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THE HUSH OF REVERENCE PERVADES ST. LOUIS' BEAUTIFUL SOLDIERS' MEMORIAL



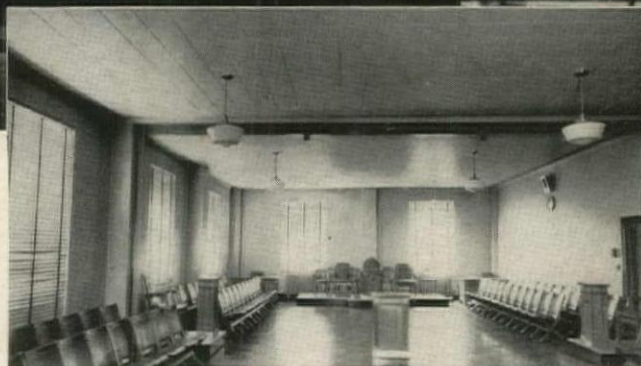
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* The word Acousti-Celotex is a brand name identifying a patented, perforated acoustical fibre tile marketed by The Celotex Corporation.



ACOUSTI-CELOTEX
SAYS "Hush" TO NOISE



AND ACOUSTI-CELOTEX
IS PAINTEABLE

Designed by architects of the St. Louis Board of Public Service, this Soldiers' Memorial is nationally known. Inset shows a meeting room used by service organizations, with sound-quieting ceiling of Acousti-Celotex.

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THE MONTH IN BUILDING

DEFENSE HOUSING

Turned on three months ago, the national defense program has generated \$13 billion of Federal appropriations, a cavalcade of cockeyed proposals and a volume of verbiage unmatched since the New Deal hatched the NRA eagle. It has been advanced by some quick, straight-forward action (see p. 4); but it has also been retarded by the now familiar merry-go-round system. Result is that, along with some other industries, housing and its Government agencies are defense dizzy. It is high time they relaxed and studied with clear heads the problem before them and the channels through which it may be solved.

To grasp the size of the problem, one need only refer to the 1914-18 period when, despite a decade of booming residential construction, industrial and military expansion first created and then suffered from an acute housing shortage (see p. 138). Reference to the World War I diary will also help the U. S. solve its current and growing emergency housing problem, for in 1917-18 Government and private building made noteworthy contributions which bear repeating now and some noteworthy mistakes which should be severely avoided.

The present situation calls for the orderly execution of these logical steps:

1. It is essential that more than a horse-back estimate of total housing requirements be made. With the extent of industrial and military personnel requirements now reasonably well established, it is possible to gauge for each locality involved the additional housing needed.
2. There must be an accurate census of housing vacancies in all communities likely to be affected by the national defense program. (Existing vacancy data are not reliable enough to give more than a general picture—see ARCH. FORUM, July 1940, p. 68.) This census should classify vacancies under such headings as habitable, substandard, uninhabitable; number of rooms; for sale or rent; ownership (private, HOLC or FHA); structural condition; proximity to industrial or military plants, etc. (An advance peek at the 1940 Housing Census, now complete, would be invaluable to defense housers.) Filling the vacancies thus tabulated should, of course, be the first step in the defense housing program.
3. A similar census should be made of all vacancies in communities which are not scheduled for a defense boom but are within a reasonable (20 or 25 mile maximum) commuting distance of defense plants. Filling these vacancies should be the second goal of defense housers. As in the World War I emergency, it may involve Government subsidy of workers' transportation costs and Government loans for the extension and expansion of privately and publicly owned transportation facilities.
4. Consideration should be given to the rehabilitation of vacant, obsolete housing where the structural qualities of the buildings make such an operation feasible. Reasons: Most substandard housing is situated in the industrial areas that are to be boomed; rehabilitation is cheaper than new construction; and it is quicker.
5. By studying the census of housing conditions mentioned above

in conjunction with continuing surveys of local industrial production and labor conditions, Government should place its armament orders with at least secondary consideration to housing.

6. Wherever new housing is required, private enterprise, if willing and able, should be encouraged to build it. In certain cases where the housing market will be artificially and temporarily swelled by national defense production, this encouragement must take the form of Federal guarantees against loss. And in these cases, private housers would submit their projects for Government approval and build, rent and sell them in line with Government restrictions—not arbitrary but reasonable approval and restrictions. If Government is to permit private industrialists to depreciate their defense-expanded plants over an abbreviated period, it follows that something of the same incentive should be given to house builders and financiers whose investment would otherwise be jeopardized with the emergency's passing.

7. Government itself should finance and build housing only as a last resort. Dictates of the program spell speed and should not become entangled in the red tape which is usually attached to direct Government building. Barracks, dormitories and even houses located in communities which will disappear with the emergency are the rightful subjects for Government housers. But, if there is any reason for the Government to supply housing for private enterprise workers in stable communities, that reason appears more political than practical. Where Federal building is required, the U. S. Housing Authority is the agency to do it; its decentralized public housing program which relies on private builders, architects, engineers, etc., is probably the best method yet devised for Government financed housing. But, in danger of seeing its program cut short in the present session of Congress, USHA is apt to use the national emergency to feather its own nest. It has already streamlined its program to permit the construction of "USHA-aided defense projects," it already has two such projects under construction, and it is already loudly stumping for additional appropriations. USHA should be reminded that, as presently established, it can solve only one part—and the least important part—of the emergency housing problem. Thus, USHA can build only *permanent* houses for *families* in communities which can use them even *after* the nation is prepared. It cannot build temporary housing for any market, and it cannot build permanent housing for unmarried workers. (Reference to the table on page 138 shows how important both types of housing were in the 1918 emergency.)

8. If the defense program is to progress with speed, it is doubly important that the housing program get under way immediately and move rapidly. Efficient industrial production depends in substantial measure on adequate housing. As this issue of THE FORUM went to press, an able Coordinator of Housing was appointed to assist the National Defense Advisory Commission (see p. 4). It is obviously mandatory that all defense housing activities (both private and Government) be coordinated under the direction of a knowing, red-tape-snipping executive.

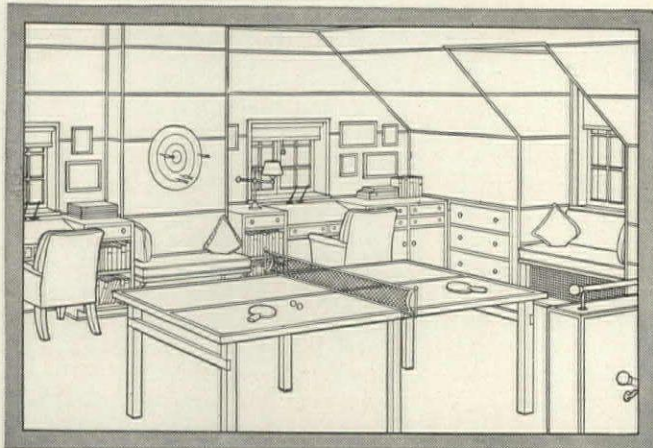
BUILDING TRENDS. Residential building in some 2,000 cities during May bettered the preceding month and the corresponding month of last year, pushed the 1940 cumulative total 7 per cent ahead of 1939's first five months. Non-residential activity showed signs of improvement, but did not reach last year's level—see table, right. According to F. W. Dodge Corp.'s building contract statistics in 37 Eastern States, commercial building was up 23 per cent at the half-year mark; industrial building, up 47 per cent, reflects Allied war orders.

PERMITS

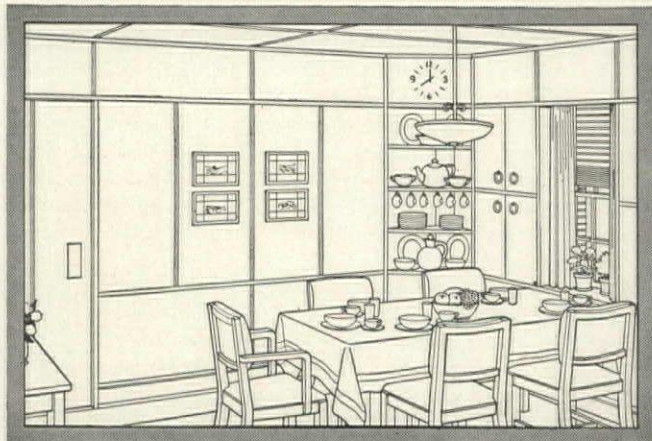
(Source: U. S. Dept. of Labor)

	Monthly data			First Five Months	
	May 1940 (millions)	Comparison with Apr. '40	May '39	1940 (millions)	Comparison with 1939
Residential	\$123.1	+2%	+14%	\$483.1	+ 7%
Non-residential	48.6	+3	+ 4	206.9	-10
Additions, repairs ...	30.9	-3	- 6	132.5	- 7
TOTAL	202.6	+1	+ 3	822.5	- 1

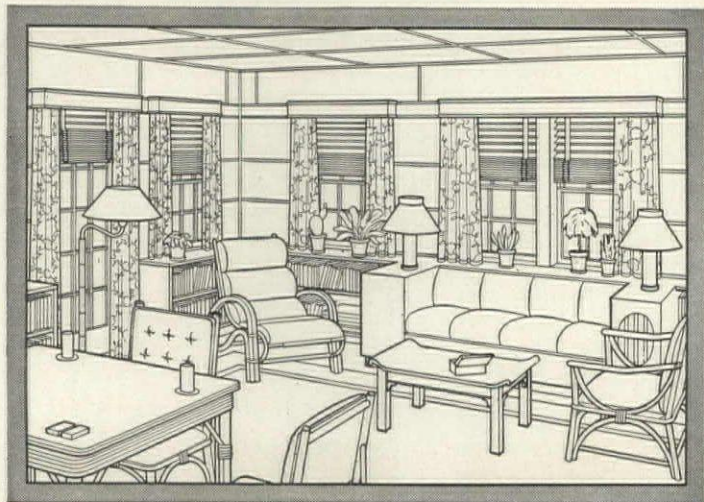
New faces for waste spaces



Once an idle attic, now a charming game room and study. The transition is easy and inexpensive and the new walls and ceilings are permanent if Masonite Structural Insulation is used. Here the board is nailed directly to studs and rafters, and is smartly grooved with a modern horizontal pattern. It can be used in its natural warm-brown surface or is available with washable color finish already applied. Built-in cabinets, shelves and drawers are especially easy to execute when you specify Masonite Tempered Presdwood.



When a home outgrows its original tiny kitchen, the latter can become a cozy breakfast room. Here's an interesting arrangement, with Tempered Presdwood applied right over the old walls, painted grey and decorated with metal moldings. Tempered Presdwood is a dry material that can be cut or sawed with ordinary tools. It is grainless and moisture-resisting, and, properly applied, will not warp, chip, split or crack. Note the built-in corner cupboard and electric clock mounted behind a removable panel of Tempered Presdwood.



Where winters are long, an open porch can easily be brought indoors and converted into this gay permanent sunroom. The Tempered Presdwood walls and ceilings, patterned with U-grooving, are glued to Masonite Structural Insulation, which has been nailed directly to studs and joists. Tempered Presdwood bookcases are built in around the room and form one lamp pedestal beside the sofa. A radio is enclosed in the other. The window cornices are Tempered Presdwood with metal moldings.

● Realizing the unlimited opportunities that are today offered in the field of remodeling, we present these suggested uses of Masonite Tempered Presdwood in the hope that they may be of some value to you. The interesting and unusual results that can be achieved with Tempered Presdwood are appreciated by architects who want expensive-looking effects at low cost. If you would care to examine a sample of Tempered Presdwood, we'll gladly mail one to you without cost or obligation. The coupon is for your convenience.



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THE MONTH IN BUILDING

PEOPLE. Last month four big names made Defense headlines and Building news: ▶To the National Defense Advisory Commission at Ringleader Signius Knudsen's nod came **Charles Forrest Palmer** to direct and coordinate the far-flung private and public housing activities which the U. S. scramble for preparedness will require. Not even in the running according to Washington prognosticators two months ago (*ARCH. FORUM*, July 1940, p. 4), Palmer's appointment was a surprise to most private housers, but no surprise to public housers and the Building industry in his home town, Atlanta.

For nine years Housing Coordinator Palmer bounced from one city to the next in the Middle West and California, picked up more real estate experience on each bounce, finally in 1921 landed in Atlanta where he became one of the town's prominent realtors as president of Palmer, Inc. Now owner and manager of several big Atlanta commercial properties, 48-year-old Realtor Palmer has been president of the local and National Assn. of Building Owners and Managers, has contributed articles on these two business subjects to several publications (to wit: *ARCH. FORUM*, June 1930). Paying close attention to business, Palmer is not much of a play boy, spends his scarce spare time golfing, riding, traveling, and designing offices and furniture for business executives.

Never forsaking real estate, Palmer in 1933 became a recognized houser when he influenced the direction of the first U. S. public housing project toward Atlanta, blocked the attempts of other local realtors to prevent construction of PWA's "Techwood" with such oratory as "The development . . . is as much a part of President Roosevelt's 'New Deal' as is the NRA, and make no mistake about it." Half right, half wrong as a soothsayer, Palmer again split even when in 1935 he

predicted "Housing for the poorest people . . . with State aid is inevitable" and in 1937 forecast that within ten years 5 million people would occupy Government housing. (Today public housing is a fact, but in the first three years of this decade has built houses for only 22,000 families.) More recent Palmer observations put him above the plane of run-of-the-mill confirmed housers, indicate that he mixes his sociology with a heaping measure of realism. Thus, last year Palmer warned: "Given too much, the former slum dweller lacks incentive to climb above public housing. Furthermore, semi-luxuries will kill Housing because our great group of middle class voters will rightly oppose any movement which gives the lower one-third conveniences those who furnish the subsidies do not have for themselves."

A student of European housing problems and solutions, Palmer has said and done so much for U. S. housing that last year he was elected vice president of the National Assn. of Housing Officials, and elevated this spring to the presidency. The occasion was a fortunate one for both NAHO and Palmer; the Association can use the blessings of business men (its new vice president is also a realtor) and Palmer can well use the cooperation of his flock in the important defense housing task now his.

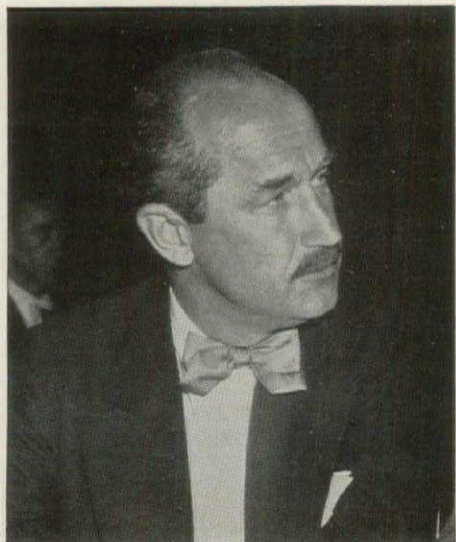
As Housing Coordinator on the Defense Advisory Commission, small (160 lbs., 5 ft., 7½ in.), gray-haired and balding Charles Forrest Palmer will not only be overseer of the defense housing activities of such potential Government helpers as FHA, FNMA, FSA, HOLC, RFC, USHA, etc. but will be the liaison man between Government and private housers. Undoubtedly, his early undertakings will include study of emergency housing accomplishments, mistakes and lessons of World War I (see p. 138) and formulation of a program for housing action (see p. 2).

▶Second man drafted last month from Building for Defense was **William Henry Harrison**, Vice President and Chief Engineer of the world's largest business concern—American Telephone and Telegraph Co. As director of the Commission's Construction Division, A. T. & T.'s Harrison will tackle the problems involved in industrial plant expansion, and put to test his reputation as a whiz at translating production requirements into square feet. He will have more than enough to keep him busy in the commercial and industrial building field, will not further burden himself with housing.

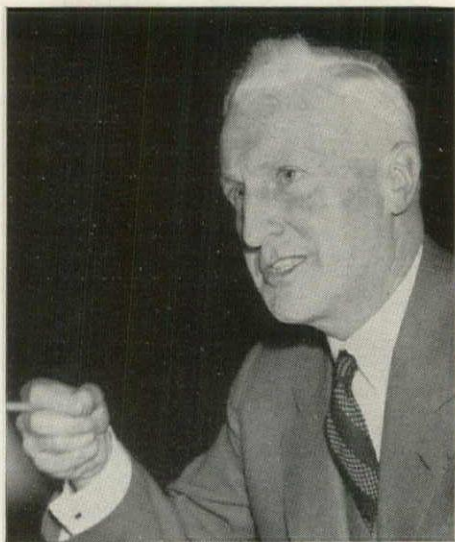
▶Also to Mr. Knudsen's side came famed and capable Subdivider **Jesse Clyde Nichols**, developer of Kansas City's 4,000-acre Country Club District and a Coolidge appointee to the National Capital and Park Commission, reappointed by Hoover and third-termed by Roosevelt. More important than his low-sounding title, "Director of the Miscellaneous Equipment Division," Nichols' broad lap will be a catchall for many small but vital problems which must be solved prior to and during the procurement of such major defense impedimenta as airplanes, battleships, tanks and guns. Another in the long list of defense coordinators, Nichols' appointment prompted many a Washington eyebrow to be lifted at the expanding paper organization, many a Washington wag to observe that the next man tagged should be a coordinator to coordinate the coordinators.

▶Gray hair sprouted on FHA's corporate head when Senator **James J. Davis** (R.-Pa.) introduced in Congress a bill to require FHA to assume payments due on an insured mortgage if the home owner is mustered into the armed services of the country either through Government order or his own volition. Unlikely of enactment, the proposal of "Puddler Jim" (one-time steel industry worker) would require a

(Continued on page 40)



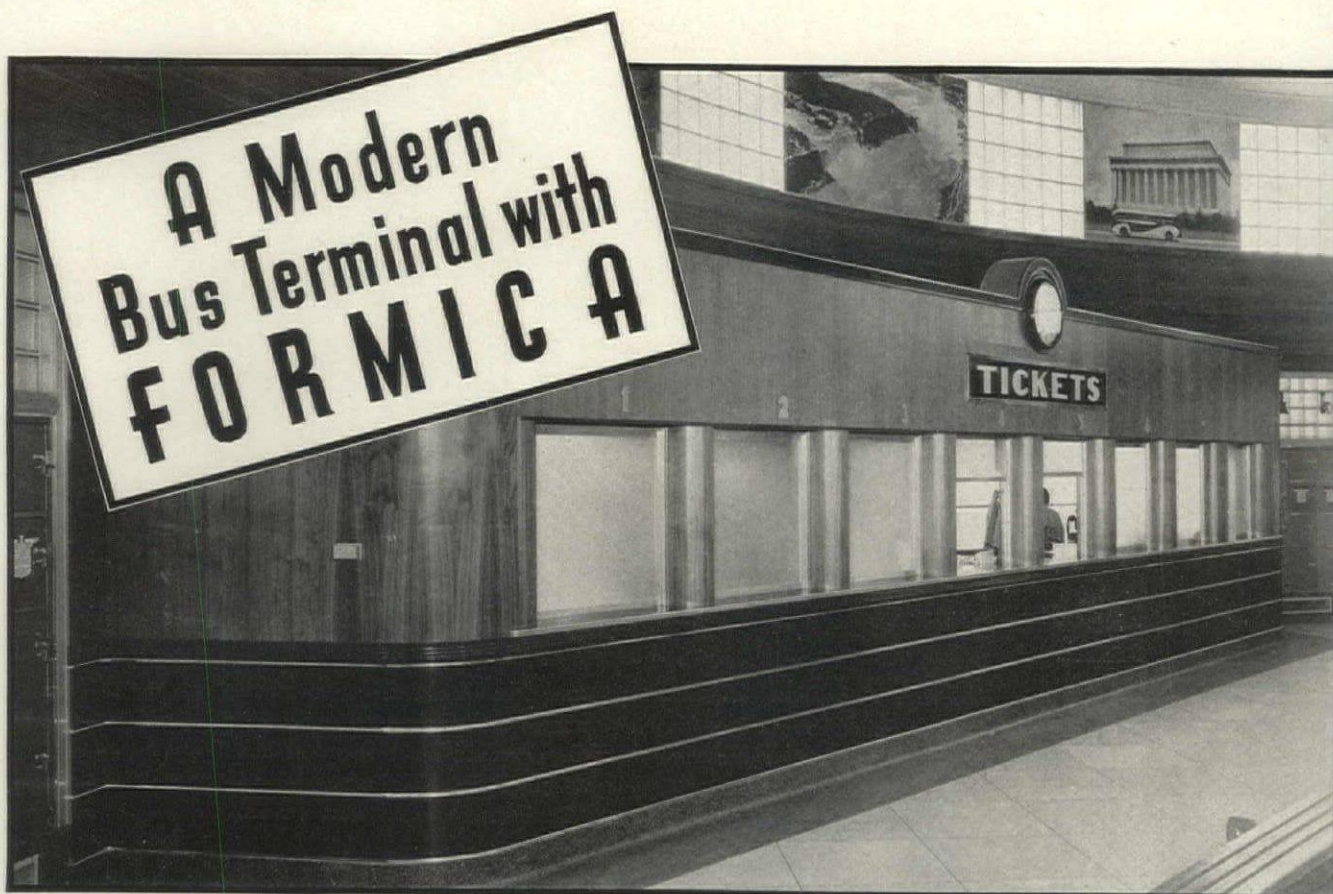
FOR DEFENSE: Charles F. Palmer *Wide World*



. . . William H. Harrison *Harris & Ewing*



. . . Jesse C. Nichols



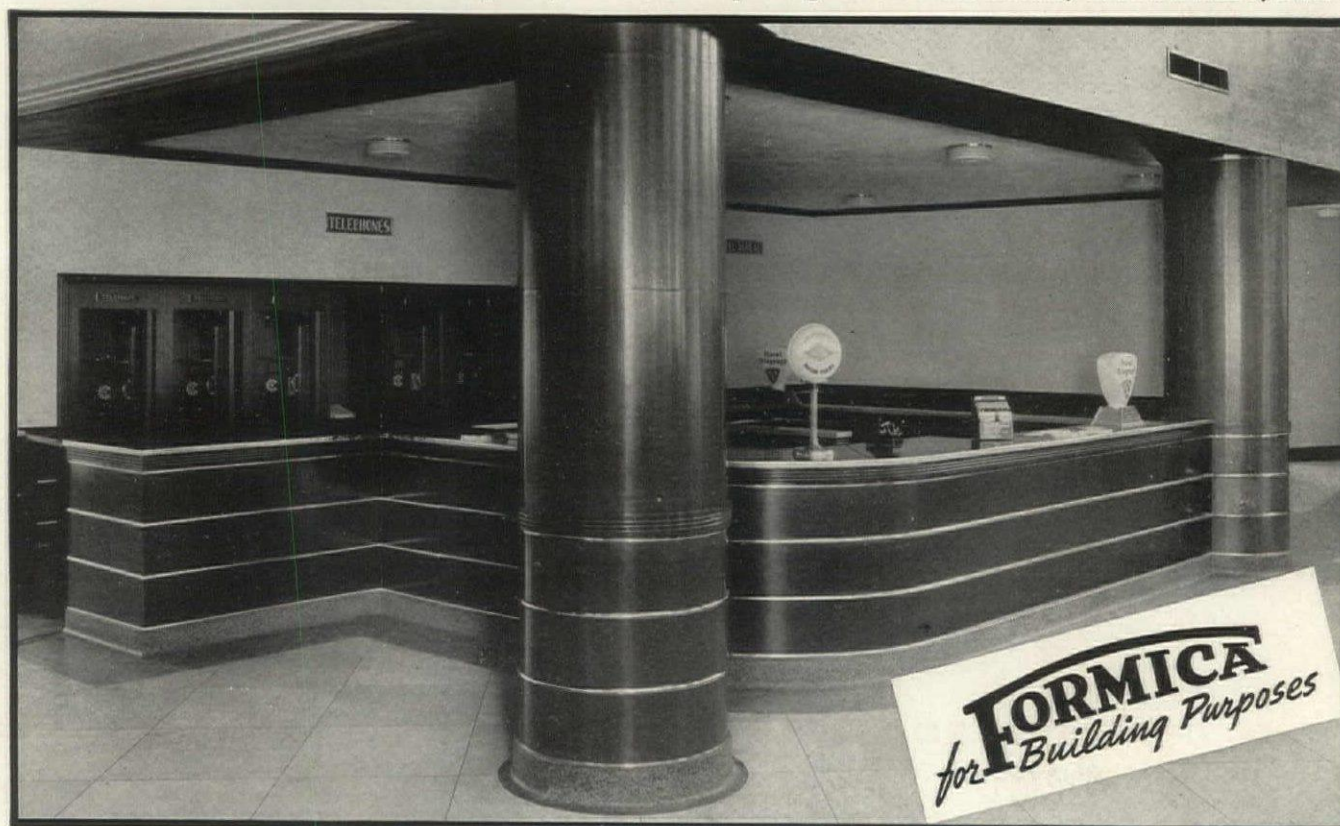
FORMICA column covering, wainscot and counter tops in the Greyhound Bus Terminal at Washington, D. C., contributed a great deal to neat, modern appearance of this unusually good-looking station, designed by Wischmeyer, Arrasmith & Ellswick of Louisville.

In the upper photo the lower part of the wain-

scot is brown Formica with metal trim, and in the lower photo the counter front is the same material, the column covering is dark red Formica, and the counter tops dark gray.

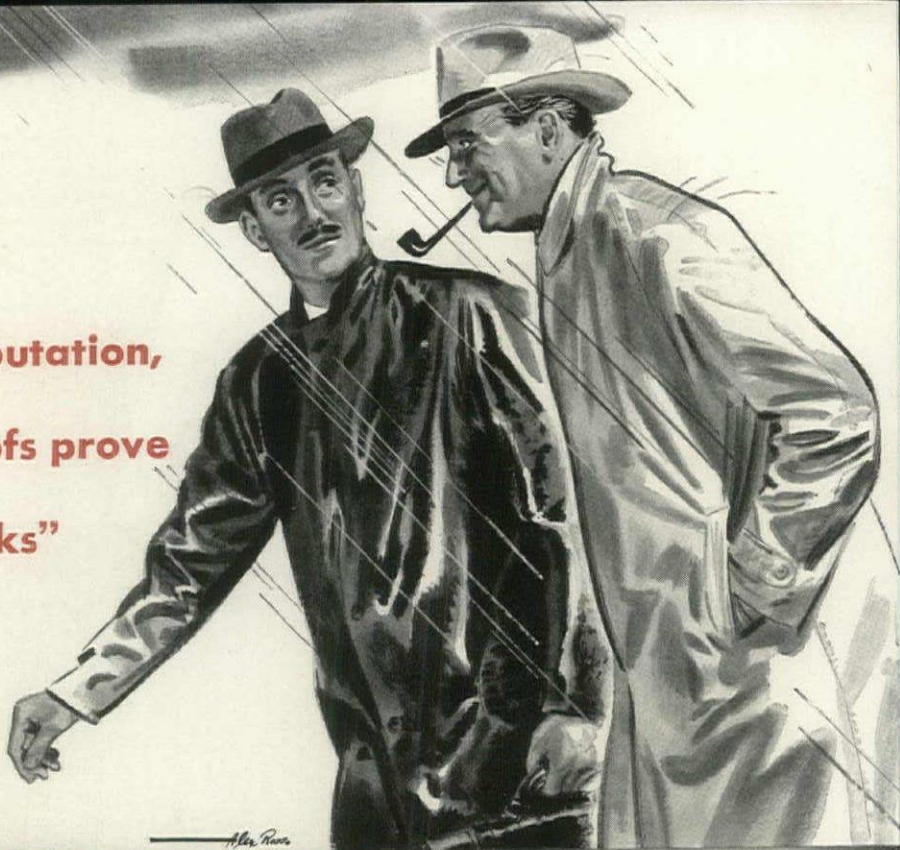
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**hurt an architect's reputation,
but Water-Cooled Roofs prove
there need be no leaks"**

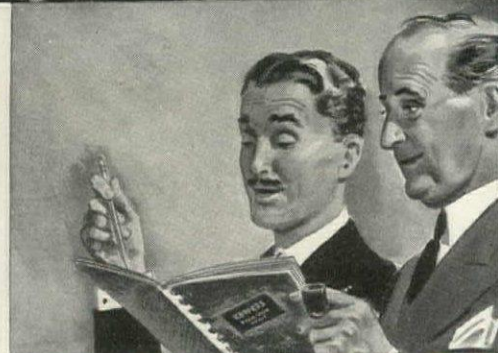


ARCHITECT: "The fellow who hit on the idea of cooling buildings in summer with a thin layer of water on the roofs did a great thing for human comfort."

ROOFER: "Yes. But he put roofings to a tough test."

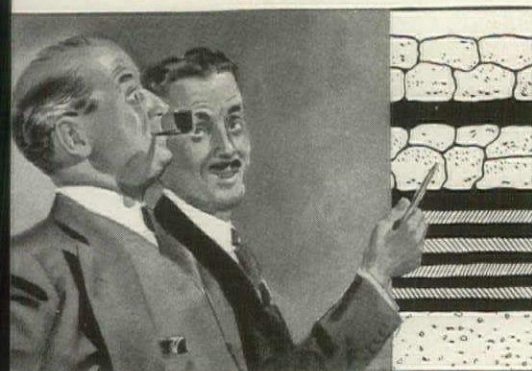


ARCHITECT: "I imagine so. Now that we put water on roofs, it seems funny to look back and see all the things we used to do to get water off roofs in a hurry."



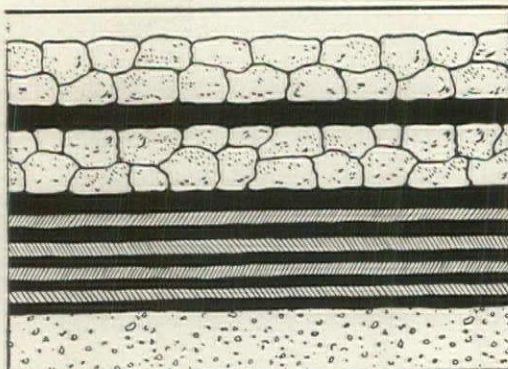
ROOFER: "Not so funny, if you've ever seen a roof that went to pieces in the low spots where water collected."

ARCHITECT: "How did you lick that on water-cooled roofs?"



ROOFER: "Most of the water-cooled roofs are built with coal tar pitch. Water never did hurt the tar roofs."

ARCHITECT: "How have they stood up now that they have water on them all the time?"



ROOFER: "Beautifully. The water-cooled roof has been the best thing that ever happened to the tar roofs. They've certainly proved that you needn't fear leaks in a coal tar pitch roof."

A roof's first job is to keep out water. But many a roof that couldn't keep out water has hurt architects' reputations. For nothing disturbs a building owner so much as a leak in a roof . . . or in a waterproofed foundation. For your own sake . . . as well as your clients' . . . specify coal tar roofings and waterproofings. (We hope you will make it Koppers Coal Tar Roofs and Koppers Coal Tar Waterproofing).

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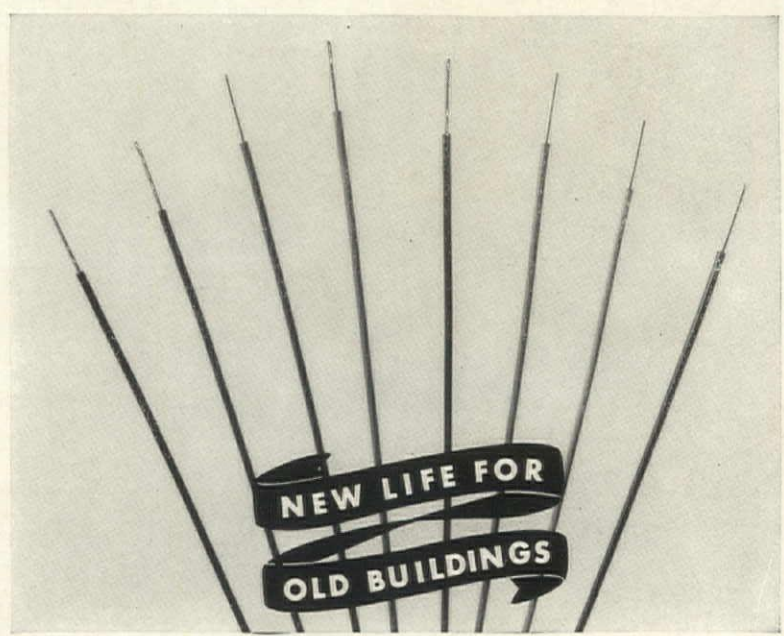
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Flamenol Building Wire may be obtained in a variety of bright, permanent colors which facilitate circuit identification. A glossy wax surface makes wire pulling easy.

For further information about Flamenol Building Wire, see the nearest G-E Merchandise Distributor or mail the coupon.

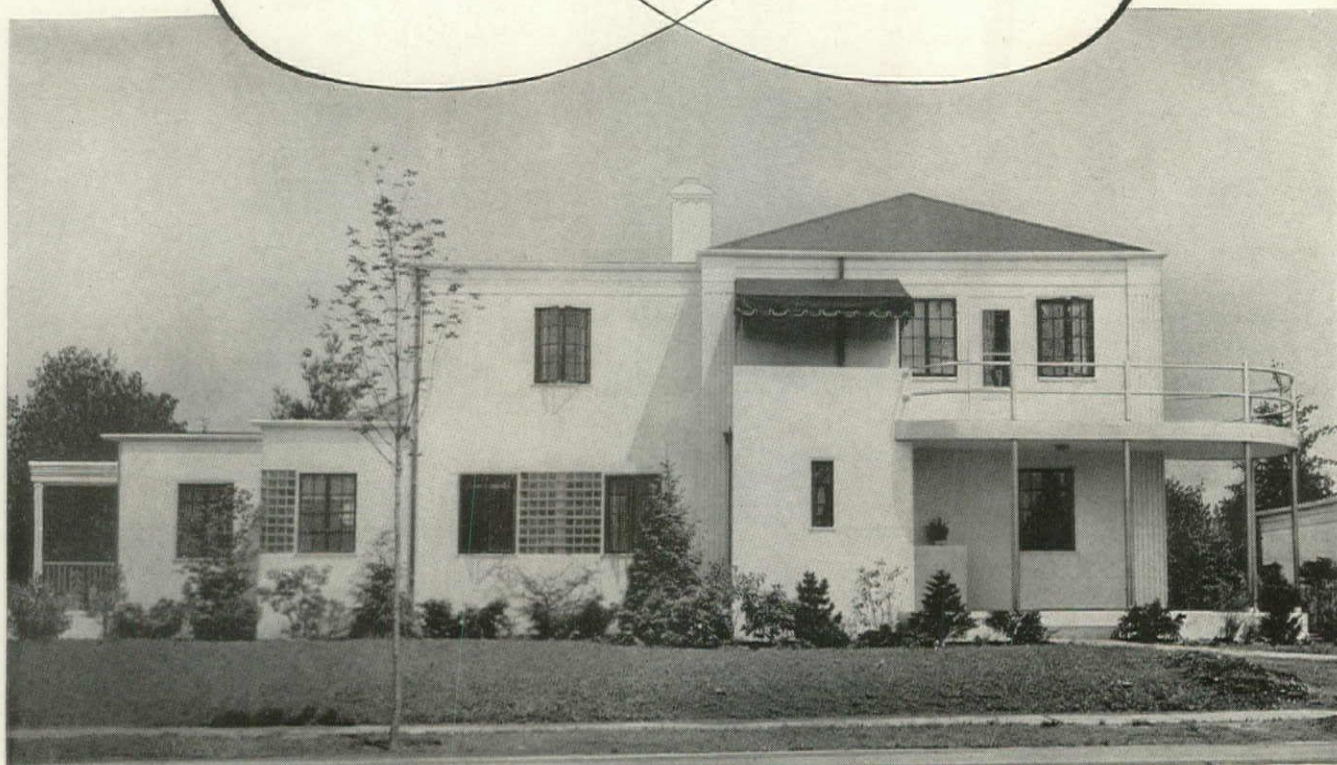


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Haskelite Plank is available in beautifully grained selected hard elm, in 5 $\frac{1}{8}$ and 8 $\frac{1}{2}$ inch random widths and 6 and 8 foot lengths, with or without plug inserts. It is regularly delivered factory sanded and finished in medium or dark.

Haskelite is also obtainable in 8 $\frac{1}{2}$ by 8 $\frac{1}{2}$ inch blocks.

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Lay WOOD Floors Like
These On Concrete or
Wood Subfloors



Because of its practical inertness to moisture, Haskelite may be specified with complete confidence for basement game rooms, and other floors in contact with or below the grade, as well as bedrooms, living rooms, etc.

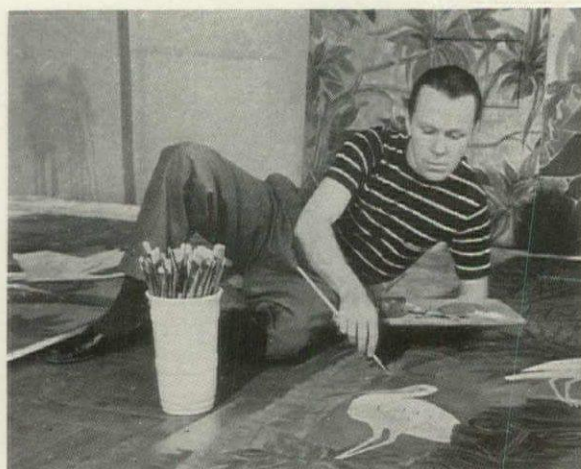
HASKELITE *Compound Lumber* **FLOORING**

FORUM OF EVENTS

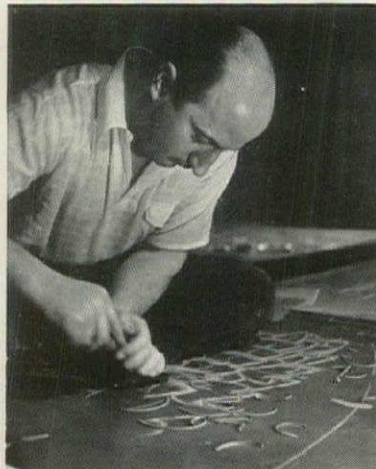


ART ON THE AMERICA

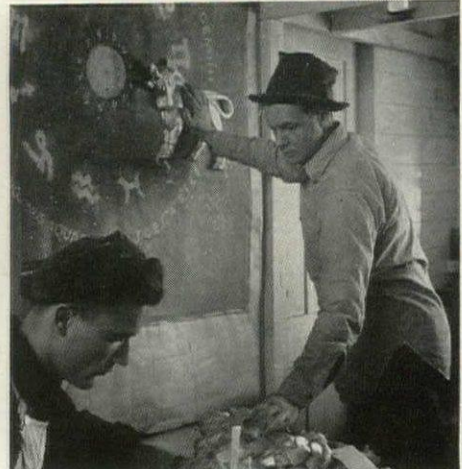
Largest U. S. Liner's 23 public rooms are being decorated by artists selected in competition. Eggers & Higgins, architects; Smyth, Urquhart & Marchwald, interior decorators. At right, Hildreth Meière working on the tourist dining room; André Durencau, the circular ballroom.



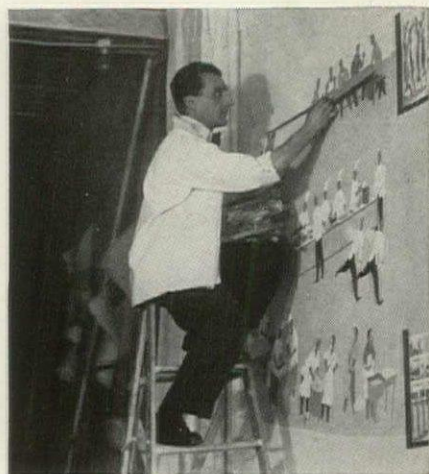
Charles Baskerville is doing a gesso panel of white ibises in the Everglades for the cabin class lounge.



Pierre Bourdelle's contribution is in carved and inlaid linoleum.



Austin Purves uses the zodiac in aluminum relief on the main stairs.



Boris Alajalov highlights life around the clock on a big liner for the cocktail lounge.



For the library, the long evolution of sailing vessels by Griffith Baily Coale.



Trade routes of the world is Barry Faulkner's smoking room theme.

(Forum of Events continued on page 12)

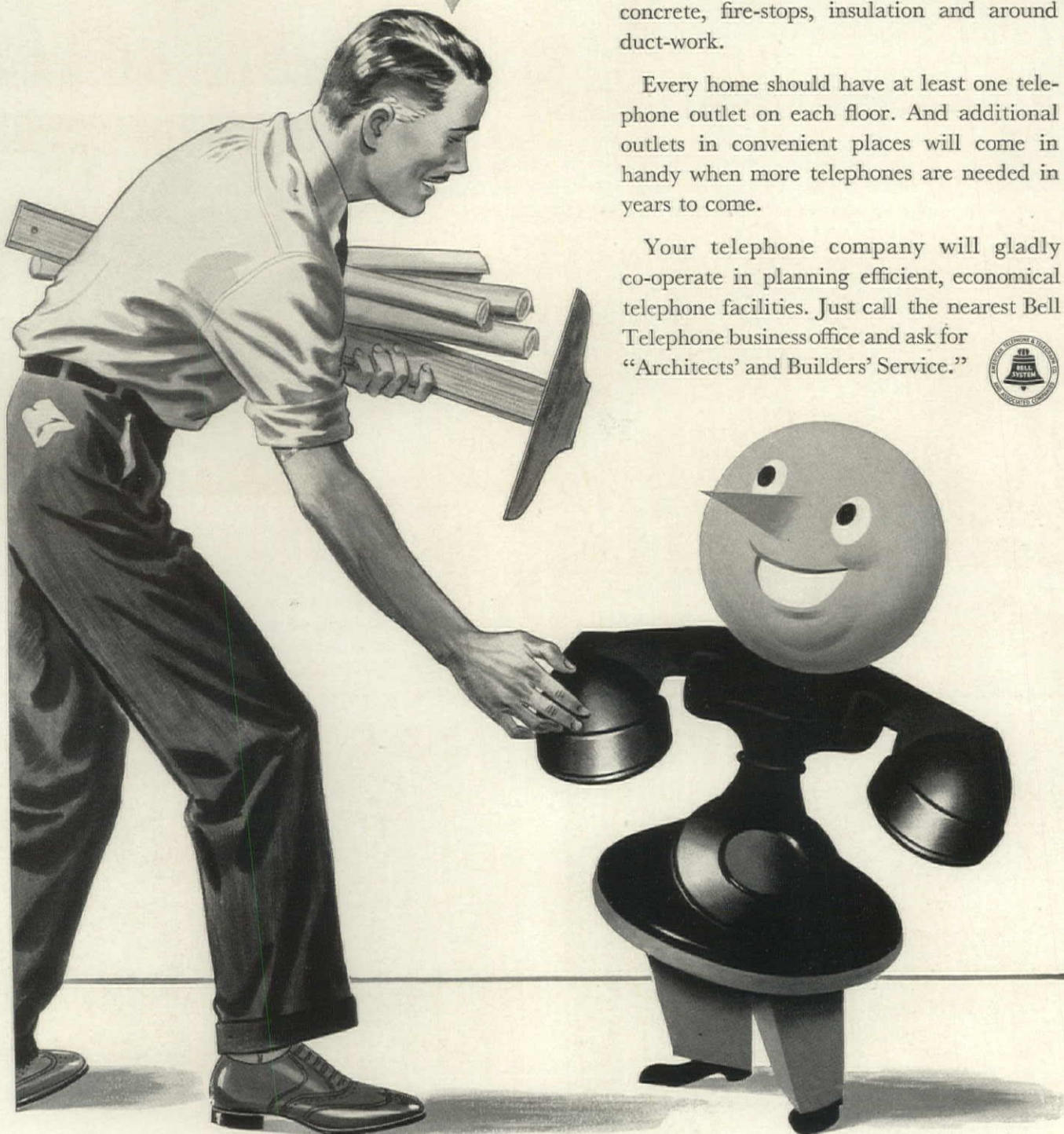
**Glad we
got together!**

YOU'LL be glad you included telephone facilities in your plans. First, because you know that lovely walls and woodwork will look the way you visualize them—unmarred by exposed wiring. Second, because your clients will appreciate the step-saving convenience of well-located telephone outlets.

While the house is under construction, telephone outlets, connected by conduit, raceways or other built-in arrangements, can be installed very inexpensively. Then there is a clear, permanent path for wires through concrete, fire-stops, insulation and around duct-work.

Every home should have at least one telephone outlet on each floor. And additional outlets in convenient places will come in handy when more telephones are needed in years to come.

Your telephone company will gladly co-operate in planning efficient, economical telephone facilities. Just call the nearest Bell Telephone business office and ask for "Architects' and Builders' Service."



FORUM OF EVENTS

(Continued from page 10)



Eliel Saarinen and Robert Swanson designed the furniture shown above and the combination server and bar, in collaboration with R. Ratili, designer for the Johnson-Handly-Johnson Co. of Grand Rapids. Unit sections make for flexible arrangements. Dining table extends with the addition of the circular border.



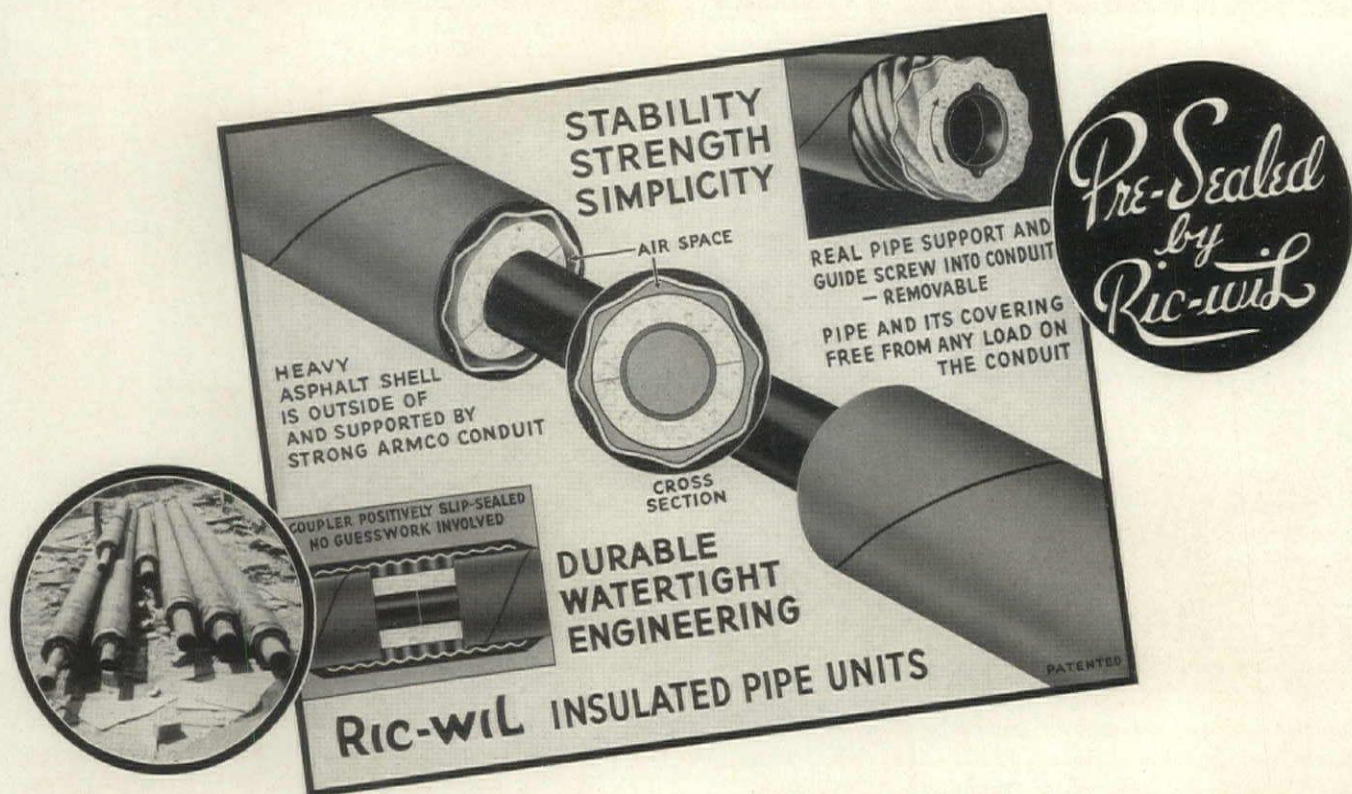
At left, an experiment by Conant Ball in designing on the basis of research. The magazine *Mademoiselle* tabulated for him the preferences of apartment dwellers, particularly the space limitations imposed upon newly-weds and bachelors.



In an effort to recapture something of the feeling which made the Jacobean furniture popular, Herman de Vries has designed for the Jamestown Lounge Co. these lighter forms for execution in oak.

(Forum of Events continued on page 14)





Save Time and Money with Precision Pre-Fabricated

RIC-WIL

INSULATED PIPE UNITS

for Underground or Overhead Steam Lines

Big bombers, transport planes—the load and impact from these is safely supported underground by Ric-wil Insulated Pipe Units, even in shallow trenches. This explains such typical recent orders as that for many thousands of feet for a large naval air base. Also used for government housing projects, and for numerous utilities and private industries.

Ric-wil Units fit together with engineering precision—save time, labor, and lost motion of old-style methods *on the job*. Field work cut to a minimum—a matter of relatively few field joints—and a better job in the end. Made in a modern factory under controlled conditions, pre-assembled to give you a *tailor-made* job.

With Ric-wil Pre-sealed Units, the engineer or

architect has only *one thing* to specify—the contractor only *one thing* to buy—the owner gets guaranteed speed of installation and fully satisfactory service.

Armco Iron Conduit is the foundation supporting heavy asphalt shell of any desired thickness—a permanent housing for the insulated pipe which is surrounded with a protective air-space. Ample structural strength, lightweight and watertight. Furnished in any lengths, with any kind of pipe or insulation, for underground or overhead steam lines. *Welded* couplings used if preferred. A complete, self-contained, *streamlined* system—MADE POSSIBLE ONLY BY MODERN ENGINEERING. Write for latest Bulletin.

THE RIC-WIL Co., Cleveland, O.

Established 1910

REGISTERED IN U. S. PATENT OFFICE
Ric-wil

Agents in Principal Cities

also Tile and Cast Iron Systems for Underground Steam Lines

FORUM OF EVENTS

(Continued from page 12)

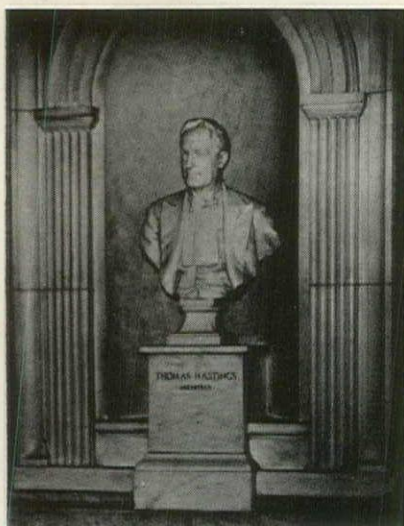
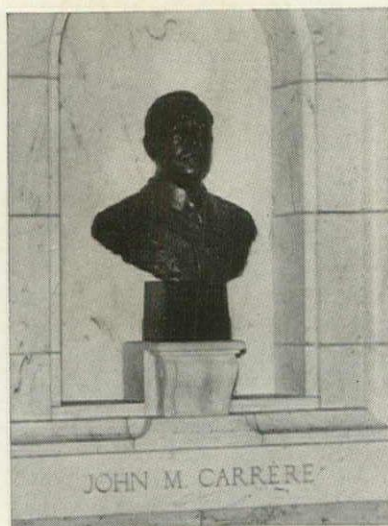


Sunami

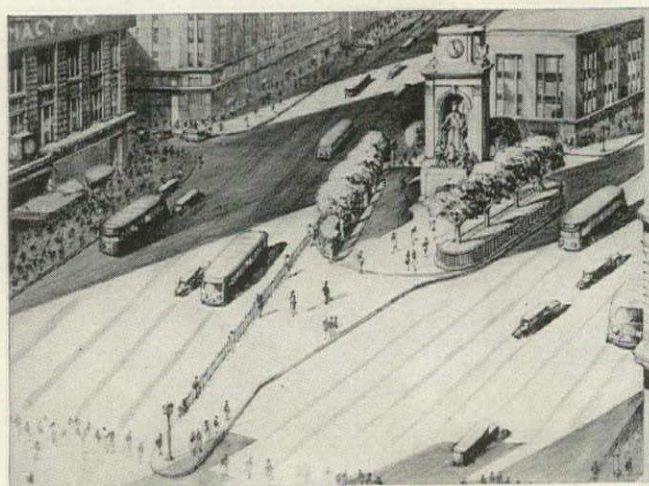
Aalto Furniture, for the first time, is manufactured in the U. S. Artek-Pascoe, Inc., has been organized by the Aaltos and Clifford N. Pascoe to show it and other modern furnishings in New York.



Designer-Craftsmen, who believe that art is born of the material rather than of lines on paper, have a good Summer Exhibition at 64 East 55th St., New York, covering metals, glass, ceramics, fabrics, wood.



Carrère & Hastings. Five years ago friends of Thomas Hastings placed his marble portrait by MacMonnies in the lobby of the New York Public Library. This month he is joined by his partner, of whom Jo Davidson made the bronze bust. Theodore Blake, formerly associated with the famous firm, designed the settings for both memorials, each on a landing of the main stairway and on opposite sides of the main entrance.



Herald Square. With the final passing of the old Herald Building, its statue of Minerva, its owls, and the two iron bell ringers will occupy a new setting, by Aymar Embury II, in the Square.



N.Y.U. Sweep. Beaux-Arts' Otto Teegen awards prizes in the Western Electric Transmitter Competition: 1st to Louis Shulman (center); 2nd to Roger W. Flood, (right); 3rd to Percy C. Ifill (left)—all of N.Y.U.

(Forum of Events continued on page 48)

Red Cedar Shingles

GIVE FIVE POINT SATISFACTION

- 1 **STRENGTH**
- 2 **INSULATION**
- 3 **LONG LIFE**
- 4 **LOW COST**
- 5 **BEAUTY**

Write Red Cedar Shingle Bureau,
Seattle, U. S. A., or Vancouver,
B. C., for copy of the Certigrade
Handbook.



RED CEDAR SHINGLES give the architect decided advantages due primarily to certain natural good qualities in the cedar wood itself: Strength combined with light weight and durability. Resistance to storm, hail and high wind. No rust or clatter. Low expansion and contraction from changes in moisture content. Natural and decided insulation. Correct application gives three laps of cedar wood, providing triple protection from summer heat and winter cold. Pleasing appearance with variety in roof texture, attractive shadow lines, and when stained or painted the soft colors do not obtrude.

FOR GUARANTEED GRADES AND QUALITY, SPECIFY—

CERTIGRADE

Red Cedar Shingles

Certigrades pass official inspection for grade and quality.



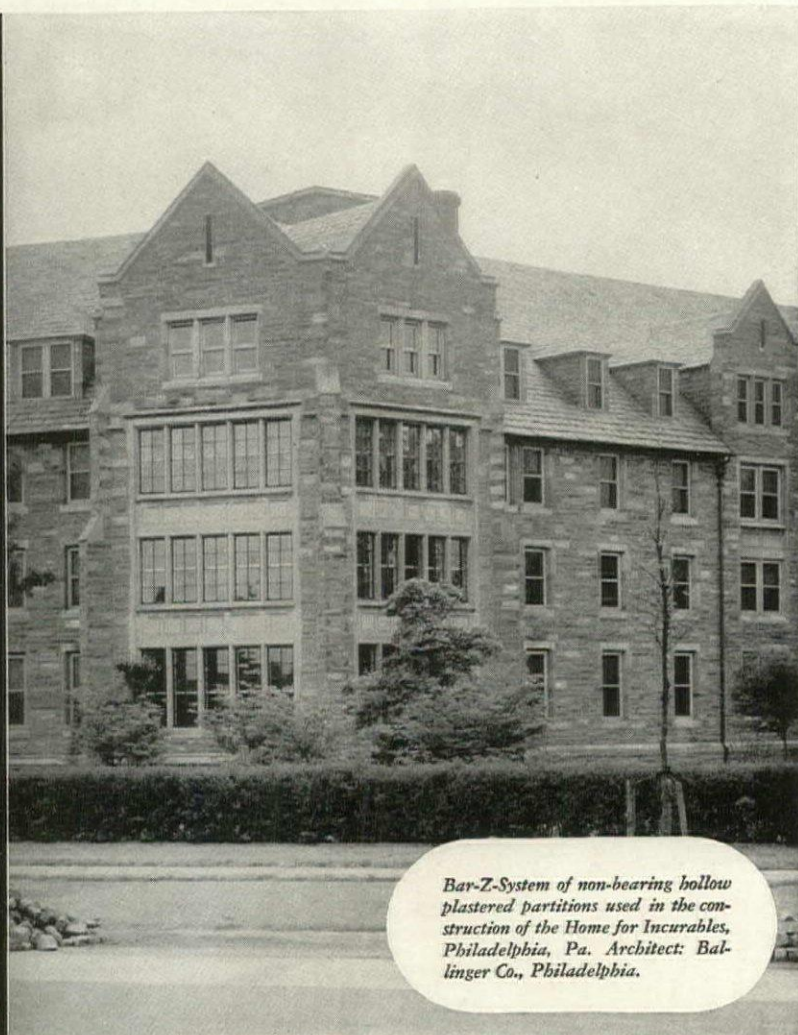
Sold only by established lumber dealers.





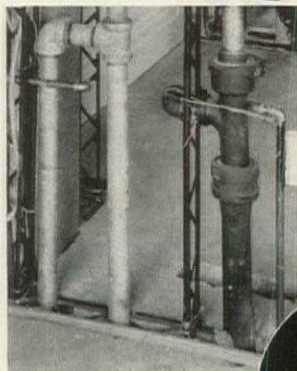
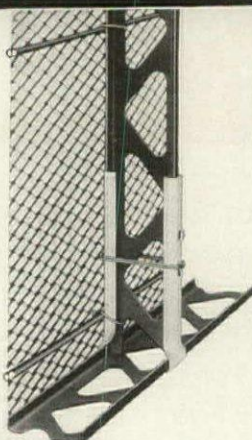
BAR-Z-SYSTEM

*Provides
Fire Safety
Plus
Economies in
Construction*



Bar-Z-System of non-bearing hollow plastered partitions used in the construction of the Home for Incurables, Philadelphia, Pa. Architect: Balinger Co., Philadelphia.

•
Of few parts and light in weight, Bar-Z-Partitions simplify erection. Uniform plaster coatings are easy to obtain with Bar-X-Lath.
•



•
Note how Bar-Z-Partitions permit the placing of piping and electrical wiring conduits prior to plastering.
•

CONSISTING of Bar-Z-Studs and Bar-X-Lath, the Bar-Z-System of hollow plastered partitions has no elements to burn. Government tests prove that Bar-Z-Partitions, plastered with $\frac{3}{4}$ " gypsum plaster, have a one hour fire rating. In addition to this vital protection, this construction offers sound deadening properties which are of great importance in homes for invalids and the aged, institutions and hospitals. Specify the Bar-Z-System and insure lasting protection for the beauty of your plastered interiors. Informative data upon request.

*"The Musical Steelmakers"—It's Wheeling Steel
—return to the air October 6, 1940—Mutual
Broadcasting System—from Coast to Coast*

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THE ARCHITECTURAL FORUM

design decade
OCTOBER

design decade

Take any unsung hero of the Gallup Poll. He knows that his fountain pen is a handsome object; his critical eye admires the sleek perfection of the DC-4 or a new suspension bridge; he won't look under the hood of a car whose lines lack elegance no matter what the salesman says—and his wife wouldn't let him if he wanted to. Try to sell him a front of Doric columns for his building and he will shoo the architect out of his office. At home the ideas of cleanliness and utility have become associated with good design: witness the refrigerators, ranges, vacuum cleaners, ice picks, percolators, and the no longer lowly orange squeezers. And just as architecture and product design have been reduced to simpler terms, so have the American man and woman stripped down to lighter and easier clothes. Sound, contemporary design is putting its mark on every field.

All this—and a lot more—happened in the last decade. On a constantly widening horizon the layman has learned to recognize a good thing when he sees it. He is even learning to understand that the front of a radio cabinet need not look like the rear end of Chartres.

There have been significant periods in U. S. design before. The great years of industrial expansion after the Civil War swept aside an age-old handicraft tradition to begin an era of bad taste without parallel in history. The Chicago Fair of 1893 inaugurated a revival of the Classic which influenced every building of importance for a quarter of a century. Its effects, however, were limited chiefly to architecture. But it remained for the past ten years to develop the machine esthetic whose foundations were laid back in the 1870's.

Today the manufacturer and merchant must gauge a rapidly-maturing public taste or go out of business. This is the first time it has been possible to chart and evaluate those

THE FORUM's recognition is extremely significant.
Henry Dreyfuss, Designer

No better medium through which this work could be done than THE FORUM.
John Root, Architect,
Holabird & Root

This issue will be the design passport of this decade.
Marguerita Mergentime, Designer

This work in defining design cannot be overestimated . . .
Norman Bel Geddes, Designer

You, ARCHITECTURAL FORUM, are turning on the lights so we can see. . . .
Walter Dorwin Teague, Designer



1930
31
32
33
34
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36
37
38
39
1940

design decade

an educational program
to record the accomplishments in

**architecture
large scale planning
product design
and related fields**

during the decade just closed.

This program is inaugurated and sponsored by

The Architectural Forum

which will devote to it an enlarged
october number.

To carry this story to the public THE FORUM is joined by a number of major MUSEUMS each of which will present a **design decade** EXHIBIT this fall, by leading STORES which will devote windows and special merchandising features to **design decade** during OCTOBER and by INDUSTRY which will use this occasion to feature new products of significant design.

Architecture was the first art in which America declared its independence of stifling tradition. And architecture is one of the great forces liberating American industrial design. THE FORUM's recognition of the mutual interest of the two fields is extremely significant.

Henry Dreyfuss, Designer

The proposed "DESIGN DECADE" issue of THE ARCHITECTURAL FORUM should prove exceedingly valuable in drawing attention to the fact that the past decade has really brought forth a great many real accomplishments in design. The recording of these accomplishments will be valuable in itself as a reference and will undoubtedly give stimulus to greater effort toward meeting the greater demands and opportunities of the future. It is appropriate that THE FORUM, which has taken such a leading part in developing and recognizing thinking in architecture, should sponsor such an issue.

Timothy L. Pflueger, Architect

It is particularly fitting right now for all of us to look carefully at our American Expression in Design. We have a rich design heritage stemming from American sources plus new material from our own age. Some of our design is regional as is our cooking, but when our expression is assembled it is indelibly stamped—U. S. A. The gathering of all the forces of U. S. Design in this decade is of great benefit and will no doubt reverberate throughout the country. This significant issue of THE ARCHITECTURAL FORUM will be the design passport of this decade.

Marguerita Mergentime, Designer

The work being done by THE FORUM in defining design and giving an accurate history of the growth of American design cannot be over-estimated. By such clarification, the purposes of design in its relation to the industrial as well as the esthetic side of American Life can be understood. Too many view design as something applied on a useful object as prettification. Good design has always been an integral part of the subject. And the time comes when the consumer and the manufacturer are united by the knowledge that design is something essential to our way of life, just as bathrooms, good motor cars and an adequate standard of living. May THE FORUM be blessed for its good work.

Norman Bel Geddes, Designer

The greatest advance this decade had brought is the integration of design, especially with all other creative activities.

For several generations designers had sat, each in his ivory tower, each intent on his own specialty of designing, each oblivious to what went on outside his own cubicle.

In the past decade the ivory towers have been tumbling, the cubicles have acquired at least a plate glass wall or two. We are learning that no man can work without regard to what all his fellow workers are doing. We see that we are not building big or little gadgets—we are building an environment. And we designers have to work also with the scientists, engineers, technologists, sociologists and economists who have part in this reconstruction. Can we get enough of this new world strongly and fairly built in time?

When night falls on a rush job, flood lights are turned on. I think you are doing that, ARCHITECTURAL FORUM, turning on the lights so we can see as much of the job as possible, what little we've done, how much there is still to do. I think your lights will show a plan emerging, at least; and that will be heartening.

Walter Dorwin Teague, Designer

Feel that need for such an affirmative statement of advance in U. S. design in the decade just closed is great. And know of no better group of men to do it than you of THE ARCHITECTURAL FORUM.

Wallace K. Harrison, Architect

The fact is that in the past ten years America's art digestive processes have immensely developed. . . . There has been a great advance in making art an inherent part of our lives instead of just an ornament. Of course, we could not make it if we did not feel it. Art has ceased to be eclectic. It has become something we have use for. Desiring it and using it, we look below the surface. And wherever the artist or the craftsman has responded to America's deeper sense of need for art, there greater warmth and greater reality have entered into his production.

**Edward Bruce, Chief of Fine Arts Sections,
Federal Works Agency.**

I am gratified to learn about THE FORUM's initiative in presenting what ten years of United States democratic civilization has contributed to graceful living in our country and the rest of the world. This is of special significance at a moment when the struggle for markets of the world is to become a matter of resourcefulness. By its timeliness, THE FORUM's issue is likely to stimulate fresh design impulse and to give

not a stark, completely intellectualized version. There is evidence to suggest that the pendulum swung too far. But there is also evidence that a thoroughly indigenous design philosophy is reasserting itself and is proving as acceptable to the banker as to the butcher.

These and many other questions inevitably emerge in **design decade**. Most of the answers are to be found in developments of the past ten years.

To bring the 1930's into focus, **design decade** will present its background—the native design traditions in America, the effect of foreign influence, the special characteristics of mass production as related to design. It will investigate the fads and sift out those developments of basic importance for the future. And most significant, it will show all contemporary fields of design from architecture to ash trays, from clothes to cars, not as isolated activities, but as integral parts of a great contemporary movement. And with the cooperation of architects and designers, it will attempt to project these trends into the future.

The scope of **design decade** goes far beyond professional boundaries. For the architect and his client it will provide a means of discovering the best and newest in buildings. For the designer and his public it will serve to differentiate between good and mediocre design. For the manufacturer and the distributor it means an opportunity to compare trends in all fields and to chart more accurately a course for the immediate future. To reach this nationwide audience, the present program has been planned.

... will add further to the significant work THE FORUM has done in the cause of design.
Albert Kahn, Architect

... certain the October DESIGN DECADE issue will be an historic issue.
Alfred Auerbach, Editor, RETAILING

We in the West eagerly anticipate THE FORUM's October Design issue.
Dorothy W. Liebes, Designer

... much interested in the DESIGN DECADE.
Irwin D. Wolf, Exec. Vice President, Kaufmann's Dept. Stores, Inc.

It is fitting that THE FORUM should sponsor such an issue.
Timothy L. Pflueger, Architect



complacent manufacturers a realistic sense of things to come. Once more THE FORUM is showing keen understanding of the premises on which will be built the new world we are about to enter. On behalf of my organization and myself, permit me to congratulate you and to offer our total cooperation.

Raymond Loewy, Designer

I congratulate THE ARCHITECTURAL FORUM on its splendid intention of reviewing United States Architecture and Planning of the last decade. Comparing achievements with 1928, when I first visited the States, I have made two main observations. First, a new spirit in architecture and planning becomes clearly apparent, showing an increasing sense for integration with contemporary life. Second, this new strong movement is growing organically which is significant for the cultural advance under a democratic regime. For, its achievements are not the result of a one-sided gospel of efficiency through compulsion, but the result of independent growth, rooted in individual insight and experience. As soon as the American people have grasped the full meaning of such a development it will strive to unite the individual efforts toward creating a contemporary architecture of a scope and resourcefulness unheard of before. THE FORUM has been invaluable as an instrument to stir up public interest and in helping to set a standard for the future.

Walter Gropius, Architect

Let me commend you on the constructive attitude shown by THE ARCHITECTURAL FORUM in devoting your October issue to "DESIGN DECADE." THE FORUM has always been one of the significant forces in encouraging good architecture and good design in America, and it is most heartening that you should commemorate the accomplishments of the last decade by this issue. May I congratulate you on what you have done in the past, and what you are doing to help American design.

**Walter Hoving, President, Lord & Taylor,
President, Fifth Avenue Association.**

We think very highly of your program of treating "U. S. design in the decade" in a coming number of THE ARCHITECTURAL FORUM. Your publication has always been a champion of progress in architecture and the allied fields. With this new material, you will add further to the significant work you have done in the cause of design. More power to THE ARCHITECTURAL FORUM.

Albert Kahn, Architect.

The past ten years have been years of enormous activity and growth for the industrial design profession in this country. They have witnessed, among other things, a gradual divorce-ment from European ties and the emergence of an American idiom. The redesigning of America has penetrated innumerable fields, has affected everyone's life. I am certain that the October "DESIGN DECADE" issue of THE ARCHITECTURAL FORUM will be an historic issue. I am certain, too, that despite the justifiable pride we may have in the performance it will record, the past era emerges really as one in which we only cleared the ground and removed the stubble for the decade that lies ahead. We are just getting into our stride. The next period will be one of still greater, richer, more courageous expression.

