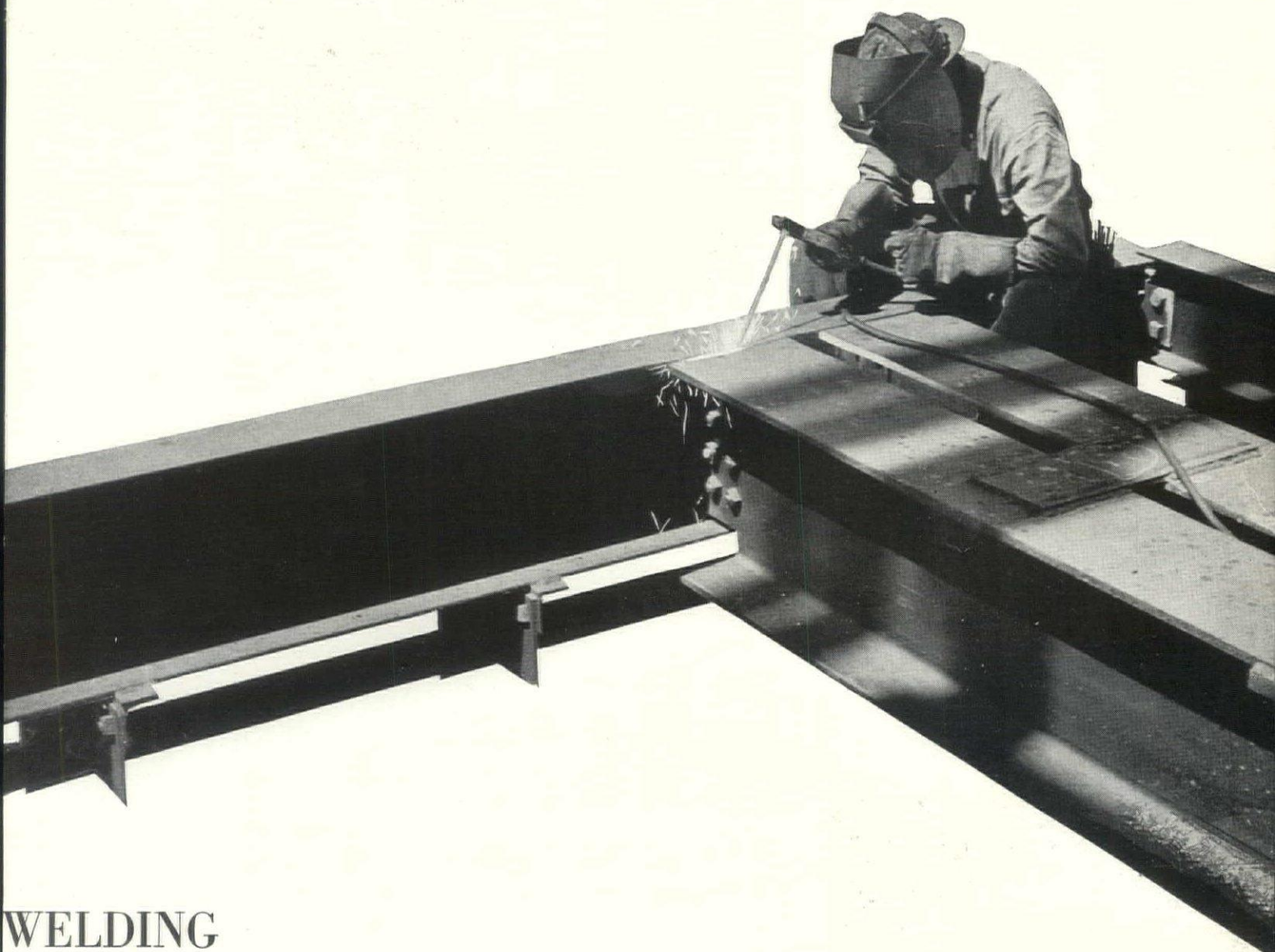


The theme of this exhibition of the Associated Industries of Massachusetts was a preview of the New York World's Fair. Held during the association's annual meeting, this ingenious exhibit was open for only 24 hours. It presented a problem, therefore, quite different from that of a display of longer duration; low cost and ease of installation were major requirements. The designers used white corrugated paper to cover the walls of the room; small exhibits were shown in niches formed by long corrugations made of blue paper; manufacturers' names were placed on standard glass frames as a further means of giving unity to the exhibition design. Space was also allocated for a small display of modern architecture; the center illustration shows the architects' prize-winning design for the American Gas Association small house competition.



Gardner Murray Photos





## WELDING

Welding is still a mystery to most architects, and a good many seem content to let it remain one. Designers who pride themselves on their expert knowledge of wood joinery and stone jointing have left the field of welding to the engineer, who—as often happens—is running away with it. Some of the new forms in structural steel which he has worked out through welding seem destined to make design history. No other new technique has opened up so many interesting new possibilities.

Many of the advantages attributed to welding, such as silent erection, greater speed, lighter weight, and increased rigidity, are of little direct interest to the designer. What he does find important are the simplified connections, elimination of unsightly rivets and protruding brackets, and the general improvement in appearance possible in welded work of all kinds, from exposed structural steel to almost every type of metal work used in buildings. For these reasons, the alert designer is prejudiced in favor of welding at the outset, is glad to learn that welding saves up to 25 per cent of the steel in trusses and plate girders, from 5 to 10 per cent in steel framework, cuts fabricating costs, and speeds delivery. Thus welding appeals to everyone connected with building as a new way to do a better job at lower cost.

It goes without saying that this picture is not entirely one-sided. Like all forms of structural work, welding suffers from the lack of a positive, non-destructive test, with the added difficulty that in welding the human factor is all important: no amount of safety can be put into the design of a connection which cannot be canceled by careless or unskilled workmanship. Then, too, the very increased rigidity which results from welding creates a new structural problem by setting up secondary stresses which must be considered by the designer, especially in the case of the dynamic and moving loads encountered in some classes of work.

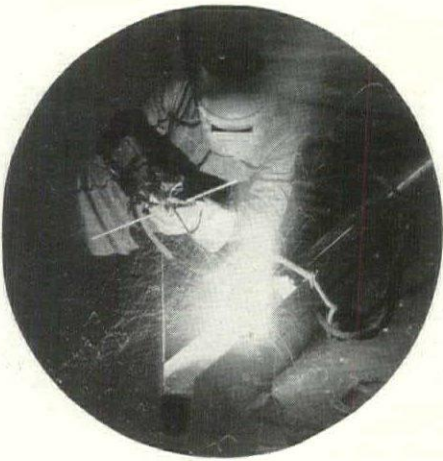
More important than any of these, however, has been the inertia of the building industry. Held back by code restrictions and the general resistance to new ideas which characterizes the building field, welding was slow in getting started. But once underway, it went ahead all the faster. With the adoption of New York City's new code for welding, with the successful completion of more than 200 welded-frame structures in the U. S., one 20 stories in height, and with its theoretical savings now a matter of established fact, welding is sure to prove a prominent feature of Building's skyline of 1939.

*(Continued on next page, text on page 473)*

WELDING IN BUILDING

TWO BASIC TYPES . . .

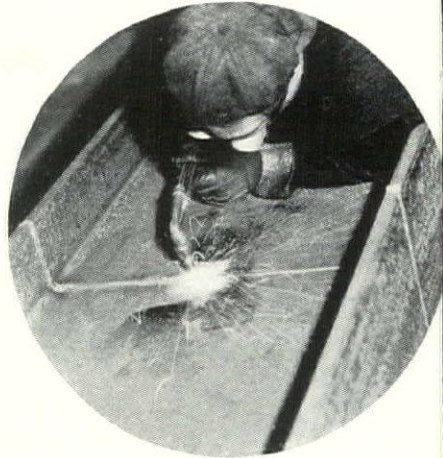
ONE ASSOCIATED PROCESS . . .



Electric Arc

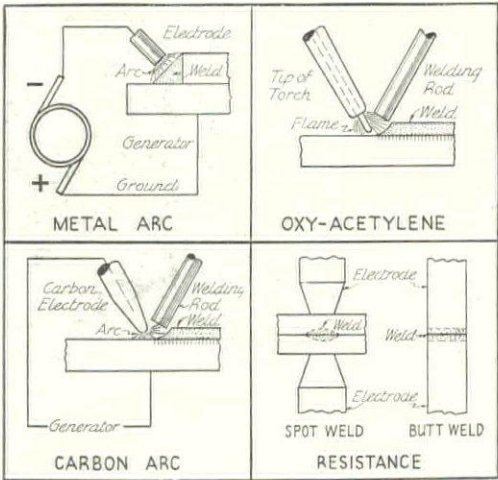


Oxy-Acetylene

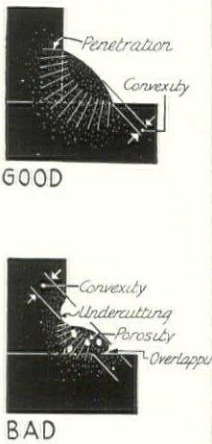
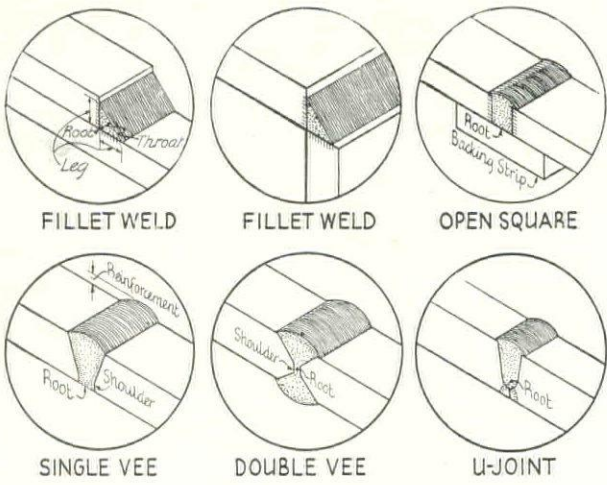


Gas Cutting

SEVERAL VARIATIONS . . .



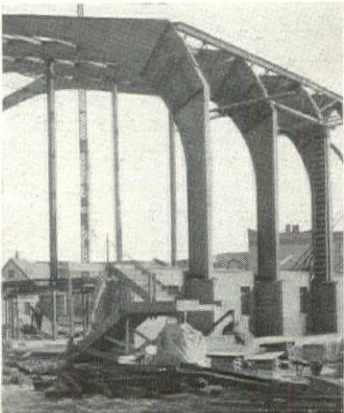
Diagrams showing the essential characteristics of the four welding processes most used in building. A description and the principal application of each is given on the opposite page.



Fundamental forms of various welds. Fillet welds are used for lap joints, butt welds where material is aligned. Butt welds of all types usually require a certain amount of "reinforcement," that is, must be somewhat thicker on one or both sides than the materials which they connect, in order to develop its full strength.

MANY APPLICATIONS . . .

Roof Arches:



1.

Structural Connections:



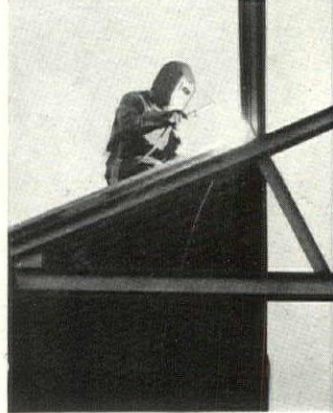
2.

1. Welded roof arches, assembled from standard I-beam and plate sections; equipment: General Electric Co. 2. Welding rigid-frame beams (shown complete on page 474); equipment: Wilson Welder and Metals Corp.

Attaching Floor and Roof Decks:



3.



4.

3. Splicing columns in welded frame; equipment: Lincoln Electric Co. 4. Attaching metal roof deck to steel trusses and purlins; equipment: Westinghouse Electric & Mfg. Co.

## METHODS

The term welding is properly applied to any "localized consolidation of metals by means of heat." Technically, welding processes are divided in two main groups: **plastic** welding, in which the metals are united by pressure without weld metal, and **fluid** (fusion) welding, in which they are joined by weld metal without pressure. In building, however, the distinction between the two principal fluid methods: **gas torch** and **electric arc** welding is more important. The only other process used to any extent in building belongs in the plastic group and is called "electric resistance" welding. Not used in the building field are the plastic and fluid "chemical reaction" types and forge welding.

**Metal-Arc Welding** obtains the necessary heat from an electric arc formed between an electrode and the parts to be welded, the electrode furnishing the welding metal. Both direct and alternating current are employed, with the former most widely used. Transformers or generators driven by internal combustion or electric motors supply the current. Since it has been found that more heat is liberated on the positive side of an electric arc than on its negative side, this terminal is usually attached to the parts to be welded, which since they are usually more massive than the electrode, require more heat. In welding thin materials, and in using some covered electrodes, this procedure is reversed, giving rise to the expression "reversed polarity welding." Metal arc welding is principally used in structural steel connections.

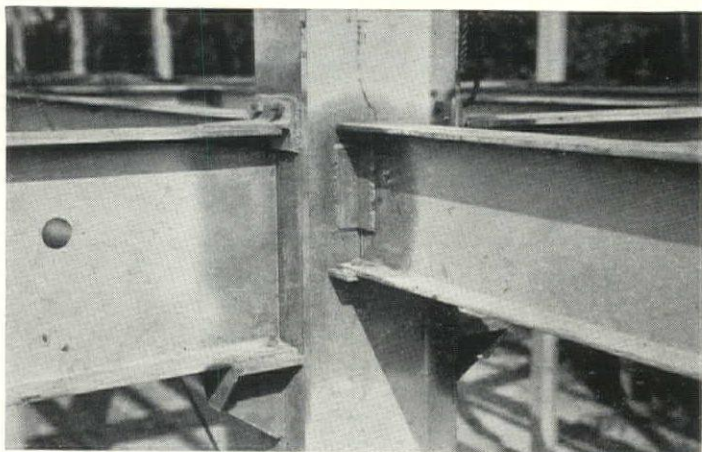
**Oxy-Acetylene (Gas) Welding** obtains its heat from a torch burning a mixture of acetylene and oxygen, welding metal from a separate welding rod similar to the electrode used in metal-arc welding. Gauges and regulators on pressure tanks afford control of gas pressures and mixing, which takes place in the torch. Gas welding is mostly employed in the fabrication and erection of miscellaneous metal work, piping, pipe rails, etc.

**Carbon-Arc Welding** is similar to gas welding in that a separate welding rod is used, and to metal arc welding in that an electric arc is used as the source of heat. In welding thin materials, the arc is sometimes used to melt the parts and fuse them together without the addition of filler metal from a welding rod.

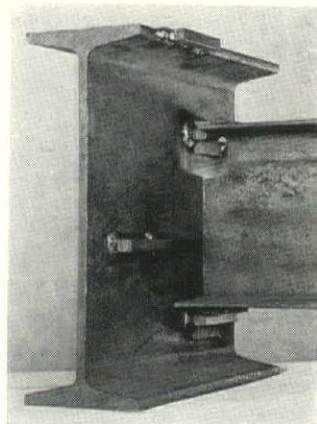
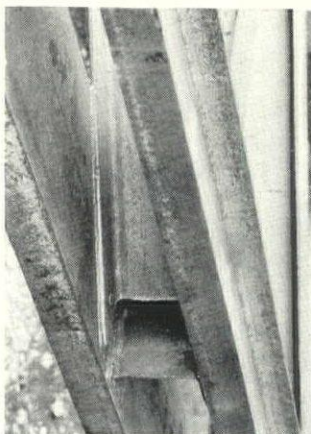
**Resistance Welding** is accomplished by passing an alternating current of high amperage and low voltage through metals while under pressure and using the heat produced at the point of contact to fuse the metal together. Resistance welding is used in the shop fabrication of metal work, especially for sheet metal.

**Types.** Two fundamental types are employed in welding: butt and fillet welds. Butt welds are used for connections with the material in alignment, fillet welds for lap and angle joints. Typical fillet

## TYPICAL CONNECTIONS . . .



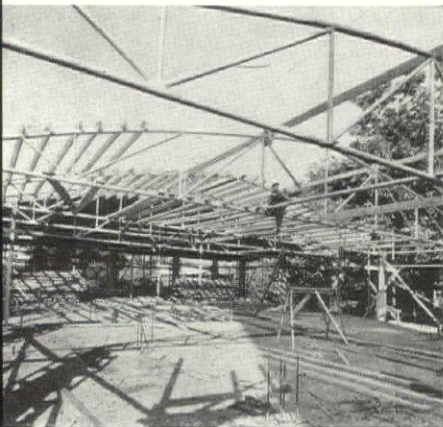
Above: Typical connections in welded steel frame. Clips are shop-welded to one member, job-welded to form connection. Below, left: Welded connection in truss showing simplified construction and improved appearance; equipment: Metal & Thermit Corporation; right: sample showing use of patent welding seat which develops wedge-like fit between members prior to welding, Van Rensselaer P. Saxe, C.E.



welds, and a few of the butt welds in common use, are shown on the opposite page.

**Gas Cutting** is closely allied with gas welding, and employs substantially the same equipment. Gas cutting may be done by hand on the job or may be machine guided. In either case a surprising degree of accuracy can be maintained, and in machine guided cutting complex shapes may be rapidly cut from templates.

### Pipe Frame Structures:



5. Bow-string trusses made from pipe with oxy-acetylene welded connections; equipment: Linde Air Products Co. 6. Shop assembly of frames for wall panels used in the Harnischfeger prefabricated house; equip-

### Shop Assembly and Prefabrication:



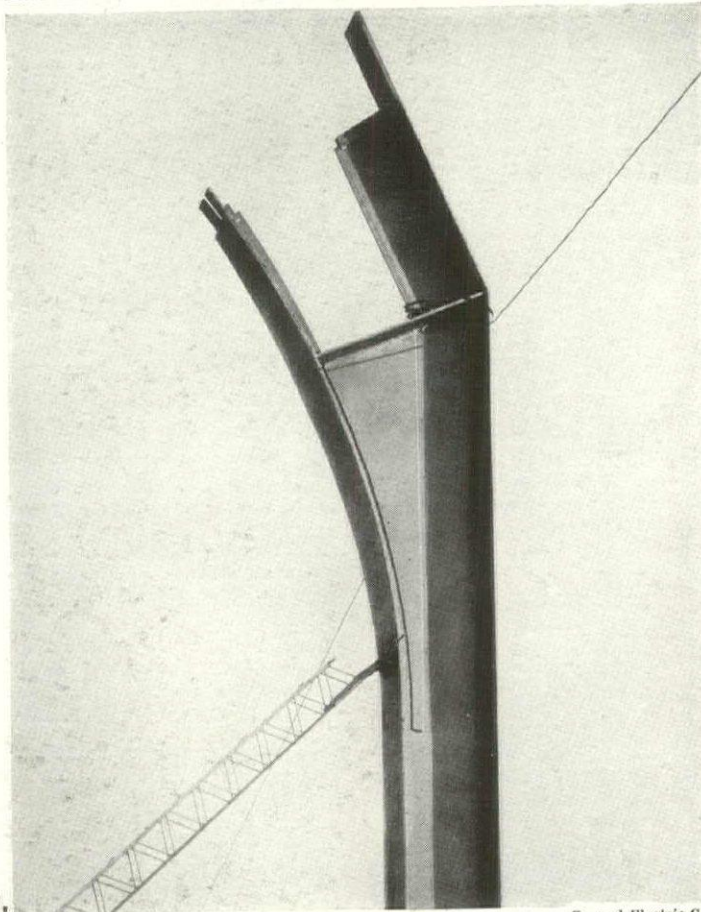
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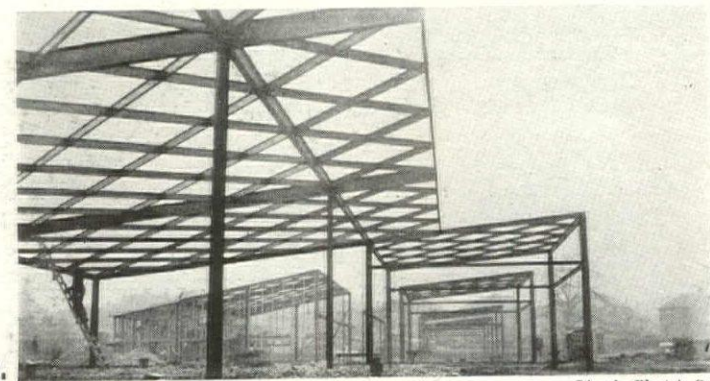
7.

ment: Harnischfeger Corporation. 7. Assembly of the Hobart Welded Steel House, which is put together complete in the factory, trucked to the site as a unit; equipment: Hobart Brothers Co.

