AMERICAN ARCHITECT and ARCHITECTURE

OCTOBER 1936 • GREENBELT TOWNS • JERUSALEM MUSEUM

Residence at Syracuse, New York, designed by Dwight James Baum, Architect, Riverdale-on-Hudson, New York City, showing use of Anaconda *Economy* Copper Roofing.

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A PREFERRED roofing material for centuries, sheet copper has now been adapted especially for residential construction. This new product, Anaconda *Economy* Copper Roofing, is lighter in weight (10 ounces per square foot) and is furnished in narrower sheets which provide a space of but 13¾ inches between standing seams. This reduced width is more in keeping with residential lines, and gives the 10-ounce copper approximately the same rigidity and wind resistance as wider, heavier, more expensive material.

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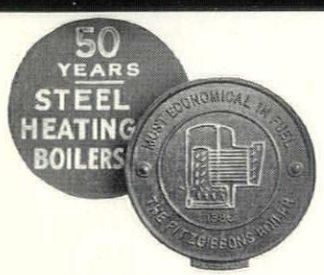

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American Architect and Architecture, published monthly by Hearst Magazines Inc., 572 Madison Avenue, New York, N. Y. $3.00 per year; Canada, $4.00; Foreign, $5.00. Entered as second class matter April 5th, 1926, at the Post Office at New York, N. Y., under the act of March 3rd, 1879. Issue 2650, dated October, 1936.

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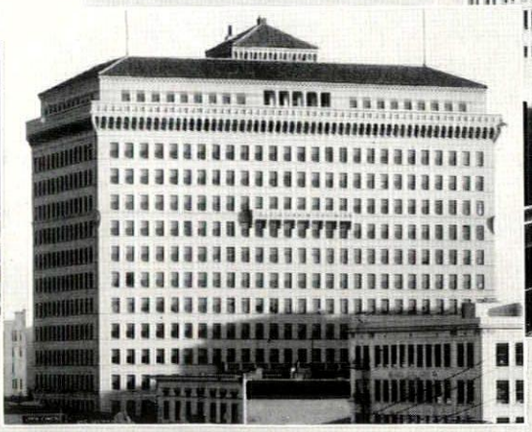
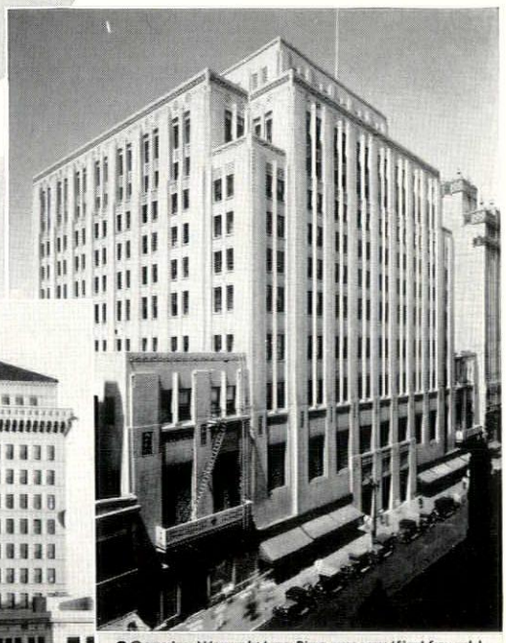
Examples by JOHN PARKINSON & DONALD B. PARKINSON

Los Angeles Architects

● Genuine Wrought Iron Pipe was specified for cold water, drinking water, exposed waste lines, vents, drains above basement, fire lines and gas piping; also heating supply lines and water and oil lines in heating system in Southern California Telephone Co. Executive Building, Los Angeles.

● Genuine Wrought Iron Pipe was specified for the cold water, fire and exposed waste lines, vents, drains above ground, gas and compressed air lines; also for heating supply and returns and refrigeration piping in the John D. Spreckels Building, San Diego.





● Genuine Wrought Iron Pipe was specified for cold water and drinking water lines, soil and drain piping above basement, standpipes, vents, gas, liquid soap, air compressor piping and heating supply lines in the Title Insurance Building, Los Angeles.

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AMERICAN ARCHITECT and ARCHITECTURE

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Vol. CXLIX No. 2650

AMERICAN ARCHITECT (Trade-Mark Reg. U. S. Patent Office), with which is combined ARCHITECTURE (Reg. U. S. Patent Office). Published monthly by Hearst Magazines, Inc., 572 Madison Avenue, New York. Other Offices: 919 N. Michigan Avenue, Chicago; General Motors Bldg., Detroit; 132 Newbury Street, Boston. William Randolph Hearst, President; Richard E. Berlin, Executive Vice President; John Randolph Hearst, Vice President; Earle H. McHugh, Vice President; R. F. Gardner, Vice President; T. W. Towler, Vice President; W. R. Peters, Treasurer; Arthur S. Moore, Secretary.

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Single copies, $1.00. Subscription: United States and Possessions, $3.00 per year; Canada, $4.00; Foreign, $5.00. Entered as second class matter, April 5, 1926, at Post Office, New York, under Act of March 3, 1879.

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TRENDS

NEWS • EVENTS • FACTS • FACES • IDEAS • OPINIONS • COMMENTS

PHOTO: PICTURES, INC.

Workmen putting the finishing touches to a model of the 1937 Paris Exposition. The redesigned site of the former Trocadero is shown in the left of the picture. It is on a direct axis across the Seine from the Eiffel Tower

Civic Pride and PWA

The great American public has been only lukewarm about the question of housing. Despite appeals that sometimes reached fervent heights Mr. John Doe and Mr. Amos P. Public have persisted in their "so-what" attitude about any and all forms of low-cost home building. Realizing this apathy the Public Works Administration today is planning a new type of promotional effort, intended to awaken US citizenry from its housing lethargy and to make local bigwigs swell with pride.

If PWA's plan is approved there soon will be loosed a flood of educational publicity aimed directly at civic pride. Now the federal government will play second fiddle, while individual cities assume the responsibility for slum clearance and low-cost housing. Any city desiring elimination of slums, and replacement with modern economical housing for low-income groups, will promote the project itself through a municipal housing authority.

Under the terms of this new plan, the city will be required to lend money to the municipal housing authority or else make an outright grant. The loan, placed at fifteen per cent of the total, will then be augmented by a grant and loan from the federal government. Big difference is that the city will have to take the initiative.

The reasons for this shift in PWA policy are not hard to see. In the first place PWA feels a definite need for stimulating local interest in all of its projects, and an equally pressing need for suppressing or eliminating much of the local criticism of and resistance to federal housing projects. Besides, this new method carefully steers clear of any possible charges of "government interference."

For the most part, however, the outstanding difference between the new and old plans is that now PWA will furnish an even greater share of the money. Originally, grants and loans for low-cost housing projects promoted by municipal authorities amounted to approximately fifty per cent. The currently considered plan calls for about fifty per cent as a grant and the remainder, except for the locally furnished fifteen per cent, as a loan.

From a selling standpoint PWA's new plan is far superior to the old. For the past two years federal agencies have been publicizing the question of housing on a national scale. Now these problems will be brought down to local conditions. Publicity will be written for individual cities. The citizenry will read not about America's housing problems, but about those of Jonesville and Cypress City. And the almost inevitable will happen. Up will go civic pride, and low-cost housing will prosper.

Just how seriously PWA is taking this plan can be seen by the fact that personnel is being added to the publicity section even while other divisions take drastic reductions. It can be almost taken for granted that there will soon be a campaign of publicity advocating the necessity of a permanent Housing Commission similar to that proposed in the Wagner Bill.

Behind all of this contemplated ballyhoo, however, is the realization that the PWA housing program has at least partially failed to come up to expectations. Grant and loan projects have been something of a disappointment. PWA has been denied the right to condemn property when acquiring land for low-cost housing. Special legislation, necessary in some states, has not been passed. Most of all, not one of PWA's completed projects has been built to rent at the figures planned. Even the Limited Dividend Corporation program, PWA's white hope, turned out to be a fiasco. Here the original plan was that a private person would put up fifteen per cent of the total cost of a project, and the federal government would finance the remainder. So popular was this proposal that *722* applications were received. Five were approved.

In the last few months PWA has "played down" its desire to re-house the country's needy. According to the most recent information, PWA is building "demonstration projects." Doubtless this will be their description of work until the new plan, with its localized appeal, is put in practice.

Rent Ratio

One of the classic myths of our times is that 20 to 25 per cent of income should be spent for rent. Careful economists and budgeteers figured out this proportion, and they are about the only persons who believed in its practicability, although most of America's heads of families in the low-income brackets have long been trying to live within this figure. Last month, FHA, destroyer of many a popular legend, proved by graph and chart that the "one-fourth for rent" theory is honored more in the breach than in the observance.

Actual findings of FHA, after checking data from 150,000 tenant families, were that the average rental expenditure increases regularly with the income level, although the increase is not proportionate. Thus, tenants earning $2,000 may spend 25 per cent for rent, while those earning $4,000 annually spend only 15 per cent. On the other hand, tenants who earn a mere $1,000 pay 30 per cent.

From these figures FHA was able to draw numerous conclusions applicable to mortgage practice. Most important single observation was that: "the level of rental expenditure will vary with

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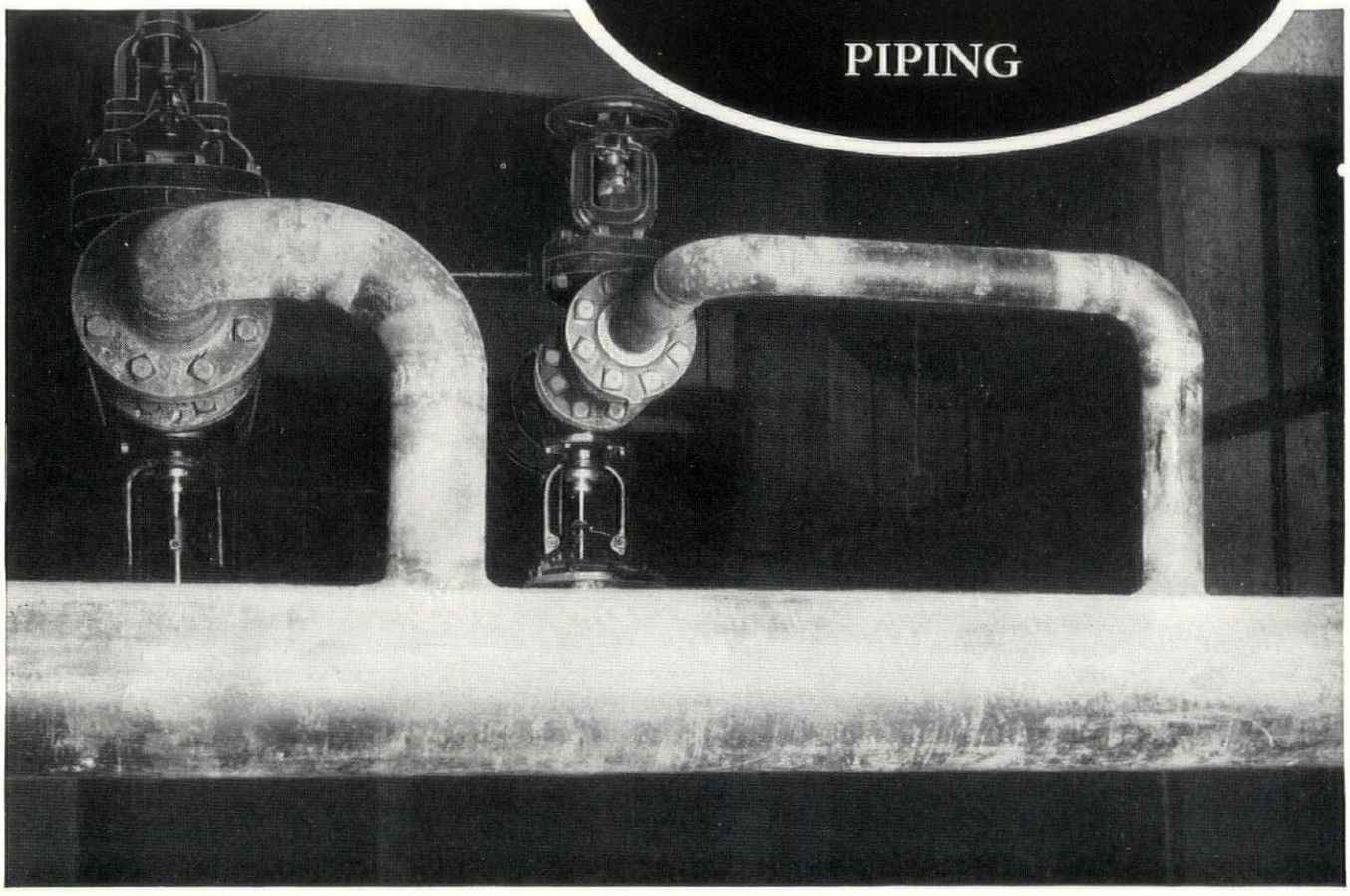

OXY-ACETYLENE welding is being specified for piping installations in more modern buildings every year. This method of installation makes piping easier for you to design and assures your client a system that will be "jointless" and *leakproof for the life of the pipe.* The welds have the full strength of the pipe, take up less space, look neater and involve no additional cost or time for construction. Pipe of all sizes and of any metal can be welded.

Linde engineers have prepared technical data especially for those interested in designing and specifying "Piping Joined by Oxy-Acetylene Welding". Ask the Linde Office in your city for complete details before writing specifications. The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and Principal Cities.

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each income group and will be in the 20 to 25 per cent range only for the slender income brackets. Thus if the head of the family earns $1,000 it is quite proper for him to pay 25 per cent. But if the man of $5,000 income contracts to pay 25 per cent of his income, he must lower his standard of living or fall delinquent in his payment."

Better Housing Society

Right now a good many architects all over the east are talking about The American Society of Better Housing. For last month this new Society, an outgrowth of Small House Associates, put on display in five commuting areas outside of Manhattan fifteen completed homes, each a different style of architecture.

Interested in the program are twenty-one members of the New York Chapter of the American Institute of Architects who have been at work on the design of these houses for six months. In addition to the fifteen homes already on display in Chatham, N. J., Hartsdale, N. Y., Crestwood, N. Y., Amityville, L. I., and Massapequa, L. I., the Society lists seventeen more homes in its "Handbook of Homes," now going to press, which are suitable for construction in the east.

Houses displayed in the handbook range in price from $5,000 to $15,000 and in size from five to eight rooms. In each instance the Society has listed the architectural style, given a description and floor plan. Also included are the monthly carrying charges which range from $35 to $100 inclusive of the plot. Each house features modern insulation, air conditioning, compact and efficient kitchens, and the latest types of heating.

Endorsed by the New York Chapter of the A. I. A., the group's avowed purpose is to "awaken a public demand for better architecture and better standards of construction, by making readily available comprehensive data on methods, materials, treatments, practices, opinions and service which are economically, sociologically and aesthetically sound." To this end the Society has sought and secured the co-operation of decorators, landscape architects, manufacturers of building materials and others in professions related to the building industry. Twelve manufacturers of building equipment were invited by the Society to participate in its plan of housing construction. They are: The General Electric Co.; Anaconda Copper Co.; Unique Window Balance Co.; Johns-Manville Co.; American Radiator Co.; Minneapolis-Honeywell Regulator Co.; American Brass Co.; American Stove Co.; Devoe and Raynolds Co.; Automatic Burner Corp., etc.

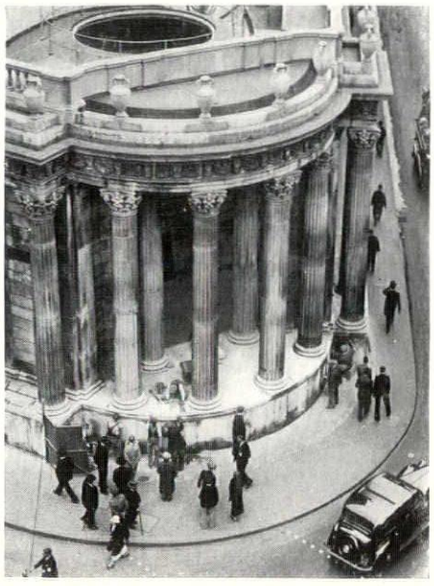


PHOTO: ACME

A historic strip of pavement at the Tivoli corner of the Bank of England has been presented to the City of London by the Bank

Members of the Society include: Lewis Delano Adams, T. Merrill Prentice, Will Rice Amon, Wesley S. Bessell, Henry Otis Chapman, Jr., Harold W. Beder, S. Merrel Clement, Charles Fuller, Edward M. Forbes, Almus Pratt Evans, Lawrence Moore, Frederick J. Woodbridge, William Platt, Geoffrey Platt, Alfred Easton Poor, Edgar I. Williams, J. Floyd Yewell, Harvey Stevenson, Eastman Studds, Harrison Gill, Randolph Evans and Carl F. Grieshaber.

British Resettlement

Dr. Rexford Guy Tugwell, head man of the Resettlement Administration, must have experienced a very pleasant feeling of satisfaction last month when the British government took its first step toward constructing the English equivalent of this country's "Tugwelltown." Even though the British projects will be called trading estates, the similarity is easily recognizable.

This first government financed trading estate in British history will be built on a 700 acre plot in the Team Valley, Gateshead, a short distance from Newcastle in northeastern England. It is estimated that the project will cost about 65,000 pounds.

In the immediate future houses will be built for the workers and modern factories will be constructed and in operation early next year. Power and transport facilities are available in abundance.

Recognized purpose of the trading estates is not merely to help the workers employed, but to completely rehabilitate distressed areas. The Team Valley, despite its fundamentally good economic situation, has been almost nonproductive for a number of years, although recently there has been a slight revival of coal, iron and steel shipping along the adjacent northeastern coast. Backers of the new trading estate point out that there is a market of 16,500,000 people within 125 miles of Newcastle that might easily be supplied by the factories to be constructed as part of the project. Backers also look to the government for rearmament orders.

The Team Valley Trading Estate marks the first time that funds supplied by the British Treasury have been left in the hands of a board of private capitalists—the North Eastern Trading Estates, Ltd., a public company limited by guarantee without share capital.

Hessian Hills Houses

Sponsored by persons interested in the Hessian Hills School, one of the outstanding experimental schools in the east, a novel residential building project, designed on a non-profit basis, is now under way in Croton-on-Hudson, New York. Four model houses are being constructed in the northern part of the village. Harvey Stevenson and Eastman Studds are the architects.

Surrounded by an acre of ground, each house will be air-conditioned and have every new type of convenience and layout which modern architecture has devised. Each house, also, will be of different size, with six, seven, or eight rooms. One of the homes will be completely decorated by the Hearn Department Store of New York, as a model of modern decorative planning and budgeting.

Should this project in community building meet with favor, more houses will be constructed in the same section.

Comparative Construction Cost

One of the most interesting current indices of construction costs is the Federal Home Loan Bank Board's standardized house. A typical $6,000, six room home of about 24,000 cubic feet has been theoretically set up as the standard. Each month the Board's representatives in a large number of cities compute the costs of building this house in their own territories.

The house is not figured complete for occupancy. It includes all fundamental elements—attached one car garage, an unfinished cellar and attic, complete insulation, and all essential plumbing.

The Old Virginia Map of the Jefferson Brick Trail

[How to follow it and something about where it will lead you both to and from]

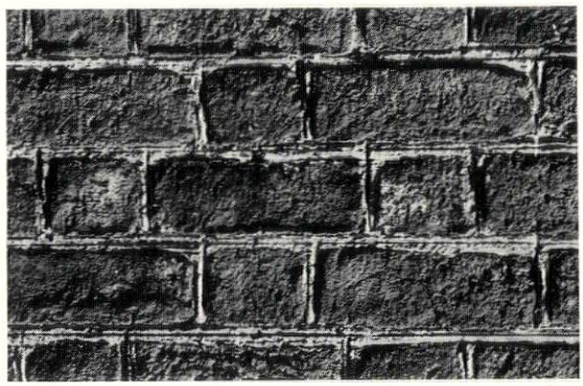
Have you when motoring down here in our Old Virginy, ever taken the Jefferson brick trail? If you haven't happened to, this will interest you. If you have, you will be a tolerable lot more interested. Which last remark is based on the pretty well accepted fact, that most of us like to talk about something we know something about. There are mighty few of us, if my observings are right, but like to be a bit knowing. But let's get-to-go on the Jefferson Brick Trail.

Don't know as you can get a map of it at a filling station, but I know where you can. The Trail goes zigzagging over pretty much all Virginia, wherever Jefferson had a hand at architecting. Has its start at Monticello where he had all the bricks made for his "little mountain" home, and scrutinized the batches to see they were true-enough Jeffersons.

Expect, however, that like enough he had to leave now and again, in the thirty years he was building Monticello. Least-wise history has a way of hinting some such. Absences for making Declaration of Independence, and the like.

'Tother day was up to Monticello and got the notion of running down from there to Poplar Forest near Lynchburg, Jefferson's retreat home. You'll recall it was one of the acquirements he got besides a wife, when he married. That is to say, the land was. As you know so well, he designed and built Poplar Forest. Octagon shaped at that.

Although Mr. Jefferson was a sure enough square-shooter, when it came to statesmanship, he never built squarish. But he sure enough made his bricks thataway. Square headers, every one of them.



You have observed that there are a lot of folks who are always just a little bit smarter than anyone else. There were several such in Virginia in Jefferson's time. They took a liking to his square headers —the reasons are plain enough. But they had it figured out, that if you made the ends of a brick higher, you ought to make the sides longer, which a passel of them did. Just natcherly such bricks were plum where they started.

It accounts for many of our bricks in the early houses down here being pretty much any old length. Sort of the result of having so much wisdom you ain't wise.

Along with this am enclosing a photo of a shot I took of a Poplar Forest wall. There isn't a doubt that those headers are square, or that the length of the brick comes right close to being our standard measurement today. And being hand made, they have a powerful amount of texture, due however, mostly to the kind of clay they had down around there.

The fact that you almost can't find any other Jefferson brick, so kinder seamy like, points to his feeling the ones at Monticello are his idea of what bricks ought to be. Feeling as how Mr. Jefferson had a way of being right, we started quite a spell back, making his kind of brick. About the only difference in his and ours is, his have *grown old* and ours are *born old*. Saying it another way, they are *time-toned*, same as are our regular standard size Old Virginians. Both of them we make in either mould-mades or hand-mades.

Next time I get to writing, may have something interesting to say about Holland brick. Those that are, and those supposed to be. But make no promise. You might hold me to it.

HENRY GARDEN
Brick Maker for
OLD VIRGINIA BRICK CO.
with Mr. Jefferson as a Guide

P. S. If you would really like to follow the Jefferson Brick Trail, say so. We'll send you a copy of a contrapshun I made for Dwight James Baum, even if he did get lost using it. Write for it yourself. Tain't a job for your freckle-faced office boy.

OLD VIRGINIA BRICK

Old Virginia Brick Company
Salem, Virginia

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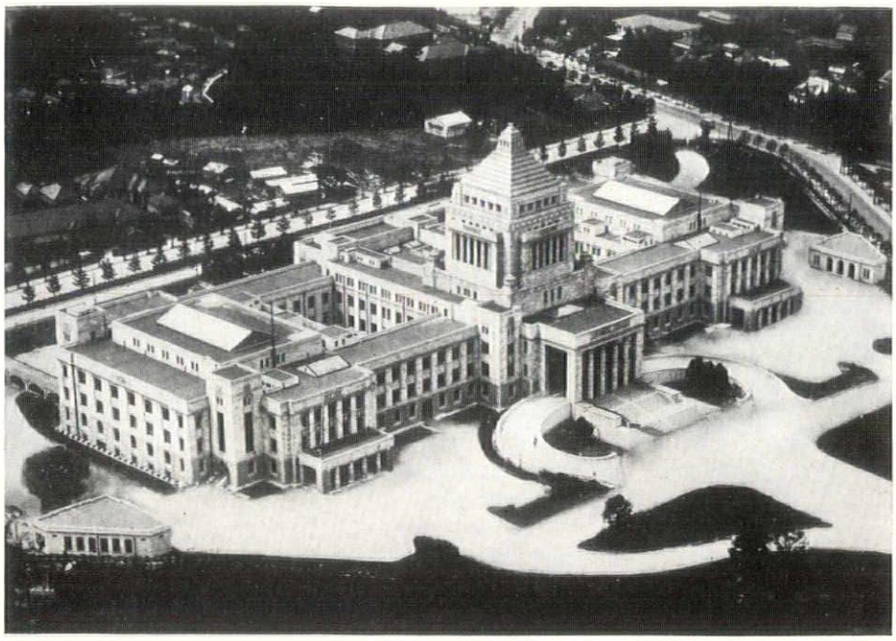


PHOTO: S. KIUCHI

It has taken nineteen years and thirty million yen to complete the new Japanese Imperial Diet Building which will be dedicated at the opening of the 70th Diet Session in December

lighting and heating equipment. The cost, however, does not include wall paper, or wall decorative finishes, lighting fixtures, refrigerator, water heater, ranges, screens, or window shades. Neither are finance costs or architects' fees included.

Figuring on the basis of this theoretical house it is interesting primarily to note the large variation for various sections of the country. The July-August figures from 50 widely separated localities vary from $6,628 in Chicago to $4,690 for Columbia, S. C.—a difference of $1938 or 41.3 per cent. Most of this divergence, according to FHLB, can be accounted for by variable labor rates. Listed below are the reports from a few localities selected at random:

JULY-AUGUST FIGURES—IDENTICAL HOUSE	
Chicago	$6628 or 27.6c a cu. ft.
Great Falls, Mont.	6554 or 27.3c a cu. ft.
Des Moines	6053 or 25.2c a cu. ft.
St. Louis	5915 or 24.6c a cu. ft.
Denver	5842 or 24.3c a cu. ft.
White Plains	5775 or 24.1c a cu. ft.
Boston	5732 or 23.9c a cu. ft.
Buffalo	5690 or 23.7c a cu. ft.
Spokane	5760 or 24. c a cu. ft.
Syracuse	5526 or 23. c a cu. ft.
Grand Rapids	5171 or 21.5c a cu. ft.
Camden, N. J.	5073 or 21.6c a cu. ft.
Baltimore, Md.	4910 or 20.5c a cu. ft.
Roanoke, Md.	4843 or 20.2c a cu. ft.
Columbia, S. C.	4690 or 19.5c a cu. ft.

Building Increase in August

Taking the value of permits issued as a measuring stick, the building industry continued to show substantial increases in August as compared with August a year ago, although a slight decline, unseasonal in character, was registered from the July totals. The total value of permits in August for the 215 cities reporting to Dun & Bradstreet, Inc. was $83,109,753, a decrease of 12.8 per cent from the $95,281,845 reported in July, but an increase of 49.6 per cent over the $55,536,546 recorded in August, 1935.

For New York City alone, the permit valuations amounted to $12,095,174, as compared with $20,745,393 in July and $12,193,007 for August last year. This represents a percentage decline of 41.7 and 0.8 respectively. The August total was the lowest recorded in New York City since last February.

In the 214 cities outside, the August volume showed the very respectable total of $71,014,579, compared with $74,536,452 in the preceding month, a loss of 4.7 per cent. On the other hand, this year's August total was a gain of 63.8 per cent over the $43,343,539 recorded in the same month of 1935.

Listed below are the group totals of building permit values for the 215 cities for August, this year and last, together with percentage changes:

Groups:	August 1936	August 1935	Change P. Ct.
New England	$ 5,021,489	$ 3,975,334	+ 26.3
Middle Atlantic	21,883,934	17,552,128	+ 24.7
South Atlantic	9,562,930	6,146,998	+ 55.6
East Central	16,222,253	9,336,527	+ 73.8
South Central	8,522,756	6,543,440	+ 30.2
West Central	4,387,442	2,908,381	+ 50.9
Mountain	3,476,508	769,249	+352.0
Pacific	14,032,441	8,304,489	+ 69.0
Total U. S.	$83,109,753	$55,536,546	+ 49.6
New York City	$12,095,174	$12,193,007	— 0.8
Outside N. Y. C.	$71,014,579	$43,343,539	+ 63.8

This consistent increase in permit valuations in each month of this year, as compared with the corresponding months of last year, has lifted the total volume for the first eight months of 1936 to $642,035,183 as against $362,972,432 for the same period of 1935, or a gain of 76.9 per cent. Every section of the country has shared in the general increase. The eight months' record of building permits for 1936 and 1935, for the 215 cities, as compiled by Dun & Bradstreet, Inc., is shown below:

Groups	Eight Months 1936	Eight Months 1935	Change P. Ct.
New England	$ 34,533,025	$ 23,658,088	+ 46.0
Middle Atlantic	210,443,691	115,596,721	+ 82.1
South Atlantic	70,545,012	40,818,203	+ 72.8
East Central	113,724,464	57,120,127	+ 99.1
South Central	70,367,243	35,180,007	+100.0
West Central	28,948,448	22,541,120	+ 28.4
Mountain	14,162,404	7,419,949	+ 90.9
Pacific	99,310,896	60,638,217	+ 63.8
Total U. S.	$642,035,183	$362,972,432	+ 76.9
New York City	$144,102,397	$ 83,599,826	+ 36.5
Outside N. Y. C.	$497,932,786	$279,372,606	+ 78.2

The building permit totals for the 215 cities for August and the first eight months of each of the past 10 years, follows:

	August	Eight Months	Year
1936	$ 83,109,753	$ 642,035,183	+76.9
1935	55,536,546	362,972,432	+54.6
1934	34,452,738	235,736,911	+16.5
1933	32,391,868	202,297,272	—30.3
1932	27,565,795	290,163,235	—67.7
1931	96,431,866	897,258,514	—23.9
1930	132,470,702	1,178,723,146	—47.1
1929	211,926,287	2,226,651,326	— 5.8
1928	276,219,504	2,364,711,438	— 1.0
1927	312,344,946	2,389,126,285	.....

Last Laugh

There was a mild degree of snickering among builders when FHA announced that it had planned a four room bungalow, a four room two-story house, and a six room two-story house, costs of which would run from $2500 to $2900 exclusive of lots. All merriment to the contrary these houses, costing on an average of $500 a room, last month became actualities in Bethesda, Maryland, a suburb of Washington.

Built by the National Lumber Manufacturers Association as a demonstration of low-cost housing possibilities with standard materials and construction methods, these three houses were previewed late in September by government officials, builders, contractors, bankers, etc. The $500 a room house had arrived.

Princeton Municipal Improvement

Many a staid and stately Princeton alumnus had a rude shock one day last month when the announcement was given out that the Princeton Municipal Improvement, Inc. will undertake a $4,500,000 civic building project that will alter markedly the appearance of Princeton's historic Nassau Street. These same alumni breathed a sigh of relief, however, when the announcement made it clear that the "traditional architecture of the town as it was in its early days will be preserved."

Plans, drawn by Thomas Stapleton

(*Continued on page* 14)

VITROLITE *fronts strike a modern note*

FOR theatre fronts, lobbies, ticket booths, lounges, or washrooms, as well as for store fronts and interiors, Vitrolite, the colorful structural glass, brings eye-catching views that bring the crowd.

The 16 colors and hues of Vitrolite and the contrasting surface effects obtainable with sandblast and color inlay afford unlimited decorative scope. It is particularly effective with stainless bright metals and with copper or bronze.

From the standpoint of maintenance, its practical advantages are outstanding. The brilliant, lustrous beauty of Vitrolite is permanent; it never requires redecorating. Occasional wiping with a damp cloth maintains the sanitary and decorative values of its flint-like surface.

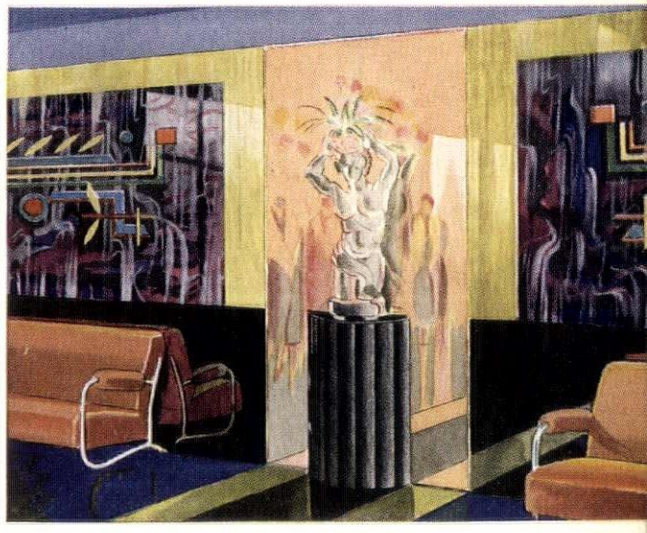
The ability of Vitrolite installations to increase patronage of theatres and stores has been decisively demonstrated throughout the country. Its ease and economy of installation on any secure surface makes it equally desirable for remodeling or new construction.

Our Vitrolite distributor will set up for you sample wall sections showing color combinations. Our engineering department will be glad to make Architectural sketches for any projects that are on your board.

For windows, specify L-O-F quality glass. For interiors, mirrors of L-O-F polished plate glass, clear or in colors, offer unlimited decorative architectural possibilities.

Vitrolite Division

LIBBEY · OWENS · FORD GLASS COMPANY



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Vitrolite Division, Libbey · Owens · Ford Glass Company
208 W. Washington St., Chicago G-10

Please send New Vitrolite Color Chart of 16 colors — 10 solid hues, 6 agate shades, and variety of surface effects — and your new literature for ☐ Construction Details ☐ Building Fronts.

Name.....

Address.....

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

QUEEN MAGGIE OF LURATANIA *rids self of* SCRATCHITUS*

"I've installed Venus Pencils in all my palaces," she cables — *collect.*

NOW another famous American product has been received regally in one of the lesser courts of Europe. Another triumph for democracy!

Her Royal Highness, Queen Maggie, as her beloved ignoramuses call her, searched the whole world over for gritless pencils, testing them in her own laboratories and now gives her Seal of Approval and royal warrant to Venus Pencils, made in far off Hoboken.

The Ceremony of Endorsement was an auspicious one (we had to donate 10 gross, but we dodged giving Maggie a suggested bejewelled platinum pencil). And our Emissary Extraordinary, Mr. Cohokus, delivered an oration about Venus Pencils, saying in part:

"Queen, you said a mouthful when you stated that 'Venus Pencils are smoothies'. They sure are gritless, Queen, — they never scratch."

The King, who looked on jealously and wanted to chisel in on the endorsing ceremony, was appeased by being given a Venus Pencil with an extra eraser.

*Scratchitus comes from using gritty pencils and causes jangled nerves, muttering and peeves. It wears you down before you realize it, so avoid ordinary pencils. Keep peppy by using only Venus Pencils.

for the best in colored pencils ask for VENUS COLORING — thin, strong, smooth.

VENUS

PENCILS 10¢

17 SHADES OF BLACK

• *This advertisement appears in Collier's and Time.*

If the advertisement at the left were addressed to you, instead of the general public, its approach would be different.

Architects and engineers don't need to be told about smoothness.

Accurate grading is the Venus Superiority that interests professional men. Every pencil in each of its 17 shades of black is always identical.

This uniformity—insured by costly processes and elaborate supervision—has won first place for Venus Pencils—the largest selling quality pencils in the world.

Venus Pencils are also made in Toronto, Canada, by the Venus Pencil Company, Ltd., and in London, England, by the Venus Pencil Company, Limited.

AMERICAN PENCIL CO. HOBOKEN, N. J.

IN SERVICE FOR 7 YEARS
at 375 Mosholu Parkway, Bronx, N. Y.

"OUR ELECTROLUX REFRIGERATORS ARE STILL IN FIRST-RATE CONDITION... STILL GIVING EFFICIENT, NOISELESS SERVICE"

J. BILLIG
REAL ESTATE and BUILDER
1282 SHAKESPEARE AVENUE
BRONX, NEW YORK

Telephone JEromie 6-5888

Northern Union Gas Company
310 East Kingsbridge Road
Bronx, New York Att: Mr. Merritt

Gentlemen:

I am more than glad to relate my experience with the gas refrigerator, for from the time I installed my first units -- about seven years ago -- I have had entire satisfaction with Electrolux. I now have approximately five hundred (500) gas refrigerators in my various properties, and my enthusiasm for the unique operation of Electrolux, "no moving parts to wear" is greater than ever. Let me say that if all equipment which goes into apartment houses could be as trouble-free as the gas refrigerator, owners and builders would certainly be relieved of much worry and expense. Very soon I intend to build a new 110-apartment building which, naturally, I plan also to equip with Electrolux.

My earliest buildings to be equipped with Electrolux are those at 375 Mosholu Pkway, 1490 and 1595 and 1601 Macombs Rd., 2141 Holland Ave., and 1282 Shakespeare Ave. - all in the Bronx; and at 10 Park Terrace East in Manhattan. And even the oldest of these refrigerators (now 6 and 7 years old) are still in first-rate condition; still giving tenants efficient, noiseless service;

No wonder I tell friends that as far as I'm concerned the most dependable, economical refrigerator on the market is the gas refrigerator.

Very truly yours,

J. Billig

JB:A

—writes J. Billig, New York Builder, who has installed 500 gas refrigerators in his various properties . . . and plans to equip a new 110-apartment building with Air-Cooled Servel Electrolux

"WHICH refrigerator has the lowest maintenance cost? Which refrigerator will give my tenants the utmost satisfaction—in silence and economy? Which refrigerator will continue to provide these advantages after long years of service?"

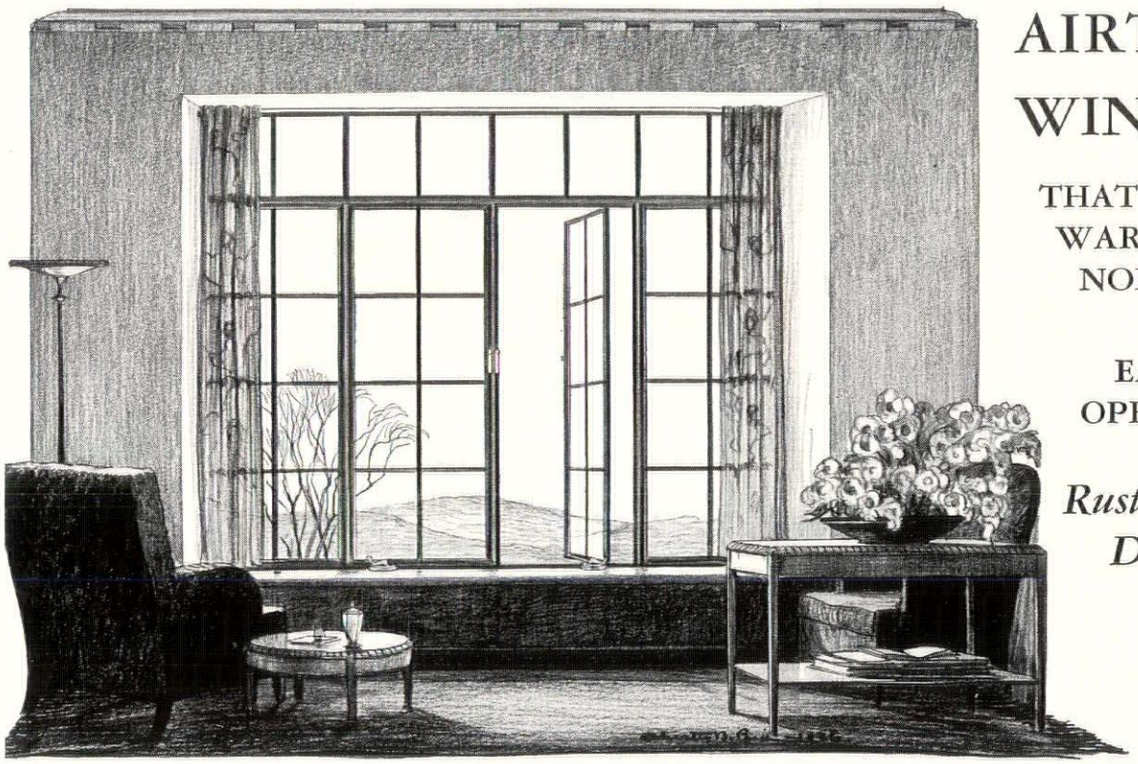
These are *three* important questions every builder and operator wants answered! Mr. Billig's letter, printed at left, answers them *all!* And his experience during 7 years with the long-life, money-saving performance of Servel Electrolux, the gas refrigerator, is *typical* of the experience of builders and operators the country over.

Today, in Greater New York alone, more than 129,000 Servel Electrolux refrigerators—from 5 to 9 years old—are still "on active duty" . . . still offering the same big maintenance and rental benefits they did when new!

Whether you are choosing refrigerators as new equipment, or to replace other types of refrigerators, it will pay you to get the *facts* about Servel Electrolux . . . to consider carefully the *proof*—based on actual "in service" performance—of the gas refrigerator's lasting efficiency and economy. The new models are on display at your local gas company showroom. See them. Ask any questions. Servel, Inc., Servel Electrolux Sales Division, Evansville, Indiana.

SERVEL ELECTROLUX
THE *Gas* REFRIGERATOR

NOW AVAILABLE
for Buildings of Moderate Cost



AIRTIGHT
WINDOWS

THAT DO NOT
WARP, STICK
NOR LEAK

•

EASILY
OPERATED

•

Rust
Dust
and
Rattle
Proof
PATENTED

FOR MORE THAN 20 YEARS GENERAL BRONZE CORPORATION HAS BUILT QUALITY WINDOWS OF RECOGNIZED SUPERIORITY FOR BUILDINGS OF MONUMENTAL TYPE

NOW GENERAL BRONZE OFFERS SUPERIOR WINDOWS
of STURDY CONSTRUCTION · · EASY OPERATION *and*
REMARKABLE WEATHER TIGHTNESS AT ATTRACTIVE PRICES

FOR HOMES, APARTMENTS AND OFFICE BUILDINGS OF MODERATE COST

PARTICULARLY DESIRABLE FOR AIR CONDITIONED BUILDINGS

GENERAL BRONZE CORPORATION
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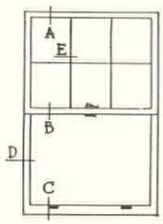
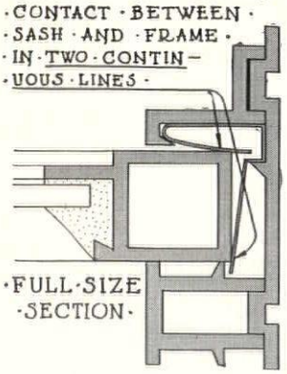
BRONZE *or* ALUMINUM

·DOUBLE·HUNG·

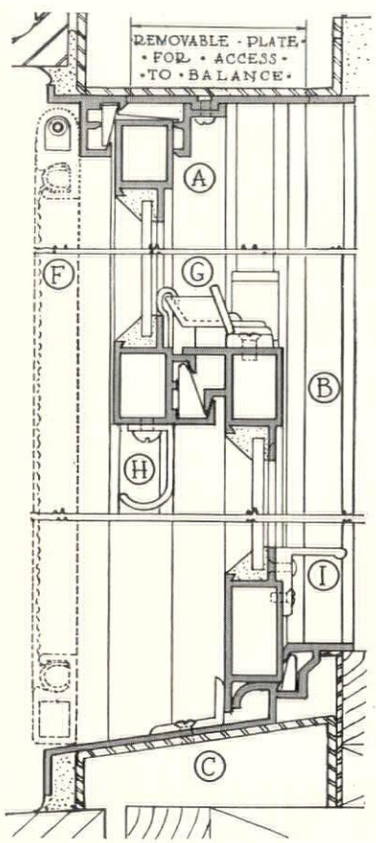


·A·HEAD·
·B·MEETING·RAIL·
·C·SILL·
·D·JAMB·
·E·MUNTIN·(optional)·
·F·SCREENS·(optional)·
·G·SASH·FASTENER·
·H·PULL·
·I·LIFT·

NOTE·TUBULAR·SECTIONS·GIVING·MAXIMUM·STRENGTH·AND·RESILIENT·NON·CORROSIVE·WEATHER·STRIPPING·POSITIVELY·SEALING·CONTACT·BETWEEN·SASH·AND·FRAME·IN·TWO·CONTINUOUS·LINES·



·FULL·SIZE·SECTION·



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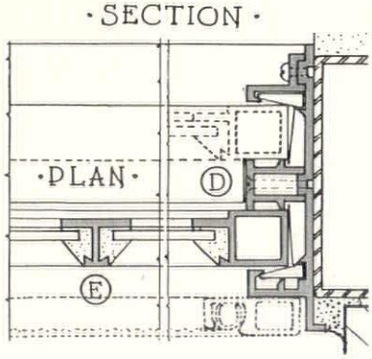

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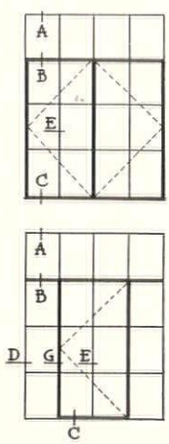
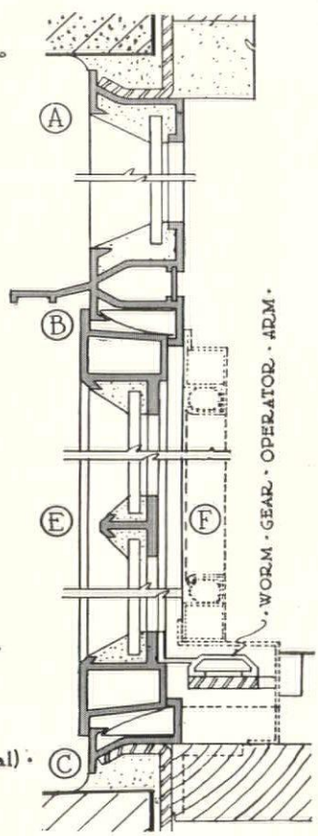


·A·HEAD·
·B·TRANSOM·BAR·
·C·SILL·
·D·JAMB·
·E·MUNTIN·
·F·SCREENS·(optional)·
·G·MULLION·



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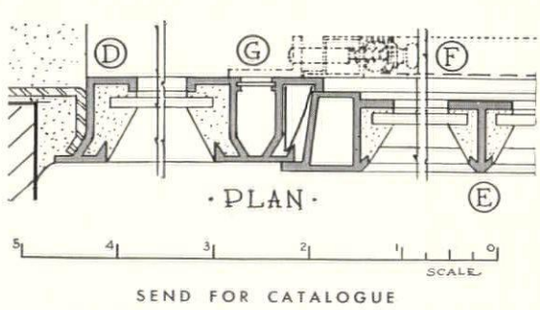

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ASK YOUR ARCHITECT'S OPINION OF THESE WINDOWS.

GENERAL BRONZE CORPORATION

34-19 TENTH STREET • LONG ISLAND CITY, N. Y.

