

# AMERICAN ARCHITECT

A N D A R C H I T E C T U R E

*Ray Munn*



CONTEMPORARY  
ARCHITECTURE  
IN ITALY

SEPTEMBER

937

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*a Responsibility*

## **AND AN ACCOUNTING**

IN 1927, after exhaustive experiments which required 10 years to complete, The American Brass Company recommended Anaconda Red-Brass Pipe containing 85% copper as the highest quality corrosion-resistant pipe obtainable at a reasonable price.

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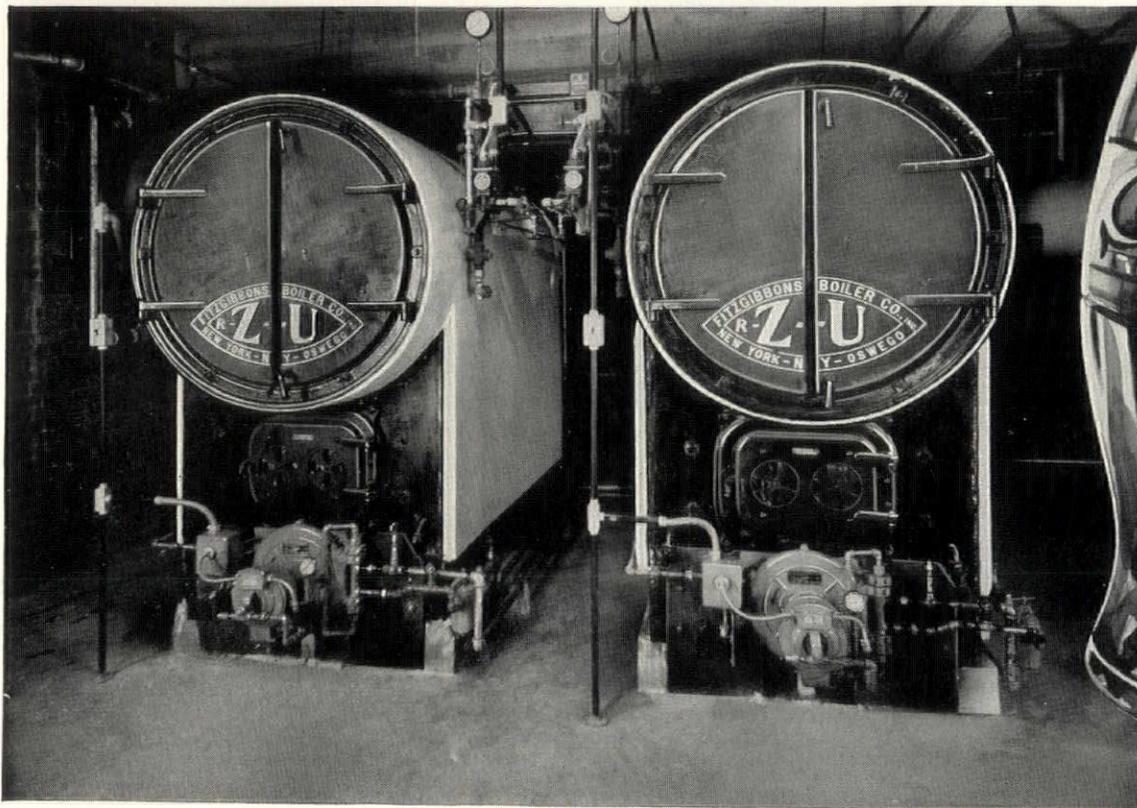
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# FITZGIBBONS STEEL BOILERS

*help to provide*  
*"The pause that refreshes"*



**T**HIS attractive steam boiler set-up is a recent installation in the Washington, D.C., plant of the Coca-Cola Company, manufacturers of the famous refreshing beverage.

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Find out why Fitzgibbons Boilers are so often the choice of architects, heating contractors, building management companies. Write for details on this and other Fitzgibbons large boilers.

*Fitzgibbons R-Z-U Boilers in the Washington, D.C., Coca-Cola Plant*

*Heating Contractor,  
W. S. MOFFETT, Staunton, Va.*

Fitzgibbons R-Z-U Steel Boilers are built in types for all fuels, in capacities from 1800 to 35,000 square feet, S.H.B.I. steam rating. Their exceptionally efficient design results from over a half century of successful steel boiler building.

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INFORMATION



## **Fitzgibbons Boiler Company, Inc.**

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AMERICAN ARCHITECT AND ARCHITECTURE, SEPTEMBER 1937

# WROUGHT IRON

specified for services where  
"CORROSION STUDY"  
proves it best



Example by...**JOSEPH & JOSEPH**...Louisville Architects

● This large industrial building project is a good example of the way leading architects and engineers use ferrous metals—Byers Wrought Iron pipe for corrosive services and Byers Steel pipe for the other services.

The pipe selection in this instance was based on a corrosion study. Wrought iron was used for those services where it has proved itself longer lived and more economical. Seagram's experience with wrought iron dates back to the founding of the house—1857. Wrought iron was the only pipe in common use then. Now, other pipe materials are available, but none has proved longer lived and more economical in many services than wrought iron.

Consequently, when Joseph & Joseph, Louisville architects, designed this new distillery at Louisville for the House of Seagram, Byers Genuine Wrought Iron pipe was used in the distillery for treated water, hot water fill and overflow lines, mash tub jacket supply and return lines, and hot water return from distillery to power house . . . in the power house for raw water lines, settled water lines to filters, filter lines to boiler feed pump, boiler feed pump suction lines, wash water pump discharge and connections, hot water tank and discharge

lines to softeners, heating return, tunnel to tank, and water lines from power house to dryer house.

Let us help you with a corrosion study on your next project. We will submit a "prescription," based on laboratory studies and service records that is subject to verification with your own experience. Write our nearest division office or our Engineering Service Department direct. A. M. Byers Company. Established 1864. Pittsburgh, Boston, New

York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

*Specify Byers Genuine Wrought Iron Pipe for corrosive services and Byers Steel Pipe for your other requirements*

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**GENUINE**  
**WROUGHT IRON**  
Tubular and Flat Rolled Products

# AMERICAN ARCHITECT AND ARCHITECTURE

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**COVER.** The Temple of Venus Genetrix, Forum of Caesar, Rome.  
By courtesy of the E. N. I. T.

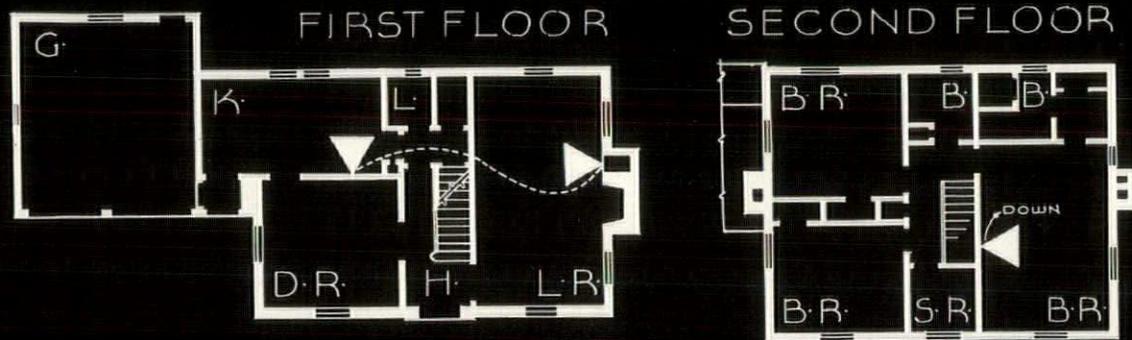
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## NEXT MONTH

Washington architects edit a section of the October number—architects who left their private practices to work for the Government—and they've shown us a new way to make a professional journal. We like it. For Architectural Overtones, Samuel Chamberlain has photographed eight New England meeting-houses. Entrance Door Steps is the subject of the

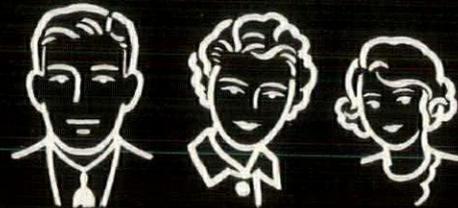
Portfolio, and the Favorite Features pages show Simple Mantels in photographs and scale drawings. The Time-Saver Standards are given over to Brickwork. A model factory, office interiors, a restaurant, a country house, and a two-family house in Florida, are other features. Unless we are poor judges, this issue is likely to achieve the status of a collector's item.

## With this center-hall plan



LEGEND  
◀ TELEPHONE OUTLET  
----- CONDUIT

### for a family of three



ALBERT M. KREIDER, Architect

## What should the telephone arrangements be?

• THE GOOD CIRCULATION of this conventional center-hall plan suggests "telephone circulation" that will be equally simple and step saving.

Built-in conduit or pipe in the walls will insure it, even if the owner's telephone requirements change in the future. Furthermore, conduit avoids exposed wiring and protects against certain types of service interruptions. For the present, three outlets will afford the convenience and the privacy that this family will demand.

Convenience dictates a telephone outlet in the living room—the hearthside closet offers an excellent location. A second outlet in the master bedroom will save steps, afford

welcome protection at night—provide privacy for the teen-age daughter when her parents' guests are being entertained in the living room.

A hang-up telephone in the kitchen will keep private conversations out of the living room circle—and allow the woman of the family to make and answer calls and watch her cooking at the same time.

• • •

*This is a suggested approach to a typical problem. Our engineers will help you develop efficient, economical telephone arrangements for your particular plans. No charge. Call your local telephone office and ask for "Architects' and Builders' Service."*



# PRACTICAL FEATURES NO WINDOW EVER OFFERED BEFORE



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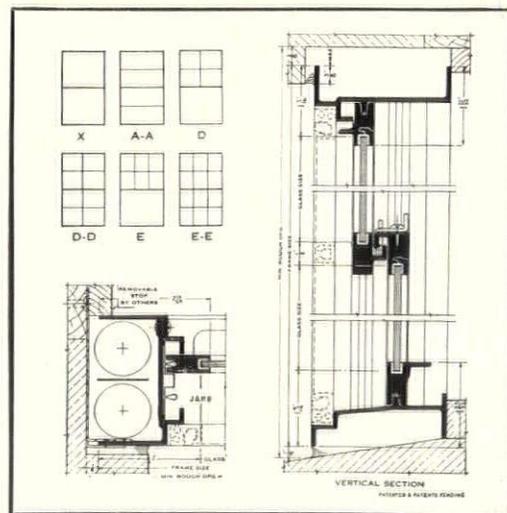
**K**AWNEER LIGHT SEALAIR WINDOWS, IN SOLID ALUMINUM OR BRONZE, offer a unique group of features, never before combined in any other window—few of them ever attained by previous types. As a result, these windows are focusing new attention on the importance of having beautiful, efficient, and economical windows in the home.

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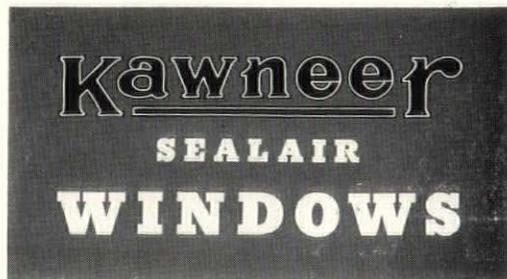
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- COMPLETE FACTORY-ASSEMBLED DOUBLE-HUNG WINDOWS, IN STANDARD SIZES FOR QUICK INSTALLATION
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- DURABLE—STURDILY FABRICATED—SIMPLE CONSTRUCTION WITH COMPACT WEIGHTS AND PULLEYS
- PRICED FOR USE IN THE AVERAGE BETTER HOMES OF TODAY.



FOR THE UP-TO-DATE HOME!!



**BUILDING AND CONSTRUCTION**

**JULY MARKED THE SECOND CONSECUTIVE MONTH** during which building permit values failed to equal the corresponding total of 1936, according to those dependable calculators and slide-rule manipulators, Dun & Bradstreet. The aggregate value of July building permits in 215 cities, says D. & B., amounted to \$91,282,414 . . . about \$4,000,000, or 4.2%, below July, 1936. True, New York City can be held chiefly responsible for these depressing statistics, since if it is excluded from the total we arrive at an increase of .4% for the country as a whole.

**NEW YORK CITY'S NEW BUILDING CODE**, which now has Mayor F. H. LaGuardia's signature nestling on the bottom of the last page, authorizes use of fusion welding in steel building construction—as we reported last month. This provision of the code, which will undoubtedly reduce the number of New Yorkers annually shell-shocked by the earsplitting rat-a-tat of riveting, elicits assurances from W. J. Donald, managing director of the National Electrical Manufacturers Association, that the attitude of organized labor experienced in fusion welding is favorable. Quoth he recently:

"The number of local man-hours in the field per ton of steel erected is greater than it is with riveting, with no increase in the total cost of the building. A relatively short period of training is required to produce competent welding operators, and the best operator is usually a man with previous structural steel erecting experience who has been trained to do

welding. Some unions have undertaken to train welders with the help of fusion welding machine manufacturers."

**ON THE SAME SUBJECT, GILBERT D. FISH**, consulting structural engineer and chairman of the Committee on Building Codes, American Welding Society of New York, states that welded buildings withstand earthquakes and gales better than riveted frame buildings. Mr. Fish points out that New York's approval of welded structures may be viewed as practically the last word in the argument concerning welded versus riveted buildings, and implies that the day is not far distant when this more modern technique will be used the country over. Calling attention to the economical feature, he says there is a considerable saving in the amount of steel required when welding is employed, because the design of the steel members can be simplified and details otherwise needed can be omitted. The saving runs from 4% to 10% of the total steel structure, and may run as high as 25% for certain forms of trusses and plate girders.

**AN EXPLOSIVE BUILDING BOOM** will be the eventual result of higher costs, says Roy Wenzlick, President of Real Estate Analysts, Inc., in an article in *Freehold Magazine*. Mr. Wenzlick's rather unusual reasoning is that advanced construction costs, in retarding building, force the rents and values of existing properties higher. In the end, a point is reached where new building can be done at a profit—whereupon the lid is off and mad activity ensues. But Mr. Wenzlick

doesn't say anything about that awful hangover when the boom pops, and everybody's left sitting around moaning and holding their heads.

**"DON'T INCLUDE US** in those ugly charges of raising prices and sabotaging recovery, says the Plumbing and Heating Industries Bureau. And just to prove that this particular division of the construction industry is innocent, the Bureau cites some statistics compiled by the U. S. Department of Labor which show present prices of building materials compared with those of 1926—regarded as a fairly normal year. If 1926 prices are ascribed a value of 100, June, 1937, prices would be: Plumbing and Heating—78.7, Lumber—102.2, Brick and Tile—95.0, Cement—95.5, Structural Steel—114.9, Paint and Paint Materials—83.6, and other building materials—101.1.

**HOUSING**

**THAT WEIGHTY REPORT ON "TECHNOLOGICAL TRENDS AND NATIONAL POLICY,"** submitted to the President a short while ago by his National Resources Committee, and to which we've just managed to get around, takes architecture to task for its record of conservatism. Bankers get a couple of sharp raps across the knuckles, too, and it would seem that the country is chock full of monkey-wrench tossers, for scarcely anyone goes un-reprimanded. You'll see what we mean from the following excerpts:

"Architecture always has been conservative. . . . Churches and public buildings still cling to the ancient and medieval forms.

. . . "There was a long delay in using iron in building, and when it was used it was either hidden, or, when unavoidably shown, employed with no idea of its esthetic possibilities. When Buffington took out patents for the steel frame skyscraper in 1888, the *Architectural News* predicted that the expansion and contraction of iron would crack all the plaster, eventually leaving only the shell.

"The pressure of vested interests has been a decisive factor in retarding change in housing materials. The lumber companies long fought legislation prohibiting the building of inflammable wooden buildings in large cities. Wooden shingle companies lobbied against laws for fire-proof roofing. Brick manufacturers carried on a persistent campaign for years against concrete structures, predicting their collapse.

. . . "Organized skilled workers in the building trades have slowed down the introduction of processes that threaten to endanger their health, destroy their skill, lower their wages and bring about their

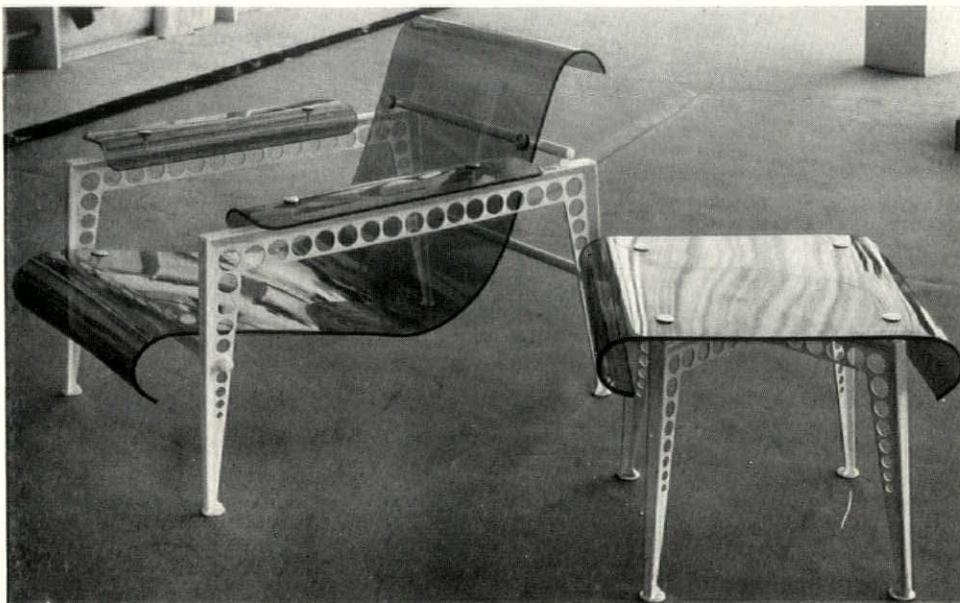


PHOTO: BONNEY

One of the new things you'll see at the Paris Exposition—furniture in a green plastic (rhodoid) and white painted steel. J. Andre, designer

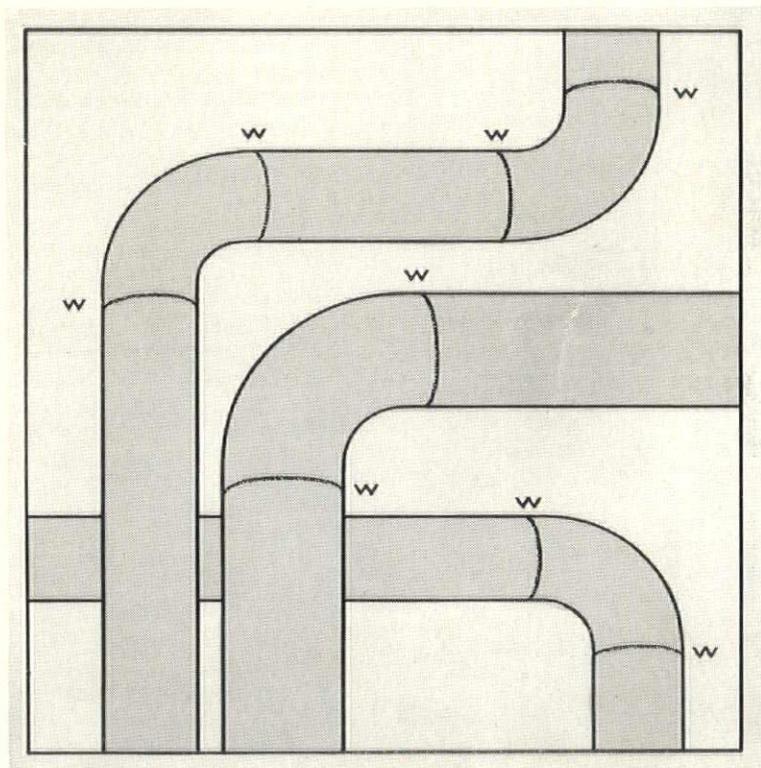
# Specify Welding

## for flexibility of piping design

**W**ELDING permits the free exercise of creative planning in designing industrial piping systems. By the use of oxy-acetylene welding, the ideas behind the specifications are embodied in the piping completely—economically—permanently. Furthermore, the welds, when properly made, are as strong, ductile, tight, corrosion-resistant and leakproof as the pipe itself. All joint maintenance—with its resulting delays and expense—is eliminated.

Linde engineers have assisted many architects in the design and installation of thousands of building and power piping systems. This practical experience is available for your use through the Linde office near you. Write for full information and ask how you may obtain a copy of the useful 200-page book, "Design of Welded Piping." The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.

Visit the Linde Exhibit  
Booth H 52  
Atlantic City, N. J.  
National Metal Show  
October 18-22, 1937



The welds, "W", are smooth inside, and practically flush with the pipe wall outside. Consider the simplicity of this group of welded connections in comparison with the joints made by any other method.

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# MAPLE FLOORING

## SHOWS ITS THRILLING BEAUTY

*in Kansas City's Modern Auditorium*



*This mammoth structure, 426 x 332 ft., houses an exhibit area of 150,000 sq. ft., an arena to seat 14,000 persons, a general function room, many committee rooms, a theatre, little theatre and administrative offices, etc. A capacity crowd of 45,000 can be removed in 8 minutes.*

*A general view of the Function Room and (below) a "close-up" of the Northern Hard Maple floor*



**I**MPORTANT to architects among many features of the Kansas City Auditorium, is the Function Room floor above. Here Northern Hard Maple—the *service* flooring—becomes a floor of brilliant beauty. 8" strips were ebonized and laid with 5" strips of natural white color, to form the striking pattern illustrated.

Let Mr. Homer F. Neville, of Architects Alonzo H. Gentry, Voskamp & Neville, explain:

"Northern Hard Maple was selected for this floor, since it seemed to be the material most suited for the hard wear which the flooring will receive, the most adaptable for execution of the design, and more harmonious in texture and finish with the high pitch to

which the decoration of the balance of the room was carried."

"It has been our experience," continues Mr. Neville, "that for hard wear and durability, consistent with ease of maintenance and generally pleasing appearance, *there is no material equal to Northern Hard Maple.*"

Here is a point for every architect: With the attractive color finishes available, Hard Maple may be matched to any decorative scheme. Thus it is now simple to combine refreshing beauty with durability and ease of maintenance that ensure your client's satisfaction. Simply specify **MFMA\*** Northern Hard Maple.

Write for interesting information concerning the color finishes available.

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*See our Catalog Data in Sweet's, Sec. 17 66*

**NORTHERN HARD MAPLE IS THE LONGEST-WEARING COMFORTABLE FLOOR**

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The Rotopower Unit is available on all types of Delco Oil Heating products. It makes the modern new Delco Conditionair still more economical. Now this great winter air conditioner that automatically heats, humidifies, circulates, and filters the air, costs less to own than

Rotopower Unit available in Delco Oil Burner Models DR, DRI—Delco Automatic Furnace Model DH3  
Delco Conditionair Models DA0, DA1

*It Pays to Talk to*

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**AUTOMATIC HEATING, COOLING AND CONDITIONING OF AIR**



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ever before. Furthermore, by correctly installing proper sized ducts at time of installation, summer air conditioning can be added *at lower cost than with any other method.*

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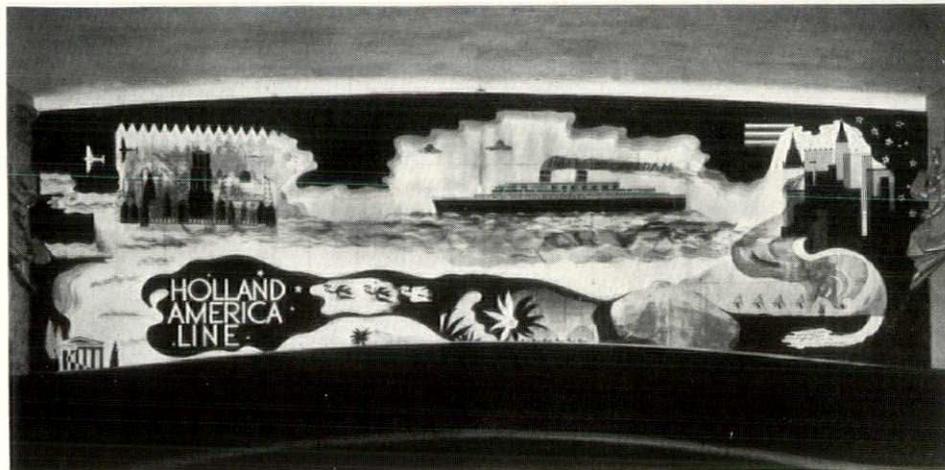
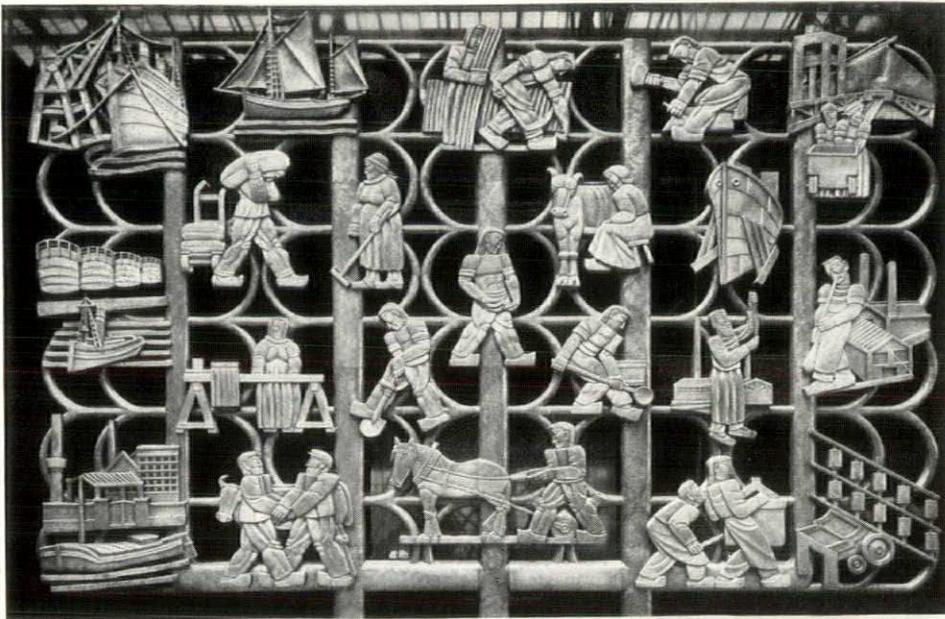
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City and State \_\_\_\_\_



PHOTOS: BONNEY

technological unemployment. Between 1911 and 1921, prohibitions against cutting, measuring and threading by machine of iron pipe of specific diameter were incorporated in agreements between plumbers' unions and builders' associations, and there were restrictions in regard to the use of substitutes for ferrules and brass soldering devices.

"When, recently, the mechanized industries, particularly in metal, entered the housing field with the production of pre-fabricated houses, they were met by the resistance of property holders, especially the banks, which held mortgages on about fifty-eight per cent of 1933 value of all urban real estate, and which feared that an influx of cheap modern buildings would subtract substantially from the market value of existing structures. These banks and loan companies have been unwilling to finance prefabricated houses except in rare exceptions, and then on a limited basis.

"Lumber companies and manufacturers of other materials which are being displaced in the production of pre-fabricated houses have sought to prevent their construction through building code restrictions and by organizing boycotts by dealers and building crafts.

"The director of the New England Division of the American Institute of Architects, in May 1934, attacked pre-fabricated houses as tending to 'substitute a life of vagrancy for responsible citizenship in the community.'"

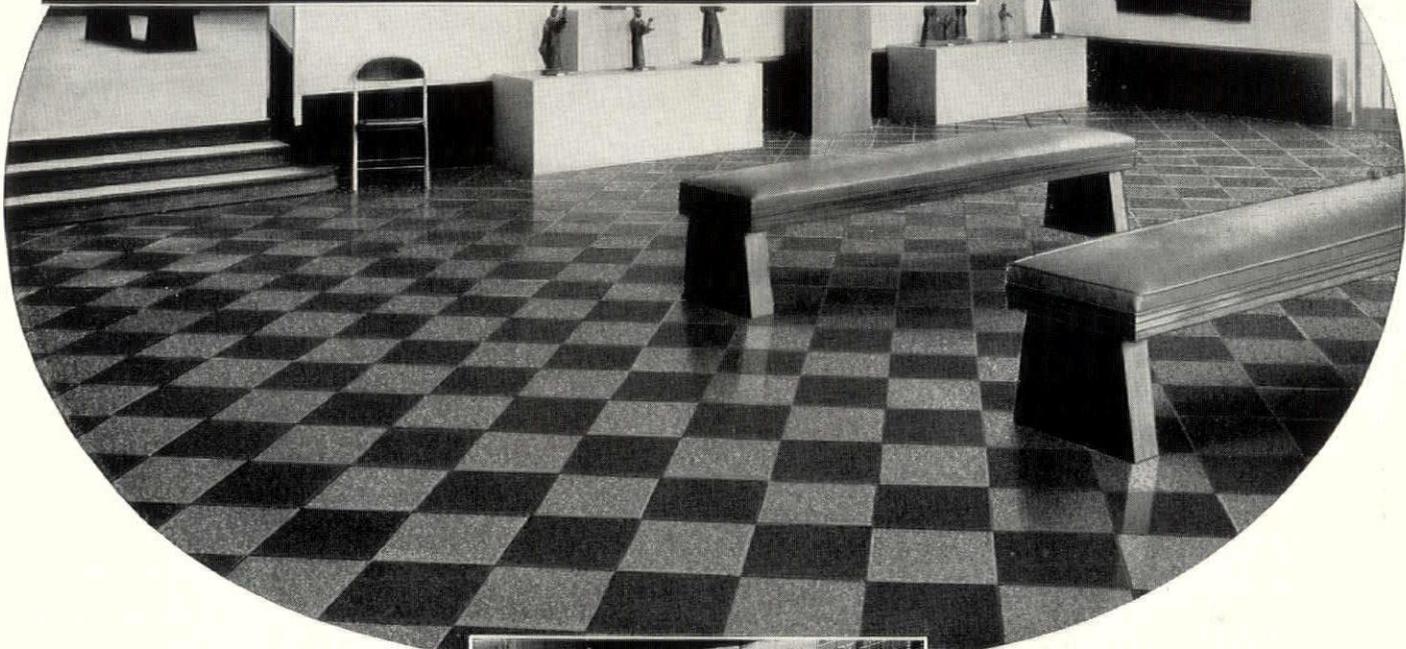
Well, everybody needs a little talking to now and then, but we do hope the National Resources Committee isn't really holding a grudge against present-day architects because of that phoney prediction back in 1888. That is visiting the sins of the fathers. . . .

**THE FHA HAS AN EIGHT-POINT PROGRAM . . .** relating to the economic building of small houses anywhere. In "Principles of Planning Small Houses," an FHA pamphlet, Thomas G. Grace, State Director, lists eight things to be considered when economy is the keynote of home building.

a. Make the house of rectangular shape, avoiding breaks in walls and roof, to eliminate inside and outside corners in the outside wall, valleys or ridges in the

To be seen at the Paris Exposition: Hand-worked copper grille by Oscar Jespers, sculptor, in the Belgian pavilion; glass mural, lighted from behind, in the Dutch Building; montage by Le Corbusier to tell the communications story—also in the Dutch Building

# When and where to use CORK TILE FLOORS



**Armstrong's CORK TILE provides quiet, comfortable floors of rich beauty**

**B**ECAUSE cork tile is a specialized type of flooring, it should be selected for areas where quietness and underfoot comfort are the most important qualities.

For instance, in museums, reading rooms, churches, high-class offices, and behind counters in stores, cork tile offers a combination of advantages found in no other flooring. Not exposed to heavy or gritty traffic in these areas, it will last for years.

Cork tile is also used where dignified decoration is desired, as in board rooms, smart shops, and restaurants. The three rich shades of brown combine harmoniously with fine furniture and woodwork.

Cork tile is quiet and restful because it provides an "air-cushion" floor. Each cork cell encloses a dead-air space that makes the tile resilient and quiet under impact.

Armstrong's Cork Tile is made of the best quality cork, compressed into firm



*In the brokerage office of Abbott-Proctor and Paine Co., Buffalo, floor is Armstrong's Beveled Cork Tile.*



*Peck & Peck shop in Cleveland, with floor of Armstrong's Beveled Cork Tile in two shades.*

*ABOVE: This dignified floor of Armstrong's Cork Tile in the Indian Museum of Colorado Springs Fine Arts Center harmonizes with other interior appointments. It reduces noise and provides greater comfort.*

but resilient tiles. Two types are available: beveled edge and squared edge. Beveled tiles are often preferred for decorative effect. Beveling also conceals unevenness in subfloors and makes sanding unnecessary. Because they require no sanding, beveled tiles can be supplied factory-finished with sealer, undercoat, and wax. Beveled tile also is winning favor as a wainscoting material.

In addition to cork tile, Armstrong manufactures the *only* complete line of resilient floors—rubber tile, Accotile, Linotile, and linoleum. Therefore, our Architectural Service Bureau can offer unbiased suggestions as to the best type for any area. See the Armstrong catalog in Sweet's 17/54, or write now for a color-illustrated, file-sized copy of "Cork Tile Floors." Armstrong Cork Products Co., Building Materials Div., 1201 State St., Lancaster, Pa.



## ARMSTRONG'S *Linoleum* and RESILIENT TILE FLOORS

LINOTILE • ACCOTILE • CORK TILE • RUBBER TILE • LINOWALL • ACOUSTICAL CEILINGS



# Take a twenty-year

## One building owner looked ahead!

When one prominent building was put up a few years ago, allowances for riser capacities were thought too liberal. Yet year after year, they have permitted increases in lighting *and the addition of 650 tons of air-conditioning equipment* without difficulty! No costly wrecking or rewiring was necessary. Authorities say that not one building in one hundred, large or small, has had the benefit of such unusual foresight. Yet the extra cost of "20-year adequacy" is small.

ANACONDA MANUFACTURES A COMPLETE LINE OF WIRE AND CABLE FOR EVERY INDUSTRIAL

# look ahead...

# Electrically!

**Underwiring costs building owners millions. Protect your client. Plan electric circuits in your new project for "20-year adequacy"**

ONE of the great 'crimes' in modern commercial building...an authority calls *underwiring*. It is a safe estimate, he says, that 95% of present-day buildings are obsolete from the standpoint of electrical circuits.

How could it be otherwise, with new motor-driven devices, air-conditioning, radio . . . other *electrical* ways of doing things better?

### A plan for the future

Because of the rapid march of electrical progress, it is important today as never before to fight for adequacy in elec-

trical wiring. The practice of "skinning the layout" to get prices down is going to be even more costly tomorrow than it has been in the past.

As an aid to you in obtaining the ideal wiring specifications, Anaconda Wire & Cable Company offers the services of its Engineering Department to assist your engineers, consultants or electrical contractors in the solution of technical wire problems. With this experienced aid, your new project can be planned for "20-year adequacy" so far as any of us can foresee the future.



**Consult the Anaconda Sheets of Time Saver Standards which will be mailed this month**

### A FEW RECOMMENDATIONS RELATING TO MODERN CABLES THAT ANACONDA HAS DEVELOPED

#### COMMERCIAL

*For general wiring purposes—*  
ANACONDA DURACODE

This cable is built for long life under the exacting conditions in commercial buildings. An extremely stable compound, highly heat resisting, highly resistant to moisture and with low susceptibility to combustion and explosion. Utilities are using millions of feet of a similar ANACONDA product for network cable and vertical risers.

#### RESIDENTIAL

Two important recommendations that enable you to specify adequacy with economy, permanence and safety.

*Service Entrance*—ANACONDA Service Entrance cables are available in all types.

*Interior Wiring*—Throughout the building, specify ANACONDA Durax Non-Metallic Sheathed Cable.

Write for the ANACONDA Handbook of Wires and Cables for All Occupancies and Types of Conditions.

37588

# Anaconda Wire & Cable Company

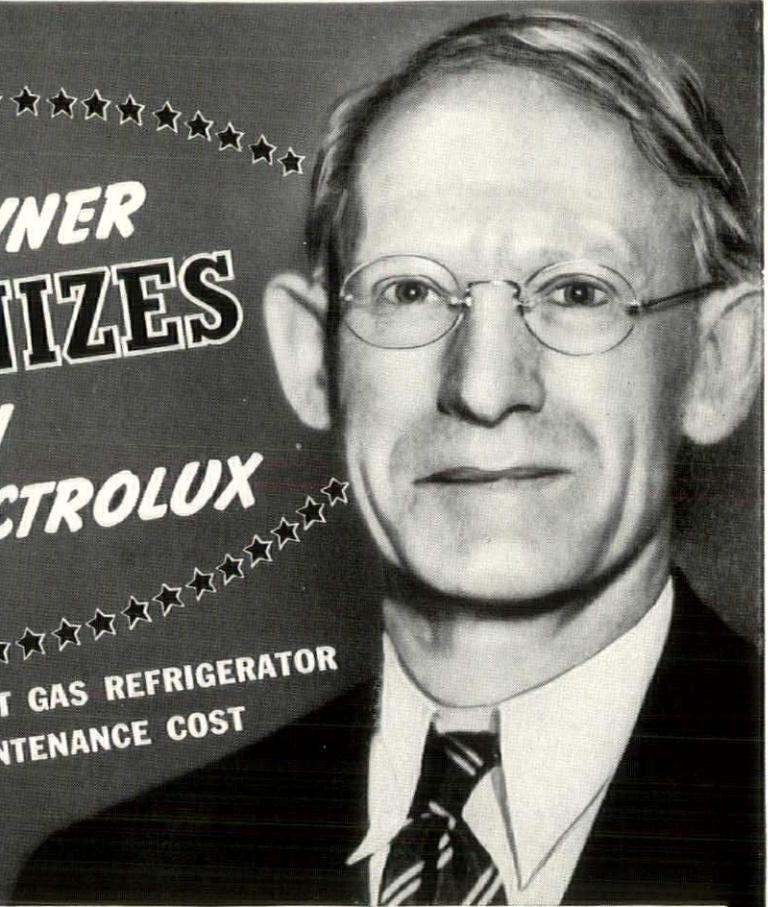
GENERAL OFFICES: 25 BROADWAY, NEW YORK CITY

Chicago Office: 20 North Wacker Drive • Sales Offices in Principal Cities

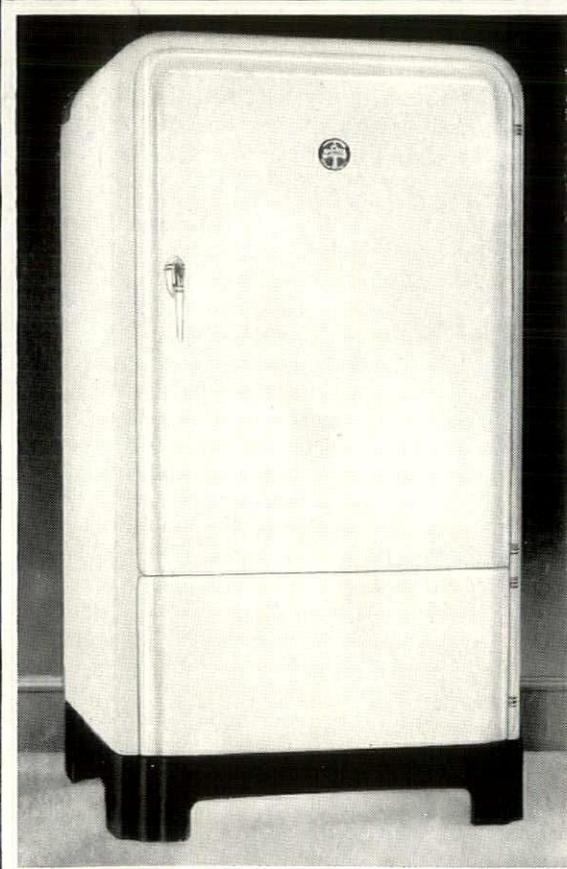
COMMERCIAL AND RESIDENTIAL PURPOSE. OUR ENGINEERING DEPARTMENT IS AT YOUR SERVICE

**OMAHA OWNER  
MODERNIZES  
WITH  
SERVEL ELECTROLUX**

**FINDS, IN 5 YEARS' SERVICE, THAT GAS REFRIGERATOR  
GIVES CONTINUED LOW MAINTENANCE COST**



*A. A. Allwine, Omaha, Neb.*



**H**ERE'S an interesting letter from Mr. A. A. Allwine, president of the Allwine Realty Co., Omaha, Nebraska:

"In 1932 our company took over the Leone, Carpathia, and Florentine Apartments, three buildings surrounding a court and consisting of 59 apartments.

"The buildings were without mechanical refrigeration, and were greatly in need of modernizing. I immediately began investigation of the different refrigerators, getting the experience of other apartment operators as to operating and maintenance costs. I was persuaded that Servel Electrolux would be the most economical refrigerator measured over a period of years.

"Some of the boxes have now been in use over four years and have proven all the claims—lower operating costs and, up to this time, no maintenance costs."

Servel Electrolux is the one automatic refrigerator that has no moving parts in its freezing system. For your tenants that means permanent silence . . . *continued* low running cost. For you it means freedom from costly upkeep, more years of satisfaction in every way. It will pay you to see the new Servel Electrolux models at the showroom of your local gas company. Servel, Inc., Servel Electrolux Sales Division, Evansville, Indiana.

**EXPERIENCED BUILDERS SPECIFY SERVEL ELECTROLUX  
THE GAS REFRIGERATOR**



*Business builds for profit*  
... with **CONCRETE**

Concrete is ideally suited for commercial structures because it is economical, firesafe, permanent, weather-resistant and low in maintenance. Its architectural distinction is a plus value which costs nothing.

Concrete sets no limits on design. Forms are being built

today not only to hold the concrete while it hardens, but to mold it into any desired architectural shape—even intricate decorative detail is cast monolithic.

Designers, specification writers, contractors, engineers: send for helpful manual, "Forms for Architectural Concrete."

**PORTLAND CEMENT ASSOCIATION**

Dept. 9-2, 33 West Grand Avenue, Chicago, Ill.

*A national organization to improve  
and extend the uses of concrete*

*Architectural Concrete*

United Parcel Service delivers packages for stores in greater New York, and also has a large business on the Pacific Coast and in other cities. They built this concrete Central Delivery Station at Los Angeles. Abbott, Merit & Co., Inc., of New York were engineers and architects. Mr. Abbott wrote us, "This building is as nearly 100% concrete construction as we know how to design. The structural frame is flat slab reinforced concrete. The floor surfaces and entire exterior walls are concrete."

roof . . . all of which add labor and material costs.

b. By sticking fairly close to the square, perimeter of the house is held to a minimum, which reduces both construction costs and heat loss.

c. Eliminate exterior corners in interior partitions.

d. Dimensions of rooms, location of partitions, height of ceilings, pitch of roof, and spacing of piers, should be studied so that standard lengths of lumber can be used. Thus waste of wood is avoided.

e. Wherever possible, joists should span from outside wall to outside wall to reduce labor and to form a better tie . . . which saves material and the labor of handling two pieces instead of one.

f. Standard stock items should be used throughout . . . moldings, trim, doors, frames, kitchen cabinets and all other built-in furniture.

g. Bathroom and kitchen should be placed back-to-back or above one another in order to have a minimum of plumbing.

h. Heating plants should be developed along with house plans to obtain economical installation and operation.

The FHA's points are quite valid of course, but with such restrictions as are implicit in some of them, it is not difficult to see why the production of attractive, individualistic homes at low cost is one of architecture's hardest puzzles.

**RESIDENTIAL CONSTRUCTION COSTS** are still below 1926-29 levels . . . or at least that's what the Northwestern National Life Insurance Company found in a nation-wide survey. If clients complain of costs, and you want to prove that things could be worse, here's something you can show them:

AREA	JULY 1937 COMPARED WITH 1936 AVERAGE	JULY 1937 COMPARED WITH 1926-29 AVER. LEVELS
Atlanta	115.8%	95.8%
Baltimore	112.9	85.2
Boston	120.5	91.1
Chicago	109.0	97.1
Cincinnati	121.8	102.4
Cleveland	117.8	100.8
Dallas	107.9	78.9
Detroit	118.2	92.2
Minneapolis	118.2	112.9
New Orleans	115.7	91.0
New York City	120.5	87.1
Philadelphia	103.6	91.6
Pittsburgh	121.4	99.4
St. Louis	108.0	82.9
San Francisco	111.4	109.9
Seattle	118.3	111.7
Average	115.0	94.8

It will be noted that in five of the sixteen areas prices are higher than was the case during the halcyon days of '26 to '29.

On the average for the entire U. S., a

house which cost \$4,000 to build at 1936 levels would have cost \$4,818 on the basis of 1926-29 prices, while that same house, if built in July, 1937, would cost \$4,602. Above are the same figures for a number of leading cities.

Another purpose of the survey was to determine the effect of mounting prices on the rate of building activity, and it was found that small home construction is hardest hit of all. Architects and contractors in 65 out of 83 cities—of varying size—have very doleful things to say about the lack of hustle and bustle in their offices . . . one contractor reporting cancellation of all but 3 out of 33 jobs figured on during the last 90 days. Some say, though, that pressure for residential space is going to force a resumption regardless of cost. Which same let us fervently hope.

**HOWEVER, SEVERAL GOOD REASONS** why residential construction lags are given in a recent issue of *The Dowservice*. This publication views the situation quite realistically and with a considerable quantity of old-fashioned horse sense. We think their discussion of the subject one of the best we've seen, and so we report it more fully than is our wont.

The Brookings Institution has estimated, says this source, that the Nation's housing requirements for 1937-41, inclusive, will be 4,500,000 units, accounted for this way; accrued housing shortage between 1930 and the end of 1936 is estimated to be at least 2,000,000 units; to take care of the increase in number of families during 1937-41, another 2,000,000 units will be needed; and replacements of demolished buildings will run to 500,000 units during this period . . . the total of these three making up the final estimate of 4,500,000 units. This means annual construction of 900,000 units, and considering the actual average of 750,000 for the years 1925 to 1929, and the 160,000 average for 1930 to 1936, this high estimate of requirements for the next five years seems impossible of attainment. Indeed, to achieve this figure an annual expenditure of somewhere between \$4,000,000,000 and \$4,500,000,000 would be needed.

The reasons *Dowservice* thinks 900,000 units per year will not be reached are quite interesting, even though they make rather heavy reading. It is pointed out that most houses are built for owner occupancy, and only a small part for immediate rental . . . the rental group being cared for by second-hand habitations. Therefore, the prospective owner-occupant is the key figure in any demand for new construction. Yet there are several

reasons why the potential home owner is not thirsting for his own ivy-covered cottage, some of them rather intangible, to be sure. Says *The*

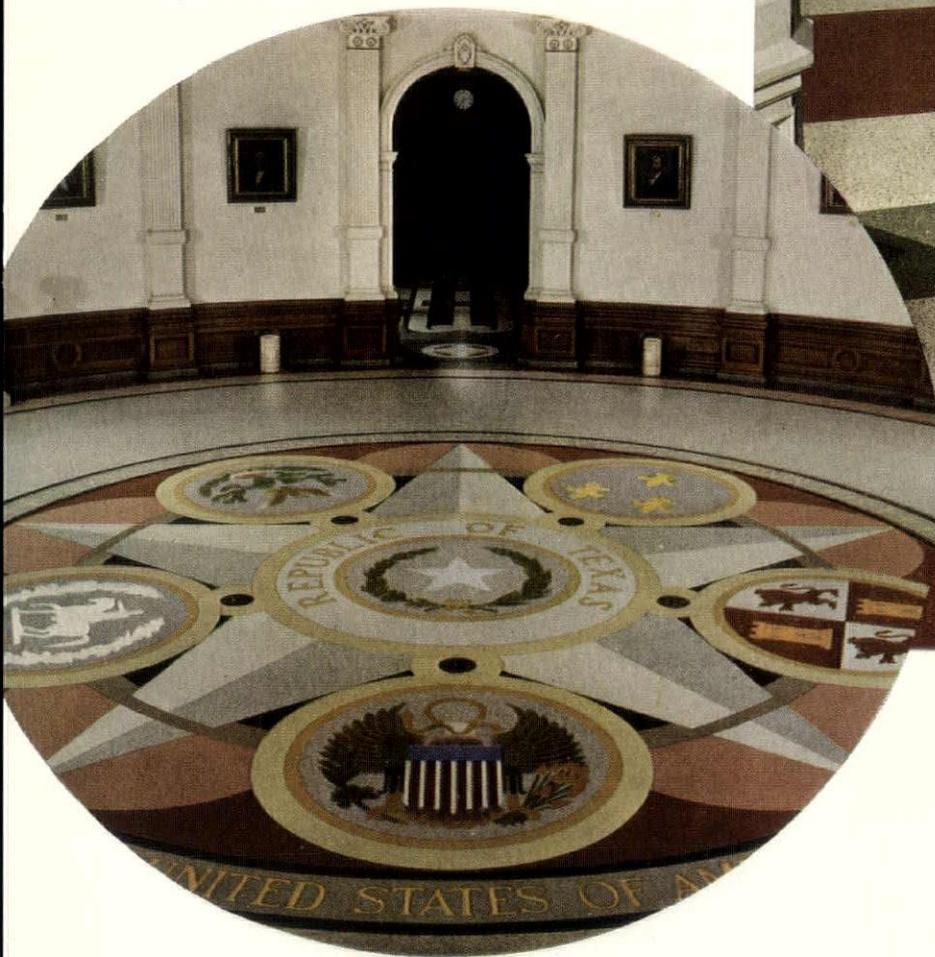
**DOWSERVICE:** "In the first place the potential home owner still has a feeling of insecurity reflecting the wreckage of the last several years which he can still see in his rear-vision mirror. In addition to this feeling of financial instability which is reported to be holding many people back, there may be some truth in the allegation of some observers of the situation, that psychologically, the American consumer is not yet owner-minded. While these are somewhat unmeasurable influences, there is at least one measurable reason why housing is falling short of expectations and it is simply that there are not enough individuals who can afford to own under present annual incomes, or, another way of getting at it, under present costs of construction and of living.

. . . "There is a proven rule-of-thumb to the effect that expenditures for new housing should not be more than twice the family's annual income. The United States Building and Loan League made a survey in 1930 which indicated that families whose incomes did not exceed \$1,800 should not spend more than 1.75 times their income for a home; and that those with incomes between \$2,100 and \$4,800 should not spend more than 1.9 times their annual incomes. This restricts most families from buying new homes for original occupancy, even when weight is given to the current sharp wage increases.

"The National Industrial Conference Board reports that the average weekly wage per skilled worker for December 1936 was \$30.25. If the fact that the 1932 average pay per skilled worker was only 65% of this amount is omitted from consideration, and that most workers were not getting as much as that, the maximum annual earnings for the skilled group would be a little over \$1,500. If the N. I. C. B. December average of unskilled workers is projected on a similar basis the average annual earnings would be just under \$1,200. On this basis, which is generous, skilled workers cannot pay more than \$3,300 for a new home, and unskilled workers not more than \$2,000 to \$2,200.

"**THE RAILROAD AGE** is reported to have recently written that the average annual salary of railroad employes was \$1,734 in 1936. It has always been assumed that railway workers were among the best paid of all workers. Even they, on the basis of 1936 data, could not then

# How to Write History... *in Fine* *Terrazzo*



*Atlas White portland cement was used in the beautiful terrazzo floors of the Texas State Capitol. Views here are of the central passage and "seal of the nations." C. H. Page of Austin was architect. Bubi Jessen, Austin, prepared sketches and designs. Art Mosaic & Tile Co., Toledo, and J. B. Martina Mosaic Company, Denver, were the terrazzo contractors jointly.*

**H**ERE'S history—in fine terrazzo. Here's all the beauty and versatility characteristic of this superb modern material.

These fine terrazzo floors are in the Texas State Capitol at Austin. The pride of Texans in their state, the romance of its history, are expressed in imperishable form under the great dome.

Note in the interiors above the complete freedom of design that fine terrazzo gives. It conveys simple impressiveness (in the memorial corridors), intense action (the Mexican seal), vivid richness (the United States seal),

simple dignity (the Confederate States seal). Each design is a work of art. All blend harmoniously with each other and in effective contrast to the classicism of the building.

Fine terrazzo, made with Atlas White portland cement (plain and waterproofed), gives you the opportunity for the same originality and beauty in the floors you build. The range of patterns and colors is infinite.

White portland cement is essential to fine terrazzo work. Only white makes each pattern clear and clean-cut. Only white gives true value to the colors of the marble chips. Atlas White portland cement brings out the full rich beauty of fine terrazzo. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South LaSalle Street, Chicago.

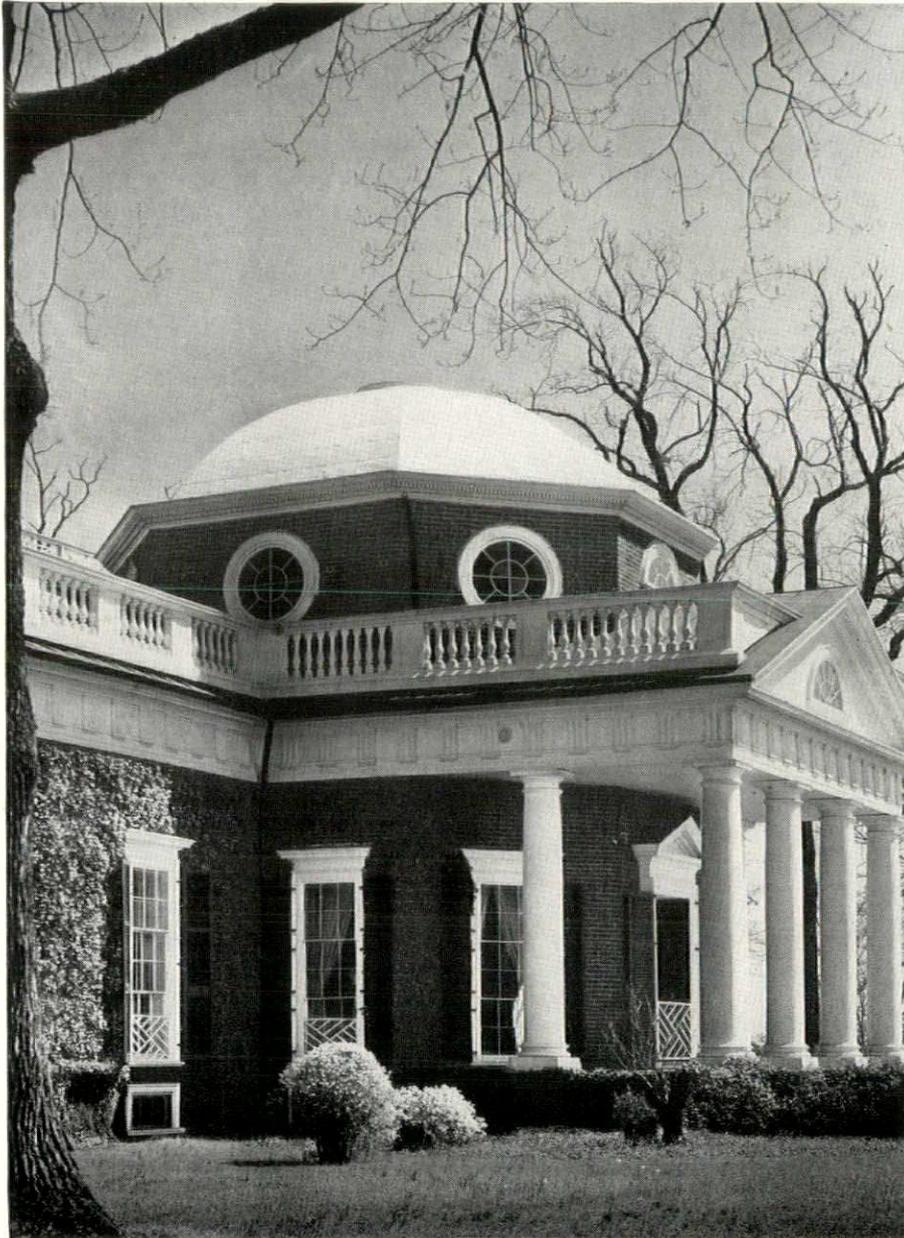
FURTHER INFORMATION ABOUT FINE TERRAZZO APPEARS IN SWEET'S



T-8

**FOR FINE TERRAZZO SPECIFY ATLAS WHITE PORTLAND CEMENT**

# Monticello — declares its *Independence from Age*



**T**HOMAS Jefferson believed in building for permanence. His home at Monticello, which is considered an architectural masterpiece, is still in excellent condition because of the use of good materials and proper maintenance.

In 1926, a new roof was needed at Monticello. U·S·S Ternes were selected because this copper-steel roofing coated with terne metal is one of the most enduring that can be built. Ample proof of this can be found in the old Southern Colonial mansions where the terne plate roofs have lasted far better than other structural parts.

U·S·S Copper Steel Terne Roofs have many other valuable features — they are fire-proof, storm-proof and form a lighter, stronger roof than most materials commonly used. Ternes can be easily applied at low cost. They do not break, crack or warp, but in case of accidental damage, repairs are simply and quickly made.

Ternes are rapidly increasing in popularity for public buildings and homes. They look particularly well on houses of New England Colonial, Cape Cod, Southern Colonial and modern architecture.

With all their advantages, ternes are inexpensive—especially so when you consider their long service life.

Write for our new book on U·S·S Steel Roofing. We welcome inquiries and will gladly send complete information on various roofing sheets.

## U·S·S ROOFING SHEETS *and* TERNES

CARNEGIE·ILLINOIS STEEL CORPORATION

Pittsburgh Chicago

Columbia Steel Company, San Francisco, Pacific Coast Distributors



United States Steel Products Company, New York, Export Distributors

# UNITED STATES STEEL

afford new housing at cost levels current that year.

Frank Watson, formerly general counsel for F. H. A., has studied 1929 incomes (much higher in low brackets than currently) and has arrived at the following conclusions on housing and incomes in the United States:

A \$2,500 house too expensive for 35% of American families.

A \$3,400 house too expensive for 53% of American families.

A \$4,200 house too expensive for 66% of American families.

A \$5,100 house too expensive for 75% of American families.

A \$6,100 house too expensive for 80% of American families.

While all this is as unpalatable as it is undebatable, as matters now stand, it seems to us that a well administered housing program can do a great deal to spur residential construction and negate to some extent the above reasoning.

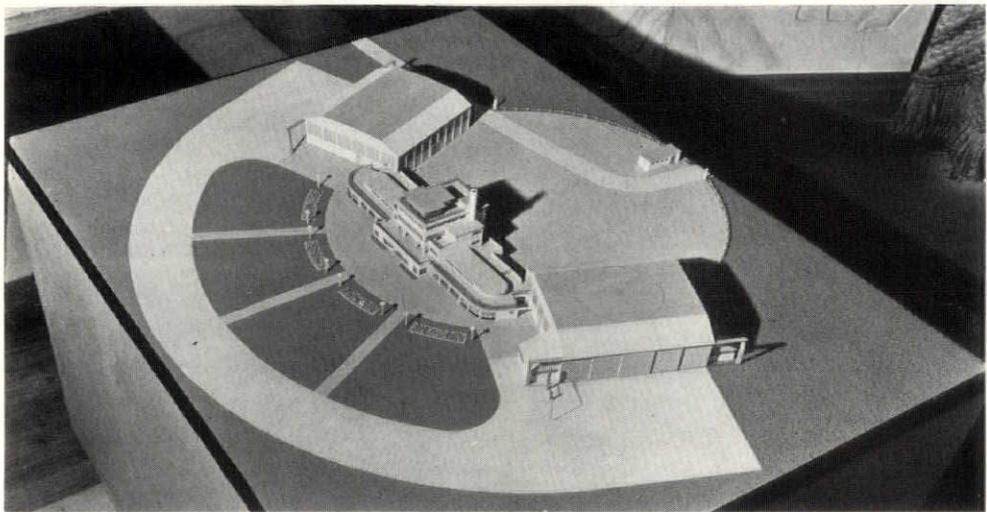
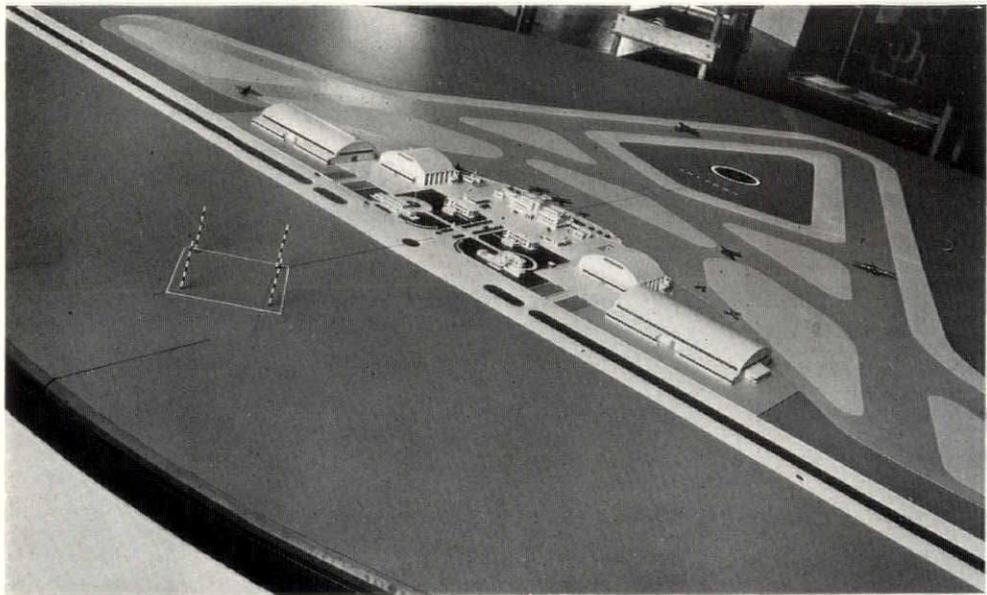
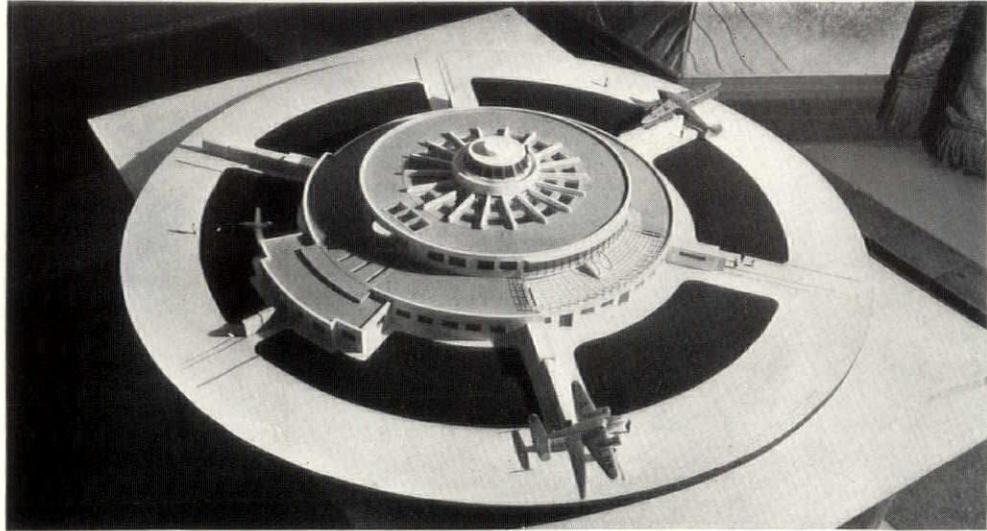
**WHO SAYS LOW-RENT HOUSING ISN'T**

**POSSIBLE?** Well, dash it all, it is . . . at least in the Virgin Islands. From some of our beach-combing informants come tidings which set us to mooning like a bilious sea cow, wistfully day-dreaming of rustling palms, virginal, dark-eyed lamels and of what a swell life we could lead in one of the PWA's cosy little \$3.00-a-month huts on the Island of St. Croix.

We have it all figured out. Our days we would spend beneath a shady catalpa tree, brooding contentedly, and our nights . . . ah, those perfume-scented, star-sprinkled nights . . . we would spend in beautiful companionship with shy, brown-eyed Flower of the Dawn, our pet turtle. But this way lies madness. Let us return to what began as a concise, matter-of-fact report on the PWA's low-rent housing project in our Dominion Beyond the Seas.

First of America's insular possessions to feel the long arm of the Public Works Administration, the Virgins are now enjoying the benefits of three low-rent projects, two of which—on the islands of St. Croix and St. Thomas—are now almost completed. In place of ragged-looking shacks, good sanitary dwellings now stand. Rents are uniform. Three dollars to \$3.45 per month fetches a one-room unit, \$4.20 to \$5.00 procures a two-room job, while \$5.50 to \$6.00 gets a three-room mansion. All have electric lights, charcoal-burning cooking contraptions just outside the kitchen door, corrugated iron roofs, cisterns, wooden floors and hurricane-proof design. Only families

*(Continued on page 134)*



PHOTOS: PICTURES, INC.

A bird's-eye view is no longer a mere figure of speech since the advent of widespread air travel. Therefore, a good looking plan becomes as important as a handsome facade. This is especially true of airport design. These three models exhibited by the Royal Institute of Architects prove this. Top: Model of the terminal building at Gatwick Airport shows how passengers reach planes under cover of telescopic corridors. Center: Imaginary Anytown's monster airport was the central feature of the Show. Below: Model of the new Jersey Airport

# “THIS ‘NEW AMERICAN’ HOME WAS PLANNED AROUND THE KITCHEN”



SAYS PAUL B. SWEENEY  
OF SWEENEY & BURDEN, ARCHITECTS, SYRACUSE, N. Y.