Alfred Auerbach, Editor, RETAILING

Large scale architectural development in industrial and domestic design has been fostered and developed under our democratic form of government in a way that is utterly impossible under an autarchic system. THE ARCHITECTURAL FORUM, being a free and contemporaneous publication, has given currency and widest publicity to original and creative ideas and moreover has coordinated the work of distinctive designers in all fields and has been a predominating influence in the remarkable progress in American design. We in the West eagerly anticipate your October Design issue.

Dorothy W. Liebes, Designer

We are very much interested in your forthcoming issue of THE ARCHITECTURAL FORUM presenting "DESIGN DECADE." Please count on us for any help we may give you to make this issue as significant as many of your others have been.

Irwin D. Wolf, Executive Vice President, Kaufmann's Department Stores, Inc.

Our democratic system, in the face of much opposition, advances with great promise as the forms of life change. Our architecture—industrial, academic, residential—has anticipated the kind of world that is to be. Freedom from restraint adds a joyous note to our homes, automobiles, furniture and utilities; all indicative of the larger life into which we are growing. A special number devoted to this extraordinary growth of the past decade, with supporting exhibitions, should bring these facts home to the general public. There is no better medium through which this enlightening work could be done than THE FORUM which is so alive to the changing order of things.

John Root, Architect.

trends which have revolutionized design from skyscrapers to salt-cellar. This is the story of **design decade**

A manufacturer changes the styling of his street sweeper, and the hardboiled city engineers fall all over themselves to buy it. Why? . . .

A designer does over a line of commercial scales and it is found in the process that the works can be made simpler. What is the connection between styling and mechanical design? . . .

Comes the airplane—and presently radios, book-ends and pencil sharpeners are streamlined. Tricks or trend? . . .

Since the first candle, the design of lighting fixtures has been based on a point source. What does the fluorescent tube do to offices, lamps, living rooms? . . .

Each year the automobile approaches more closely the tear-drop form. . . .

Each year more ornament is peeled off the gadgets. . . .

Each year more color goes into objects with the growing use of plastics. Are we heading for a textureless, uniform simplicity relieved only by color?

What happens to the handicrafts?

Is there room for variety within the limits of standardization for large-scale production—and if so, how much? . . .

The trend in architecture is modern. What kind of modern? In this country probably

feel that need
such an affirmative
ement is great.
Place K. Harrison,
hitect

... making art an inherent
part of our lives ...

Edward Bruce, *Chief of
Fine Arts Sections, F. W. A.*

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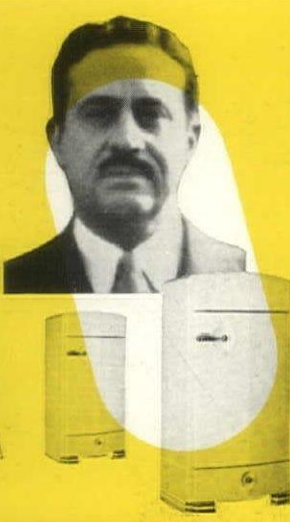
Raymond Loewy, *Designer*

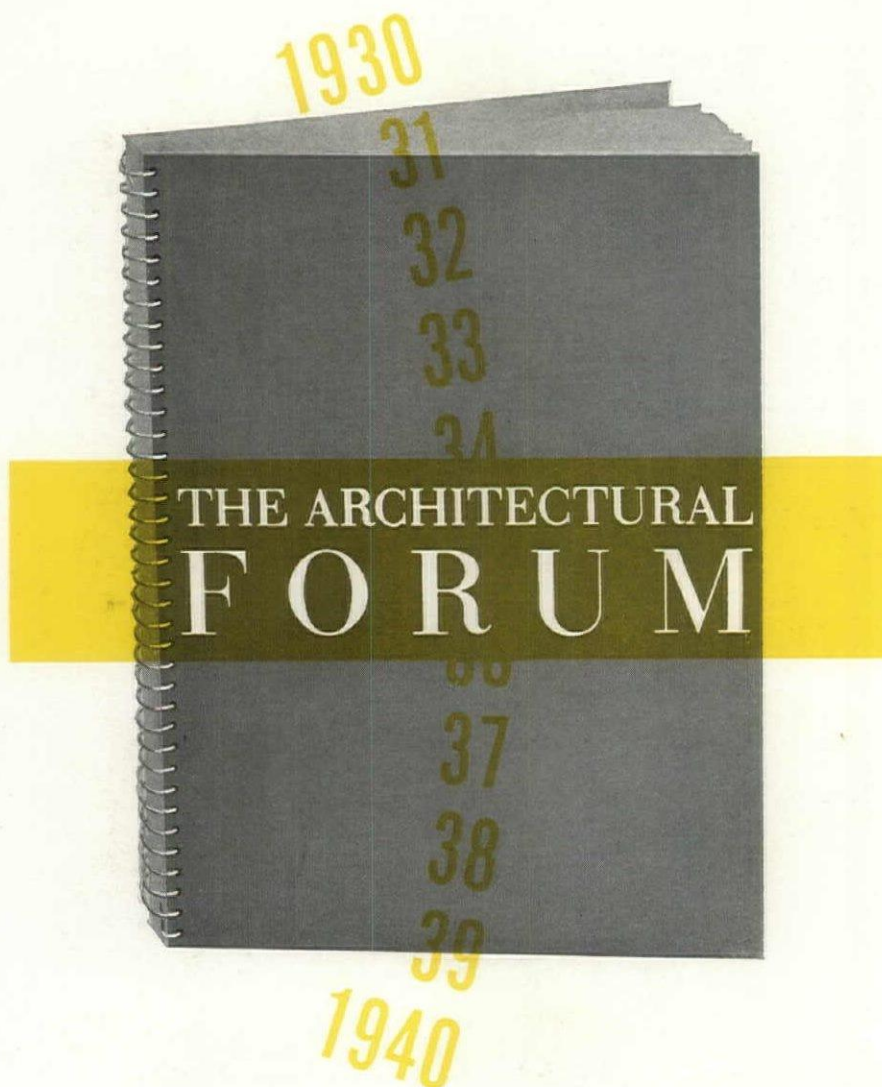
THE FORUM has been
invaluable in helping to set
a standard for the future.

Walter Gropius, *Architect*

May I congratulate you
on what you are doing to help
American design.

Walter Hoving, *President,
Lord & Taylor*





Like many another U. S. business enterprise, THE ARCHITECTURAL FORUM has seen . . . and helped bring about . . . sweeping changes in the past ten years. While house design still revolved around such trivialities as whether to use a Georgian or a Tudor doorway, FORUM editors spoke for a rational approach, anticipating and furthering a trend that has since become firmly established. When public officials faced the problem of large scale, modern planning of housing, highways, bridges, recreational centers and other improvements, THE FORUM helped to clarify and integrate support for them. When designers were still struggling to convince industry that the public would buy clean, simple design, THE FORUM backed this view which today finds national acceptance. These are among the significant accomplishments of **design decade**.

To tell this story, FORUM editors find that a wide-angle lens is needed . . . a story involving architects, city planners, engineers, industrial designers, manufacturers, stores, chemists, decorators and the many others who have made the 1930's the most significant and exciting years in U. S. design history.

THE ARCHITECTURAL
FORUM

Published by TIME INC. • Time & Life Building • Rockefeller Center • New York

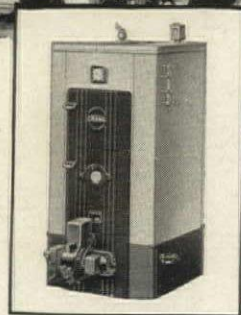
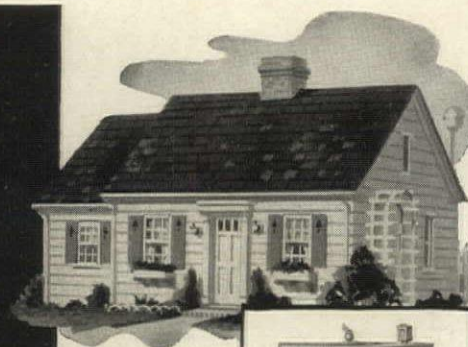
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LOW cost cottage or tycoon's mansion—modest bungalow or two-storied residence—no matter what type of house you design there is a Crane heating system exactly suited to that plan.

The Crane line of heating equipment includes boilers designed for coal—for oil—for gas—boiler burner units in various sizes—various capacities of furnaces for any fuel as well as stokers, oil burners, radiators, convectors, winter air conditioners, controls, water specialties, water heaters, valves and fittings.

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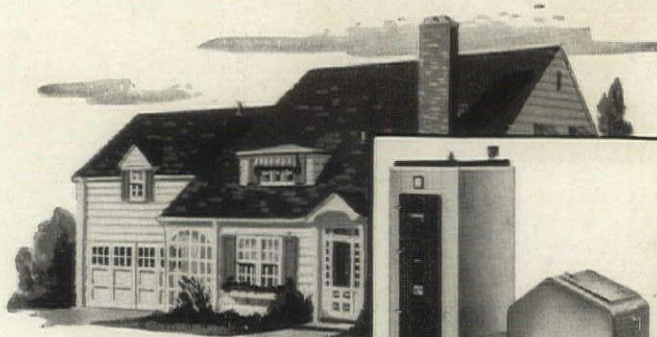
Because every item carries the name Crane, your clients are assured of a completely unified system—all parts working together for greatest efficiency.



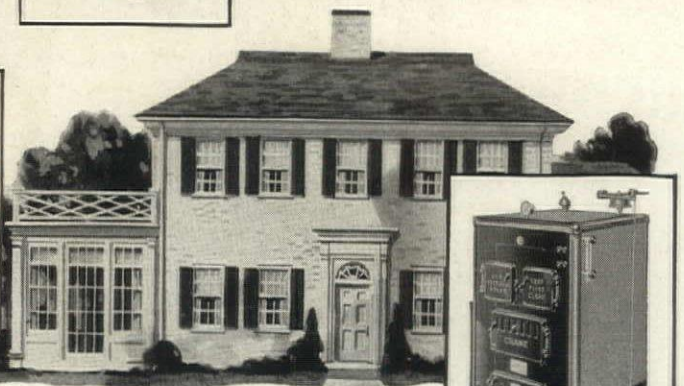
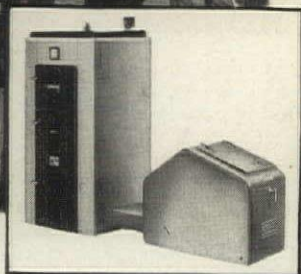
The Conservoil Boiler Burner Unit is a low-cost oil burning heating unit for the small home.



The Crane Oil Burning Furnace—one of the many sizes and types of Crane furnaces for oil or gas consumption.



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them all*

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Steel is essentially a peacetime industry—and America's normal appetite for steel is great.

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It permits steel producers to carry on year after year and to find employment for hundreds of thousands of men.

It makes management extend itself to remain competitive—to improve its production facilities—to better the quality of its old products—through research, to devise new products—in order to win in the battle for markets that goes on apace in all industry.

Republic has done exactly that and—in the emergency now facing America—is in a position to supply more and better steel—the first line of any nation's defense.

Republic has invested millions of dollars in plants, in equipment, in research and in the training of men. Republic has ex-

panded its ore supplies—enlarged its blast furnaces—increased open hearth and electric furnace capacity—built new mills and added new finishing equipment. But more, Republic has built an organization of men who know steel.

And now, seeing but dimly through the haze that clouds all business prophecy, but realizing our own deep responsibility, Republic, vital to peacetime prosperity, pledges its every effort to help keep America the way we know it and love it—to keep America safe for Americans—through steel, first line of national defense. Republic Steel Corporation, Cleveland, O.

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INTERIOR OF ST. MARK'S, VENICE.

ARCHITECTURE THROUGH THE AGES, by Talbot Hamlin. G. P. Putnam's Sons, New York City. 680 pp., illustrated. $6\frac{1}{4} \times 9\frac{1}{2}$. \$6.00.

It is many, many years since the last history of architecture appeared, which alone makes the publication of Mr. Hamlin's book something of an event. The standard histories in this field are not only old but frequently stale. Written during the heyday of eclecticism most of these books reflect the tacit assumption of the architects—that it was important to be familiar with the monumental structures of previous ages because this knowledge was useful when applied to the banks, schools, office buildings, and department stores that were handed out so lavishly during the golden age of the 20's and earlier. This assumption is conspicuously absent from Mr. Hamlin's book, whose story is that of "building in relation to man's progress." That architecture in every period has reflected with unswerving fidelity the culture and social relationships of its time is so completely taken for granted by contemporary architects that it hardly seems worth stating. Unfortunately, outside of Charles H. Whitaker's "Rameses to Rockefeller," and Lewis Mumford's books, few if any critical surveys of architecture reflect this attitude.

The standard arrangement of architectural histories is based on a combination of chronological and geographical divisions. Thus one generally finds a chapter on Greece, a chapter on Egypt, one on Rome, another on Byzantine, with a return to Italy in the section on Renaissance types, etc. This scheme is maintained in a general way in Mr. Hamlin's book with a number of notable additions commonly ignored in the conventional histories. There is a chapter for example on pre-Columbian building in America, another on the architecture of Islam. Another valuable addition is the section on eclecticism which provides an excellent basis for the understanding of the developments leading to a contemporary movement in design. All of the sections both old and new are discussed in a thoroughly readable and occasionally lively manner. Certain questions still present themselves to the reader, however, which probably disturbed the writer as well. In the first place, while one could not possibly accuse Mr. Hamlin of using words wastefully, the aggregate number of pages devoted to the description of build-

ings not illustrated forms a large percentage of the total number. While description is clearly necessary where so complex an object as a building is discussed, it would seem that in the majority of instances, pictures might do the job much more effectively. The relatively few pictures shown are invariably small, with all the disadvantages that such a presentation involves. To be sure, the use of illustrations rather than lengthy text is the method adopted in Banister Fletcher's well-known "History of Architecture," but it would seem possible that a combination of Mr. Hamlin's admirable critical approach with the highly developed technique of modern pictorial reporting would be stimulating, readable and instructive. Another question that suggests itself is the possibility of a history in which building types, structural principles and planning were discussed in more or less chronological order, thereby giving a clearer and more basic picture of architectural development. An obvious objection to such a scheme for a book is that trends within separate countries might be lost sight of. But such an approach properly correlated with general discussions of architectural development might be extremely interesting.

All of the foregoing constitutes not so much a criticism of a really splendid piece of work as a question of whether the conventional framework is still the best possible scheme for telling the story. It does have the great advantage of familiarity and workability while the treatments mentioned above suffer from the practical drawback that large books full of pictures are extremely expensive to produce. Working within his chosen framework and the budgetary limitations that confront any author, Mr. Hamlin has made a distinct contribution with what is undoubtedly the best one-volume history of architecture that has yet appeared.

SOUND TRANSMISSION IN BUILDINGS, by R. Fitzmaurice and William Allen. His Majesty's Stationery Office, London. 48 pp., illustrated. $9\frac{3}{4} \times 12$. \$1.20.

A practical manual for architects and builders, the result of joint research in the National Physical Laboratory and the Building Research Station in England. There are data on the nature and transmission of sound, on materials, construction methods, etc. The book is unusually well illustrated with a great number of construction details which show various methods of taking care of reducing noise transmission, many of these details being taken from actual jobs in which the systems have been tested in practice. Brief but adequate text fills in the gaps and offers a variety of solutions to the most common acoustical problems.

OLD KENTUCKY ARCHITECTURE by Rexford Newcomb. William Helburn, Inc., New York City. 154 pp., illustrated. $8\frac{1}{2} \times 12$. \$10.00.

A book of photographs and drawings covering the Colonial, Federal, Greek Revival and Gothic Revival periods. Illustrative material on the whole is good and includes a number of previously unpublished buildings. The book is the result of some thirteen years of work initiated by the Kentucky Chapter of the A.I.A. and carried out by the author in conjunction with a committee formed by the Chapter. A brief introduction describes the characteristic building types in the South.

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GOOD design, good workmanship, good materials—that is the essence of sound construction, as typified by Wellesley College's new Recreational Building and Swimming Pool. Architect: William T. Aldrich, Boston. Contractor: Aberthaw Company, Boston. Cement: Lone Star.

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● Lansing, Mich., Waterworks. The 32-ft. sculptured figure was formed against a plaster waste mold. Designed by Board of Water Supply and Electric Light Commissioners, Claude Erickson, engineer; Black & Black, consulting architects; Alvord, Burdick & Howson, Chicago, consulting engineers.

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Architects: Delano and Aldrich

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An entrance to the main administration building at New York Municipal Airport, showing use of stainless steel trim.



This giant eagle, of welded stainless steel sheet, surmounts the Landplane Administration Building (above).



Stainless steel chandelier, window frames, and railings in the Marine Terminal Building at La Guardia Field.

LETTERS

Parking Progress

Forum:

... An ordinance has recently been enacted in Detroit to permit the construction of light-weight "parking pavilions." This is the first step in solving the parking problem in large cities as mentioned in your January 1940 issue, p. 64. The second step will be the construction of city owned facilities as mentioned in your issue of December 1938, p. 20. ...

... Concrete floors, ramps and foundations and the provision for store rooms on the ground level, indicate permanency. Required five year permit renewal will be a matter of routine and later it will be changed to ten years or made permanent. It is also contemplated to add one or more decks if a trial period indicates they are desirable.

The live load requirements are higher than needed and those established are the result of a compromise. A load of 40 lbs. per sq. ft. of floor is sufficient. Such a loading would actually carry a load of 125 lbs. before the elastic limit of the steel is exceeded. The average weight of a parked car is 27 lbs. per sq. ft. of the floor space covered. ...

... I was somewhat surprised at not receiving the slightest objection to omitting fireproofing from structural steel. The Fire Marshal does not consider the modern automobile a fire hazard, in fact he says that their all steel construction will retard the spread of a fire. No temperatures could be raised in an open structure that would cause distress to structural steel.

An estimate on an actual design for a lot 180 x 450 ft. shows a cost of 94 cents per sq. ft. of deck floor. The cantilever was used extensively in the design.

JAMES B. STEEP

Detroit, Mich.

To Engineer Steep, on whose research the December 1938 and January 1940 articles were based, many thanks for keeping FORUM readers posted on Detroit efforts to solve the parking problem, lick decentralization and stem downtown real estate decline.—Ed.

... No Place to Go

Forum:

... I happen to be one of those unfortunate individuals owning a piece of unproductive real estate and wishing to unload and not knowing how. This property is in a city of 50,000 population within 70 miles of New York, has a frontage of 1,000 ft. of which 600 ft. faces a city park. The average depth is about 280 ft. It is a hillside location.

It seems to me that there may be many readers of THE FORUM who are situated much the same as I am. Also it may be that many of your readers who are architects or builders might be glad to have information on available properties brought to their attention. These architects and builders after checking up on the properties which appear promising might interest investors, insurance companies and savings banks, or they might be able to finance the project by means of an FHA insured mortgage or through a building and loan association.

There continues to be the possibility of inflation, and an income producing property with a mortgage is about as good a hedge as can be found. ...

H. D. K.

New York, N. Y.

More Costs

Forum:

... The recommendation of H. D. James with respect to improvement in cubic foot cost estimating is excellent. ... But further changes are necessary in the system and its application. Even disregarding plumbing, an increase or decrease in the size of a building does not proportionately effect its cost. ... Some buildings, compact for their type, can be greatly enlarged at little extra cost—others sprawl and much can be saved by reorganization. ...

The contractor-builder bases a new project upon a former job and figures his new cost by quantity survey. This process encourages him to push room areas to the maximum that can be enclosed with a given amount of labor and materials. People like liberal accommodations and prospective home owners are continually faced with a choice between the contractor's large rooms and ill considered design, and the more expressive design of architects with rooms so small as to be inconvenient. ...

This is a large subject and has a broader base than even the most commendable and necessary improvements in making, reporting and comparing costs. It brings the architect face to face with an old responsibility to his client. Dodging this responsibility for years has done great damage to the profession. The first real improvement has been the accurate and well organized cost analyses and reports by the architectural press—a really distinguished and scholarly continuity supplied when it was most needed.

WILLIAM GRAY PURCELL

Pasadena, Calif.

New Rochelle Apartments

Forum:

In the July ARCHITECTURAL FORUM, p. 69 may I call your attention to "More Integration, Less Fabrication." As for the New Rochelle apartments mentioned therein:

1. The project is not 100 per cent rented.
2. The project was not completed at the time stated in the article.
3. Instead of 28 units being "completed by April 15" only 20 units were erected, and work is still in progress at this writing.
4. The costs were not lower than those of standard methods of construction, based on comparable specifications. Plaster board walls and ceiling were used in place of 3 coat plaster on wire lath, for example.
5. The construction of the second group of apartment buildings has not been started.
6. The "commendable open planning of first floor space and interesting site layout," was not by Holden, McLaughlin & Associates, but by Benson Eschenbach, A.I.A. ...

BENSON ESCHENBACH

Scarsdale, N. Y.

To set the records right: 1) the renting agents advise that only 75 per cent of the project's completed section was rented when the July FORUM was published, but that the number of families signed up was enough to fill the existing vacancies. 2) On April 15, some painting, landscaping, etc. was unfinished, but tenants were in the project. 3) First section of the project contains 20 units; second section 28. THE FORUM's typographical error was spotlighted by mention in a subsequent sentence of three completed buildings, four to come. 4) The comparative merits of lath and plaster versus plaster board are a matter of opinion. 5) Construction of the project's second section, scheduled to begin prior to THE FORUM's publication date, was delayed; is now under way. 6) Floor planning and site layout were the accomplishments of Benson Eschenbach, A.I.A. to whom FORUM apologizes for an inexcusable oversight.—Ed.

Kudo

Forum:

I have had the opportunity to study your description of the workings of the Federal Housing Administration in the June 1940 issue of FORUM, and I am struck by the simplicity with which you discuss an extremely complicated mechanism. ...

GEORGE P. TURNER

Federal Housing Administration
Dallas, Tex.

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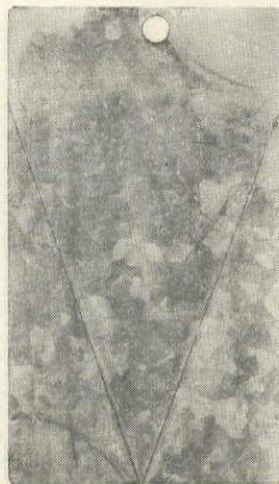


Figure No. 1. A Galvanized section finished with two coats of paint. Exposed in Florida 18 months. Paint peeled from most of the surface.

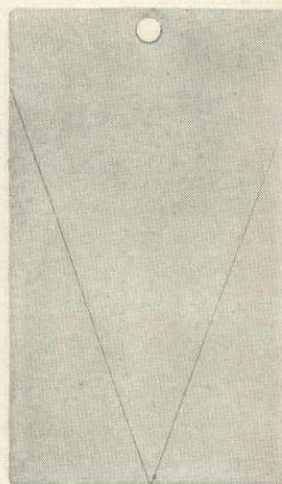


Figure No. 2. A Galvanized and Bonderized section. Finished same as section No. 1. Exposed in Florida 18 months. Surface O.K. Adhesion good.

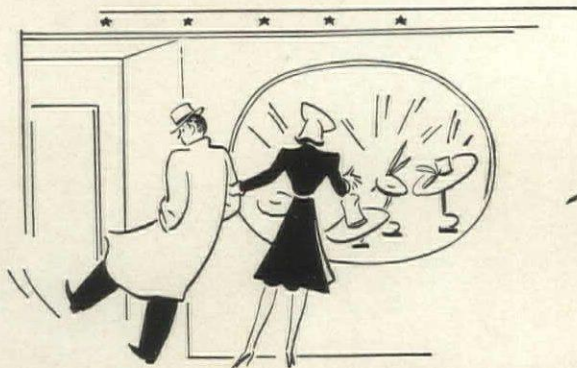


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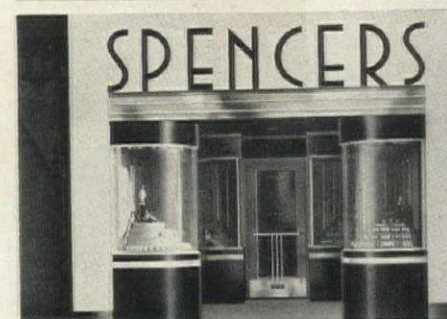
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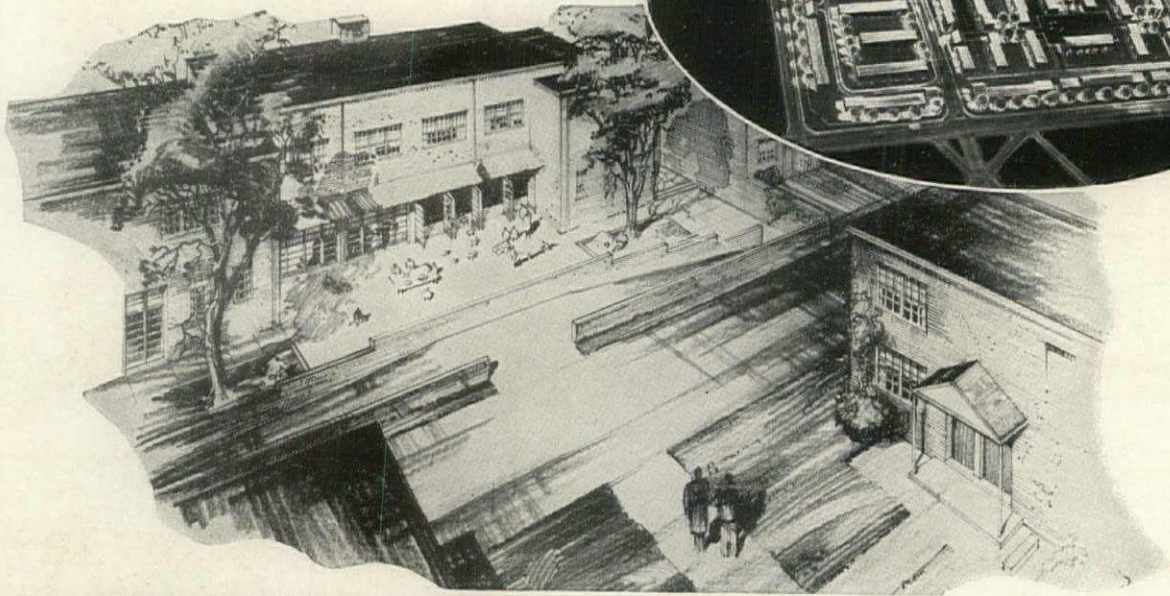
Aluminum Company of America, 2166 Gulf Bldg., Pittsburgh, Pa.



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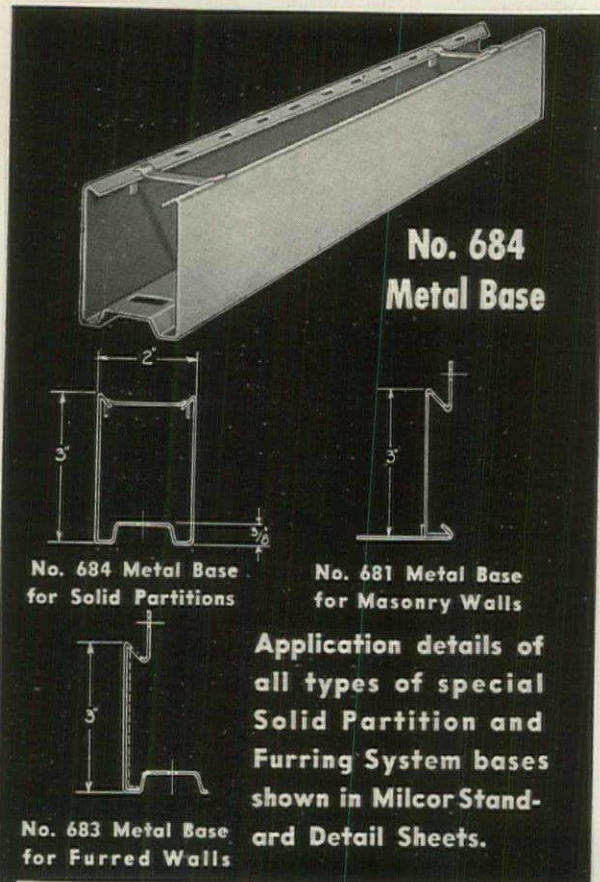
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Milcor Metal Base (and Milcor Solid Partitions) installed in Glenwood Housing Project comprising 535 dwellings in Philadelphia, Pa. Architects: Associated Architects, W. Pope Barney Director; Frank R. Watson, Assistant Director. Architects' sketches courtesy of Philadelphia Housing Authority.



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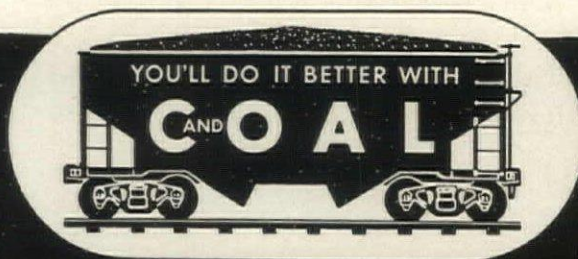
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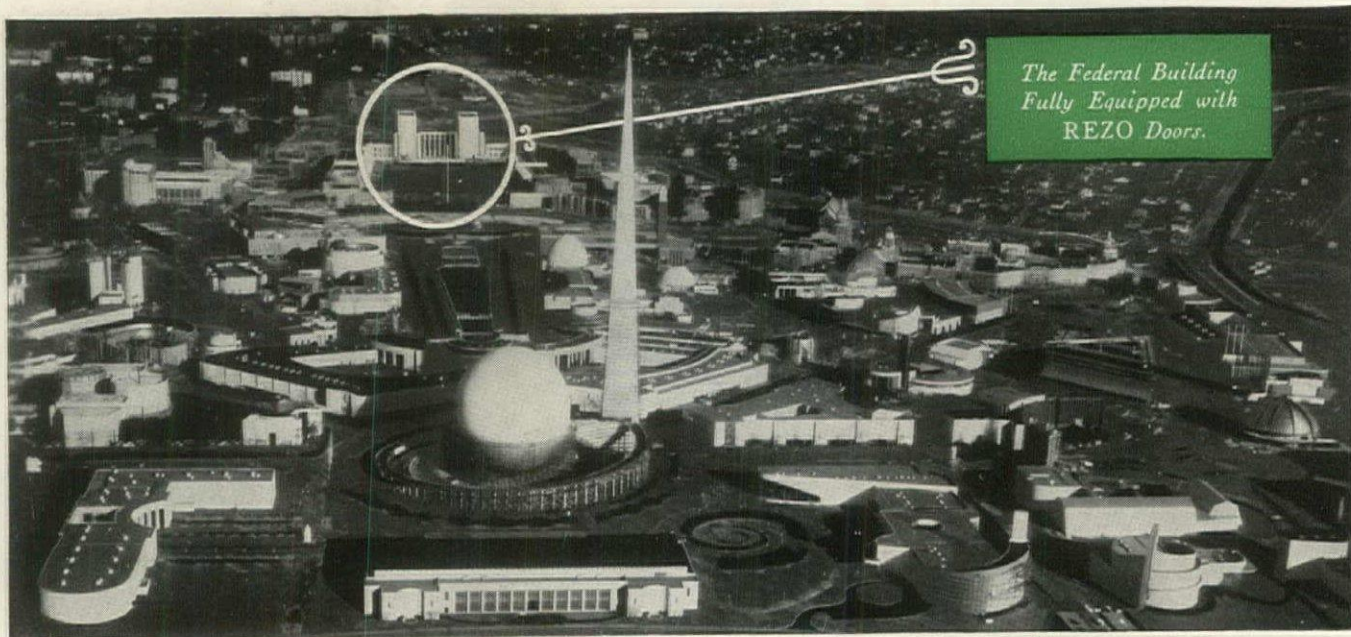


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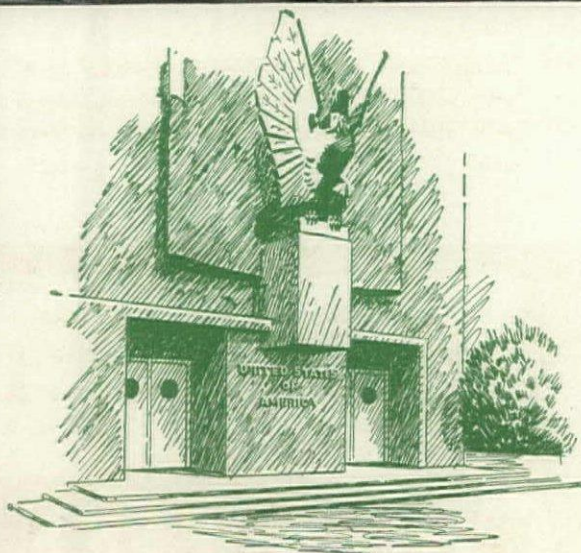
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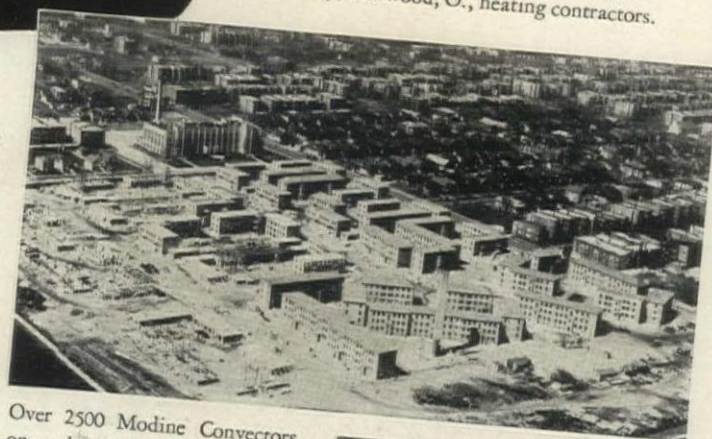
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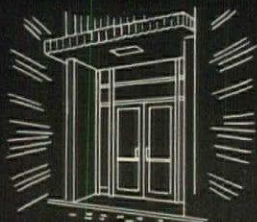


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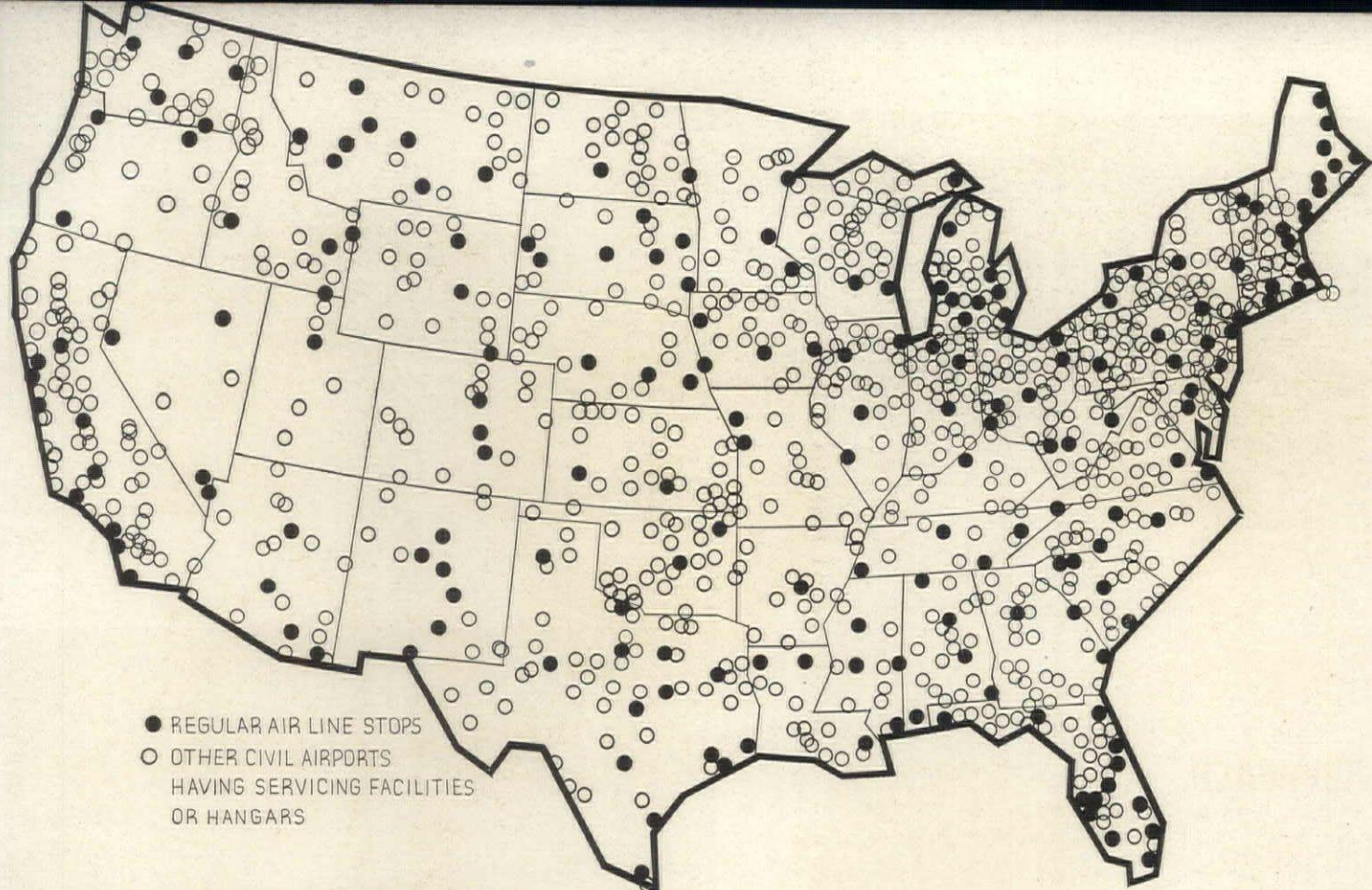
Illustration shows entrance for U. C. Press Building, Berkeley, California, Masten & Hurd, Architects. Standard doors with stiles only 1-1/2" wide are now available — for maximum visibility.

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U. S. AIRPORTS

blanket the country with a network of landing points that are now over 2,400 in number. The speckled map above, dotted with circles each covering an area 30 miles in diameter, does not show all of them; nevertheless it is apparent even here that in many sections of the country it is impossible to get more than fifteen miles away from a field. The transport lines that are served by these airports carry

more passengers and mail than those of any other country, and passenger traffic alone has increased by about 40 per cent in the past year. So high a pitch of efficiency has been reached in American plane performance and airline operation that in the last year and a quarter there has not been a single casualty on any of the passenger lines. All of this adds up to a satisfying picture until the airports are examined in the light of the present program of defense.

Look again at the map. Note that the 200-odd black dots mark the only commercial fields at which the big transports (read "bombers") can be accommodated. Note also that of these only a bare 36 are Class 3 airports, that is, fields with paved landing strips of adequate length, hangars, shops, two-way radio, visual and instrument traffic control and a weather bureau. What with ten or more billions to be earmarked for armaments, and anywhere from 20,000 to 50,000 planes to be added to the air forces within the next few years, the existing fields are unprepared to handle these planes in peacetime, and certainly not in an emergency. This is the new picture, and it is not so good.

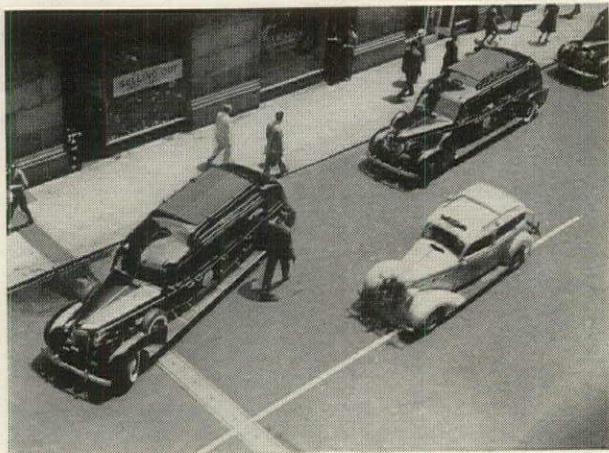
The building of new fields quickly, and bringing the old ones up to scratch is essentially a problem of money and manpower. Fortunately we are well supplied with both. Equally vital, however, is technique of planning. In this respect we are not so well off. Most of our big fields today are merely a patchwork of haphazard construction. Among the experts there is disagreement all along the line, understandable enough in view of the brief experience to date, but a handicap at the beginning of a large building program nevertheless. Were it merely a matter of planning for commercial

traffic, bad design would probably mean no more than inconvenience, delay and the high costs that accompany inefficiency; with the added factor of national defense, inadequate planning could be disastrous.

The nature of modern warfare has revealed very clearly the close connection between military power and economic potential. The best tractor factories are the best tank factories. If the army should have to move in a hurry it would take to the newest parkways. And the best civil airports are also—with slight modifications—the best military airports. There has been some talk in recent months about underground air bases. The present consensus of opinion among military and civil airport planners is that underground hangars and other facilities are not needed here. The main reason is the complete difference between the U. S. and Europe from the viewpoint of air vulnerability. Another is the expense. Costs for underground hangars whose span may be 150 ft. or more become astronomical; while money becomes a secondary consideration where national security is threatened, the question nevertheless arises whether it might not be more effective to allocate construction funds to a greater number of above-ground fields. The arguments advanced carry much weight with them, and it seems probable that the construction program of the immediate future will concentrate on surface airports with the possible exceptions of such restricted areas as the Canal Zone where the demolition of a single major air base might expose a vital area to destruction.

This article, which attempts to explore the basic problems of present-day airport design, contains several assumptions. One is that if this coun-

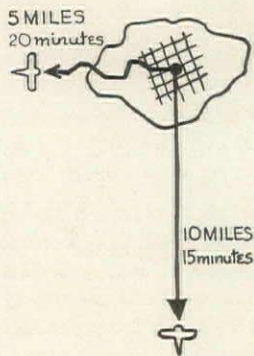
try proceeds to construct the best network of civil airports in the world, it will be well on the way to military air supremacy as well. Another is that there is a maximum size to any airport, beyond which it is economically and technically impractical. Such a maximum would appear to include at least one runway 6,000 to 10,000 feet, depending on altitude, with facilities for handling perhaps 60 planes per hour. Beyond some such ceiling the solution would be to increase the number of fields; on this point both military and commercial authorities are in complete agreement. The rapid development of plane design has obsoleted many fields once considered adequate; recent trends indicate that while planes are getting larger, only slight increases in present maximum runway lengths are likely to be needed. This does not suggest that the need for flexible planning is over—quite the contrary. With the expansion of the air services all over the country it may be taken for granted that most of the smaller fields will have to take a steadily increasing load during the years to come. This article therefore assumes that airport design which is not flexible is not good. And finally, it is most emphatically affirmed that proper planning of landing fields and their adjuncts is not the concern of a few professionals, but of the widest sections of the community. If the question of national defense should become a matter of immediate necessity, a highly developed network of peacetime airports would be of decisive importance to every American. If the emergency should never arrive, we would still have an extremely useful addition to the nation's wealth. Hundreds of airports are going to be built, hundreds more rebuilt. They should be planned and built properly.



John D. Beinert

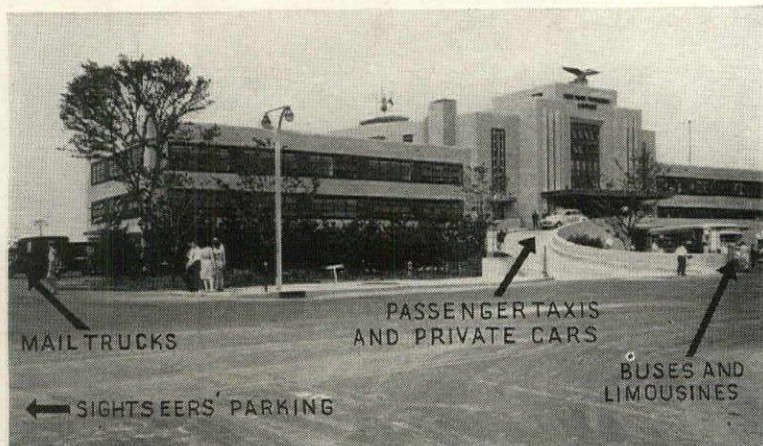
APPROACH.

Air transport, whether of passengers, mail or freight, has to be considered as an operation from point of departure to destination, not from airport to airport. If the 20th Century Limited went from New York to Chicago in sixteen hours, but with a five-mile trip at each end by ox-cart, it would still be twenty hours as far as passengers and shippers were concerned.

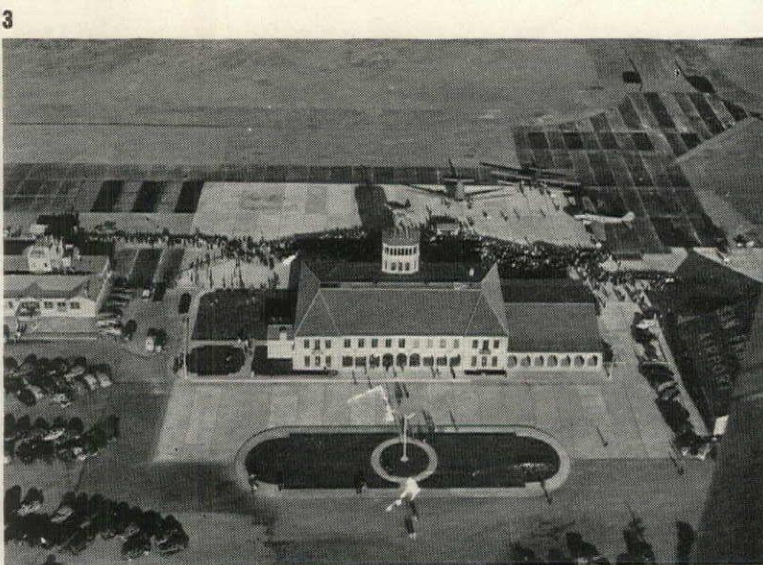


In air travel such discrepancies actually exist. Hence field location must be considered as part of the city and highway plan, and in this plan, as the above diagram suggests, distance is not necessarily the major factor. New York's field is by no means far removed from the midtown section, but after leaving the ticket office 1 the buses must thread their way through crowded streets before arriving at a fast highway.

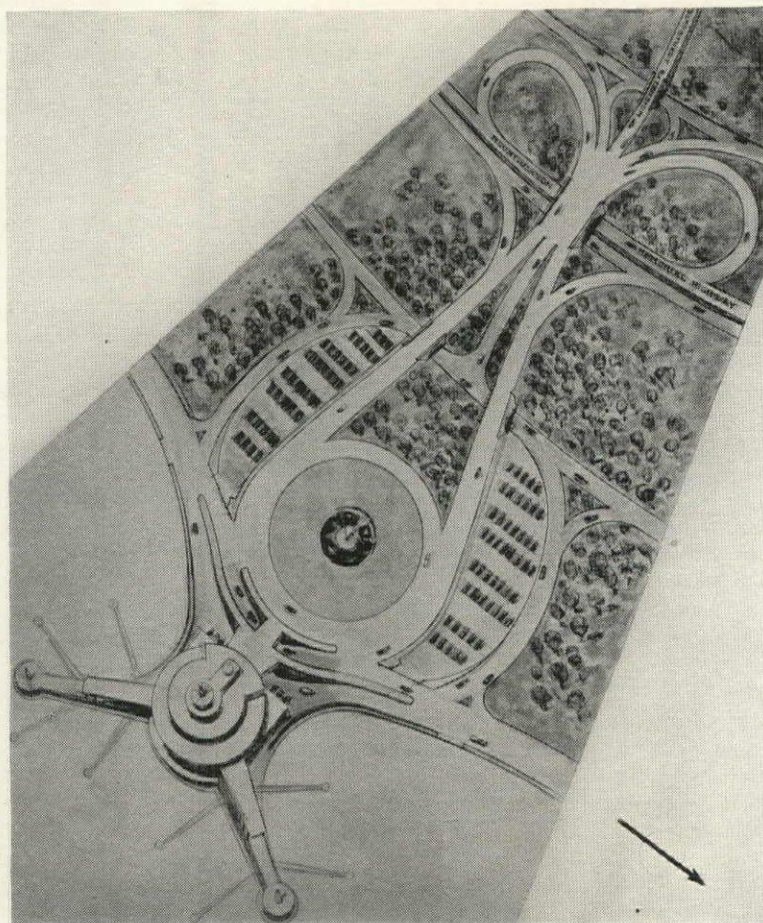
Once at the airport, the approach still remains important. Traffic must be separated to prevent jamming of trucks, limousines, private cars of passengers, visitors and employees, taxis and other vehicles. The terminal at LaGuardia Field in New York, designed by Delano & Aldrich, 2 provides for this. A more completely developed scheme of traffic control is shown in the plot plan of a project 4 by Fellheimer & Wagner for an airport at Washington. Here the principle of traffic separation according to type has been worked out in conjunction with the clover leaf and rotary to permit a rapid flow. In smaller airports, as for example the field at San Francisco 3, no such elaborate plans are required, but adequate space must still be provided for free movement of traffic.



John D. Beinert



Phil Stroupe

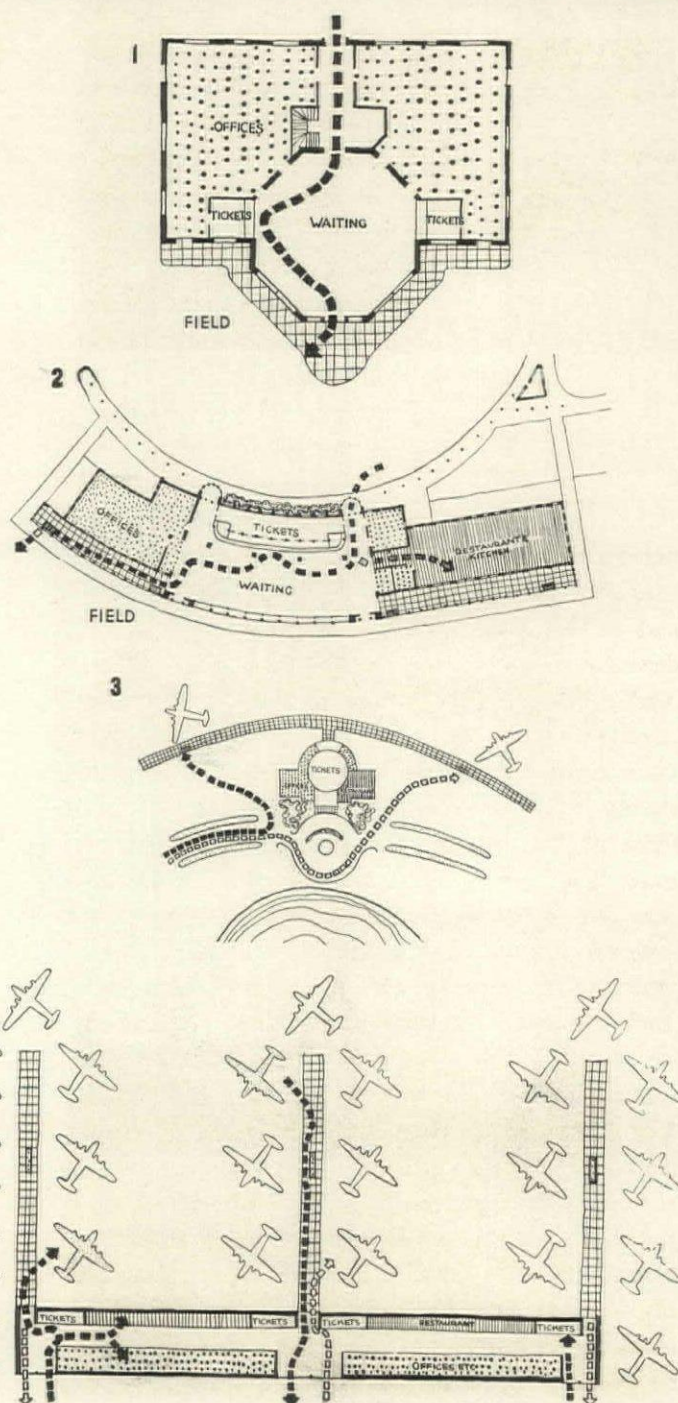




John D. Beiner

PASSENGERS. The above photograph was taken at New York's LaGuardia Airport, "world's largest and finest." That so fantastically primitive a method of communicating between the terminal and the planes should be accepted at this new field indicates to what degree the problems surrounding air transport still remain unsolved. To some extent, the continuance of practices that would be unthinkable in a third-rate railroad station may be attributed to the lack of experience in this field, but there is no lack of general transportation experience in this country which might reasonably be applied to aviation problems.

Terminal buildings, serving an exclusively contemporary mode of transportation, show a curious preoccupation with the monumental, entirely inappropriate forms of past centuries. The external appearance of these structures is discussed elsewhere; the attitude, however, has an effect on the plans. Take as illustration diagram 1, typical of any number of small terminals. Symmetrical in arrangement, it separates the washrooms, offices and ticket windows although there is no conceivable reason for splitting any of these elements save a desire for a conventional exterior. A much more reasonable approach is the plan for the new Washington terminal 2, where the passenger can go about his business without interfering with the other parts of the building. A basic question on terminal planning is brought up by the LaGuardia field example, where, as indicated in diagram 3, the great majority of arriving and departing passengers never see the inside of the building but go directly to their planes from the airline limousines. One of the largest lines in the country has estimated that of all passengers using its planes in the big cities, almost 90 per cent never go near the waiting rooms or ticket windows. This circumstance has produced the very intelligent suggestion that terminals be designed to fit this practice, with ticket offices moved to the gates where passengers take their planes 4.

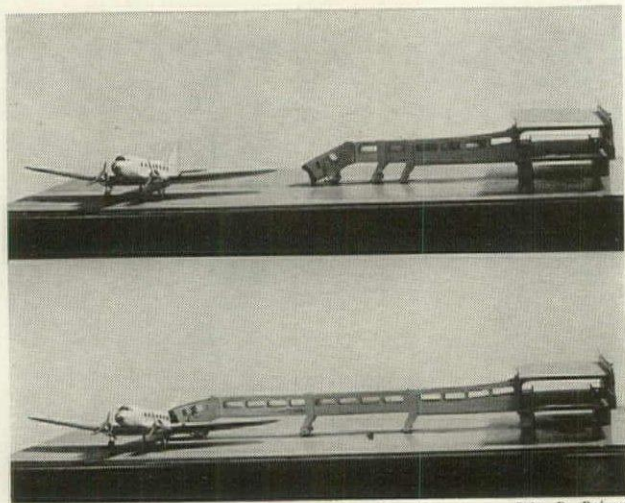
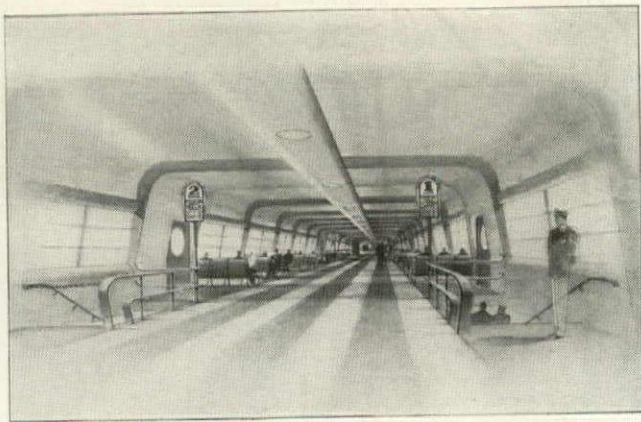




John D. Beinert



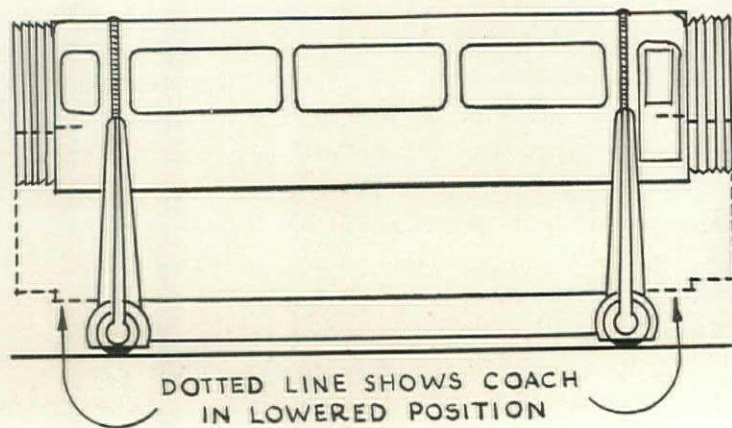
Courtesy, Eastern Airlines



John D. Beinert

In line with this trend is the building of central terminals in the cities. The terminal for New York City, now nearing completion, is shown at the top of the page. This is a natural solution for metropolitan terminals where in the very near future each city will be served by more than one airport. The central terminal will serve the busy midtown area, and passengers living near the fields will go direct. In the smaller cities it is probable these facilities will continue to be built at the fields. The space needed is not large, as illustrated by the photograph of a typical waiting room. The rendering to the left illustrates the principle which the architects, Fellheimer & Wagner, have applied to their railroad terminals—that passengers wait as close as possible to the point of departure. This arrangement also accommodates the transfer passenger with minimum loss of time. In addition to its practical advantages, this scheme also provides a full view of the field. Plans of the concourse and of the ticket room on the opposite page are shown on page 86.

Elsewhere in this article the problem of getting passengers into planes under cover is discussed more fully. The illustrations at the bottom of the page show a workable scheme developed by Fellheimer & Wagner for a telescoping passageway from the concourse to the planes. The structure would be built of light sections and operated manually or by motors. The special bus, directly below, also by the same architects, has been proposed as means of taking passengers out to the plane at fields where the stopover time is to be kept to a minimum; the use of such a vehicle would eliminate the need for the plane to taxi over to the terminal.



SIGHTSEERS. Sightseers at airports have been variously regarded as a necessary evil, an unnecessary evil, and as a means of stimulating public interest in air travel. At the New York airport it was recently decided to charge an admission fee of ten cents for use of the observation platform, and on one Sunday the revenue was well over \$2,000. This has been common practice abroad, and it seems likely that this source of funds will not long go untapped elsewhere in the U. S. The basic problem where visitors are concerned is one of separation, and this separation of visitors from passengers and employees is best handled before they get into the building. Illustration 2 shows an excellent scheme for allowing visitors to look down into the main room of the terminal without interfering with its activities. The illustrations below show methods of separation used at small and large airports. Both at Syracuse, N. Y. 4 and the new municipal airport at Philadelphia, Pa. 5, fencing separates the sightseer from the loading apron and the field entrance as well as from the field. At New York 3 a separate observation deck is provided sightseers and a terrace above that for dining, the latter bringing in additional revenue to the airport.



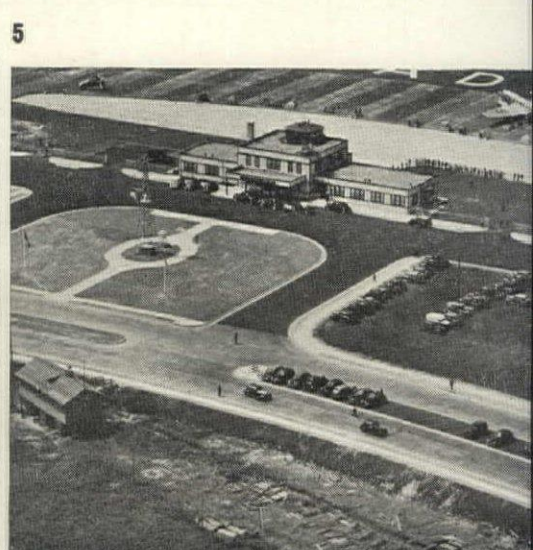
Carl M. Mydans



John D. Bienert



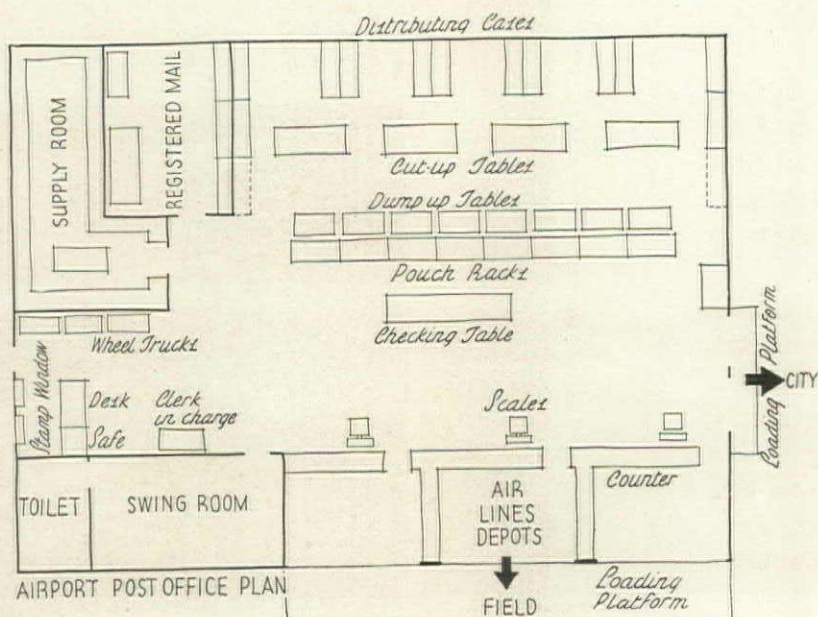
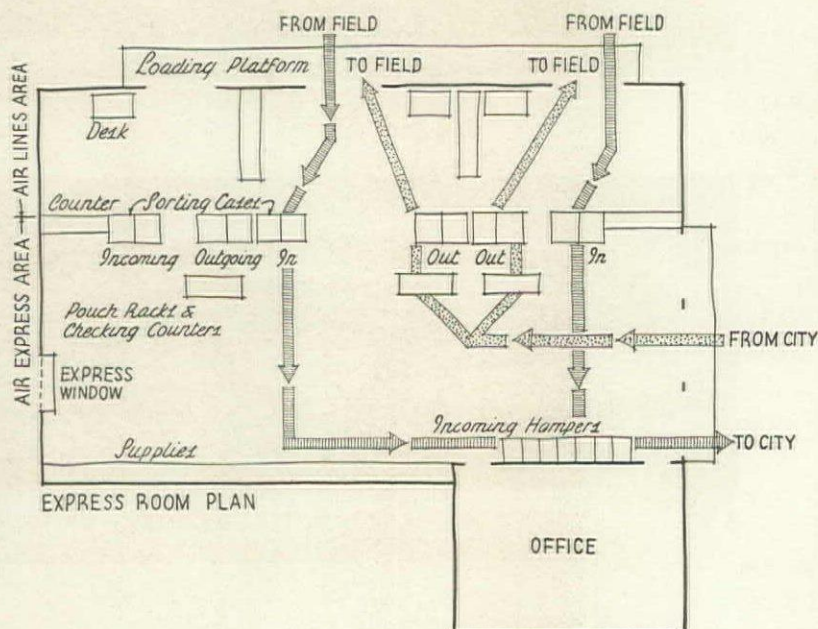
Courtesy American Airlines Inc.



Dallin Aerial Surveys



Donald Bisler



EXPRESS AND MAIL

Both air mail and express have shown impressive increases during the past few years, with lowered costs and reduced rates largely responsible. Air mail, for instance, has dropped from 24 cents for the first ounce to six cents. A tremendous increase in tonnage could be obtained by further reductions, but this would probably require the use of special mail planes whose operation is less profitable than those carrying both mail and passengers. Air express, on the other hand, brings in more revenue per pound than passengers, and there is a good possibility that future increases in business will lead to the use of planes carrying only freight.

The diagrams at the left show schemes for an express room and a terminal post office. Both are based on corner locations, which offer advantages for circulation. The solutions are essentially similar in that freight and mail arrive from the city, are distributed in pouches, and then turned over to the different air lines. Loading platforms must be adequate, and capable of easy expansion, as experience to date has shown the original facilities soon prove to be insufficient. Both schemes are based on the requirements of a present-day major airport; they could be reduced for smaller terminals without changing the circulation shown.

OPERATIONS. Because of its invariably conspicuous position, the control tower 1 represents the key to airport operation in the public mind. Actually it is one part of a larger and very carefully organized process.

The control tower is always given a location which permits an uninterrupted view in all directions covering three to five miles. Within some such radius arriving and departing planes are under its sole control, and it is equipped with a transmitter, two receiving sets, wind direction finders, a microphone to the administration building, and controls for the airport lighting system.

Airway Traffic Control 2 is a government office, with complete control of all airways. There are about a dozen such centers at present, each with jurisdiction over a region. On the slanting boards shown a continuous record of each flight is maintained, and pilots follow flight instructions given out by the office. In all cases it should be closely related in plan to the control tower.

The Department of Agriculture maintains weather bureaus at the main terminals. These receive teletyped reports from stations all over the country about every fifteen minutes, and are used as the basis for weather maps. The airlines use this service, and supplement it with departments of their own 3.

Radio rooms 4 are operated by each airline using a terminal. The line keeps in touch with its pilots throughout each flight, transmits instructions and weather reports.

Before every flight the pilot must make a flight plan 5, in which he charts all details of the proposed flight. This must be approved by the airline dispatcher and filed with Air Traffic Control. After it is checked by the latter to make sure that there is no conflict with other flights, the plane is cleared through the control tower.

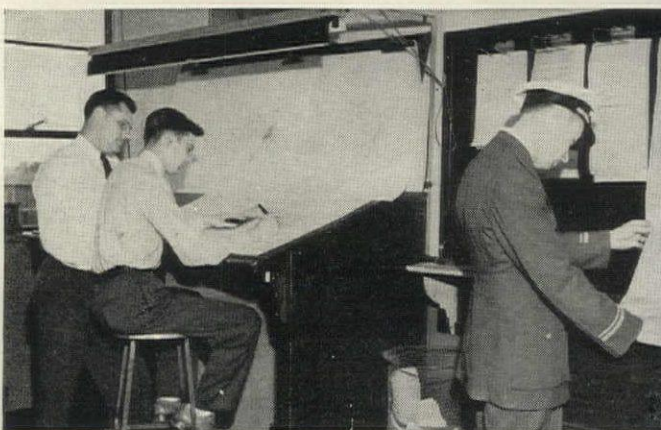
Walt Sanders—BS



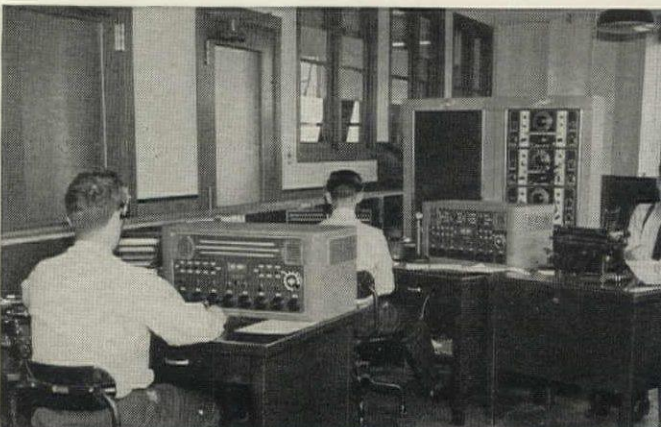
John D. Belcher



Courtesy, TWA



Courtesy, TWA



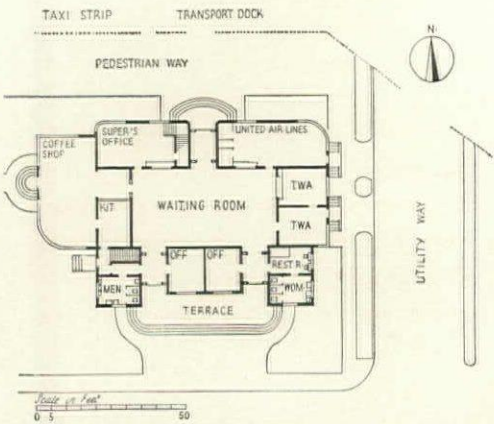
Walt Sanders—BS



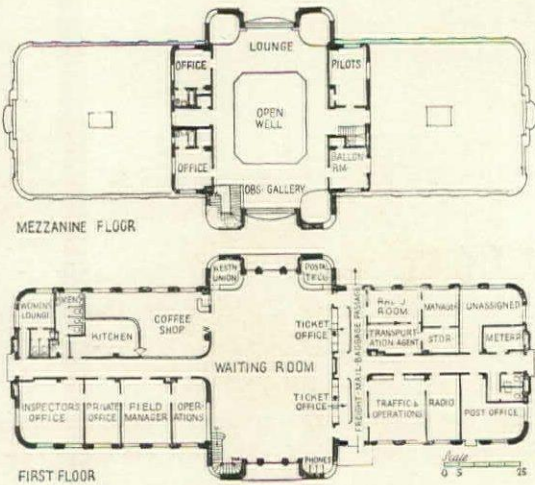
TERMINALS. The plan of the terminal at Fresno shows a fairly typical arrangement for a small station, with a central waiting space surrounded by administration offices, services, and the airline offices. A control tower is provided for on the second floor although at present these facilities are taken care of in the airline offices. Adequate for a limited traffic load, such a plan presents considerable difficulty if expansion of the building should be required. An advantage of the plan is a maximum distance of 400 ft. from car to plane.

Conventional in approach, the station at Houston nevertheless shows a very workable arrangement for a terminal of moderate size. There is complete separation between the passengers and the various control rooms, ticket and operations office are grouped for minimum of personnel, and the coffee shop and washrooms are adequate for the number of people using the station. Provision is made for spectators on the mezzanine terraces. If expansion were desired, the problem would be simpler than in the scheme shown above.