TRENDS

NEWS • EVENTS • FACTS • FACES • IDEAS • OPINIONS • COMMENTS

(*Continued from page 8*)

New York City architect, call for the demolition of business buildings and apartments for 400 feet along Nassau Street between Baker Street and John Street, the clearing of an area of five acres north of these points, and the creation of a new civic center, with a theatre, hotel, power plant, public library, apartments and business buildings.

Backing the project as president of the Princeton Municipal Improvement, Inc. is Edgar Palmer, Princeton graduate of the class of 1903, who donated Princeton University's athletic stadium that bears his name. Nine years ago Mr. Palmer began acquiring the land and properties required to carry out the project. Early in September ground was broken for the first of the new buildings, the hotel, which will be known as Nassau Tavern. Among the historic buildings to be torn down will be the famous Nassau Inn, the original section of which was built in 1756.

As explained by Mr. Stapleton, the aims of the Princeton municipal improvement project are much the same as those which prompted the Rockefeller family in the restorations in Williamsburg, Va. The essential character of the development will be that of a small town square which has remained prosperous and conscious of tradition as time went on. Mr. Stapleton points out that by use of different materials and different colors, the project will avoid architectural monotony.

One of the most interesting treatments, according to Mr. Stapleton, will be that of the Nassau Tavern, which has been imagined as a small hostelry built in Revolutionary days. As Mr. Stapleton describes it: "The fictitious proprietor of this tavern has been assumed to have become prosperous and built an addition. This addition will be represented by a later style of architecture. Finally, in the eighteen-fifties, the owners of the tavern are supposed to have built a brick addition."

City Planning Report

When New York City's Mayor Fiorello H. LaGuardia went to work on the morning of September 14th, he found on his desk the long-awaited report of the Committee on City Planning. Thus was culminated a two year series of fact finding surveys inaugurated at the Mayor's suggestion as a possible means of guiding the future growth of America's largest city.

With the assistance of the Works Progress Administration the work began two years ago with a study of the uses to which the city's area of 200,000 acres is being put. From here the surveyors directed their efforts to a study of population trends, public works and public services, business and industry, and municipal financing. Housing, transportation, zoning and recreational facilities are covered in the 122 page report.

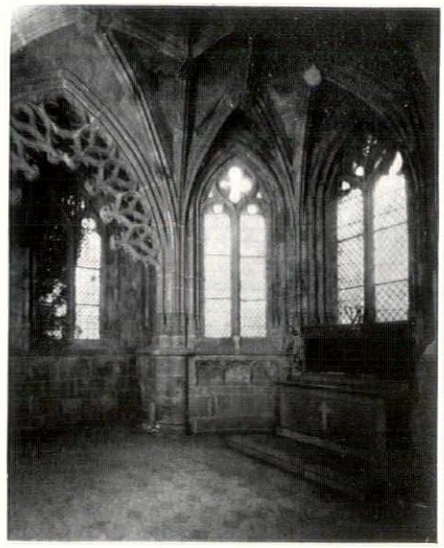


PHOTO: SWIFT NEWS PHOTO

A 15th Century apse from the ruined St. Hubert Chapel at Chauvery Le Chatel is to be a permanent loan to the Metropolitan Museum of Art from the French Government

First facts disclosed by the survey are that 60 per cent of the city's area is residential; 10 per cent is non-residential; 10 per cent is devoted to parks and cemeteries; and the remaining 20 per cent is entirely vacant. Surprisingly enough New York's world-wide reputation as the city of apartments is entirely unjustified in the report. The survey shows that about half its dwellings are single family houses. Manhattan, of course, has the smallest number of single family homes (1.7 per cent of the total). This type dwelling is naturally more numerous in the other boroughs.

In regard to the age of residential dwellings the committee finds that 77 per cent of the dwellings in Manhattan have been standing for 35 years or more. This percentage drops to 40 in Brooklyn, with the ratio for the entire city at 22.6. New construction (that during the last 10 years) comprises 32 per cent of the total.

Studying the rentals paid, the survey finds that the vast majority of the population is paying a rate within the range of from $19 to $60 per month. Only 8 per cent of the population pays less than $19 and an even smaller percentage pays more than $60. Families in this broad classification have incomes between $1200 and $3600.

Park acreage, according to the report, amounts to a meagre 8.6 per cent of the city's total area. Only 17,008 acres of the city's 200,000 are set aside for park use, and 2,000 of these, 12 per cent, have been converted into park lands since the beginning of Mayor LaGuardia's administration in 1934.

If federal aid continues to make funds available for this work, the Mayor's committee plans to capitalize on this newly gathered knowledge by making a preliminary city plan within the next twelve months. The present report, which merely presents findings of facts without conclusions or recommendations, gives city planners for the first time a large amount of information on the basic factors in the life of the city. The committee has drawn freely on the aid of the Port of New York Authority, the Regional Plan Association and other organizations that have volunteered their help.

Looking briefly toward the future the report estimates that in the next thirty years the city's population will be stabilized at about 9,227,000 inhabitants. Taking into account forthcoming shifts in population, it is expected by the committee that Brooklyn will have 3,327,000 residents, or about double the number that Manhattan is expected to have in 1965. The committee expects the Bronx to have 1,987,000 residents; Queens 1,900,000; Richmond, 335,000.

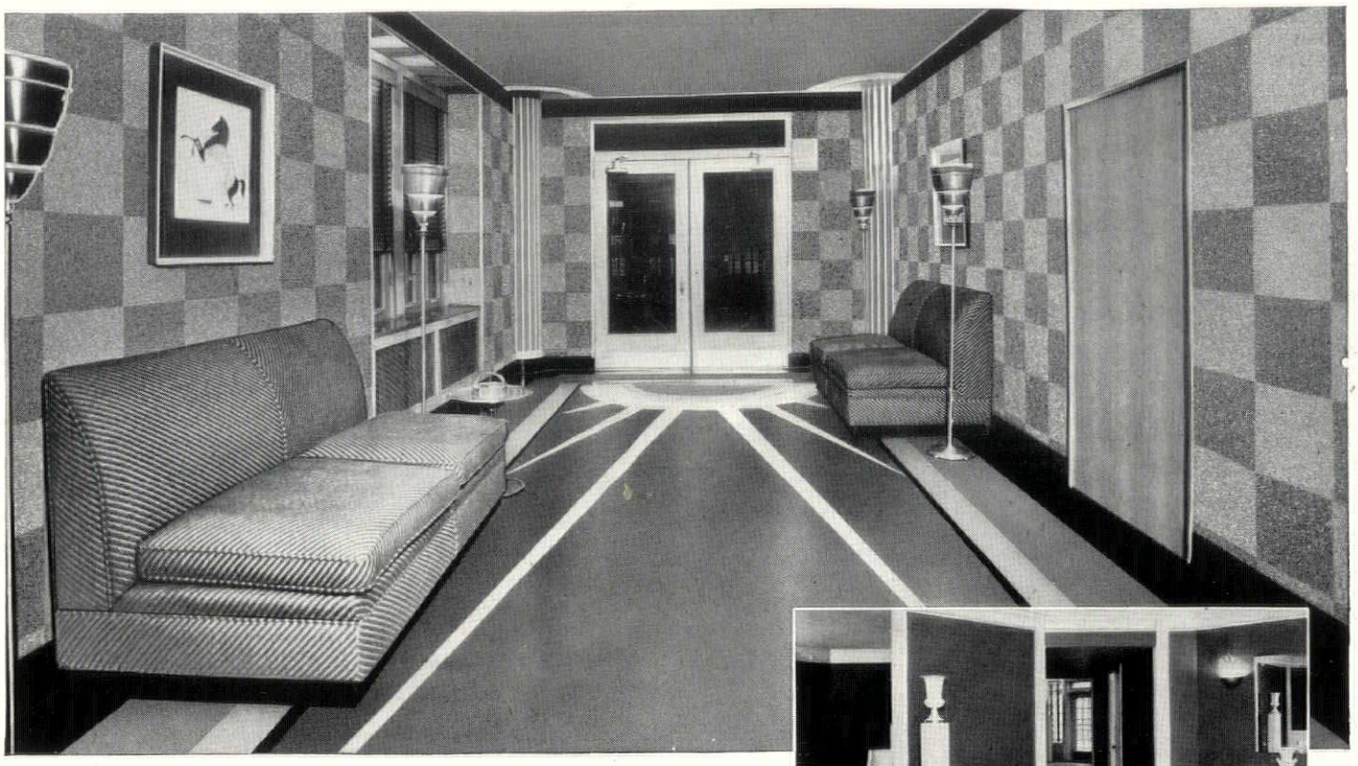
With these anticipated population increases and shifts, the committee feels that redistribution of the city's population on a scientific basis is one of the most important tasks confronting city planning. These preliminary studies have shown that the city could accommodate a much larger population than its present total if the population were distributed to equalize existing densities. Hand in hand with this reallocation, the committee believes, should go the planning of transportation facilities.

Bright Side

On the bright side of the tenement picture in New York City is the fact that since 1934 3,300 "old law" tenements have been vacated under orders of the Tenement House Department. On the dark side is the fact that there still remain some 50,000 such buildings.

Twenty-five years ago there were approximately 64,000 old-law (those dating back to before 1901) tenements. On an average, approximately 500 have been cleared each year. During this same 25 year period about 85,000 "new-law" tenements have been constructed—meaning that about two out of three families live in modern apartments.

HERE ARE FLOORS KEYED TO THE MODERN



Entrance Lobby of the Maple Terrace Apartments, Dallas, Texas. Floor is Armstrong's Linoleum in black, silver-gray, and terra cotta with inner border of black and field of egg-plant and yellow. Walls are Armstrong's Display Cork.

Lobby of the Greystone Apartments, St. Louis, Mo. Floor is Armstrong's Linoleum in egg-plant, white, and yellow. Architect—John F. Barlow.

CUSTOM-BUILT floors of Armstrong's Linoleum make it easy for you to provide an attractive individualized setting for any decorative scheme. The design possibilities of these linoleum floors are practically unlimited. Any decorative idea drawn on paper can be faithfully reproduced in the floor—every intricate detail trimly cut and tailored to fit with craftsmanlike perfection.

Armstrong's Linoleum Floors are modern in other ways, too. They're resilient—quiet and comfortable underfoot. They're simple to install. And once installed, they're long-wearing and inexpensive to maintain.

On your next floor job, you are invited to consult the Armstrong Architectural Service Bureau. The completeness of the Armstrong Line enables this bureau to give valuable, *unbiased* suggestions on the best type of floor for any interior. See Sweet's or write now, on your letterhead, for "Armstrong's Floors and Walls." 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

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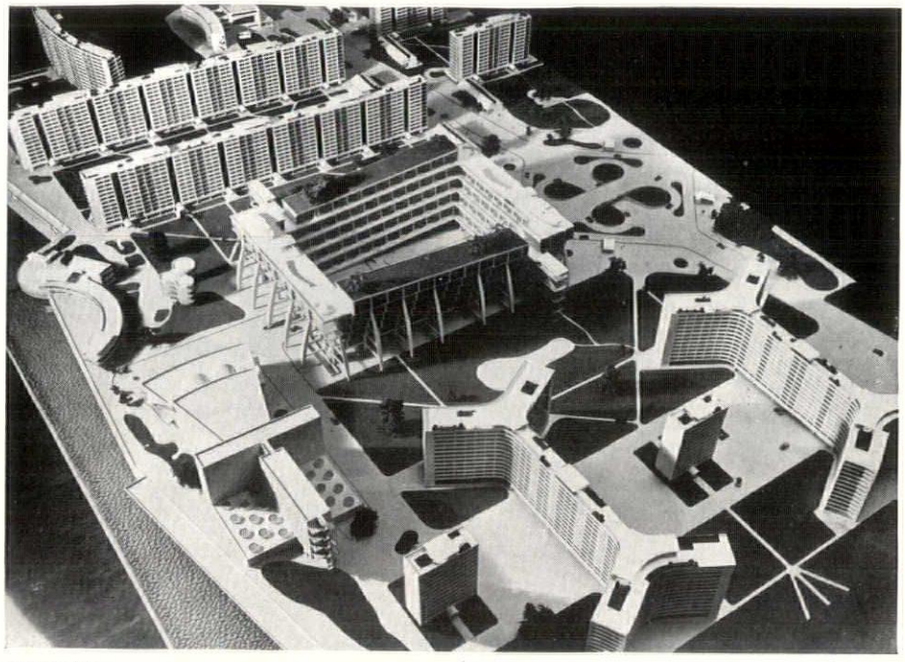


PHOTO: FOX

A model concrete city of the future designed by Marcel Breuer and F. R. S. Yorke was one of the novelties at a recent building exhibition in London

Swedish Housing Survey

In an attempt to bring more light to bear on the current American housing problem, the Federal Home Loan Bank Review has gone to considerable pains to analyze the successes and failures of foreign home-building systems. Most recent analysis made by the Review was of the Swedish solution to the urban housing problem.

Here it was found that Sweden, like Great Britain, Holland, and other European countries, used the dwelling shortage brought on by the World War as a lever to raise the housing standards of urban population. Surprisingly, however, the distinctive feature of the process in Sweden seems to have been the co-operative activity of the citizens themselves in providing their own better housing. For even though the government exercised the broadest powers affecting housing—rent restriction, subsidies and loans, direct construction of dwellings, expropriation of land—the emphasis, wherever possible, seems to have been on measures to help the citizens to help themselves. Moreover, says the Review, the costs to the Government and the taxpayers apparently have been held to a minimum.

Part of the success of Sweden's plan, however, can be traced to the fact that public opinion, during the World War housing crisis, was awake to the need for and insistent upon better housing. Besides, a well-rounded public policy for housing had been formulated and several mechanisms established to give effect to that policy. Thus, writes the Review, as far back as 1874 the Government had empowered local authorities to undertake town planning, including, in some instances, the control of subdivision. Town planning regulations have been gradually extended and modified. Parks and playgrounds are now required in proportion to the dwelling density. Municipalities have powers of expropriation to provide adequate housing in congested areas.

Today, therefore, in most Swedish cities no building may be erected without the approval of the building board, comprising one lawyer, one physician, two architects, and one building contractor. This board, states the Review, is required to see, among other things, that the buildings are suitable to their lots and that they satisfy architectural standards. Also in the field of design and construction, the Government has long sought to rationalize the building industry. Numerous important grants have been made to the Academy of Technical Science for research. The State Housing Office has developed a series of model plans providing for a rational layout of dwellings and has secured their rapid adoption in practice through its control of governmental grants and loans for buildings.

Coupled with its success in housing, Sweden has also developed a farsighted land policy. Evils of land speculation, often rife in this country, have been reduced in Sweden by a policy of municipal land purchase. Stockholm, according to the Federal Home Loan Bank Review, set the example by its policy, begun in 1904. By 1935 it had purchased land surrounding the city to a total of 20,000 acres, five times the area of the city proper. Other Swedish cities have followed suit. To prevent speculation, once the land was built on, the Government in 1907 authorized municipalities to transfer only surface rights so that they could retain control of the uses to which the property could be put.

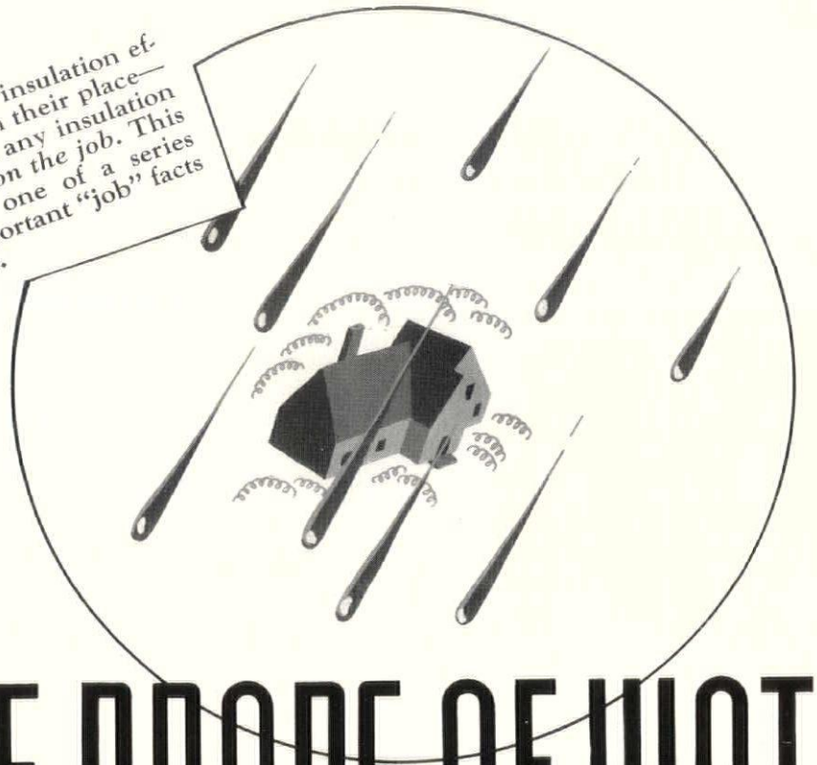
Of equal importance in the Swedish solution to the housing problem was the question of financing the homes themselves. Since 1909 Sweden has had a system somewhat comparable to our Federal Housing Administration. In 1909 the State organized a semipublic central mortgage bank known as the Urban Mortgage Bank, for which the Government supplied the working capital. Raising its funds by the sale of bonds to the public, says the Review, the bank makes loans to the Urban Mortgage Associations on the security of first mortgages, up to a maximum of 60 per cent of value of the property.

To further stimulate home ownership, the Swedish government, as early as 1904, started the "Garden City Movement," purpose of which was to provide low-cost housing on city-owned land. To supervise and encourage the idea of Garden Cities, the Small-House Bureau was created as a part of the Real Estate Department of the City of Stockholm. This Bureau developed the Garden Cities as complete communities with well built streets, sewers, water, gas, etc. It supervised the layout and improvement of lots. It developed standard house plans with detailed drawings and complete working instructions. It arranged for the financing of homes. It selected prospective home owners. In short, it shouldered all of the burdens of home ownership, and left only the virtues.

Knowing of this generous spirit of housing co-operation long practiced in connection with Swedish housing, it is not surprising to learn that the co-operative housing movement is more important in Sweden than in any other country in the world. Housing societies, says the Review, provided 29,839 of the 230,523 family dwellings constructed between 1917 and 1934 in towns and cities throughout the country.

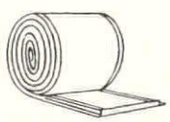
Summarizing the successful advances of Swedish housing practice, the Review finds five reasons why Sweden can claim an adequate, if only temporary solution to housing problems:

● Laboratory tests of insulation efficiency are useful in their place—but the final test of any insulation is what it will do *on the job*. This advertisement is one of a series dealing with important "job" facts about insulation.



LITTLE DROPS OF WATER

. . . don't let them spoil insulation value for YOUR clients!



Certainly you want to give your clients the most insulation value per dollar spent.

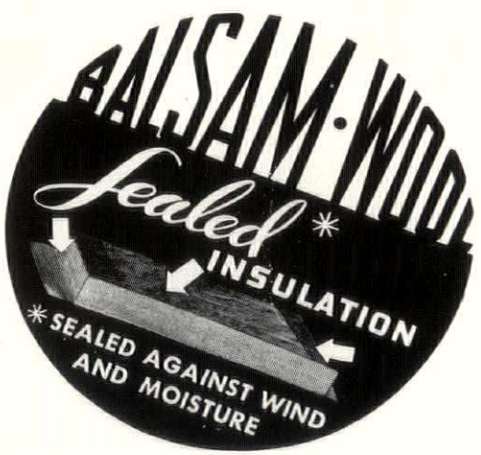
Then be sure that the insulation you specify is *fully* protected from moisture! For water and water vapor are deadly enemies of insulation. A good insulation material must be amply and positively protected from condensing moisture in walls, ceilings and roofs.

Balsam-Wool Blanket Insulation is *sealed* in a tough, waterproof covering. Moisture cannot get into this insulation to rob it of efficiency. There can be no condensation within the material to cause decay of framing members. Season after season, year after year, Balsam-Wool retains its high insulating value.

Unlike materials that are merely hand-packed or blown in, Balsam-Wool is fastened in place. It assures you of getting *continuous* insulation, with no uncovered spots for the wind to blow through. Balsam-Wool does not settle . . . does not change its form. In addition, it is vermin-proof and highly fire-resistant.

Balsam-Wool enables you to specify the right amount of insulation for every building and every climate. It comes in *three* thicknesses. With Balsam-Wool, you need never waste money by specifying *too much* insulation . . . never run the risk of specifying *too little*.

Complete information about Balsam-Wool is yours for the asking.



BALSAM WOOL

WEYERHAEUSER FOREST PRODUCTS

Made By The Makers of
NU-WOOD

WOOD CONVERSION COMPANY — **ST. PAUL · · · MINNESOTA**

Products of Weyerhaeuser

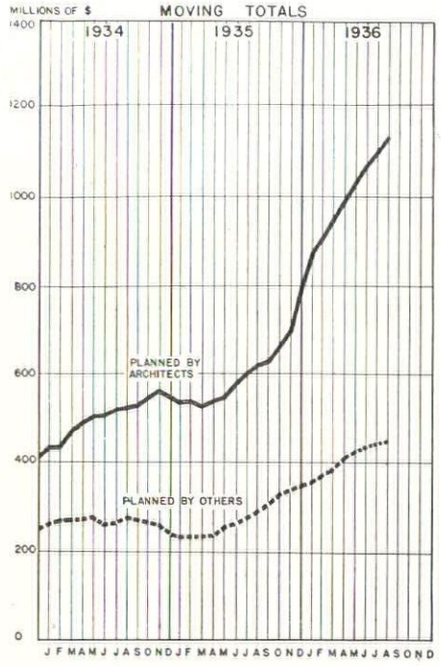
(1) "The land purchase program of municipalities has checked land speculation and provided building lots at low cost;

(2) Scientific town planning and control of building has eliminated waste and improved quality of housing. This has been accompanied by an intensive educational campaign in behalf of better housing;

(3) The organization under Government supervision of central mortgage banks for granting first and second mortgages and the granting of loans directly by the Government has kept down home-financing costs and constituted yardsticks for private leaders;

(4) Large-scale building operations by the municipalities in the Garden City movement have reduced the cost of construction as much as 30 per cent and increased its quality. The high degree of efficiency in design and planning and the extensive use made of prefabrication and standardization of parts have contributed greatly to this reduction of costs;

(5) Finally, the concentration of the functions of banker, architect, materials dealer, builder, and manager in one agency by co-operative societies, has eliminated many intermediate costs and fees."



Heartening to the architect is the easily visible trend shown in this chart—the trend toward a greater percentage of architect-planned buildings. Chart courtesy Dodge Statistical Research Service

In Store for Stores

Always a source for useful, if little known, information, the Department of Commerce has recently issued an analysis of the physical condition and appearance of approximately eight thousand small and medium-sized stores and service establishments that should serve as a definite groundwork for retail store modernization. The study, titled "Store Modernization Needs," reveals that over half of the 8,000 stores contacted need modernization in varying degrees.

While most of the stores included in the analysis are located in the western part of the United States, the 23 cities in which the information was collected were selected on a sampling basis and are, therefore, believed to reflect the approximate general conditions prevailing in other regions of the country. The analysis revealed a generally unsatisfactory appearance of store fronts. The most frequent recommendations call for the painting and refinishing of store exteriors and the installing of new or the replacing of existing outside signs. Painting or repairing of walls and ceilings and the improvement of store lighting were recorded as the greatest interior needs.

Apparel stores, the analysis states, were found to be in the best condition of all of the groups of retail establishments both as to exterior and interior appearances. Even in this instance, however, it is noted that one-third of such stores offer an opportunity for improvement.

On the other hand, among all of the establishments observed for the purpose of the analysis, dry cleaning, pressing, and shoe-repair shops are rated lowest on the impressions given by both exteriors and interiors, nearly three-fourths being rated as "fair" or "poor" in these respects.

Just how thorough a job has been done by the Bureau of Commerce observers is shown in the 10 page check list reproduced in the report. Here are enumerated nearly all of the features in a store which might be subject to physical improvement. And for each item listed in the check list a number of possible faults are listed for the guidance of the store owner interested in modernizing.

As additional information the study also puts emphasis on a number of interesting sidelights of store modernization. Today, about three-fourths of the grocery and drug stores in the sampled area are using mechanical refrigeration, while only 61 per cent of the restaurants have this equipment. Eighteen per cent of all the stores in the sample have no washrooms. Thirty-four per cent of the stores lack electric signs. Twenty nine per cent of the stores have inadequate lighting.

New Referee for Building Labor

Dr. John A. Lapp, until recently director of labor relations in the Public Works Administration, stepped into one of the hottest spots in industry last month when he accepted the job of referee of the building trades unions' jurisdictional disputes. Thus easily did the warring factions submit to President William Green's scheme for arbitration, but non-partisan observers continued to feel that this move meant merely a truce, not peace.

The appointment of Dr. Lapp springs directly from the healing of the breach between the McDonough and Williams factions in the building unions affiliated with the American Federation of Labor. Apparently the naming of Lapp as a "czar" for the trades has no connection with the C. I. O. drive for industrial unionism. For even though carpenters, sheetmetal workers, bricklayers and other building workers may bite, scratch, or gouge over who shall put up this or that building, all such strictly "family matters" are forgotten in the battle against the Committee for Industrial Organization.

Ever since structural steel was introduced to building construction strife has prevailed between the building unions. No permanent peace is expected as long as new methods and new materials force their way into use.

Just after the world war period, during which the unions behaved admirably, Ernest J. Russell, St. Louis architect, and John Donlin, then president of the Federation's building trades department, founded an arbitration board which functioned for several years with gradually dwindling effectiveness. Dr. Lapp is the first outsider to whom the unions have been willing to submit their claims of encroachment upon each other's craft. And it can be emphatically said that Dr. Lapp has picked as his next job one of the most delicate tasks of labor relationship in all industry. In fact, so tough is this assignment that contractors are already freely predicting his failure.

In theory this new system of arbitration will prevent interruptions to work on the job while disputing unions seek, first, to settle their differences by conferences, then, if they cannot agree, by referring the matter to Dr. Lapp. All crafts have consented to abide by his decisions.

Specify "Pennvernon"...not just "window glass"

GLASS FOR THE WINDOWS OF THE NATION! In the warehouses of progressive glass jobbers throughout the country . . . in the warehouses of the Pittsburgh Plate Glass Company . . . are complete stocks of Pennvernon Window Glass ready for your use. And that means glass brought to the peak of sheet glass perfection by skilful Pennvernon Craftsmen.

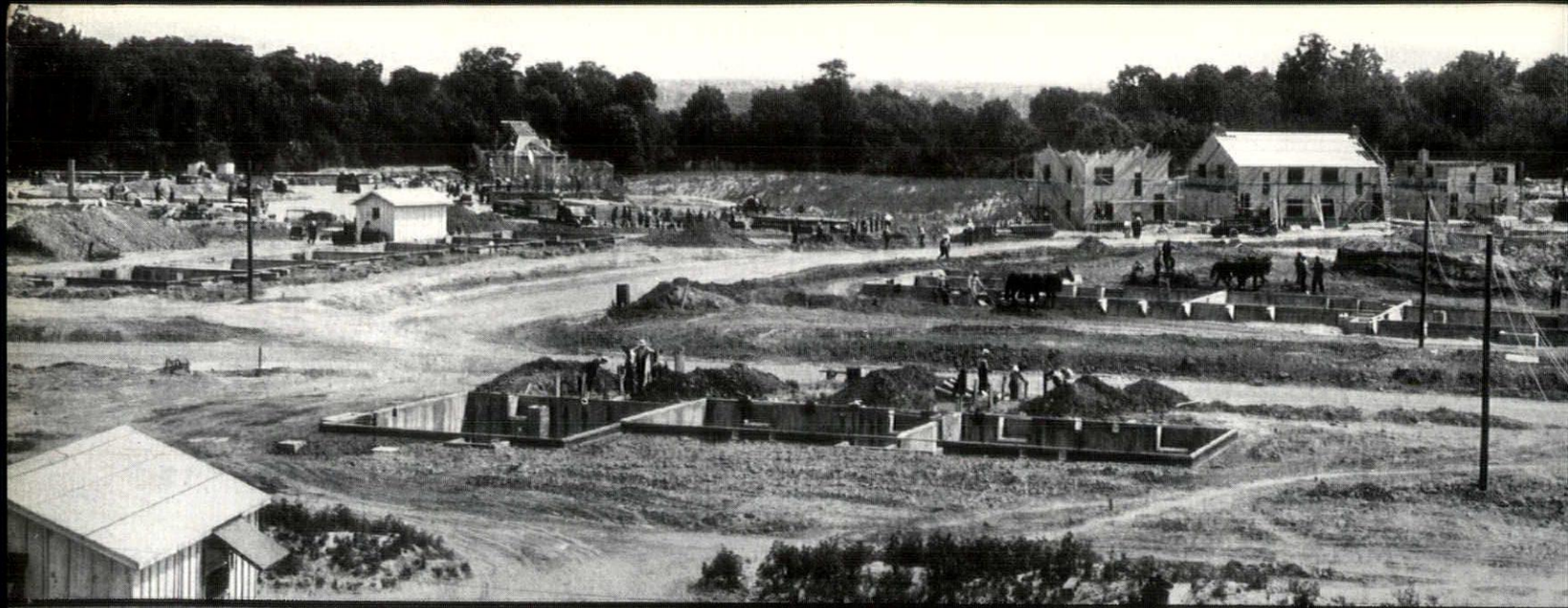
Our new booklet, called "The Making of a Leader", describes in dramatic pictures the manufacture of Pennvernon Window Glass. To get your free copy of this interesting book, sign and mail this coupon to

PITTSBURGH
PLATE GLASS COMPANY
2197A Grant Building, Pittsburgh, Pa.

Name _____

Address _____

City _____ State _____



COMPARATIVE ARCHITECTURAL DETAILS IN THE GREENBELT HOUSING

A primary result of careful investigation among prospective tenants is the conclusion that people's needs and desires vary widely with geographical and other regional considerations

Most communities in America have merely grown—without plan, guidance, or forethought on the part of those who live therein. In rare cases, one might assume, on glancing at an airplane view, that a town really had a plan, but even here the semblance of one probably arises from the fact that the eye is held by the same old gridiron arrangement of streets. Haphazard growth of this sort is almost inevitable in the settlement of a new country—there is no one to blame. But the worst of it is that, once established, a community must make the best of its formlessness, its uneconomic layout, its inevitable awkwardness. The city planner, dreaming by his fireside may say, "If I were locating a city on this site of virgin land I could do thus and so, making it not only a wonderful place in which to live but also a city which all the world would come to see."

This fresh start, free of all the hampering results of the Topsy-like growth, is the vision on which is based the Greenbelt Housing. Given a clean slate—adequate land under one ownership, a definite need of decent homes near industrial centers, the means to build a self-supporting project—what can our present knowledge and techniques accomplish?

In order that each project might be treated with the utmost individuality in the light of local conditions, the Suburban Division set up an independent planning group for each project. Each group consists of one or more town planners, and architects and an engineering designer, who work together as a committee, no one man being in complete charge. The necessary correlation among them is effected by the Chief of Planning, Frederick W. Bigger, who is responsible to the Director of the Division, Assistant Administrator, John S. Lansill.

In the completion of projects, the Suburban Division, one of the Resettlement's four main operating bodies, shares responsibility with the Construction Division, which is in charge of building operations, and with the Management Division which is responsible for tenant selection and for the operation of the town after its completion.

Plans for four complete suburban towns, housing from 750 to 1,000 families each, have been completed. Construction is now under way on three of these projects, located near Washington, D. C., Cincinnati, O., and Milwaukee, Wis. The fourth project, planned for Bound Brook, N. J., has been held up by adverse court action.

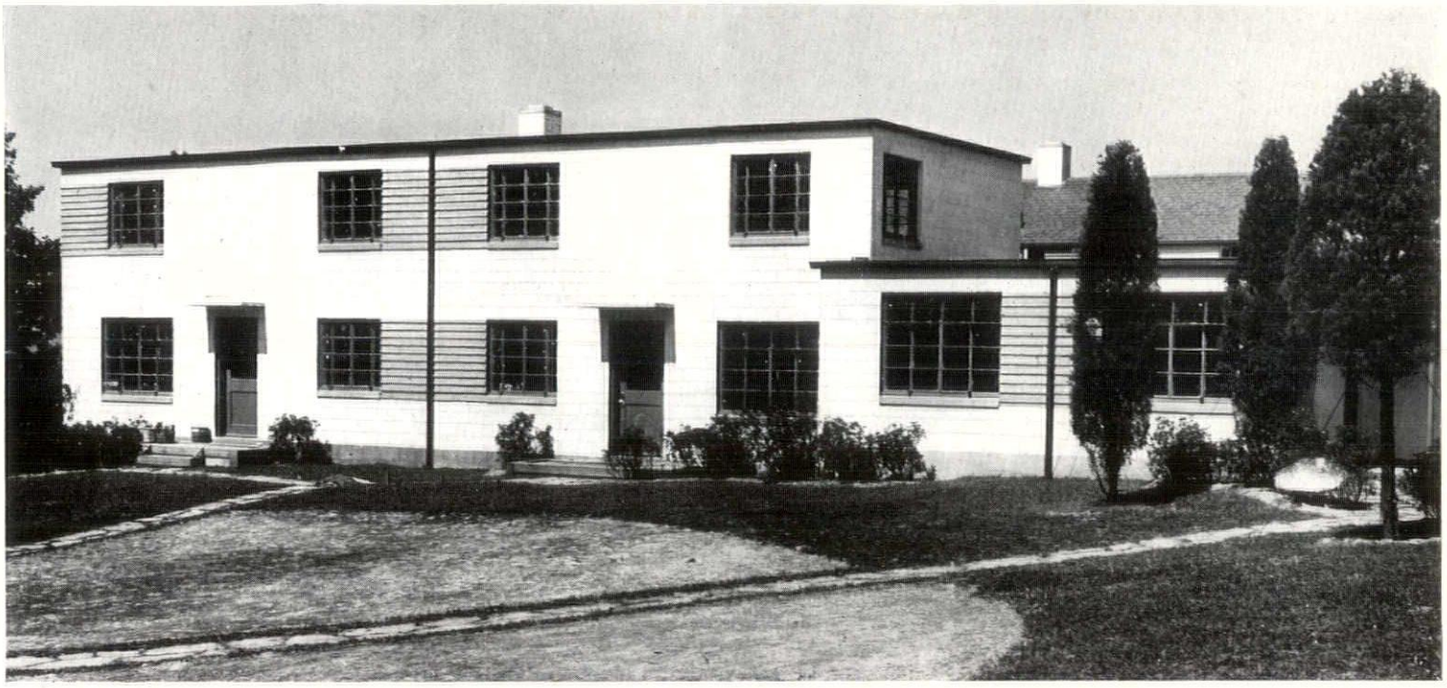
Several important factors have influenced all four projects. The work was being undertaken in connection with the Work Relief Program. This meant that a minimum of highly skilled labor could be expected, and necessitated the selection of a variety of materials that could be handled by the less skilled workers who make up the bulk of the relief rolls. It also prohibited the use of prefabricated units, inasmuch as employment of large numbers of men at the site was one objective of the program.

An all-important feature of the Suburban program is the fact that all houses are to be continued under one unified ownership, and rented rather than sold. At once a certain freedom in the treatment of lot boundaries, and the possibility for economy in heating and plumbing systems became evident. At the same time, the whole property will be turned over to a non-profit holding corporation and amortized over a long period of years. This requires emphasis upon quality construction, with possibly higher first costs being combined with economy in maintenance. It goes without saying that the objective of low rents necessitated the utmost economy in construction.

With these common factors in mind, the project staffs approached the more specific requirements of their respective localities. Considerable economic research had already been undertaken to determine the best locations and sites for the projects[1]. Additional studies were then made to find out the human factors which would have to be considered in the design of houses.

One fact is obvious: geographical and regional needs and desires vary radically in minor details. Here, a cellar is considered a necessity; there, a separate dining room is not wanted; here again, the automobile is indispensable and its housing more important than porch space. A ready means of comparison between the architectural elements in these four communities is set forth in the following pages. There are here to be found innumerable conclusions based not on guesswork or the personal whims of the designers, but on facts as developed by careful research and personal questioning of the people who will live in these made-to-order environments.

[1]This aspect is covered in the article on Greenbelt Towns which appeared in *The Architectural Record* for September, 1936.



GREENBELT, BERWYN, MARYLAND

LOCATED within reach of both Baltimore and Washington, this project is designed for 1,000 dwelling units to shelter an estimated population of 3,500. The designers believe that this is the first instance where row house plans have been designed and executed to provide entrance and exits from both exposures of the living room. This gives ease of access and circulation on the service side, as well as from the garden side. Such a plan allows the rows to be placed with their ends to the street, facing on the one side the quiet, safe, service quarter, and on the other side, the park-play area.

Owing to sub-surface water conditions, no basements are provided in the rows except under units containing the group heater and where sharp changes of grade permit.

The unit most frequently used is a two story one of which the plans are shown adjoining the photograph on the following page. The dining room can be used for sleeping, study, or play.

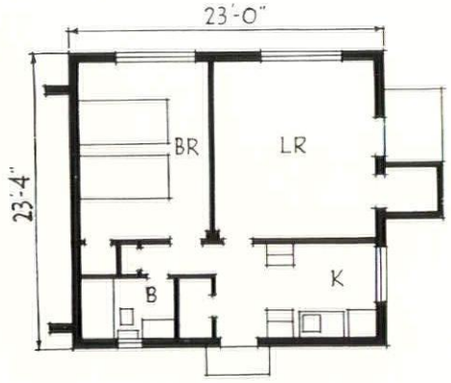
PERSONNEL

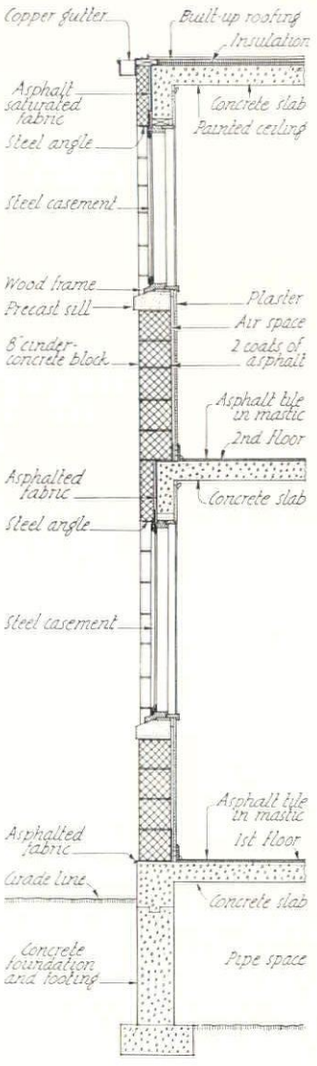
Town Planner:
HALE WALKER

Architects:
DOUGLAS D. ELLINGTON
R. J. WADSWORTH

Engineering Designer:
H. B. BURSLEY

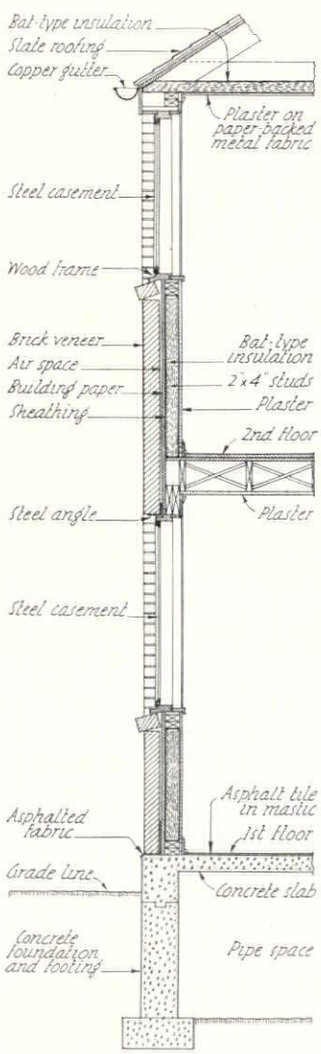
Coordinator:
WALLACE RICHARDS





At the top of the page, a group of concrete block houses, showing at the near end the one-story unit, a plan of which appears at the left. A typical wall section of this construction, as compared with the brick veneer type on the opposite page, is shown at the right

At left, a typical group in brick veneer construction, a detail section of which is shown below the photograph



COMPARATIVE ELEMENTS

General. 1,000 dwelling units, of which 712 are grouped into buildings of 2, 4, 6, and 8 units; 288 units are arranged in 11 three-story multi-family units of varying sizes and groupings

Construction. 40% of row units, cinder concrete block walls, oil-painted. Floors and roofs, reinforced concrete. 60% of row units, wood frame with brick veneer or with asbestos shingles; pitched slate roofs

Insulation as indicated in sections herewith

Heating. Forced hot water system with separate plant for each group; cast-iron radiation, automatic oil burner
Domestic hot water by means of heating boiler

Interior Walls, smooth plastered, casein paint; kitchens and baths oil paint and enamel

Floors, asphalt tile; second floor of frame buildings, strip oak

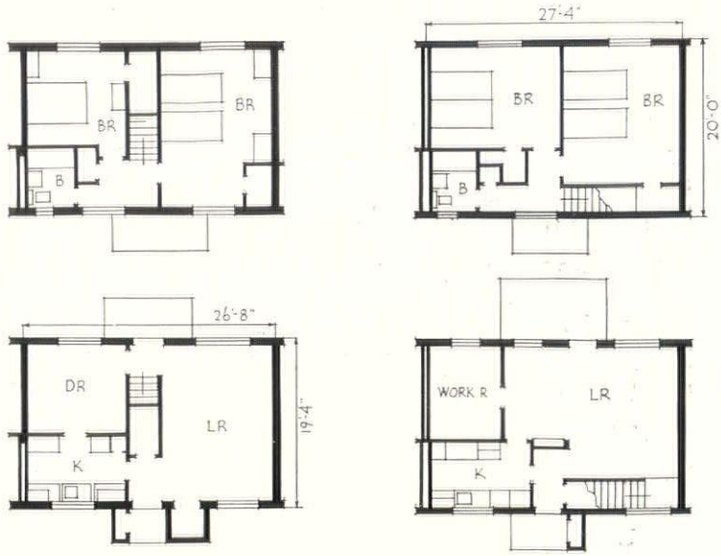
Windows, steel casement type with wood surrounds; underscreen operators

Variable Uses. Dining-room used in emergency for sleeping, study, or play — hence, regular doors rather than double-acting

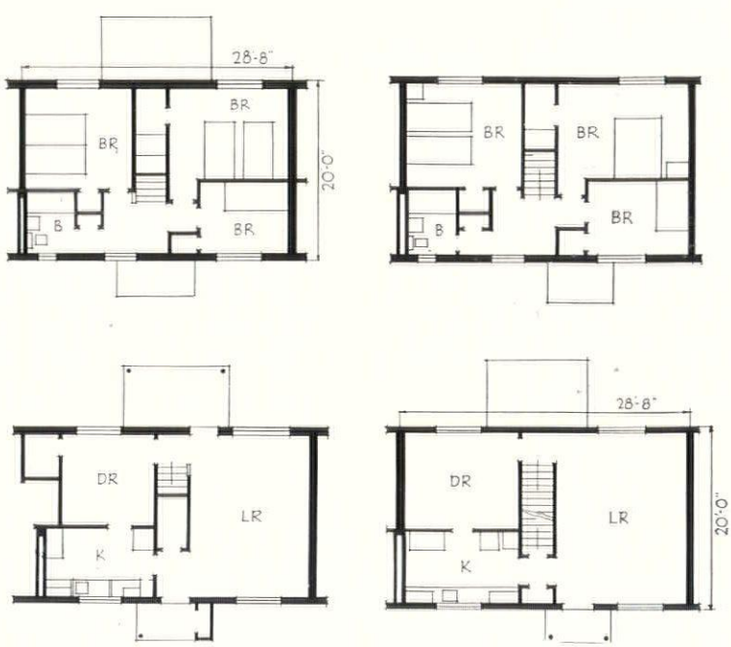
Garages. About half the units provided with garages grouped in batteries or attached

Multi-family Building. Fireproof, flat roofs, cinder block exterior, painted

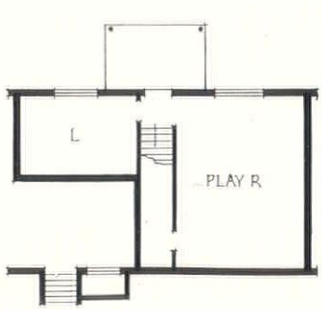
Ranges. Electric



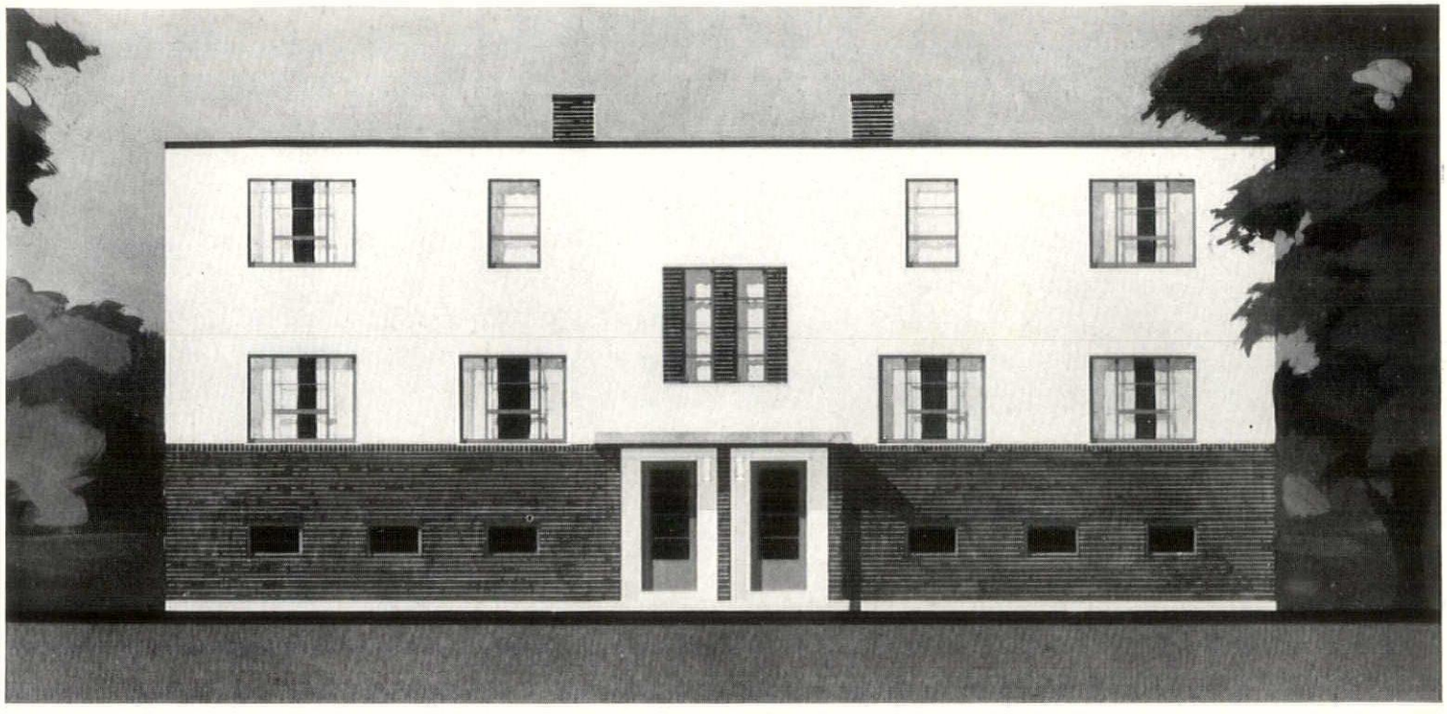
Above, first and second floor plans of two schemes for the two-story row unit. The one at left is the unit most frequently used

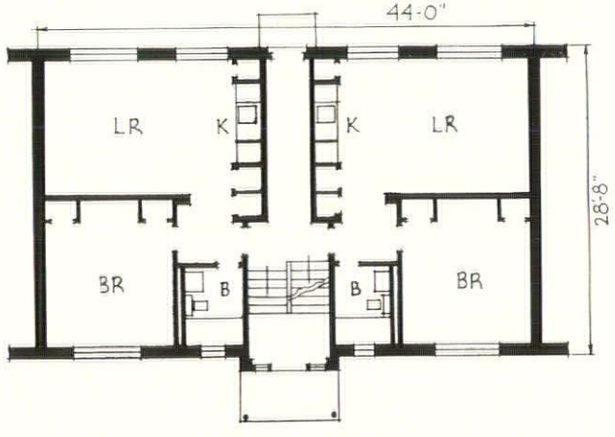


Above, a scheme for a two-story row unit providing three bedrooms



At right, basement, first and second floor plans of one of the comparatively few units having the three floor levels

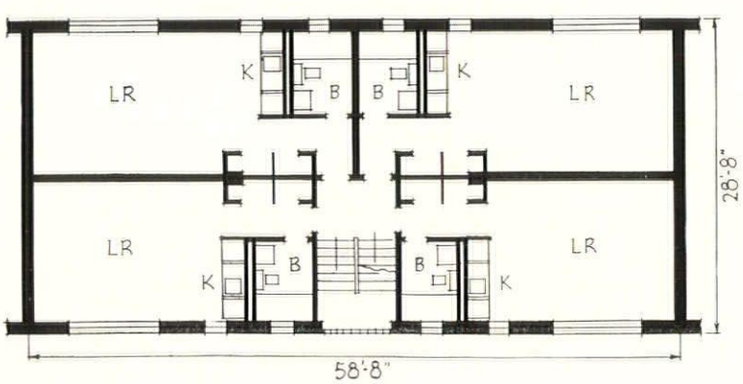


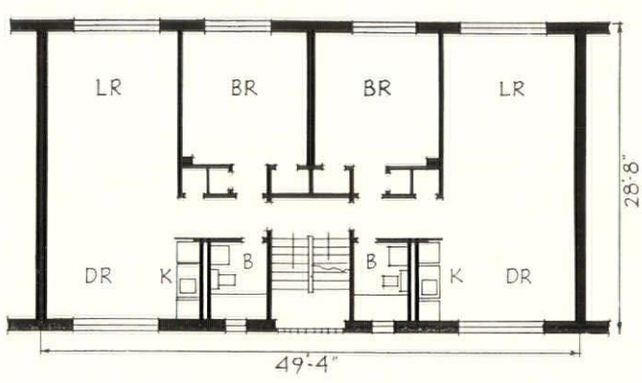


Elevation of the entrance side of a group house of two and a half stories, planned for a sloping site. The entrance occurs half way between the levels of first story and basement.