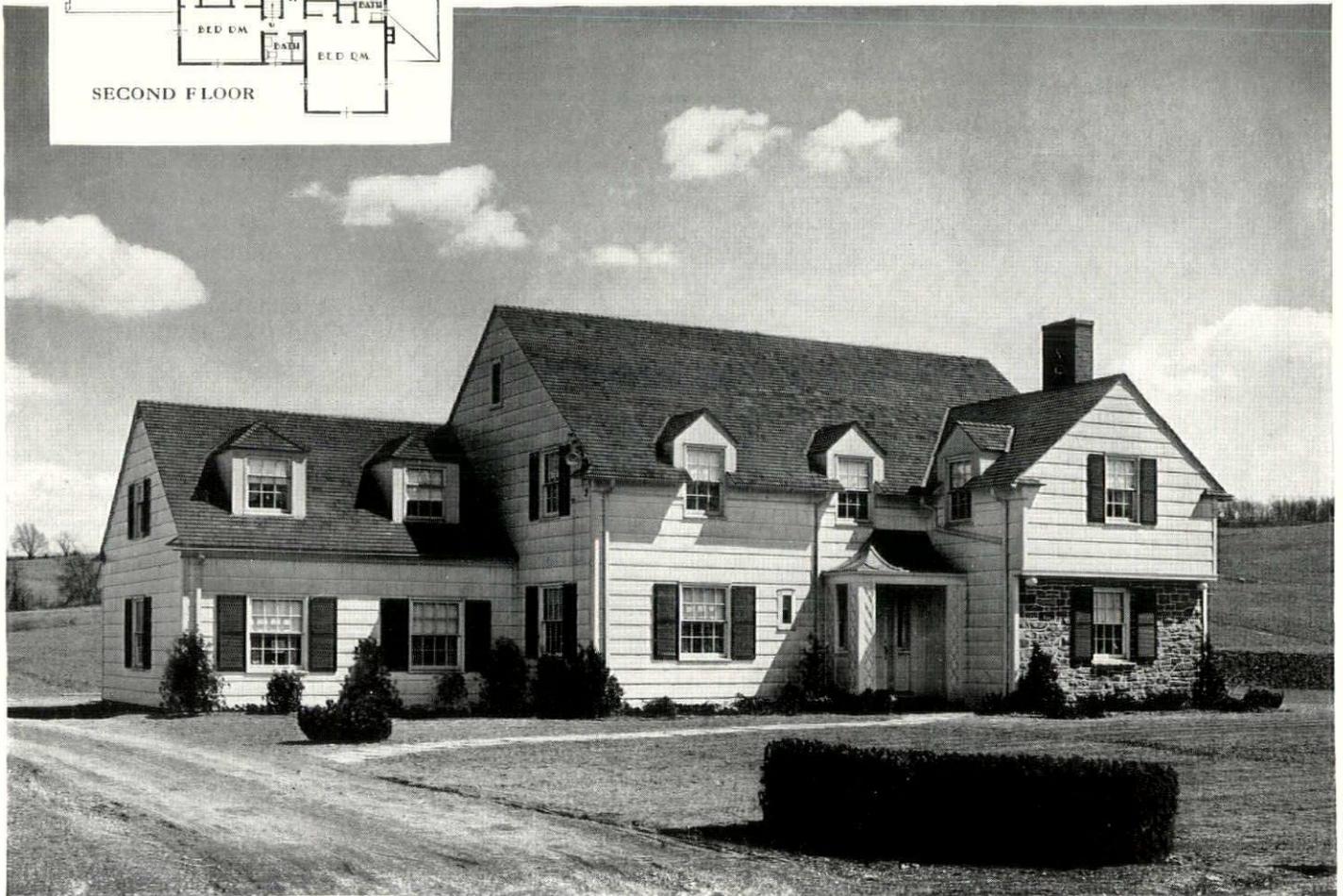
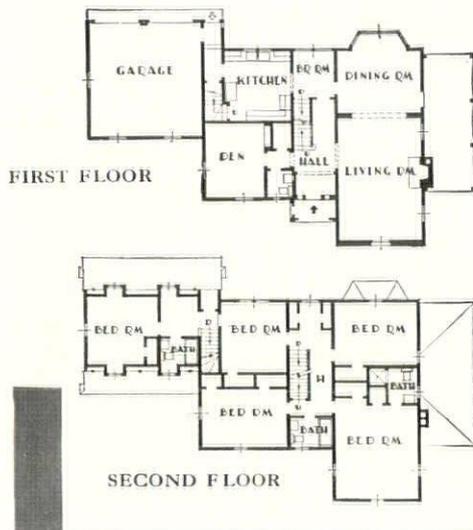
● “In planning this home for Dr. and Mrs. L. E. Sutton, our first consideration was ease of operation. So we decided to make it a ‘New American’ home.

“Mrs. Sutton was especially interested in three things—a well arranged, workable kitchen, a spacious living room, a recreation spot where the children could entertain without disturbing other members of the family.

“We accomplished all three. We installed a complete General Electric

kitchen; ran the living room the entire width of the house with dining facilities at one end; provided a large play-room in the basement and a carpentry-workshop as well. A modern G-E Home Wiring System guarantees electrical adequacy, and G-E automatic heating and winter air-conditioning assures uniform even temperature. In this ‘New American’ Home *everything* works — for the greater health and freedom of its occupants.”

*Paul B. Sweeney*





Visitors to the Sutton home never fail to admire its smart and smoothly efficient kitchen. Completely equipped with a G-E refrigerator, range, dishwasher and sink with Disposall (waste unit).



In one corner of the carpentry-workroom in the Sutton basement, stands this gleaming G-E air-conditioning and heating unit. It has turned in a 100% performance since its installation.

## The G-E kitchen—heart of the “New American” Home

No feature of the Sutton Home has received more enthusiastic praise for the architects than the smoothly efficient G-E all-electric kitchen. It simplifies work—saves wasted steps and energy—makes housework easier. A G-E kitchen is the heart of every “New American” Home. It includes such labor saving devices as a General Electric refrigerator, range, dishwasher and sink with a General Electric Disposall (waste unit). General Electric Kitchen units are flexible enough to fit every type of floor plan. They may be installed complete—or piece by piece.

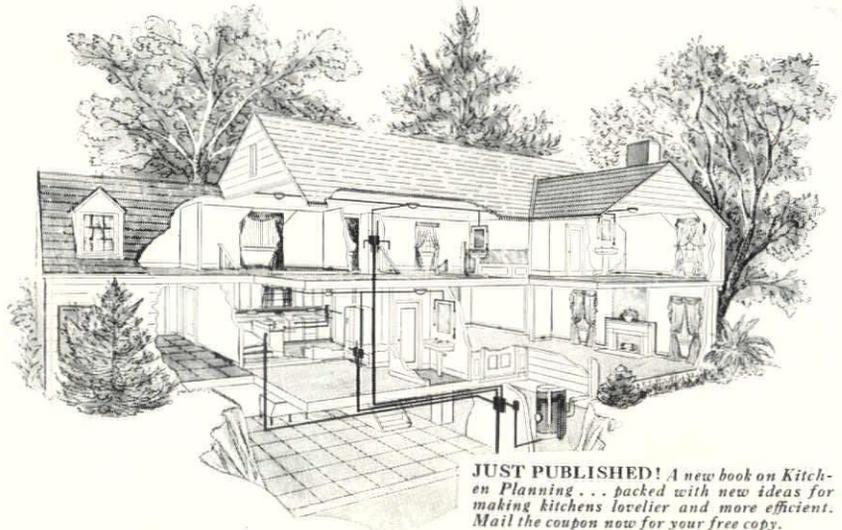
### First Aid to Busy Architects

The General Electric Home Bureau serves architects and their clients—with technical advice and assistance on all home-electrification and air conditioning problems. We will check your plans from an electrical point of view—prepare wiring and heating specifications—scientific lighting plans—kitchen schemes—and Home Wiring (Planned Wiring) layouts. We can supply you with valuable data on new electrical materials, methods, and equipment. Let us help you on your next job. Address: The General Electric Home Bureau, 570 Lexington Ave., New York.

The phantom drawing below shows the efficient G-E Home (Planned) Wiring system in the Sutton house—which assures full current, adequate outlets and the elimination of blown-out fuses.



The Sutton house is an excellent example of modern wiring and scientific heating. No dark spots—or dim corners. The lamps used are Mazdas made by G-E—the kind that stay brighter, longer.



JUST PUBLISHED! A new book on Kitchen Planning... backed with new ideas for making kitchens lovelier and more efficient. Mail the coupon now for your free copy.

### Other General Electric Products for the Home

Dishwashers	Coffee Makers	Curling Irons
Disposall Units	Percolators	Immersion Heaters
Disc Stoves	Sandwich Grills	Radiant Heaters
Electric Cookers	Toasters	Air Conditioning
Food Mixers	Urn Sets	Gas Furnaces
Hot Plates	Waffle Irons	Oil Furnaces
Ranges	Electric Blankets	Christmas tree lights
Refrigerators	Heating Pads	Floodlights
Ventilating Fans	Room Coolers	Photo Lamps
Clocks	Sunlamps	Mazda Lamps
Fans	Electric Irons	Vacuum Cleaners
Chafing Dishes	Washers	Water Coolers

GENERAL ELECTRIC CO. AA & A 9-37  
Home Bureau, 570 Lexington Ave., N. Y.

Please send me your new book on Kitchen Planning.

Name.....

Address.....

# GENERAL ELECTRIC

RESEARCH KEEPS GENERAL ELECTRIC YEARS AHEAD!

# ARCHITECTURALLY SPEAKING

by

## OTIS ELEVATOR COMPANY

Sometimes we take it for granted that all we have to do is mention the name of a product and everybody understands what we're talking about. But, if we'd just stop to consider for a moment, we'd realize that new developments and new names come so fast they can be very confusing.



For instance, there are two important types of apartment house elevators—by name, Single-Call Push-button Control, and Collective Control. Maybe it would be well to go over their outstanding differences and indicate where each would serve best.



First, to classify Single-Call Push-button Control. In a nutshell, it gives one-call-at-a-time service. In other words, the car answers calls singly and must complete the transportation needs of one passenger before it gives heed to the call of the next passenger. Obviously, satisfactory service by this type of elevator is limited to buildings housing comparatively few tenants.



And now Collective Control. This type of elevator answers *all up* calls on its *up* trip and *all down* calls on its *down* trip. This means—less passenger waiting, less trips for the elevator, which in turn means less wear and tear, and less power consumption. A Collective Control elevator can serve many more tenants than a Single-Call Push-button elevator.



Collective Control elevators can be arranged for "home stations" to which they automatically return when all

current calls have been answered. The "home station" may be at the top of the building in the morning when most traffic is down. At night, when the traffic is up, the system can be reversed, with the "home station" at the bottom. This means a further saving in time and operation cost.



Newest feature of Collective Control is automatic door operation especially adapted for this type of equipment where passengers usually operate the car. This is also an advantage where a part-time operator is employed. During the day when traffic is light and the operator may be assigned other tasks in the building, the elevator is completely automatic and the passenger becomes the operator.



Still another feature is *Duplex* Collective Control (another name, but we'll explain). Duplex provides automatic operation for the building which must have the service of more than one elevator at times of peak demand, and where "serve yourself" service is desirable. Duplex Collective Control is co-ordinated automatic operation on two or more elevators working together as a unit.



Installation of Collective Control has been given added popularity in recent years by the nation-wide availability of manufacturer maintenance. Otis maintenance is available for all types of elevators. It is especially useful to the moderate-size apartment building where elevator service is so important to the tenant's satisfaction, and engineering and mechanical staffs are limited.



## No Need to Worry ABOUT DAMP WALLS OR WET BASEMENT . . . THIS HOUSE IS PERMANENTLY WATERPROOFED



Did you ever stop to think how easy it is to assure your clients that their home or building will be permanently dry—no damp interior walls or wet basement? All that need be done is to specify Medusa Waterproofed Portland Cements (White and Gray) for use in all concrete and stucco construction, and in all masonry mortar.

Thousands of homes and buildings that have been permanently waterproofed in the past twenty-seven years prove the dependability of Medusa Waterproofed Portland Cements (White and Gray). These cements are manufactured by grinding in Medusa Waterproofing with Medusa White or Gray Portland Cements (White and Gray) for use in all concrete and stucco construction, and proofing and portland cement in one bag, thereby removing human hazards associated with mixing waterproofing and portland cement on the job. The use of a waterproofed cement instead of unwaterproofed cement adds only a very small amount to the cost, yet assures dry homes and buildings for your clients. If you have a waterproofing problem at the present time, get in touch with us. Send the coupon below for a copy of the book "How To Make Good Waterproofed Concrete."

# MEDUSA

*white and gray*

**WATERPROOFED PORTLAND CEMENT**

-----  
**MEDUSA PORTLAND CEMENT COMPANY**

1005 Midland Building, Cleveland, Ohio

Gentlemen: Please send me a free copy of the book "How To Make Good Waterproofed Concrete."

Name .....

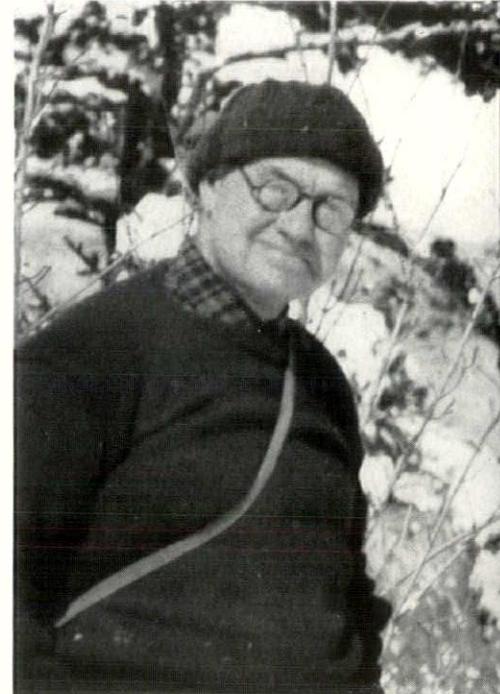
Address .....

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# ARCHITECTS AND AVOCATIONS



One of the things, apparently, that brings a smile to John Wellborn Root, F.A.I.A., of Chicago, is getting out in the country, away from architectural skylines



John Hutchins Cady, of Providence, R. I., takes his winter mountain climbing seriously. Here he is with the Appalachian Mountain Club in New Hampshire



This is the way Robert Herzberg thinks that his fellow Detroit, G. Frank Corder looks. The latter's chief extra-curricular interests are walking, dogs, geography, and birds, and the beauty of it is that all four can be enjoyed simultaneously



Left: W. G. Malcomson, F.A.I.A., now goes south each year for the winter months to pick his own citrus fruit, and he confesses to a comfortable belief that his Detroit office (Malcomson & Higginbotham, Inc.) rolls along very well without him

Right: Clement W. Fairweather, F.A.I.A., of Metuchen, N. J., without whose presence no A.I.A. convention would seem normal, divides his interests between his own art and the music which engrosses two of his daughters. The dog will have none of it



# REVECON\*

## STRUCTURAL SECTIONS

### QUALITY

Revecon Structural Sections are made of a strong, light, corrosion-resisting alloy, by the extrusion process. They are characterized by the straightness of line, fidelity of profile and precision of fit that is inherent in extruded products.

### LOW COST

Revecon Structural Sections are not expensive. In material cost Revecon compares favorably with other "face applied" materials. But the real economy of Revecon becomes fully apparent once you start using it. Its simplicity of application and efficiency in function make it definitely superior in over-all economy.

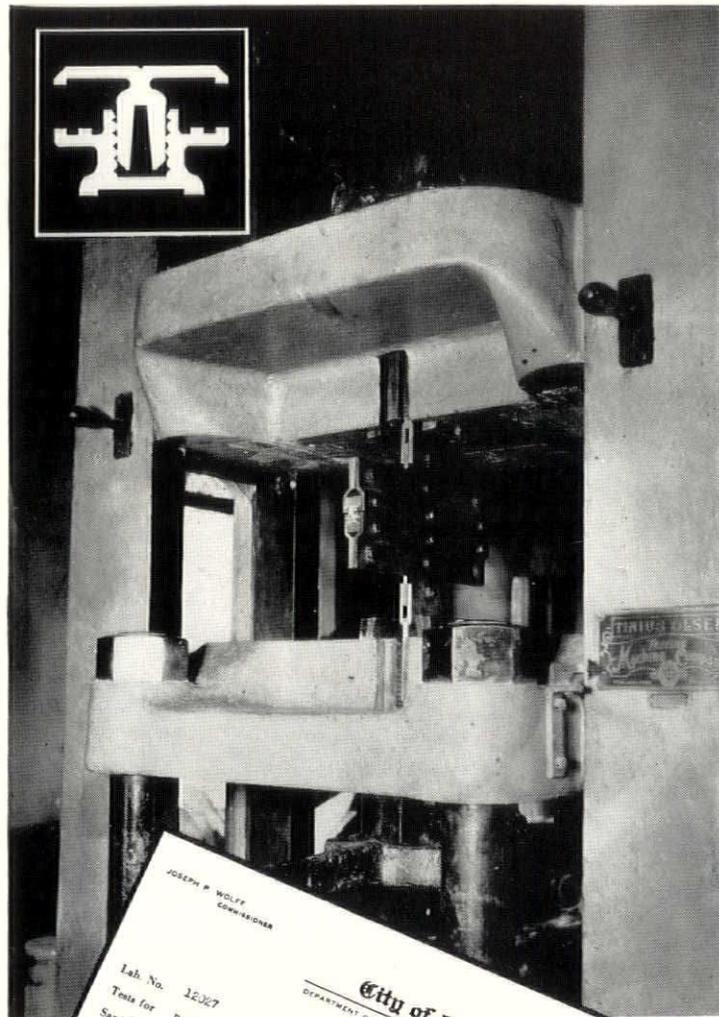
### STRENGTH

Revecon Moulding is the only STRUCTURAL moulding offered to the building industry to apply flat sheet materials.

Rigid flat sheet materials are easily applied with Revecon Structural Sections. They are very strongly held, as is shown in the Laboratory Report herewith of a test made of Revecon by the Department of Buildings and Safety Engineering of the City of Detroit, Mich.

### REVECON HANDBOOK

Write on your own letterhead for copy of the Revere Revecon Technical Handbook. Contains full-sized illustrations and descriptive text showing how Revecon Structural Sections are used to apply rigid sheet materials of any thickness up to 1/2-inch to exterior or interior surfaces over any type of superstructure. Please address your inquiries to our Executive Offices, 230 Park Ave., New York City.



JOSEPH P. WOLFF  
COMMISSIONER

**City of Detroit**  
DEPARTMENT OF BUILDINGS AND SAFETY ENGINEERING  
CITY SERVICE BUILDING  
CLAYTON AND KILBOUR AVENUES

E. L. SANDERSON  
DEPUTY COMMISSIONER

Lah. No. 1E327

Tests for Building Department  
Sample for "Revecon" (aluminum)  
Remark: Revere Copper and Brass Inc., 5861 W. Jefferson Avenue, F. F. Dillon, Rep.

**LABORATORY REPORT**

C. Daymade June 25, 1937

Tensile Test on 1' sections (pressed friction joints).

<b>Light Section</b> (#212 gripping section, and #215 cap.)	855 #	Failure Load	1,125 #
<b>Heavy Section</b> (#228 gripping section, and #215 cap.)	Material used for securing rigid plates up 1/2" thickness and not to exceed 2' x 5' in size.	Failure Load	

\*U. S. Patents No. 1,973,795; 2,005,994; 2,012,070; 2,073,277; 2,073,278.  
Canadian Patents No. 360,122; 365,274.

# Revere Copper and Brass

INCORPORATED  
EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY



HERE IS THE SUCCESS SECRET OF THE  
*Seven* **TRADE**  
 HEATING SYSTEMS

*Related Units!*

TRANE FLOAT  
VENT VALVE



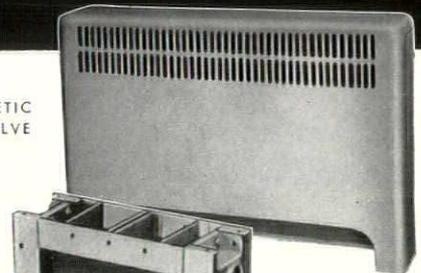
THE TRANE BELLOWS  
TYPE RADIATOR TRAP



TRANE HERMETIC  
RADIATOR VALVE



TRANE FLOAT  
DRIP TRAP



THE TRANE CONVECTOR. Successor to the radiator for all modern heating requirements.

TRANE TYPE 'E' BLAST COIL . . . standard for high or low pressures

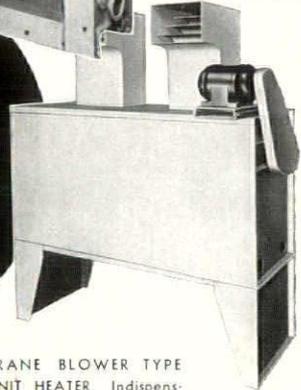
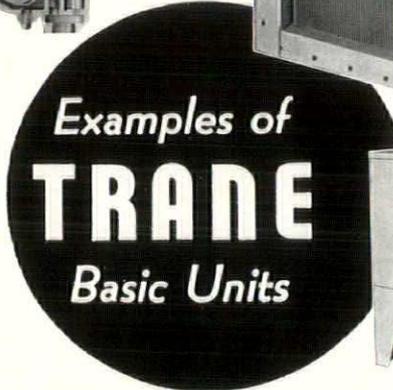
ASSEMBLED units in a heating or air conditioning system, gathered together like delegates in a political convention, are not good enough to answer modern temperature demands for efficiency and comfort.

Trane Related Unit Systems, backed by the undivided responsibility of Trane, have revolutionized a heating and air conditioning practice which has forced divided responsibility upon the industry.

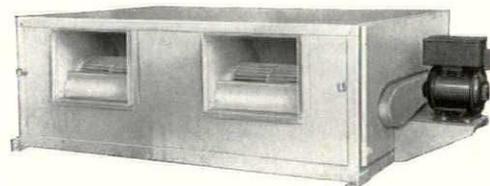
The units shown on this page are a few examples of standard Trane equipment which are combined in Seven Flexible Trane Systems — indicated at the base of this advertisement — to meet any problem, large or small.

Ask Trane to explain these applications, their economy, simplicity, their superiority over the assembly of unrelated equipment. There is an inherent and quickly apparent advantage in results to every architect, engineer and contractor who uses or specifies Trane Related Heating and Air Conditioning Equipment. Investigate. Mail the Trane-O-Gram on opposite page today.

**THE TRANE COMPANY, LA CROSSE, WISCONSIN**  
 65 U. S. BRANCH OFFICES  
 Trane Company of Canada, Limited, Toronto, Ontario.



TRANE BLOWER TYPE UNIT HEATER. Indispensable for large space heating.



THE TRANE CLIMATE CHANGER. Basic unit for heating, cooling or complete year round air conditioning.

**TRANE VAPOR-CONVECTOR SYSTEM**

**TRANE ORIFICE CONVECTOR SYSTEM**

**TRANE CLIMATE CHANGER SYSTEM**

**TRANE SPLIT SYSTEM**

**TRANE SETS NEW LEVEL IN UNIT HEATERS**

**1935 FLOOR LINE SPREAD**

**1936 CRADLE COIL**

# 1937 A NEW Quietness

## TRANE UNIT HEATERS

*"purr"*

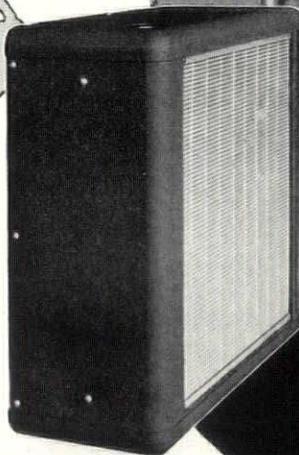
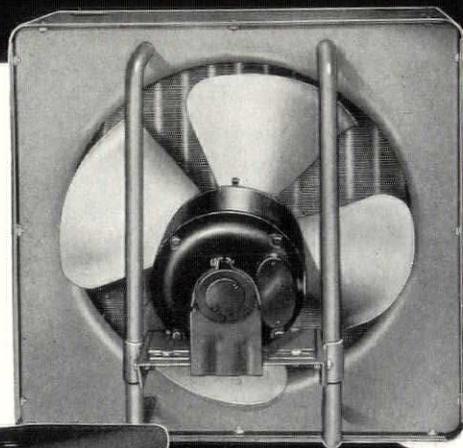
In 1935 Trane gave to unit heaters the extra efficiency of FLOOR LINE SPREAD, made possible by the Trane exclusive FREE-FLO GRILLE, which put greatly increased heat volume where it was most needed, at the floor. A sure cure for cold feet.

In 1936 Trane spring-cradled the heater coil in the casing, cutting vibration, removing operating stress and strain, and lengthening unit heater life.

Now in 1937, Trane engineers have designed an amazingly quiet unit heater fan. IT PURRS.

In addition to standard industrial applications this OVERALL QUIETNESS PROMPTS and PERMITS use of Trane Unit Heaters in STORES - OFFICES - SHOWROOMS - anywhere that efficient and diffused heating must be accomplished.

15 OUTSTANDING FEATURES OF THIS HEATER ARE FULLY DETAILED IN OUR New Bulletin. Fill out and mail the Trane-O-Gram Today. **THE TRANE COMPANY, LACROSSE, WISCONSIN**  
Trane Company of Canada, Limited, Toronto, Ontario.



**NEW  
QUIET  
FAN!**

TRANE'S NEW 4 BLADE FAN designed for maximum efficiency & quiet performance. Balanced and formed to eliminate noise due to air friction.

**TRANE-O-GRAM**

The Trane Co., 2001 Cameron Ave., La Crosse, Wis.  
I want all the facts on the new Trane Quiet Unit Heater.   
I want information on a Trane System to heat the following:

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**TRANE UNIT HEATING SYSTEM**

**TRANE BLOWER HEATING SYSTEM**

**TRANE BLAST HEATING SYSTEM**

# THIS ADVERTISEMENT REACHES 9,000,000 READERS

• A full page appearing in The Saturday Evening Post, Collier's, Time, American Home, Better Homes & Gardens, House Beautiful, Town & Country.



"HOME, SWEET HOME," almost as much a part of American tradition as the flag itself—yet since those immortal lines were scored, the advancements of architectural science and the development of better materials have made today's house a far more comfortable, livable home.

• A restoration of John Howard Payne's "Home, Sweet Home" on Long Island.

## Homes, Sweet Homes



HOMES being built today are designed to take much from the drudgery of housekeeping and give more to the art of living. You can thank your architect for that—for he builds the modern home by placing walls around your needs. Gone forever is the house of the "Nineties"—today's roofs are designed for efficiency—today's walls, to keep heat in or out. Yes, and in those walls are better windows, properly designed and placed to make the most of sunshine and surroundings.

Study these new homes; you will find glass used generously yet inexpensively—corner areas sparkle with glass—a Picture Window frames a favored view—part of a wall is mirrored to magnify the room. Vitrolite, that colorful and practical structural glass, makes kitchen and bathroom clean and bright as a crystal pool. Everywhere, it's glass, playing little parts and big, brightening and making living more cheerful. When you build, remember architectural guidance, a competent builder and good ma-

terials are your best assurance of lasting satisfaction with your building investment. Libbey-Owens-Ford Glass Company, Toledo.

NEW AND NOVEL USES FOR GLASS, both decorative and practical. A glass pushplate on the door to the kitchen never tarnishes. Glass drawer fronts on a closet chest; you can tell at a glance what each drawer contains. Many A Vitrolux ceiling for lighting your bathroom. Many other practical suggestions which utilize the sparkling beauty of glass will gladly be offered by your decorator or local Libbey-Owens-Ford Glass Distributor.

LIBBEY · OWENS · FORD  
QUALITY GLASS



# HOUSING BILLS AND HOUSING PROBLEMS

IT IS ALMOST A FOREGONE CONCLUSION that a new Federal Housing Act will be passed by Congress—in fact, it probably will have been passed before this is off the press. It will naturally be a compromise bill, not wholly devoid of politics, the Senate having changed the original Wagner-Steagall Bill before turning it over to the House. There, undoubtedly, more alterations and additions will be made before it is shuttled back and forth and finally passed. There is time enough after the bill becomes law to discuss its provisions in detail. The important thing is that the passage of this legislation means a continuance of the experiments in housing and slum-clearance begun under PWA—but with this difference: Housing now becomes an issue in itself; no longer is it to be considered as an unemployment-relief emergency measure. The Wagner-Steagall Bill marks the beginning of a long line of housing legislation, for no one is sanguine enough to believe that this bill offers the final solution to a problem as complicated and as far-reaching as that of providing decent shelter for families in the low income brackets.

The magnitude and ramifications of the problem are better understood now than they were just a few years ago when limited-dividend corporations were thought to be an adequate solution to the financing phase of the problem, or later when all low-cost housing was to be “self-liquidating.” Now arguments seem centered on the kind of subsidy to be provided, whether or not direct capital grants are preferable to rental-deficit refunds. The discussion rages about the terms of loans, the totals of loans and subsidies and their ratios, the administrative organization and the relationships of federal to local Housing Authorities.

This new law will presumably represent a point of view looking toward a solution that is based on the experience of the past few years, on the fifty or more

projects which PWA has undertaken with its 135 millions of dollars. The research, the technical data, the cost figures, the ways and means developed, the operating experience, and the personnel of PWA's experiments in housing should prove of inestimable value in carrying out this next big step in housing progress. And we will learn much more of the problem itself and of the possibilities of working out solutions through this larger program inaugurated by the Wagner-Steagall Bill.

■ One thing the architectural profession has learned since it rushed down to Washington with rolls of housing-scheme blueprints and a backer with an option on the acreage: That is, that, with all its difficulties, the physical solution of the problem, the plans and specifications, are as nothing compared to the underlying problems of economics, of federal and local government—in fact, of the whole so-called social system which affects and is affected by housing. While the architect's chief function is, and will continue to be, to provide a physical plan, he finds himself faced with conditions which involve many, and often conflicting, interests. He has learned that his problem is but a part of that larger one which must reconcile the interests of landowners and tenants, of financiers and artisans, of politicians and sociologists.

■ The significance of the Housing Bill is that it is an expression of the willingness of the representatives of the people to recognize the social, economic and political importance of the housing problem and to expend five hundred millions of dollars in the search for a solution. Architects will be called upon to do their part, and the importance of the part to be played will probably be in a direct ratio to their ability to contribute to the solution of the problem as a whole as well as to plan the physical structures wisely and economically.



EDITOR

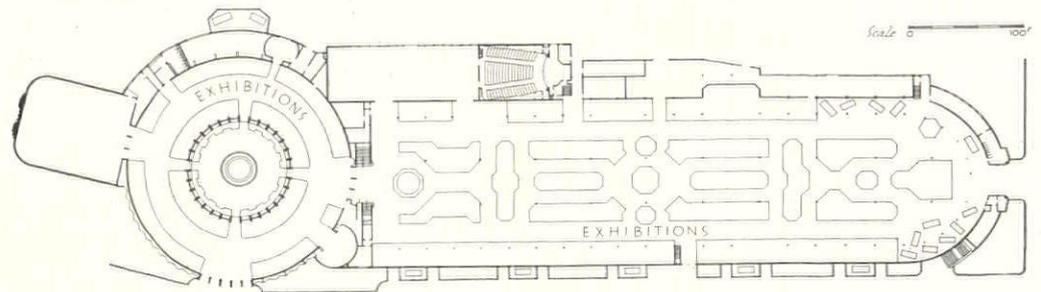


PHOTO: BLACK STAR

# EXHIBITION TECHNIQUE

A well-known industrial designer with wide experience in fair work, Mr. Teague takes the guesswork out of fair design in an article based on a talk given by him before the Board of Directors of New York World's Fair 1939

By **WALTER DORWIN TEAGUE**



A FAIR is essentially a meeting place for buyers and sellers. As such, the great Leipzig Fair at the crossroads of Europe has flourished for hundreds of years, and the simplest form may be seen in any little French town on market day when the peasants bring in their ducks and cauliflower and the housewives come with baskets on their arms to buy.

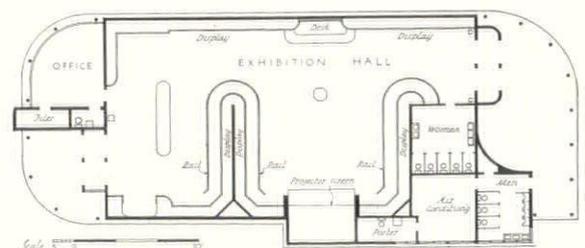
The more elaborate pattern of "world's fairs" also is very ancient. It is described in a strikingly modern form in the first chapter of the Book of Esther, where it is told that the great King Ahasuerus organized an exhibit of all the riches of his many provinces. The exposition lasted for "an hundred and four score days"—the customary six months—and the decorative scheme as described definitely forecast A Century of Progress show at Chicago. At the closing ceremonies Ahasuerus called upon his queen, Vashti, to do something in the nature of a fan dance, and her refusal precipitated a domestic crisis which had important effects on the course of history.

Since the Crystal Palace Show of the early fifties, world's fairs have developed far beyond even the splendor of Ahasuerus's maiden effort. They have grown enormously in size and variety. The element of amusement has been stressed until many people go to fairs primarily in search of entertainment. On the serious side, fairs have been recognized as opportunities to sum up national or international progress, and review advances in many fields—social, scientific, educational, artistic as well as industrial and commercial. And today many exhibitors come to fairs, not actually to sell wares. Some of the largest exhibitors in the New York World's Fair 1939 have nothing to show in which the general public is directly interested as purchasers: but they see here an opportunity to meet the public face to face, explain the social value of their operations and justify their existence.

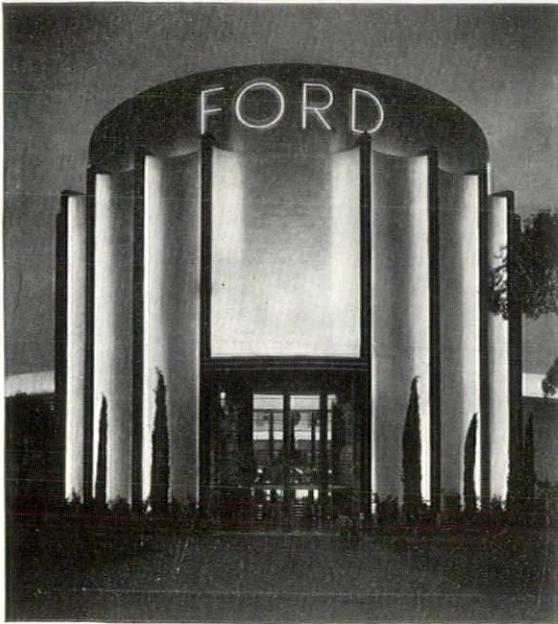
The enormous expansion of world's fairs due to these factors, and the keen competition for interest resulting, have brought a great many problems, the chief of which has to do with the limits of human endurance. The strongest impression many visitors carry away from a fair is one of utter, devastating fatigue. The crowd leaving the fair grounds at the end of a day has all the spirit and sprightliness of a troop of war refugees. This "bunion problem" can never be neglected by a fair designer, and he must always bear in mind the low I.Q. of fair visitors: no matter how brilliant a man may be when he pays his admission fee, by the time he has tramped around the fair for a few hours his mental receptivity has probably declined to a twelve-year-old level.

This phenomenon of fatigue is curious. It is not due to the amount of walking or the amount of standing that is done. A golfer will play eighteen or thirty-six

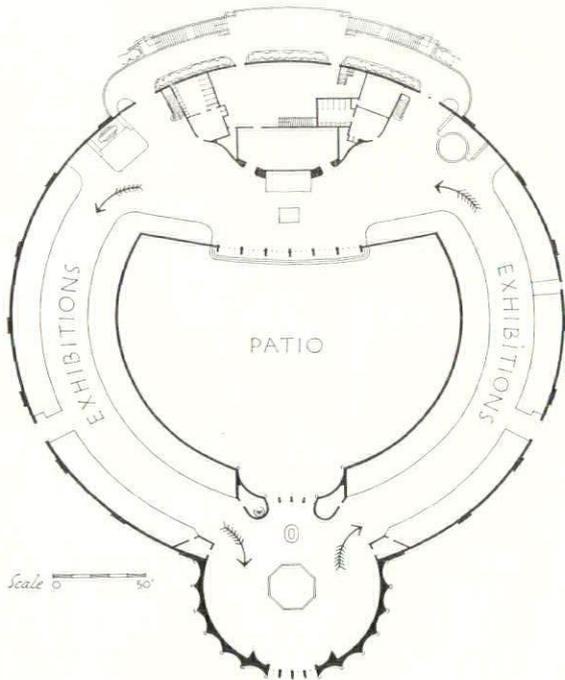
"At a Century of Progress the Ford Building was architecturally magnificent . . . but it was possible for people to come in at either end and follow any course their fancy dictated in going through the show. . . . When people wander at will, they see the show incompletely and carry away a more or less fragmentary impression."



The Texaco Building at the Texas Centennial in Dallas is an excellent example of planning for dramatic display and controlled traffic flow. Walter Dorwin Teague, Designer



"Correct lighting of buildings has become an increasingly important part of fair design and we have learned a good deal about this in recent years. We have learned to avoid flat floodlighting of buildings. Light should be used as accents, since areas in shadow by contrast give greater value to illuminated areas"



"When we planned the Ford Building for San Diego, we made it our first consideration to control the movement of the people. . . . People first came into the spacious rotunda where they received a dramatic impression of the importance of the Ford car. They were routed to the right around the circular building filled with manufacturing and scientific exhibits arranged in logical order"

holes and walk further and stand up longer than at a fair without being so tired. I suspect that policemen and postmen get just as tired at fairs as you or I. Nor is it due to mental effort. Seven hours of complete absorption in the most intricate details of business will not exhaust a business man as completely as three hours at a fair. We go to a play, a serious drama where our attention is deeply engaged and our minds compelled to be alert for a period of two and a half to three hours, and we are not tired; while the same time at a fair may leave us exhausted.

Also, the kind of fatigue experienced at fairs is not peculiar to fairs alone. After two or three hours in a large museum, most people feel the same degree of weariness. Most men are similarly exhausted by large department stores, and dread shopping in them for this reason.

In none of these cases is fatigue the result of physical or mental effort in themselves. *It is induced by the impact of many wholly unrelated impressions on the consciousness—the fact that there is no continuity whatever and an enormous variety in the impressions an individual is asked to absorb.*

Golf or tennis follows a well-known routine and the player is carried on from moment to moment. In the theater a similar continuity prevails and the mind follows one train of thought. The business man deals with familiar matters in an orderly manner, and many women understand the organization of department stores, enjoy them and are not tired. But in a fair, a museum or, for an uninitiated male, a department store so many claims, wholly unrelated, are made on one's perceptions that one quickly becomes exhausted by the effort to assimilate them all and one's sensibilities become blunted.

This explanation of the cause of fair fatigue suggests its cure. A consciousness of this problem and its solution has guided the Board of Design in all its work on the New York World's Fair 1939. We have attempted to ease the strain on our public by creating as much continuity and as much logical organization within the Fair as it is possible to achieve, by the planning of easy circulation, the relation of the architectural elements to the whole scheme and to each other, by the grouping of related exhibits in specific areas, by the stressing of a Theme of the Fair which should give it a coherent story or plot binding the whole vast enterprise together, and, insofar as we can, by the guidance of individual exhibitors to their proper place in the major scheme.

In the case of individual exhibitors, the problem of the big exhibitor who builds his own building and puts on a large show is, of course, somewhat different from that of a smaller exhibitor who takes space in a Fair-built exhibit building, yet the difference is chiefly one of magnitude. In both instances the matter of control of the circulation of the visitors is of primary importance. A continuous and unified story cannot be told unless you are able to present your story to your public in a logical order. Consequently I feel very strongly that the basic consideration in planning an exhibit building is to plan the circulation of the people within the building so that they will follow a certain route, coming in at one given point and leaving at another point. Thus you are able to tell your story in a connected form.

An exhibit should have dramatic unity. It should tell a continuous story and it should borrow from the stage the theories of dramatic structure. That is, there should be an introduction, an attention-compelling starting-point from which the plot should be built up to a climax, so that people come away with a simple but vivid impression of the entire underlying message. In doing this you have to plan both the interior of the building and the content of the exhibits so that they appeal to all the senses—the sense of sight, the sense of hearing and, insofar as you can, the sense of touch.

In the theater the audience remains stationary and one scene after another, one act after another, is brought onto the stage before its eyes. In a World's Fair exhibit acts of the play are spread out in space rather than in time, and the audience is moved past the acts instead of moving the acts past the audience. In both cases one element should be related closely to the next and they should build up in some sort of climactic effect.

People can be entertained by a multitude of things not ordinarily classified as amusements—such as scientific demonstrations, mechanical operations, etc. They love to learn and are entertained by learning if not too much effort is required. It is necessary, however, to entertain them *actively*. It has become an axiom of exhibit design that you must have movement, but that is not enough by any means. I like to go further and say that you must have *events*, must have things *happening*

in your exhibit. And they have to happen in such a way that people can watch, understand easily and be both interested and thrilled by them. Whatever it is that is going on—a welding operation, the weaving of cloth, or a chemical experiment, let us say—must be presented in such a way that it can be easily and quickly assimilated. Since fair crowds are large, it should be possible for spectators to understand the exhibit visually by means of diagrammatic illustrations or text on the walls or incorporated in the exhibit: then you can go further and explain the operation to them orally.

It is also important that the display preserve a cheerful atmosphere. I have been led to criticize a great many exhibits because the designer used somber colors, perhaps rich colors that were esthetically perfectly correct, yet didn't have the exhilarating effect of a high key of color.

Every exhibitor has a different, individual problem and in the planning of an exhibit it is necessary to study the corporation, to study its market, its relations with its employees, its relations with its stockholders and its relation to the users of its merchandise, whatever it may produce.

In the case of one of our own clients, for instance, we have recently completed a nation-wide tour to visit the properties of that company from the mines in Minnesota to the mills in Chicago and Pittsburgh and various parts of Ohio and the East in order to acquaint ourselves with the operations of the company before we begin to plan their exhibit. At the same time we are digesting an enormous amount of printed material about the history and organization of the company, the social functions that it performs and the needs that it serves in the country. On the basis of that sort of study we will attempt to build a simple story of the company's characteristics, dealing with those three phases that I have cited—its relationship with its employees, its relationship with the public it serves and its relationship with its owners, the stockholders. We will try to reduce that story to such form that anybody, the tired farmer from Iowa, or the tired business-man from New York, will be able to understand and enjoy.

Fortunately, for our New York World's Fair, we have accumulated in the last four or five years a great deal of exhibit experience—a capital fund with which no other exhibit has ever started. Heretofore world's fairs have been spaced so far apart that each has been planned out of a vacuum, by a generation with no experience in any previous fair. But we have had a series of fairs in the past five years; we have been able to observe the reactions of the public, the effect of exhibits on the spectators and the degree of interest they aroused.

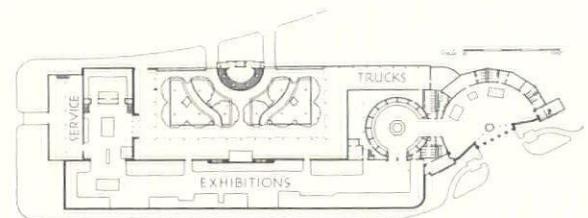
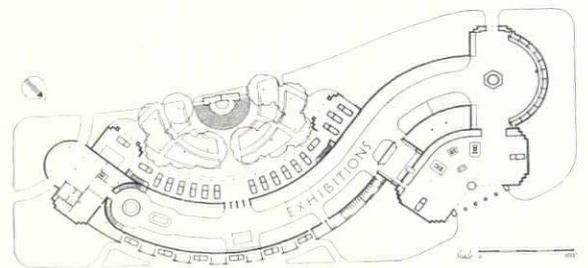
At A Century of Progress the Ford Building was architecturally magnificent. The main exhibit hall was between 500 and 600 feet long and 250 feet wide. Four aisles ran the full length of the hall, which was completely filled with operating exhibits, and the effect on the visitor was tremendous. But it was possible for people to come in at either end of the building and follow any course their fancy dictated in going through the show. Our show was a great success because of its scale and impressiveness, but we felt afterwards that it fell far short of what it should. We could accomplish the same result without such lavish means if we could establish a continuity of effect. When people wander at will they see the show incompletely and carry away a more or less fragmentary impression.

When we planned the Ford building for San Diego we profited by our experience and made it our first consideration to control the movement of the people. People first came into a spacious rotunda where they received a dramatic impression of the importance of the Ford car in and to the nations of the Pacific. From there they were routed to the right around a circular building filled with manufacturing and scientific exhibits, arranged in a logical order. They could pause halfway round and come out on the terrace at the back to rest and enjoy the view, or they could stop and refresh themselves in a central patio filled with flowers and fountains. When they continued around the doughnut plan they arrived at their starting point—the front entrance.

We have found that curving walls of this kind are of great value in holding the visitor's interest and leading him on. Usually, if he can see half of an object around a curve, his curiosity will be piqued to see it all, whereas if he is asked to make a right-angle turn he may not continue. People must *flow* in an exhibit. Audiences follow the line of least resistance just as water does, and it is much easier to take them around a slow curve than to make them turn an abrupt corner. We bore that in mind in laying out our plan.



"In Dallas we kept the word 'Ford' down low over the entrance because we found in San Diego (opposite page), where the name was about 80 feet above the ground, some people who walked up to the building were too tired to lift their eyes to see what it housed"



"When planning the building at Dallas . . . it was necessary to get our main effect on an axis which was not at right angles to the plot . . . the building was originally planned in a sinusoidal, curving form (top plan) but the expense of this plan exceeded our budget and it was necessary to straighten its lines"



"The executive lounge in the Ford Building at Dallas was air-conditioned and decorated in cool tones of turquoise blue, white, yellow, and emerald green. As a refuge from the summer climate of Texas it was both psychologically and actually cool. About 8,000 luncheons and dinners were served there to invited guests during the continuance of the Fair"



"When planning the story of an exhibit, you must put it in terms of the spectator. . . . In this case it was a revelation to farmers that thousands of cows contribute to the making of the Ford car every year. . . . We translated our story into the terms of the Southwestern visitor"



"In the Dallas building the visitor passed into a room which was purposely made small, low and dimly lighted to give the pause that comes sometimes in a dramatic production . . . a prelude to the 500-foot exhibition hall brilliantly lighted and colorful"

Our exhibit was staffed by personable young men who explained the visual presentations in turn. As one completed his talk, lasting three or four minutes, covering the operation performed in that time, the next man took up the story immediately and the group passed on to him.

When planning the building at Dallas, we had quite a different problem. Our plot was differently shaped and located. It was also necessary to get our main effect on an axis which was not at right angles to the plot. Consequently the entrance rotunda faced down the main avenue of the fair and the axis of the main exhibit was at an angle of about 60° to the axis of the entrance. The building was originally planned in a sinusoidal, curving form—a flattened "S"—but the expense of this plan exceeded our budget and it was necessary to straighten out its lines. This I felt was a considerable loss, but in operation the building worked out successfully. In this case the people came in at one end and left at the opposite end, passing into the patio.

In Dallas we kept the word "Ford" down low over the entrance because we had found that in San Diego, where the name was about 80 feet above the ground, some people who walked up to the building were too tired to lift their eyes to see what it housed.

From the huge semi-circular entrance hall in this Dallas building the visitor passed into a room which was purposely made small, low and dimly lighted. We had there the pause that comes sometimes in a dramatic production, the suspension of interest before you give your spectators another big smash. This was a prelude to the big exhibit hall which was about 500 feet long, brilliantly lighted and colorful. Down both sides of this hall we showed operations on the automobile which have some relation to the Southwest, that is, the fabrication of cotton, wool, mohair and various farm products obtained from that part of the country.

When planning the story of an exhibit you must put it in terms of the spectator and relate it to his interests. You must translate the exhibitors' story in terms of the individual citizen who cares nothing about his exhibitor and yet who, perhaps, bears some definite relationship to the exhibitor's business that he never thought of before. In this case it was a revelation to many farmers that thousands of cows contributed to the making of Ford cars every year and that it requires the cooperation of 90,000,000 bees to produce a million of these automobiles. We translated our story into the terms of the Southwestern visitor.

Most large corporations have found fairs a splendid medium for creating pleasant public relations and it is becoming the practice in large exhibit buildings to provide entertainment facilities for invited guests.

The executive lounge in the Ford building at Dallas was air-conditioned and decorated in cool tones of turquoise blue, white, yellow and emerald green. As a refuge from the summer climate of Texas it was both psychologically and actually cool. About 8,000 luncheons and dinners were served there to invited guests during the continuance of the Fair. I think most large corporations are going to do a considerable amount of private entertaining of this kind at the New York Fair.

It is also important to make the same sort of effort for public comfort and convenience. In the Ford Building at Chicago, there was a public writing-room where visitors could address postcards to the folks back home or just sit down and rest. In Dallas, San Diego and Miami there were restful patios.

Correct lighting of buildings has become an increasingly important part of fair design and we have learned a good deal about this in recent years. We have learned to avoid flat flood-lighting of buildings. Light should be used as accents since areas in shadow by contrast give greater value to illuminated areas. We should play with lights and shadows to get our effect and never make the mistake of wiping out the whole design in a blaze of light.

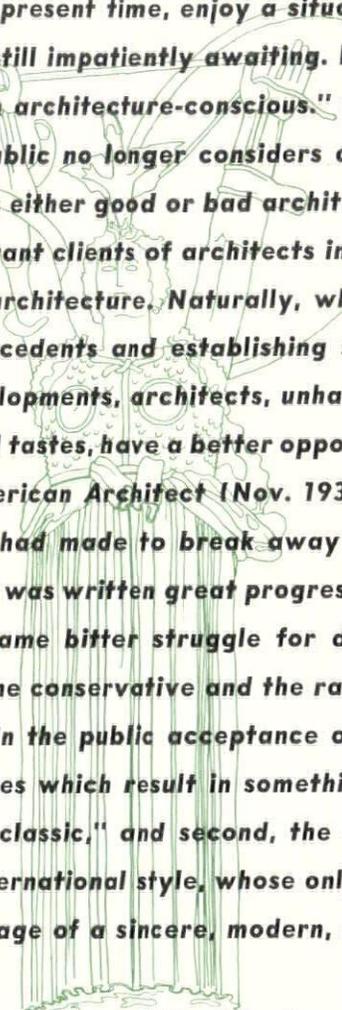
In interior lighting we have learned to combine mercury vapor and mazda light in a way to give almost exact daylight values to color. By correct distribution and diffusion we can reduce shadows and prevent the slightest eye-strain.

To sum up, an exhibitor's story should be presented with continuity and dramatic effect—in action. It should be told simply and made easy to assimilate. It should be related as closely as possible to the visitors' own personal interests. It should be presented cheerfully, even gaily, and this can be done without any sacrifice of serious import. The visitors' comfort and convenience should be considered at every turn, and if we lead them craftily through a planned maze we should reward them at the end with a chance to rest and relax.

# ARCHITECTURE IN ITALY

BY BRUNO FUNARO  
& SEYMOUR SALTUS

DRAWINGS BY DOTT, ARCHITECT G. B. REPETTO

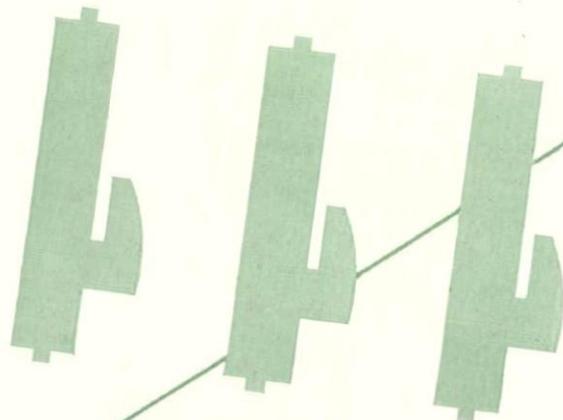


*Italian architects, at the present time, enjoy a situation that many of their American confreres are still impatiently awaiting. In short, the majority of their clients are "modern architecture-conscious." Once this state of mind has been reached, the public no longer considers a building as modern or traditional, but merely as either good or bad architecture. The government, as one of the most important clients of architects in Italy, has set its stamp of approval on modern architecture. Naturally, when a government takes leadership in setting precedents and establishing standards, especially in large scale building developments, architects, unhampered by the vagaries of unintegrated individual tastes, have a better opportunity to do good work. A previous article in American Architect (Nov. 1935) discussed the efforts which Italian architects had made to break away from the limitations of traditionalism. Since that was written great progress has been made. Today, there is no longer the same bitter struggle for domination between the opposing viewpoints of the conservative and the radical. Gone also are the two preliminary phases in the public acceptance of a new style: first, the compromises by both sides which result in something neither new nor old, a sort of "sandpapered classic," and second, the extreme radical experiments, of factory-like International style, whose only seeming virtue is their complete novelty. The stage of a sincere, modern, and Italian architecture has been reached.*

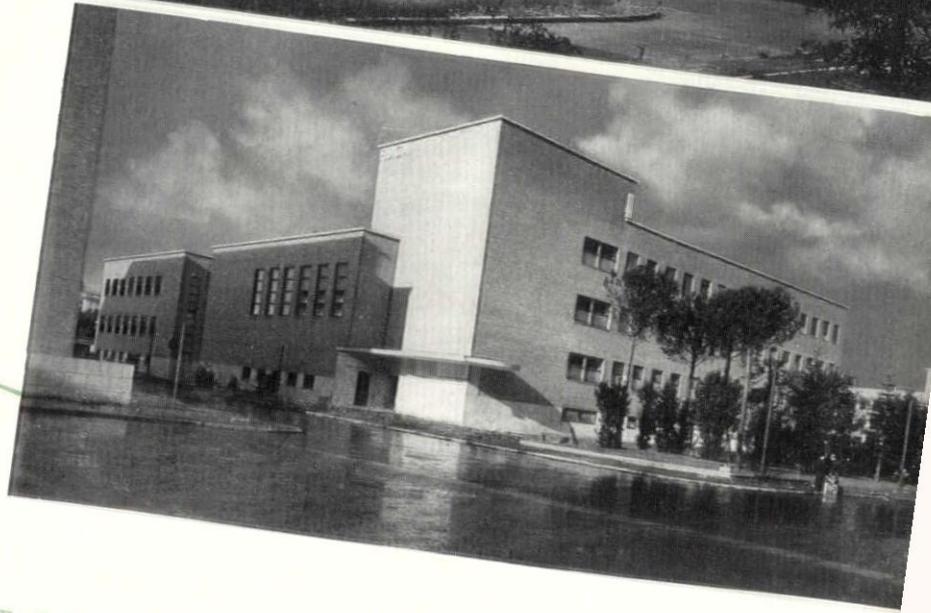
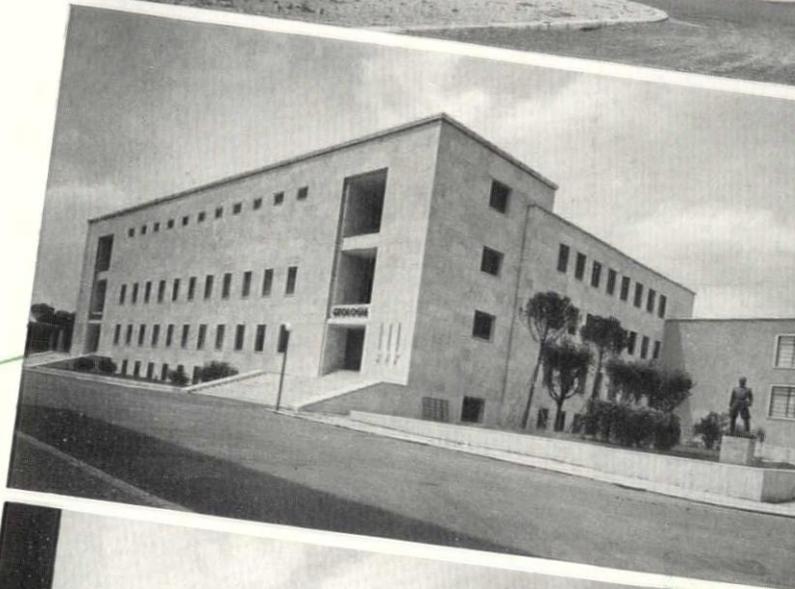
*One of the characteristics of modern architecture in Italy is that it is not confined to façade decoration or to single buildings, but is intimately connected with modern site planning, city planning, and even state planning. The relations of new buildings to their surroundings are carefully studied. A problem which often confronts architects in Italy is that of building in close proximity to monuments of great historic and artistic value, and many different solutions have been tried. In the sixteenth and seventeenth centuries many of the then existing monuments were completely destroyed in order to make way for the new. The Colosseum in Rome barely escaped this fate, as a design by Fontana called for a street through its site. In the past academic age, new structures built near old buildings had to be dressed in the same style as the ancient ones, thus attempting to persuade the casual observer that they were all of the same age. The modern way, however, is to build sincerely the architecture of our age, without overshadowing or detracting from the ancient buildings.*

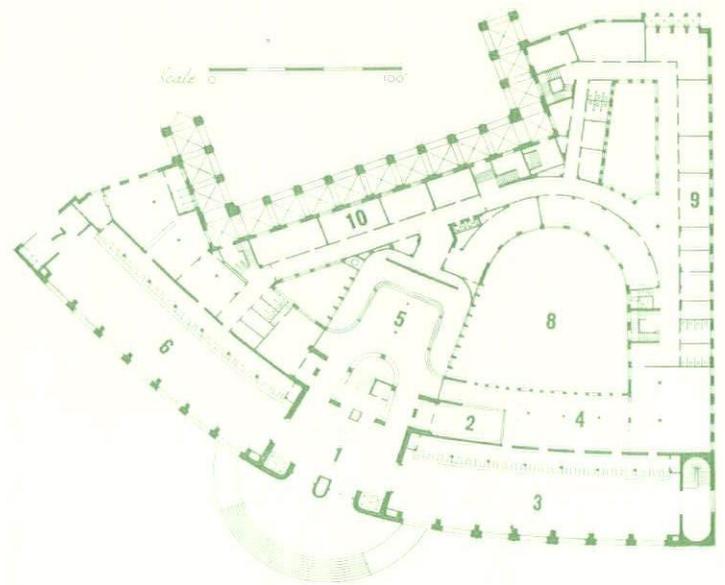
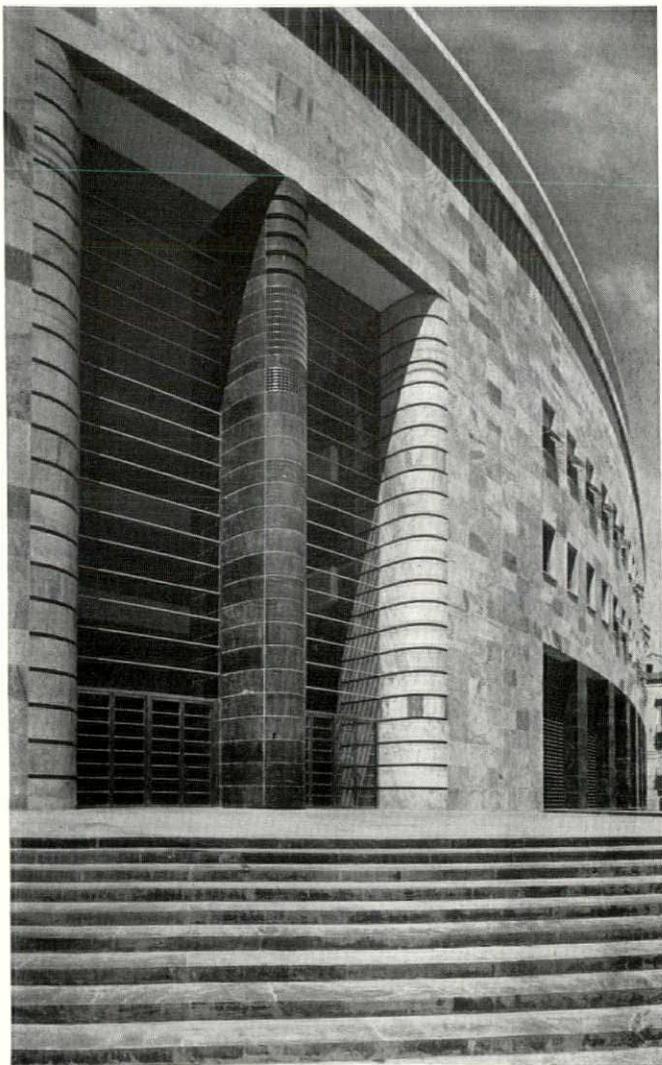
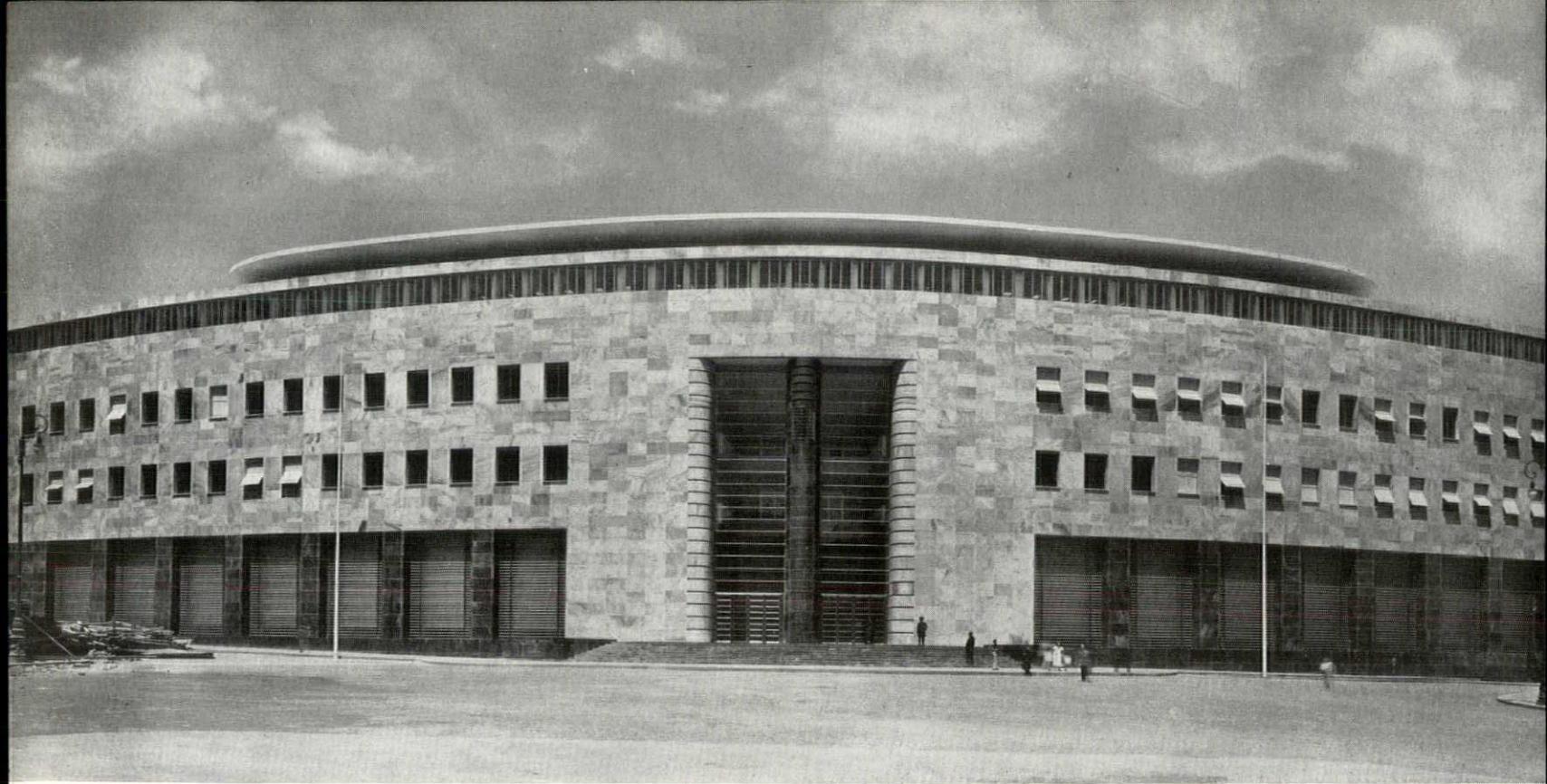


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|---|--|
| 1. R.O.T.C. Barracks                              | 11. Mineralogy, Geology and Paleontology |
| 2. Histology, Physiology, Anthropology            | 12. Mathematics                          |
| 3. Physiology, Organic Chemistry and Pharmacology | 13. Legal Medicine                       |
| 4. Political Science                              | 14. Neurological Clinic                  |
| 5. Law School                                     | 15. Physics Institute                    |
| 6. Administration, Library, Auditorium            | 16. Chemistry                            |
| 7. Botany   | 17. Hygiene and Bacteriology Institutes  |
| 8. Greenhouses                                    | 18. Orthopedic Clinic                    |
| 9. Student Dormitory                              | 19. Powerhouse                           |
| 10. Faculty of Letters and Philosophy             | 20. Faculty Club                         |