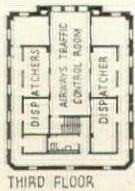
The terminal building in Kansas City is one of the best of such structures built to date. Both plan and exterior are clean, direct in expression, economical in arrangement and use of materials. The second floor offices are properly located, with services related to flight control in a central group directly under the tower. Spectators are given an elevated gallery which has an excellent view of the field without interfering in its operation. Expansion can be provided for by extending the concourse at the dining room end.



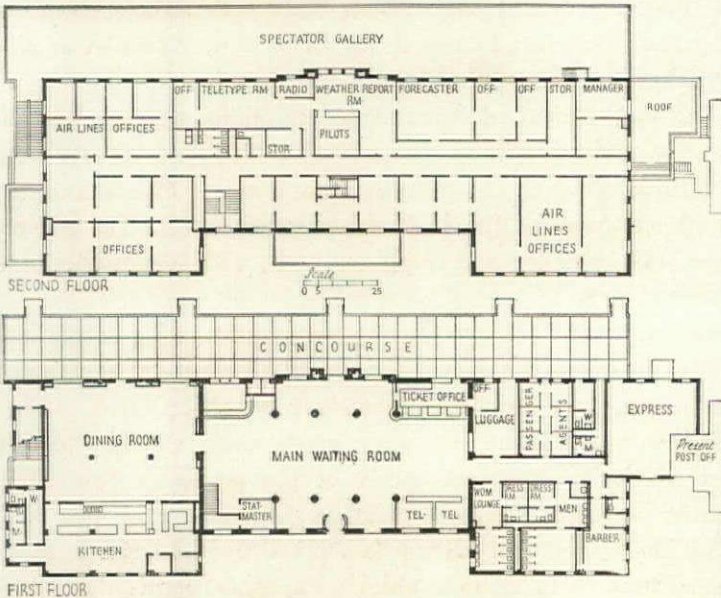
MUNICIPAL AIRPORT, FRESNO, CALIF.
ALBERT C. WHITE, ENGINEER



MUNICIPAL AIRPORT, HOUSTON, TEXAS
JOSEPH FINGER, INC., ARCHITECTS



THIRD FLOOR

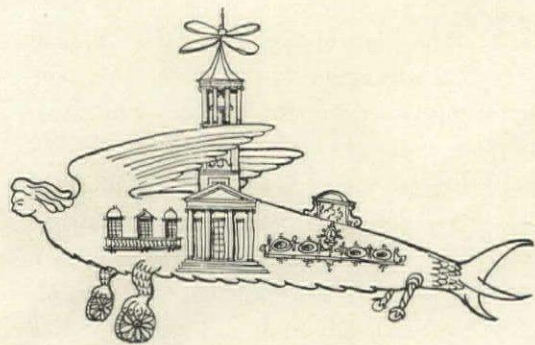


MUNICIPAL AIRPORT, KANSAS CITY, MO.
GENTRY, VOSKAMP AND NEVILLE, ARCHITECTS



EXTERIOR DESIGN

The twenty photographs below present a fair cross-section of terminal buildings found all over the U. S. Well-designed structures are to be found, but not often. It is suggested that if the plane designers operated on the same basis as those responsible for the overwhelming majority of terminals, the latest super strato-liner might not be unlike the sketch at the right.



Courtesy, American Airlines



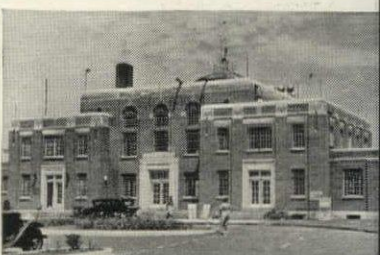
Courtesy, American Airlines



Courtesy, United Airlines



Courtesy, TWA



Elwood M. Payne



Courtesy, American Airlines



Courtesy, American Airlines



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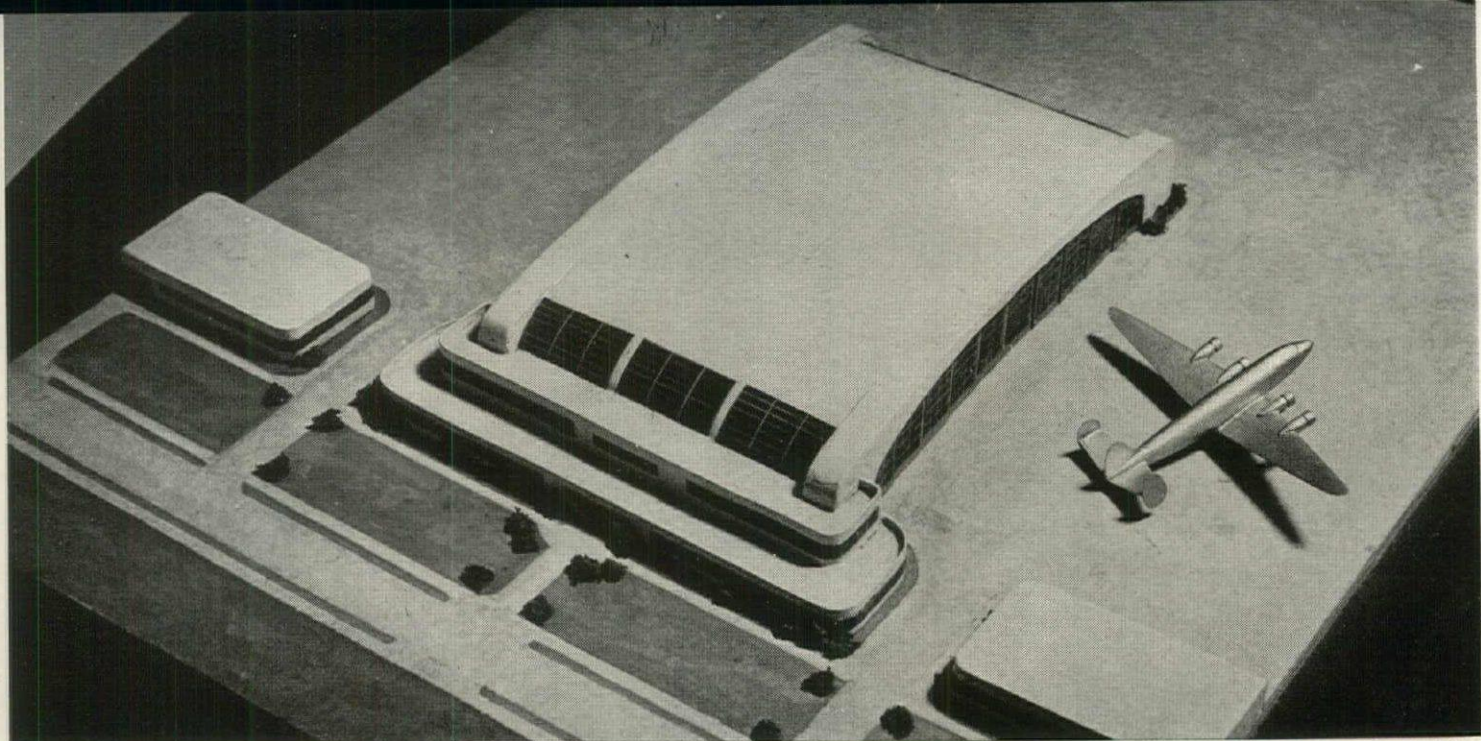


Carl M. Mydans



Courtesy, Eastern Airlines

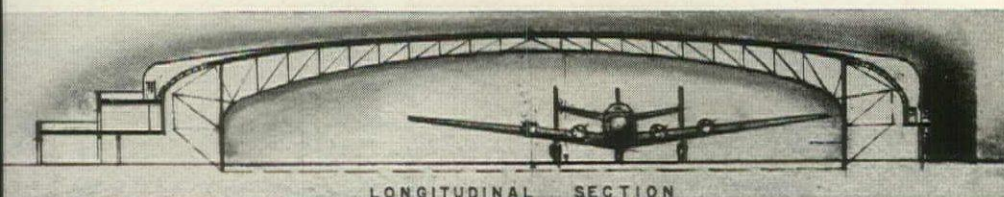




John B. Beinert

1

2



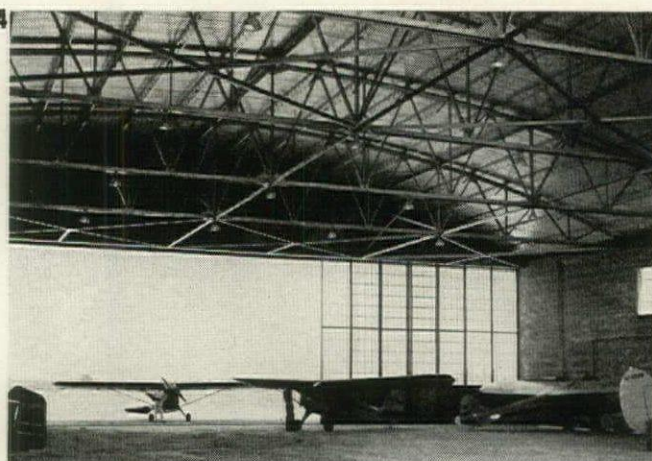
LONGITUDINAL SECTION

HANGARS. The essential requirements of a hangar are minimum height, maximum clear span, and easily operated doors. Perhaps the most common and inexpensive type is the steel-framed shed 5, covered with corrugated iron or some other light material, and equipped with sliding doors. Other types of roof construction are shown in illustrations 2 and 3. The larger hangars are now being equipped with motor-operated overhead doors 4 which, despite their enormous size, can be opened and shut in well under a minute. An unusually interesting project is shown above (1, 2), designed by Fellheimer and Wagner. Its roof construction reduces the height by as much as 30 feet in some cases without loss of headroom. Doors on each side of the hangar greatly increase the flexibility of the building; shops and offices are located at the ends.

3



4



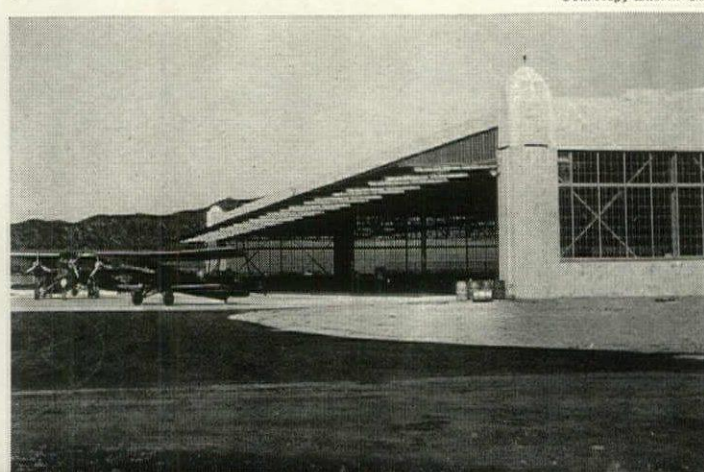
5

De Palma—BS



6

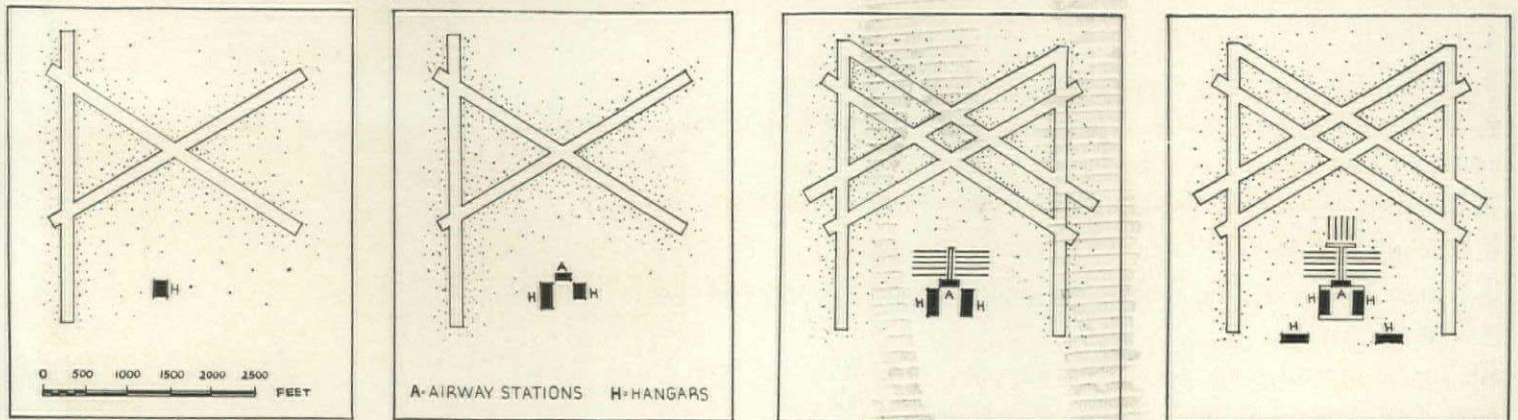
Courtesy, Austin Co.



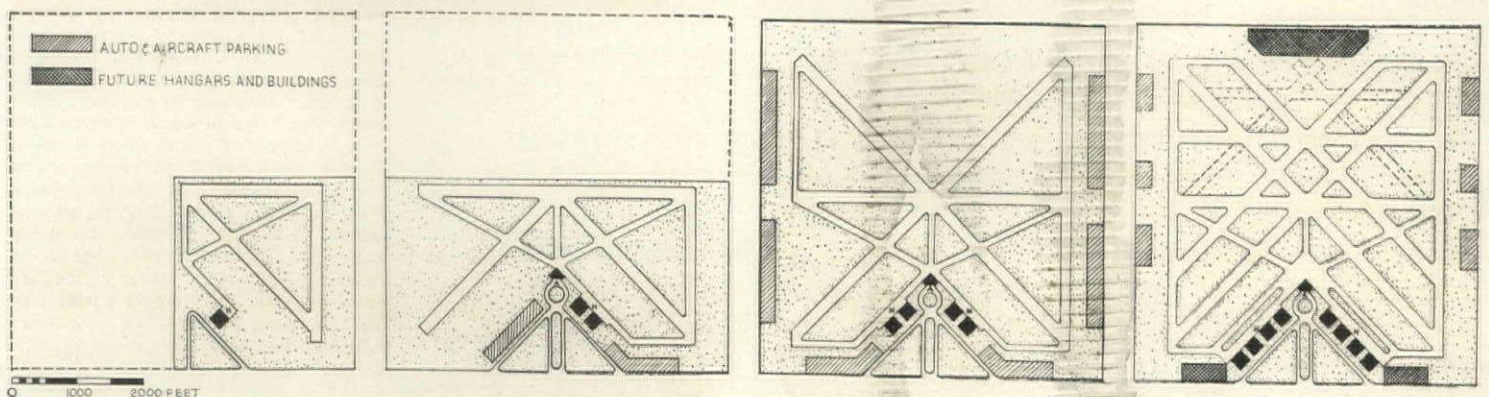
EXPANSION. Of paramount importance, as has been stated elsewhere in this article, is the planning of an airport so that when need arises it may be expanded with a minimum of expense and rearrangement. This applies to both the field and the buildings which serve it. In the light of experience now available to the planner, such provisions are by no means difficult to arrange for, if the community shows sufficient foresight to acquire title to all the land that will eventually be required, and to enact zoning regulations that will adequately control the surroundings.

Two schemes are illustrated here. The plan by Mr. Wood was developed some years ago, and envisages expansion of both field and buildings. The loading platform employs a unique conveyor system described in somewhat more detail on page 88. The plan by the Civil Aeronautics Authority, worked out after more experience had been accumulated, shows a more comprehensive development, from a field handling only light sports and trainer planes, to a complete airport one square mile in area, accommodating the largest transports. The final stage is by no means a complete solution, however, as the solution for automobile traffic and parking is inadequate.

TRAFFIC-CONTROL-AIRPORT-EXPANSION PLAN, John Walter Wood, Airport Consultant



MASTER PLAN, Technical Development Division, Civil Aeronautics Authority



PRINCIPLES OF PLANNING

The following list attempts to summarize, in very condensed form, the basic requirements for a modern airport. It is assumed that the location of the airport has been established after proper consideration of the city's present and probable future needs, the existing and projected highway facilities, and the relation of such an airport to the national defense program.

SITE

The question of size is fundamental. Since the future of the rapidly expanding industry is likely to exceed even the most optimistic of present-day calculations, it seems reasonable that any airport, no matter how small, should control enough ground to permit its eventual development as a Class 4 airport. Zoning restrictions should also be established to prevent the building of obstructions in the vicinity of the field.

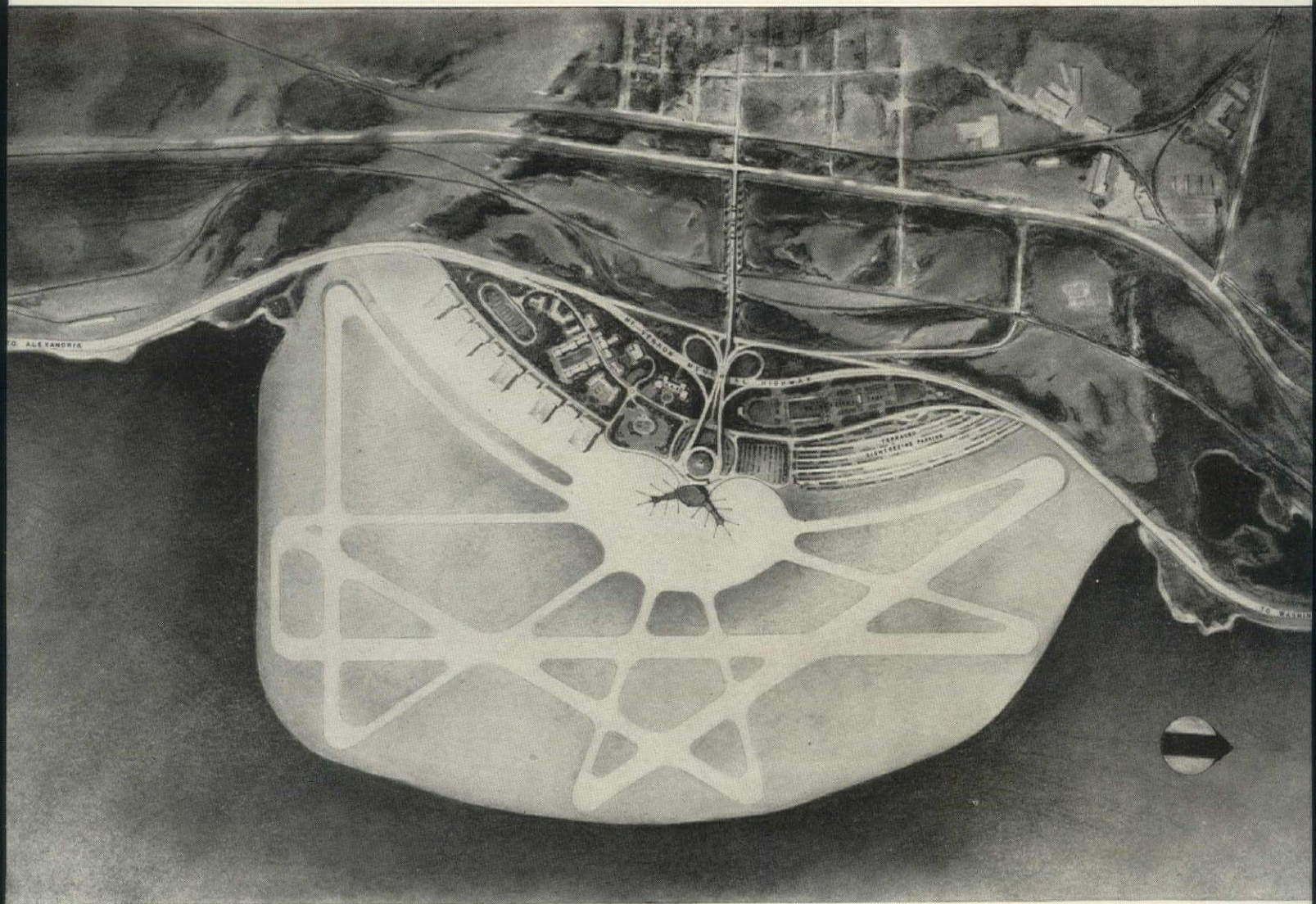
A Class 4 airport as defined by the Civil Aeronautics Authority, has sufficient size to permit the safe operation of the largest aircraft now in operation or proposed for the immediate future.

TERMINAL BUILDING

This building will include some or all of the following facilities, depending on the size of the airport: passenger facilities, space for visitors, dining and lunch rooms, offices for traffic control, weather bureau, airline offices, baggage, mail and express rooms, administration offices. In planning for these services, the following should be considered:

1. Orderly arrangement, enabling passengers to locate all facilities readily.
2. Shortest possible walking distance for passenger between car and plane.
3. Complete separation of passenger and service activities.
4. Major station facilities for public at one level.
5. Direct view of all plane gates from passenger concourse.
6. All loading and unloading of passengers, mail and freight to take place under cover, without crossing of circulation.
7. Complete separation of sightseers from rest of station activities.
8. Placing of concessions to ensure adequate patronage.
9. Attention to acoustical design to permit efficient operation of public address system.
10. Traffic control tower to have unimpeded view of entire field. Room should have floor space of at least 120 sq. ft.
11. Restaurant should be designed to give optimum view of field.
12. Adequate provision for expansion of building and plane loading platforms.
13. Terminal building should be placed in approximate geographical center of field, in close proximity to all runways.
14. Plane taxi strips centered radially on station, and of average length, avoiding excessive distances to any particular runway.
15. Ample provision for various types of parking: passenger, employee, sightseer, directly related to building and to adequate system of one-way roads free from grade crossings.
16. Appearance of terminal to express in a general way its relation to a contemporary mode of transportation. Frank acknowledgment of structural elements. Materials selected with view to effect of lightness. Mass of building as low as possible.

For their generous assistance in connection with the preparation of this article, FORUM wishes to thank the following: Ralph S. Damon, Vice-President in charge of operations, American Airlines, Fellheimer & Wagner, architects, Poor and Wood, airport consultants, Captain Robert Dawson, pilot, United Air Lines, J. C. Young, assistant superintendent Air Mail Service at New York, Frederic A. Rogers, Wm. A. Steele, Railway Express Company, Major A. B. McMullen, Civil Aeronautics Authority, Joseph Meehan, chief engineer, LaGuardia Field, New York. Eastern Airlines, Inc., Northwest Airlines, Transcontinental and Western Airlines, United Airlines.



PROJECTED AIRPORT

FELLHEIMER & WAGNER, ARCHITECTS*

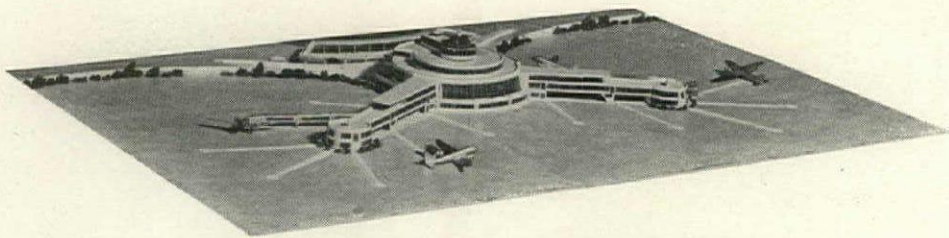
L. L. ODELL, AVIATION CONSULTANT

The drawings shown on this and the following page present two schemes prepared by Fellheimer & Wagner in conjunction with their work as consultants for the new airport in Washington. Neither solution is being built, but the plans show so brilliant an approach to a series of transportation problems that they are worthy of the most careful examination.

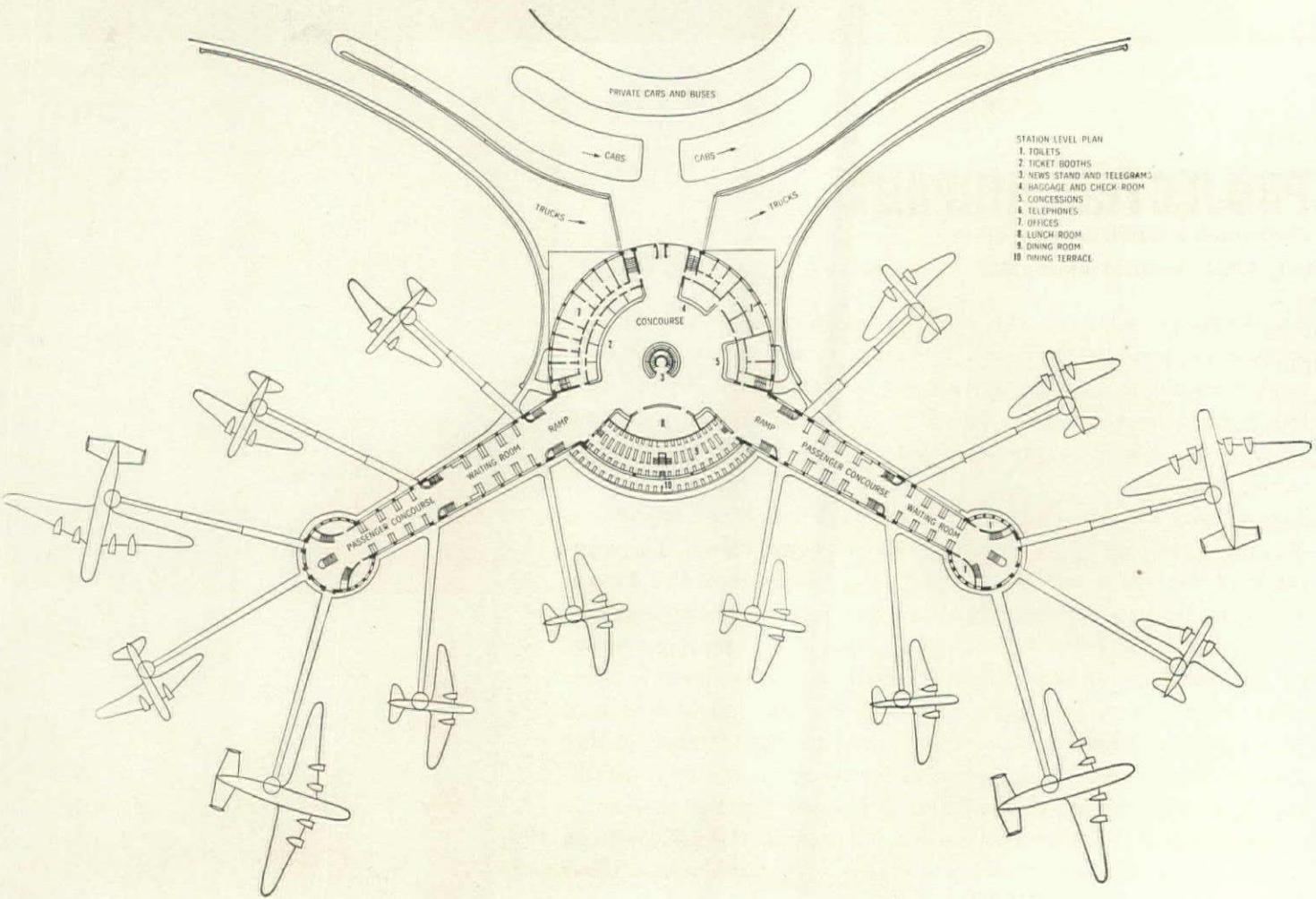
The schemes are essentially similar, and both reflect the importance of using experience gained in other fields of transportation. The reputation of the firm in railroad terminal design is of course well known, and many features developed for these buildings have been used here most successfully. There is a complete system of vehicular approaches to the building, arranged on two main levels to provide complete separation of passengers (upper level) and freight and mail (lower level). Sightseers are routed up ramps at the entrance, so that they go directly to the observation roofs without in any way disturbing the other functions of the building. In each case the restaurants are so designed that they command a full view of the field; a lunch

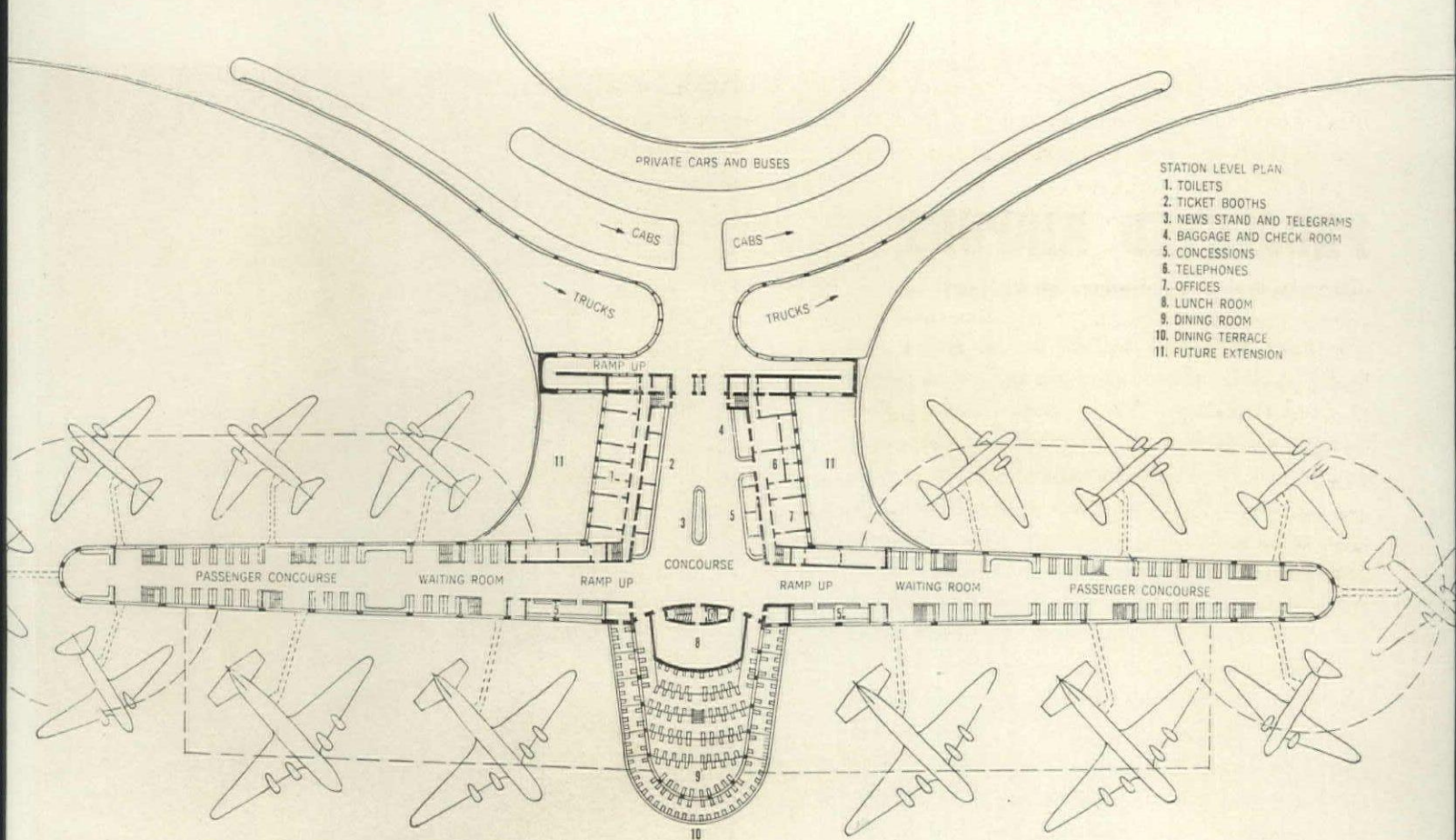
*Acknowledgment is made by Fellheimer & Wagner to Mr. Charles Rausch, United Air Lines for his valuable suggestions.

room is placed on the main level for quick service to passengers, and other lunch rooms located on the field level for flying personnel and employees. There is no large waiting room in either plan, but a series of seats all along the passenger concourse. This arrangement was first used by the architects in the Cincinnati terminal to enable passengers to reach gates with the least loss of time. In each plan the entire length of the passenger concourse can be supervised from one central point, thus permitting policing with a minimum of personnel. The architects considered that an under-cover approach to the planes was an absolute necessity. In the first scheme this is provided by a series of adjustable telescoping passageways (see page 76 and below). In the second plan shelter is furnished by cantilevered overhangs, open gangways to the planes being used for access. Common to both schemes are the projecting concourse units, which permit plane loading from both sides at once.

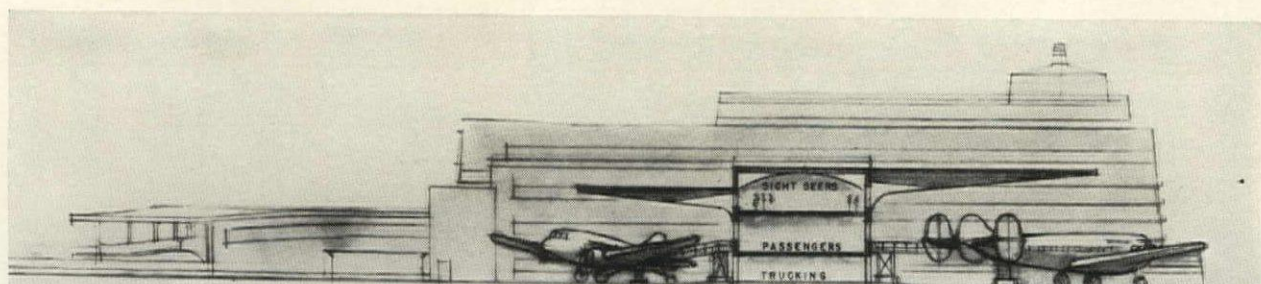
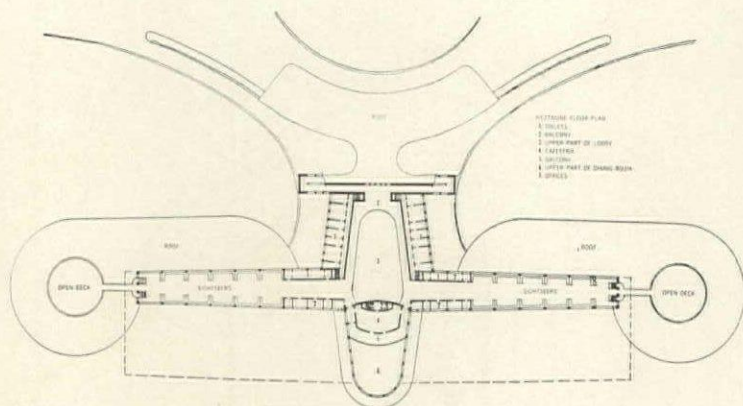
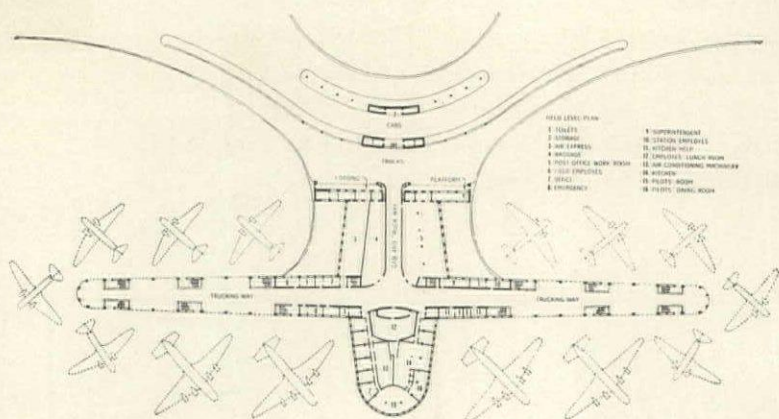


MODEL OF FIRST SCHEME FOR PROJECTED AIRPORT





SECOND SCHEME FOR PROJECTED AIRPORT

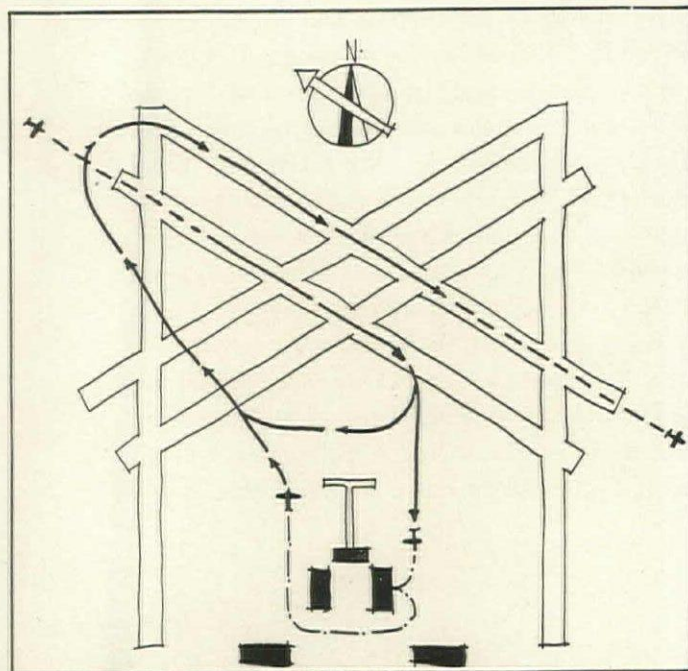
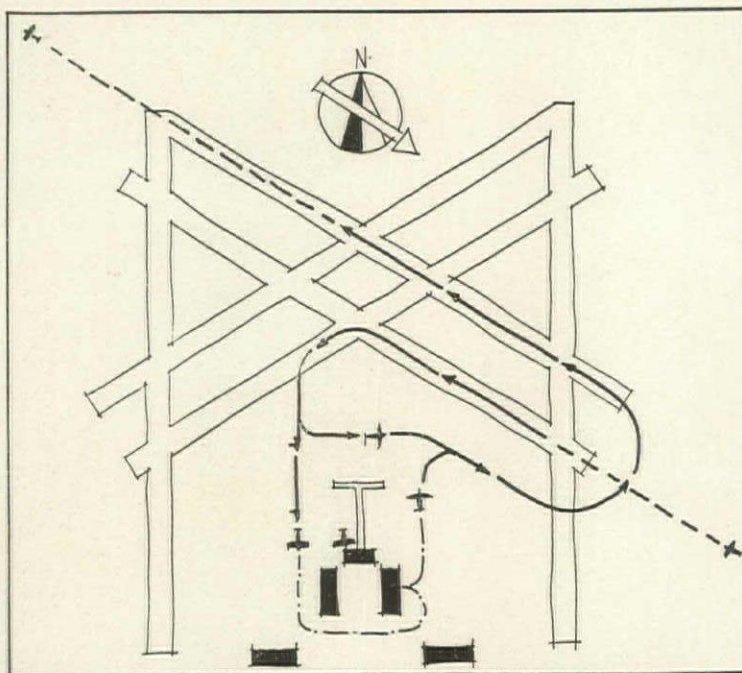
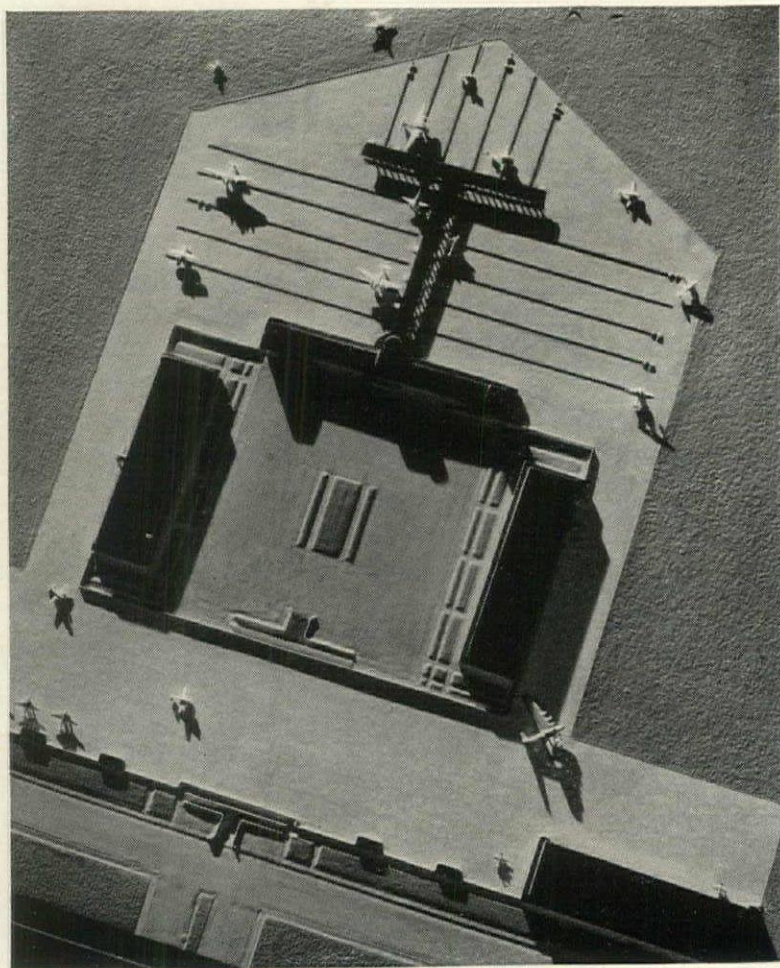


SECTION THRU CONCOURSE

PROJECTED AIRPORT

JOHN WALTER WOOD, AIRPORT CONSULTANT

The most important feature in the Wood plan is that it eliminates all cross circulation of planes on the landing area. The T-shaped loading platform is elevated to avoid mixing of passenger and freight traffic. A mechanical system of conveyors moves the planes into position, eliminating movements of planes near the platform under their own power. This permits a closer, more accurate spacing of the planes and reduces the annoyances of motor noise, dust, and other objectional features of the present-day loading platform. Express planes and through planes would use the exterior platform, while slower planes or those terminating their flight at this station would use the interior one. The circulation diagrams below illustrate the field in use under different wind conditions. The entire plan is described in some detail in Mr. Wood's forthcoming book "Airports—Some Elements of Design and Future Development" which also includes plans and photographs of 50 existing airports. This book will be published in the autumn by Coward-McCann, Inc.



LEGEND

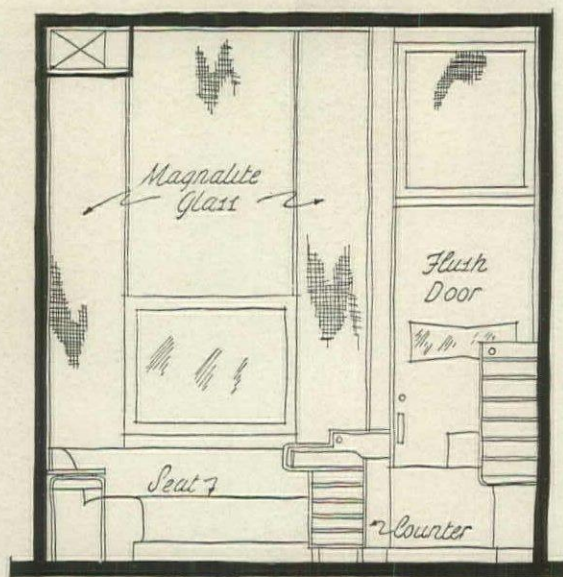
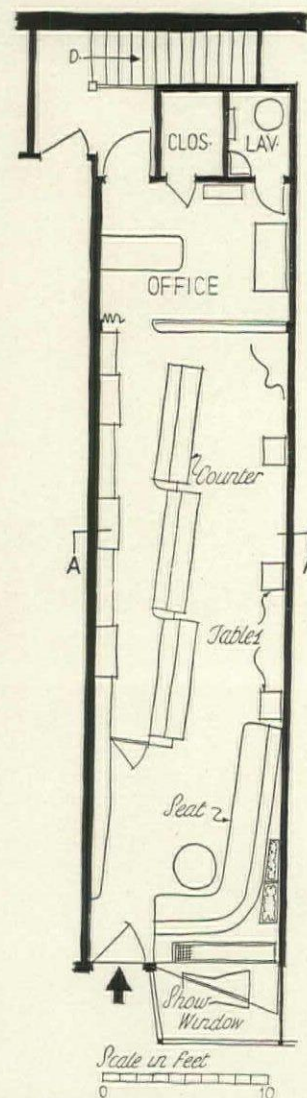
- Planes Loaded
- - - Planes Unloaded
- · · Planes In Flight



A highly specialized shop, only twelve feet in width, dealing in individually prepared cosmetics. Selling is done at the make-up bar, which is arranged in three staggered sections and equipped with individually lighted mirrors. The use of strong color has been restricted to the ceiling, couch and entrance door to eliminate any possible effect upon the appearance of make-up. Design of the front was limited to the window, as no exterior changes were permitted beyond a new door; the display requirements of such a shop are obviously few, however, and the problem was solved by the combination of an open case and ribbed glass, providing a view of the interior for passers-by without destroying the illusion of privacy inside. Of particular interest is the use of new materials. Transparent plastic sheets, for instance, are used as a protection for the lace-covered couch, the monk's cloth counter top, and chair webbing. Other materials and details are illustrated on the following pages. Cost: about \$10,000.

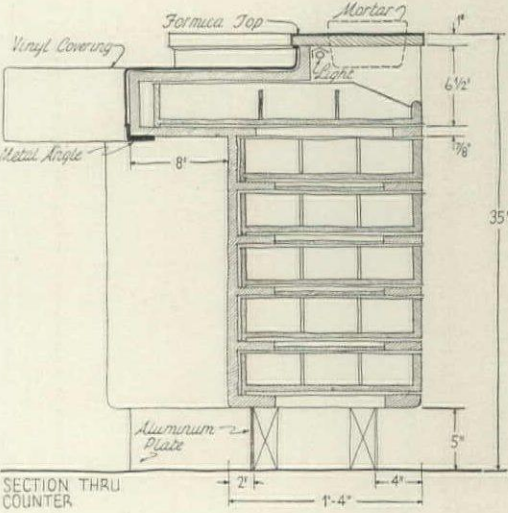


All photos, Richard Garrison



SECTION 'A-A'





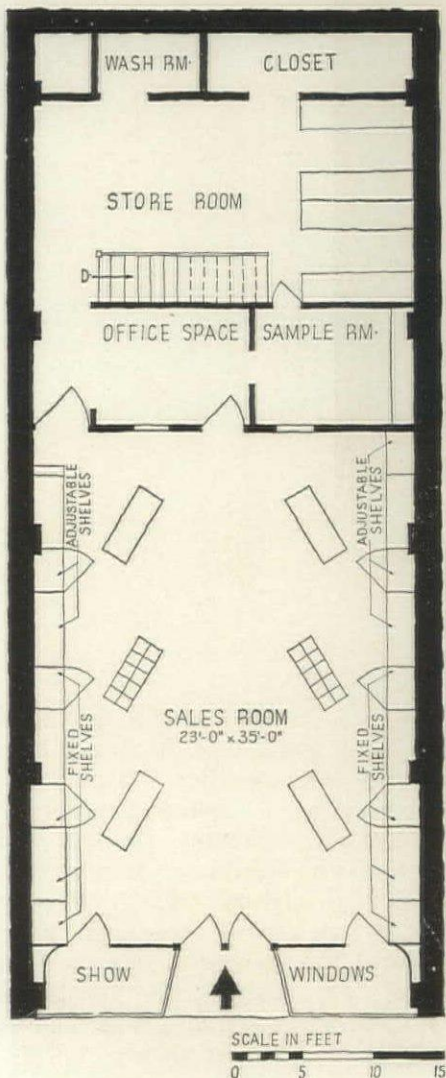
FINISHES AND EQUIPMENT

FLOOR COVERINGS—Flexachrome, Tile-Tex Co. WALL COVERINGS—wallpaper, Katzenbach & Warren; figured glass—Mississippi Glass Co. FURNISHINGS: Tables—oak, Plexiglas trim, Rohm & Haas. Chairs and sofa—covered with Vinylite, Carbide & Carbon Chemicals Co. Make-up bar—oak covered with Vinylite over white glass fiber cloth, J. H. Thorp & Co.; work side—Formica, Formica Insulation Co. HARDWARE—J. H. Judd & Sons. PAINTS—Keystone Varnish Co., T. J. Ronan Co., Inc. and Mauch & Merk. AIR CONDITIONING—complete unit, Model FD, General Electric Co.

PAINT STORE JOHN MATTHEWS HATTON, ARCHITECT



F. S. Lincoln Photos



SAMPLE ROOM

FOUNTAIN PAINT CO., PATERSON, N. J.

STORE FIXTURES BY ORENSTEIN STORE

FIXTURE CO., PASSAIC, N. J.

"The problem," states the architect, "was to establish quickly a store selling Pontiac paints, a line that had never been promoted in this territory. In designing the store the psychology of selling color was given the greatest consideration. It was argued that since the chief motivating force in the purchase of paint is the desire for the effects that are created by paint (bright fresh color) the store should be a perfect example of the results that can be achieved through the proper use of color. Painted plywood was used throughout for simplicity of appearance and to avoid any suggestion that the merchandise is high-priced. The familiar landmarks of the old type of paint store have been eliminated; much of the stock is concealed behind flush doors separating the sections of open shelving, the rest is in a stock room behind the house. Painted decoration is functional in that it illustrates the paints on sale; the basic color scheme is in red and gray." Cost: \$4,306.



All photos, Schnall

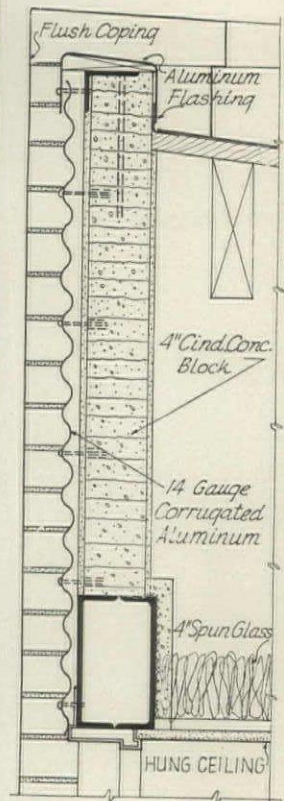
REMODELED APARTMENT HOUSE, NEW YORK CITY

SANDERS AND BRECK, ARCHITECTS, SMITH-MILLER, ASSOCIATE

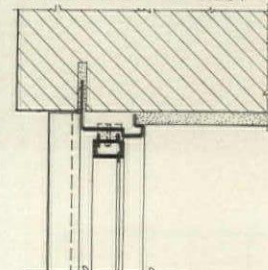
Since December, 1934, when *THE FORUM* first published the town house of William Lescaze, four New York architects* have helped to build the case for Modern by remodeling Manhattan brownstones for their own use. The house on this and the following pages has increased the total—at one jump—to seven. A cooperative venture in every way, it houses on its ground floor the office of the architects, and on its upper floors three apartments for the members of the firm.

*The others: Morris B. Sanders, Jan Ruhtenberg, and Michael M. Hare—*ARCH. FORUM*, Mar., 1936, July, 1937, and Feb., 1940.

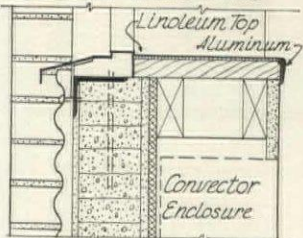
The street facade, which was entirely rebuilt, is exceptionally open, straightforward, and severe. Accordion-type steel windows, providing a clear opening of more than 14 ft. for the living room of each apartment, are separated by one-piece, corrugated aluminum spandrels and flanked by gray brick piers which are mere terminations of the party walls. Result is a solution which is not only unusually attractive, but which proved exceedingly practical as well. Light in weight, the spandrels and their 4 in. backing (see detail, right) are easily carried across the wide opening, and the whole effect readily maintained at its original freshness with a minimum of upkeep.



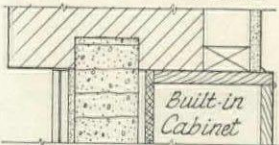
SPANDREL AT ROOF



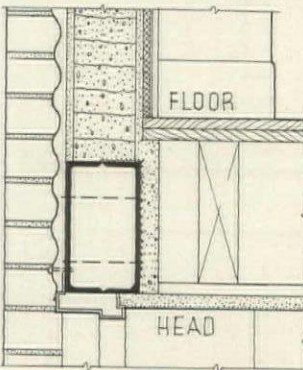
SECTION THRU JAMB



SECTION THRU SILL

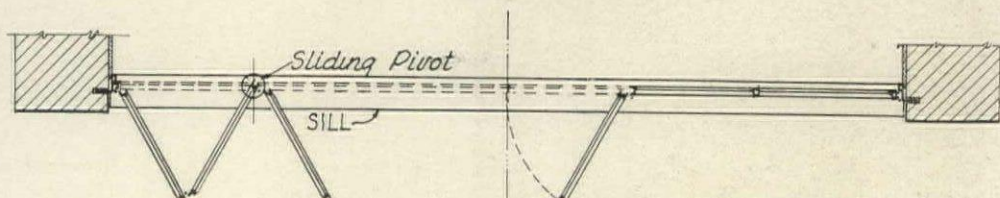
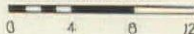


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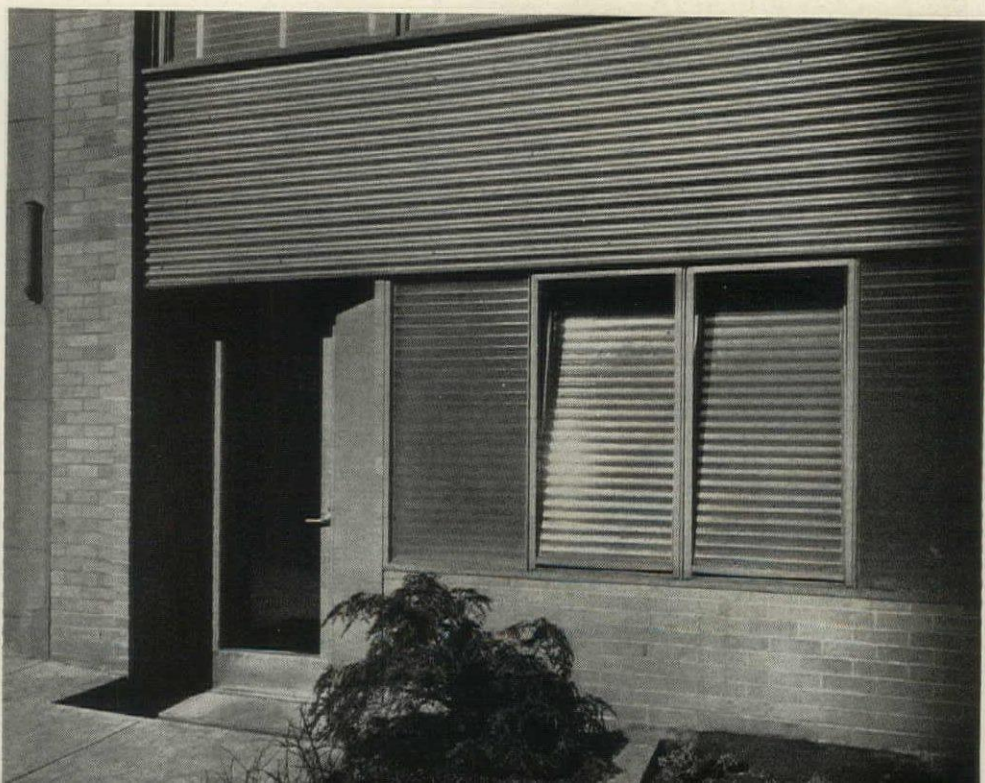
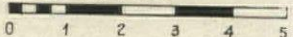
SPANDREL AT FLOOR

Scale in Inches



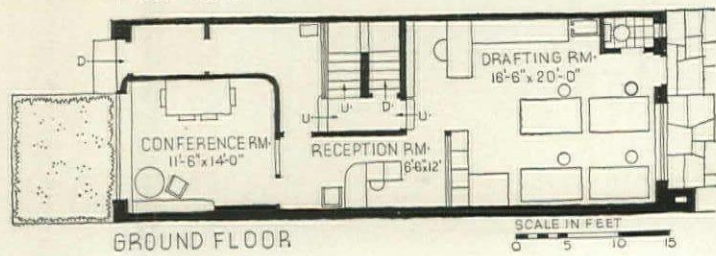
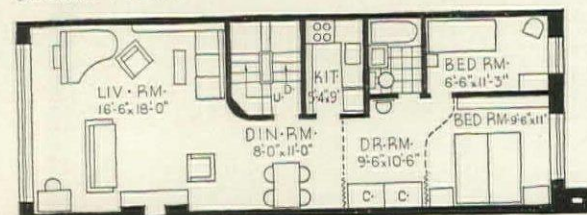
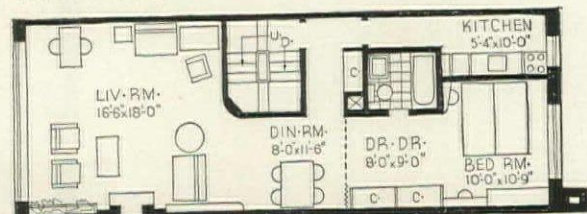
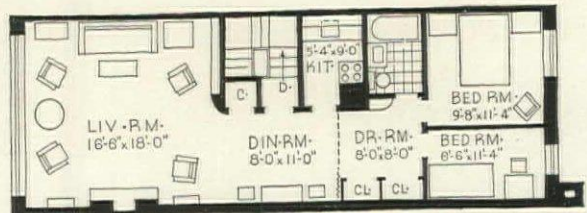
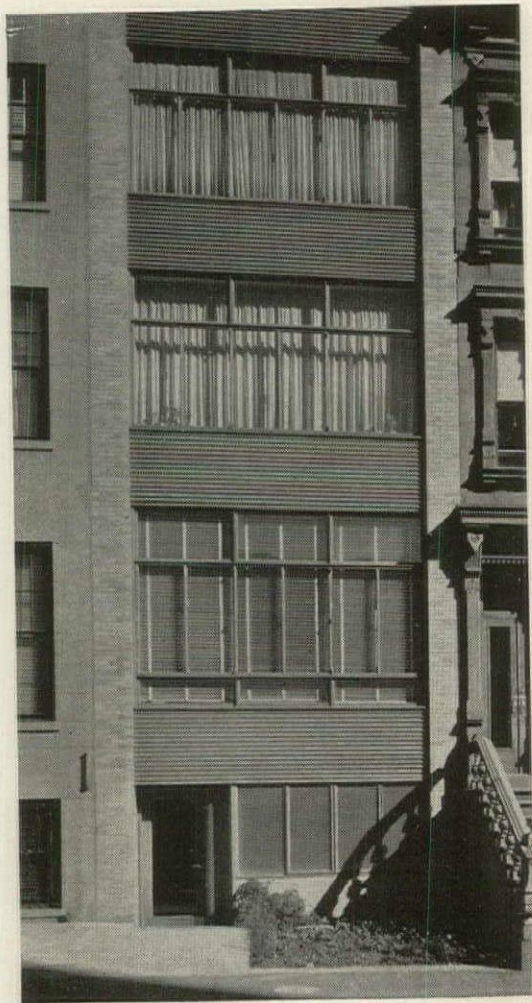
DETAIL OF ACCORDION WINDOW

Scale in Feet





CONFERENCE ROOM





**LIVING ROOM
2ND FLOOR APARTMENT**

In planning the individual apartments, which were varied to suit the requirements of the several tenants, a minimum of fixed partitions was employed. Service units—stairs, bath, etc.—are grouped as compactly as possible at one side near the middle of the building, and are similar, but not identical, on the different floors. Thus the top floor apartment, where skylight was available, has an inside kitchen, the second floor unit one at the back, yet vents and soil lines are in one vertical run.

The remaining space was kept as open as possible for the sake of light and air, which was at a premium, and to afford the flexibility demanded for entertainment and relaxation in the small city apartment. Division between living-dining and sleeping-dressing areas, when privacy is required, is accomplished by unique folding doors, resembling curtains (right), 8 ft. wide and 10 ft. high. Closed, they make a soundproof partition; folded back, they occupy little more than a foot. In place of built in closets, portable wardrobes, completely fitted, were used. These may be moved about if necessary, and afford further flexibility of plan.





BEDROOM—3RD FLOOR APARTMENT



CONSTRUCTION OUTLINE

FOUNDATION: Stone.

STRUCTURE: Exterior walls—face brick, corrugated aluminum alloy sheets, Aluminum Co. of America, furring strips, cement plaster, cinder concrete blocks, $\frac{1}{2}$ in. Celotex, Celotex Corp. Interior partitions—studs, metal lath and plaster. Floor construction—pine T. & G. sub-floor, oak strip finish.

ROOF: Covered with sheathing and built-up roofing.

SHEET METAL WORK: Flashing—16 oz. copper. Ducts—galvanized iron.

INSULATION: Roof—rock wool bats, U. S. Gypsum Co. Weatherstripping—Chamberlin Metal Weather Strip Co.

FOLDING DOORS: Modernfold doors, New Castle Products.

WINDOWS: Sash—steel, accordion and projected casements, Hope's Windows, Inc. Glass—Pittsburgh Plate Glass Co.

STAIRS: Steel, Kompolite treads, Kompolite Co.

FLOOR COVERINGS: Main rooms—oak strip. Public halls—Kompolite, Kompolite Co. Kitchen and bathrooms—asphalt tile, Tile-Tex Co.

WOODWORK: Cabinets—pine plywood. Interior doors—Paine Lumber Co. All window sills—linoleum, Armstrong Cork Co.

HARDWARE: By Charles Arcularius and P. & F. Corbin.

PAINTING: Materials by Benjamin Moore Paint Co. and Minwax Co.

ELECTRICAL INSTALLATION: Switches—Pass & Seymour.

KITCHEN EQUIPMENT: Range—Lindemann & Hoverson. Refrigerators—Sparton, The Sparks-Withington Co., Kelvinator, Kelvinator Sales Corp. Cabinets—Kitchen Maid Corp.

BATHROOM EQUIPMENT: All fixtures by American Radiator-Standard Sanitary Corp. Seat—C. F. Church Mfg. Co. Shower—Speakman Co. Cabinets—Charles Parker Co.

PLUMBING: Soil pipes—extra heavy cast iron. Hot and cold water pipes—Anaconda, American Brass Co.

HEATING: Vacuum vapor system; boiler and convectors, Utica Radiator Co. Valves—Hoffman Specialty Co. Thermostat—Minneapolis-Honeywell Regulator Co.

THE ARCHITECT'S WORLD

ARCHITECTURE AND THE MODERN MIND

By Joseph Hudnut

Introduction to an article in *Magazine of Art*, May 1940

Architecture, considered as an art of expression, has both universal and specific aspects. There are certain ideals of form common to all architectures—proportion, for example, unity, and a rhythmic disposition of space, of materials, of light and color—which, taken together, afford a continuity throughout the ages. These are the persistent substance of architecture, the deepest sources of its dignity and power. There are also, besides these general aspects, qualities of architecture which have their origins, one after another, in nationalities, techniques, and the changing nature of cultures: diverse and recurrent complexities of form, arising from the more immediate needs of men, which overlie the stem of architecture and hide from our view its growth and its universality. These are essential since, except for them, architecture would lack that relevance to the life of an era without which it would remain, like the specimens in a museum, remote from the quickening currents of ordinary experience. However we may share those sympathies which are common to all humanity, we are necessarily cabined by time, place, and circumstances; and architecture, if it is to command our hearts, must repeat her ancient promises in languages peculiar to each epoch of human history.

★

Among those influences which are formative in architectures one of the most determinant is the impact of ideas. The human mind is, I suppose, much the same in all eras, being the product of reactions which are everywhere alike and continuous; but it is subject to wide changes in emphasis. Where experience and that funded experience we call knowledge are constantly changing, both in range and in content, ideas also must change; and such changes are inevitably reflected, not only in the actions of men but in the things that they make. Nothing is created without philosophy; and the forms of buildings, which of all objects are the most responsive to the human spirit, are as frequently evidence of mind as they are of circumstance.

It seems altogether plausible, for example, that the Greek conception of the world as a complete, fixed, and symmetrical system, concentric about man, should—in part, at least—have determined the

balanced, geometric, and humanized architecture of the temple. Since they thought of the universe as a cosmos of order and therefore accessible to the understanding, the Greeks could not have found delight in a mystic or obscure architecture, still less in an architecture of realism or of passion. Infatuated with the objective beauty of the visible world, boldly seeking to apprehend nature's terms, the Greeks translated their rational soul into rational philosophies and rational temples.

The medieval mind, addressed to spiritual values, is as unmistakably reflected in the dynamic splendor of Gothic architecture. In that youthful, poetic world, wherein each of the inexhaustible forms of experience revealed some new aspect of the vast drama of creation and redemption, the cathedral had no other purpose than to reaffirm the overwhelming reality of the divine will. That same passion for belief which directed and illumined scholastic theory and popular legend informed also each detail of this intricate but synthetic architecture: the visible cathedral is the mirror of an invisible cathedral of thought.

The seventeenth century, which overcame human misery and defeat by spectacle and formal observances, by pomp and incense and high language—which created by an act of the will an illusion stronger than reality—impressed as definitely the pattern of its spiritual life upon its constructed forms. And where else than in the facades of the Georgian houses can we read more intimately, not manners, customs, and techniques merely, but the

very spirit—lucid, decorous, and arid—of that engaging period?

A principle so persistent in history must, it would seem, be operative today; and if, as I believe, a new architecture is now in process of formation, it is probable that at least some of the characteristics of that architecture are being determined not merely by physical and social circumstances such as climate and available materials, the habits of the people, the form of government, the condition of science and industry, but also by whatever spiritual attitudes are provoked by the eager currents of contemporary thought. There exists in every era a collective mind, a background of general concepts, in part inherited and in part formed anew by commerce with the world; a background which is not passive, not a white page merely to receive the imprints of experiences, but alert and active; and which, even without the consent of conscience, shapes and colors the interests and aptitudes of each era and as surely directs also its ways of making and of seeing. We have not explained our new architecture when we say that it will be specific to our day—that is to say, conformable to our technique, adaptable to our uses and observances; it will be specific also to whatever may be the pattern of contemporary idea. It will be shaped as inevitably by whatever vision we may form of the structure of the world, by whatever explanations of human experience we may accept, by whatever hope or despair is ours as we face the unknown and the implications of that which is known.

THE FUTURE OF STAINED GLASS

By Walter Dorwin Teague

Summary of an address before the Convention of the Stained Glass Association of America, New York, June 11, 1940.

We stand at a dark hour of history. Forces of destruction threaten our civilization with more complete disaster than the world has suffered for many centuries. But black as the times seem, we must not forget that there are also great constructive forces operative in our world. Here, while we have peace, we have a vast army of men working earnestly, tirelessly, ingeniously,

at the building of a better world: research scientists, chemists, metallurgists, physicists, engineers, designers, craftsmen—all these men are makers and builders. Tremendous powers, also, are in their hands—greater powers than any group of men ever before possessed in human history. If they are allowed to use their powers in peace, there is no reason why they

should not build a Utopia such as we have only dreamed of hitherto, and that not too clearly.

The forces of destruction that threaten to bring all this creative effort to halt are themselves the last violent manifestation of an age of disorder and confusion from which, actually, we are emerging. It is possible that this convulsion may delay our work a few years, a few generations or even a few centuries. But it is also possible that it may end and disappear as a factor in human affairs, much sooner than now seems possible. It is contrary to the whole trend of our racial history, an anachronism and a throwback. It is a last irrational spasm in that process of radical readjustment through which our western world has been passing for the past century and a half of industrial revolution.



We can see around us, in the work of the past few generations, the sources of our present difficulties made visible. The architecture—all the design—of these recent generations is replete with symbols of confusion. Our art, like the rest of our world, has been full of meaningless forms, unnecessary elaborations, costly, pretentious, empty survivals and revivals, suppressions and frustrations. It has had no

clarity, no unity of aim, no revelation of a strong, controlling spirit which saw its ideals clearly and held them firmly.

Only within our own brief working life has such a spirit awakened among us. We have begun to see with increasing clarity what we want to make of our world and our lives, and this new vision has begun to manifest itself as a new order and a new unity in our work. Again designers and craftsmen are joining with the other creative workers of their times in a common effort to realize shared ideals. Our renaissance may not have come quite soon enough: disease may have eaten too deeply into the body of our civilization. But if we survive this attack it will be because of the new clarity, the new unity of aim, we have only just been acquiring.

You practice an ancient and a beautiful art: But if a saner world emerges from this cataclysm, your art, to survive, must be integrated with its times much more closely than in the recent past. You cannot practice it as an echo of an art that reached its finest development centuries ago. In those centuries of its triumphs, your art was a force and a power in the world. The glassmakers had as much influence on Gothic design as the engineers, the master builders or the prelates. It was to give the artists in glass broader and broader scope

that the vaulting rib, the flying buttress and the compound pier were developed: Gothic building became attenuated to a mere skeleton of masonry so that its glass might fill vaster and vaster areas. If your art is to flourish in our new world you must find means of binding it as firmly into the special practices of these times.

You cannot continue to think of your art in terms of masonry and Gothic liturgy. You will have to find a way of practicing it in terms of steel and electricity, and you will have to make it expressive of the moods and preoccupations of our times.

If we succeed in extricating ourselves from this impending disaster it will be because we have recovered clarity of vision, and united in support of shared ideals. In such a world, confusion will not be tolerated, and reminiscence will have no value. It will be a world animated by deep and powerful enthusiasms for the better ordering of human living, for the reconstruction of our environment to meet our modern needs, in the light of our modern knowledge, by means of our modern tools and techniques. Any art which does not contribute to these ends will receive little tolerance.