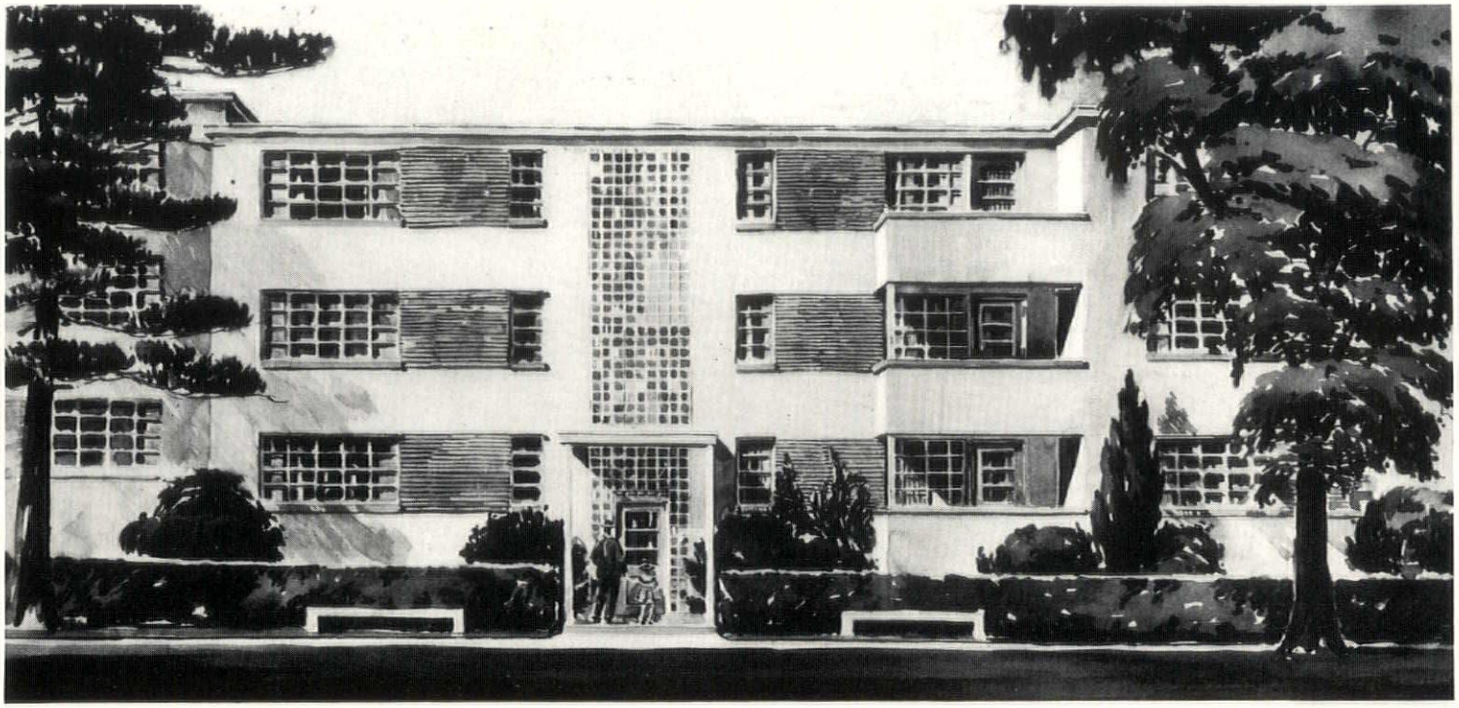
Five or six basic plan types were developed for the accommodation of approximately 700 families. These plans provide four, five and six rooms and bath, and are arranged in pairs, with baths and kitchens abutting a common pipe stack. Pairs are grouped in rows with sufficient flexibility between pairs to permit either a change in floor level to meet grade conditions, as above illustrated, or a setting back or forward on the same level to avoid removing desirable trees

The plans on this page show three of the schemes used for the three-story multi-family units with common stair hall. At left above is a first floor plan; the two below are typical upper floors. Basements are provided to include laundry space, play space, storage and rooms for heater, incinerator and meters

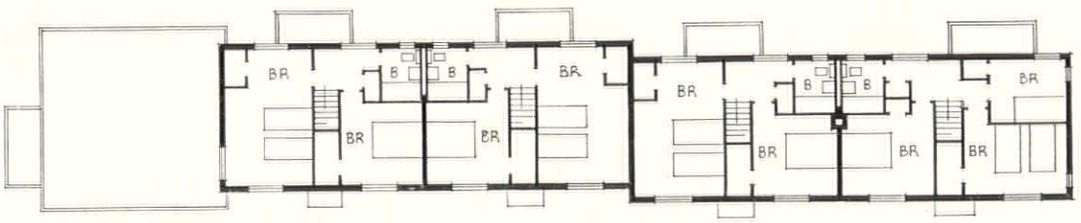




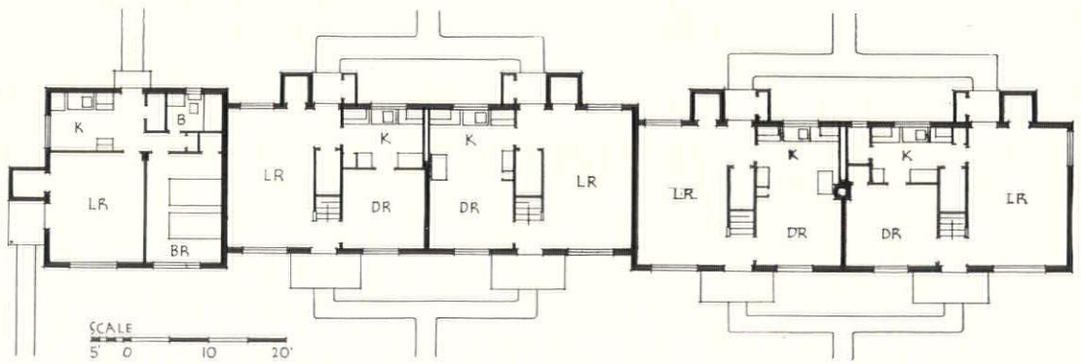
GREENBELT, AT BERWYN, MD., NEAR WASHINGTON, D. C



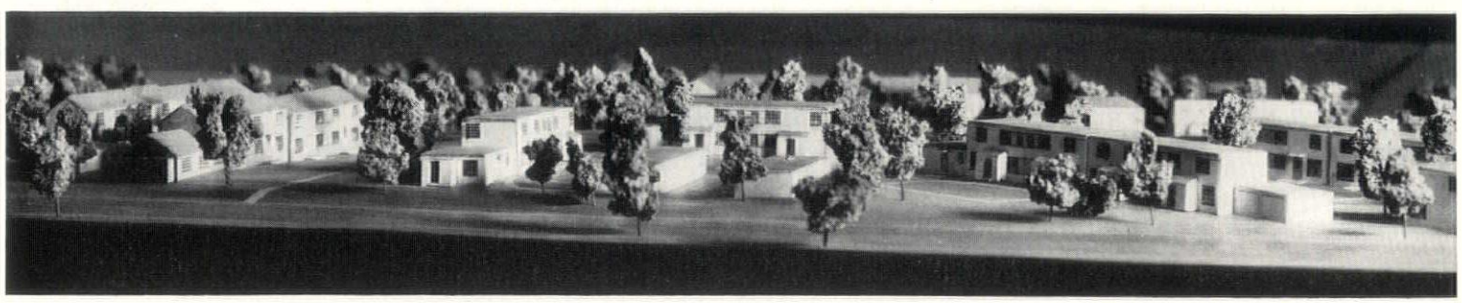
Detail elevation of multi-family dwellings, on the garden side. All window sizes are standardized to eliminate cutting of block or brick

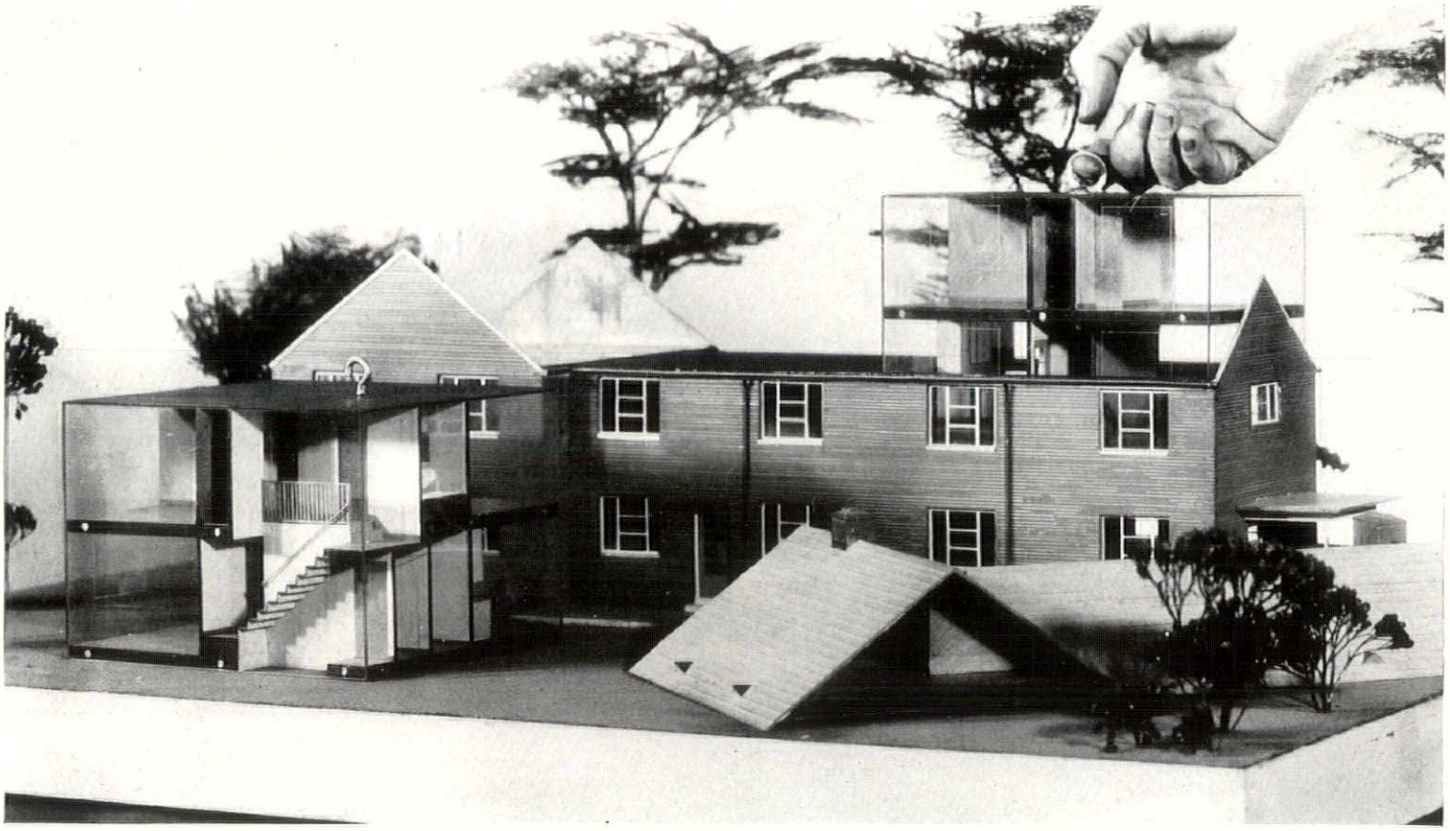


At right are first and second floor plans of a typical row house building. The left end unit is a one-story house, of which there are 16 in the development. Top side of plans faces the service side; bottom, the garden side



Below, photograph of model. Groups of flat roof cinder block houses alternate with groups of brick veneer houses having pitched roofs of slate





GREENHILLS, NEAR CINCINNATI, OHIO

A 5,930-acre tract, 4½ miles north of the city line, is planned as to utilities and layout to allow eventual enlargement to 3,000 units. Of the 1,000 units in the present plan, 2.5% will be single detached houses, 18% in semi-detached two family houses, 46.5% in three to six family group houses, and 33% in multi-family dwellings. A rural area—farms, woodland, parks and recreation spaces—of 4,970 acres surrounds and protects the 960-acre community. Greenhills will demonstrate modern town planning in providing adequate low-rent housing for employed families of limited income ($1,200-$2,000 per annum) now inadequately housed.

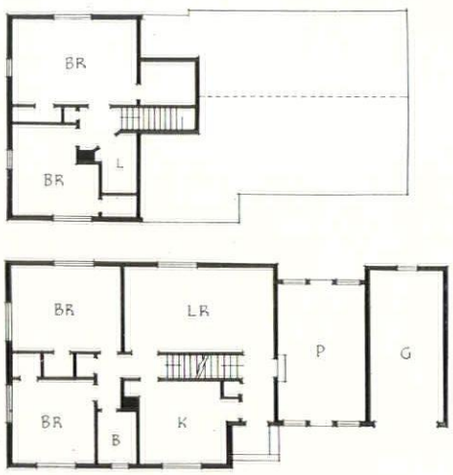
PERSONNEL

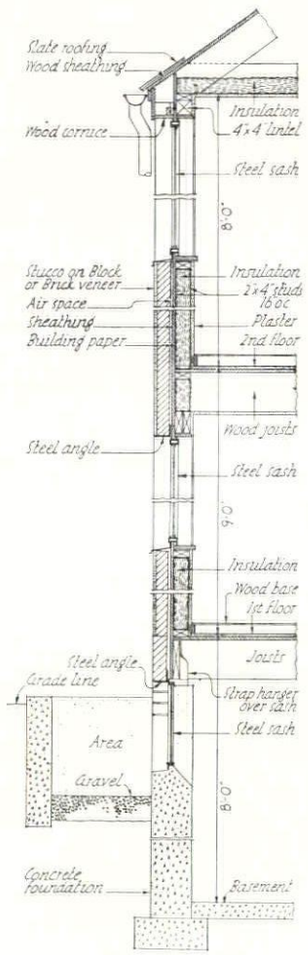
Town Planners:
JUSTIN R. HARTZOG
WILLIAM A. STRONG
ARMAND A. TIBBITTS

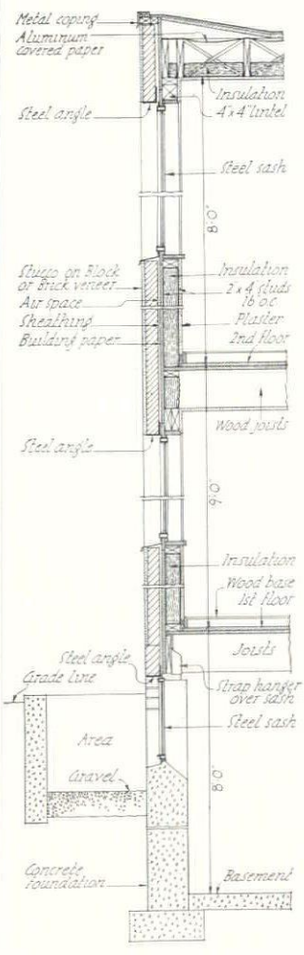
Architects:
ROLAND A. WANK
FRANK CORDNER

Chief Engineer:
WILLIAM G. POWELL

Coordinator:
ALBERT L. MILLER



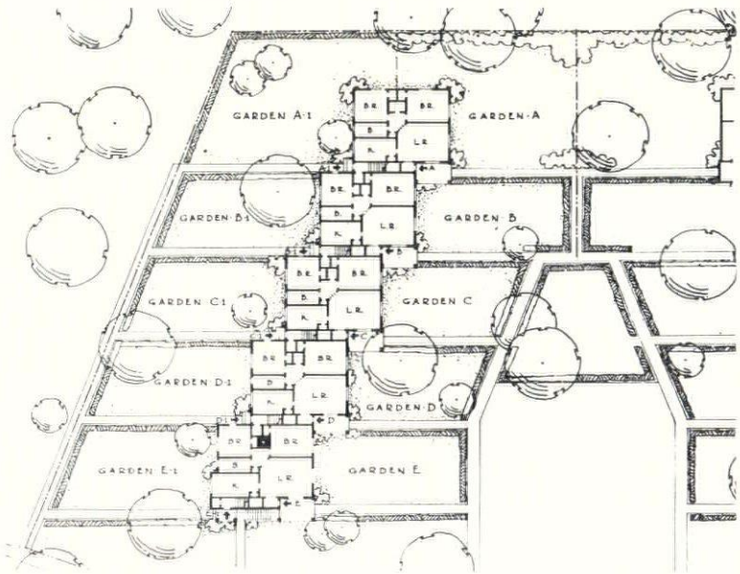




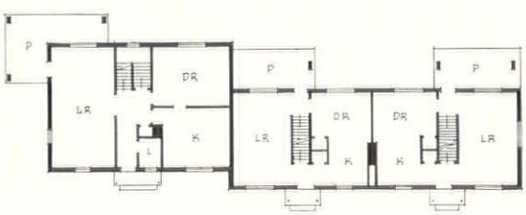
On the opposite page: model of a typical two-family house; and, below, plans and perspective detail of a typical detached dwelling, together with wall section of the veneered and pitched roof buildings

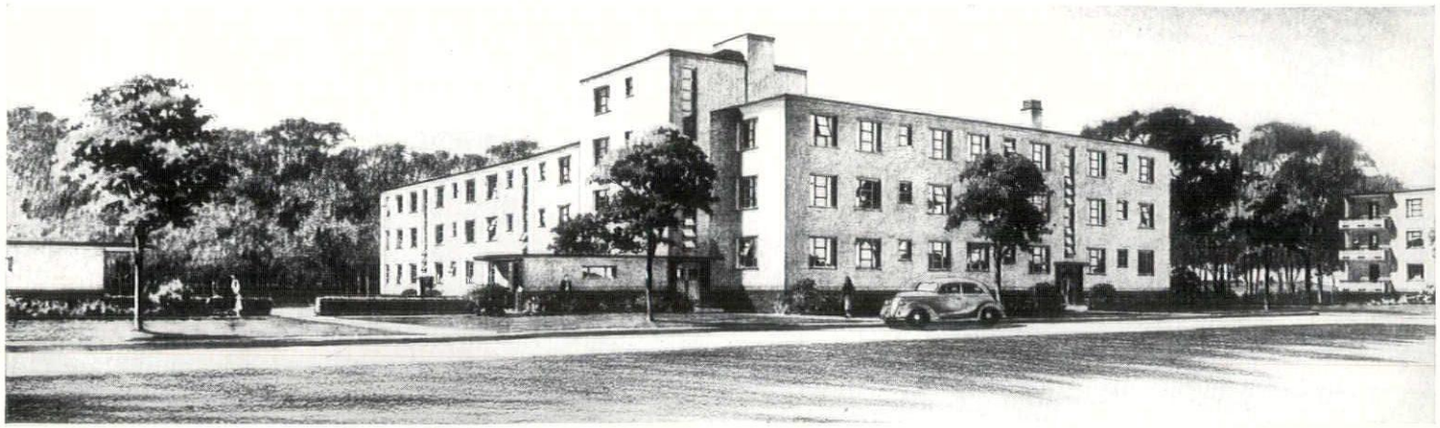
The wall section on this page shows the typical construction details of the veneered flat roof buildings

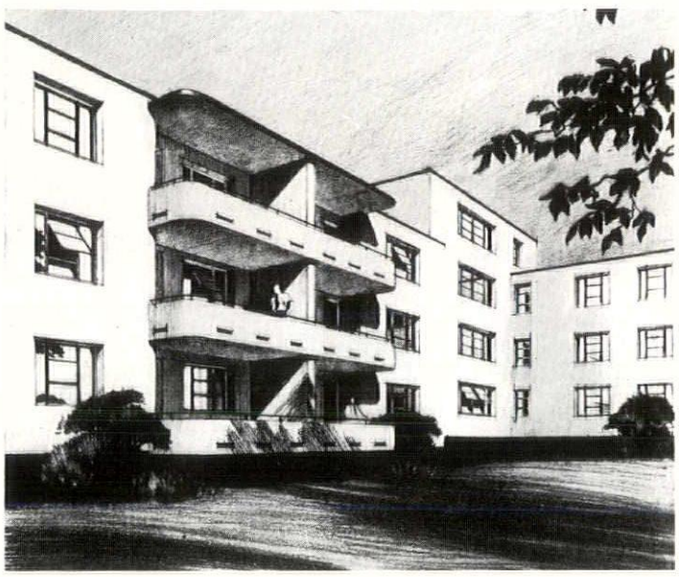
Above, a perspective study and, at right, a half plan of a group of semi-detached two-family houses. This staggered plan is well worthy of study for its preservation of cross-corner drafts in two rooms of the four, and for the privacy and garden isolation of both first and second floor tenants

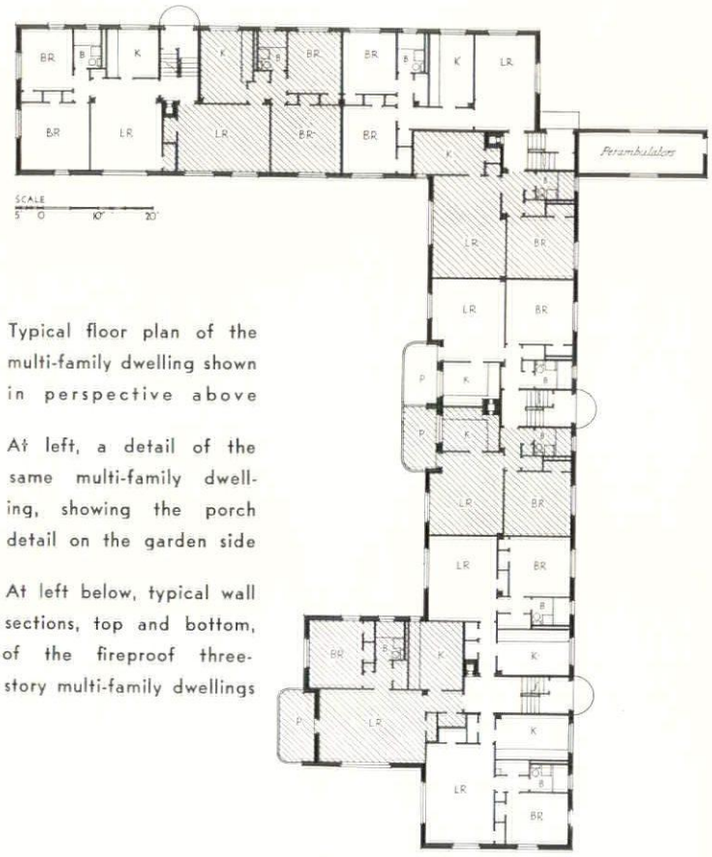


Below, first and second floor plans of a three unit group, of which the left end house provides the maximum of four bedrooms





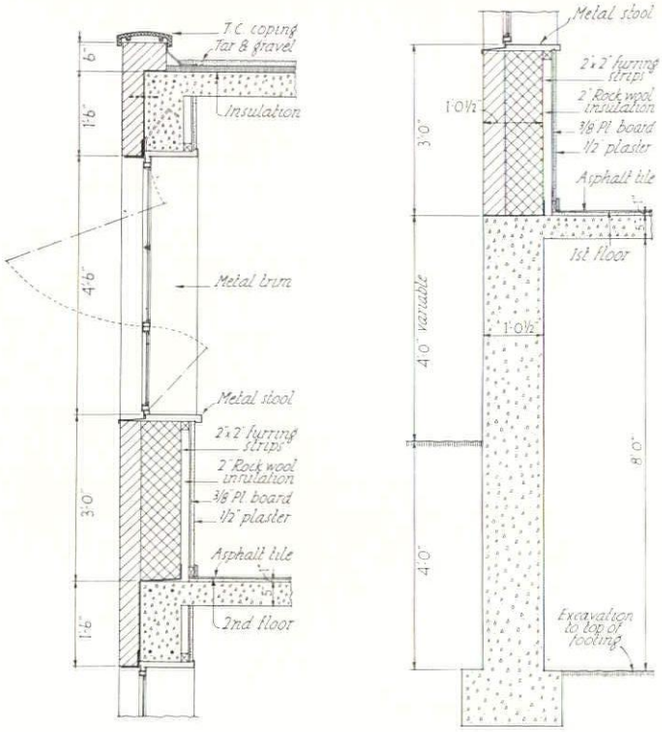




Typical floor plan of the multi-family dwelling shown in perspective above

At left, a detail of the same multi-family dwelling, showing the porch detail on the garden side

At left below, typical wall sections, top and bottom, of the fireproof three-story multi-family dwellings



COMPARATIVE ELEMENTS

General. 1000 dwelling units: 2.5% in single detached houses; 18% in semi-detached two family houses; 46.5% in three to six family group houses; 33% in multi-family dwellings.

Construction. Wood frames, covered with brick, terra cotta blocks or asbestos siding. Flat roofs, tar and gravel; pitched roofs, slate, terra cotta shingle tile, or asbestos shingle tile.

Insulation. Rock wool and reflective type.

Heating. Individual coal-fired one-pipe steam systems; also hot water. Domestic hot water from individual electric or coal-fired heaters.

Interior Walls. Sand-finish plaster, casein paint; Keene cement on metal lath, enameled, for bathrooms.

Floors. Red oak; jaspé linoleum in baths and kitchens.

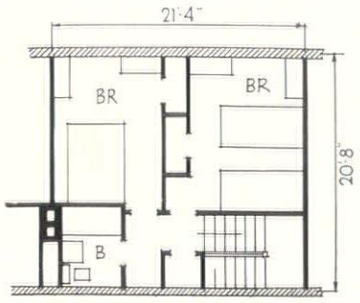
Windows. Steel, projected type; stainless steel sills.

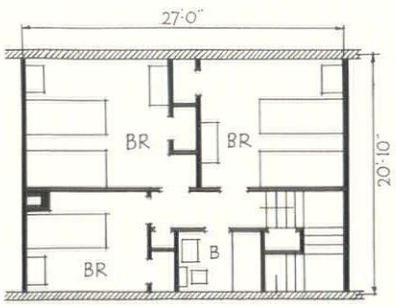
Variable Uses. Flush curtain track makes possible separation of part of living room for dining.

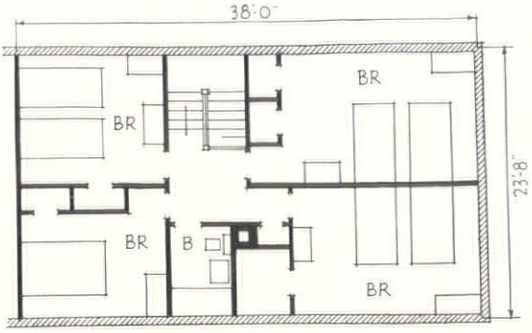
Garages. Attached and integral for 22% of the family units.

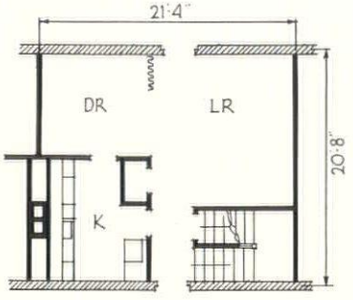
Multi-family Buildings. Fireproof; cement-painted common brick, tile back.

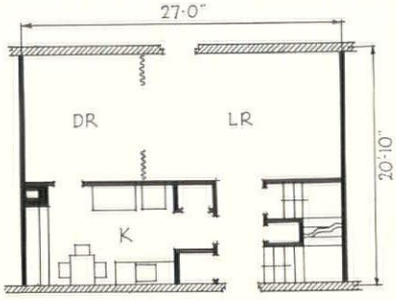
Ranges. Electric.

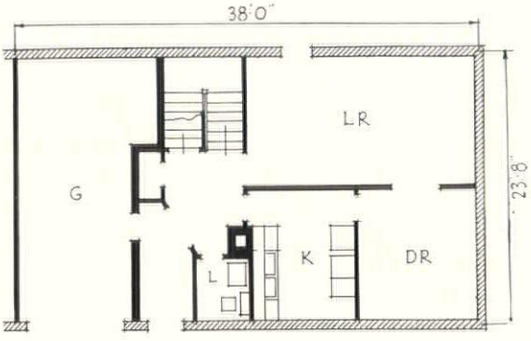


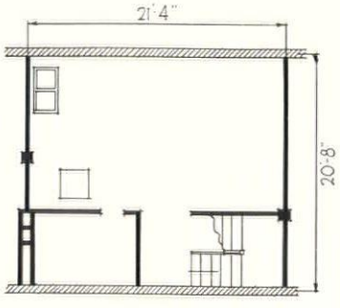


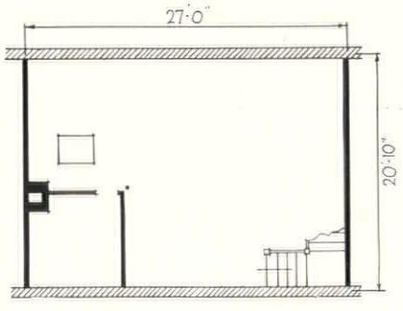


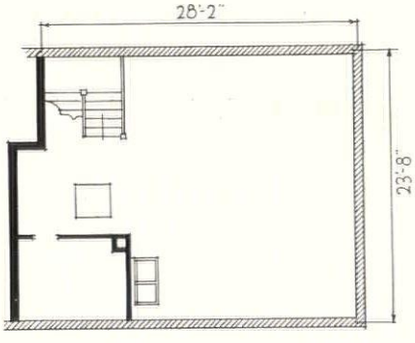








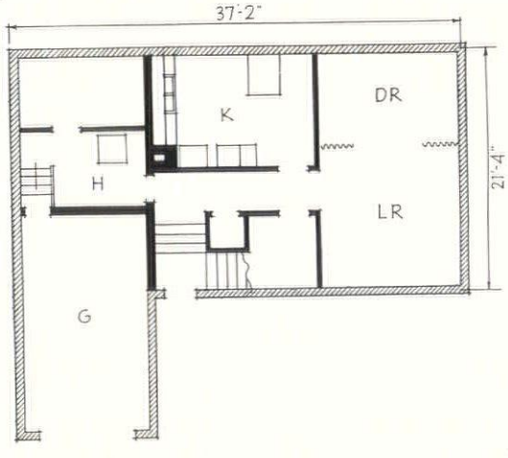


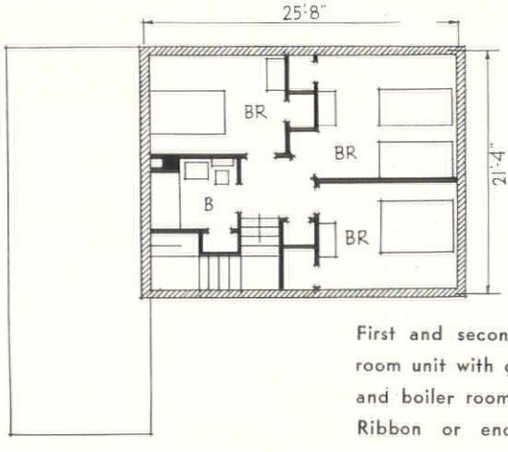


Basement, first and second floor plans of a two-bedroom ribbon unit. May face north or east

Basement, first and second floor plans of a three-bedroom ribbon unit. May face north or east

Basement, first and second floor plans of a four-bedroom ribbon unit with garage. May face north or east





First and second floor plans of a three-bedroom unit with garage. No basement. Garage and boiler rooms, with coal storage, attached. Ribbon or end unit, facing any direction

GREENHILLS, A GREENBELT TOWN NEAR CINCINNATI, OHIO

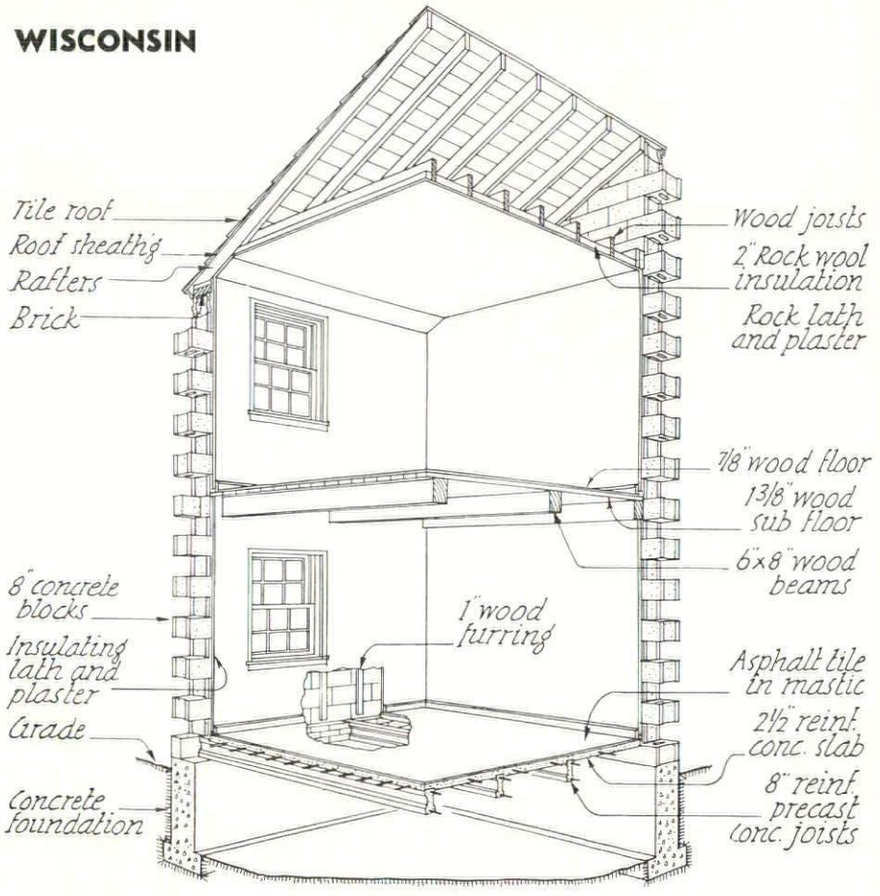
Above, a typical residential lane

GREENDALE, NEAR MILWAUKEE, WISCONSIN

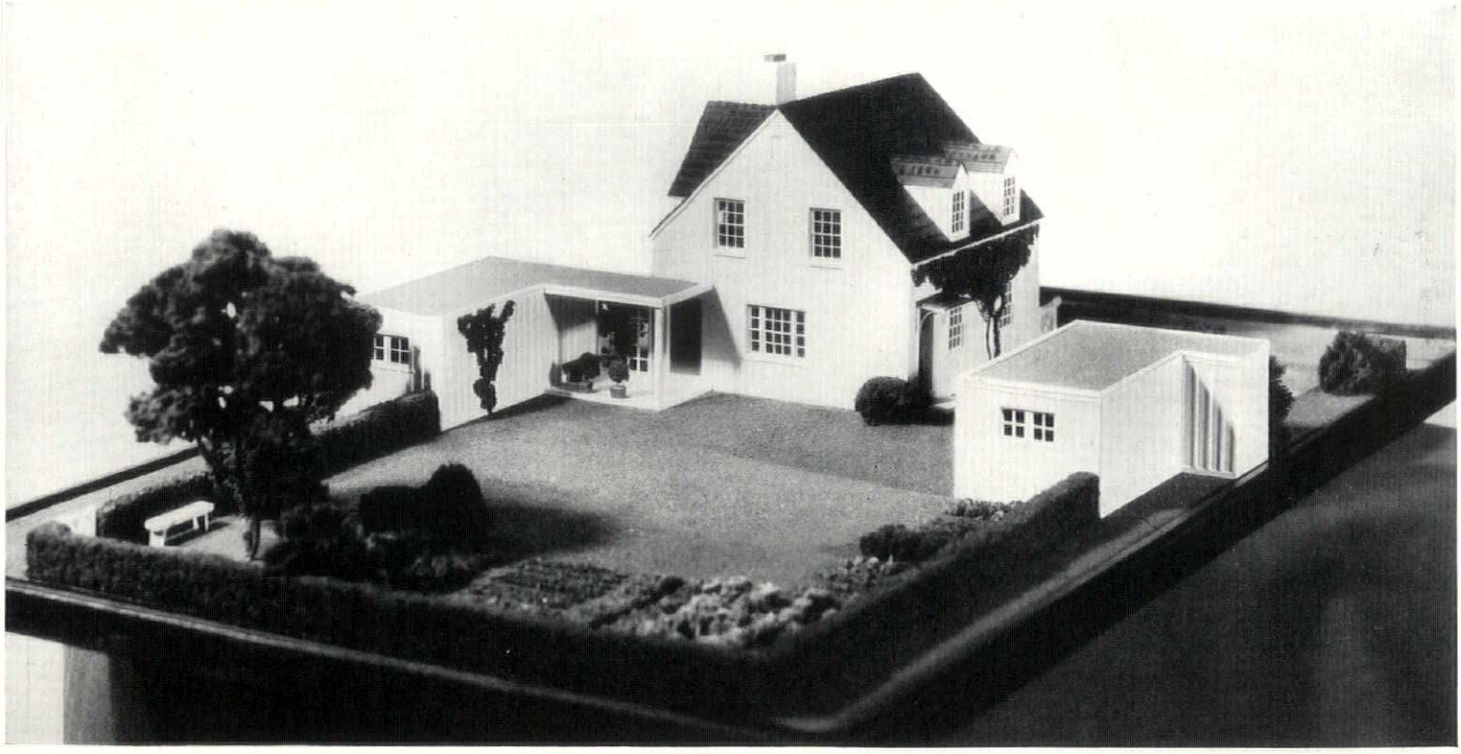
A SITE comprising eight square miles begins two miles south of the city boundaries. On this, within the present allotment of $7,050,000, it is proposed to build, together with the various community needs, 750 dwelling units: 370 of the group and twin types, 380 of the single family type. Approximately 53% of the units have five rooms with three bedrooms, providing for the most nearly normal family composition with only about 10-15% greater initial and maintenance costs than the two bedroom unit. The town's street system connects with highways on all sides but is intersected by none. Streets are traffic thoroughfares and residential lanes, mainly culs-de-sac.

The town site is protected from winter winds by rising slopes on the north, but is open to the prevailing summer breezes; it comprises a single drainage basin. The dwelling units have been grouped as compactly as good design will allow, but any feeling of congestion is eliminated by the presence nearby of large open areas.

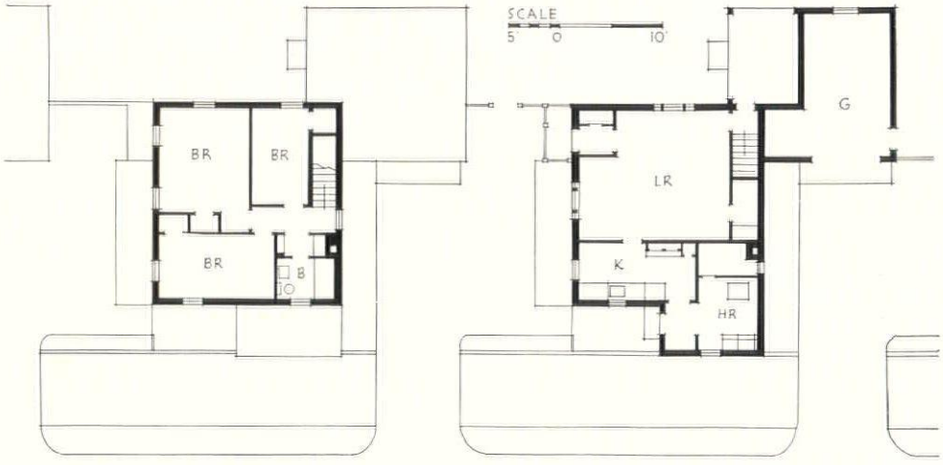
A total of 23 types of house plans have been designed for the 750 units. Standardization of details has been accomplished to a high degree.



Analytical perspective, showing construction of the typical house unit. Basements are eliminated in favor of utility rooms near the kitchen



Above, photograph of small scale model of the single house type with three bedrooms; 324 units with this accommodation will be constructed—more than any other one type. Note that the garage belonging to one unit is built integrally with the adjoining unit. Fueling of a house is accomplished through the garage approach of the adjoining unit. Planning economies of this kind are practicable through unified ownership prevailing in these projects



Second and first floor plans of two adjoining single house units of the type shown by the model above

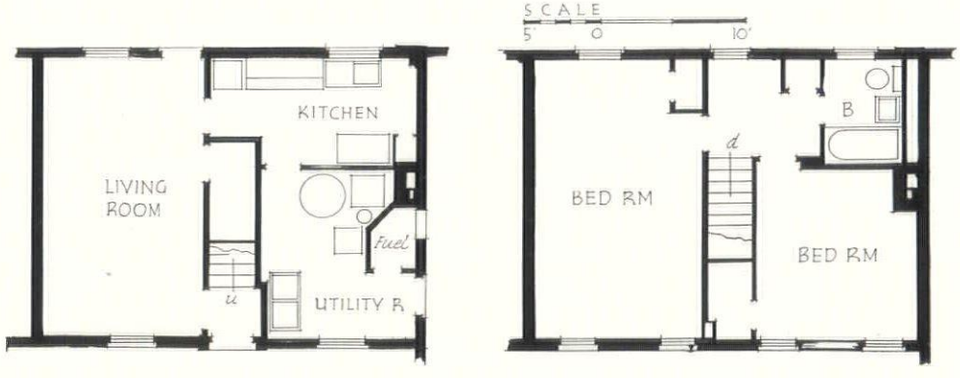
PERSONNEL

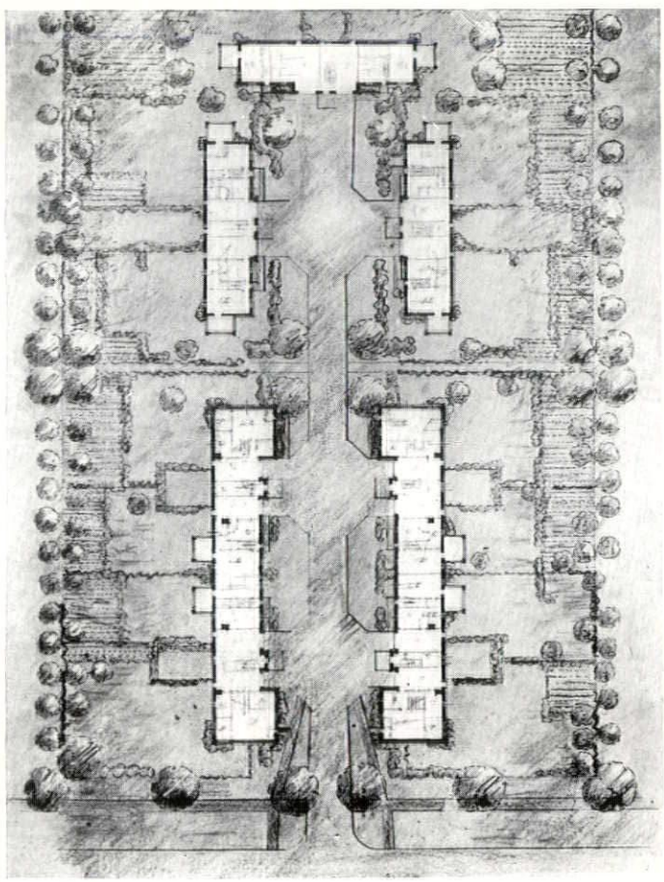
Town Planners:
JACOB L. CRANE,
ELBERT PEETS

Architects:
HARRY H. BENTLEY,
WALTER G. THOMAS

Co-ordinator:
FRED A. NAUMER

At right, first and second floor plans of one of two group house types with two bedrooms; 80 units of this type will be constructed. All plan types will have porches, with the exception of the one-bedroom apartments in the group houses, and these in most cases will have balconies





Perspective study of a cul-de-sac of the general character of that shown in plan below to the left. Floor plans of a four unit group similar to that pictured at the right in the perspective are illustrated in the lower left corner of the facing page

COMPARATIVE ELEMENTS

General. 750 dwelling units, of which 370 are of group and twin types, 380 of single family types

Construction. Exterior walls, light-weight concrete block with occasional brick trim, waterproofed with cement paint. Pitched roofs of clay tile. First floor, concrete; second, wood on exposed beams; attic, wood frame

Insulation. As indicated in perspective section, page 30.