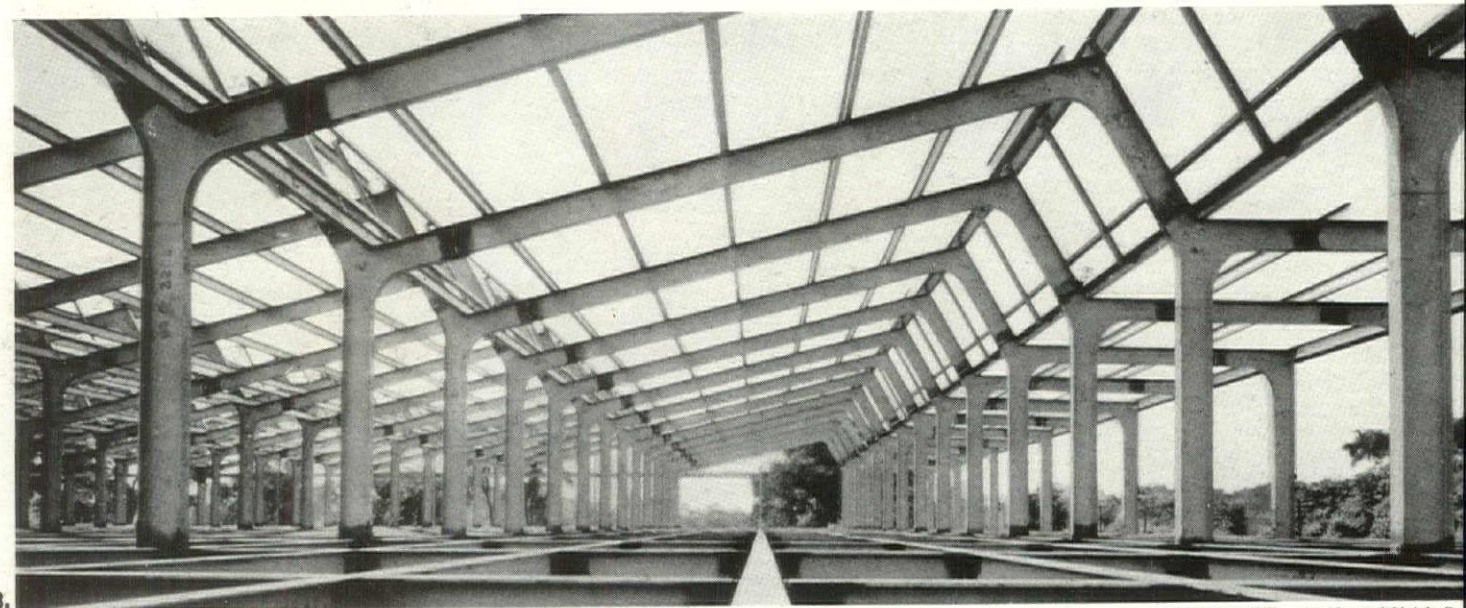
## EFFECT ON DESIGN . . .



1. General Electric Co.



2. Lincoln Electric Co.



3. Wilson Welder and Metals Co.

Another form of gas cutting, known as flame machining, employs the cutting torch at an angle so that the cut does not extend all the way through the piece, may be used in the preparation of material for butt welding.

## TESTS AND INSPECTION

The biggest problem in welded structural work is the problem of adequate tests and inspection. The strength developed by a welded connection depends largely on the skill of the welder, and it has long been recognized that the future of structural steel welding depends upon prequalification of welders and rigid inspection of finished work. This problem, however, is rapidly being solved. The code now in force in New York City, for example, provides for certification of the welder on the basis of a standardized qualification test, revocation of the certificate for negligence, defines the responsibilities of welding foremen, contractor, architect and engineer, and calls for inspection, with daily reports, by an approved independent inspection agency. Under this system, all connections are marked for identification, so that in the event of poor workmanship or failure responsibility may be traced all the way back to the welder who did the work.

Qualification tests usually call for several types of welds made in various operating positions, which are then tested to the point of ultimate failure. Welders must demonstrate their ability to make satisfactory connections in each operating position before certification.

There is no method of testing welds comparable to the simple "tapping" test given to riveted work, but adequate inspection can assure good workmanship if properly carried out. In boiler and machine work, various exacting tests, designed to show up subsurface flaws in the weld metal—such as X-ray, Gamma-ray and magnetic tests and inspection with a stethoscope—are employed, but in structural work careful visual inspection, coupled with observation of the welder at work, has been found adequate. Standard qualification tests and inspection techniques for structural work have been developed by The American Welding Society and are rapidly being improved, as are the welding materials and data upon which the engineer must base his design of connections.

1. Vertical leg of welded roof arch, formed from rolled I-beam section by splitting and cutting away portions of web and bending flange, welding on additional web pieces. 2. Diagonal-grid roof and floor construction made possible by monolithic welded connections. 3. Right frame sawtooth roof construction, illustrating the clean cut structural forms which result from the use of welded joints.

# THE INTEGRATED HOUSE

Since April, 1937, when THE FORUM published its original research study, *The Integrated House*, many experimental projects incorporating the basic ideas advanced in the study have been carried out. Most noteworthy among these—because of its comprehensive character—was the development of Modern Housing of Washington, Inc., described in the November, 1937 issue. Another has been reported in *Letters* (July 1937, p. 34). A third is described in *Building Money* (p. 477). In order to provide a medium for the presentation of further developments of this kind in an easily recognizable form, THE FORUM hereby inaugurates a page devoted to them exclusively.

## PRE-CUT FRAMING

Los Angeles plan unites contractors and lumbermen, benefits both.

Dear Member:

How would you like to receive all the wall and partition materials for some of your current jobs (excepting only the plates) cut to exact length, marked and bundled, ready for immediate erection in place? And at no cost to you for listing, pre-cutting, marking or bundling.

The West Coast Lumbermen's Association, through its technical staff, is offering a very limited number of members, who have ready, or nearly ready, three or more simultaneous wood frame buildings whose total lumber list is 30,000 to 40,000 board feet, this complete service, without any charge on your pocketbook for your time, other than the usual price you pay your retailer for stock mill lengths. And you may buy the lumber through your own retailer on your usual account.

If you have a job or group of buildings whose walls and partitions will require 10,000 or more board feet of materials, (total lumber list 30,000 to 40,000 bd. ft.) and you would like to have this kind of service at the regular price you have been paying for uncut lengths please telephone Paul De Huff (Oxford 4610). He is a member of the Board and he will explain and arrange the details for you.

Incidentally, this offer is made only for a limited time, and projects are subject to the approval of the Lumbermen's Association.

Very truly yours,

BUILDING CONTRACTORS ASSOCIATION  
OF SOUTHERN CALIFORNIA

P.S. This offer is good only in the Los Angeles area.

To more than 500 top-flight Los Angeles builders early last September went the offer above, jointly sponsored by the West Coast Lumbermen's Association, the Building Contractors Association of Southern California, and the Lumber and Allied Products Institute of Los Angeles. Object: to test a new pre-cut framing plan. Essence of the plan was its two-fold purpose: 1. to provide the builder with framing members pre-cut to exact size and packaged for convenient use and 2. to afford the lumber dealer an opportunity to select better portions of No. 3 common lumber for sale in the more profitable No. 2 classification and to enlarge the market for otherwise slow-moving lengths. On paper, the plan's originator, Los Angeles Builder Paul DeHuff, had already shown that his scheme would save money for all concerned. What remained undetermined was whether or not these theoretical savings could be realized in run-of-the-mill practice, and if so, how much could actually be saved.

Ready last month was Builder DeHuff's advance report on stop-watch studies of several otherwise ordinary building oper-

ations carried out according to his method. Conclusions: an indicated construction cost saving upwards of \$10 per thousand board feet of wall and partition framing, or about \$30 per house without counting reduced overhead; added mill costs, No. 2 common, pre-cut and ready for delivery, zero.

To those accustomed to thinking in thousand—or at least hundred—dollar items, the probable overall saving of about \$50 per house which these figures indicate may seem like small change, but the importance of the scheme rests not on this but on its far-reaching applicability. In sharp contrast with most systems of prefabrication, the Los Angeles plan promises positive initial savings in terms of the typical-size building operation, may be used to advantage almost anywhere. And \$50 per house, multiplied by the number of frame houses built annually in the U. S., is big money indeed.

### TIME-STUDY DATA

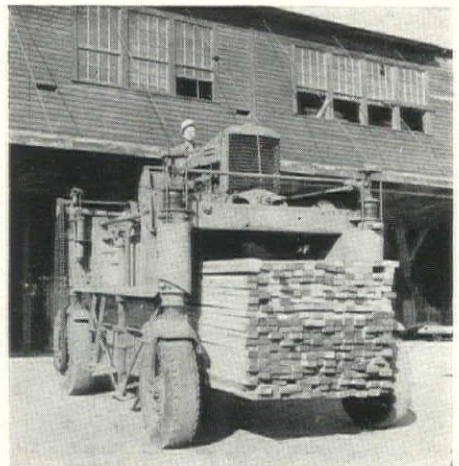
Basis of these figures is a comparison between a series of carefully checked time-studies and the average for ordinary (all hand-sawn) practice as given by various authorities. With the latter taken as 24 man-hours of framing labor per 1,000 ft. of materials, pre-cutting showed a job-saving of more than ten man-hours per 1,000 board feet, according to the following typical breakdown:

**Job:** 22-unit one-story project, built under FHA insured loan and located within 25 miles of Los Angeles.

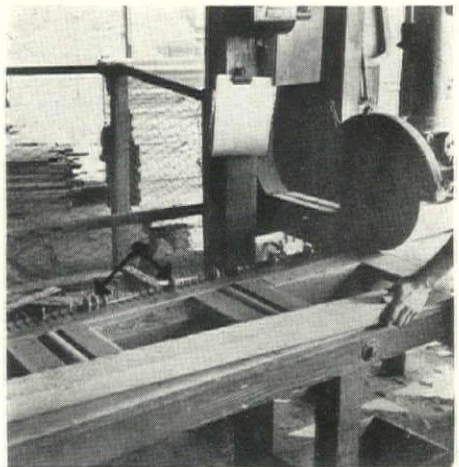
**Conditions:** Plates random length cut in place. Members between plates delivered pre-cut to exact fit, bundled and marked

(Continued on next page)

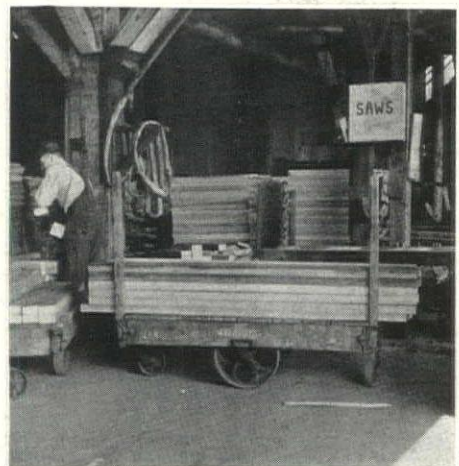
**Right: Pre-Cutting Sequence.** 1. Random length lumber spotted for sawyer. Carrier used to move stock from yard to cutting table. 2. Cutting table. Sawyer-grader cuts low grade stock to maximum advantage. Arrows indicate selective stops which permit rapid, precise gauging. 3. Pre-cut lengths. Cart is provided for each length. Helper also keeps tally and disengages the proper selective stop as soon as all pieces of any length have been cut. 4. Layout area. Handcarts located for convenient assembly of bundles.



1.



2.



3.



4.

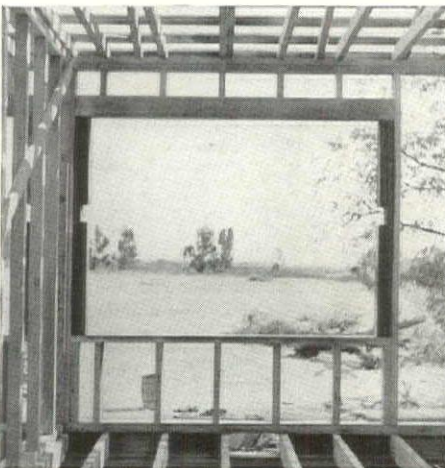
THE INTEGRATED HOUSE



5.



6.



7.

for openings. Plates laid off for openings and studs by template.

**Segregation:** Study confined to two typical units.

Time Study:

	Lineal Ft.	Board Ft.	Man Hours	Man Hours per 1000 Board Ft.
Double plate layout.....	260	347	1.5	4.32
Second top plate.....	130	173	2.0	11.57
Assembling, raising, plumbing, temporary bracing stud walls.....	1,986	26.0	13.10	
Totals and Average.....	2,159	29.5	13.68	
Estimated Saving .....	21.3	10.32		

That this saving was due to the pre-cutting and not to the scale of the operation was later demonstrated in the construction of H. Roy Kelley's Los Angeles LIFE house, where the savings on a total of but 2,300 board feet of framing were slightly higher.

PRE-CUTTING COSTS

To the lumberman, the advantage of furnishing pre-cut framing members at the price usually charged for stock mill lengths depends upon the fact that it is then possible to sell the better portions of No. 3 common lumber at a higher price in the No. 2 grade. Whether this works out is determined by three factors: the price differential between the two grades, the cost of cutting and handling the material, and the amount of waste involved. That pre-cutting affords an opportunity to cut mill waste to a minimum, dispose of slow-moving short lengths, has proved in practice to offer considerable benefits to the dealer is shown in the following cost study of a typical 7,500 board

foot order, cut in Los Angeles on October 17, gave the following box score:

**Average Piece Length:** 2 ft. 8 in.

**Number of Finished Pieces:** 2,236.

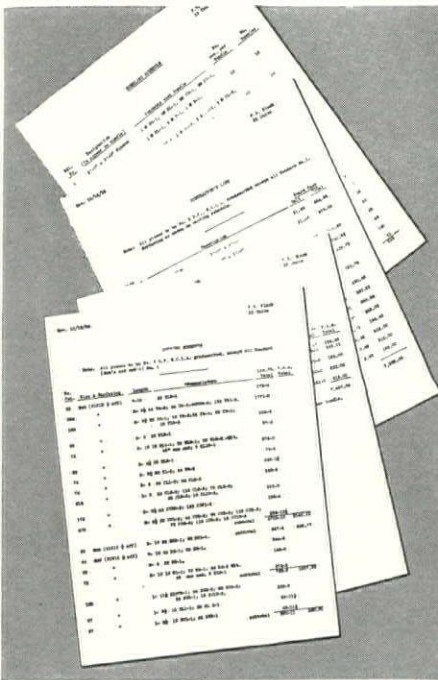
**Equipment:** Permanent mill equipment consisting of 16 in. overhead swing saw, 20 ft. free roller table with toggle stops. Dolly-carts for racking cut lengths according to size.

**Conditions:** Material delivered within reach of Sawyer-grader in carrier loads. Sawyer provided with complete exact-dimension list of finished pieces required. Sawyer instructed to fill order by cutting No. 3 common and better grade lengths from 20 ft. lengths of yard stock No. 3 common Douglas Fir. Helper "tailed" saw and sorted cuts into proper dolly-carts.

**Segregation:** 3,963 bd. ft. (bundled items).

Cost Study

	Cost per 1000 Bd. ft.	Hourly Man- Rate	Cost
Grading and Cutting			
Grader-Sawyer .....	\$.82	2.95	2.1
Helper .....	.65	1.60	1.0
Piece and Grade Marking .....	.65	2.04	1.3
Assemble, Bundle & Stencil .....	.65		
Total			\$4.5



Left, above: **Bundling and Use.** 5. Completed bundle. This one contains pieces for rough window frame. 6. Bundles distributed at job. Foreman locates wall openings and places appropriate bundles for assembly. 7. Pre-cut framing in place. Below: Typical framing take-off. Right: Cutting and bundling schedules and contractor's list.