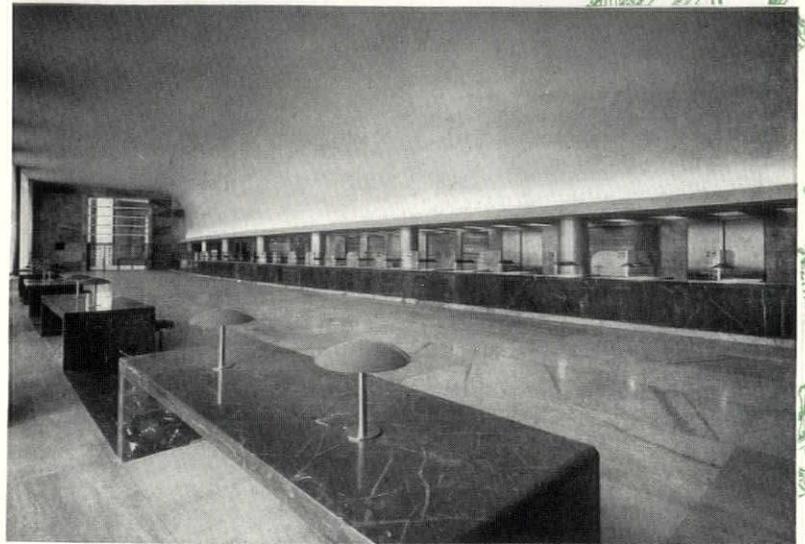
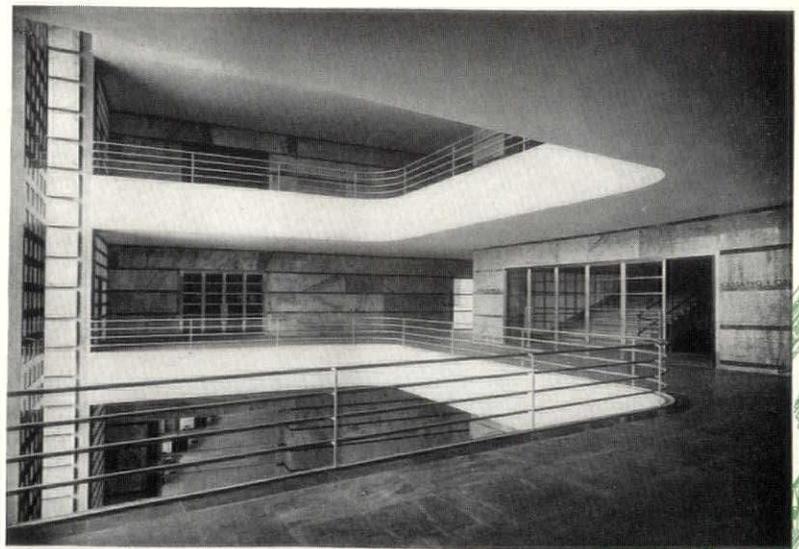
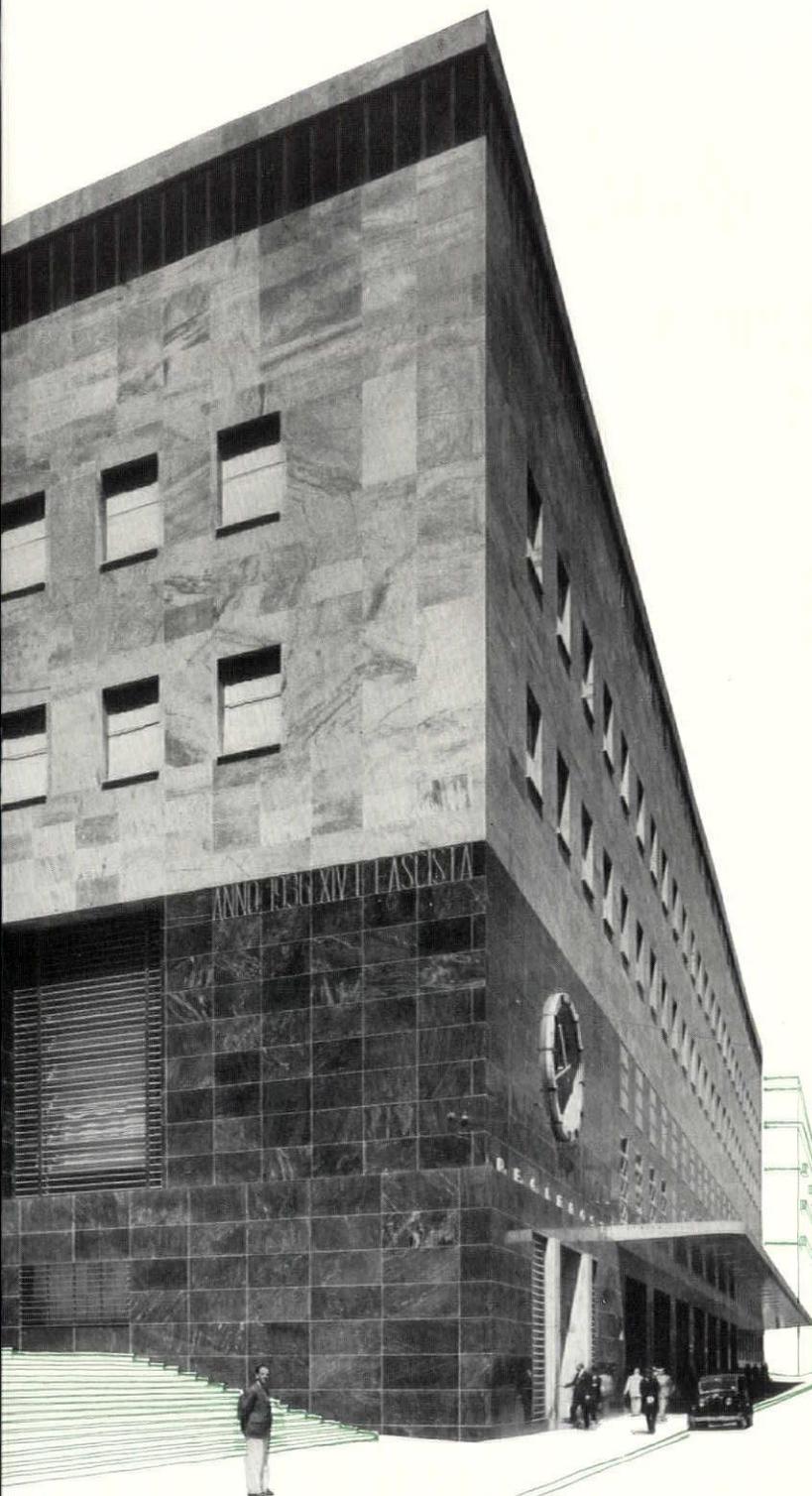


Formally opened in 1935, the University city was built to unify the many schools of the University which had been inadequately housed in old parts of Rome. The present site occupies about 54 acres in a newly planned area on the edge of the city. Chief designer and co-ordinator was M. Piacentini. Associated architects were A. Foschini, P. Aschieri, G. Michelucci, G. Capponi, G. Pagano, G. B. Ponti, G. Rapisardi. The statue of Minerva is by Martini

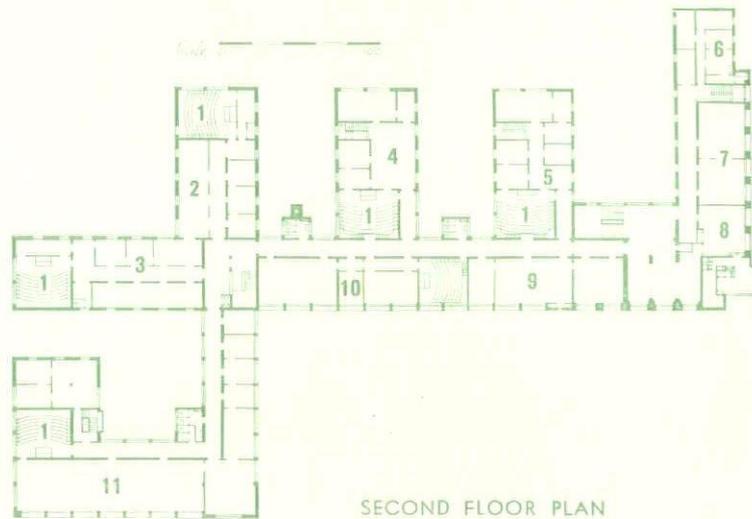
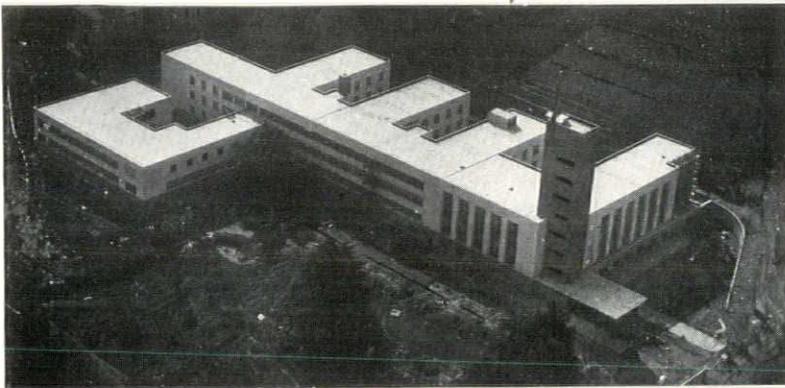
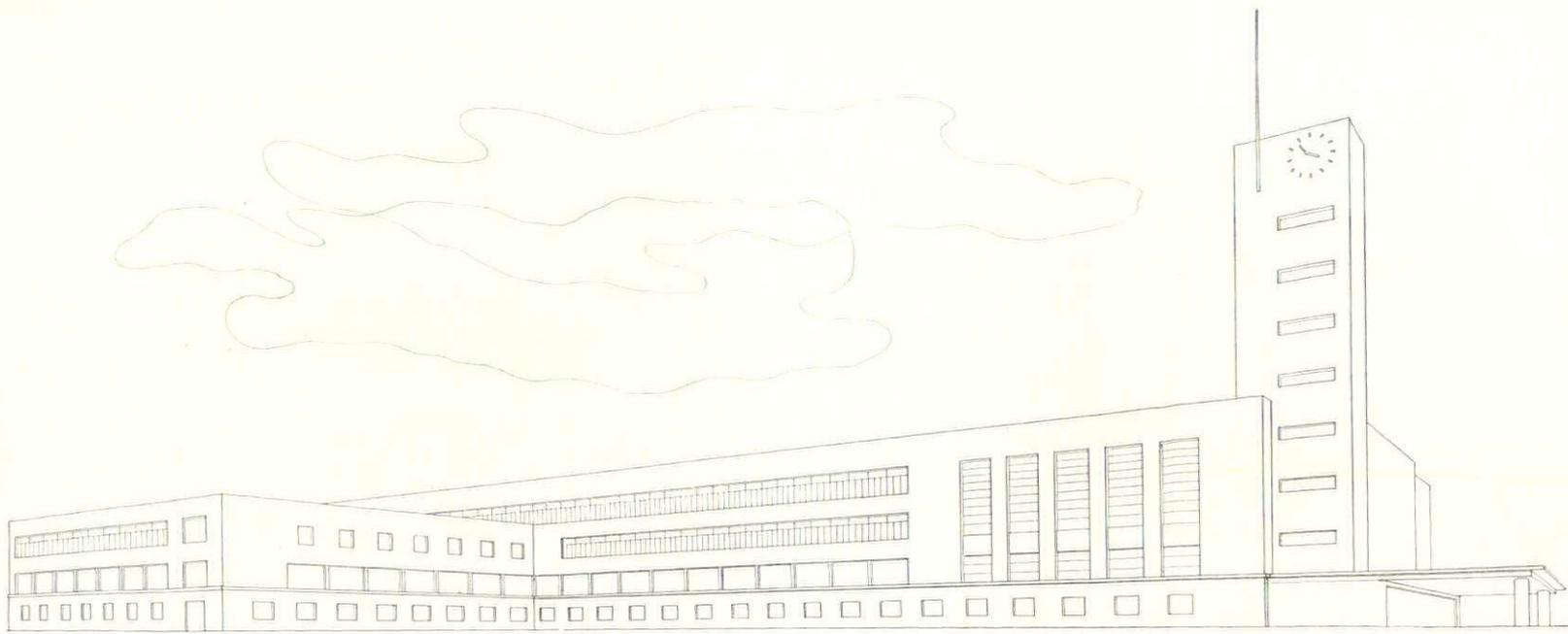




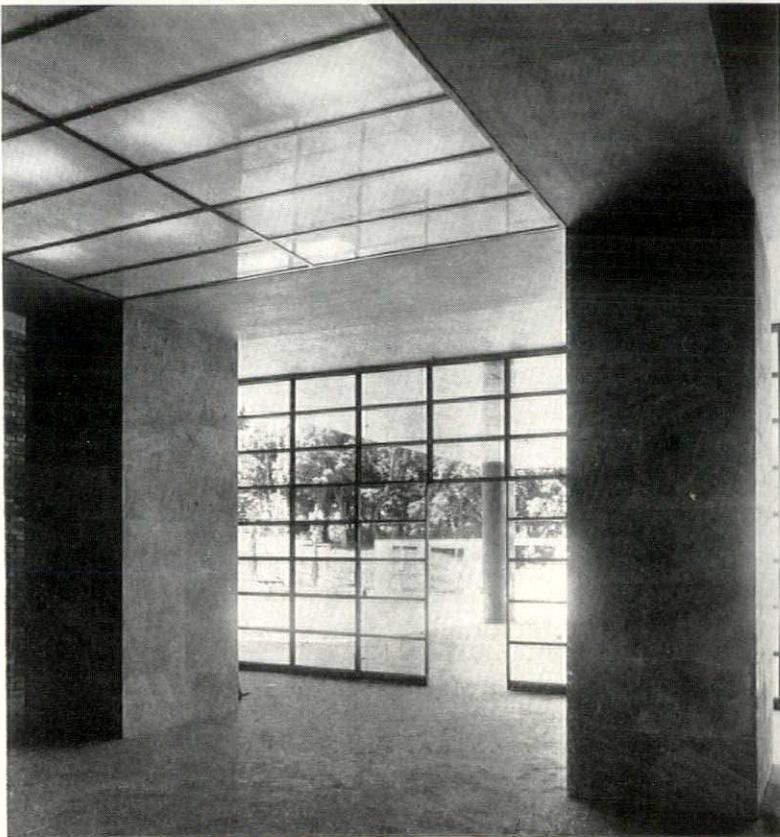
- |                             |                           |
|-----------------------------|---------------------------|
| 1. Entrance Lobby           | 6. Main Telegraph Office  |
| 2. Mail Boxes               | 7. Night Telegraph Office |
| 3. Main Public Post Offices | 8. Truck Courtyard        |
| 4. Sorting Room             | 9. Offices                |
| 5. Registry, Money Orders   | 10. Records               |



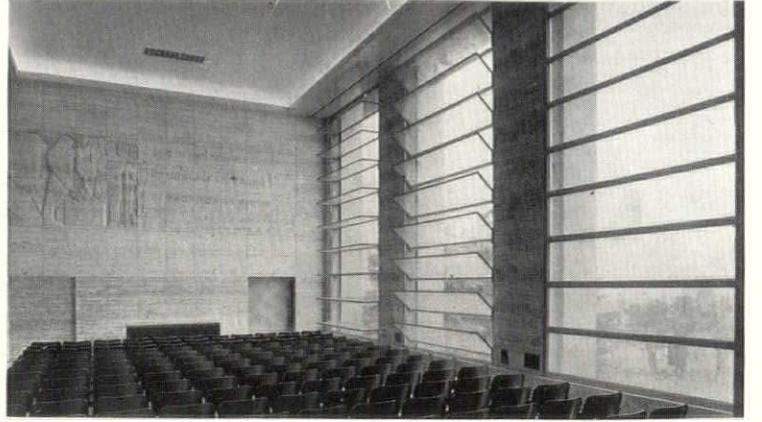
*Selected as the winning design in a competition, the building was started in 1933 and finished in 1936. The site was an irregularly shaped, steeply sloping plot in the center of the city. Of reinforced concrete construction, the building was finished with a veneer of black Diarite from Baveno and marble from Vallestrona. G. Vaccaro and G. Franzi were the architects*

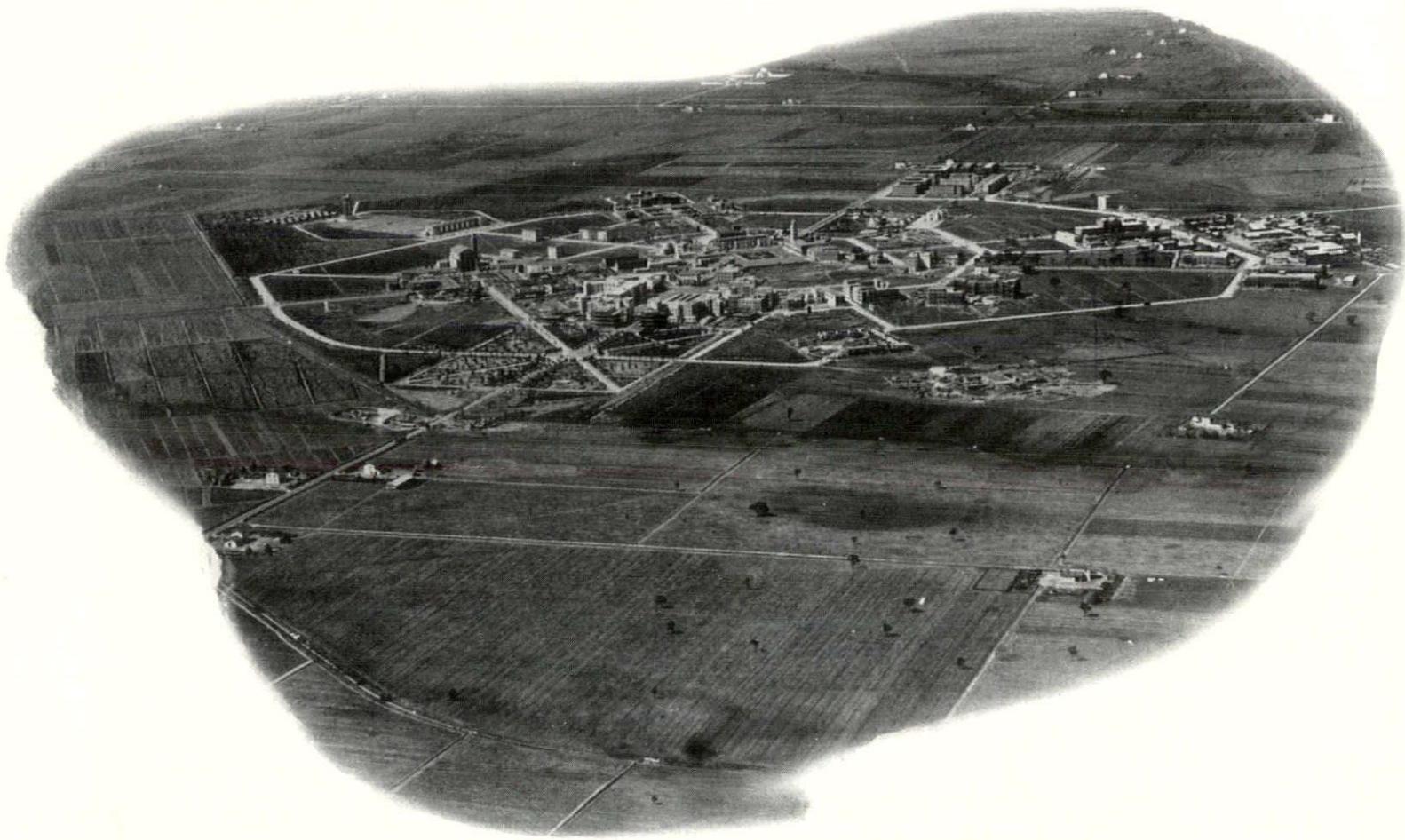


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|----------------------------------|------------------------------|
| 1. Lecture Rooms                 | 6. Janitor's Living Quarters |
| 2. Hydraulic Constructions       | 7. Chemistry Studies         |
| 3. Hydraulics Classrooms         | 8. Reading Room              |
| 4. Thermal and Hydraulic Studies | 9. Electric Laboratory       |
| 5. Electrical Studies            | 10. Machine Construction     |
|                                  | 11. Technical Physics        |

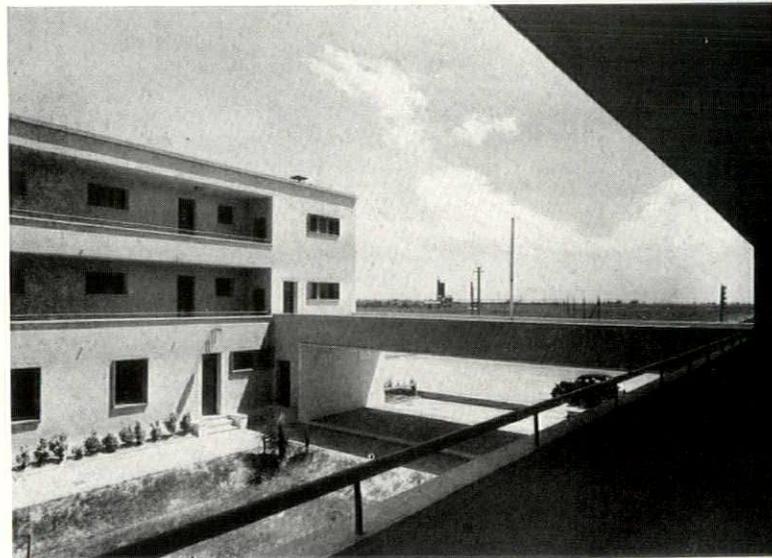
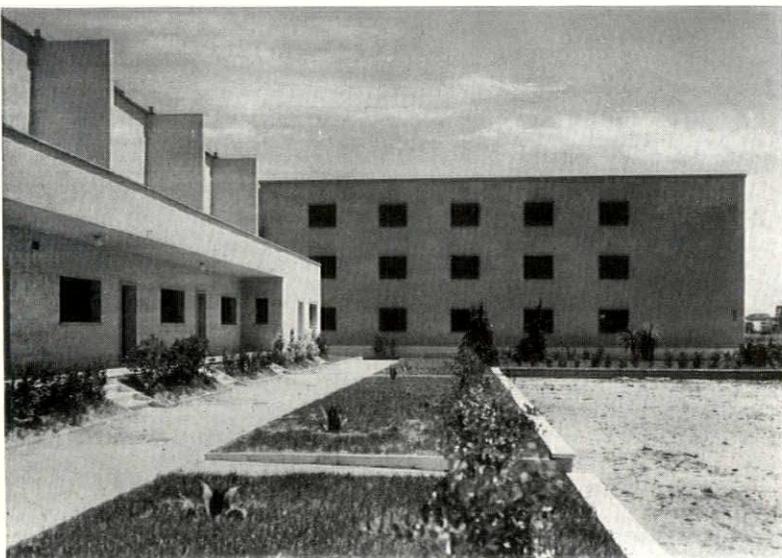


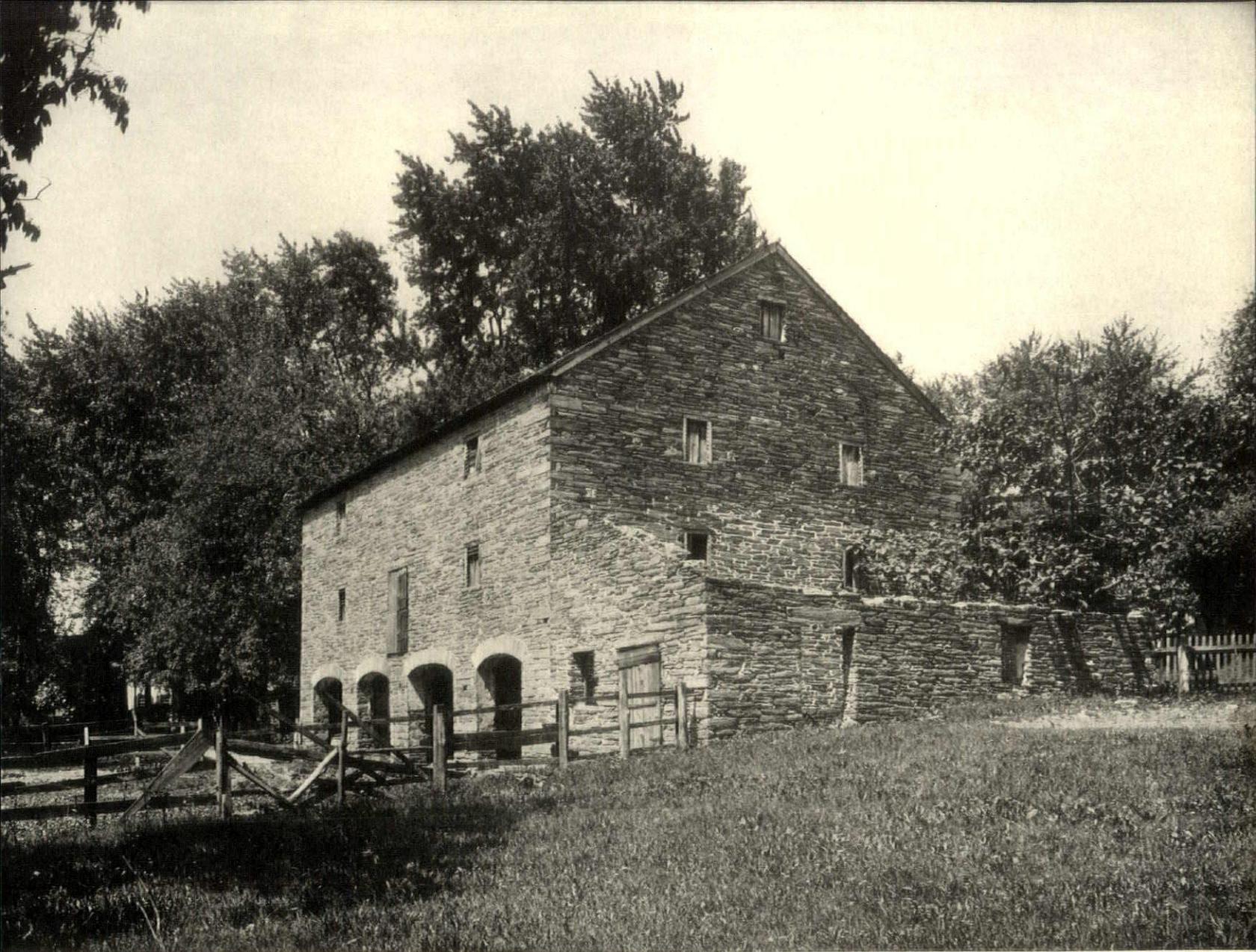
*The building for the School of Engineering, University of Bologna, was built during 1935 in a park on the outskirts of the city. The structure is of reinforced concrete construction with a brick tower and stucco and marble finish. Designed to accommodate 300 students, the various departments occupy separate wings of the building and contain their own lecture rooms, laboratories and work space. G. Vaccaro was the architect.*





*One of the best examples of wise regional planning, urbanism and architecture is the town of Littoria. From a practically useless tract of marsh, this enormous area has been developed into a regularly subdivided agricultural region, centering on the new cities of Littoria, Saubaudia, and Pontinia. The cities have been built under a unified design. Below are two illustrations typical of the housing within the area*



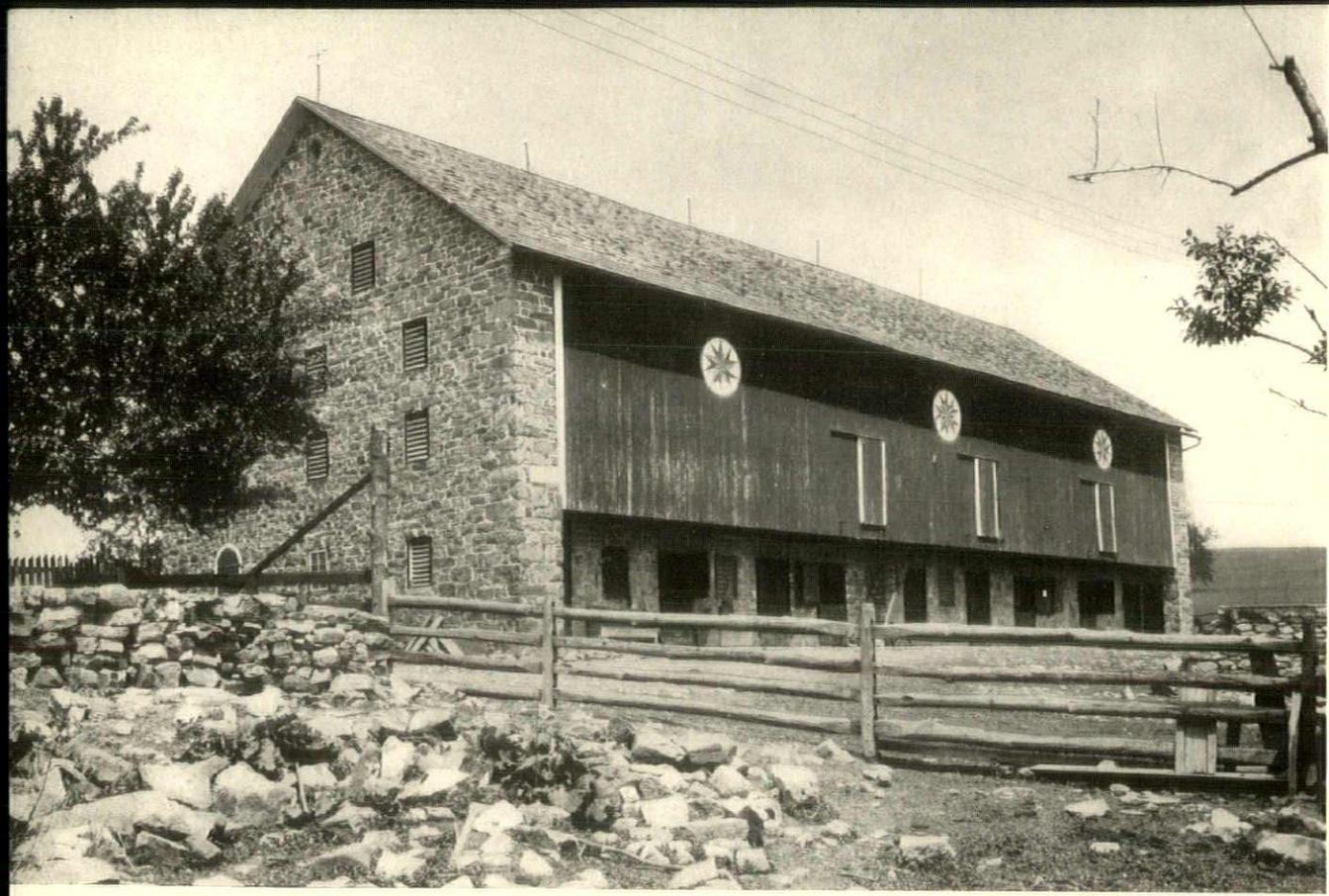


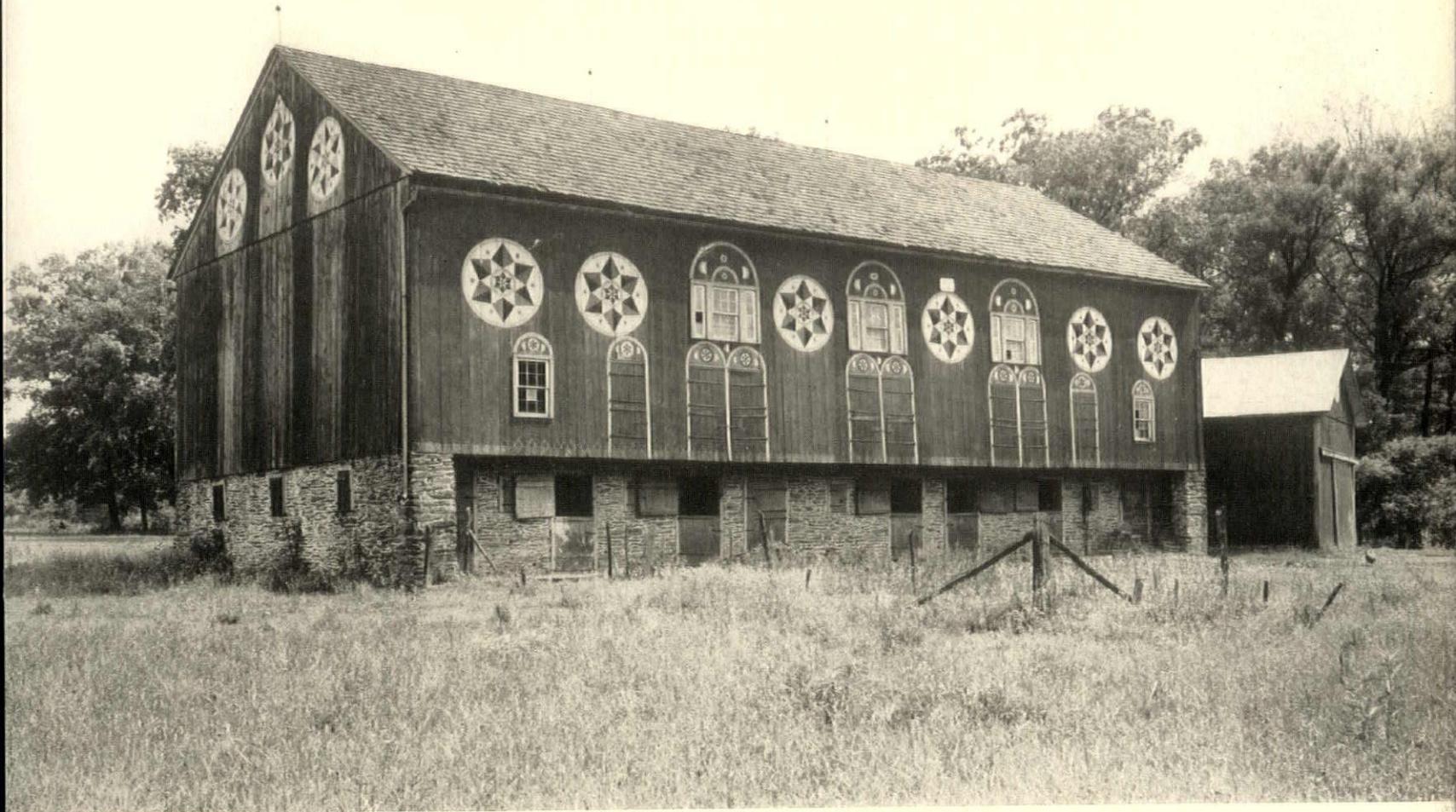
PHOTOS: PHILIP B. WALLACE

Keystone arches and stone lintels stamp the work on the barn at Mount Airy in Philadelphia County as that of a skilled mason

## ARCHITECTURAL OVERTONES **Pennsylvania Barns..**

Under the rich, rolling soil of Eastern Pennsylvania lies the limestone that has, since the eighteenth century, given Pennsylvania buildings their very special character. Peculiarly enough, most of the settlers of this locality came from countries where wood was the exclusive domestic building material. Thus we find strange anomalies, such as wood lintels, wood columns, wood siding to protect masonry and a total absence of masonry corbelling to carry wood beams in most of their stone buildings. Yet, despite this ignorance of the fundamental technique of masonry construction, the buildings are a splendid architectural heritage





**M**ANY of the settlers of Berks and Lancaster Counties were Palatinate German, Dutch and Swiss members of the Mennonite, Amish, Moravian and Dunker Sects. These are a clannish, frugal and prosperous agricultural people, respecting and continuing their old traditions against outside influences. Many of their customs which seem to us to be but quaint superstitions are in reality manifestations of the age-old subconscious worship that men of the soil have for the mysterious workings of nature. To them sickness of man, cattle or produce is caused by witchcraft, the exorcism of which is done according to long accepted rituals. Important among the various anti-witchcraft practices is that of painting so-called "hexenfoos" on buildings to protect them, the stock and the grain from evil. These are adapted from examples in old German almanacs and are always ancient zodiac symbols for the seasons and the cardinal points. These examples are from Berks County.



**A** NOTE that might almost be considered sophisticated in view of the otherwise crude masonry work throughout this locality is the clever handling of quoins. On this particular example in Berks County the lean-to in the rear is evidently an addition to the original structure. The louvered window and slots for ventilation add notes of interest. Whitewash is often applied and after it has weathered the contrasting textures of reddish stone against white are remarkably beautiful

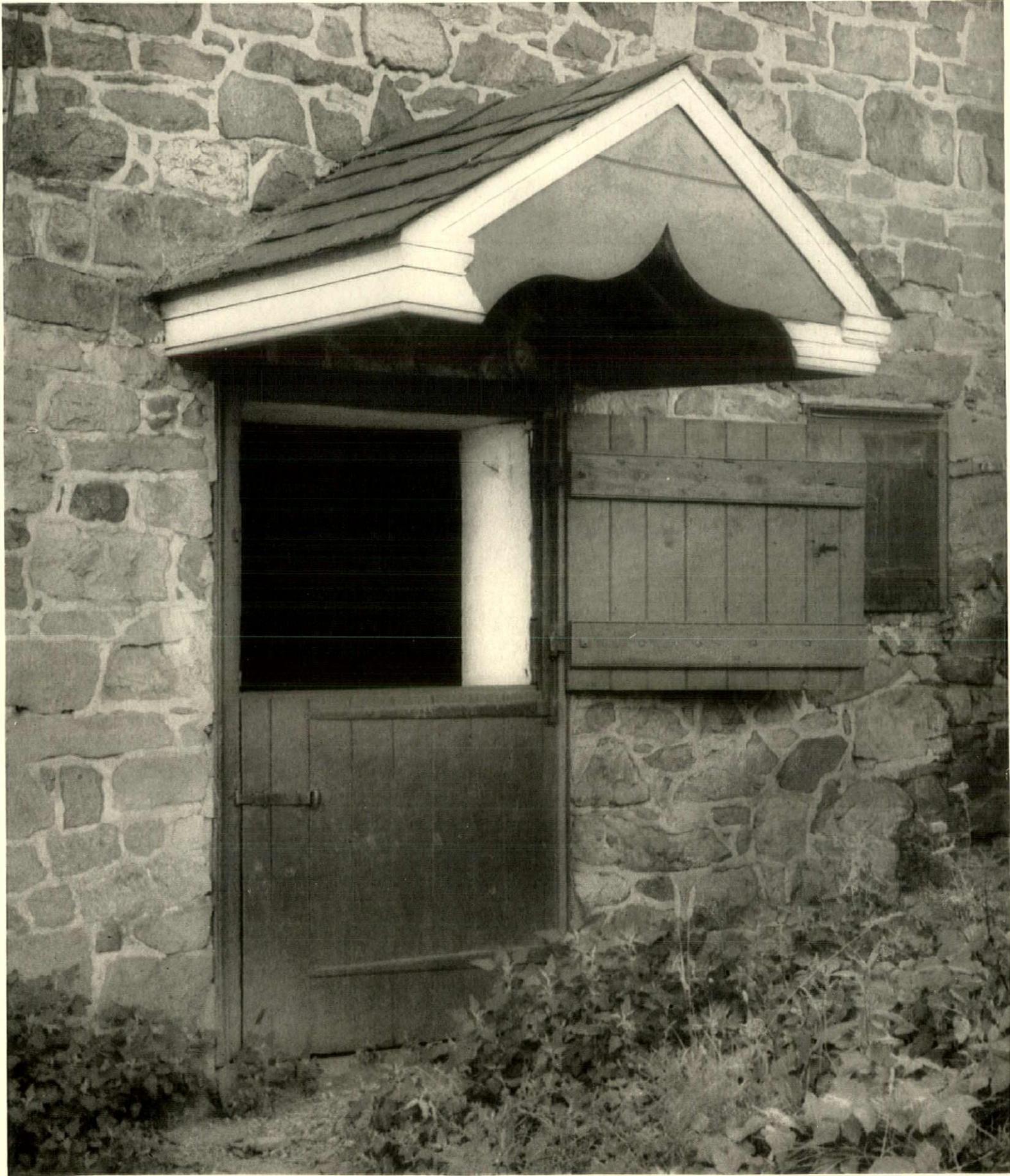


"HEXENFOOS" such as the variant of the swastika form and the painted door outlines on the large hay loft door are somewhat rare in Bucks County where this example is to be found. The use of a small entrance door and window in this large door is interesting. Ventilation portholes outlined by means of brick voussoirs result in a pleasant pattern. The wood of the addition on the stock side of the barn which can be seen to the left has a characteristic return



THE rolling character of the country has exerted a considerable influence in developing an almost standardized plan for Eastern Pennsylvania barns. Usually placed on the south side of a hill, the entrance to the hay loft is to the north. Thus the farmer may drive a loaded wagon directly into the second story loft which is obviously on the higher side of the building. The ground floor is thus entered from the south. Here the stock is kept in the lee of winter winds. There is usually also an overhang of the building on this side as additional protection during inclement weather. The barn above in Chester County illustrates the direct entrance to the hay loft on the higher level. . . . That opposite, also in Chester County, has an open wagon shed on the lee side.



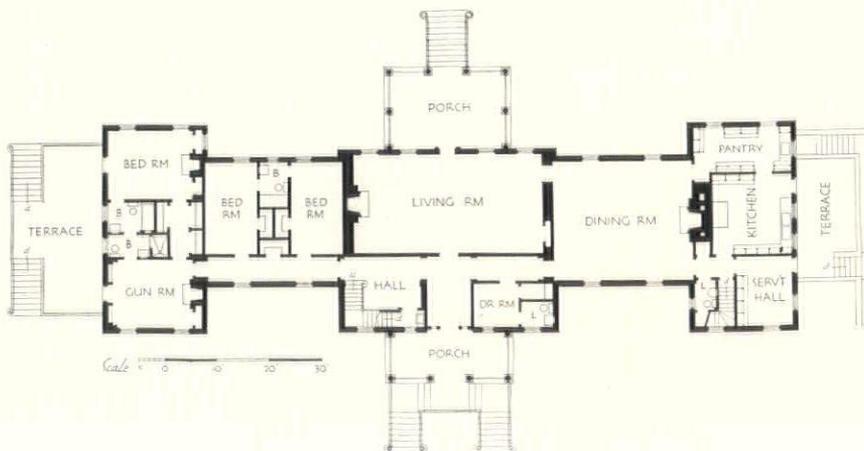
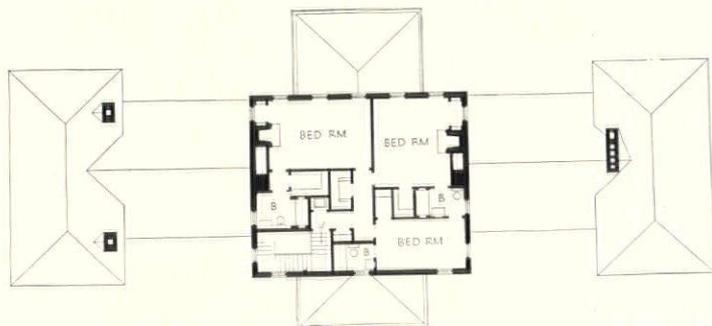


Once commonplace, hooded double-door barn entrances, such as this Bucks County example, are becoming increasingly rare



PHOTOS: SAMUEL H. GOTTSCHO

"Greenfield," is an old plantation, located on the Black River about nine miles north of Georgetown. It belonged at one time to Dr. Poinsette who introduced into this country the poinsettia, a flower which bears his name. Although the house is new, its peninsula-like site, facing the river and flanked on both sides by rice fields, and a close adherence to the architectural tradition of the locality combine to make it seem one of great age. The scale of the openings and other details were inspired by those at Harrietta Plantation, one of the few fine neighboring houses still standing and occupied. The plan is also based on local precedent



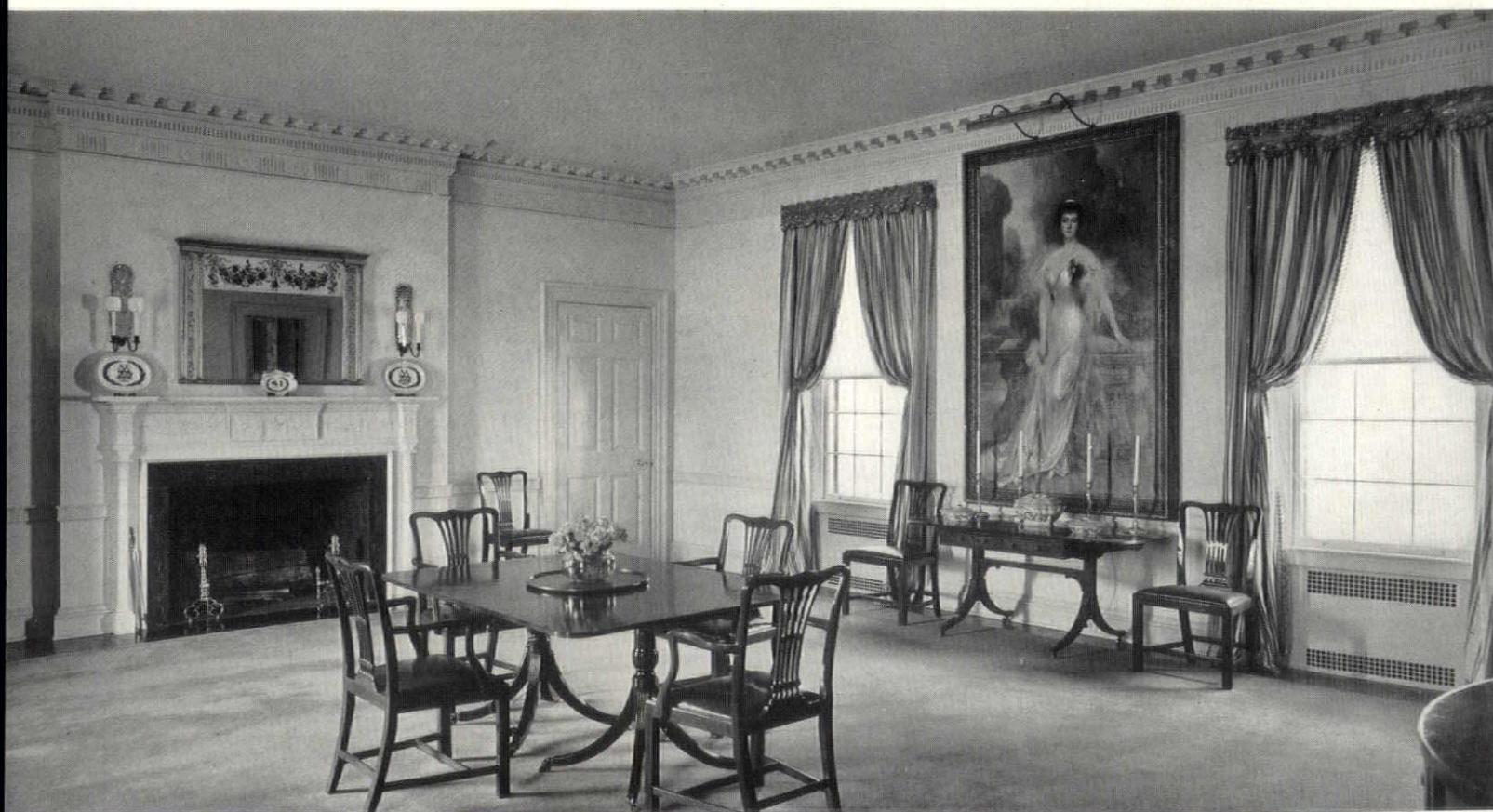
**PLANTATION OF WALKER P. INMAN**  
**GEORGETOWN COUNTY, SOUTH CAROLINA**  
**WYETH & KING, ARCHITECTS**  
**INNOCENTI & WEBEL, LANDSCAPE ARCHITECTS**



In furnishing the large living room, the decorator recognized the natural division made by the traffic lane established by the doors on the axes of the facing long walls. Thus (above and opposite, above) each end has a separate grouping of furniture. Walls are white and the richness of the Georgian mahogany furniture is enhanced by a color scheme of green, white, mustard and beige. (Right) A small pine paneled gun room, which is used as a personal sitting room, is decorated in blue, beige and cream chintz, blue leather and accents of snuff colored material. (Opposite page, below) White walls serve as the background for Georgian furniture in the dining room. Draperies have an olive and white stripe; chairs are upholstered in green leather, and the rug is beige

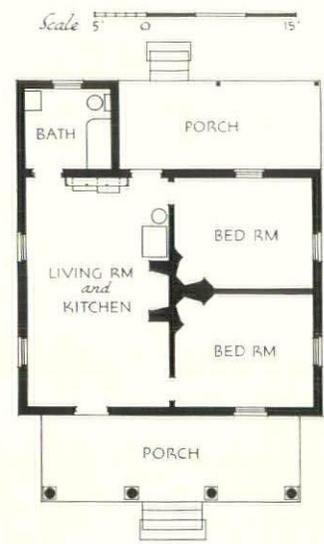
**PLANTATION OF WALKER P. INMAN, GEORGETOWN COUNTY, S. C.**  
**WYETH & KING, ARCHITECTS - RUBY ROSS WOOD, DECORATOR**





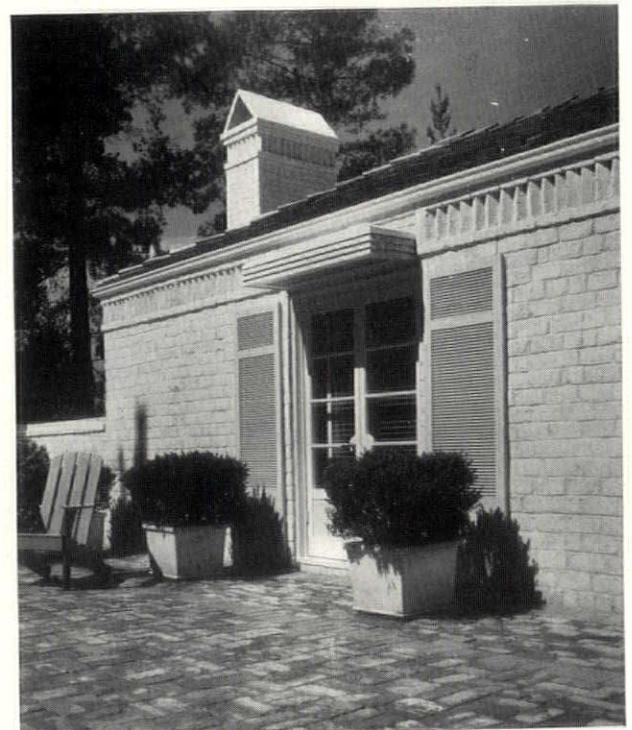
PLANTATION OF WALKER P. INMAN  
 GEORGETOWN COUNTY, SOUTH CAROLINA  
 WYETH & KING, ARCHITECT

(Left) A view of the road to the house flanked by trees, seen from under the entry porch, exemplifies the characteristic hospitable charm of plantation life. (Below) Quarters for the Negro servants follow the old plantation principle of building "slave houses," as they are known locally, along a "street." Each of these houses has the same plan





Located in the hills in the northern section of Oakland, the house commands a view of San Francisco Bay, the Golden Gate Bridge and the San Francisco-Oakland Bay Bridge. Sloping sharply from the street downward, the site allowed ample light for a laundry and garage in the basement at the rear. Exterior walls are whitewashed brick or plaster and redwood siding painted white. Shutters are painted yellow

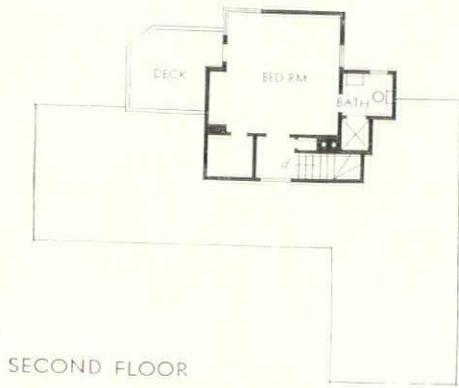


**HOUSE OF E. M. JUDA, OAKLAND, CALIFORNIA**  
**F. L. R. CONFER, ARCHITECT, J. H. ANDERSON, ASSOCIATE**  
**T. D. CHURCH, LANDSCAPE ARCHITECT**

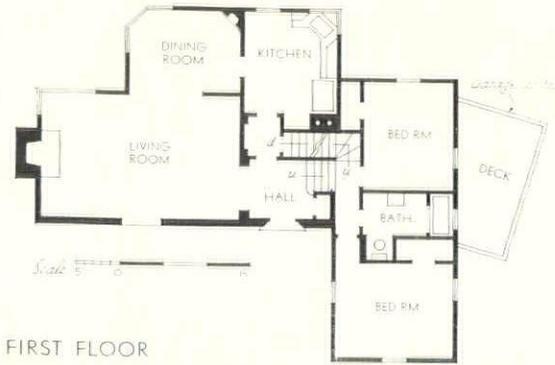
HOUSE OF E. M. JUDA, OAKLAND, CALIFORNIA

F. L. R. CONFER, ARCHITECT

J. H. ANDERSON, ASSOCIATE



SECOND FLOOR



FIRST FLOOR



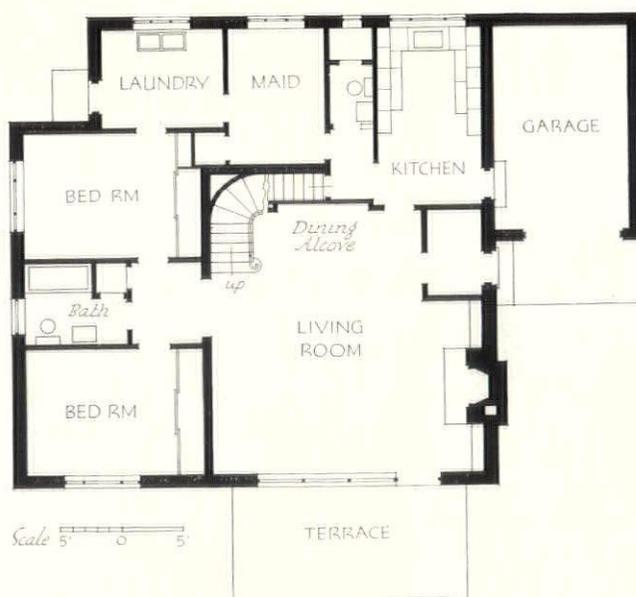
In the living room, a large corner window allows a view to the west and the Bay Bridge. Walls are painted a soft coral color, and the stepped wood ceiling is painted white. The central trough lighting fixture is made an integral part of the ceiling design



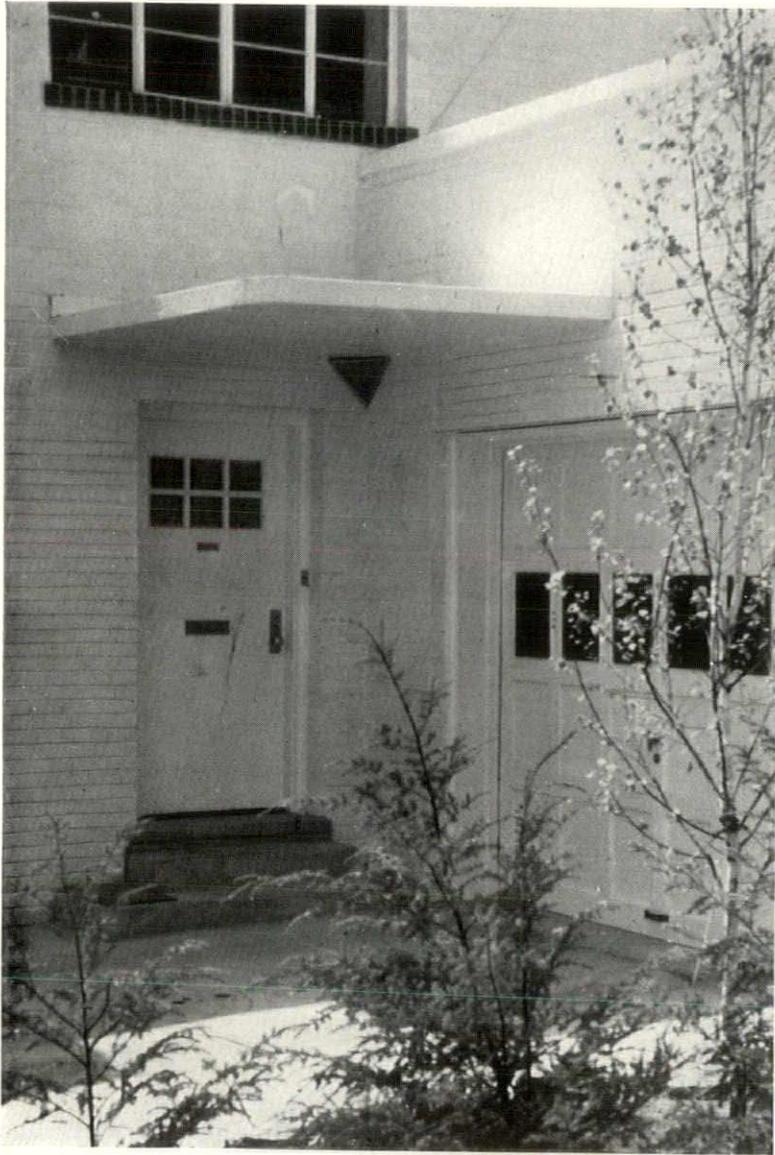


PHOTOS: LERNER

Designed by the owner, a mechanical engineer, architectural traditions were discarded whenever they conflicted with the principles of utility and simplicity. Without an attempt to follow it, the result is, nevertheless, suggestive of the modern style. Designed for two people, it was purposely kept small. To reduce upkeep costs, only high grade materials were employed, resulting in a construction more substantial than is customary in small houses



**HOUSE OF DR. AND MRS. PAUL H. SCHWEITZER**  
**STATE COLLEGE, PENNSYLVANIA**  
**C. A. LAMM AND H. W. LOMAN, ARCHITECTS**



A feature of the house is the large two-story living room which serves also as dining space, stair hall and sun porch. The stairway leads to the roof terrace which offers an attractive view of the surrounding mountains. The heating and air conditioning system, located in the basement, is of the split type

**HOUSE OF DR. AND MRS. PAUL H. SCHWEITZER**  
**STATE COLLEGE, PENNSYLVANIA**  
**C. A. LAMM and H. W. LOMAN, ARCHITECTS**

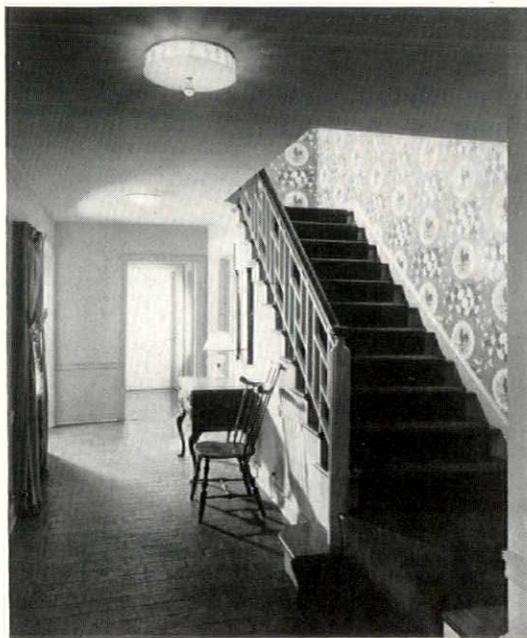


PHOTOS: HEDRICH-BLESSING

Stone and wood are used in a very pleasing combination in this small residence. The low, stone fence effects a happy transition to the site, and the use of white wood shingles on the upper story lends a light, domestic touch. Blinds are painted a dark blue-green. The roof is of black hand-split shingles



**HOUSE OF HAROLD SMITH, EVANSTON, ILLINOIS • WHITE & WEBER, ARCHITECTS**



Patterned blue wall paper is used in the dining room, with all trim and ceiling painted white. The floor is of Bruce Unit Blocks. Reeded trim and gray painted walls decorate the stair hall, with brilliant wall paper used on the stair wall. Brick tile is used for the floor

HOUSE OF HAROLD SMITH  
EVANSTON, ILLINOIS  
WHITE & WEBER, ARCHITECTS



PHOTOS: SAMUEL H. GOTTSCHO



Looking through the motor entrance toward the main house, the silhouetted arch connects the resident gardener's apartment on the right with the garage on the left. The one-story unit at the right consists of a sitting room, two bedrooms, with baths, for guests. The copper and bronze grille in the front wall of the main house permits a view of the patio beyond

**HOUSE OF D. F. BRODERICK**

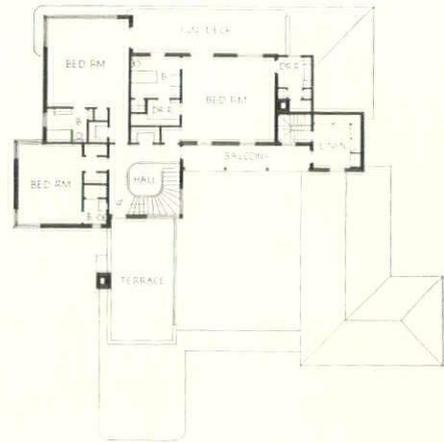
**MIAMI BEACH, FLORIDA**

**RUSSELL T. PANCOAST, ARCHITECT**

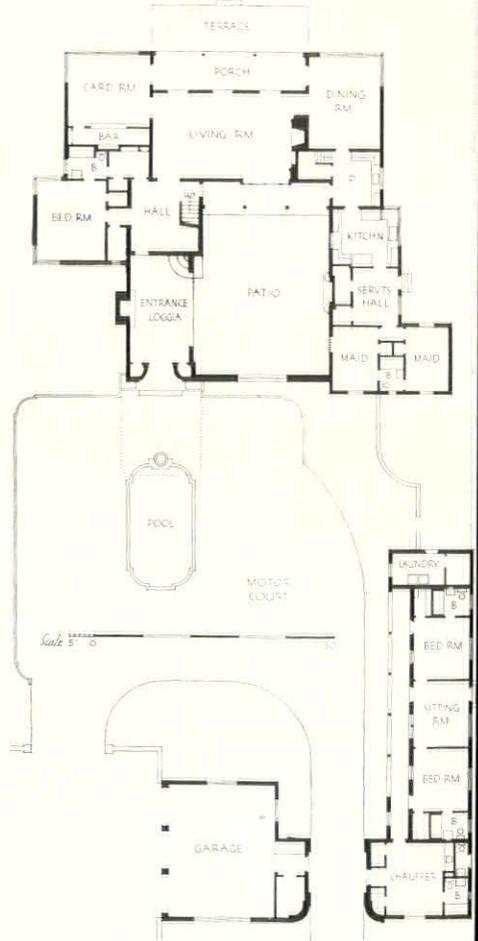


HOUSE OF D. F. BRODERICK  
 MIAMI BEACH, FLORIDA  
 RUSSELL T. PANCOAST, ARCHITECT

SECOND FLOOR



FIRST FLOOR



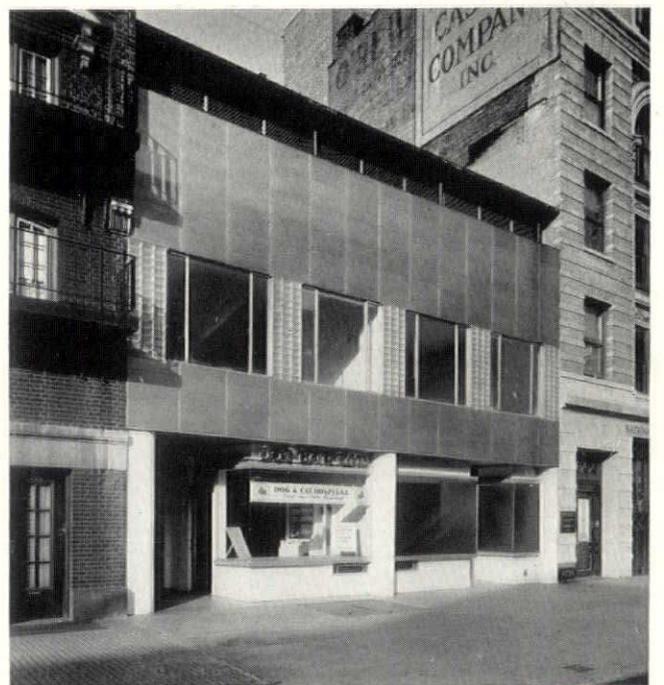
At the base of the simple supporting column of the porte cochere, there is a lotus pool edged with coral rock. The balcony acts as a means of communication from the servants stairway to the main second floor hall

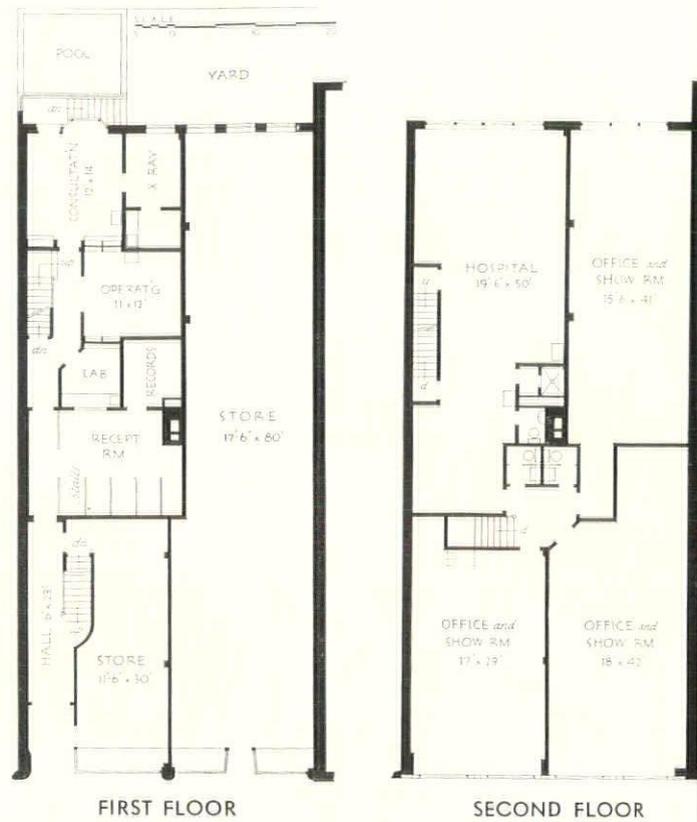
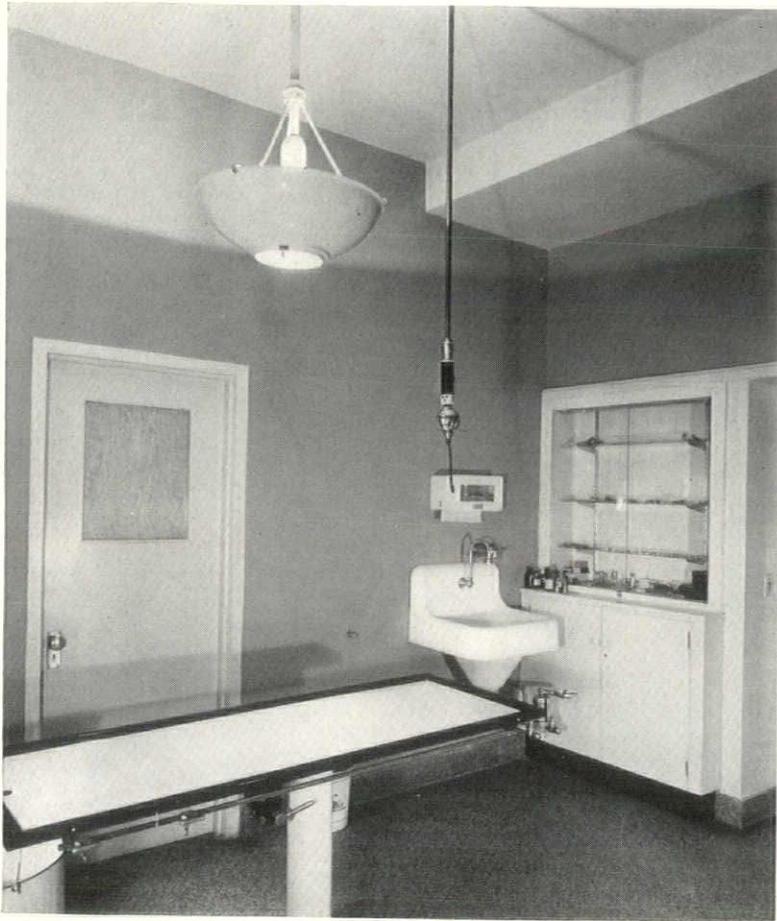


PHOTOS: SCHNALL

This building is evidence that the design of hospitals for animals is keeping pace with the remarkable progress that has been made in the scientific design of hospitals for human beings. An ingenious use of modern materials has resulted in a clean, horizontal facade treatment. Above the first floor a facing of stainless steel, developed by the Oscar B. Bach Studios, Inc. has been applied by means of Revecon sections. At the first floor, which is mostly show window area, the surface is yellow-white Vitrolite. Structural glass block has been used between the second floor windows to carry out the horizontal feeling