And if we don't succeed in emerging from this crisis, nothing much will matter, for a long time.

THE LITERATURE OF CITY PLANNING

By L. Hilberseimer

PROFESSOR OF CITY PLANNING, ARMOUR INSTITUTE OF TECHNOLOGY

Condensed from an address before the Chicago Chapter, A. I. A., January 10, 1939; translated by Prof. John B. Rogers

City planning literature of the last 50 years began with the criticism of the blemished beauty of the cities. I refer to the small book, "City Planning, Its Artistic Principles" by Camillo Sitte, published in 1889 in Vienna. It exercised an extraordinary influence, the after effects of which are still felt today. It was indeed an architect who wrote the book, and in it the architects were called upon not only to concern themselves with the design of buildings, but also with their relationship to the city plan.

The effect of this book was as successful as the use of its principles was unsuccessful. The reason was Sitte's inability to recognize the changed structural character of the old cities which he admired. He believed that their beauty was something independent of this structure and therefore something which, without further ado, could be used for the new and entirely different kind of cities in order to reach the same goal, "beauty." His book contains only rarely a passage from which one might conclude that he also thought of the people who live in the cities. Of workers' dwellings there is no mention whatever.

But there was just at this time an in-

dustrialist with insight who recognized the worker's dwelling as an important element in the development of industry and city planning and who, by his action, set the world an example.

In the year 1887 the industrialist Lever located his factory in the neighborhood of Liverpool and established at the same time a colony for his workers, Port Sunlight. His goal was to create the best possible living conditions for his employees. Lever never wished to be regarded as a philanthropist, but he possessed a thing rare in the nineteenth century, a social conscience. He proposed a bill in the House of Commons setting a maximum building concentration for small buildings. Unfortunately it was without success, but he thereby made one of the most important principles of city planning a subject of parliamentary and legislative action for the first time.

However, Port Sunlight finally led to the English garden city movement. In 1898 Ebenezer Howard published a small book, "Garden Cities of Tomorrow," in which he expressed the thought that it would be comparatively easy to develop a city in a way exactly opposite to the former usual and apparently reasonable way. Name-

ly, first to develop a plan which would take into consideration all public requirements, and then to determine the development of the city on the basis of this plan. He also wished to create, not minimum housing, but small houses of limited expense which would satisfy all the requirements of modern hygiene for light and air, and all the requirements for the enjoyment of life.

The necessary means were forthcoming. In 1903 the garden city of Letchworth was built near London, from the plans of Parker and Unwin—a garden city in which 30,000 people were to dwell.

How right Howard's thoughts were was shown by, among other things, the location of industry in relation to the residential district—not around the perimeter but on its leeward side, and separated from it by a strip of park.



But this garden city movement, although it established basic principles, must always remain a romantic phase in the development of city planning. Like wise the book, "Town Planning in Practice," by Raymond Unwin (who, besides

Letchworth, built other garden cities, and summed up his experience in this book) is prejudiced by this romantic spirit.

Such considerations lay too distant from the aims of that time to have exerted a decisive influence. One could feel the effect of these new ideas everywhere, but other shocks were necessary to bring the current principles of city planning into doubt.

The automobile gave the first shock to the city planning structure. In the interior of the city the auto is a check to traffic rather than an aid. The reason is that all the cities are oriented about a center, the typical criterion of a pedestrian city. But this centralization results in such traffic jams that a subway is the better alternative.

★

Among the many attempts to create an improvement, the most consequential was the one by Ludwig Sierks in his book, "Plan of the Safe, Rich and Beautiful City," published in 1929. He designed his ideal city with a round central core containing the business district, this surrounded by a concentric residential district, with the industrial district and agricultural land on the perimeter. He believed that the tall business building and the single family house would be the final forms evolved for these purposes.

What is especially interesting in Sierks' proposal is the traffic connections. He proposed three levels, with all rapid transit underground and all motor traffic elevated. His plan provided concentric and radial streets. The avoidance of street crossings on the same level he regarded as fundamental.

Sierks' plan has many defects, especially by reason of its concentric form. It does not keep industrial fumes and smoke from the residential section. It also raises the question whether traffic should be directed toward a center; is not perhaps the best solution a plan that requires no traffic?

In 1882 a Spanish writer, Sori y Mata, proposed the "lineal city," which today has awakened intense interest as the "ribbon city." His proposal envisioned a simple wide street of any length. "So will be the city of the future, whose terminal points can be Cadiz and St. Petersburg, or Peking and Brussels. Railroads, rapid transit lines, conduits for water, gas and electricity lie in the middle of this immense ribbon, and, in certain spaces between, small buildings for the city services—fire department, public health authorities, police, etc. . . . A certain point on the line, where the cheapness or advantageousness of the land is inviting, will be the starting point of another city, which would form an angle, or a fork; like the limbs of trees. . . ."

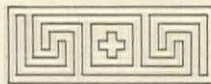
Our present highways could be the spine of such new colonization. One could border them with settlements, somewhat as Frank Lloyd Wright has suggested.

In 1930, in Moscow, a book by N. A. Miljutin was published on the fundamental

questions of city planning, particularly in Russia. Miljutin likewise takes the traffic ribbon as the spine of the city organism, but he establishes six parallel zones: traffic, industry, green area, residential, administration, park with sport fields, and the adjoining agricultural land. Miljutin wished to bring industrial and agricultural production, education and dwelling into conclusive relationship so that the twin growth of industrial and residential districts can take place. This plan produced the first theoretic form for an industrial community, capable of logical and unhampered growth, and therefore a form which corresponds to the requirements of our civilization.

Alongside of these influences, which affect the city on the technical side, are others of a social nature, which will perhaps have an even deeper effect.

It is certainly no coincidence that two books with almost similar titles and contents appeared at the same time in Europe and America: "The Flight from the City" by Ralph Borsodi, and the "The Flight from Berlin" by Hermann Ullmann. Both are concerned with the social structure which results from the city. "Is city planning perpetuated unemployment?" is a question asked by W. F. Bruck in his book of that title.



MURALS

Excerpts from a discussion between H. S. Goodhart-Rendel, Past-President of the R.I.B.A., and Eric Newton, as reported in *The Listener*, London, February 8, 1940.

NEWTON: So you think a renaissance is due, if it has not come. We shall have to evolve a sound tradition in mural painting, and decide on a few basic principles, shan't we, before such a renaissance really begins to count?

GOODHART-RENDEL: As a rule, neither architects nor painters seem to me to have any general principles of wall decoration at all. No, that isn't quite true. They have exactly one maxim—that a wall-painting must emphasize the solidity of the wall it is on, and not appear to knock a hole in it.

NEWTON: Isn't that a sound principle?

GOODHART-RENDEL: It may not be bad as a general maxim, but of course it is most arbitrary. In every building some walls impress the eye as being weight-carriers and others appear to us only as screens. Naturally, it is most uncomfortable to have weight-carriers painted away, but you can do what you choose with screens.

NEWTON: What about Veronese's big ceiling panel? There's a hole in the building if ever there was one! Don't you feel it is more justifiable to knock a hole in the ceiling than to knock a hole in the wall?

In contrast to the former tendency to concentrate production in the cities, with their reservoirs of labor, the exact opposite is now seen, because the city has become expensive in both plant and labor.

Henry Ford has long held this point of view. In his book, "My Life and Work," 1923, he wrote: "The belief that an industrial country must concentrate its industry is, in my opinion, unfounded. That is only an intermediate phase in the development. Industry will decentralize itself. If the city were to decline, no one would rebuild it according to its present plan. That alone discloses our own judgment on our cities."

This negation of the metropolis by Ford finds its parallel in the opinion of the military authorities. The development of offensive and defensive weapons has always corresponded to the growth of the city. Today the offensive weapons lead to the scattering of individual centers of population.

The solution of these problems extends beyond the boundaries of the city. City planning today must become national planning. One can solve partial problems, but only if one realizes their implications on the whole. For city planning is a social task: the solving of the technical and economic problem, and of the architectural, artistic and spatial problem.

GOODHART-RENDEL: I am prepared to knock a hole anywhere; but I am not prepared to let you do on a ceiling an enormous vertical composition which half the time is seen upside down. From only one point on the floor does it make sense. Oh, I know the number of precedents to the contrary, from the Sistine Chapel downwards. But do we really want any more booms-a-daisy compositions, with heavy bodies crashing through the plaster and everything always just wrong from where you are standing? I can't see anyone doing them nowadays, and I'm not sorry. Paintings that aim at the perspective illusion of reality aren't very enjoyable anywhere, except as a joke. But if you have, within an architectural frame, a vertical surface that might just as well be open as closed, then, short of illusion, you can have as much distance and perspective in it as you choose.

NEWTON: This is fascinating. Do go on.

GOODHART-RENDEL: The most important principle in my opinion is that of observing in the painting the natural scale of the surroundings. Scale in architecture is of two kinds, the natural and the artificial. Any Gothic building has all its features

what you might call man-size. If the building is larger than usual the individual features are hardly any larger for that—there are merely more of them. The buildings of classical antiquity, on the other hand, and many buildings of the revived classical styles, have features following a fixed proportion with the size of the building; and in buildings of any magnitude those features are therefore apt to be gigantic.

NEWTON: Like the Cherubs at St. Peter's—they weigh about ten tons; but they fit beautifully into the building.

GOODHART-RENDEL: Yes, and they are just about as big as they can be. As far as there are any absolute rules for decorative painting, I think it is true that the largest figure in any subject ought not exceed the size

implied by the surrounding architecture; except, of course, when you are portraying supernatural or abstract personifications.

NEWTON: But who is to judge exactly what size is implied by the surrounding architecture?

GOODHART-RENDEL: The architect knows that, or he ought to. As a rule, the painter doesn't. And another thing the painter doesn't usually know is the sort of composition that is most suitable to the surroundings. Take a long hall or gallery, a place that people pass through and never remain in. The architect must tell the painter that here the paintings too must be, as it were, processional, and not a series of tight little pictures that you have to stop and look at separately.

MOTHER OF PARLIAMENTS

By "Astragal"

From Notes & Topics, *The Architects' Journal* (London) for May 9, 1940.

One hundred years ago last week Mrs. Barry (wife of Charles Barry, architect) laid the foundation stone of the Houses of Parliament. It was an obscure ceremony, for there is no record left of the other persons attending it, and the stone itself has never been found. This rather sinister beginning fits in well enough with the troubled history of the building.



Six years before, Mr. Barry, returning to London on the Brighton coach, saw in the sky a red glare. It was the burning of the old Palace of Westminster, and was to be his great chance. It was decided to rebuild in "the Gothic or Elizabethan manner," and the designs were to be selected by competition. Mr. Barry won, and retired under a deluge of Greek-v.-Goth pamphlets to prepare the working drawings with the help of Mr. Pugin, who had provided the elevations of the winning scheme (and, incidentally, the plans for another competitor; such a subdivision of

our art would, of course, horrify us today).

For two years they worked together, Barry sending the dimensions for Pugin "to work up. . . . I send some tracings . . . most wretchedly made by a youngster who is as dull and destitute of feeling as the board upon which he draws . . . do not be shackled as to height," etc., etc. "A quarrel broke out, and it lasted seven years before Barry swallowed his pride and wrote again for help. ". . . I am in a regular fix respecting the working drawings for the fittings and decoration of the House of Lords. . . ." Pugin consented to carry on again, and worked feverishly to cope with the pressure of work thrust upon him. Almost the last requests of Barry were for "eighteen umbrella stands of quaint design" and some inkholders "cut on the exterior in a knowing way." It is not surprising that Pugin shortly after turned the corner and became insane from overwork—particularly as he did a good many of the details alone in a small boat.

WHAT'S IN THE ARCHIVES BUILDING?

By Theodore J. Young

OF EGGERS & HIGGINS, ARCHITECTS

Excerpts from an address before the University Women's Club, Washington, D. C., March 14, 1940.

It had been long realized that adequate provision should be made for a depository easily accessible for study and research and for the permanent preservation of various papers and documents of the Government.

The value of the papers and files thus deposited would vary from such priceless documents as the original laws and treaties of the U. S., to vast quantities of data which in themselves would appear relatively unimportant were it not for the relation

they might bear to future and possibly larger questions of national and international importance that might arise.

The completed National Archives is not designed as a central filing depot for active files, which belong and are kept accessible in the various Governmental department buildings, but for papers that have ceased to be related to current business.



It was desired that adequate facilities should be made not only for the agencies of the Federal Government which might desire to verify or seek information or to trace continuity of policies, but also for students of history from the U. S. and foreign countries.

In 1800, 1801, 1833, and at other times, fires in public buildings in Washington, destroyed valuable records of the U. S. Government. In the historic fire of 1801 when a portion of the records of the Treasury were destroyed, a contemporary newspaper reports that the President of the U. S. was observed in the ranks rushing buckets of water to the conflagration.

Loss by fire was only one way in which valuable government papers were destroyed. Stamp collectors, autograph dealers and thieves mutilated and purloined valuable documents. In one case, an official sold to a junk dealer 400 tons of official records—he needed the space for his office force.

Following a destructive fire in the Department of the Interior in September, 1877, President Hayes, in a special message to Congress, called attention to the pecuniary value and historical importance of the archives of the Government and recommended the erection of a fireproof building. A half century of discussion of the problem, both within and without Congress, followed before the 69th Congress, in 1926, authorized an expenditure of \$6,900,000 which was afterwards increased to \$8,750,000 for the erection of a National Archives Building. The contract was let on December 11, 1935, and the work was completed on February 19, 1937—60 years after the movement for a Hall of Records was launched by President Hayes. . . .

As a preliminary to the actual planning of the National Archives, Mr. Louis Simon, Supervising Architect of the Treasury, was commissioned to make a comprehensive survey of buildings used for a similar purpose abroad. On his return the then Secretary of the Treasury, Mr. Mellon, at Mr. Simon's request, appointed an inter-departmental committee to work with him in coordinating the needs of the various departments of the Government that would use the architects' organization when in operation.

. . . It was estimated that the total bulk of documents worthy of permanent preservation up to January 1, 1917, was slightly over 1,000,000 cu. ft. It was further estimated that the files which accumulated between January 1917 and January 1930

formed approximately twice the bulk of all files for the earlier period.

An anticipated annual accumulation of 200,000 cu. ft. a year, calling for an increase in stack space of 600,000 cu. ft. a year, made it necessary to plan for a building having 10,000,000 cu. ft. of stack accommodation, although at that time, 1930, it was assumed that about 60 per cent of this space would not be required within the next half century.

The planning of this building was one of the most interesting problems that an architect may encounter. Hitherto, most archives buildings were little more than storage warehouses. Now it was proposed, not only to house the documents, but carefully to clean, repair, and prevent their deterioration by all known modern methods.

After a shipment of records is brought in to the Division of Accessions and is receipted for on behalf of the Director of Archival Service, it is examined by the staff of the Division of Repair and Preservation and given such treatment as may be necessary and feasible.

Papers that are dirty or moldy are cleaned and fumigated, and those that are torn or otherwise damaged are repaired according to the most approved scientific methods. Documents that are folded are opened and pressed flat. The material is then removed to the stacks, where it is arranged and filed in fireproof containers on steel shelves. Once there it is shielded from sunlight; surrounded by air that is carefully conditioned as to temperature, humidity, and chemical content; and pro-

tected by elaborate devices for detecting and preventing fire and unauthorized entry.

In addition to Departments of Accession and Preservation, there are departments of classification, cataloguing, maps and charts, reference, research library, motion picture and sound recordings. There is space for the executive officer, purchase and supply department, personnel and payroll, finance and accounts, and other allotments too numerous to mention, each carefully located in the building with reference to its function.



The building, when completed, consisted of a hollow cube. A large court in the center provided space for expansion for presumably the next 50 years. So rapid has been the growth of material considered valuable, that this court has now been completely filled with additional stacks.

There are 21 levels of stacks, divided by fire walls and concrete floors into numerous sections. The stack space, including the extension, comprises over 5,500,000 cu. ft.

The Government has amassed approximately 5,000,000 lineal feet of motion picture film depicting such subjects as World War activities, news reels of historic occasions, as for example, Presidential inaugurations. There are film records of soil erosion and forestry work, development of national parks, Indian dialects, folk songs, etc. The building contains a projection room where they may be exhibited to those who have adequate reason for desiring to see them.

LET US GET BACK TO ART

By Ernst Jonson

Excerpts from an article in *The Journal of Adult Education*, October, 1939

In no realm is modern education more deplorably ineffectual than in that of art, a realm which is virtually unknown to the popular mind of today. Even among educated people, the great majority think of art as the skillful rendering of natural objects. Almost nowhere do we find an approach to the concept of art as a creative activity. The revolt against the shallow, affected sentimentalism of the nineteenth century, which is the root and marrow of modernism, is the sign of resurgent vitality, no question about that; but the form taken by modernism indicates that this resurgence is not powerful enough to dare true artistic expression.

What the modernist presents to us as art is not art at all, but something essentially different from art. Man created works of art before he learned to think. In all parts of the world we find remains of primitive cultures that possess the mysterious quality which we call the quality of art. That is archaeological fact.

Frequently this art quality is enhanced concurrently with the development of the capacity for thought, but on the whole not proportionately with such development. On the contrary, when much emphasis is put upon logic, the arts begin to show signs of decay. Witness what happened in Greece in the fifth century before Christ. Again, the rise of rationalism in modern Europe was accompanied by a marked decline of all the arts of design. The nineteenth century, which excelled in preciseness and clarity of thought, saw the arts sink to a level lower than that of the arts of primitive peoples. Imitation of nature came to be regarded as the aim of art. A skillful draftsman was thought of as an artist. And in architecture as well as in the arts of decoration, continuity of development was wholly abandoned, and for it was substituted a capricious, senseless imitation of the work of past ages. "Period work" became the vogue.

It was the resulting emptiness and superficiality of nineteenth century art that gave rise to modernism. Modernism seeks to restore life to art by releasing it from the constraint of the nineteenth century ideas that architects and craftsmen should work in some supposedly superior historic period and that painters and sculptors should copy nature with the greatest possible exactness. But the means employed in this attempt at liberation are intellectual considerations and are as bad for art as the constraints they are intended to remove. Modernists insist that their work has meaning. True enough, but the meaning is intellectual and not artistic.

Here is a radical difference of opinion. The modernist declares that his work is art, and he backs this declaration with arguments. I hold that art is not an intellectual construction, and that the value of a work of art cannot be certified by argument. I make my appeal to a faculty of extra-material intuition, generally called taste. In its lower denominations this taste merely appreciates sensual beauty, the beauty of a deer, of the youthful human body, of a Pompeian wall decoration, or a Chinese fabric. From these lower levels it gradually and spontaneously rises to appreciation of the more subtle qualities of art.



Natural taste lies dormant in all men, but comes to actual manifestation among the masses only under favoring conditions. Natural taste should be sharply distinguished from what is known as good taste, which is taste instructed by the consensus of a school or group. The taste to which I make my appeal is the innate, uninstructed taste of the human mind, freed from the constraints of argument and fashion, and sheltered from the agitations of economic insecurity and mounting social ambition. . . .

Modernist painting and sculpture are as much under the domination of naturalism as were the painting and sculpture of the nineteenth century, but they seek to disguise their naturalism in various ways. One of these ways is to affect an infantile crudity of execution; another to adopt mannerisms derived from primitive arts. Still another is to disrupt the natural order of things and present an aggregate of lines and forms abstracted from nature, or to force the forms of nature into some geometrical pattern, or to distort them in some wholly arbitrary and senseless way. To be different, that is the main thing. It is argued that these differences give meaning to art; but when they do so the meanings are intellectual, not artistic. Thus, for example, modernism shuns the pleasant and romantic subjects dear to the nineteenth century and chooses in their stead gloomy and disgusting ones. This change signifies merely a transition from an infantile optimism to a juvenile

pessimism. These are intellectual attitudes, and they have nothing to do with art. . . .

Modernism is bad art, not because it violates assumed principles of art; it is bad art because it fails to appeal to the natural, uninstructed taste of the human mind, unaffected by the influences of style

and fashion. And the reason for this failure is that modernism has its roots in personal whim and argument; it is not the spontaneous, unpremeditated expression of universal human taste. In other words, modernism was invented; it did not evolve.

And it must be judged as such a separate thing.

We also encounter the notion that it is somehow constructive to mention virtues first and faults second. What this has to do with any given case I have never been able to see. If there are two good things you can say about a picture and twenty bad ones, it will make no difference to an intelligent man how you order them. He still will see that the faults of the work outnumber the virtues ten times. And indeed if the total and the final impression of a work is that the work is poor, or shoddy, or mediocre, or insincere, or incompetent, or dull, or unoriginal, then that impression is the most important thing about that work; and whatever minor felicities it may possess should be made to take a secondary position so long as they are not sufficient to reverse the total verdict of the thing as a whole.

As a matter of fact, criticism can be criticism only if it's to be of any use, and efforts to make it either "constructive" or "destructive" are most dangerous. It is not a critic's duty, not his right, *as critic*, to build anything more than an opinion, as reasoned, fair and sensible as he can make it.

MORRIS AND COMPANY: 1861-1940

From "Notes and Topics" by Astragal in *The Architects' Journal*, London, June 13, 1940.

Last week, among all the headlines and special articles of the third day of the Somme battle, there was in one paper half a column, and in another a paragraph, announcing that the firm founded by William Morris had come to an end.

It was a queer moment for a postscript to be written on Morris and Company: it was queer to find how, for a moment or two, the wording of the paragraph "Famous firm . . . Morris . . ." suggested only that something had happened to Lord Nuffield. Then one began to remember.

It was in 1861 that the firm which was later known as Morris and Company started at 8 Red Lion Square, Holborn. Its original members were William Morris, Madox Brown, Rossetti, Burne-Jones, Philip Webb and the two "business" men—Faulkner and Marshall. From there they set out to reform their age.

Beside the stained glass, wallpaper, tapestries and furniture for which it was most famous, the firm tackled almost every kind of decorative design—painted panels, painted tiles, gesso work, and embroidery,

table glass and china—and always with the same aim: to avoid the lifeless vulgarity of machine reproduction, to reintroduce *personality*—individual craftsmanship—into all design.

It was an aim that only expressed half the truth as we see it—for Morris and Company did not admit that good design could be obtained through the machine as well as without it. No doubt their good influence was all the greater for this limitation. Victorians liked things cut and dried: black or white, machine or man.

The battle they all fought seems very ancient history now: charming history of times when "Red Lion Square seems to be the natural resort of people on the venture"; when "Faulkner kept the books, and helped to fire the glass in the basement. His two sisters helped in tile painting and gesso work"; and one day a roll-parcel came (addressed to Morris, who was apt to be impatient with parcels) "of which the wrapper—and it was all wrapping—was gummed right through to the core." Burne-Jones was suspected.

CONSTRUCTIVE CRITICISM

By A. D. Emmart

Excerpts from a bulletin of the Baltimore Museum of Art, reprinted through the courtesy of *The Baltimore Sunday Sun*

I have tried painstakingly to get at just what idea this or that person may have in mind when he speaks of constructive criticism. I have never succeeded. Sometimes it stands simply for praise; sometimes for gentleness of manner; sometimes for the making of suggestions for improvement. Now none of these of course constitutes criticism at all. Criticism is an effort to appraise, to weigh—justly—and to state one's findings, justly. That is all. Praise obviously is criticism when it is deserved. But praise as an unfailing rule is simply advertising. Gentleness is nearly always admirable, but it is a matter of tone, not of judgment. Or if it does pass over into the influencing of judgment, the softening of it, the obscuring of it, then it ceases to be an excellent thing and becomes one which blurs an honest opinion into one not so honest, because it either

is vaguer than it should be or disproportionate. Suggestion for improvement when it comes, unasked, from a critic is merely a valueless impertinence unless the suggestion is exceedingly general in nature. The critic's business is not to advise the artist but to inform the public.

There is still another notion about constructive criticism, I believe. That is that it is a form of criticism which takes full cognizance of the artist's intention. Now intentions are important affairs; and if a critic sees that a painter, writer or musician has undertaken a very ambitious, or difficult, or novel work and has failed in it, he should of course give credit to the artist's initiative and courage. But that must not affect his view of what actually is before him. The result is in every case—whatever purpose was behind it—something tangible and complete in itself.

THEY SAY—

"Although I am a conservative by instinct, I believe that the only constant factor in art is revolution."—EDGAR I. WILLIAMS.

"Of the 182 men on our office staff, 165 are college graduates, and five 1940 graduates have just been taken on."—HENRY C. TURNER of Turner Construction Co.

"Of the important or major necessities in this country, small house building offers the greatest opportunity for, and is most in need of, a reduction in costs."—ALFRED P. SLOAN.

"Resolved that . . . the time has come for a radical modification of the prevailing typical style of library building, and the adoption of a style of construction better suited to economy and practical utility."—AMERICAN LIBRARY ASSOCIATION in the year 1881.

"One lesson of the last war is that housing plays an important part in the speed with which war industries can be created and carried on. . . . In 1917-18 housing of war industry workers became a very real bottleneck."—NEWTON C. FARR, president, National Association of Real Estate Boards.

"Some few weeks before I left my country I saw a little village, including nearly 150 houses, destroyed in less than one hour. . . . Modern war is mainly the destroying of buildings. . . . There are terribly large problems which cannot be solved except by the architects."—ALVAR AALTO of Finland.

THE DIARY

Henry J. Saylor

Monday, June 17.—Donald Deskey disavows a crime I had laid upon his doorstep—running plywood through a set of molding knives to imitate the texture of handrived shingles (June FORUM, page 435). Imitating one material with another is as much a pet hate of his as it is of most of us. What he was aiming at was a three-fold purpose—securing a surface that would not mar so easily as the smooth face of plywood, one that would not show finishing nails, and at the same time breaking the surface tension to permit easier bending of the material on curved walls. And his striated texture is not obtained by cutting a plywood that has already been finished smooth, but by substituting one new operation for two former ones in the manufacturing process. Deskey tells me that one of his chief concerns these days is the armoring of the surfaces we live with. Too many of them take on permanent scars at every accidental blow—not only our walls but our floors. At the moment Deskey is experimenting with the linoleum family.

Wednesday, June 19.—Dropped in at the Beaux-Arts Institute to learn the awards (see page 14) in the Western Electric competition—a small transmitter station. Competition programs recently have been getting away from their traditional tightness, but this one reached a new high in that respect. The one mandatory requirement in presentation was that a plot plan should be shown at 1/32-inch scale; aside from that the door was open to drawings, photographs, models and what have you? The competitors had plenty—diagrams in the latest exhibition techniques, models at various scales, and even a motion picture with a sound track to tell the Jury the why and wherefore. Sad to relate, the Jury's facilities for receiving all these sensory impressions proved inadequate, so that what must have been an eloquent story on the sound track never did reach the judicial ears.

★

Friday, June 21.—Peter Bittermann, director of the Gallery of The Artist-Craftsmen in New York, has put on, with the help of some of his fellow enthusiasts in the Society of Designer-Craftsmen, a summer show of metals, glass, ceramics, fabrics, furniture, wood, mosaic. It invites comparison with the Metropolitan's Contemporary Arts Exhibition, for the two shows have different impulses behind them. At the Metropolitan the machine looms large as the dominant force behind the

product; at the smaller show, it is the hand. Not that the Society of Designer-Craftsmen is trying to recapture the handicraft age of William Morris—nothing so foolish as that. What its members believe, I take it, is that all the hope of an advance in the design of, let us say, glassware, lies in the craftsmen who know the actual making of glassware as well as they know the fundamentals of design. After a designer-craftsman produces an object, it may either be preserved as something unique and precious, or it may serve as a pattern for production in quantity by machine. In either case it is more likely to be esteemed a worthy representative of glass making than the piece resulting from a casual designer's drawing handed over to a glass factory to be put into production. This feeling of the mastery of techniques pervades the Society's show. Whether the object exhibited is a lighting fixture, a fabric, a silver bowl or a piece of furniture, one feels at first glance the close rapport between design and technique; the two elements are wedded. What one does not see here is the tour de force in metal or plastic by one who evidently wanted to see what his lines on paper would look like in that particular translation.

Monday, June 24.—California soil is growing something new. What the State produces in flower and fruit has been overshadowed of late by the burgeoning of architecture and its attendant arts. From the San Francisco Bay region comes news of a new growth—a group of young architects, landscapers and industrial designers which calls itself "Telesis." Someone has been reading the dictionary, with the discovery that telesis means "progress intelligently planned and directed; the attainment of desired ends by the application of intelligent human effort to the means." The group, which is planning an August exhibition in the San Francisco Museum of Art, is concerned not so much with line, form, texture and color as with the sum total of our physical environment and the factors which form it. These latter are certainly not the same as those which formed our present surroundings; their growth and change deserve our constant reexamination and appraisal. Telesis hopes to reveal possibilities for the development of the San Francisco Bay Region as an environment for the life of man. There's a goal for you, and nature has given them a running start.

Wednesday, June 26.—Through the efforts of D. Knickerbacker Boyd, that indefatigable

cultivator of better public relations, the Philadelphia Chapter, A.I.A., is putting into effect a drive for architectural credit lines in their local newspapers. Whenever an illustration of architectural significance appears, the members who notice it write to the newspapers, either commending the editor for mentioning the architect or criticising him for the omission of proper credit. Boyd supplied typical forms for each. As an immediate result one publisher has directed his staff to include the architect's name whenever possible.

★

Washington, D. C., Thursday, June 27.—William Dewey Foster, Rudolph Stanley-Brown, and I, discussing wall materials, stumbled upon a surprising fact. Perhaps the powers of observation and memory were abnormally slow among us and the other architects we questioned, but our conclusion was that the architect is surprisingly blind to wall materials, even in buildings with which he has long been familiar. He is seldom in doubt as to whether some building you may mention is of brick or stone, but among the stone buildings his impressions and his memory become very hazy. He will almost surely know that the Lincoln Memorial and the U. S. Supreme Court Building are of marble. Of what is the Treasury built?—the University Club in New York?—McKim, Mead & White's Gorham Building? My own guess that St. Patrick's Cathedral was of granite was quite wrong—above the granite base the walls are of bush-hammered marble. Of what is the Columbia Presbyterian Medical Center built?—the Cornell Medical Center? Both of these New York piles are familiar to the profession in general mass; does that familiarity extend to the wall materials? It would be interesting to know the results of other localized tests among architects who should know the more important buildings in their communities. If this material blindness does exist, we've been wasting a lot of time, in specification writing, not to mention the client's money.

Saturday, June 29.—Gilmore D. Clarke and his Commission of Fine Arts think we are very tight with our allotments of funds for decoration in Federal buildings. On many post office jobs, 1 per cent of the cost has had to cover the work of the mural painters and sculptors. Italy spends 5 per cent as a normal allowance, and we ourselves have been more open-handed in the past. On the Supreme Court we spent 3,

Department of Justice 3.5, Archives 3.1, Post Office Department Building 3. On the Department of Commerce we dropped to 1.2, Federal Trade Commission Building 1.6 and Department of the Interior a flat 1. The Commission urges a minimum of 3 per cent. All of which discussion happens to have suddenly become purely academic, for we're likely to worry along without new monumental buildings for some time to come. Leonardo da Vinci turned rapidly and effectively from art to armament; perhaps our painters and sculptors will achieve a comparable versatility.

Monday, July 1.—Pity the poor draftsman. Last year the Glenn L. Martin Co. saved \$80,000 by replacing him with a camera. Full-size drawings of airplanes, like the loft drawings of the naval architects, once made, are expensive to duplicate, too easily distorted. Photographic projection directly on the metal, previously sensitized and later developed, saves labor, eliminates error. The shrinkage of zinc in molding, formerly compensated for as we compensate for terra cotta shrinkage, requires only lens adjustment instead of whole new drawings at slightly enlarged scale. The projection process also makes easy the creation of exact scale models for wind tunnel and water basin tests.

Wednesday, July 3. — Considering the number of troubles now descending upon governments, our own included, one would hesitate to throw in another. Not Senator Tom Connally and Representative Louis C. Rabaut—they warn the Congress, with the opinions of eminent experts, that both wing roofs of the Capitol are liable to fall upon the assembled statesmen at any moment. Herman F. Doeleman of Baltimore and J. H. Frankland of A.I.S.C. were the consulting engineers, their findings bearing out previous surveys by Thomas W. Marshall and the Architect of the Capitol. The roof trusses date from 1854, before the day of standard steel shapes, and are of cast iron and wrought iron. Wood blocks were screwed to the wrought iron angles and corrugated copper roofing attached; a plaster ceiling on wood lath hangs from the angles. No fireproofing, no insulation. Nevertheless the spending of half a million to make the Capitol safe for congressmen might not receive unanimous public assent even now.

Friday, July 5.—There have always been elements of the automobile that proclaim the fact that it was and still is a child of the buggy. Thomas A. Watson goes a lot further. Speaking before a class in mechanic arts at the University of California the other day, he said that the automobile is four decades behind what it should be in its fundamental engineering principles. Because the horse pulled a buggy instead of pushing it, motor car design got off to a bad start. He also pointed out the fact that the public welcomes improvement but only in small

annual doses; radical changes are emphatically rejected. Engineering progress is slowed down by the public's insistence upon evolution rather than revolution. And Mr. Watson might have added, "Ditto for architecture!"

Saturday, July 6.—Robert L. Anderson, who teaches architecture down in Clemson, S. C., dropped in for lunch the other day on his way up to the Pierian spring of knowledge in Cambridge. Now that he has taken a first draft he writes: "As I recall, one once stepped through the door of Robinson Hall into the antique world of unwashed plaster casts, Greek and Roman. One now steps as far into the future as one stepped into the past: into a brave new technological world as remote from the America we know as visionary brave new worlds can very well be.

"Possibly I am wrong, but when I emerged into Harvard Square and faced the heterogeneous crowd awaiting on the safety zone for bus and subway I could have shouted with relief. This was indeed my own, my native land. These were my people."



Monday, July 8.—What was formerly called PEDAC. (Permanent Exhibition of Decorative Arts and Crafts) has changed both its name and its purpose, the latter being summed up in the former—Rockefeller Home Center. It now becomes a "permanent exhibition of building materials, equipment and furnishings." Today it formally opened on a roof terrace of the International Building, Rockefeller Center, a "House of Ideas." Edward D. Stone designed it and *Collier's* sponsored it. It's a full two-story dwelling, of natural redwood exterior with a spacious terrace and a balcony to emphasize the fact that home life today requires outdoor space thoroughly correlated with that which is under roof. To say that the house is far ahead of the usual run of model and sample houses is too faint praise. It is something that should be visited, but for those too far away we bring something of a photographic resumé beginning on the next page.

Tuesday, July 9.—A striking instance of what centralized organization will do is found in the experience of the Institute, cooperating with the engineering profession, in assembling data for the Preparedness Committee. The idea originated about June 1. Within one month approximately 15,000 questionnaires had been mailed and returns were already flowing back. As a result the U. S. knows who and where its architects and engineers are, for what specialization they are equipped that is applicable to defense measures, and the professions are standing by awaiting orders.

It is inconceivable that such efficiency and speed could have been found even in the most willing collaboration of State associations and miscellaneous professional

organizations. A national body alone could achieve the results with such speed—a new argument, if one were needed, why the membership rolls of A.I.A. should be lengthening daily.

Thursday, July 11.—A bronze bust of the late John M. Carrère greets the visitor in the front lobby of the Library his firm designed for the City of New York. Theodore Blake made the formal presentation today at the unveiling of Jo Davidson's sculpture, a gift from Mr. Carrère's former friends and associates. Five years ago Frederick MacMonnies' bust of Thomas Hastings was placed in a niche designed for it by Blake, so the two former partners are henceforth fittingly honored in their most widely known monument—which, it will be recalled, Carrère did not live to see finished. (See page 14.)

Saturday, July 13.—The old Herald Building, designed by McKim, Mead & White for the north end of Herald Square, New York, is no longer among the City's famous landmarks. H. Craig Severance has replaced it with a new four-story building whose granite and limestone are in strong contrast with the former gay terra cotta. When James Gordon Bennett erected the Herald Building in 1893, one of its unusual features was the pair of bronze bell ringers whose hammers sounded the quarter hours. The pair, known as Stuff and Guff, disappeared long ago, and in 1928 were presented to New York University. They are coming back, together with the old Herald statue of Minerva and the owls, in a low clock tower designed by Aymar Embury for the triangular park just south of where they originally stood. (See page 14.)

Monday, July 15. — Effective today, Pennsylvania requires the signature and seal of a State registered architect or engineer on plans seeking building permits. Exceptions are: new row and semidetached dwellings not over two stories in height of third-class construction, and not exceeding 1,500 sq. ft. in area or \$10,000 per dwelling; new garage buildings not exceeding three-car capacity and not more than one story high; dwellings to be converted into a store and dwelling or business building wherein the combined floor area will not exceed 1,800 sq. ft. and other structures where cost of alteration does not exceed \$3,000, exclusive of sprinkler installation or of additional new construction. I suspect that State laws such as this will carry us a long way toward a public awareness of what the architect is and does.

Tuesday, July 16.—I hear indirectly that Albert Kahn is putting into effect a plan by which the employees of his great office are to share in the profits. That's a two-star piece of news—first that an architect's office in these days is contemplating the possibility of profits, and second that the rank and file are to see the color of same.

HOUSES

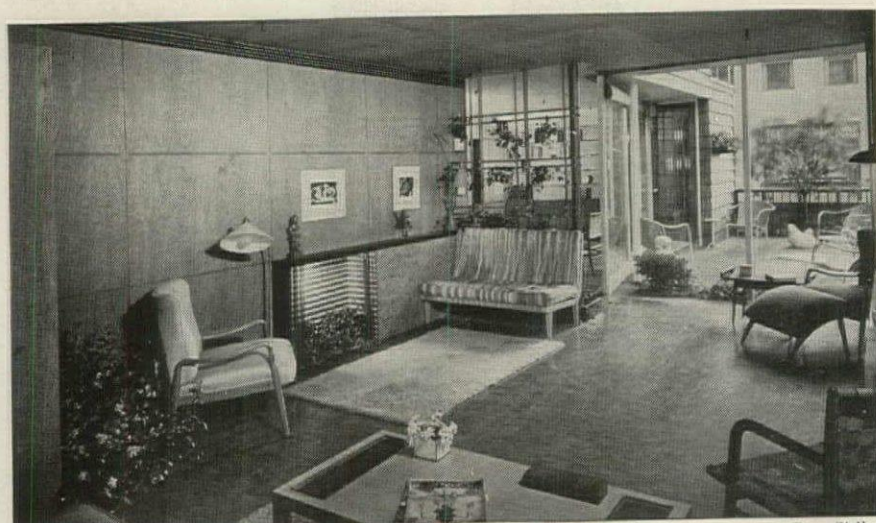
TERRACE HOUSE, ROCKEFELLER CENTER, NEW YORK CITY. EDWARD D. STONE, ARCHITECT





LIVING ROOM

Frank Randt



LIVING ROOM

Ezra Stoller

COMBINATION ROOM



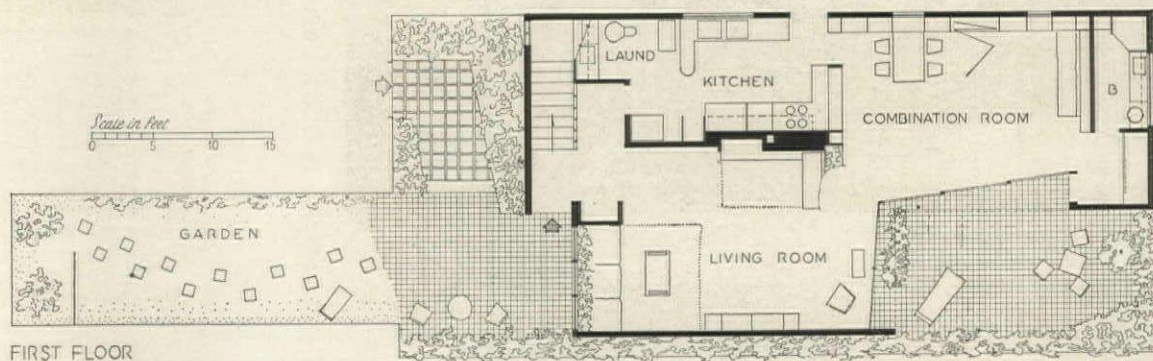
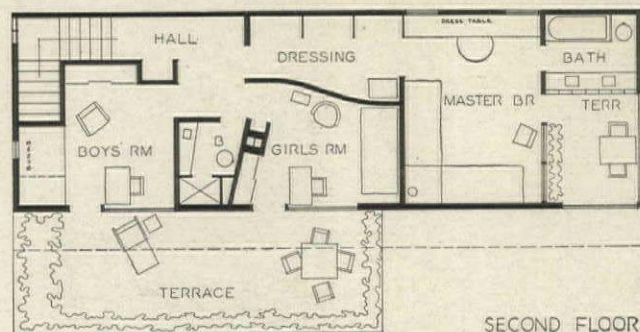
Frank Randt

Model houses are traditionally christened with the most elaborate of titles. Collier's "House of Ideas," built on the terrace of the Rockefeller Home Center, is the first of a long line to be named accurately. Both the photographs and plans indicate the ingenuity with which this moderate-size house has been designed and furnished. There is a lavatory, planned for easy conversion into a photographic darkroom, an amusing pair of bunks in the boys' room, and a counter off the kitchen which serves as a cocktail bar or for quick breakfasts. Most interesting of these innovations is the "combination room" which serves as a dining room, ping pong or movie projection room, or can be subdivided to permit the half next to the lavatory to be used as a guest room. In all instances the rooms have been very well designed for furnishing, and the use of large fixed and sliding glass areas off the main ground-floor rooms adds materially to the flexibility of the living scheme. The exterior



Erna Stoller Photos

is done entirely in redwood, its pleasant natural color accented only by the white doors and trim. Two upstairs terraces are provided, and the roof rafters have been extended out over the larger of the two to allow the installation of an awning. Completely modern in expression, the house is an excellent example of a treatment which meets all of the common objections to the contemporary approach in residential design.



COMBINATION ROOM

KITCHEN FROM LAUNDRY





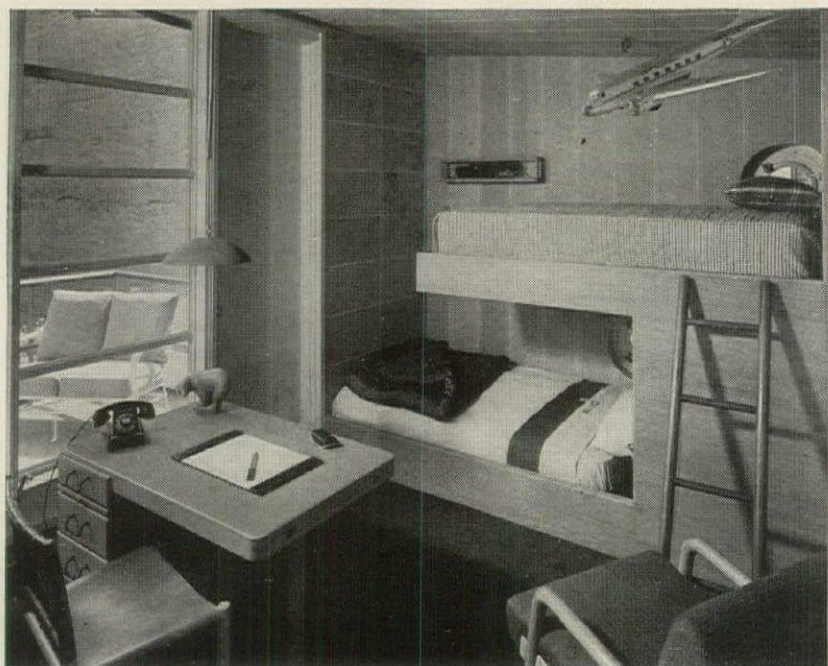
MASTER BEDROOM

Ezra Stoller



DRESSING TABLE

Frank Randt



BOYS' ROOM

Ezra Stoller



GIRL'S ROOM

Frank Randt

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—fireproofed redwood, Kimsul Insulation, Kimberly-Clark Corp., plywood, U. S. Plywood Co. Fence—Check-R-Board Co. Floor construction—Builders' Flooring Co.

ROOF: Covered with Flintkote Co., Inc. roofing. Deck—covered with canvas, William L. Barrell Co., Inc.

FIREPLACE: Screen—Bennett Fireplace Co. **INSULATION:** Outside walls—Kimsul, Kimberly-Clark Corp.

WINDOWS: Sash—steel, Truscon Steel Co. Glass—Libbey-Owens-Ford Glass Co. Glass block—Owens-Illinois Glass Co.

FLOOR COVERINGS: By U. S. Rubber Co. and Tile-Tex Co.

WALL COVERINGS: Sanitas—Standard Coated Products Co. Grass cloth—W. H. S. Lloyd Co. Metal panelling—Martin-Perry Corp.

WOODWORK: Doors—The Peelle Co., Kinneair Mfg. Co.

PAINTS: By Rug-Snug, Inc., Breinig Bros., Inc. and Devoe & Reynolds Co., Inc.

ELECTRICAL INSTALLATION: Appliances by General Electric Co. Work by Robert E. Denike, Inc. Fixtures—Kurt Versen.

FURNISHINGS: Furniture—M. Bartos, Inc., Molla, Inc. Curtains, draperies and upholstery—The Kroder Reubel Co., Inc. and Dan Cooper, Inc. Closet accessories—Delmont Products Co. Shades—The Aeroshade Co.

AWNINGS: Wm. L. Barrell Co., Inc. **BATHROOM EQUIPMENT:** Fixtures by Speakman Co., Flat Metal Mfg. Co. and General Ceramics Co.

HEATING AND AIR CONDITIONING: By Gilbert Barker Mfg. Co. Regulator—Minneapolis-Honeywell Regulator Co.

HOUSE IN HINSDALE, ILL.

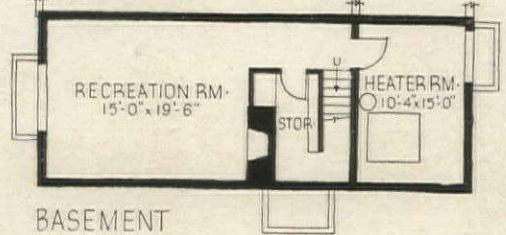
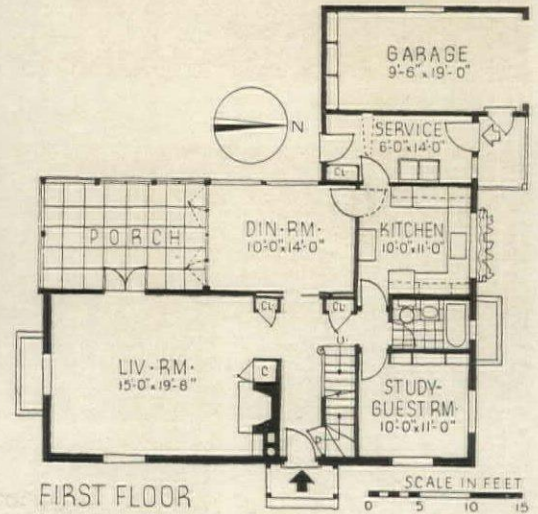
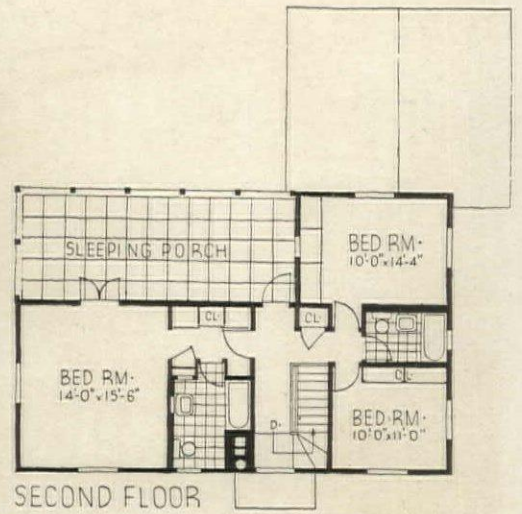


McLrich-Blessing Photos

PAUL SCHWEIKHER, INC. AND THEODORE W. LAMB
ASSOCIATED ARCHITECTS



One of the most important—though little recognized—effects of the modern style has been its influence on more or less conventional houses, and especially on house plans. Thus the plan of this house, exceptionally well arranged both for easy, comfortable living and easy, economical building, owes much to the early work of the "International Style." Compactly organized in clean rectangles for simple framing, its open dining room, generous strip closets, and the double exposure enjoyed by a majority of the rooms are signs of real steps forward which the profession—all along the line—has made in the past decade.



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Batavia stone, Bild-rite sheathing, Insulite Co., studs; inside—Sheet-rock, U. S. Gypsum Co.
ROOF: Covered with asphalt shingles.
FIREPLACE: Damper—Colonial Fireplace Co.
INSULATION: Ceilings— $\frac{1}{2}$ in. rockwool, General Insulation Co. Weatherstripping—Monarch Metal Weatherstrip Corp.
WINDOWS: Sash—wood casement. Glass—double strength, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Main rooms—red oak. Kitchen and bathrooms—linoleum, Armstrong Cork Co.
WOODWORK: White pine throughout. Garage door—McKee Door Co.
HARDWARE: By Yale & Towne Mfg. Co.
BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—Morton Mfg. Co.
HEATING: Forced hot air system, humidified and filtered, gas fired Niagara unit, Forest City Foundries Co. Thermostats—Minneapolis-Honeywell Regulator Co.

HOUSE IN GLENCOE, ILL. DUBIN AND DUBIN, ARCHITECTS



All photos, Steven Heiser



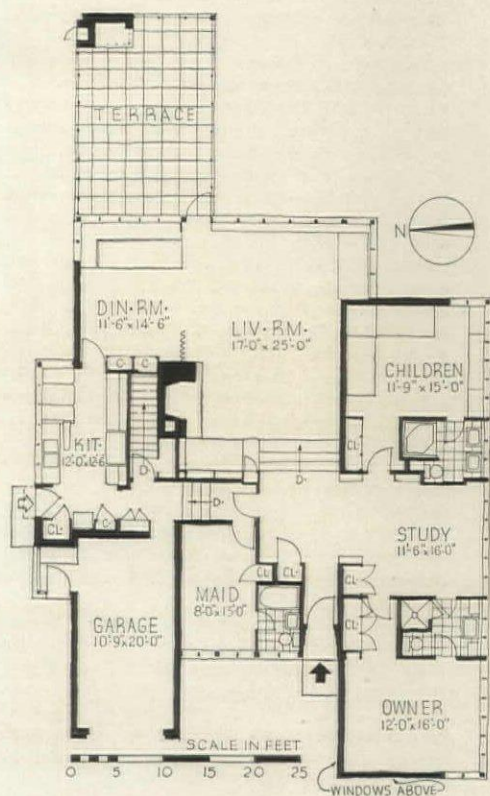
Considerably larger than it appears at first glance, this house is remarkable for the thoroughness and consistency with which the style—an outgrowth of that developed by Frank Lloyd Wright—has been carried through in every detail. Basis of the plan is the sinuous, interconnected, dining-living-study space, on two levels, which provides most of the circulation and creates a feeling of openness with vistas in every direction. Off this space open the bedrooms, main entrance, and a service hall serving the maid's room, garage, and kitchen. Nice separation is achieved between the glazed wall of the bedrooms and study, at the side of the house, and the living rooms, which open to the rear. A screened terrace (second page following), with outdoor fireplace, is open on three sides for maximum circulation of air. Cubage: 53,000; cost, including architects' fee: \$23,000.

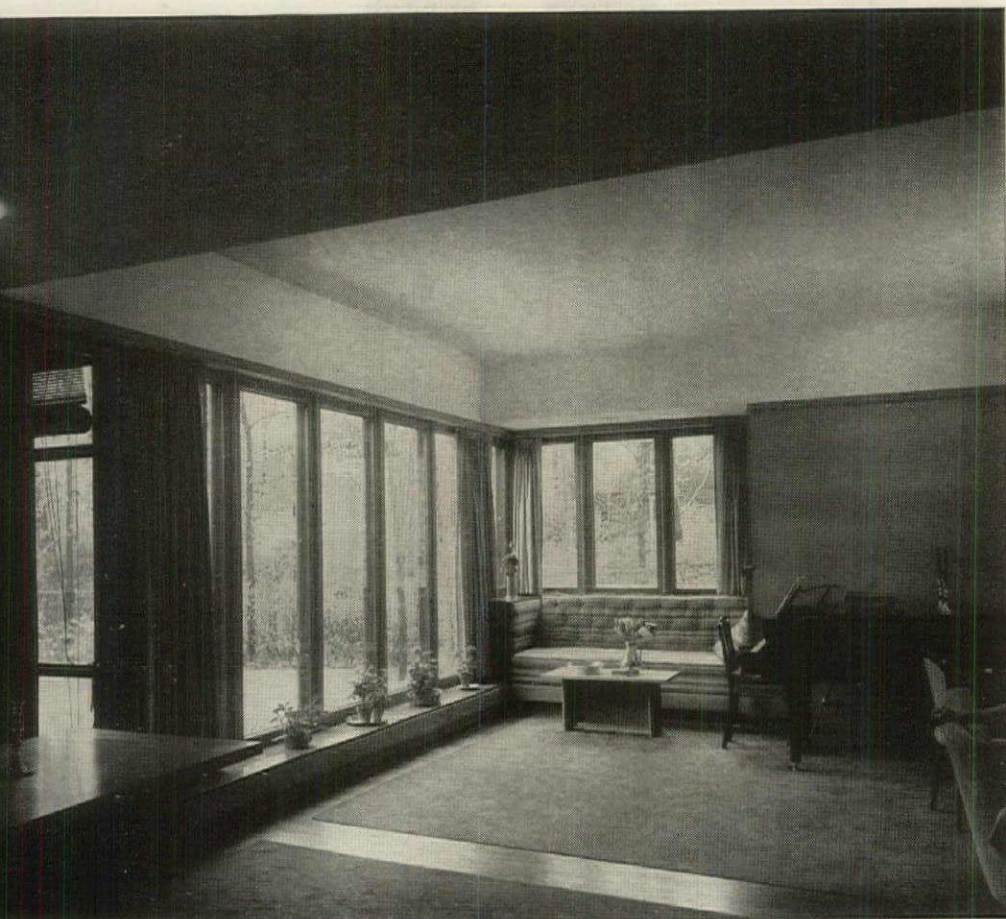


LIVING ROOM



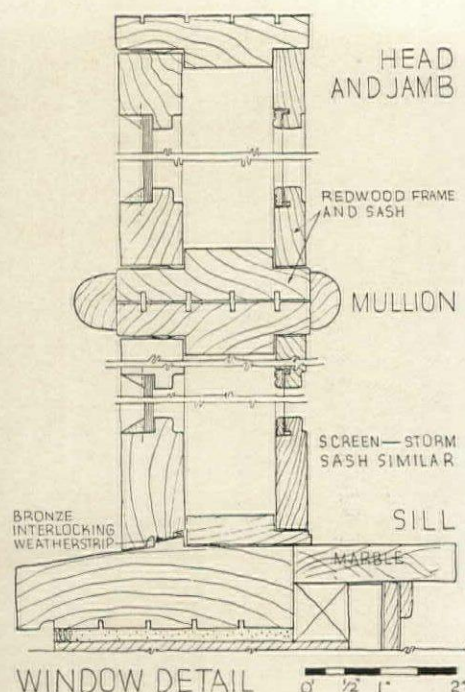
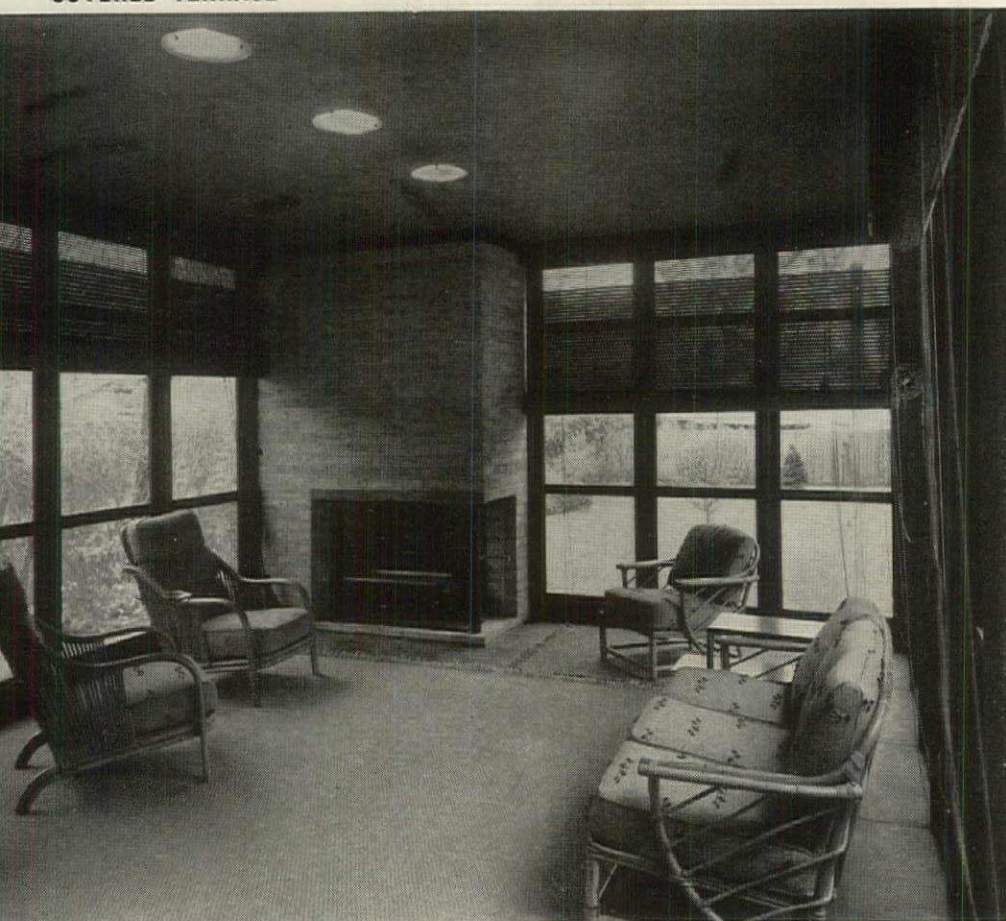
DINING ROOM





LIVING ROOM

COVERED TERRACE



CONSTRUCTION OUTLINE

FOUNDATION: Reinforced concrete.

STRUCTURE: Exterior walls—brick, concrete block backing, Samuel Cabot, Inc. Quilt insulation between furring strips; Inside—plaster on wire mesh or 5-ply plywood. Floor construction—reinforced concrete slabs on Jones & McLaughlin Junior beams.

ROOF: Covered with 20-year tar and gravel roofing, Barrett Co.

FIREPLACE: Marble trim—Clow Marble Co. Screen—Bennett Fireplace Co. Damper—Colonial Fireplace Co.

SHEET METAL WORK: Ducts—copper bearing galvanized steel; remainder—copper.

INSULATION: Outside walls and sound insulation—Cabot Quilt, Samuel Cabot, Inc. Attic floor—rockwool bats. Roof—Celotex, Celotex Corp.

WINDOWS: Frames and sash—redwood. Glass—plate, Pittsburgh Plate Glass Co.

FLOOR COVERINGS: Living room—white oak. Bedrooms, halls and bathrooms—Corinco cork tile, Cork Insulation Co., Inc. Kitchen—rubber tile, Wright Rubber Co.

WALL COVERINGS: Main rooms—plywood, U. S. Plywood Corp. Bathrooms—tile, Cambridge Tile Mfg. Co.

WOODWORK: White oak or selected red birch, Harris Bros. Co. Garage doors—redwood, Barber-Colman Co.

HARDWARE: By Yale & Towne Mfg. Co.

ELECTRICAL INSTALLATION: Wiring system—thin wall conduit and circuit breakers. Switches—Arrow-Hart & Hegeman Electric Co. Fixtures—Garden City Plating Co.

KITCHEN EQUIPMENT: Range and sink—Albert Pick Co. Refrigerator—Sears Roebuck Co. Cabinets—Harris Bros. Co.

BATHROOM EQUIPMENT: Lavatory—Kohler Co. Shower—Chicago Faucet Co. Remainder of fixtures by American Radiator-Standard Sanitary Corp. Cabinets—Harris Bros. Co.

PLUMBING: Soil pipes—cast iron. Water pipes—copper.

HEATING: Warm air system; provision made for air conditioning. Boiler—Herman Nelson Corp. Grilles—Independent Register Co. Thermostat—Minneapolis-Honeywell Regulator Co. Water heater—Williams Oil-O-Matic Heating Corp.

HOUSE IN SAN ANTONIO, TEXAS



BARTLETT COCKE, ARCHITECT

Zintgraff Photos

Another example of the style of architecture so popular in the Southwest, this one-floor plan has its principal rooms turned toward the rear of the lot for outlook and privacy. The entrance directly into the living room and the maid's room with no indoor connection to the house are features which could hardly be used in all parts of the country, but which are perfectly appropriate to the Southern climate. Addition of a private bath and dressing room for the master bedroom are contemplated later on. Cubage: 21,685.

CONSTRUCTION OUTLINE

FOUNDATION: Reinforced concrete.

STRUCTURE: Exterior walls—hollow common brick and frame with siding, paper, studs, sheathing. Interior partitions—brick, plaster and pine boards.

ROOF: Covered with roofing felt, slate and shingles.

FIREPLACE: Damper—Donley Bros. Co.

INSULATION: Roof—rockwool. Windows—Monarch Metal Weatherstrip Co.

WINDOWS: Sash—wood, double hung and steel casements. Glass—double strength, quality A, Pittsburgh Plate Glass Co.

FLOOR COVERINGS: Main rooms—oak. Kitchen—linoleum. Bathrooms—tile.

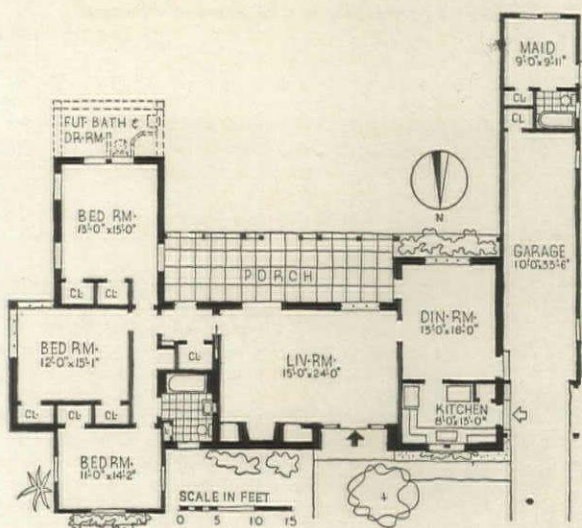
HARDWARE: By Schlage Lock Co.

PAINTS: By Pratt & Lambert, Inc. and Reardon Co.

BATHROOM EQUIPMENT: All fixtures by American Radiator-Standard Sanitary Corp. Cabinets—The F. H. Lawson Co.

PLUMBING: Soil pipes—cast iron. Vents—cast and galvanized iron. Water pipes—galvanized steel, National Tube Co.

HEATING: Forced warm air system. Water heater—Crane Co.



LIVING ROOM



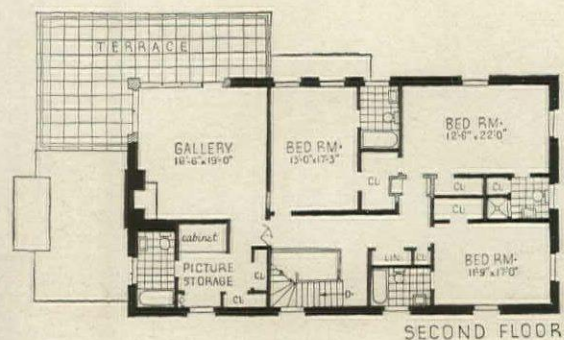
DINING ROOM



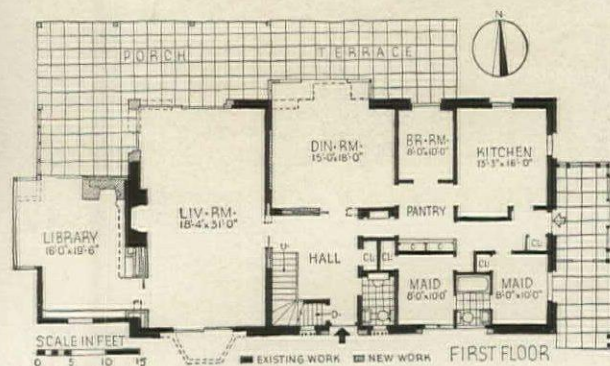
REMODELED HOUSE IN BEL AIR, CALIF.



All photos, Julius Shulman

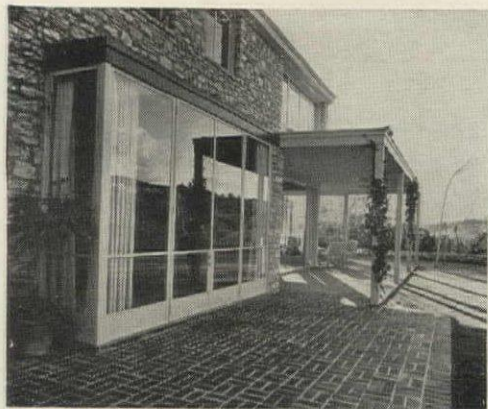


SECOND FLOOR

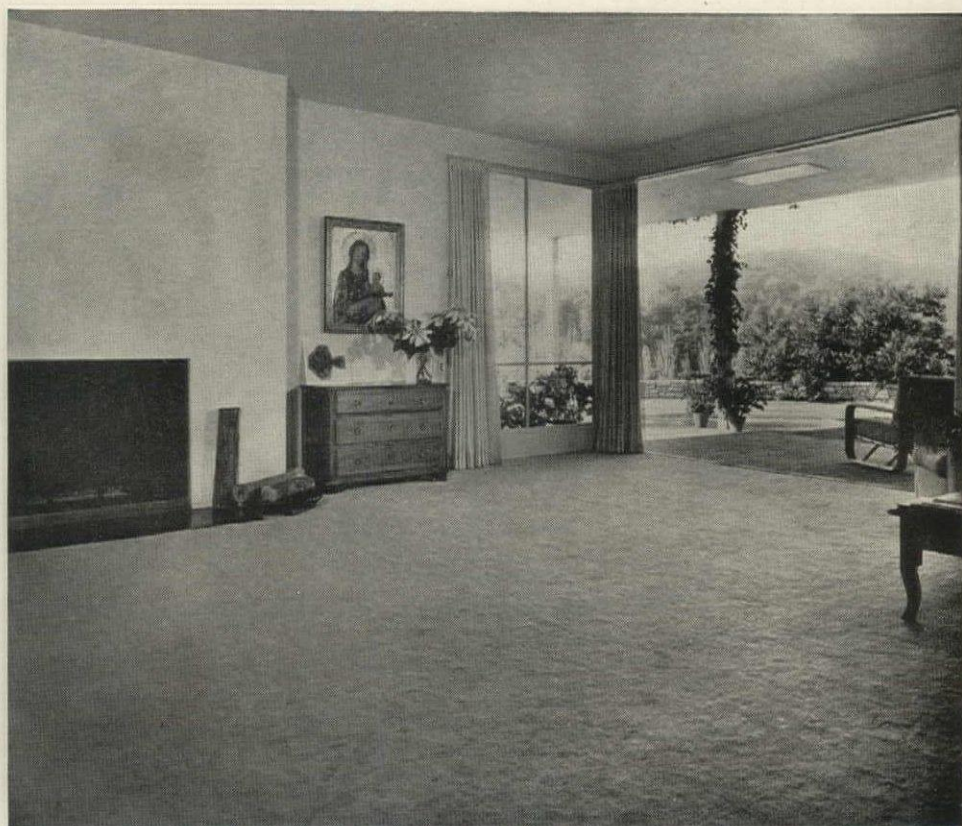


FIRST FLOOR





L. Valeska



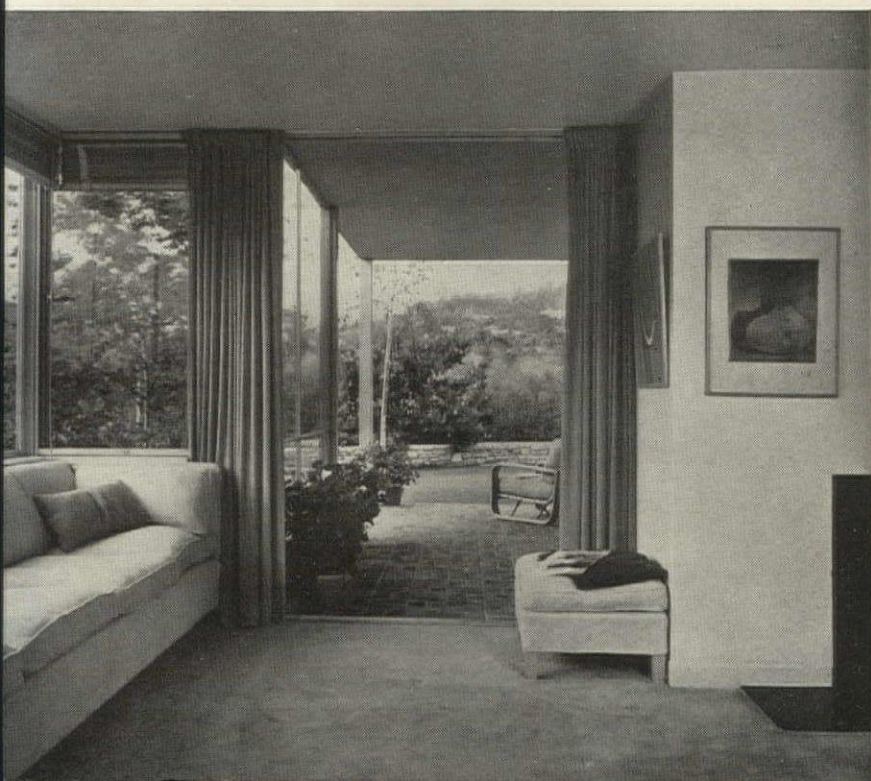
The designer comments: "The problem was to remodel a conventional Georgian stone house so as to provide an appropriate background for a collection of modern paintings, and to open the house to the view.