Max. Op. Symbol	Window Symbol	OPENINGS FINISH SIZE	DESCRIPTION	CRIPPLES UPPER		HEADERS (3'0" & LESS)		HEADERS (OVER 3'0")		TRIMMERS		LOWER HEADERS		CRIPPLES LOWER		PC Per 60'	LINEAR FT. PER BUNDLE				BOARD FEET PER BUNDLE				LINEAR FT. TOTALS		BD. FT. TOTALS																	
				No	LENGTH	No	LENGTH	No	LENGTH	No	LENGTH	No	LENGTH	No	LENGTH		No	LENGTH	2"x4"	4"x4"	4"x6"	TOTAL	2"x4"	4"x4"	4"x6"	TOTAL	THIS ORDER	THIS ORDER																
— WINDOWS —																																												
1	5	1-6 x 3-0	Cast	1	11'4"	1	2'-0"			2	3'-3 1/2"	1	2'-0"	1	3'-0"	6	12.563	2.00		14.563	8.36	2.66		11.02	72.28	55.10																		
2	1	1-6 x 3-6	"	1	"	1	2'-0"			2	3'-4 1/2"	1	2'-0"	1	2'-9"	6	13.313	2.00		15.313	8.90	2.66		11.50	15.31	11.50																		
3	2	2-0 x 3-0	D.H.	2	"	1	2'-6"			2	3'-3 1/2"	1	2'-6"	2	3'-0"	8	17.00	2.50		19.50	11.30	3.33		14.63																				
4	1	2-0 x 4-6	"	2	"	1	2'-6"			2	4'-9 1/2"	1	2'-6"	2	1'-9"	8	17.50	2.50		20.00	11.45	3.33			3.64	535.78																		
5	4	2-0 x 5-1	"	2	"	1	2'-6"			2	5'-4 1/2"	1	2'-6"	2	1'-2"	8	17.50	2.50					21.00	118.37	92.82																			
6	2	2-6 x 3-0	"	2	"	1	3'-0"			2	3'-3 1/2"	1	3'-0"	2	3'-0"	8	17.50			22.00	11.00		22.00	63.00	63.00																			
7	1	2-6 x 3-6	"	2	"	1	3'-0"			2	3'-4 1/2"	1	3'-0"	2	3'-0"	8								44.00	44.00																			
8	3	2-6 x 4-0	"	2	"	1	3'-0"			2	4'-0"					5	15.92	3.17		18.462	10.02	4.22		14.24	1353.62	1142.37																		
9	10	2-6 x 4-6	"	2	"	1	3'-0"			2	5'-0"					6	15.729			19.729	10.50		3.00	18.50	18.46	14.24																		
10	2	2-6 x 5-6	"	2	"	1	3'-0"			2	6'-3 1/2"					7	16.50			21.00	11.00		3.00	20.00	18.92	74.00																		
11	5									2	6'-3 1/2"					7	16.50			21.50	11.00		10.00	21.00	63.00	60.00																		
																													21.50	21.00														
S	1543 PIECES			2x 3 3/4" STUDS 7-11 1/2" Long (Each R. = 8 L.F. 55.33 F.B.M.)																																							(181.88)	(169.24)
BR	129	774	"	2x 3 3/4" DIAG. BRACING 1'-8" Long (Each R. = 1.66 L.F. & 1.11 F.B.M.)																								Bundles of 6 each				10.00								6.66	1290.00	8224.19		
BLK	103	1030	"	2x 3 3/4" FIRE BLOCKS 1'-2 8/16" Long (Each R. = 1.823 L.F. & 1.14 F.B.M.)																								" " " 10 each				11.823								7.90	12171.7	859.14		
PRE CUT WALL-FRAMING PROJECT for WEST COAST LUMBERMENS ASSN. SIX-ONE STORY DWELLINGS for GEORGE BLANK, LOS ANGELES																																												
REVISED LIST NOV 4 1938																																												
COMPUTATIONS BY P. DEHUFF																																												
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# BUILDING MONEY

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Big Builders Gilbert and Varker

Johnston & Johnston

## ENGINEERING TAKES A FLING

At Building's toughest problem, puts low cost housing on a conveyor belt.

Gilbert-Varker has a system and a yen for steel construction.

IX houses per day for 50 consecutive working days is big building in any man's language. An organization that can boast such a record is at least a prototype of the long-awaited big building corporation. Right now, in Clairton, Pa., both the record and the prototype are being established. The former, a 300 house subdivision in the \$4,000-\$5,000 price bracket, known as Colonial Village and, being aimed principally at steel workers but not financed by their employer, is an example of company housing's up-and-coming successor. The latter is the Pennsylvania Housing Corp. whose construction team of Gilbert-Varker, Inc., has temporarily descended from the ranks of heavy engineering to teach large scale home builders the value of neat organization and management, to preach the conversion of home building into home assembly.

Aside from its size and rapid, systematic construction, Colonial Village commands the spotlight on two additional counts: 1) it is the first FHA project whose houses may be either sold or rented; 2)

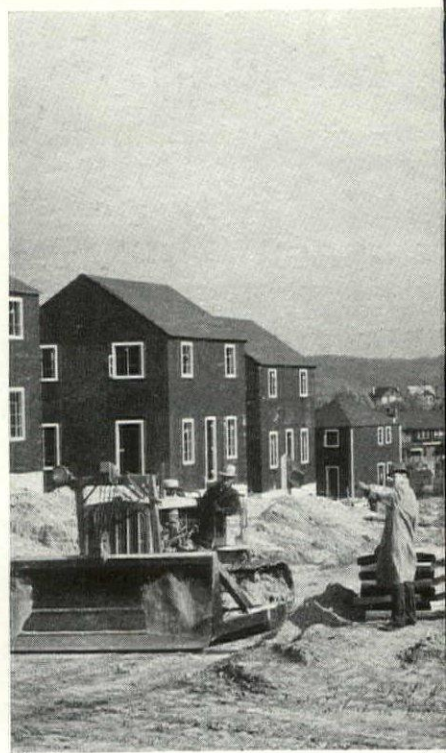
these houses, much to the liking of Carnegie-Illinois Steel Corp., contain three times as much steel as the customary house of the same size. Sum total of all its newsmaking characteristics points to Colonial Village as the most significant subdivision in the U. S. today.

**Market.** Like most other subdivisions, Colonial Village is a speculative proposition—at mid-month about 50 houses were sold before completion. But, unlike many others, it was undertaken to supply a very definite market. Situated nine miles southeast of Pittsburgh, Clairton is a town of steel mills, and bulk of its 12,000 population is steel workers. Furthermore, with the recent completion of Carnegie-Illinois' \$60,000,000 Irvin Works, three miles down the Monongahela River, Clairton's population is due to expand with about 1,000 families.

Obligated to a certain extent to do something about this expansion, Carnegie-Illinois year ago researched the local housing problem, found there to be an imme-

diate shortage of 2,000 houses in the eight principal communities within a five-mile radius of the Irvin Works, not counting the needed shelter for workers who will be attracted by the opening of the new plant. It was also determined that these communities had an annual replacement requirement totaling at least 300 houses.

Recognizing the existence of this housing problem but preferring not to participate directly in any residential building program, Carnegie-Illinois was ready to cooperate with outside interests in any plausible solution. To them last winter came Messrs. Gilbert and Varker with such a solution. Since their approach to the problem seemed sound and since the only favor they asked was an option on some U. S. Steel Corp. land at Clairton, they were accorded a hearing. Theirs was a new plan based on long experience. Fifty-year-old Engineer Royce W. Gilbert had worked with Stone & Webster Co. (twelve years), with McArthur Brothers, New York City contractors, then with Boston's Chase & Gilbert Inc. These years



of experience in heavy construction (apartment houses, hotels, industrial plants, etc.) were punctuated, especially during Depression, with experiments in low cost housing and prefabrication. In 1937 Gilbert teamed up with 44-year-old Engineer William M. Varker, who, in addition to serving as an engineer for Pennsylvania Railroad's Construction Department, had administered the new-business and financial departments of William Macy Stanton Co., Philadelphia architects, and Chase & Gilbert, Inc. In the new firm he occupies the position of Vice President and Treasurer under President Gilbert.

**Site.** After an extensive survey, Gilbert-Varker chose the Clairton site for their housing project. No other in the vicinity of the Irvin Works was found to be as favorable in price and buildable area as this 540-acre Clairton tract owned by two U. S. Steel Corp. subsidiaries, Carnegie Land Co. and Carnegie Natural Gas Co. High and to windward of the steel mills, it was 70 per cent buildable. Other points in its favor: It is served by a network of roads leading in five minutes to Clairton's business center, in ten minutes to the Irvin Works, in 25 minutes to Pittsburgh; main trunk gas, water, and electric lines were readily available.

Having secured an option on 92 acres of this property, Gilbert and Varker in late February set about to perfect their solution. Their Engineering Department prepared all working drawings for development of the virgin site. Sloping terrain necessitated much cutting and filling, and to minimize costs an economic balance between the two was prudently worked out. Back filling was kept to a minimum. The steep slope of many lots precluded the building of houses upon them; they

were set aside as park areas. As finally platted (see page 479), the site included lots for 300 houses with 55 per cent of the 92 acres being set aside for parks, playgrounds, streets, walks and a community center.

Coincident with this land planning, Gilbert-Varker's Purchasing Department was evolving a systematic delivery and expediting schedule. Construction was broken down into its various phases which were to be handled by specialized crews. Production of these crews was estimated and a time sequence chart worked out which permitted the Department to determine on exactly what dates the various materials should be shipped by manufacturers whose cooperation and suggestions were solicited. When specifications were drawn, they were requested to submit competitive bids.

**Product.** Specifications were not prepared, however, until the Architectural Department had spent many an over-time day producing house designs. A Gilbert consultant for four years, Architect W. Sanford Full of Boston worked in collaboration with Pittsburgh's Architect Lawrence H. Rank. To hold down construction costs, they limited their 300 houses to two basic designs: one of five rooms, the other of

six. But, to avoid monotonous similarity, they adapted 40 exterior variations to the two basic plans. The means: different orientation, fenestration, front entrances, hoods and porches and a wide variety of colors for roofs and exterior trim.

Tangible evidence of the close association of Gilbert-Varker with Carnegie-Illinois during the project's planning stages is the fact that the final specifications of Architects Full and Rank included as much as 7,000 lbs. of steel items per house, compared with the 2,380 lbs.\* used in the average small dwelling. Like almost any other wide-awake corporation, Carnegie-Illinois is continually seeking new outlets for its product, and it naturally pumped for as much steel as practicable in the Gilbert-Varker houses. Long experience in heavy construction had taught these builders the value of steel as a building material. Having decided to use it in their houses, they set up two rigid requirements to be met by all steel items: 1) that they be competitive in price with conventional materials, and 2) that they equal or surpass in performance the materials they replace.

In return, Carnegie-Illinois bent every effort to get fabricating companies to design new housing applications of steel to meet Gilbert-Varker requirements and to submit bids on the Clairton project. Results of these efforts are seen in the many new uses of steel embodied in the houses, particularly clothes closets, stairs, framing members, trim, and a multitude of porcelain enameled parts (see below). Another result: construction of the 300 houses will bring a 955-ton order to the steel industry.

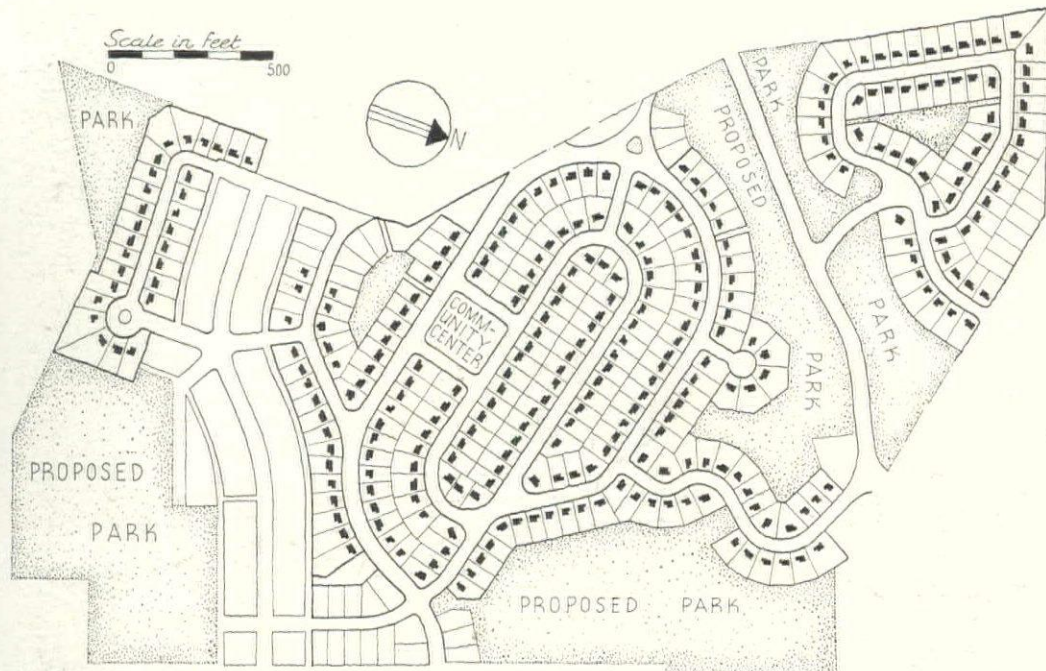
\* Estimate of the American Iron & Steel Institute, less weight of cast iron, wrought iron, copper and zinc items.

#### TYPICAL COST BREAKDOWN

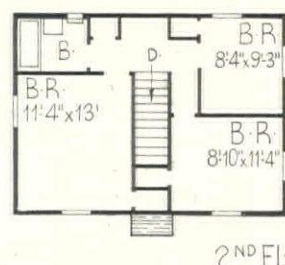
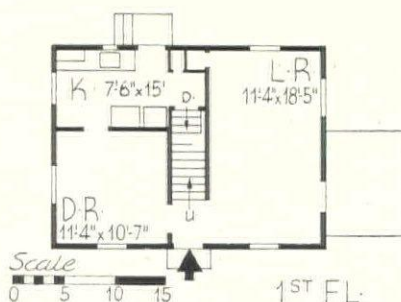
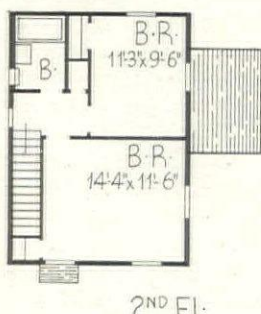
	5-room House	6-room House
Cost of land and improvement .....	\$ 620	\$ 700
Cost of house (inc. architectural and engineering fees) .....	2,900	3,300
Financing and carrying charges .....	120	140
Selling cost .....	140	160
Profit .....	420	500
Total .....	\$4,200	\$4,800



Johnston & Johnston



Ninety-two acres of rolling Clairton land (above) constitute Gilbert-Varker's theater of operations. The 300 lots cover 45 per cent of the land. Pictured to the left: a row of steel-trimmed houses ready for the public; a tar-papered group ready for winter finishing. Below: basic floor plans from which came 96 five-room units, 204 six-room units of varying exterior appearance.



financing. Prime forte of Gilbert and Varker is construction: they were not interested in financing, operating, and managing the project. So, to handle this latter and all-important phase, they interested nine housing-minded Pittsburghers. Led by Investment Banker Kirk W. Todd, this group studied the investment opportunities of a project financed under Section 207A of the National Housing Act. It was found that once preliminary planning had been completed, the Federal Housing Administration would appraise the entire project, make a blanket mortgage commitment on it as a rental project and later make mortgage commitments on any individual properties that might be sold. FHA would also estimate and approve in advance the sales price and rentals of these properties, thus permit the financiers to pre-determine their margin of profit and investment return.

Such was FHA's entry into the picture. After revising and approving the plot plan and the house designs, it appraised the values of all individual properties in relation to the economic structure of the community. At mid-June it committed itself on the basis of these valuations to \$1,050,000 of mortgage insurance—about 10 per cent of the project's \$1,314,000 anticipated cost. That action gave the finan-

cial backers something to go by, and within a week's time they had formed the Pennsylvania Housing Corporation, elected Todd president. To its members the Corporation issued 65,000 shares of authorized stock, thereby providing sufficient capital to meet the junior equity requirement of \$264,000, representing 20 per cent of the total value of the project.

**Materials.** Construction of the 300 houses got under way at mid-September. From then on, Colonial Village has been the scene of beehive activity with an average of six houses being started per day and as many as ten per day during peak operations. Secret of this speed in construction is the planning technique introduced by the engineers, the ingenious use of materials and the conversion of as much building as possible into assembly. Thus, a monolithic concrete floor slab eliminates the necessity for the concrete crews to return to the plot after construction of foundation walls to pour the cellar floors; and its upset footer adds an extra 5 in. of basement wall height which, in turn, makes possible a minimum ceiling height without the cutting of blocks. Light, easily handled, terra cotta tiles make up these basement walls. Atop them is bolted a steel sill with welded spacer tabs at proper

intervals to serve as templates for conventional 2 x 4 studs of standard 16 ft. lengths (see detail pictures, page 480).<sup>\*</sup> Similar steel ribbon pieces are used to align and support second floor joists. Combined with complete precutting of all framing members, these steel templates obviate the use of the carpenter's hand saw except for the trimming of plywood sheets which sheath both interior and exterior of the houses. By the same token, need for the familiar carpenter's rule has virtually been done away with.

Interesting economy is effected in the construction and assembly of steel windows of the familiar casement type. Built up of steel sash set in an insulated steel trim, they do not require addition of sills or moldings after installation. Designed especially for Gilbert & Varker, they come completely assembled with windows and locking hardware attached at the factory. Furthermore, each frame is delivered in-

<sup>\*</sup> Gilbert-Varker's use of steel sills and stud tabs (or lugs) corresponds closely in principle to the construction method advanced by THE FORUM in the presentation of its "Integrated House" (ARCH. FORUM, April, 1937). It corresponds still more closely to the procedure followed by Modern Housing of Washington, Inc. (ARCH. FORUM, Nov., 1937, p. 19 et seq.)

side a 2 x 4 in. wood enclosure, is therefore easily installed as a unit by toenailing the enclosing 2 x 4's to adjacent studs.

Staircases, also of steel, are installed with equal ease. Four bolts and five minutes' time do the trick. Linoleum treads are included in the finishing touches. Factory-assembled steel closets with baked-on finish are delivered to the site complete with hooks, shelf, reenforced steel doors hung with a continuous, piano hinge. Doors and trim of the prefabricated closets are quickly installed after the walls are finished. In lieu of tile-setting in the bathroom, installation of nine large porcelain enameled steel panels, serving as a templet for fixtures and a grille for enclosed radiators, form the customary 3 ft. dado, waterproof the wall to the height of the shower over the tub.

Most ingenious cost-reducing, custom-made material used on the interior of the Gilbert-Varker houses is the wall covering. Composed of a chemically neutral, dry felt base coated with a factory-finished and tinted resin surface, it measures 3/32 in. in thickness. More than a wallpaper, it is ordered in rolls ceiling-height in width, is therefore easily applied to the walls in one continuous, horizontal strip. Two strips cover the ceiling. All base and cove moldings, as well as door bucks, are made of steel, factory finished in color.

Exteriors of the Gilbert-Varker houses feature materials which will require a minimum of maintenance. Asphalt and asbestos cement shingles cover the roof and sides, respectively; all other exposed materials are of metal, the following being porcelain enameled steel: cornices, shutters, cornerboards, rake pieces, and front entrance hoods. Lead-coated steel gutters and down-spouts also require no paint.