**VETERINARY HOSPITAL, NEW YORK  
BLOCH & HESSE, ARCHITECTS**

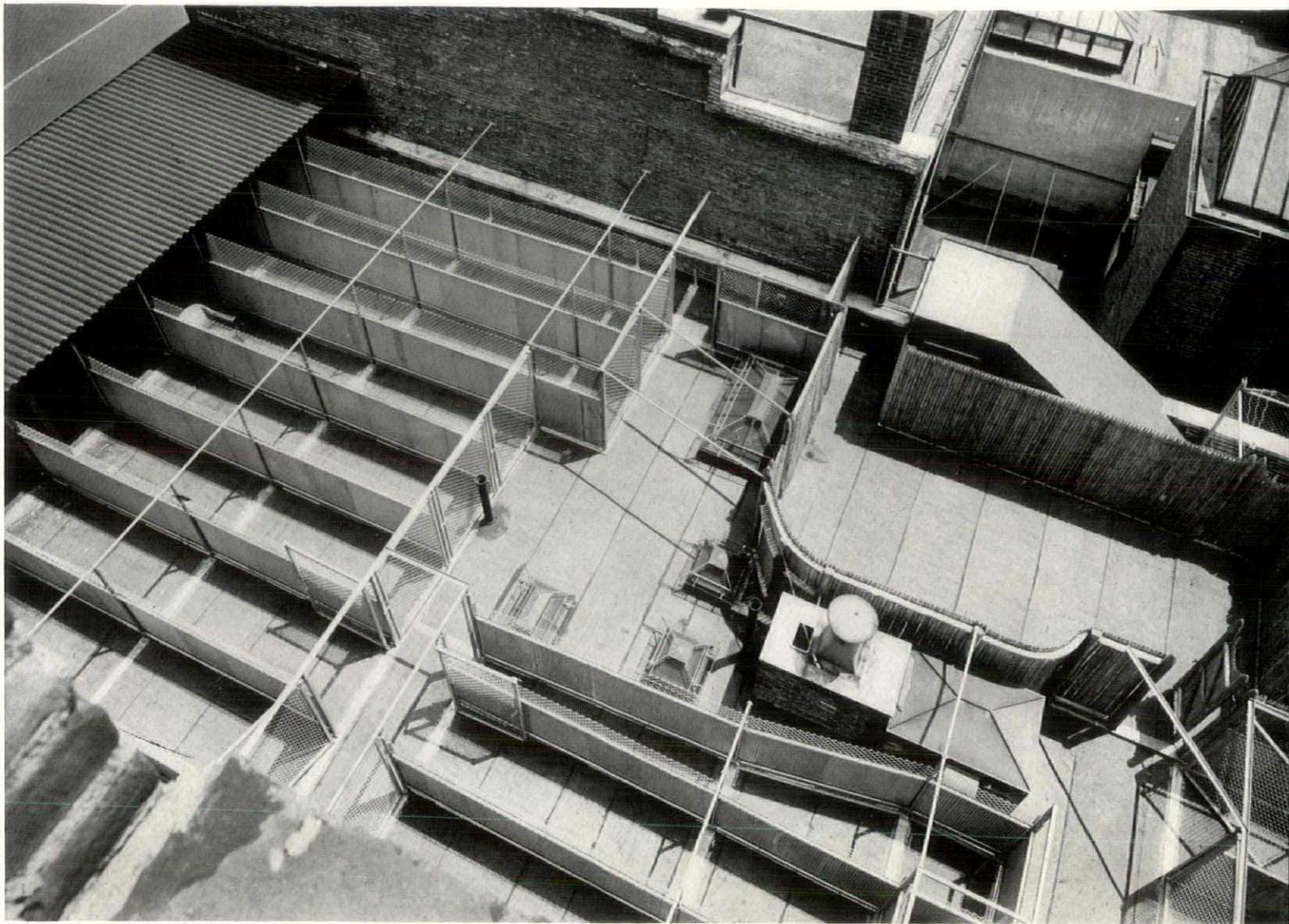




Besides the veterinary office and the grooming space in the small store on the first floor and the hospital space on the second, there is a ward in the basement and a dog run on the roof. The remainder of the building is given over to rentable area. (Above) A view of the fully equipped operating room. (Below) White walls, blue partitions and red leather upholstery are used in the reception room. The use of partitions is a simple device to discourage patients from barking. (Opposite page) The grooming room also has partitions between work areas. Each of these has its own wash tub with running water. Flooring is of black terrazzo

**VETERINARY HOSPITAL, NEW YORK  
BLOCH & HESSE, ARCHITECTS**





(Above) a view of the dog run on the roof with both wire and cedar post fences  
 (Left) The hospital with metal cages. . . (Right) A view of the laboratory through the window from the reception room

**VETERINARY HOSPITAL, NEW YORK • BLOCH & HESSE, ARCHITECT**

THE PORTFOLIO

# Wall-face Dormer Windows

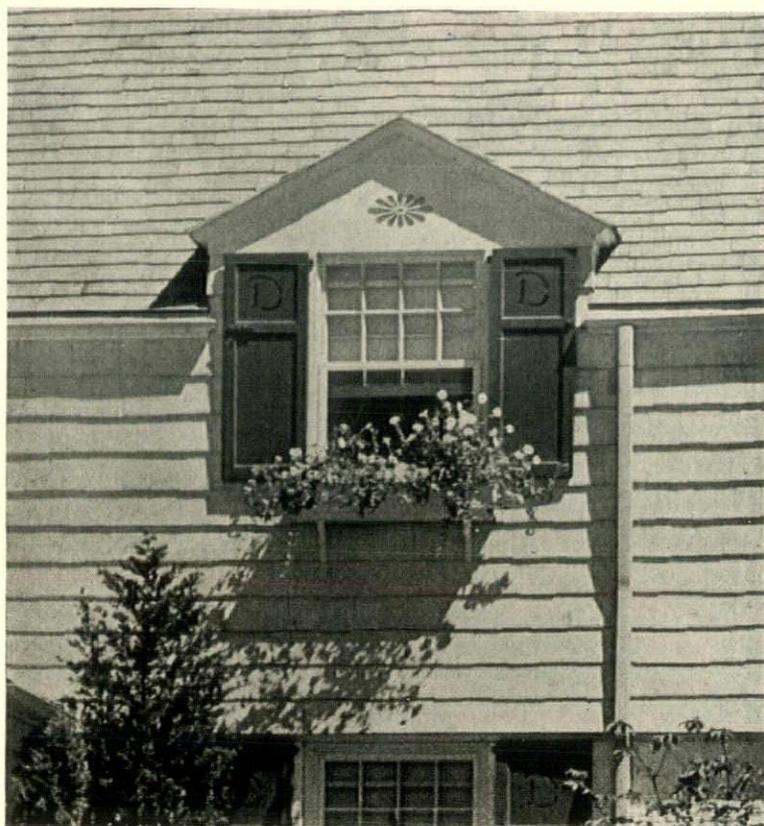


Gladwyne, Pa.  
Edmund B. Gilchrist

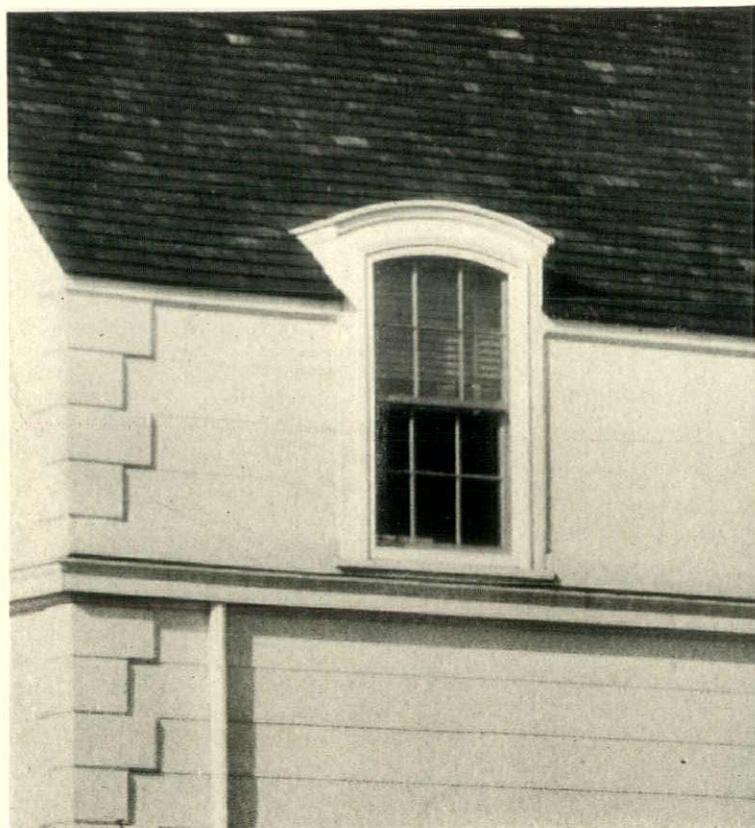
**PORTFOLIOS IN PREPARATION—Door Steps, October . . . Doorway Sidelights, November . . . Resilient Floors, December . . . Roof Textures, January**

The Editors welcome photographs of these subjects. . . . Forms close eight weeks in advance of publication. A list of the subjects that have appeared will be sent upon request. Certain of these past Portfolios are available to subscribers at 25 cents each; or five subjects for one dollar

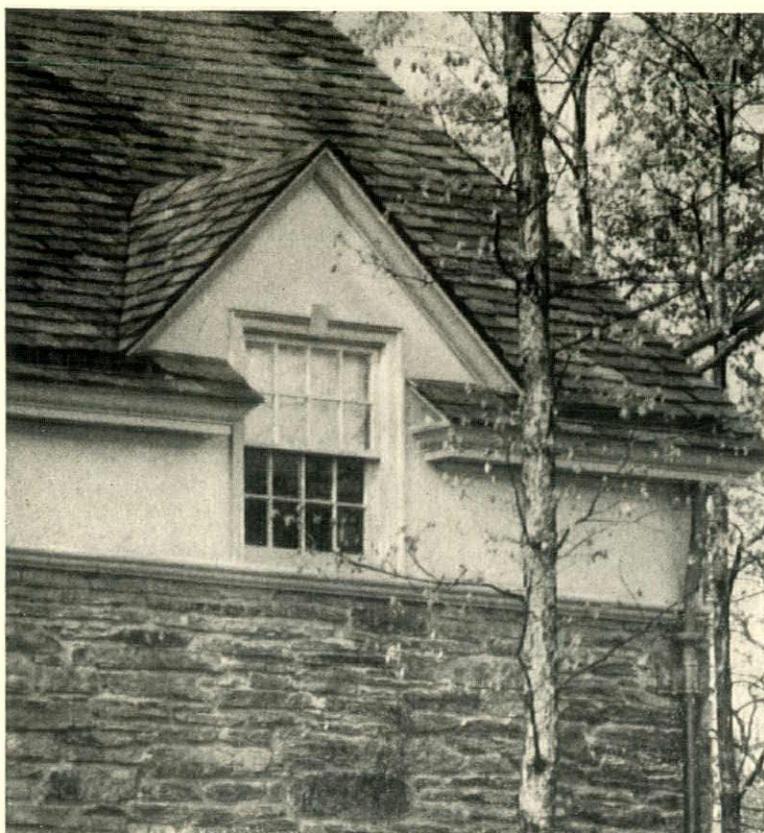
**NUMBER 131 IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS**



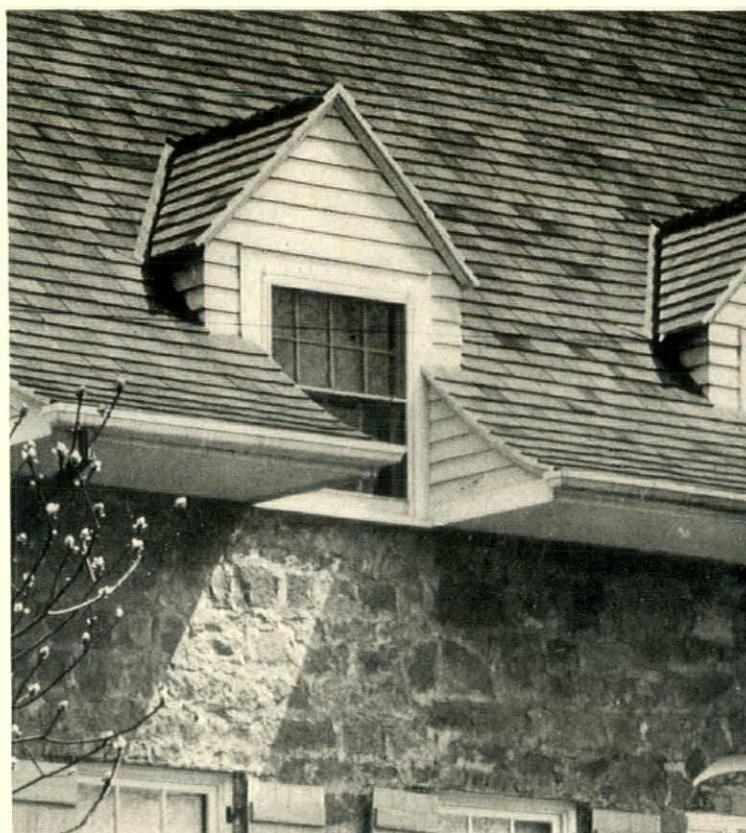
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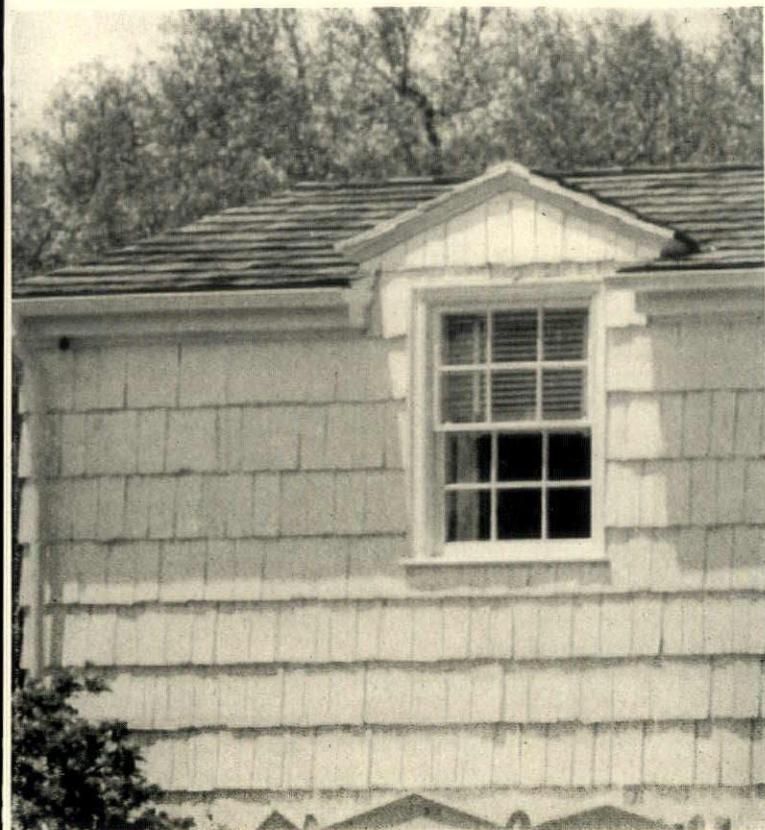
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Milman & Morphett



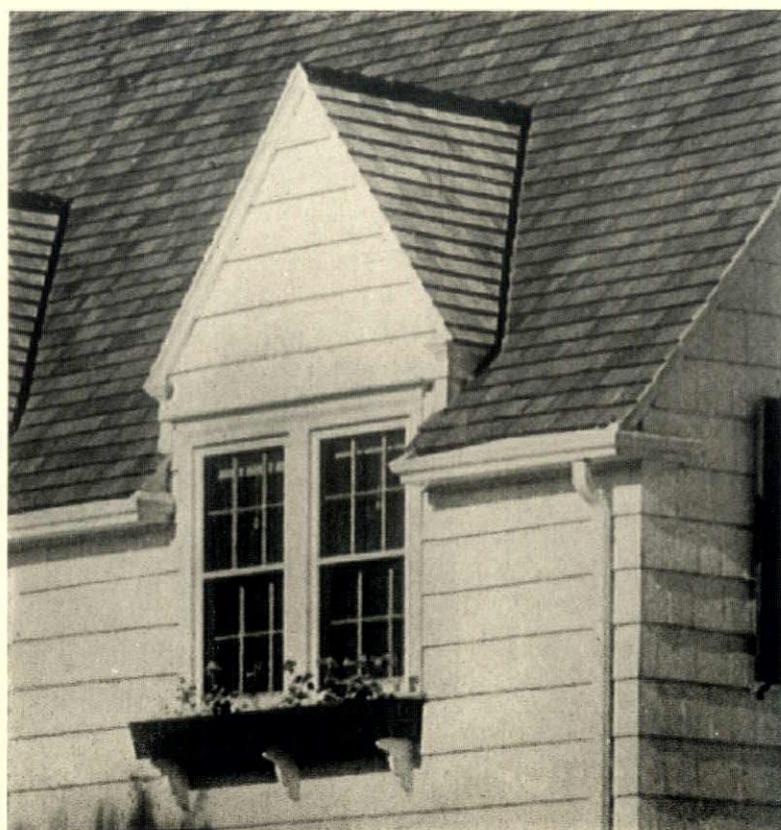
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R. C. Hunter & Brother



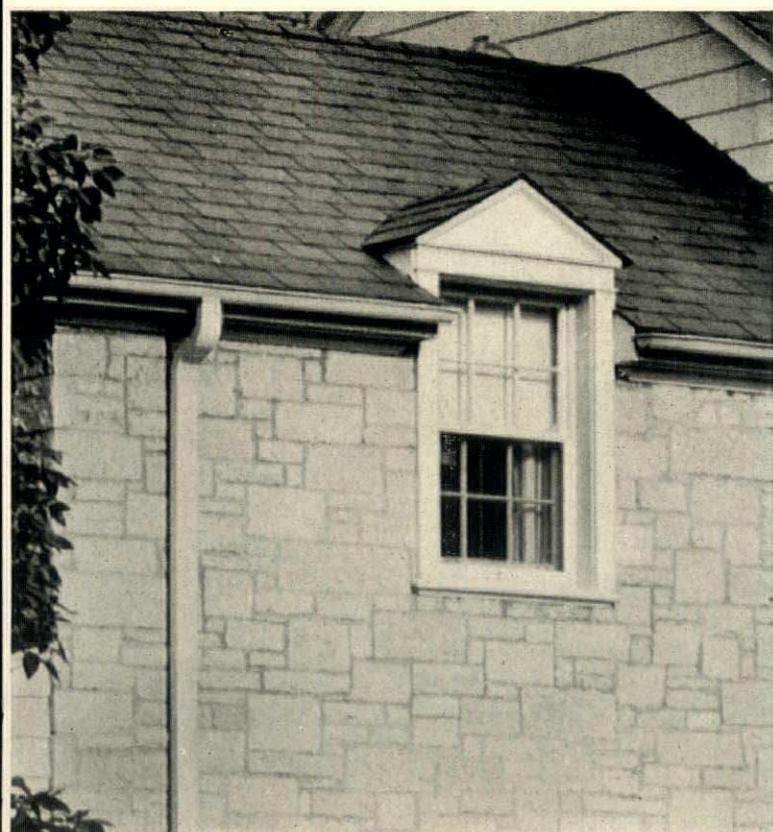
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Frederick T. Warner



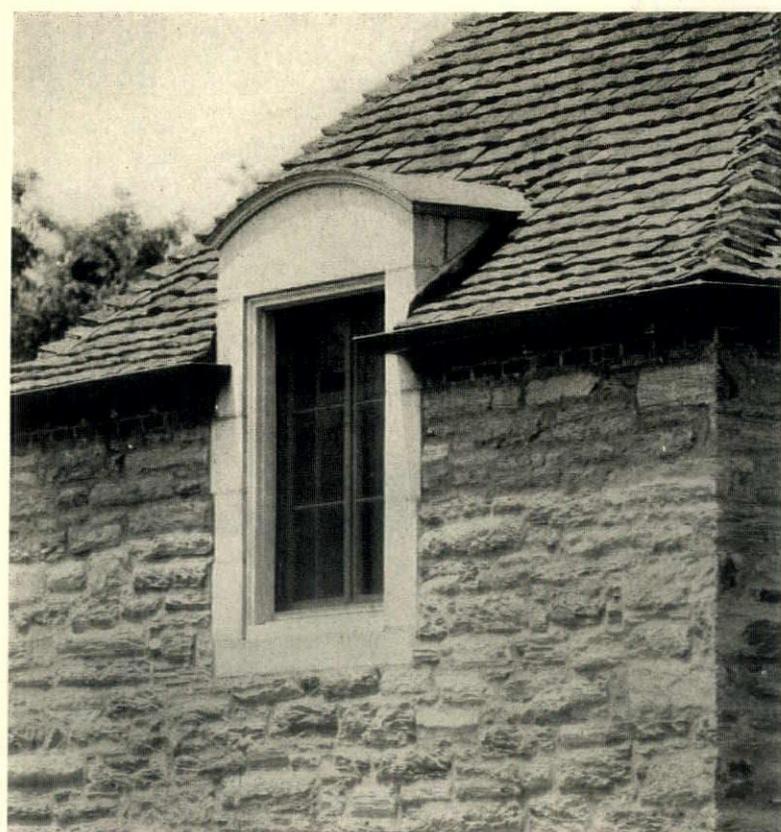
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Roland E. Coate



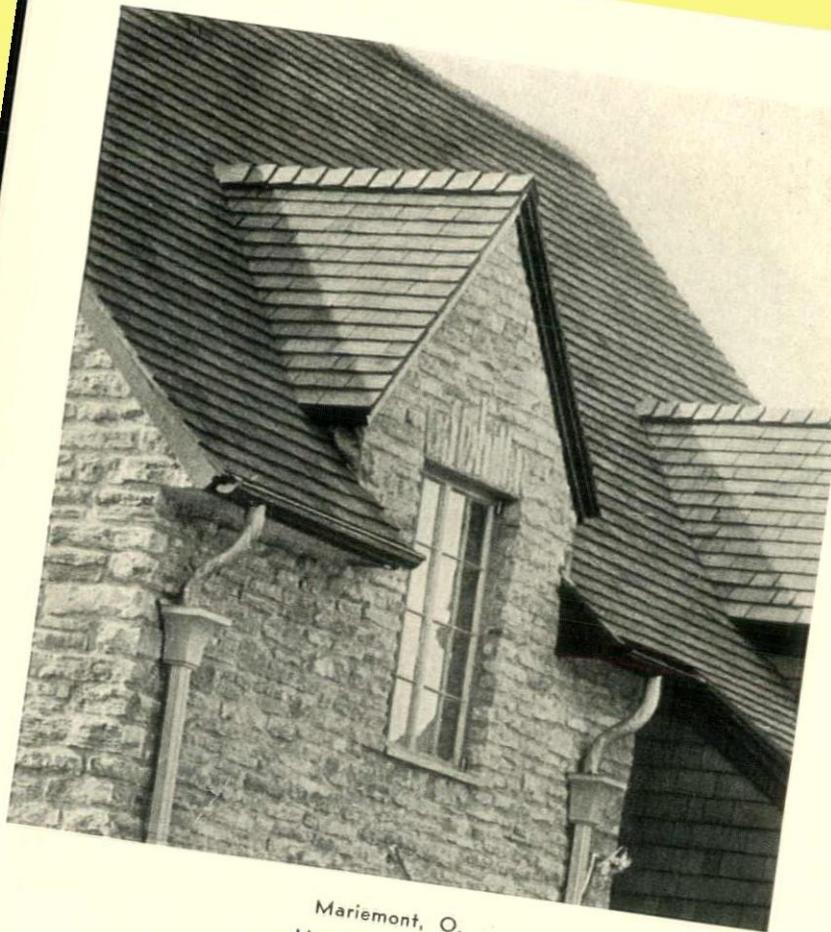
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Pliny Rogers



Glencoe, Ill.  
Ralph E. Stoetzel



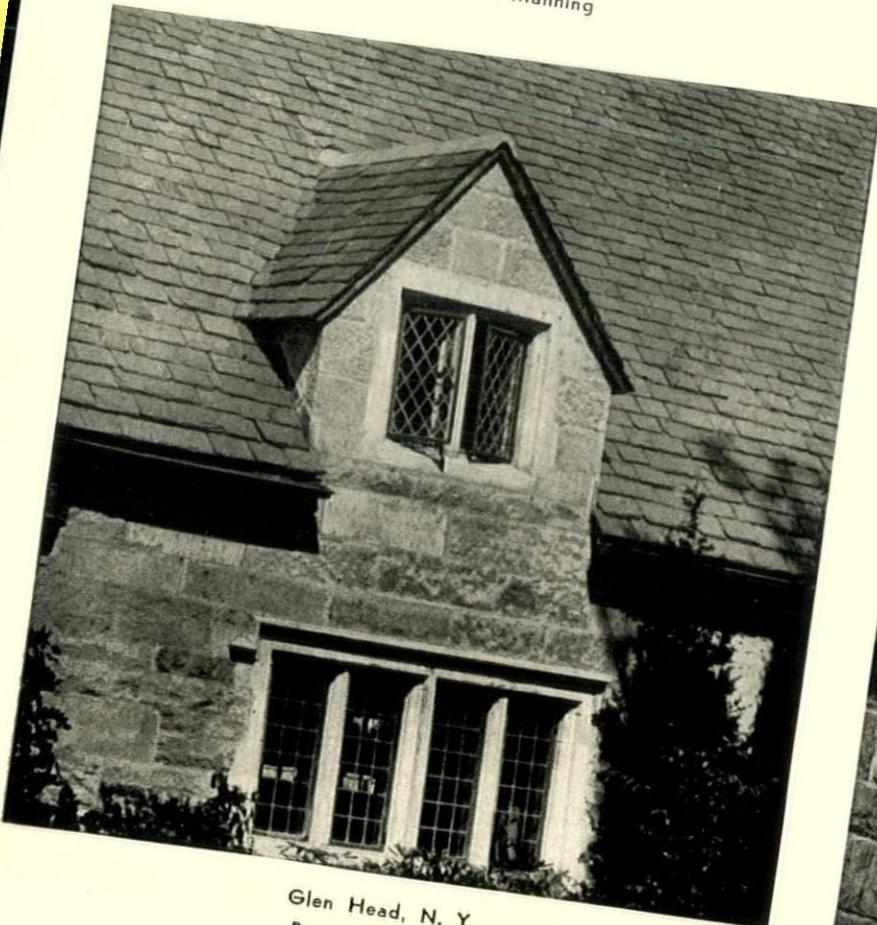
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Edmund B. Gilchrist



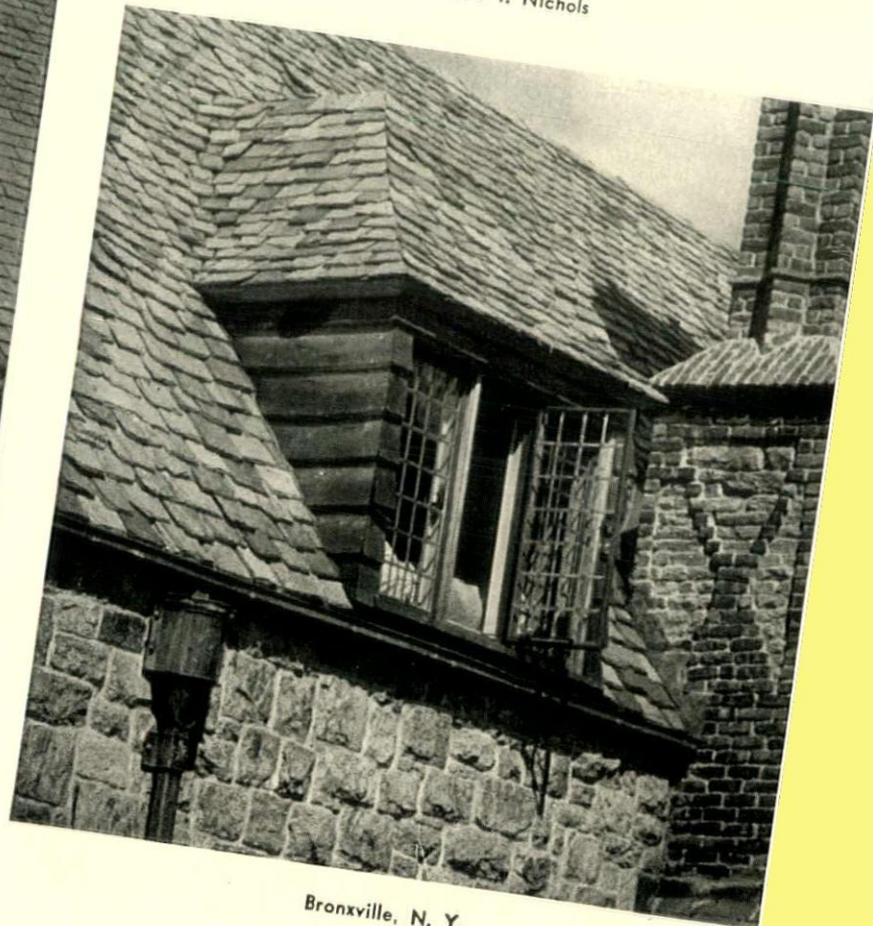
Mariemont, O.  
Howe & Manning



Larchmont, N. Y.  
Leslie I. Nichols



Glen Head, N. Y.  
Roger H. Bullard



Bronxville, N. Y.  
Lewis Bowman



Plouaret, France



Truesdale Lake, N. Y.  
Warren Shepard Matthews



Fishers Island, N. Y.  
Eric Kebbon



Ann Arbor, Mich.  
York & Sawyer



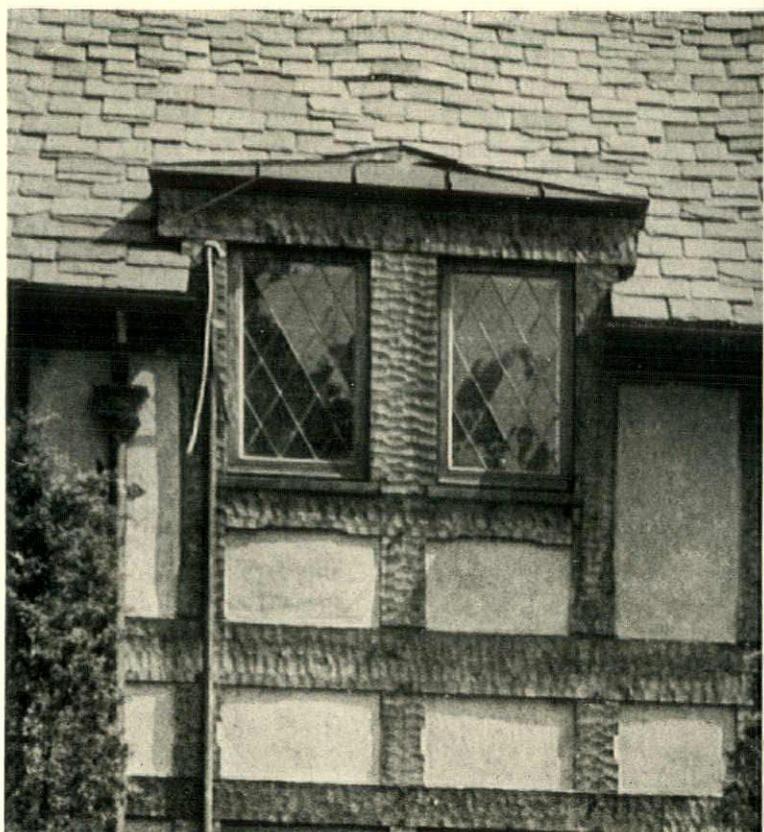
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William F. Dominick



Summit, N. J.  
Wesley Sherwood Bessell



Newport, R. I.  
Office of John Russell Pope



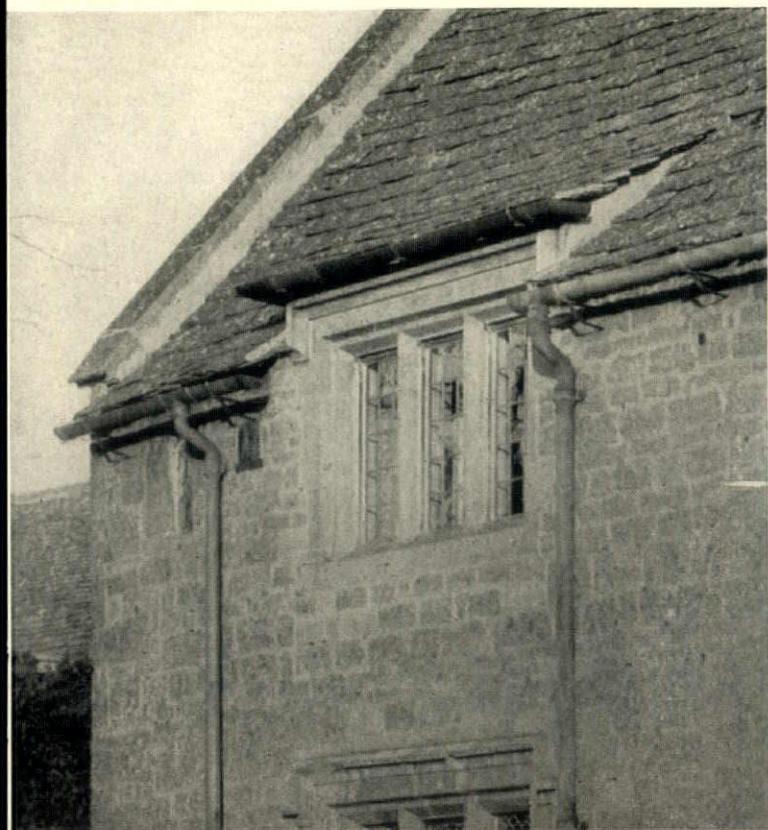
Westfield, N. J.  
D. Wentworth Wright



Brookville, N. Y.  
Polhemus & Coffin



Pelham, N. Y.  
George F. Pelham



Broadway  
Worcestershire, England



St. David's, Pa.  
Tilden, Register & Pepper



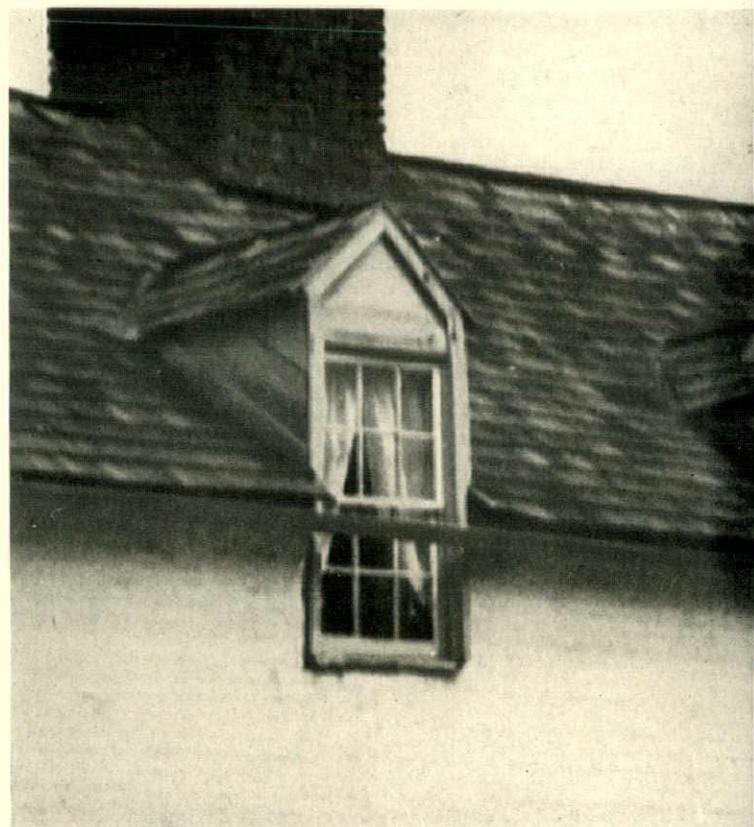
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Davis, McGrath & Kiessling



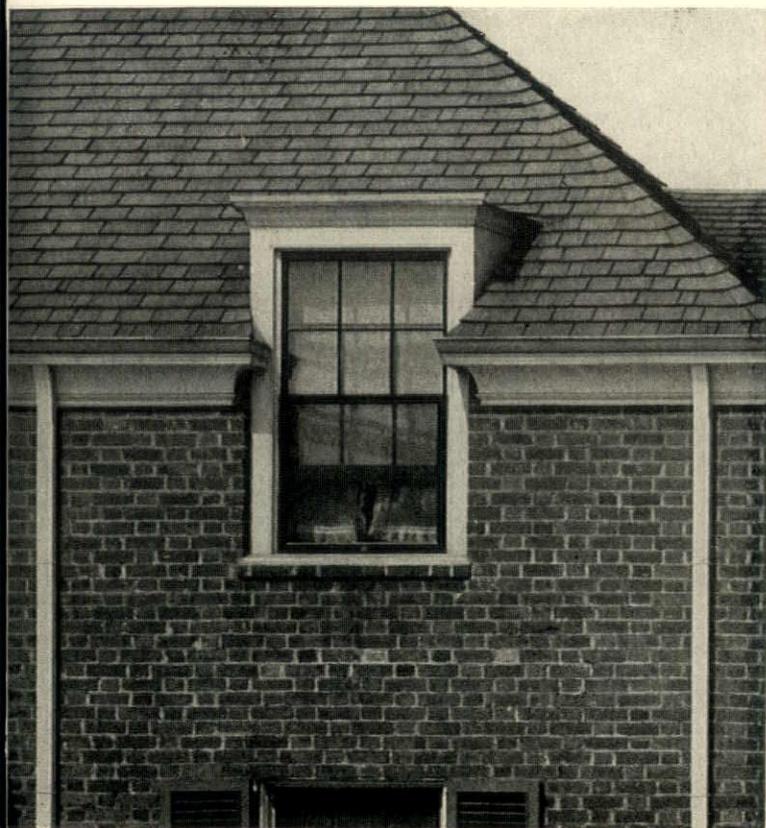
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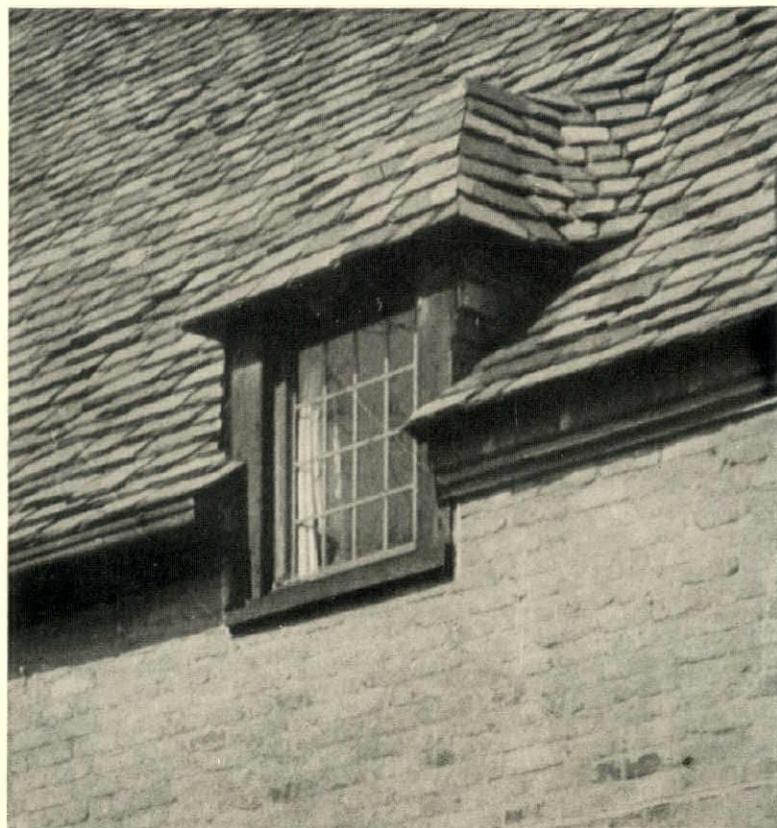
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Walter Scholer



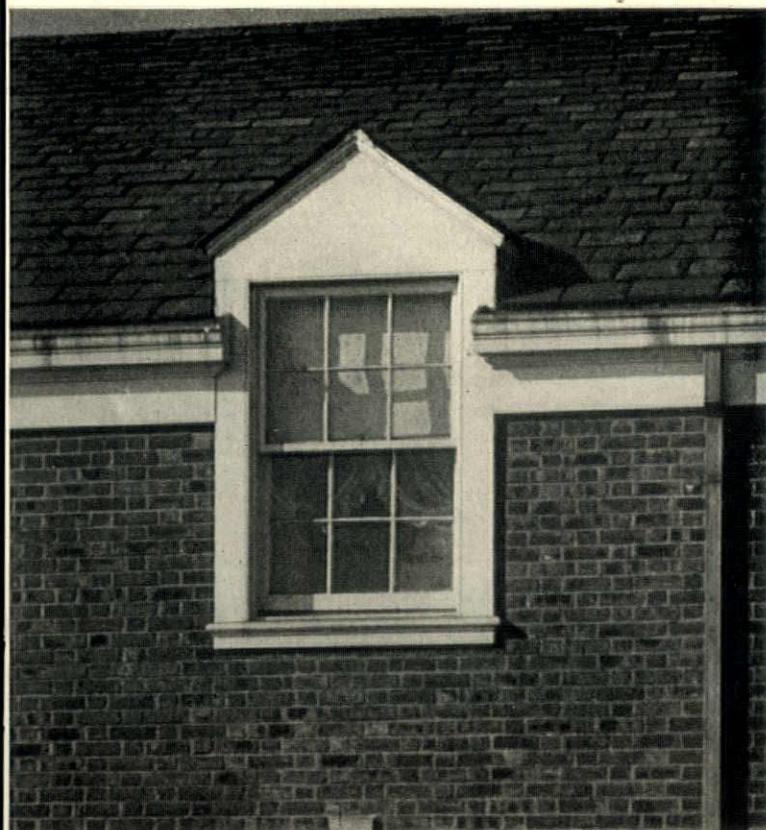
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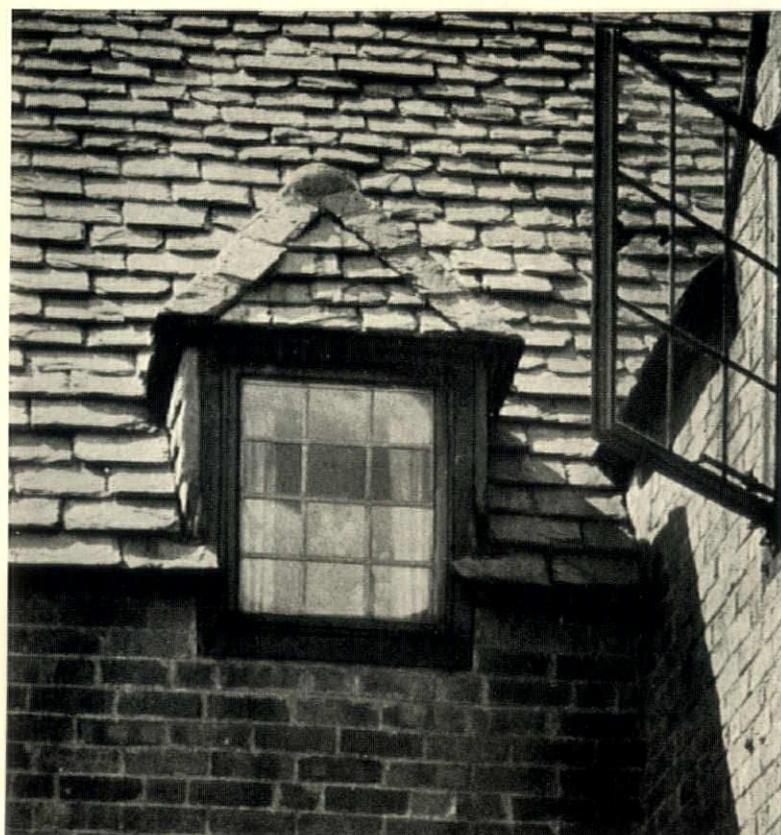
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Edmund B. Gilchrist



Brooklyn, N. Y.  
Frank J. Forster; R. A. Gallimore



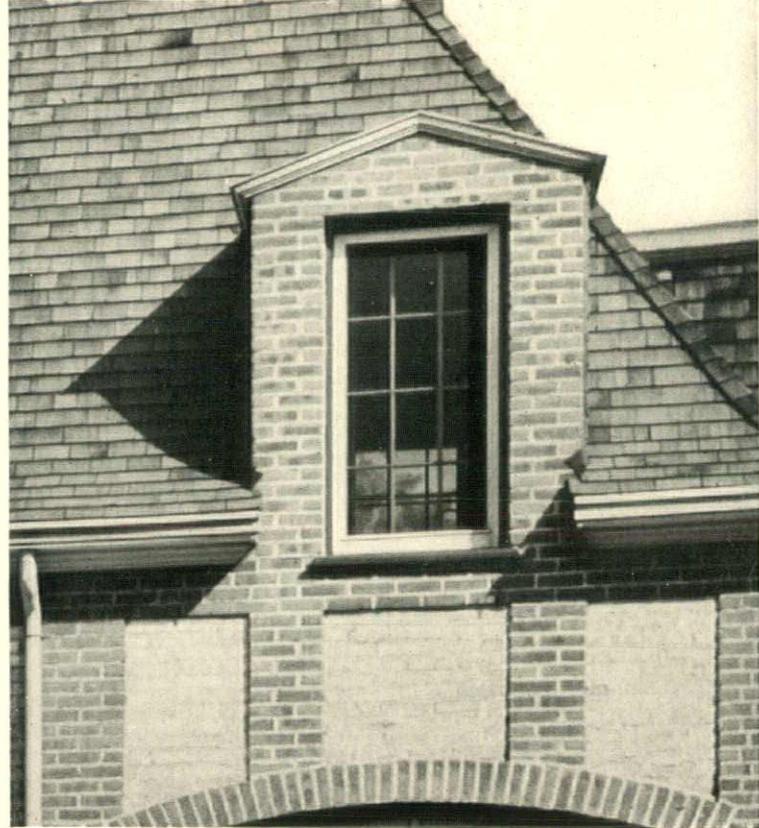
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Greville Rickard



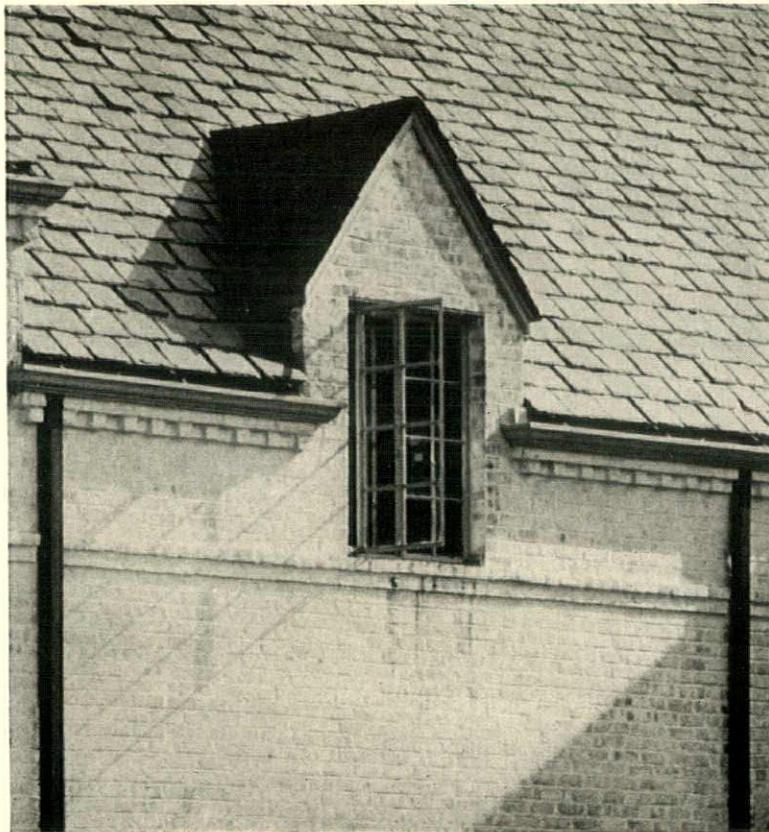
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Wesley Sherwood Bessell



Sioux Falls, S. D.  
Harold Spitznagel



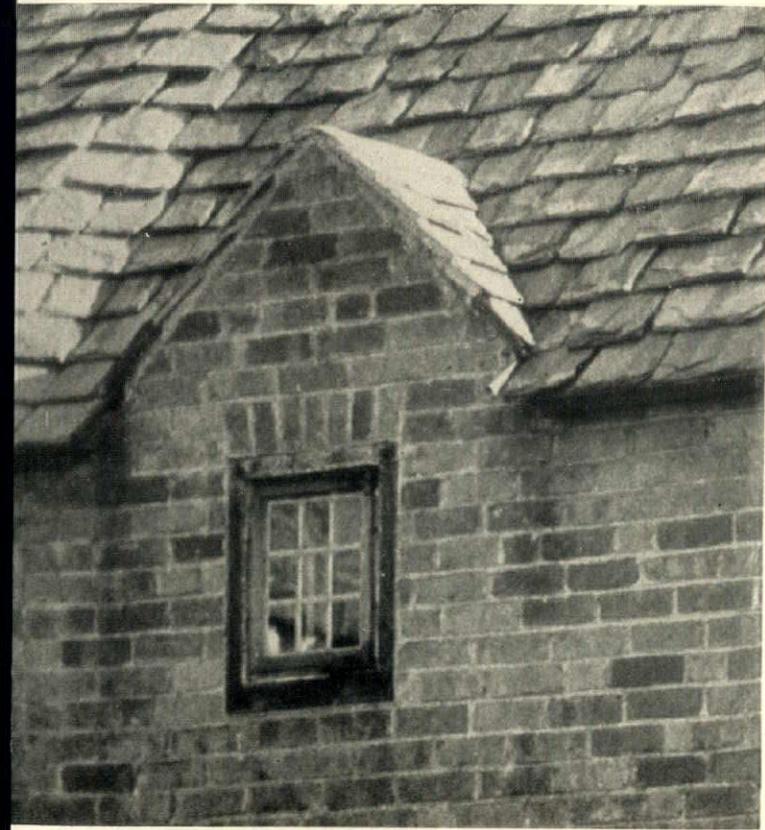
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Loebl, Schlossman & Demuth



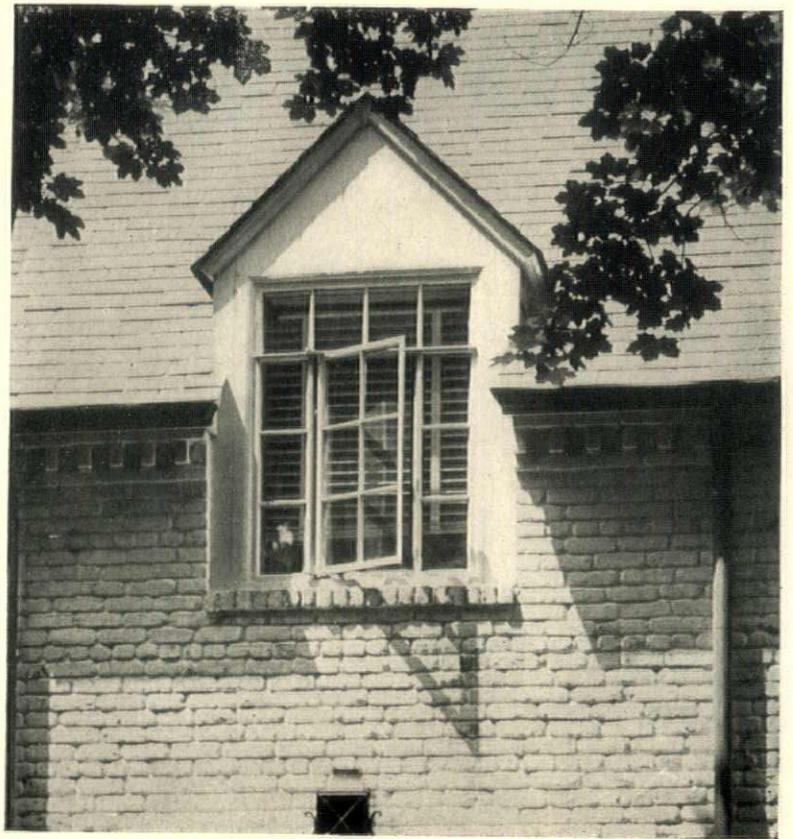
Lawrence, N. Y.  
Polhemus & Coffin



Jenkintown, Pa.  
Edmund B. Gilchrist



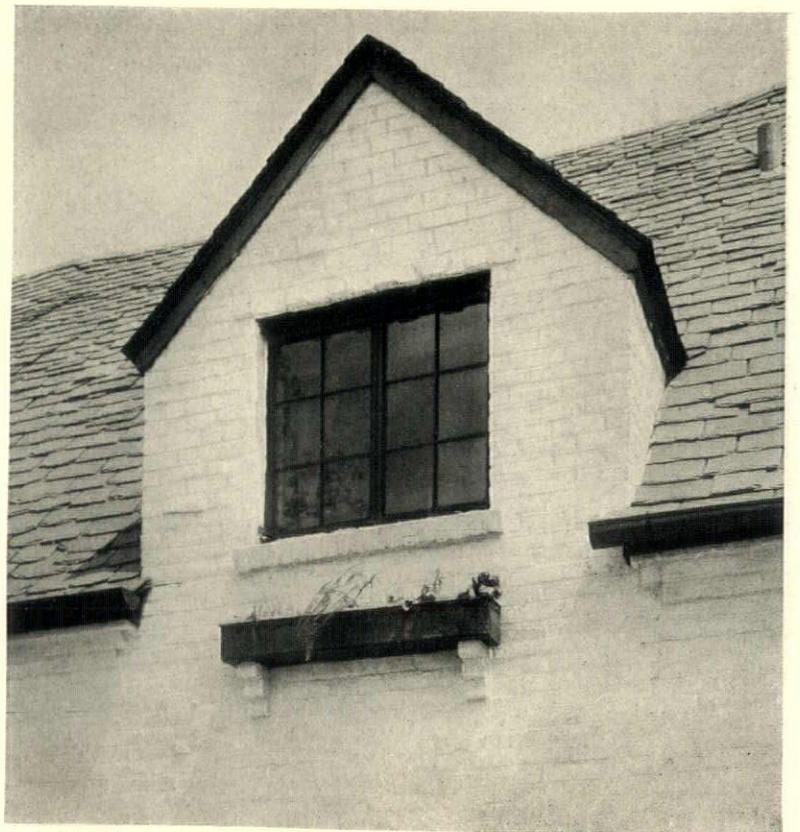
Hackensack, N. J.  
Wesley Sherwood Bessell



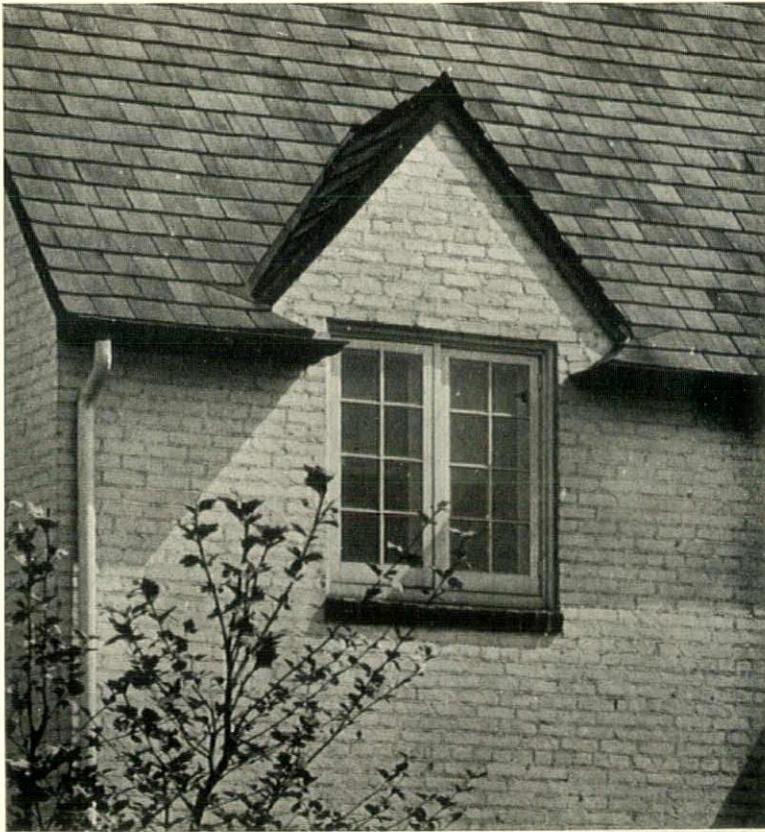
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Reinhard M. Bischoff



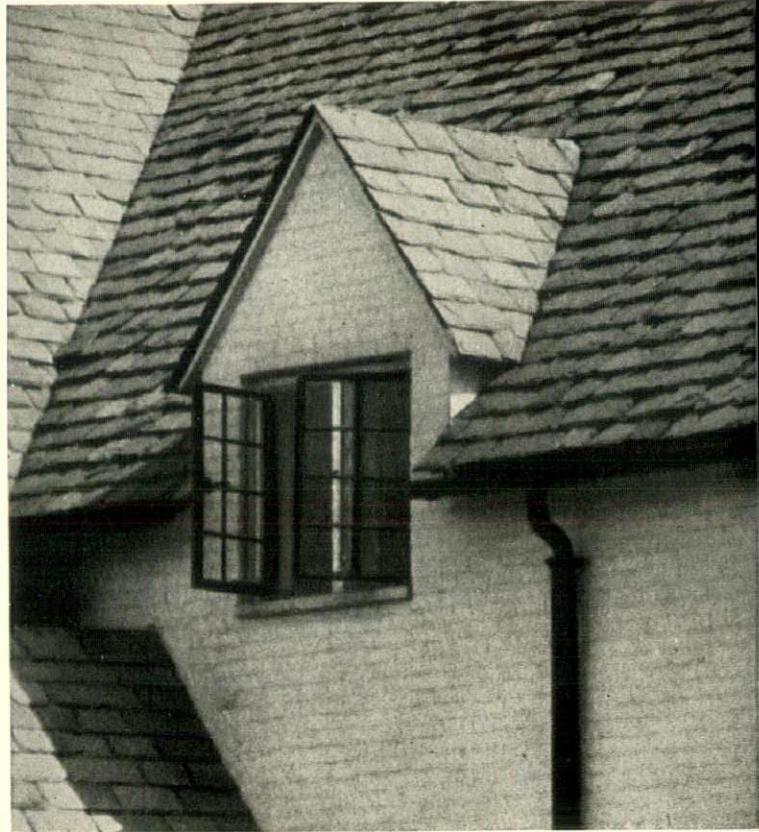
Glen Head, N. Y.  
Frederic Soldwedel



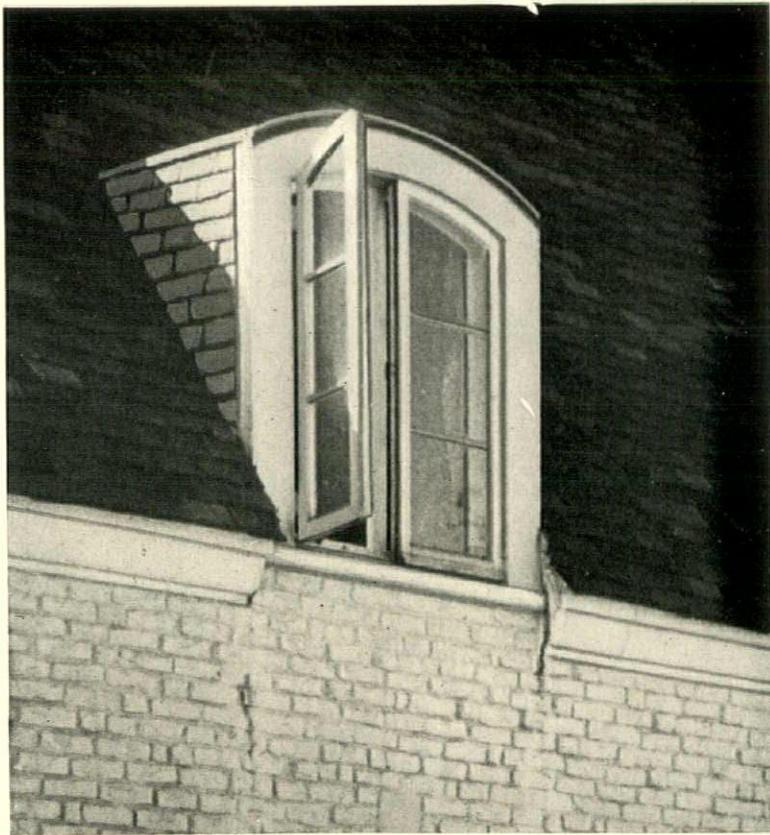
Glen Head, N. Y.  
Frederic Soldwedel



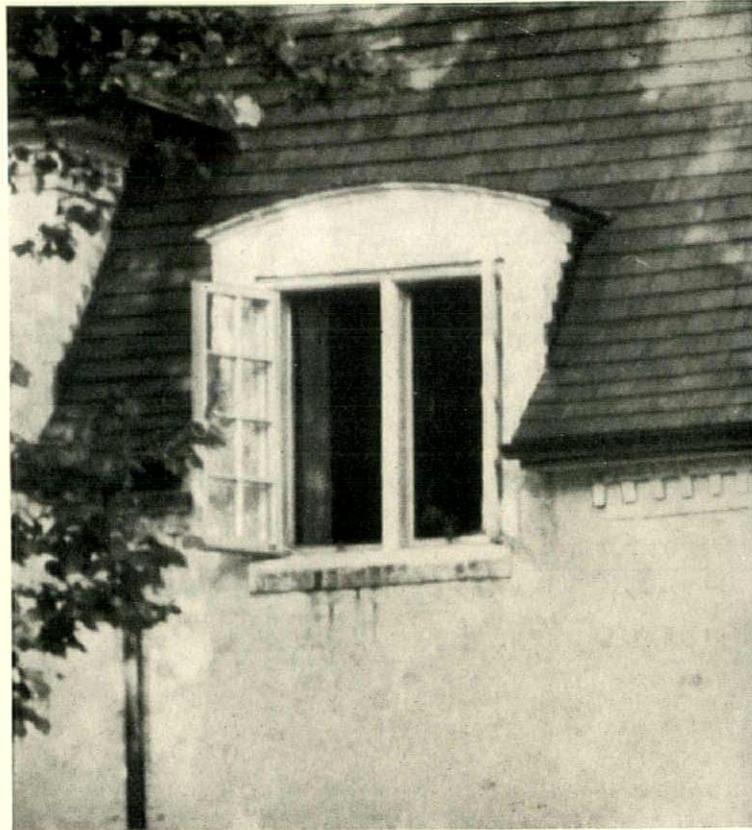
Mariemont, O.  
Robert R. McGoodwin



Manhasset, N. Y.  
Roger H. Bullard



Morristown, N. J.  
Greville Rickard



Bronxville, N. Y.  
Perry M. Duncan; C. Cabell Garrett

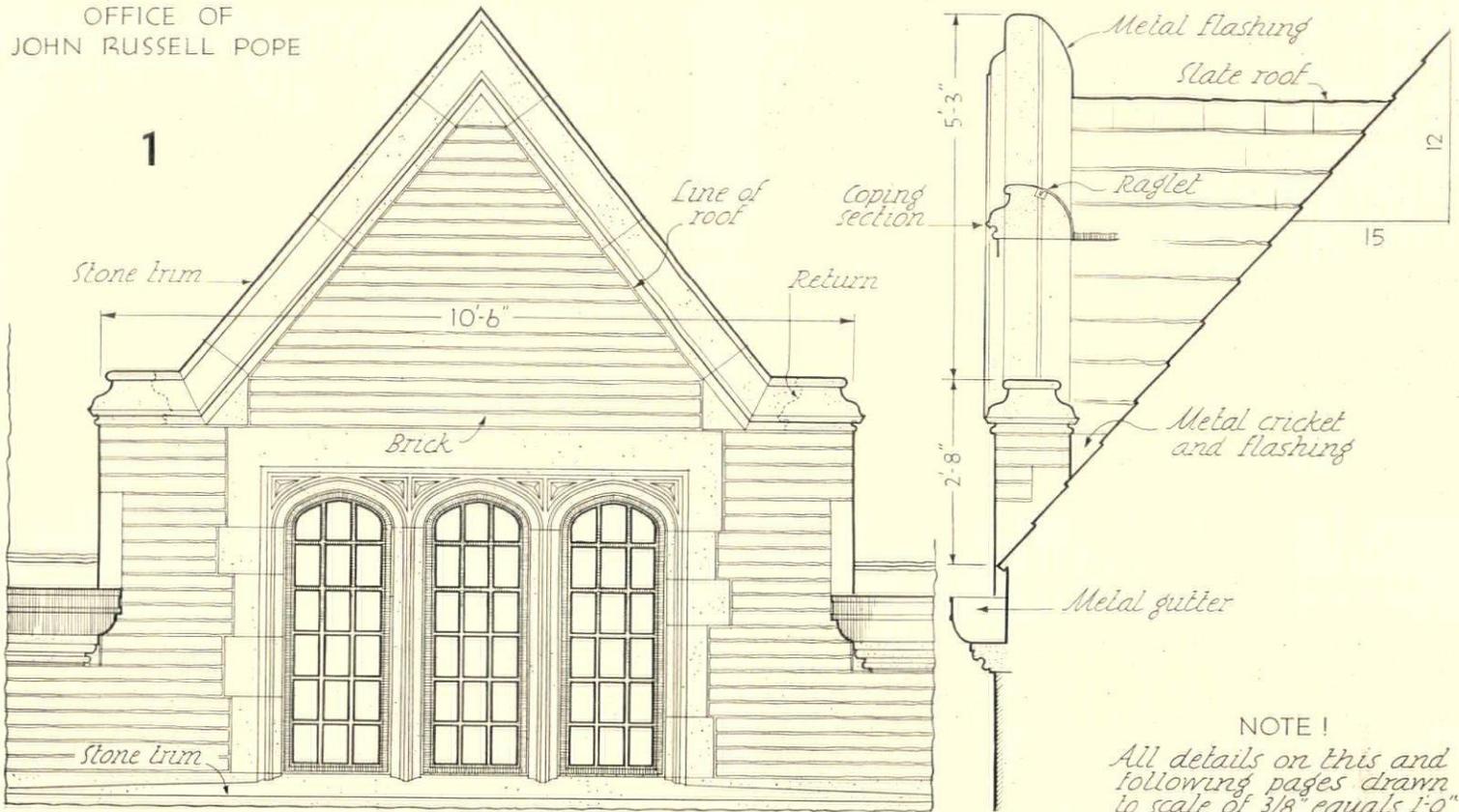
# FAVORITE FEATURES

Common problems of design in everyday practice — how the results look and how the drafting-room detailed them

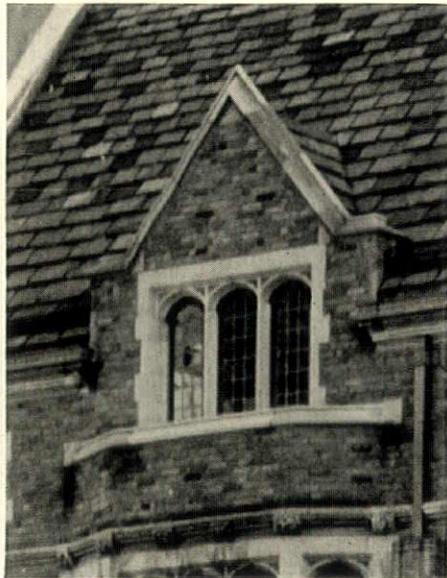
## Wall-face Dormer Windows

OFFICE OF  
JOHN RUSSELL POPE

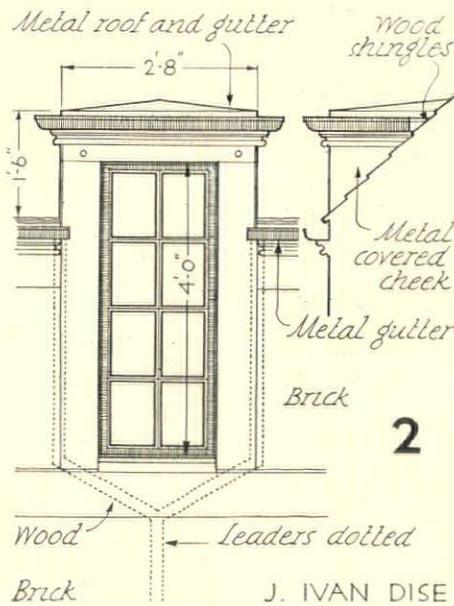
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NOTE!  
All details on this and following pages drawn to scale of 3/8" equals 1'-0"



1

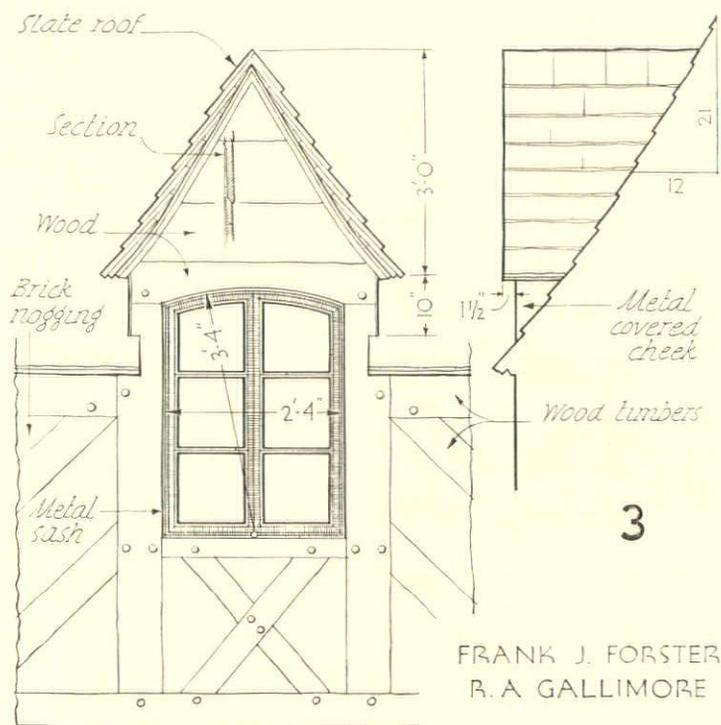


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J. IVAN DISE

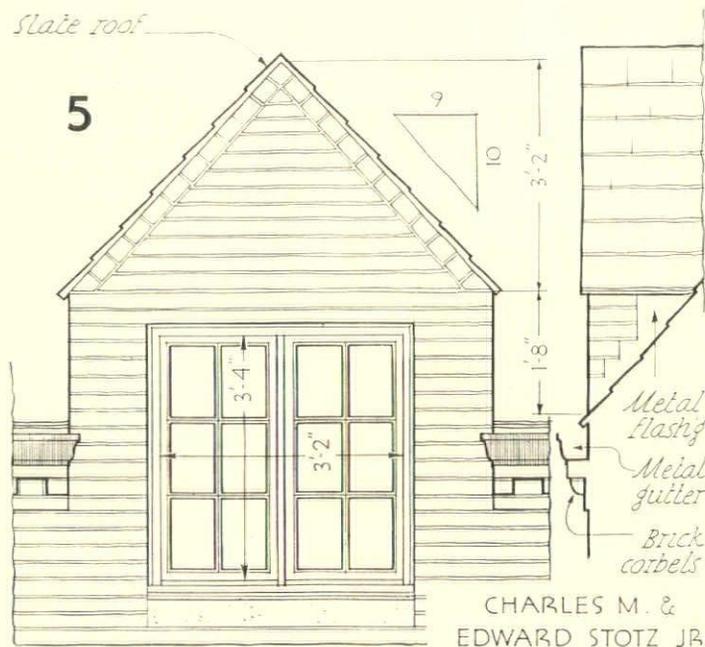


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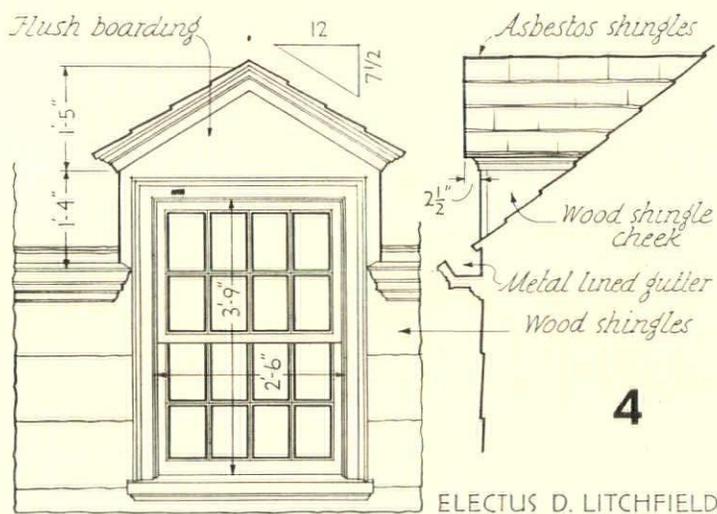


3

FRANK J. FORSTER;  
R. A. GALLIMORE

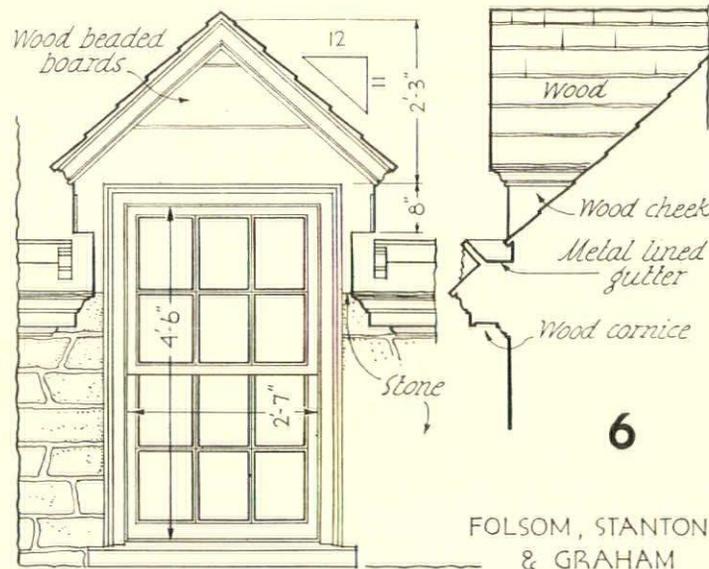


CHARLES M. &  
EDWARD STOTZ JR.