Heating. Hot air type, recirculated, with blower. All except one-story twin houses, coal fired. Central plant for multi-family dwellings

Domestic hot water from furnace coils in winter; from coal-burning laundry stoves in summer

Interior Walls. Putty or sand-finish, painted; possibly enameled in kitchens and baths

Floors. Asphalt tile on concrete; double wood above.

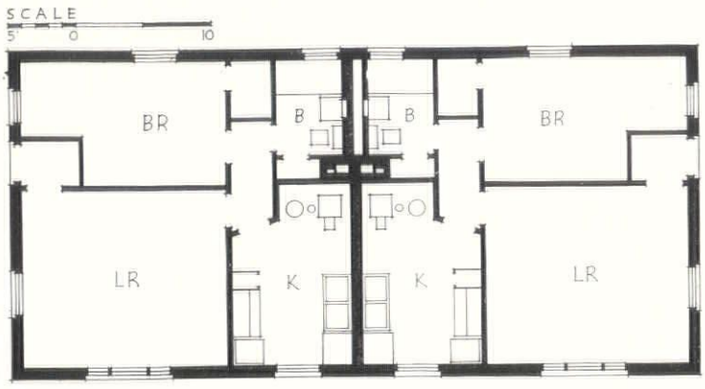
Windows. Double-hung wood, metal weatherstripping

Variable Uses. In most units, access to second floor from entrance makes possible the use of living room as overflow sleeping space

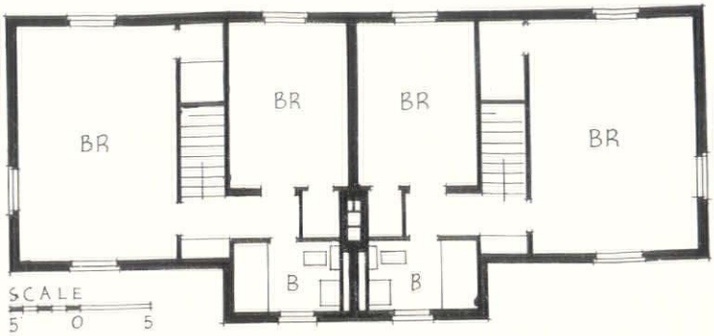
Garages. Nearly all units include a garage, either incorporated or closely adjacent, to avoid inconvenience in severe Wisconsin winters

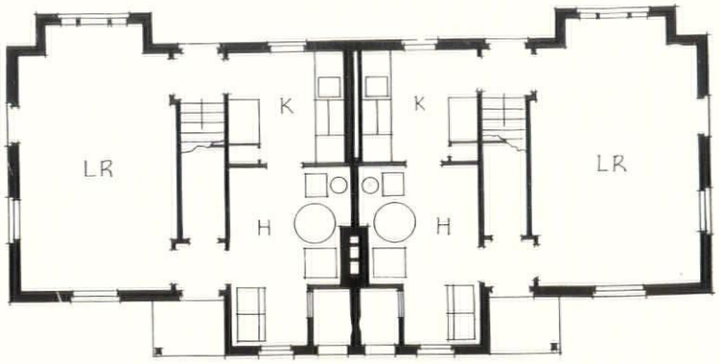
Multi-family Buildings. Here, a measure to keep total construction cost down, to add interest and variety, and to test out this type in the Greendale situation

Ranges. Electric. Gas not contemplated



Plan of a twin dwelling unit. This type is but one story in height and has a hip roof

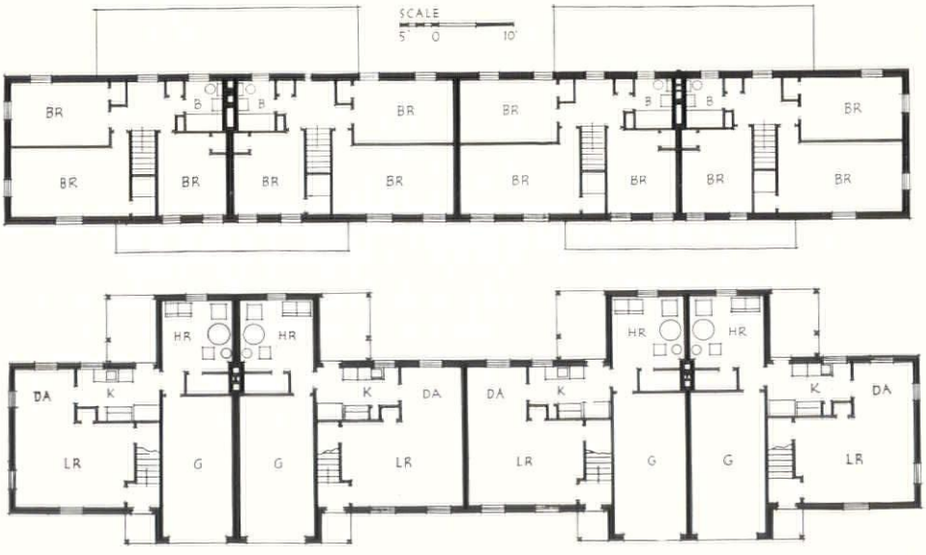


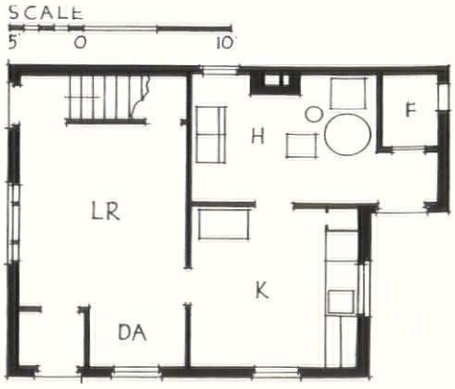


At right, first and second floor plans of a typical twin dwelling having two bedrooms. In many of these plans the porches are not indicated; this feature is nearly always a part of the dwelling, and, through standardization of forms, is indicated upon assembly plans instead of upon these unit plans. On the first floor the small compartments side by side, just in front of the chimney, are for coal storage

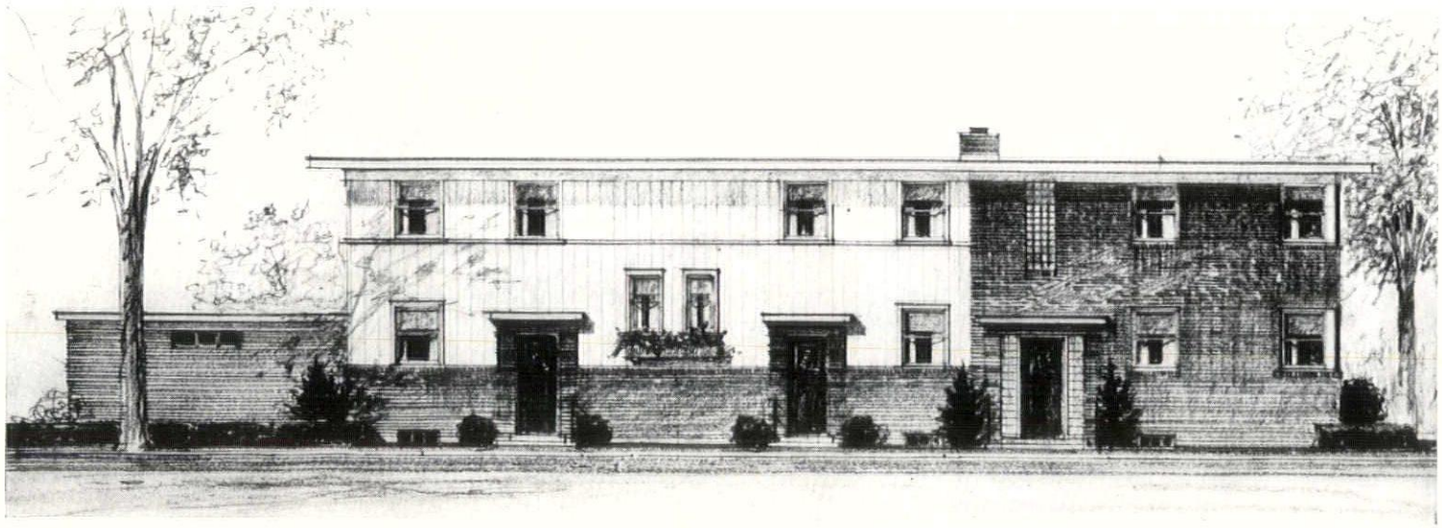
At right, first and second floor plans of a type of single family dwelling. To compensate for lack of cellar storage space, a hatch is provided in second floor ceiling, giving access to attic space

Below, first and secand floor plans of a typical four-family group house somewhat like that shown in the perspective at the top of the facing page. This is the general plan scheme for dwelling units in which the garage is incorporated



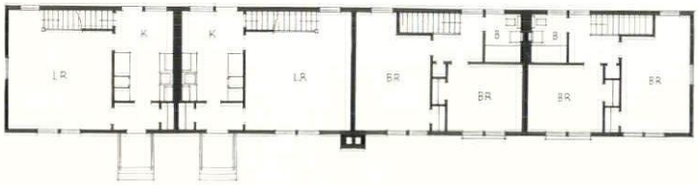


GREENDALE, A GREENBELT TOWN NEAR MILWAUKEE, WISCONSIN

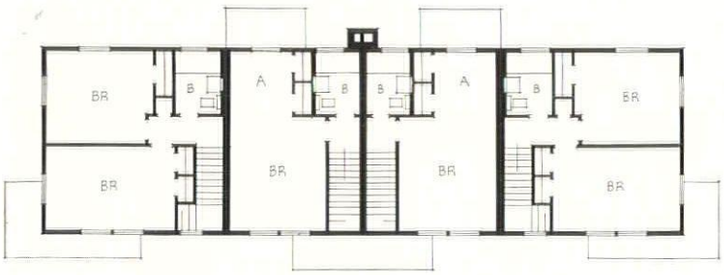


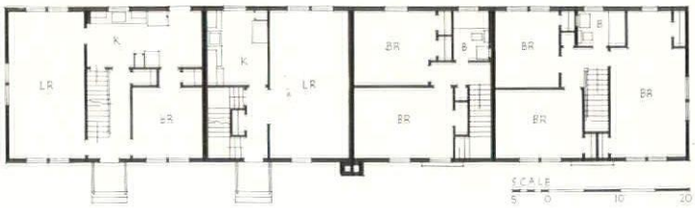
GREENBROOK, PLANNED FOR BOUND BROOK, NEW JERSEY

IT was expected that this town would be occupied by the higher paid workmen from the large industrial area within a radius of five to ten miles of the project—Manville, New Brunswick, part of Plainfield, and possibly as far as the Amboys. Adequate housing facilities in this area are woefully lacking. Research established the family of four persons as the size to be most favored, resulting in a distribution of unit sizes as follows: 4 bedroom house, 10%; 3 bedroom, 25%; 2 bedroom, 50%; 1 bedroom, 15%. The units were planned largely for blocks of four to six units, with a few twin houses and a few detached one-story houses; there were also two fireproof apartment houses of three stories, for the small units. Cellars were universally provided, investigations in the field showing that they were highly desired and much used; to omit them would have been questionable economy and might have interfered seriously with rentability.

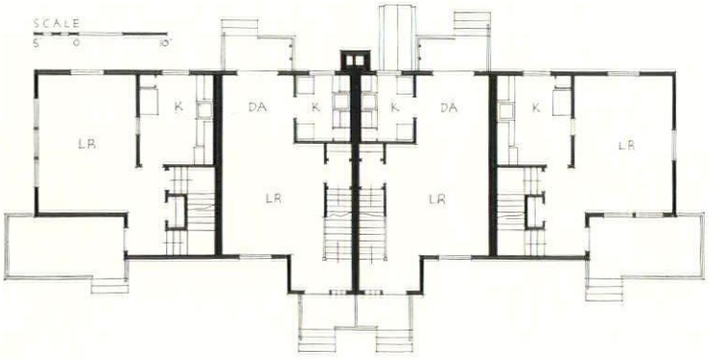


First and second floor plans of row house with four units of two bedrooms

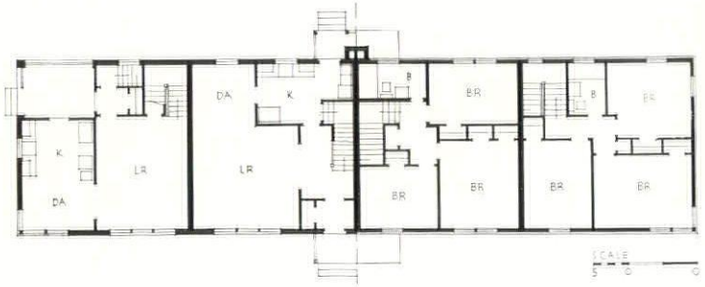




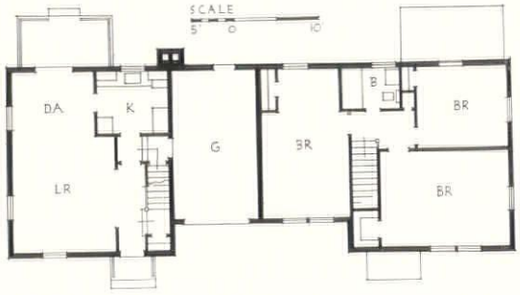
Four unit row house, two with four bedrooms, two with two bedrooms



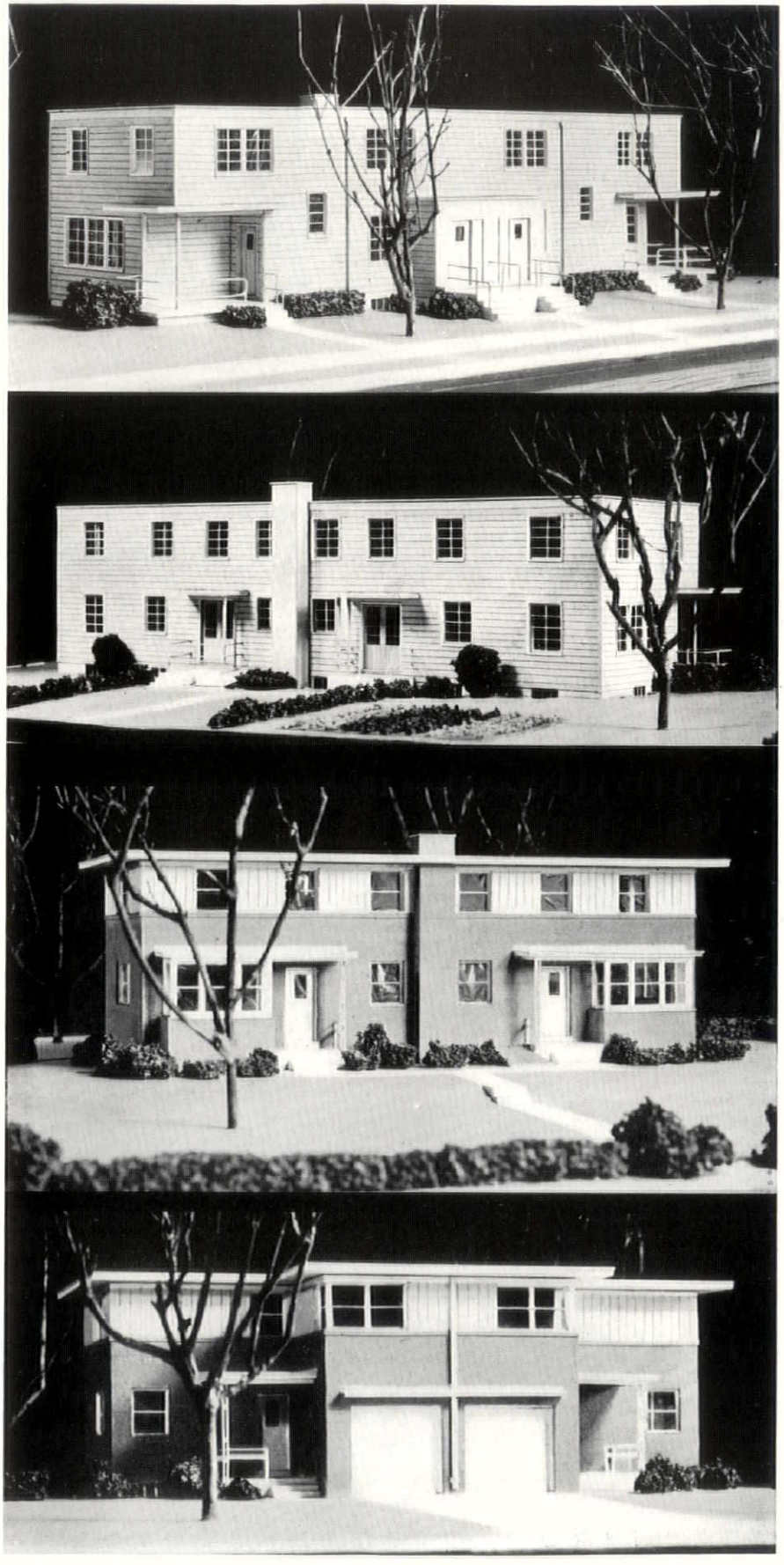
First and second floor plans of a four unit house



Four unit row house each unit with three bedrooms



Twin houses, three bedrooms, with and without garage. At right, models of twin house types



PERSONNEL

Town Planners: HENRY WRIGHT, ALLAN KAMSTRA

Architects: ALBERT MAYER, HENRY S. CHURCHILL, CARL VOLLMER

Chief Engineer: RALPH EBERLIN

Co-ordinator: ISAAC McBRIDE

COMPARATIVE ELEMENTS

General. 750 dwelling units, mainly in blocks of four to six houses, with a few twins and a few detached one story houses

Construction. Wood frame worked out to a standard basis for any type of exterior material—brick, clapboards, transite. Flat roofs, tar and gravel; pitched roofs, slate

Insulation. Throughout walls and roofs

Heating. Oil-fired hot water plant for each group, controlled by exterior thermostat
Domestic hot water from individual gas heaters

Interior Walls. Plywood, with fibre board ceilings

Floors. Hardwood

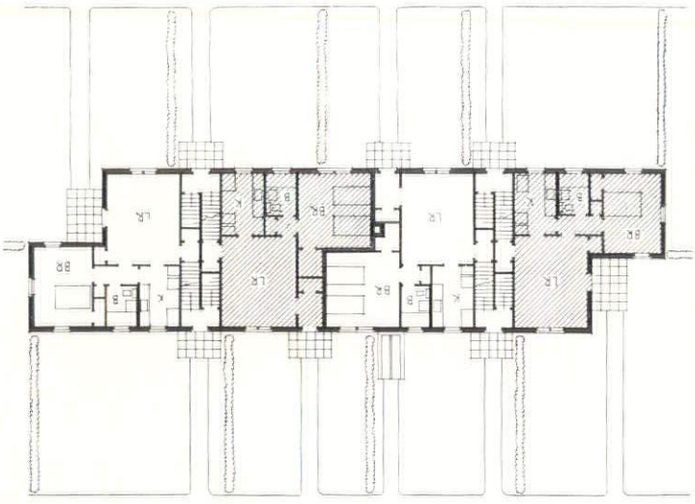
Windows. Double-hung wood

Variable Uses. Some plans allowed conversion of dining alcove into the kitchen space by moving a light partition

Garages. Provided for 70% of the houses; 35-40% of these attached, balance in group garages. No house without garage was to be more than 200 feet from a group garage.

Multi-family Buildings. Fireproof

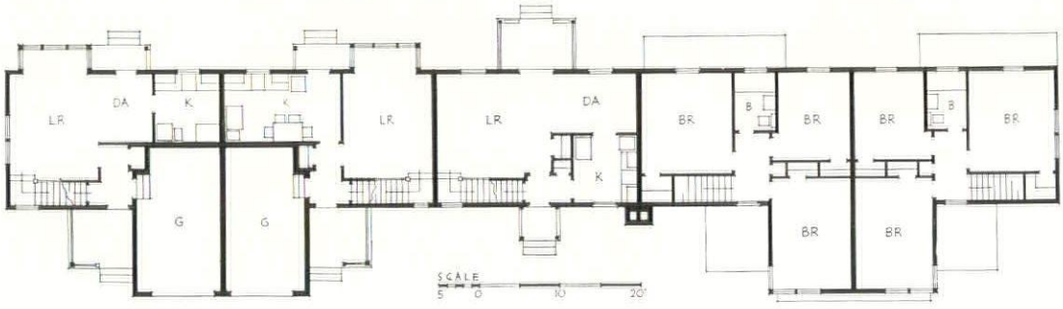
Ranges. Gas



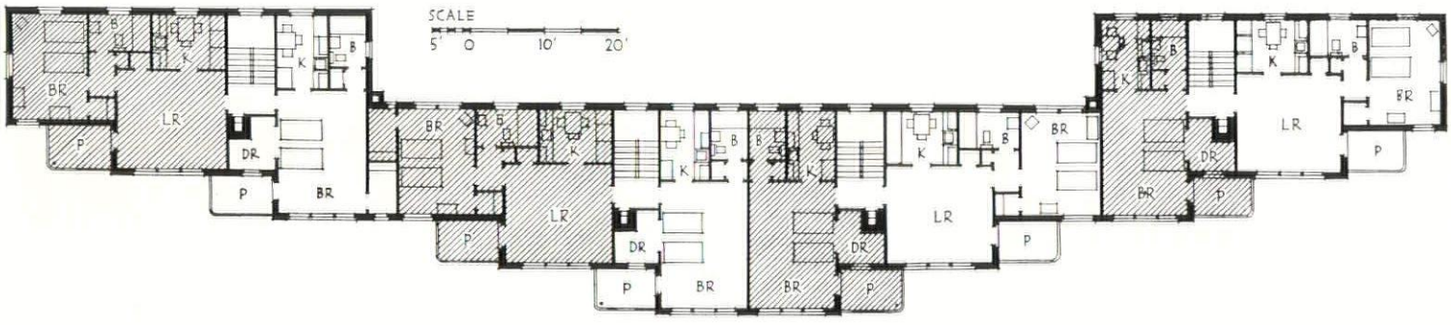
Above, perspective studies of typical exteriors for the houses having pitched roofs

First and second floor plans of a two story multiple dwelling in which each apartment is reached through its private garden

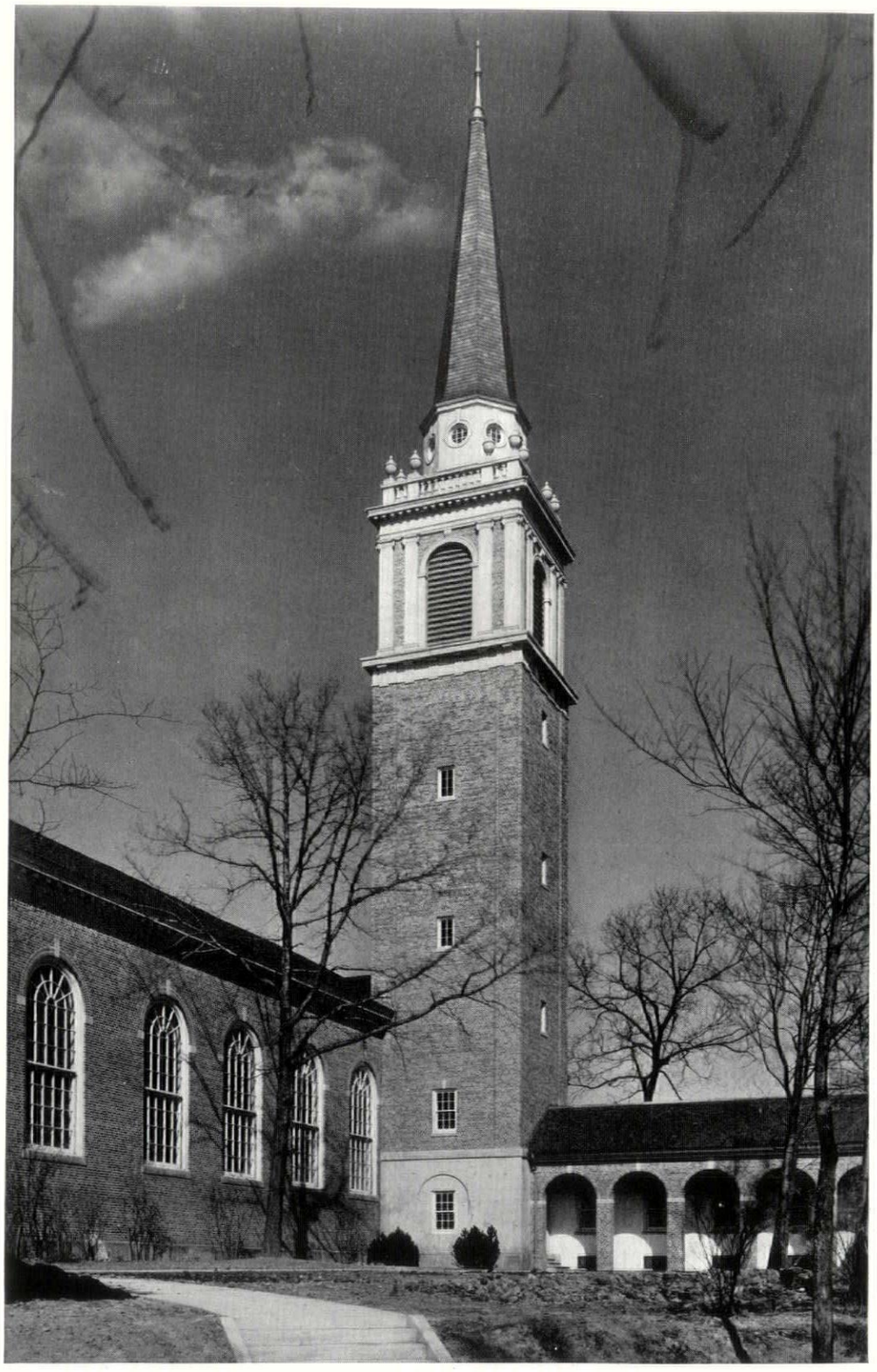
First and second floor plans of a row house of four three-bedroom units, each with garage, and one two-bedroom unit without



Below, typical floor plan of a three story fireproof multiple dwelling, each apartment in which has its porch or balcony

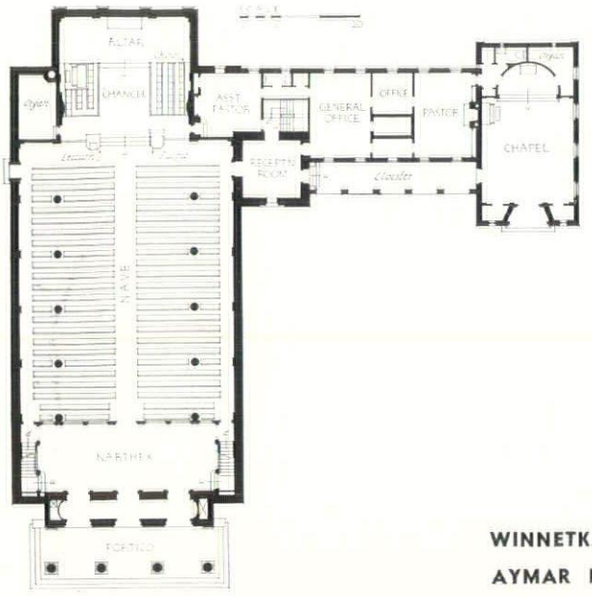


GREENBROOK, PLANNED FOR BOUND BROOK, N. J.



WINNETKA CONGREGATIONAL CHURCH
WINNETKA, ILLINOIS

AYMAR EMBURY 2nd AND JOHN LEONARD HAMILTON, ASSOCIATED ARCHITECTS



The building is admirably adapted to the irregular triangular shaped plot which slopes sharply at the rear. Limestone, brick, and wood trim are used in pleasant relationship on the exterior. Auditorium including balcony seats 800; the chapel 55. The structure is air conditioned throughout

WINNETKA CONGREGATIONAL CHURCH, WINNETKA, ILLINOIS
AYMAR EMBURY 2nd AND JOHN LEONARD HAMILTON, ASSOCIATED ARCHITECTS

Blue-green blinds are used in the windows. Pews are of pale yellow with blue seats and trim. Lighting fixtures are silver touched with blue. The floor is of rubber tile

The interiors are highly colorful. Walls are of pale yellow touched with silver; the ceiling gray and silver. The chancel floor is of royal red, white, gray, and black Vermont marble

WINNETKA CONGREGATIONAL CHURCH, WINNETKA, ILL. AYMAR EMBURY 2nd AND JOHN LEONARD HAMILTON, ASSOCIATED ARCHITECTS

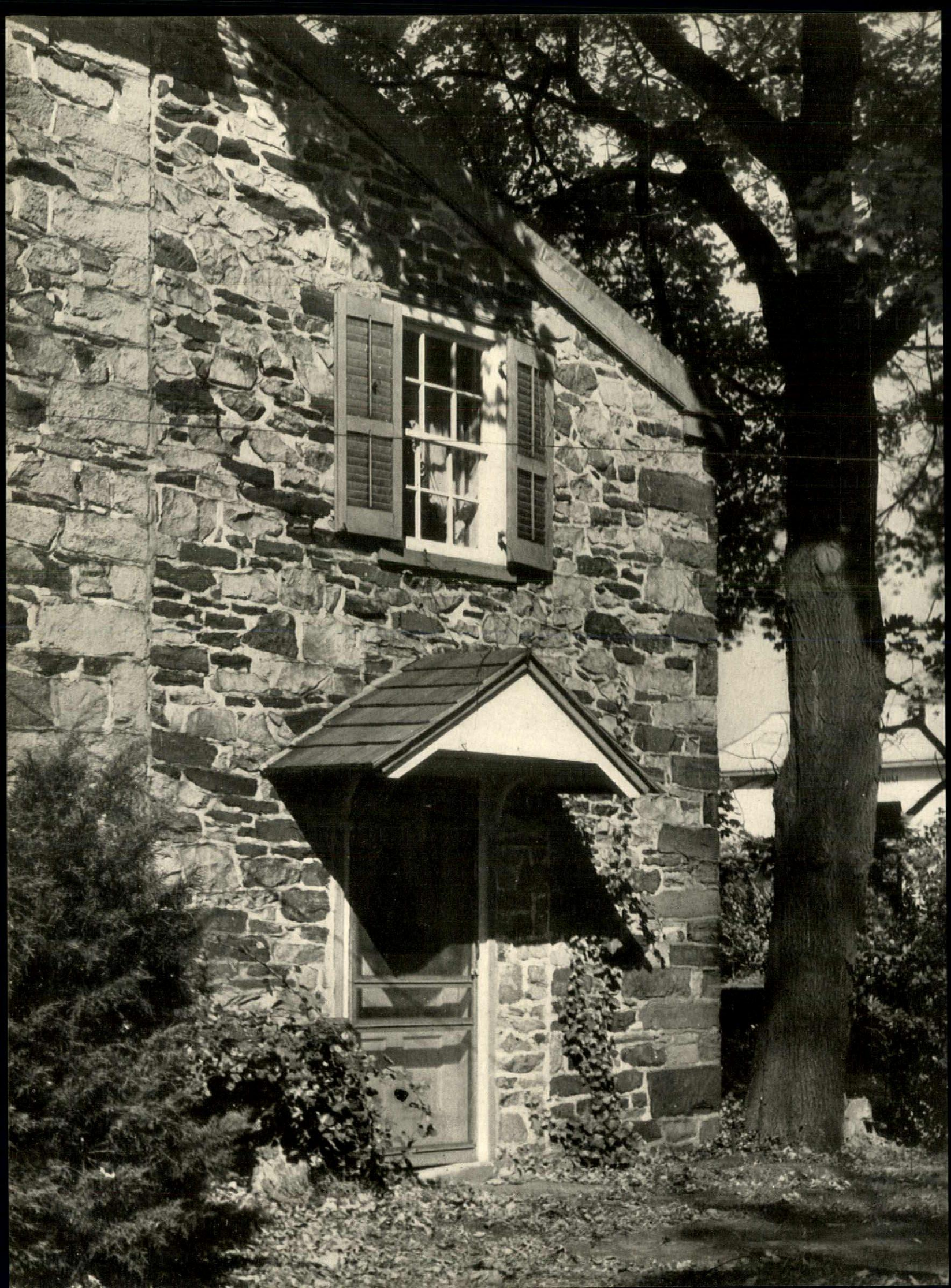
The interior treatment of the chapel which is connected to the church by the cloister, is similar to that of the auditorium. Wall of the cloister and reveal of main entrance door are of white plaster

PHOTOS: R. W. TEBBS

Rear elevation of the Guttman Residence near Newtown. . . . Fritz Steffens was the architect for the renovation. Symmetrically placed entrances give the effect of a two-family house, although it was built in 1853 for but one.

OLD STONE HOUSES IN BUCKS COUNTY

SITUATED on the Delaware River above Philadelphia, Bucks is one of three original Pennsylvania Counties. The supposed site of New Albion, Sir Edmund Plowden's mythical colony, its earliest history is one of strife between the Dutch, Swedes and English jockeying for imperial position. From the time William Penn became proprietary in 1681 there was rapid colonization by English, German and Scotch-Irish settlers. During the early part of the Revolutionary War, Bucks County was a place of some strategic importance. On Christmas night, 1776, Washington crossed the Delaware at McConkey's Ferry (now Washington's Crossing) to surprise the Hessians at Trenton. Recently a group of architecturally discriminating Philadelphians and New Yorkers have been attracted to Bucks County by its unspoiled rural calm.

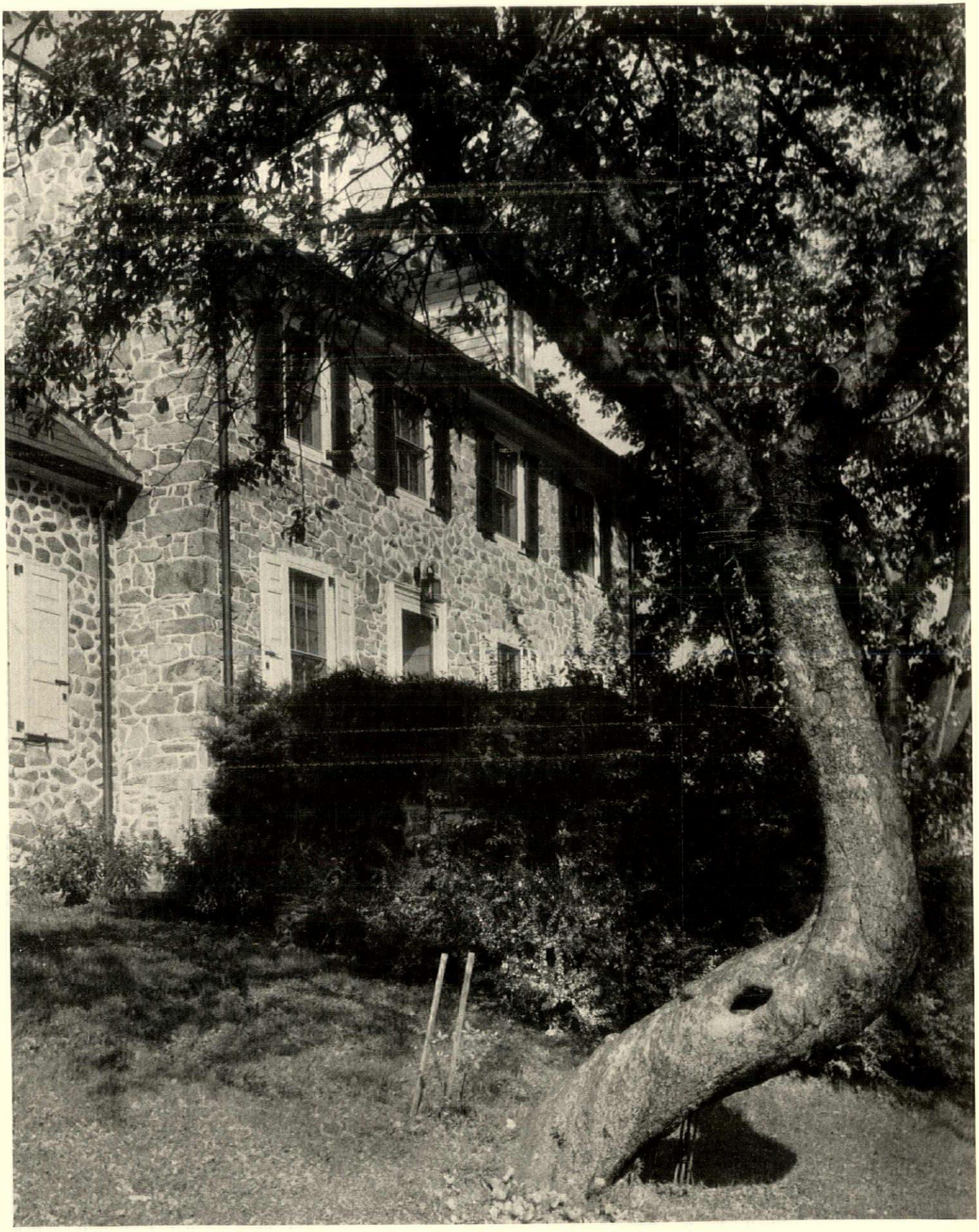


Under the rich rolling top soil of Bucks County, lies a bed of limestone providing almost every farm with a lime kiln and building stone quarry. The stone varies in color from blue and gray to yellow, buff, rust, brown and purple brown. The original portion of the Buttonwood Bend House (opposite page) was built in 1760. "Byecroft" (above) near Lahaska has been in the Bye family since it was built. It is now the residence of Dr. E. Bye.

The minor outbuildings such as the barns, carriage houses, smoke and springs houses were built with the same careful stone joining that typifies the houses. This old spring house is on the Willis place near Newtown.

The stone which was difficult to dress and rough to handle determined the simple, square character of these houses. Their sites were almost invariably a southern slope near a spring or stream. The residence of C. S. Morgan III.

Despite the rather unwieldy character of the material, great skill was shown on the part of Bucks County masons in the careful way they handled arched openings and built up corners with alternating large and small stones. The Nichols residence (above) is near Aquetong. (Opposite page) a rear view of the Richardson house on Windybush Road near Newtown.



The front of Woodward residence, Bucks County, Pennsylvania

BUYING HABITS VS. PROFESSIONAL PRACTICES

THIS is a time of expanding opportunity for architects, defeatists to the contrary notwithstanding. The country needs, wants and will pay for the services the architect has to offer—the services for which he is preeminently fitted—design,—design that couples and unifies efficiency with beauty. If this is true what is our field, why is it that the public is not availing itself of our creative abilities? Must we continue to blame the public for its lack of understanding, for its lack of appreciation of how good we are and what we can do for them? Is it all the public's fault or does it rest with our own attitude, our own lack of initiative, our own methods of making our services available, "marketing" or "selling" our services (to use those anathemaic words)? If we assume for ourselves abilities to design possessed by no other group, if we assume this should guarantee us leadership in this field—what holds us back?

The greatest deterrent is probably the lack of understanding on the part of the profession as a whole of what might be called the "buying psychology" of the public. It is now time to investigate both the public and ourselves and to adapt our policies and programs to the realities of the public's buying habits and desires. Is not the means justified by the end sought—greater service to society through better design? Of course this means coming out of our shell, it means reconsidering our attitude toward three phases of our rules of professional practice, viz.—1. revising our systems of charges; 2. revising our attitude toward advertising and publicity; 3. revising our relationships with the other factors in building and manufacturing production, i.e., with contractors, decorators, realtors and developers, engineers, landscape architects, town planners, material and equipment manufacturers, producers of all those things we use.

Let us think for a moment about the three phases of our practice that may be revised if we are to become effective rather than potential. First, our system of percentage charges. The public buys most services and hidden charges in the price of the end product or commodity. The services of the tailor in styling and fitting are included in the price of the suit. The builder's charges for services (and his profit) are included in the price of the house built for sale, or in the lump sum of a contract job. To the average home builder the payment of six or ten per cent for the architect appears as an "additional" charge. It is a system of payment strange and unfamiliar to him. Shall we revise our methods so that our fee will not stand out as a separate charge? The implications of such a procedure would carry us into a closer integration of the design with the construction, of architecture with contracting, too many ramifications to be indicated here, but worth thinking about. It would involve Number 3 of our phases of practice to be investigated. Or shall we adhere to our present system of charges for building design and attempt to educate the public?

This brings up phase Number 2. Does it not indicate an organized campaign of advertising and publicity, whether or not our system of charges is changed, or whether our relationships become more closely integrated with construction itself? Blaming the public for apathy toward us without bending every effort to inform the public is puerile, it's a spoiled child attitude. Individual architects can do much in their own locality (and some do for themselves) but organized effort would bring far greater results.

Phase of practice Number 3, revision of our relationships with others in the field,—both technicians and producers,—offers many possibilities for expanding our services. It deserves our consideration individually and collectively, and, it involves both other phases. If we are capable of designing good homes, for instance, why is it not possible for us to produce them in a manner better suited to the "buying psychology" of the public? Can we become master-builders and prove our worth through a superior product at no greater cost to the buyer? Would our ethics and professional standards necessarily have to go by the board? Contractors are being urged to be better designers of houses and to become "architractors." Does the rule work both ways?

To go further—why should the architect be content to design house shells—equipped, of course, with mechanical accessories? The designer's field should not be circumscribed and limited to shelter, buildings—it must encompass the whole field of things that people use. The latent and potential abilities to design that are now dormant, rusting, dammed up, should be released to the benefit of industry, the consumer and to the prestige of the profession. Are we not able to provide better designed furniture, refrigerators, bathtubs,—the first for individual clients *and* for manufacturers, the others for the manufacturers. The fertile field of industrial design is open to the architect. A study of the public's "buying psychology" and a study of the three phases of our own "marketing methods" seem in order if we are to expand our usefulness in the future.

Kenneth K. Stowell

EDITOR

THE DIARY

Henry Sayler

Tuesday, September 1.—One of the straws carried along by a significant wind is the talk one hears here and there about the possible development of the house which can, at will, be attached to, or detached from, the land. One finds it in the automobile trailer idea, in the existence in Florida of municipal camping spots where the various utility services are readily available for connection. Henry N. Wright, who was in today, senses this idea in the air, and brings up the point that the detachable dwelling brings with it a greater degree of mortgagability. For instance, the man who buys a "diner"—a dining car fitted up by the roadside buys such property almost on a shoe string. The reason is that it can readily be recaptured by the mortgagee. Possibly there is in all this a tendency back toward the custom which prevailed in the early days of this country, of leasing land instead of buying it. Whatever the significance, it is a somewhat startling fact that there will be manufactured in this year, 1936, some forty thousand trailers.

Thursday, September 3.—Lunched with Samuel Yellin who had come over from Philadelphia for his usual Thursday in New York. Yellin thinks that the greatest single specialized collection of art in existence is the armor at the Metropolitan. A museum endowed today with sufficient millions could, within a fairly short period, acquire an adequate collection of paintings, sculpture, and most of the other branches. It could not, however, acquire a really representative collection of armor, specifically, or even the broader field of metal work, for there is little or none to be had.

Saturday, September 5.—We are all of us rather too prone to attach large round figures to buildings, representing their cost, without much respect for the actual facts. A month or so ago we referred to the U. S. Supreme Court Building as a twelve million dollar building. Cass Gilbert, Jr., having the facts, points out, merely with the idea of keeping the record fairly straight, that the Supreme Court cost for general construction and equipment, including the architects' fee, $8,998,886.31; for furniture and furnishing, the cost, also including architects' fee, was $214,089.-24. As a matter of fact, it will be recalled that the appropriation for the construction alone was $9,740,000, to which an additional amount was to have been appropriated later for furniture and furnishing, architects' fees, and supervision. So here was one building that came well within its expected cost. The cost of the land, is not included.

Monday, September 7.—The world should rise and give at least three cheers for American Artists Group, Inc. It has just put into effect an earnest effort to bring art in the form of the print within the reach of a vastly greater circle. When man gained the knowledge of how to make a precisely duplicable image, it seemed that art would be carried beyond the church and the wealthy patron to the homes of the people. For some reason, however, artists and those who sell copies of their graphic arts, decided that art should be kept a precious thing. They restricted production, printing only twenty-five to one hundred copies of an etching, and even restrained the artist himself from producing "too many plates." The print was made still more precious by having it signed in pencil by the artist.

The American Artists Group of some fifty outstanding artists, have produced plates of which prints are to be sold unsigned at the cost of a novel. More power to them!

Wednesday, September 9.—E. Keith Mackay, Australian architect, dropped in today to find out what he should see and with whom he should talk in a hasty trip across the United States. It is not so many years ago that all of the architectural exploration farther afield was being done by Americans, chiefly in Europe, and little, if any, by other peoples in seeking what we had to show. Our students and architects these days seek out the northern countries of Europe as a rule, rather than the southern countries. We are very much more frequently hosts to students from England, Australia, New Zealand, China, France, and Japan.

Friday, September 11.—I saw an architectural rendering today which had in its sky two or three birds in flight. It brought to mind Hughson Hawley, the English architect turned American, who in the past half century made more than eleven thousand renderings for other architects—nearly always with a few birds below his clouds. Hawley died last May in Brighton, England, in the home of his son-in-law, Jeffrey Farnol, the English novelist. We used to see Hawley in The Architectural League club house occasionally during recent years. The vogue of architectural renderings had changed. No one seemed any longer to want Hawley's realistic water colors, such as he had made to supply a keen demand from architects in forty-two states of the Union, and in more than a thousand cities. We shall not again have the joy of sharing with Hughson Hawley his intense enthusiam for life, but it will be a long time before his familiar signature on a water color rendering and his birds in the sky will be without meaning to American architects of what may now be called the older generation.