"No attempt has been made to give the house a stylistic face, but all unessential details outside and inside were removed. Location of openings, formerly based on an axial layout, was changed according to the inter-relationship of the rooms and the view. Large openings with sliding steel doors were made in the outside wall, leading out to the terrace and lawn, and allowing an unobstructed view of the landscape.

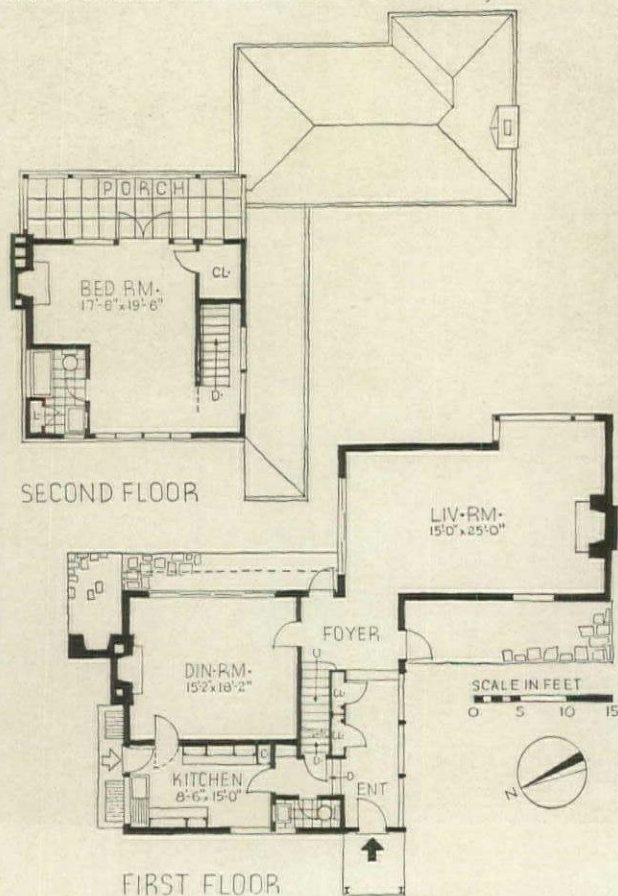
"Materials and colors throughout were selected with regard to the pictures, in an effort to secure a neutral background. Simplification was carried through to the smallest details; for example, cabinet work has no handles, but continuous fingerpulls shaped into the wood; hinges are of the invisible type."

CONSTRUCTION OUTLINE

FOUNDATION: Concrete.
STRUCTURE: Exterior walls—rubble stone and sheathing; inside—plaster on wire lath.
ROOF: Covered with cedar shingles. Deck—covered with canvas.
SHEET METAL WORK: Flashing—copper, American Brass Co.
INSULATION: Roof—1 in. Celotex, Celotex Corp. Weatherstripping—Chamberlin Metal Weather Strip Co.
WINDOWS: Sash—steel, Truscon Steel Co. Glass—plate, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Main rooms—carpet, V'Soske Shops. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—rubber, Goodyear Tire & Rubber Co. Laundry and porches—asphalt tile, Thomas Moulding Co.
HARDWARE: By Soss Mfg. Co., Earle Hardware Co. and Truscon Steel Co.
PAINTS: By Sherwin-Williams Co. and Reardon Co.
ELECTRICAL INSTALLATION: Wiring system—American Brass Co. and General Electric Co. Switches—Arrow, Hart & Hegeman Electric Co. Fixtures—Hollywood Light & Fixture Co.
KITCHEN EQUIPMENT: Range, refrigerator, dishwasher—General Electric Co.
BATHROOM EQUIPMENT: All fixtures—Crane Co.
HEATING: Warm air system, Payne Furnace & Supply Co. Grilles—Tuttle & Bailey Mfg. Co.



HOUSE AT SETAUKET, LONG ISLAND, N. Y. WILLIAM R. HUNTINGTON, ARCHT



REAR VIEW

Gottschalk Ph



CONSTRUCTION OUTLINE

FOUNDATION: Poured concrete.

STRUCTURE: Exterior walls—brick veneer, Sisalkraft Co. paper, wood sheathing, Ecod lath, plaster, Reynolds Metal Corp.; (2nd story)—Weldwood, U. S. Plywood Corp. Interior partitions—studs, plaster, Duali plywood, U. S. Plywood Corp. Floor construction—red oak strip flooring.

ROOF: Covered with slate shingles. Deck—covered with Barrett Co. built-up roofing and Con-ser-tex canvas, William L. Barrell.

FIREPLACE: Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing and leaders—copper. Gutters—fir. Ducts—galvanized iron.

INSULATION: Outside walls, attic floor and roof—rock-wool.

WINDOWS: Sash (basement)—Andersen Frame Corp. Glass—Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: Main rooms—red oak. Bathrooms—ceramic tile. Remainder—linoleum, Armstrong Cork Co.

WOODWORK: Interior doors—Johns-Manville.

HARDWARE: By H. S. Getty Co. and Richards-Wilcox Mfg. Co.

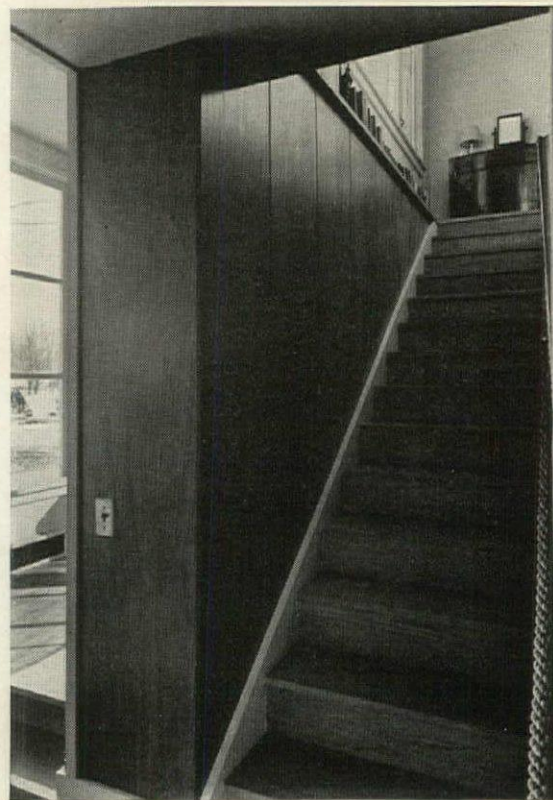
PAINTS: By Wilbur & Williams.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—toggle.

KITCHEN EQUIPMENT: Range—gas. Refrigerator—electric. Cabinets—Janes & Kirtland.

BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—G. M. Ketcham Mfg. Co.

PLUMBING: Soil pipes—cast and wrought iron. Water pipes—copper.



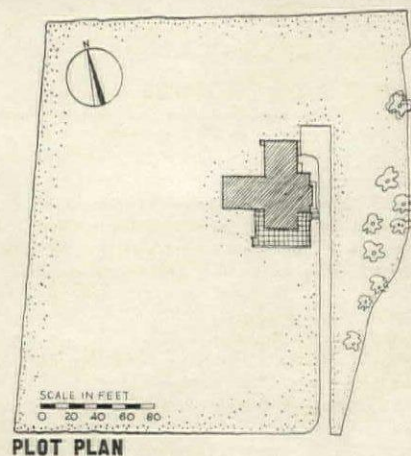
STAIRWAY

Designed for a couple with no children and no servants, this house has exceptionally generous living quarters for its single bedroom. Plans call for the addition of guest quarters later on. Arrangement of the ground floor rooms and the second floor porch was dictated by the view of the water, which is diagonally across the rear of the irregular plot, and this also determined the placing of the house to one side, so that the view might never be obstructed by planting on the adjoining property. Cubage: 30,100; cost, including architect's fee: \$12,500.

HOUSE IN STAMFORD, CONN., LESTER C. TICHY, ARCHITECT



All photos, Ezra Stoller

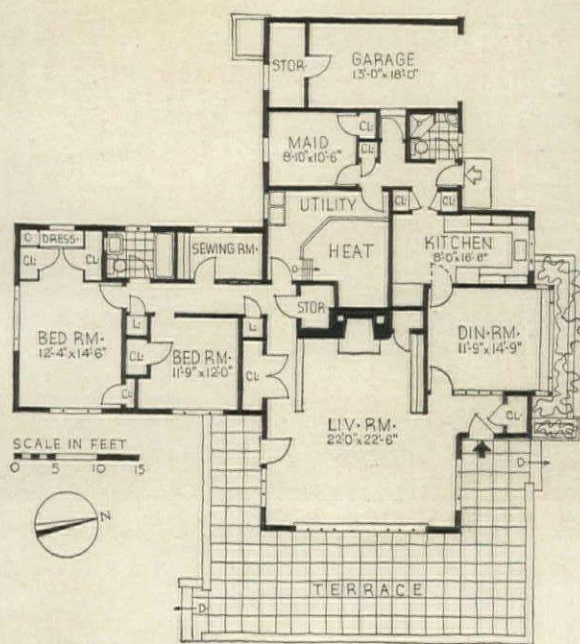
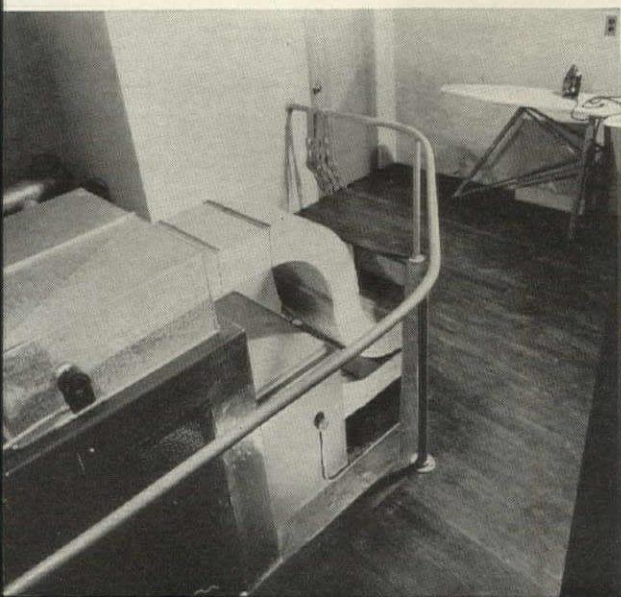


That modern is no mere matter of flat roofs and corner windows is by now commonplace. Seldom, however, is there so disarming an example as this to prove it. A glance at the picture above suggests nothing but the quietest and most unpretentious of exteriors; a study of the plans and interiors on the following two pages discloses the fact that you have been looking, among other things, at a glass-walled dining room. All on one floor, and with no basement, a plan of this size is a difficult problem in organization, but here it has been well handled, with most of the "musts" observed. Finish and decoration are unusually successful, a considerable amount of built-in furniture having been designed by the architects. Cubage: 35,700; cost, including architect's fee: \$10,000.



LIVING ROOM

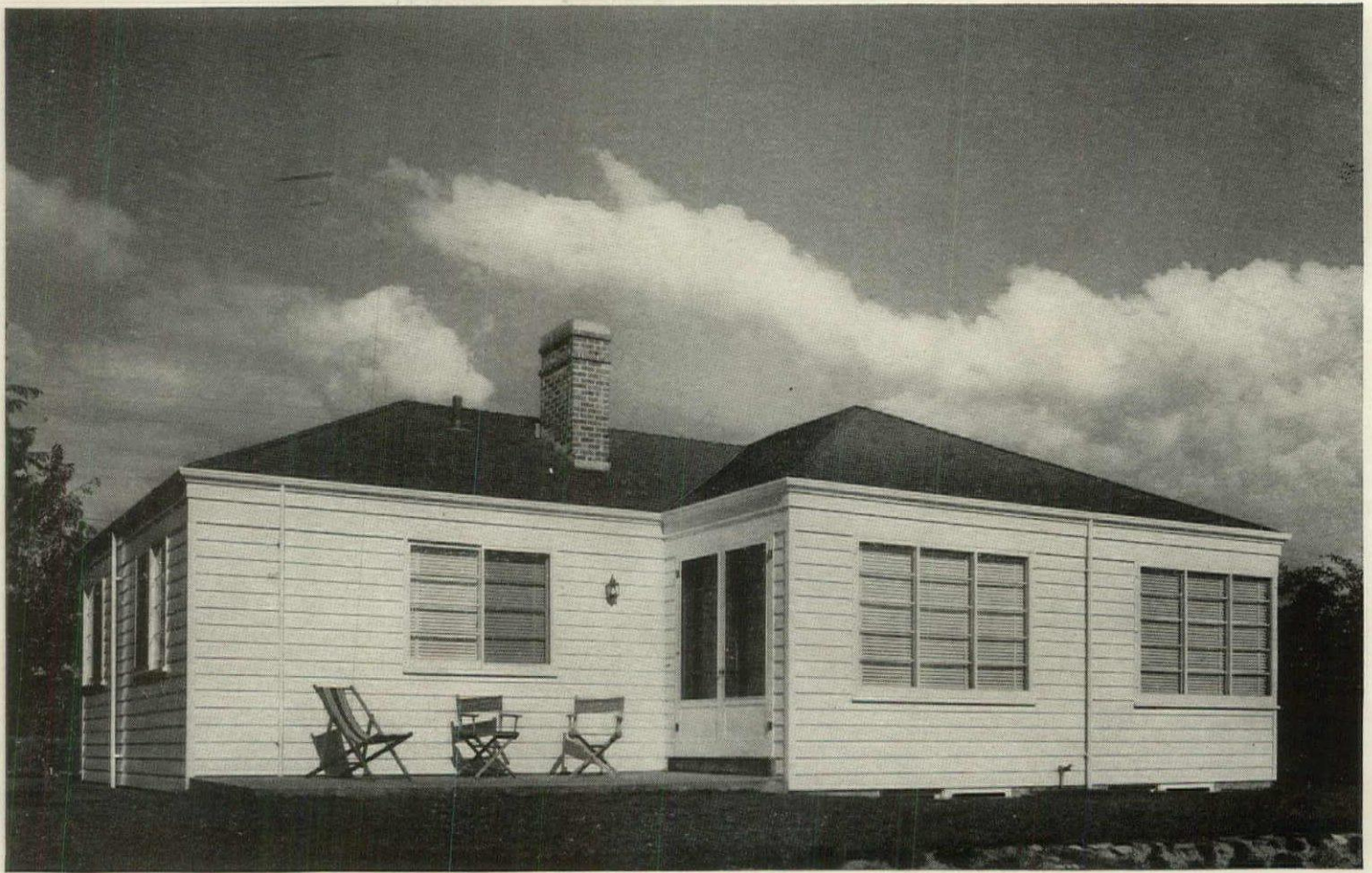




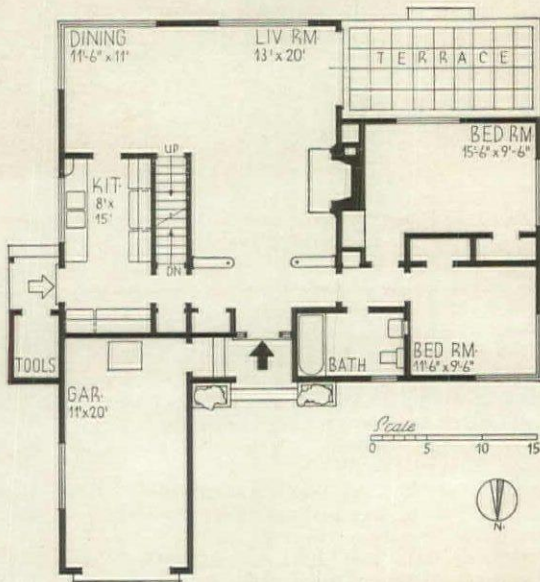
CONSTRUCTION OUTLINE

FOUNDATION: Concrete block.
STRUCTURE: Exterior walls—wood siding, studs, Celotex Corp. Vapor Seal sheathing, plaster and metal lath inside. Floor construction—wood joists, cork finish flooring.
ROOF: Covered with red cedar shingles.
FIREPLACE: Damper—H. W. Covert Co.
SHEET METAL WORK: Flashing—copper. Ducts—galvanized sheet metal.
INSULATION: Outside walls—Celotex Corp. Attic floor—rockwool, U. S. Gypsum Co. Weatherstripping—Chamberlin Metal Weather Strip Co.
WINDOWS: Sash and screens—steel, Hope's Windows, Inc. Glass—Pittsburgh Plate Glass Co.
FLOOR COVERINGS: Living room and halls—cork, Cork Insulation Co. Bedrooms—oak. Kitchen, dining room and bathrooms—linoleum, Armstrong Cork Co.
WOODWORK: Trim—steel, Milcor Steel Co. Doors—"Sturdibilt," M. & M. Woodworking Co.
HARDWARE: By Schlage Lock Co.
PAINTS: By National Lead Co. and Samuel Cabot, Inc.
ELECTRICAL INSTALLATION: Wiring system—BX. Switches—toggle. Fixtures—Lightolier Co.
KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co.
BATHROOM EQUIPMENT: All fixtures by American Radiator-Standard Sanitary Corp. Seat—C. F. Church Mfg. Co.
PLUMBING: Soil pipes—cast and galvanized iron. Water pipes—brass. Pump—The Deming Co.
HEATING: Hot air system, filtering and humidifying. Boiler—Lennox Furnace Co. Oil burner—Petroleum Heater & Power Co. Grilles—Tuttle & Bailey Mfg. Co. Thermostat—Minneapolis-Honeywell Regulator Co. Water heater—Lochinvar Corp.

HOUSE IN BELLINGHAM, WASH.



F. C. STANTON, ARCHITECT

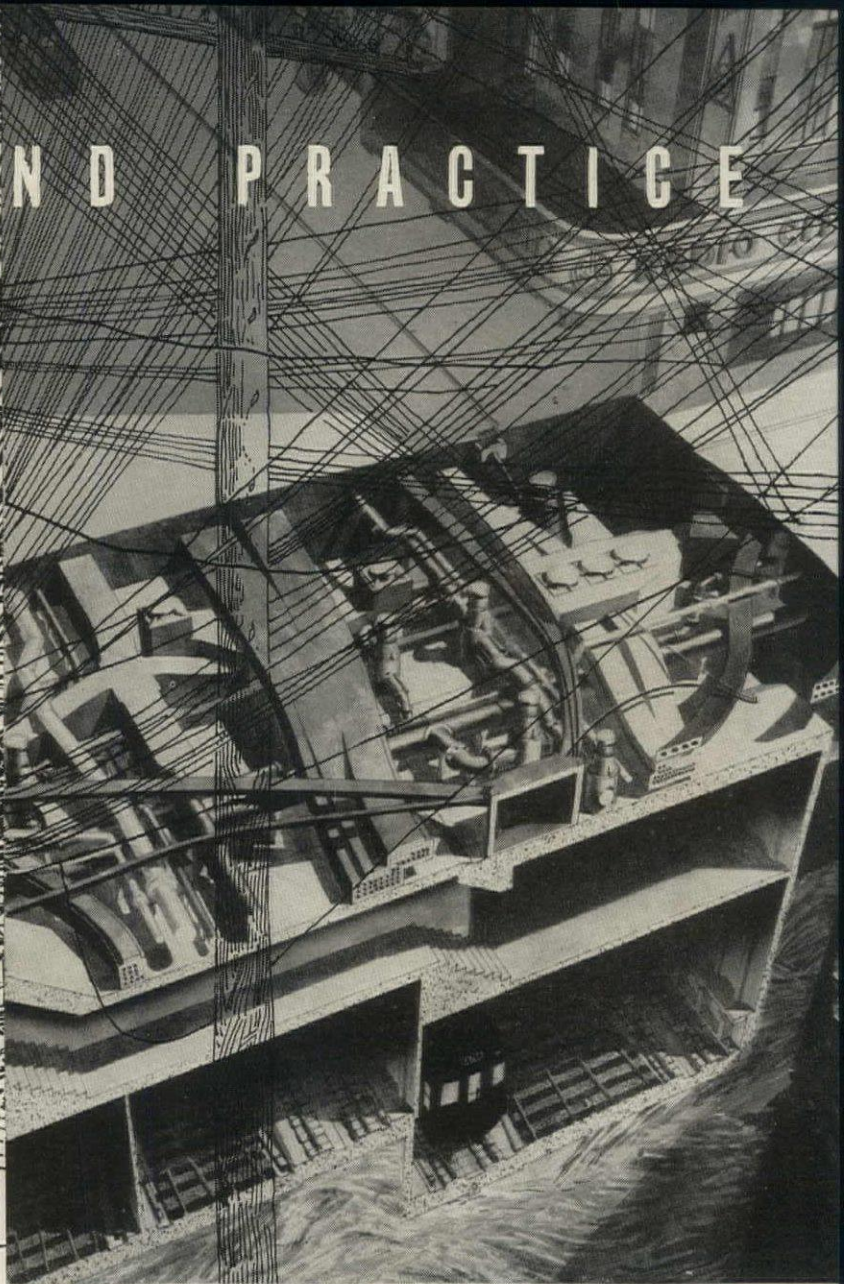
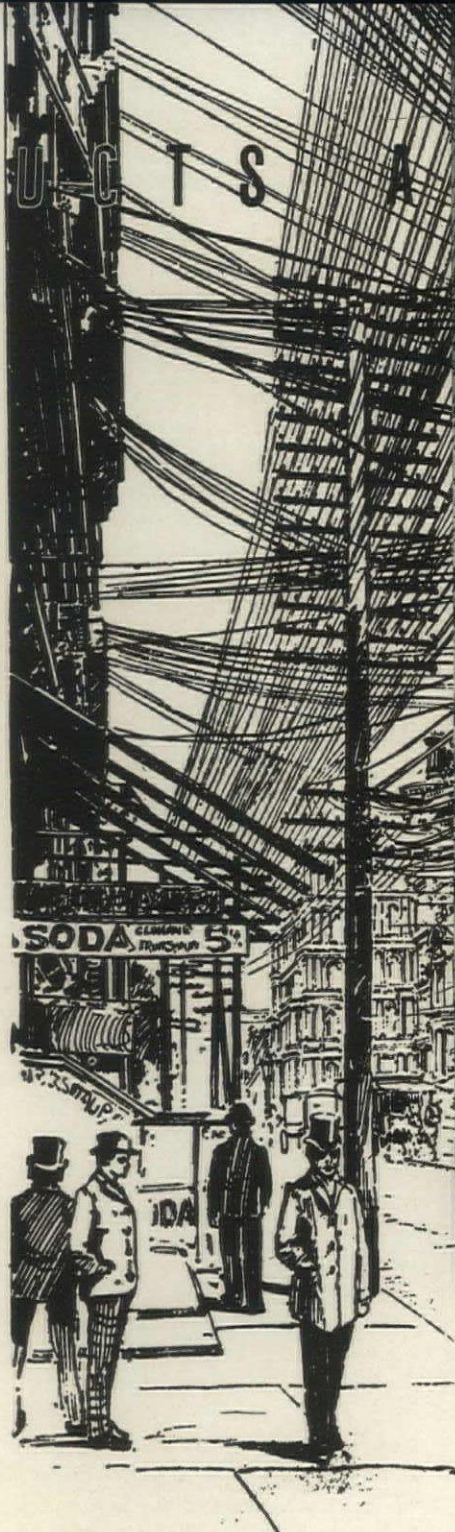


FRONT VIEW

A good example of modern design technique applied to conventional small house construction, this house employs the open plan for living areas, has its garage frankly located at the front. Living and dining rooms are at the rear, face south, and open on a paved terrace. Windows are generous, and the treatment of the exterior eminently satisfactory. Cubage: 26,400; cost, including architect's fee: \$6,060.

CONSTRUCTION OUTLINE

FOUNDATION:—Poured concrete, steel reinforced.
STRUCTURE: Exterior walls—cedar siding, building paper, shiplap; inside—studs, plaster. Floor construction—oak finish flooring.
ROOF: Covered with cedar shingles.
SHEET METAL WORK: Flashing and leaders—Toncan iron, Republic Steel Corp.
INSULATION: Outside walls, attic floor—Weatherwood, U. S. Gypsum Co.
WINDOWS: Sash—wood, horizontal siding. Glass—quality B, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Living room and halls—oak, E. L. Bruce Co. Bedrooms—carpet, Bigelow-Sanford Carpet Co. Kitchen and bathrooms—linoleum, Armstrong Cork Co.
WALL COVERINGS: Kitchen and bathrooms—Linowall, Armstrong Cork Co.
HARDWARE: By Sargent & Co. and Stanley Works.
PAINTS: By Sherwin-Williams Co.
ELECTRICAL INSTALLATION: Wiring—knob and tube. Switches—Arrow-Hart & Hegeman Electric Co.
KITCHEN EQUIPMENT: Range and washing machine—Hot Point, Edison-General Electric Appliance Co.
BATHROOM EQUIPMENT: All fixtures by American Radiator-Standard Sanitary Corp.
PLUMBING: Soil pipes—cast iron. Water pipes—copper, Chase Brass & Copper Co.
HEATING: Hot water system. Radiators and valves—U. S. Radiator Corp. Aquatherm—Day-nite, Minneapolis-Honeywell Regulator Co. Fan—West-wind, Western Blower Co.



CORNERS of Broadway and John Street, 1890, and Sixth Avenue and 50th Street (cut-away view), today. New York in the Nineties faced a current famine similar to that in many a commercial building at the present time, and due to the same cause—inadequate wiring.

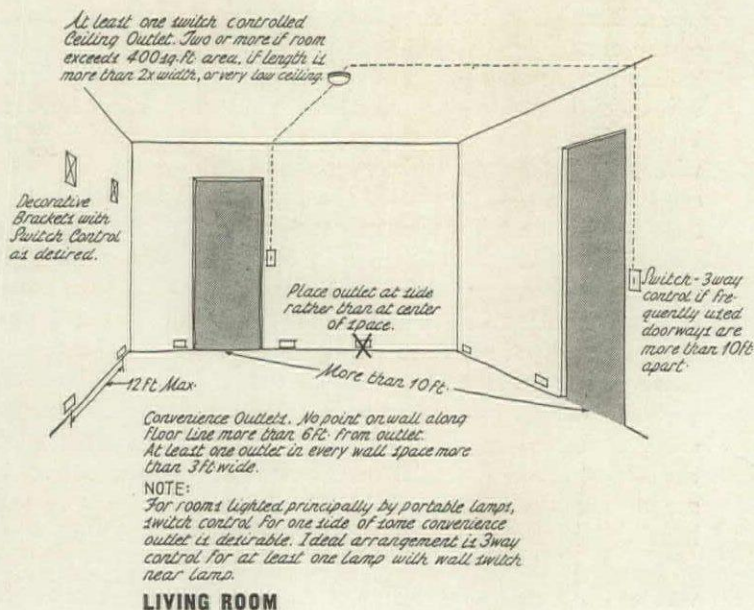
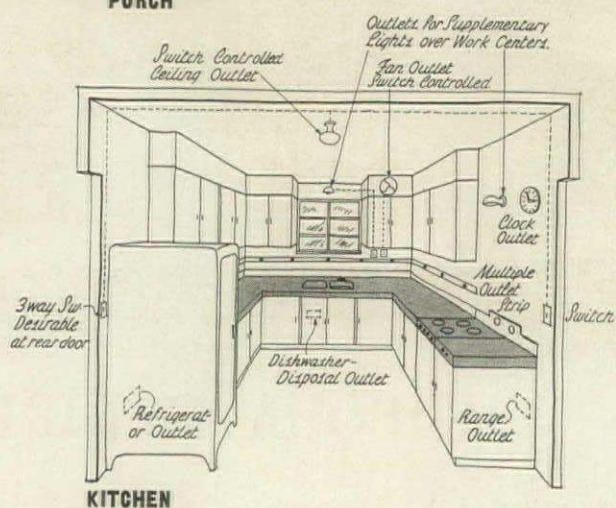
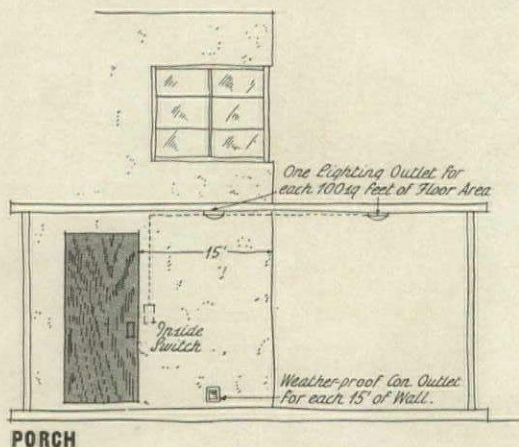
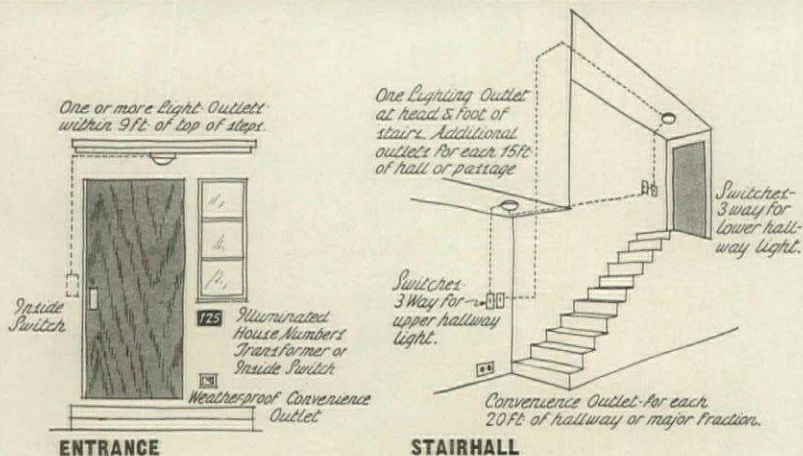
ADEQUATE WIRING

Electric supply is a vital factor in buildings of every type. In the residential field, insufficient convenience outlets are rated a "pet peeve" second only to lack of closet space. In the commercial field, modernization for profit is more and more a matter of bringing electrical equipment, particularly lighting equipment, up to date—and in making such improvements, wiring is increasingly the controlling consideration. In the industrial field, a factory without proper electric wiring is almost useless.

Increased consumption of electricity—more than 50 per cent in the past ten years—is being met by improved wiring techniques which render the standards of even a few years ago obsolete. Developments in electric wiring are therefore of major interest to the whole of Building—and developments there are aplenty. The National Adequate Wiring Bureau, now in its third year, has mobilized the electrical industry behind an effort to make the public aware of wiring and to furnish architects and builders with reliable data on good wiring practice. Manufacturers have developed new wiring and insulating materials to provide greater electrical capacity at reduced costs. The National

Electric Code has been revamped and liberalized to permit utilization of the new materials and more efficient use of the old.

To laymen, and many architects as well, almost any pair of wires seems an adequate electrical conductor. Even among those who realize that the current carrying capacity of a wire is as rigidly controlled by size as the water carrying capacity of a pipe the belief is widespread that the standards set by electric codes are sufficient protection against wasteful "choking" of current in the wires. But while this may have been true at one time, in this day of increasing demand nothing is further from the truth. When John Consumer, in an effort to wring the last bit of lighting capacity from an antiquated wiring system, overloads it to the point where voltage drop (resulting in wastefully inefficient performance of electrical equipment) and heating of the wires (resulting in direct waste of paid-for current) are adding to his electric bill and cutting the output of his lamps, code requirements will permit him to do so. The point where this sort of overload becomes a fire hazard lies well beyond the point where it endangers the pocketbook.

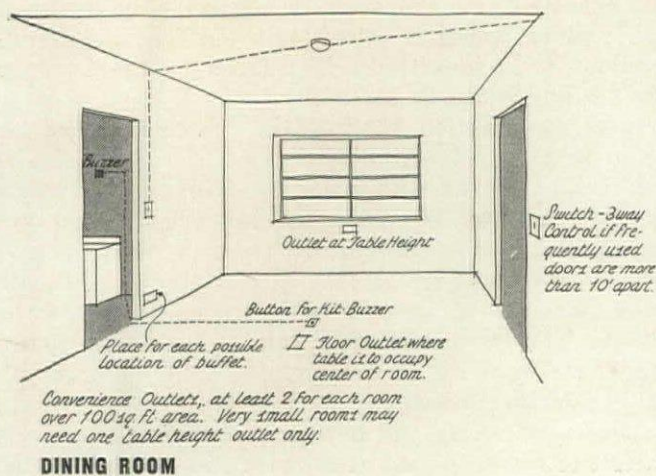


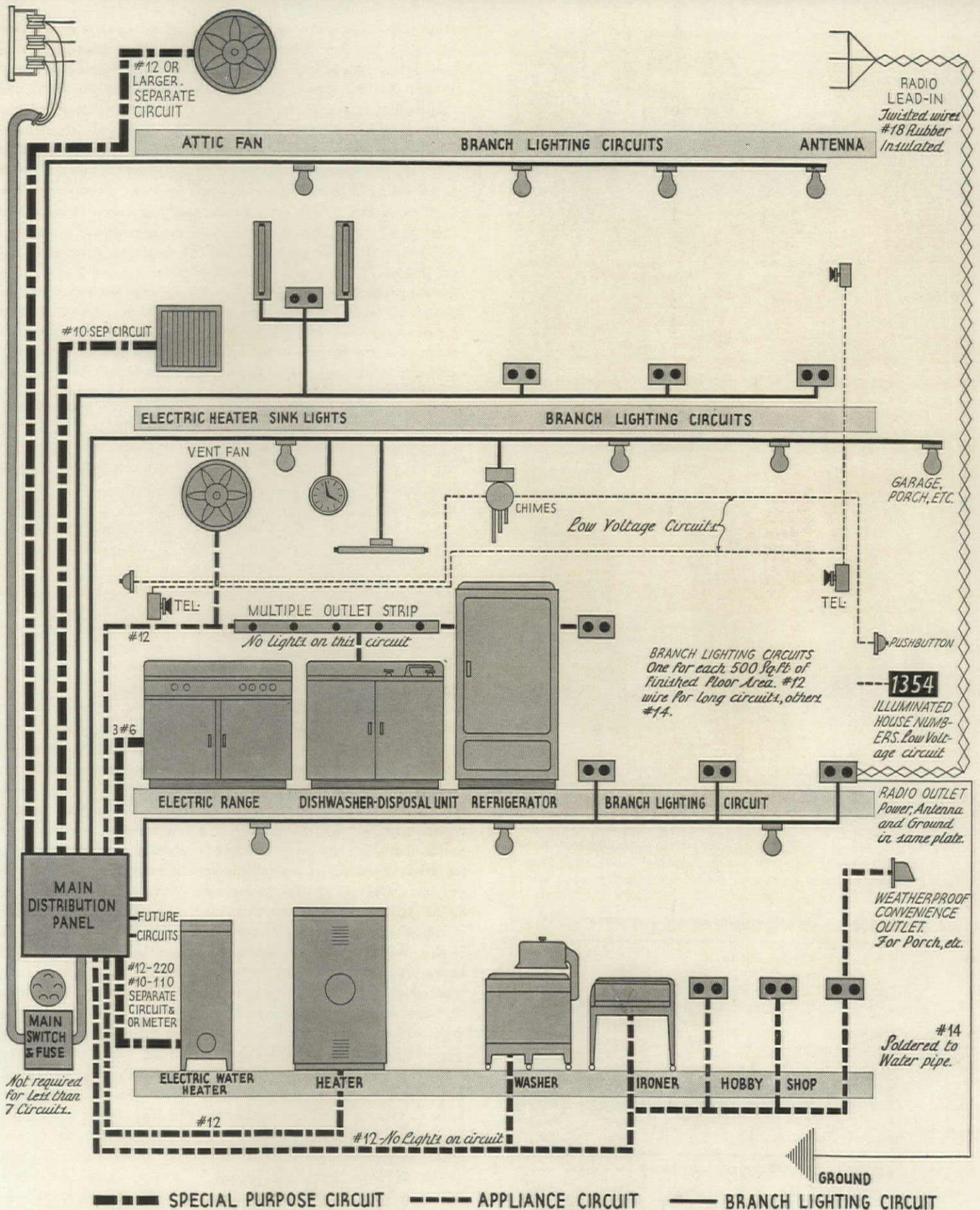
Adequate wiring therefore means more than the convenience of plenty of outlets and freedom from annoying winks and flicker when automatic appliances switch on or heavy loads are connected. It makes sense economically as well. In large commercial installations, where lights are operated eight or ten hours per day, wiring which just meets code limitations may cost hundreds of dollars per year in wasted current and loss of light. In residential work, the difference between a bare necessity layout—which usually must be supplemented later on by unsightly surface wiring—and one which is adequate in every way is usually about 3 per cent of construction cost (\$100-\$200), ups mortgage payments by a small fraction of the electric bill. To the building professional, who must concern himself with this as with every other problem which must be analyzed in the light of the owner's needs and the functioning of the plan, it pays handsome dividends in client satisfaction.

RESIDENTIAL REQUIREMENTS

So long as the typical residential electrical load consisted of a few small wattage lamps and an occasional toaster or iron, house wiring was a simple matter. Today, with electrical appliances much more numerous and lighting levels higher, it calls for careful planning. Hand irons a few years ago burned 660 watts, the 1000 watt size is now commonplace. Range loads once averaged five thousand watts, today the average is closer to ten. Attic ventilating fans and similar heavy equipment are increasingly common. Average annual home consumption of electricity, which stood at 460 kilowatt hours in 1928, by 1939 had reached 900 kw. hr., with the rate of increase going up, rather than down, as time went on.

Under the circumstances, it is not surprising that electric wiring intended for the needs of twenty, fifteen, or even ten years ago is proving unsatisfactory for present day requirements. The most obvious evidence of this is furnished by the home radio. Fading of signals when heavy appliances are in use does not represent normal performance, rather, it is a sure sign of an inadequate or improperly designed wiring system. Less obvious, but even more important, is the slowed operation of irons, toasters, and other heavy current consumers, resulting in their use long beyond the normal time, with current dissipated as heat by overloaded supply wiring paid for at regular rates. Finally, there is dimming of all of the lamps on the overtaxed circuit due to voltage drop. Residential wiring systems which avoid these pitfalls and offer the advantage of plenty of convenience outlets and switches exactly where they are needed are now easier, and in some cases cheaper to install than the old-fashioned type with all its deficiencies. No longer do code requirements limit the number of outlets per circuit, thus discourage the use of convenience outlets in order to save circuits. In place of this requirement the number of lighting circuits is now determined by finished floor area—and therefore





SCHEMATIC DIAGRAM of the wiring system of a small, single-family house, according to best current practice. Planned provision for radio, telephone, electric clocks, kitchen- and attic-ventilating fans, illuminated house numbers, weatherproof outdoor outlets, and other

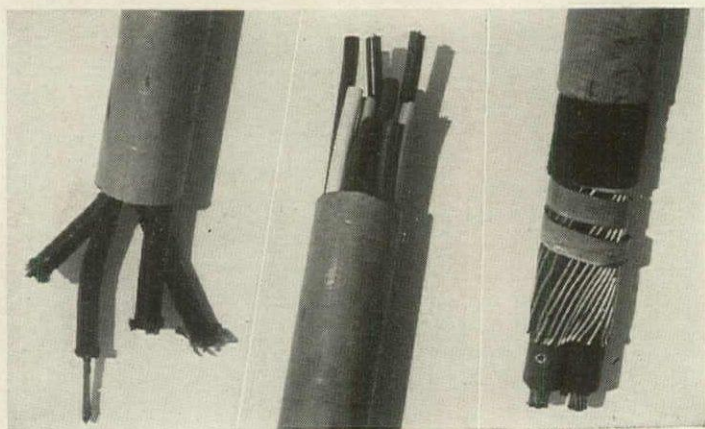
appliances—once considered “special” equipment—is essential for their proper operation and if installation later on is not to mar decoration. Equally important is separation of outlets into appliance and lighting circuits, and special-purpose circuits for heavy equip-

ment. Not shown in the diagram, but a good way to accomplish these purposes, is the use of a number of distribution points centrally located on the various floors, with circuits fanning out in short runs in all directions.



Eric J. Baker

MULTIPLE OUTLET STRIPS, which provide for the connection of an appliance every 6 in. along their length, are among the many new wiring devices now available. Others include silent mercury toggle switches, dial-type switches for variable control of ceiling fixtures, delayed-action switches for garage lighting, etc.



1.

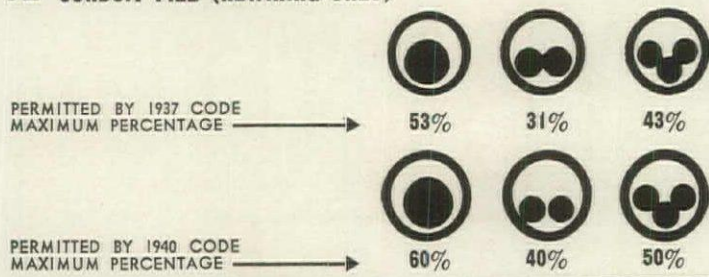
2.

3.

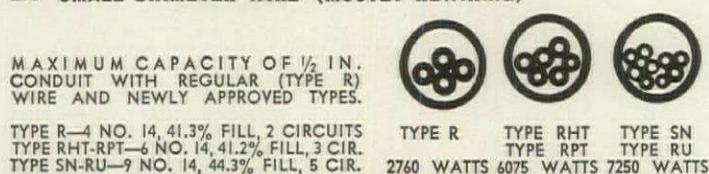
APPROVED for certain purposes by the 1940 electric code are numerous new kinds of wire. 1. and 2. show relative capacities of a 1/2 in. conduit using regular type R wire and small diameter wire, which has been okayed for rewiring use—nine No. 14 conductors replace four of the old type. 3. is an approved, armored service entrance cable employing a “neutral” or uninsulated conductor, which is grounded, thus saving bulk and cost.

CHANGES IN 1940 NATIONAL ELECTRIC CODE*

A. CONDUIT FILL (REWIRING ONLY)



B. SMALL DIAMETER WIRE (MOSTLY REWIRING)



*Changes in the National Electric Code, already approved by the National Fire Protection Association's Electric Committee last December, will not become fully official until November, 1940, after the American Standards Association meets to make them the official standard of the industry and the new edition of the code is published. Meanwhile, many cities and progressive local inspectors have authorized the use of new materials under the proposed new rules.

actual lighting needs—with the number of outlets unlimited, provided they are evenly distributed between the required number of circuits. Special appliance circuits, not used for lighting purposes, are provided for the kitchen, laundry, dining room, and other spaces where heavy equipment is likely to be used. Real current consumers, like bathroom heaters, water heaters, and—of course—electric ranges, are separately wired from the distribution panel to assure efficient operation and guard against waste of current in the supply wiring. Sufficient three-way and four-way switches are provided to furnish a lighted path on entering every room in the house; clock, telephone and other special purpose outlets are installed during construction and not as costly or defacing afterthoughts.

Most important, all of these improvements have been embodied in a comprehensive, industry-wide standard, the Handbook of Interior Wiring.† The Handbook contains complete, room-by-room check lists, sample plans and model specifications for residential work, and a vast amount of more technical information applicable to buildings for general and special occupancy. A simplified and condensed version, applicable to residence work only, may be obtained free from any local Adequate Wiring Bureau, which will also aid in laying out residence wiring systems.

Still another improvement in residential wiring technique, which has numerous advantages, is the use of distribution sub-centers on the various floors—the so-called “radial” wiring method. Sub-feeders are carried directly from the service entrance panel to distribution centers located at various convenient and centrally located points throughout the house, from which branch circuits for lighting and appliances may be extended in short runs in every direction. Voltage drop is thus reduced to the absolute minimum and circuit breakers or fuses may be placed in handy locations near the circuits they control.

REWIRING

To provide wiring adequate for present and future needs in new buildings is a simple matter. In existing structures, where increased demand for current has rendered the original wiring obsolete, and conduit is buried in the construction, it is considerably more difficult. When, as is normally the case, this conduit is filled to capacity, larger or additional raceways are required to increase current capacity, calling for costly and messy alterations. With this in mind, manufacturers have developed new and superior insulating materials, resulting in wire of smaller diameter for the same size copper conductor, and increasing safe current capacity.

Small diameter building wire, the trade name of the new product, is intended only for rewiring purposes, except for one type, which is also used for heat-resistant installations. It is somewhat more expensive than regular wire, but makes possible substantial economies where new conduit would otherwise be necessary. It is made in four types. Type SN (rewiring only) has a one-piece, integrally colored, synthetic-plastic insulating material and type RU (rewiring only) a special rubber and braid insulation, each resulting in a wire about one-third smaller than the regular type R. Type RPT (rewiring only) is rubber covered and midway in size between type SN and the regular type R. The fourth type, RHT, is similar to RPT but intended for both new and rewiring purposes where heat resistance is needed. All types, under the new (1940) National Electric Code, can be used to more than double the capacity of existing raceways, the smallest types naturally being capable of even greater increases. Rewiring of existing commercial buildings has a definite part in modernization for profit, especially where lighting levels are being stepped up. Besides making a building considerably more attractive from the rental standpoint, it may prove self-liquidating, due to reduction in wasted current and light.

†National Adequate Wiring Bureau, 155 East 44th St., New York, N. Y. 35¢.



Robert M. Damora

LINCOLN HALL, LINCOLNDALE, N. Y.

IDES VAN DER GRACHT & WALTER H. KILHAM, JR., ARCHITECTS

Lincoln Hall is a rural boarding school and farm, operated by the Christian Brothers, to which boys who are judged suitable for its rehabilitation program are committed by the New York courts. Occupying the site of a former Catholic Protectory—an agricultural school—it consists of nine new buildings and five which have been extensively altered and modernized. Six new cottages, of the type shown above, a faculty house, gymnasium, and a vocational school have been erected.

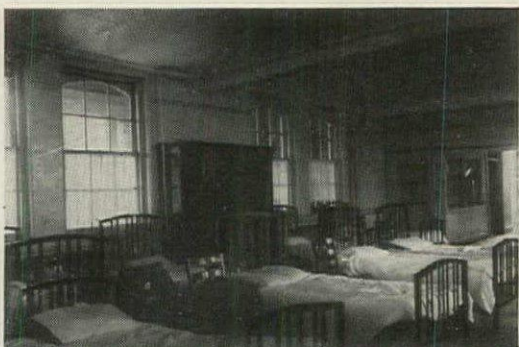
The six cottages, plus two which have been renovated, provide living accommodations for about 200 boys, in groups of 24. Each has a living room with a fireplace, two small studies, a large room for rough play, and two dormitories, arranged so that each boy has his own locker space for clothes and personal belongings. The design of the dormitories provides for division into individual cubicles if, in the future, this is considered desirable. The cottages are widely scattered so as to avoid as much as possible an institutional effect; exterior design follows no set style but is exceedingly simple and appropriate to the setting and purpose. Cottage interiors, and some of the other buildings, are shown on the following pages.



LIVING ROOM

DORMITORY

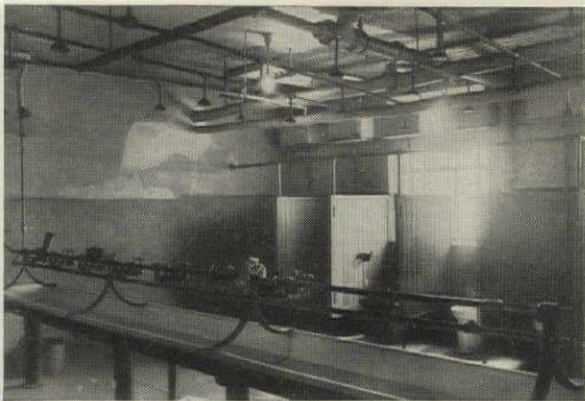
Robert M. Damora



FORMER DORMITORY

Cottage design is intended to stimulate "a social life comparable to that in any good family home." Two groups of twelve boys, each under the supervision of a Brother, occupy each cottage, share a living room, playroom (for wet weather, basketball practice, table tennis), toilet and shower facilities. The attractive and practical furniture was designed by the architects. Open to criticism is the dormitory arrangement (right), where wardrobes placed at the head of the beds tend to block the windows, besides being unpleasant in appearance.



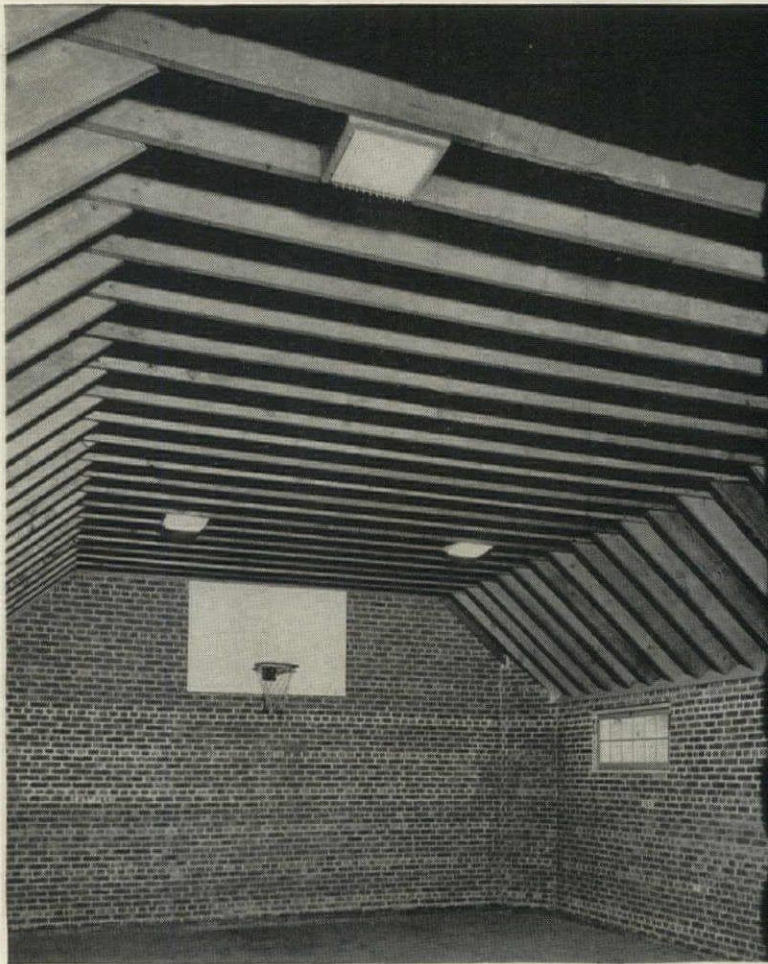
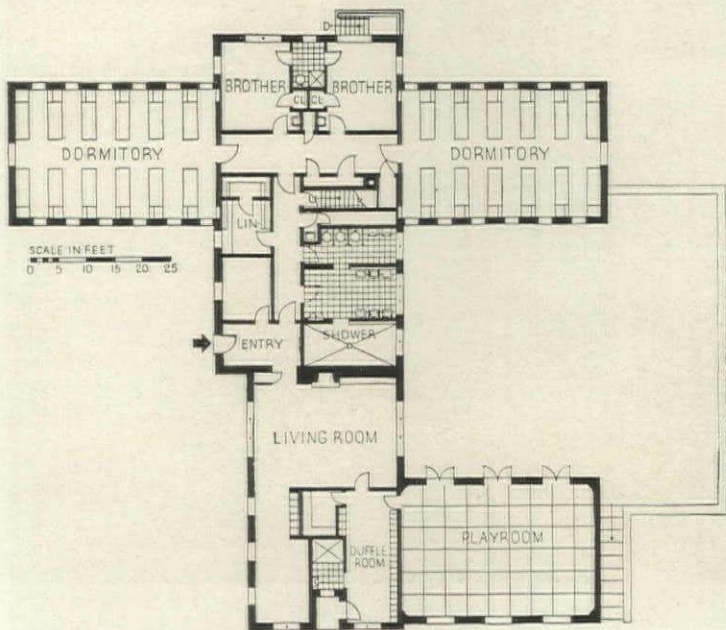


FORMER LAVATORY



LAVATORY

Robert M. Damora
PLAYROOM





EXTERIOR
THE BROTHERS' RESIDENCE

Robert M. Damora

VAN DER GRACHT AND KILHAM,
ARCHITECTS

The school building, part of the original plant, has been completely renovated. New heating, plumbing, and electrical systems were installed and the interiors refinished and refurnished in the manner shown at the right. The vocational school (below) and the Brothers' residence (facing page) are new.

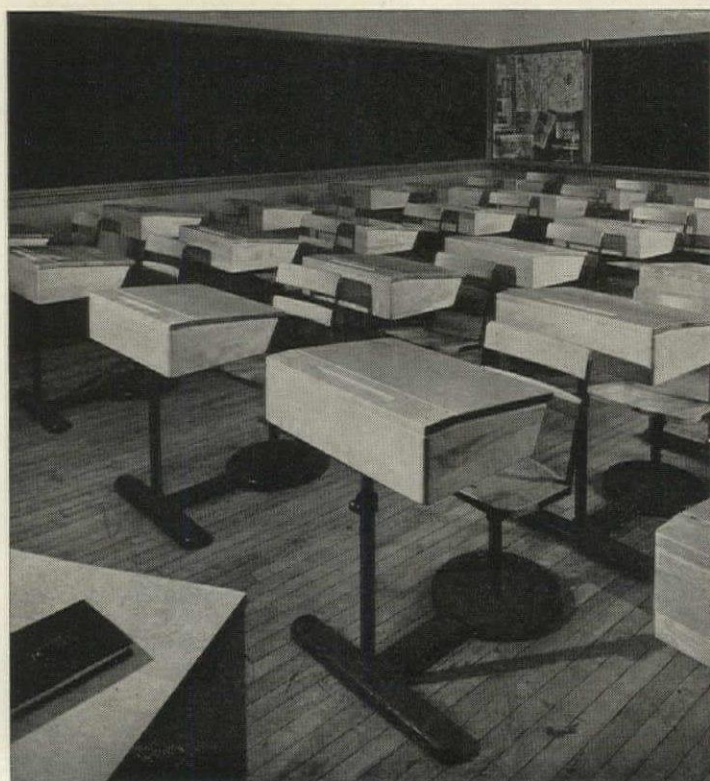
The new gymnasium, shown on the following page, contains a standard intercollegiate basketball court and three practice courts. There is a projection booth for motion pictures and a small gallery for staff and visitors, as well as shower and locker rooms for both home and visiting teams. Adjoining the gymnasium is an athletic field with baseball diamonds and a football field.



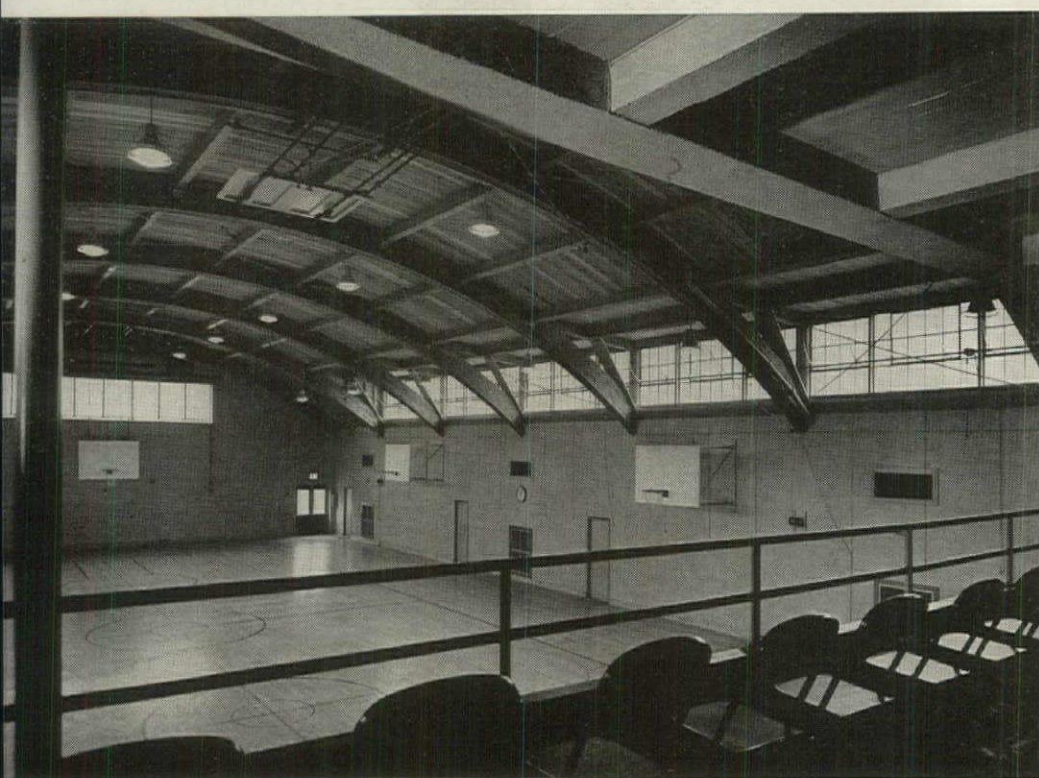
PRINTING SHOP

LIBRARY

Robert M. Damora Photos

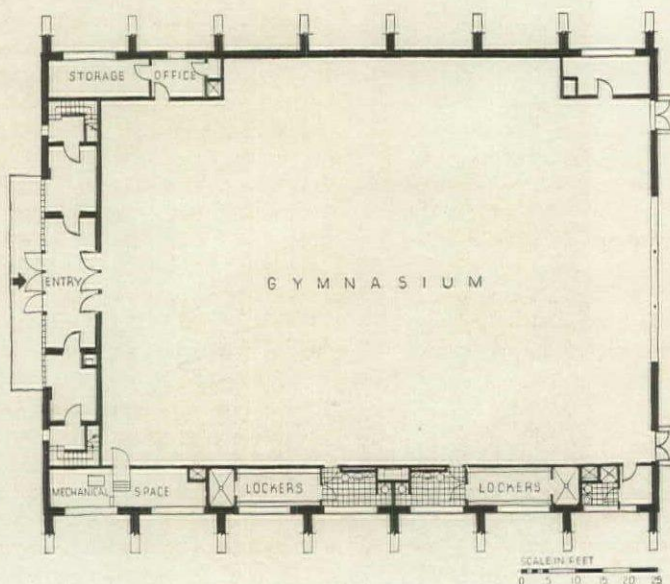


CLASSROOM



GYMNASIUM

Robert M. Damora Photos



CONSTRUCTION OUTLINE

Typical Cottage

FOUNDATION: Concrete.

STRUCTURE: Exterior walls—brick veneer, 8 in. cinder block; inside—cinder block, wood studs, metal lath and plaster. Floor construction (1st.)—precast concrete; (2nd.)—wood beams.

ROOF: Covered with red cedar shingles.

FIREPLACE: Dampers—H. W. Covert Co.

SHEET METAL WORK: Flashing—lead coated copper, Revere Brass & Copper Co. Ducts—Toncan Iron, Republic Steel Co.

WEATHERSTRIPPING—Zero Weatherstripping Co.

WINDOWS: Sash—wood, double hung; balances by Unique Window Balance, Inc. Glass—quality A, Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: Main rooms—asphalt tile, J. E. Kennedy Co.

WOODWORK: White birch and pine.

HARDWARE: By John H. Judd & Son and Schlage Lock Co.

ELECTRICAL INSTALLATION: Wiring—BX. Switches—Arrow-Hart & Hegeman Electric Co.

Fixtures—designed by Charles J. Lindenthaler, manufactured by Ferd Rath, Inc.

BATHROOM EQUIPMENT: All fixtures by Kohler Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—Revere Copper & Brass Co. Pump—Whitlock Pipe Coil Co.

HEATING: Central steam and hot water system for cottages. Trane Co. unit heaters in all playrooms. Boiler—Babcock & Wilcox. Radiators and water heater—American Radiator Corp. Grilles—Tuttle & Bailey Mfg. Co. Valves—Warren Webster, Carne and Jenkins Bros. Thermostats—Minneapolis-Honeywell Regulator Co.

CONSTRUCTION OUTLINE

Gymnasium

FOUNDATION: Concrete.

STRUCTURE: Exterior walls—brick and 8 in. cinder blocks. Interior partitions—cinder block and plaster. Lally columns and steel construction for balcony and projection booth. Floor construction—sub-floor and maple finish floor.

ROOF: Covered with Barrett Co. roofing.

SHEET METAL WORK: Flashing—copper. Ducts—Toncan Iron, Republic Steel Corp.

WINDOWS: Sash—Truscon Steel Co. Glass—quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Pittsburgh-Corning Corp.

STAIRS: Steel, cement treads, White Plains Iron Works.

HARDWARE, ELECTRICAL INSTALLATION, and PLUMBING: Similar to Cottages.

HEATING: Steam from central plant and indirect warm air system; equipment same as cottages. Water heater—Whitlock Pipe Coil Co. Fan—American Blower Co.

GENERAL CONTRACTOR: O'Hare Construction Company.

BUILDING MONEY

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LONDON



LINDEN

Richard Averill Smith

IMPORTED FROM ENGLAND: a formula for successful shopping centers featuring impressive bulk, main street revival, friendly landlord-tenant relations. Proof it works: 1,000 stores in London, Eng., 11 in Linden, N. J., more to come.

BETWEEN 1929's world depression and 1939's world war, London watched big building societies cover its flowing outskirts with some 600,000 houses—at least twice as many as went up in Metropolitan New York. Watching the residential decentralization roll by, one Londoner hopped on the band wagon, built shopping centers to serve the mushrooming suburbs. By the end of 1938 he had finished about 1,005 stores with apartments above valued on the pre-war exchange rate at some \$20 million. Today, Edward Lotery having hopped from London, England, to Linden, N. J., boasts a New York office and his first U. S. shopping center.

A modest development in a small but growing industrial town, Lotery's eleven-store project is only nine months old but is 100 per cent rented and slated to close the year with every tenant making money—an enviable record, as the owner of any new commercial building will attest. However, this is only one of the project's claims to significance. It reflects several design and construction policies and owner-tenant

relation policies which proved their worth in England and merit analysis by U. S. Building. The biggest business structure in town, it has made life easier for Linden shoppers, has upped the community's civic pride and has prompted many a competitive store along the once shabby main street to spruce up. Also, it is the curtain raiser of a large scale one-man store building program which may parallel its London prototype; Lotery already has projects under way in three other small New Jersey communities and can see no limit to the possibilities of spreading his activities the country over.

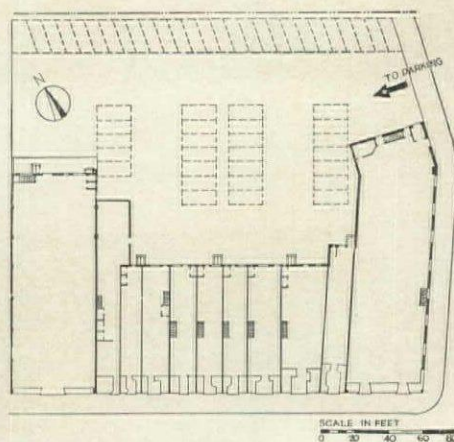
A field which an outsider finds so fertile should certainly arouse the curiosity, if not the profit incentive, of native builders.

LONDON

Fundamentals behind the Linden project had their genesis decade ago in England. For several years young Edward Lotery had directed the retail and real estate departments of his father's extensive cloth-

ing manufacturing company (H. Lotery & Co., producer of England's postmen uniforms as well as "bespoke" and ready-made men's suits, now the leading producer of England's military uniforms). In this capacity he studied and helped solve the company's merchandising and rental problems, examined new districts into which the business might be extended. By 1930 he had spent enough time in the field to realize that London's decentralization was creating a tremendous market for shopping centers and had saved enough money to exploit it. Forthwith he formed Greater London Properties, Ltd., and as chairman of the board launched the greatest suburban store building and management program England has ever seen.

Parades. Wherever a suburban area showed signs of healthy growth, Lotery moved in, erected a shopping "parade" (English lingo for a string of stores). Frequently his keen judgment of trends led him to acquire land and sometimes to build his stores at the first sign of residential development. And,

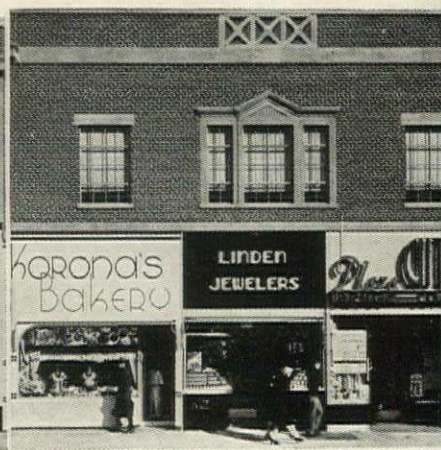


once his reputation had been established, he was able to corner the entire business section of many a London satellite town. Thus, in many cases too much of a budding community was zoned for commercial use, and before buying the centrally located section Lotery would require that the owner agree not to sell the balance of the property for commercial purposes. Result: he benefited by becoming sole owner of the commercial district, and the community benefited by his immediate erection of large, complete, well-planned shopping facilities strategically concentrated with respect to transportation systems and the balance of the community. In such cases, the Lotery developments were more than parades; they were whole "downtowns," covering as many as six blocks, making room for as many as 80 stores and exclusively serving as many as 8,000 houses. While numerous projects of this size helped swell the total number of Lotery stores to 1,005, some of them contained only one store. Average size of his 80 parades: 13 stores.

As construction and management problems multiplied with the program's expansion, Greater London Properties, Ltd., became one of the largest, most closely integrated organizations in England's commercial building field. Working with him was a staff of 25 executives and their subordinates, including an assigned division of a London law office, agents of London's top-notch suburban store brokers and a firm



GROCERIES, ETC.



BAKERY

JEWELER

DRUGS

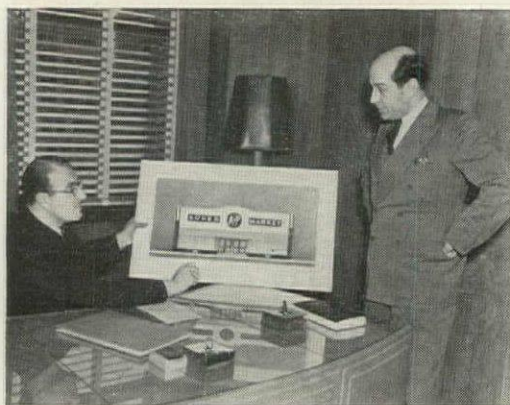
of architects. Construction was handled by three general contractors. Thanks to standardization of design and the stability and uniformity of labor and material costs, Lotery could phone one of these experienced builders to erect a 20-unit building in a certain suburb and, without asking, would know its cost. To design the buildings, which at Lotery's insistence followed an easily recognizable pattern, the company commissioned Architects Marshall & Tweedy, R.I.B.A. fellows and designers of King George V's house, gave them floor space in its five-story office building in the swank center (between Regent and Bond Streets) of London.

Stores. In addition to sheer bulk, the design, construction and operation of a London shopping center is vastly different from anything seen in the U. S. In the first place, it is designed as a series of separate stores (with 18 to 28 ft. fronts and a depth of about 40 ft.) separated by bearing party walls—not as one big room which is later subdivided with partitions to meet tenant requirements. Atop each store goes a two-story duplex "maisonette" whose five or six rooms are usually occupied by the tenant's family and, to save valuable store frontage, are accessible via stairs at the rear. Like most all English houses, these store-apartment buildings are without basement and central heating equipment. And, since all utilities are metered to the tenants, the landlord has no operating costs, no finan-

cial worries but rent collection and maintenance. With these minor exceptions, the £250 gross annual rent (about \$1,250) which Lotery charged for the average store-apartment was net income.

Design and construction of the parades as a series of independent units made possible their piecemeal sale, and by the war-forced close of his construction program, Lotery had thus disposed of about 40 per cent of them to free his capital for further developments. Long-term leases and the absence in England of a real estate tax on vacant properties combined to make the shopping centers attractive investments for insurance companies, trust funds and individuals. Large investors bought whole parades; small investors bought parts of them (sometimes the tenant purchased his store and maisonette). Average sale price per store-apartment unit: \$20,000.