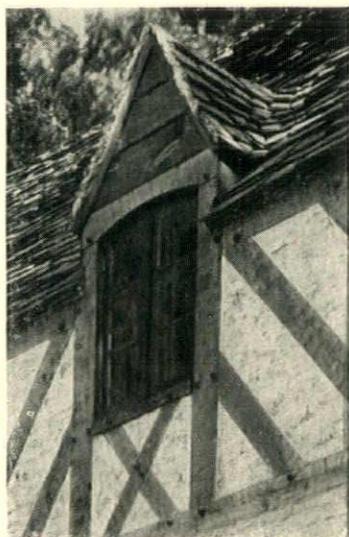
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ELECTUS D. LITCHFIELD



6

FOLSOM, STANTON  
& GRAHAM



3



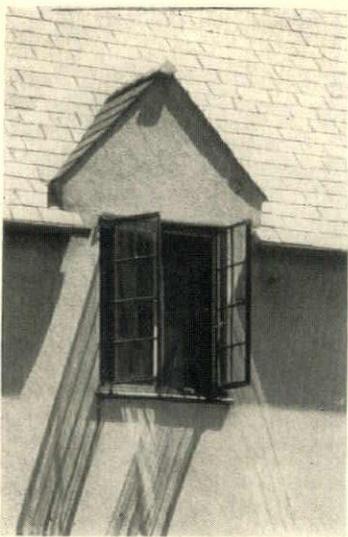
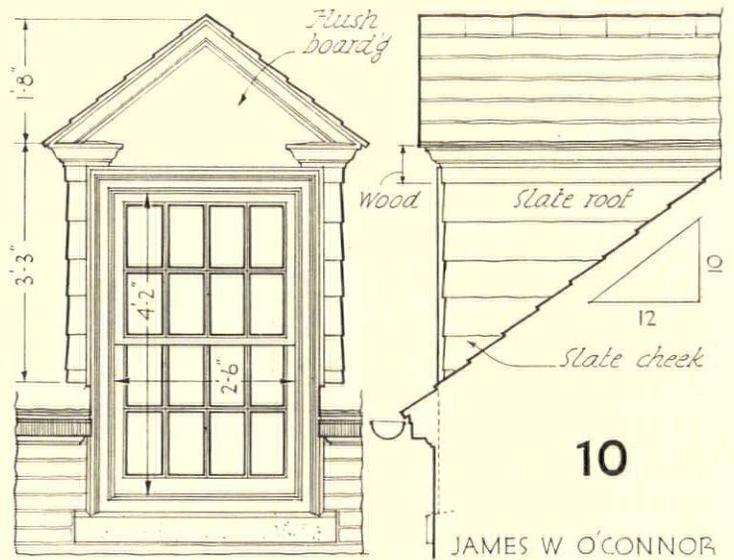
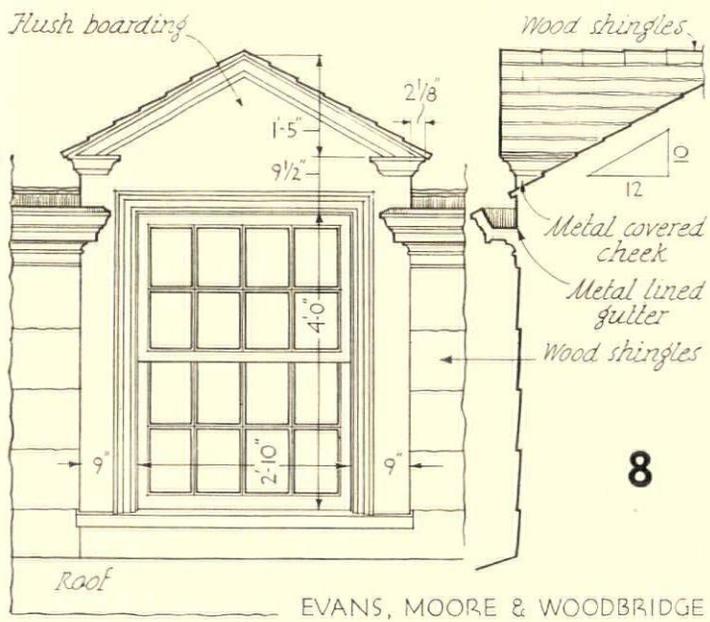
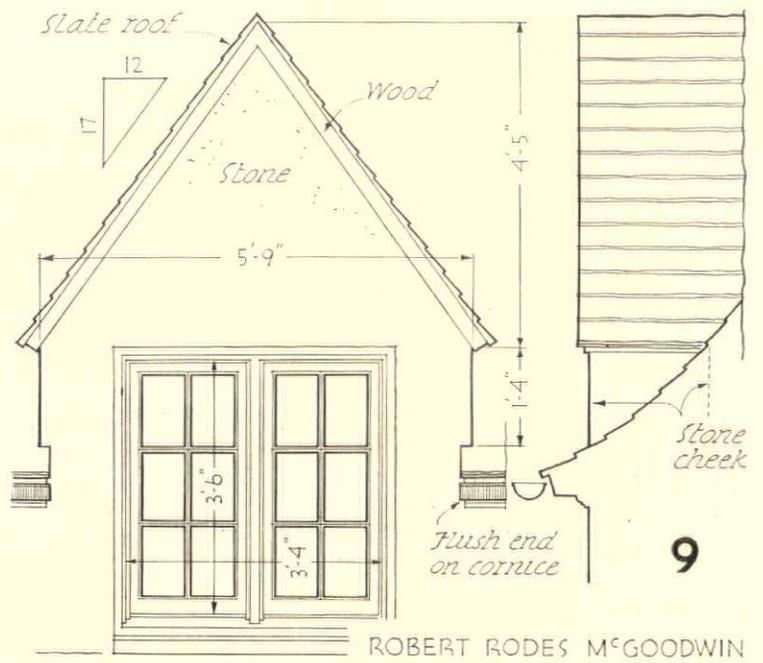
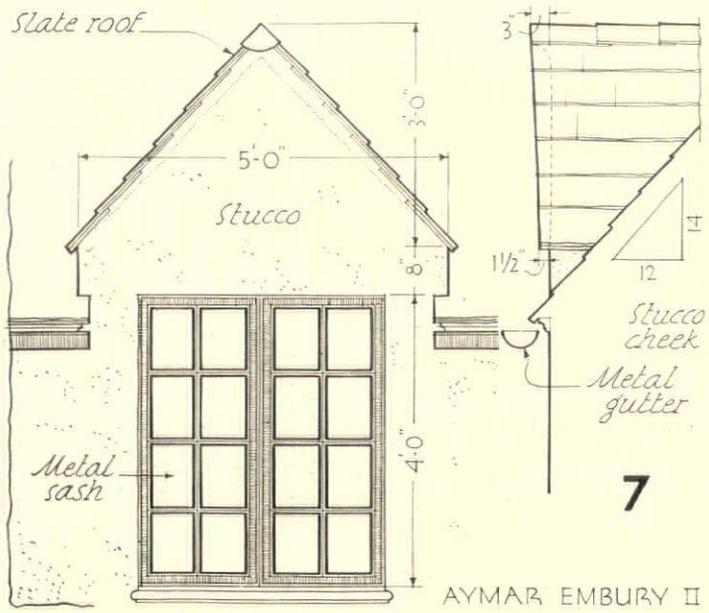
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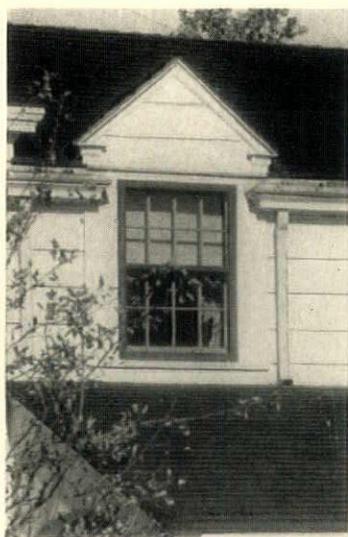
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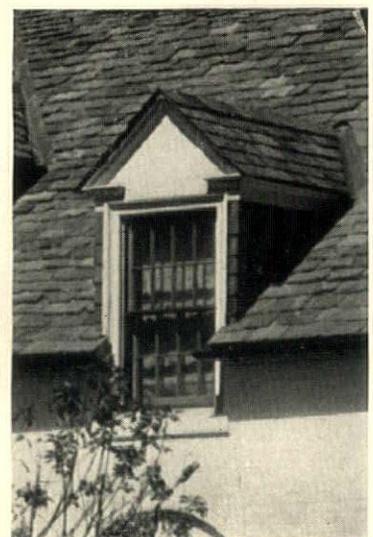
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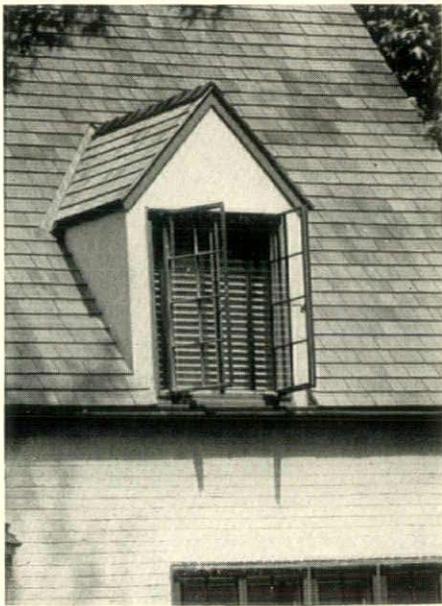
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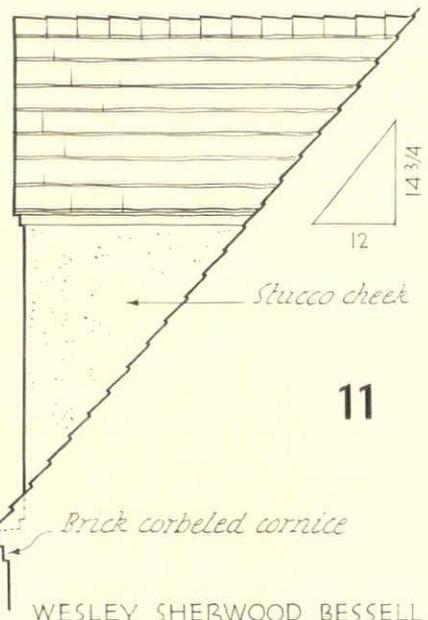
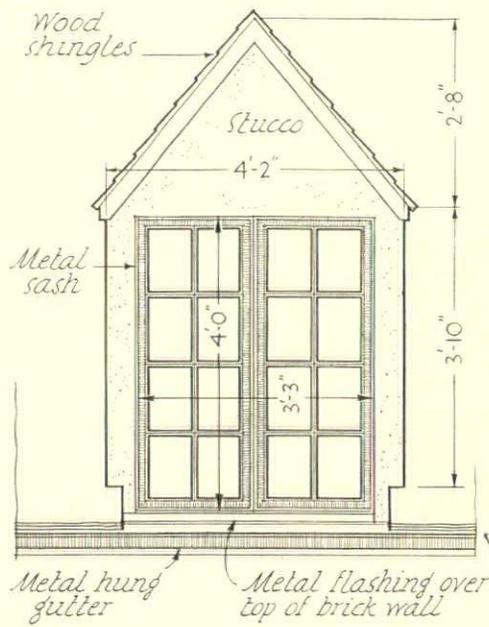
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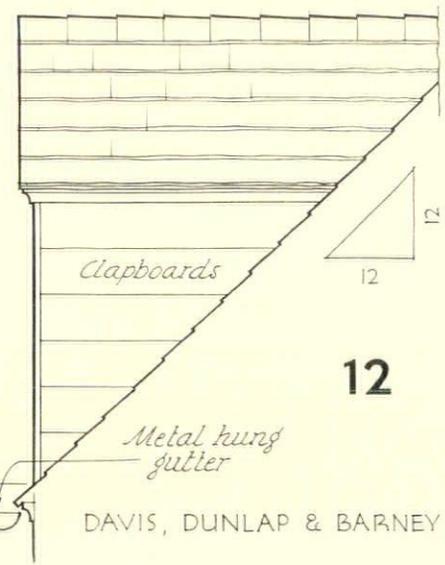
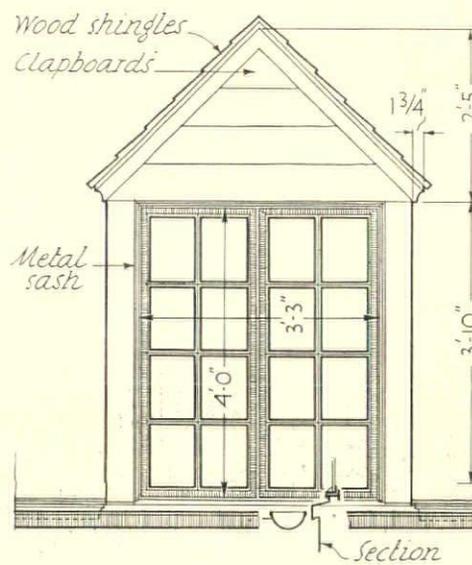
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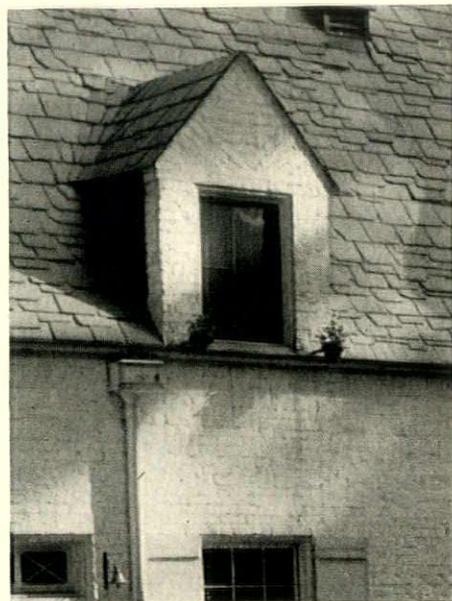
WESLEY SHERWOOD BESSELL



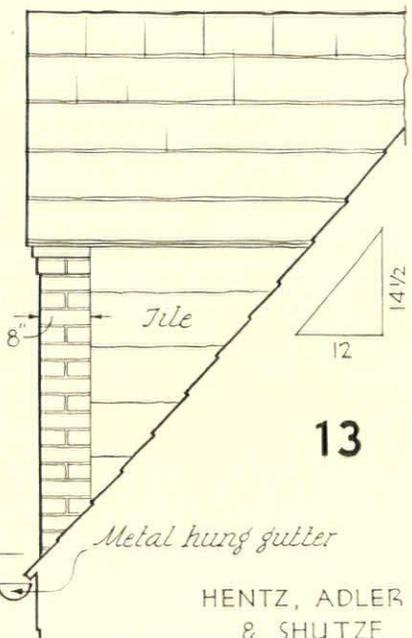
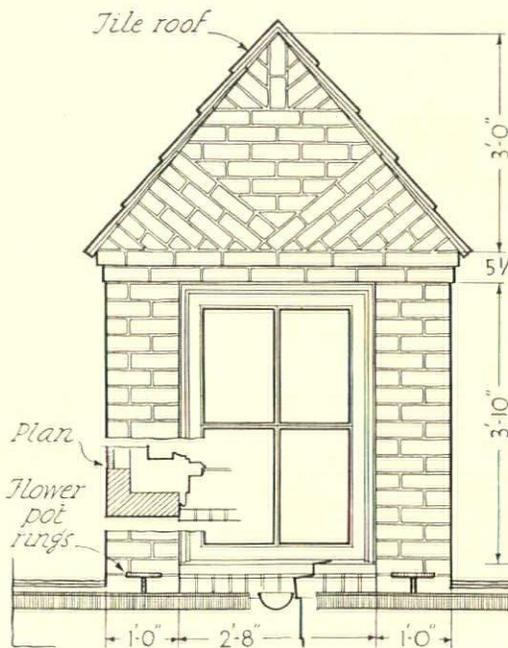
12



DAVIS, DUNLAP & BARNEY



13



HENTZ, ADLER & SHUTZE

## THE DIARY

Henry Taylor



Tuesday, August 2.—In the Diary we have mused frequently, straining the resources of the linotype composing machine to its limits, upon the subject of how the architect can best serve the individual builder of a small house. Two years of experiment with the idea of group practice, utilizing standard plans and details, with a limited supervision, seems to have brought very few tangible results. Walter McCornack says that if we get any results in five years, we shall be doing well. At the moment my doubts beset me as to whether this road is not closed by a stone wall, against which we are butting our heads in vain.

Perhaps these doubts are prompted by a vista into what seems to be a better road ahead. Pope Barney said so, long ago. Clarence Stein's experience and practice has directed his gaze along this same vista. In a word, the most promising alternative to practice which concerns the individual is practice which concerns the group. Charles F. Lewis certainly is looking down this same vista when he urges a concerted attempt to build carefully controlled communities, planned to the best of our ability for an avoidance of further blight and for the utilization of our best thought in techniques—building in the mass rather than for the individual.

The individual citizen who today seeks a pair of shoes, a suit of clothes, or a motor car, gives no thought to the possibility of having these designed and made individually for him. Is the situation radically different with respect to his shelter?

The above is seized upon as an argument for prefabricated dwellings. It is not along that line, however, that I am thinking. Rather does the vista embrace a widespread utilization of the co-operative building idea, or a widespread utilization of large-scale operations looking towards well planned, well built, and well guarded communities. Is the day of the individualist passing, in so far as his shelter is concerned? Certainly not for the top fractional part of the population whose income and means still permit that course. For the others, in the great middle scale, what can they get, and what assurance of permanent value can they have, by building through individual effort alone?

Wednesday, August 4.—The new president of the R. I. B. A., H. S. Goodhart-Rendel, possesses that fairly rare attribute in these days, the ability to think and to express his thoughts. For instance:

"A great deal of building nowadays is still done without any architect, and an increasing amount is being done under architectural departments or staffs in which it is difficult to discover and isolate any master mind. Even among private practitioners there are being formed groups, the members of which not only pool their various specialized abilities but collaborate in the initial work of actual designing. The results of such collaboration seem to me rather like a statue I re-

member in my youth. This statue had been produced by a talented family, each female member of which posed until she felt too cold, when she put on her clothes and took a turn at the sculpture with someone else as model. It was not a bad statue, but it was not a very good one."

Friday, August 6.—Motoring all day through upper Vermont and New Hampshire. It is a curious thing how, in a country that abounds in marble and granite, the people build houses of wood, churches of wood, and town halls of wood. Apparently it is not because they fail to see the suitability of their local stone for building; they use white marble in Vermont as foundations for barns and minor outbuildings. One of the most astonishing sights in this north country is the so-called "marble fill" which forms a long causeway across an arm of Lake Champlain. Great chunks of marble have been dumped into the water to afford a crossing, just as in other parts of the country we would use sand, gravel, or cinders. In a long day's journey today I saw no buildings of marble, and but one house of granite, and that was built, I should judge, over a hundred years ago.

Saturday, August 7.—Our dignified, conservative contemporary, *Journal of the Royal Architectural Institute of Canada*, has put on some new clothes, abandoning the silk hat and frock coat for a pair of slacks and a sport jacket. A new editor is in the saddle. He has a theory that he can produce a professional magazine dealing with architecture that will at the same time interest a large part of the public and be available on the news stands. It's a good trick if you can do it. The net result of our own experience is that it can't be done. However, that is a dangerous statement to make today when the impossible is constantly being achieved.

Monday, August 9.—Lunched with Clarence Stein, talking among other things of museums. In these days when we accept no previous findings of civilization without analytical question, the function and form of the museum is surely worthy of re-examination. I take it that the main purpose of a museum is the bringing together of objects found interesting and inspiring by experts, with the hope that the general public may be exposed to these objects with the opportu-

nity of deriving pleasure from them under comfortable surroundings. There are other secondary purposes of the museum, of course—such as careful preservation, historic and other forms of grouping, and the like, but nothing should obscure the aforesaid main purpose.

Why then the central court? Apparently a very early museum built in Italy utilized an old building in which a central court existed. From that day to this architects seem to have regarded the interior court as a *sine qua non*. Why the monumental staircase?—tiring the layman before he reaches the object in which he is interested. Why a lot of other things, such as great high architecturally elaborated interiors?

We certainly did not answer all these questions nor solve the problems, but Stein has been laboring for some years upon the manuscript of a work which puts into some sort of logical order these considerations and many others which should in all reasonableness govern the design and the conduct of museums.

Friday, August 13.—The threat of unionization of architectural offices in Seattle seems to have had a damp fuse, for no explosion took place. Charles H. Alden points out several errors in my Diary note of June 25. The Seattle police force is not unionized, and Mr. Alden wonders why it was taken for granted that Seattle is now "one of the most fully organized union cities in the country." The latter was my own vague impression.

Apparently what happened in Seattle was that a notice appeared recently in the architects' offices to the effect that if the architects did not put the union label on their drawings by July 1, last, they could expect trouble with their work under construction. This notification was sent apparently without the knowledge or authority of the Seattle Building Trades Council, and the Council expressed itself as not in favor of it. The Washington State Chapter, A. I. A., having investigated the matter, notified the State's practicing registered architects of the findings, and the belief of the committee that "such a union would be to the distinct disadvantage of the practicing architects, the employed draftsman, and to the members of the building trades." That is possibly the end of the story. At any rate, there is nothing heard out there at the moment of any unionizing of offices, the use of union labels, or any trouble on the job from this quarter.

All of which indicates once more that architectural organizations, and the A. I. A. particularly, should take steps to weld together in a close-knit professional body the architects, draftsmen, specification writers, and inspectors.

Saturday, August 14.—Our July cover bore a photograph of the Mosque of Suleiman the Magnificent in Istanbul, and we failed to

mention the name of the architect. Walter F. March of West Nyack, is not going to let us get away with this—a practice far too reminiscent of our American newspapers. The architect of the Mosque of Suleiman never has received the recognition which is his due for work done in the sixteenth century. He is said to have designed and built one hundred thirty-one mosques, fifty-five schools of Koran, three hospitals, thirty-three castles and palaces, nineteen monuments, eight bridges, sixteen inns, and thirty-two bath houses, among other lesser known items. In addition he built five aqueducts, some at least of which have been credited to the era of Justinian. Mimar Sinan, we make obeisance in thy memory.



*Monday, August 16.*—Jacques Greber, who has carried largely on his own shoulders the burden of design of the Paris Fair, had lunch with a group from the Chapter at The League today. He told us of some of the difficulties incurred in maintaining the schedule of production—difficulties which resulted in opening the Fair with some of the buildings unfinished. Apparently there has been a curious feeling of unrest among the French workmen, due largely to political uncertainties. It was not a strike, but it involved a very definite slowing up of work on the part of many individuals—a sort of slow motion procedure, on which those directing the work could not put a restraining finger. Then too, the contracts were quite different from the usual building contracts, for the successful bidder owned the materials throughout the life of the building. He agreed for a certain amount to put up the building, maintain it in repair, demolish it and take it away from the site at the end of a specified period. Possibly because of labor difficulties, and possibly because of the novelty of this arrangement, it was practically impossible for a time to secure any bids whatever. However, the Fair, from outside accounts, is well worth seeing. I should think that it might prove a wise move, in view of its unfinished character when opened this year, to continue it through 1938.

*Tuesday, August 17.*—Lunched with Aymar Embury, Allston Dana, and Sydney Wilmot after looking over some of the progressive studies for the Henry Hudson Bridge, Whitestone Bridge, and the Triborough. Far too frequently in the past the relationship between engineer and architect in bridge building has been marred by a very definite division in the work. The engineer does this, the architect puts on a few finishing touches afterwards, largely because the engineer has not had sufficient faith in his own design as appealing to the public. Embury and Dana—the latter the engineer of

design for the three bridges mentioned—work almost as two hands of the same man. Collaboration of this kind has been far too rare. In another field it was notable in the case of Bertram Goodhue and Lee Lawrie. The bridges mentioned were designed not by having the architect attempt to dress up the work of the engineer, but by a close collaboration from the very outset of each project. Embury would study and suggest even such minor details as rivet patterns, the silhouette of bracing members, the rhythmic spacing of vertical struts. As a result, these bridges show no line of demarcation between span and abutment—both are integral parts of one conception.

It is the close association of minds such as obtained here that helps to dispel the common feeling on the part of the engineer that the typical architect is a dilettante, knowing little of structure, and with little ability to think about it if he did. The architect, on the other hand, has been prone to think of the engineer as a mathematical technician, utterly devoid of esthetic appreciation, thinking only of what occurs in the molecular structure of steel or concrete, without any conception of how the finished result is going to appear.

*Friday, August 20.*—Leo J. Weissenborn of Chicago corrects the Diary in a letter today, regarding the matter of measured drawings of Mount Vernon. The Diary, in its usual blithe assumption of all knowledge, intimated, on July 2, that George Washington's home was being measured and drawn for the first time. Weissenborn convicts me of inaccuracy with a particularly deep thrust, for AMERICAN ARCHITECT in 1900 copyrighted three plates made by Theodore F. Laist and some of his pupils in the Architectural Department of what was then Columbian University, now the George Washington University. Mr. Laist took the students to Mount Vernon, measured the main house on the outside, including one of the flanking buildings at the end of the arcade, the white servants' quarters. These plates were published in Vol. II of "The Georgian Period." Weissenborn remembers particularly that Frederick V. Murphy, then a member of the class, and now head of the Architectural Department of the Catholic University, made the detail of the west doorway.

The present effort to put Mount Vernon in the permanent records goes much further. Mr. Morley J. Williams and his assistants are measuring the house outside and inside with all of its details. Granted access to the records, their work is likely to destroy some long cherished acceptances and reveal some forgotten facts. As an instance, the railing surmounting the long portico on the river side was an addition made in the mid-nineteenth century, was never contemplated by Washington, and has recently been removed. It is really a wonder we haven't

heard reverberations of this in Congress with the cry that the country's most cherished traditions are being swept away

*Monday, August 23.*—It has been anyone's guess just what effect PWA work has had upon construction through private initiative. The extremist on one side will say that since the Government has been building a lot of permanent improvements, private initiative has crawled into its shell and stayed there. Some facts, however, have just come out with regard to the Williamsburg slum clearance, the housing project just outside of Manhattan. This Williamsburg area in Brooklyn has long been regarded as particularly blighted. Few property owners have cared to invest money in improvements when the whole neighborhood seemed doomed. Along came the construction of Williamsburg Houses, PWA's largest project, to house 1,622 families, and the whole neighborhood began to pick up. Building permits totaling nearly half a million were issued, a new theater was built, stores and adjoining tenements were improved. Over and above the actual new construction, property values in the immediate vicinity have started to climb.

*Friday, August 27.*—Out of the laboratory at Purdue University come some new and surprising figures regarding the cost of building small houses. Holding to the \$5,000 level, they have completed four houses out there: one of wood, one of steel, one of concrete, and one of stucco on wood frame. Of course, the all-wood house cost the least—twenty-eight cents a cubic foot—but both the concrete house and the steel house, to my surprise at least, cost less than the stucco on frame—thirty-one and thirty-six cents respectively as compared with thirty-eight cents for the frame and stucco. Not that these figures prove anything except for the vicinity of Lafayette, Ind.

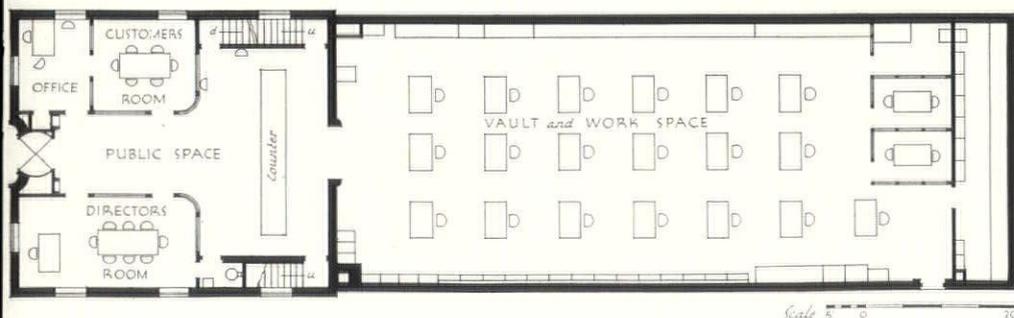
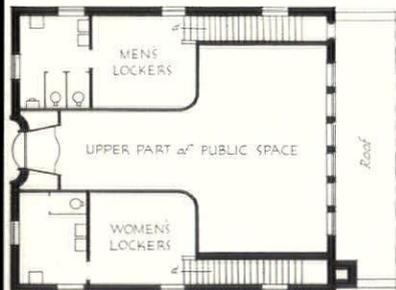


*Tuesday, August 31.*—Frank C. Baldwin, the revered past secretary, A. I. A., sends us a little book, "Ninety-Five Per Cent Perfect," by Everett U. Crosby. Mr. Crosby, a layman, has been spending his summers on the island of Nantucket for more than half a century, and writes this book as a measure of protection against those who come to Nantucket and build without understanding its architectural traditions. Mr. Crosby, I repeat, is a layman, and one who is willing to take upon his own shoulders a duty that one might have allotted to the architectural profession. Just to fill the measure full and running over, Mr. Crosby published the little booklet, not for sale, but to distribute where it might do the most good. All of which I respectfully refer to the committee of the A. I. A. which nominates candidates for honorary membership.



PHOTOS: HEDRICH-BLESSING

**ILLINOIS TITLE COMPANY BUILDING, WAUKEGAN, ILLINOIS  
HOLABIRD & ROOT, ARCHITECTS**

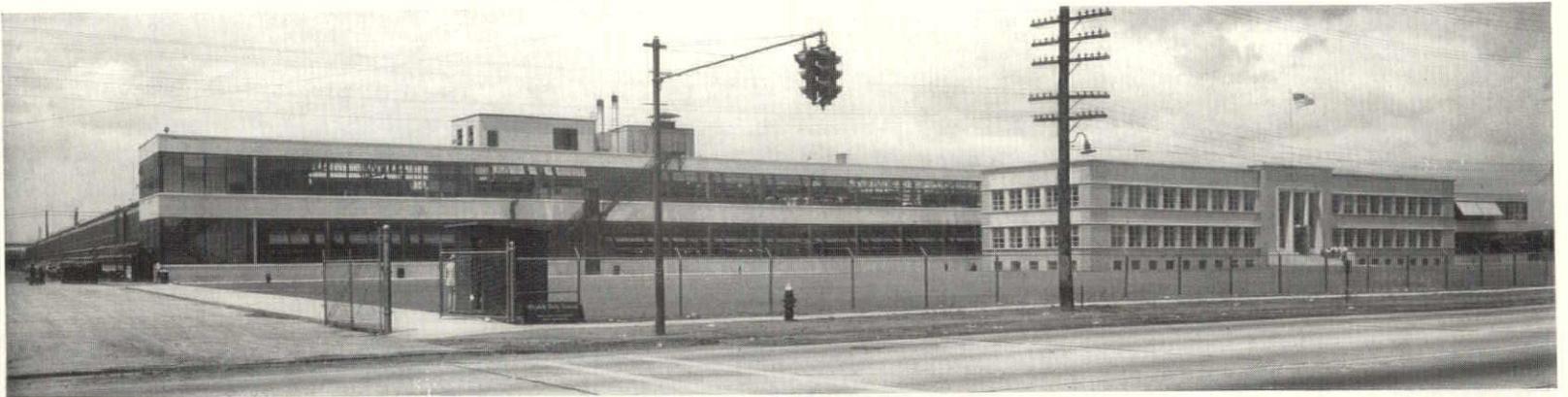


Preparation and preservation of records, the main function of the company, takes place in the vault-work space. The relatively few remaining spaces complete the structure. Elevations are a simple expression of the plan. Walls are faced with russet tinted brick and framed with buff Indiana limestone. On either side double steel sash windows admit light to the Directors and Customers Rooms, while above them small steel windows screened with bronze grilles mark the location of toilet rooms



Interior treatment is as simple as the exterior. In general, all doors are of the flush panel type with simple wood trim flush with the plaster surfaces. The wainscot, door height, is of Brazilian rosewood flexwood, and the floors are of dark brown asphalt tile. The vault and work space has walls insulated with cork and finished with plaster; ceiling is finished with Sanacoustic Tile. Heating is by an automatic gas-fired boiler with thermostatic control. Air conditioning is provided using filtered air with mechanical refrigeration and dehumidification in the summer, and with humidification in the winter period

**ILLINOIS TITLE COMPANY BUILDING  
WAUKEGAN, ILLINOIS  
HOLABIRD & ROOT, ARCHITECTS**



PHOTOS: MULTI-COLOR

**FACTORY FOR GENERAL MOTORS CORPORATION  
LINDEN, NEW JERSEY  
ALBERT KAHN, INC., ARCHITECTS**



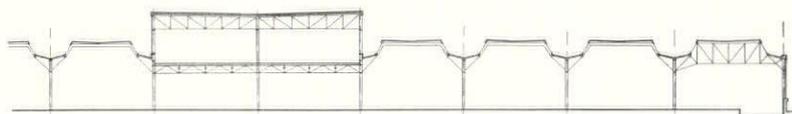


Occupying a site of approximately 78 acres, this automobile assembly plant constitutes the most recent step in the company's decentralization program. The factory unit, 1080 feet long by 680 feet wide, is of steel, concrete and brick construction. Roof is of the double monitor type affording an abundance of light in addition to that assured by windows on all sides. Parts received for assembly purposes are unloaded on two long receiving platforms, one on each side of the entire length of the assembly unit. Two main assembly lines run down the center of the building, parallel to the receiving platforms, and are each 460 feet long, accommodating 26 cars each. Throughout the entire plant, safety is carried out as a general policy. All portable tools are suspended from overhead feedrails, aisles are wide and well marked, and a completely equipped plant hospital is maintained for the care of employees.

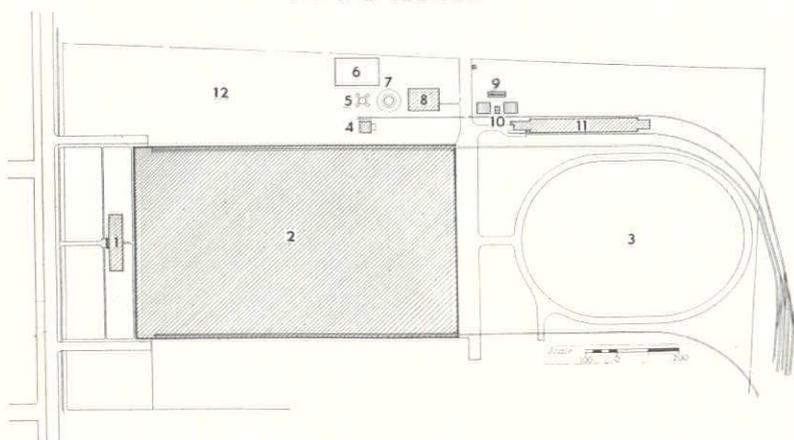
**FACTORY FOR GENERAL MOTORS CORPORATION, LINDEN, NEW JERSEY**



1. Office Building
2. Factory Building
3. Test Track
4. Gas Storage
5. Sprinkler Tank
6. Public Service Building
7. Fuel Oil Tank
8. Boiler House
9. Propane Tanks
10. Pump House and Tanks
11. Loading Dock
12. Parking Space



TYPICAL SECTION

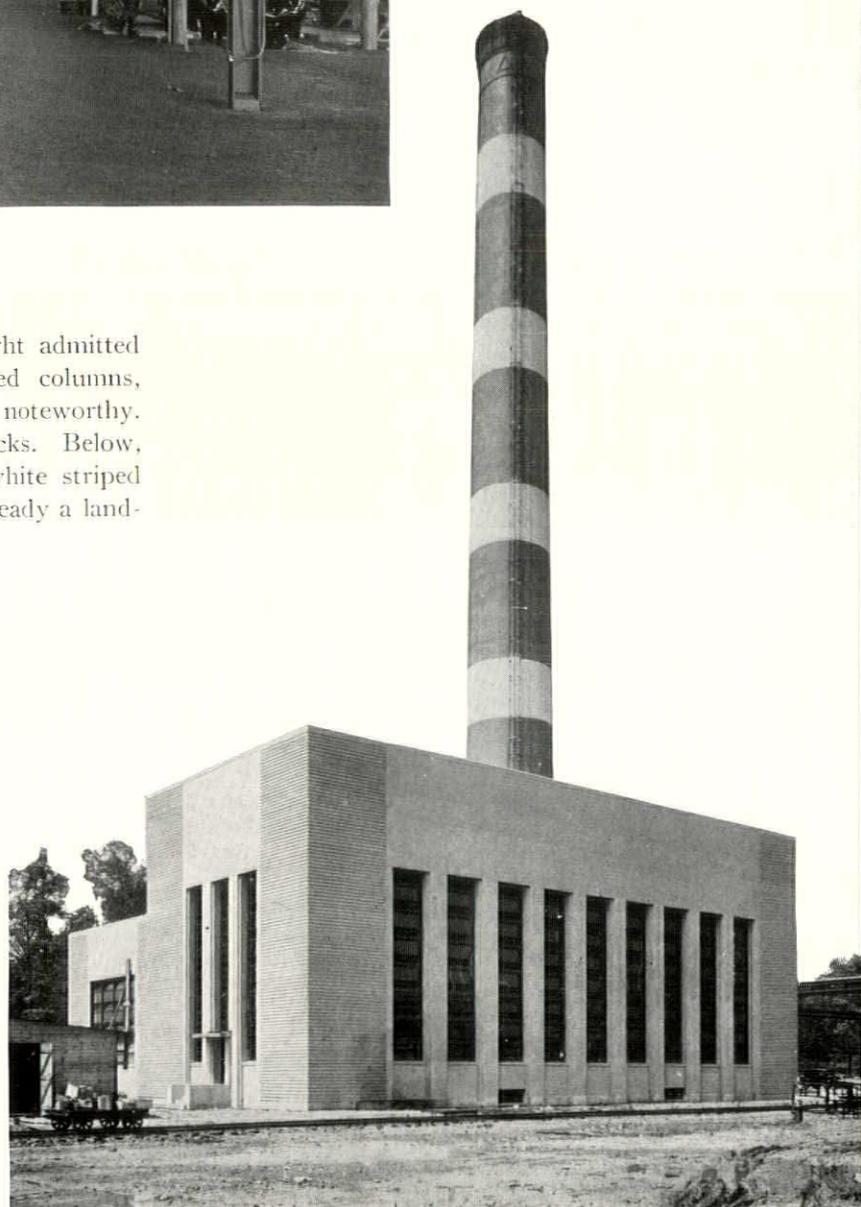


PLOT PLAN

**ALBERT KAHN, INC., ARCHITECTS**



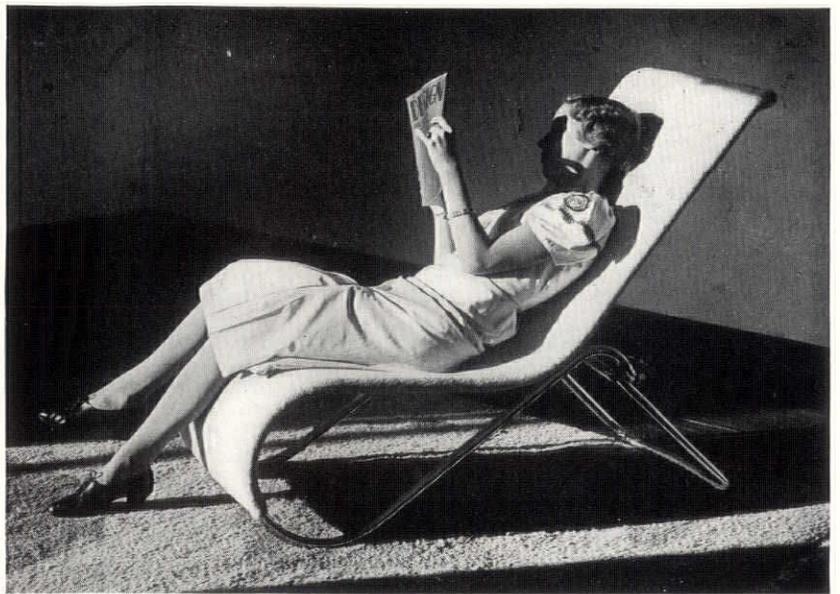
View, above, showing abundance of natural light admitted by double-monitor type roof. The well spaced columns, affording great freedom of movement, are also noteworthy. Floors throughout are of creosoted wood blocks. Below, a view of the power plant with its red and white striped smokestack rising up like a great air beacon, already a landmark in that busy industrial center.



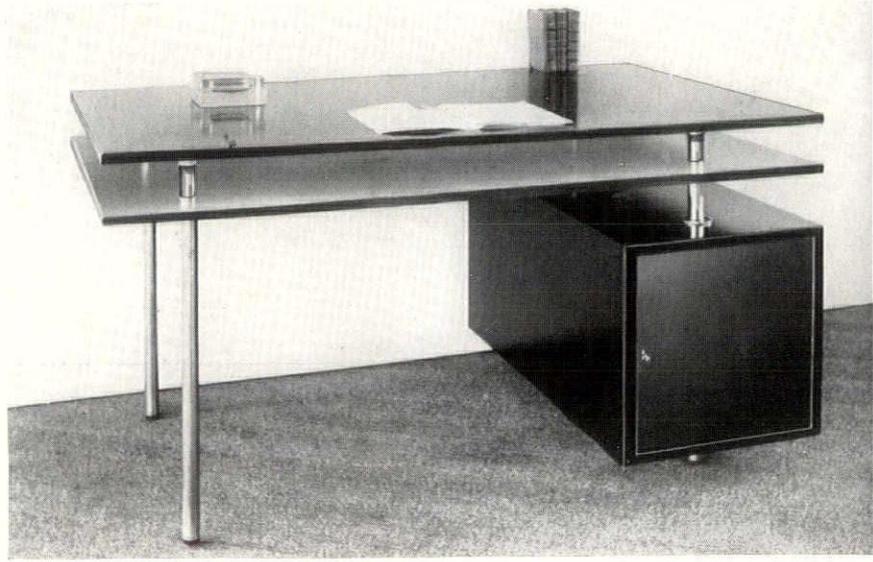
**FACTORY FOR GENERAL MOTORS CORPORATION  
LINDEN, NEW JERSEY**



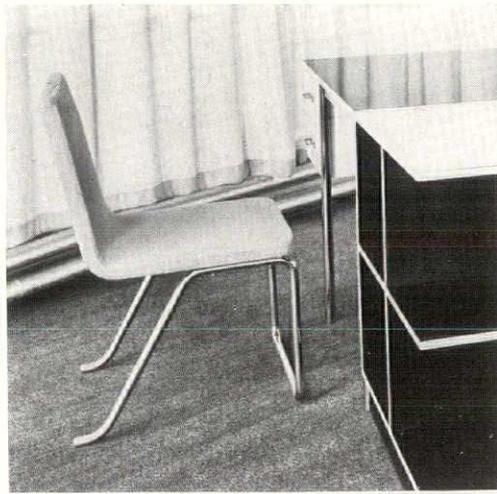
The adjustable easy-chair above was designed by Jean Burkhalter. It consists of chrome steel tubes with twisted cord, covered with latex rubber and upholstered in a light grey material. This chair and the furniture illustrated on the following page were all executed by N. V. Metz, Amsterdam



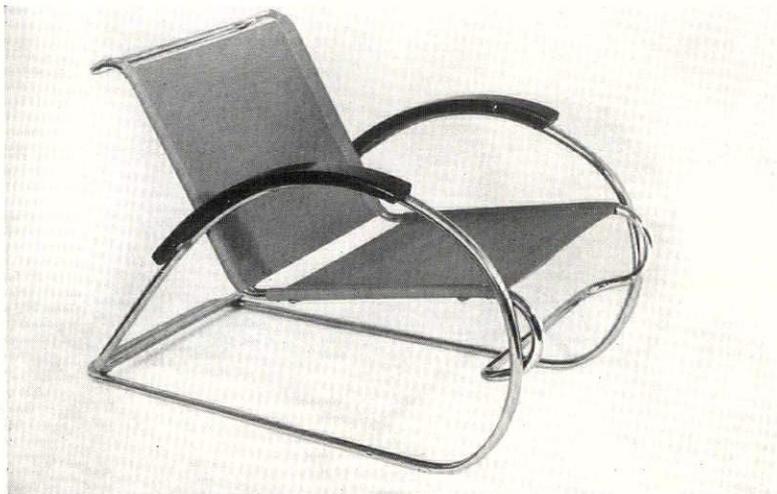
**MODERN FURNITURE, HOLLAND  
DESIGNED BY J. J. P. OUD,  
E. BERKOVICH AND J. BURKHALTER**



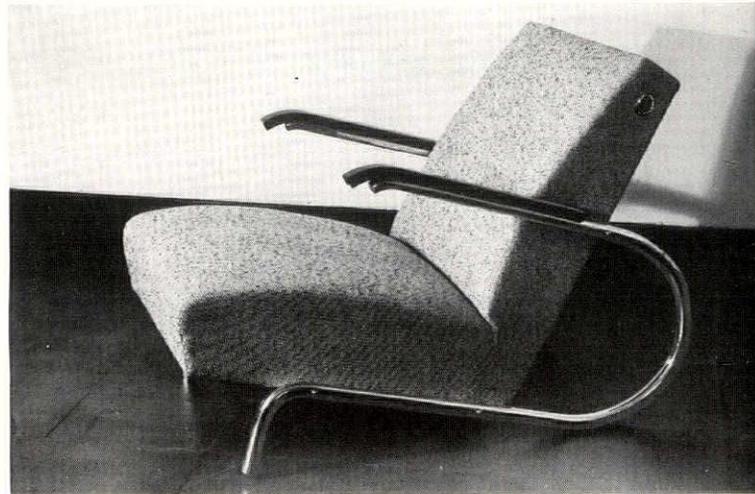
The desks above were designed by E. Berkovich and are obtainable in various colors



Three chairs designed by J. J. P. Oud, architect for the housing development at Rotterdam



Since most of the spring is in the action of the tubular frame, the chair above requires only a heavy cotton fabric for upholstery



In this semi-rigid type frame, inner-spring cushions for both back and seat contribute greatly to comfort

**MODERN FURNITURE DESIGNED BY J. J. P. OUD, E. BERKOVICH AND J. BURKHALTER, HOLLAND**

Men's Room, Radio City Office Building.  
Reinhard & Hofmeister; Corbett, Harrison  
& MacMurray; Hood & Fouilhoux, Architects



SCHNALL PHOTO

# UNIT PLANNING · VIII

## ..... THE PUBLIC TOILET

By JULE ROBERT VON STERNBERG

SIZE, equipment and control of public toilets have rarely been definitely charted. Architecturally, definite limits can be set confining and correlating the scope of these and other elements. Dimensions are based on dimensions and clearances of the human figure; construction should provide wearing surfaces designed to resist action of water, acids and contacts; arrangement and size are based on use-averages, efficiency of use and maintenance, and, to a great extent, social customs. The units and unit relationships resulting from co-ordinated data on these points constitute a definite planning guide.

Functions of the public toilet are premised upon utility, comfort, hygiene as prescribed by codes, custom, and above all, usefulness. Public toilets are herein divided into four general groups: (1) large railroad station services; (2) subway and park toilets; (3) theater and hotel toilets; and (4) office building toilets. These include a majority of all types and contain determinants which may be applied to the design of any public toilet.

In the accompanying Time-Saver Standards, these various types are analyzed according to the number of fixtures and floor area, drainage and ventilation, fixture sizes and spacing and accessory problems of design, equipment and maintenance. The analysis is arranged under two headings: a vocabulary, and its application.

*Basic vocabulary* contains fixture sizes, types, plumbing minima, clearances, such as aisle widths and fixture spacing, ventilation and general design recommendations.

*Application* will describe the arranging and organizing of these unit elements into the typical groups. The ratio of fixtures to expected use (the use-ratio) varies with each of these groups.

Layout and general design treatment are determined by different combinations of factors in each group. These factors can be generally described as convenience, use-ratio, fixture-ratio, control, accessory use (for other than purely comfort purposes), location, available space, sales appeal and sanitary, labor and building codes.

AMERICAN ARCHITECT  
AND ARCHITECTURE,  
SEPTEMBER 1937 · 93

**PLAN**

The corridor plan is most satisfactory. This provides a single corridor with fixtures on one or both sides, and permits easier control, simplified plumbing, and convenient use. Where facilities are divided into several groups, as in a large railroad station, several corridors may be introduced to separate pay toilets from free toilets or from urinals.

**Aisle width** between rows of water closet facilities will vary with aisle length and with the number of fixtures in the row served. The minimum aisle, between a row of fixtures and a wall, is 3'-6" to 4'-0". This will satisfy aisle lengths up to 16'-0", but for longer aisles width should be increased to 5'-0" to 6'-0".

**Control** will vary with the type of toilet. In all cases, two purposes must be served: maintenance of public safety and of cleanliness. The correct design of any public toilet must primarily consider these two points. Inadequacy of control, particularly in the more public types of toilets, tends to restrict their usefulness. Toilets in many office buildings, for instance, are now restricted to the use of tenants on the floors they serve.

**Plumbing.** Toilets are considered as two complementary areas: public and service. Service areas may include a service corridor behind the fixtures providing access to plumbing, traps and valves, or a central chase serving a number of superimposed toilet facilities in a building.

The development of wall-hung water closets, tamper-proof fixtures and pedal operated flush valves has enlarged the use of service corridors. Various fixture types will require varying clearances and allowances in floor and wall construction. Wall-hung closets and urinals, basins in stall urinals, floor-type closet traps and floor drains require allowances in construction and slab thicknesses. Plumbing pipe sizes and connections are definite code requirements.

**Plan accessories.** Slop sinks, porters' lockers and supply closets will be found in several types of public toilet. Slop sinks are generally placed outside toilet rooms, but convenient to them. Access to service corridors behind fixtures should preferably be through the slop sink closet. Porter's or supply closets are generally found only in those toilets with attendants, such as those in parks, hotels and some theaters. These provide storage space for towels, soap, paper and toilet accessories. In size they vary considerably, but provision should be made for several shelves and some hooks.

**FIXTURES**

**Water Closets.** Wall-hung, integral seat (or seatless) water closets are used in some park and all subway toilets. Their chief advantage is cleanliness. Open-front seats with impervious surfaces are employed in all other cases. All seats should preferably be unbreakable and white in color to assure cleanliness.

Wall-hung closets require access corridors be-

hind them and the introduction of steel mounting stocks in the wall and floor to support them. Floor-type closets may permit an accumulation of dirt and make cleaning more difficult.

**Urinals** are of three types: *stall*, *wall-hung* and *floor* or *pedestal* type. Stall type urinals, the most widely used, are best suited to heavy service. Floors should be constructed with a slight pitch towards the fixture, for cleanliness and easy maintenance. Wall and floor types, however, where subject to careful use, are highly satisfactory.

Urinals are usually spaced two feet on centers. Pedestal and wall-hung types, however, for installations such as hotel restaurant toilets, may be spaced more liberally, but rarely more than 2'-4" on centers, in partitions between them of impervious materials such as marble or glass.

**Lavatories** are of three types: *wall-hung*, *pedestal* and *leg*. The latter two are more widely used because of appearance, ease of cleaning and strength.

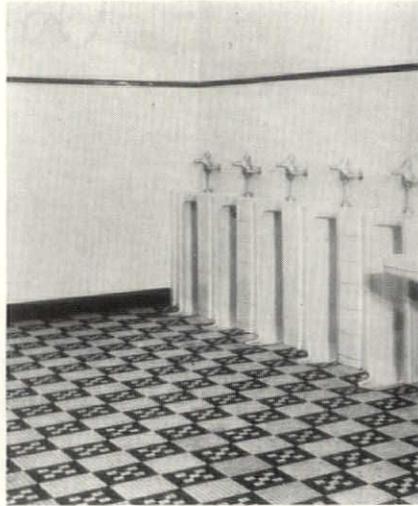
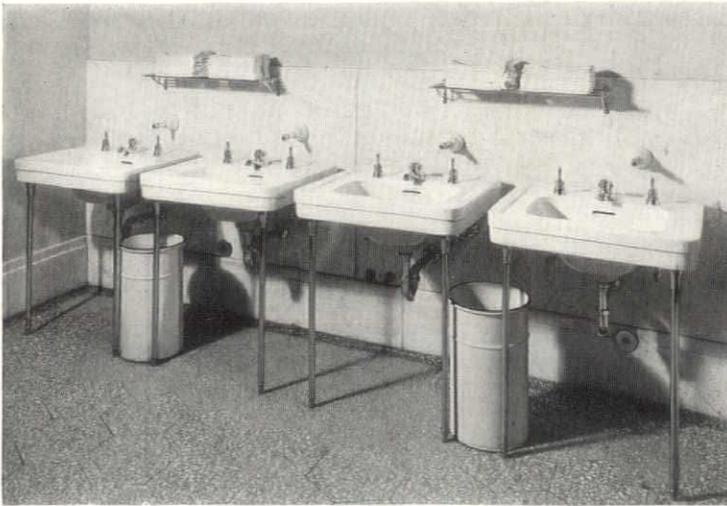
The most commonly used lavatory is 18" x 22", spaced 24" on center. In small dressing and shower rooms, 16" x 18" basins may be used.

**Arrangement of fixtures.** For convenience, in toilet rooms, lavatories are nearest the door, followed by urinals and water closets. In office buildings, where space is at a premium, however, urinals are placed nearest the door. This allows a wider aisle than is required for the less used closets and lavatories, and also reduces total aisle space.

Spacing of closets varies from 2'-6" to 3'-0" on centers with 1-inch thick partitions. Depth of compartments is determined by the following factors: doors (opening in or out), water tank or flushometer and the overall depth of the fixture. See the accompanying Time-Saver Standards.

In an effort to create uniform practice the Federal Bureau of Standards, in co-operation with fixture manufacturers and sanitary engineers, has prepared standard specifications for toilet fixtures. These have been developed for both staple porcelain and staple vitreous china fixtures but are still incomplete and list a wide variety of sizes. Dimensions for all fixtures should be obtained from manufacturer's data. Agencies such as the American Standards Association also have prepared recommended codes, outlining minimum toilet facilities for industrial establishments. These standards, representing comfort averages, are applied in the Time-Saver Standards as bases for recommendations.

**Ventilation** by artificial means is preferred to natural ventilation in almost all public toilets, to provide positive easily controlled and efficiently placed ventilation in addition to permitting more privacy. Rate of change varies from one air change every two minutes (a high standard, used in a large railroad station toilet with a low ceiling) to one air change every ten minutes (average code requirement). The average for toilets in railroad stations, hotels, restaurants, and parks should be one air change every six minutes.



HEDRICH-BLESSING

Lavatories for all types of public toilets are preferably of the leg type, as these are easiest to keep clean. Wall-hung lavatories tend to pull away from the wall finish and leave unsanitary cracks. Stall urinals are likewise easiest to clean. Space between stalls should be filled with impervious material

## PART II — TYPES OF INSTALLATIONS

### RAILROADS

**Scope.** Large terminals or city stations, besides serving the comfort needs of passengers, will also provide dressing rooms with private lavatories and, in some cases, showers. The railroad station will also serve non-passengers, particularly if located in the center of a business district. In Grand Central Terminal, New York City, for example, it is estimated that over 500,000 people use the station daily. Of these, only 100,000 represent passenger traffic.

**Location.** Toilet rooms in a railroad station should be easily accessible from the waiting room, and least accessible from the street, to prevent constant use by non-passengers.

**Control** is very important. Porters, matrons or other station representatives are on duty at all times to provide personal service and to maintain orderliness and cleanliness. Lockers are required for toilet supplies and slop-sinks and closets for cleaning-up. Shower and dressing room areas should also have special central porter's lockers to accommodate towels, soap and clean-up equipment. Use of pay toilets and special services such as showers necessitates close supervision of toilet rooms and implies high standards of maintenance.

**Use-ratio.** Passenger traffic is an indeterminate quantity, since the number of passengers using the station at any one time is subject to wide variation. Toilet facilities of a station must be designed to accommodate an expected increase of passengers over a twenty to fifty year period. Grand Central, since its completion in 1906, has made several additions to its toilet system. As now designed they are adequate for present traffic. Men's toilets are located at three different points. The total number of fixtures includes 152 water closets (of which number 71 are pay toilets with lavatories), 55 urinals and 33 lavatories. Women's toilets are located on two levels connected by

interior stairs and contain 56 water closets (including 12 water closets with lavatories) and 39 lavatories. The difference in number between these two totals is due to the fact that a greater number of men use this station, and that men make more frequent use of public toilets.

The number of fixtures will be determined by: (1) present rate of traffic growth, (2) maximum traffic capacity, and (3) use-ratios. Facilities need not be designed to accommodate exceptional peak loads such as special excursions, convention crowds, etc. In the new Syracuse station of the New York Central Railroad, for example, the total number of toilet fixtures, is 12, or enough to serve the capacity of one train. The waiting room of this station seats 88 persons.

**Fixtures.** Stall urinals are favored because of the ease with which they can be kept clean. Foot-operated flush treadles are being used extensively for both water closets and urinals. Lavatories are provided, but soap and towel must usually be purchased from the attendant. This factor will necessarily alter the specifications as soap and towel containers will not be necessary.

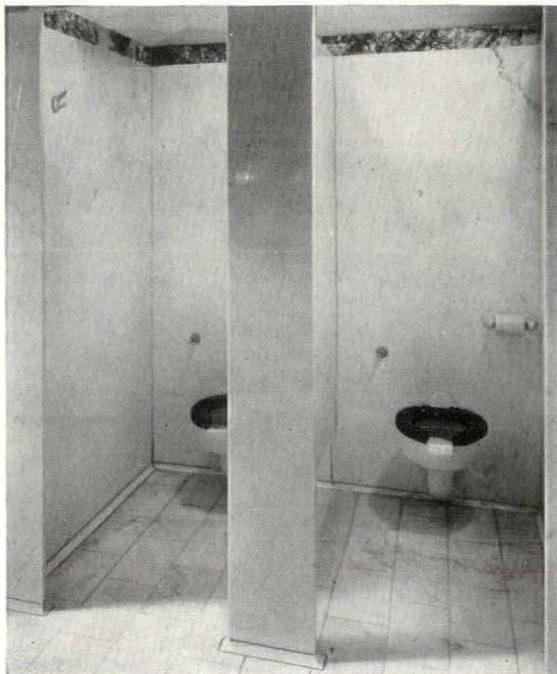
**Water closets** are of the floor type, with individual compartments. In larger stations they are divided into three groups: free toilets, pay toilets and toilets in dressing rooms. Groups are usually separated with a central control, or common lobby, connecting them.

**Plan accessories.** Rest rooms are a necessary part of women's toilets and should provide space for a settee, vanities, chairs and smoking stands.

The smoking room will supplement men's toilets, and should provide space for chairs and stands for smokers, and bootblack stands.

**Construction and finish.** Floors and walls of a railroad toilet should be finished in glass or tile or marble with metal, marble or glass partitions. Ventilation usually requires one complete air change every six minutes, through grilles

**PUBLIC  
TOILETS  
UNIT PLANNING  
NUMBER..... 8**



HEDRICH-BLESSING

Left: Wall-hung water closets permit mopping underneath fixtures and are particularly recommended for park or subway toilets. Access for servicing wall-hung fixtures is obtained through a service corridor, which may serve also as a plenum chamber for ventilating. Right: A typical park toilet in the Brookfield Zoological Gardens

located on the ceiling and spaced at regular intervals, in rooms of low or medium ceiling. Higher ceilings may require ventilating grilles in side walls directly above the fixtures.

**PARKS AND SUBWAYS**

**Scope.** Both park and subway types are similar in equipment and service requirements and are usually designed for utilitarian purposes only.

A street toilet room should cater more to comfort and appeal than it now does. It should be well lighted, amply dimensioned, clean and colorful, and accompanied by adjoining rest rooms for women. Cubicles should be large enough to accommodate a mother and child and lavatories should be equipped with soap and towels to encourage cleanliness. Such facilities could do a great deal toward educating the public to their considerate use.