Monday, September 14.—Bad news from Paris: a fire has severely damaged the Opera House. Since 1874, when Charles Garnier completed it, Paris would not have been Paris without the Opera House. It is hard to conceive of a fire that could really do an irreparable damage to the building. The library, however, and a museum of historical documents seem to have suffered most.

Tuesday, September 15.—A goodly number of men representing the technical press, gathered around a luncheon table today in the Metals and Minerals Show in Rockefeller Center. Here is being established a permanent exhibition paralleling to some extent the architects' sample shows in New York and elsewhere. They have a good idea for the Metals and Minerals Show—conducting the exhibition somewhat along the lines of magazine publishing. The manufacturers have individual displays corresponding to the magazine's advertising pages. Supplementing these, however, there is a changing exhibition presenting much that is new and interesting in this growing field—and these are the editorial pages.

Vergil D. Reed, who is assistant director of the U. S. Bureau of Census, told us, after lunch, a lot of things that few of us knew about the Bureau's activities, particularly as to its more recent accumulation of data regarding business rather than people.

Thursday, September 17.—A newspaper clipping this morning tells of a farmer in Arkansas who rigged up an air conditioner to cool his home, at a total cost of $1.50. I suppose we are in for this sort of thing now because of the rapidly spreading interest in making more comfortable our environment. Nevertheless, newspaper stories of this kind are going to give the public a false impression of what is possible—just as the continuous publication of obviously insufficient house costs leads the public to expect the impossible from the architect and builder.

Friday, September 18.—I find a great deal of confusion over the news from Spain that "The Alcazar" has been dynamited. One should be more specific than this. Alcazar (*el-Kasr*, the castle) is almost a generic term. The Alcazar of Toledo, a fortification used as a military school, is the one that has suffered at the moment through the inability of one group of men to agree with another group as to how the world is to be made better. The Alcazar in Seville, the Alcazar in Segovia, and other lesser alcazars have as yet not interfered with man's noble efforts to improve his environment—as did Rheims.

Saturday, September 19.—Claude Bragdon tells me that he is about to publish his autobiography, and I can imagine few life stories that would have in them more to interest the architectural student and the practicing architect of today. Bragdon's life has been a varied one, touching upon many things outside of his chosen profession—making newspaper cartoons, stage settings, book illustrations, the writing of fifteen books, many of which he designed in format. Architect, mystic, illustrator, philosopher, musician, he has drunk deeply of many phases of life, and always in the quest for beauty. Perhaps we can print some of his musings upon early days—his contacts with Harvey Ellis, Bruce Price, Louis Sullivan, and others whose lives have helped to direct the stream of architectural history in the United States.

Monday, September 21.—The Small House Associates, which was organized nearly a year ago in New York's attempt to solve the problem of rendering architectural service to the builder of a small house, has been metamorphosed. It is now called the American Society for Better Housing, and will include as members, properly qualified architects, and as associate members, manufacturers of materials, lending institutions, realtors, and builders. It has just embarked upon a campaign of advertising to the public, and helping the home builder to get what he wants and needs by showing him houses that are built, instead of plans and perspectives of imaginary creations. Full-page advertisements in five New York newspapers last Thursday had brought into the office by today 8,000 inquiries for booklets selling for twenty-five cents. It is a departure from the usual professional practice on the part of the architect which will be interesting to watch.

Wednesday, September 23.—Talked with Gilmore Clarke and Alfred Geiffert today about the changing technique of swimming pools. Major Clark said that he had just been looking at an air view of one of the new municipal pools, and noticed that there was an even distribution of several hundred bathers over the whole area. Pools are no longer built with one deep end and the pool sloping upwards to a shallower depth at the other end. Instead, they are built with a depth of three and a half to four and a half feet over the whole area, with an adjoining section twelve feet deep, possibly as a half circle at one end, for diving, and another section at the opposite end for the children's wading pool. This obviates the interference of the divers with the swimmers, and incidentally makes the swimmers more comfortable in that they know they are never beyond their depth. Obviously, there is a great saving in the depth of wall to be constructed, in the reinforcement for increased depth, and the smaller bulk of water to be filtered and chlorinated.

Friday, September 25.—I see that Eric Kebbon and Thomas H. Ellett are back in New York, and John Bollenbacher has returned to Chicago, all busy in private practice after their sojourn in Washington with the Procurement Division. Lorimer Rich tells me that there are now down there only eleven of the original score or more of men who went to Washington to design post offices and court houses on a salary basis. Looked upon in retrospect, the scheme seems to have worked out very well. The Government certainly got some of the best public buildings it has had in a generation, the architects were kept busy at a time when there was nothing much to occupy them at home, and now the strong upswing in building activity is bringing the architect back to his normal procedure.

Monday, September 28.—In much casual talk of our mutual problems with specializing engineers recently—men who know what needs to be known about lighting, acoustics, air conditioning, electric equipment, and the like, it became more and more evident that the design of modern buildings of the larger sort has gotten far beyond the ability of the architect practicing alone. It is still possible and proper in designing a residence, a small store, or some other minor undertaking, for an architect to design and direct the work in every detail. Not so with the hotel, the theatre, the apartment house, and other problems of larger size. The architect who attempts to encompass such a problem with his own hands and his own knowledge, is likely to spread himself so thinly as to make his influence negligible. The science of building the sort of structure that modern civilization requires is too wide and varied for any one man to master. Inevitably, it seems to me, the architect must recognize this fact, and maintain his control as a coordinator of the work of other technicians. He must keep his eyes upon the forest rather than upon individual trees. He must delegate authority and responsibility to others who have greater specialized knowledge than he can attain. If he is wise, he will confess his ignorance of certain technical problems, and entrust their solution to collaborating engineers. Any attempt on the architect's part to arrogate to himself a mastery of this wide field of technical knowledge is inviting disaster.

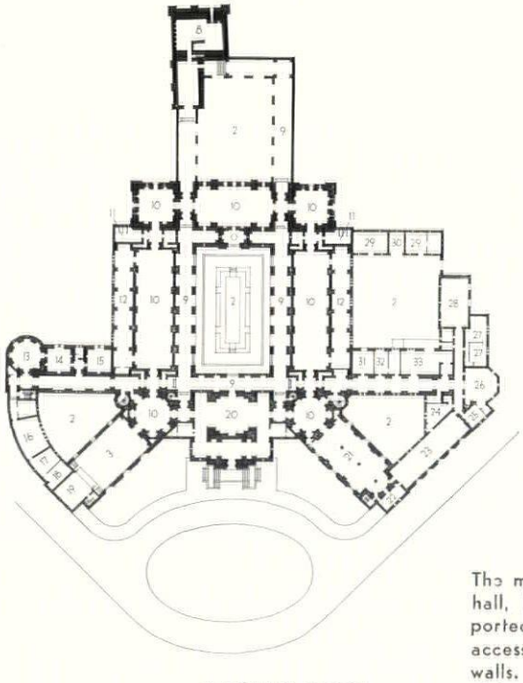
Wednesday, September 30.—Miss Helen Alfred, secretary of the National Public Housing Conference, tells me that she has brought back from her study tour abroad a lot of new material. A number of men and women, some of them from university faculties, others prospective project managers, sailed early in July with notebooks and cameras. What they have learned, when it can be told, may help to speed up the housing program in our own country. It seems to be in one of its periodic lulls.

PALESTINE ARCHAEOLOGICAL MUSEUM

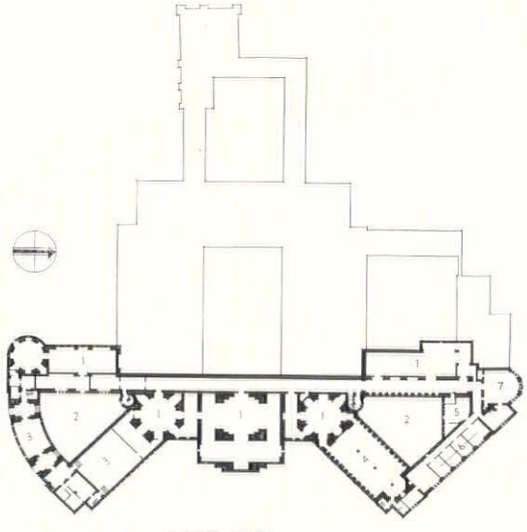
AUSTEN ST. B. HARRISON, F.R.I.B.A., GOVERNMENT ARCHITECT

PAUL MAUGER AND WILLIAM PRICE, ASSISTANT ARCHITECTS, PUBLIC WORKS DEPARTMENT

1. Stores
2. Court
3. Lecture Room
4. Stack Room
5. Chemical Stores
6. Laboratories
7. Formatores Room
8. Existing Ancient House
9. Cloister
10. Galleries
11. Toilets
12. Students' Rooms
13. Archaeological Advisory Board
14. Director of Antiquities
15. Chief Inspector
16. Registry
17. Typists
18. Files
19. Optical Lantern Room
20. Tower Hall
21. Reading Room
22. Catalog Clerk
23. Record Room
24. Librarian
25. Curator
26. Arranging Room
27. Dark Room
28. Studio
29. Stores
30. Garage
31. Assistant Curator
32. Museum Catalogs
33. Reception Room

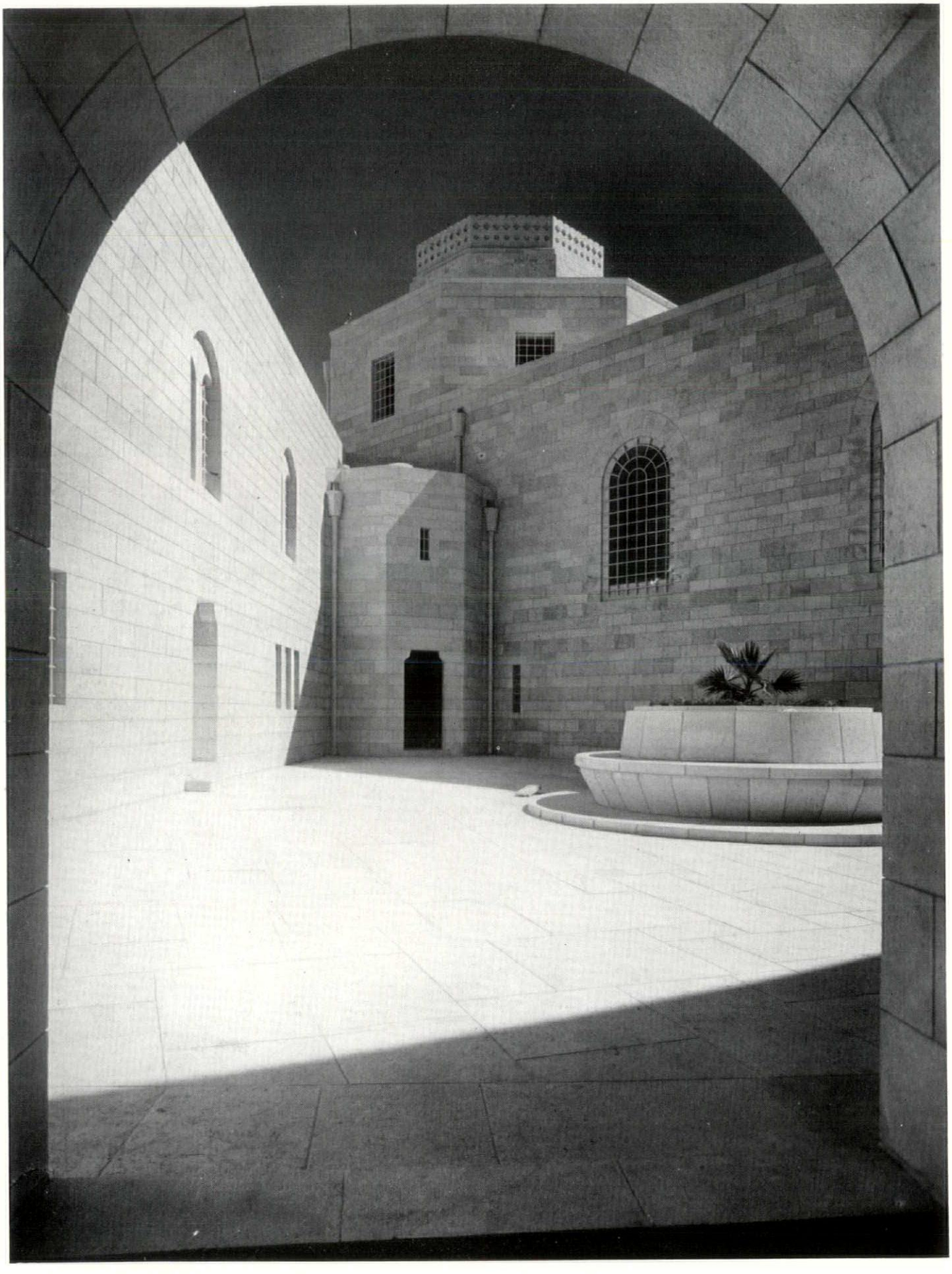


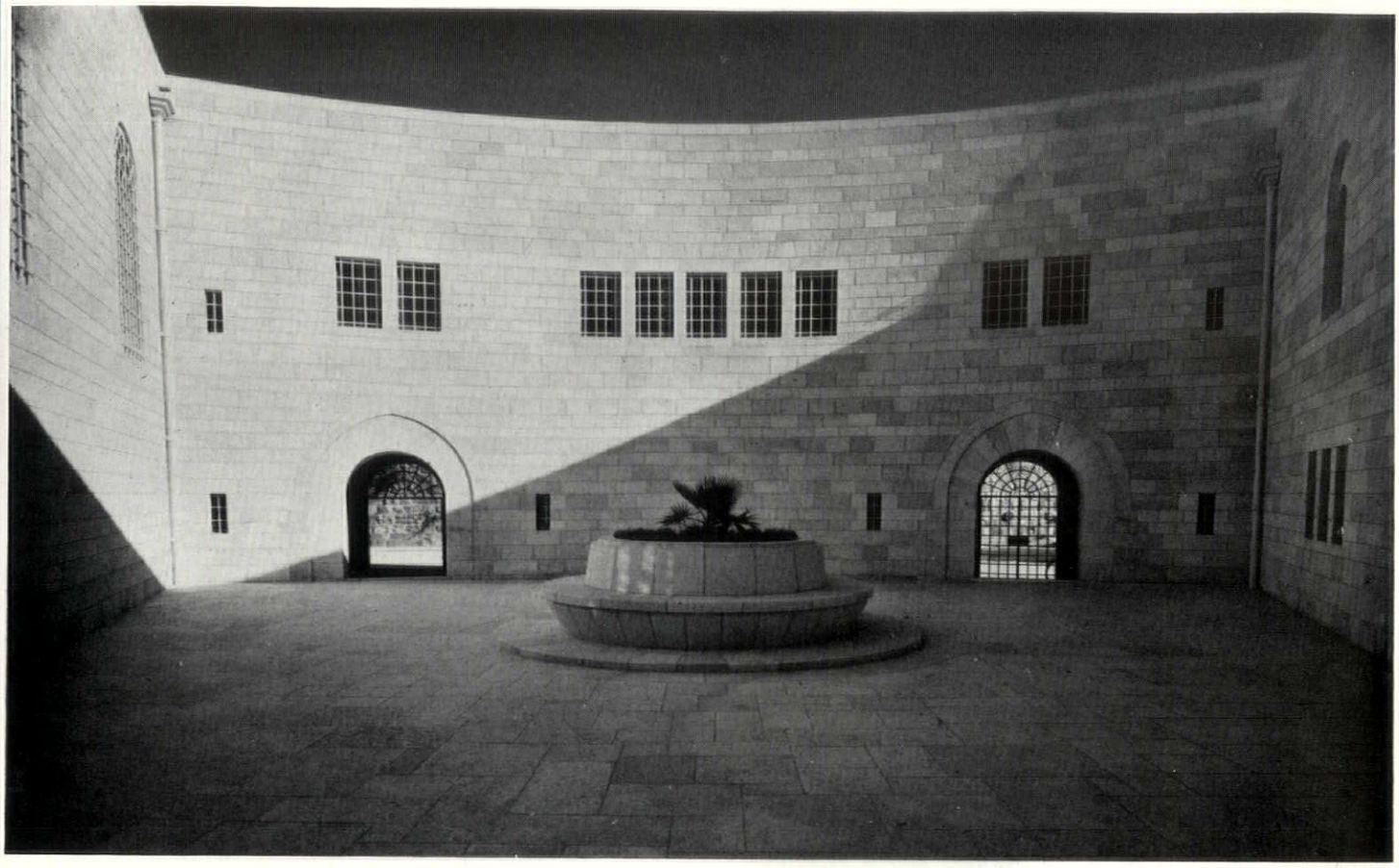
GROUND FLOOR



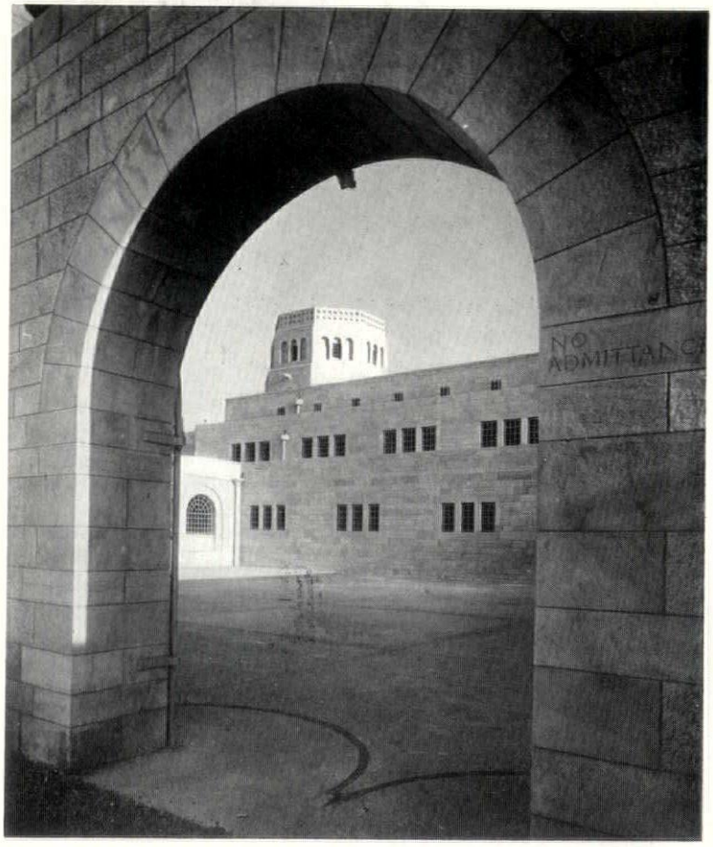
BASEMENT

The main entrance to the Museum gives access to the tower hall, lighted by eight windows in an internal dome supported on squinches. Above the dome is a "Look-Out," access to which is by stairs in the thickness of the tower walls. The central court (facing page) is flanked by cloisters for the exhibition of architectural fragments





The building, to accommodate collections "throwing light on the past of man in Palestine," is the generous gift of John D. Rockefeller. The site just outside the extreme eastern end of the north wall of the Old City of Jerusalem was a gift of the Government, and part of a town planning scheme to conserve the natural amenities of the site. The walls throughout are of local limestone, the windows of bronze. The south court (above) with entrance archways from the Jericho Road approach. View from archway of south approach (facing page) showing entrance to circular staircase to ground floor and Department of Antiquities. Windows on right are those of the Lecture Theatre. Above the upper part of the South Octagon may be seen the top of the central entrance tower. Entrance to service court (right) with view of north gallery and central tower beyond



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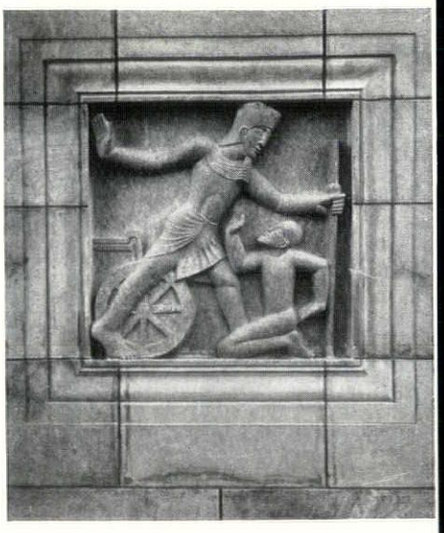
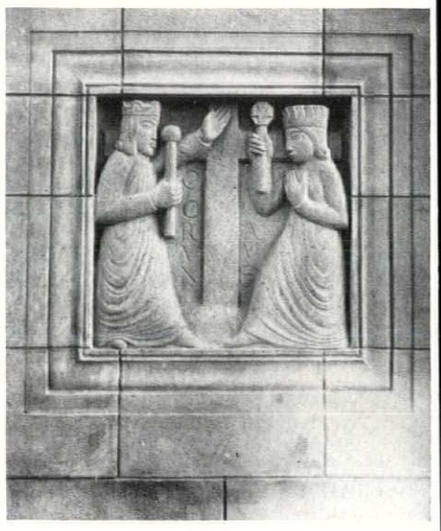


EGYPT



BYZANTIUM

At the west end of the central court is a domed niche ornamented with dark blue turquoise and white tiles. The fountain within this niche feeds the lily tank with water. The series of ten sculptured panels placed between the arches of the cloisters symbolize the civilizations which have most affected the history of Palestine. These were carved by Eric Gill, as were the ornamental head through which the water of the tank is extracted and the panel in the tympanum (facing page) over the main entrance symbolizing the historical role of Palestine as the meeting place of Asia and Africa

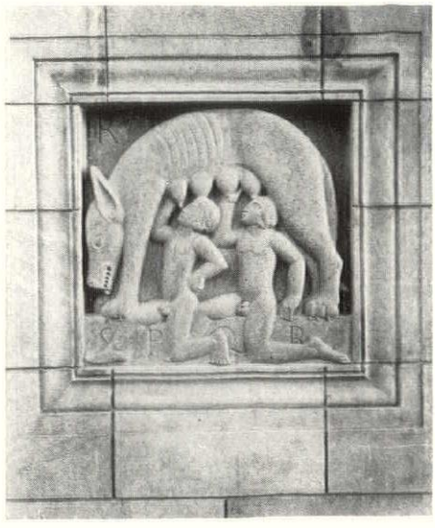
ISLAM

PALESTINE ARCHAEOLOGICAL MUSEUM

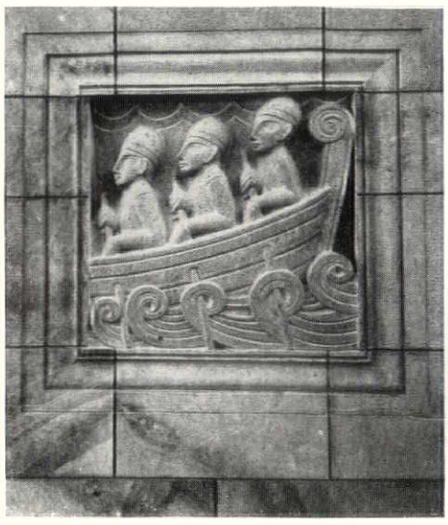
AUSTEN ST. B. HARRISON, F.R.I.B.A., GOVERNMENT ARCHITECT

PAUL MAUGER AND WILLIAM PRICE, ASSISTANT ARCHITECTS

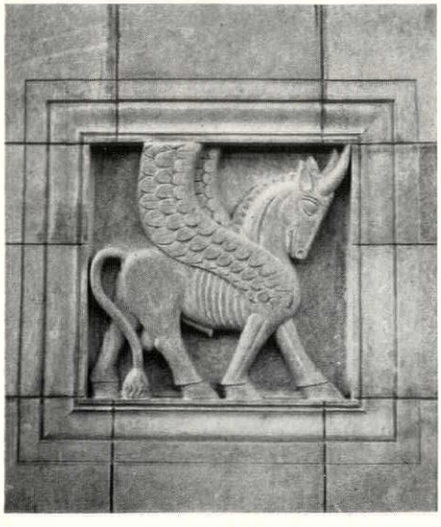
GREECE



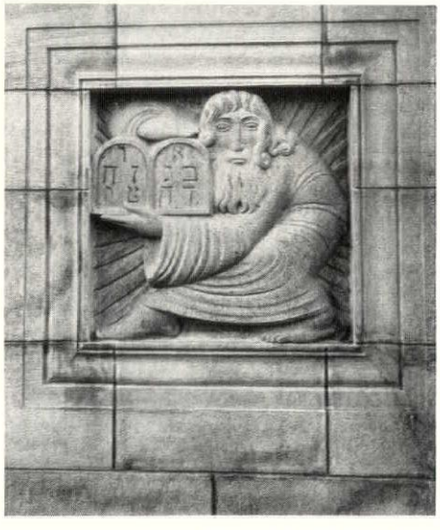
ROME



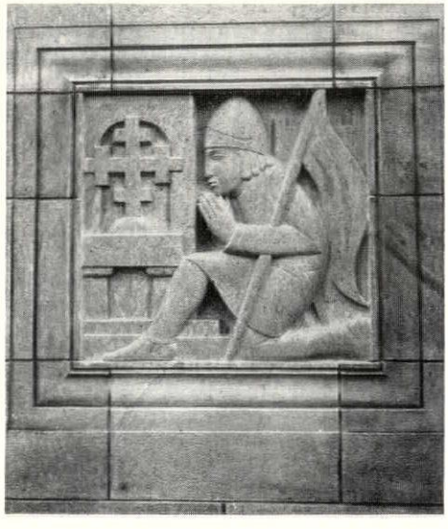
PHOENICIA



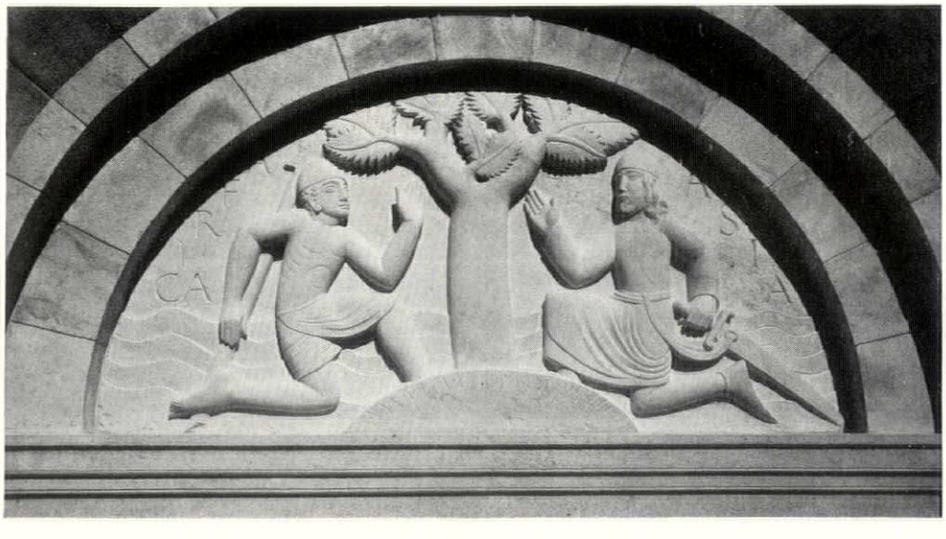
IRAN AND IRAK



ISRAEL

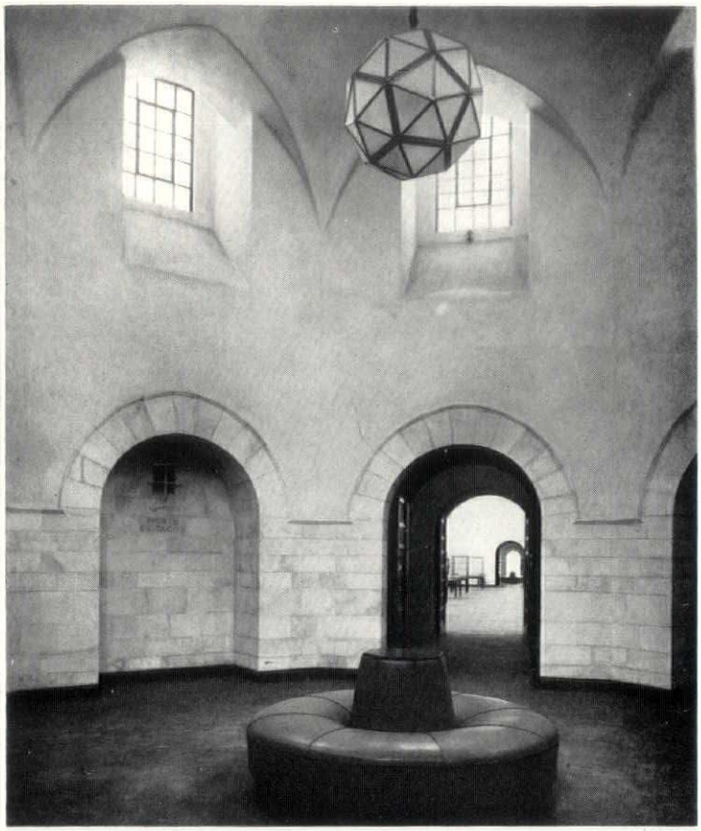


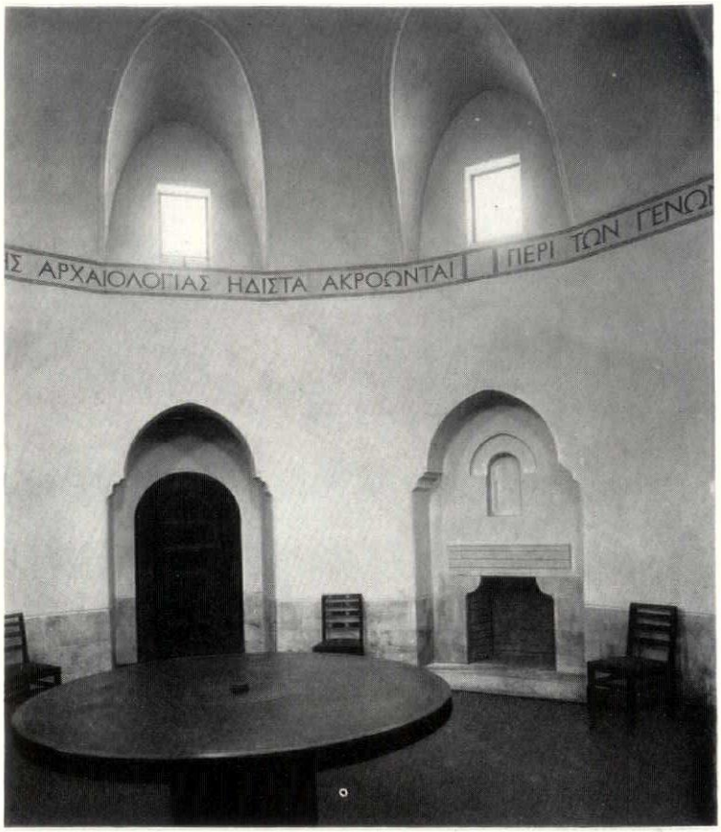
CRUSADERS



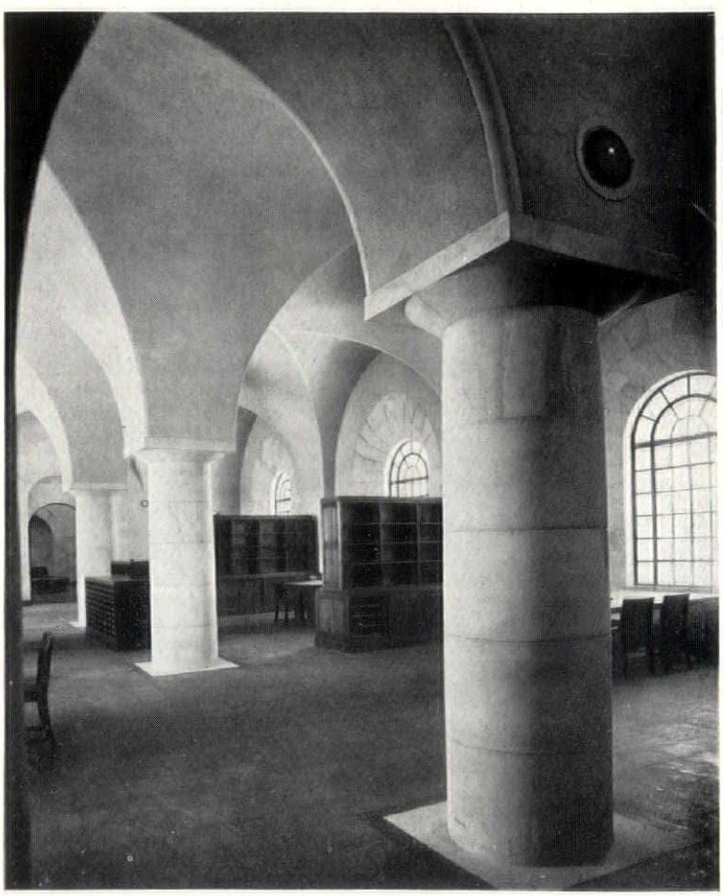
AFRICA AND ASIA

CANAAN





The North Octagon (above), lighted by eight windows placed as high as possible under the umbrella vaults, gives access to the North Gallery beyond. The treatment of the South Octagon is similar. The Archaeological Advisory Board Room (upper right) is a circular domed structure decorated with a Greek inscription in local tile work. The simple treatment of the furnishings lends dignity to the room. The Reading Room (right) has plastered cross vaults carried in part by three stone columns in the center. The bookcases and tables are so arranged as to form six study bays. The North Gallery (facing page) specially designed to accommodate show cases, has top side lighting and a narrow gallery on either side running the full length of the room to give easy access to the windows for cleaning. The coffered ceiling is thrown into sharp relief by the rows of clear-story lights flush with the ceiling. The South Gallery is similar



PALESTINE ARCHAEOLOGICAL MUSEUM
AUSTEN ST. B. HARRISON, F.R.I.B.A., GOVERNMENT ARCHITECT
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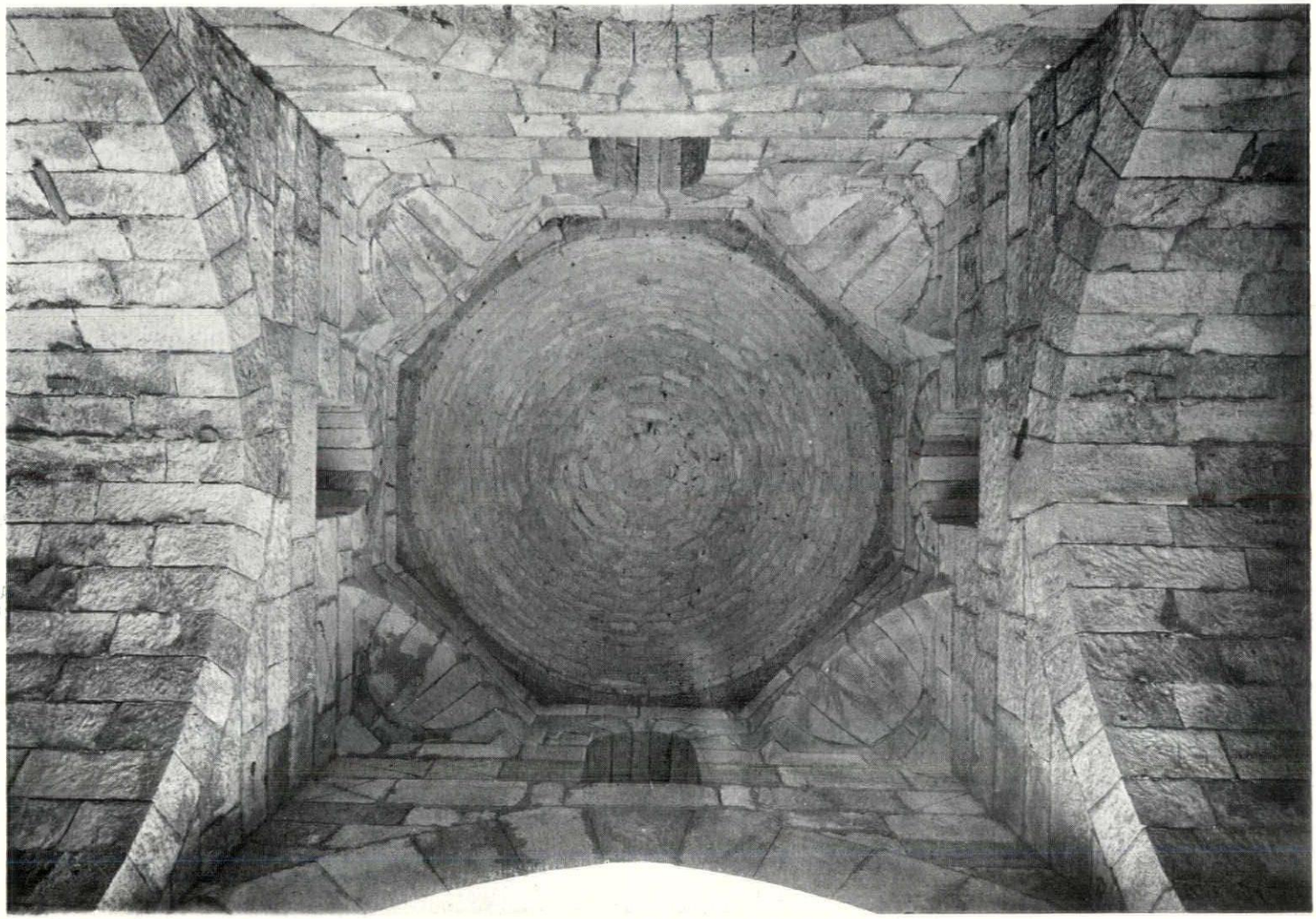
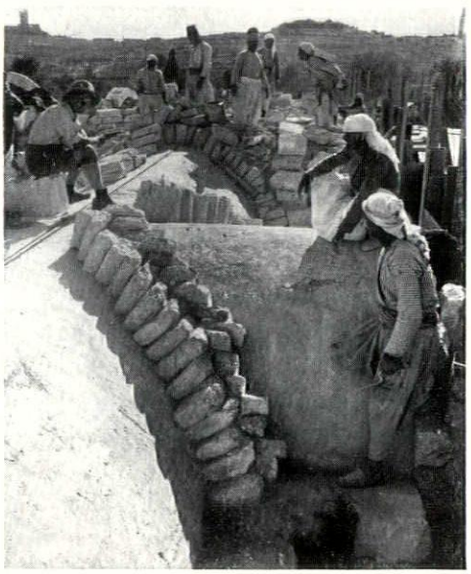
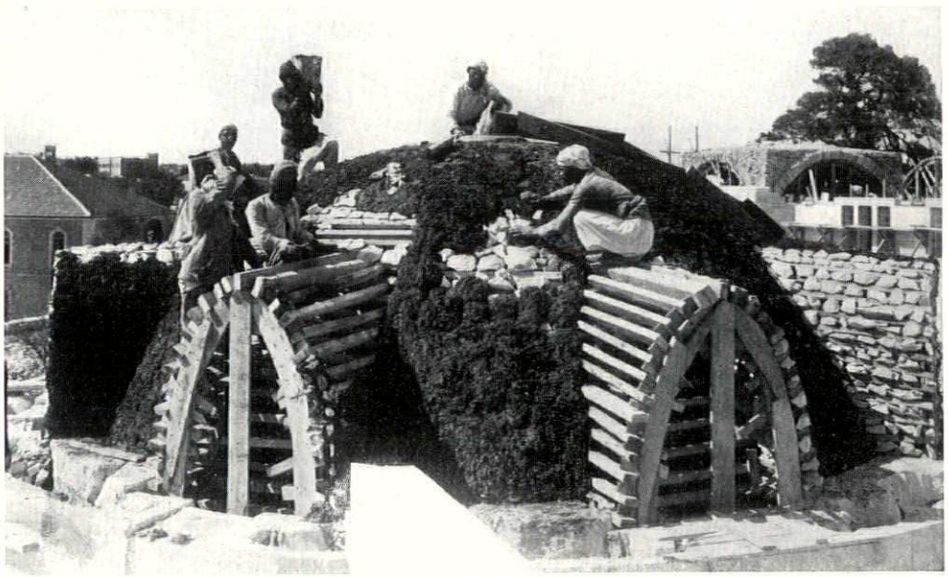


Dome of the fountain niche in the central court before application of colored tiles



Stone ribs of vault over reading room in course of construction



Dome of advisory board room showing traditional centering of wood, stone and mud

Tower hall (opposite page) looking toward north octagon

PALESTINE ARCHAEOLOGICAL MUSEUM, AUSTEN ST. B. HARRISON, PAUL MAUGER AND WILLIAM PRICE, ARCHITECTS

HOUSES FOR HALF "FIVE THOUSAND"

A leading architect after reading about the $5,000 house, chidingly wrote to the editor that substantial, well designed houses could not be built at that price. It can be done, it is being done, and we present as proof, the small houses for all year 'round living that, with land and landscaping sell for $2,500 to $3,200

BY GODFREY ERNST

WHILE researchers are studying the problems and possibility of providing good small houses for $5,000, alert, practical builders and real estate operators are actually producing houses for half that,—well-designed and well-built considering the cost. A year 'round house can be and is being sold complete with land, equipment and landscaping for $2,500. How is it done?

The Hillside Heights development presented here, takes advantage of quantity buying, large-scale operation, FHA financing and good design to become attractive to the low income tenant.

This project definitely reaches the man with only five or six hundred dollars for down payment, the man who wants to pay only twenty to twenty-eight dollars a month on the FHA 20-year amortization plan, including taxes, insurance and water. The standard achieved offers a mark for the prefabricators to shoot at.

The houses are compact, 27′ x 25′ in size, making it possible to place them on a lot 40′ or 45′ wide by 100′ deep and yet acquire a more spacious effect than is possible with larger houses set on a lot 60′ x 100′. Each house is complete; nicely landscaped, cement walks laid, and all mechanical equipment in place.

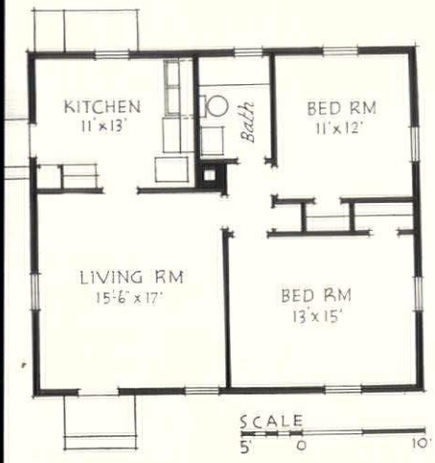
The property, Hillside Heights, is on Long Island, near Mineola, within a mile and a half of the New York City line and on a main thoroughfare called Hillside Avenue. Ground was broken on June first of this year, and in less than two months, fifty houses were sold. About 600 are planned.

Each street in the development runs back straight for about six hundred feet from the main thoroughfare. Each house is set back from the curb line about 27′ to 30′. Cement walks are being laid, and the streets surfaced.

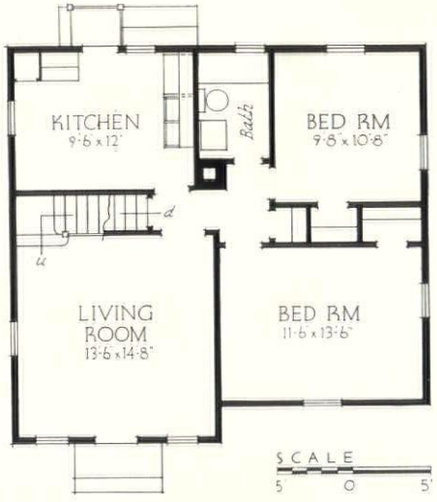
Four types of houses have been designed, two of them of one story type and the other two of the story-and-a-half type with an unfinished second floor providing space for two more rooms to be finished later. Variety in street layout is secured not only by the rotation of these four types, but also by different color treatment of walls, trim, and shutters. Walls of either clapboard or shingles and four different colors in asphalt roofing shingles afford a further variation in appearance.

Ground floor plans follow an apartment house idea: liv-

Plan (below) for one-story type. The same plan with basement employs a stairway from an enclosed kitchen landing for access



Two-story type with unfinished second floor, providing spaces for two additional rooms later. Benjamin Driesler, Jr., Architect. Realty Associates, Inc.



ing room, two bedrooms, kitchen and bath. All rooms have ample wall space, good closets and cross ventilation. There is no dining room, but the larger types have a breakfast nook.

The lowest cost house, selling for $2500, has no cellar. This same type with cellar, on a plot 45′ x 100′ sells for $2900. The people buying this type are quite willing to pay extra for the cellar because it provides a place to put the heating plant, which otherwise is of the one story type of hot water heating made by the American Radiator Company, with boiler placed in the kitchen.

WHAT OF THE CONSTRUCTION?

Construction is of standard balloon type. Sills are 4″ x 6″; corner posts built up of two 2″ x 4″ and one 2″ x 6″; studs 2″ x 4″ set 16″ o.c.; plates two 2″ x 4″ lapped at all intersections; girder under first tier 6″ x 8″; first floor joists, and floor joists where there is an attic, 2″ x 8″, all set 16″ o.c. and doubled under bearing partitions; bridging 1″ x 3″ double spiked not less than 8′ o.c.; ceiling joists 2″ x 6″, 16″ o.c.; rafters 2″ x 6″, 20″ o.c.; collar beams 1″ x 6″ or 2″ x 4″ every third rafter; ridge beams 1¼″ x 8″; valley rafters 2″ x 8″. All timbers are double spiked. In one story houses, ⅞″ plank is spiked on top of ceiling joists in lieu of cross bridging. Ribbons are 1″ x 4″ let into studs and spiked. All openings are double studded with jack stud and doubled 2″ x 4″ headers are set on edge for openings not over 3′-4″ in width, and double 2″ x 6″ set on edge or trussed when of greater width. All bearing partitions are bridged once in their height.

All exterior walls, rafters and floor beams are covered with ⅞″ t. & g. N. C. pine not more than 8″ in width and not below No. 2 common. Sheathing is laid horizontally except in story-and-a-half houses, where it is laid diagonally for the first story and horizontally for the second story. Under flooring is laid at right angles to floor beams.

Exterior walls are covered either with No. 2 white pine or redwood ⅞″ x 10″ beveled siding laid 8″ to the weather; wall shingles are 18″ long red cedar applied 7″ to the weather. Shingles and clapboards are applied over saturated felt of at least 6 lbs. per square ft.

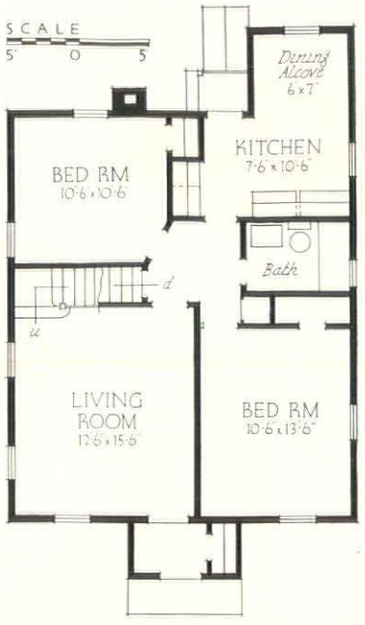
Roofs are covered with 230 lbs. asphalt square butt strip shingles, Genesco brand, applied over 24 lb. saturated tar felt.