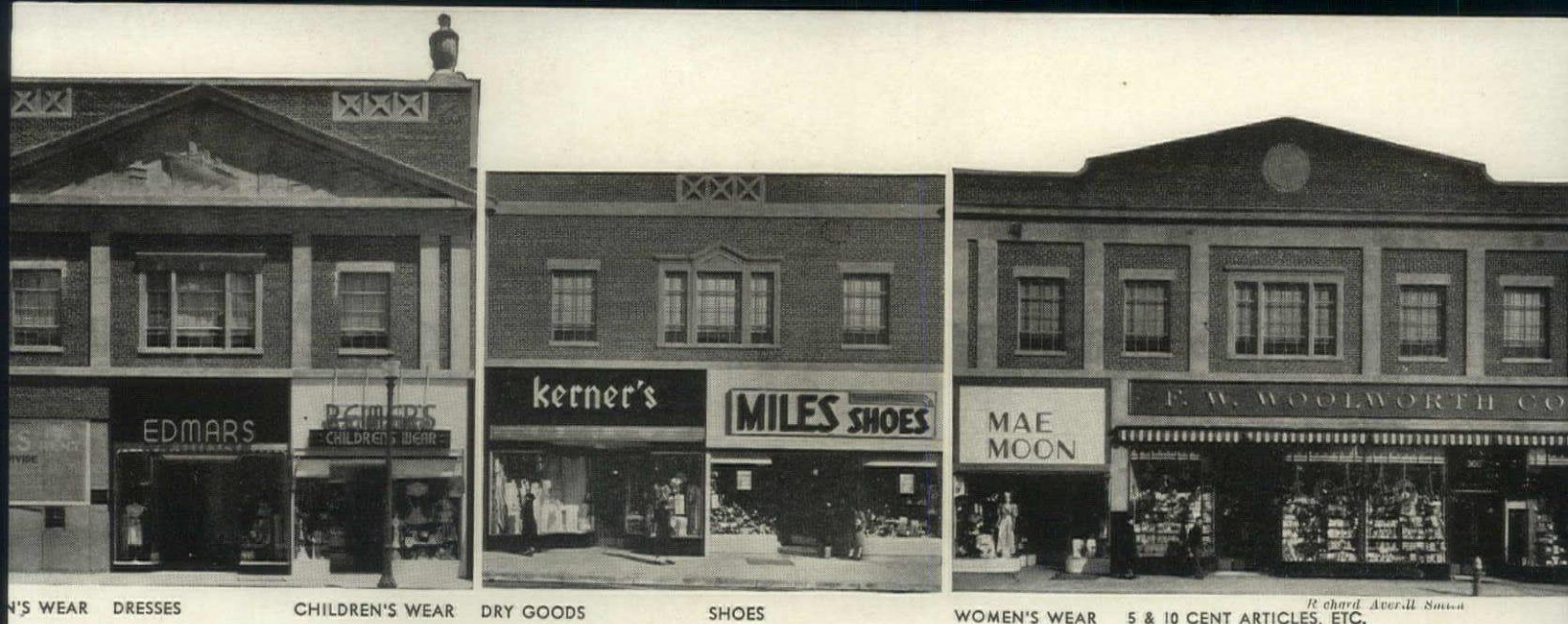
While Lotery did not attempt to sell his remaining holdings when he saw the approach of war, today he undoubtedly wishes that he had. Under England's total war economy, business property ownership is all headache, no profit. Wealth has been taxed galore, consumer buying power has diminished, retail sales volume is small, business failures are numerous, rents are difficult to collect, war risk insurance is not available and empty shops are almost impossible to fill. Result: Lotery's once prosperous parades are now just so many problems for the skeleton staff of Greater London Properties, Ltd.



Team-mates Londoner Edward Lotery (left) and New Yorker Hanford M. Twitchell in the former's modern Manhattan office discuss a proposed A & P store front. Both are chain store advocates.



Main street of Linden is a heavily trafficked mile of unattractive, old stores—most of them one-story high. This battery of typical units is a half-block southeast of Lotery's pompous eleven-store "parade" (top of page). Uniform in over-all height and use of structural glass, Lotery's store fronts and signs are well above main street's average.



Richard Averill Smith

NEW YORK

Two years ago Lotery began tapering off his land acquisition program and limiting his construction activities to the 400 store sites already acquired. Reasons: 1) He and two or three competitors had about caught up with the market for shopping centers, and 2) true to the basic principle of all large British enterprises, he deemed it wise to spread his activities elsewhere, not to carry all his real estate eggs in one small basket—the British Isles. In the summer of 1938 Lotery made a reconnaissance trip to the U. S., discovered that urban decentralization combined with the substandard condition of most small town shopping facilities were creating a large and fertile market for new shopping centers.

Upon advice from its London correspondent, New York Realtors Albert B. Ashforth, Inc., welcomed Lotery, later teamed up with him and sent one of its directors, Hanford M. Twitchell, back to London to study the business. During the following year Lotery commuted to New York (nine crossings between September, 1938 and July, 1939), where he established a downtown office on the most English-sounding street in the city—Maiden Lane. There he and Twitchell studied the U. S. problem and adapted the lessons learned in London to a U. S. program.

Program. It was realized early that there would be no need in the U. S. for such whopping projects as went up around London—no new towns or suburbs which could support even 30 stores (much less 80) are being born. Instead, the program's aim is to supply new shopping facilities in small growing towns which are either under-supplied or are served by substandard facilities. Lotery also learned many other hard U. S. facts which required modification of his English principles: 1) Difficulty in leasing above-store apartments on noisy commercial streets at rents which would show an operating profit meant a basic change in the building's design. 2) Higher construction costs—about 30 per cent for both labor and materials—meant a larger capital investment per store. 3) Shorter term leases and a more rapid tenant turnover combined with taxation of vacant

stores meant that projects would be less attractive to mortgage financiers and outright purchasers. 4) Taxation of undeveloped land meant that large holdings for future development would involve high carrying charges and therefore be unwise.

More newsworthy, are the policies of the London program which were introduced into its U. S. successor: 1) Fundamental is the policy to build a shopping center only after a detailed survey of the community indicates that it is needed. 2) From his wide experience in the retail clothing business, Lotery concludes that salesmanship begins with the building—the shopping center must be “sold” to the public first, then the merchants’ stores and finally their merchandise. 3) This leads him to build large, imposing buildings which will attract attention, create civic pride and draw business to the tenants. 4) To the same end, design and construction must be well above average. 5) On the basis of the survey, he convinces out-of-town merchants that the community offers a market for their wares. In other words, he goes out and gets tenants, instead of waiting like most small town store owners for tenants to come to him. 6) Landlord-tenant relationships are many degrees warmer than the U. S. level. Not only does Lotery adjust his leases to the problems of merchants starting out in new locations and thus establish himself as a considerate landlord, but he also follows their business curves, heeds their complaints and further builds up valuable good will. 7) As in England, where in later years he built a large percentage of all F. W. Woolworth Co.’s retail outlets, Lotery tries to get at least one big chain store in each of his shopping centers. Contrary to the views of Congressman Patman, whose bill to tax the chains out of business was killed by Congress last month, he counts a chain store as the necessary keystone to any successful multiple store building. Their comparatively low prices attract shopping crowds to which neighboring merchants may also cater. Result, claims Lotery, is that once a chain store has signed its lease, most of the other stores rent themselves.

Today, with his program just beginning to bud, Lotery’s staff is small, but his plans are big. To explain the pattern they will



New post office, separated from Lotery's shopping center by Linden's only theater, is one sign of the town's recent revival.



New houses, selling well at an average price of \$5,000, dot Linden's periphery. Total number of houses in town: 5,000.



New apartments in an FHA-insured \$1.2 million project rent for \$14.50 per room, number 284—40 per cent of town's total.



Robert M. Damora

New factories like General Motors' have been attracted by Linden's strategic location, boomed the town, made new stores feasible.

cut, he points with obvious pride to his first U. S. project.

LINDEN

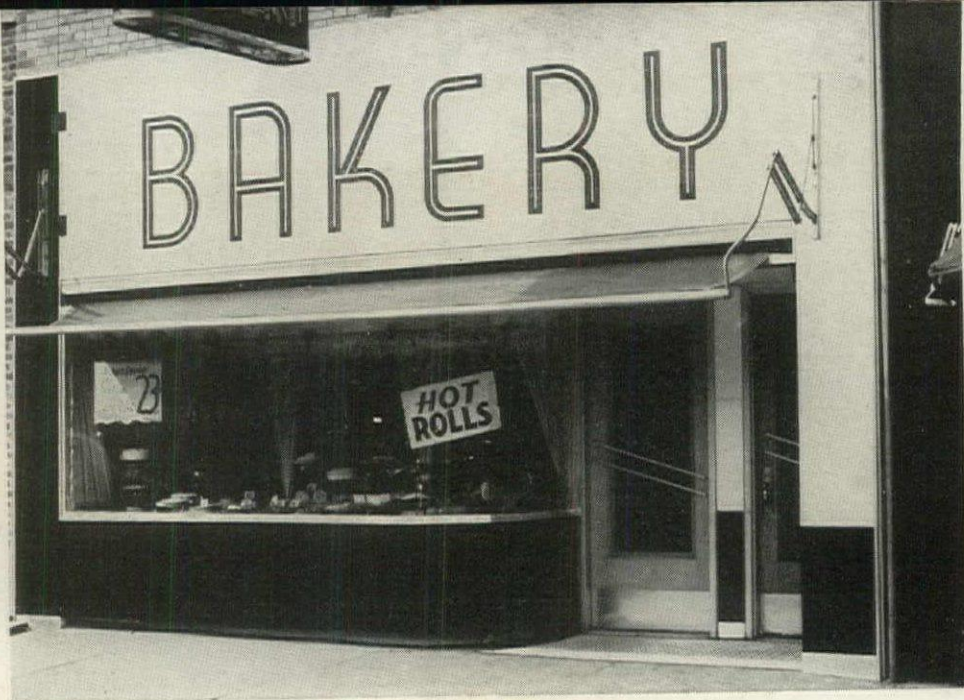
Location of this shopping center in a town whose name sounds much like London is pure coincidence. Linden was selected only after a visual survey indicated that it needed new stores more urgently than most any other northern New Jersey town and only after a statistical survey proved it. Among other things (see table, right), Factfinder Twitchell learned that Linden's population had jumped about 50 per cent in ten years (1939 estimate: 27,000), that many of its 65 factories were in line for expansion, that residential building was booming (700 houses and 300 apartments since 1935—see illustrations, p. 135), that only a handful of stores had gone up haphazardly along its down-at-the-heel main street, that much of the population was shopping in Elizabeth and Rahway (competing centers within a three-mile radius) and, happily, that the best business site on the mile-long main street was vacant.

A "100 per cent location" in any realtor's judgment, this 215 x 240 ft. site is opposite the well landscaped city hall and bounded on one side by a busy cross street, on the other by a theater, with the new post office one door beyond (see illustration, p. 135). Its only "improvement" was a weathered sign which for years had announced that Woolworth would "soon" open a store on the property. (The land owner apparently lacked the courage or the funds to erect his long projected building.) Well equipped with both courage and money, Lotery immediately purchased the lot which he valued at \$190,000, about \$800 per front ft. and a bargain in the light of today's main street "asking prices" (roughly \$1,200 per ft.) which have been upped by the Lotery development.

Design. With Woolworth and The Great Atlantic and Pacific Tea Co. already having rented two-fifths of the frontage at either end of the site, Lotery commissioned New York Architect Philip Ives to design the building around several definite and rather unusual requirements: 1) While it was to be only a one-story structure it had to look like two stories—and a big two stories. 2) Its exterior design, unfortunately perhaps, had to resemble Lotery's established English pattern. 3) The building had to be composed of several independent units any one of which could be sold.

A specialist in country houses, Architect Ives had gained some experience in the commercial field by designing a six-store Westport, Conn., shopping center and F. A. O. Schwarz' famed Manhattan toy shop. But, orthodox experience helped little in meeting these strange requirements. First he studied the elevations and working drawings of the London parades, then decided that a modified Georgian style would best solve the exterior design problem. Exterior treatment divides the building into

(Continued on page 34)



MARKET SURVEY of Linden compiled by Albert B. Ashforth, Inc., preparatory to erection of Edward Lotery's shopping center:

LOCATION—17 mi. southwest of New York City
AREA—11.3 sq. mi.; 7,296 acres
DRAWS FROM—Roselle, Roselle Park
COMPETING CENTERS—Elizabeth, 3 mi.; Rahway, 2 mi.

POPULATION—1930, 21,200; 1936, 25,000; 1939 estimate, 27,000. Greater New York Regional Plan Assn. experts expect heavy growth 1940-50. Breakdown, 1936: commuters, 28%; local factory workers, 12%; other local workers, 50%; other, 10%.

FACTORIES—Number, 65; employees, 12,000; about 33% live in Linden. Annual value of production, \$100 million; estimated annual payrolls, \$20 million; principal industries: General Motors, Merck, Simmons Bed, American Cyanamid, Standard Oil, Cities Service, du Pont, Tip Top Clothing, Sinclair Oil. (War orders and the national defense program will boom many of Linden's industries—Ed.)
BUSINESS—Number of lines, 45; structures, 484.

PUBLIC FACILITIES—14 schools including 2 high schools; \$350,000 city hall; 25,000-volume library; 57 policemen; 42 firemen.

HOSPITALS—None

HOUSES—5,000

APARTMENTS—700

RESIDENTIAL SHORTAGE—Existing shortage will be aggravated as great industrial activity draws more workers to Linden.

HOME EQUIPMENT—4,700 radios; 1,400 refrigerators and washing machines; 2,300 vacuum cleaners; 3,500 gas hot water heaters; 4,400 gas ranges; 1,000 telephones. Average gas bill, \$25 per year; average electrical bill, \$31 per year. (1936 statistics.)

PRESENT BUILDING PROGRAM—Both houses and apartments are under construction. Selling and renting well. Average price of new homes, \$5,000. Many are for families in higher income brackets.

RECENT BUILDING RECORD—700 houses built in last four years. FHA-insured rental project for 284 families recently completed; average rent per room per month, \$14.50.

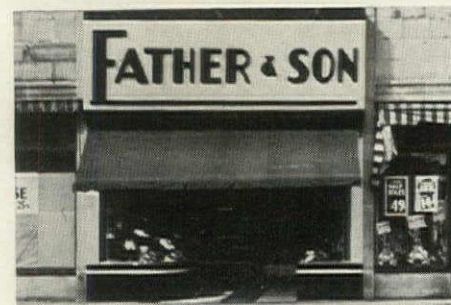
AUTOMOBILES—Approximate number, 5,000.

FINANCES—Total assessment \$52.2 million; tax rate for 1939, \$3.64; tax rate for 1940, \$3.41; personal property tax very high; 1938 tax bill, \$2.2 million; tax on real estate is only \$1.7 million; percent of tax levies collected, 80% in 1933, 89% in 1936; 96% in 1937, 86% in 1938. Balanced budget for many years. Town debt, \$5 million. Post office receipts, \$74,441 in 1939. Commercial bank deposits, \$3.5-4.0 million.

FAMILY INCOME—Total, about \$11 million; average, about \$1,800.

TRANSPORTATION—Several highways; 7 bus lines, 600 trips per day; 100 miles of streets, mostly paved; good parks and parking facilities; three railroads, one of which alone has 60 Linden trains per day. Staten Island Sound frontage and docks. Traffic on nearby Lincoln Highway, 50,000 per day; traffic at shopping center, 20,000 per day.

Direct results of the new Linden shopping center are some of the dozen store improvements which have since been made on the main street. One-story, five-store project now abuilding is located opposite Lotery's parking entrance (see plan, p. 134). Vacant offices over the new department store (bottom) appear to justify Lotery's decision to omit second floor rental space.



FORUM BUILDING COST INDEX*

CURRENT TREND IS DOWN IN 41 OF 81 CITIES, HIGHER THAN YEAR AGO IN 48.

* Home Building Costs Expressed in Per Cent of the 1936 National Average.

STATE	CITY	LATEST REPORT	PRECEDING REPORT	YEAR AGO	STATE	CITY	LATEST REPORT	PRECEDING REPORT	YEAR AGO
ALA. ¹	Birmingham	94.4	94.0	96.0	NEV. ²	Reno	122.5	121.9	118.6
ARIZ. ²	Phoenix	112.1	112.1	109.2	N. H. ¹	Manchester	97.4	97.4	98.1
ARK. ²	Little Rock	93.4	93.6	94.6	N. J. ³	Atlantic City	110.0	113.2	103.8
CALIF. ²	Los Angeles	94.9	95.0	95.6		Camden	107.7	107.4	102.6
	San Diego	96.0	98.0	103.4		Newark	103.2	103.1	100.1
	San Francisco	113.7	114.0	114.8	N. M. ²	Abuquerque	112.3	113.2	115.8
COLO. ¹	Denver	110.1	112.5	115.3	N. Y. ³	Albany	102.7	101.6	101.0
CONN. ¹	Hartford	109.6	107.3	105.6		Buffalo	103.1	102.7	102.3
	New Haven	106.1	105.7	101.2		Utica	....	105.5	....
DEL. ²	Wilmington	94.6	97.4	101.1		White Plains	100.9	101.2	99.4
D. C. ¹	Washington	103.7	103.8	102.2	N. C. ¹	Asheville	90.0	90.3	88.1
FLA. ¹	Tampa	102.5	103.7	100.8		Raleigh	90.6	90.6	89.5
	West Palm Beach	109.4	105.3	104.8		Salisbury	88.5	87.9	84.4
GA. ¹	Atlanta	88.1	89.0	87.2	N. D. ³	Fargo	105.7	106.0	102.2
IDAHO ³	Boise	113.0	112.4	111.4	OHIO ²	Cincinnati	99.5	99.9	104.2
ILL. ¹	Chicago	122.4	122.7	123.7		Cleveland	121.0	122.8	117.1
	Peoria	128.0	127.0	118.5		Columbus	104.8	104.8	102.0
	Springfield	129.2	127.8	122.7	OKLA. ¹	Oklahoma City	110.6	109.4	105.9
IND. ³	Evansville	110.4	110.6	103.9	ORE. ³	Portland	96.7	96.6	92.2
	Indianapolis	99.2	100.9	107.8	PENNA. ²	Harrisburg	105.5	106.3	103.5
	South Bend	106.6	104.9	99.5		Philadelphia	102.6	101.1	98.0
IOWA ³	Des Moines	114.6	114.6	113.1		Pittsburgh	110.9	113.0	116.0
KAN. ¹	Wichita	105.5	104.1	108.8	R. I. ¹	Providence	109.6	109.1	108.4
KY. ²	Lexington	103.3	106.7	102.1	S. C. ¹	Columbia	84.2	85.5	86.5
	Louisville	98.5	97.8	94.9	S. D. ³	Sioux Falls	11.5	110.2	112.3
LA. ²	New Orleans	104.2	105.4	101.8	TENN. ²	Memphis	97.5	97.6	96.5
ME. ¹	Portland	95.0	95.0	95.7		Nashville	89.4	90.0	90.3
MD. ¹	Baltimore	85.9	85.9	85.8	TEXAS ²	Dallas	97.8	97.9	98.8
	Cumberland	....	101.8	100.1		Houston	106.7	107.1	106.8
MASS. ¹	Boston	117.2	117.3	113.6		San Antonio	99.4	101.0	106.3
	Worcester	....	103.3	....	UTAH ³	Salt Lake City	108.7	109.1	108.9
MICH. ³	Detroit	105.2	105.1	110.6	VT. ¹	Rutland	96.3	96.2	98.1
	Grand Rapids	93.1	99.2	105.5	VA. ¹	Richmond	87.1	87.6	89.2
MINN. ³	Duluth	111.9	112.0	108.4		Roanoke	94.1	94.0	93.1
	St. Paul	117.4	117.9	118.7	WASH. ³	Seattle	114.9	114.1	114.0
MISS. ²	Jackson	110.0	109.1	106.8		Spokane	114.1	114.1	110.1
MO. ³	Kansas City	108.4	108.9	107.7	W. VA. ²	Charleston	105.8	105.6	105.7
	St. Louis	110.5	111.3	109.4		Wheeling	114.7	114.3	113.9
MONT. ³	Great Falls	124.8	125.7	127.2	WIS. ¹	Milwaukee	109.8	109.6	108.3
NEB. ¹	Omaha	110.7	111.3	104.4		Oshkosh	105.4	106.7	107.0
					WYO. ³	Casper	113.2	116.3	118.1

1 Latest report—June; preceding report—March; year ago—June 1939.

2 Latest report—May; preceding report—February; year ago—May 1939.

3 Latest report—April; preceding report—January; year ago—April 1939.

Based on Federal Home Loan Bank Board statistics covering the cost of building the same typical house in each city. This typical or **standard house** has six rooms, a total volume of 24,000 cu. ft. On the first floor are living and dining rooms, kitchen and lavatory; on the second floor, three bedrooms and bath. Exterior finish is wide-board siding with brick and stucco as features of design. Included in the cost of the standard house are all fundamental structural elements, an attached one-car garage, unfinished cellar and attic, fireplace, insulation, and all essential plumbing, heating and wiring. Only cost variables are materials and labor; compensation insurance, overhead and profit are included as constants. Excluded from the cost of the standard house are all items of finish and equipment such as wallpaper, lighting fixtures, refrigerator, window shades, etc. Costs do not include land, landscaping, walks and driveways, architect's fee, building permit, financing charges, etc. For a more detailed explanation, See ARCH. FORUM, Dec. 1939, Page 474.

USE OF INDEX.

1. To show current local trends of building costs by means of three reports for each city, covering the most recent month, as well as three months and a year

previous. In addition, the index of each city provides a direct comparison with the 1936 national average, as it is given as a percentage of that average.

2. To report the wide variation in local cost levels, shown by the relative size of the index figures. As all local indexes are based on the 1936 national average, they are directly comparable.

3. To provide a ready means of **adjusting house costs** between cities.

Thus, to find the cost in City B of a house built in City A for \$5,000, first multiply the most recent City B index (90) by the cost of the house in City A (\$5,000). The result is 450,000. Second, divide that 450,000 by the latest City A index (110). Result: \$4,090—the approximate cost of the house in City B.

In using THE FORUM Building Cost index to make such an adjustment of costs between cities, the basis of the index—the standard house, defined in the first column—should be kept in mind. The index applies to medium-to-small houses, not to large houses and those replete with gadgets. Neither does it apply to costs which include land. If land is included in the total cost, 20 per cent may be deducted to obtain a rough approximation of construction costs. For application in the South, the cost of cellar and heating plant may be eliminated from a Northern house by deducting 10 per cent.

HOUSES AS WELL AS ARMAMENTS

are a part of national defense. World War I proved it, gave 1940 a pattern, six lessons and a preview of the market.

"In many important industrial centers, the congestion of living conditions made it practically impossible for the war industries to secure and hold the labor necessary to carry on their operations; . . . chiefly as a result of the inadequate housing facilities, the labor turnover often ranged from 200 to 300 per cent a year, with the attendant financial loss, waste of time and inefficiency"—thus President Otto M. Eidlitz of the U. S. Housing Corp. prefaced his report on Government housing activities at the close of World War I. And, unless the U. S. is quick to heed the housing problems, experiences and lessons of 1917-18, someone may eventually dust off Mr. Eidlitz' 21-year-old statement to describe the inevitable shortcomings of the current national defense program.

Fortunately, the housing industry today is in many respects better off than in the former emergency; unfortunately, however, housing conditions are equally poor and, in many cases, worse. During the ten years prior to 1917, home building boomed to the cheerful tune of 400,000 dwelling units per year; yet the \$45 billion of Allied and U. S. war orders created such acute housing shortages that some informed observers predicted that a continuation of hostilities beyond 1918 would see a breakdown in U. S. armament industries. During the past decade home building has averaged a scant

230,000 units per year with the result that the shortage of satisfactory housing is already greater than the 1918 peak. Moreover, it is being steadily aggravated by the \$2 billion order for British war materials and the \$13 billion order for U. S. defense equipment. If properly handled, however, the situation is not as dire as statistics indicate. The U. S. still has time to study and solve the industrial and military housing problem—in the earlier emergency it was neglected until 1918, four years after the war began, one full year after the U. S. entry. There are several Government agencies which have a backlog of valuable housing data and practical experience and can adjust their activities to the problems' solution—in World War I there was no USHA, FHA, RFC, FNMA, FSA, FHLBB nor any other housing agency. There is no immediate prospect of skyrocketing interest rates and construction costs, a building labor shortage, priority material orders nor a dearth of capital—in 1917-18 all these conditions combined to stifle private residential building and intensify the housing shortage. Finally, there is a wealth of information on the housing problems which World War I produced, on workable solutions which were developed and on costly mistakes which were made. It is the diary of the U. S. Housing Corp., a Government agency incorporated in 1918, too late to do

much good for World War I production but in ample time to help with 1940 national defense. Written 21 years ago, it is news today.

Problem. Looking back on these timely records, housing shortages became apparent as early as 1914 when Allied war orders boomed industrial towns. With increased foreign orders and U. S. war declaration in 1917, the shortages became more acute and general, began to bog down armament production in nearly 100 localities. Typical was the January 1918 complaint of President William T. Cobb of the Bath Iron Works (Maine manufacturers of destroyers) to the U. S. Emergency Fleet Corporation: "All through the summer, fall and winter we have found it increasingly difficult to secure an adequate supply of labor . . . Men come here, apply for work, then leave because of their inability to secure suitable homes for their families or even for themselves." More extreme than typical was another complaint from Bridgeport: "Labor turnover rates running from 200 to 400 per cent per year at present time [1918] and one important company reported a turnover of 50 per cent per month, or at the rate of 600 per cent a year. . . . Employers stated that, if they could reduce their labor turnover to reasonable proportions [say, 30-50 per cent], they could, with their present equipment, increase their production anywhere from 10 to 20 per cent." (The current national defense program has already produced similar complaints, see p. 139, col. 3.) When it is realized that a turnover of 600

WORLD WAR I HOUSING PROBLEM & PROJECTED SOLUTIONS

Prepared by the U. S. Housing Corp. in 1918, this list covers the localities then most urgently in need of housing as a result of increased industrial production and expanded military and naval personnel. Since the location of industrial, military and naval centers has not shifted materially during the past 21 years, this list is a timely

indication of where the current national defense program may hit housing hardest. To it must be added the production centers of the airplane industry—an infant industry when this list was prepared. (For an explanation of "saturation" and "transportation" see text, p. 139.)

LOCALITY	PROBLEM		PROJECTED SOLUTIONS		
	Total workers to be housed	Saturation, Workers	Transportation, Workers	New construction, Families	Workers
Aberdeen, Md.	6,000	2,000	2,000	750	500
Ala. nitrate dist.	1,800	600	...	450	300
Alliance, O.	5,000	4,000	...	375	250
Alton, Ill.	5,000	750	...	1,500	1,250
Bath, Me.	900	600	...	150	...
Bethlehem, Pa.	6,950	...	950	2,250	1,500
Belle, W. Va.	230	...	...	100	...
Bridgeport, Conn.	15,000	...	9,500	1,200	2,000
Buchanan, Mich.	600	...	200	250	...
Butler, Pa.	2,000	1,250	...	300	...
Charleston, S. C.	5,000	...	3,200	500	300
Charleston, W. Va.	3,000	1,200	1,200	250	...
Chester, Pa.	10,500	...	...	5,300	...
Cleveland, O.	250	...	150	...	100
Dayton, O.	8,000	1,500	4,000	1,250	...
Elizabeth, N. J.	10,000	5,000	1,000	1,500	1,000
Erie, Pa.	10,300	5,000	800	1,175	1,350
Ilion, N. Y.	3,000	...	1,200	450	900
Indianapolis, Ind.	1,000	...	800	...	200
Indianhead, Md.	1,300	200	100	300	320
Kenilworth, N. J.	2,000	...	1,000	200	600
Kings Mills, O.	2,300	300	2,000	...	...
Lowell, Mass.	6,000	3,700	...	900	500
Lyles, Tenn.	350	...	...	150	50
Mare Island, Cal.	2,500	1,300	...	640	400
Milton, Pa.	1,040	130	130	240	300
Muskegon, Mich.	5,500	3,500	...	200	1,500
Neville Is., Pa.	9,000	1,000	...	4,000	...
New Brunswick, N. J.	2,300	1,050	...	300	500
New Castle Del.	900	...	...	33	680
New London, Conn.	1,300	...	...	446	...
New Orleans, La.	370	...	...	180	...
Newport, R. I.	1,000	...	...	350	300
Newport News, Va.	8,000	2,800	...	1,600	2,000
Niagara Falls, N. Y.	4,600	2,000	...	1,000	400
Niles, O.	7,860	4,500	...	1,275	300
Norfolk, Va. Dist.	7,500	...	1,000	3,000	500
Paulsboro, N. J.	1,575	400	...	400	300
Penniman, Va.	2,300	...	...	225	1,400
Pensacola, Fla.	1,000	...	500	200	...
Perth Amboy, N. J.	2,900	...	1,900	400	...
Philadelphia, Pa.	8,275	500	500	2,750	...
Phillipsburg, N. J.	2,075	1,175	...	300	...
Pompton Lakes, N. J.	2,000	...	600	...	1,400
Port Penn, Del.	3,000	...	...	...	3,000
Portsmouth, N. H.	1,725	350	...	200	1,000
Portsmouth, O.	1,000	...	...	450	100
Puget Sound, Wash.	6,000	...	500	2,000	1,000
Quincy, Mass.	7,000	...	250	2,750	1,000
Rock Island Dist.	9,050	500	4,000	1,750	500
Seven Pines, Va.	5,400	...	2,200	226	2,700
Sharon, Pa.	1,500	500	...	225	550
South Amboy, N. J.	6,649	...	3,000	800	2,000
South Bend, Ind.	4,000	3,700	...	200	...
Stamford, Conn.	2,400	1,200	...	300	600
Staten Is., N. Y.	5,500	1,200	2,950	500	300
Warren, Ohio	3,500	...	1,700	450	550
Washington, D. C.	36,900	10,000	6,200	1,750	14,750
Waterbury, Conn.	7,350	3,600	...	600	600
Watertown, N. Y.	5,000	2,550	...	700	1,100
Watervliet, N. Y.	6,200	2,980	2,000	610	...
Woodbury, N. J.	2,000	...	...	...	2,000
TOTAL (62 localities)	292,649	71,035	55,530	50,350	52,850

per cent per year means 600 men were hired during a year to do 100 men's work, the resultant waste of time and money is easily appreciated. Experience proved that large scale, efficient armament production depended on quantity and quality labor which, in turn, depended largely on quantity and quality housing.

While the housing shortage was widespread, it was concentrated in two types of communities: 1) those industrial centers, such as Bridgeport, New London and Erie, in which huge contracts were placed and 2) those remote communities where proving grounds, powder plants and similar dangerous industries were necessarily placed and where few, if any, housing facilities existed. In the large cities adequate unskilled resident labor was generally available, but increased demand for skilled mechanics attracted outsiders to town and upped the need for moderate-cost housing. To service the more remote plants, housing for both skilled and unskilled labor was needed.

When Armistice cut its program short, U. S. Housing Corp. had carefully surveyed the national shortage and had selected 62 communities as being most urgently in need of housing assistance. Since it is likely that most of them will be similarly boomed by the budding national defense program, their location and wartime housing shortages are significant (see tabulation, p. 138). Builders and realtors in these areas will do well to watch their markets.

Solution of an emergency housing problem involves more than the mere construction of houses. After considerable and thorough analysis, USHC decided that direct Government construction was only one of five fronts on which to attack the World War I housing problem:

1) Through its Homes Registration Service, the USHC worked for the complete "saturation of housing space" by listing all suitable vacant dwelling units within reasonable radii of industrial plants and arranging for their occupancy by war workers at prices commensurate with their wages. By war's end, after three months work, 100 communities had been canvassed and about 70,000 persons had been housed. This part of the program, which also handled the requisition of some 385 houses for 2,500 war workers and discouraged rent profiteering via arbitration and public opinion enlistment, was pushed above all others because it produced results with the greatest speed at the least expense.

2) Next in importance was the work of the Transportation Division. After a complete housing saturation had been obtained within reasonable distances of industrial centers, Government put vacancies in outlying areas to use by paying part of the workers' commutation or by lending money to transportation companies with which they improved or extended their services. Examples: USHC paid 17 cents of the 42 cent fare between residential Asbury Park and the copper plants at Perth Amboy,

N. J., and lent enough money to charter an extra ferryboat between Manhattan and Staten Islands, N. Y. All told, these loans and subsidies put some 8,000 people in war jobs and cost Government only \$35 per worker per year—a minute charge beside the \$1,750-\$2,250 average cost per man of new residential construction (see item No. 5, below).

3) Stimulation of building by private capital was another of USHC's undertakings. Where local builders could and would produce houses on a volume basis and in accordance with certain rental and price restrictions, it recommended that Government place important war orders, then arranged for building material shipments and, in some cases, Government material prices. Signed agreements of this nature would have produced \$43 million worth of houses for workers had the emergency continued—almost half as much as was to be produced at direct Government expense. Workers actually housed: 30,000.

4) By studying the distribution of factories, labor shortages and housing vacancies the country over, USHC was able to advise the War Industries Board on the intelligent allocation of war contracts. Result: orders were placed in towns where factories, labor and houses were idle or where non-essential industries could readily shift to war material production. And, large orders were not placed in towns where increased industrial activity would require new housing.

5) Finally, "and only as a last resort," USHC built and operated houses, apartments and dormitories. Substantial research led to the production of dormitories only for unmarried workers and prefabricated housing, also temporary, only for remote communities where the war-time population was abnormally large. Permanent construction of detached and multi-family houses was found to have greater salvage value (with respect to both materials and post-war use intact) and thus comprised the bulk of the direct construction program. The corporation's Construction Division let its first contract within three months, and at the Armistice 83 projects were under way for the housing of 75,000 workers. However, only 37 had progressed more than 25 per cent toward completion and thus escaped the wholesale abandonment of the program which immediately followed the Armistice. Completed by June 1, 1919, fourteen months after the Construction Division's formation, these 37 projects housed 5,899 families and 8,109 dormitory occupants. Total workers: 20,000.

Salvage. In addition the \$32.5 million saved through the cancellation of contracts, Government has recouped to date some \$40 million via sales, repayment of loans and operation of properties owned by the now defunct USHC. Moreover, the Treasury is still collecting installments on the 5,899 houses sold into private ownership at comparatively low prices and on easy terms; hopes to pocket another \$1 million before the business is wound up.

HOUSING SHORTAGES, existing and prospective, reported by local housing authority officials to the National Executive Committee of Housing Authorities in July 1940:

CAMDEN, N. J.—Seven of the largest real estate men in the city of Camden could only muster thirteen houses. . . . Further expansion of defense activities without immediate and extensive housing activity would be tragic.

DENVER, COLO.—Army air school at Lowry Field will probably increase personnel manifold requiring immediate housing for families of enlisted men.

FAIRFIELD DISTRICT, ALA.—We must have several thousand more dwelling units in this district if the industries are to function with the national defense program.

KEY WEST, FLA.—Serious housing shortage . . . made more acute in the past months by the reopening of our naval station and the enlargement of its personnel.

KNOXVILLE, TENN.—Imperative that additional housing be made available. Expansion of nearby Aluminum Company of America plant will create further housing shortage. . . . Other large electrochemical and metal works planned.

LOS ANGELES, CALIF.—Los Angeles' acute housing problem principally related to aircraft industry. Five major plants today employ 40,000 while January 1 same plants employed but 19,000. . . . all plants located in districts with existing housing shortages.

NEWPORT, R. I.—Conservative estimates show living quarters for 1,800 families are urgently requested prior to any naval building program being undertaken.

OMAHA, NEB.—Unless new housing is provided to meet a substantial shift in population . . . unjustifiable rent increases will inevitably result . . . will make for suffering not alone on the part of imported industrial workers or military and naval personnel but on permanent residents as well.

READING, PA.—Overcrowding in both standard and substandard houses. . . . Expected increase of at least 1,500 additional workers to be brought in by defense program will make problem definitely acute.

ROCK ISLAND, ILL.—Only 35 Rock Island dwelling units not occupied. All of these substandard. Prospective arsenal employees refusing work owing to housing shortage.

SHREVEPORT, LA.—Acceleration of industrial activity in Shreveport, expansion of air force and creation of new training center for air pilots at Barksdale Field will complicate existing housing shortage.

YOUNGSTOWN, OHIO—Unquestionably weakest link in city's part of defense program is shortage of housing.

Lessons. More valuable than its belated accomplishments, however, were the lessons USHC taught in emergency housing. Fortunately, many of the individuals who learned these lessons first hand are still engaged in housing and building activities; others are available for timely advice. In the latter group is Harlean James, one-time USHC Executive Secretary, who recently reviewed war-time housing mistakes and outlined a half dozen pointed lessons for current consumption:

► As first in importance Houser James lists "Government red tape," recalls that it was a "handicap and an irritation" which caused "delays and unexpected obstacles at every turn." And, the advantages that did accrue through Government authority were "diluted by attempted political interference."

► Lesson No. 2: "Operation of rental housing is a very specialized business, even when not complicated by Government ownership." During the post-war operation of projects, USHC found difficulty in deal-

ing with tenants on a business basis (they expected concessions because Government was the landlord) and justification for its early decision to favor the sale of houses and the rental of only dormitories and apartments. Interesting in the light of the current public housing program was the war-end skepticism of Miss James and colleagues "about the desirability of adding to the Federal Government-citizen relationship that of landlord and tenant."

► Third lesson reads that low income families with little assurance of steady employment and earnings should be housed in rental quarters. And while Miss James believes the three-year-old U. S. Housing Authority may have the answer to the management problem in low renting housing, she foresees "many headaches . . . which they have not yet anticipated!"

► Fourth, accurate cost accounting is essential to success. Facts and figures promptly recorded to serve the executives will enable them to spot unnecessary losses before they become devastating. Also essential are simple, easily understood financing plans which will contribute to easy operation of the program and its projects.

► Fifth, it was learned that a house is not housing; that, to be completely effective, a new community must include integrated schools, libraries, play areas, parks, etc.

► Finally, an emergency housing program must start early and move rapidly, for, until it is complete, expanded industries cannot begin to function with speed and efficiency. During World War I, the housing problem was not even officially recognized until October, 1917, when the Council of National Defense appointed a committee to study and advise on housing war workers. In February, 1918, Congress appropriated \$50 million for the housing needs of the War and Navy Departments. In May it authorized the President to form a housing bureau and next month gave him \$60 million for "housing for war needs" which was subsequently boosted by \$40 million. Not until the end of July, however, was USHC formed and the funds transferred for disbursement. Three months later the emergency was over.

1940 Defense Housing. With a generous background of housing experience from which to draw, the U. S. is already studying and beginning feebly to tackle the increasingly urgent housing problem created by the current national emergency. On June 28, the President signed a bill authorizing the U. S. Housing Authority 1) to develop via its 400 cooperating local authorities housing projects for enlisted personnel and their families, Navy and War Department employes and defense industrial workers with families; 2) to build directly (without local assistance) similar projects which, if possible, will be leased to local authorities; 3) to supply the Army and Navy Departments with housing solely for their enlisted men, employes and families which will be built either by USHA directly or by the Army or Navy with USHA

(Continued on page 38)



FIVE TWO-FAMILY BUNGALOWS

tap a growing market, comprise one of FHA's smallest, lowest rent projects, give an Indianapolis builder a 14 per cent income.

RENTAL housing presents a tricky problem in equation balancing. The landlord must set rents high enough to cover operating costs and debt service, besides yielding a fair return on the invested capital. But, if in making his calculations he follows the natural impulse to jack up rentals and pocket a maximum return, he then risks overstepping the tenant market and losing in the subsequent write-down of values. For assurance and stability of earnings, some rental housers have learned to set their rents low enough to fall within reach of the lower-income pocketbooks representing a broader rental market.

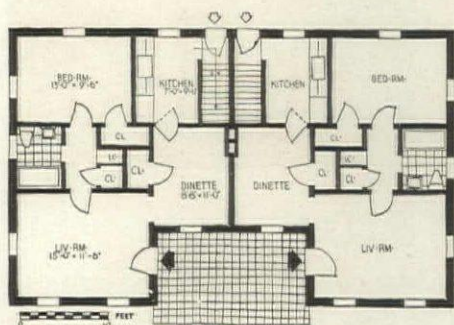
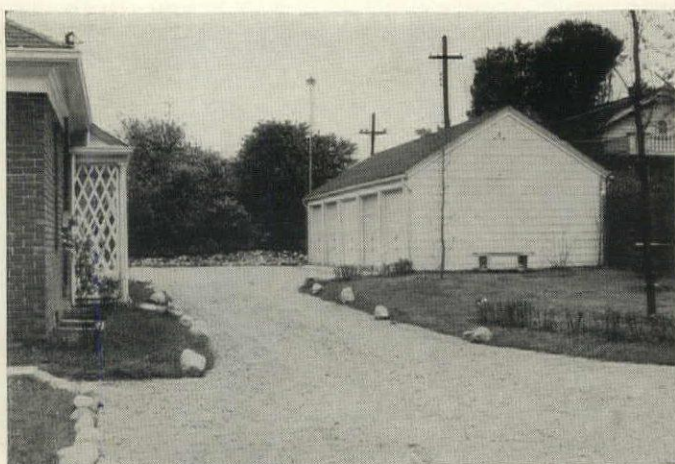
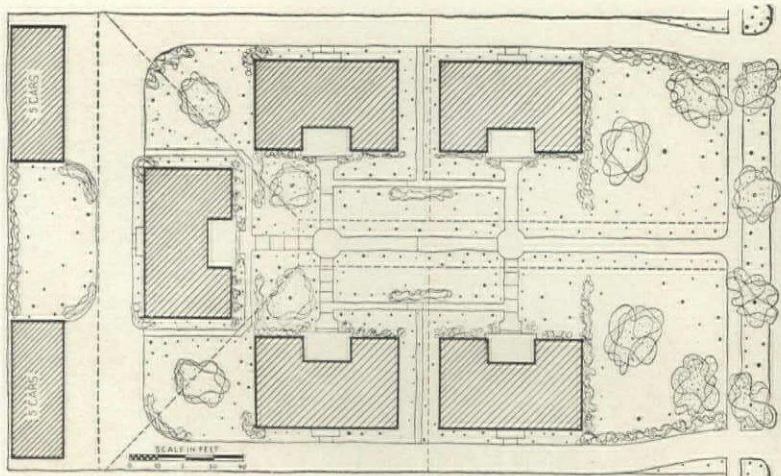
While an amateur, Indianapolis' general practitioner Dr. Charles H. Keever is such a houser. Not only does his ten-family College Colonial Court offer the attractive low monthly rental of \$12.50 per room (average for other FHA-insured rental projects throughout the country is about \$15.50), but his stake of \$14,300 in the \$45,300 project will produce a handsome 14 per cent net yield, plus an increase in the equity through repayment of principal (see table, opposite). Designed as a group of five two-family houses, each with its own lot, the project also has the investment virtue of flexibility, since the five units can be sold separately if desired.

Development. Only recently, however, has Dr. Keever's investment appeared so roseate. The land was acquired a decade ago as a site for a house he expected to build for himself, but gradual encroachment of the nearby business center made him change his mind. Stuck with the property and wishing to derive some income from it, he decided to build a movie the-

ater, optioned an adjoining lot, petitioned Indianapolis' planning commission for a change in the zoning regulations. The scheme flopped under a wave of protests from other property owners, and Dr. Keever commissioned Engineer James A. Young to analyze the problem and make recommendations.

Fact that 90 per cent of the neighborhood's houses are rental properties immediately suggested a possibility. Earlier experience with zoning restrictions quickly led to their acceptance as fixed conditions in developing the 156 x 255 ft. site. Chief restrictions: a 51½ ft. setback from street to conform with other houses in the block; 2,400 sq. ft. of ground area for each dwelling unit; no more than two families to a house; also, in case the site were subdivided to provide lots for individual houses, a dedicated easement to all lots with 25 per cent of each lot's depth reserved for a front yard, 15 per cent for a rear yard (to be used for driveways if so desired), and 20 per cent of its width for side yards.

The site's shape made a single battery of houses along the street front uneconomical. Nearby business traffic also made greater privacy for the dwellings desirable. Hence it seemed advisable to group the houses around a landscaped central court, using the site's sides for service drives, its rear for detached garages. Juggling site dimensions and zoning regulations, Engineer Young found he could squeeze in five lots and a 16 ft. easement by restricting the plan outline of each building to a wide, relatively shallow rectangle. Next step was to justify this plot plan by developing the five rectangles into ten dwelling units.



A deep site, too narrow to permit an economical line-up of houses on the street frontage, was subdivided into five lots (indicated by dotted lines), each with its own two-family bungalow. Water, gas and sewer lines were run in from street mains along a 40 ft. easement in the central court. (Plot plan shows this dedicated strip as 16 ft. wide—the requirement before a last minute change was made in the zoning regulations—see text.) Stalls in the two five-car garages are included in each tenant's \$50 rental.

With this scheme well in hand a \$31,000 FHA-insured mortgage, amortized over nineteen years, was then obtained. Meanwhile, however, the zoning ordinance requiring an easement to all interior lots was changed: the dedicated strip now had to be 40 ft. wide. Hurried calculations showed that by moving each house back $2\frac{1}{8}$ in. from the site's center line the layout could meet the new requirement and still comply with all other zoning restrictions. Construction started a year ago.

To avoid grading and expensive terracing, the site's natural contours have been altered only where necessary for proper drainage. Thus there is a maximum difference of 3 ft. in the floor levels of various buildings. Entrance walks are also broken by varying numbers of risers. Site improvements include catchbasins, sewers, gas and water mains, walks, drives, garage floodlights, planting. Total cost: \$3,000.

Market. In appraising different types of tenants that might be attracted to Dr. Keever's project, Engineer Young discovered little consideration had been given elsewhere in the city to the needs of elderly couples whose children have grown up and left home. Also neglected by other landlords were young couples without children, especially those where the husband is frequently out of town and the wife prefers nearness to neighbors during his absence. Such families, reasoned Young, require less space than is offered in ordinary detached houses, demand more privacy and freedom than they can find in apartments. The project's ten dwelling units, he concluded, could and should be designed for this particular market.

As the plan shows, each building provides compactly convenient living space for two families. Besides a soundproof party wall, both kitchen and dinette serve as buffers against inter-apartment noise. Thus each unit's living room and bedroom are assured maximum privacy. A separate dining room, usually questionable on grounds of economy, in this instance obviously represents a concession to market demand. Inclusion of a bed closet in the dining room allows it to do double duty as a spare bedroom. Each dwelling unit also has a separate basement with tubs and laundry space, plus a separate hot air heating system which can be regulated to suit the tenant.

Individual partitioned spaces in the two five-car garages are assigned to all families at no extra cost. The landlord furnishes no utilities but employs a yardboy to take care of the premises. Tenants have all independently engaged the yardboy to fire their heating plants, remove ashes and garbage.

Proof that Engineer Young correctly appraised the potential rental market: Eight of the ten families now living in the project are either elderly couples or young couples without children. The two exceptions have children, but in each case the husband is frequently away on trips. Proof that the project design also scores a bull's-eye: Using no promotional artillery except a 4 x 18 in. sign with the legend, "Unit Available," Dr. Keever was able to rent each dwelling at \$50 monthly (\$7.50 more than had been figured in the original FHA loan application) before the buildings were even ready for occupancy. And, they have been 100 per cent rented ever since.

COST BREAKDOWN

HOUSES

Excavation	1.75%
Foundations	8.08
Masonry & cement work	6.28
Brick veneer	8.98
Framing	7.79
Plumbing	7.84
Outside trim	1.41
Inside trim, sash, doors	6.63
Lath, plaster, paper	7.10
Cabinets	3.32
Roofing	1.54
Wiring & fixtures	3.18
Tinning	1.07
Tile	0.63
Linoleum	.30
Painting	3.45
Hardware & nails	1.57
Heating	5.09
Floor & finishing	3.42
Screens	1.07
Storm doors	.39
Insulation	.55
Venetian blinds	1.41
Gas service	.24
Permits	.14
Fire insurance	.08
Common labor	1.18
Carpenter labor	12.15
Insurance, taxes	1.88
Misc. materials	1.48

TOTAL100.00%

GARAGES

Concrete work	25.37%
Framing	21.03
Doors	25.37
Asbestos siding	8.88
Roofing	8.48
Labor	10.87

TOTAL100.0%

COST & INCOME SUMMARY

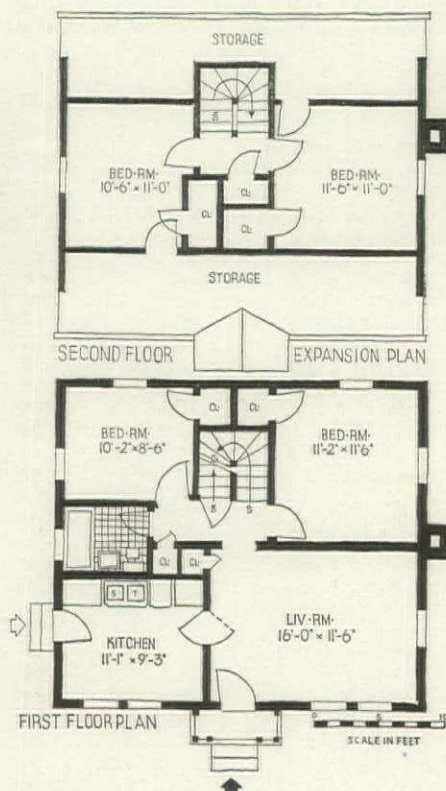
Land (appraised)	\$ 6,000
Site improvements	3,000
Two 5-car garages	2,200
Five 2-family houses	34,100

Total investment	\$45,300
Mortgage	31,000

Owner's equity	\$14,300
Amortization, interest, taxes, insurance	\$ 2,904
Reserve for repairs	720
Operating expenses	360

Annual expenditures	\$ 3,984
Annual rental income	6,000

Annual net income\$ 2,016



CONSTRUCTION OUTLINE

FOUNDATION: Concrete blocks.
STRUCTURE: Exterior walls—asbestos shingles, Johns-Manville, 12 lb. felt, shiplap sheathing studs; inside—Sheetrock, U. S. Gypsum Co. Floor construction—sub- and N. C. pine finish flooring.
ROOF: Covered with asphalt shingles.
SHEET METAL WORK: Flashing—16 oz. copper. Gutters—fir. Leaders—galvanized iron.
WINDOWS: Sash—double hung, balances by Unique Window Balance Co. Glass—single strength, quality A.
FLOOR COVERINGS: Main rooms—N. C. pine. Bathrooms—linoleum.
WALL COVERINGS: Main rooms—wallpaper, Lloyd Wallpaper Co. Bathrooms—Sanitas, Standard Coated Products Corp.
HARDWARE: By Schlage Lock Co.
PAINTS: By U. S. Gypsum Co.
BATHROOM EQUIPMENT: All fixtures by American Radiator-Standard Sanitary Corp.
PLUMBING: Soil pipes—cast iron. Water pipes—copper.
HEATING: Steam Arco boiler, Corto radiators and valves, American Radiator-Standard Sanitary Corp.



LOW COST HOUSE TRIO

Experimental models demonstrate advances in planning, construction and merchandising—East, Middle West, Far West.

This month THE FORUM takes a hop, skip and jump across country, examines three significant ventures in low cost housing. Hopping to Long Island: a builder, the lumber industry and Government join hands in trial-ballooning a house intended to blaze the way for mass reproduction by private builders. Skipping across to Missouri: a Kansas City architect handmakes his own house as a practical research project prior to mass prefabrication. Jumping to the Pacific Coast: a small town lumber dealer in Washington also builds himself a house, uses it as a show case to promote new business.

TRIAL BALLOON

A group of representatives from Government's many housing agencies, the Central Housing Committee has long scratched its head over the problem of a "typical American family forced to live on a restricted budget." First, hundreds of experts—housing financiers, architects, engineers, builders, leading material and equipment manufacturers—appeared before its various subcommittees to pool their advice on how to solve this heady problem. Next came a request for definite plans and specifications for a house that would represent a composite of the experts' best advice.

From a mass of plans submitted, CHC singled out a compactly efficient design developed for the National Lumber Manufacturers Assn.'s 1940 promotional campaign, and modified by the Commerce Department's Construction and Real Property Section. Plan was to have the parts of this house packaged and distributed to builders the country over. Last month this ambitious program got to first base as Brentpines Realty Co. completed the first

CHC-blessed model for \$2,750 in its 250-acre Brentwood-in-the-Pines colony on Long Island.

Whether the CHC program will go beyond first base is still a big question mark. Beset with current uncertainties, it may possibly get lost in the Washington shuffle. Latest word is that nothing further will be done at least until defense housing plans have crystallized.

However, aside from its interest as a field test, the Brentwood house merits attention in its own right. It is an exhibit house intended to help move Brentpines Realty's large land holdings which are in the heart of an extensive pine belt and within commuting distance of New York. Unable to sell the subdivision parcels otherwise, the company's enterprising President John W. McKeown last year decided to develop the lots, produced 35 houses priced below \$3,000 with land. They sold like hot cakes.

This year's model and its duplicates will retail at \$3,100 with 190 x 150 ft. lots, and are expected to find an even readier market than their predecessors. Reason: workers in the booming aircraft plants at Farmingdale, only ten miles away, are facing a local housing shortage.

As drafted by the Commerce Department's Architect E. A. Ledwith, McKeown's floor plans are almost identical with the 1940 stock plans developed by NLMA. Only difference: the Government model is a little less hefty in the waistline. A width of 28 instead of 30 ft., it was thought, would make the house better suited to 40 ft. lots—no great shakes as a design factor at Brentwood, where land is plentiful, but admittedly important elsewhere. Most interesting design detail is the

staircase which neatly catches just sufficient headroom under the eaves to provide easy access to the unfinished attic. Winders shorten the stair run, net a deep closet for each downstairs bedroom. Storage areas in the front and rear attics amplify the upper floor closet space.

In making use of these plans, Builder McKeown has added a few improvements of his own. Not satisfied with Architect Ledwith's explanation that ashes could be hoisted out through a basement window and unwilling to see them trucked through the living room, he provided an outside basement entrance at the rear. Also, to give the exterior the appearance of greater size, he has introduced mullions in the windows which were ordained as plain double-hung.

At present the two upstairs bedrooms are left unfinished—a come-on for young married couples who do not immediately need this extra space but can finish it as the family increases. For future houses at Brentwood, however, McKeown contemplates finishing these rooms. This will permit him to knock out the partition now separating the living room from one of the ground floor bedrooms and thus increase the general living space. Another idea in McKeown's mind is greater openness between the living room and kitchen, to be achieved by substituting a counter-bar and Venetian blinds for the partition. Also, he considers the upstairs hallway insufficiently lighted, expects to correct this difficulty in subsequent houses with a skylight or dormer.

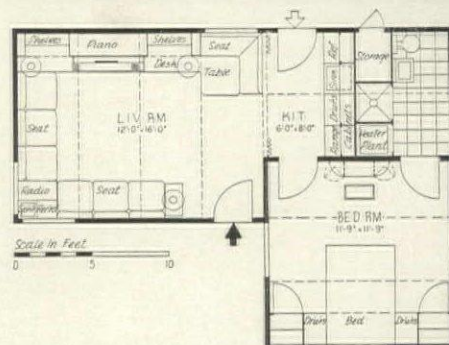
Generally pleased with the design of the exhibit house, McKeown's principal worry is easier credit for prospective buyers. Before a \$2,500 mortgage can be insured under FHA's Title I, an equity of \$600 is necessary to hold the retail price at \$3,100 for house and lot. By shifting over to FHA's Title II, the required down payment becomes only \$300. Foreseeing the desirability of such a shift, McKeown has made his basic specifications conform to the more rigid structural requirements for Title II mortgage insurance.

HAND MADE HOUSE

Convinced that mass production can bring houses with modern conveniences within range of low income pocketbooks, Kansas City's 27-year-old Architect Neal O. Reyburn is conducting his own experiment in prefabrication. Spending roughly \$3,000, he designed a three-room house replete with electric kitchen (including a garbage disposer) and built-in furniture (including a built-in piano), fabricated most of the structure by hand, trucked the sections to a suburban site, assembled the house in a day and a half, got married the following day, moved in with his wife. In guinea-pigging the 4,700 cu. ft. dwelling, he has tested several new design and heating features, hopes eventually to manufacture similar houses in knocked-down form for quantity sale to land developers at \$1,500.

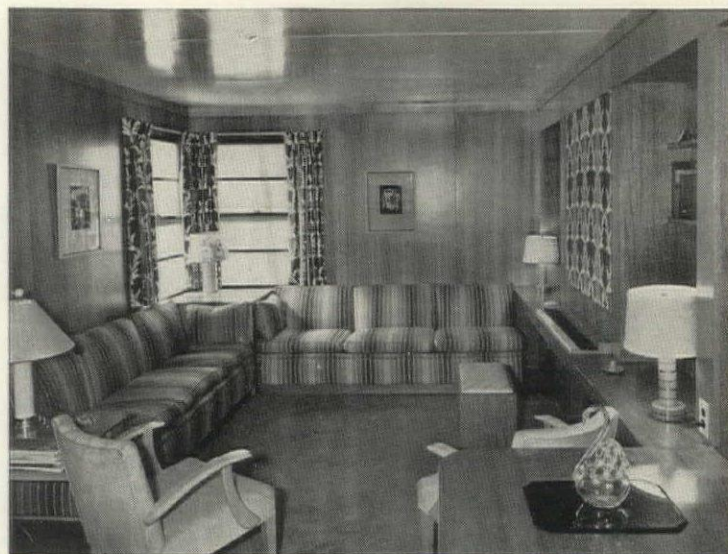
Since graduating from Kansas University's School of Architecture and Engineering in 1935, Reyburn has specialized in low cost housing. Together with his father, long a residential builder, he has erected in the past two years some 60 well-planned houses selling for \$4,335 to \$4,777. (Each house in the Reyburns' development offers a combination living-dining room, two bedrooms, a garage-recreation room and an electric kitchen.) Out of this practical experience has been distilled the belief that rock-bottom costs depend on machine construction methods, plus mass production to wring out excessive overhead expenses.

Study of the Fort Wayne housing experiment (ARCH. FORUM, Oct. 1938, p. 299) and other prefabrication schemes led Architect Reyburn to use shop-fabricated plywood panels for his own dwelling. Wall panels, 4 ft. wide, consist of plywood sheets separated by 1 1/4 x 3 in. studs and insulation, are held together by resin glues and steel bands. Exterior surfaces are painted white, interior surfaces are stained and varnished. Similarly constructed with 2 x 6 in. joists, floor panels are covered with carpeting or linoleum, ceiling panels with built-up roofing. The entire structure rests



CONSTRUCTION OUTLINE

FOUNDATION: Reinforced concrete.
STRUCTURE: (See text). Plywood by Roddis Lumber & Veneer Co.
ROOF: Covered with plywood, 15 lb. felt and Silvercote, Silvercote Products Co.
SHEET METAL WORK: Flashing—Armco, American Rolling Mill Co.
WINDOWS: Sash—double hung, white pine. Glass—double strength, Libbey-Owens-Ford Glass Co.
FLOOR COVERINGS: Main rooms—carpet, Mohawk Carpet Co. Kitchen and bathrooms—linoleum, Congoleum-Nairn, Inc.
HARDWARE: By Schlage Lock Co.
PAINTS: By Pratt & Lambert, Inc.
ELECTRICAL INSTALLATION: Wiring system and switches—General Electric Co.
KITCHEN EQUIPMENT: Complete equipment by General Electric Co.
BATHROOM EQUIPMENT: All fixtures by Briggs Mfg. Co.
PLUMBING: Soil pipes—cast iron. Water pipes—galvanized iron.
HEATING: Gas forced air system. Thermostat—Minneapolis-Honeywell Co.



LIVING ROOM furniture is built into the walls.



KITCHEN ALCOVE may be shut off from living room

on a foundation of precast concrete beams and piers.

All room dimensions are convenient multiples of a 4 ft. module (see plan). Placing kitchen and bath back to back simplifies the plumbing and eliminates long piping runs. Substitution of a built-in shower for a tub gains space for a storage closet, reached from the outside.

Heat is generated by a gas-fired plant, small enough to fit in a closet alongside the bathroom shower. Warm air is forced into the floor panels, circulates between the joists, returns through grilles in the walls. Entire floor area thus becomes a panel of radiant heat. Experience during the past winter, contends Reyburn, has proved this floor heating system to be adequately comfortable. By adding a refrigeration unit and a fan to blow cold air through the floor panels he expects to achieve a similar degree of comfort by radiant cooling during summer months.

In designing the interior, Reyburn went beyond his immediate objective of lowest possible cost. Including the electric kitchen, the structure itself would have cost approximately \$1,700. But, with interior refinements, this was upped to about \$3,000. Reason: Reyburn wanted to see how much furniture could be included in the prefabrication of structural parts. Even the bed is built in. So too are the dressing table and bedroom cabinets. (Other than these and the utility storage space, the house has no closets.) Living room sofas, tables, bookcases, desk, radio and piano are all permanent parts of the structure, are all finished in light mahogany to match the plywood walls. When the kitchen is not in use, curtains are drawn across the alcove, and the table and seat which form the dinette become living room furniture.

Tentative FHA approval has already been secured on a new design which Reyburn intends to use for his manufacturing program. Principal difference in plan: The new model will have two bedrooms, and the kitchen will be a separate room rather than an alcove. Also significant from a marketing standpoint will be its pitched roof and Cape Coddish exterior.

MATERIAL DEMONSTRATOR

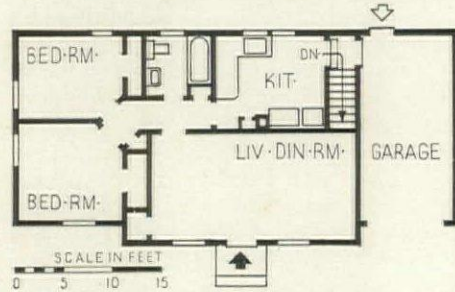
Undeniably the best sales gag in the subdivider's repertoire, the exhibit house may also effectively advertise the wares and services of the building material dealer. And, when the dealer thinks well enough of the house to move in, the advertisement becomes doubly effective. A case in point is the small house of Lumber Dealer H. H. Johnson in the small town of Dayton, Wash. Spending only \$4,050, including the cost of a 70 x 130 ft. lot, Johnson has built a compact dwelling for his wife and himself, broken down the community's sales resistance to small houses, drummed up new business in lumber and other building materials for his Potlatch Yards, Inc.

A potent demonstration of small house virtues was deemed necessary for Dayton. One of the State's oldest towns, it still

(Continued on page 40)



Vitart



A Show Case for selling building materials, Lumber Dealer H. H. Johnson's house in Dayton, Wash. has many cost-saving features. Note economical use of space in plan and simple straight-wall rear elevation. Kitchen connects with an oversized garage doing double duty as a rear vestibule.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—studs, cedar sheathing, 15 lb. felt and clear cedar beveled siding. Interior—1/2 in. NuWood, Wood Conversion Co., lath and plaster. Floors—sub-floor and oak finish. Ceilings—shiplap and NuWood tile.
ROOF: Covered with Slatekote shingles, Pioneer Roofing Co.
SHEET METAL WORK: Flashing—galvanized iron, Dayton Sheet Metal Works.
INSULATION: Walls and ceilings—NuWood, Wood Conversion Co. Weatherstripping—Curtis Cos.
WINDOWS: Sash and screens—Curtis Cos. Glass—Pennvernion, single strength, quality A, Pittsburgh Plate Glass Co.
FLOOR COVERINGS: Main rooms—oak. Kitchen and bathrooms—linoleum, Armstrong Cork Co.
WOODWORK: Interior doors—Tacoma Sash & Door Co. Garage doors—Crawford Door Co., Fir Door Institute. Remainder—Curtis Cos.
HARDWARE: By Schlage Lock Co.
PAINTING: By I. F. Laucks Co., E. L. Bruce Co. and Chicago Paint Works.
ELECTRICAL INSTALLATION: Wiring system—Flexloom cable. Switches—toggle Bakelite Co. Fixtures—Packard-Mallooy Co.
KITCHEN EQUIPMENT: Range—Hot Point, Edison General Electric Appliance Co. Refrigerator—Grunow, General Household Utilities Corp. Sink—Crane Co.
LAUNDRY EQUIPMENT: Washing machine—Thor, Hurley Machine Co.
BATHROOM EQUIPMENT: All fixtures by Crane Co.
HEATING: Warm air system. Cabinet style fan humidifier, Sandberg Co. Coal stoker—Conco, Sampsel Stoker Corp. Thermostat—Minneapolis-Honeywell Regulator Co.



COST BREAKDOWN

Land	\$ 300
Lot survey	2
Title insurance and abstract	45
Excavation	25
Concrete and masonry	421
Plastering	68
Sheet metal work	12
Painting	187
Linoleum	55
Lumber, brick, other materials	1,093
Carpentry (labor)	512
Plumbing	395
Electric wiring	88
Lighting fixtures	35
Heating system	500
Automatic stoker	190
Electric water heater	62
Landscaping	60
Total	\$4,050

Turn old buildings into new...

WITH THIS WALL 2 INCHES THICK

Architectural Concrete Slabs provide an exterior facing with the structural strength of concrete and steel and the lasting beauty of crushed stone aggregates in an endless variety of colors, patterns and textures.

THESE thin slabs are quickly, easily and economically erected and anchored to old masonry. Only a bare two inches thick, they are applied frequently without ripping off old walls to keep within the building line. Their large sizes and varied shapes increase freedom of design and may eliminate up to 90% of joints. A single slab often is used to include window head above and window sill below, or to include window head and coping.

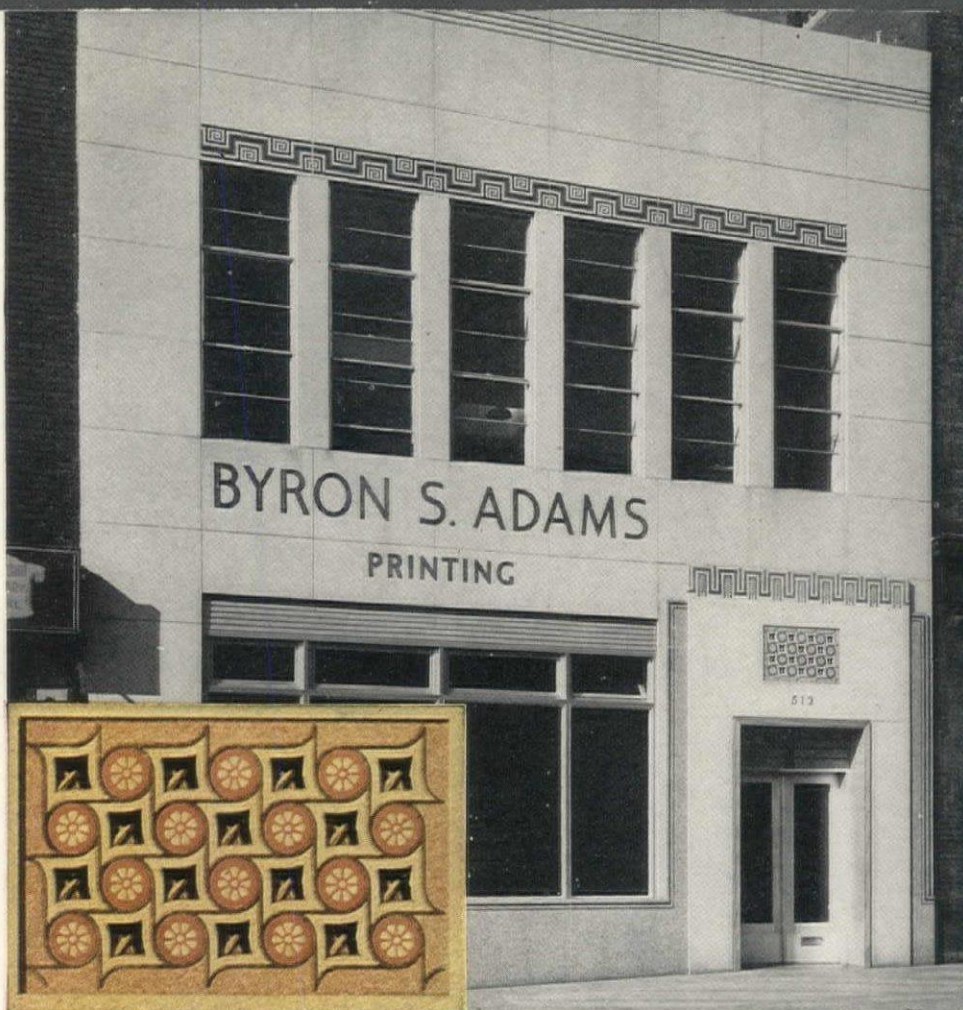
Architectural Concrete Slabs are precast, factory-made units of strongly reinforced concrete. They are large—up to 100 square feet or more—but only two inches thick. They are made with selected aggregates—quartz, marble, granite, ceramics, or vitreous

The Adams Print Shop in Washington, D. C., looks new, due to its new facing of thin Architectural Concrete Slabs made with Atlas White cement. Color appears in the detail over the doorway (shown in close-up) and in decoration over windows. False joints make large slabs look small. Only one slab, for example, was used between upper and lower windows. Architects, Porter and Lockie, Washington, D. C., awarded gold medal of the Washington Board of Trade for this building, the best "modernizing" project in 1939. Slabs by John J. Earley, Washington, D. C.

Architectural Concrete Slabs modernized The Heidelberg Co. store, Baltimore, Md. They are used for store fronts, office, bank and public buildings and theaters. Thinness and flexibility in size, shape, color, and design offer advantages hitherto unavailable in a building material. Detail shows almost unlimited color and design possibilities of thin Architectural Concrete Slabs made with Atlas White cement. Architect, J. R. Kennedy; Slabs by John J. Earley—both of Washington, D. C.