**Location** should be as accessible as possible to public areas without obtruding upon them. In playgrounds, recreation areas and parks, toilets are generally in conjunction with dressing rooms, lockers or bath houses. In city squares, they should be easily reached from centers of densest traffic. Location and approach are more subject to esthetic factors than for any other type of public toilet, though this factor is too often neglected.

**Control.** An attendant who is also a porter usually performs the dual function of policing and maintaining cleanliness. He should be provided with an office in a controlling position adjoining the toilet room. It should be large enough to accommodate a chair and locker, should have access to a supply closet, and should contain electric and water meters. Slopsink closets should adjoin

toilet rooms and contain slopsink, cleaning equipment, exhaust fan and, when used, an access door to the fixture service corridor.

**Use-ratio.** For parks it is impossible to indicate any ratio between the number of fixtures and the number of people who might be served by them. No attempt has been made to organize a system of public toilets with any precise observance of rules of use-frequency.

**Fixtures.** Park toilet fixtures, designed for utilitarian performance, are white vitreous china. Water closets are wall-hung with integral seat (or seatless). Urinals are stall type, usually placed on a 2'-0" platform, four inches high and pitched slightly toward the fixture. Doors are normally omitted on men's water closet compartments. In high class locations doors may be used and seats provided on closets. Lavatories are wall-hung, cold-water type, 18 inches by 22 inches.

Toilet partitions are of enameled steel. Walls and floor are usually of tile, however the fixture wall may be of impervious slate.

**Plan accessories.** Women's toilets should have an adjoining lounge room provided with comfortable chairs and a settee and should be under supervision of a matron.

**Ventilation** in the park toilet may be either natural or forced, though artificial ventilation has many advantages over window ventilation, permitting more efficient control of air changes in all weather and assuring greater privacy and better control of exhausted air. One air change every six minutes is recommended.

**Subway toilets** are not usually subjects for the architect. In New York, city-built subways are equipped with standardized units consisting of: 2 water closets, 2 urinals and one lavatory for

men; 2 water closets, 1 lavatory for women. Control might be improved by locating entrances within sight of station agents.

Use-ratios are not related to passenger traffic, due to "crowd-velocity." Stations serving as suburban commuter transfer points require most facilities. Unit multiples are used according to location: one unit per outlying local station; two per express station; three per central station; four per central express station.

Construction is usually of cement or tile. Preferred practice might employ more impervious materials with fewer mortar joints to absorb dirt and odors. Floors are drained to sewers. Ventilation is artificial, using a service corridor behind fixtures as an exhaust plenum chamber, exhaust being carried to sidewalk.

Fixtures are tamper-proof, similar to those in park toilets and are serviced through the plenum chamber. A slop-sink closet adjoins the toilet and gives access to the service or plenum corridor.

**THEATERS**

**Scope.** Theaters may be grouped in two general classes: *continuous shows* and *legitimate shows*. Theater toilets serve a definite number of people—the house capacity—which is usually assumed to be half men and half women.

Theater toilets must be attractive and clean for use by all members of a family if the theater is to be successfully patronized. Appearance is extremely important and therefore finish materials, fittings and fixtures of high quality are used.

**Location (continuous)** will vary with the class of the house. Theaters are generally grouped in three classes: *Class A* (large, high-class theaters) provide toilets on every floor with the exception of orchestra floors which are served by toilets in the basement. *Class B* provide one group of toilets only, located on the mezzanine, opening off a common lounge. This classification includes better type neighborhood and small town theaters. *Class C* theaters have one group of toilets located in the basement. This type of installation, used in many poorer theaters, is also being more widely used in small intimate theaters of a better type.

**Location (Legitimate).** Toilets are usually in the basement or mezzanine. Because of intermissions during which this type will be most used, large lounge and smoking areas should adjoin them for smoking and conversation.

**Control.** Occasional inspection by an usher or other theater representative is the usual extent of policing. Main toilet groups in large theaters, however, particularly women's toilets, may have an attendant.

**Use-ratio.** In continuous show theaters, a method of determining the number of fixtures required based on house capacities has been developed by Thomas Lamb, architect. Requirements are: *For men*, one water closet for every 100 persons, 1 urinal for every 75 persons and 1 lavatory for every 250 persons; *for women*, 1 water closet for every 75 persons and 1 lavatory for every 250 persons. Assume an audience composed of 50% men, 50% women.

In legitimate playhouses, previous figures should be increased by 20%. In a thousand-seat theater,

for example, seating 500 men, 7 men's water closets would be provided.

These figures apply to average houses. In special cases, it may be necessary to increase this ratio. In large "de luxe" metropolitan theaters, for instance, the number should be increased. Since this type of house should be served by a number of toilet rooms located on various floors, individual toilet rooms will have to be proportionately larger.

**Fixtures.** Urinals may be stall, wall or pedestal type, depending on the designer's preference. Where there is considerable traffic, however, stall types have been found most efficient. Water closets are pedestal type with flushometer attachment, and lavatories are generally pedestal or leg type, 18 inches x 22 inches.

Partitions are often structural glass or marble, sometimes metal. Walls and floors are generally constructed of tile, structural glass, or marble.

"Sales appeal" will determine choice of fixtures, fitting and finishes of theater toilets. There should be considerable emphasis on color and brightness and in common practice no expense is spared on this part of the house.

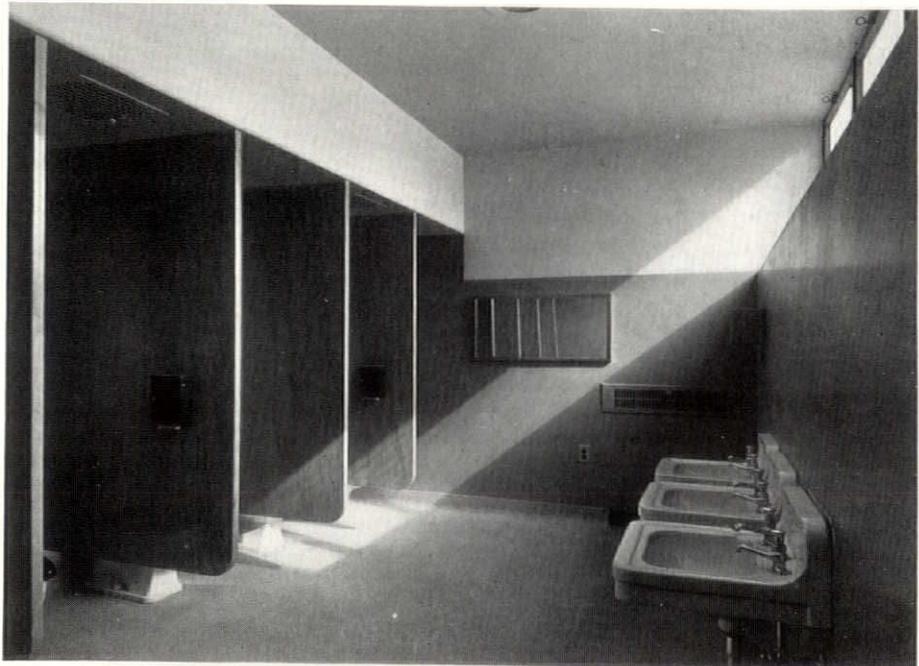
**Plan Accessories.** Ventilation should be better than code minimum requirements. One air change every six minutes is considered ample and is recommended practice.

Slop-sink closets should adjoin toilets and should be complete and accessible enough to permit easy storing of cleaning equipment and supplies.

**HOTELS**

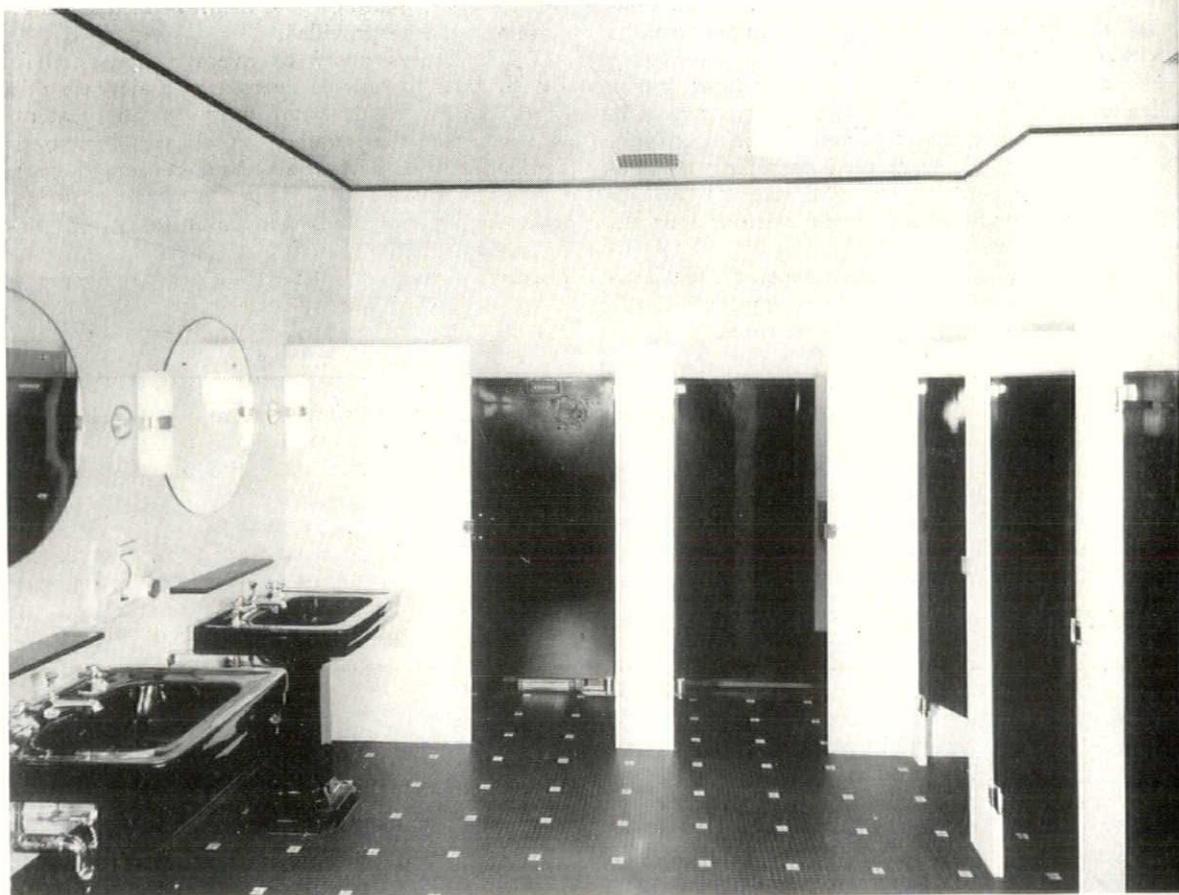
**Scope.** Public toilets in the hotel must serve restaurants, public rooms and ballrooms. Because floor space is valuable on lower floors, the number of fixtures and the space allotted to them is held to an absolute minimum. Hotel owners consider toilet space to be unproductive and make

LYNDON & SMITH, ARCHTS.  
PHOTO: LINCOLN



Two faults appear in this otherwise good example:  
(1) Note how wall-hung lavatories have pulled away from wall;  
(2) Air inlet for concealed radiator forms a dirt pocket.  
Raising radiator stack above floor level would have solved the problem.

**PUBLIC  
TOILETS  
UNIT PLANNING  
NUMBER..... 8**



REINHARD & HOFMEISTER; CORBETT, HARRISON & MACMURRAY; HOOD & FOUILHOUX, ARCHITECTS

PHOTO: SCHNALL

Toilets in theaters and hotels should be more attractive than in other types of buildings, since a part of their function is to please the customer. Above: Women's toilet, Radio City Music Hall

every effort to confine it to a minimum size in least desirable locations.

A number of factors complicate design of hotel public toilets. Restaurant toilets are more utilitarian than ballroom toilets, are smaller, are used by a different type of patron and are used more frequently.

**Location** should not be easily accessible from the street. Toilets in restaurants and cafes should be convenient to them and to lounge space.

Ballroom toilets are used by other than hotel patrons. More than restaurant toilets, they must serve peak periods (particularly after banquets, or during intermissions in dances) and must be arranged in conjunction with check-room facilities. These are usually on a mezzanine convenient to circulation.

**Control.** Since service is an essential feature of American hotels, toilet supervision and attendance is important. Male and female attendants are stationed in all toilets. For their work supply closets are required for supplies and toilet accessories.

**Use-Ratio,** for large public rooms which are rented out to various organizations, varies with the occupancy, both as to number and proportion of men to women. Usual practice provides liberal accommodations for 50% men and 50% women. One fixture for every fifty persons has been found adequate for practically all occasions. In restaurant toilets, one fixture for every fifteen per-

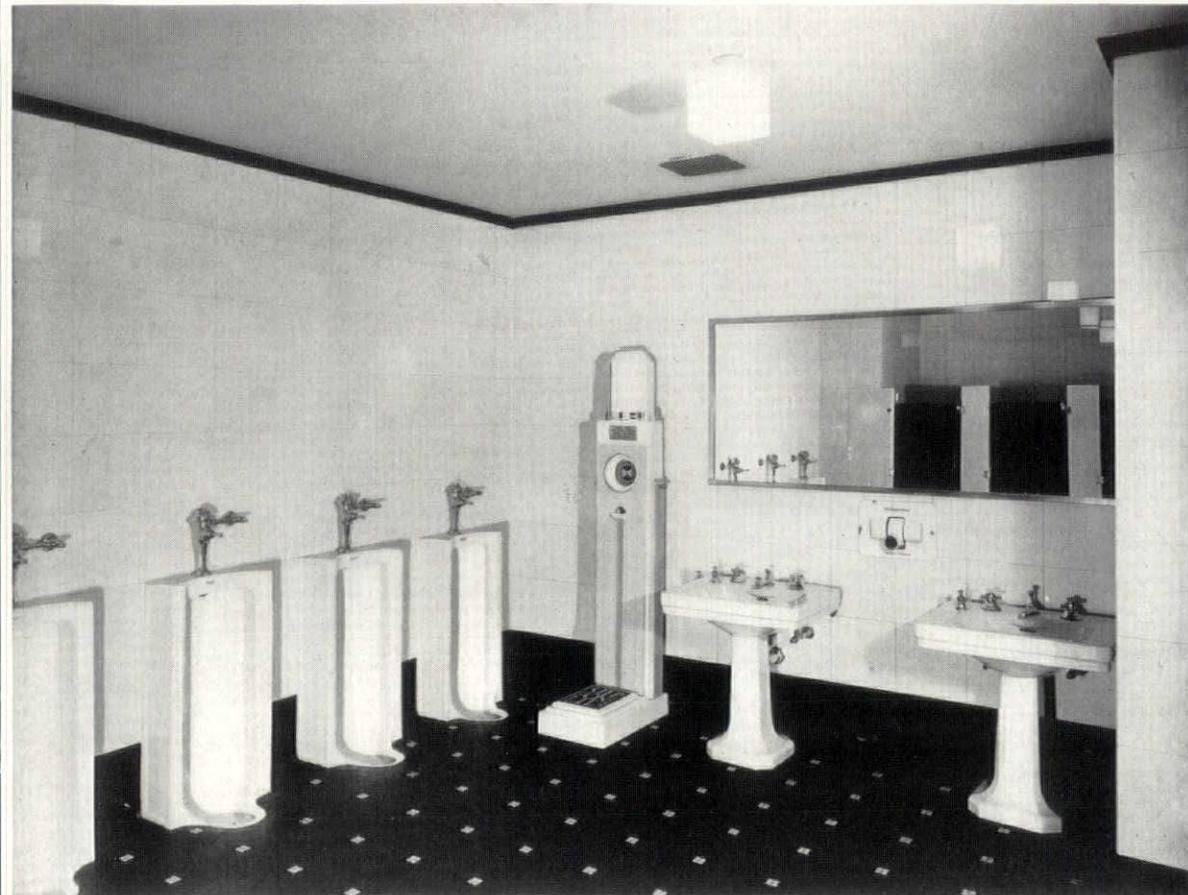
sons is preferred, assuming a 50% male, 50% female capacity. Introduction of cafes and bars has resulted in increased toilet facilities. A "fixture" may be either a water closet or a urinal.

**Fixtures** should be of the best quality. Water closets are usually vitreous porcelain and are generously spaced, about 36" on center. Stall urinals are preferred, although all types are used. In small hotel toilets, pedestal or wall-hung types may be used; their reduced flushing area make them easier to keep clean. In ballroom toilets for women's use, partitions should be at least 36" clear. Dressing rooms should also be provided in women's toilets; recommended practice provides one dressing room for every two water closets. A good size for these is 4'-6" x 5'-0". They should provide space for a water closet, lavatory, pier glass and a small vanity.

Installation of pay toilets in hotels should be considered. In some modern hotels, all but one water closet is of the pay type. Such installations are generally operated as concessions, a matter of individual policy. Most hotels, however, require no charge for use of their facilities.

**Plan Accessories.** Ventilation usually requires a minimum of one air change every six minutes. Exhaust grilles are commonly placed in the ceiling and exhaust is through ducts in furred spaces.

Women's toilets in ballroom areas require lounge accommodations. A room large enough



SCHNALL PHOTO

Men's toilet, Radio City Music Hall. Note wide spacing of fixtures which eliminates overcrowding. In this instance, urinals are so far apart that filling between them is not imperative

to seat from fifty to one hundred per cent of the toilet capacity is ample. It should contain settees, chairs, and smoking stands.

## OFFICE BUILDINGS

**Scope.** In most office buildings, public toilets serve tenants on one floor only and are closed to others. In planning, adequate facilities should be provided for an expected occupancy. When the type of occupancy is changed or increased, as is customary in some types of offices, particularly those employing large numbers of women, available facilities should be correspondingly enlarged.

**Location** of office building toilets is a function of the entire plan. A location within the central group of services which includes circulation, plumbing and steam risers, etc., is preferred since this is the least valuable floor space. The plan is usually corridor-type, long and narrow.

**Control.** Policing is not required. Rooms are usually closed to all but tenants of the floor. Maintenance is provided by the office cleaners.

**Use Ratio.** Since future tenancy may bring a varying number of persons to a typical floor, definite fixture ratios can be pre-determined only as approximations. Minimum fixture requirements are usually determined by local sanitary and labor codes. The average number of persons per floor is obtained by dividing floor area by the number of sq. ft. allowed per person. Labor codes pre-

scribe the number of fixtures necessary for the resultant tenancy.

A minimum unit for office buildings should include two water closets, one urinal and one lavatory for men; and two water closets and one lavatory for women. General practice provides one fewer urinals than water closets.

The number of fixtures related to floor capacity is definitely set according to code tables shown in the accompanying Time-Saver Standards.

**Fixtures.** Water closets are usually floor type. Urinals may be of any type. Lavatories are pedestal or leg type. Fixtures, partitions and fittings of the office building toilet are generally of the highest quality; structural glass, flush metal or marble partitions, tile floors and marble wainscots are often used. Equipment for soap and towels is usually unnecessary.

**Plan accessories.** Ventilation of office building toilets is preferably artificial to assure more privacy and permit use of least valuable floor space. One air change every ten minutes (code requirements) is considered ample, since loads on this type of installation are usually light.

Slop-sink and storage closets should be separate from toilet facilities to serve the entire floor. Women's toilets may have a lounge, usually necessary on only one floor of the building.

Vestibules are necessary in this type of installation when toilets open off public halls.

# PUBLIC TOILETS—1—Design Data

On this sheet are developed fixture and use ratios and areas and clearances necessary for fixtures. Sufficient data are included on waste stack sizes for preliminary planning purposes (see T-S.S. Q9.1.1, -2, and -3). For information relating to fixture sizes, types and installation see T-S.S. Serial No. 89, "Public Toilets—2—Fixtures." Research was done by J. R. von Sternberg.

## RATIOS

Tables I and II give the number of fixtures to be supplied per unit of occupancy and the proportion of men to women for typical cases. Units of occupancy vary with the type of occupancy, as listed. The water closet is the basis of both tables. In all cases consult local building, sanitary and labor codes. Ratios for theaters were developed by Thomas W. Lamb, Architect.

**Use ratio** is shown in col. 3 of Table I and in Table II. The word "persons" as here used includes both men and women. If occupancy falls at or below the minimum for 1 water closet, provide at least full minimum accommodations for each sex.

**Fixture ratio** is given in col. 2 of Table I and in the notes in Table II. Here are listed the proportion of men to women contained in the "Use Ratio" occupancies, and the proportion of lavatories and urinals to water closets. For example, assume a railroad terminal in the center of a city, whose daily occupancy totals 60,000 persons.

Total occupancy . . . . .	60,000 persons
Total no. water closets $\left(\frac{60,000}{1,500}\right)$ . . . . .	40
Proportion, men (3) . . . . .	30
women (1) . . . . .	10
Total fixtures, men's toilet:	
Water closets . . . . .	30
Urinals . . . . .	15
Lavatories . . . . .	15
Total fixtures, women's toilet:	
Water closets . . . . .	10
Lavatories . . . . .	5

## PLANNING

**Park toilet** installations are of two general types: (1) small parks, small recreation areas, and city squares; (2) municipal picnic grounds, bathing beaches, and large recreation areas. Both types should be accessible to, but not directly on, routes of main circulation; and should be provided with fixtures, door hinges, paper holders, hooks, etc., of tamper-proof type. Type 1 is purely utilitarian, with a minimum number of fixtures and space. Type 2 may be expanded to include pay toilets for both men and women, a women's lounge room equipped with settees or easy chairs, or may be planned in conjunction with locker or dressing rooms used in recreational areas.

**Control** is extremely important, due to uncertainty as to the type of patronage. Slop and supply lockers (and attendant's office, if used) should be located near entrance. *Number of fixtures* is indeterminate, varying from 2 or 3 water closets per toilet for Type 1, to approx. 1 w.c. per 1,500 persons for large municipal bathing beaches. *Access corridors* should be provided, with *wall-hung water closets* and *stall urinals* mounted so that plumbing is serviced through the access corridor.

**Construction** should be of impervious material throughout. Concrete and tile, with slate on the fixture wall, are often used; however, when cost will permit, more dense materials (such as terrazzo for floors or flush metal partitions) are preferred. **Ventilation** is preferably artificial, with a recommended minimum of 1 air change per 6 minutes (consult local codes). Access corridors may also serve as exhaust plenum chambers. If toilets are underground, exhaust vents should be carried up in sidewalk posts to a point more than 6'-0" above the sidewalk.

**Subway toilets** are similar to park toilets, Type 1. New York City municipal subways employ as a toilet unit: 2 water closets, 2 urinals and 1 lavatory (for men); 2 water closets and 1 lavatory (for women). One unit is provided for outlying local stations; two per outlying express station; three per central local station; four per central express station.

**Railroad terminal toilets** are likewise divided into two groups: (1) terminals in highly developed urban centers; (2) terminals in city outskirts. The distinction lies principally in the fixture and use ratios (see tables). Type 2 is used by large numbers of non-passengers (ratio to passengers, approx. 5 to 1); Type 1 principally by passengers.

I - FIXTURE and USE RATIOS		
TYPE OF TOILET	FIXTURE RATIO	USE RATIO
PARK (and Subway)	3 men to 2 women; allow 1 urinal & 1 lav. per 2 w. c. for men; 1 lav. per 2 w. c. for women	Indeterminate, depend- ing on location
R. R. TERMINAL (City center)	3 men to 1 woman; allow 1 urinal & 1 lav. per 2 w. c. for men; 1 lav. per 2 w. c. for women	1 water closet per 1500 persons (passengers + transient)
R. R. TERMINAL (Outskirts)	2 men to 1 woman; allow 1 urinal & 1 lav. per 2 w. c. for men; 1 lav. per 2 w. c. for women	1 water closet per 500 persons (passengers + transient)
HOTEL (Restaurant, Bar, Lobby)	1 man to 1 woman; allow 2 urinals & 1 lav. per 2 w. c. for men; 1 lav. per 2 w. c. for women	1 water closet per 15 persons in restaurants; per 50 in public rooms
HOTEL (Ballroom)	2 men to 1 woman; allow 2 urinals & 1 lav. per 1 w. c. for men; 1 lav. per 2 w. c. for women	1 water closet per 50 persons
THEATER (Continuous)	7 men to 3 women	men $\left\{ \begin{array}{l} 1 \text{ w. c. per } 75 \\ \text{persons} \\ 1 \text{ urinal per } 100 \\ 1 \text{ lav. per } 250 \end{array} \right.$ women $\left\{ \begin{array}{l} 1 \text{ w. c. per } 75 \\ \text{persons} \\ 1 \text{ lav. per } 250 \end{array} \right.$
THEATER (Legitimate)	7 men to 3 women	Increase no. fixtures given for continuous theaters by 20%
OFFICE BLDG.	See Table II	

## II - Use Ratio - OFFICE BUILDINGS

(N. Y. State Industrial and City Building Codes)

Allow 1 person per 50 sq. ft. of rentable floor area. Allow 1 urinal and 1 lav. per 2 w. c. for men; 1 lav. per 2 w. c. for women.

Total No. Persons	Water Closets Required	Ratio
1 to 15	1	1 for 15
16 to 35	2	1 for 17½
36 to 55	3	1 for 18½
56 to 80	4	1 for 20
81 to 110	5	1 for 22
111 to 150	6	1 for 25
151 to 190	7	1 for 27

Above 190, allow 1 w. c. per 30 persons. Assume 50% men, 50% women unless tenant requirements can be accurately determined. When urinals are supplied, if occupancy totals more than 20 persons, 1 less than the required no. of water closets for men may be provided; but in no case should total no. of water closets equal less than 2/3 required number.

# PUBLIC TOILETS—1—Design Data

## III - CHECK LIST - EQUIPMENT

Note: Check (✓) indicates recommended use of checked material in given type of toilet. **Water Closets:** Type A, pedestal; Type B, wall-hung. **Urinals:** A, stall; B, wall-hung; C, pedestal

FIXTURE TYPES	PARK (and subway)	R.R. TERMINAL (City center)	R.R. TERMINAL (Outskirts)	HOTEL (Restaurant)	HOTEL (Ballroom)	THEATER (Continuous)	THEATER (Legitimate)	OFFICE BUILDING
		B	A B	A B	A	A	A B	A B
Water Closets	B	A B	A B	A	A	A B	A B	A
W.C. Compartments	Open (M) Closed (F)	← closed fronts (doors) →						
Pay Toilets		✓	✓	✓	✓	✓	✓	
Urinals	A	A B	A B	A B	A B	A B	A B	A B
Lavatories	✓	✓	✓	✓	✓	✓	✓	✓
Dressing Rooms		✓	✓		✓	✓	✓	
Slop Sink	✓	✓	✓	✓	✓	✓	✓	
Service (Plenum) Corridor	✓	✓	✓					
Attendants' Lockers	✓	✓	✓	✓	✓	✓	✓	
Floor Drains	✓							
VENTI- LATION	Wall Grilles	✓	✓	✓	✓	✓	✓	See bldg. Codes; or 1 chge. per 10 min.
	Ceiling Grilles	✓	✓	✓	✓	✓	✓	
← One air change per 6 minutes →								

## IV - MINIMUM FLOOR AREAS

(Gross areas recommended by Am. St'ds Ass'n.)

Fixture	min. width	min. depth	min. area
Water closet	2'-8"	3'-6"	16 sq. ft.
Lavatory	2'-0"	3'-6"	12 sq. ft.
Urinal	2'-0"	3'-6"	12 sq. ft.

## V - RECOMMENDED AISLE WIDTHS

TYPE OF W.C. DOOR		W.C. Doors Open IN	W.C. Doors (2'-2") Open OUT
CLEARANCE BETWEEN WALL AND FIXTURE ROW	Aisle lengths up to 16'-0"	3'-6" to 4'-0"	4'-6"
	Longer aisles	4'-0" to 6'-0"	4'-6" to 6'-6"
CLEARANCE BETWEEN TWO ROWS OF FIXTURES	Aisle lengths up to 16'-0"	5'-6" to 6'-0"	6'-6"
	Longer aisles	6'-0" to 8'-0"	7'-0" to 9'-0"

## VI - SOIL and WASTE LINES; TRAPS

Stack	Min. Size, inches
Main Soil	4
Branch Soil	4
Main Waste	2
Branch Waste	{ Slop Sink 3 Urinal 1½ Lavatory 1½

Preferably, each fixture should be provided with a water-sealed trap placed not more than 2'-0" from fixture, except that no more than 8 lavatories may connect to a single trap. See local codes.

## VII - ACCESS CORRIDORS

Recommended clear inside width of access or plenum chambers behind urinals, lavatories or water closets is: 2'-6" to 3'-0".

Location should be convenient for passengers but not too convenient to the street. Space assigned to public toilets should be the least valuable. If several toilet rooms are provided, the largest should adjoin waiting rooms. Size should be determined by station capacity, which in turn is determined by track capacity; however, plans should permit additions to existing facilities to accommodate future increases.

Facilities should include showers, dressing rooms, men's smoking rooms and women's rest rooms in addition to free and pay toilets, lavatories and urinals. The modern tendency is to include as many pay toilets as possible within the required number. These need constant supervision, necessitating provision of a porter's closet, preferably opening off a common corridor serving all pay toilets. Storage space should be provided for towels, soap, combs, etc., sold or rented by porters.

Plan. A lobby should give access to all parts of each toilet group and may also serve as a men's smoking room or women's lounge; and may contain bootblack stands, etc. Use of separate corridors for free toilets, pay toilets, urinals, lavatories, showers and dressing rooms, provides an efficient and desirable means of segregating fixtures by types. Ventilation is preferably artificial with one air change per 6 minutes.

Theater toilets serve two types of houses: "continuous" and "legitimate." In the former, audiences are constantly changing; in the latter, audiences change at stated intervals and consequently must have facilities adequate for peak loads. Continuous show theaters are divided into three groups: class A (large theaters in metropolitan centers) with separate toilets on each floor; class B (neighborhood theaters) with one group of toilets only, usually on the mezzanine; and Class C (intimate theaters, inexpensive theaters) with one group of toilets in the basement. In legitimate theaters toilets are in the basement or mezzanine. Appearance of toilets is important in attracting patronage, especially among women. Fixtures, fittings and interior finish should be of high quality. Ventilation should be artificial, 1 air change per 6 minutes.

Control is not important. In large installations, however, some supervision is generally provided, especially in women's rooms. Slop sinks and lockers should always be provided.

Hotel toilets should be convenient to guests, but not easily accessible from the street; and may be divided into two types: (1) those serving restaurants and public rooms; (2) those serving ballrooms and banqueting floors. Location of both types should be in least valuable volumes, preferably on low-ceilinged mezzanines below ballroom floors and convenient to check rooms. Restaurant and first floor toilets may be located in basements.

Type 1. Restaurants and first floors may have common toilet rooms, unless floor area served is excessive. In such cases, provide separate toilets for bars and grills as these will receive heaviest use. Other facilities may be distributed as desired preferably near coat rooms.

Type 2. Women's toilets should have adjoining lounge or powder rooms. Closets and lockers for porters and matrons must also be provided for slop sinks, equipment and matron's accessories. Dressing rooms should be provided in the ratio of 1 dressing room per 2 water closets, and should contain, in addition to a water closet and lavatory, a pier glass, small stool or chair and dressing table. Men's toilets should contain an attendant's locker and porter's slop sink.

Use and fixture ratios for Type 2 should be carefully followed to accommodate peak loads. Control of both types by a matron or attendant is usually constant.

Office building toilets are restricted to use of tenants and are often kept locked, keys being distributed to tenants. Location is determined by two factors: value of floor space and position of plumbing stacks and other services. Rentable space is the building's only commodity; hence toilets should occupy least valuable space, usually near center of building in windowless areas. Control is unnecessary.

The minimum unit should include two water closets, one urinal and one lavatory for men and two water closets and one lavatory for women. There is ordinarily one more water closet than urinals in men's rooms. Quality of fixtures and finish varies from highest grade in buildings commanding high rentals to serviceable, inexpensive grades.

The corridor plan is ordinarily used, with a battery of water closets on one side and urinals and lavatories on the other. Ventilation need only comply with minimum code requirements. Doors should open inward. Whenever possible provide vestibules. If this is not possible, toilet doors should open so as to shield the interior.

**PURPOSE**

Data pertaining to types, locations, clearances and dimensions of fixtures used in public toilets are presented on this sheet. Basic data on types, sizes and locations of public toilet rooms is given on T-S.S. Serial No. 88. For details of plumbing drainage systems consult T-S.S. Q9.1.1, -2, and -3.

**FIXTURES**

**Lavatories** may be leg, pedestal or wall-hung. Leg type is preferred for all installations. Pedestal type is difficult to keep clean. Wall-hung types are easiest to clean but tend to keep away from wall finish, leaving unsightly, unsanitary cracks. Color is preferably white or light shades, although other colors are in common use in hotels, theaters and office buildings. Typical sizes are given in the accompanying drawings. Center-to-center spacing is normally 1'-10" to 2'-2", but may be increased for greater comfort, as in theaters, hotels, etc.

**Urinals** are of three types: stall, wall-hung and pedestal. Stall types are recommended for all installations. Wall-hung or pedestal types are easiest to clean but are subject to misuse and so are recommended only for public toilets whose use is restricted, as in office buildings, etc. Partitions or fins are usually installed between pedestal or wall-hung urinals, rarely between stall types. Color is usually white. Dimensions are shown in the drawings. Center-to-center spacing ordinarily varies from 2'-0" to 2'-4", and may be greatly increased as suggested for lavatories. When space between stall urinals is too small for easy cleaning, pockets should be filled flush with materials having an impervious surface.

**Water closets** are of two types: wall-hung and floor or pedestal. Floor types are most difficult to clean and consequently are recommended only for toilets whose use is restricted. Wall-hung types are recommended for some park toilets and all subway toilets, where plumbing is serviced through access corridors. Seats for floor types are unbreakable, open-front, with impervious surfaces; preferably white in color. Wall-hung types usually have integral seats (seatless). Color recommendations are same as for lavatories. Flushometers are recommended for all types. Floor treads or seat-operated valves are also used.

**Water closet compartments** may be of masonry, opaque glass or metal. Doors are usually metal and may be single or double. Compartment dimensions vary as shown in the drawings with inswinging, double-acting or outswinging doors. Larger compartments are preferred where space permits, particularly in hotel or theater toilets.

Preferred types are those having flush surfaces. Doors are omitted on some park and subway compartments and occasionally on other types. Partitions should be stopped approximately 1'-0" above the floor.

Various kinds of metal partitions are manufactured, including post and panel assemblies with or without overhead bracing, and flush panels with integral posts.

**Fittings**, including lavatory, urinal and water closet fittings, should be tamper-proof and simple to operate. Hot and cold water faucets are preferably self-closing, as are compartment door hinges. Flushometers are recommended for unrestricted toilets particularly; and floor-treads, often used in higher class installations, should be easily cleaned types. Clothes hooks

should be provided in compartments and dressing rooms. Pay-toilet coin-boxes should be easy to operate and indicate clearly when compartment is in use.

**Additional equipment** may include scales, automatic hand driers, soap and towel dispensers (usually omitted in office buildings) and mirrors. Smoking rooms or lounges should contain easy chairs, couches and smoking stands; and in railroad terminals, bootblack and hat-cleaning stands. See also T-S.S. Serial No. 88.

**FIXTURE ARRANGEMENT**

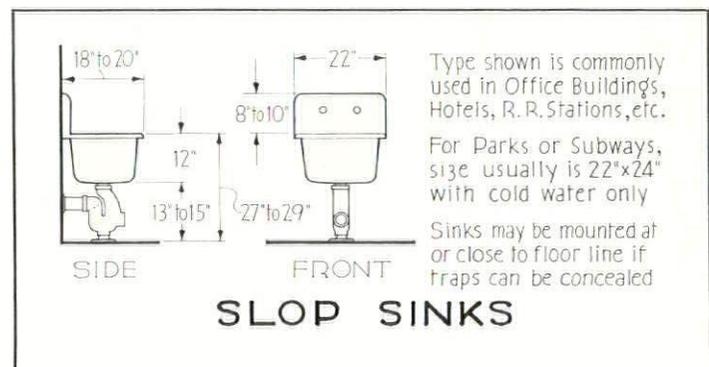
For convenience, lavatories are usually nearest the door, urinals next, and water closets and dressing rooms farthest. Where space is at a premium as in office buildings, urinals are nearest the door to allow a wider aisle in the narrow corridor plan commonly used. Aisle dimensions are shown in T-S.S. Serial No. 88.

Fixtures are arranged in batteries. Stall urinals have a trap beneath floor level; if floor slab thickness will not accommodate the indicated average dimension, urinals may be placed on a platform 4" high by approximately 2'-0" wide, with its surface pitched to the fixtures. This practice makes for cleanliness and is recommended for unrestricted toilets in every case, as are floor drains.

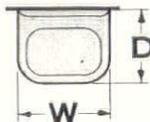
**Dressing rooms** are employed in men's and women's railroad terminal and women's ballroom or banquet room toilets. Those in terminals in outlying districts are usually of the smallest type shown and contain a lavatory and water closet; the largest, containing showers, lavatories and toilets, are ordinarily used only in large mid-city terminals. Types used in hotel toilets should be generous in size to accommodate women in evening dress, but need not contain showers. Enclosures may be of any impervious material (masonry, opaque glass, tile finish, or metal, either prefabricated or job-fitted).

**Clearances** between fixtures in batteries are covered in the center-to-center spacings given. For water closet partitions and prefabricated dressing room partitions, allow 1" per partition. Clearances between rows of fixtures or fixtures and walls are shown in T-S.S. Serial No. 88, Table V.

**Slop sink closets** are ordinarily located close to toilet rooms, generally with separate doors. Typical sinks are shown below. If a service corridor is used behind a fixture-row, access to it is preferably through the slop sink closet.



# PUBLIC TOILETS-2-Fixtures

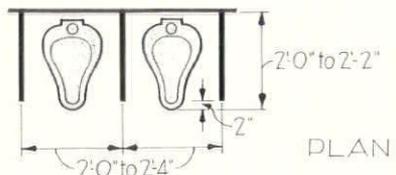
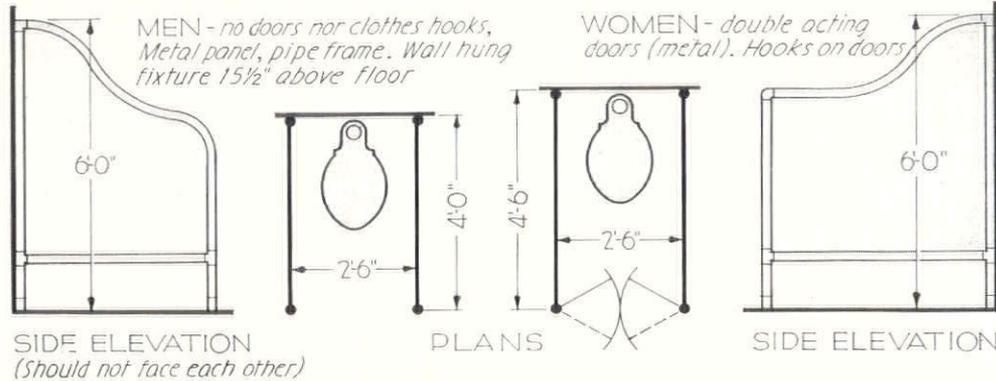


D	W	USE
1'-0"	1'-2"	Subway, Serv. Stat'n
1'-6"	1'-8"	Office, R.R., Hotels, Etc.
1'-8"	2'-0"	Dressing Rms, Rest Rms, Etc.

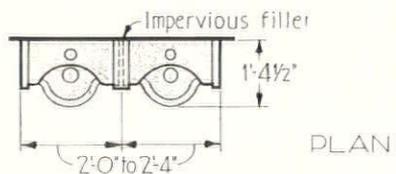
*c. to c. spacing 1'-10" to 2'-2"*

*Minimum c to c spacing = 2'-0"*  
*Leg type recommended*

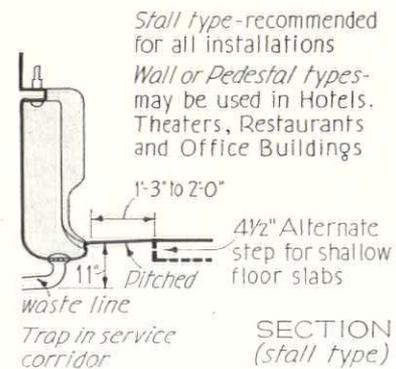
## LAVATORIES



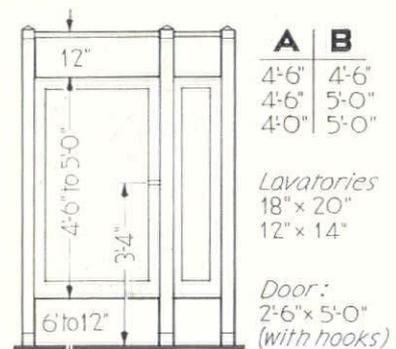
## WALL HUNG or PEDESTAL



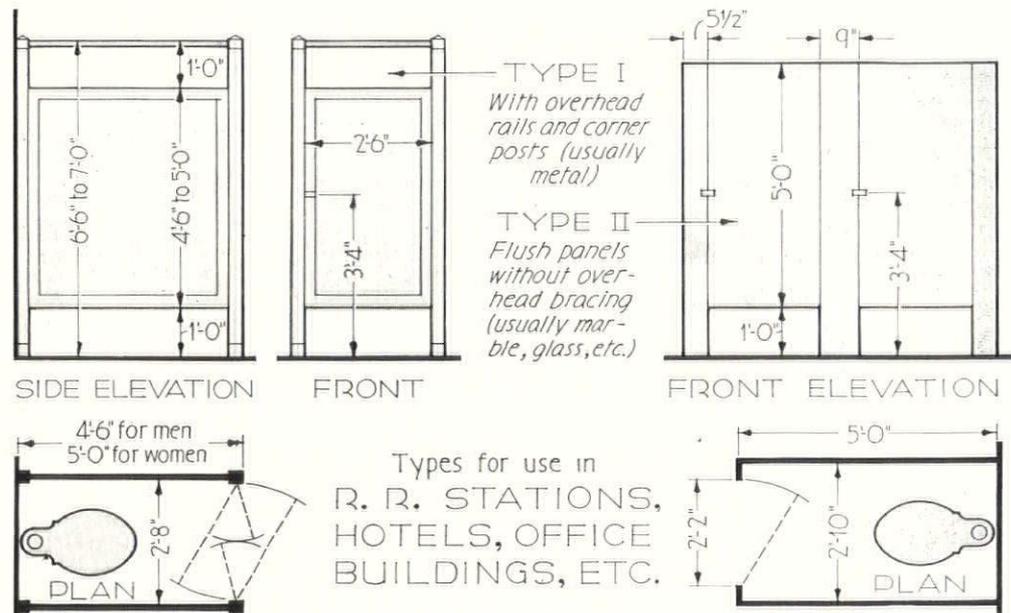
## STALL TYPE



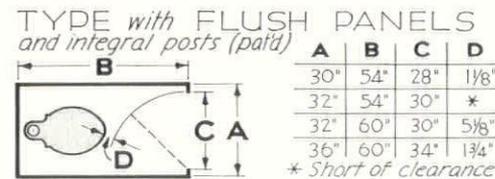
## URINALS



## PARKS and SUBWAYS



## WATER CLOSET COMPARTMENTS



TYPICAL DOOR SIZES

Dimension	Width	Height	Ht. above fl.
Single door	2'-2"	4'-6" to 5'-0"	1'-0" to 1'-2"
	2'-0"	4'-6"	1'-0" to 1'-2"
	2'-6"	5'-0"	1'-0" to 1'-2"
Double doors (each door)	1'-3"	4'-6"	1'-0"

## DRESSING ROOMS



## BOOKS FOR THE ARCHITECT'S LIBRARY

**MODERN BUILDING. Its Nature, Problems and Forms.** By **Walter Curt Behrendt.** 242 pages, 6¼ by 9¼ inches. Illustrations from photographs and drawings. New York: 1937: Harcourt, Brace & Company. \$3.

Lewis Mumford says of this book: "I know of no other book that has the same philosophic clarity, social realism, and esthetic and technical grasp: Dr. Behrendt's experience as an engineer, architect, administrator, and as a critical writer, has stood him in good stead." Dr. Behrendt was born in Germany, became the first editor of *Die Form*, and had a leading part in the construction of governmental housing and governmental buildings in Prussia. He is now teaching at Dartmouth.

**COMPRESSIVE STRENGTH OF STRUCTURAL TILE MASONRY. Research Paper RP972.** By **Douglas E. Parsons and David Watstein.** 16 pages, 6 by 9¼ inches. Illustrations from photographs and diagrams. Pamphlet binding. Washington, D. C.: 1937: U. S. Department of Commerce, National Bureau of Standards. 10 cents. Tests to determine how differences in tile design or kind of mortar affected the compressive strength of masonry walls in a combination of brick-facing and end-construction tile under eccentric loads.

**INVESTIGATION OF SUMMER COOLING IN THE WARM-AIR HEATING RESEARCH RESIDENCE. Bulletin No. 290.** By **Alonzo P. Kratz, Maurice K. Fahnestock, and Seichi Knozo.** 140 pages, 6 by 9 inches. Illustrations from drawings and photographs. Paper binding. Urbana, Ill.: 1937: University of Illinois. \$1.

**LES MOSQUEES DE FES ET DU NORD DU MAROC.** By **Boris Maslow. Introduction by Henri Terrasse.** 200 pages, 7½ by 11¼ inches. Paper binding. Printed in France. Paris: 1937: G. Van Oest. Available in America from Weyhe, New York City. \$6.

This is Volume XXX in the official publications of L'Institut des Hautes Etudes Marocaines. A painstaking and comprehensive survey with excellent drawings and good photographic illustrations. The text is in French.

**SUMMARY REPORT OF NATIONAL BUREAU OF STANDARDS RESEARCH ON PRESERVATION OF RECORDS.** By **A. E. Kimberly and B. W. Scribner.** 30 pages, 6 by 9¼ inches. Illustrations from photographs and diagrams. Paper binding. Washington, D. C.: 1937: U. S. Department of Commerce, National Bureau of Standards. 10 cents.

A survey that will be of interest particularly to those architects concerned with the design of libraries and other shelter for archives.

**SHAKER FURNITURE.** By **Edward Deming Andrews and Faith Andrews. Preface by Homer Eaton Keyes.** 134 pages, 8½ by 11 inches. Illustrations from photographs. New Haven, Conn.: 1937: Yale University Press. \$10.

There is a particular timeliness in this conscientious study of craftsmanship in the past history of an American communal sect. Here is functionalism regnant—not as a result of the modern movement, but as a result of a religious conviction. To the Shakers, ornamentation for its own sake was sinful. In spite of their intention to eliminate beauty, they achieved it in forms nakedly simple through an instinctive appreciation of beauty that could not be denied.

**MELLOW WOOD INTERIORS EVERYONE LOVES.** 20 pages, 8 by 10 inches. Illustrations from photographs and drawings. Paper binding. Washington, D. C.: 1937: National Lumber Manufacturers Association. 10 cents.

A booklet intended for the layman, showing the structure and appeals of various types of interior panelling, sheathing, and veneers. Illustrations are from old and new work, in each case accompanied by a sectional detail along the wood surface.

**CAPE COD IN THE SUN.** By **Samuel Chamberlain.** 96 pages, 9¼ by 12¼ inches. New York: 1937: Hastings House. \$3.75.

America is apparently to have, in Samuel Chamberlain, a pictorial Boswell. We could go far without finding his equal in pictorial perception and a technique for showing to others clearly

what he sees. Last year the same publisher brought out a volume, "A Small House in the Sun," the New England traditional home. This is a companion volume in which Mr. Chamberlain's photographs are reproduced at large scale with just enough caption material to serve as a thread joining them together. With these pictorial volumes and Chamberlain's magnificent series of postcards, "The American Scene," we are all likely to know our country very much better.

**STANDARD FILING SYSTEM AND ALPHABETICAL INDEX.** For Filing Information on Building Materials and Appliances. Developed and distributed by The American Institute of Architects. 48 pages, 8¾ by 11¼ inches. Stiff paper binding. Washington, D. C.: 1937: The American Institute of Architects. \$1.

A new and revised edition of this valuable index. A number of changes and additions have been made in classifications and file numbers to cover materials and items of equipment which have come upon the market since the former edition of 1930.

**FREEHAND AND PERSPECTIVE DRAWING.** By **Herbert E. Everett and William H. Lawrence.** 142 pages, 5½ by 8¼ inches. Illustrations from photographs and drawings. Chicago: 1937: American Technical Society. \$1.50.

An elementary treatment of freehand drawing and a condensed exposition of the principles of perspective, as put together for instruction in vocational school work.

**A DECADE OF BRIDGES 1926-1936.** By **Wilbur J. Watson. Introduction by Paul P. Cret.** 126 pages, 6½ by 10¾ inches. Illustrations from photographs and working drawings. Cleveland: 1937: J. H. Jansen. \$4.50.

**BRIDGES IN HISTORY AND LEGEND.** By **Wilbur J. Watson and Sara Ruth Watson.** Introduction by William E. Wickenden, 248 pages, 7½ by 10½ inches. Illustrations from cartoons by J. H. Donahey and pen drawings by Emily Maria Watson. Cleveland: 1937: J. H. Jansen. \$3.50.

Dr. Watson would seem to be gaining a real hold upon the title of official bridge historian. His former volume, "Bridge Architecture," presented for the technician a pictorial and factual history of the bridge from the days of Rome to 1926. In "A Decade of Bridges," Dr. Watson brings this history up to date, emphasizing incidentally the fact that our bridge building of recent years has been particularly active and successful.

"Bridges in History and Legend," on the other hand, is clearly a book for the layman rather than for the technician. The authors have sought to show the significance of the bridge in civilization, in the thoughts of man, and in his art.

**FUNCTIONAL COLOR.** By **Faber Birren.** 124 pages, 6 by 9 inches. Illustrations in color and black-and-white from diagrams and photographs. New York: 1937: The Crimson Press. \$2.

Here is a new sort of book added to the vast number on its subject. It offers no new theories, no particular short cuts, no unapplied theories. It is a book of facts regarding color—physical, visual, emotional. It brushes aside a lot of haze and reveals bald unquestioned facts. The reader will find in color a useful tool, rather than a glamorous romance.

**BIG TOP RHYTHMS. A Study in Life and Art.** By **Irving K. Pond.** 230 pages, 5½ by 7¾ inches. Illustrations from the author's pen drawings. Chicago: 1937: Willett, Clark & Company. \$2.

As most of his contemporaries know, Irving K. Pond has throughout his life been interested not only in his chosen profession of architecture, but in a broader field of life and art. In the circus there is for him a manifestation of art which challenges in its beauty and abstraction, expression in any field of art endeavor save possibly architecture and musical composition in their creative aspects. With this perception he has felt it a duty as well as a privilege to put beside the many superficial books and articles upon the circus, a work which should brush aside much of the false glamour and misinterpretation of a little understood art.



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# TECHNICAL DIGEST

## KEY TO PRESENTATION

Typical reference: 15 N'37:14-26 **gptv**

This indicates: Issue of November 15, 1937, pages 14 to 26, inclusive, presented according to the following key:

**d**—detail drawing    **g**—graph    **p**—plan  
**s**—section            **t**—text        **v**—photo view

Accordingly, **gptv** means graph(s), plan(s), text and photographic view(s) in the article mentioned.

**NOTE:** Readers desiring to secure copies of any publications mentioned herein are advised to have their local bookseller obtain them, or write to the periodical of origin, either directly or in care of AMERICAN ARCHITECT AND ARCHITECTURE.

## AIR CONDITIONING & HEATING

**American practice in panel heating.** (L. L. Munier). Heating, Piping & Air Conditioning. J1'37:424-426 **tv**

Discussion of the several American installations of this English method of securing comfortable conditions. Lower air temperature is maintained (63° F.) and the difference made up with a greater amount of radiant heat.

A ceiling location is favored for panels and there is rarely over 2° F. difference in air temperature between floor and ceiling. Panel area is determined as with other radiation by heat-loss-of-room method. Piping is same as for a forced hot water system. The method of plastering is important: (1) Three coats with high-calcium lime. (2) Pipes must be completely surrounded with plaster. (3) A reinforcing scrim must be worked into the finish coat to prevent cracking.

There are brief notes on the patents involved and on greenhouse heating.

**Radial compressor.** (W. L. Laurence). New York Times. 1 Ag'37:Science p.7 **tv**

Reduced size and weight permit easier installation, less vibration and lower cost with this new air conditioning compressor with a radial arrangement of cylinders similar to that used in one type of airplane motor.

While conventional line compressors operate at a speed of 400-600 rpm, this new type may turn up to 1750 rpm. This results in far greater compression capacity with small piston displacement. It is also claimed that the reduction in size of the compressor allows a larger condensing tank and a decrease in the quantity of water required.

**Evaporative condensers for cooling water for air conditioning.** (Abstract from Ebasco Services Inc. special report). Heating & Ventilating. J1'37:39-41 **gt**

Evaporative condensers have a number of advantages over direct (once-through) use of cooling water. These include: 90-95% saving of water; no in-

terruption if water supply fails temporarily; no shutdown because of local water shortage in long hot spells; no need for larger service connection from city mains; elimination of private wells, pumping units and disposal wells; contribution toward solution of municipal water supply and sewage-disposal problems.

This article includes a table of motor sizes for various loads. Storage requirements, selection of size, summer and winter operation and maintenance are also discussed.

**Installation Code for Air Conditioning revised by Fire Protection Group.** Heating & Ventilating. J1'37:53-58 **st**

Full text of Part I (Regulations for buildings other than residences) and Part II (Residential installations).

Part I includes data on: construction of ducts, installation of ducts, automatic fire doors and dampers, air intakes and outlets, air filters, fans, controls, electric wiring and equipment, air cooling and heating equipment.

Part II: Warm air ducts from direct-fired furnaces, registers, high temperature automatic controls, low temperature system ducts, cold or return air ducts, filters, etc.

**Insulation in Air Conditioning.** (R. E. Backstrom). American Builder. J1'37:86 & 4p. **pt**

Analysis of a small house for proper insulation. Arguments advanced include: savings in air conditioning equipment and operating costs, more uniform temperatures, elimination of wall condensation and reduction of duct losses. There are tables giving annual heating loads and savings for a number of different types of construction. Another table gives maximum hourly summer heat gains. Results are summarized as follows: Insulation may bring an annual heat saving of 39%, double glazing and weatherstripping add another 21% saving. Summer cooling load can be reduced as much as 35%, with proportionate reduction in equipment.

**Heating load.** Domestic Engineering. Je'37:84-85, 180 **dgt**

Quick approximate method of determining Btu requirements. Accuracy within 5% by using graphs correlating number of stories and square feet of radiation per 100 cubic feet of building.

**Steam traps and their characteristics** (T. N. Adlam). Heating & Ventilating. J1'37:44-47 **gst**

Discussion of operating principles, examples of calculation of amount of condensate which traps must handle and explanation of action of thermostatic traps.

Types mentioned are thermostatic, float and thermostatic, inverted bucket, open top bucket, liquid expansion, restricted orifice, impulse, metal expansion and bimetallic.

It is emphasized that traps should be selected for the pressures and temperatures involved.

## COLOR

**Colour in the town.** (Ozenfant). Architectural Review (London). J1'37:41-44 **tv** (col.)

An essay on London and color possibilities there. The point is made that in sunny climates volume, projection and shadow play a most important part in architectural design. (Greek polychromy is mentioned as an accessory to more important shadow-casting form). In lands with dull skies, color is essential for contrast—to make architectural compositions "read." This contrast may be secured through value or even by contrast of soft, differing hues.

It is remarked that wood, alone of all materials, because of long custom, may be camouflaged with color without giving a bad impression.

**Color—The red and blue pigments.** (M. R. Paul). National Painters Magazine. Je'37:19, 39-40 **†**

Second of two articles on color, this gives historical and technical data on blue and red pigments: ultramarine, cobalt blue, and Prussian blue. Iron oxide and organic reds; the former including Venetian red, Indian red and Tuscan red; the latter, Rose Lake and Bulletin Red. There are also notes on Permanent Red, Orchid Tinter and Lampblack.

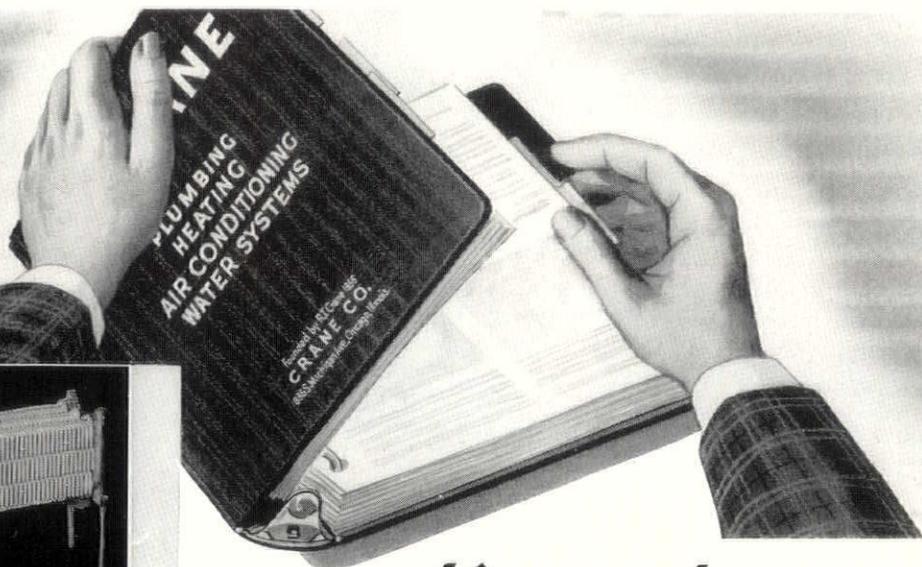
## CONSTRUCTION

**On choosing materials and methods of construction for the modern building.** (R. Fitzmaurice). R.I.B.A. Journal. 5 Je'37:779-783 **tv**

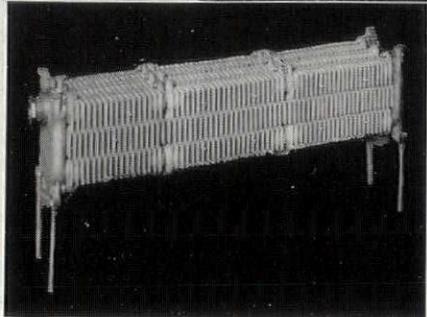
Review of an important technical lecture delivered before the R. I. B. A. this Spring. It is emphasized that "the old method of dealing with the choice of building materials and methods of construction was based entirely on accumulated experience of the behavior of certain combinations of materials in certain specific forms." This tradition fails to protect when the traditional forms are abandoned.

It is suggested that the development of new materials and new standards of living are equally important in changing building technique.

There is an interesting group of building failure cases, classified, illustrated and carefully described:



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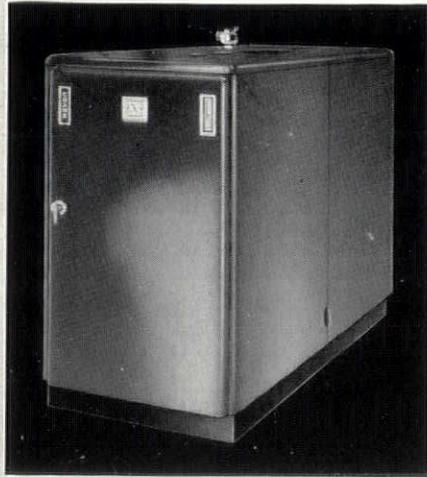


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	Boiler Efficiency—%	71.0	70.0	69.0	68.0
3-7-S 3-7-W Grate Area 8.95 Sq. Ft.	Firing Period—Hours	22.5	18.0	14.5	12.0
	Boiler Efficiency—%	72.0	71.0	70.0	69.0
3-8-S 3-8-W Grate Area 10.45 Sq. Ft.	Firing Period—Hours	25.0	20.0	16.0	13.0
	Boiler Efficiency—%	73.0	72.0	71.0	70.0

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(1) Failures with materials of the very best quality, due to errors in use; (2) Failures with materials having certain inherent deficiencies calling for special precautions in use; (3) Failures with new materials which have not been used for a sufficient length of time for their shortcomings to be apparent; (4) Errors in construction due to lack of appreciation of properties of materials; (5) Failure to provide essential amenities in buildings.

The speaker found promise of solution in scientific research such as that undertaken by the British Building Research Station and other agencies.

**Electrical computer eliminates calculations.** (F. H. Hedin). *Electrical Engineering*. JI'37:787-790 dtv

Describes a device to solve the structural problems involved in designing overhead catenary "messenger cables" for lines for railroad electrification. These messengers support the contact wire by means of hangers of varying length, the messenger itself being supported only at 200-300 ft. intervals by towers.

It was discovered that there is a direct analogy between the typical loading of such cables and a simple electrical circuit. This led to the development of this computer which saves hours of nearly duplicate calculations. The average time required for a calculation is five minutes, compared with the forty minutes, including checking, required by the paper method. Accuracy is within  $\frac{1}{4}$  of 1%, or better than possible with a slide rule.

It is suggested that many other mechanical problems may be solved on similar or slightly different computers.

**Design of (Welded) Connections.** (H. C. Whittlesey). *Welding Journal*. JI'37:17-23 dt

Over 60 clear diagrams of typical eccentric joints, column bases, column splices, beam connections, plate girder details, truss chords, truss joints and bracing connections. The text refers to the sources of many of these details and comments briefly on each.

This is particularly timely in view of the more general recognition of welding by new building codes.

**Construction of Buildings adjacent to Drancy.** *L'Ossature Métallique* (Brussels). Je'37:276-284 dpstv

Analysis of construction of some new French apartment houses. All units of light welded steel frame and covering of vibrated concrete slabs were prefabricated as far as possible. Erection was simplified by rigid standardization and by use of a restricted number of typical light steel shapes, some of which are illustrated.

This is an advanced example of dry construction with standard elements of fair size, fixed to a light welded frame of an entirely new type.

**Quarry Hill Estate Housing—Mopin System.** *R.I.B.A. Journal* (London). 5 JI'37:770-778 tv

Of great interest in recent British magazines are the accounts of this housing scheme in which nearly a thousand flats are being built on the Mopin System of light steel frame with prefabricated, vibrated concrete slab floor and wall units.

A plan, photo views and a description of the shop and process used for slab fabrication are included as well as several progress photos of the structures.

See also: *Architects Journal* (London). 17 Je'37:1051 tv . . . *The Builder* (London). 25 Je'37:1338-1341 tv

**Novel plywood wall units cut costs in Seattle house.** *American Builder*. JI'37:80-82, 84 dstv

Description of the Horn method of using prefabricated fir plywood wall units. These consist of stock 4 x 8 ft. panels with milled wooden ribs grooved into and glued on one side. These ribs are set at a slight angle so as to interlock when the inner panel is inverted, resulting in a rigid, hollow three-inch wall of plywood with strong, glued joints. Six panels will make 100 sq. ft. of wall. Units can be handled by one man but a two-man team is more efficient. A small shop with one skilled carpenter and a helper fabricated the 170 units, required for the small house illustrated, in 18 hours. Erection time averaged about 20 linear feet per hour. Openings were cut with portable power saw (20 minutes per opening, average), and trimmed with square stock, glued and nailed between the panel edges.

The flush, rigid surfaces possible provide an ideal base for many interior and exterior finishes or may be left as finish.

**Wallboard joint cracks.** (From *Building Supply News*). *Architect & Engineer*. JI'37:75 †

By nailing narrow  $\frac{1}{4}$ -inch plywood strips to studs a smooth bed for a glued butt-joint between wallboard panels has been provided. The grain of the face ply of the strip must be at right angles to the length in order to isolate glue joint from shrinkage of studs. A special, extra strong and waterproof adhesive is used and 2 x 4 headers between studs 4 ft. from floor are recommended as stiffeners for the panel walls.

**Prefabrication tempts the home builder.** *Nation's Business*. JI'37:50-51, 102-103 tv

Brief article on business aspects, illustrated by photo-views of several prefabricated unit house elements. Phenolic resin plywood, light steel frames, and colored face aggregates seem typical features being investigated by the various manufacturers.

According to this article, plumbing, heating, lighting, wall and floor finish are

still not a true part of prefabrication, requiring more individual field work than other elements. Standardization of materials and equipment with the possibility of variety in plan and composition is stated to be the present aim.

## DESIGN PLANNING & DETAILS

**Architecture & Science.** (J. D. Bernal). *R.I.B.A. Journal* (London). 26 Je'37:805-812 dtv

A philosophical lecture showing an appreciation rare among men of science for the essentials of architecture. Several classifications are made which may be of interest: The three aspects of architecture are given as the *formal*, the *structural* and the *functional*. Functions of new materials are subdivided into *strength*, *insulation* and *finish*. The speaker also explained and extended the concepts of symmetry and topology. There are diagrams of complex symmetries, of which there are 17 planar and 230 three-dimensional modes. A working knowledge of these arrangements would undoubtedly be of great value in architectural design.

Topology, a rapidly developing branch of mathematics, "represents the analysis of the connectedness of different parts of space." In architectural terms, an analysis of circulation or spatial relations independent of actual or relative distances.

The thesis that architectural function is social rather than merely biological is stated and well developed. The paper concludes with an argument for an "Institute of Domestic Engineering," to pursue research in this direction.

**Hospitals — Reference issue.** (*Architects Journal* (London). 24 Je'37:1093-1160 ptv

*Articles:* Today and Tomorrow, the Medical View, Today and Tomorrow, the Architectural View.

*Illustrations:* Thirty pages of views and plans of British examples of all types.

*Planning:* Arrangements of block plans, wards, outpatient departments, operating theaters, kitchens, and thirteen additional examples of hospitals, mostly European.

**Factories and Industrial Buildings.** (F. E. Towndrow, R. L. Stubbs & B. E. Verstone). *Design & Construction* (London). Je'37:303-323 pstv

Short text includes data on floors, dust and waste, lighting, heating and ventilation, labor, storage, conveyors.

General factories, warehouses and special industrial buildings are fully illustrated.