Floors are of ⅞″ x 2¼″ t. & g. No. 2 red oak applied over resin sized paper on top of ⅞″ t. & g. rough flooring. In kitchen, rough flooring and plywood covered with Armstrong linoleum are used. Bathrooms have tiled floors laid over 3″ cinder concrete.

Plastering is on wood lath, finished either rough or smooth to receive wall paper, which is washable in kitchens and baths.

Flashings and valleys are of copper, with Toncan metal painted for gutters and leaders. Leaders are connected to dry cisterns.

Foundation walls at first were of 8″ concrete blocks with



Two-story type wth entrance vestibule and dining alcove. Its compact arrangement is similar to an apartment layout. Benjamin Driesler, Jr., Architect. Realty Asociates, Inc.

8″ x 16″ buttresses bonded into the wall every 16′ of exterior running wall, and where girder ends rest on running walls. Later construction makes use of poured concrete 8″ thick with buttresses as above. Lally columns support girders.

Chimney is of brick laid in cement mortar and provided with an 8″ x 8″ terra cotta flue lining.

Plumbing is of copper tubing. Cesspool is provided. Fixtures are Standard Sanitary Mfg. Co. make; Kohler combination fixture in kitchens. Exposed fittings are of chromium.

Electric wiring is of BX steel cable. Two double outlets are provided in every room except kitchen and smallest bedroom.

A one car garage including driveway will be erected for $250.

Heating in cellarless houses is American Radiator hot water one floor system. In houses with a cellar, the standard is a Thatcher pipeless furnace of the re-circulating type, with register placed in the center hall. For $150 extra, steam is provided with American Radiator boiler and radiators and Jenkins valves. All steam mains are insulated with three ply aircell sectional non-conducting covering one inch thick. Hot water is provided by a "Boyton" hot water heater with a 30 gallon galvanized iron storage tank painted black.

Front entrance door is weatherstripped with metal.

Financial set-up for the $2,500 house without a cellar, on a plot 45′ x 100′:—

The price is....$2,500
Cash required.. 500

The balance....$2,000
is all one mortgage, insured by the Federal Housing Administration for twenty years.

Payments each month (principal and interest)...$14.87
Estimated taxes per month ($68 a year)..... 5.70
Estimated insurance per month ($6 a year)..... .50
Estimated water per month ($12 a year)..... 1.00

Monthly payments, estimated.....$22.07
When the mortgage is paid, the approximate carrying charge will be about $7.20 a month.

The financial set-up for the most expensive house, on a plot 45′ x 100′:—

The price is....$3,200
Cash required.... 640

Balance $2,560
Monthly payments, estimated, $27.91.

It would not be possible to build just one house and sell it on the basis quoted above, any more than it would be possible to put a minimum price on one prefabricated house. Large scale operation makes the low price possible, plus the additional important factor of FHA financing, which does away with all second mortgage expenses.

Purchasers are required to fill out the customary application for FHA insurance.

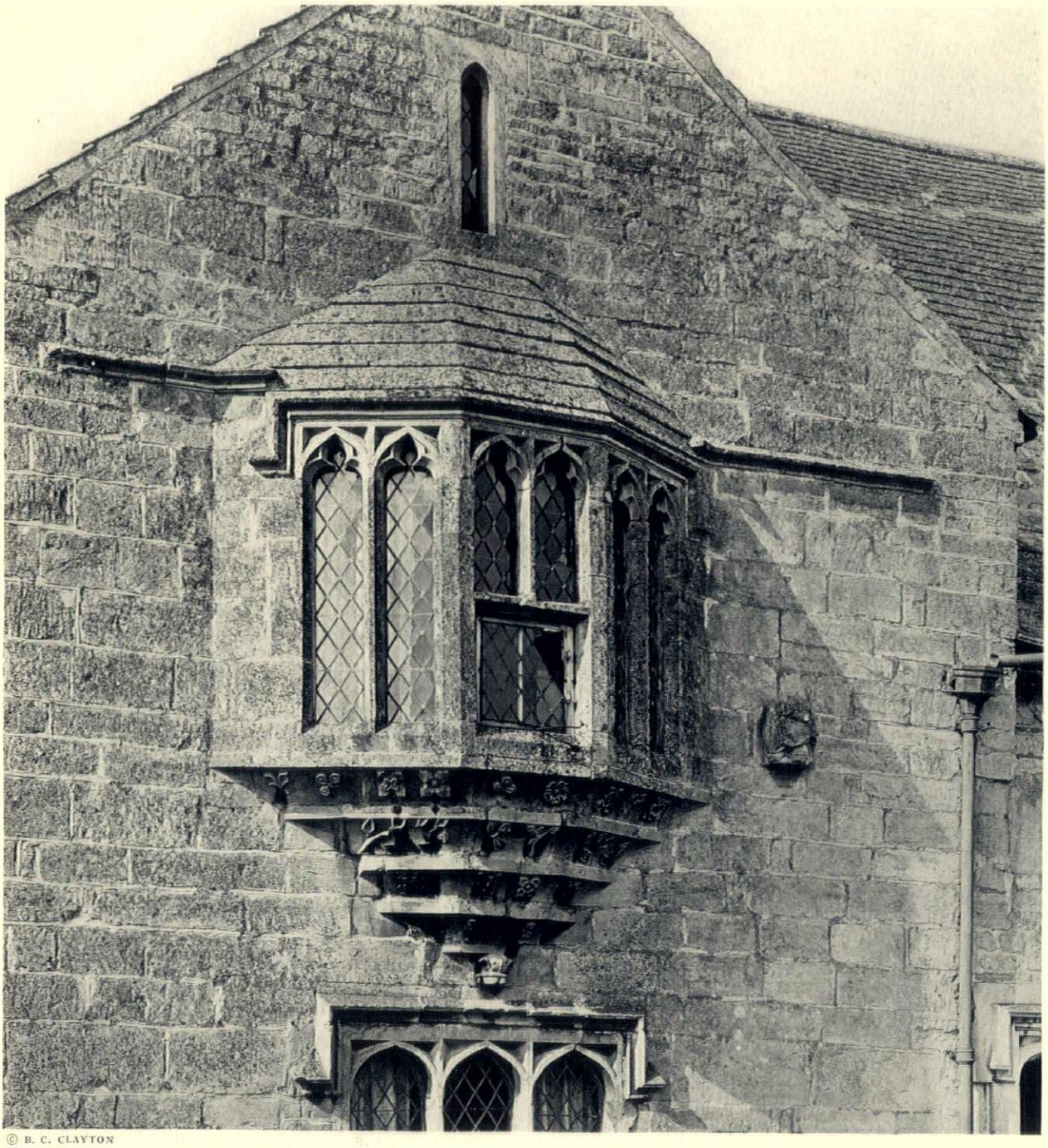
Building lots larger than the standard 40′ or 45′ widths may be had if desired.

The immediate success of Realty Associates, Inc., with these small houses designed by Benjamin Driesler, Jr., architect, indicates that there are a number of people content with houses of this size, provided that they are conveniently planned and well designed.

People have learned that the small house, soundly financed, well designed by a competent architect and with a minimum up-keep, offers a real haven in time of stress.

PORTFOLIO OF ORIEL WINDOWS

NUMBER 120 IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS



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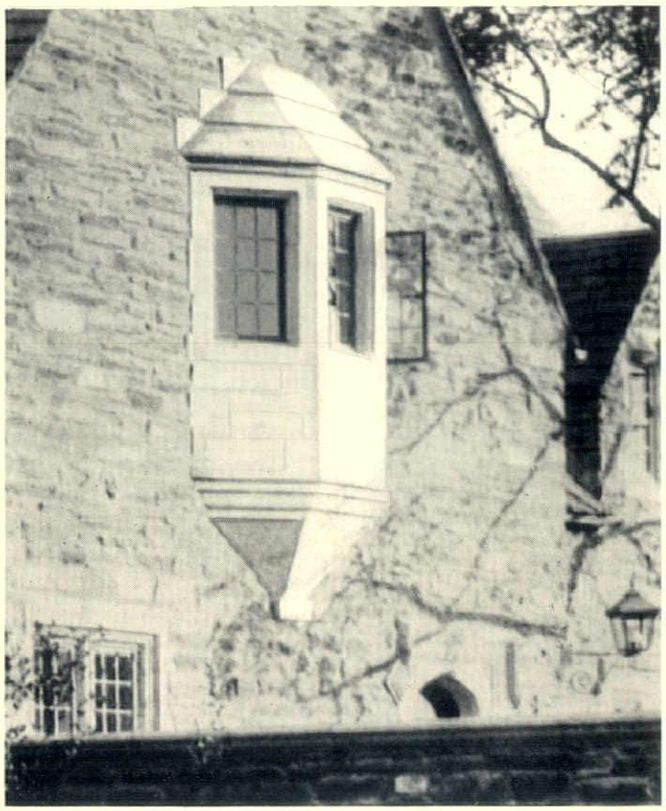
The Manor House, Oasby
Lincolnshire, England

PORTFOLIOS IN PREPARATION

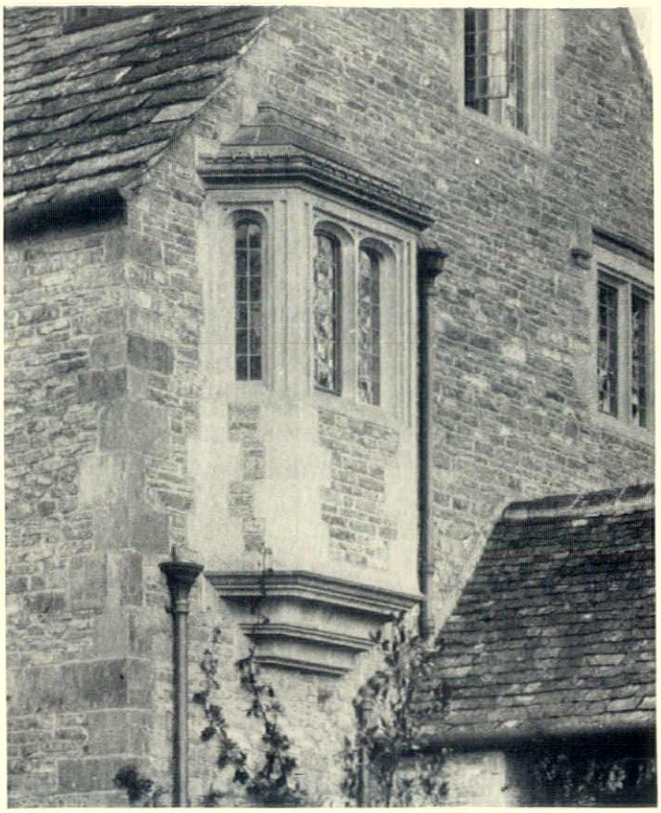
Memorial Tablets, November . . . Cast-Iron Treillage, December . . . Outdoor Paving, January . . . Shop Windows, February.

The Editors welcome photographs of these subjects. Forms close six weeks in advance of publication.

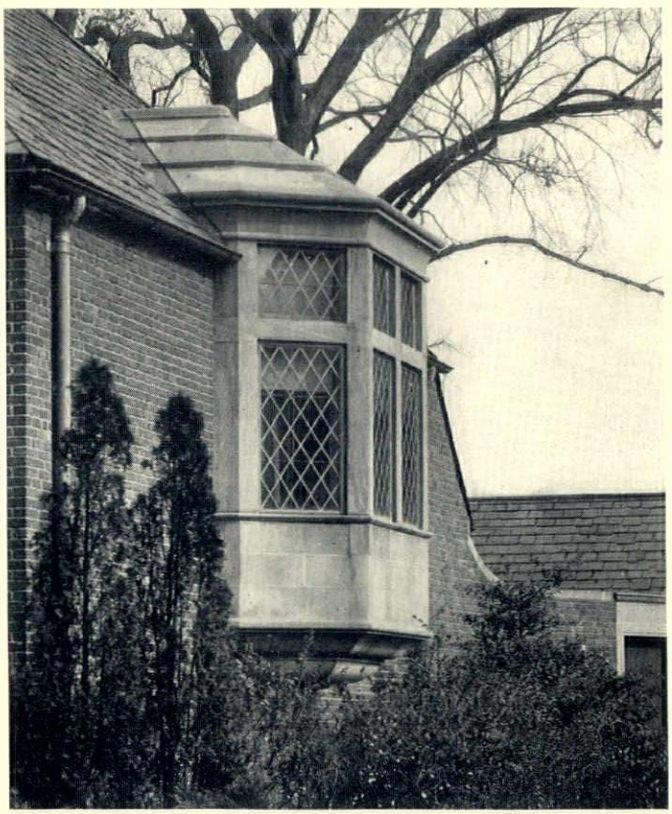
A list of the subjects that have appeared will be sent upon request. Certain of these past Portfolios are available to subscribers at 25 cents each; or five subjects for one dollar.



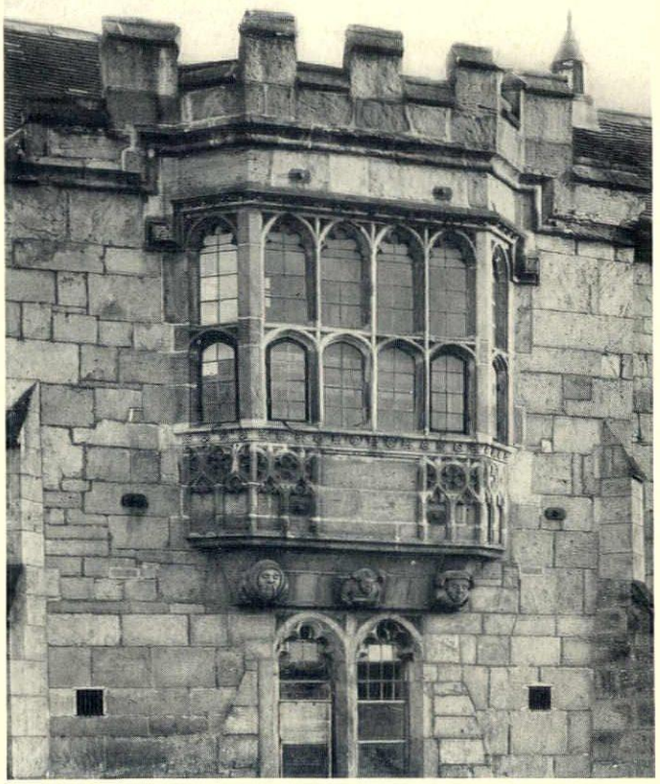
Gate Lodge, Brookville, N. Y.
Roger H. Bullard



Asthall Manor
Oxfordshire, England



School, Port Washington, N. Y.
Wesley Sherwood Bessell



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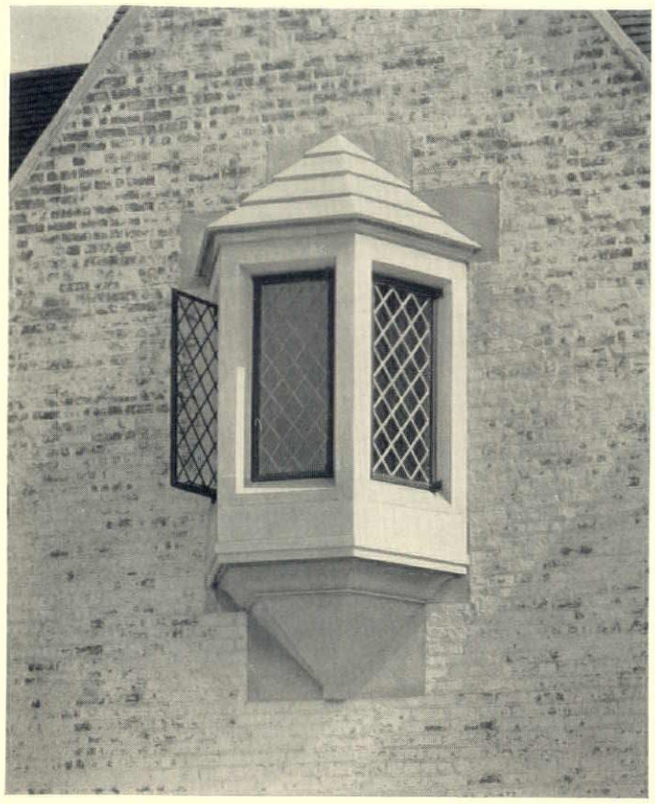
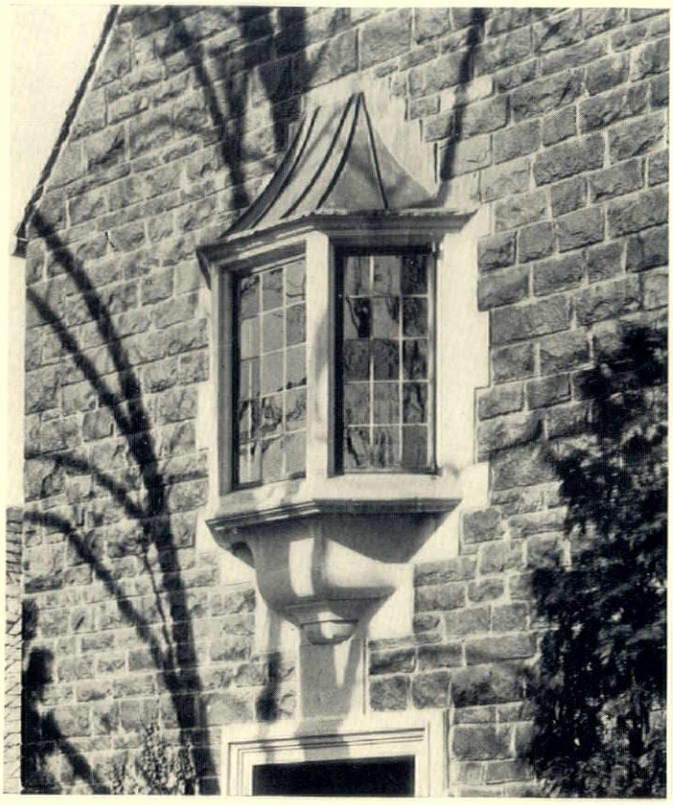
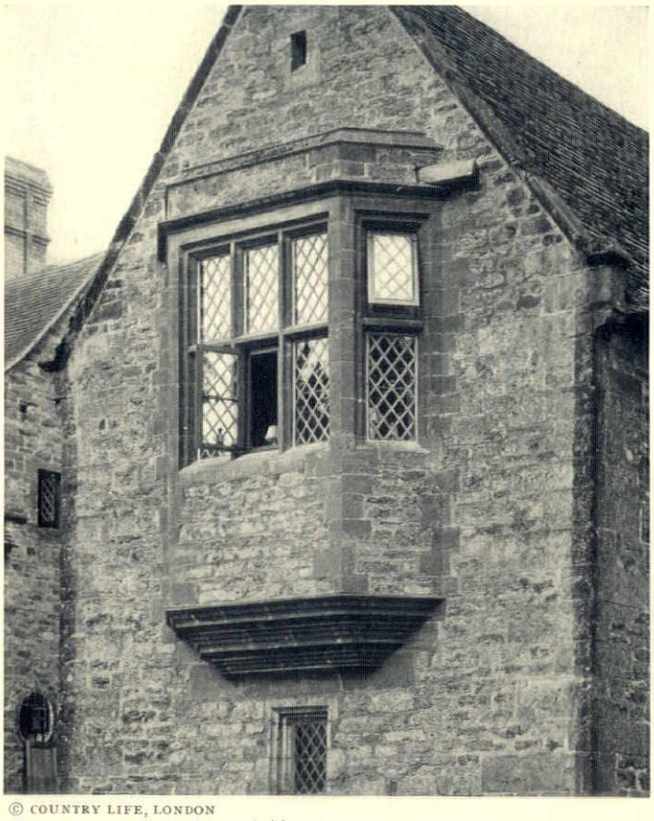
Priory Buildings
Monmouth, England



House, Omaha, Neb.
Walcott & Work



House, Plandome, N. Y.
Wesley Sherwood Bessell



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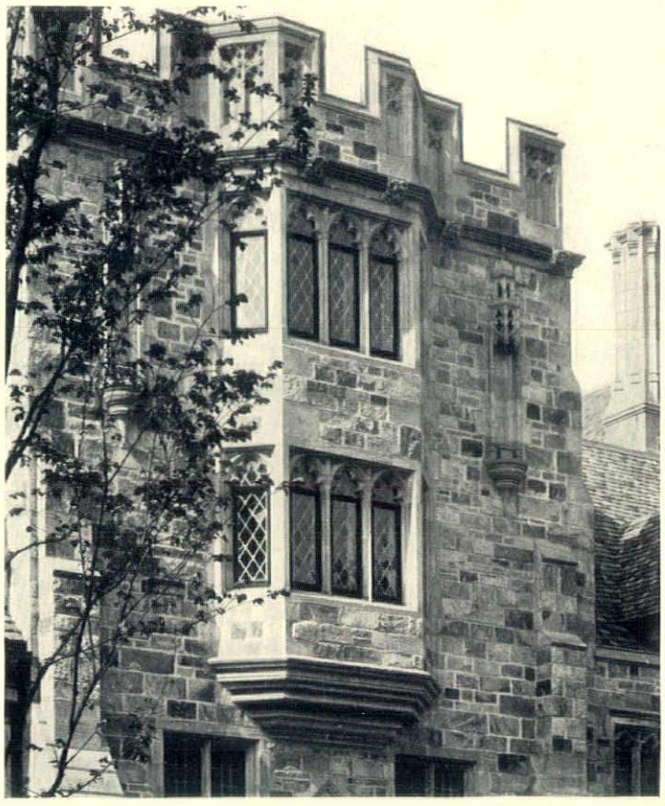
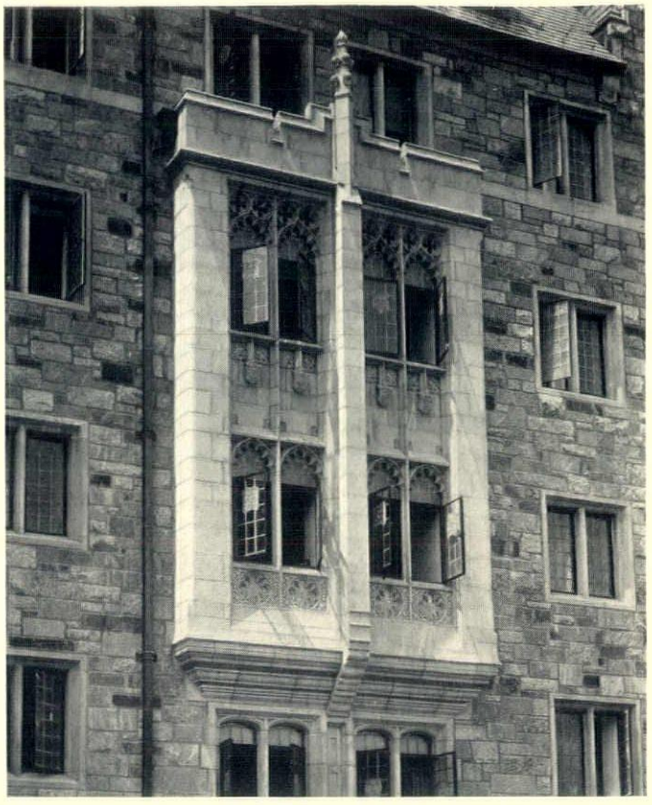
Ashby St. Ledgers
Northamptonshire, England

Sudeley Castle
Gloucestershire, England

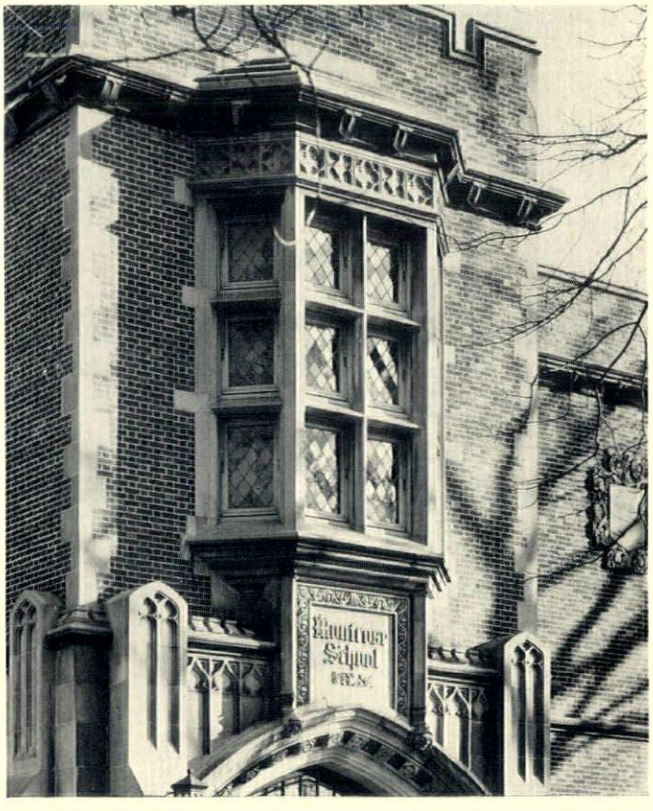


Yale University dormitory, New Haven, Conn.
James Gamble Rogers

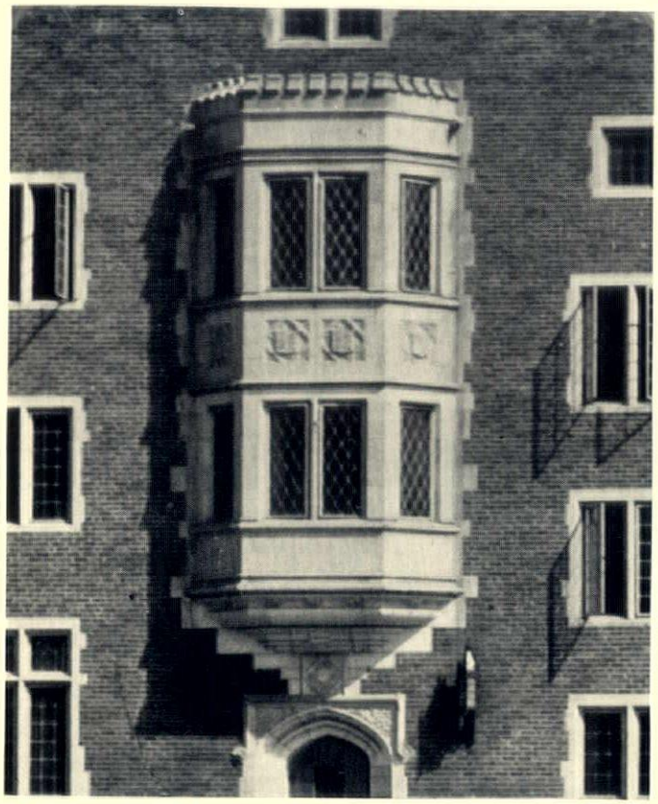


Georgetown University dormitory, Washington, D. C.
Emile G. Perrot

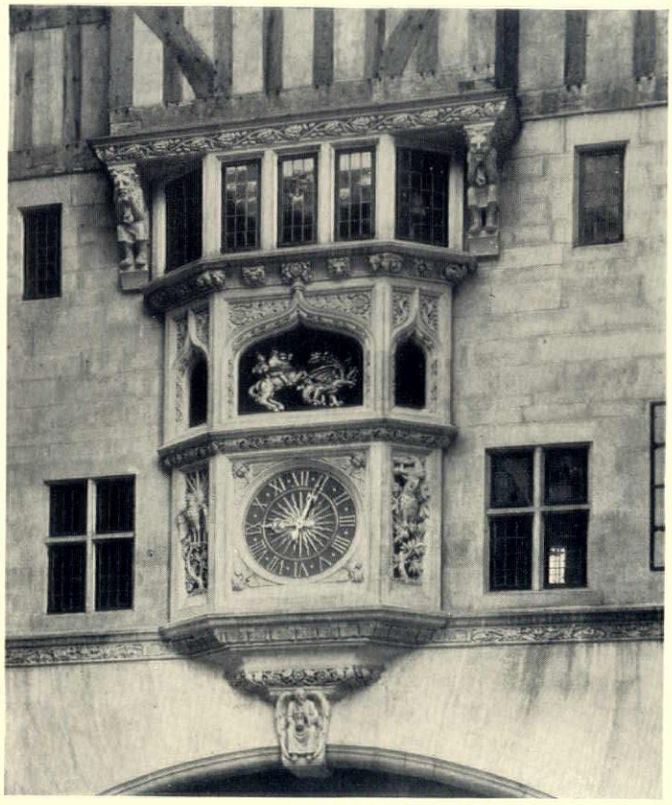
Yale University dormitory, New Haven, Conn.
James Gamble Rogers



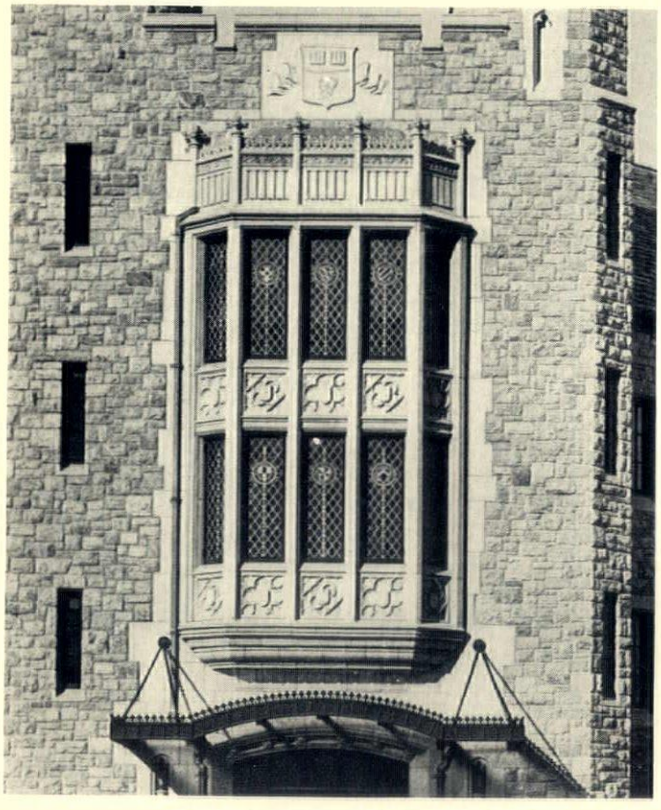
School, South Orange, N. J.
Guilbert & Betelle



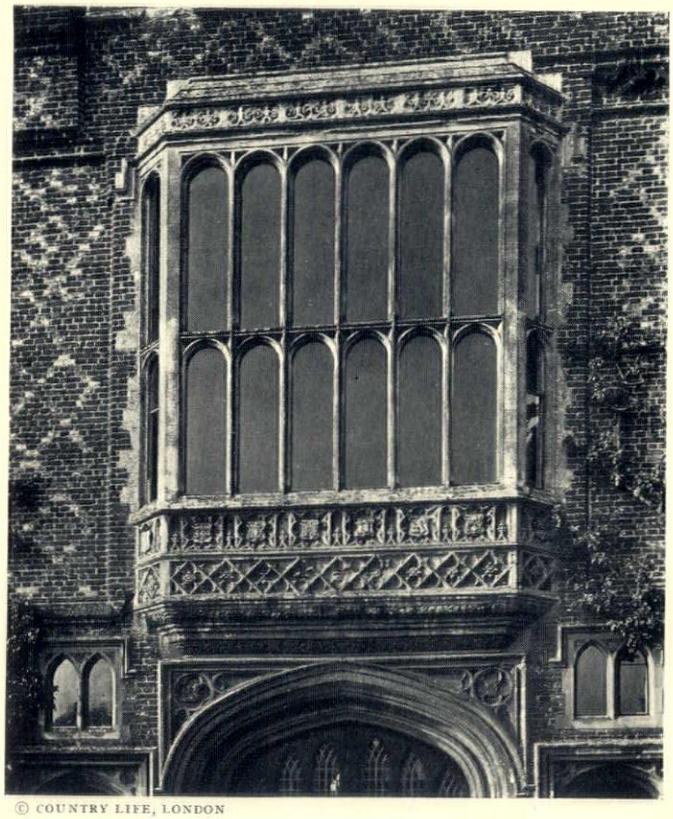
Purdue University dormitory, Lafayette, Ind.
Walter Scholer



Liberty's, London, England
Edwin T. Hall & E. Stanley Hall



School, Pelham, N. Y.
Tooker & Marsh



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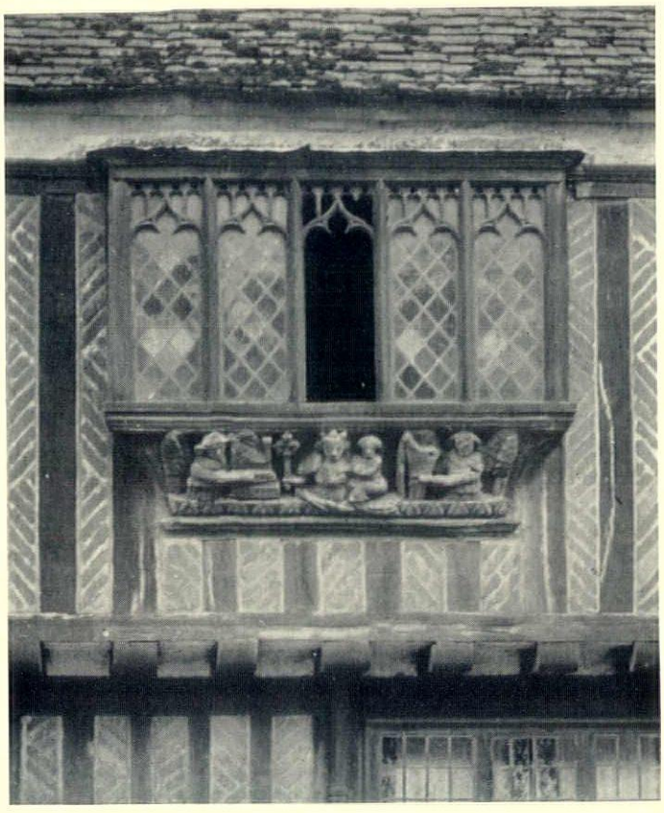
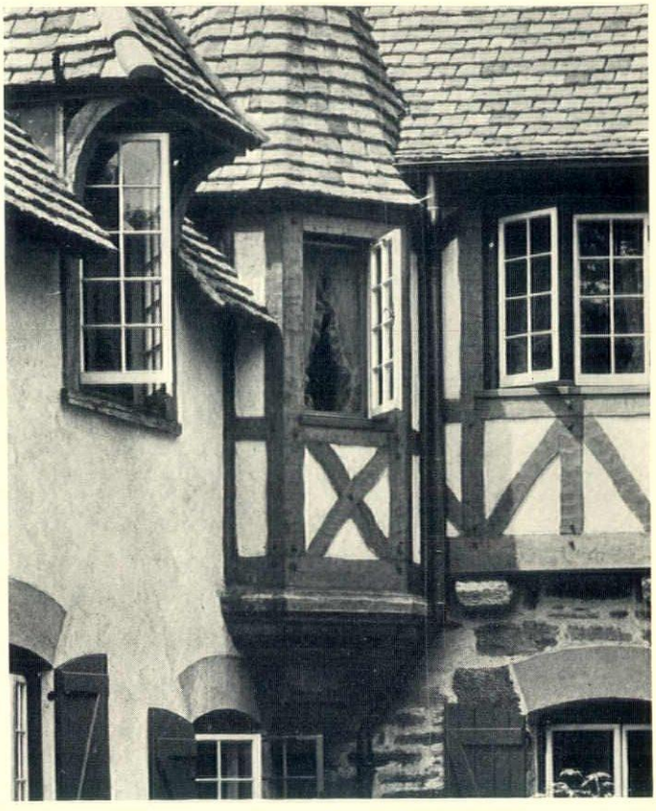
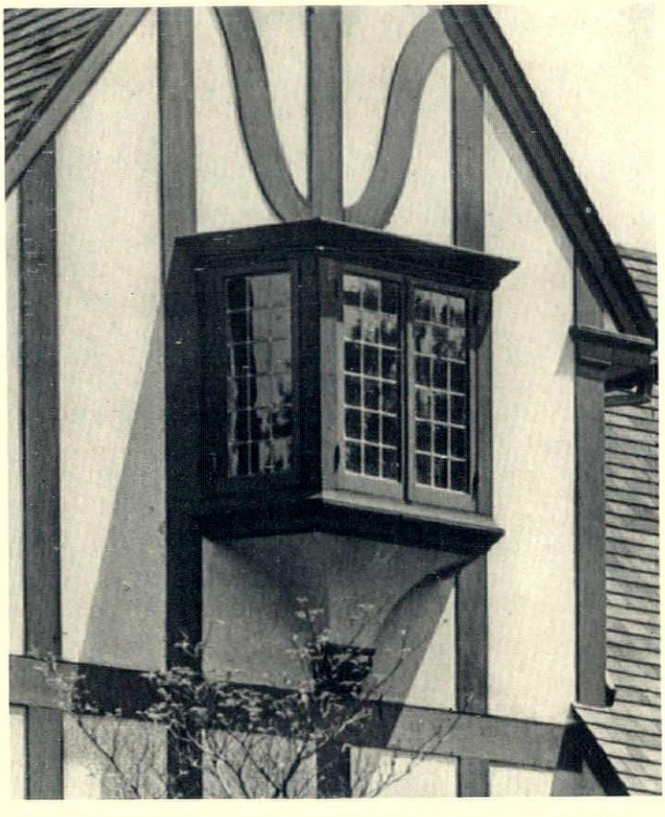
St. Osyth's Priory
Essex, England



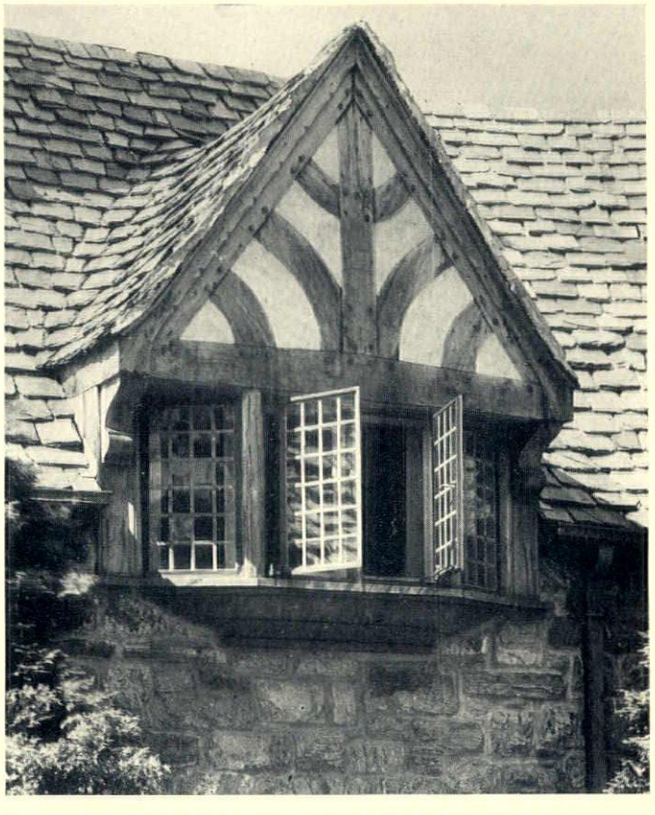
Old house near
Cambridge, England



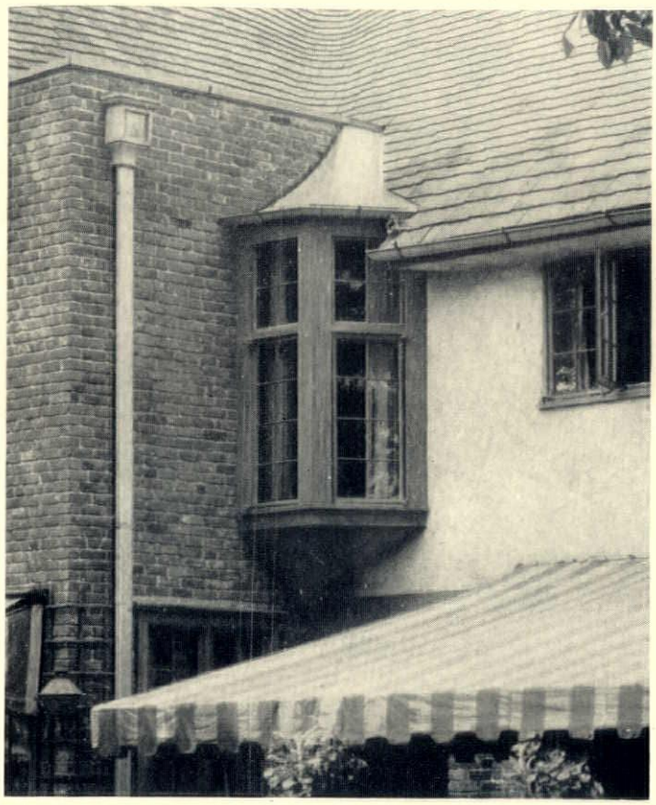
House, Greenwich, Conn.
William F. Dominick



House, Beechhurst, N. Y.
A. Wallace McCrea



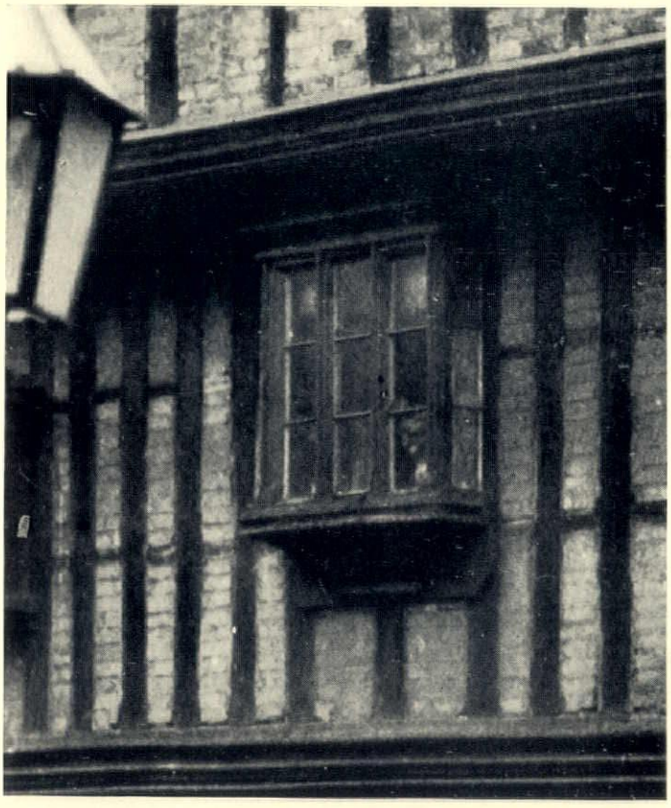
House, Bronxville, N. Y.
Lewis Bowman



House, Birmingham, Mich.
Richard H. Marr

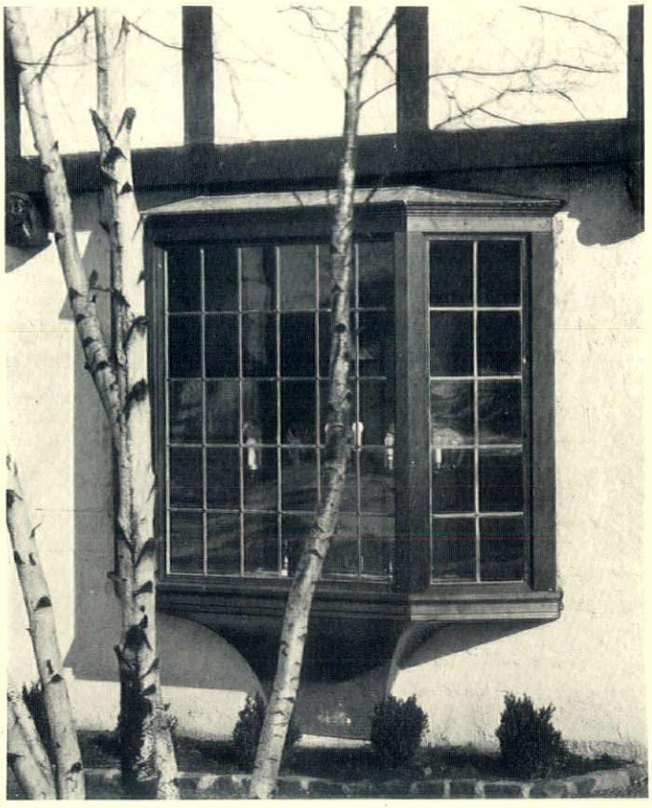
House, Englewood, N. J.
Aymar Embury II

Lavenham
Suffolk, England

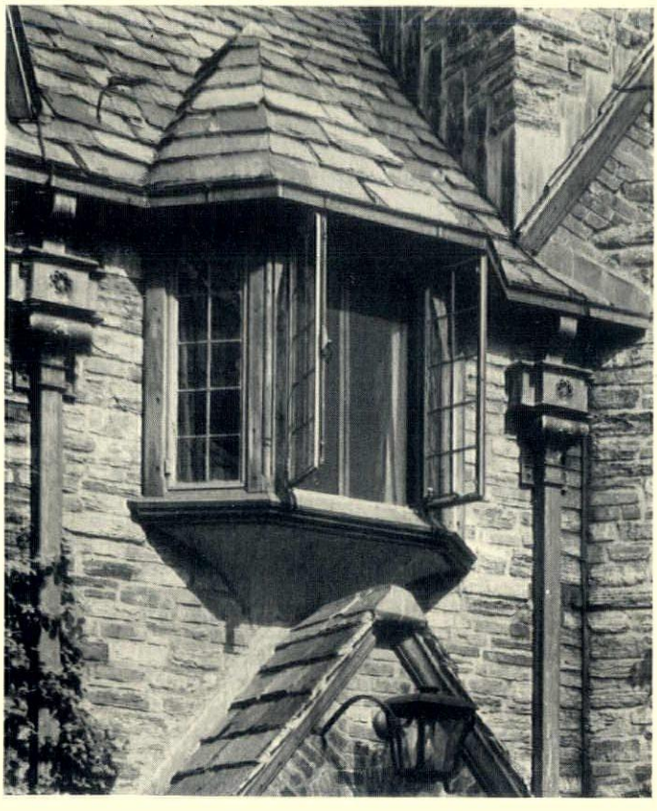


The Abbot's house
Shrewsbury, England

House, Bellevue, Del.
Prentice Sanger



Shop, Essex Fells, N. J.
James R. Marsh



Marcus L. Ward Home, Maplewood, N. J.
Office of John Russell Pope

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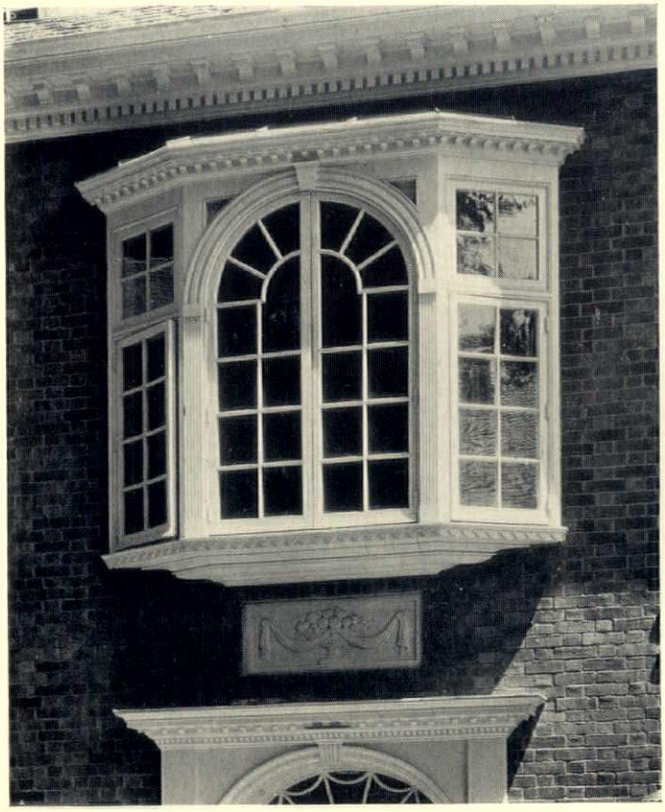
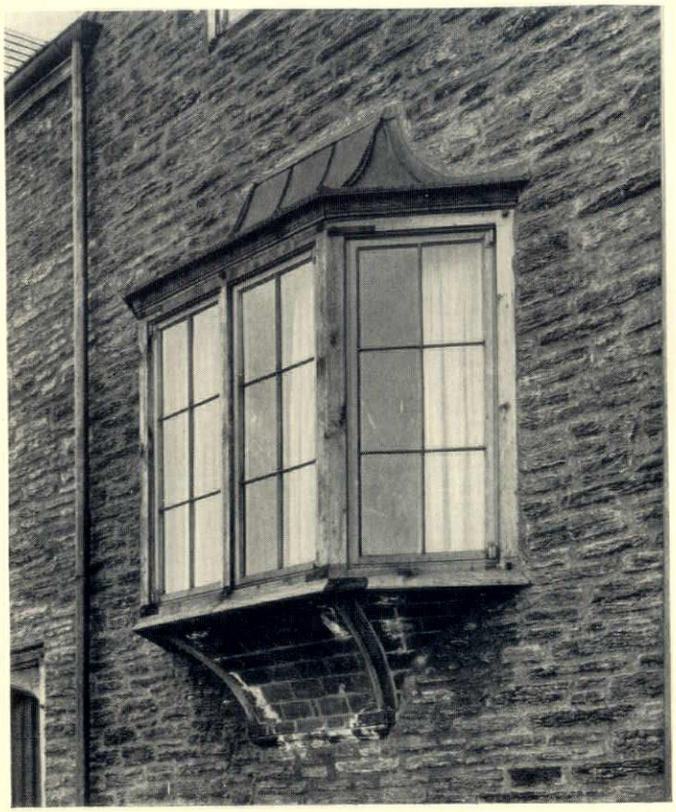
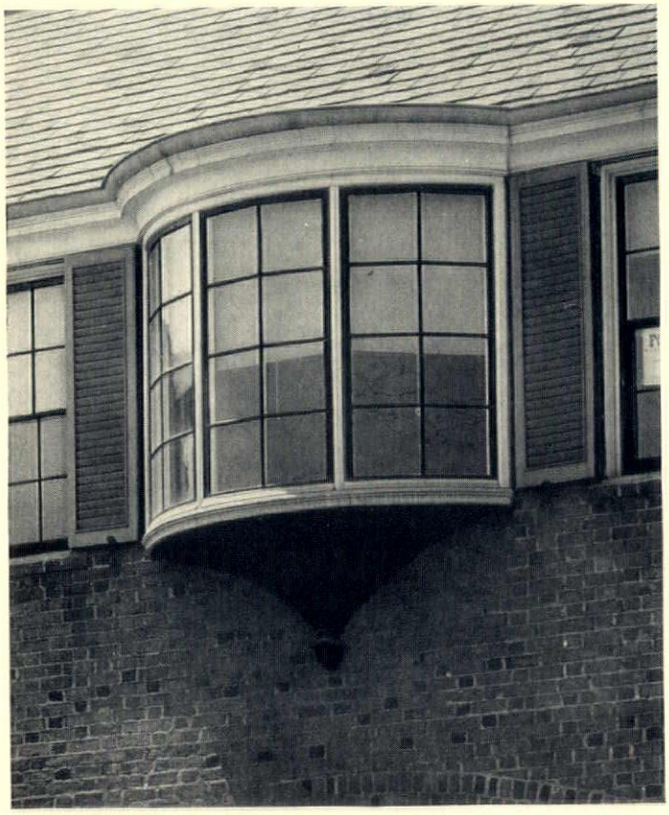
Little Croft
Guildford, Surrey, England