Chamel—exposed in a matrix of Atlas White portland cement. They make possible new and economical variations in colors, patterns and surface textures.

Write for more information on this new, modern material for new as well as old buildings—for interior as well as exterior walls, or see **SWEET'S CATALOG, Section 4.** Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Dept. A3, Chrysler Building, New York City.



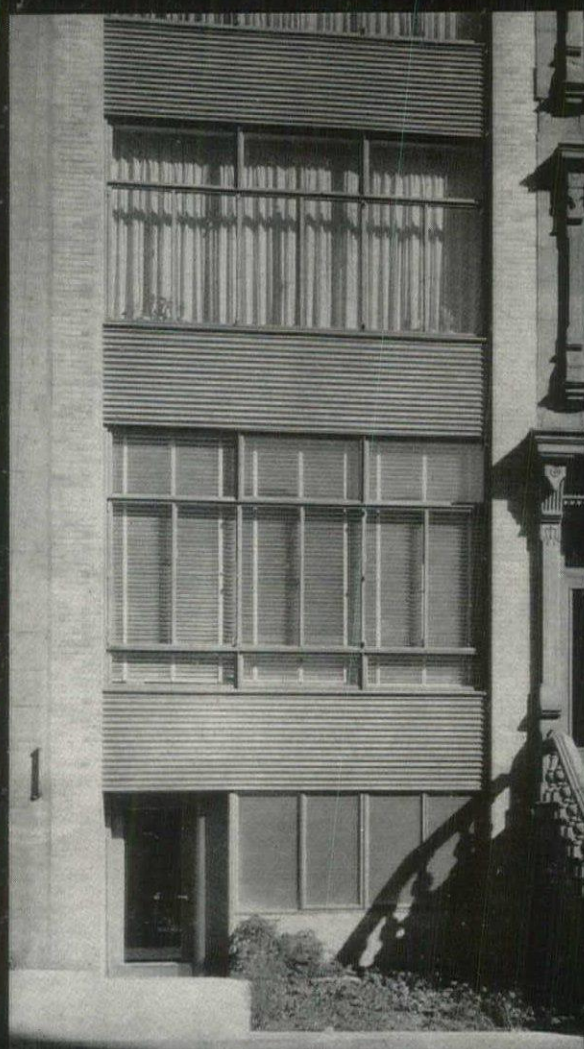
ACS-21

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MADE WITH ATLAS WHITE CEMENT



The Name **HOPE'S** *Guarantees*
1818 WINDOWS 1940



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Town House, New York, N. Y.



SLIDING-FOLDING WINDOWS, OPEN
Sanders & Breck, Arch'ts

THE ABOVE PHOTOGRAPHS DEMONSTRATE THE ADVANTAGES OF SLIDING-FOLDING STEEL WINDOWS WHERE AN UNINTERRUPTED VIEW IS DESIRED, GIVING THE EFFECT OF AN "OPEN AIR" ROOM. THESE WINDOWS ARE EASY TO OPERATE AND MAY BE LEFT WHOLLY OR PARTIALLY OPEN FOR ANY DEGREE OF VENTILATION. THE LONG EXPERIENCE OF OUR ENGINEERING DEPARTMENT IN DEALING WITH SIMILAR PROBLEMS IS ALWAYS AT YOUR SERVICE.

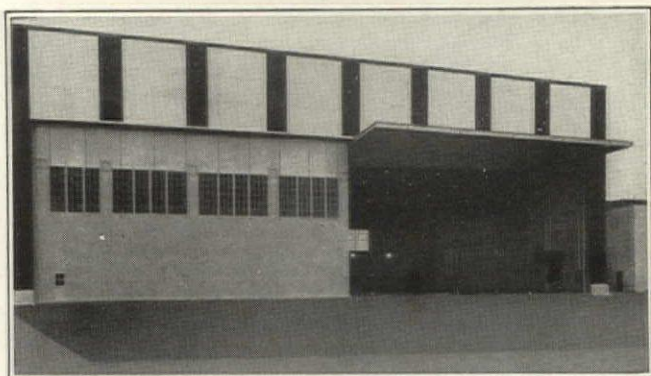
HOPE'S WINDOWS INC., Jamestown, N. Y.

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When Byrne doors go up, costs go down . . . because Byrne doors require minimum maintenance, operate on minimum power, reduce heat losses, save useful floor space . . . and these economies usually represent a total saving greater than the entire cost of installation.

To the hangar door problem Byrne engineers have devoted more than 12 years of research and development work. The result today is a basic Byrne design that assures high-speed operation, trouble free performance and low-cost maintenance. Furthermore, a Byrne installation can be engineered to any requirement . . . any width . . . any height . . . any clearance . . . in single spans or sections.



Byrne Type K Canopy Door, 150 x 40 ft. One section open.

Combined with this flexibility in application are outstanding advantages of construction—particularly:

1. Single leaf, weather-tight construction . . . eliminates all unnecessary joints and prevents cold air infiltration.
2. Balanced design . . . minimizes stresses in door and in structure and requires minimum power for operation.
3. Automatic self-locking operator . . . provides safety and security.

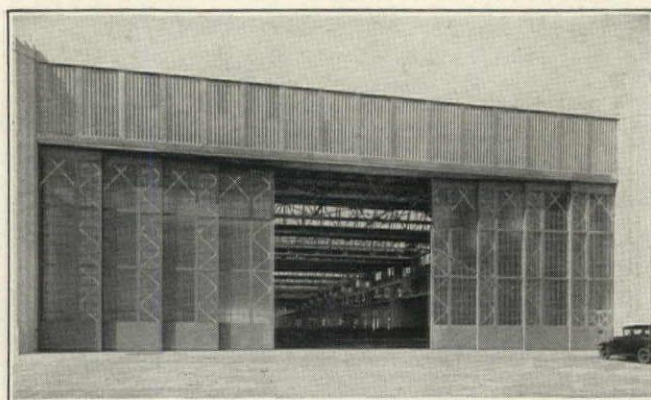
Standard designs meet U. S. Government specifications for wind loads and provision for emergency hand operation.



Byrne Type B Door, 100 x 23 ft. Opens or closes in 35 seconds.

Byrne Canopy doors are available in three types:

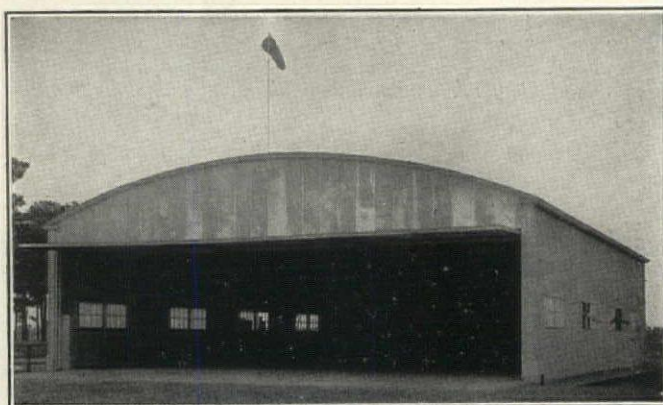
- Type A . . . for openings up to 40 ft. wide
- Type B . . . for openings up to 120 ft. wide
- Type K . . . for openings of any size



Byrne Motorized Slide Doors, 120 x 39 ft.

In the illustrations of typical Type K installations, note that the sections can be operated independently or simultaneously. There are no mullions or movable posts between sections.

For multiple-leaf slide doors, there is the Byrne Multi-Leaf Operator . . . a simple, ingenious power driven unit that provides positive traction and differential speed for each door leaf.



Byrne Standardized Hangar with motor or manually operated door.

Standardized Hangars at Low Cost

In addition to fast-acting, dependable doors for large openings, Byrne service also provides undivided responsibility for the engineering, fabrication and erection of standardized hangars at low cost. Byrne engineers with 10 years' experience will gladly assist in solving your hangar or door problems.

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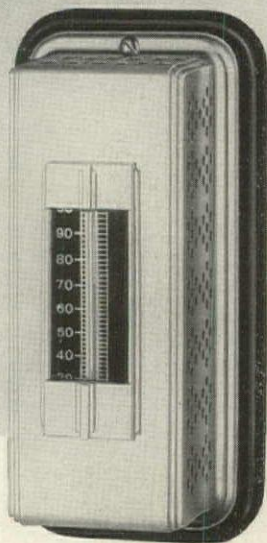
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Every device pictured here brings you a new conception of precision, greater flexibility, and increased understanding of what you may expect from Johnson's modern automatic control equipment . . . The Johnson line of pilot operated apparatus, for truly modulated operation by Johnson gradual acting instruments, with adjustable sensitivity, is the very latest "word" in precise synchronizing of control devices. Ask to see a Johnson engineer from a nearby branch office or send for detailed bulletins. Johnson Service Company: Milwaukee, Wis., and direct branches in all principal cities.



Johnson "Absolute-positioning" pilot operated Damper Motors with two diaphragms, insuring precise positioning of dampers. No springs.



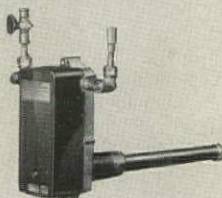
"Streamline" Modulating Valves, another exclusive Johnson development, with seamless metal diaphragms and unique throttling characteristics.



Johnson "Piston" Damper Motors, affording long-travel at full power, a feature not found in other damper motors. Available with or without pilot mechanism.



"Absolute-positioning" Modulating Valves, with Johnson pilot mechanism and "Streamline" gradual control characteristics. Maximum power for re-positioning at slightest command of controlling instrument.



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JOHNSON

Automatic TEMPERATURE AND AIR CONDITIONING *Control*

IMPORTED STORE BUILDING

(Continued from page 136)

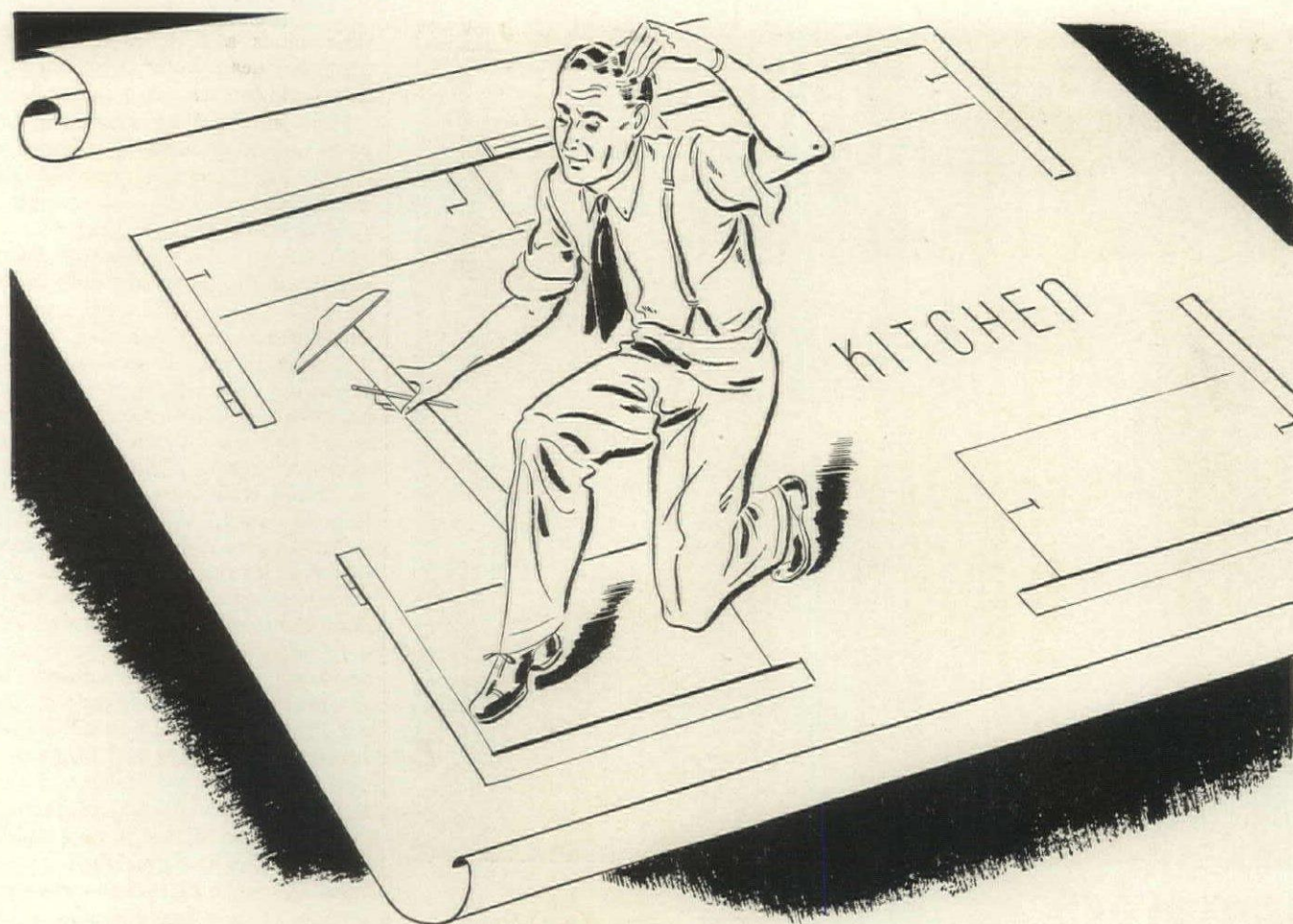
five easily distinguishable sections, each of which is provided with a set of utilities and may therefore be sold independently. To give the one-story building an air of bulk and importance, the exterior walls at the front and sides were extended 17 ft. above the roof line and broken at intervals with dummy windows fitted with venetian blinds. (See illustration, p. 133.) While Ives believes that false fronts are to be discouraged, the Linden exception justifies itself commercially. It is a brazen fake which has deceived most observers (but not FORUM editors.—Ed.); attracted by and proud of its apparent size, most Lindenians think they are shopping in a large two-story building. The impression of height and importance is increased by the application of cast stone pilasters to the 12-in. solid brick walls and by the installation of a stone bas-relief in the central pediment. Scale of the building is unlike anything on Linden's main street—it measures 34 ft. to the top of the lowest parapet, 50 ft. to the top of the huge (6 ft.) stone urns.

Construction of the project is also above the main street average. Red face brick and light mortar were used on all exterior walls. Long span steel beams supporting the insulated built-up roof make interior columns and bearing walls unnecessary, permit flexible floor planning. Like the 16-in. poured concrete foundations, they are designed to carry a second story if and when Linden's demand for office space warrants the addition. With the exception of A & P's custom made premises, all shops have full basements with front and rear exterior access and interior stairs.

Exclusive of Architect Ives' fee and \$30,000 worth of store fronts paid by the landlord, construction costs came close to \$150,000, about 22 cents per cu. ft. and ample evidence that there was no skimping on materials. About 60 per cent of the project's total cost is covered by a Prudential Insurance Co. 10-year mortgage at 4 per cent interest, 2 per cent amortization.

Rents. True to Lotery's convictions (mentioned above), tenants for the small shops were easy to find once A & P and Woolworth had joined his parade. The jeweler and baker were already Linden residents; the former had operated a half-store farther down the street and the latter had been employed in another local bakery. Twitchell and Lotery brought all the other tenants (most of them members of small chain store systems established elsewhere in the New York-Philadelphia area) to Linden by selling them the town and the new shopping center. For instance: executives of the Miles Shoe Company, operators of 113 branch stores, had previously considered and vetoed Linden, but changed

(Continued on page 36)



WE'LL DO YOUR WORK—IN THE KITCHEN

ARCHITECTS who use the Curtis Kitchen Planning Service don't worry about *that* room. They know from experience, and from the acclaim of thousands of housewives, that the Curtis-Planned Kitchen will be step-saving, attractive, efficient and economical!

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1866
CURTIS
WOODWORK

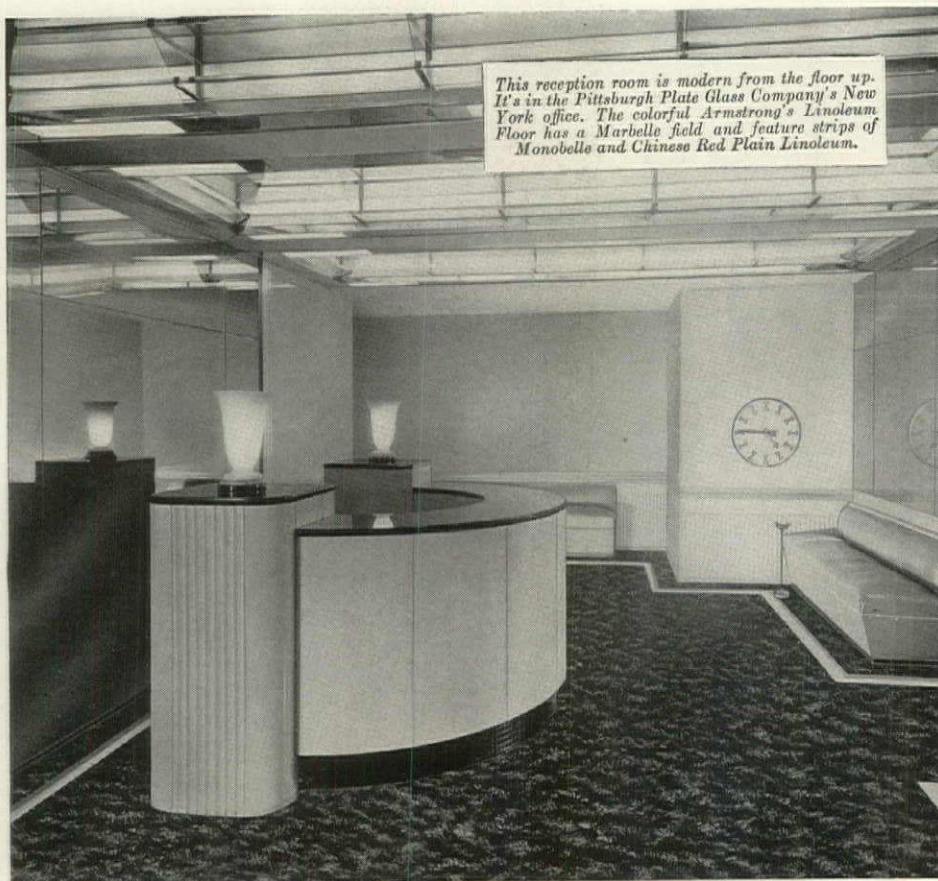
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This reception room is modern from the floor up. It's in the Pittsburgh Plate Glass Company's New York office. The colorful Armstrong's Linoleum Floor has a Marbelle field and feature strips of Monobelle and Chinese Red Plain Linoleum.

PITTSBURGH . . . the glass of fashion . . . uses ARMSTRONG'S LINOLEUM

THE FLOOR OF FASHION IN MODERN NEW YORK SHOWROOM

THIS business home of the Pittsburgh Plate Glass Company is the last word in modern glass decoration. And in perfect keeping with the trim beauty of its glass appointments is its Armstrong's Linoleum Floor.

No matter what *your* clients sell—whether it's a product or a service—Armstrong's Linoleum can help them because this flooring does a grand selling job *in its own right*. The rich colorings are pleasing to a customer's eye. Its resilient comfort and quiet provides an atmosphere that's really conducive to sales. Special inset designs—trade-marks, slogans, pictures

of the product—are easily installed at only slight additional cost.

From a maintenance point of view, an Armstrong Floor is an especially wise choice. Expensive refinishing is never necessary. The colors don't wear off. All the attention required is routine dusting, occasional washing, and periodic waxing.

Over 200 different colors and patterns are available to you. For complete information, see *Sweet's* or write for *Better Floors for Better Business*. Armstrong Cork Company, Floor Division, 1203 State St., Lancaster, Pennsylvania.



ARMSTRONG'S FLOORS LINOLEUM

Rubber Tile - Linotile (Oil-Bonded) - Asphalt Tile - Cork Tile - Linowall Wall Covering

(Continued from page 34)

their minds and signed a 20-year lease when they heard Lotery's convincing arguments and saw his new building.

Most of the other leases run for ten years and are attractively adjusted to suit tenants starting out in a new location. For the first five years the rent averages about \$150 per front ft. per year (\$2,250 per 15 ft. store), but is considerably below this average during the early years when the tenant is getting his business under way and commensurately higher toward the fifth year when business should be better. While the base rent is stable during the next five years, the lease provides that the tenant pay in addition a certain percentage of his gross income. (The percentage clause in Woolworth's lease has been in effect from the start.) A mutually satisfactory contract form, it does not overburden the tenant if his business is slack and, at the same time, gives the landlord a fixed minimum income plus a hedge against inflation—an important factor in the light of current economic trends. Percentage of income specified in the leases varies with the tenants' probable annual business volume, his normal profit margin and turnover.

To maintain the tenant friendships established by his liberal rental terms, Lotery visits his Linden project frequently, and for other purposes than rent collections. First-naming the store managers, he inquires of their business, asks for suggestions, offers them merchandising tips he learned in his father's clothing business. Result: he is respected as a friend, not feared as a run-of-the-mill landlord; and his business benefits.

Effect. Proof that Lotery's imported policies work in the U. S. is the Linden project's record. Within six months after its completion last October, all but one store had been rented, and that was leased two months later in June. Over a five-year period Lotery's Linden investment will gross a comfortable 25 per cent after mortgage costs but before real estate tax (comparatively low at \$3.41 per \$1,000), insurance and maintenance.

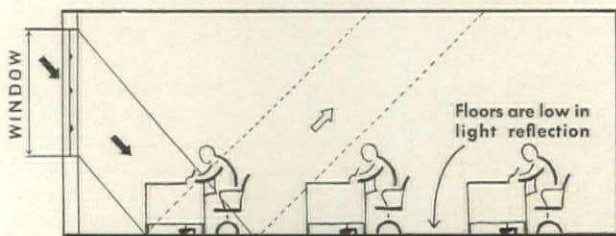
Moreover, by influencing Lindenors to shop in their own home town, the new project has drummed up business for other main street merchants, has boosted their property values and has prompted several of them to refurbish their premises. Since construction of the shopping center started, nine stores have installed new fronts, and two new buildings have been launched (see illustrations, p. 136).

Encouraged by the success of his No. 1 U. S. venture, Londoner Edward Lotery has already broken ground for a similar development in Woodbridge and has acquired land in two other New Jersey communities. The success has also encouraged several of his Linden tenants to sign up in Woodbridge, a step which presages more than any other factor the expansion of Lotery's U. S. program.

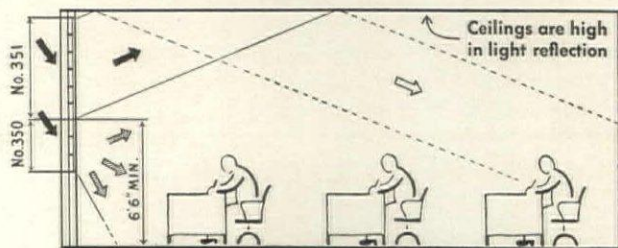
A New Tool for Architects

INSULUX LIGHT-DIRECTIONAL BLOCK

for Better Distribution of Light



Daylight passing through ordinary glass areas goes *downward* to dark floors, which absorb 80 to 85 per cent of the directly transmitted light. Illumination is strong near openings, weak at the rear of a deep interior.



Panels of Insulux prismatic block above eye-level and No-Glare block below eye-level can be used to direct daylight *upwards* to a painted ceiling, which provides 50 to 85 per cent reflection. Daylight is thus better distributed throughout the interior. The rear of a deep interior gets better light from such a panel than from an opening with no glass in it at all.



This livestock judging pavilion at the Indiana State Fair, Indianapolis, is an example of the many uses architects will find for light-directional block. A large, deep structure, it is well lighted by tall Insulux panels.

WHAT THEY ARE: Our two new Insulux Glass Block designs, Nos. 351 and 352, have double-prismatic interior faces that change the direction of transmitted daylight, refracting the light upwards towards the ceiling. Both exterior faces are ribbed vertically. No. 352 transmits a higher percentage of light than No. 351. Both designs are for use in direct sun exposures if installed above eye-line.

WHAT THEY DO: These new Insulux prismatic designs give the architect a new tool with which he can achieve better distribution of light in large interiors. With the incident daylight directed up to light-colored ceilings instead of down to dark floors, deep interiors get more even illumination throughout. There is no objectionable glare when these block are used above eye-level, since the light is bent upward. (A harmonizing design, the Insulux No-Glare Block—No. 350—can be used below eye-level.)

WHERE TO USE THEM: The architect will find many uses for these new light-directional block in schools, auditoriums, building lobbies, factories, gymnasiums and other large interiors where even distribution of light is requisite.

OTHER ADVANTAGES: Like all Insulux Glass Block, these designs have high insulation value . . . insure privacy . . . eliminate air and dust infiltration . . . insulate against outside noises . . . keep maintenance expense low.

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HOUSES AND ARMAMENTS

(Continued from page 140)

funds and technical assistance. And, on July 19 The Defense Advisory Commission appointed a housing coordinator (see p. 4).

While USHA will push the first mentioned, most orthodox, part of the new program it will lift several limitations originally imposed on construction and rental of projects by the USHA: no eligibility limit will be placed on family incomes; equivalent elimination of substandard slum dwellings will not be required; the law that local loans cover 10 per cent of development costs will be shelved—USHA may now supply 100 per cent; USHA may acquire land through Federal powers of condemnation and sell it to local authorities for improvement; defense projects will fall outside the provision that not more than 10 per cent of its loans be concentrated in any one State.

Also significant is the proviso that any slum clearance project for which USHA funds have been earmarked or placed under loan contract may, with USHA approval, be revised to fit the national defense housing program; and that any project now under construction may, with local approval, be likewise shifted. In all cases it is required that projects be of a permanent nature (minimum life: 20 years), accommodate families rather than individual persons, serve a normal market sufficiently

large to support the project regardless of abnormal defense-inspired markets, and revert after the emergency to the originally specified functions of public housing.

While USHA has been given no new funds for defense housing purposes, it has about \$50 million of idle money earmarked for low rent projects in numerous communities. Pending hoped-for new appropriations and the emergency's end, many of these earmarkings may be rescinded and re-allocated to housing projects in defense boomed localities. Precedent has already been established: month ago USHA Administrator Nathan Straus took \$17.2 million which Philadelphia refused (in favor of a two-year operating test of its three completed projects), re-earmarked most of it for defense housing in Beaver County, Chester, Erie, McKeesport and Pittsburgh, Pa., and Newport, R. I., Corpus Christi, Texas, and Portsmouth, Va. Further along under the new program are "USHA-aided defense projects" near Montgomery, Ala.'s Maxwell Field army air base and Pensacola, Fla.'s Corry Field naval air station. (Note that four of these ten communities appear on the roster of World War I housing shortages—p. 138.)

While USHA under present authorization can only produce new Government financed, permanent housing for families (this was only one part of the U. S. Housing Corp.'s least important functions—see p. 139, col. 2), its proponents are currently stumping for increased working capital.

Thus, a report on the "special emergency conference" of representatives of the nation's local housing authorities called in Washington last month by USHA Administrator Straus, concludes that the pending bill to boost USHA's borrowing-lending power and its subsidy appropriations should be immediately enacted. Basis for this demand is the argument that USHA's decentralized program is the best method yet devised for Government financed housing and is therefore the best answer to the current defense housing problem. Basis for the demand's urgency is a sheaf of reports from local housing authorities (briefed on page 139, col. 3) which comment on present and prospective housing shortages in their communities.

These reports are indicative of a general condition, but they come from somewhat biased sources and are therefore apt to over-exaggerate actual local conditions. With countless idle dwellings on their hands, bankers and realtors in the same communities would probably submit decidedly different reports.

While housing action has thus far been insignificant, the rampant discussion of housing is an encouraging sign that one of the major mistakes of World War I emergency has not been duplicated in the current national defense emergency—the housing problem has been recognized early enough to permit speedy solution. (For an editorial discussion of possible solutions, see p. 2—Ed.)



O. K.



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But if you were a tenant . . . the man who actually uses the Ivory Dispenser . . . you'd be chiefly interested in *this* angle: *What does it deliver?*

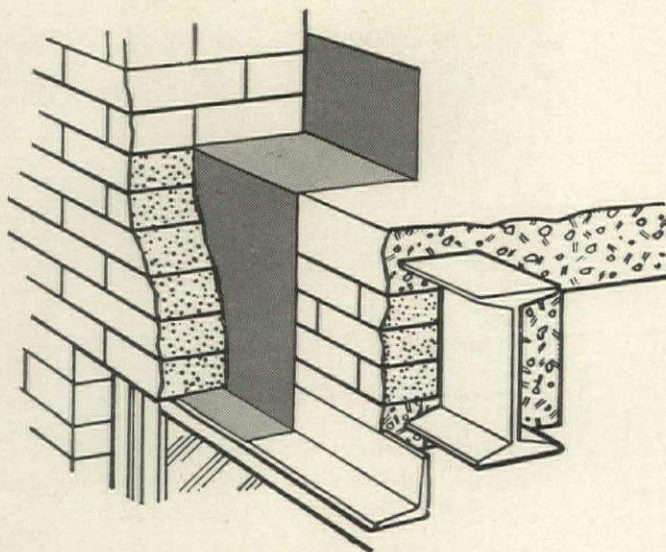
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LOW COST HOUSE TRIO

(Continued from page 144)

has the look of the Eighties and Nineties. Doodad-encrusted exteriors, rambling entrances and 12 ft. ceilings distinguish most of the houses. A few up-to-date dwellings have been built, but generally local builders have found it difficult to stir up an interest in the conveniences of new houses. Chief reason: townsfolk hesitate to inspect any new house unless specifically invited to do so. Hence, Johnson's decision to build his own house as a demonstration, to hold a three-day warming so that every Day-tonite might see a new house complete with furniture and furnishings and then compare it with his own.

In addition to window displays announcing when the house would be opened, a full-page invitation was run in the local newspaper. At the site itself was erected a large sign identifying the house as a model sponsored by Potlatch Yards. Total cost of this advance publicity came to only \$30 but its effectiveness has been proved by the fact that during the three-day open house 620 persons—approximately a quarter of the town's population—appeared on the scene. On entering the house visitors signed their names and addresses in a register which has since proved to be a valuable prospect list. On leaving, each visitor was handed a promotional pamphlet and samples of materials used in the house's construction, thus further concentrating attention on Potlatch Yards' merchandise.

Johnson's house demonstrates skillful planning, has many good selling points:

- ▶ A diagonal twist of the hallway eliminates some waste space, and creates a closet to boot.
- ▶ Instead of being two small rooms, the living and dining spaces are effectively combined into a single large room.
- ▶ Recessing of bathtub nets an extra linen closet in the hallway.
- ▶ An oversized garage provides storage space for garden tools and, being connected to the kitchen, serves as a vestibule for the rear entrance.
- ▶ A straight-wall elevation in the rear cuts down construction costs, while a central bay projection adds interest to the facade.
- ▶ Thanks to a full step at the front door, the entrance stoop is two rather than three steps high, is thus safer and more sightly.

Included in the cost of the house are a 22 x 24 ft. basement, an air conditioning system, simple landscaping consisting of a rock garden, shrubbery and lawn.

Still used to advantage as a full size show case whenever Material Dealer Johnson wishes to sell an unconvinced prospect, the Dayton demonstration has cracked local prejudice against small houses, has sold many a board foot of Johnson's lumber. Its growing progeny already includes one house that duplicates the plan and several others modified to suit individual requirements and tastes.

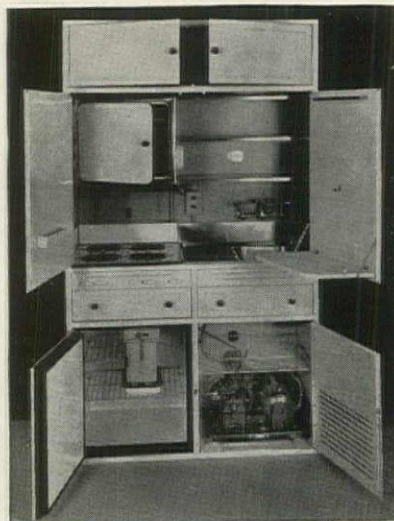


Remodeled Into Apartments

By using Pureaire Kitchens, a clever Ohio architect left virtually no waste room in the remodeling of this fine old home into small housekeeping apartments. . . . More income per dollar, of course. . . . As always, these Pureaire-equipped apartments rent on sight. No vacancy problem at all. . . . Remember, Pureaire is complete—range, oven, sink, refrigerator and unit, shelves, drawers. It's all-steel, installs in one piece, occupies less than 8 sq. ft. and allows no escape of cooking odors. . . . As useful in new buildings as in remodeling. . . . Ideal for ultra-small homes. . . . Write today!

THE PARSONS COMPANY

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Patented and Patents Pending

PARSONS

Pureaire
KITCHEN

MONTH IN BUILDING

(Continued from page 4)

Federal appropriation to reimburse FHA for the extraordinary drain on its mutual mortgage insurance fund which would result. But, even if the bill is passed, FHA would not be sorely affected; only a small percentage of its mortgagors are of military age and most of them would be exempt from military service because they are married and have dependents. FHA's new gray hair came not so much from this particular bill but from the likelihood that similar measures will pop up in Congress as long as the national emergency lasts. Seeking to dodge any emergency assignment in the national defense program, FHA points to its "business as usual" policy, to a 20 per cent advance over 1939's first half in the dollar volume of new house mortgages selected for appraisal.

PACKAGES. To its long list of interesting building developments, New Jersey last month added another—a twelve-acre Cranford subdivision which, among other things, proves three salient truths on which housing economists have long been harping: 1) Standardization and large scale operations reduce costs; 2) good low cost houses sell themselves; 3) advance planning of a subdivision's every detail and strict adherence to this planning, while seldom practiced, are long steps toward big business. Thus, Cranford's 63 houses are based on one set of floor plans (similar to NLMA's 1940 demonstrator—see p. 142) with a dozen exterior variations in Cape Cod. Designed by a small house specialist, New York Architect Randolph Evans, all 63 houses were sold for about \$4,000 each within five weeks and from blueprints and renderings alone—last house was sold before a spadeful of the subdivision's top soil had been turned. Subdivision planning followed these logical but unusual steps: land was platted; a house was designed for each lot; specifications were written; and, despite the whims of purchasers, no modification of any detail was permitted. Result: absent are the extra costs and delays which usually go with the individual selection of design, materials, equipment, colors, etc. Another result: If a prospect could not find the house he wanted among Cranford's 63 complete, wrapped up and price-tagged packages, he went elsewhere.

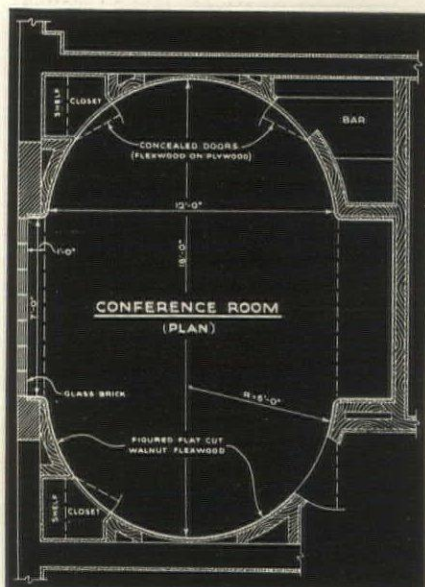
Almost as newsworthy as the subdivision itself is the fact that its driving force and material supplier is the "modern homes division" of Sears, Roebuck Co. Increasingly active in New Jersey home building, this mail order company stands to make still bigger headlines than those of last month: its 63-house project covers only a small part of Cranford's old Sperry estate whose 50 acres could easily make room for 250 Sears, Roebuck houses.

The art of modern wood treatment



Conference room, Chicago Vitreous Enamel Corp., Cicero, Illinois, Figured Flat Cut Walnut in flush wall treatment from design of Roy Blass, Architect.

STRIKING, OVAL CONFERENCE ROOM IN FIGURED FLAT CUT WALNUT FLEXWOOD, FOR CHICAGO VITREOUS ENAMEL CORP.



Construction detail of oval Conference Room showing application of Walnut Flexwood.

What could be more fitting for the conference room of an important company than Walnut, notable for its union of strength, stamina and beauty. Figured Flat Cut Walnut was chosen by Roy Blass, Architect, because of its vigorous figure and its luminous brown tones, and he designed a gracious, mellow room, with flush, curved walls, and concealed doors, with a recess, glass-blocked from floor to ceiling. Offices and corridors are also done in Flexwood; requiring 2900 sq. ft. of Figured and Plain Flat Cut and Quartered Walnut, and Figured Teak.

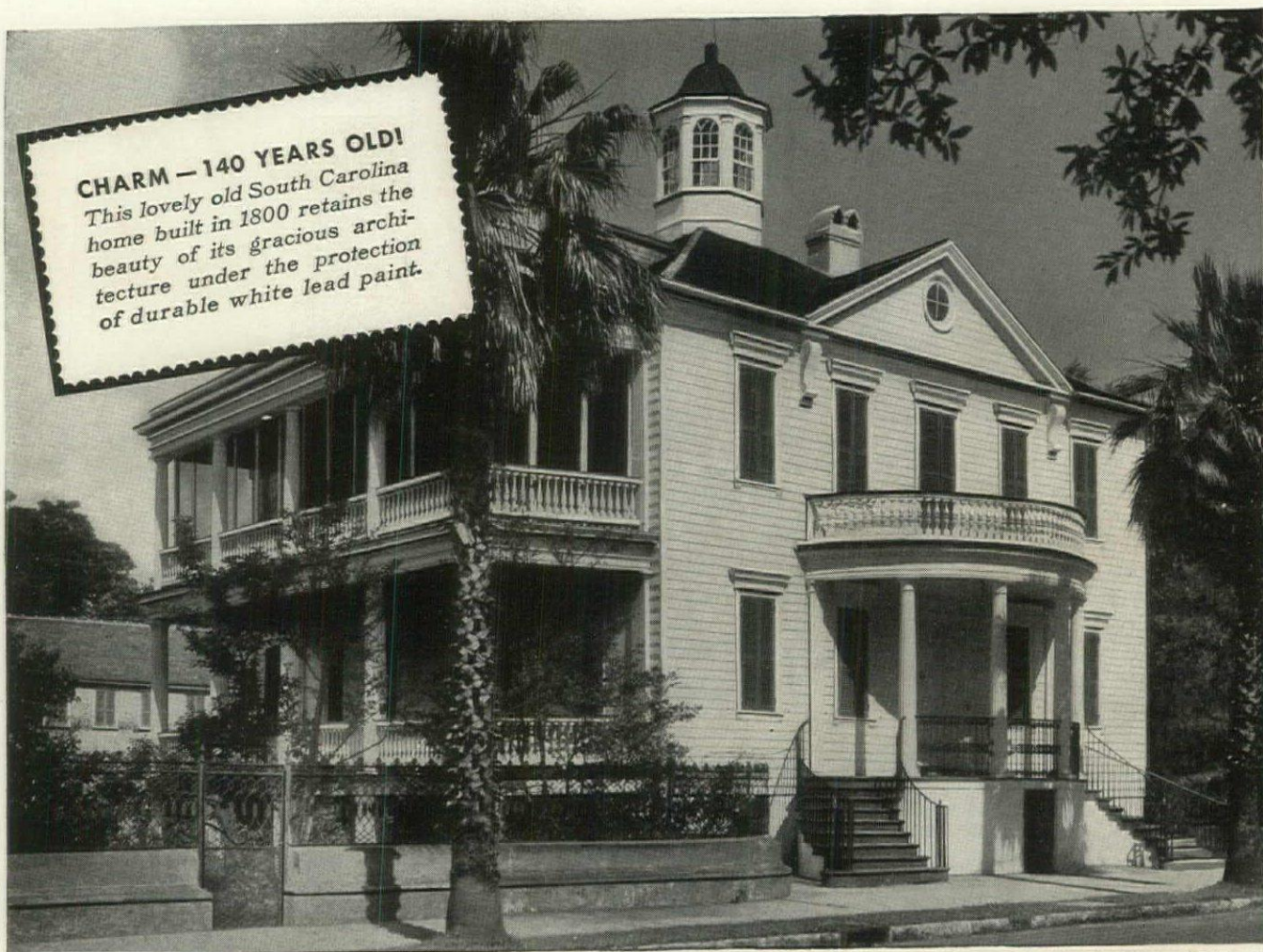
Historically, Walnut has played a leading role in interior design for hundreds of years in many lands. Modern Walnut Flexwood-treated rooms in every corner of the United States indicate, first, that Walnut has lost none of its popularity, and, second, that there has never been anything better than the present way of handling wood interiors. More than 40 rare and exotic woods are available in Flexwood, and the ease and speed with which it is applied make it a logical choice when the luxury of real wood is desired.

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WHEN 7 out of 10 architects say they prefer one particular kind of paint, you can be sure *that* paint has some pretty important advantages.

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So it's a good idea when specifying paint to know how much white lead it contains. And it is a pretty safe rule to say: *the higher the lead content*, the better the paint. You can't, for example, get a more durable paint than one containing 100% white lead. This is the kind good painters mix from lead-in-oil. In many localities it is also sold ready for use.

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In such circumstances, owners have to suffer from chilly houses or make real sacrifices of other desirable possessions in order to pay fuel bills. The choice of a heating plant and fuel for a new home should be made only with a complete understanding of these important factors:

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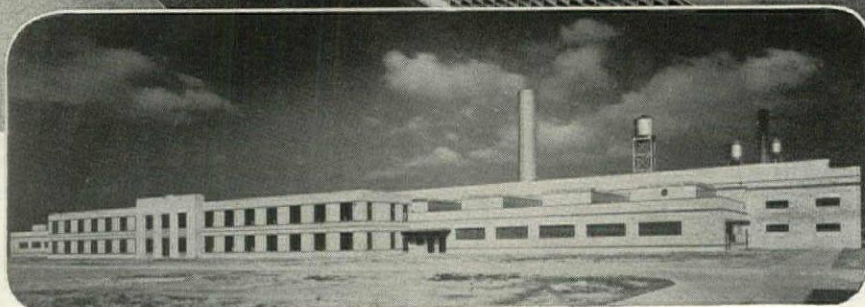
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THE ultra-modern windowless, air-conditioned plant of Industrial Rayon Corporation, at Painesville, Ohio, is revolutionary in many respects—both in various features of building construction and in the advanced methods of producing rayon yarns through a new continuous spinning process.

Every detail of this mammoth structure has been engineered for the highest degree of efficiency. To protect the building and its costly equipment, a CAREY Roof was specified, indicating the confidence of the architects in CAREY'S ability to supply the best roof protection money can buy. For

the building extension which will increase plant capacity 50 per cent, a CAREY roof has also been specified.

Sixty-seven years' experience in the manufacture of dependable building products are back of every CAREY Roof. This experience, plus the practical skill of CAREY applicators, are basic reasons why CAREY Roofs last longer, cost less per year.

To insure trouble-free service over definite periods of time, specify CAREY Bonded Built-Up Roofs. Write for book "Master Specifications"—address Dept. 20.

HOW SPRINKLERS PREVENTED \$450,000 FIRE LOSS AT AIRPORT



AMAZING NEW FIRE PROTECTION
SYSTEM SAFEGUARDS BOTH
PLANES AND HANGAR

Closely nestled inside the Moffett Hangar at the famous New Orleans Airport on the night of November 11, 1938 were 32 planes with wing overlapping wing. Suddenly at 8:30 P. M., fire flashed from the wing of a plane being repaired. In less than a minute, as flames raced across the wing surface, a remarkable new type of sprinkler system went into action. Automatically, it sounded an alarm and deluged water on the burning plane and those in the surrounding area. Within five minutes the entire fire was extinguished at a loss of only \$1700.

This amazing new sprinkler system was the Rockwood Dualguard Deluge System—designed especially for airplane hangars with their severe fire hazards of quick-burning contents, high ceilings and remoteness from fire departments. Fast, sure action of the fire protection system is imperative—that's where the Rockwood Heat Actuated Devices which operate on the revolutionary principle of Temperature Rate-of-Rise are so important. These start water flowing instantly and automatically as soon as the room temperature rises faster than a predetermined rate—long before any device operating at a fixed temperature would go into action. Once the system goes into operation it delivers huge quantities of water—a real deluge to drown the fire at once and protect the neighboring planes and the hangar, as it did at New Orleans.

WRITE!

More detailed account of this fire and description of Rockwood Dualguard Deluge System are contained in booklets which will be sent on request. Protection of planes is vital from the standpoint of national defense and insurance savings. If you are planning a new hangar or are interested in the protection of an existing hangar, specific engineering information will be gladly sent. Write or wire now—no obligation.

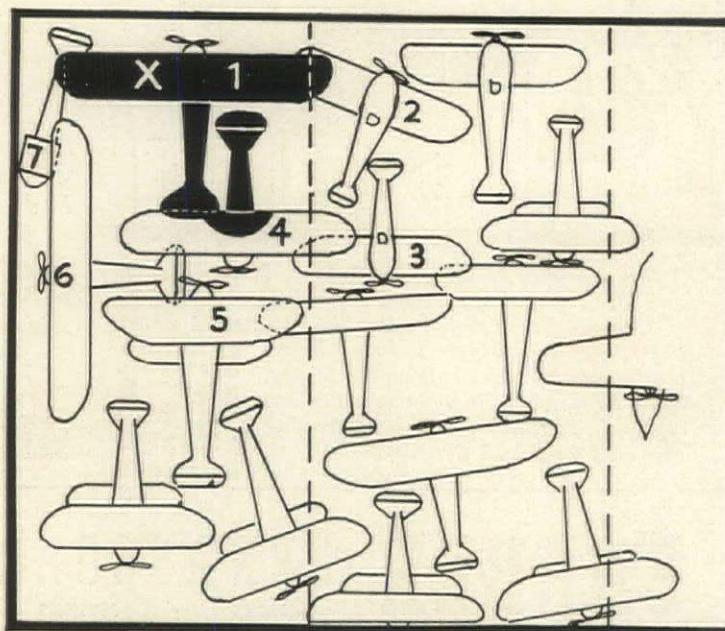


Diagram shows the interior of Moffett Hangar. Fire first started in plane No. 1 on the underside of the wing at the point marked X. Sections of the three planes which were burned are shown in black. Following is a summary of the damage to the planes in the immediate area:

No. 1 Plane—Damage \$1100—Fabric burned from wings and fuselage, instrument panel destroyed. Salvage: undamaged motor, landing gear, framework and propeller.

No. 2 Plane—Damage \$100—Fabric burned off top side of wing for distance of about 4 feet, where overlapped by plane No. 1. Salvage: undamaged entire remainder of ship.

No. 3 Plane—No damage—though overlapped by plane No. 4.

No. 4 Plane—Damage \$500—Fabric burned from tail, underside of wing and a portion of

the upper surface of wing. Salvage: undamaged motor, propeller, framework, landing gear, instrument panel.

No. 5 Plane—No damage—though nose to nose with No. 4 plane.

No. 6 Plane—No damage—though overlapped by No. 4 plane.

No. 7 Plane—No damage—though overlapped by No. 1 plane.

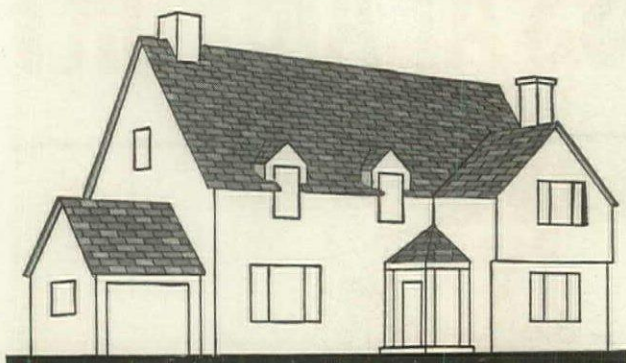
More important, the rapid action of the Rockwood Dualguard Deluge Sprinkler System prevented any damage to the other planes and the hangar itself—a total valuation of \$450,000.

ROCKWOOD SPRINKLER CO.

WORCESTER . . . MASSACHUSETTS.



IF YOU THINK ALL ASPHALT ROOFS ARE ALIKE—*Read this!*



Nationally advertised Barber Genasco Products, made with The Vital Element, include: Bonded and other types of Built-up Roofings, Shingles, Sidings, Roll Roofings. Other Barber Products include: Waterproofing Asphalts and Fabrics, Resurfacer, Asphalt Protective Products (Plastics and Liquids), Spandrel Beam Waterproofing (Spandrel Cloth and Cement).

FOR FURTHER
INFORMATION



ONE asphalt roofing is definitely *unlike* all others. The difference lies right in the asphalt coatings—the vital part of any roofing.

That roofing is Barber Genasco, made only by Barber Asphalt Corporation. The difference is the addition of genuine Trinidad Native Lake Asphalt, the remarkable natural weatherproofer from the Island of Trinidad.

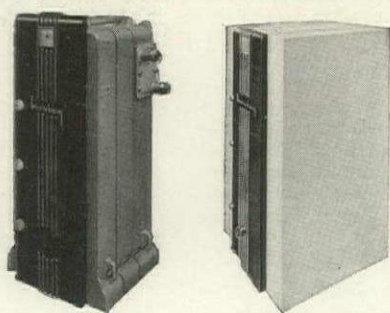
Barber calls Trinidad Native Lake Asphalt *The Vital Element* because it has an unusual and vital ability to withstand the ravages of the weather. Because it is absolutely uniform in quality.

Barber Genasco Roofings have been newly “color-styled” by Howard Ketcham, a leading color expert. And Barber has introduced the new Magnatab, a 240-lb. asphalt shingle that meets all F. H. A. specifications.

If you would like to hear more about a line of asphalt roofings that really are different, we'll be glad to answer your inquiries. Address: Barber Asphalt Corporation, Barber, New Jersey.

BARBER GENASCO QUALITY ROOFINGS

SHINGLES • SIDINGS • ROLL ROOFINGS • BUILT-UP ROOFINGS



Cuts Installation Costs for Small Boilers

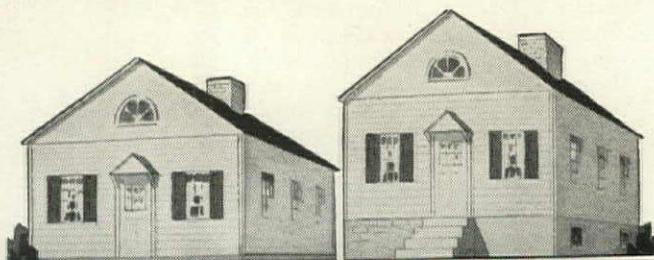
Although it's a cast iron sectional boiler, this Junior Yello-Jacket Small House Boiler comes to the job all assembled, ready to set on the floor and at once connect the piping.

No base to set, as base and boiler are one. Jacket goes on like slipping into a coat. No hot water storage tank is needed. It has a Biltin Tankless Taco Heater.

See Sweet's. See for yourself.

BURNHAM BOILER CORPORATION
IRVINGTON, N. Y. ZANESVILLE, OHIO
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Burnham Boiler



RAISE GRADE LINE *at low cost with* DONLEY AREA WALLS



Raise that all-important grade line and your homes look as though they grew in place—look nestled in the ground instead of sticking up too high. You can raise the grade line at low cost—by using Donley Steel Area Walls. Users say these prefabricated units cut the cost of area ways by 50%.

—you just set them in front of the window and backfill.

Arch formed and ribbed for strength, Donley Area Walls are made of 16 ga. copper bearing steel with two coats of special rust resisting paint (last coat made with aluminum). Finish reflects maximum sunlight into the basement. Carefully crated to insure delivery in perfect condition.

Write today for new catalog which gives complete facts about area walls and other Devices for home owner and builder.

THE DONLEY BROS. CO. 13945 Miles Ave.
Cleveland, Ohio



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An investment in time!

THE ARCHITECT who specifies ARMCO Ingot Iron for sheet-metal work has time on his side—paying dividends in service, durability and client satisfaction.

For—of all trademarked galvanized metals—ARMCO Ingot Iron has the longest record of actual service. The original analysis has remained essentially unchanged for thirty-four years, and thousands of installations testify to the staying-power of this uniform, highly refined iron.

This is significant: *A careful study was made of all sheet-metal specifications given in ARCHITECTURAL FORUM from June, 1939, to June, 1940. It revealed that there were more specifications for galvanized ARMCO Ingot Iron than for all other ferrous metals combined. Even non-ferrous metals ran second to ARMCO Ingot Iron*

There is a fund of valuable information on architectural applications of ARMCO Ingot Iron. We shall be glad to share it with you if you will let us know your special interest. The American Rolling Mill Co., 2151 Curtis St., Middletown, Ohio.

ARMCO INGOT IRON "THE ARCHITECT'S
STANDARD"

FORUM OF EVENTS

(Continued from page 14)

AWARDS

To JOHN R. TREGENZA, New York, the Rome Fellowship in Landscape Architecture of the American Academy in Rome. Mr. Tregenza last year won an Honorable Mention in this competition. He is a member of the A.S.L.A., studied at the University of Virginia, Columbia and Harvard Universities. He has been a junior designer for the Department of Parks, New York, and assistant designer of landscape architecture for the World's Fair Board of De-

sign. At present he is employed by Alfred Geiffert, Jr.

To CHARLES M. STOTZ and JAMES K. HESS, first prize (\$400) in the Competition for the "Pittsburgh Home," sponsored by Barone & Lind Co. Second prize (\$200), awarded to Robert Schmertz; third prize (\$100), awarded to Edward G. Rigg. Honorable Mentions to Thomas C. Pratt, J. Walter Ketterer, J. Gemmi and Gordon T. Brown.

To RALPH WALKER, presidency of the Municipal Art Society, New York, succeeding Alfred Geiffert, Jr.

To THE NAVY DEPARTMENT, first award in the Ninth Annual Exhibition of the Association of Federal Architects, Washington, D. C. "Awarded for consistently high standard of work shown. A variety of buildings are handled competently with simplicity of design and clearness of solution." Jury: Louis Justement, George Nelson, Louis Skidmore.

To LOUIS SHULMAN, first prize of \$250 in a competition sponsored by Western Electric Company and conducted by the Beaux-Arts Institute of Design, for a radio transmitting station. Second prize, \$100, won by ROGER W. FLOOD. Third prize, \$50, won by PERCY C. IFILL. All three winners are students at New York University. There were 91 entries from 102 individuals representing 19 leading architectural schools.

To CARL H. DROPPERS, Cleveland, fourth year student, Cleveland Museum of Art. the Charles Frederick Schweinfurth Traveling Scholarship for a summer of study and travel in Mexico.

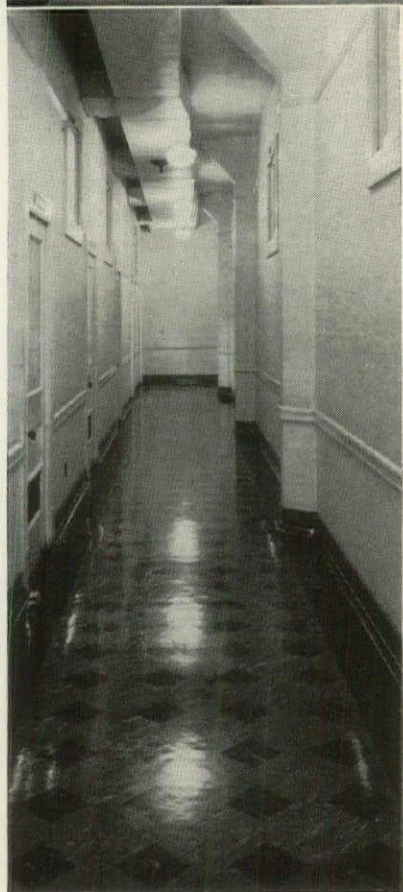
To ELEANOR PLATT, sculptor, New York, the Chaloner Prize, an award having a value of about \$5,400, by the Chaloner Prize Foundation. Honorable Mention to Albert Wein, New York.

COMPETITIONS

FIFTH ANNUAL MODERN PLASTICS COMPETITION open to all who use plastics in their products, to designers and other technicians. They may submit any object or product designed and placed on the market since September 1, 1939, in which any sort of plastic material is a component part. Fourteen classifications, of which one is architecture. Three awards in each classification. Jury: Alfred Auerbach, Harvey Wiley Corbett, William A. Kimbel, Morris B. Sanders, A. M. Swigert and Harold Van Doren. Closing date for all entries, August 15. Further details from *Modern Plastics Magazine*, 122 East 42nd St., New York.

NEW YORK CHAPTER, A.I.A., is sponsoring a competition to give recognition to the best new small home designs for residences completed from January 1938 to closing date, in the New York metropolitan district. Eligible are houses from New York City, Nassau, Westchester and Rockland Counties, N. Y.; from Bergen, Passaic, Essex, Union and Hudson Counties, N. J.; from Fairfield County, Conn. Houses must have not more than six rooms nor shall

(Continued on page 52)



JUST AS the public demands efficiency in service from public utility companies, so do these firms demand efficiency in service from the products they use. So, for a recent remodeling job, the men in charge chose AZROCK Carpet Tile for floors and corridors.

AZROCK has all the qualities desired in a modern floor covering—and more. Either marbled or plain, it makes a distinctive floor, pleasing to the eye, quiet underfoot. Its exclusive integral wax finish and micro-cut edges mean that it will be simple to keep clean, beautifully polished. And AZROCK "can take it" year in and year out, for AZROCK is durable. The AZROCK mixture—with a base of high-grade rock asphalt—is triple-mixed and triple-tested during manufacture, insuring perfection in the finished tile.

Whatever your problem . . . private or public building, office, store, home, theater, hospital or factory . . . there is a proven AZROCK Tile to serve you.

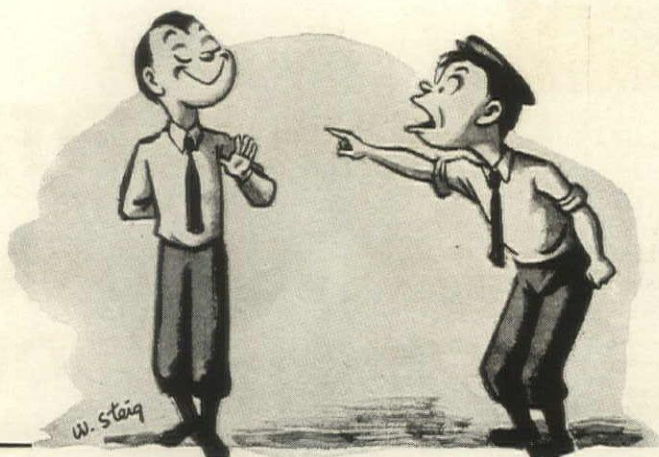
AZROCK

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Manufactured by
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(In Business Since 1912)

Gen. Offices: San Antonio, Texas; Mines: Blewett, Texas; AZROCK Plant: Houston, Texas; Distributing Contractors: in principal cities of U. S. A.



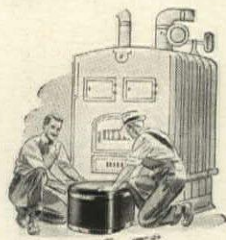


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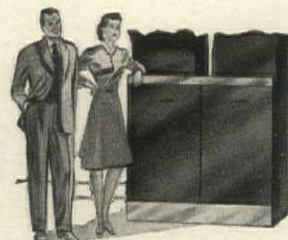
Whatever your problem ... General Electric's complete line gives you the answer



G-E Oil Furnaces (steam, hot water, vapor) quick steaming . . . unusually economical. Year 'round domestic hot water coil optional. Also a complete line of G-E GAS FURNACES.



Attachment burner designed to operate with boilers and furnaces of the following types: pressure steam, vapor steam, hot water, warm air. Economical in operation, quiet, odorless and safe.



G-E Winter Air Conditioners (oil or gas fired) circulate warm, clean, moistened air. Highly efficient. A single switch provides circulation in summer. Cooling equipment can be added.



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G-E Unit Air Conditioners for low-cost air conditioning in shops, restaurants, offices, etc. Complete range of sizes. Low in cost. Easily installed, little or no duct work needed.



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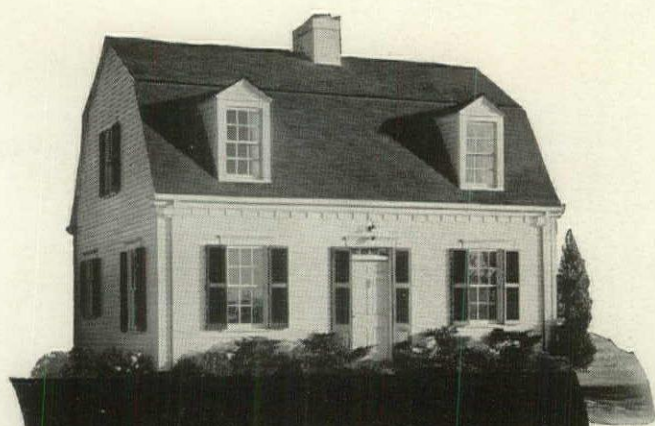


For full details on the complete G-E line, see Sweet's Catalog—²⁶/₁₀, or write to:

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Div. 199-813, Bloomfield, N. J.

HEATING...AIR CONDITIONING...COMMERCIAL REFRIGERATION



**What paint
do you specify
for DUTCH
COLONIAL
HOMES?**

• A safe specification is Eagle White Lead. Since 1843 Eagle White Lead has been preserving the beauty of American homes. This weather-resisting pigment creates an elastic paint film when mixed with oil. Doesn't scale. Doesn't crack. Your clients are money ahead when they paint with white lead.



ARCHITECTS—WEBER & SMITH

The Eagle-Picher
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Makers of Eagle Home Insulation—Fireproof, Water-Repellent Mineral Wool.

EAGLE pure
WHITE
LEAD

The uses of **HOMASOTE** in **CONVENTIONAL CONSTRUCTION**



Homasote is recognized by many leading architects, builders and material dealers as the outstanding insulating and building board of its kind. With the growing trend toward dry-wall construction, Homasote fills a need not yet reached by other board products. It is made in wall-size

with Homasote on the interior looks like any other house, but it is forever free from the usual problems of cracking and sometimes falling plaster.

Homasote is absolutely weatherproof; it can be used for the exterior sheathing under siding, shingles, brick veneer and stucco—and also as the exterior surface. When this is done, a California stucco or sand finish may be achieved with a synthetic paint material.

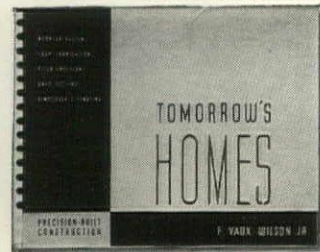
The structural and insulating qualities of Homasote have all been attested by independent laboratories. Full details of these tests will be supplied on request.



PRECISION-BUILT CONSTRUCTION

With Precision-Built construction, any house—any size, any type—can be built in 10 to 30 days. \$4,000,000 of architect-designed homes have already been built this way—they are in all parts of the country.

Write for your copy of TOMORROW'S HOMES, which is privileged without charge to architects in the U.S. (Only one copy to a firm.) This book tells of shop fabrication, field erection, simplified estimating—shows the architect how to save time in planning, drafting and supervision; tells how the Bemis 4" module provides standardization and integration—yet does not in any way affect the flexibility of design.



HOMASOTE COMPANY
TRENTON . . . NEW JERSEY

WINDOW IDEAS BY ARCHITECTS

South Side Vocational School,
Chicago, Illinois.

John C. Christensen, Architect



The architect's own individual ideas can be readily applied to the windows when Fenestra "Projected Fenmark" Steel Windows are specified. An example is shown in the detail illustration above where the windows occupy larger than usual spaces and where Fenestra's attractive lines and well-proportioned glass areas conform to the facade design.

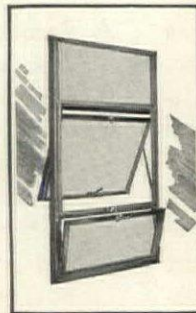
Surely an abundance of light is provided throughout this

beautiful structure. And fresh air ventilation, under perfect control, has been arranged according to the desires of the architect and building owners. Open-out vents are designed to form canopies over openings. Open-in vents are designed to deflect drafts upward, shed water to outside.

Numerous other advantages include:

permanent, easy, silent opening of vents—no warping or sticking; safe washing—glass cleaned on both sides from inside a room; better screens—attached safely from the inside; fire resistance—steel does not burn.

Complete details furnished on request. See Fenestra Catalog in SWEET'S for 1940 (31st consecutive year) or use coupon below.



Fenestra

HEAVY CASEMENT-TYPE STEEL WINDOWS

Detroit Steel Products Co.
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Please send free literature, as follows:

- ☐ Heavy Casement-Type Steel Windows
- ☐ Detention Steel Windows
- ☐ Residence Steel Casements

Name _____

Address _____

City _____

State _____

FORUM OF EVENTS

(Continued from page 48)

have cost more than \$7,000; no summer or seasonal home will be considered. Judgment will be made of interior and exterior design, construction, and site planning. Closing date, September 30. Further details from New York Chapter, A.I.A., 115 East 40th St., New York. Jury: representatives from each region will be selected by the collaborating organizations.

POSTER COMPETITION conducted by the National Alliance of Art and Industry for

prizes totaling \$1,875 offered by the American Society for the Control of Cancer. Posters are to be designed "to stimulate public interest in the control of cancer, to further the support for the educational movement, to encourage endowment for research and to deliver a helpful message to a public to which the very word cancer spells Fear." Prizes: \$1,000, \$500, \$250, \$50, \$25, and five of \$10 each. Entries received between October 1 and 12. Jury: Dr. Frank E. Adair, John Taylor Arms,

William H. Baldwin, Lester Beall, Harvey Wiley Corbett, Edmund Graecen, Rodney Wilcox Jones, Abbott Kimball, Dr. C. C. Little, Mrs. Robert G. Mead, Ben Nash, Hobart Nichols, Francis J. Rigney. Further information from the National Alliance, 119 East 19th St., New York.

EDUCATIONAL

COOPER UNION, New York, has appointed to the faculty of its Art Schools, Richard Boring Snow, architect, and Douglas A. Nettleton, structural designer.

LABORATORY SCHOOL OF INDUSTRIAL DESIGN, New York, closed its doors at 116 East 16th St., New York, last December. Some 50 students and teachers continued classes on an informal basis, but have finally disbanded.

ERRATA

PLASTICS IN BUILDING, June 1940, p. 415: List of resin-bonded plywoods should have included "Super-Harbord," Harbor Plywood Corp.; list of manufacturers of resin bonds for plywoods and veneers should have included Plaskon Co., Inc.

In publishing the THEATER AND ART CENTER at the University of Wisconsin (July FORUM p. 49) our credits for design were not complete. They should have read: Michael M. Hare, Corbett & MacMurray, associated architects; Lee Simonson, theater consultant; John B. Manzer, interior consultant; Charles C. Potwin, acoustical consultant.

DIED

GEORGE GIBBS, engineer, 79, in New York. Born in Chicago, Mr. Gibbs was graduated from Stevens Institute of Technology, and was employed immediately thereafter as a laboratory assistant to Thomas A. Edison. He followed the general line of railroad engineering, and is said to have designed the first steel passenger car. He was chief engineer in charge of design and construction of the Pennsylvania Station, New York, and also the electrification of the Pennsylvania Railroad between New York and Washington. He was a consulting engineer for the New York Central Railroad, and for many other railroads in the U. S. and in Europe.

MARTIN C. HOFF, interior decorator and painter, 84, in Washington, D. C. A native of Oslo, Norway, Mr. Hoff came to the U. S. in 1883, thereafter settled in Washington and attended the Corcoran School of Art. His works include the decoration of many Washington houses—the McLean, Willard and Bliss mansions. He decorated a staircase at the White House and painted several frescoes in the Capitol.

(Continued on page 56)



Missouri State Capitol. Architects, Swarthout & Tracy. Genl. Contr., John Gill & Son, Cleveland, Mo.

OLD BUILDINGS, TOO, NEED PECORA PROTECTION

The Missouri State Capitol, Jefferson City, Missouri was completed 25 years ago. Recently the need manifested itself to calk joints in movement as well as to waterproof other exposed joint areas. The contract was awarded to the Western Waterproofing Company of St. Louis, Mo. and Pecora Calking Compound was used exclusively for this important work.