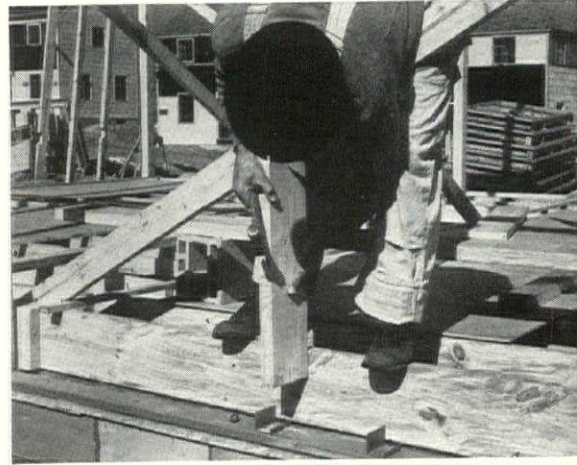
**Delivery-Assembly.** Equally significant as the use of many new materials at Colonial Village has been the delivery and assembly of *all* materials. In practically every case, the materials move from manufacturer to site. To put this movement on a "conveyor-belt" basis, an analysis of Gilbert-Varker's transportation and delivery requirements was made by the Pennsylvania Railroad and a special expeditor was assigned to the job to see that the movement of several hundred cars of freight was properly scheduled and maintained. Manufacturers are supplied with a plot plan of the site on which the houses are keyed, and a time schedule specifying on what dates material deliveries to individual houses are expected. Example of the operation of this unique system is the arrival at each house, as it is framed in, of one package containing all its necessary hardware, another containing all its plumbing fixtures, another containing all lighting equipment even to the proper length of cables, etc. The function of local material dealers is principally one of serv-

(Continued on page 36)

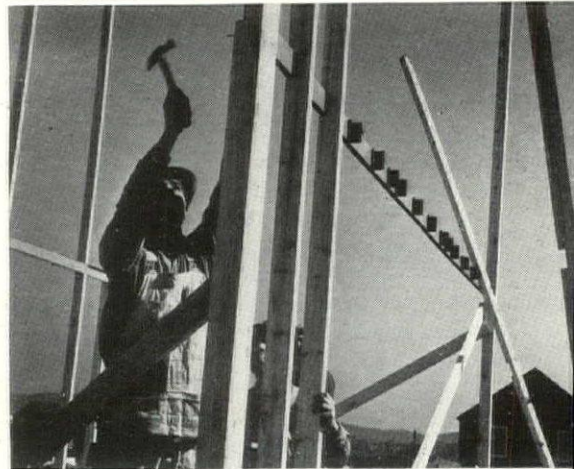
1 Steel sill with welded spacer tabs is laid atop termite guard and mortar, is then bolted to terra cotta tile foundation.



2 Spacer tabs act as templet for 2 x 4 in. studs. Note light, easily handled foundation tile back of carpenter.



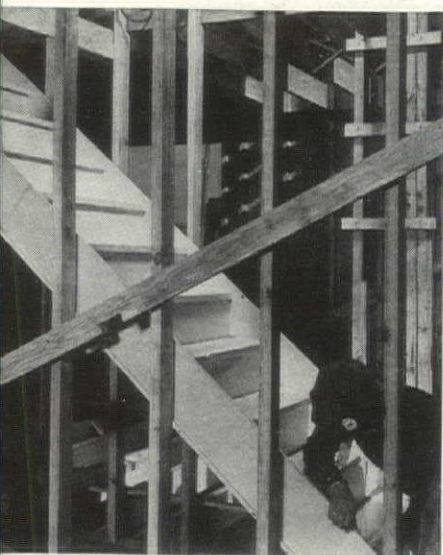
3 Ribbon piece, also of steel, fits into studs previously notched. Its tabs align studs and second floor joists.



4 Plywood sheathes the balloon frame both inside and out. A detailed cutting plan minimizes waste and labor.



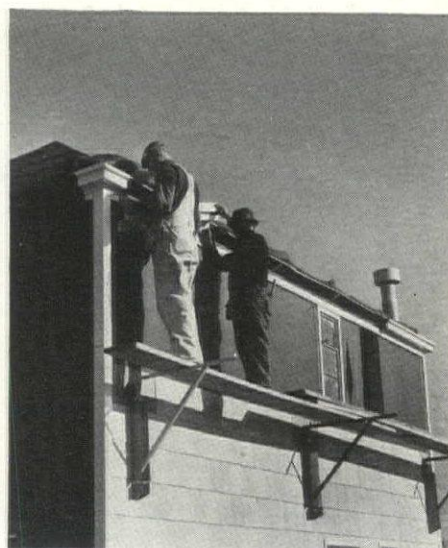
All photos, Johnston & Johnston



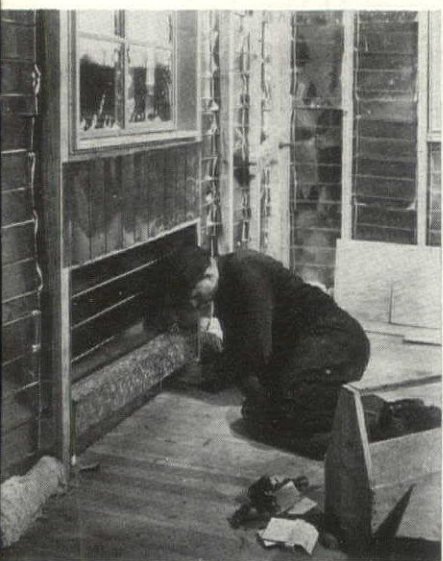
5 Staircase of steel is installed by four men in five minutes. Sound-deadening linoleum treads will come later.



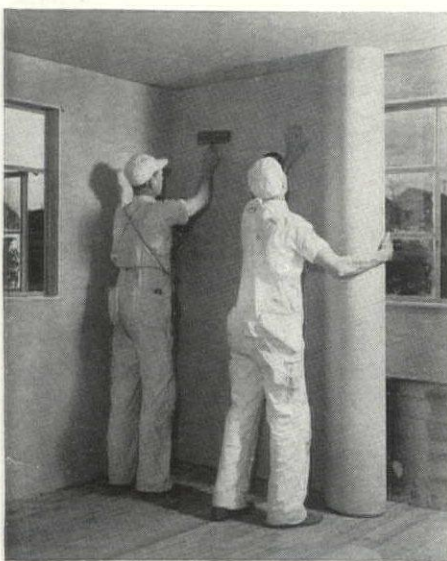
6 Steel windows, enameled and self-flashing, are delivered in wood surround, inserted into frame as a unit.



7 Exterior trim includes steel cornice, cornerboards, rake pieces. Short, self-flashing sections are easily installed.



8 Sheet steel insulation is forced between studs, stapled to exterior sheathing. It reflects heat from small radiator.



9 Wall covering, ceiling-height in width, is secured to plywood sheathing. Steel base and cove moldings finish it off.



10 Steel closet, complete with hooks and shelf, is assembled at factory, inserted into wall recess, finished with steel door and trim.

## CONSTRUCTION OUTLINE

**FOUNDATION:** Walls—8 in. x 8 in. x 16 in. speedlock hollow tiles, National Fireproofing Co. Cellar floor—6 in. cinder fill, 3 in. monolithic slab of reinforced concrete with 5 in. inset footer. Waterproofing—1 coat asphalt paint, Koppers Co.

**STRUCTURE:** Exterior walls—asbestos shingles, Johns-Manville Corp., building paper, 5/16 in. fir plywood, U. S. Plywood Co., 2 x 4 in. studs No. 2 yellow pine, Ferro-Therm sheet steel insulation, American Flange & Mfg. Co., 5/16 in. fir plywood, Monacousec wall finish, Bird & Son. Interior partitions—studs with plywood and Monacousec finish on both sides. Floor construction—2 x 8 in. joists, 25/32 in. red oak flooring. Ceiling—building paper, 5/16 in. fir plywood, Monacousec finish.

**ROOF:** 2 x 8 in. rafters, 5/16 in. fir plywood, building paper, asphalt roofing, Bird & Son and Certain-teed Products Corp.

**CHIMNEY:** Transite flue pipe, 2 1/4 x 11 1/4 in., Johns-Manville Corp.

**SHEET METAL WORK:** Flashing—12 oz. inc. Gutters and leaders—lead-clad steel.

**INSULATION:** Ferro-Therm sheet steel, American Flange & Mfg. Co.

**WINDOWS:** Factory-painted, steel casement, Michael Flynn Co. Glass—single strength, quality A. Screens—bronze, Michael Flynn Co.

**STAIRS:** Steel, 14 gauge, Overly Mfg. Co., Chromalin treads, Bird & Son.

**FLOOR COVERINGS:** Kitchen and bathroom—Chromalin, Bird & Son. Porch—finished concrete.

**WALL COVERINGS:** Bathroom—18 gauge, 36 x 42 in. colored enameled steel panels, Ingram-Richardson Mfg. Co.

**DOORS:** Interior—1 3/8 in. fir, 20 gauge steel bucks. Exterior—1 3/4 in. fir, 16 gauge steel bucks.

**TRIM:** Interior—steel base and cove moldings. Exterior—colored porcelain enameled steel cornice, cornerboards and rake pieces, Ingram-Richardson Mfg. Co., colored porcelain enameled shutters and front entrance hoods, Porcelain Metals Corp.

**HARDWARE:** Window handles—bronze, remainder—brass, Shillman Bros. Mfg. Co.

**ELECTRICAL INSTALLATION:** Wiring and switches—Iron City Electric Co. Fixtures—semi-indirect with plastic shades, Chase Brass & Copper Co.

**KITCHEN EQUIPMENT:** Sink—60 in. 14-gauge porcelain enameled steel, Alliance Porcelain Products Co. and Briggs Mfg. Co. Cabinets—steel.

**BATHROOM EQUIPMENT:** Lavatory and tub—colored porcelain enameled steel, Alliance Porcelain Products Co. and Briggs Mfg. Co. Water closet—vitreous china, Eljer Mfg. Co. and General Ceramics Co. Shower—Chase Brass & Copper Co. Medicine cabinet—F. H. Lawson Co.

**PLUMBING:** Soil pipes—4 in. cast iron. Water pipes—3/4 in. copper tubing, supplied (depending upon its use) by Bridgeport Brass Co., American Brass Co. and Revere Copper and Brass Company.

**HEATING:** Two gas-fired hot water systems, 1) American Radiator and Standard Sanitary Co. in 96 houses, 2) Air Devices Corp. in 204 houses. Furnace—Taco Heaters, Inc. Radiators—copper fin-type, Tuttle and Bailey, Inc.

# MORTGAGE COSTS MICROSCOPED

by Mortgage Banking's tenth man. A statistical comparison of conventional and monthly payment loans.

EVERY mortgage lender would like to know more exactly how much it costs to make and service loans and how much of his employes' time it takes. Nine out of ten of them are pretty much at sea. A tenth is Mortgage Banker Irvin Jacobs who told MBA conventioners this fall (ARCH. FORUM, Nov. 1938, p. 410) just how much his company ferrets out. And well was he heeded, for the firm of Irvin Jacobs and Co., one of Chicago's largest, has a corporate finger on every phase of its mortgage operations.

**Method.** Although most directly applicable to a large mortgage brokerage business, Jacobs' cost analysis system has its lesson for any mortgage banker.

First step was to divide his business between the two general mortgage types: 1) conventional loans with semiannual or quarterly payments of interest and principal, or both, and 2) monthly payment loans. Jacobs found that 86 per cent of his business was in conventional loans, the average size of which was \$22,400. Monthly payment loans ran smaller, averaged \$7,100.

All expenses were then broken down between these two mortgage types, but a necessary preliminary step, and valuable in itself, was analysis of costs of the company's four operating divisions: buying, selling, closing, and servicing of mortgages. When the cost of each one of these steps is known, any broker, by an empirical formula, can then divide those costs between his conventional and monthly payment mortgages.

To arrive at a just apportionment of expenses among the operating divisions, Irvin Jacobs first required that his staff, from office boy to executive, make daily reports of how they spent their time during the first eight months of this year. This gave a basis for allocating salaries, which he found constituted two-thirds of total expenses, to the proper operating division.

The remaining third, made up of every cost from advertising to unemployment insurance, was similarly allocated. Next step was to determine how much it cost to route each type of mortgage through the four operating divisions.

**Acquisition Cost.** First three of those company divisions fall under the general head of acquisition and cover the period from the first application for a loan through sale of the mortgage to a client, to final acquisition of title. As the amount of this

work per month is approximately the same for both conventional and monthly payment mortgages, logical basis of comparison was the time it takes to acquire them.

The company studied their loans made during eighteen months ending June 30, 1938, found that conventional loans required an average of five months, eight days to close, that monthly payment loans required four months, fifteen days. These two elapsed times are in the ratio of 1 to .854—the basis for apportioning acquisition costs.

During the first eight months of this year, the average acquisition cost of all mortgages was \$328. Applying the above ratio, average cost of conventional mortgages was \$345; of monthly payment mortgages, \$295. Breakdown of these two costs by the three operating divisions that come under acquisition is shown in the first part of the table below.

A striking check on departmental efficiency is afforded by this method of tab-keeping. If any division of a mortgage company were theoretically discontinued, its work re-apportioned, and the costs per mortgage re-analyzed, the economic justification for that division would be found. Thus, by eliminating the real estate sales and management departments, Irvin Jacobs found that average total mortgage costs would rise from \$327 to \$356.

## AVERAGE MORTGAGE LOAN STATISTICS

	Conventional	Monthly Payment
Loan term (yrs.-mo.)...	7-10	15-8
Total cost .....	\$438	\$1,031
<b>Acquisition:</b>		
TIME (mos.-days) .....	5-8	4-15
Time ratio .....	1.000	.854
<b>COST:</b>		
Buying .....	\$195.38	\$166.74
Selling .....	64.44	54.99
Closing .....	85.32	72.82
Total .....	\$345.14	\$294.55
<b>Servicing (per year):</b>		
<b>TIME:</b>		
Collection .....	4.44 hrs.	23.06 hrs.
Taxes .....	1.44 "	6.74 "
Insurance .....	2.23 "	2.38 "
Banking .....	.40 "	2.40 "
Miscellaneous .....	1.75 "	6.07 "
Total .....	10.26 hrs.	40.65 hrs.
COST .....	\$11.86	\$46.99
PROCEDURAL STEPS.	89	413

**Servicing Cost.** Unexpected pitfall of many a mortgage lender has been his failure to provide for the cost of servicing loans once they were acquired. Servicing costs depend, of course, on the average length of time loans are outstanding. Life of conventional loans of the Company average seven years, ten months; monthly payment loans average fifteen years, eight months. As monthly payment mortgages naturally need more attention than ones handled as little as twice a year, procedural steps vary greatly. Jacobs' study showed that the average conventional type required 89 procedural steps or 10.26 hours; the average monthly payment type, 413 steps, or 40.65 hours.

This does not, however, give a basis for apportioning the cost of servicing between the two mortgage types. To do that, Irvin Jacobs used as a basis the cost of making collections and found that the unit cost of servicing conventional mortgage loans is \$11.86 per year and of monthly payment loans, \$46.99 per year.

**Analysis.** These findings make possible a statistical, and therefore significant, comparison of conventional and monthly payment mortgages. Thus, although the monthly payment mortgage costs less to acquire, the yearly cost of servicing it and its longer life make it more expensive to the lending institution; to Irvin Jacobs and Co. the average total cost of a conventional loan is \$438; of the monthly payment loan, \$1,031. Logically, that total cost is progressively reduced as the time it remains outstanding is shortened. When a monthly payment mortgage is refinanced after 50 per cent of the principal has been repaid, the cost to the company drops to \$663.

While the annual cost of servicing remains constant during the life of a monthly payment loan, income derived from that loan declines as the principal amount is repaid. Therefore, a method of reserving a part of that income for future needs is imperative. To do it Jacobs determines the average monthly income during the life of a loan and puts any part of actual income in excess of that average into a reserve fund. That reserve will carry the loan when income has dropped below the monthly average.

While the actual figures produced by Analyst Jacobs hold little significance for Mortgage Banking in general (they will vary from company to company according to operating policies), a comparative analysis of them is valuable to the business, giving a factual basis for estimating brokerage charges. It also points to the increased time and money involved in writing FHA-insured mortgages and the need for establishing a servicing reserve. Furthermore, if other mortgage banker wisely undertake a similar study, the Jacobs original will serve as an interesting check on company efficiency.

## GARDEN APARTMENTS

Modern in Houston,  
Some high in rents.

By turning its back on neighboring houses, the garden apartment has reached a new high in real estate rudeness, but it is also setting a record as a real estate investment. With his eye on the latter fact, Houston Subdivider William E. White built North Boulevard Manor, a group of three modern apartments with four apartments each, faced them on their own central garden. But whereas Dutch Colonial in Teaneck, N. J. (ARCH. FORUM, Aug. 1938, p. 164) has proved 100 per cent popular, Modern in Texas has been a minor disappointment. Only 83 per cent of the apartments are rented, despite the growing Houston's need for space. Apparent reason why North Boulevard Manor was not a sellout is that its \$70 rents came high for Houston purses, even when tempted by built-in radios and fridges.

Also tempting and worthy of national notice, is the project's general appearance and plan as designed by Architect F. Harry Johnston. The plan is simple in that it has three buildings, all twelve apartments, all alike. Each apartment is heated by an individual gas heater in the living room in an arrangement that satisfies in the mild Texas climate, particularly when abetted by ventilating fans.

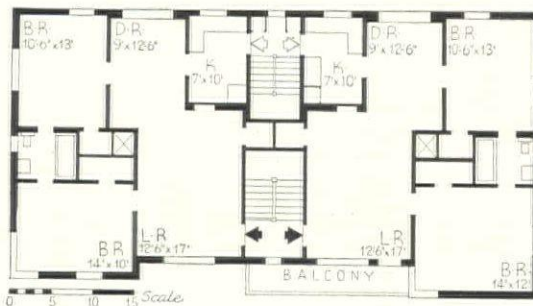
North Boulevard Manor cost only 1/2 cents per cubic foot to build. And this may be attributed, in part, to uniformity of units which simplified construction, to the low slanting roof which came down on waste space. Total cost was \$2,500. To that, Builder White adds \$10,000 as the value of the 195 x 145 ft. lot. His cash outlay, however, was \$27,000; the remaining \$35,000, or 48 per cent of the total investment, including land, was financed by the Prudential Life Insurance Co., sans FHA insurance.

White's estimate of operating costs is \$347 yearly, doled out as follows: taxes, \$100; insurance, \$235; janitor service, \$60; water, \$144; public lights, \$108; depreciation, \$600 (kept low by steel casements, copper roof, tile lobby). In addition, he will amortize the insurance company's 5 per cent loan over a period of sixteen years by means of, roughly, \$200 yearly payments.

As the apartments are all alike, the rents vary little: from \$67.50 to \$70 per month. Income with 100 per cent occupancy would be \$9,720 per year, enough to pay all expenses, give its owner an 11 per cent return on his investment of cash and land. With the present 17 per cent vacancy, however, White grosses about \$1,667, nets 7 per cent.



**Triplets** in plan and design, Subdivider White's garden apartments have a pleasing, low-lying appearance. All twelve dwelling units are alike, have built-in bars and radios under dining room windows. Note that each unit has a service entrance, that all rooms have cross ventilation. Garages are concealed behind the project.



## CONSTRUCTION OUTLINE

**FOUNDATION:** Walls—reinforced concrete. Sills, pressure creosoted.

**STRUCTURE:** Exterior walls—brick veneer on 2 x 4 in. studs, applied on Gyp-Lap exterior sheathing, U. S. Gypsum Co. Floor construction—sub-floor and select white oak, E. L. Bruce Co.

**ROOF:** Rafters, 2 x 6 in., sheathed solid with tongue and groove, 1 x 6 in., on which Copper Roofs, Inc. copper shingles are applied.