**Office Buildings.** (E. & O.E.). *Architect & Building News* (London). 18 Je'37:348-349 pt

First installment of a series of brief articles on the planning of office buildings. This issue considers sites in detail. Small diagrammatic plans illustrate the  
(Continued on page 128)

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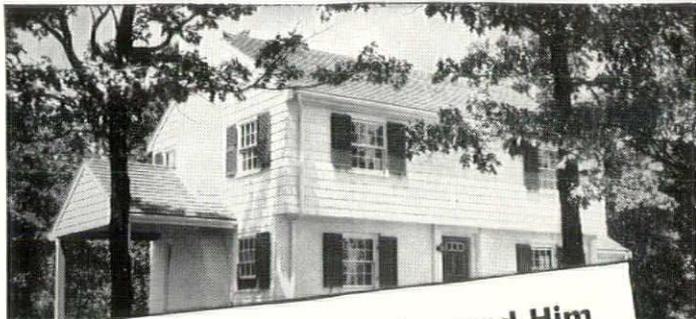


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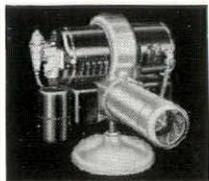
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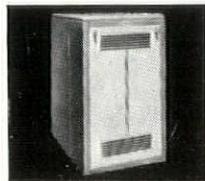
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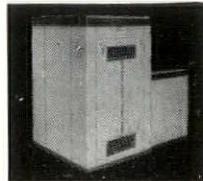
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A new line of 200-watt size, enclosing-globe type Explosion Proof Fixtures with attachable porcelain steel reflectors, was recently placed on the market by Benjamin Electric Mfg. Company, Des Plaines, Illinois. The fixtures embody detachable hood construction in which socket is held between hood and fixture body by deep-threaded joint to form a barrier between conduit system and lamp chamber; socket with conventional terminal screws accessible through removable inspection plug, precluding the use of pigtail connections and sealing compound; inner, auxiliary reflector of etched Alzak aluminum to prevent loss of light up the neck of the fixture; guard threads to outside of fixture body clamping the enclosing globe in place. Reflectors clamp onto bead on guard and can be attached or detached without disturbing guard. These fixtures are listed by Underwriters' Laboratories for Class I, Group D hazardous locations.

835M

## ROOM AIR CONDITIONER



A new type of room air conditioner for the cooling of homes and offices has just been developed by Airtemp, Incorporated, Dayton, Ohio, air conditioning subsidiary of Chrysler Corporation. It is contained entirely in one cabinet made of walnut and provides for the cooling, filtering, dehumidifying and circulating of air in a single room. The Radial compressor and electric motor which runs it are enclosed in one hermetically sealed housing

to insure quietness. Vibration is said to be eliminated through special mountings for the motor compressor unit. The new unit is available in both air cooled and water cooled models. The air cooled model eliminates the necessity of a drain by providing for the re-evaporation of moisture taken from the air which is discharged into the outside air stream.

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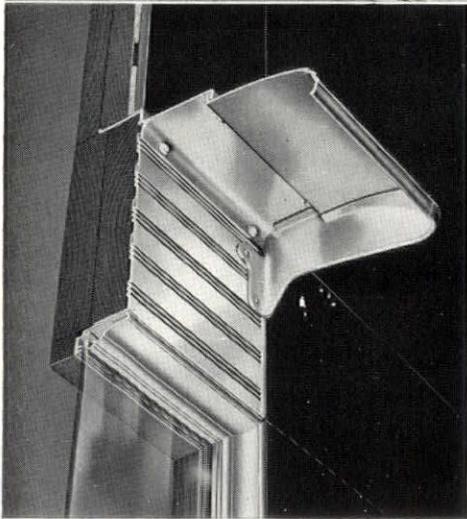
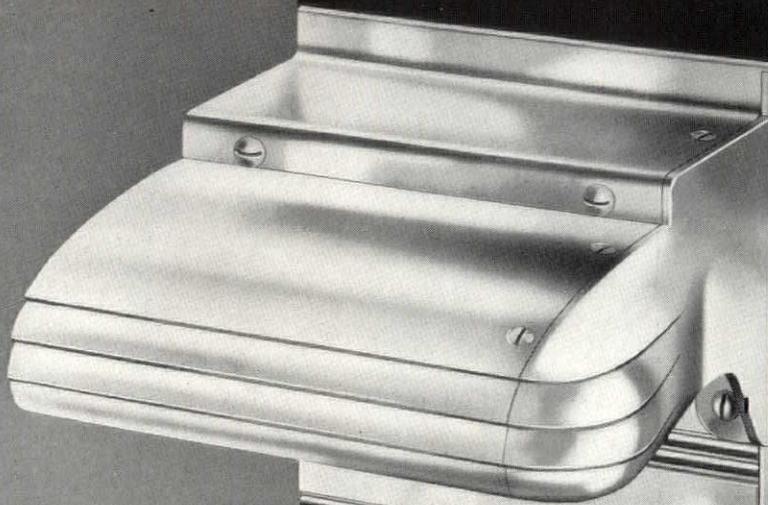
## CONVERSION BURNER

A gun-type oil burner, called the Crano Burner, has been added to the line of heating fixtures and equipment manufactured by Crane Company, Chicago. Of the pressure-atomizing, continuous-ignition type, the Crano Burner is housed in a single casting and has only one moving part—the pump and fan being on a single shaft. Air delivery and mixture are controlled without combustion noise, and side stress and thrust have been eliminated. It possesses the floating flame which is said to keep the fire in complete suspension and to enable the boiler surface to absorb all possible heat. Two models are available—one for general conversion installation and one, having flange mounting, for combination with the Crane "Sustained-Heat" Boiler. It is now standard equipment with this boiler. Each model has,

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Street .....

City ..... State .....

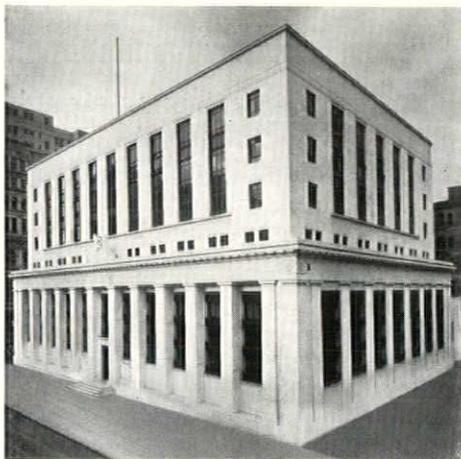


Old Customs House, Erie, Pa.

## BUILT IN THE DAYS OF OXCARTS

For an even century—Erie's Old Customs House has kept young. Of Vermont Marble, hauled by oxcarts, canal and lake boats, it is an enduring example of the ability of Vermont Marble structures to serve, without remodeling, the changing needs of the Community.

Built of marble from our quarries, specially selected to withstand the ravages of time and climate, the Federal Reserve Bank will also serve for generations.



Federal Reserve Bank, Philadelphia, Pa.  
Paul P. Cret, Architect.

### VERMONT MARBLE CO., PROCTOR, VT.

Branch Offices, New York, Boston, \*Philadelphia, Albany, \*Chicago, Cleveland, Detroit, Washington, D. C., \*San Francisco, Los Angeles, \*Tacoma, \*Dallas, \*Houston, Toronto, Ont., \*Peterborough, Ont.

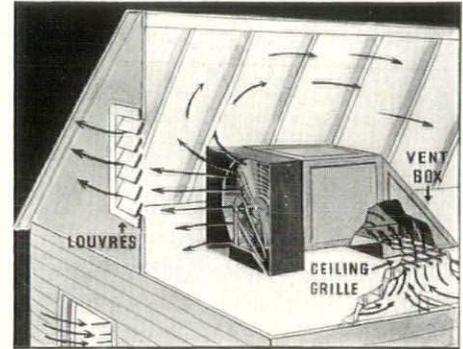
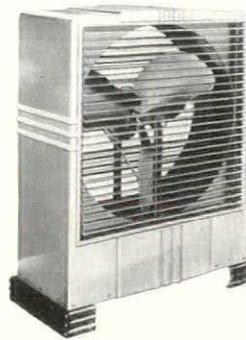
\*Branch Plants in these cities.



at the front of the chassis casting and directly in line with the draft tube, an observation port for convenient observation of ignition and combustion. Standard controls include thermostat, combustion control, and choice of steam limit control, water limit control, or air limit control.

837M

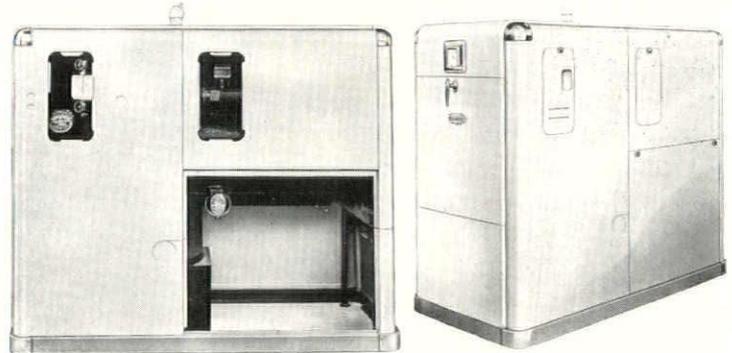
### MULTIPLE-USE FAN COOLER



A many-purpose fan cooler designed for offices, hotels, restaurants and home rooms has been introduced by Burnham Boiler Corporation, Irvington, New York. It is also available in a complete equipment package for attic cooling of residences. For the latter use, fan draws warm air through grille in upper story hall and forces it out of attic louver. The heavy warm air accumulated in the house is replaced by the cooler air from outside. The Attic Cooler Package includes vent box with flame-proof trap door, ropes, pulleys and automatic fan switch. Vent box is made in panels of special sound-absorbing acoustical board set in slotted wooden frame panels which allow for expansion and contraction without causing loosening of joints. Vent box trap door is made of a flame-proof material and is equipped with fusible link. When fan is not running a shutter closes the grille opening, stopping back drafts from attic. The trap door is linked with the switch to start and stop fan. It starts fan when open, stops it when closed. All wiring is located in attic.

838M

### STEEL OIL BURNING BOILERS

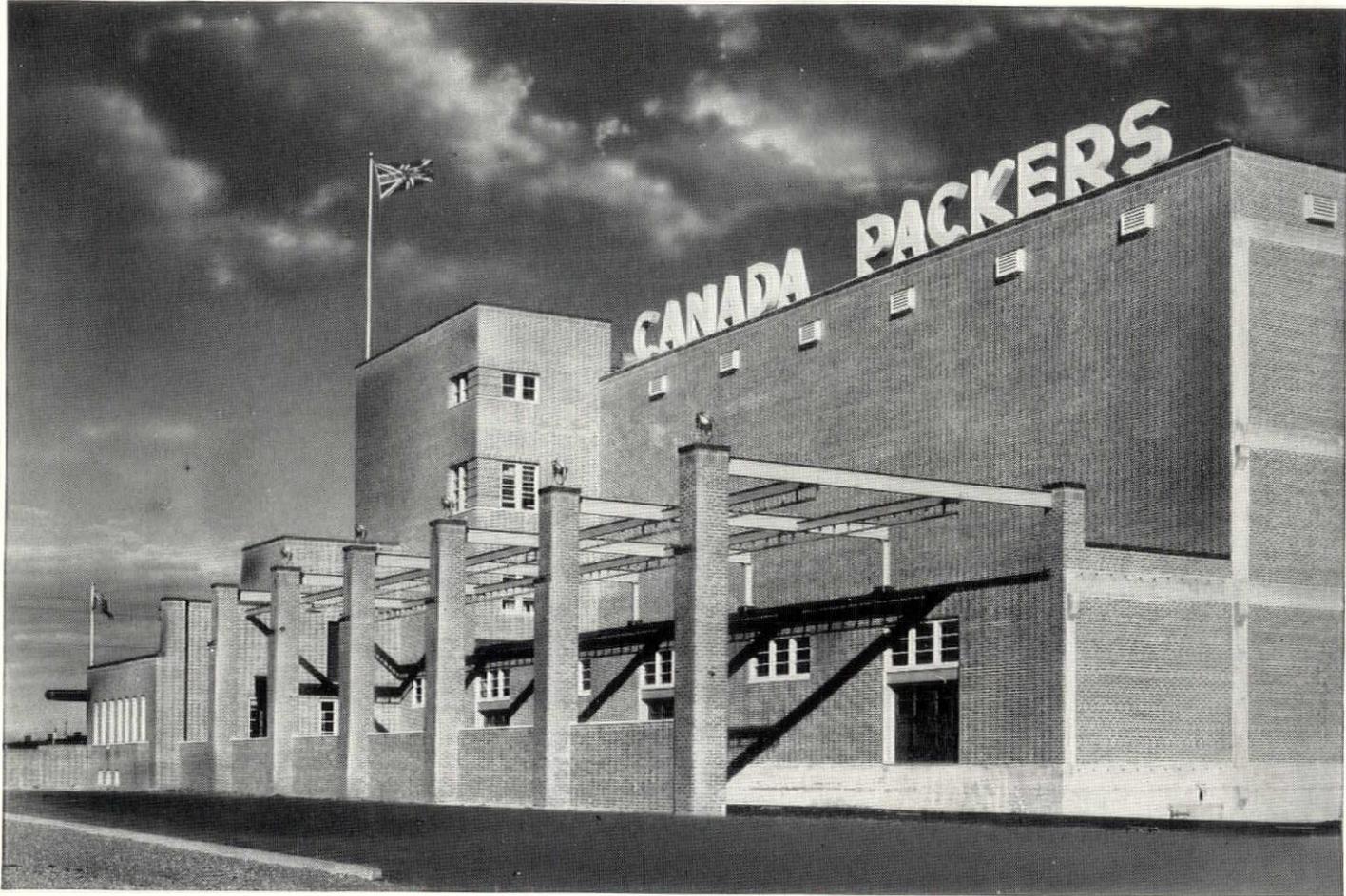


Fitzgibbons Boiler Company, Inc., New York, recently introduced two new models of its streamline jackets for the Oil-Eighty Automatic Steel Boiler for oil burning. Among the outstanding features claimed for the enclosing model of the new jacket are: Complete enclosure of the oil burner within the jacket; the jacket enclosing the burner and the boiler occupies no more space than that taken up by the boiler alone; standardized locations have been placed on

# Medal Winning

## AIR CONDITIONED PLANT

EQUIPPED WITH STURTEVANT APPARATUS



*New Canada Packers Plant, Edmonton, Alta., Canada, which early this year won for its designer, E. R. Arthur, Toronto, the First Medal of Honor at the Sixth Biennial Exhibition of Architecture at the Toronto Art Gallery. Architect: Eric R. Arthur, Toronto. Engineers: Engineering Staff of Canada Packers, Ltd.*

**I**N THE medal-winning Canada Packers Plant, Edmonton, Alta., Canada, Sturtevant Equipment provides air conditioning for general and private offices.

This system provides an abundant supply of fresh air to these rooms at uniform temperature and humidity. In the summertime the air is cooled and dehumidified. In the wintertime, it is heated to the proper temperature and humidified.

Sturtevant-supplied Equipment consists of fan, motor, humidifier, steam heating coils, brine

coils, and Shell cooler. Refrigeration is received from the main plant refrigeration compressor.

B. F. STURTEVANT CO., Hyde Park, BOSTON, MASS.

*Branch Offices in 40 Other Cities*

B. F. Sturtevant Company of Canada, Limited—Galt, Toronto, Montreal

## Sturtevant

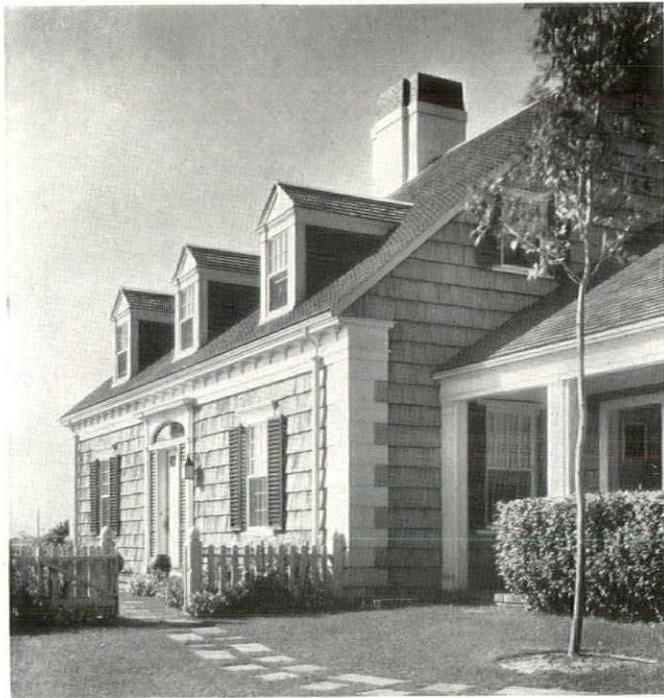
REG. U. S. PAT. OFF.

*Puts Air to Work*



**Fans, Blowers, Air Washers, Air Conditioning, Heating, Vacuum Cleaning, Drying, Mechanical Draft Equipment**

# Built to Last and Stained to Last



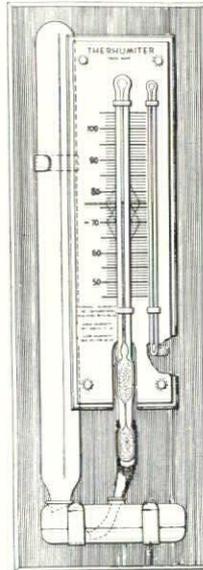
House at Chatham, Mass. Roof and walls stained with Cabot's Creosote Stain. The architect is Edward Sears Read of Boston.

The soft, transparent colors of Cabot's Creosote Stains preserve the *textured beauty* of wood shingles which is lost when paint is used. These stains are low in first cost, and they reduce the expense of upkeep to a minimum. Their vehicle of pure creosote adds years to the life of the wood. . . . Cabot's Creosote Stains are available in a wide range of colors and in the famous weathering grays which produce, in a few months' time, the natural weathered effects which you see on New England houses, centuries old. . . . Write today for color card and our new booklet, *Stained Houses*. Samuel Cabot, Inc., 1265 Oliver Bldg., Boston, Mass.

## Cabot's Creosote Shingle Stains

the boiler for two aquastats, pressure switch, stack switch and low water cutoff; all controls and oil burner are accessible through removable panels; new type steel base adaptable to gun type, flange type gun burner, or rotary burner. Also available is a new type jacket to be known as the standard jacket where installation is of such nature that the oil burner is either of the rotary type or is to be installed outside and in front of the jacket. The boiler is built in 12 different sizes from 425 sq. ft. of steam EDR to 2680 sq. ft. of steam EDR.

839M



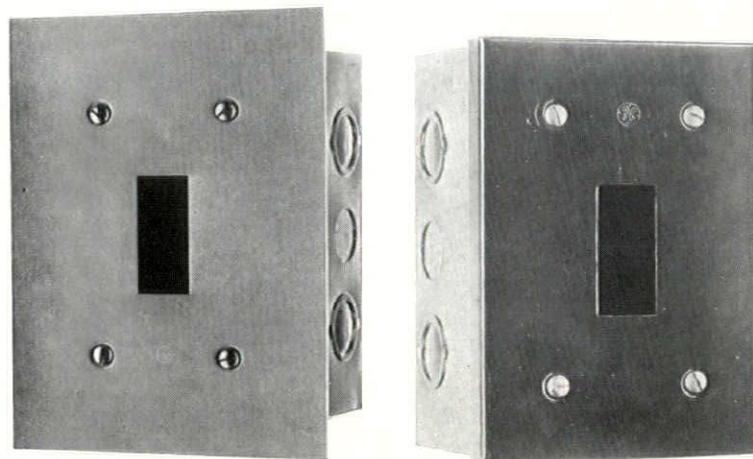
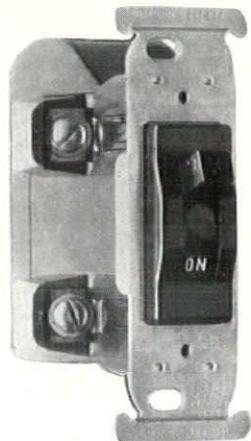
### EFFECTIVE TEMPERATURE INDICATOR

Effective temperature, which is an arbitrary composite index of the effect on the human body of a combination of temperature, humidity and movement of air, can now be measured by the newly developed "Therhumiter" recently introduced by John R. Parsons, consulting physicist, New York. This new instrument combines air temperature, relative humidity and air movement into a single unit to show effective temperature. The device has no moving parts, is said to be permanently accurate and does not require adjustment. Results are read directly from the instrument without reference to any chart or index.

840M

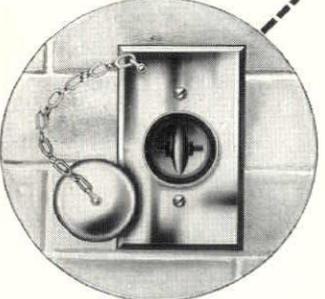
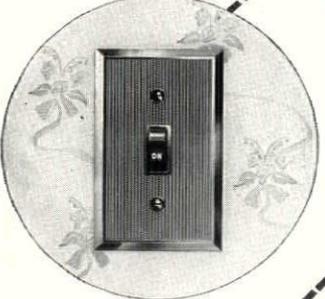
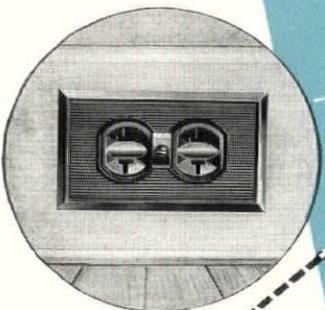
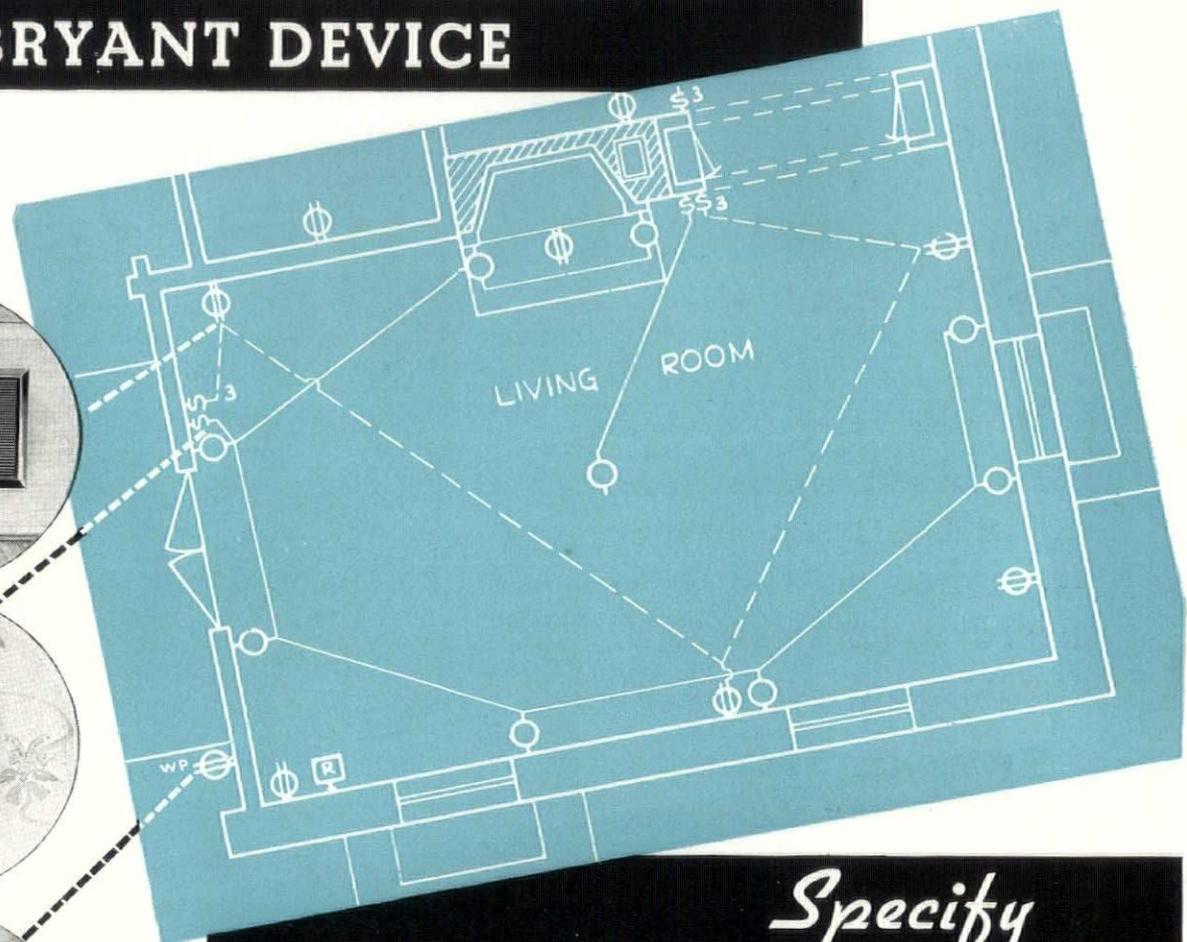
### CIRCUIT BREAKERS

A new line of branch-circuit circuit breakers has been announced by the wiring devices section of the General Electric Appliance and Merchandise Department, Bridgeport, Conn. The circuit breakers serve both as master control switches, governing groups of lighting or convenience outlets (occasionally both) and as means of overload and short-circuit protection. They are said to eliminate fuse replacements and the practice of hazardous over-fusing, and also to





EVERY OUTLET DESERVES  
A BRYANT DEVICE



*Specify*  
**MORE THAN SYMBOLS**

The completeness of the line of Bryant and Hemco wiring devices enables you to specify a wiring device of dependability, within any price range, for the electrical symbols on your plan.

The design, finish and workmanship of Bryant devices — plus the complete line of Ivory finishes — provide attractiveness that harmonizes with any decorative scheme.

For a line of devices, proved by years of service, refer to the Bryant easy-to-use catalog, arranged to simplify your selection — or to Sweet's catalog file.

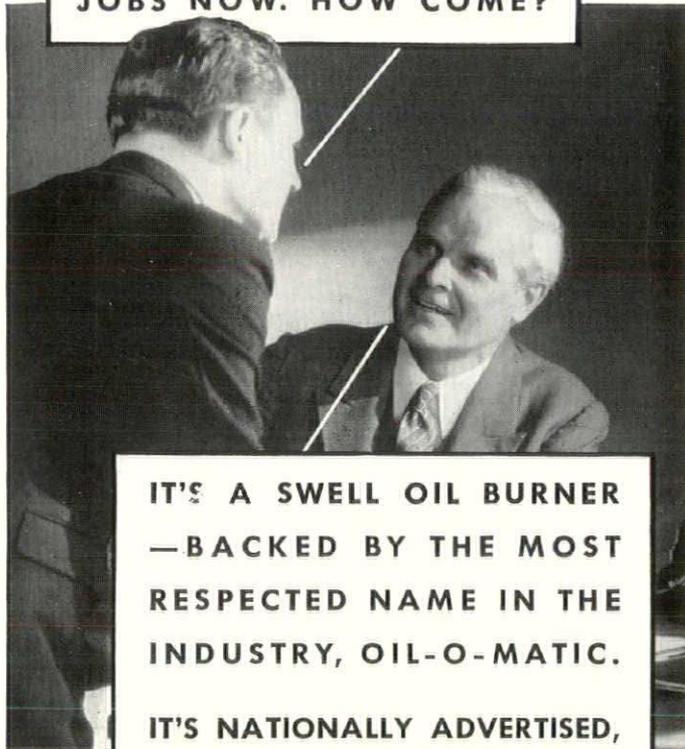
**BRYANT**  
WIRING DEVICES



*Sold Through  
Electrical Wholesalers*

**THE BRYANT ELECTRIC COMPANY • BRIDGEPORT, CONNECTICUT**  
NEW YORK: 100 East 42nd St. • CHICAGO: 844 West Adams St. • SAN FRANCISCO: 325 Ninth St.

**SAY—I UNDERSTAND  
YOU'RE SPECIFYING  
THAT NEW WILLIAMS  
OIL BURNER IN YOUR  
JOBS NOW. HOW COME?**



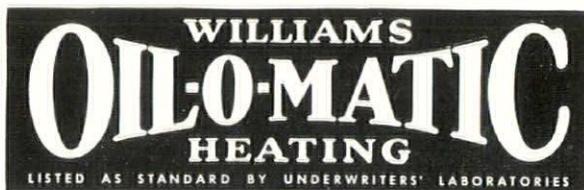
**IT'S A SWELL OIL BURNER  
—BACKED BY THE MOST  
RESPECTED NAME IN THE  
INDUSTRY, OIL-O-MATIC.**

**IT'S NATIONALLY ADVERTISED,  
YET AMAZINGLY LOW PRICED!**

**IT'S A NATURAL FOR ME.**

## *See the Sensational New* **WILLIAMS OIL BURNER**

MADE BY



The peer of any high pressure oil burner at any price!

*The Williams Oil Burner is on display  
at your nearest Oil-O-Matic showroom*

**WILLIAMS OIL-O-MATIC  
HEATING CORPORATION**

*World's Largest Specialists in Temperature Control*  
Dept. 911, Bloomington, Illinois

provide accessible localized control at convenient decentralized points for re-establishing circuits opened by overloads or other abnormal conditions. The circuit breakers have been designed for single-pole only, in 15, 20, 25, 30 and 35-ampere capacities, 125 volts, a-c or d-c. They have a tamper-proof mechanism, sealed in and not affected by vibration. The trip-free mechanism cannot be blocked by the handle when the circuit is actually overloaded. Case and handle are of brown Textolite. Wiring terminals are easily accessible. Standard outlet boxes with raised covers for flush mounting, or special circuit breaker enclosures for either flush or surface mounting, can be used.

**841M**

### INTERIOR WALL PANELING

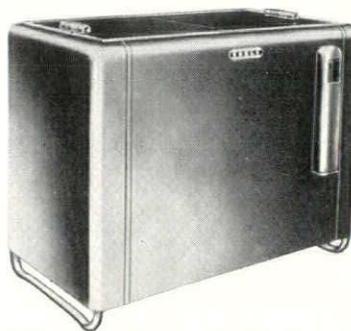


Kraftwood is a specially processed plywood developed for interior wall paneling by the M & M Woodworking Company, Portland, Oregon. To produce the new material ordinary soft plywood is first processed in order to completely destroy the old grain and supplant it with another. A filler is applied over the surface

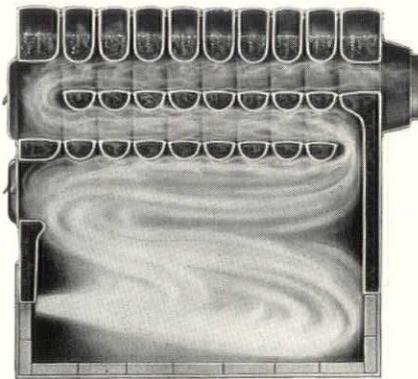
of the board to fill the new grain cuts, following which the entire board is painted in a chosen color. The filler is then brushed out of the cuts and a paint of another color applied partially filling the cuts. This is then wiped off the surface before being allowed to completely dry, leaving a colored board with a distinct fleck to give the grain effect. Created in various designs and colors, the new material can be applied in numerous ways. It is said to be especially useful in remodeling attics, basements, and redecorating home libraries, dens, kitchens, offices and stores.

**842M**

### BEVERAGE COOLERS



The new Norge beverage coolers are of immersion type, powered with a Rollator compressor. Cabinet is constructed of anti-rust treated furniture steel, built around and supported by heavy, all-steel, welded center and bottom frames of battleship construction. High baked enamel is used for exterior finish in vermilion red or sahara tan. Two gliding, lift-off lids finished in high baked black enamel with chromium trim form the top of the cabinet. A sanitary bottle decapper and easily removable cap receptacle are mounted on the outside of the cabinet. Under the cap receptacle is a concealed temperature control with eleven positions. Interior tank is constructed of heavy gauge galvanized sheet steel, fitted with drain connection. Cooling coils are mounted between metal baffles around inside of side and end walls, and bottom of tank, furnishing natural water circulation. Sulphur Dioxide is used for the refrigerant.



*Why*

**We Don't Urge  
Your Using  
A Cast Iron Boiler  
For Burning Oil**

(Yes, we make them)

Don't you feel, that the boiler to use, is the boiler that's best for that use? Cast iron, if cast iron is the one. Steel, if such is so.

Now suppose we made only cast iron boilers. Then we would just plain have to do a strong-arm selling job on cast iron for every place and purpose.

Making both steel and cast iron boilers as we do, our only concern is, that you get the one *best for the job.*

So that's why we don't urge your using either cast iron or steel. But we do urge fitting the job with the boiler that best fits it. Yours is the advantage of our being in an unprejudiced position.

**BURNHAM BOILER CORPORATION**

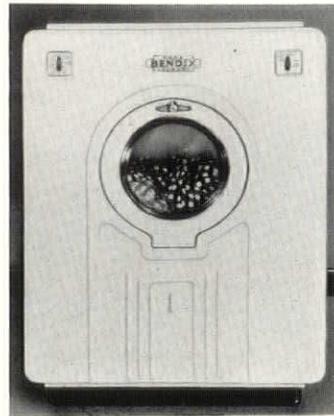
*Manufacturers of Heating Equipment  
Since 1873*

Irvington, New York - Zanesville, Ohio

**Burnham Boiler**

Bottle racks are made of woven wire grids welded on heavy frames. These coolers are manufactured by Norge Division, Borg-Warner Corporation, Detroit. **843M**

**HOME LAUNDRY MACHINE**



Handling a nine pound wash at one time, a new type of automatic home laundry machine automatically soaks and agitates the clothes, washes them, gives them three fresh water rinses and after the last rinse spins clothes damp dry. The machine then shuts off. The operator handles the clothes just twice; once when the soiled clothes are placed in the machine and once when the clothes are removed. The machine is housed in a white cabinet with a black base and stands 36 inches high. Controls are mounted on the upper portion of the cabinet's face which also includes a round glass door through which clothes are passed when open and through which can be seen the operation of the machine when closed. The new unit can be either connected to hot and cold faucets and set tubs with flexible hose, or plumbed directly to hot and cold water pipes and drain outlet. Bendix Home Appliances, Inc., Detroit, Michigan, are the manufacturers of this home laundry machine. **844M**

**KITCHEN CABINETS**

Two new developments in Kitchen Maid Cabinetry have been announced by the Kitchen Maid Corporation, Andrews, Indiana. The first is a new cabinet for beverages. It holds 23 bottles and includes space for cocktail shakers, siphons and other such necessities. Bottles are recessed in a circular board which rotates for easy reach and a honeycombed section at the top encases wines and cordials. Above is a utility drawer for jiggers, muddlers, bottle openers. A pullout workboard is an added convenience. The other development is a unit of open shelving for recipe books. **845M**

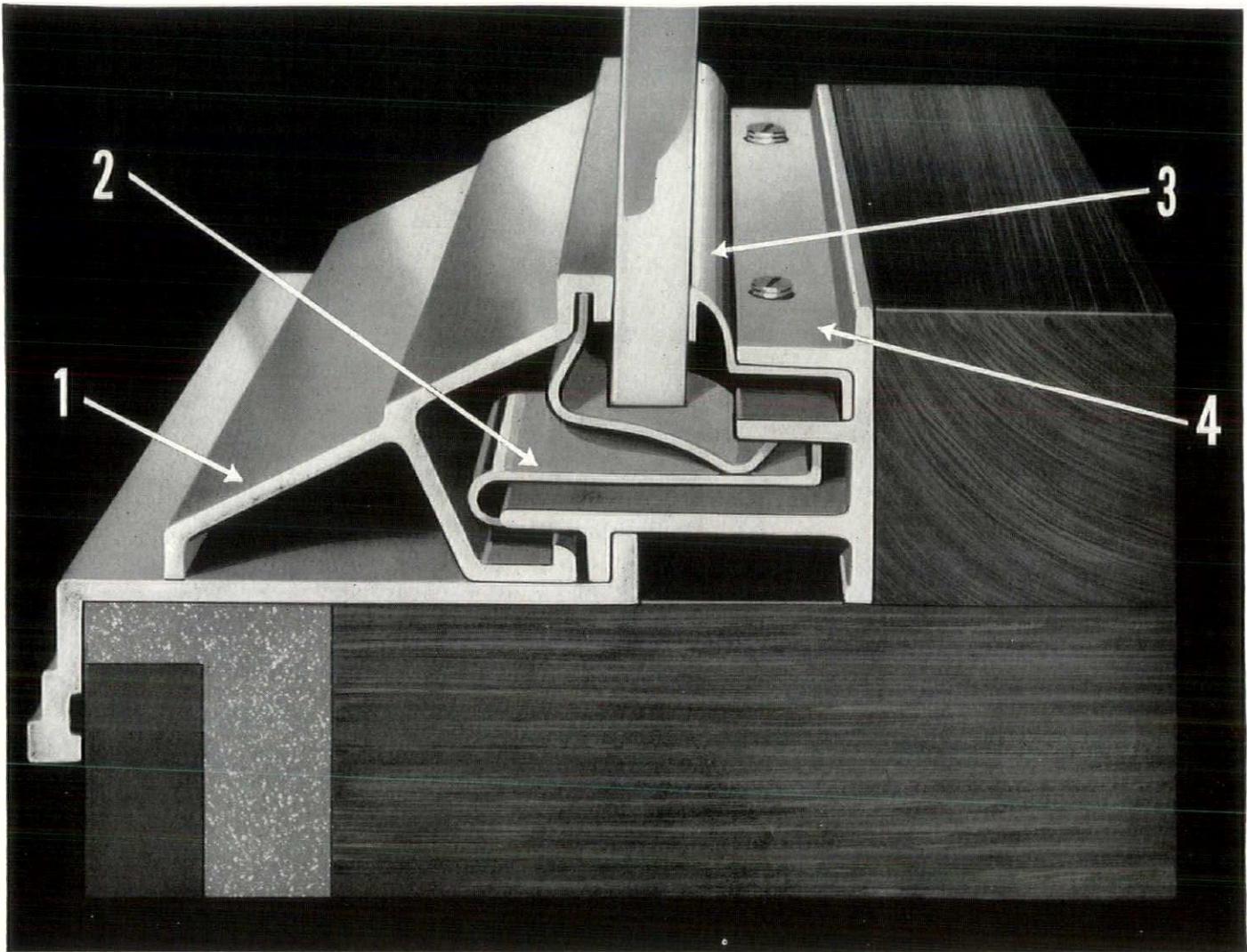
**GARAGE DOOR OPENER**



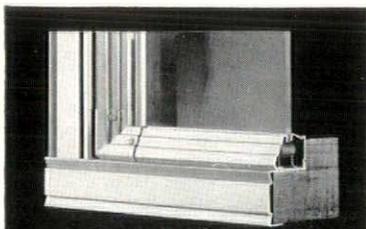
The flashing of the car headlights upon a photoelectric eye puts the new Seed Electric Garage Door Opener into operation, or, as an alternative, it may be operated by a switch mounted on a post, located at the side of the driveway so that it can be reached from the car window.

Whether operated by photoelectric eye or switch, the device causes the garage doors to open and the garage lights to go on, enabling the motorist to drive in without leaving his seat in the car. A second, manually operated switch, placed inside the house at a convenient point, also opens and illuminates the garage and, in addition, closes and locks the garage and disconnects the driveway switch or photoelectric eye. The device is adaptable to all existing types of garage door construction. It is a new product of the R. W. Seed Manufacturing Company, Upper Darby, Pa. **846M**

# ZOURI EXTRUDED STORE FRONT SASH No. 1210-X



## - WITH FULL CUSHION GRIP ON GLASS



**ROLLED SASH**

The complete ZOURI Rolled Store Front line features the famous Safety Key-Set Sash illustrated above. Dependable service is given also on special metal requirements. Recent developments:

- RECESSED AND CONCEALED AWNING BARS (stock)**
- ENTRANCE DOORS**
- METAL SIGN LETTERS**
- SNAP-ON AND OTHER MOULDINGS**
- ORNAMENTAL METAL WORK**

The importance of proper functioning cannot be overemphasized in judging store front sash. For the nature of the hidden mechanisms is what determines the degree of glass protection.

This attractive extruded sash—part of the complete line of ZOURI extruded construction—is equipped with Spring Mechanisms in face and Continuous Spring in gutter. This splendid functioning follows time-tested principles established by the famous ZOURI Safety Key-Set Sash. It assures an absolutely safe and dependable glass setting. For it holds plate glass in a secure yet yielding grip—without looseness or rattling—without rigidity or binding! See illustration:

1. As pressure from screw in gutter is applied to Spring Mechanism, the ZOURI face moulding is drawn back in true alignment—distributing pressure evenly along face of glass. Removable only from inside.

2. Flexible Spring Mechanism which gives vital cushion grip to face of construction. Strong grip assured on glass from 3/16" to 5/16".

3. Continuous Spring at back holds glass with even, yielding grip, which, with action of mechanism at front, allows for the inevitable movement of large plates of glass.

4. Wide, strong gutter member provides amply for moisture from glass and gives secure anchorage to framing. Self-supporting.

Write ZOURI Store Fronts, Niles, Michigan, for folder on Extruded Sash No. 1210-X, and for F. S. Details of Extruded and Rolled Construction.

# ZOURI STORE FRONTS

WHEN YOU SPECIFY **ASPHALT,**

SPECIFY *The Vital Element*

**BARBER MAKES A COMPLETE  
LINE OF ASPHALT PRODUCTS  
FOR BUILDING PURPOSES**

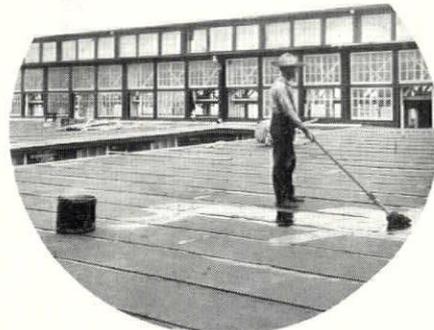
Nationally advertised Barber Genasco Products, made with The Vital Element, Trinidad Native Lake Asphalt, include:

**BUILT-UP ROOFINGS  
MASTIC FLOORINGS  
SHINGLES**

**OTHER BARBER ASPHALT PRODUCTS INCLUDE:  
WATERPROOFING ASPHALTS AND FABRICS • RESATURATOR  
ASPHALT PROTECTIVE PRODUCTS (Plastics and Liquids)  
SPANDREL BEAM WATERPROOFING (Spandrel Cloth and Cement)  
DAMP-PROOFING ASPHALTS • RESURFACER**



MASTIC FLOORINGS



BUILT-UP ROOFINGS



SHINGLES



**T**rinidad Native Lake Asphalt—*The Vital Element*—was made by Nature. It is "mined" from the asphalt lake on the Island of Trinidad. For millions of years this natural asphalt has been constantly "stirred" by Nature . . . exposed to the scorching rays of a year-round summer sun, the fury of tropical tempests. Trinidad has come through these centuries with a natural vitality which it retains indefinitely.

"Asphalt Headquarters" offers you the benefit of more than fifty years of experience and research in asphalt. We are glad to give you assistance at any time with any problem that involves the use of asphalt.

**THE BARBER COMPANY, INC., ASPHALT HEADQUARTERS SINCE 1883, PHILADELPHIA, PA.**



the **BEST SEAT**  
in the house  
**IS CHURCH**



Specify CHURCH Sani-Black SEATS for theatres, auditoriums—any building where the public goes. They're built to stand the gaff. Indestructible . . . impervious to time, acids and abuse, they outlast the building itself. And their **FIRST** cost is the **LAST**.

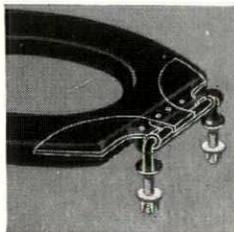
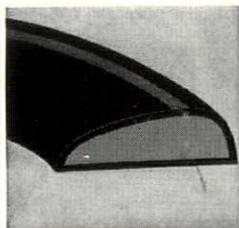
CHURCH Sani-Black SEATS are molded of hard rubber into one unbreakable unit by 108 tons of pressure. Hinge posts are hard rubber over brass with no exposed metal to rust or corrode. They are absolutely hygienic . . . easy to clean with soap and water.

Many of the world's largest public buildings—Empire State, Chrysler, Radio City—have selected CHURCH Sani-Black SEATS as standard equipment. Specify them on your next job. They fit all bowls. Write today for the catalogue showing the complete line and free sample cross section. Dept. K9, C. F. CHURCH MFG. CO., HOLYOKE, MASS., *Division of American Radiator & Standard Sanitary Corporation.*

**THE FIRST COST IS THE LAST**

HARD RUBBER molded under 108 tons pressure makes each Sani-Black Seat an unbreakable, everlasting unit.

STEEL HINGE PLATES molded integrally, never loosen. Hinges, hard rubber over brass, never corrode.



**CHURCH Sani SEATS**

**CABINET DISHWASHER**

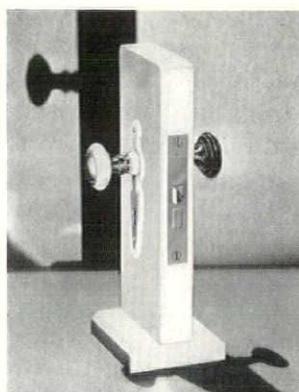


A new cabinet-type electric dishwasher, which is adaptable for practically all shapes and sizes of kitchens, has been introduced by Westinghouse Electric & Mfg. Company, Mansfield, Ohio. This new cabinet combines the electric dishwasher, the sinkbasin and work surfaces in an

attractive space-saving unit which occupies no more space than a standard kitchen sink and drainboard. It may be installed as a separate unit or adjacent to base cabinets. The all-steel cabinet is finished in white dulux. The monel metal sink basin has new design fixtures including a swinging pedestal type mixing faucet, a combination drain and crumb cup which catches food particles and can be easily removed for cleaning. The work top and back splasher are finished either in black Micarta, monel metal, or green Jaspe linoleum with monel metal trim. The dishwasher has a total capacity of 57 dishes including glasses and 45 pieces of silverware. The only plumbing connections required are to the hot and cold water pipes and to the drain. These connections are made at the sink. The dishtank is filled and emptied through a combination fill and drain fixture which is attached to the sink basin.

**847M**

**PLASTIC KNOBS AND ESCUTCHEONS**



Color accent has its very practical application in the new Patrician Plastelle Builders Hardware recently introduced by Lockwood Hardware Mfg. Company, Fitchburg, Mass. In this line, the knob body is a solid ring of molded Tenite, accurately fitted to the metal shank, and having a metal inset top. One feature of this design is that it is interchangeable, for the plastic knob is secured to the shank and top by means of

a hidden screw. Thus it is possible to change the color of the knob to meet the needs of the decorative scheme. A further innovation is offered in the new Plastelle Escutcheons or bases of molded Tenite with metal inset. They carry the color scheme of the knob into the door itself. Colors available include black, ivory, green, orchid, yellow, delphinium blue, and Chinese red. The material is said to be resistant to moisture and not to crack or craze.

**848M**

• If you plan to change your address, please report the change direct to American Architect and Architecture five weeks before the change is to take effect, sending both old and new addresses. The Post Office will not forward copies to your new address unless extra postage is provided by you. Our request is made to save you this expense and to assure the receipt of your American Architect and Architecture.

# TENTH ANNUAL SMALL HOUSE COMPETITION

Conducted by

## HOUSE BEAUTIFUL

# \$ 2,300

## IN CASH AWARDS

### THIS YEAR'S PROGRAM

**GENERAL** The competition will be divided into three classes. These, with their awards, are as follows:

**CLASS I**—For houses of 6-9 rooms inclusive, built east of the Mississippi

First Prize..... \$500  
Second Prize..... \$300

**CLASS II**—For houses of 6-9 rooms inclusive, built west of the Mississippi

First Prize..... \$500  
Second Prize..... \$300

**CLASS III**—Houses of 5 rooms and under built especially for week-end or summer living

Special Prize..... \$300

**Honorable Mentions**—Not less than eight nor more than twelve in all classes will be awarded at the discretion of the judges in the amount of \$50 each.

Houses entered in the competition must have been completed within the past three years within the continental limits of the United States, and shall not have been published in any other national magazine (professional architectural magazines excepted). Breakfast rooms, pantries, baths, dressing rooms, halls, laundries and inclosed porches shall not be counted as rooms.

**COMPETITORS** Any architect or architectural designer is eligible to compete, and each competitor may submit as many houses as he desires in any or all classes. No house shall be eligible in more than one class.

**ENTRY BLANKS** A special entry form will be available to prospective competitors immediately upon application to the Competition Editor. This form shall in every case accompany the entry in the manner prescribed.

**DATES** All entries shall be shipped for normal delivery to the offices of the Competition on or before October 15, 1937. Judgment by the Jury will follow, and announcement of awards will be made to competitors immediately after the judgment. Prize-winners will be announced and prize winning entries will be published beginning with the

January, 1938, issue of HOUSE BEAUTIFUL.

**JURY** The jury will consist of three members of the American Institute of Architects and the Editors of HOUSE BEAUTIFUL.

**BASIS OF AWARDS** Awards will be made by the jury on the basis of the following principal points:

1. Excellence of design
2. Economy in space and convenience of plan
3. Adaptation to lot and orientation
4. Skill in use of materials

**REQUIREMENTS** 1. **Mounts.** All entry mounts shall be a single piece of compo board, of white or light color, or board of comparable weight and stiffness. The size shall be exactly 30" by 40". On the lowest part of the mount shall be neatly lettered, in one or two lines, the inscription, "House Beautiful Small House Competition 1937." In the upper right corner of the mount shall be left space for a 3" by 5" card which will display the architect's name if the entry is selected for the Traveling Exhibit. A clear margin of at least half an inch shall be left on all edges of the mount.

2. **Photographs.** On the face of each mount shall be firmly secured at least three matt finish photographs of the house, as follows: A general exterior view, at least 14" by 18" in size; an exterior detail at least 8" by 10"; an interior detail at least 8" by 10". Duplication of exterior views is not desirable.

3. **Plans.** First and second floor plans and a plot plan, either separately or incorporating first floor plan, shall be drawn in ink at any convenient scale and pochéd, with rooms plainly labeled and dimensioned. An arrow indicating points of the compass shall be included.

4. **Legend.** A legend shall be clearly presented to supply information as indicated by the special entry forms which are available to all competitors and one of which, properly filled out, must accompany each entry. This legend, as specified, shall supply all the factual information required by the jury in determining awards.

5. **Anonymity.** No contestant's name or address shall appear on the face of the mount but shall be lettered on the back of the mount and covered by a piece of opaque paper pasted around the edges. On the back shall also be attached a sealed envelope containing the required entry form properly filled out and a 3" by 5" card clearly lettered with the name and address of the competitor. This card shall be suitable for attachment to the face of the mount for later exhibition purposes.

6. **Delivery.** All entries should be carefully packed with stiff board for protection and shipped express prepaid and at owner's risk to the Competition Editor, HOUSE BEAUTIFUL, 572 Madison Avenue, New York City. The competition closes on October 15, 1937, and all entries shall be shipped in time to arrive in the offices of HOUSE BEAUTIFUL on or before that date.

7. **Publication and Exhibition.** All photographs and plans entered in this competition and chosen either for publication or exhibition shall remain in our possession until after such use. We request that houses entered in this competition be not submitted to any other magazine until after they are released by us. All contestants will be notified of the awards soon after they are made, and those whose houses are not selected either for publication or exhibition may withdraw them by sending the necessary notification. Entries will be returned express collect. Contestants whose houses are exhibited will be notified when the exhibitions are over. If they desire, their entries will then be returned upon the payment of transportation charges.

To insure good reproductions, glossy prints of those photographs to be published in HOUSE BEAUTIFUL will be requested from the architects. (Additional photographs in readiness are desirable.) Photographs of houses not awarded prizes but requested for publication will be paid for at \$5 for each one used. Good, clear, reproducible photographs are essential.

8. **Agreement.** It is agreed that submission of entries carries with it acceptance of the above conditions and those contained on the required entry forms.

Copies of this program and entry forms to the desired number may be obtained from:

**Competition Editor, HOUSE BEAUTIFUL, 572 Madison Ave., New York City**

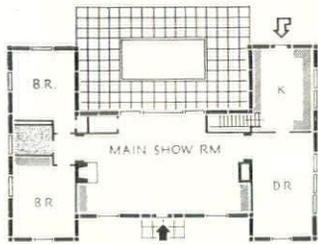
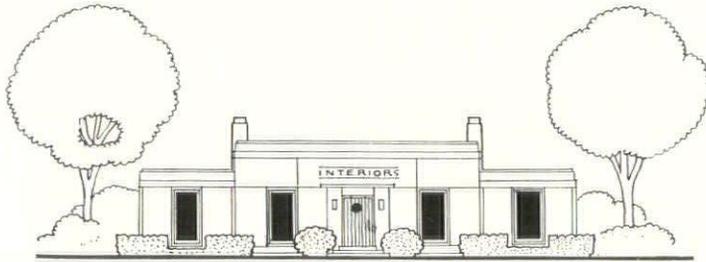
# TECHNIQUES

METHODS . . . MATERIALS . . . RESEARCH PRACTICES

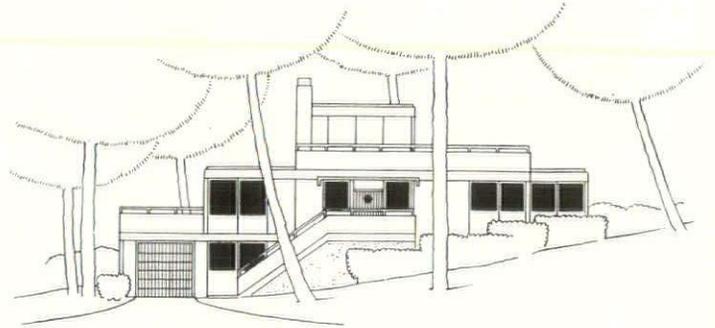
## SIMPLIFIED DESIGN LANGUAGE

BY ROBERT C. WEINBERG

IN the September 1936 issue of AMERICAN ARCHITECT AND ARCHITECTURE there was set forth the theory that the establishment of a system of pre-fabricated units brings to architecture a simplified language of design. In the article "No More Hieroglyphics" the author made the point that with a fixed



Display rooms of an interior decorator in a suburban town, laid out to exhibit furniture in spaces resembling rooms of average residence. Extra ceiling height of main showroom achieved by using solid panels laid horizontally above standard vertical ones



House for shallow, sloping, wooded plot on Long Island's North Shore. Requirements included: Maximum deck space on which to enjoy summer evening breezes; basement recreation room; extra closet space for comfort of couple with occasional guests

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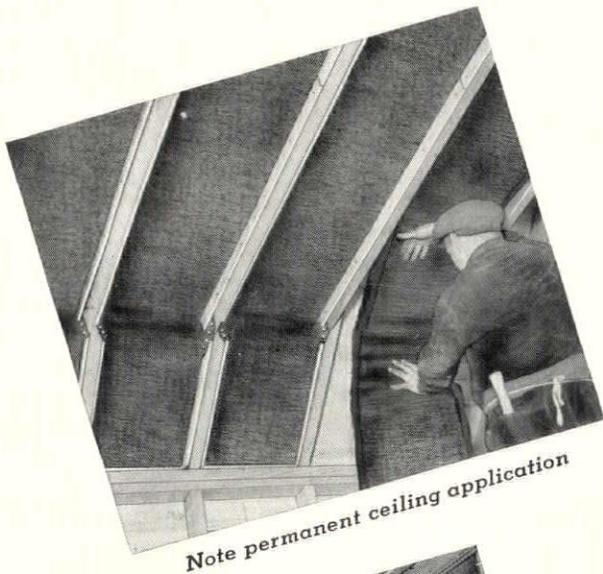


YOU SPECIFY

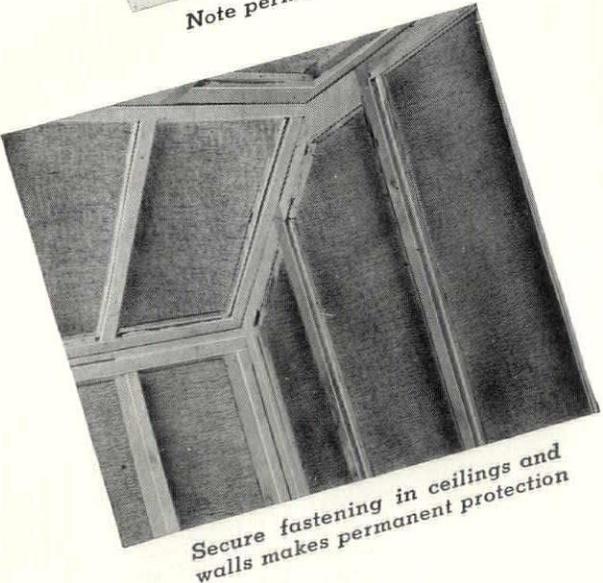
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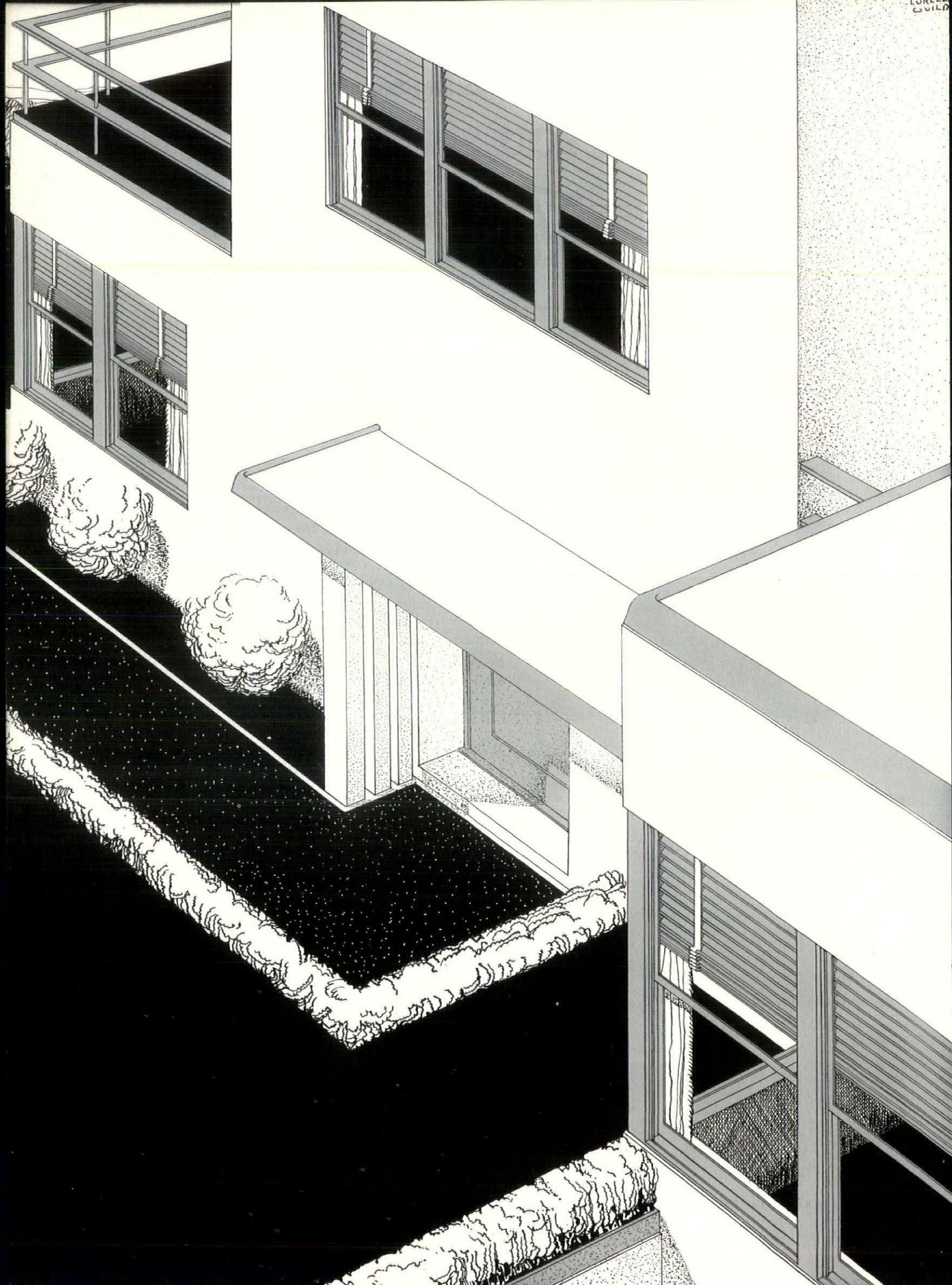
Room 159, First National Bank Building, St. Paul, Minn.



**BALSAM-WOOL**

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# LET'S LOOK INTO THE REAL COST OF WINDOWS



A price is quoted on "Windows." Is that the final cost, or must a lot of extras be added to get their true cost; labor for assembling knocked-down parts, weather stripping, paint and more labor, and so on? Many builders are saving money by knowing the truth.

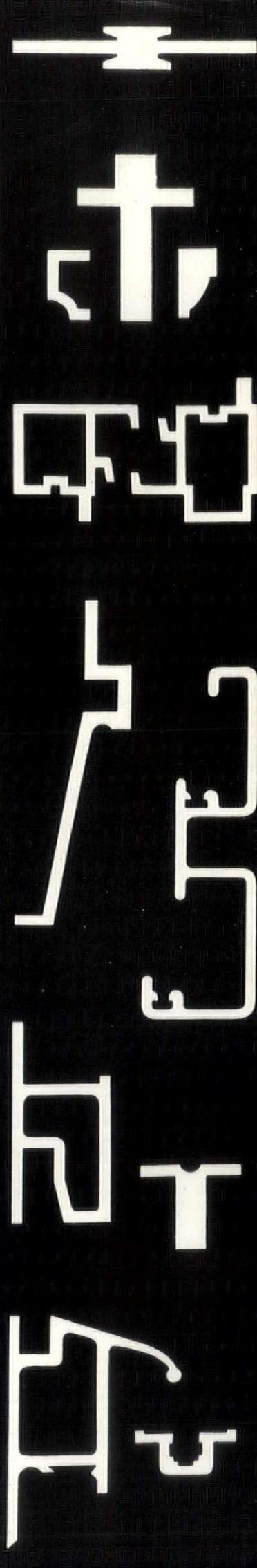
Only the cost of setting Aluminum windows need usually be added to the figure quoted. Price differentials are, therefore, often equalized when costs are compared on a completely installed basis.

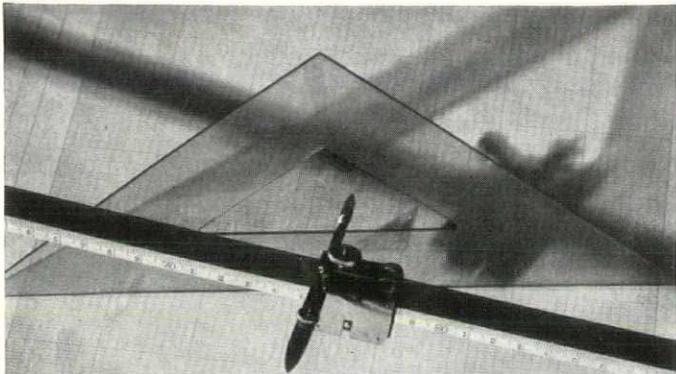
With Aluminum windows, less maintenance is required. Because Aluminum is so resistant to weather, they retain their attractive appearance without the frequent painting and repainting required by other windows; they never warp, swell, rust or rot. Property owners are spared much of the upkeep expense ordinarily expected.

Aluminum windows are fabricated from extruded shapes like those shown on this page. Designed especially for window construction, these shapes utilize every ounce of metal to best advantage, giving maximum strength with minimum weight and cross section. They account for the reasonable cost of Aluminum windows.

We do not manufacture windows, but supply Alcoa extruded shapes to many well known window manufacturers. They have developed individual types of construction, and will gladly give you detailed information on windows of their own design. Aluminum Company of America, 2195 Gulf Building, Pittsburgh, Pennsylvania.

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ALUMINUM





# The new bauhaus

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director

formerly Professor at the Bauhaus, Dessau

**Dr. Walter Gropius**  
adviser

founder of the Bauhaus  
now Professor of the Graduate School of  
Architecture, Harvard University

thorough education in  
principles of design  
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handicraft and machine  
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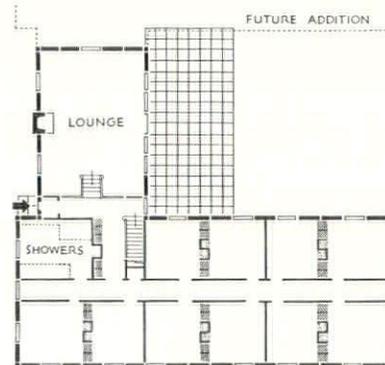
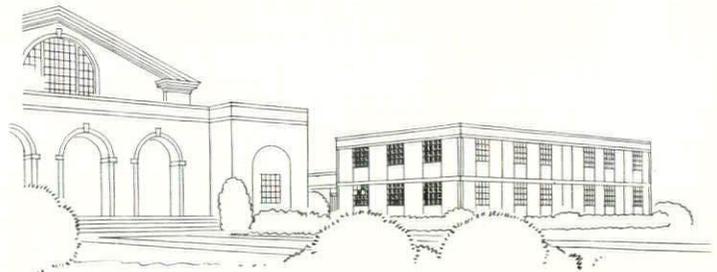
School opens  
**October 18, 1937**

For information on courses write  
Association of Arts and Industries  
700 North Michigan Avenue, Chicago, Tel. Superior 2415

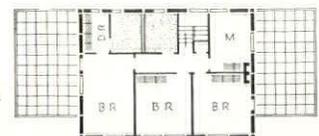
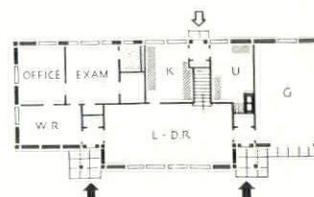
demanded by clients of non-specializing architects in the average American metropolitan centers.

Herewith are presented a number of other designs of houses planned by the author, and constructed with General Houses units, during the same year, 1935, for clients with a wide variety of requirements. They are published here as further demonstration of the immense new possibilities inherent in the use of this simplified design language, which will, it is hoped, become more universally used when the various producers of pre-fabricated units have further developed and perfected their products so that architects can employ them freely and confidently in arriving at the best solution.

- Solid Panel (Standard 4 ft. by 8 ft. insulated steel)
- Door Panel (Standard exterior)
- ⇌ Window Panel (Standard double-hung)
- ⌋ Double Doors (Wood casement)
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- ▒ Cases (Standard 2 ft. by 2 ft. prefabricated wood wardrobe)
- ▒ Bathrooms (With standard wall section containing utilities)
- ⊞ Paved Terrace and Deck Space
- ➔ Main Entrance
- ⇓ Service Entrance



Dormitory for small country college adjacent to and to harmonize with an existing building of pseudo-colonial style. Note: use of stock sash, retaining vertical muntins; exterior surface stuccoed and painted to match existing building; special cornice developed to match; one story lounge, at lower level, utilizing panels set horizontally BELOW others, giving 12' ceiling height



Combined home and office for physician in a built-up suburban community. Requirements include: a formal conventional exterior appearance; separate entrances for home and office; easy access to garage; compactness and economy of maintenance

## STANDARDS OF GOOD PRACTICE IN THE USE OF

# Brickwork



**N**EXT month *AMERICAN ARCHITECT AND ARCHITECTURE* will present three useful Time-Saver Standards on Brickwork. These will cover workmanship, including advantages of various types of joints . . . wall textures, patterns, and bonds . . . characteristics and methods of constructing various types of load-bearing walls . . . foundations and footings. One Time-Saver on reinforced brick masonry will summarize methods of design, working stresses for floor slabs, and load tables for beams, lintels, and retaining walls. Be sure to watch for these helpful sheets in your October issue.