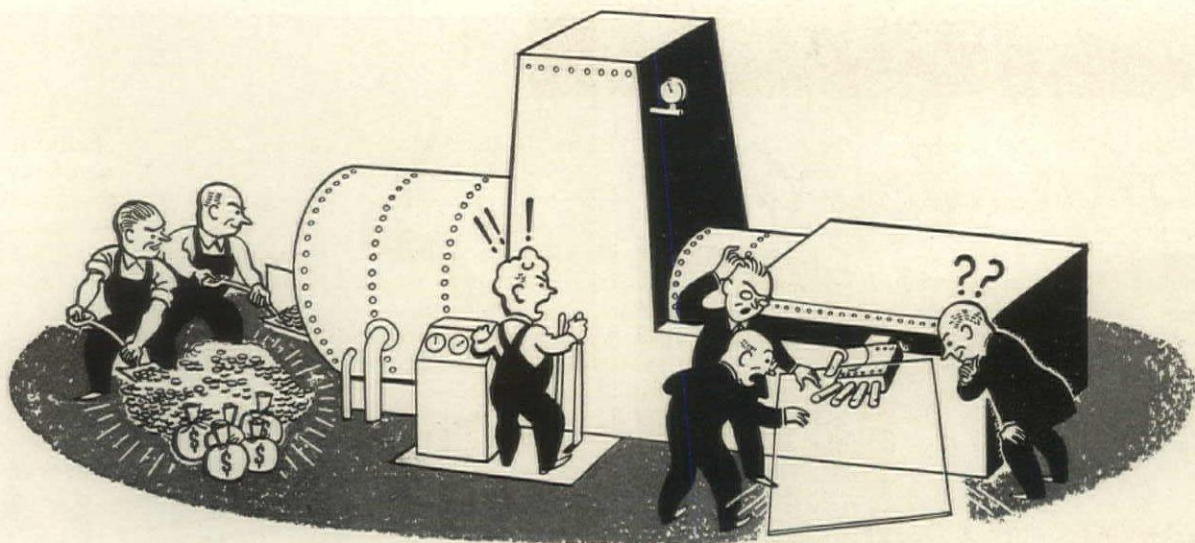
A Pecora protected building is a weather protected building. Definitely, Pecora Calking Compound helps to save fuel, helps to avoid drafts, helps to make air conditioning more effective. Pecora will not dry out, crack or chip when properly applied. Its ever present resiliency is possible only because of the exceptionally high quality of its formula.

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... in went time and money, and out came plate-like sheet glass, the like of which no one had ever seen before:

If it isn't plate glass and it isn't window glass. What is it?

THE SHADOWGRAPH TELLS THE STORY
by amplifying distortion and defects 20 times



(1) This is high quality cylinder drawn window glass. The bent and twisted lines shown by the shadow-graph testing device indicate the presence of considerable distortion. This glass became obsolete in 1928.



(2) Here is what most manufacturers offer today as top quality window glass . . . Made by the sheet drawn process, it shows a characteristic distortion in the waviness of the black lines.



(3) Now look at this "shadow-graphed" sample of the new Lustraglass. Obviously an important improvement. The lines are straight, showing relatively perfect vision—freedom from distortion.

● Write for the new Windowgraph Slide Rule Chart and a sample of the new Lustraglass. Examine both—then tell us what you think.

EVEN THE GREEKS DIDN'T HAVE A WORD FOR IT

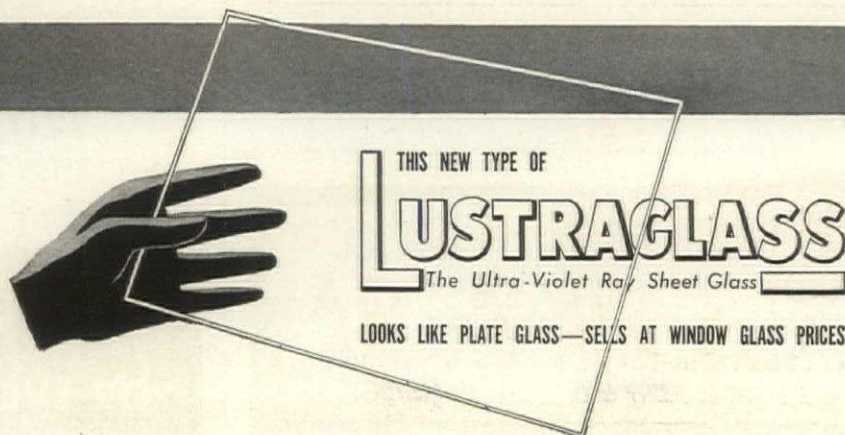


This new, improved Lustraglass has everybody guessing. Experts have looked at it and called it plate glass. They couldn't believe it could be sold at window glass prices . . . It is practically free from distortion. It has a new, jewel-like luster all its own. It is free from that greenish window glass cast. It transmits the sun's ultra-violet rays in substantial amounts and has great tensile strength . . . Truly, the new, improved Lustraglass is a vital advance in the process of flat glass manufacturing. How would you classify it?

American Window Glass Co.

PITTSBURGH, PA.

Manufacturers of Plexite, the safer safety glass; Lustrablu and Lustragold for ornamental uses; Crystal Sheet, Chipped and Special Glass for industrial purposes.



FOR STRIKING
MODERN MURALS
PC Architectural Glass



HERE IS AN outstanding example of how PC Architectural Glass may be used for sculptured glass murals of distinction. These panels add beauty and interest to the entrance of the new Banker's Life Company Building in Des Moines, Iowa. Architects . . . Tinsley, McBroom and Higgins.

MANY architects and designers have deplored the fact that they cannot actually model in glass. But today, they can do almost as well—they can produce murals of the same striking originality and delicacy by having their own modeling in clay or plaster faithfully reproduced in exquisite sculptured panels of PC Architectural Glass. For murals, cornices, friezes and many other purposes, pieces of this glass as large as 4 feet by 4 feet can be used to reproduce a single design. Or a number of sculptured pieces can be joined to create a larger, overall pattern or design.

PC Architectural Glass is also available in a wide range of attractive standard shapes. Send the coupon for free literature giving additional facts about this modern material.

At the New York World's Fair, visit the Glass Center Building and the Pittsburgh House of Glass

"PITTSBURGH" stands for Quality Glass

Pittsburgh Corning Corporation
2148 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your free literature on PC Architectural Glass.

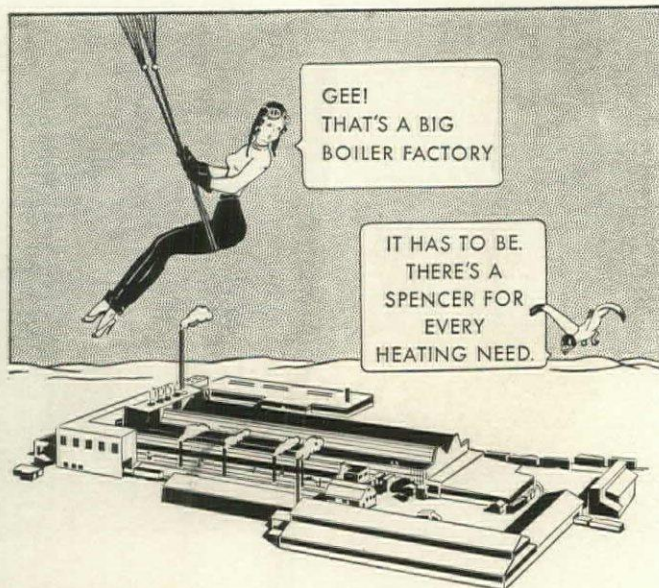
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ARCHITECTURAL
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SPENCER Keeps Pace With Modern Heating Demands

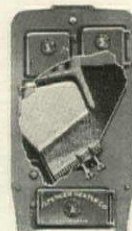
Fifty years ago the home with a central heating plant was the envy of the entire community. But today specifying and selling "just another boiler" is a losing proposition from every angle—including price. One owner wants oil—another gas—a third demands automatic convenience with greater economy—or year 'round hot water—and so on.

That's why Spencer keeps extending its line—always modernizing and adding to it. Such a policy protects those who specify and install Spencers. Regardless of the individual job the owner is given a Spencer specially engineered and built to *out-perform*, to *out-economize*, and to *outlast* competitive offerings.

And that's why Spencer's 1940 organization and its production facilities are greater today than any time in its history. They are at your service.

THERE'S A SPENCER FOR
EVERY HEATING NEED—

Installed Only by Recognized Heating Contractors



The Magazine Feed Heater—with or without Jacket



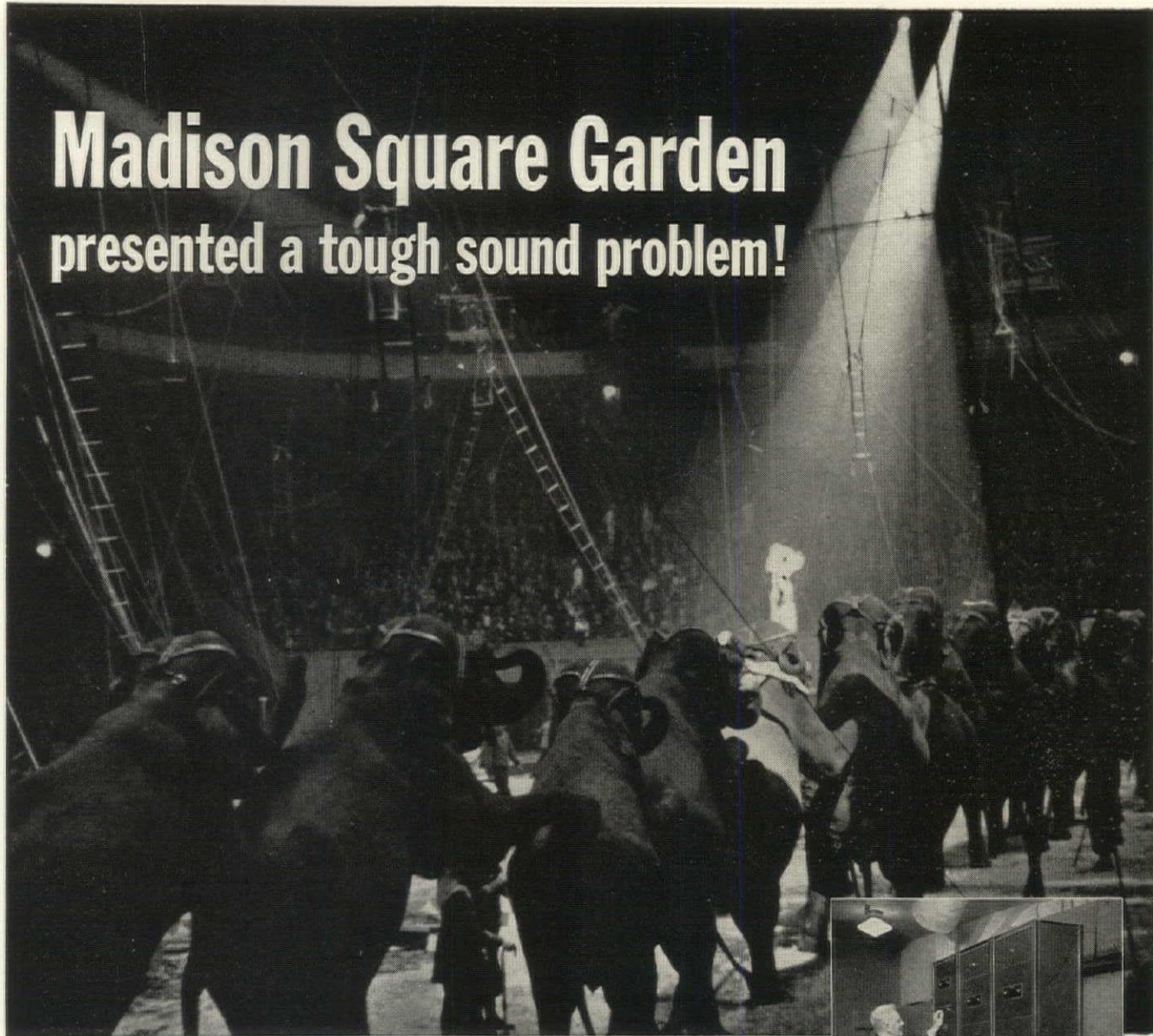
The "A" Type Steel Tubular Boiler, up to 42,500 ft. steam

Send for the new 1940 catalogue

SPENCER HEATERS, Williamsport, Pa.
A Division of Aviation Manufacturing Corporation.

SPENCER HEATERS
FOR EVERY HEATING NEED

Madison Square Garden presented a tough sound problem!



New Western Electric equipment solved it!

Imagine! A sound system to cover a room a block long! Uses? Prize fights, ice carnivals, circuses, rodeos, hockey games, basketball games, speeches, concerts, mass meetings — each with a different sound problem.

This tough installation was solved with a 10-loudspeaker gondola, movable vertically as well as from the

center to the end of the Garden. Eighteen microphone positions are available for use with up to 36 mikes. Amplifying equipment includes facilities for loudspeakers located even in the basement to supply entertainment to overflow crowds.

This is but one example of many showing how the new Western Electric sound equipment can solve Public Address problems previously thought impossible.

Get full details from Graybar Electric Co., Graybar Bldg., New York, N.Y.



*Complete Western Electric
Sound Amplifying equipment
for Madison Square Garden
in New York City.*

Western Electric

LEADERS IN SOUND-TRANSMISSION APPARATUS



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Janitrol factory men are located in principal cities . . . a gratis service of experienced heating engineers which relieves you of many heating responsibilities.

FORUM OF EVENTS

(Continued from page 52)

RALPH MODJESKI, bridge engineer, 79, at Los Angeles. Born in Cracow, Poland, Mr. Modjeski came to the U. S. when he was fifteen. He went to Paris to study engineering, being graduated from the College des Ponts et Chaussees at the head of his class. His first work in engineering was with George W. Morison as assistant engineer on the Union Pacific Bridge at Omaha. Mr. Modjeski's first big job was as chief engineer of the Thebes Bridge over the Mississippi. A list of bridges with which his name was connected as engineer or consultant reads like a bridge census of the U. S. He was said to have been in charge of building bridges costing a total of more than \$100,000,000, and a consultant for bridges built at a cost of more than \$140,000,000. He received the John Fritz Gold Medal in 1929, the honorary degrees of Doctor of Engineering from the University of Illinois, Pennsylvania Military College, and the University of Lwow, Poland. He was a knight of the French Legion of Honor.

WILLIAM STONE POST, architect, 74, at Bernardsville, N. J. Mr. Post was born in New York, a son of the late George B. Post, with whom he became associated in the practice of architecture after his graduation from Columbia University. He was made a partner of the firm in 1904, and retired in 1930. In collaboration with his father he designed the New York Stock Exchange, the Statler Hotels in Cleveland, Detroit, St. Louis, Boston and Buffalo, the Hotel Roosevelt, New York, Hotel Olympic, Seattle, and the Wisconsin State Capitol. For more than 40 years he was a member of the A.I.A.

DR. ALEXANDER POTTER, consulting engineer, 74, at Great Barrington, Mass. Dr. Potter was born at Gibraltar, studied in the schools of Halifax, N. S., and was graduated as a civil engineer from Lehigh University. He was outstanding as a consulting engineer in sanitary and hydraulic work. He was appointed by Gov. Lehman as one of the three members of the Commission to study the possibilities of a bridge across the Hudson near Tarrytown. During the World War Dr. Potter was in charge of sanitary construction for two army cantonments and a munitions plant. Lehigh conferred upon him the honorary degree of Doctor of Engineering.

SIR RAYMOND UNWIN, architect, town planner, and housing expert, 76, at Lyme, Conn. Born in Rotherham, Yorkshire, Raymond Unwin was trained in engineering and architecture at Oxford, first practicing in 1896 when he was commissioned to lay out his first garden city. During the World War he was director of the Housing Branch, Ministry of Munitions, and afterwards, chief architect in the Housing Branch, Ministry of Health. He was president of the Royal Institute of British Architects from 1931 to 1933, was knighted by King George in 1932, received the Royal Gold Medal in 1937, and in 1938 the Ebenezer Howard Memorial Medal. Harvard University conferred upon him the honorary degree of Doctor of Arts. He held other honorary degrees from the Universities of Prague, Toronto, Manchester and Trondheim. A frequent visitor to the U. S., Sir Raymond had been a visiting professor in the Columbia School of Architecture for the last four years. Best known of his works in design are the garden cities of Letchworth and Hempstead Garden Suburb. Sir Raymond was the author of "Town Planning in Practice," a basic work in this field which has been translated into French and German; of "Nothing Gained by Overcrowding," and, with Barry Parker, of "The Art of Building a Home."

(Continued on page 60)



THE "RULE OF THREE" FOR MODERN WALLS

O BEAUTY
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 O ECONOMY

THESE ARE THE QUALITIES THAT MAKE NAIRN WALL
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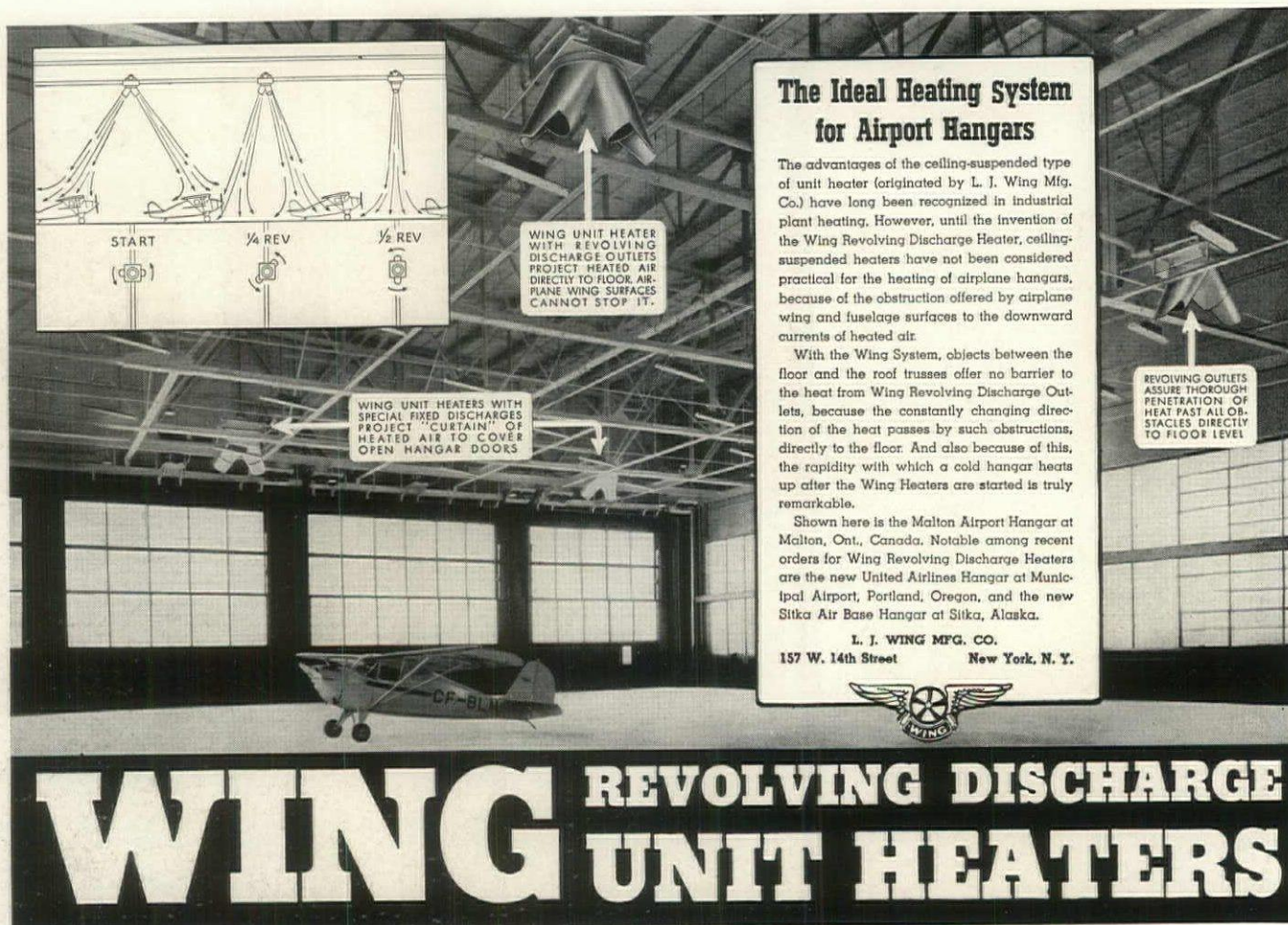
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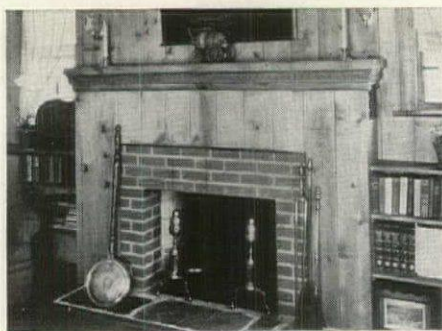
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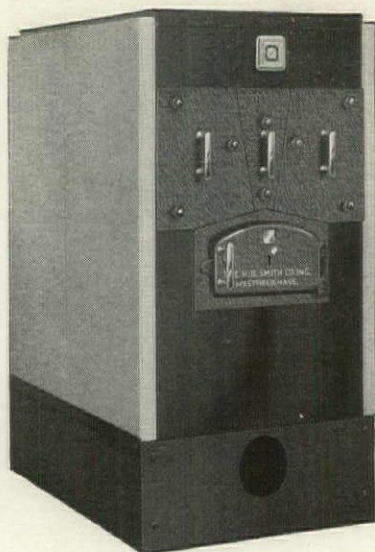
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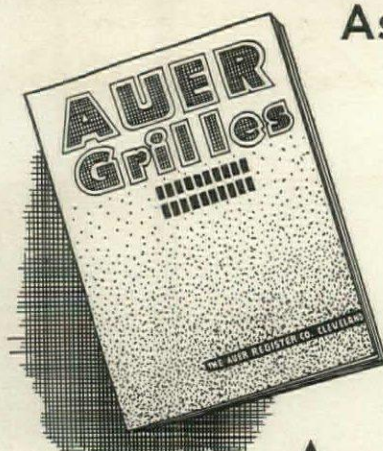
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CLIENT: "See here. My house must be warm, dry and tight. Blanket insulation is swell, but I've only got \$25.00 for sealing out all weather hazards. What do you...?"

ARCHITECT: "BROWNSKIN is your best bet. So far as the walls are concerned (22% of normal heat loss occurs here), Brownskin gives built-in BASIC 'Insulation'. By that I mean it gives permanent protection—proofed for all time against water, wind, and moisture."

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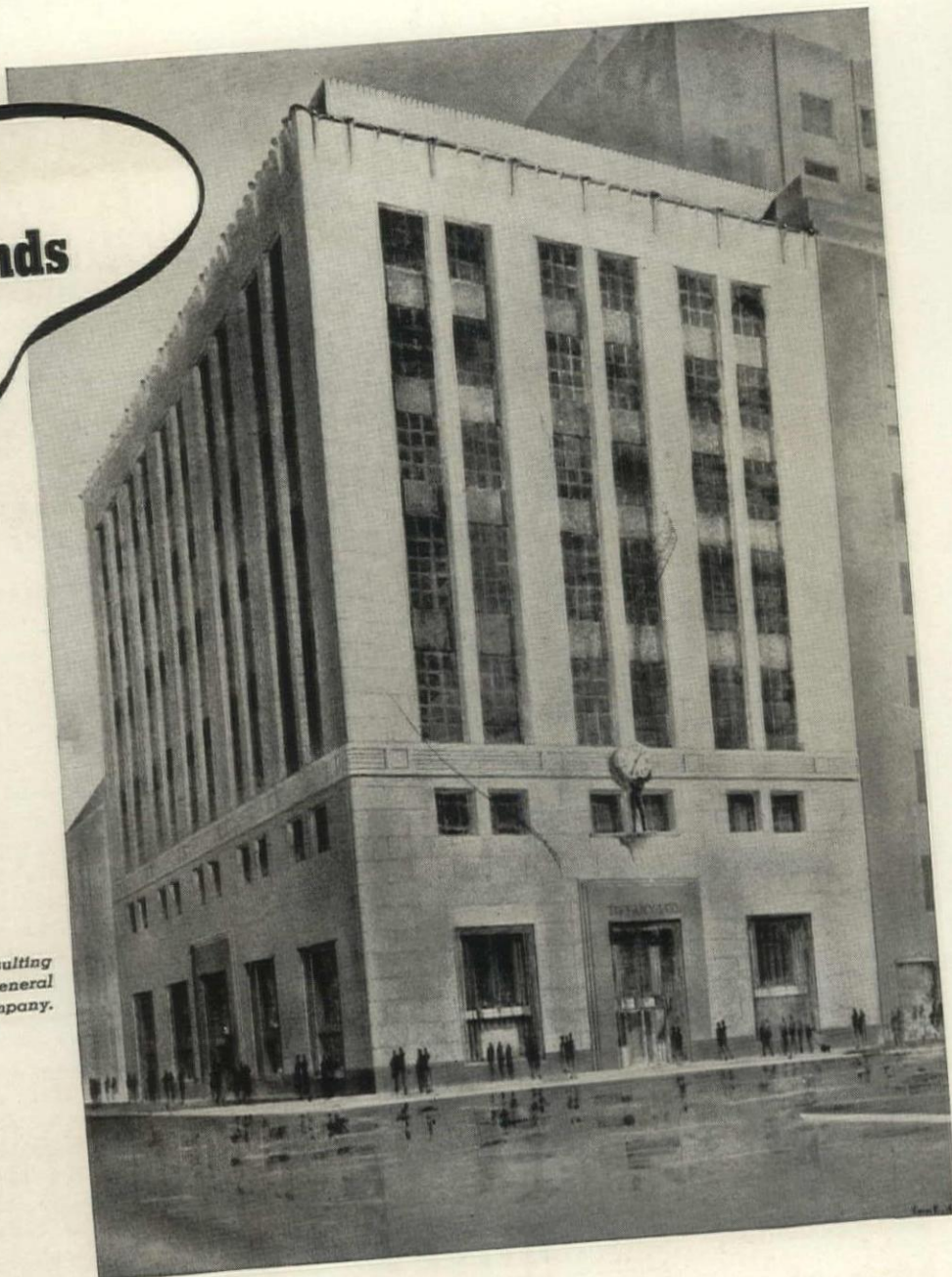
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Brownskin Far superior to ordinary sheathing papers because (1) Resilient with a stretch of 15%; (2) Specially treated to resist deterioration and highly Waterproof; (3) Extremely tough; (4) Windproof; (5) Dustproof; (6) Most effective economical Vapor-Seal.

In Tiffany's new House of Diamonds

Architects, Cross and Cross; consulting engineers, Weiskopf and Pickworth; general contractors, Turner Construction Company.



Bethlehem New Elevator Rope

The 100 per cent use of Bethlehem New Elevator Rope in Tiffany's new 5th Avenue store is one of many examples of the increasing popularity of this improved elevator rope.

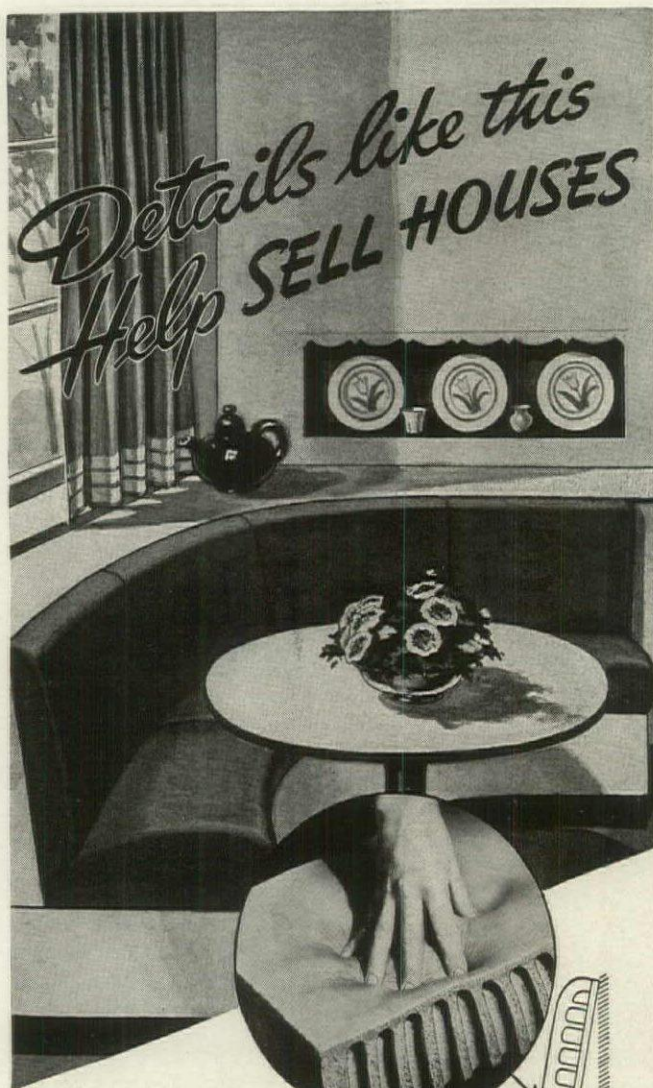
This steadily growing popularity is the natural result of Bethlehem's intensive two-year program of developing and perfecting a better, more uniform elevator rope. In the improved Bethlehem rope each wire is precision drawn, carefully protected against

surface imperfections in manufacture. Only the best quality steel is used. The rope as a whole is "strand stuffed" with a special oil that lubricates the strands internally without oozing to the surface and causing excessive slippage.

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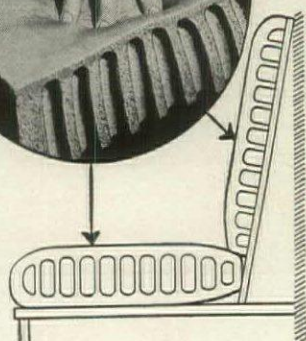
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FORUM OF EVENTS

(Continued from page 56)

EDWIN STANLEY HALL, architect and president of the Royal Institute of British Architects, 59, in London. Mr. Hall was educated at Dulwich College and Oxford. He received his architectural education at the Architectural Association schools, and served his apprenticeship with his father, the late Edwin T. Hall. In 1920 he was made a partner, and after his father's death in 1923, continued the work of the firm for some years. In 1930 he formed a partnership with Easton & Robertson with whom he carried out many important buildings, including much hospital work. He succeeded H. S. Goodhart-Rendel in the presidency of the R.I.B.A. in May, 1939.

HONORING FREDERICK P. KEPPEL

The Architectural League of New York, charged with the responsibility of awarding the Friedsam Fellowship and Medal for distinguished service to the arts, has designated Frederick P. Keppel as the recipient for 1940.

At a dinner at The League on May 9, president Edgar I. Williams welcomed members and guests and introduced Henry W. Kent, secretary of the Metropolitan Museum of Art, and a Friedsam Fellow, who sketched the history of Colonel Friedsam's trust from its establishment in 1923.

Mr. Williams then called upon William Adams Delano to tell of Mr. Keppel's qualifications.

MR. DELANO: "It is seldom that a group of impecunious artists has the pleasure of giving gold to one whose occupation is the generous distribution of that much-prized metal. It savors of sending coals to Newcastle. What can a paltry gold medal mean to him, our guest tonight, who gives away millions? Let us call this medal merely a token of what we all feel, affection. . . .

"Starting his career as Assistant Secretary of his alma mater, Columbia University, it took him only two years to become Secretary, less than ten to become the Dean of the College. A dean, as you all know, occupies a singularly important role in the student's life.

"I shall not review all of the many good causes he espoused during the next five years—Secretary for International Conciliation, Third Assistant Secretary of War, Director for the American Red Cross, Secretary of the Plan of New York. It is enough to say that they were each and all steps toward the position he now occupies with such distinction, and in each he exercised the same wisdom, understanding and tact as when dean of Columbia.

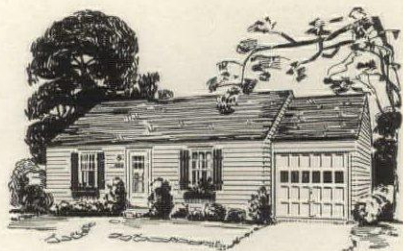
"His present occupation is one that has a need of such training. We each of us in our humble way know how pleasant it is to give a few dollars to this or that worthy cause and how hard to refuse when one's pocketbook runs dry. Multiply such gifts and refusals by the *n*th power, and you have a picture of what Dr. Keppel's life is. His is the buffer between the seekers and the sought, the sieve through which appeals reach the trustees of the Carnegie Corporation. . . .

"His sympathy and understanding for the aims and aspirations of artists need no brush. He has been showered with honors and degrees by colleges and universities from Toronto to Australia. He is a doctor of all things except divinity and medicine. So what we are giving him tonight may not have the significance we desire, but I can assure him that what it may seem to lack in importance is more than made up by the warmth of affection in which we who practice the arts hold him. . . .

CITATION READ BY MR. WILLIAMS: "Award of the Friedsam Medal, 1940, to Frederick Paul Keppel, President of the

(Continued on page 64)

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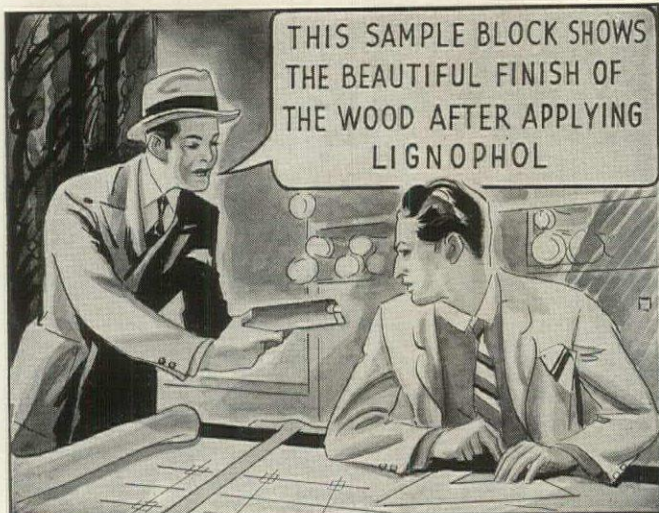
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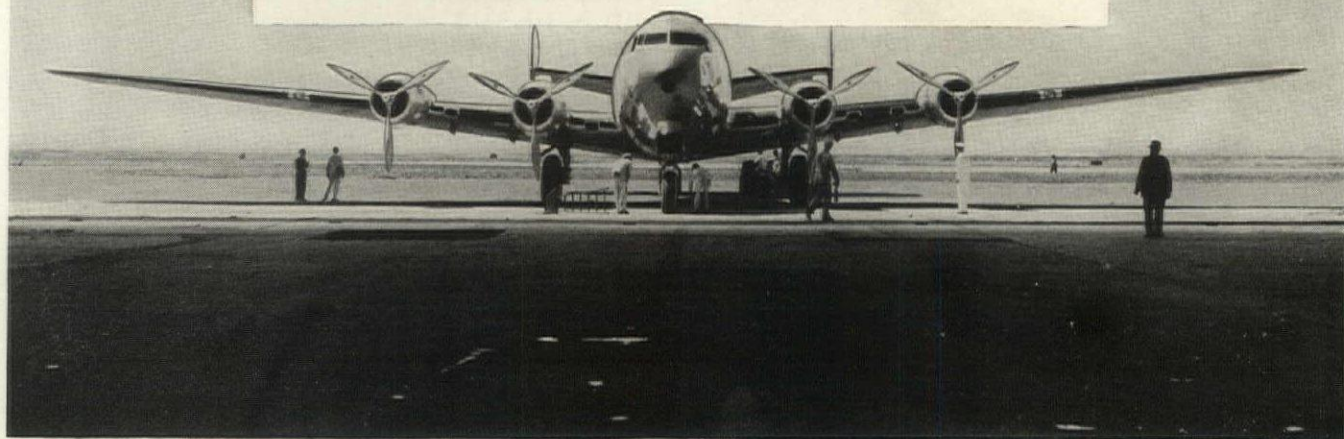
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IRAQ—At the crossroads of East and West, the International Airport Hotel offers cool relief from the blistering sun. Carrier Air conditioned all 45 guest rooms, lounge and bar.



NEWARK—Giant hangars built for the world's largest planes are comfortably, economically heated by Carrier Heat Diffusers.

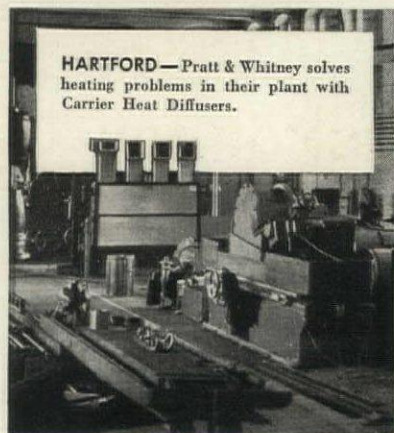
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In the precision building of intricate engines, in hangars and factories, in airport and terminal buildings throughout the world, Carrier equipment does its part through control of indoor temperature in the building of airplanes and operation of air services.

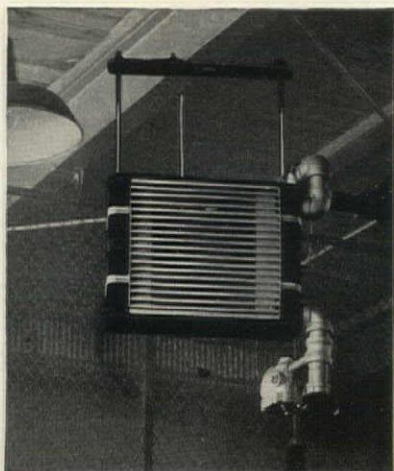
Carrier's experience is of vast importance. For in such distant installations as Pan American's far-flung Pacific stations, or at the desert airport in Iraq, Carrier Equipment must continue to operate without benefit of service men.

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HARTFORD—Pratt & Whitney solves heating problems in their plant with Carrier Heat Diffusers.



BETHPAGE, L. I., N. Y.—(Below) Carrier Unit Heaters and Heat Diffusers provide comfort and low cost operation—plus a saving on installation—for Grumman Aircraft Corp.



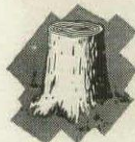
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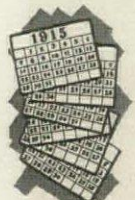
Under extreme hydraulic-heat pressure, in one operation, the core, sturdy bronze hinges, and Whale-Bone-It are molded into a solid, permanently rigid unit wholly impervious to moisture. The hinges are covered with Whale-Bone-It—leaving no exposed metal to corrode.

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FORUM OF EVENTS

(Continued from page 60)

Carnegie Corporation of New York. Educator and educational administrator, sympathetic guide and thoughtful adviser of students, understanding director of educational institutions, author of important works on the place of art in public life, and the sociological significance of art in the growth of a nation. With power and wisdom, bringing to art and to artists, to the learning as to the learned, active aid and encouragement. Wise dispenser of great fortune seeking its greatness in the service to art, and, with practiced hand, assuring by that service, in its simplicity and directness, an effective enhancement of American art."

MR. KEPPEL: "Mr. President, may I say that since I came here this evening I was greatly relieved about one point that was disturbing me. I thought it was very, very nice to get a gold medal, but I supposed that you had to hand it to Mr. Roosevelt or Mr. Morgenthau and have it buried at Camp Knox, but I see my Fellows in this company wearing theirs without shame and openly, so I see that is all right."

"For seventeen long years—they happened to be the first seventeen years of this century—I was, as some of my friends have pointed out, an officer at Columbia University, my own alma mater, first as secretary and then as dean of the college. Well, I can't recall in all that time that I ever stirred hand or foot for the advancement of the arts, and I had more responsibility than some of my colleagues because at least I had been raised in a picture shop and I ought to have known something about it."

"I am not telling you that to glory in my shame. I am telling you because I think it was fairly typical of what you might call the academic attitude at that time. If you happened to be interested in music or in pictures or whatever, that was all right, and it was very much your own business, but it wasn't regarded as your business to do anything to create opportunities for other people to get the same pleasure through an understanding of the arts."

"Well, a man with a record like that very seldom gets a second chance; very, very seldom; but it did come to me. It came to me when I was some years older and perhaps a little wiser, and it came owing to my having joined the organization which really should have received this medal tonight."

"Well, between the years 1917, when I left Columbia, and 1923 when I joined the Carnegie Corporation, something had happened in the United States, or perhaps I would rather say something had begun to happen. There were signs of a new attitude toward the arts. There were indications that art was beginning to be regarded as a part of normal human life, not as something a little apart, something out of the main current of living."

"I suppose that would have happened in any event as a part of our national growing up to maturity, but I would like to say in this presence that I think it had been greatly stimulated and hastened by one group of men in this country, and those were the architects. . . ."

"Well, at any rate, when I came in 1923 to the Carnegie Corporation, there was something in the air, there was something that, thank heaven, I caught. I began to wonder what a trust like ours might perhaps be able to do for the advancement of the arts in the United States. I confess it wasn't a very active interest. It might easily have been quenched, because in those days the American foundations were still feeling their way, they were a bit on trial—in fact, they had been tried down in Washington in 1916 by a Congressional Committee—and they were fairly chary about having anything to do with anything that appeared to be

(Continued on page 68)

● In toilet rooms, Carrara provides beautiful and practical stiles, partitions and lintels, as well as polished reflective walls. Note the accurate reflections on the Carrara stiles.



WHY EVERY PIECE OF CARRARA GLASS HAS A GROUND AND POLISHED FINISH

WHEN a structural glass is used, only one which is mechanically ground and polished can contribute the maximum beauty and effectiveness to architectural design. Only ground and polished glass has the mirror-like reflectivity, the richness, the perfect brilliance of surface which can add so much to any installation.

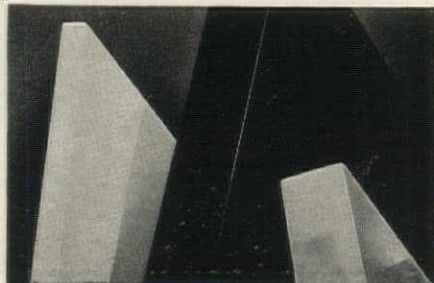
That's why every piece of Carrara . . . whatever its color, thickness or size . . . is mechanically ground and polished. When you specify Carrara, you know you are getting structural glass at its best.

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PITTSBURGH PLATE GLASS COMPANY



Who rides after

“WAKE UP! WAKE UP! The Germans are marching! . . . Wake up! Wake up! The brownshirts are coming!”

Once more America hears that ringing shout of alarm, with only two words changed after 165 years.

► Since the tenth of May, every flying bundle of newspapers that thumps against a way-station platform has been the thunderous knock of the rider sent out by the lantern signal in the Old North Church. With editorial and news dispatch, cartoon, column, and special article, the far-sighted among America's newspapers have roused the town and the countryside.

Never had citizens been more soundly asleep in their complacent

beds. “Safe behind three thousand miles of good green water” . . . smugly confident of the power and might of friendly former allies . . . blandly indifferent to the condition of our fighting forces . . . blind to sinister stirrings in neighbors to the south and even in our own midst.

That voice in the darkness, that knock at the door came not a moment too soon.

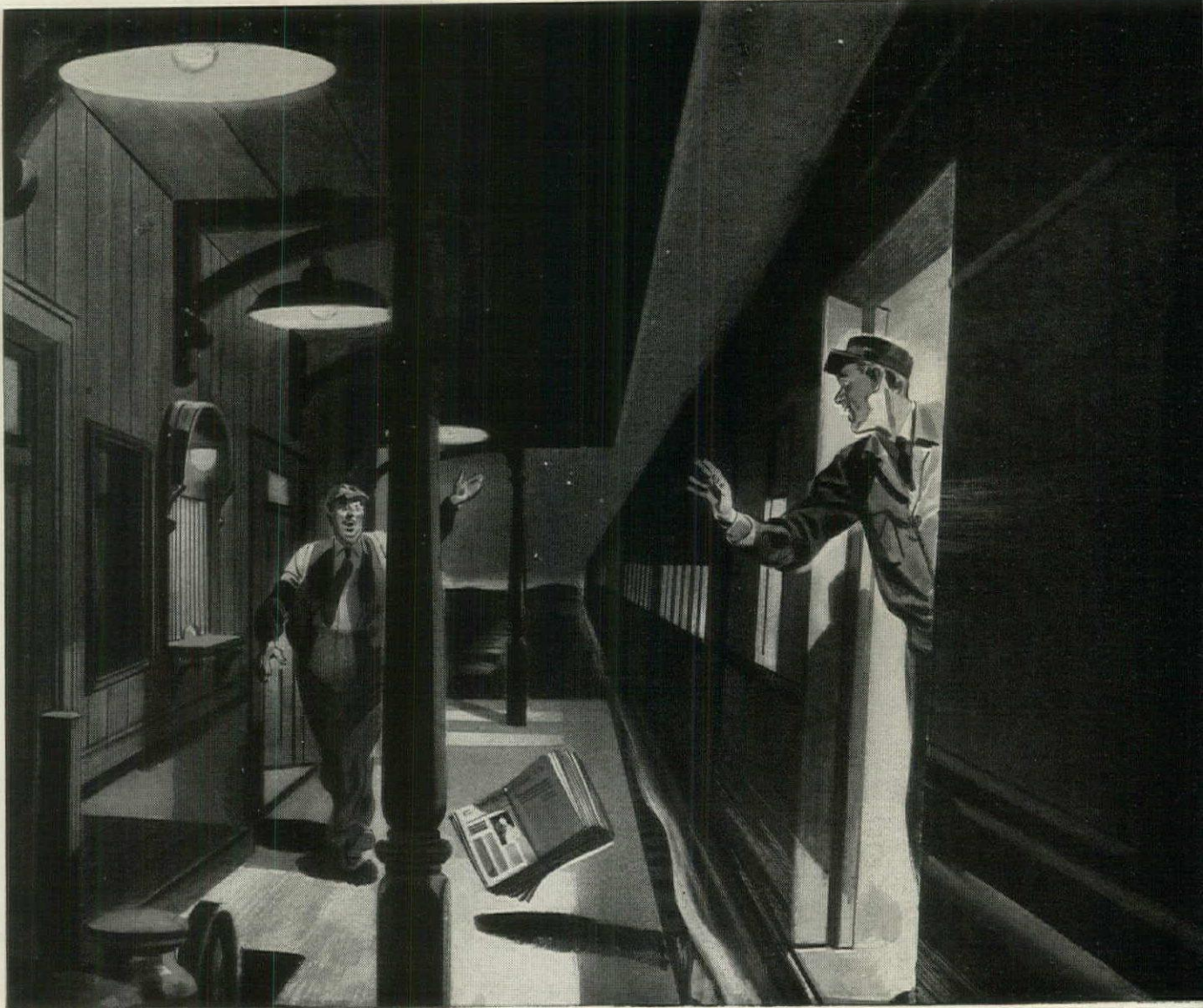
► Where and how the present-day menace to freedom will strike, no man knows, or whether it will strike by direct invasion at all. We know that attack is possible—and that is enough.

So now, as always before, Americans have sprung to action. Today's Ethan Allens are gathering together their Green Mountain Boys in train-

ing camp, machine shop, and flying field. Today's Israel Putnams have left their plows standing in the furrow, scrapped their plans for making the peaceful machines of work and play, put their factories and their brains at their country's command.

► Today, if Knudsen and Stettinius, Stimson and Knox had time for such thoughts, they would know how George Washington felt when he took command at Cambridge. The same swarm of eager civilian volunteers, no two alike in equipment and training, but all anxious, devoted, impatient. Across the desks of the defense chiefs flows a steady stream of letters, thousands of them, all of the same tenor, “I'm ready. Put me to work.”

The Paul Reveres of the American



Paul Revere?

press have done their work well. Now they are riding out again with other messages — just as important. Messages of courage . . . and patience . . . and hope.

► For we too have our fainthearts who are ready to quit when the outposts are taken. We have our near-sighted who imagine that they would rather lose their liberties than their comforts, and don't see that they stand to lose both.

We have our cynics, young and old, who suppose that all wars are futile because the results of the last one were thrown away. We have our warped and embittered — our potential Charles Lees and Benedict Arnolds.

All of us need protection from the

defeatism that seeps from such sources. We need our own uncertainties and fears cleared up. We need our spirits heartened about what we have done, can do, and are now doing.

► This protection, this enlightenment, this encouragement, the press is supplying now every day. Day after day, our newspapers are bringing us news of plans completed at Washington in weeks, whose details in normal times would have consumed years. Soon they will tell us of raw-material problems solved, of factories and mills swinging into stream-lined production, of rapid organization and training of our man power.

We have asked for miracles and we are getting them. But the press will remind us that even Aladdin's palace took a night to build.

In this planning stage, when all roads lead to Washington, the metropolitan newspapers and wire services have increased or reassigned their staffs in the Capital.

► They are covering stories so big, developments so rapid, that even the early days of the New Deal seem quiet in retrospect. Economic relations of the Americas, history-making moves of the State Department, expansion of Army and Navy on a scale never seen in this hemisphere, sensational industrial decisions affecting hundreds of centers from Hartford to Southern California . . . the situation is the greatest challenge to energy, in-

genuity, and vision that this generation of newspapermen has ever met.

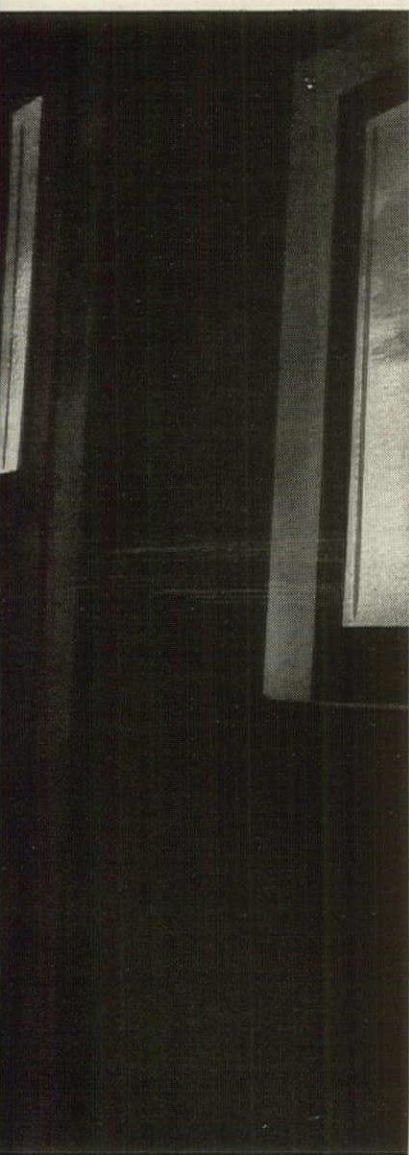
Because the question of security for our country is today's No. 1 problem, TIME, the Weekly Newsmagazine, has decided to establish a new department, to be devoted exclusively to the progress of National Defense.

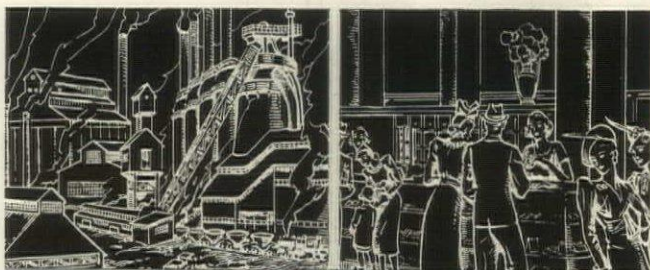
Here, in one place, the anxious citizen will find reports from every field — government, management, materials, factories, shipyards, man power, training schools, public opinion — every detail in the current picture of the nation's defense effort. TIME's much-discussed summaries, which have been so widely quoted in recent weeks, give some idea of the completeness and grasp with which this vital news will be handled.

► As the circles widen out from Washington, TIME's fact-finders and trend-observers will be ready and waiting wherever the ripples roll in. If things go wrong, bog down in personalities, get tangled in red tape, TIME will say so. If things go as well or better than can humanly be expected, TIME will say that too.

TIME, along with all loyal Americans, believes that an intelligent, informed, single-minded citizenry can and will build a strong defense — a defense so strong, so dynamic, and so efficient, that no power on earth will be able to attack or challenge the vital interests of the American people.

This is one of a series of advertisements in which the Editors of TIME hope to give readers of ARCHITECTURAL FORUM a clearer picture of the world of news-gathering, news-writing, and news-reading — and the part TIME plays in helping you to grasp, measure, and use the history of your lifetime as you live the story of your life.





PUBLIC RELATIONS *and* PUBLIC HEALTH

CASE

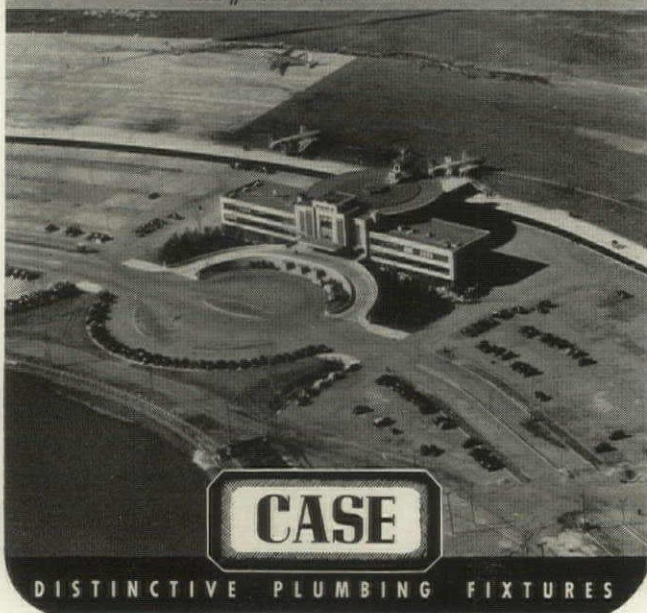
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one of today's
vital problems

One of the greatest problems facing your industrial and commercial clients today is that of public relations. It is vital to their continued welfare. And nothing is more closely

allied with good public relations than careful provision for public health. Case twice-fired vitreous china plumbing fixtures provide permanent cleanliness and sanitation, are impervious to acids and discoloration. Their mechanical excellence is a dependable safeguard of public health. See the full line of Case products on display in distributors' showrooms everywhere. Write to Dept. E-80, W. A. Case & Son Mfg. Co., Buffalo, N. Y.

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(DELANO & ALDRICH, Architects)

CASE #700 Windsor Lavatories, #1600 Syphon Jet Closets,
and #2310 China Urinal Stalls.



CASE

DISTINCTIVE PLUMBING FIXTURES

FORUM OF EVENTS

(Continued from page 64)

vague and inchoate and nebulous. They liked to stick to something that was concrete. . . .

"Well, most fortunately at that time the Chairman of our Board in the Corporation was one of the wisest of mankind. He was for a whole generation the first citizen of New York, and that was Elihu Root. Mr. Root had the imagination to see that the imponderables and the intangibles were just as important for human life as the things you could count and measure and get an estimate on, and, with his blessing and with his active cooperation, and I may say with his extraordinary powers of persuasion on the other members of the Board, we set forth on a hitherto uncharted sea in the study of the arts.

"Then an interesting thing happened. About the first advice that we received and took was to make it possible for a generation of promising youngsters to get a thorough training in the history and the appreciation of the arts. They were youngsters then, and on the average it was a dozen or more years ago, and they are still young; but those young people are now to be found in many of the key positions in the United States. The new director of the Metropolitan Museum of Art is one of our fellows, so is the director at Cincinnati, and a number of professors in our universities. . . .

"I don't know whether some generation to come will label our time as a day of great art, a day for the creation of masterpieces, or whether we will be put down as one of the mediocre periods, perhaps one of the bad ones—I haven't the slightest idea. But I think I do know this, that we are rapidly creating the setting in public interest and public understanding of the arts, the setting without which great art very seldom comes in this world.

"And now, before I sit down, I wonder whether you in this room have been asking yourselves the same question that I know I have been asking myself. Here we are today in a world that seems to have gone mad. Millions on millions of men are bent not on creation, not on preservation, but on destruction. Is there something immoral, is there something indecent, in the technical sense of the word, in snatching such pleasure as we can from order and serenity and beauty wherever we can find it? Are we like a lot of Neros playing the fiddle while not Rome but the whole world is burning? It is a cruel question, but I am beginning to wonder whether that, after all, is a kind of a throw-back to our Puritan background when anything that gave pleasure to the senses was under suspicion, and I am wondering whether we can't fairly look at the whole matter from a very different point of view, whether we can't say that beauty, beauty whether created by man or the beauty of nature, is given to us as a kind of balance in our lives so that we will be better able to withstand pain and sorrow, misfortune and confusion. If that is so, are we going to be able here in America to play our part, whatever that part may prove to be, better if we frankly and openly take advantage of these balancing factors in our lives, these opportunities to get pleasure, satisfaction, in things of beauty?"

PERSONAL

C. C. Briggs, architect, announces the removal of his office to 607 Fifth Ave., New York.

Milo S. Holdstein, architect, announces the removal of his office to 721 Hickox Building, East 9th & Euclid Aves., Cleveland, Ohio.

Morris Ketchum, Jr., architect, announces the removal of his office to 607 Fifth Ave., New York.

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5 Refinements*

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Complete Satisfaction
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In the interests of your clients, you are alert to any worth while mechanical improvement. You want to be informed on new equipment features that contribute to satisfaction with the completed job. In the field of Overhead Type Garage Doors, Ro-Way has perfected 5 improvements available without extra cost. These are described and illustrated with detail drawings in the helpful 72-page book described below. We would like to mail a copy for your A.I.A. File. Your request on the attached coupon or on your letterhead will bring it promptly. Briefly, these 5 features are:

● **"Crow's Foot" Outer Bearing Support**
Rigidly holds the chain sheave wheel in permanent alignment. No twist . . . no sag to cause friction.

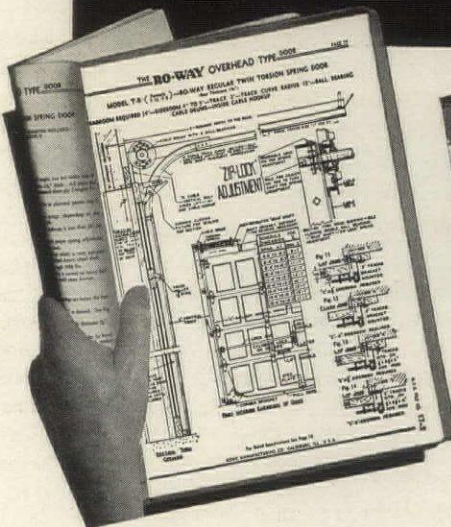
● **"Ro-To Live" Spring**
A powerful *Floating* Torsion Spring (used on some models), gives perfect balanced lifting power, and ends side-drift and binding.

● **"Zip-Lock" Adjustment**
Used on Ro-Way Doors having Twin Torsion Spring Power. Permits instant easy adjustment of spring tension.

● **"Tailor Made" Spring**
Each spring is individually made for the Ro-Way Door on which it is used. Each is power-metered to the weight of the door.

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Ro-Way Hardware and Tracks are given this well known protection against rust and corrosion.

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(Above) Socony-Vacuum Corporation Service Station, Indianapolis, Ind.



(Above) Attached Residence Garage with Ro-Way Door.



(At left) Ro-Way Garage Doors especially designed for use in Modernistic Service Station.

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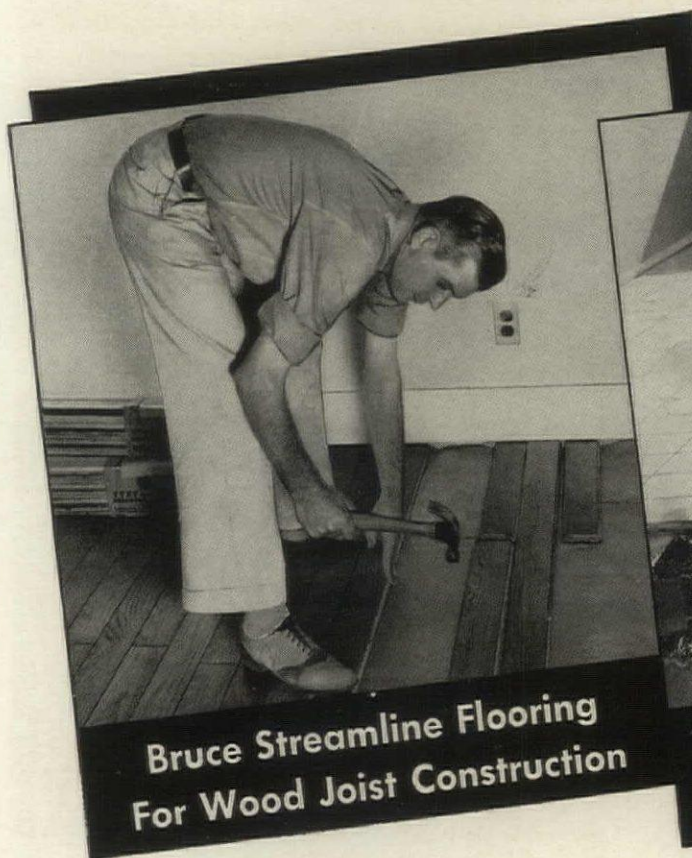
SPECIFICATION AND BUYING INDEX

The advertising pages of THE ARCHITECTURAL FORUM have become the recognized market place 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 or 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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More and more, Bruce factory-finished floorings, both Streamline and Block type, are being used in buildings everywhere. And no wonder! For here are floorings whose finish is in the pores of the wood itself . . . not just on the surface. Won't scratch, chip or peel like ordinary finishes. What's more, when a Bruce factory-finished floor is laid . . . it's finished. This saves time and money because there's no costly, messy sanding, finishing or polishing to do.

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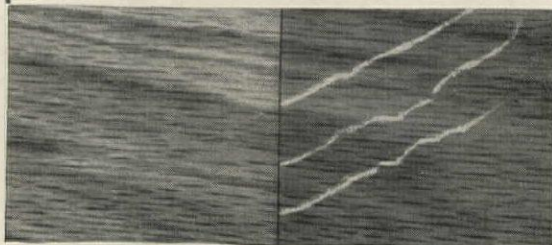
than other floors of comparable quality.

Bruce Streamline Flooring gives a distinctive yet low-cost floor that is installed exactly like an ordinary strip floor. Its wider $3\frac{1}{4}$ inch face and gracefully beveled edges create a costly plank floor effect. Available in Oak, Maple, Beech.

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The Ford Playhouse

AT THE NEW YORK WORLD'S FAIR

A SYMPHONY IN GOLD, WALTER DORWIN TEAGUE, DESIGNER



Dutch Leaf Flexglass columns, Ford Playhouse, N. Y. World's Fair. View of entrance, with Flexglass pylons, at lower left.



The color scheme of the Ford Playhouse is as delightful and as unique as the multi-purpose theatre itself. First to catch the eye are two giant entrance pylons, and fourteen circular columns treated with Dutch Leaf Flexglass. U.S.G. acoustical blocks on the ceiling are gilded to blend with the golden tone of the glass columns. Gold-tufted satin walls above a wainscot of Pale Mahogany Flexwood, and Bigelow-Sanford carpeting in Ford Salon Red, complete a striking and luxurious ensemble. Adjoining the sitting area is a new kind of car Salon, with cars painted a pinkish beige to harmonize with the scheme. Other important Flexglass installations at The World's Fair are in The World of Fashion, The Chrysler Building, The Terrace Club and The Coty Building. Flexglass is real glass in 30 different colors and patterns in four types . . . opaque, flat mirror, rolled pattern mirror and metallics. Easily cemented to any hard, smooth surface . . . indoors or outdoors . . . Flexglass is exciting and exotic. Design and decorative possibilities are unlimited. Please write for sample and information.

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Manufacturers of Flexwood

U.S. Patents — Re. 21313 and 21285 DESAGNAT Other patents pending. See our Catalog in SWEET'S.

Flexglass is manufactured and marketed jointly by The Mengel Co., Louisville, Ky., and the United States Plywood Corp., New York



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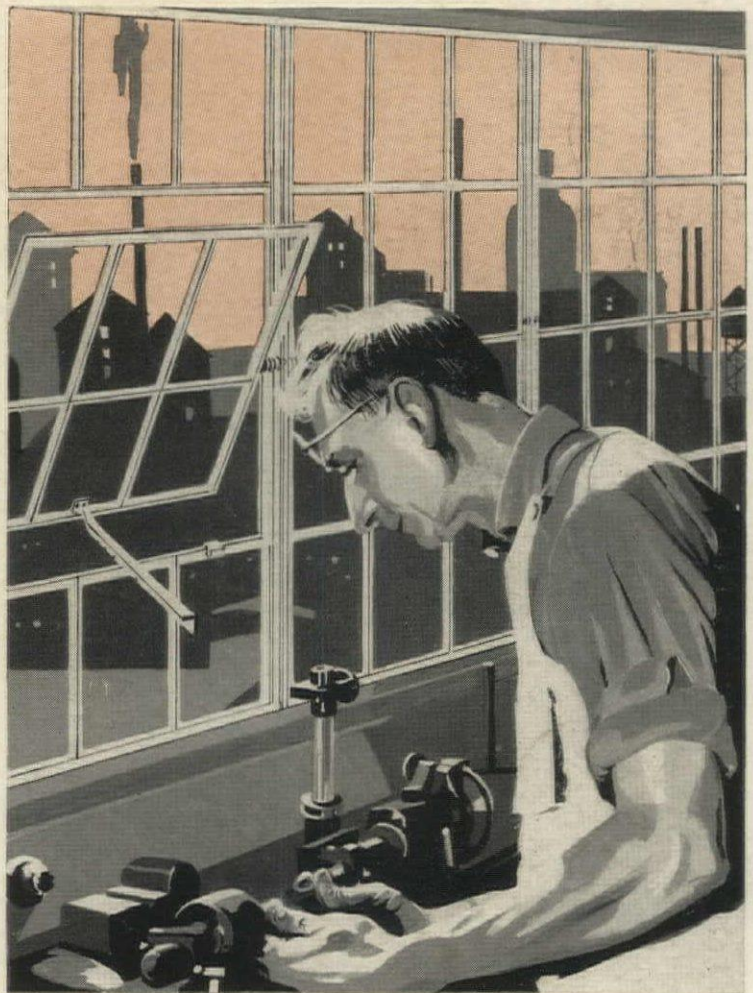
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Steel company

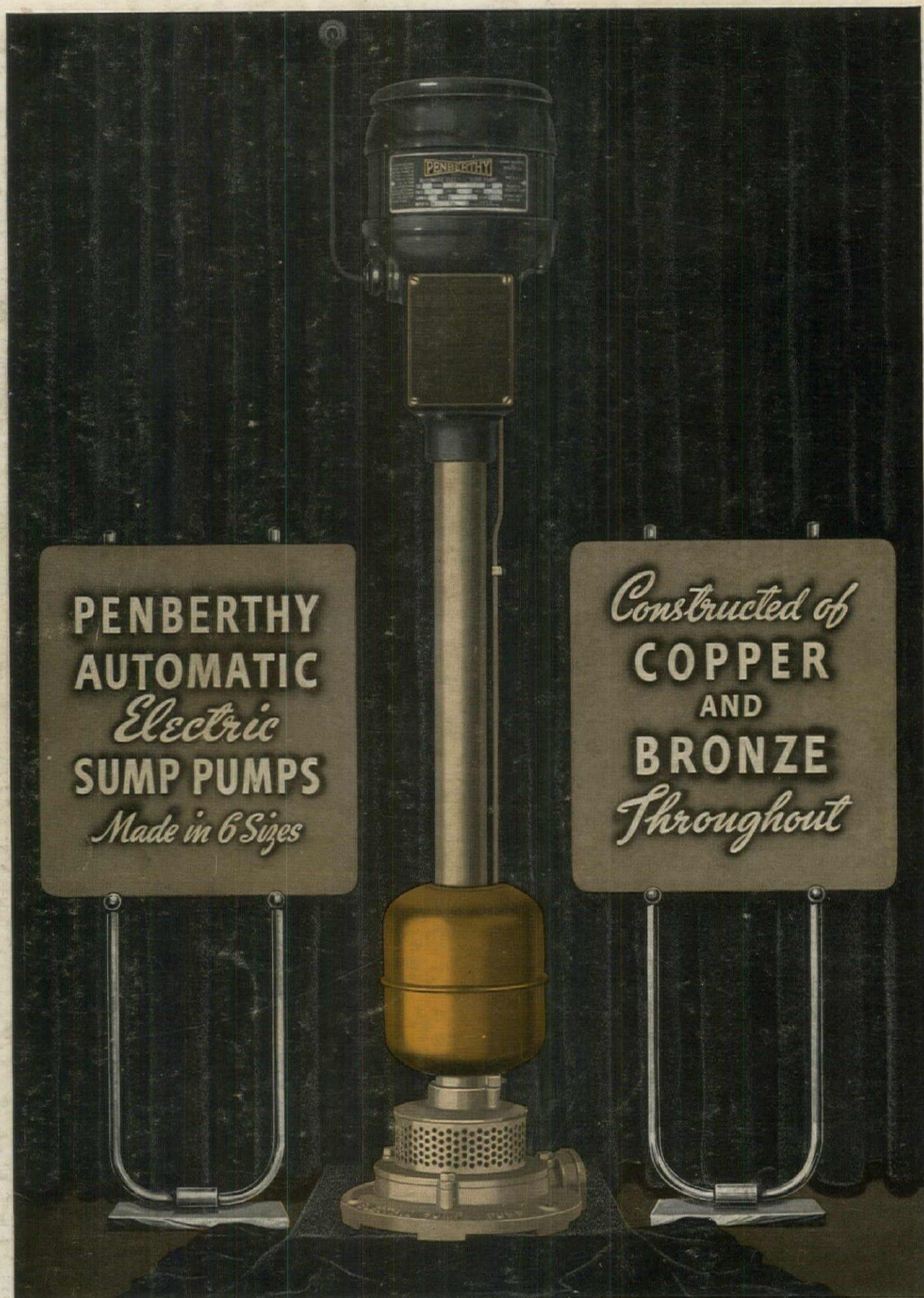
61 SALES ENGINEERING OFFICES • 29 WAREHOUSES
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