**SHEET METAL WORK:** Copper, 16 oz.

**INSULATION:** Outside walls—insulating Gyp-Lap, U. S. Gypsum Co. Ground floor—50 lb. insulating felt. Weatherstripping—copper on all exterior doors. Sound insulation—sheet-rock, U. S. Gypsum Co.

**WINDOWS:** Sash—Fenestra Bonderized steel

casements, Detroit Steel Products Co. Glass—double strength. Glass blocks—Pittsburgh-Corning. Screens—full inside, bronze mesh on metal frames.

**FLOOR COVERINGS:** Living room—hardwood. Halls, bathrooms and porches—tile. Kitchen—pine covered with linoleum.

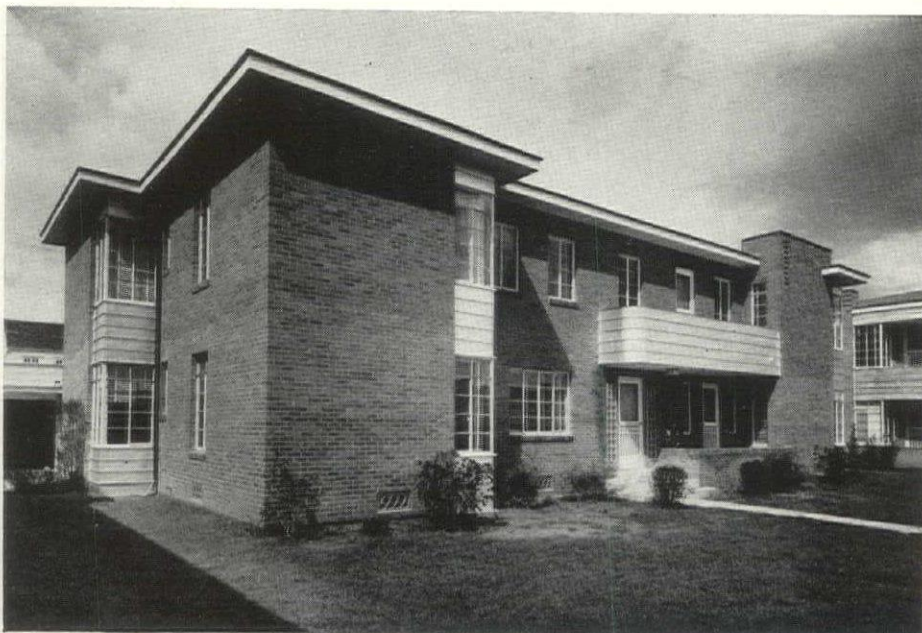
**WALL COVERINGS:** Sheetrock finished with Texstone throughout, U. S. Gypsum Co., 2 coats wall paint, Glidden Co. Bathrooms—5 ft. tile, sheetrock above.

**ELECTRICAL INSTALLATION:** All fixtures chromium. Switches—white Bakelite, Westinghouse Electric & Mfg. Co.

**PLUMBING:** All fixtures by Kohler Co.

**HEATING:** Individual gas heaters. Hot water heater—20 gal. Crest, Day & Night Water Heater Co.

**SPECIAL EQUIPMENT:** Attic ventilating fans for each apartment. Also Venetian blinds.



Harry L. Starnes Photos

# CARES OF REALTY AND FINANCE

get an airing at two November conventions—NAREB in Milwaukee; U. S. Building and Loan League in Chicago.

A SMALL German band did most of the welcoming as the **National Association of Real Estate Boards** last month rolled into beer-famous Milwaukee on a fleet of special trains. Official welcoming committee for this 31st annual convention was the Wisconsin delegation, but it was busy celebrating the outcome of the State elections which that night brought to Wisconsin the rout of the LaFollette dynasty, the election of Republican Julius P. ("The Just") Heil as governor.

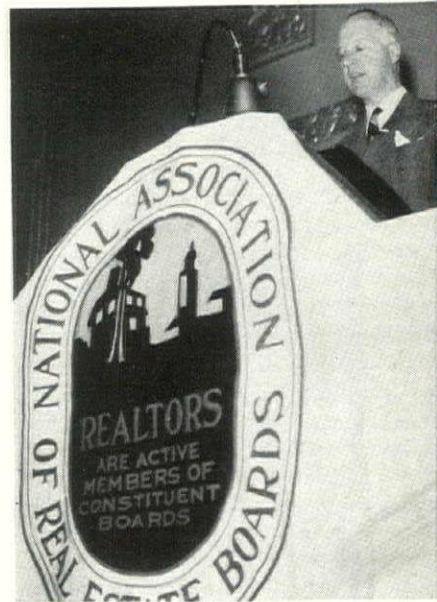
Day after the election, convention delegates cheered the optimism of Retiring President Joseph W. Catharine, cheered still louder next day when Governor-elect Heil made an unscheduled appearance on the rostrum. Winning more applause than any other speaker, he demanded that the political appointment of tax assessors cease, that property income be considered in assessing real estate. Questioned Manufacturer Heil: "Why not take the income of a property over a period of ten years and base the tax valuation on the average? When times get bad, reduce valuations; in good times, put them up, but make them responsive to economic conditions." He bowed out with a whacking attack on Wisconsin's building and loan associations and the suggestion that they put their houses in order "or else."

While a bevy of astonished building and loan men, most of whom had voted for Heil two days before, closed in on the Governor-elect back stage, Executive Secretary Carl Taylor of the Wisconsin Building and Loan League took the floor affirm-

atively to debate homestead tax exemption with Graham Aldis of the National Association of Building Owners and Managers. Although the ensuing argument produced the convention's noisiest general session, it did not sway NAREB from its neutral position—over-all tax limitation on realty levies.

Next noisiest session came when Representative Wright D. Patman argued in defense of his proposed legislation to tax chain stores out of existence with Professor Paul D. Nystrom, Columbia University's retail store authority. Realtors sided with the professor when it was pointed out that property owners collect \$400 million in annual rent from the chains, that the chains have 27,000 fewer branches in operation today than in 1927 and that independently operated stores have increased from 1,450,000 to 1,580,000 during the same period.

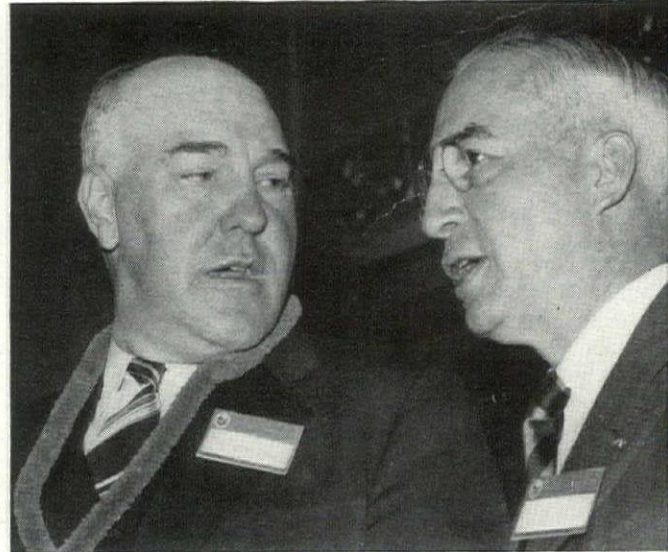
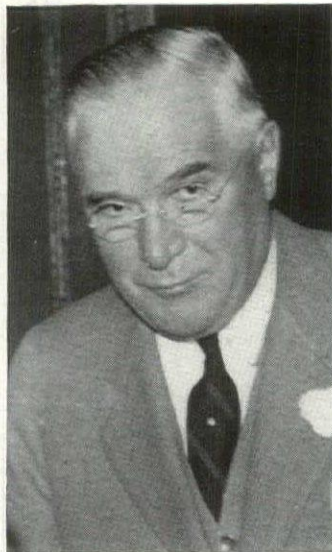
Representatives of three Government agencies spoke at the convention; two of them left with pats on the back, one with a rap on the head. Thus, the realtors commended the Federal Housing Administration but sent back FHA's Victor N. Fleming with the request that the National Housing Act be modified "to make possible after July 1, 1939 the granting of insurance on mortgages on existing dwellings on the same basis as on new dwellings, so that sound properties built prior to January 1, 1937 will not be compelled to enter the real estate market at a marked disadvantage." Also urged was continuation of the Act's Title I, sched-



Hiding behind the NAREB convention pulp U.S.Housing Administrator Nathan Straus gives speech on housing management.

uled to expire next July. Work of the Home Owners' Loan Corp., as expounded by Deputy Manager Harold Lee, was praised and agitation for a reduction in its interest rates from 5 to 3½ per cent was frowned upon.

Rap came to U. S. Housing Administrator Nathan Straus. After he addressed the convention on the comparatively low dwelling costs obtained in USHA projects thus far and on the need for efficient management of these projects, NAREB "seriously questioned the wisdom and effectiveness" of his program in that it was building on unimproved land (instead of slum land), competing with private building, and providing above-minimum dwelling facilities. Alternative vaguely suggested by NAREB's housing committee was that slum clearance be effected by neighborhood reconstruction corporation in cooperation with Government agencies.



Winner of NAREB'S presidential race was Cleveland's E. L. Ostendorf (left) in a photo-finish over Chicago's Mark Levy and Newton C. Farr. Right: Surprise Speaker Julius P. Heil, Wisconsin's governor-elect.

Lei-encircled Charles J. Pietsch of Hawaii urges NAREB'S Retiring President Joseph W. Catharine that next year's convention should be called in Los Angeles, adjourned in Honolulu. Result: It will.

Having enjoyed a week of *gemuetlichkeit*, (Milwaukee's synonym for "southern hospitality"), but not having learned to pronounce it, NAREB's 1,165 delegates truck tent, went home.

Week following, on November 16, the S. Building and Loan League, 1,500 strong, formed Chicago for its 46th annual convention. Less militant toward New Deal legislation than NAREB, it voiced praise for all Government agencies whose fingers are in Building—at least in a general way. Specifically, it would make a few changes. In the Federal Home Loan Bank Board, the building and loaners would like to have a representative. As for the Federal Housing Administration, they are far from wild on the economic soundness of 90 per cent mortgages, insured or uninsured. The convention spent little time discussing Government, spent more time on methods for obtaining new business.

Long-applauded was the address of Retiring President E. C. Baltz, which keyed the convention, gave delegates six good reasons for remembering the year 1938: 1) Increased business in construction loans, long a building and loan goal, has been achieved; financing of new construction advanced from 25 per cent of total dollar volume in January to 30.2 per cent in August. 2) As a result of a new competitive situation, this year has been their best in respect of advertising. Aim of this publicity program has been to

coax architects, realtors, contractors and material dealers to send their clients to local building and loan associations, one argument being that home dollars should be invested at home to help local business and make local jobs. 3) "... Building and loan men began to recognize the Government agencies as means rather than ends in themselves. ... Now there is general recognition that after all there were a lot of good building and loan associations here before these agencies were created." 4) There was a wholesale rehousing of the business; an increasing number of executives realized that an individual building and a "nice looking office inspires confidence." 5) There was a general reduction in mortgage interest rates and an increased inclination for associations to keep more cash on hand readily to meet public withdrawals. 6) A new emphasis was placed upon the trade association of the business, the U. S. League, which today mothers some 4,000 member associations.

Not expected from the retiring president was the statement that never again in the delegates' lifetimes would they see "any wholesale acceptance of the idea that it is wiser to own your own home. ... We are not going back to any good old times in this business." Decrying high taxes as a greater detriment to home ownership than high interest rates, long-term loans or small down payments,

Washington's Baltz suggested a fight for lower real estate levies as the best way to recreate the home ownership ideal for the next generation.

Despite this pessimistic note, the convention's general tone was one of optimism. And rightly so; the League's associations currently claim about 55 per cent of all U. S. institutional mortgage lending business.

To hold their share of this business, Speaker Leo T. Crowley, chairman of the Federal Deposit Insurance Corp., advised building and loan associations to cut their dividend rates, said "dividends much in excess of 3 per cent are hazardous." Reason: a two point spread should exist between what an association receives on loans and what it pays for the money it lends, and today's mortgage carries 5 per cent interest. He held that, since the maximum rate insured banks are permitted to pay on time and savings deposits is 2½ per cent (and the average is lower), associations should have no trouble obtaining long-term savings at a dividend rate of 3-3½ per cent. The League's Board of Directors and Executive Council endorsed his recommendations.

Last event on the three-day program was election of officers. At the top of the slate was placed Clarence T. Rice of Kansas City, Kan., as President; at the bottom, Hard-worker Morton Bodfish, oft-re-elected Executive Vice President.

## HOUSE COST INDEX

... takes another step  
... on level ground.

FURTHER evidence that the trend of construction costs is in a state of hesitation came last month as the Federal Home Loan Bank Board compared the cost of building its hypothetical house in October with that of July. Of the nineteen cities sampled during both months, nine reported a decline in composite labor and material costs, another nine reported an increase and one indicated that costs were changed.

Variations in cubic foot costs of more than two mills were registered by only four of the cities during the three month period. Thus, in FHLBB's New York District, cost of Buffalo's house advanced seven mills, Newark's advanced three and Albany's dropped four. The other significant change occurred in the Portland District where cost of the standard house in Boise, Idaho, rose six mills. Percentage-wise, the largest rise in price was Albany's; amounted to only 2.7 per cent.

Average cost in the nineteen reporting cities was 24.8 cents per cubic foot, or .952 for the 24,000 cubic foot house described in column three.

FHLBB DISTRICTS STATES AND CITIES	CUBIC-FOOT COSTS			
	OCT. 1938	JULY 1938	OCT. 1937	OCT. 1936
<b>NEW YORK:</b>				
NEW JERSEY:				
ATLANTIC CITY	\$0.242	\$0.243	\$0.254	\$0.238
CAMDEN	.245	.244	.245	.219
NEWARK	.231	.228	...	.213
NEW YORK:				
ALBANY	.244	.248	.256	.222
BUFFALO	.263	.256	.271	.238
<b>INDIANAPOLIS:</b>				
INDIANA:				
INDIANAPOLIS	.240	.242	...	.229
SOUTH BEND	.240	.239	...	.246
MICHIGAN:				
DETROIT	.257	.256	.259	.219
GRAND RAPIDS	.245	.246	.243	.216
<b>DES MOINES:</b>				
IOWA:				
DES MOINES	.257	.255	.269	.256
MINNESOTA:				
DULUTH	.258	.258	.262	.240
ST. PAUL	.272	.273	.284	.234
MISSOURI:				
ST. LOUIS	.250	.251	.268	.254
N. DAKOTA:				
FARGO	.243	.244	.249	.233
SIOUX FALLS	.268	.266	.264	.236
<b>PORTLAND:</b>				
IDAHO:				
BOISE	.250	.244	.257	.238
OREGON:				
PORTLAND	.227	.225	.251	.223
UTAH:				
SALT LAKE CITY	.245	.246	...	.237
WYOMING:				
CASPER	.235	.236	.248	.237

The House on Which Costs Are Reported is a detached 6-room home of 24,000 cubic feet volume. Living room, dining room, kitchen, and lavatory on first floor; 3 bedrooms and bath on second floor. Exterior is wide-board siding with brick and stucco as features of design.

The house is *not* completed ready for occupancy. It includes all fundamental structural elements, an attached 1-car garage, an unfinished cellar, an unfinished attic, a fireplace, essential heating, plumbing, and electric wiring equipment, and complete insulation. It does *not* include wall-paper nor other wall nor ceiling finish on interior plastered surfaces, lighting fixtures, refrigerators, water heaters, ranges, screens, weather stripping, nor shades.

Reported costs include, in addition to material and labor costs, compensation insurance, an allowance for contractor's overhead and transportation of materials, plus 10 per cent for builder's profit.

Reported costs do *not* include the cost of land nor of surveying the land, the cost of planting the lot, nor of providing walks and driveways; they do not include architect's fee, cost of building permit, financing charges, nor sales costs.

In figuring costs, current prices on the same building materials list are obtained every three months from the same dealers, and current wage rates are obtained from the same contractors and builders.



Orren Jack T

## LOW INCOMERS AND CAPITALISTS

**have a niche in the Lambert Housing Plan. A guinea pig project rents at \$6.25 per room, returns investment at 4 per cent.**

**H**EEDED the snap of Presidential fingers, Washington housing mentors month ago hot-footed it to the White House, encircled Mr. Roosevelt for one of his informal chats. In that circle the President saw a new face, heard a new plan. The face was that of 52-year-old Millionaire Gerard Barnes Lambert, who since spring has served inconspicuously as volunteer associate of FHAdministrator Stewart McDonald. The plan, also Lambert's, was to attract private enterprise into housing construction through elimination of speculation and guarantee of reasonably high investment return; to attract low income families through the erection of new dwellings to rent at \$5 to \$10 per room per month.

To prove that this plan was no idle dream, its creator pointed a proud finger at Princeton, N. J., where today a \$30,000 project is providing ten families with shelter at \$6.25 per room and Lambert with a steady 4 per cent income.

**Plan.** Housing is a Lambert hobby. As director and one-time president of the Lambert Pharmacal Company, he has gained fame and a fortune via Listerine. Part of this fortune he invested in the Gerard B. Lambert Co., a dealer in lum-

ber and cotton; part in J-boats, part in books on housing, and still another part, though not the last, he wanted to invest in housing.

Lambert's hobby thus assumed business proportions. From his books, from Princeton Economist Winfield W. Riefler and from FHA Economist J. M. Daiger he learned a thousand facts of housing life which these stalwarts had developed in special administrative studies. Among them was the fact that of the Nation's twelve million urban rental families, four million pay rent of less than \$5 per room per month, five million pay from \$5 to \$10, and three million pay more than \$10. Believing that the first group was the field for the U. S. Housing Authority program (although as presently financed, it will take care of only about 150,000 families) and that the last group would be provided for by large scale rental projects with FHA's mortgage insurance, Houser Lambert logically decided to tackle the great middle group.