House, Pelham, N. Y.
Pliny Rogers

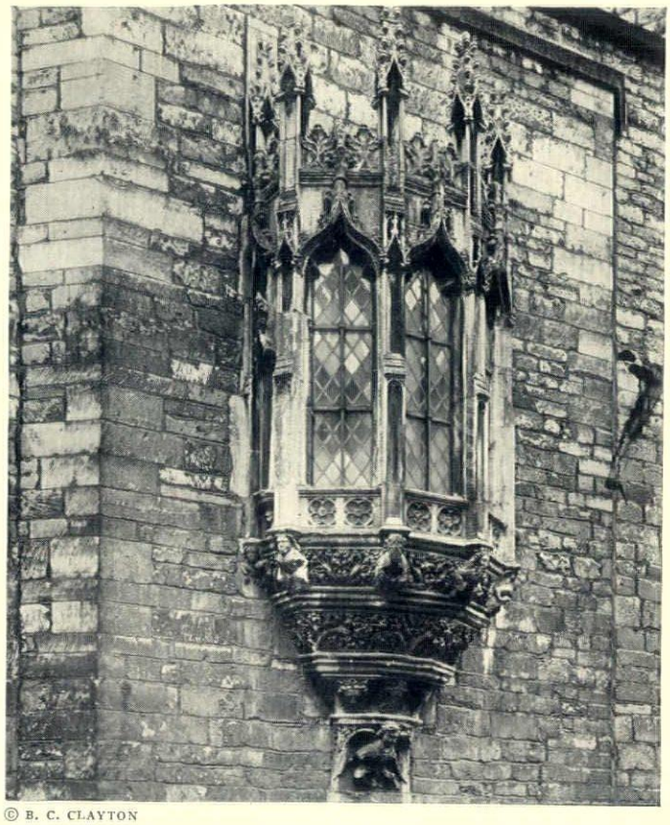


House, Germantown, Pa.
Edmund B. Gilchrist



Housing, Mariemont, Ohio
Edmund B. Gilchrist

House, Bayshore, N. Y.
William F. Dominick



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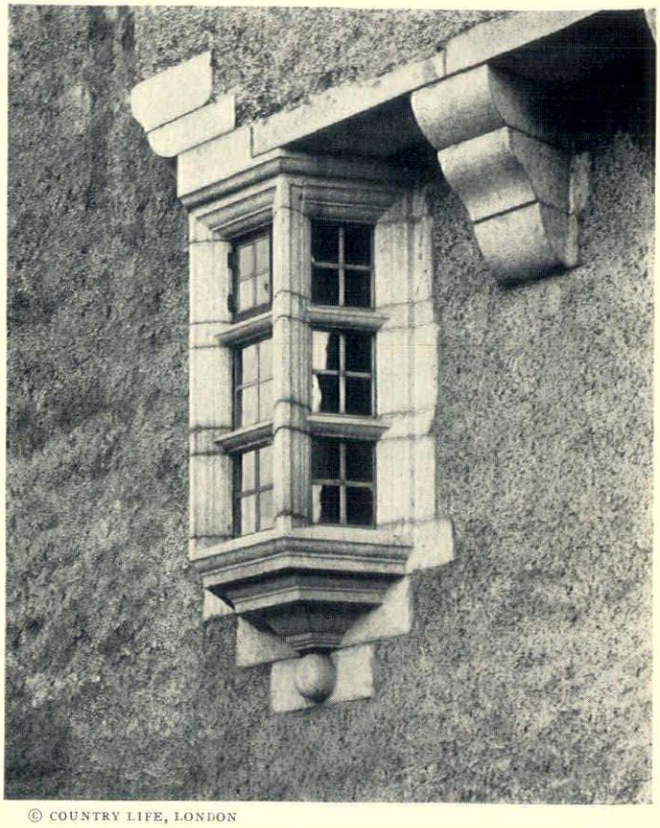
Lincoln Castle
England



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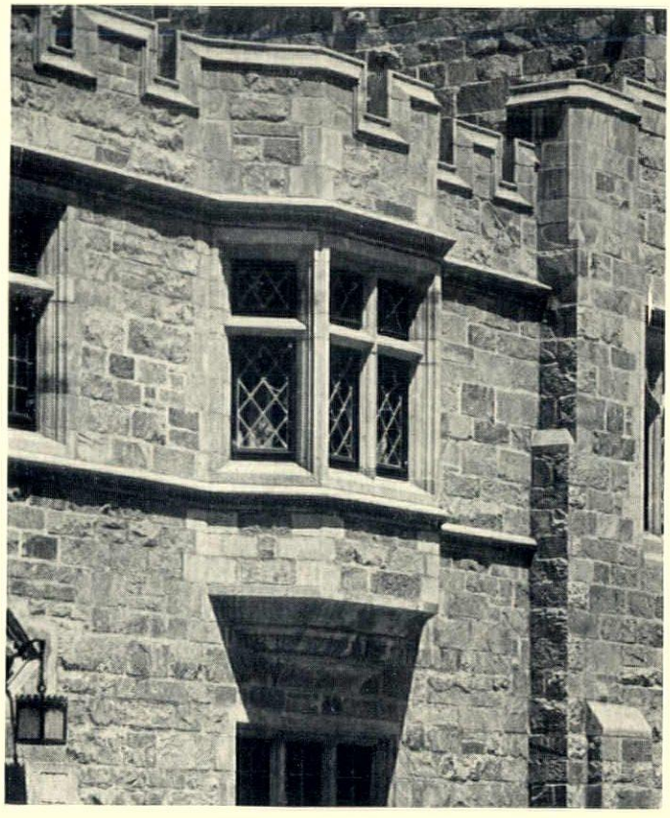
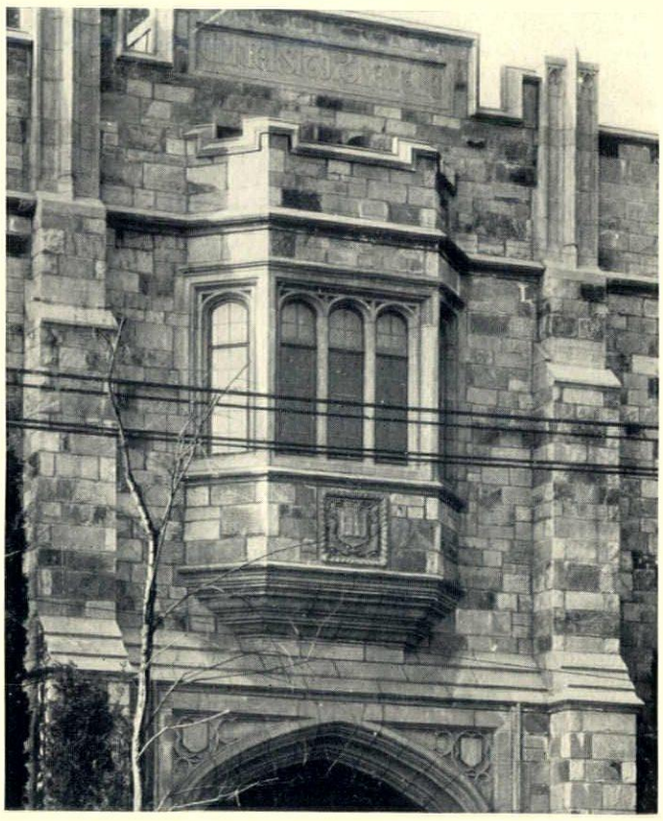
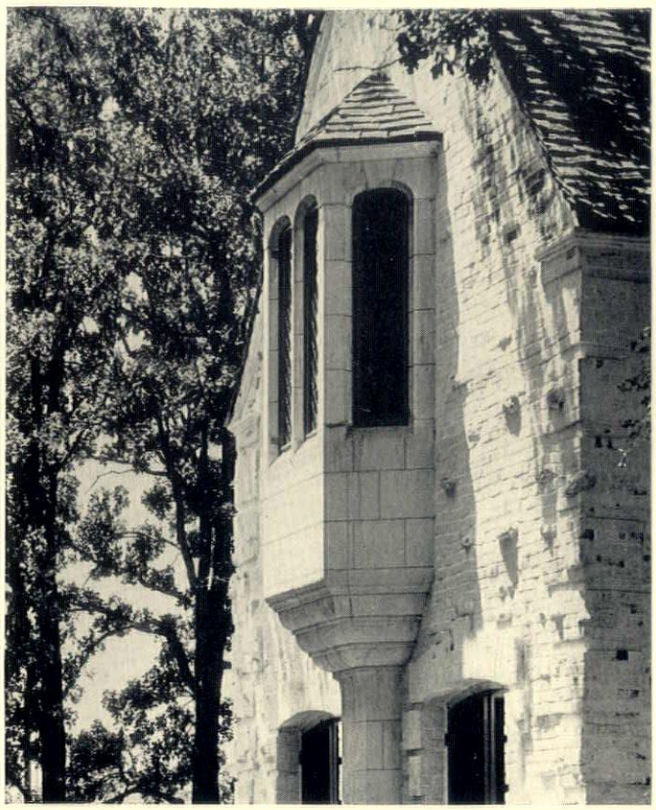
Howth Castle
County Dublin, Ireland



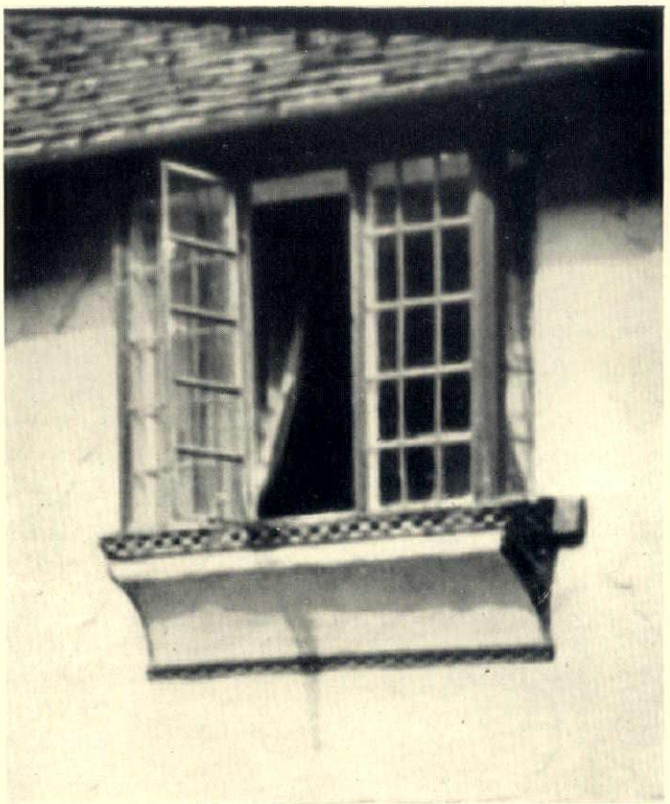
Yale University dormitory, New Haven, Conn.
James Gamble Rogers



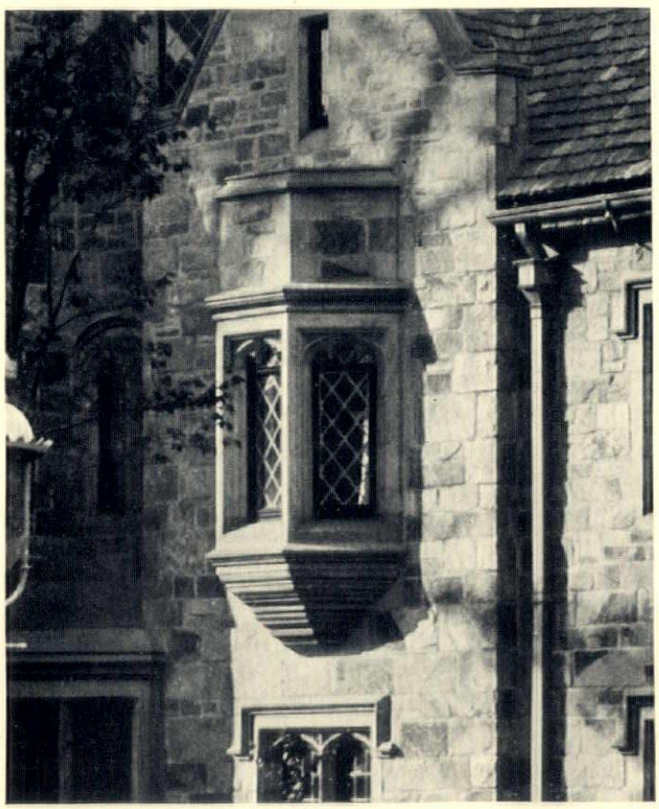
Yale University Theatre, New Haven, Conn.
Blackall, Clapp & Whittemore



House, Houston, Tex.
Frank J. Forster

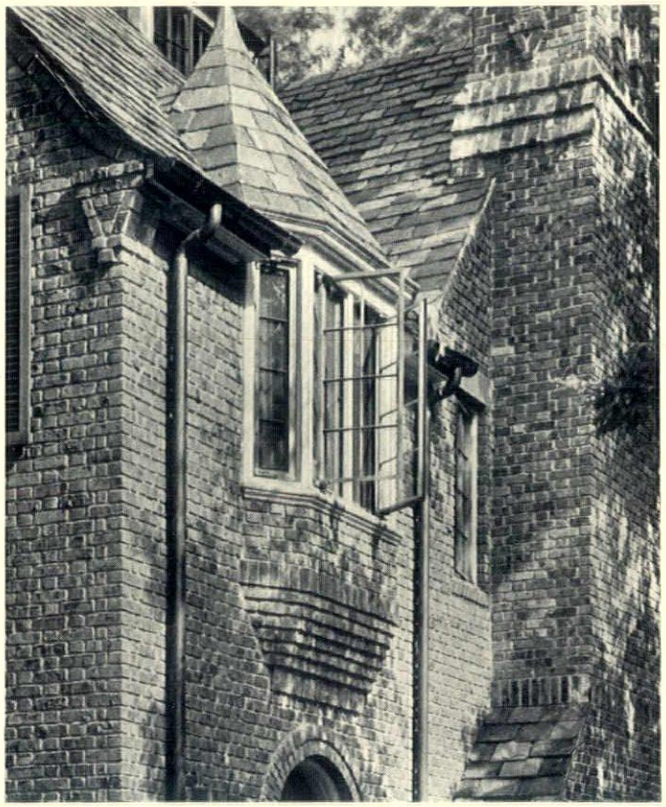


Inn, Saffron Walden
Essex, England

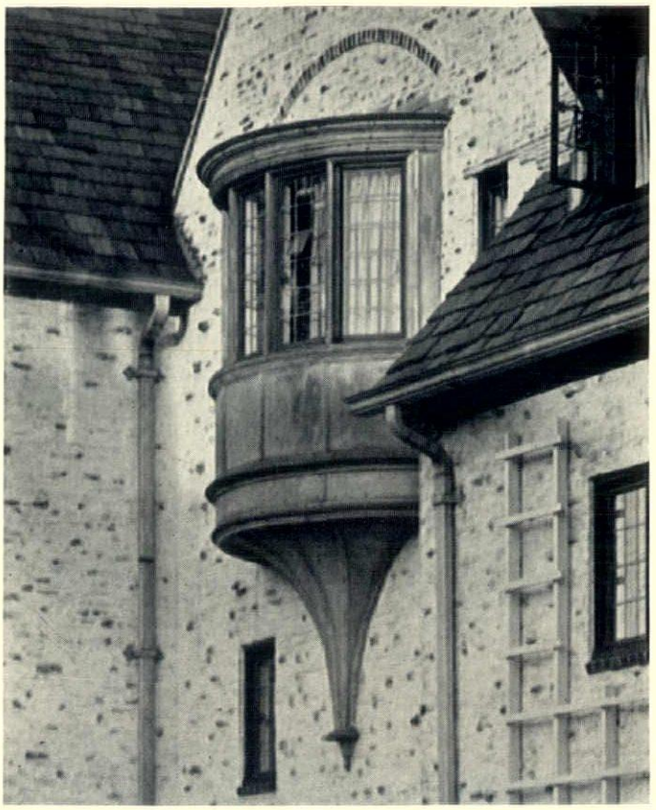


Yale University dormitory, New Haven, Conn.
James Gamble Rogers

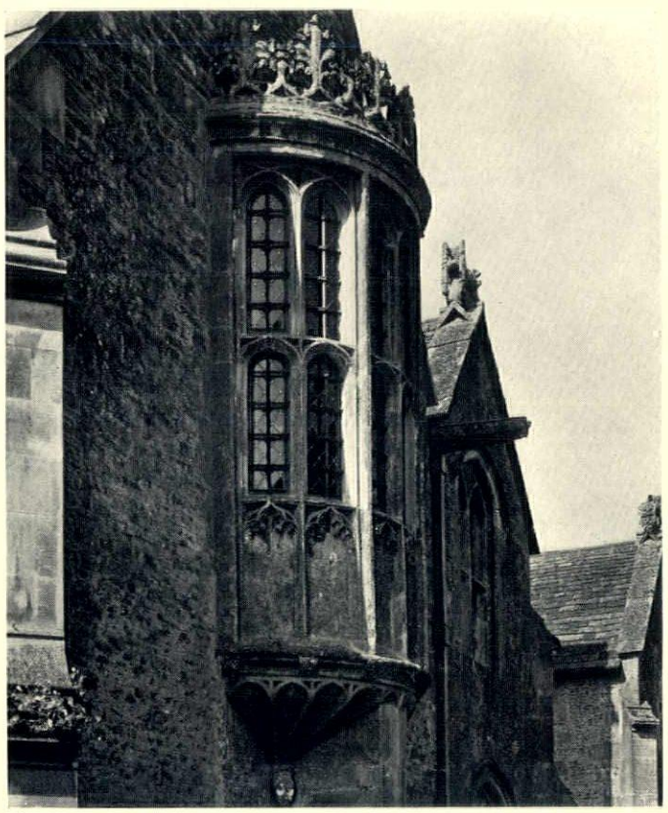
House, Greenwich, Conn.
Greville Rickard



House, Greenwich, Conn.
William F. Dominick



House, Newark, N. J.
Guilbert & Betelle



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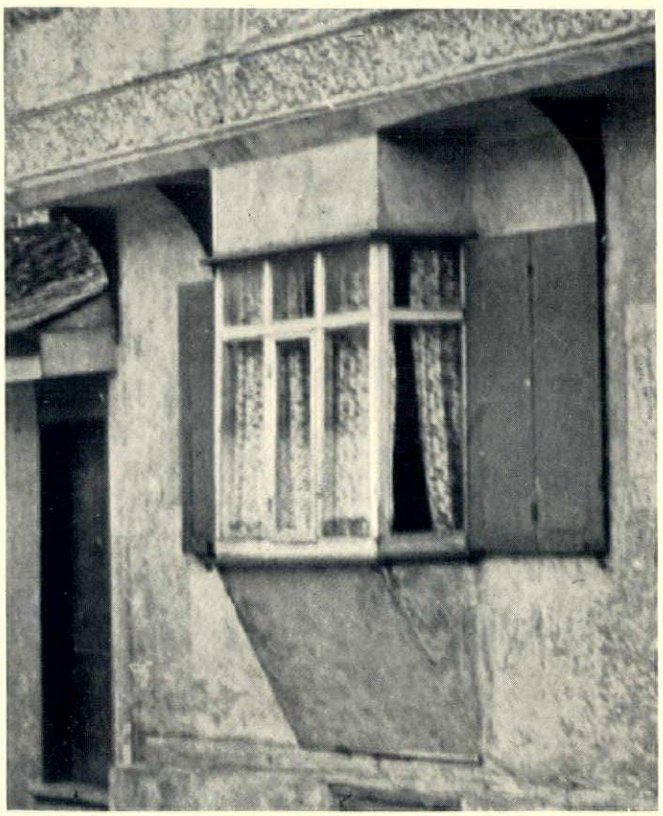
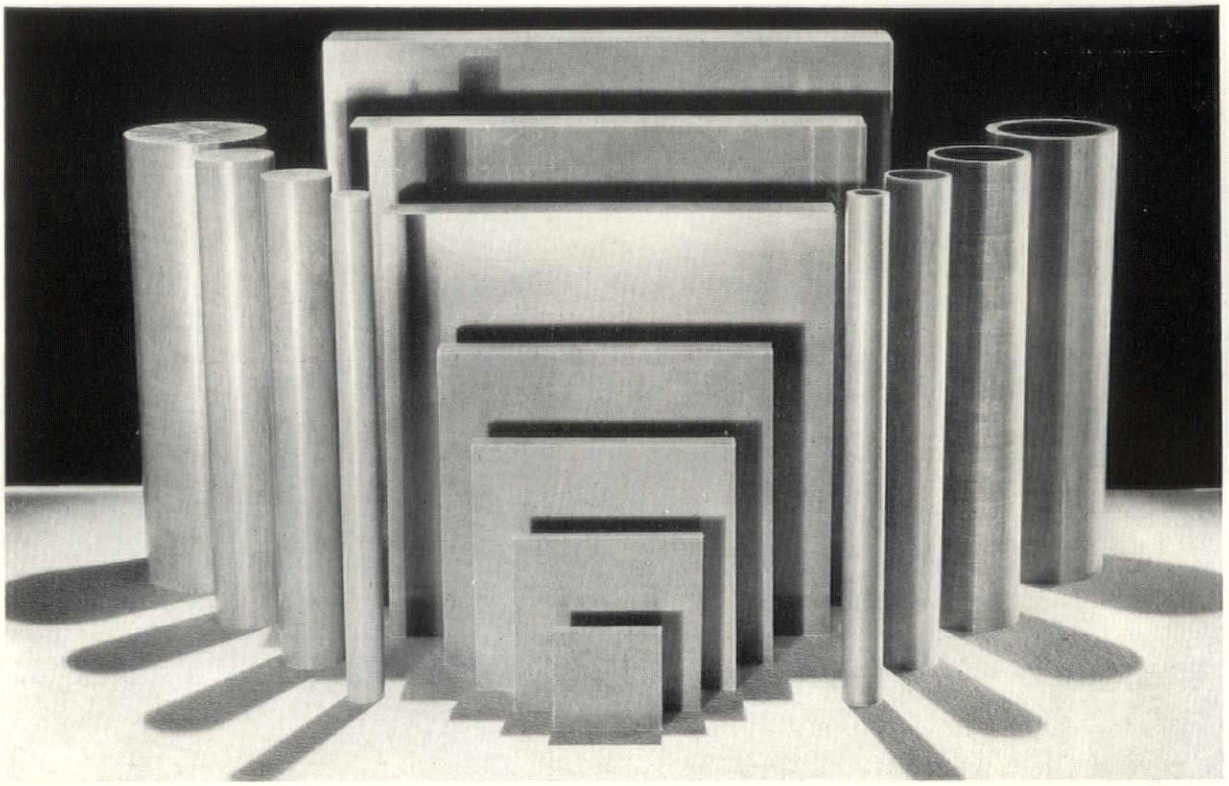
Great Chalfield
Wiltshire, England



Row House, Great Chesterford
Essex, England



Sheets, rods and tubes are easily used for various kinds of design. Courtesy of Textolite Corporation

PLASTICS IN INDUSTRIAL DESIGN

By D. C. O'CONNELL

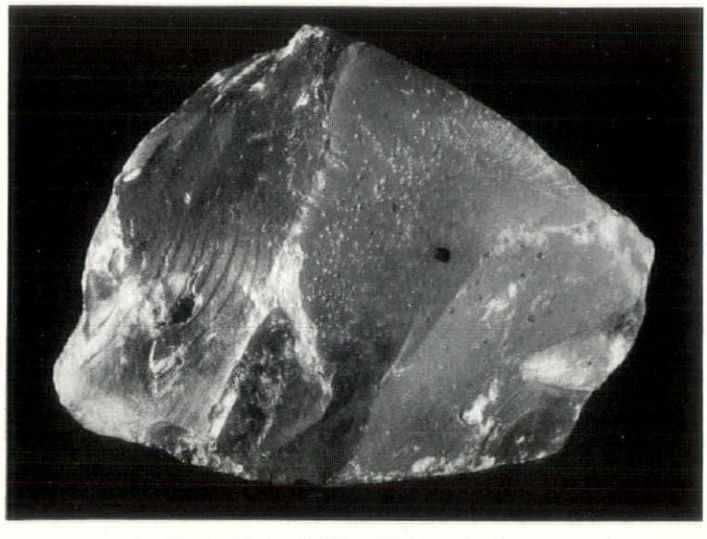
Powder plus pressure plus the designers' skill has resulted in a wide use of plastics in architecture and industrial art.

PLASTICS have come from the celluloid collar stage to be about a $200,000,000 yearly business. Today there is probably no industry in this country that does not use plastics in some form or other, whether for its manufacturing operation or for a completed product. Yet despite the current use of various types of plastics in factory, office and home, the possibilities of their more widespread use are increasingly impressive.

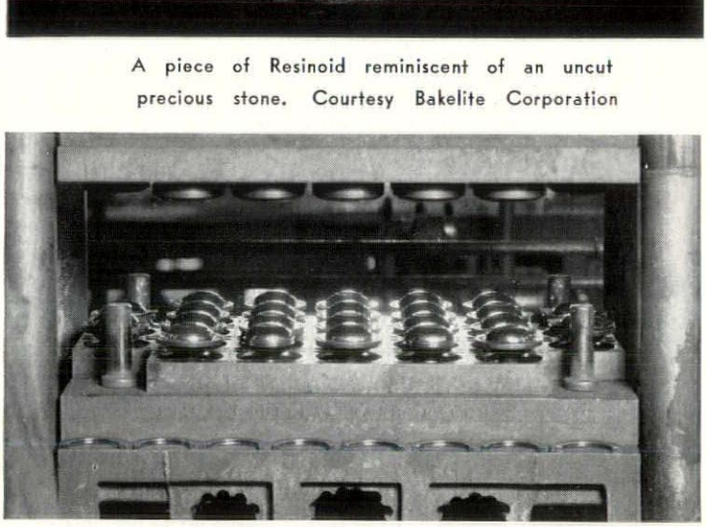
Celluloid, first of the plastics, was originally marketed as a substitute for ivory, amber and tortoise shell. Plastics now are sold on the basis of their own characteristics. Their virtues are many and sometimes even paradoxical. For example, they may be obtained in either transparent, translucent or opaque form. Made under heat plastics are not affected by atmospheric changes and have, when asbestos or mineral fillers are added, heat insulation properties. They are insulation against electricity, are easily cleaned and have a durable finish. Most plastics are procurable in powder, cast, bar, rod, tube and solid or laminated sheet forms. They are also procurable in soluble forms as varnishes, enamels, lacquers and cements. Plastics also have a wide color range which adds to their attributes as a medium for the contemporary industrial designer and architect.

The designer must know all the conditions and uses to which a product will be subjected before he attempts to use a plastic. The selection of the most suitable plastic is very important in view of their different characteristics—in regard to their reactions to acids and lights, tensile strengths and other physical properties.

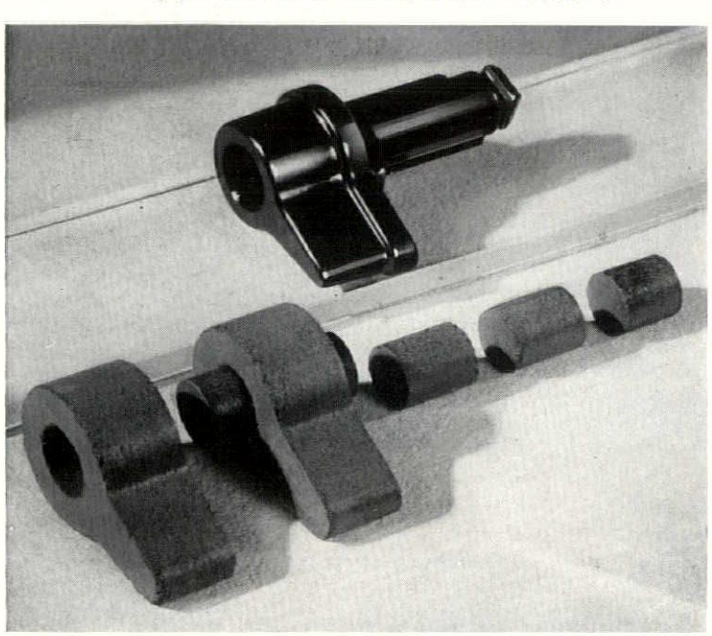
In molding, the chief disadvantage is the initial cost of the hardened steel mold. In general production, the number of moldings must exceed a certain minimum before the mold cost can be absorbed reasonably. There are also technical limitations in the designing of plastic moldings which the designer must consider. Interior undercuts, curved or right angle tubular pieces and extremely thin sections should be



A piece of Resinoid reminiscent of an uncut precious stone. Courtesy Bakelite Corporation



A molding press with multi-cavity mold for producing gear shift knobs. Courtesy Bakelite Corporation



Preforms roughly approximate the shape of the finished mold. Courtesy Bakelite Corporation

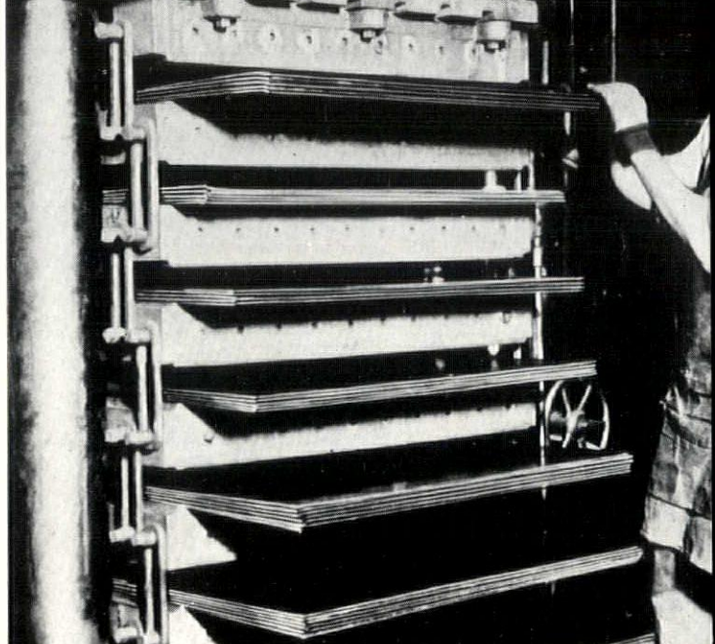
avoided. The designer should constantly seek ways to simplify the design in order to reduce the mold costs.

Perhaps more than anything else, the designer should keep in mind the realization that he is working in a contemporary medium and strive to instill that tempo in his work. The repousse of an 18th Century sterling silver platter seems somewhat tasteless when reproduced in a plastic.

The following outline and illustrations briefly describe the general process of plastic molding without touching special cases or equipment. The sources of some of the more common plastics are also shown.

Plastic molding in its simplest form consists of loading the mold with molding material and then applying heat to make it plastic and pressure to force it into the shape of the mold. Following this, a chilling operation is necessary in order to harden the finished molding. The manner in which these operations are carried out varies for different plastics. A plastic which only undergoes a physical change upon the application of heat is called a thermoplastic. This permits heating before placing in the mold and lends itself readily to injection and blowing molding. A thermosetting plastic is one which undergoes a chemical change upon the application of heat. Therefore, it requires a heated mold. When it has been subjected to the proper temperature and pressure, it is complete and does not need a chilling operation.

Most molding material is in powdered form or is reduced to that form. It can be loaded into the mold as a powder, but the resultant inaccuracies of this method soon lead to the development of tableting. This permits the necessary amount of the charge to be stamped into a compact mass, usually a disc, which facilitates handling and loading. Spherical shapes permit a gravity loading of the mold. Sometimes it is



1,500 pounds pressure per square inch presses resinoid impregnated sheets into laminated panels. Courtesy Formica Insulation Co.

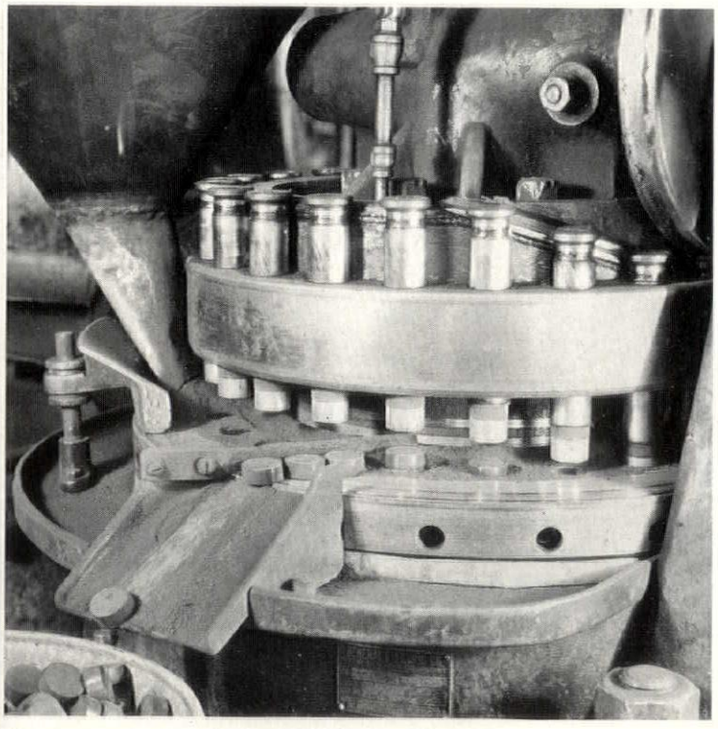
advisable to roughly approximate the shape of the finished molding and these are called preforms.

Molds for general production work are multiple cavity of machined steel. The cavities are formed by pressing a hardened steel replica of the object to be molded into the blank. The molds usually consist of two halves, the lower half being fixed and holding the charge, while the upper half descends closing the mold. There may be an ejector pin that expels the molding when the operation is complete. There are more complicated molds as well as those for special types of molding, such as injection molding where the plastic is forced into a closed mold, and blowing molds for forming hollow objects where compressed air forces the plastic to the shape of the mold. It is possible in some forms of molding, especially those with highly decorated surfaces to use cast metal molds. Where an insert of material other than plastic is necessary, the insert is set in the mold before loading.

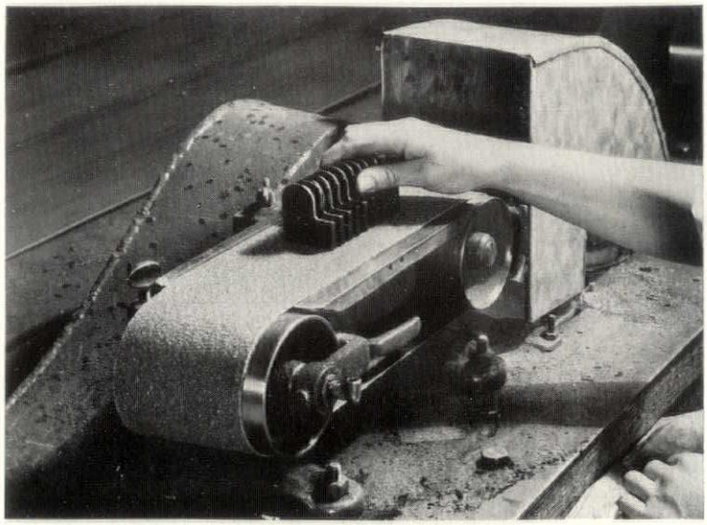
Although gas and electricity are sometimes used for heating, the most general medium is steam. The usual method of applying heat to the mold is to place it between the two heated plates of the press, thus securing heat indirectly. For direct heat, steam is introduced into channels in the mold itself.

Mechanically operated presses are used but, for quantity production, the hydraulic press is the preferred means of supplying pressure. The pressure must be of a steady and constant nature and not in the form of a sudden blow.

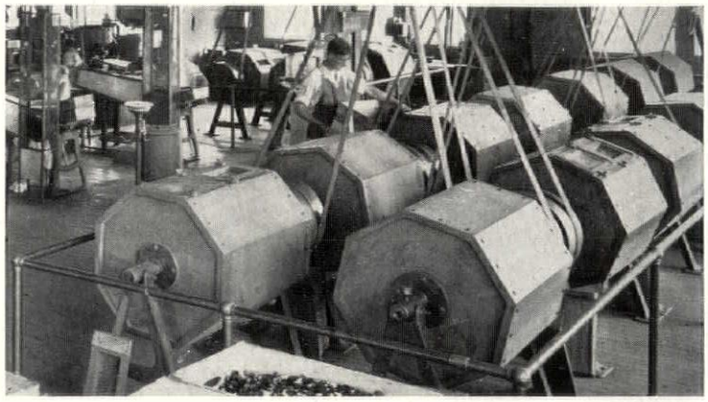
The necessary excess of a charge leaves a slight fin on the finished molding which is usually removed by revolving in a tumbling barrel. Drilling, tapping and grinding are other finishing operations.



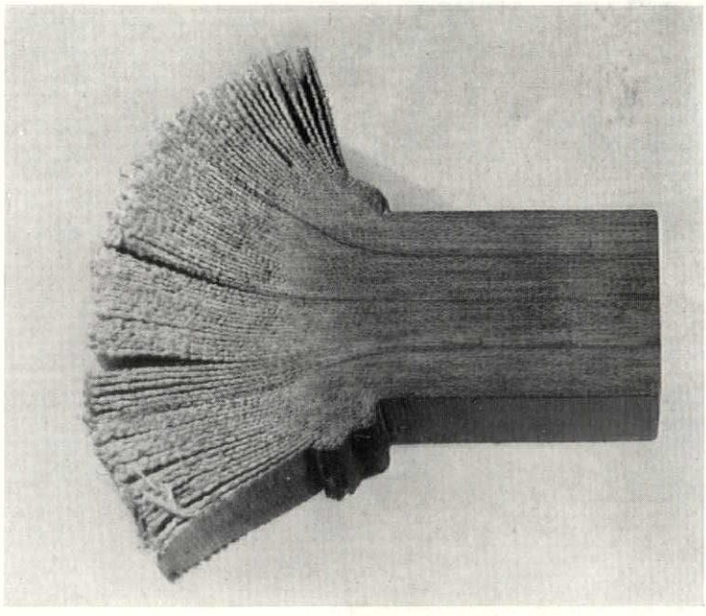
A rotary preform press for producing disc pellets. Courtesy Textolite



An abrasive hand grinder and sander is used for fine finishing. Courtesy of Textolite



Tumbling barrels are also used for finishing various objects made of plastics. Courtesy Bakelite Corporation



Paper and cloth are impregnated with resinoid and pressed together. Courtesy Bakelite Corporation

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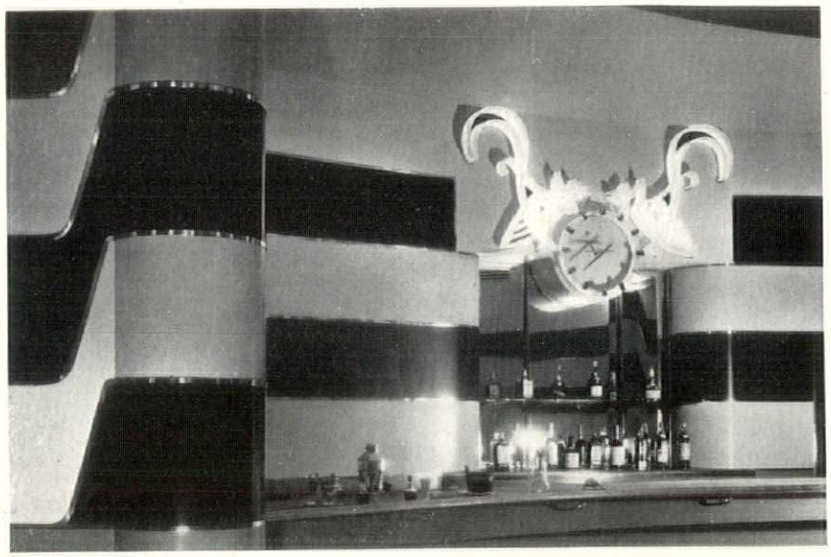

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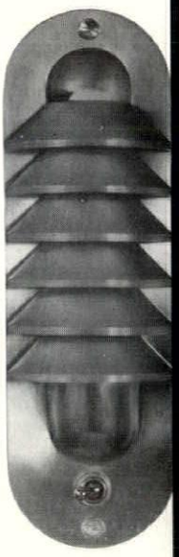

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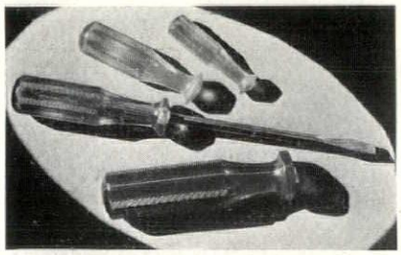

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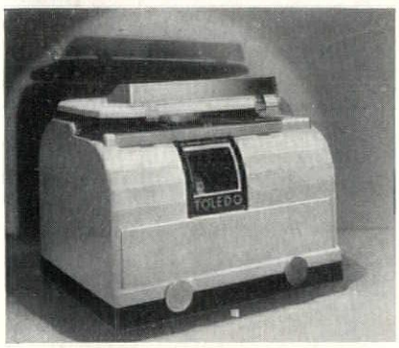

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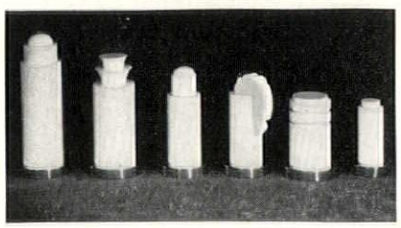

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1. Translucent molded door of Catalin, designed by Hammond Kroll for Grosfeld House. **2.** Beetleware lighting fixtures by Waterbury Button Co. **3.** Unbreakable, shockproof tool handles of amber celluloid by Celluloid Corporation. **4.** Toledo scales in a molded white Plaskon casing. **5.** Modern chessmen designed by Victor Civkin, Architect. **6.** Black, red and gray Formica sheets cover the walls of a London cocktail room, Oliver P. Bernard, Architect. **7.** Wall bracket lighting fixture made of Unyte.