### ALSO IN THE OCTOBER ISSUE, *AMERICAN ARCHITECT AND ARCHITECTURE*

**"WE VIEW WITH ALARM"**—Third in the series of sections by architects in various parts of the country. Edited by a group drafted to work for the various Federal agencies in Washington, including Miles Colean and Henry Klaber of the Federal Housing Administration, William Dewey Foster and Lorimer Rich of Procurement, and Pierre Blouke of Home Owners Loan Corporation. Their contribution takes a decidedly unusual turn in its entire presentation since it is written in the form of dramatic dialog.

**ARCHITECTURAL OVERTONES**—New

England churches, photographed by Samuel Chamberlain.

**CIBA FACTORY**—Summit, N. J., by John Floyd Yewell, architect. A factory building that definitely contributes to the beauty of an outstanding suburban town.

**KATSINAS RESTAURANT**—Champaign, Illinois, by William Ganster, architect. Typical of the advanced architectural trend in smaller cities.

**OFFICES FOR A PHILANTHROPIC ORGANIZATION**—New York, by C. Coggeshall. Illustrates the modern

trend of specially designed furniture as an integral part of planning.

**TWO-FAMILY HOUSE**—Miami Beach, Florida, by Visscher & Burley, architects. A simple concrete building without extraneous decoration.

**HOUSE OF FRANCIS F. HARRISON**—Cooperstown, N. Y., by Greville Rickard, architect. A better-than-average Colonial adaptation in wood and stone.

**PORTFOLIO**—Featuring doorsteps.

**FAVORITE FEATURES**—Devoted to simple mantels.

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**A LETTER TO THE EDITORS**

AMERICAN ARCHITECT AND ARCHITECTURE:

We have noted with interest two comments which appeared in your July issue on the matter of organization of private architects' offices in Seattle. You have expounded the viewpoint of the employer, but we feel that this so vitally concerns the employe draftsmen and the architectural profession as a whole that it would be only fair to present our viewpoint to the readers of your magazine.

Mr. Stowell feels rather keenly on the subject. "In the far west," he writes, "a movement to limit the independence of private architects is sponsored by labor unions who are striving for a closed shop in all architects' offices. . . . We believe that the work of independent architects in private practice is essential to the greatest progress of the art and science of building."

Mr. Stowell, it appears, cannot see the forest for the fringe of trees. "The art and science of building" cannot progress when the work itself does not exist. And this was largely the situation during the six-year depression when the preponderance of architects either completely liquidated or reduced to a skeleton their office forces. And this fact Mr. Stowell quite blissfully ignores.

The aim of the draftsmen in Seattle, apparently, is to mitigate the harsh effects of such economic crises so that the whole burden will not be borne by them. With this object in mind, they tell their employers, "We too are interested in a stabilized profession wherein we will receive regular employment and decent wages. This does not jeopardize your position. On the contrary, we make it more easy for you to demand the established 4% to 6% for your architectural services. We believe that if the entire profession is so organized, the practise of cut-throat competition will inevitably and permanently be eliminated from the profession. You gain and we gain. And the builder is compelled to pay the legitimate fee for your services."

And this is the patent fact. When Mr. Stowell invokes the bogey of "progress in the art and science of building" in this connection, he is guilty of a bad metaphor. There is no limitation put on the work of the private architect. His creative faculties remain unhindered, unimpaired. The draftsmen are equally efficient; they have, in fact, more energy, more incentive as a result of reduced working hours, more pay, the prospect of extended and regulated employment.

Mr. Saylor, in his "Diary" is equally alarmed. "It seems hardly likely," he writes, "that this move toward unionization of whole offices is the work of the Federation of Architects, Engineers, Chemists and Technicians. Presumably the members of this organization, both in Seattle and elsewhere in the country, realize that their interests are far more closely knit to those of the architects or engineers who employ them than to any organization of the trades."

Yes and no, Mr. Saylor. We regret that it is not the Federation which is unionizing offices in Seattle. But we'd like to, and endorse any union so engaged.

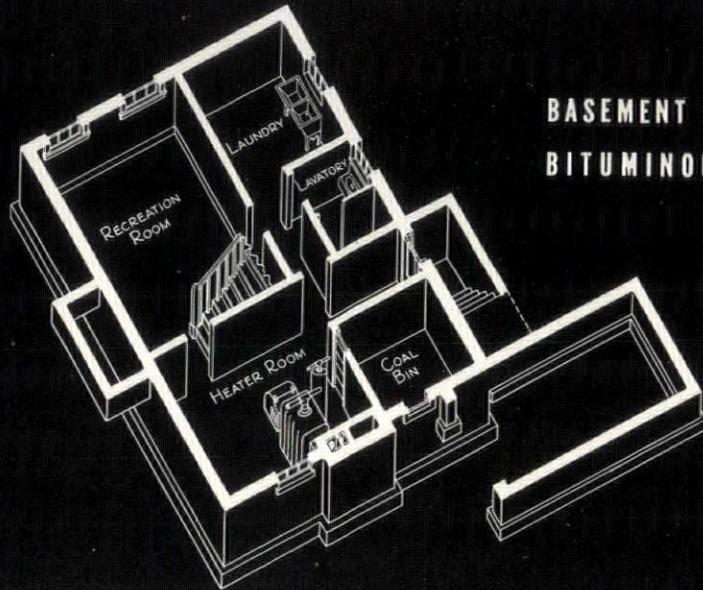
We draftsmen do feel a strong bond with our employers. So much so, that we will even unionize their offices to help them demand their well-merited fees. But we do not feel such a bond that we will forego unionization, the only instrument which will guarantee us a livelihood. This appeal to professional pride and tradition is shopworn. And draftsmen are progressively becoming aware of the fact.

Respectfully yours,

(Signed) JACOB SPINNER  
Jacob Spinner, Publicity Director  
Architects' Section, New York  
Chapter, F. A. E. C. T.

NOTE: In connection with the subject discussed above, there is a further Diary note in this issue, page 83, under date of Friday, August 13. Mr. Charles H. Alden, F.A.I.A., writes of the matter of union organization in Seattle and corrects us in several details.  
—THE EDITORS.

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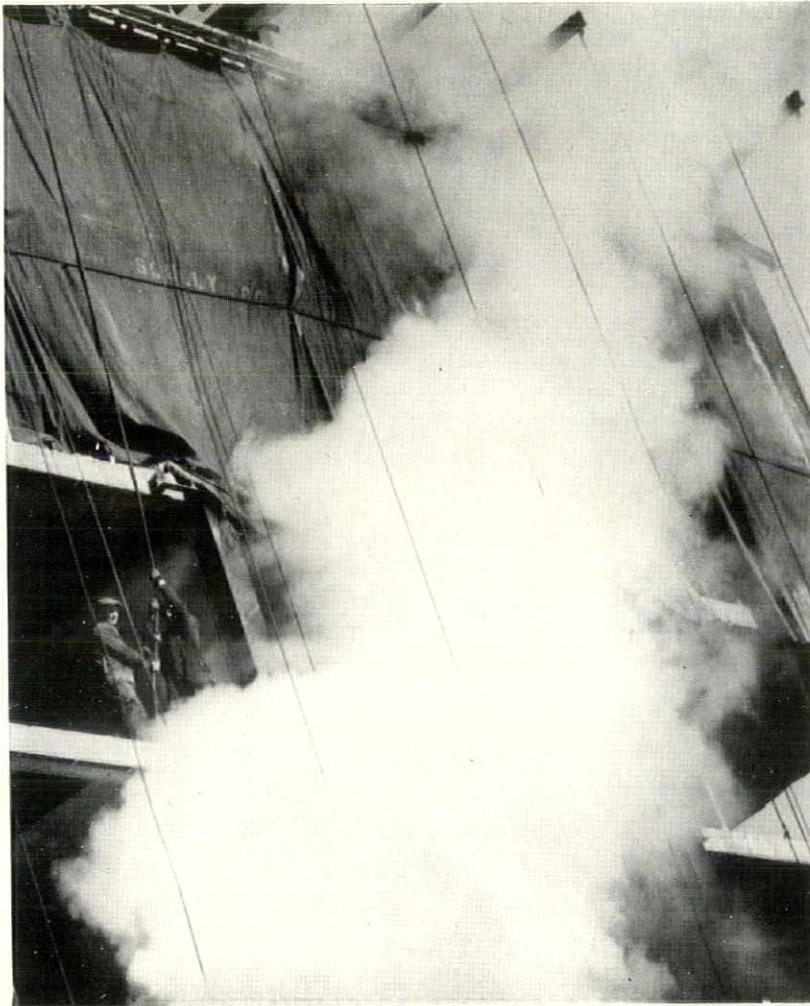
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# NEW CATALOGS...

Readers of AMERICAN ARCHITECT and ARCHITECTURE may secure without cost any or all of the manufacturers' catalogs described on this and the following page by mailing the prepaid post card printed below after writing the numbers of the catalogs wanted. Distribution of catalogs to draftsmen and students is optional with the manufacturers

## Revecon System

308 . . . Revere Copper and Brass Incorporated, New York, has incorporated its sixteen TIME-SAVER STANDARDS sheets on the Revecon System for holding sheet materials in a handsome handbook, which also includes latest price list, memoranda and Template schedule sheet. These sixteen sheets give complete factual descriptions, principles of assembly, data on how to design and specify, details for various types of constructions, and other pertinent data. Filing size; A. I. A. File 16-E.

## Linoleum

309 . . . Actual samples of Sealex Battleship and Plain Linoleum showing colors and patterns available are contained in a pocketed portfolio just issued by Congoleum-Nairn, Inc., Kearny, N. J. Gauge standards and installation data are included. A similar portfolio for Sealex Veltone Linoleum is also available. Filing size; A. I. A. File 23-J.

## Protective Products

310 . . . A reference chart in the form of an eight-page booklet has been issued by Toch Brothers, Inc., New York, giving descriptions and use data on its line of protective products. These include waterproofings, dampproofings, caulking compounds, floor treatments, protective paints and allied specialties.

## All-Year Air Conditioning

311 . . . All-Year-Air Equipment for complete winter air conditioning and summer cooling is described and illustrated in an eight-page broadside recently issued by Air Conditioning Division, Auburn Automobile Company, Connersville, Ind.

## Water Tube Steel Heating Boilers

312 . . . Knowlton Watertoob Steel Heating Boilers with copper tubes designed especially for oil burners are described in Bulletin P-O recently issued by Orr & Sembower, Inc., Reading, Pa. Ratings are given. Filing size; A. I. A. File 30-C-1.

## Fire Alarm System

313 . . . The General Alarm Type Selective Code Interior Fire Alarm System for use in factories, schools, and similar places, is featured in Bulletin No. 946 offered by American District Telegraph Company, New York. Description of equipment and specifications are given. Filing size; A. I. A. File 31-i-31.

## Welding Fittings

314 . . . Bonney Forge & Tool Works, Allentown, Pa. has just issued a new Bulletin WT23 fully illustrating and describing WeldOlets and ThredOlets, the patented, drop-forged pipe fittings for making branch pipe connections by welding. Tables showing stock sizes, dimensions and weights are included.

## Magic Door Equipment

315 . . . Stanley Magic Door Equipment for the automatic operation of doors—single or double, swinging or sliding types—is presented in a 24-page, filing-sized brochure just published by The Stanley Works, New Britain, Conn. The booklet demonstrates where magic doors are used to best advantage and gives complete technical information.

## Non-Metallic Sheathed Cable

316 . . . The Anaconda Wire and Cable Company, New York, has just issued a 20-page, filing-sized publication (No. C-27) describing non-metallic sheathed cable for direct burial in the ground. In addition to complete descriptions of the types available and their uses, helpful information relating to the application, installation and other engineering data are included.

## Unit Air Conditioner

317 . . . The Adco Roll-About Single-Room Air Conditioner, for filtering, cooling, dehumidifying and ventilating the air in a room, is described and illustrated in a four-page catalog recently issued by Air Devices Corporation, Chicago, Illinois. Specification data are given.

## Furniture Store Modernization

318 . . . "Furniture Store Modernization—What To Do and How to Do It" is the title of an informative 20-page-and-cover brochure just released by Masonite Corporation, Chicago. Four typical plans of departmental divisions together with photographs, drawings and descriptions of the interior planning of these departments are featured. A chart of suggested three-color and four-color combinations is included.

## Tennis Courts

319 . . . A sixteen-page booklet offered by The En-Tout-Cas Co., Ltd., through Guy C. Foster, Inc., New York, explains the advantages and superior qualities of En-Tout-Cas fast drying tennis courts. The various types are described and illustrated by actual installation pictures.

## Unit Kitchens

320 . . . The various models of electric unit kitchens for apartments, hotels, etc. manufactured by Electric Invisible Kitchen Company, Chicago, are cataloged in an eight-page booklet recently issued. Specifications, engineering data and installation procedure are fully described.

## Wellpoints

321 . . . The feature of a new 20-page catalog issued by Griffin Wellpoint Corporation, New York, is the number of job photos showing Griffin Jet 'N Drive Wellpoint and Griffin Vac-U-Matic Pump installations on a variety of construction projects throughout the country.

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AMERICAN ARCHITECT and ARCHITECTURE  
New York, N. Y.

September, 1937

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## AMERICAN ARCHITECT and ARCHITECTURE

### Stokers

322 . . . With the heading, "The finest Automatic Heat that money can buy," a 16-page booklet, No. 1469-B, just issued by Link-Belt Company, Chicago, takes the reader pictorially through the features of automatic firing with coal. Primarily a picture book, it contains a series of illustrations from photographs taken in one of the homes heated by Link-Belt Stokers and describes results achieved.

### Household Water Conditioning

323 . . . The line of household water conditioning equipment manufactured by The Permutit Company, New York, is cataloged in a new booklet (Form 477) of 24 pages, recently issued. Specifications, capacities and selection data are given for each model in the line. Filing size; A. I. A. File 29-D-3.

### Water Vapor Refrigeration

324 . . . The application and advantages of Steam-Jet Coolers (Steam-jet water-vapor refrigerating units) is the subject of Bulletin 9143 recently published by Ingersoll-Rand Company, New York. Examples of steam-jet cooler applications together with rating curves and details of construction and operation are presented in text and illustration.

### Steel and Concrete Construction

325 . . . The New Alpha system of steel and concrete construction is clearly explained in Circular 58, an eight-page filing-sized booklet issued by Porete Manufacturing Company, North Arlington, New Jersey.

### Dry Vacuum Pumps

326 . . . Bulletin L-711-B2 published by Worthington Pump and Machinery Corporation, Harrison, N. J., contains installation views, a detailed description, and sectional cuts of Worthington Horizontal Dry Vacuum Pumps for the complete field of vacuum application.

### Ventilator

327 . . . Victor Electric Products, Inc., Cincinnati, Ohio, has issued a new four-page folder which explains and illustrates the advantages of the Victor In-Bilt Ventilator for kitchen ventilation. Specifications and installation instructions are given. Filing size; A. I. A. File 30-D-1.

### Emergency Lighting

328 . . . A new booklet on Exide Emergency Light and Power Systems is announced by The Electric Storage Battery Company, Philadelphia, Pa. It reviews the entire field covered by Exide Emergency Battery protection and explains the workings of the systems.

### Steel Oil Burning Boilers

329 . . . The features of Burnham Steel Oil-Burning Boilers are outlined in a four-page illustrated folder recently published by Burnham Boiler Corporation, Irvington, New York. Filing size; A. I. A. File 30-C-14.

### Electric Motors

330 . . . The Louis Allis Co., Milwaukee, Wis., has issued a 60-page book describing the construction, features, advantages and applications of practically every commercial type of electric motor. It also includes engineering data on various types of special motor applications and construction and gives a detailed analysis of the characteristics of squirrel cage motors, motors for centrifugals, etc.

### Steel Flooring

331 . . . Many interesting angles on safe floors and plant safety in general are suggested in a new booklet recently published by Inland Steel Co., Chicago, pertaining to Inland 4-Way Floor Plate. Typical applications are illustrated. Specifications, sizes, thicknesses, patterns and other data are included.

### Convectors

332 . . . Complete information on Young Streamaire Copper Convectors is contained in Catalog No. 4037 released by Young Radiator Company, Racine, Wis. Description of types available, cross section views, ratings, detail drawings, piping diagrams are all included. Filing size; 24 pages; A. I. A. File 30-C-4.

### Built-Up Roofing

333 . . . A 44-page specification manual covering USG Built-up Roofing has recently been issued by United States Gypsum Company, Chicago. Data given in each specification include general requirements, materials and application, and details of application.

### Low Pressure Refrigerating Units

334 . . . The design and construction of Frick Low Pressure Refrigerating Units are completely described in Bulletin No. 97-C just released by Frick Company, Waynesboro, Pa. The various commercial applications of these units are illustrated and briefly described.

### Hollow Partition Studs

335 . . . The new Truscon Hollow Partition Studs are illustrated and described in a four-page folder recently issued by Truscon Steel Company, Youngtown, Ohio. Detail drawings, specifications and dimensions are given. Filing size; A. I. A. File 20-B-14.

### Bakelite Materials

336 . . . The story of the development of various Bakelite resinous materials, their general characteristics, their properties and their applications, is presented in a small 20-page booklet issued by Bakelite Corporation, New York.

### Sash Balances

337 . . . The features and advantages of Unique Sash Balance and Unique Weatherstrip are outlined in an eight-page broadside offered by Unique Window Balance Corporation, New York. Filing size; A. I. A. File 27-C-4.

### Oil Burners

338 . . . Data on Simplex Horizontal Rotary Oil Burning Systems are presented in a four-page folder (Bulletin No. 119-37) recently offered by Simplex Oil Heating Corporation, New York. Sizes and capacities are clearly indicated. Filing size; A. I. A. File 30-G-1.

### Metal Windows

339 . . . Campbell Metal Double Hung Windows are described in a 12-page brochure issued by Campbell Metal Window Corporation, Baltimore, Maryland. Specifications and details are given.

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# ARE YOU INTERESTED IN GENEALOGY?



If you're an architect you're interested in the genealogy of the *window family*. And you're glad to know that Curtis has introduced a new Silentite Casement.

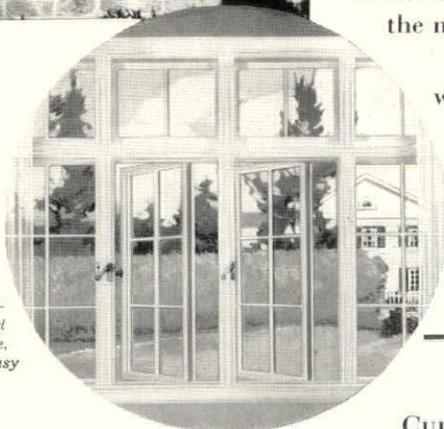
Window history isn't exciting. For 300 years, until 1932, there was nary an improvement. Then Curtis introduced the Silentite Double-Hung Insulated Window, big brother to the new Silentite Casement.

Here's a wood casement window that has architects applauding. It's a trouble-proof, draftless casement — improved, weather-stripped, with new principles and new, charming architectural beauty, and

new features, which are covered by exclusive Curtis patents.

The Pittsburgh Testing Laboratory checked Silentite against other wood and metal casement windows. They found that it allowed *less heat loss* and *less air leakage* than any of the rest. And they found that Silentite will save as much as 17 out of every 100 fuel dollars!

That's news about windows, and there's plenty more that you'll be glad to hear. For instance, Silentite can't rattle, vibrate or swing in the wind. There's no visible hardware outside or inside except a sash adjuster that's easy to operate. Pre-fit screens and insulating glass make a complete unit. Curtis preservative oil dip adds longer life.



As attractive inside as it is architecturally correct outside — simple, charming and easy to operate.

Let us tell you more, give you all the details about this new Silentite Casement. Just return the coupon.

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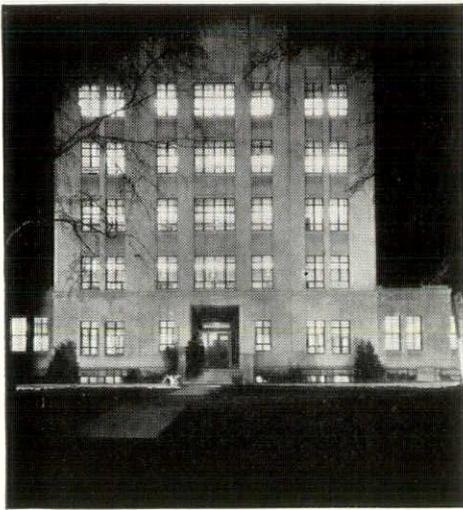
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Cooperative GLF Office Building Ithaca, N. Y.

## NEW GLF BUILDING GETS MODERN HEATING

Low Cost Heating and Long-Time Effectiveness Provided in the Webster Moderator System Concealed Webster Radiation

Ithaca, N. Y.—Built during 1936, the modern, five-story office building of the Cooperative Grange League Federation stands as a tribute to the careful planning and sound business management of the Cooperative officials.

Working on a limited budget, officers of the GLF sought long life and low maintenance cost in selecting equipment.

Study of the performance records of Webster Systems of Steam Heating in scores of installations convinced Grange officials that the Webster Moderator System was the soundest possible investment for the heating of their new building.

The Webster Moderator System provides balanced heating service. Heat is delivered continuously to all radiators and the entire building is comfortably heated regardless of the severity of the weather and without overheating in mild weather. Heating costs are held continuously at a minimum.

The installation includes 70 concealed Webster System Radiators. The grilles of these "out-of-the-way" concealed radiators harmonize with the modern interior and increase available floor space. All cast-iron radiators used in the building are equipped with Webster Three-Point Valves to insure maximum flexibility.

Two Webster Boiler Protectors guard against accidental low water in the low-pressure heating boilers. If water is lost from a boiler accidentally, the Webster Boiler Protector automatically maintains emergency level and provides the operator with definite indication that water has been lost.

The Webster System was installed in the GLF Building by the American Warming & Ventilating Co., well-known heating contractors of Elmira, N. Y. The building was designed by Arthur N. Gibb, a leading Ithaca architect.

These before-and-after facts point the way to maximum comfort and economy in heating new buildings as well as in modernization of existing installations. Consult your architect, engineer or heating contractor. Or address WARREN WEBSTER & CO., Camden, N. J. Pioneers of the Vacuum System of Steam Heating Representatives in 60 principal U. S. Cities—Est. 1886

## TRENDS

(Continued from page 19)

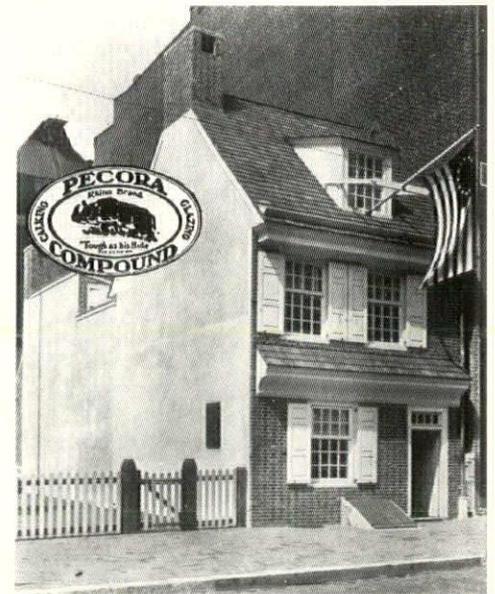
whose incomes are less than five times the rental will be admitted. (A restriction, we add, which wouldn't keep us out.)

AND WHILE ON THE SUBJECT OF GOVERNMENT ACTIVITIES, the FHA reports that for the first six months of 1937 new home mortgages accounted for 48% of the value of all mortgages accepted for insurance. During recent months, this figure has been running around 56%. From its inception to July 1st, it is reported, FHA had selected 290,000 homes for appraisal . . . a number sufficient to house a city of more than 1,000,000 people. Certainly this is one agency which, on the whole, has more than justified its existence and operation.

REPORTS ON TWO INTERESTING RESEARCH PROJECTS are on our desk. The first, "Graphic Summary of Housing Conditions in Allegheny County," a project of the Bureau of Business Research of the University of Pittsburgh, contains data of interest to all who favor better housing in the United States. Works Progress Administration workers co-operated in preparing this report, which covers not only Allegheny County but 36 other metropolitan areas as well. Housing conditions in Pittsburgh and Allegheny County receive most attention, however. Bar charts present the data in very easy and convenient form.

We are struck by such odd statistics as these: in Waterbury, Conn., about 75% of owner-occupied dwellings are mortgaged; in Wheeling, W. Va., over 40% of the dwellings have no private indoor water closet; in Birmingham, Ala., about 52% of the dwellings have no private baths; in Wheeling, W. Va., about 27% of the homes are without running water. Surely, in this day and age, such situations as these are no bright spots on our national escutcheon.

The second research report referred to is "Studies of Community Planning in Terms of the Span of Life," published by the New York City Housing Authority. Premise of this study is that the general community pattern as to age and family size must be the criterion in planning housing developments, no matter how small, and that housing authorities should plan for aging adults, not for a selected static age group. Architectural considerations are given in an appendix. Briefly, these are: Old people prefer homes or apartments on busy streets rather than those fronting on quiet, restful surroundings; maximum sunlight is a desideratum; apartments for old people should be located on the main floor or up one flight; further, that rooms and



## The BETSY ROSS HOUSE

All Window and Exterior Door Frames Are Calked with  
**PECORA CALKING  
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One of Philadelphia's historic shrines, this birthplace of our Stars and Stripes Flag has been carefully preserved for future generations. To prevent moisture and dust leaks, with consequent deterioration, all window and door frames have been calked with Pecora Calking Compound. Pecora is the preferred calking compound where absolute reliability is demanded, for properly applied, it will not dry out, crack or chip. Widely used for air conditioning projects and as an important aid in preventing heat loss.

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This new type, high pressure Cartridge Calking Gun (patent applied for) is a great time and material saver. Pecora Calking Compound is specially packed for this gun in non-refillable metal cartridges of approximately one quart and one pint capacity.

For further details see  
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fixtures should be planned with comfort, safety and convenience primarily in mind.

**WE CANNOT EXCLUDE FROM OUR HOUSING TIDBITS** a Dryden-like editorial which appeared recently in the New York *Herald Tribune* and which fairly reeks with a nostalgia for the "good old days." Here it is:

"Our mechanical times, the rationalists tell us, call for a radical change in domestic architecture. They love to quote Corbusier's dictum that a house is a machine for living in; it must be dustless, air conditioned, termite-proof, electrically equipped to the last degree, with a streamlined exterior and, preferably, asymmetrical fenestration. To desire any other kind of house is retrograde, sentimental, antiquarian and getting over toward the quaint side of things. It risks being ye olde.

"Yet the rage for old houses is hardly abating and many sensible people modern in all other ways cannot resist such a medieval survival as a Connecticut lean-to, if the sills are sound and the location and price right. For others the heart leaps up when it beholds American Doric or Palladian fronts under wine-glass elms in western Massachusetts or Vermont; or Dutch Colonial in north Jersey or New York. And, although the rustic or cottage mood is strongest now, genuine Georgian finds ready buyers. Even Victorian Gothic, something of a joke twenty years ago, does not go begging.

"The curators of old houses who docent summer visitors at two bits a head see their number yearly increasing, growing more enthusiastic and better informed about early American domestic. There are at least two hundred such houses open to tourists, we learn from a recent illustrated guide to them: 'Open House in New England,' by Samuel Chamberlain, who does the many who indulge in this form of antiquarianism a great service in listing with photographs in chronological order the most famous examples of old American houses that may be visited by the public."

### FAIRS

**FOOTSORE AGRARIANS**, plodding their weary way around the grounds of New York City's World Fair of 1939, will give shrill yelps of joy when they see before them a completely electrified farm—for the design and construction of which they will be able to thank Harrison & Fouilhoux, New York architectural firm. Assigned to plan a completely electrified farm by the Edison Electric Institute, Harrison & Fouilhoux intend to stock the place with dairy cattle, poultry, bees and all sorts of useful electrical gadgets. Crops will be planted and so complete are the projected plans we doubt not but what straws will be pro-

cured for a pseudo hired man to dangle from one corner of his mouth.

### SCHOOLS

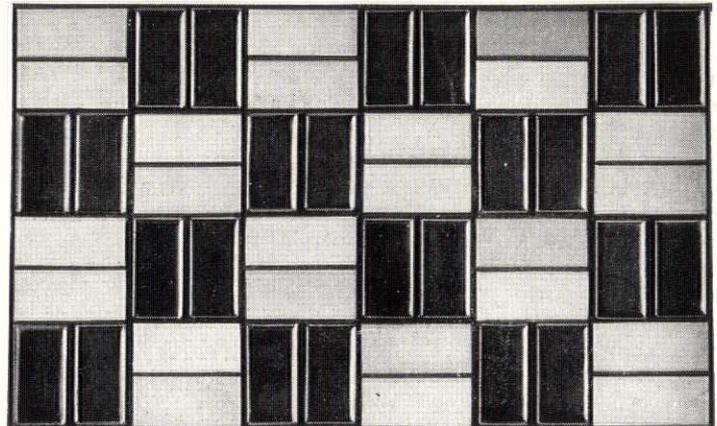
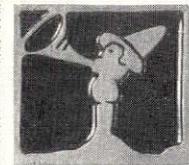
**THE NEW BAUHAUS**—American first cousin of the world-famous school in Dessau—has just announced October 18th as the beginning of its first school year. Founded by the Association of Arts and Industries in Chicago, Dr. Walter Gropius of Harvard University will act as advisor and L. Moholy-Nagy, formerly professor of the Bauhaus, will serve as director of the school.

The New Bauhaus intends to incorporate in its teaching of design practical instruc-

tion in the utilization of latest scientific and technical devices. The school will occupy the house presented to the Association of Arts and Industries by Marshall Field III. Located at 1905 Prairie Avenue, it has been thoroughly remodelled for the school's opening in the month of October.

In describing the Aims and Organization of the New Bauhaus, the Association states that the training offered will be for creative designers of hand and machine made products; also for exhibition, stage, display, commercial arts, and typography, as well as for sculptors, painters and architects.

# New!



## FAIENCETTES

A Matt Glazed Tile of Attractive Coloring in Small Size

An innovation in this class of tile, presenting a moderate price floor that will match plumbing fixtures, wall tiles or glazed colors. And as a wall surface, FAIENCETTES offer a pleasing variation from commonly accepted wall tile or faience, in raising scale of room because of their small size. Design possibilities are unlimited in sizes 1" x 1", 2" x 1" and 2" x 2", with suitable trim. Ten attractive colors. Suggestions for special designs gladly supplied upon request.

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interior and corner lot solutions described.

The writers note briefly the effect of the recent ruling of the London City Council requiring all deliveries to buildings to be made on their site. Our large cities may come to this, as well.

**Movie Architecture.** (R. Myerscough - Walker). *Design & Construction* (London). Je'37:296-298 **ptv**

A brief article on movie sets and the motion picture art director, a part often played by a former architect. Several typical film problems and design solutions are discussed and illustrated. The writer stresses the essentially dynamic approach to this type of design.

**Table—Chair—Light & Mirror.** *Moderne Bauformen* (Stuttgart). JI'37:373-380 **tv**

Examples of new single pieces from a Munich design and manufacturing concern. A refreshing tendency toward simple "peasant" types and the use of natural, probably native, wood can be noted in several of the better pieces.

## MATERIALS & FINISHES

**A.S.T.M. Convention at New York.** *Engineering News-Record*. 15 JI'37:110-114 **†**

Review of the 40th annual meeting of the American Society for Testing Materials which include brief notes of developments in materials research, specifications and testing standards for steel and wrought iron, impact testing, corrosion of metals, fatigue of metals, cast iron, paints, bituminous materials, cement and concrete, masonry materials, brick efflorescence, timber, consistency of plastic and viscous materials, and general methods of testing.

Noteworthy is the recognition, in both corrosion and paint sessions, that accelerated laboratory tests do not represent actual conditions, and that field service tests are the only really successful type. On the other hand, the described "wick" test of brick for liability to efflorescence seems to be a useful if not infallible indicator.

**Reference Issue on Metals.** *Architectural Review* (London). Je'37:251-296 **tv**

An encyclopedic reference prepared by a number of specialists. An introductory article gives history of metals, sources and methods of production. This is followed by special articles on iron and steel (non-structural), stainless steel, copper and bronze, nickel silver and Monel, aluminum, lead and pewter, zinc, gold-leaf, and fascinating "unfamiliar metals." There is a classified bibliography.

These background treatises are in turn

followed by articles on finishing metals, the technique of pressed metal, and research. There are many fine photo-views of metal use in architectural detail, furniture, hardware and other equipment.

**Asbestos-cement—Its production and uses.** (C. Penn). *Architects Journal* (London). 3 Je'37:969-977 **dstv**

Number 10 of a series of information supplements on building materials.

*Production* includes data on physical properties, development of the industry, raw material, processes, future possibilities. The latter include a number of molded items such as rain-water heads, drain boards and flower boxes, all of which utilize the resistance to dampness shown by this material.

*Present uses* include roofing, both corrugated sheet and "slate" or tile varieties; walls, corrugated or flat sheet; trim; floors; piping, duct-work and conduit. There are a number of details and tables.

**Paint manufacture benefits all other industries.** (E. T. Trigg, from *Rand-McNally Bankers Monthly*). *Business Digest*. JI'37:59-61 **†**

Business statistics on paint industry. Importance lies in the value preservation of basic materials. Paint is needed in manufacture and maintenance of many essential items. It is estimated that \$20,000,000 per year is saved in protection of boats and marine structures from animal attack, and that \$450,000,000 per year is saved by painting metal for all exposed uses.

**The progress of plastics.** (From *Modern Plastics*). *Business Digest*. JI'37:101-102 **†**

Advances in industrial technique. Present usual limit of injection molding, a rapid production method, is a 4-6-ounce charge but there is one press in the United States capable of taking an 18-ounce charge. Extrusion is another process not yet fully developed, and automatic molding presses are yet to be perfected.

## LIGHTING

**The control of light with louvers.** (W. E. Folsom). *Illuminating Engineering Society Transactions*. JI'37:734-752 **dst**

A long and well-illustrated article giving many diagrams of actual and suggested applications of this favorite method of light control, masking and decoration. There are notes on design, construction, finish, patterns, show-window louvers, display-, office-, stockboard-, museum-, industrial- and "architectural" lighting, lighting of tennis courts, luminous architectural features, venetian blinds, store

lighting, exterior, sign and car lighting, and louver-type fixtures.

**Star dust made in France.** *Illuminating Engineering Society Transactions*. JI'37:704 **†**

Brief note about a lighting stunt used in the Paris 1937 International Exposition. Shiny metal is ground up and scattered on a heavy oil film floating on the Seine. Colored light thrown on this produces brilliant effects of sparkling points of many-colored light.

## PLUMBING

**Plumbing Diagrams.** *Domestic Engineering*. Je'37:86-88, 175-176 **st**

Good plumbing practice illustrated by solutions of problems presented in an earlier issue. Editorial criticism.

Continuation. JI'37:87-90 **st**

## COMPETITIONS

The three-part competition sponsored by Structural Clay Products Institute, with the closing date of September 20, is to be judged by the following jury: Dwight James Baum, Chairman, New York; D. K. Este Fisher, Jr., of Taylor & Fisher, Baltimore; Louis LaBeaume of LaBeaume & Klein, St. Louis; William Stanley Parker, Boston. With these four architects the following three nationally known men in the real estate field will serve: Herbert Hugh Nelson, Secretary of the National Real Estate Board, Chicago; W. C. Miller, Washington, D. C.; J. C. Nichols, Kansas City, Mo. It is hoped also that Senator Robert F. Wagner will find it possible to serve as Honorary Chairman.

## A MASTER SPECIFICATION

To help solve the vast problem of keeping 1,000,000 homes—on which it holds mortgages—in good repair, the Home Owners' Loan Corporation has made public a revised list of Master Specifications of construction which may offer a pattern for private industry to follow. This list, in the form of a conveniently sized booklet, is for the use of contractors employed by the Corporation, and is intended to insure the best standards of materials and workmanship.

Although general in intent, the Master Specifications cover the erection of most of the structural elements of building: chimneys, downspouts, joists, foundations—and even deal with such problems as termite control, landscape work, terrazzo, tile and marble application.

It is recognized, however, that this booklet of specifications is only a first step towards the eventual standardization of practices and co-ordination of the construction industry.

## U. S. HOUSING ACT OF 1937

The Wagner-Steagall Bill has at last become a law of the land. Differences in the bills passed by the Senate and the House were finally compromised without radical changes.

Coleman Woodbury, director of the National Association of Housing Officials, in a bulletin to the membership, comments upon the Act as follows:

Unquestionably the act is one of the most important pieces of housing legislation enacted in this country. For the first time the federal government has outlined a long-term program and a continuing agency for the improvement of low-rent housing. Thus at last it attains the national status granted years ago in middle-class housing, home ownership, etc.

### OBJECTIVE:

Federal financial aid to state and local housing authorities providing decent housing for families "who are in the lowest income group and who cannot afford to pay enough to cause private enterprise in their locality or metropolitan area to build an adequate supply of decent, safe and sanitary dwellings for their use."

Housing shall be available only to families whose net income is less than five times the rental, including heat, light, water and cooking fuel. For families with three or more minor dependents, the limit is six times rental.

### ADMINISTRATION:

United States Housing Authority created in the Department of the Interior, under the general supervision of the Secretary. A body corporate of perpetual duration. Powers of the Authority exercised by an Administrator appointed by the President with the consent of the Senate. Five-year term. Administrator removable by President for neglect of duty or malfeasance. Salary, \$10,000 a year.

Employees of the Authority receiving less than \$1,980 per year to be appointed under civil service laws. All others appointed by Administrator without regard to civil service. Appointees receiving more than \$7,500 per year must be confirmed by the Senate.

### FINANCING OF AUTHORITY:

Authorization for appropriations of \$26,000,000 for the fiscal year ending June 30, 1938. Of this amount \$1,000,000 is for capital stock of the Authority.

Authority may issue obligations guaranteed by the United States both as to interest and principal in amounts not to exceed \$100,000,000 on or after the date of enactment, an additional \$200,000,000 on or after July 1, 1938 and a further additional \$200,000,000 on or after July 1, 1939. Maturity of these obligations may not exceed sixty years; rate of interest not more than 4%. Proceeds of bond issue not available for subsidies.

Not more than 10% of Authority's funds for loans, capital grants or annual contributions may be expended in any one state.

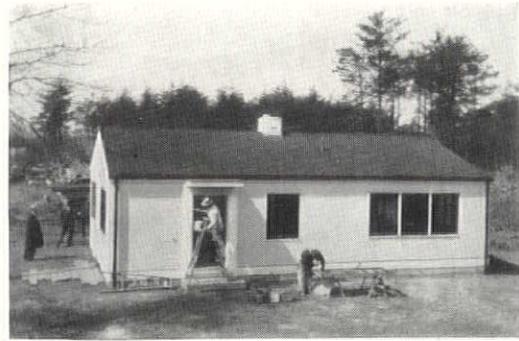
### LOANS:

Loans may be made to local and state housing authorities for the development, acquisition or administration of low-rent housing or slum clearance projects. If capital grants or annual contributions are also made, the Authority's loan may not exceed 90% of the development or acquisition cost. By implication Authority's loans may be 100% of cost if not accompanied by grants or annual contributions. Term of loans may not exceed sixty years; interest rate may not be less than the going federal rate at the time the loan is made, plus one-half of one per cent. Character of security left to the discretion of the Authority.

### ANNUAL CONTRIBUTIONS:

Annual grants authorized to supplement rents collected by local authorities. These contributions to be limited by Authority to amount and period necessary to assure low-rent character of development. Under no circumstances may annual contribution exceed yield at federal going rate plus 1% upon development or acquisition cost.

Term of annual contributions may not exceed sixty years. If  
(Continued on page 142)



Tego plywood house at Greenbelt, Md.  
(Resettlement Administration)

## TEGO-BONDING

### PLYWOOD FOR DIFFICULT PROBLEMS

THE general answer to critical questions about Tego-bonded plywood is "Yes!"

Is it weatherproof, waterproof, steamproof, boilproof, bakeproof, moldproof?

Is the joint stronger than the wood itself?

Can it readily be curved or bent after bonding?

Does it permit the use of face veneers that are thin, fragile, end-grained and difficultly matched, without staining, separation or open joints?

Such questions, and many others like them, can all be answered in the affirmative only for plywood made with Tego Resin Film.

Tego Resin Film is manufactured by *The Resinous Products and Chemical Company, Inc., Philadelphia, Pa.*

RESINOUS  PRODUCTS

## OBITUARIES

**STOCKTON BEEKMAN COLT**, a retired architect, member of a family prominent in America since colonial days, died at his home in Elizabeth, N. J., on June 22.

He was born in Paterson, N. J., in 1863, and was educated at Columbia University. After a short apprenticeship in the office of George B. Post, Mr. Colt opened his own office in New York, which he maintained until his retirement in 1928.

Among his larger business buildings should be mentioned the Barclay Building at 299 Broadway, and the Emmet Building at 95 Madison Avenue. The latter was designed in collaboration with the late J. Stewart Barney, with whom he was associated for a few years.

Mr. Colt was a member of The Architectural League of New York, the American Institute of Architects, and the Union County Society of Architects.

**VICTOR LALOUX**, dean of the Paris Beaux Arts atelier patrons, and one of the most eminent architects of France, died at his Paris home July 13. M. Laloux was eighty-seven years old. Of late years he had entrusted the work of his atelier to younger men, coming in only for the Grand Prix de Rome and

one or two other important competitions. In his declining years he had found a delightful and not too strenuous life as director of the School of American Art at Fontainebleau.

M. Laloux was born in 1850 in Tours, and the town's Hotel de Ville stands as one of his best known architectural works. Another is the Gare de Quai d'Orsay. He also designed the Town Hall of Roubaix, reconstructed the crypt of St. Martin's Church at Tours, as well as other architectural monuments throughout France. Among his published works were several on Greek architecture, one on the restoration of Olympia. He illustrated Paul Monceaux's work, "Olympie."

It was, however, as a patron at the Beaux Arts that his outstanding architectural leadership was demonstrated. For nearly half a century he taught the architects of France and other countries, inspiring them with his skill, personality, and high ideals.

When Delano & Aldrich were awarded the commission to design the American Embassy on the Place de la Concorde, Mr. Delano, who had been a pupil of Laloux, induced the master to serve as consultant, thus making decidedly easier the introduction of an American building in the Paris architectural holy of holies.

M. Laloux was a member of the French Institute. He was architect inspector of

civil buildings and national palaces. He was a Commander of the Legion of Honor. In 1878 he won the Grand Prix de Rome. In 1884 he was awarded a Gold Medal in the Salon, and in 1885 the Salon's Medal of Honor.

It will be many years indeed during which the influence of Victor Laloux will continue in the world through the hundreds of able architects he has taught and inspired.

A list of Laloux's American pupils alone reads like a Roll of Honor in American architecture: Lewis G. Adams, Raymond F. Almirall, H. L. Beadel, William H. Beers, Walter D. Blair, William L. Bottomley, Albert I. Brady, Frederick H. Brooke, Arthur Brown, Jr., Charles Butler, Lawrence Smith Butler, Jacques Carlu, Edward P. Casey, George S. Chappell, Henry I. Cobb, Jr., Dayton Colie, Knight C. Cowles, John W. Cross, Henry Davenport, William A. Delano, Ethan A. Dennison, Alfred V. duPont, Douglas D. Ellington, William Emerson, Harold P. Erskine, Alfred L. Fechheimer, Edward L. Frick, Albert S. Gottlieb, Carl F. Gould, George H. Gray, Howard Greenley, William C. Hays, Frederic C. Hirons, Lansing C. Holden, Jr., William d'O. Iselin, Louis E. Jallade, Jean Labatut, F. C. Lee, Thomas Machen, Clinton Mackenzie, Alexander P. Morgan, William E. Parsons, Frank E. Perkins,

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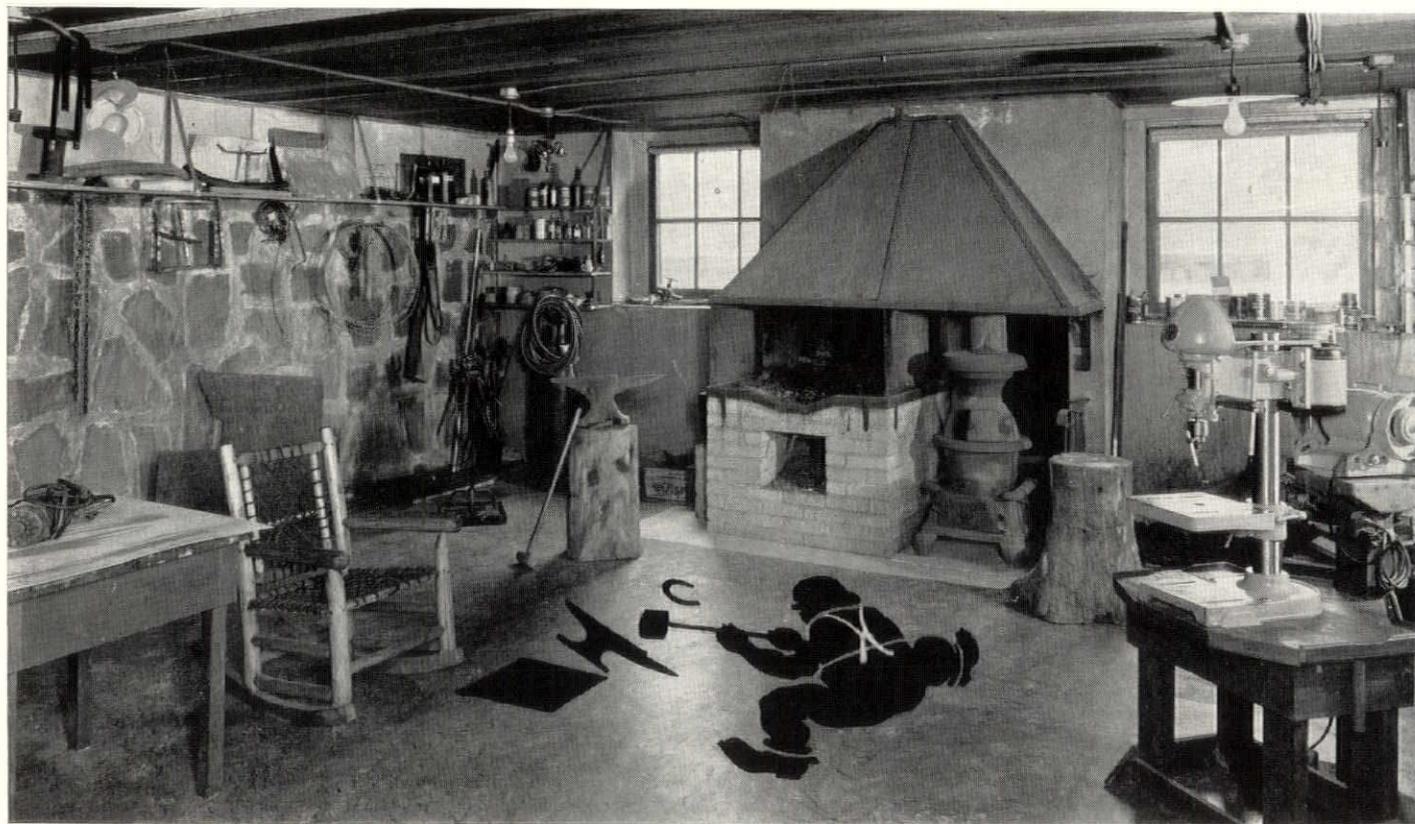
419 WEST 55TH STREET, NEW YORK, N.Y.

# Even a Hobby Shop craves COMFORT

In his Hobby Shop at Princeton, N. J., where he carries on a fascinating avocation begun in boyhood, W. W. Colpitts finds new comfort. Expertly fashioning chandeliers, lamps, candlesticks, wall sconces, stair rails, weather vanes, panelled figures and other ornamental work wrought out of iron and other metals, requires many hours of standing and foot strain. So, an attractive Sloane-Blabon Linoleum Floor now graces this unique little shop. Mr. Colpitts is a consulting engineer of note. He prides himself on his ability as a draftsman and makes all his own designs for work in his shop.

This amateur metal craftsman states that

since covering the concrete floor with Sloane-Blabon Linoleum, he finds foot strain tremendously relieved and that the linoleum surface meets every requirement from a durability viewpoint. The latter is important since the Hobby Shop is equipped with forge, lathe, drill press, grinder, saw, gas-cutting-and-welding equipment and other heavy tools. Embellishing the brown Marbletone pattern is an inset figure of a metal craftsman in black linoleum with white suspenders and belt; a black and yellow border surrounds the field of the floor. For all types of commercial and institutional floors, this Sloane-Blabon Linoleum installation contains a hint.



*Member of Coverdale & Colpitts, well-known consulting engineers, W. W. Colpitts chose Sloane-Blabon Linoleum for his Hobby Shop*

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**FRANK DAVID CHASE** died July 23, at his home in Evanston, Ill. at the age of sixty years. Mr. Chase was born in Riverside, Ill., and received his technical training at Massachusetts Institute of Technology. Since 1913 he has been president of Frank D. Chase, Inc., Chicago engineers and architects, with a practice covering railroads and other large industrial work. For several years he was architect for the Western Electric Company, the Illinois Central Railroad and the General Motors Corporation.

Among his better known works are newspaper plants for *The St. Louis Star-Times*, *The Oklahoman* at Oklahoma City, and *The Milwaukee Journal*. In Chicago he is known for the Chicago Memorial and Community Hospitals.

Mr. Chase was formerly president of the Western Society of Engineers, and a member of the American Society of Civil Engineers.

#### OF THE OFFICES

**WILLIAM ORR LUDLOW** announces the formation of the architectural firm of

Ludlow & Ludlow, with offices at 101 Park Avenue, New York, N. Y., and Madison, N. J. The new firm is the successor of Ludlow & Peabody, Mr. Charles S. Peabody having died in 1934. William Orr Ludlow, F.A.I.A. and David Ludlow, A.I.A., compose the firm.

**KENNETH K. HARKNESS**, architect of Cleveland, O., announces the removal of his office to 1388 West 91st Street.

**GLEESON & MULROONEY**, architects, announce the removal of their offices to 1612 Market Street, Philadelphia, Pa.

**THE PARTNERSHIP OF CHARLES L. HILLMAN & SON** having terminated, Charles S. Hillman, architect, announces that he will continue to practice architecture at 201 East Cliveden Street, Philadelphia.

**FALLON & MILLS**, architects and engineers, have dissolved partnership, and Joseph R. Fallon will practice architecture under his own name at the First National Bank Building, Richmond, Ind.

**WILBUR A. MULLIN**, architect of Kenosha, Wis., announces that he has taken over the architectural practice and office at 5 North Genesee Street, Waukegan, Ill., of the late C. W. Webster. Mr. Leonard J. Latz of that office will continue in his present capacity with Mr. Mullin. Mr.

Mullin will continue his practice from his Kenosha office.

**C. W. & GEORGE L. RAPP, INC.**, architects, announce the removal of their offices to the Carbon and Carbide Building, 230 North Michigan Avenue, Chicago, Ill.

**KYLE W. ARMSTRONG**, architect, formerly associated with the late Robert R. Reeves, and the earlier firm of Miller & Reeves, has established an office in the Beggs Building, Columbus, O., for architectural and engineering services.

**HOBART UPJOHN**, architect, takes pleasure in announcing that Walter A. Taylor has become an associate of the firm, whose offices are in the Grand Central Terminal, New York.

**JOHN M. MARRIOTT and GUY E. NEWHALL**, architects, announce the opening of their offices in the State National Building, Corpus Christi, Tex., and request manufacturers' catalogs and data.

**G. MEREDITH MUSICK**, architect, announces the removal of his office to the Security Building, Denver, Colo.

**HENRY J. TOOMBS** announces the association with him of H. Griffith Edwards in the practice of architecture, with offices at 101 Park Avenue, New York, N. Y., and Warm Springs, Ga.

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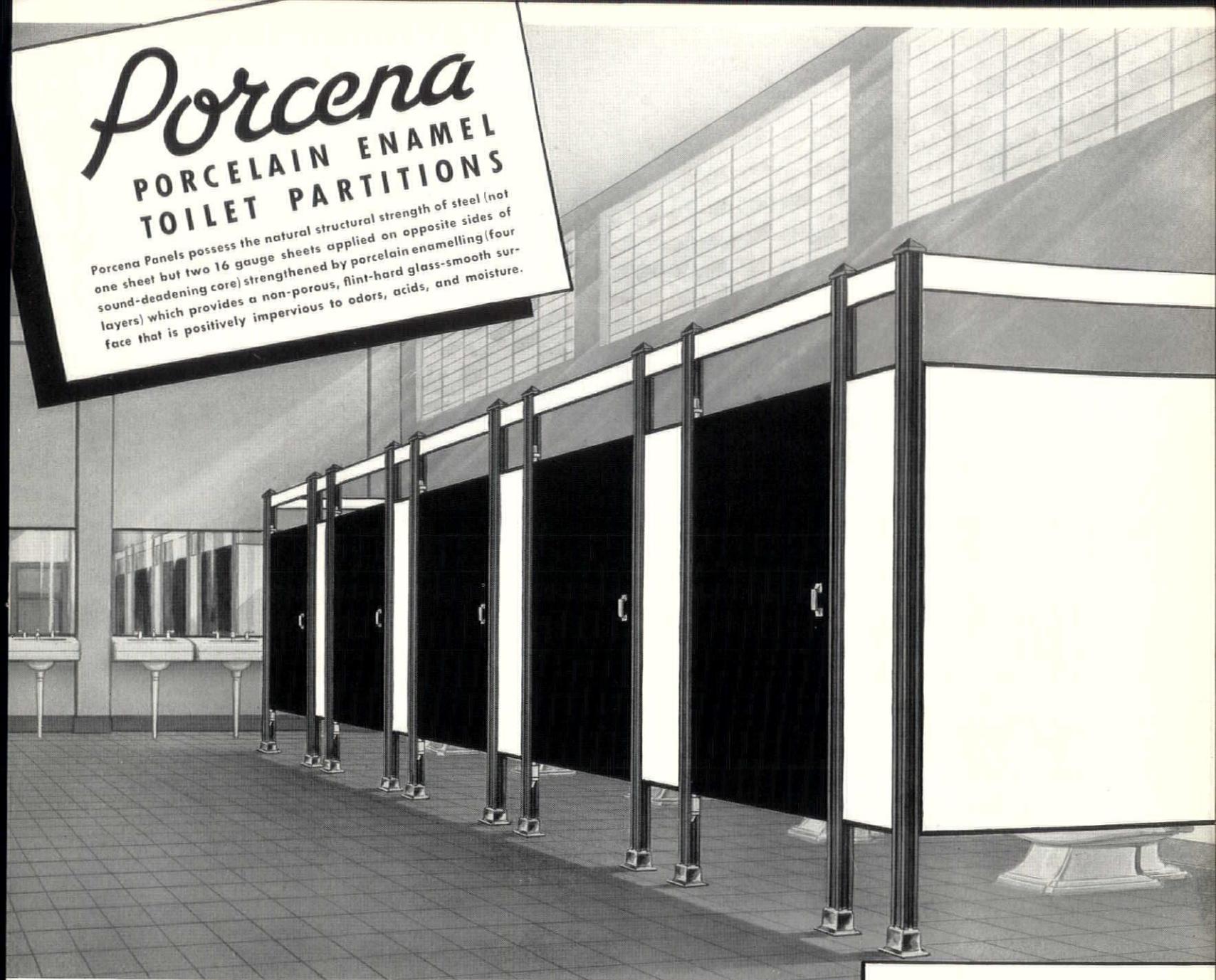
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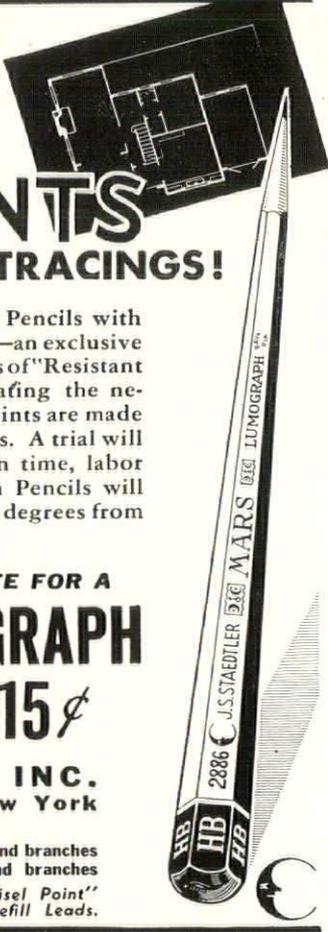
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(Continued from page 137)

greater than twenty years, the Authority shall reserve the right to re-examine and if necessary, to readjust amounts at the end of ten years and every five years thereafter. Subject to this provision annual contributions must be in fixed and uniform amounts.

Authority's power to enter into contracts for annual contributions limited to \$20,000,000 over a period of substantially three years.

**CAPITAL GRANTS:**

Upon request of a local housing agency approved by the United States Authority, a rather involved system of capital grants may be substituted for annual contributions to assure low rents. The Authority's capital grant may not exceed 25% of the project's cost. In addition, the President may allocate to the Authority from unemployment relief funds an additional grant to be expended for labor on the development. This additional grant may not exceed 15% of cost. No federal capital grant may be made unless the state or local governments make a grant of 20%. This local grant may be in the form of cash, land, or the capitalized value of community facilities, tax remissions or tax exemptions.

Federal capital grants are limited to \$30,000,000 during a period of substantially three years.

**LOCAL ANNUAL CONTRIBUTIONS:**

The Authority may make no annual contributions to supplement rents unless the state or local governments shall contribute "in the form of cash or tax remissions, general or special, or tax exemptions, at least 20 per centum of the annual contributions herein provided."

**EXISTING PROJECTS:**

The President may transfer to the Authority any right or title held by an agency of the federal government in any housing or slum clearance project. He may also transfer any of the assets, records, libraries, materials, and any unexpended balances of funds allocated to such agencies for housing or slum clearance activities, or any employes engaged in such work. Subject to the provisions of this act, the Authority may continue any or all activities undertaken in connection with projects so transferred.

Projects transferred or acquired by the Authority shall be sold or leased "as soon as practicable." Sale may be only to state or local housing authorities. After sale a project shall be eligible for loans, grants or annual contributions. Sale price shall be not less than a fair value of the project for low-rent housing purposes less depreciation.

**LOW RENTS:**

The Authority has broad powers to assure the low-rent character of projects financed by it. These include the right, upon substantial breach of agreement to maintain low rents, to raise the interest rate on loans, or to declare the unpaid principal due at once, or to terminate annual contributions.

Furthermore, the Authority is under a triple limitation on construction costs. (a) Projects may "not be of elaborate or expensive design or materials"; (b) The average construction cost per dwelling unit in any project may not exceed the average cost of units privately produced in the same locality under building laws applicable to the housing project and under similar labor standards; (c) In addition, in cities under 500,000 construction cost may not exceed \$4,000 per dwelling unit or \$1,000 per room. In larger cities the figures are \$5,000 per family unit and \$1,250 per room. These cost figures exclude land, demolition costs and non-dwelling facilities, which are site development, improvements and facilities located outside building walls.

**SLUM CLEARANCE:**

Projects subsidized by the Authority must include the demolition and effective closing or the compulsory repair and improvement of unsafe and insanitary dwellings substantially equal in number to the units to be constructed. The Authority, however, may defer this elimination under conditions of acute shortage.



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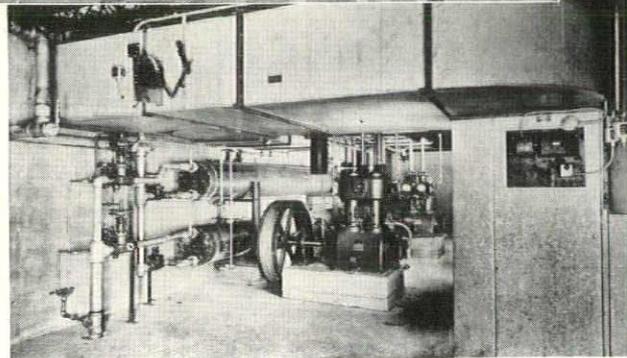
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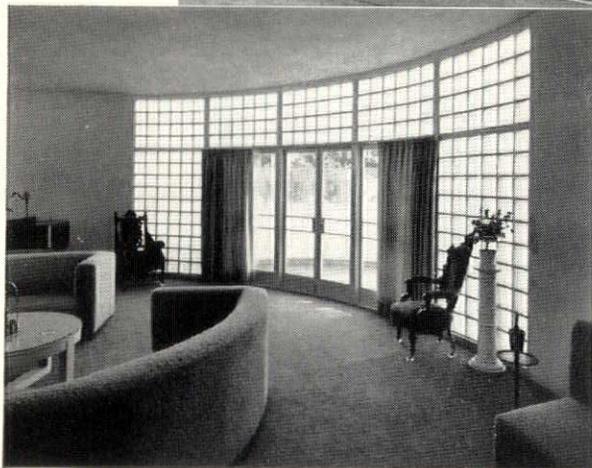
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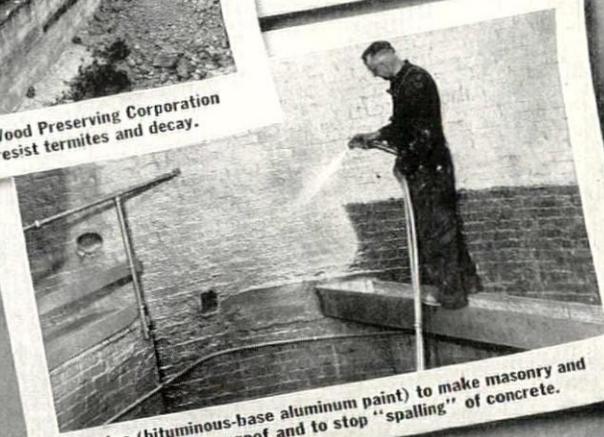
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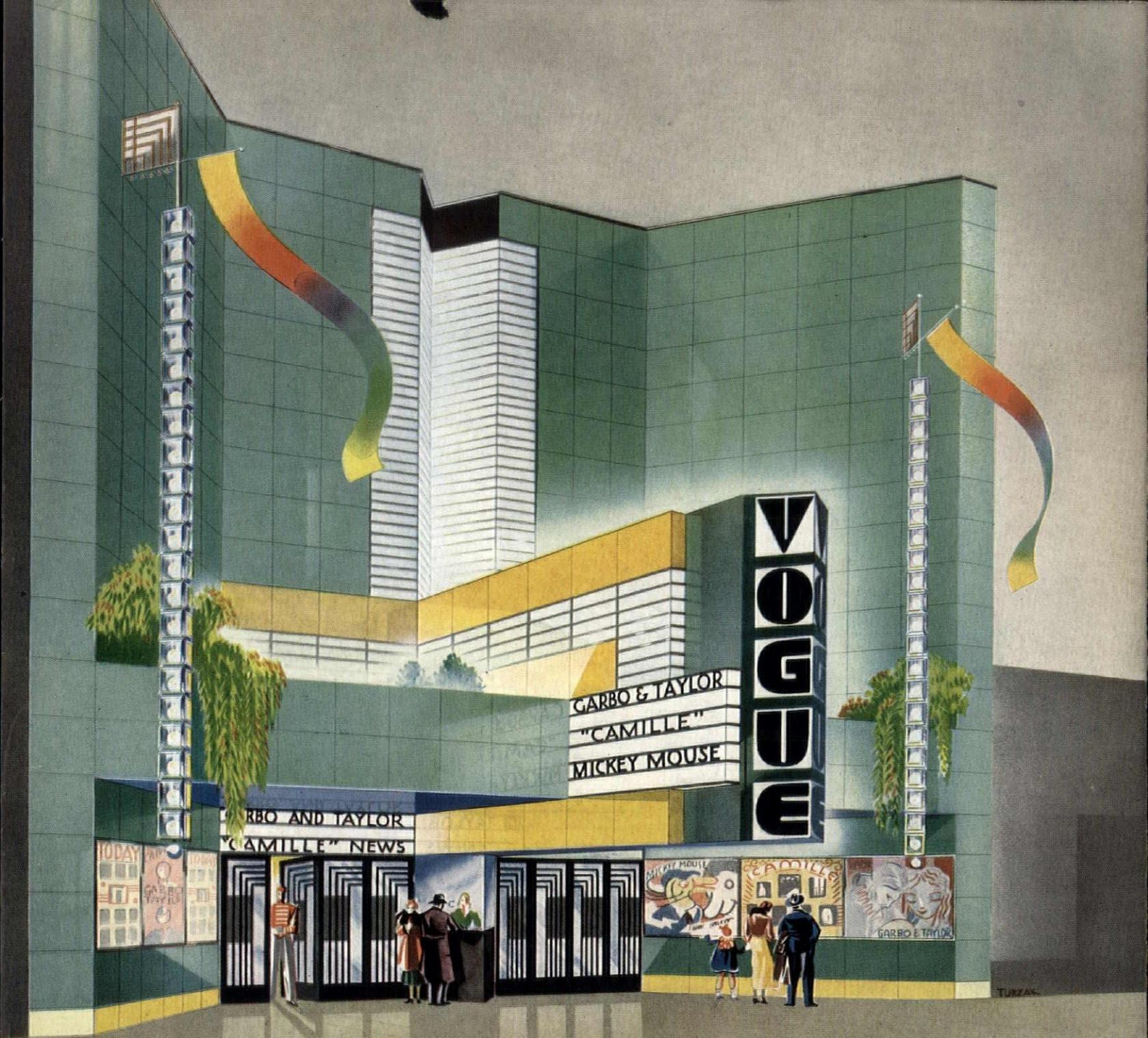
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Lumino (bituminous-base aluminum paint) to make masonry and concrete dampproof and to stop "spalling" of concrete.



DESIGNED FOR AND BUILT WITH *Vitrolite*

**L·O·F** We illustrate one of many new building types for which Vitrolite is especially adaptable. Vitrolite is the ideal material for new, modern construction and for transforming old fronts and interiors as well. Quickly and easily installed, its wide range of colors, adaptability to modern design and ease of cleaning are obvious reasons for a growing popularity. The luminous sections in the project illustrated are of Vitrolux—the new color-fused, tempered plate glass. With concealed lighting, Vitrolux gives a beautifully diffused soft light. Because of its wide range of colors, it may be used as an important element in the design or as a source of modern illumination. Consider Vitrolite and Vitrolux for any new construction or remodelling projects now on your boards. We will be

happy to furnish construction details and cooperate fully with you. Name of nearest representative sent upon request. Libbey-Owens-Ford Glass Company, 1306 Nicholas Building, Toledo, Ohio. (Member of Producers' Council.)

*Make certain your Vitrolite installation is made by an authorized L·O·F dealer*

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*Colorful Structural Glass*



For windows, specify L·O·F quality glass. For interiors, mirrors of L·O·F polished glass, clear or in colors, offer unlimited architectural possibilities.



How inset wood molding, as used above, is applied over beveled recessed edges of Celotex panels. The moldings cover all joints—at the same time complete the Neo Classic design.

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