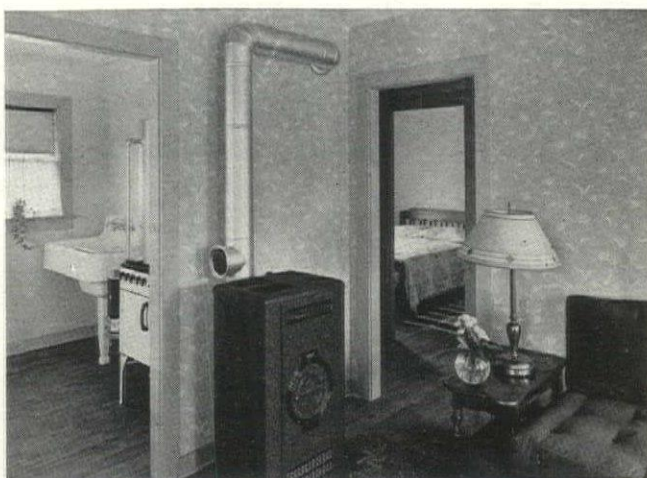
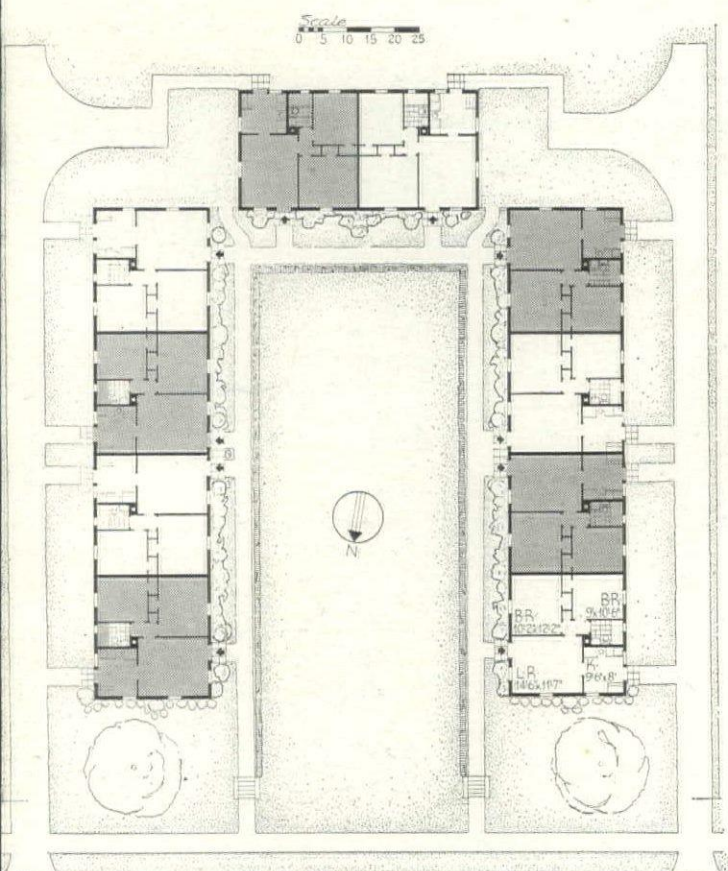
To give that tackle the necessary below-the-knees effectiveness, Lambert devised a plan (and it will remain only a plan until enabling legislation is enacted) for national application that would make \$5 to \$10 rents profitable as well as pos-

sible and make the housing business attractive to private enterprise. Biggest wheel in the plan's general mechanics establishment of a new type of corporation to be recognized and regulated by Federal law and called, for lack of a better name, "investment housing corporation." They would sell securities to the public, build housing projects with the proceeds, manage and maintain the projects until they have paid for themselves. At such time, projects would be turned over to the municipality.

**Rent Reduction.** Securities of the corporation would be limited to a maximum return of 4 per cent and no profit beyond this income could accrue to the corporation or the individual investor. The corporation would receive annually from each project fixed sums sufficient to repay invested capital over a period of years and yield 4 per cent on money still invested in the property in any one year. When all capital has been returned and interest paid, the project is to become the property of the community's. (If the dwelling units were built for sale instead of for rent, the project would become the property of the occupants.)

Since the community will ultimately own a revenue producing asset, it is logical to suppose that most any enterprising municipality would waive taxes on the property while it is being operated by the corporation. Eventual release of title would also eliminate any possibility of speculation on the part of the corporations.

A plan for private enterprise, it nevertheless allows the Government to put



Samuel H. Gottscho

**Keynote** of Lambert's Princeton project is efficient simplicity in design. Equipment is also simple; an oil heater in each dwelling unit (with exposed tank at each rear door) permits tenants to regulate heat to individual requirements. It saves the tenants money, obviates the landlord's need for a janitor. Briar hedge around the sunken court keeps tenants to the walk, prevents the wearing of unsightly paths across the lawn. This landscaping and the necessary grading, walks, utilities, etc., cost Lambert \$3,243. Labor and materials came to \$24,757. Land valued at \$2,000 brought the project's total cost to \$30,000.

finger in here and there. Any earnings remaining in the corporation's coffers after provision each year for interest charges, amortization, maintenance, and reserves would be paid as a tax to the Treasury Department. Government would get the corporation's accumulated reserve when title to its project is transferred; also, any surplus cash remaining after a corporation's dissolution or liquidation.

Such is the manner in which profits and, in turn, speculation, would be eliminated and rents reduced.

**Capital Attraction.** In addition to the advantages of a steady 4 per cent income, three other inducements are proposed which would make private investment in this type of housing an attractive venture: 1) While the financing plan entails no mortgages, it is reasonable to believe that the FHA might be authorized to insure the investments of these corporations; 2) Housing in many States could be built under existing legislation permitting local housing authorities to issue bonds exempt from Federal, State and municipal taxation. 3) In view of the social and economic benefits which these investments in housing would produce, the Federal government might consider the elimination or reduction of individual surtaxes on incomes derived from money invested in housing. When Lambert mentioned this possibility at the White House chat, the President, currently engineering an attack on all forms of tax evasion, countered with a negative wag of his head.

**Project.** To prove that low rent housing can be accomplished profitably even without the added benefits of the plan's necessary legislation and to give the investing public something concrete to work with while this legislation is being considered, Houser Lambert last summer conceived a project for his own home town, Princeton, N. J. It does not purport to be an example of what will be done under his plan, for in this local scheme he, himself, took the part of the investment housing corporation, supplied all necessary cash. With \$2,000 he purchased a 150 x 225 ft. lot near the Negro quarter, and with \$28,000 he built ten one-story, four-room dwellings in rowhouse fashion from plans developed by the FHA and polished up by New York Architects Robert I. Powell and Alexander P. Morgan, whose fees are not included in the cost. Construction began August 6; three months later the project was ready for occupancy by tenants earning less than \$125 per month.

Following closely the principles of his national plan, Lambert interested the local housing authority in the project, agreed to swap it for \$30,000 of 4 per cent tax-free bonds, to be redeemed in part annually for the next 28 years, at which time amortization will be complete and the project will become the property of the borough. In return for this delayed gift, property taxes (\$40 per year, or \$1,120 during the 28-year period of amortization) have been waived.

Proof that the plan's mechanics have produced Lambert's requisite of low rents

is the rate established for the Princeton project: \$6.25 per room, \$25 per dwelling unit (plus heat). Annual gross rent from the project will be \$3,000. Of this amount \$1,800 will go each year to Bondholder Lambert as interest and return of principal (\$1,200 as 4 per cent interest, \$600 as amortization for the first year; and in successive years, smaller dollar amounts of interest, larger amounts of principal). The remaining two-fifths of gross revenue (\$1,200, or \$10 per apartment per month) will be used for operation and upkeep of the project. If tenants help minimize maintenance expenses by promptly paying rents and by contributing labor for gardening, minor repairs, etc., they may be rewarded at year's end with rent rebates equal to the differential between actual maintenance expenses and the amount set aside for each apartment.

Salient fact is that the Princeton project's low rents are the direct result of the new financing technique—not the result of cost reduction. Lambert used union labor throughout, ran up extras for rushing the project's completion. He did not skimp on materials (as witness brick veneer walls, oak floors, and slate roofs), for fortune of the project depends to a great extent upon minimum depreciation.

A success at Princeton, the Lambert Plan should prove still more successful if and when adopted on a national basis. Investment housing corporations employing the plan's rent-reducing financial mechanics could also reduce costs through large scale operations and research.

# AN APARTMENT WITH A PAST

turned inside out to satisfy New York City tenants. Elaborate Alwyn Court was a total loss, now more than pays its way.



Wurts Bros.

WITH wine vaults, conservatories, billiard and music rooms, Alwyn Court was among the most opulent apartment buildings in pre-war New York City. But along with antimacassars and red plush, its day passed, and it turned from a money-making investment into a boarded-up liability. To turn it back again, Dry Dock Savings Institution, owner, tore out the 22 huge suites of 14 to 34 rooms, put in 75 compact modern apartments of three to five rooms, left the rococo exterior practically untouched. Result was a jump in occupancy from zero before to 92 per cent after, and Dry Dock proudly shifted Alwyn Court into their income producing portfolio, what with \$137,460 in annual rents.

Paradox is, however, that although most evidence of the past was removed in order to attract tenants, the aura of the past remained, was a ponderable factor in tenant acceptance. Alwyn Court was built in 1908 in a fashionable neighborhood one block south of Central Park. Wealthy families of that day dined and wineed at home, demanded apartment space comparable to that of individual mansions, and Alwyn Court supplied it. Suites were so large they came only two to a floor.

The Court proved popular and profitable until the 1920's when one by one the tenants moved out in search of more compact, less expensive quarters. The end came in 1936 when the last tenant left, and the building was boarded up—a complete liability with \$30,000 in yearly taxes and an unpaid mortgage. In the same year, Dry Dock Savings Institution, as mortgagee, foreclosed, spent two years in search of a method of rehabilitation.

**Alternatives.** In that search it explored four possible paths to total or partial resurrection of its investment: demolition, outright sale, sale with purchase money mortgage plus a loan for remodeling, and reconditioning as owner-builder. The first three were ruled out as either impossible or unprofitable, the fourth was adopted when Edgar Ellinger, owner and builder on New York's East Side, submitted his ideas for remodeling the interior. He proposed that the exterior be left alone

in spite of its over-ornamentation because, 1) it could not be removed without completely demolishing the structure, and 2) the carving was careful, expert work, looked rich and expensive from street level. So, only outside change was to remove the overhanging cornice.

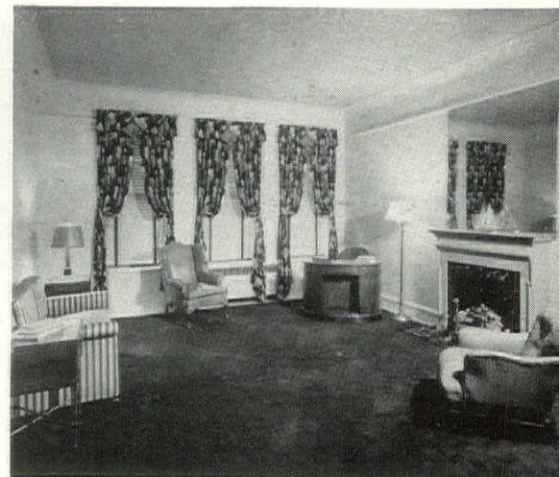
**Remodeling.** All that the wreckers left of the interior were the steel frames and floor arches. Major structural change necessary to rebuilding was a shift of elevators so they would serve the center, rather than only one end, of public corridors. This, in turn, meant moving the main entrance from the corner of the building around to one side.

Into the skeleton of the building Architect Louis S. Weeks fitted 72 apartments in place of the original 22 suites, turned the servants quarters on the roof into three penthouse apartments, complete with private terraces. Living quarters resulting from this transformation have the large room sizes of the original, have the same spacious 10½ ft. ceiling heights. These proved attractive to tenants where-



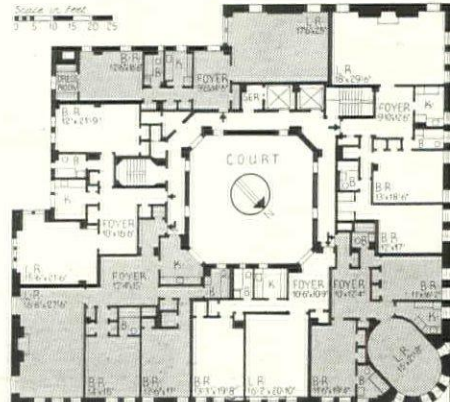
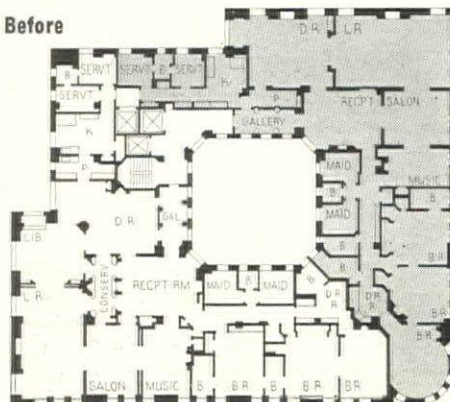
Brown Bros.

**Spacious rooms** highlight plans both before and after remodeling, but average apartment size was cut from twenty-four to four rooms. The central court daylights new public corridors instead of maids' rooms and galleries.



Wurts Bros.

Before



as a large number of rooms had not; 5 per cent of the apartments were accepted from floor plans; 92 per cent, rented within one month after completion. Evidence that the Ellinger analysis of tenant preferences hit the gong is that at least 50 per cent of the tenants left larger apartments to go to reconstructed Alwyn Court.

To help attract those tenants, Dry Dock spent \$5,000 for advertising over a period of six months, opened a model apartment. Ads were published in daily newspapers and in the New Yorker magazine. Further, the romance attached to the old Alwyn Court made news; it was the subject of seventeen features in New York papers.

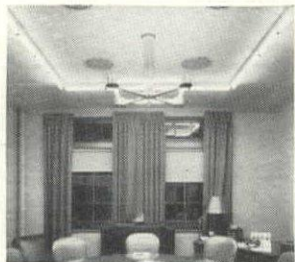
**Finances.** Original cost of Alwyn Court to Dry Dock Savings Institution was \$885,342. Components of that cost were mortgage debt due, \$869,257; cost of foreclosure, \$1,000; unpaid taxes, \$15,597; miscellaneous, \$598. When to it is added the \$500,000 cost of remodeling, Dry Dock's investment totals \$1.4 million.

In the original Alwyn Court rents began at \$6,500. In the new, they begin at \$1,200, go to \$4,000. Total rents this year amount to \$137,460. Operating expenses in contrast, total an estimated \$110,000—including interest, overhead, and \$26,371 in taxes, which are based on an assessed valuation of \$900,000. Thus, when 100 per cent rented, Alwyn Court's net return is approximately \$27,600 yearly.

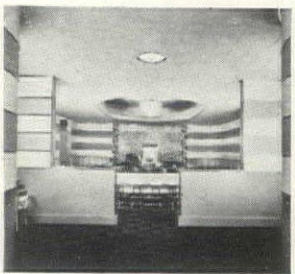
Here's a new designing tool  
for Architects...

# FLUORESCENT LIGHTING

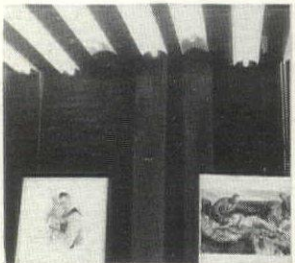
WITH NEW G-E FLUORESCENT MAZDA LAMPS



This striking modern fixture uses four exposed 20-watt Daylight Fluorescent MAZDA lamps.



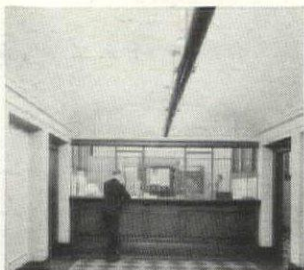
Both pink and daylight Fluorescent MAZDA lamps light "Fan and Bill's" at Glens Falls, N. Y.



Crowell Publishing Co., Springfield, O. uses 46 Daylight Fluorescent lamps in color matching.



Because these lamps are 50% cooler they lend themselves to installations where heat must be avoided.



Fluorescent lamps can be used for indirect lighting by using an inverted trough.



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SECONDHAND HOUSES

go for less than \$2,000 in  
Seattle's 1938 market.

A SURVEY of Seattle house sales during the first half of 1938 showed County Assessor Roy B. Misener how his valuations compared with sales prices. But of more general interest, it also pointed out in what cost bracket the secondhand home market lies and, most emphatically, what types of houses are satisfying that market.

With the help of the WPA, 1,443 home sales were analyzed, representing 90 per cent of the total sales made during the first six months of this year. Sales of houses constructed after January 1, 1938, and deals in escrow and unrecorded were excluded.

Most startling fact revealed by the survey is that Seattleers are buying more houses priced between \$1,000 and \$2,000 than at any other price. In that range 506 sales were made. There were also 131 sales of houses costing less than \$1,000. At the opposite extreme, only 186 houses were sold for more than \$5,000; only 23 for more than \$10,000.

With such low sales prices predominating, it is small wonder that the most

popular down payment was only \$1,000, that 36 per cent of such payments were below that figure. And, it is logical to assume that most of the lower priced sales entailed no down payment at all; only 597 down payments were recorded for the 1,443 sales.

For their money, 88 per cent of Seattle purchasers got a frame house, and chances were four-to-one that it was over ten years old: two-to-three that its age was 20 years or more. Only 43 of the houses sold were new.

Most popular size was five rooms with the volume of purchases tapering off in both directions as the number of rooms increased and decreased. Seventy per cent of the purchasers bought homes with from four to six rooms.

The secondhand Seattle house was found most frequently on a 40-foot lot, although 50-footers ranked a close second.

Two houses had a 25-foot frontage; others had 170 feet of frontage. While most of the lots were in neighborhoods serviced by sewers and water, 39 had sewer connections and one had no water.

In inverse ratio to the utilities were the amenities. The survey briefly listed under "view" that 96 houses looked on the mountains, 246 on the water. The rest looked on their neighbors, or nothing.

The accompanying table summarizes the most predominant qualities of houses sold in Seattle. It does not purport to indicate that all the listed qualities attracted purchasers. Biggest attractions were, of course, the purchase prices, for the "under \$5,000" maximum holds as good for Seattle's housing market as for any other.

\* \* \*

Most interesting effect to date of the WPA-Misener survey was the unexpected opportunity it afforded the city to snuff back at the recent Stuart Chase diatribe against home ownership, with teeth sharpened by facts and figures. A house rented for \$35 monthly, Misener calculated, could be purchased for \$28 a month—saving of \$7. He also stated with pardonable pride that low taxes were a factor in the low cost of both renting and owning in his city. A recent survey of the National Association of Real Estate Boards showed that the national average annual tax per room is \$29; in Seattle it is \$

SEATTLE HOME SALES

Qualities	Most Popular	Per Cent of Total
Price	\$1,000-2000	35
Construction	Frame	88
Age	10 yrs.	23
Number of rooms	5	31
Down payment	\$1,000	14
Road	Paved	77
Lot frontage	40 ft.	26
View	None	77



A Service That's Easy to  
----- JUSTIFY -----

THERE'S just one reason for changing a service you're already providing for the occupants of your buildings. It's to add something to the comfort, convenience and satisfaction of your tenants.

And on this score you'll have plenty of justification for adopting Ivory Dispenser service for your washrooms.

For Ivory Dispensers make the task of washing face and hands more convenient, more agreeable, more generally satisfactory than is possible with old-fashioned dispensers.

These smartly designed dispensers deliver Ivory Soap—one of America's best liked soaps. Ivory is famous for its purity, rich lather and gentleness. It's safe for face as well as hands.

Here is a service that is bound to please—that will add generously to tenant good-will—that costs little to install, little to maintain. A letter or postcard will bring you full details.

Procter & Gamble Cincinnati, Ohio  
IVORY SOAP DISPENSERS

CAN'T LEAK!  
CAN'T CLOG!  
CAN'T RUST!

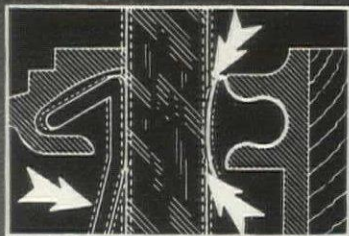
EASY TO INSTALL!  
EASY TO REFILL!

100 WASHES FOR 1¢!

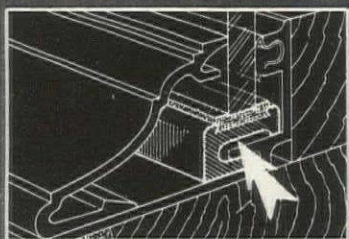
DELIVERS AMERICA'S FAVORITE SOAP . . .  
IVORY SOAP  
in flakes or granules

# Eight distinctive Features

## OF PITTCO STORE FRONT SASH



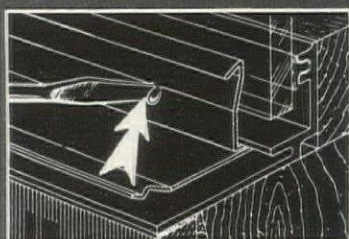
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2



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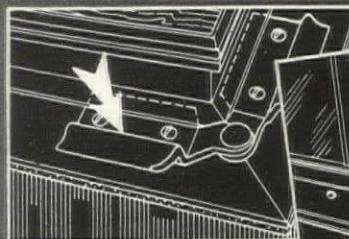


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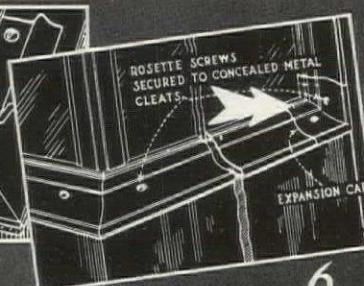


1. Cushion Grip on Glass. The metal surfaces which contact the sides of the glass act as a yielding cushion, absorbing shocks.
2. Fixed Supporting Block. Non-ferrous metal supporting blocks are firmly wedged in groove, thus preventing tipping, rocking or sliding out of line during setting of glass.
3. Adjustable to Various Glass Thicknesses. Glass-holding units and face members are self-adjusting to various glass thicknesses without tilting inward or outward.
4. Installation Operations All from Outside. Both glass and sash are set from outside by standard wood or machine screws. No special keys or tools required.
5. Corner Cleat to Assure Tight Mitre. Heavy metal cleats are used at the corners to secure mitres against spreading due to expansion or contraction.
6. Expansion is Controlled. Expansion in long lengths of aluminum is controlled by combining expansion cap, cleats and rosette screws. See also 5.
7. Protection for Carrara. A sturdy, square-cut, continuous metal flange projects over edge of Carrara, shielding the area which is most vulnerable.
8. True Setting Edge. The outer edge of inner member serves as a true, unvarying line to which face of Carrara or similar material is set.

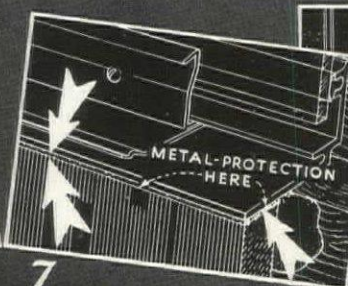
Write for complete information on Pittco Store Front Metal . . . and for our file of detail drawings of various applications. Address Pittsburgh Plate Glass Company, 2143X, Grant Bldg., Pittsburgh, Pa.



5



6



7



8



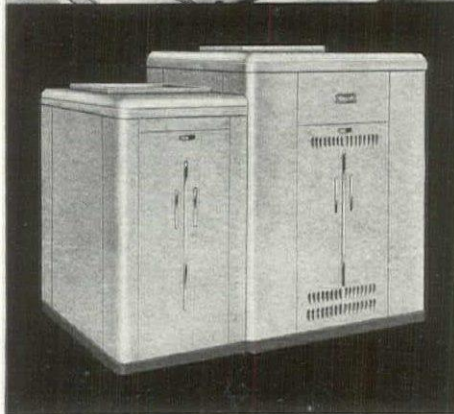
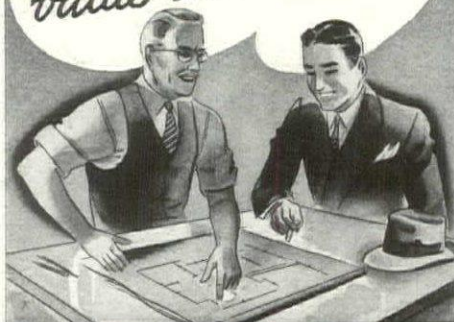
**PITTCO**  
STORE FRONT METAL

PITTSBURGH PLATE GLASS COMPANY

# MONCRIEF

winter  
AIR CONDITIONING

*Adds much more to  
value than to cost*



Aside from greatly increasing the comfort of the owner, Moncrief Winter Air Conditioning adds to the value of a house in many ways. The basement is made freely available for any use desired. Clean, properly humidified air preserves the house and its furnishings. And warm air conditioning requires no accessories to take up space in the various rooms or to interfere with the arrangement of furniture. Whether the house be large or small, Moncrief can supply a unit of exactly the right size and type—for burning gas, coal or oil with highest efficiency and economy. Beautifully finished in the modern mode.

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Write for  
illustrated literature  
and data sheets.  
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Moncrief Engineering Service  
is freely available  
for estimating and  
laying out plans.

**THE HENRY FURNACE & FOUNDRY CO.**  
3485 E. 49th Street      Cleveland, Ohio

## ENGINEERING'S FLING

(Continued from page 480)

ice, thereby providing additional assurance that delivery schedules will be maintained.

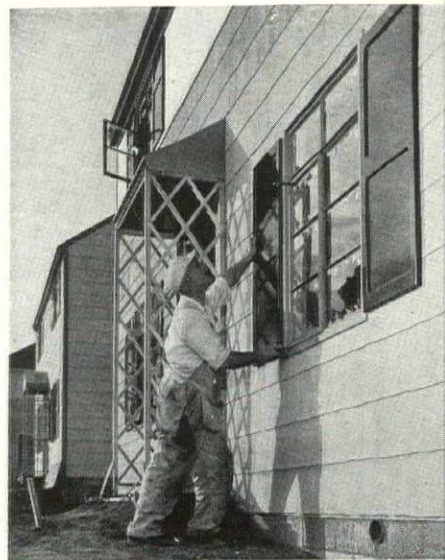
For the pre-cutting of all lumber, local dealers set up a saw mill at a nearby railroad siding. Here, as the lumber comes in by the carload lot, a saw crew cuts and notches it to specifications, assembles all the studs, rafters, joists, etc., necessary for each house, and at the proper time delivers this complete bill of material to each individual site.

As far as labor is concerned (peak employment amounted to about 400 men), Colonial Village is 100 per cent unionized. With the exception of a few minor jurisdictional disputes quickly ironed out by the crafts, work has progressed without a hitch.

Thanks to construction loan procedure, Gilbert-Varker, Inc., is able to pay its laborers regularly without the necessity of keeping a large amount of cash on hand. Twice a month they estimate the amount of work accomplished during the preceding two weeks, send the data to FHA's Washington Office together with receipts showing that all material and labor charges have been paid up to the beginning of that period. FHA checks the report, sends a release notice to the New York Life Insurance Co. as mortgagee who, in turn, advances the necessary cash to the builders. By year-end when the 300th house is scheduled to be completed and landscaped, the mortgagee will have advanced all of its \$1,050,000 loan, including the 10 per cent which it withholds from each bi-monthly payment pending completion of the project and its final acceptance by FHA.

**Disposal.** Established as the FHA's first "release clause project," Colonial Village is unique in its rental-sales policy. In the main, it is a rental project and, as approved by the FHA, rents have been set at \$8 per room per month—\$40 for the standard five-room house, \$48 for its six-room sister. However, by virtue of the release clause, an individual may purchase a new house and lot for 10 per cent down (plus transferral fees, title investigation charges, etc.) and a 25-year amortized mortgage for the balance. Upon such a purchase, the house and lot are released from the blanket mortgage and an individual mortgage is written. These individual mortgages range from \$3,600 on the \$4,000 minimum valuation to \$4,700 on the maximum valuation of \$5,225. They will be assumed by the holder of the blanket mortgage.

Interesting is the fact that, while rents are \$40 and \$48, the low and high of carrying charges on the same houses under the sales plan are just under \$28 and \$35



**Finishing touches** include application of porcelain enameled steel shutters and entrance hood, both factory tinted to match other exterior steel trim.

per month, respectively, including interest amortization, mortgage insurance, fire insurance and taxes.

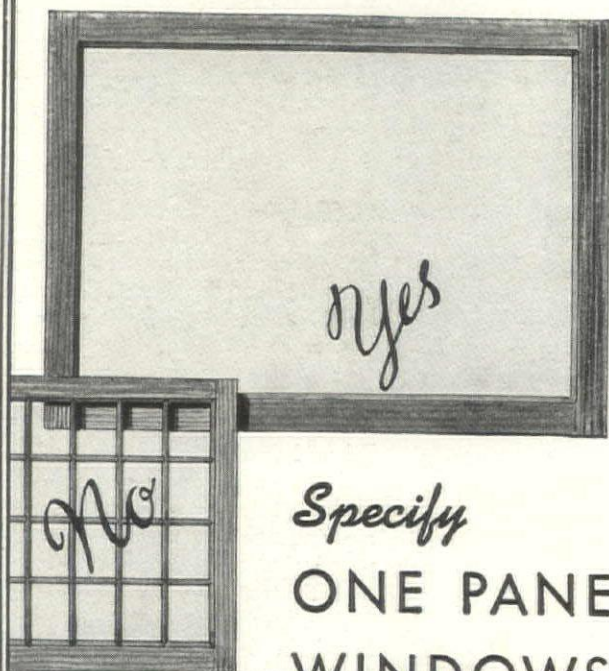
Public reaction to this rental-sales plan has not yet been tested. To prepare the houses for the approach of winter, activity through November was concentrated upon enclosing them; so, by mid-month only 28 of the 300 units had been wholly completed. In view of this condition and the fact that the Pennsylvania Housing Corp. has to date released no publicity, the sale of 50 houses is far from discouraging. Furthermore, since the Irvin Works has still to begin full operations, the anticipated demand for the houses has yet to come.

While the houses are well constructed and should be exceptionally inexpensive to maintain they are probably more houses than the lower income group of steel workers can economically afford. However, chances are that Gilbert-Varker ingenuity and experience evident in building the 300 houses will lead to further economies in later units which will meet the needs of the lower income workers as effectively as the present houses serve the middle and upper income groups.

So sure are Gilbert-Varker and the Pennsylvania Housing Corp. that their houses will go like hot cakes, they hopefully refer to Colonial Village as project No. 1, are actively planning two more 300-house subdivisions in the Pittsburgh neighborhood.

Regardless of public reaction to Colonial Village and the outcome of these plans for the future, Pittsburgh has produced a highly significant subdivision. Big Builders Gilbert and Varker have demonstrated a system of construction worth aping. And, Carnegie-Illinois' producing of steel fabricators has developed some new building materials which, with proving, may cause at least a minor revolution in home design.

For  
MAXIMUM LIGHT—



Specify  
ONE PANE  
WINDOWS

If windows are to be for practical use rather than decorative, and serve their purpose of light transmission, then why not specify one pane, or the undivided windows?

In a test conducted by The Pittsburgh Testing Laboratories, it was found that the undivided window transmits from 8% to 30% more light than the divided window. And also there is less eye strain with an undivided window.

Consider the advantages of the one pane window and specify Clearlite Quality Glass.



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ASSET IN THIS GOOD-LOOK-  
ING **ASPHALT TILE**  
FLOOR

RIGHT! AND IT'S MADE  
BY **JOHNS-MANVILLE**  
... SURE TO GIVE EXTRA-  
LONG SERVICE



**M**AKE your floors easy on the eye and on the feet—and you've added an important asset to every room. Surprisingly enough, it can be done at comparatively low cost with positive assurance of years of wear with J-M Asphalt Tile.

The free book shown above tells the whole story. It tells why J-M Asphalt Tile is quiet, easy to clean, hard to wear out. It illustrates many of the beautiful colors and patterns in which J-M Asphalt Tile is supplied . . . shows how they may be adapted to any decorative ideas. It offers interesting new ideas for decorative floors for every type of building. Send for your free copy and specification data. Mail the coupon.

J-M Asphalt Tile is sold only by approved J-M Flooring Contractors. There is one near you . . . ready to show you samples of this unusual flooring material. Consult your classified telephone book under "Flooring" and look for the J-M Insignia.

UNLIMITED DECORATIVE EFFECTS, such as this and the pattern at the top of the page, are possible with J-M Asphalt Tile Flooring. And this material is resilient and durable, requires little, if any, upkeep.



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State \_\_\_\_\_

# FORUM OF EVENTS

(Continued from page 22)

## COMPETITIONS

Sponsored by the Alumni of the American Academy in Rome. Collaborative competition in memory of Robert W. Gardner. Problem: summer theater. Awards: \$200 to the team whose design ranks first; additional prizes to the amount of \$200 and mentions. Closing February 11, 1939. Details may be had from Association of the Alumni, American Academy in Rome, 101 Park Ave., New York, N. Y.

American Academy in Rome announces its annual competitions for Fellowships in architecture, landscape architecture, painting, sculpture, musical composition, and classical studies. Stipend of each fellowship \$1,250 a year plus \$300 for transportation, and \$200 to \$300 for incidental expenses. Entries close February 1, 1939. Further details may be had from American Academy in Rome, 101 Park Ave., New York, N. Y.

Sponsored by American National Theater and Academy, an architectural competition for a great festival theater on the campus of William and Mary, Williams-

burg, Va. Closing date for entries: January 31, 1939. Cash prizes, \$500, \$300, \$200, and five citations of \$100 each. The following architects with remuneration of \$400 each have been invited to compete. Goodwin & Stone, New York; Walter Gropius, Cambridge, Mass.; Michael Hare, New York; Harrison & Fouilhoux, New York; Richard Neutra, Los Angeles. Further information and blanks may be obtained from Kenneth K. Stowell, professional adviser, % *The Architectural Record*, 119 West 40th St., New York, N. Y.

Lowell M. Palmer Fellowship in Architecture: to enable a student of unusual promise to undertake advanced study at Princeton. The Palmer Fellow is exempt from tuition fees, and receives a stipend of \$700. Applications with supporting documents must be received not later than March 1, 1939. Application blanks and further details from Secretary, School of Architecture, Princeton University, Princeton, N. J.

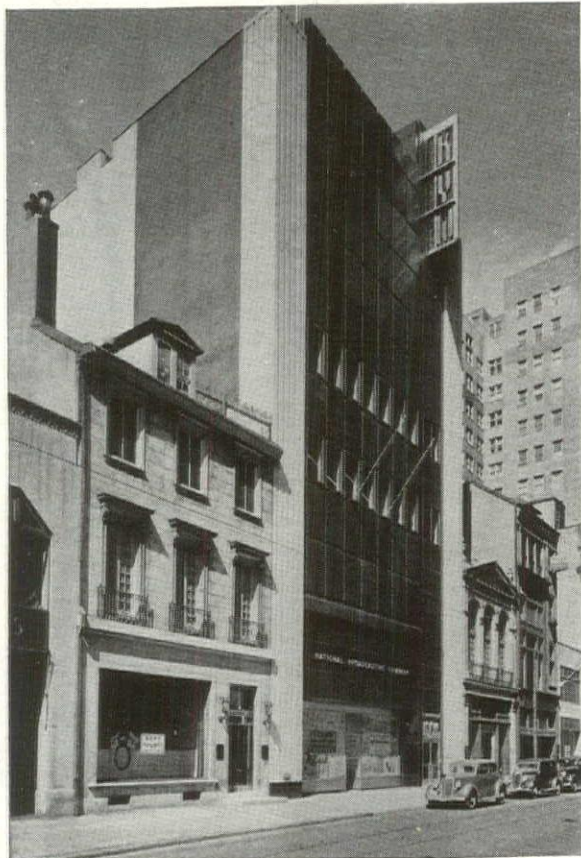
James Harrison Steedman Memorial Fellowship in Architecture: an award of \$1,500 to assist qualified architectural graduates in a year abroad. Open to all

graduates of recognized architectural schools between the ages of 21 and 30 who have had at least a year's practical work in the office of a St. Louis architect. Closing date for applications January 31, 1939. Further details and blanks may be obtained from Secretary, School of Architecture, Washington University, St. Louis, Mo.

## EDUCATION

The Charles Eliot Norton lectures at Harvard will be given this year by Dr. Siegfried Giedion, a Swiss engineer and Doctor of Art, since 1928 General Secretary of the International Congresses of Contemporary Architecture.

Edward Langley Scholarships: The A.I.A. will receive proposals of candidates from January 1 to March 1, 1939. Scholarships are open to all persons engaged in the practice of architecture. Grants are limited to ten with no stipend exceeding \$1,500. Details of the conditions will be found in *The Octagon* for November 1938, or may be obtained from the A.I.A., 1741 New York Avenue, Washington, D. C.



Station KYW—National Broadcasting Co., Philadelphia. Exterior Facing and Panelling of 2 1/4" thick Polished Virginia Black Serpentine. Tilden & Pepper, Architects.

## POPULAR!

*for very sound reasons*

Virginia Black Serpentine has become increasingly popular for facing, bulkheads, and spandrel panels because it supplies the demand for a black exterior material which can be installed at moderate cost and on which upkeep will be negligible.

Virginia Black Serpentine has a rich, deep, satiny finish, not reflective or mirror-like. It has great toughness, and density, and can be cut into sections as thin as 7/8". Installations show a diversity of design treatments for re-modeling operations as well as new construction. It is being used quite widely on interiors also, for base, door trim, pilasters, mantel-facings, hearths, etc.

*A set of samples, conveniently boxed, showing the range of stone, including mottled dark blues and greens from the Alberene quarries will be sent gladly. The Alberene Stone Corp. of Virginia, 419 Fourth Avenue, New York. Quarries and Mills at Schuyler, Va. Sales offices in principal cities.*

**Virginia Black  
SERPENTINE  
FROM THE ALBERENE QUARRIES**

# Compare!

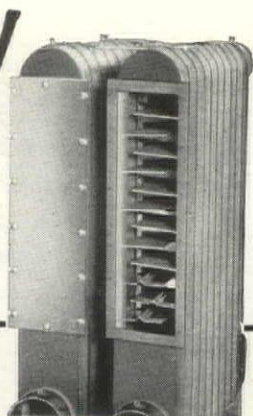
**BEFORE IT IS  
TOO LATE**

**AND WHEN YOU COMPARE  
BE SURE YOU GET THE FACTS**

The time to be sure you recommend and specify the right heating equipment is before it is installed. It isn't necessary for you to take anyone's word for it—you can prove to yourself whether or not the equipment that goes into the houses you design is beautiful, efficient and dependable. The obviously apparent facts prove Janitrol superiority beyond any shadow of doubt.

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Compare, point by point, Janitrol equipment with any other make offered. Only in Janitrol will you find a one-piece, self-leveling base—floating blower and motor mountings—seal-tight, non-leakable joints—Janitrol advanced engineering and design.

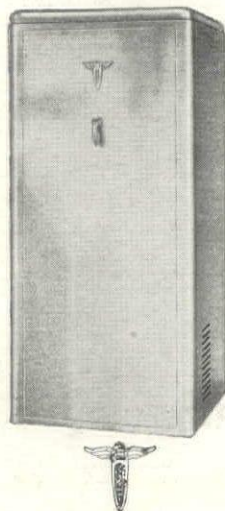


**JANITROL  
TWIN EXCHANGERS  
HEAVIER STEEL  
STRUCTURALLY  
STRONGER  
QUIETER  
MORE COMPACT**

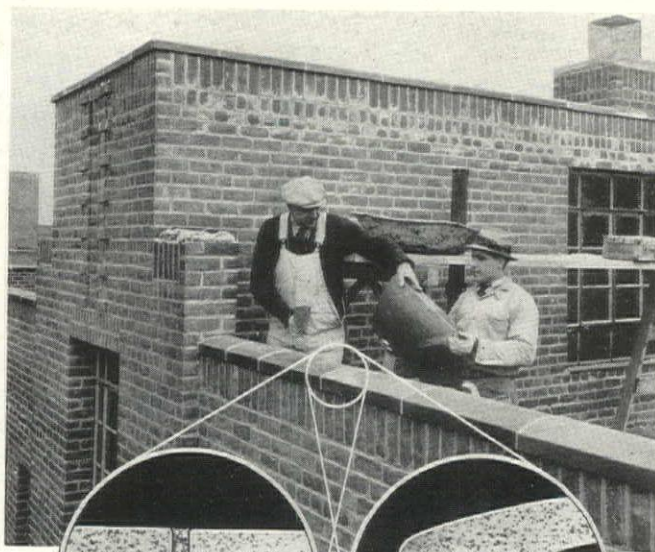
The heart of any piece of heating equipment is its heat exchanger. Only in Janitrol do you get an exchanger so much heavier in construction ( $\frac{1}{8}$ " boiler plate) that its rigidity assures quietness of operation, free from expansion and contraction and expansion rumbles. Why take a chance with thin sheet steel exchangers  $\frac{1}{16}$ " to  $\frac{1}{8}$ " thick? Only in Janitrol will you find this strongest, sturdiest, more compact heat exchanger. Notice too, how complete the interior floating baffles block the travel of combustion gases so that all the usable heat is extracted. This baffling means quietness as well as economy of operation.

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New Side Lock

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that makes the difference  
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Robinson Lap-Lok Wall Coping is far more pleasing in appearance than ordinary copings. But that's only half the story. It's the hidden Lap-Lok features of design . . . features that can't be seen when the coping is in place . . . that make it so superior to other wall copings.

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The Robinson Clay Product Company, Akron, O.

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Glazing Compound  
has "Something on the Ball"

Nu-Glaze is a separate, distinct product, created especially for glazing and forms perfect bond between glass and wood or steel sash. Applied like putty, it sets to rubber-like consistency; does not dry out, crack or peel regardless of weather conditions.

Sash houses "apply, crate and ship" Nu-Glazed windows with no delay for "seasoning." Nu-Glaze has successfully met every test for five years with architects, contractors, sash houses, mechanics and home owners. Properly applied Nu-Glaze should last the life of the building.

Write today for sample and tests for proving the superiority and perfection of this amazing product.



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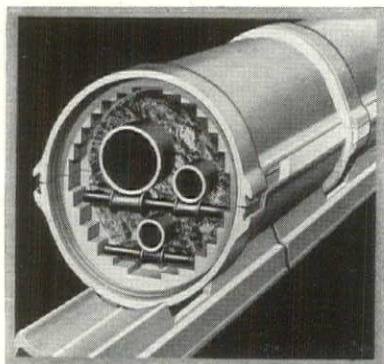
Interesting data gladly furnished on almost any type of job you request.

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Instead of insulation that meets some of these requirements, recommend the insulation that **MEETS THEM ALL...** and pass on to your clients the advantage of economy in building as well as economy in heating.

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Expanding Blanket  
INSULATION

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF MARCH 3, 1933, OF THE ARCHITECTURAL FORUM, published monthly at Philadelphia, Pa. for October 1, 1938.

State of New York } ss.  
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Henry A. Richter, who having been duly sworn according to law, deposes and says that he is the Business Manager of THE ARCHITECTURAL FORUM and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Time Incorporated, Time & Life Building, Rockefeller Center, New York, N. Y.; Editor, Howard Myers, Time & Life Building, Rockefeller Center, New York, N. Y.; Managing Editor, Ruth Goodhue, Time & Life Building, Rockefeller Center, New York, N. Y.; Business Manager, Henry A. Richter, Time & Life Building, Rockefeller Center, New York, N. Y.

2. That the owner is: Time Incorporated, Time & Life Building, Rockefeller Center, New York, N. Y., that the names and addresses of stockholders owning or holding one per cent or more of total amount of stock are: Brown Bros. Harriman & Co., 59 Wall Street, New York, N. Y.; J. P. Morgan Company, (a/c Henry P. Davison), P. O. Box 1266, New York, N. Y.; F. DuSossoit Duke, Green Farms, Conn.; Mrs. Mimi B. Durant, c/o National City Bank, 167 E. 72nd Street, New York, N. Y.; General Publishing Corporation, 15 Exchange Place, Jersey City, N. J.; William V. Griffin, 140 Cedar Street, New York, N. Y.; Irving Trust Company, (Benefit of Elizabeth Busch Pool), 1 Wall Street, New York, N. Y.; New York Trust Company, (a/c Edith Hale Harkness), 100 Broadway, New York, N. Y.; New York Trust Company, (a/c William Hale Harkness), 100 Broadway, New York, N. Y.; Louise H. Ingalls, c/o D. S. Ingalls, 1658 Union Commerce Building, Cleveland, Ohio; Robert L. Johnson, c/o Robert L. Johnson, Inc., 135 East 42nd Street, New York, N. Y.; Margaret Zerbe Larsen, c/o Time Inc., Time & Life Building, Rockefeller Center, New York, N. Y.; Roy E. Larsen, c/o Time Inc., Time & Life Building, Rockefeller Center, New York, N. Y.; John S. Martin, c/o Time Inc., Time & Life Building, Rockefeller Center, New York, N. Y.; Samuel W. Meek, c/o H. A. Schafuss, c/o Chas. D. Barney & Co., 14 Wall Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Henry A. Richter,

Business Manager.

Sworn to and subscribed before me this 28th day of September, 1938.

[SEAL]

E. S. RHETT,

Notary Public

(My commission expires March 30, 1940)

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land cement in Hotel Victor,  
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Company; sub-contractor for  
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Company, all of Miami Beach.



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floor service"—with this beautiful  
installation of fine terrazzo.

Here is flooring that has everything.  
It is attractive, durable, of moderate  
cost, inexpensive to maintain—  
the flooring you "refinish" with water  
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loses its original freshness. It is made  
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chips that never fade, never surrender  
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terrazzo job are clean-cut. There are  
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In planning terrazzo jobs, do not  
overlook the importance of *white* port-  
land cement matrix. Only with white  
cement can you get exact color control,  
minute pattern reproduction. Only with  
white can you create a fine terrazzo job

which you can be sure will be faithful  
to specifications.

And you can be sure of quality when  
you specify Atlas White for your terrazzo  
jobs. Atlas White (plain and water-  
proofed) is pure white. It exceeds specifi-  
cation requirements for portland cement  
strength. It assures fine terrazzo at its  
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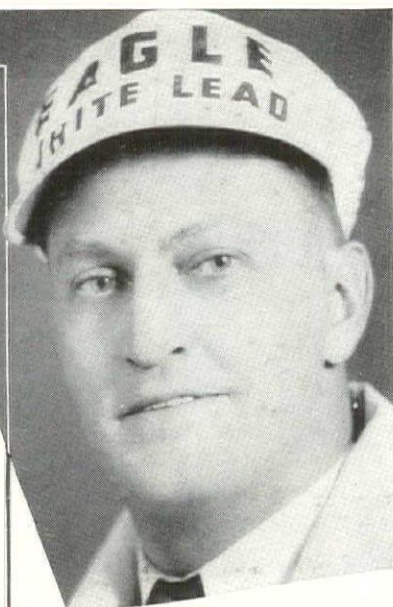
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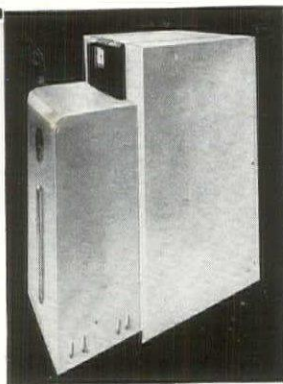
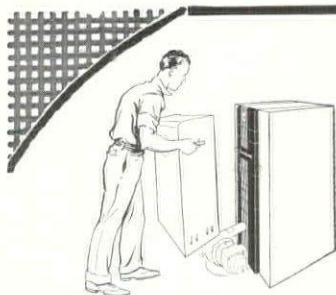
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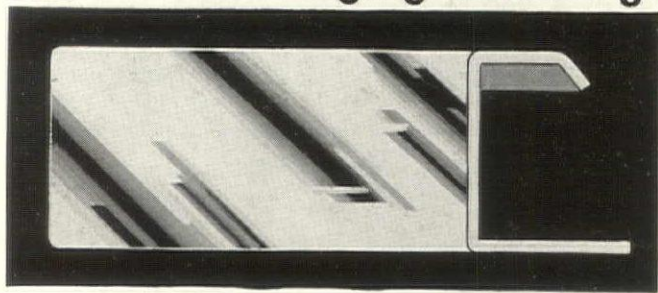
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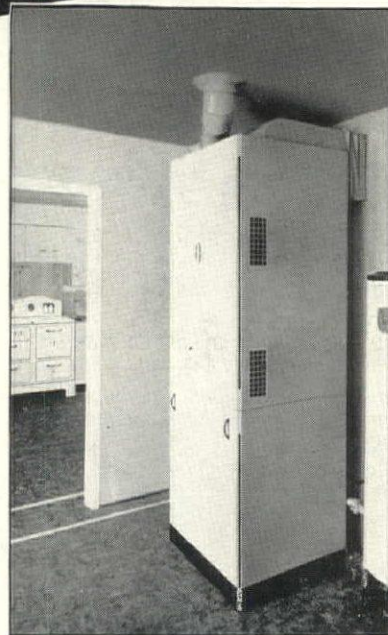
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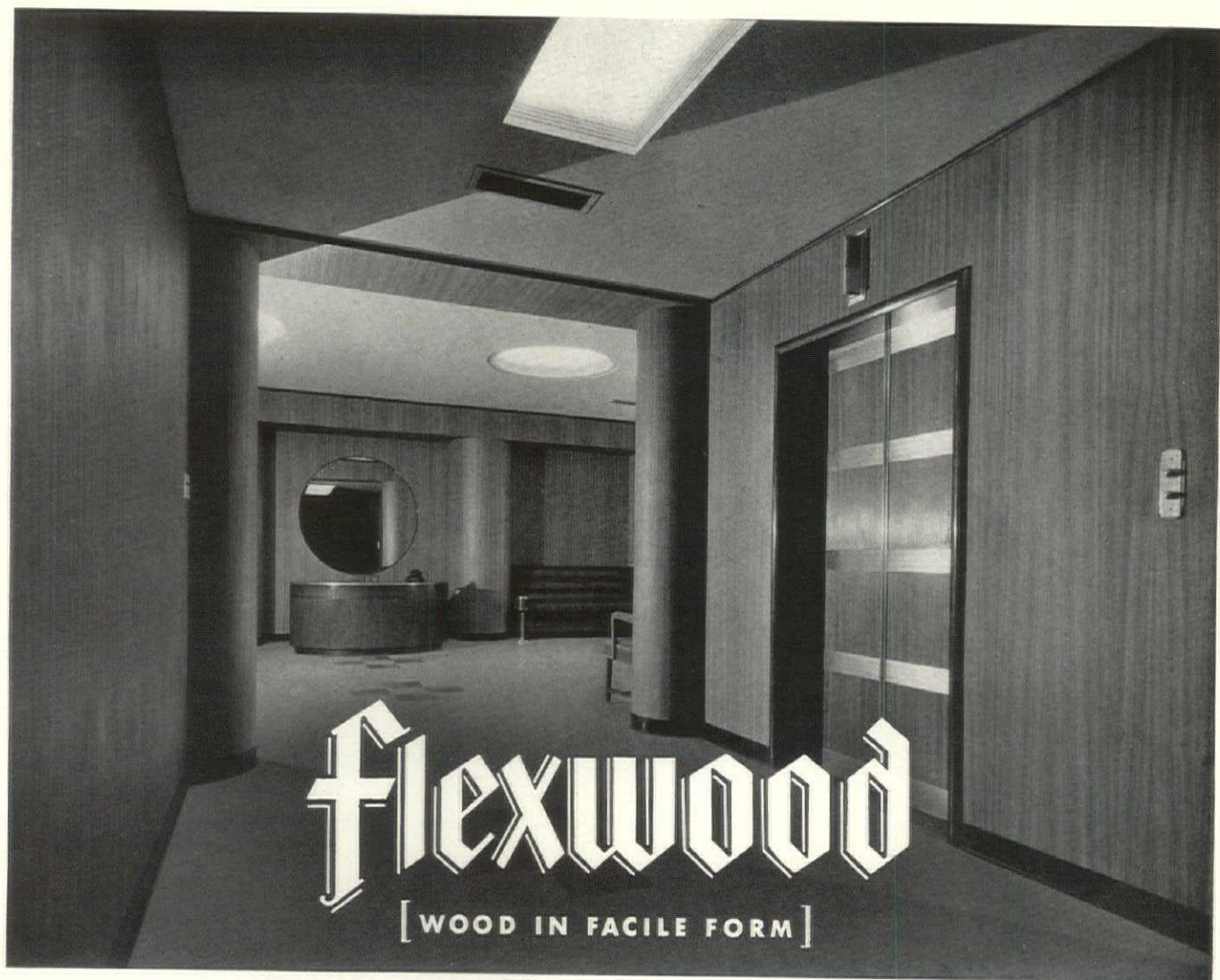
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# SPECIFICATION AND BUYING INDEX

The advertising pages of THE ARCHITECTURAL FORUM have become the recognized marketplace for architects and all others engaged in building. Each month these pages offer the most complete guide to materials, equipment and services to be found in any magazine. A house of any other building could be built completely of products advertised in THE FORUM. While it is not possible for a magazine to certify building products, it is possible to open its pages only to those manufacturers whose reputation merits confidence. This THE FORUM does.

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*Orientalwood Flexwood flush treatment, elevator lobby, Kraft-Phoenix Cheese Corporation's new office building, Chicago; over 5,000 sq. ft. of Flexwood used for lobbies and offices, 6th, 7th and 8th floors; Mundie, Jenson, Bourke and Havens, Architects.*

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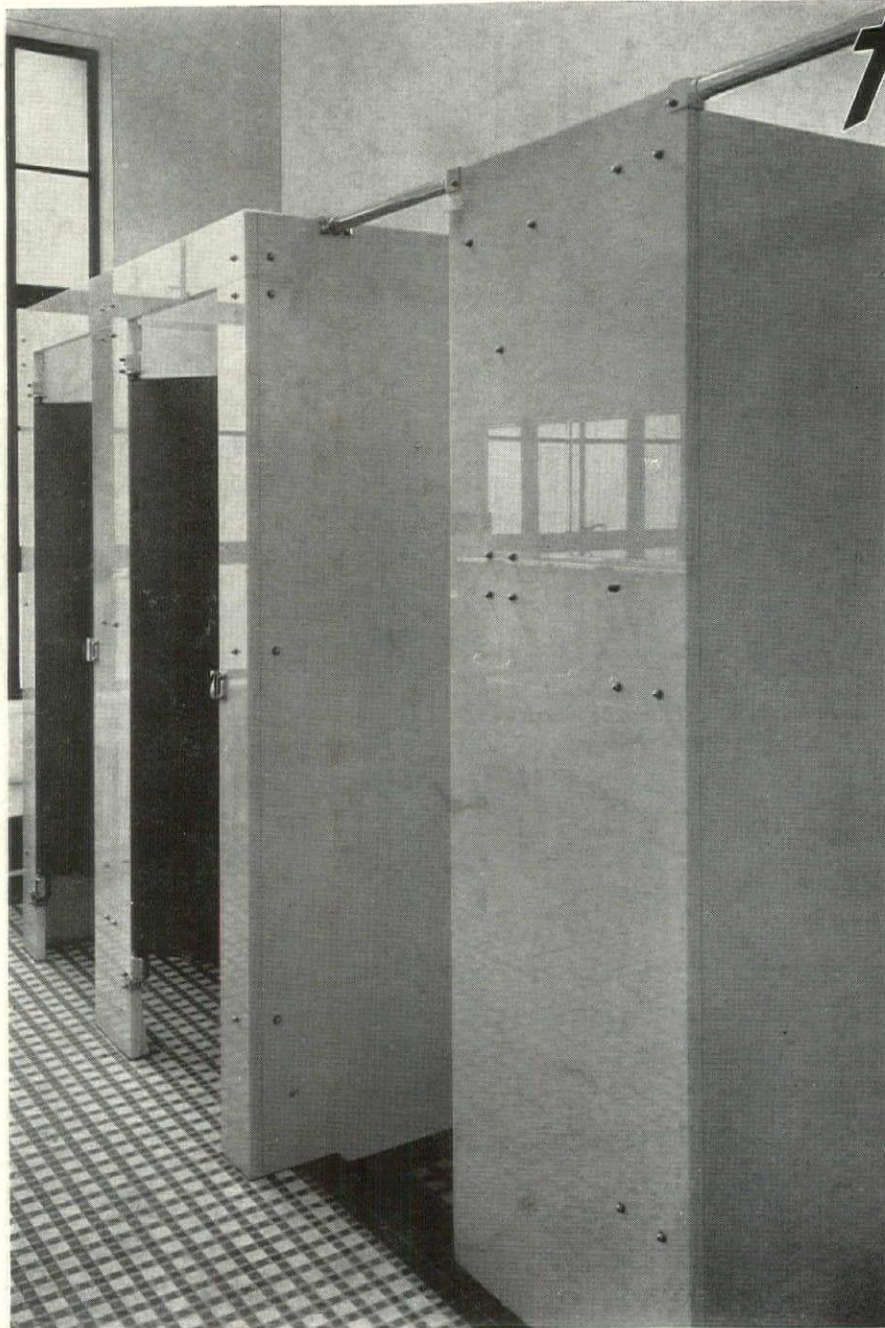
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