RUBBER

A natural plastic. The latex of the rubber tree is coagulated by acetic acid, washed, dried and smoked, then combined with sulphur and fillers of the desired nature. The color is added with the fillers. Opaque and translucent—red, brown, black. Trade names—Ebonestos, Ebonite, Vulcanite, etc.

SHELLAC

A natural plastic. Shellac is ground to powder and mixed with fillers such as mica, clay, wood, rosin and wax. Mixed warm and color added. Opaque—usually black—lighter colors possible.

PYROXLIN

Cellulose is nitrated with sulphuric and nitric acids, washed, dried, then alcohol and camphor are added and the compound is worked in a plastic mass. Opaque, translucent, transparent—any color possible. Trade names—Amerith, Celluloid, Fiberloid, Pyralin, Viscoloid, Xylonite, etc.

CASEIN

Skimmed milk with butter fat removed by centrifugal force is treated with rennet to allow the whey to drain off. After washing and drying, it is ground to powder. Opaque, translucent—all colors possible. Trade names—Aladdinite, Erinoid, Galalith, Karolith, Secalite, etc.

UREA—FORMALDEHYDE RESINS

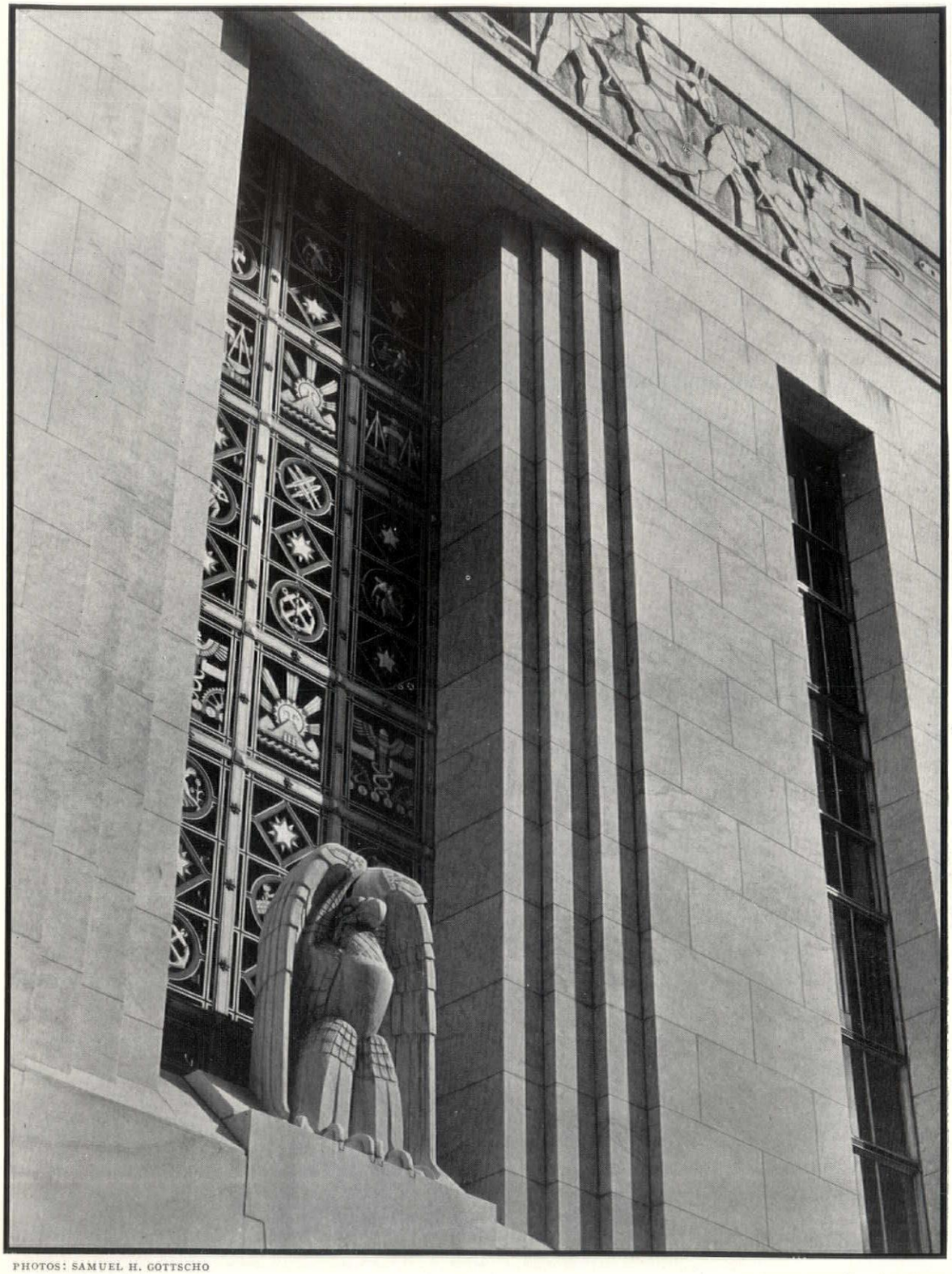
A synthetic resin created by the reaction of urea and thiourea with formaldehyde. Ground paper is usually used for a filler. Opaque, translucent and transparent—all colors possible. Known under trade names of Aldur, Beetle, Plaskon, Unyte, etc.

PHENOL—FORMALDEHYDE RESINS

A synthetic resinate of carbolic acid and formaldehyde in the presence of a catalytic agent. After the resin has cooled, the desired filler is worked in, usually wood flour, although asbestos, mica and others are possible. Opaque—all colors possible. Known under trade names of Bakelite, Catalin, Durez, Formica, Micarta, Nobeline, Norloc, Textolite, etc.

CELLULOSE ACETATE

Cellulose treated with acetic acid, acetic anhydride and a catalyst. Ground to powder and color added, used generally without filler. Opaque, transparent, translucent—all colors possible. Known under trade names of Bexoid, Celastine, Celastoid, Lumarith, Plastine, Rhodoid, Socoid, etc.

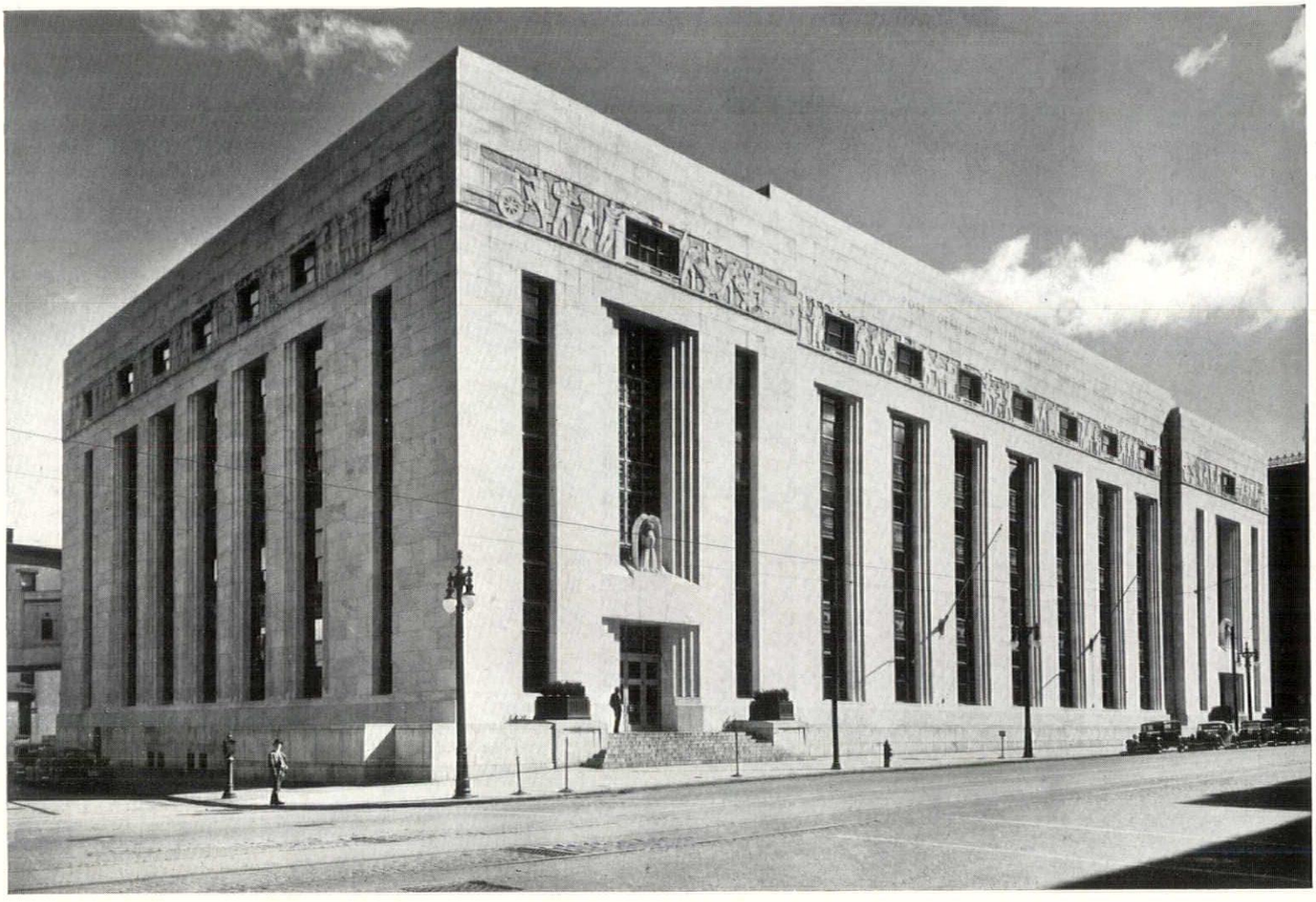


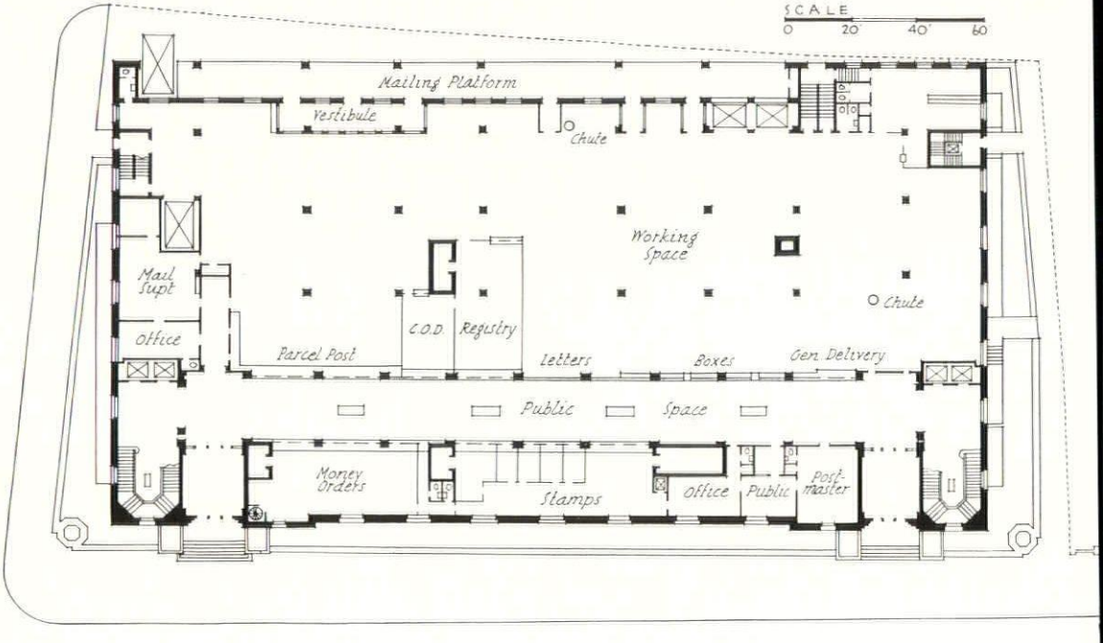
PHOTOS: SAMUEL H. GOTTSCHO

UNITED STATES POST OFFICE, COURT HOUSE AND CUSTOM HOUSE, ALBANY, N. Y.

GANDER, GANDER & GANDER, ARCHITECTS

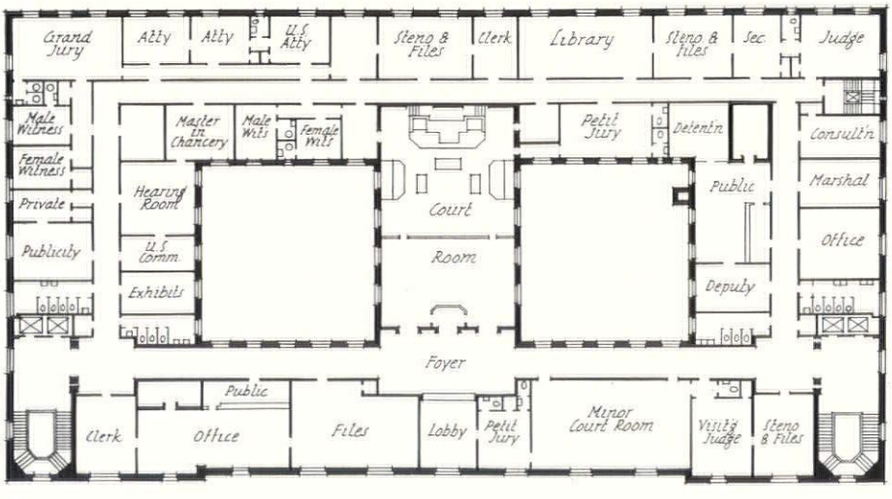
NORMAN R. STURGIS, ASSOCIATE ARCHITECT. ELECTUS D. LITCHFIELD, CONSULTING ARCHITECT





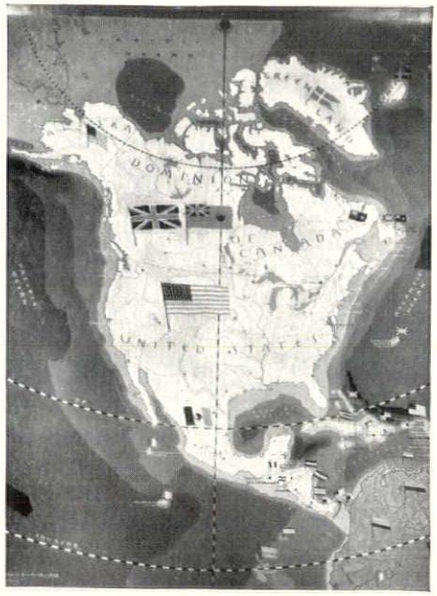
Essentially classical in its proportions this building is faced with Vermont marble. The carved frieze representing the activities of the Postal and Custom Departments, the Law Courts, and the large eagles over the main entrances are the work of Albert Stewart, Sculptor. The aluminum grilles over the main entrances (page 83) representing various departments are the work of Benjamin J. Hawkins, Sculptor

UNITED STATES POST OFFICE, COURT HOUSE AND CUSTOM HOUSE, ALBANY, N. Y. GANDER, GANDER & GANDER,



The first two floors are occupied by the Post Office, the third and fifth by various Federal Departments and the entire fourth by the Federal Courts. The exterior bridge between the Post Office and the railroad station is covered with satin finished sheet aluminum. All window trim is of satin finished extruded aluminum. Built around two interior courts the building is 269 feet long by 150 feet deep. It was constructed at an approximate cost of $1,462,634 or about $43.5 per cubic foot. Main facade spandrels are carved black glass while rear facade spandrels are of aluminum

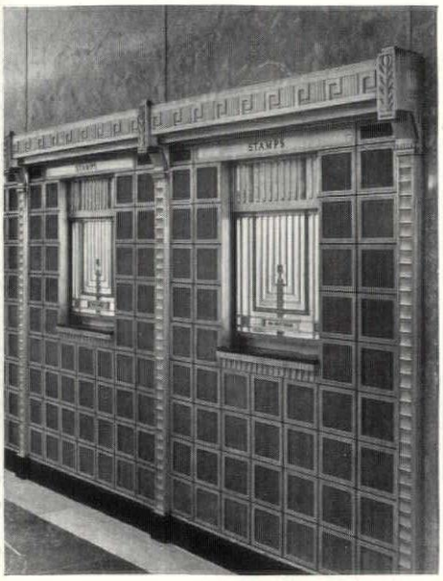
ARCHITECTS. NORMAN R. STURGIS, ASSOCIATE ARCHITECT. . . . ELECTUS D. LITCHFIELD, CONSULTING ARCHITECT



PHOTOS: R. W. TEBBS

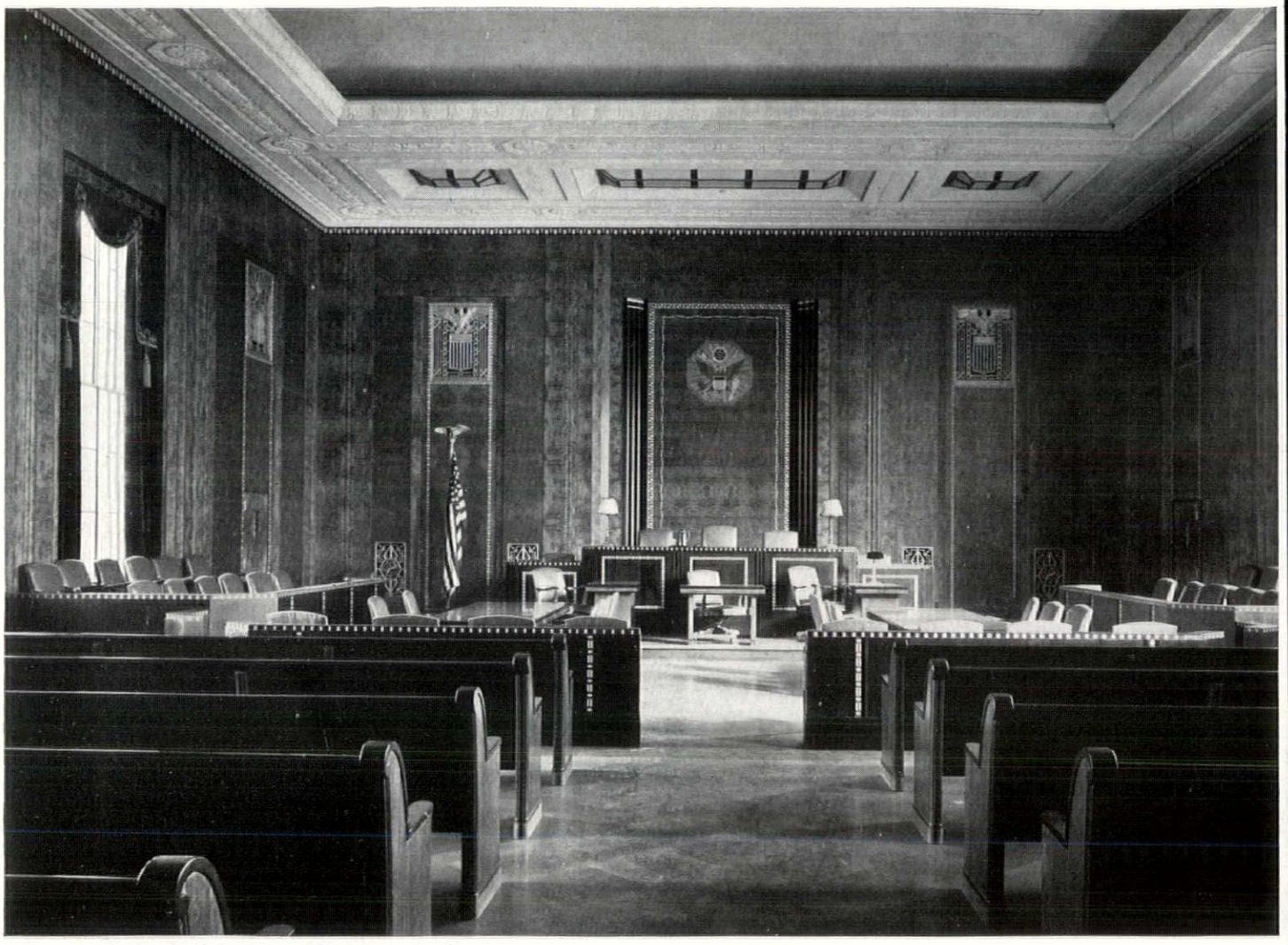
The main public corridor 265 feet long by 20 feet wide has walls of St. Genevieve Golden Vein and Rose marble. Ceiling decoration consists of nine maps executed in oil on canvas by Ethel M. Parsons. Between the maps is a sculpture in relief of eight stamp heads, the Franklin 1c; Jackson 2c; Washington 2c; Lincoln 6c; Clay 12c; Webster 15c; Scott 24c; and Hamilton 30c. These are the work of Enea Biafora, Sculptor

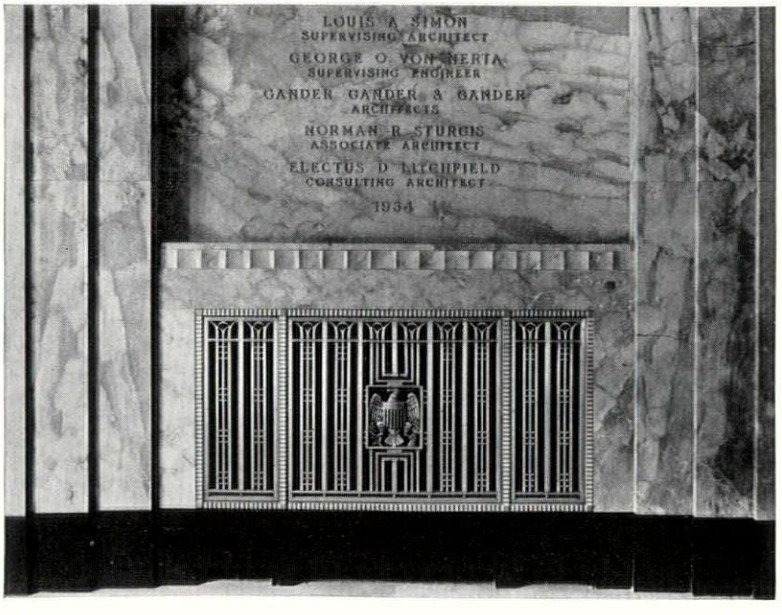
UNITED STATES POST OFFICE, COURT HOUSE AND CUSTOM HOUSE, ALBANY, N. Y. GANDER, GANDER & GANDER,



There are two main stairways and four passenger elevators in the building. The stairways are executed in St. Genevieve Gold Vein and Rose marble. The railing of satin finished cast aluminum has intercepting decorative panels incorporating beaver, airplane and scales of justice in the pattern. The Post Office screens in the main corridor (above) are executed in cast aluminum with a satin finish. The top of the screen houses an indirect lighting system

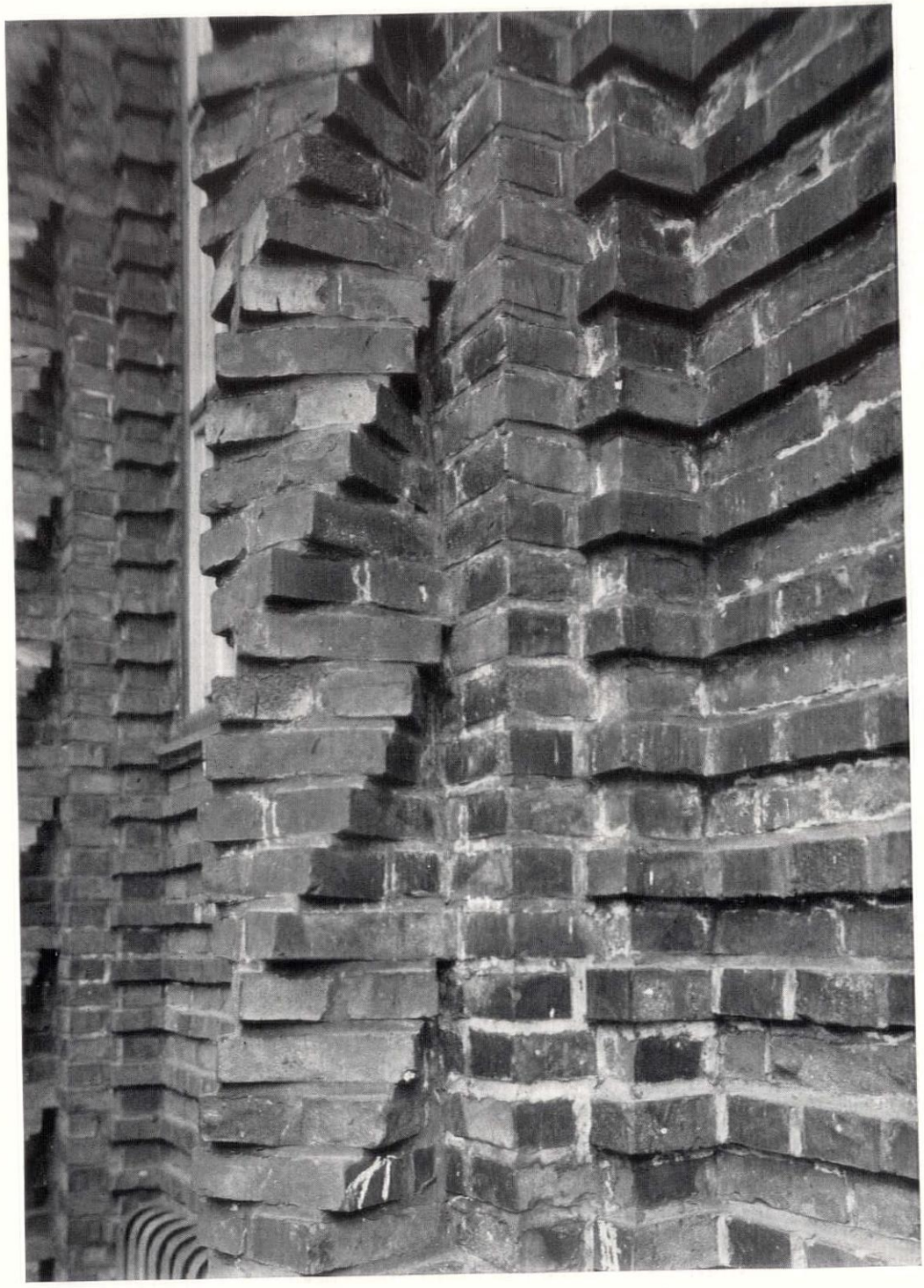
ARCHITECTS. NORMAN R. STURGIS, ASSOCIATE ARCHITECT. . . . ELECTUS D. LITCHFIELD, CONSULTING ARCHITECT





Oregon Maple burl panels the main Court Room. The Coat-of-Arms is executed in marquetry of twenty different kinds of hardwoods. The jury boxes are of ebonized cherry with inlays of white holly and mahogany. The acoustical plaster ceiling was decorated by Ethel M. Parsons. Principal lighting is indirect. Fixtures are of aluminum. Flooring is of cork tile. Draperies designed by the architects are in mahogany color trimmed with silver

UNITED STATES POST OFFICE, COURT HOUSE AND CUSTOM HOUSE, ALBANY, N. Y.



Time-Saver Standards

BRICKWORK—QUANTITIES & COURSING TABLES—1
BRICKWORK—QUANTITIES & COURSING TABLES—2

LADDERS AND PEDESTRIAN RAMPS

AMERICAN ARCHITECT
TIME-SAVER STANDARDS

Serial No. 61
OCTOBER 1936

BRICKWORK—Quantities and Coursing Tables—1

PURPOSE

Material on this sheet includes dimensions of courses for ¼", ⅜", ½" and ⅝" jointed brick masonry; scales for the above joint thicknesses, reading at ¼", ½" and ¾" to the foot; and quantities of brick masonry materials.

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QUANTITIES OF MATERIALS
per 100 sq. ft. Brick Wall

Based on standard brick (2½"× 3¾"× 8") with joints completely filled. No allowance for waste. Hydrated lime assumed.

Adapted from data issued by the Brick Manufacturers' Association of New York.

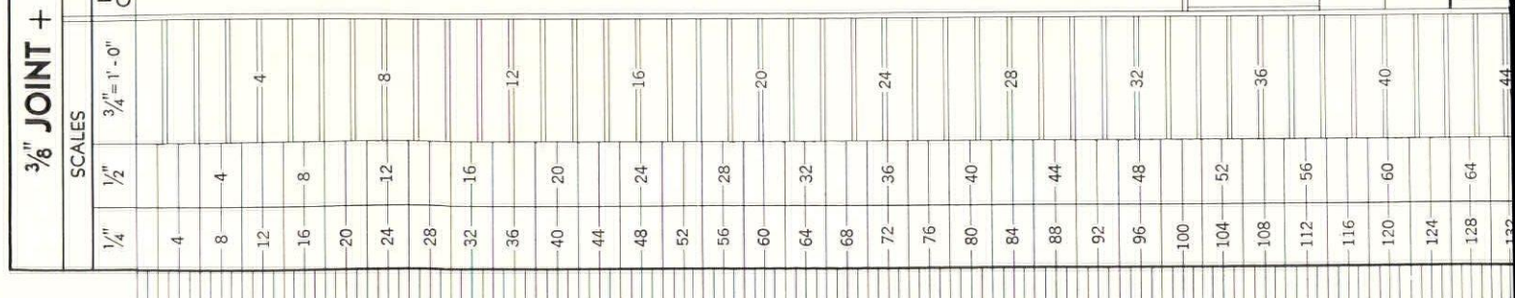
WALL, Thickness		8" Solid			12"			12¼"		
JOINT, Thickness		⅜"	½"	⅝"	⅜"	½"	⅝"	⅜"	½"	⅝"
BRICK, Number		1310	1232	1161	1965	1848	1742	1965	1848	1742
MORTAR, Cu. Ft.		15.5	18.6	21.3	23.3	27.8	31.9	25.3	29.9	34.0
MIX 1-0.15-3	Cement, Bags	4.80	5.75	6.60	7.20	8.60	9.88	7.83	9.26	10.52
	Lime, Lbs.	29	35	40	44	52	60	47	56	64
	Sand, Cu. Yd.	0.54	0.64	0.74	0.80	0.96	1.10	0.87	1.03	1.17
MIX 1-1-6	Cement, Bags	2.55	3.07	3.51	3.84	4.58	5.26	4.17	4.93	5.60
	Lime, Lbs.	102	123	141	154	184	210	167	197	224
	Sand, Cu. Yd.	0.57	0.68	0.78	0.86	1.02	1.17	0.93	1.10	1.25
MIX 1-2-9	Cement, Bags	1.72	2.06	2.36	2.58	3.08	3.53	2.80	3.31	3.76
	Lime, Lbs.	138	165	189	207	246	283	224	265	301
	Sand, Cu. Yd.	0.57	0.69	0.79	0.86	1.03	1.18	0.93	1.10	1.26
MIX 1-3-12	Cement, Bags	1.29	1.55	1.78	1.94	2.32	2.66	2.11	2.49	2.83
	Lime, Lbs.	155	186	213	233	278	319	253	299	340
	Sand, Cu. Yd.	0.58	0.69	0.79	0.87	1.03	1.18	0.94	1.11	1.26

2½" COURSE = 2¼" Brick + ¼" JOINT

DIMENSIONS						SCALES		
No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	¾"= 1'-0"	½"	¼"
1	2½	51	10- 7½	101	21- 0½			
2	5	52	10-10	102	21- 3			4
3	7½	53	11- 0½	103	21- 5½			
4	10	54	11- 3	104	21- 8		4	8
5	1- 0½	55	11- 5½	105	21-10½			
6	1- 3	56	11- 8	106	22- 1	4		12
7	1- 5½	57	11-10½	107	22- 3½			
8	1- 8	58	12- 1	108	22- 6		8	16
9	1-10½	59	12- 3½	109	22- 8½			
10	2- 1	60	12- 6	110	22-11			20
11	2- 3½	61	12- 8½	111	23- 1½			
12	2- 6	62	12-11	112	23- 4	8	12	24
13	2- 8½	63	13- 1½	113	23- 6½			
14	2-11	64	13- 4	114	23- 9			28
15	3- 1½	65	13- 6½	115	23-11½			
16	3- 4	66	13- 9	116	24- 2		16	32
17	3- 6½	67	13-11½	117	24- 4½			
18	3- 9	68	14- 2	118	24- 7			36
19	3-11½	69	14- 4½	119	24- 9½	12		
20	4- 2	70	14- 7	120	25- 0		20	40
21	4- 4½	71	14- 9½	121	25- 2½			
22	4- 7	72	15- 0	122	25- 5			44
23	4- 9½	73	15- 2½	123	25- 7½			
24	5- 0	74	15- 5	124	25-10			
25	5- 2½	75	15- 7½	125	26- 0½	16	24	48
26	5- 5	76	15-10	126	26- 3			
27	5- 7½	77	16- 0½	127	26- 5½			52
28	5-10	78	16- 3	128	26- 8			
29	6- 0½	79	16- 5½	129	26-10½		28	56
30	6- 3	80	16- 8	130	27- 1			
31	6- 5½	81	16-10½	131	27- 3½	20		60
32	6- 8	82	17- 1	132	27- 6			
33	6-10½	83	17- 3½	133	27- 8½		32	64
34	7- 1	84	17- 6	134	27-11			
35	7- 3½	85	17- 8½	135	28- 1½			68
36	7- 6	86	17-11	136	28- 4			
37	7- 8½	87	18- 1½	137	28- 6½	24	36	72
38	7-11	88	18- 4	138	28- 9			
39	8- 1½	89	18- 6½	139	28-11½			76
40	8- 4	90	18- 9	140	29- 2		40	80
41	8- 6½	91	18-11½	141	29- 4½			
42	8- 9	92	19- 2	142	29- 7			
43	8-11½	93	19- 4½	143	29- 9½	28		84
44	9- 2	94	19- 7	144	30- 0			
45	9- 4½	95	19- 9½	145	30- 2½		44	88
46	9- 7	96	20- 0	146	30- 5			
47	9- 9½	97	20- 2½	147	30- 7½			92
48	10- 0	98	20- 5	148	30-10			
49	10- 2½	99	20- 7½	149	31- 0½	32	48	96
50	10- 5	100	20-10	150	31- 3			

3/8" JOINT + 2¼" Brick = 2⅝" COURSE

DIMENSIONS						SCALES		
No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	¾"= 1'-0"	½"	¼"
1	2⅝	51	11- 1⅞	101	22- 1⅜			
2	5¼	52	11- 4½	102	22- 3¾			4
3	7⅞	53	11- 7⅛	103	22- 6⅜			
4	10½	54	11- 9¾	104	22- 9		4	8
5	1- 1⅛	55	12- 0⅜	105	22-11⅝			
6	1- 3¾	56	12- 3	106	23- 2¼	4		12
7	1- 6⅜	57	12- 5⅝	107	23- 4⅞			
8	1- 9	58	12- 8¼	108	23- 7½		8	16
9	1-11⅝	59	12-10⅞	109	23-10⅛			
10	2- 2¼	60	13- 1½	110	24- 0¾			20
11	2- 4⅞	61	13- 4⅛	111	24- 3⅜			
12	2- 7½	62	13- 6¾	112	24- 6	8	12	24
13	2-10⅛	63	13- 9⅜	113	24- 8⅝			
14	3- 0¾	64	14- 0	114	24-11¼			28
15	3- 3⅜	65	14- 2⅝	115	25- 1⅞			
16	3- 6	66	14- 5¼	116	25- 4½		16	32
17	3- 8⅝	67	14- 7⅞	117	25- 7⅛			
18	3-11¼	68	14-10½	118	25- 9¾			36
19	4- 1⅞	69	15- 1⅛	119	26- 0⅜	12		
20	4- 4½	70	15- 3¾	120	26- 3		20	40
21	4- 7⅛	71	15- 6⅜	121	26- 5⅝			
22	4- 9¾	72	15- 9	122	26- 8¼			44
23	5- 0⅜	73	15-11⅝	123	26-10⅞			
24	5- 3	74	16- 2¼	124	27- 1½			
25	5- 5⅝	75	16- 4⅞	125	27- 4⅛	16	24	48
26	5- 8¼	76	16- 7½	126	27- 6¾			
27	5-10⅞	77	16-10⅛	127	27- 9⅜			52
28	6- 1½	78	17- 0¾	128	28- 0			
29	6- 4⅛	79	17- 3⅜	129	28- 2⅝		28	56
30	6- 6¾	80	17- 6	130	28- 5¼			
31	6- 9⅜	81	17- 8⅝	131	28- 7⅞	20		60
32	7- 0	82	17-11¼	132	28-10½			
33	7- 2⅝	83	18- 1⅞	133	29- 1⅛		32	64
34	7- 5¼	84	18- 4½	134	29- 3¾			
35	7- 7⅞	85	18- 7⅛	135	29- 6⅜			68
36	7-10½	86	18- 9¾	136	29- 9			
37	8- 1⅛	87	19- 0⅜	137	29-11⅝	24	36	72
38	8- 3¾	88	19- 3	138	30- 2¼			
39	8- 6⅜	89	19- 5⅝	139	30- 4⅞			76
40	8- 9	90	19- 8¼	140	30- 7½		40	80
41	8-11⅝	91	19-10⅞	141	30-10⅛			
42	9- 2¼	92	20- 1½	142	31- 0¾			
43	9- 4⅞	93	20- 4⅛	143	31- 3⅜	28		84
44	9- 7½	94	20- 6¾	144	31- 6			
45	9-10⅛	95	20- 9⅜	145	31- 8⅝		44	88
46	10- 0¾	96	21- 0	146	31-11¼			
47	10- 3⅜	97	21- 2⅝	147	32- 1⅞			92
48	10- 6	98	21- 5¼	148	32- 4½			
49	10- 8⅝	99	21- 7⅞	149	32- 7⅛	32	48	96
50	10-11¼	100	21-10½	150	32- 9¾			



AMERICAN ARCHITECT
TIME-SAVER STANDARDS

BRICKWORK—Quantities and Coursing Tables—1

Serial No. 61
OCTOBER 1936

½" JOINT + 2¼" Brick = 2¾" COURSE

SCALES			DIMENSIONS					
¼"	½"	¾"=1'-0"	No. of Courses	Ft.-In.	No. of Courses	Ft.-In.	No. of Courses	Ft.-In.
			1	2⅜	51	11- 8¼	101	23- 1⅜
4			2	5½	52	11-11	102	23- 4½
			3	8¼	53	12- 1¾	103	23- 7¼
8	4		4	11	54	12- 4½	104	23-10
			5	1- 1⅜	55	12- 7¼	105	24- 0¾
12		4	6	1- 4½	56	12-10	106	24- 3½
			7	1- 7¼	57	13- 0⅜	107	24- 6¼
16	8		8	1-10	58	13- 3½	108	24- 9
			9	2- 0⅜	59	13- 6¼	109	24-11⅜
20			10	2- 3½	60	13- 9	110	25- 2½
			11	2- 6¼	61	13-11⅜	111	25- 5¼
24	12	8	12	2- 9	62	14- 2½	112	25- 8
			13	2-11⅜	63	14- 5¼	113	25-10⅜
28			14	3- 2½	64	14- 8	114	26- 1½
			15	3- 5¼	65	14-10⅜	115	26- 4¼
32	16		16	3- 8	66	15- 1½	116	26- 7
			17	3-10⅜	67	15- 4¼	117	26- 9⅜
36		12	18	4- 1½	68	15- 7	118	27- 0½
			19	4- 4¼	69	15- 9⅜	119	27- 3¼
40	20		20	4- 7	70	16- 0½	120	27- 6
			21	4- 9⅜	71	16- 3¼	121	27- 8⅜
44			22	5- 0½	72	16- 6	122	27-11½
			23	5- 3¼	73	16- 8⅜	123	28- 2¼
48	24	16	24	5- 6	74	16-11½	124	28- 5
			25	5- 8⅜	75	17- 2¼	125	28- 7⅜
52			26	5-11½	76	17- 5	126	28-10½
			27	6- 2¼	77	17- 7⅜	127	29- 1¼
56	28		28	6- 5	78	17-10½	128	29- 4
			29	6- 7⅜	79	18- 1¼	129	29- 6¾
60		20	30	6-10½	80	18- 4	130	29- 9½
			31	7- 1¼	81	18- 6⅜	131	30- 0¾
64	32		32	7- 4	82	18- 9½	132	30- 3
			33	7- 6⅜	83	19- 0⅜	133	30- 5¾
68			34	7- 9½	84	19- 3	134	30- 8½
			35	8- 0⅜	85	19- 5⅜	135	30-11¼
72	36	24	36	8- 3	86	19- 8½	136	31- 2
			37	8- 5⅜	87	19-11¼	137	31- 4⅜
76			38	8- 8½	88	20- 2	138	31- 7½
			39	8-11¼	89	20- 4⅜	139	31-10¼
80	40		40	9- 2	90	20- 7½	140	32- 1
			41	9- 4⅜	91	20-10¼	141	32- 3¾
84		28	42	9- 7½	92	21- 1	142	32- 6½
			43	9-10¼	93	21- 3⅜	143	32- 9¼
88	44		44	10- 1	94	21- 6½	144	33- 0
			45	10- 3⅜	95	21- 9¼	145	33- 2¾
92			46	10- 6½	96	22- 0	146	33- 5½
			47	10- 9¼	97	22- 2⅜	147	33- 8¼
96	48	32	48	11- 0	98	22- 5½	148	33-11
			49	11- 2⅜	99	22- 8¼	149	34- 1⅜
100			50	11- 5½	100	22-11	150	34- 4½
104	52							
108		36						
112	56							
116								
120	60	40						
124								
128	64							

QUANTITIES - BRICK and MORTAR
per 100 sq. ft. Wall Area

Based on standard brick (2¼" x 3¾" x 8) with ½" joints, completely filled. No allowance for waste

Adapted from data issued by the Brick Manufacturers' Association of New York

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Type of Wall	2" Veneer	4" Veneer	8" Rolok-Bak
BRICK, Number	399	616	1056
MORTAR, Cu. Ft.	3.2	7.2	9.9

Type of Wall	8" Solid	12" Solid
BRICK, Number	1232	1848
MORTAR, Cu. Ft.	18.6	27.8

2⅞" COURSE = 2¼" Brick + ⅝" JOINT

DIMENSIONS								SCALES		
No. of Courses	Ft.-In.	No. of Courses	Ft.-In.	No. of Courses	Ft.-In.	No. of Courses	Ft.-In.	¾"=1'-0"	½"	¼"
1	2⅞	51	12- 2⅝	101	24- 2⅜	151	36- 1⅞			
2	5¾	52	12- 5½	102	24- 5¼	152	36- 4¾			
3	8⅝	53	12- 8⅜	103	24- 8⅛	153	36- 7⅝			
4	11½	54	12-11¼	104	24-11	154	36-10½			
5	1- 2⅜	55	13- 2⅛	105	25- 1⅞	155	37- 1⅜			
6	1- 5¼	56	13- 5	106	25- 4¾	156	37- 4¼	4		
7	1- 8⅛	57	13- 7⅞	107	25- 7⅝	157	37- 7⅛			
8	1-11	58	13-10¾	108	25-10½	158	37- 9⅞			
9	2- 1⅞	59	14- 1⅝	109	26- 1⅜	159	38- 0¾			
10	2- 4¾	60	14- 4½	110	26- 4¼	160	38- 3½			
11	2- 7⅝	61	14- 7⅛	111	26- 7⅛	161	38- 6¼			
12	2-10½	62	14-10¼	112	26-10	162	38- 9			
13	3- 1⅜	63	15- 1⅛	113	27- 0⅞	163	38-11¾			
14	3- 4¼	64	15- 4	114	27- 3¾	164	39- 2⅝			
15	3- 7⅛	65	15- 6⅞	115	27- 6⅝	165	39- 5½			
16	3-10	66	15- 9¾	116	27- 9½	166	39- 8¼			
17	4- 0⅞	67	16- 0⅝	117	28- 0⅜	167	39-11			
18	4- 3¾	68	16- 3½	118	28- 3¼	168	40- 1⅞			
19	4- 6⅝	69	16- 6⅜	119	28- 6⅛	169	40- 4¾			
20	4- 9½	70	16- 9¼	120	28- 9	170	40- 7⅝			
21	5- 0⅜	71	17- 0⅛	121	28-11⅞	171	40-10½			
22	5- 3¼	72	17- 3	122	29- 2¾	172	41- 1⅜			
23	5- 6⅛	73	17- 5⅞	123	29- 5⅝	173	41- 4¼			
24	5- 9	74	17- 8¾	124	29- 8½	174	41- 7			
25	5-11⅞	75	17-11⅝	125	29-11⅜	175	41- 9⅞			
26	6- 2¾	76	18- 2½	126	30- 2¼	176	42- 0¾			
27	6- 5⅝	77	18- 5⅜	127	30- 5⅛	177	42- 3⅝			
28	6- 8½	78	18- 8¼	128	30- 8	178	42- 6½			
29	6-11⅜	79	18-11⅛	129	31- 1⅞	179	42- 9¼			
30	7- 2¼	80	19- 2	130	31- 4¾	180	43- 0			
31	7- 5⅛	81	19- 4⅞	131	31- 7⅝	181	43- 2⅞			
32	7- 8	82	19- 7¾	132	31-10½	182	43- 5¾			
33	7-10⅞	83	19-10⅝	133	32- 1⅜	183	43- 8⅝			
34	8- 1¾	84	20- 1½	134	32- 4¼	184	43-11½			
35	8- 4⅝	85	20- 4⅜	135	32- 7	185	44- 2⅜			
36	8- 7½	86	20- 7¼	136	32- 9⅞	186	44- 5¼			
37	8-10⅜	87	20-10⅛	137	33- 0¾	187	44- 8⅛			
38	9- 1¼	88	21- 1	138	33- 3⅝	188	44-11			
39	9- 4⅛	89	21- 3⅞	139	33- 6½	189	45- 1⅞			
40	9- 7	90	21- 6¾	140	33- 9¼	190	45- 4¾			
41	9- 9⅞	91	21- 9⅝	141	34- 0⅛	191	45- 7⅝			
42	10- 0¾	92	22- 0½	142	34- 3⅞	192	45-10½			
43	10- 3⅝	93	22- 3¾	143	34- 6¾	193	46- 1⅜			
44	10- 6½	94	22- 6¼	144	34- 9⅝	194	46- 4¼			
45	10- 9⅜	95	22- 9⅛	145	34- 8⅞	195	46- 7			
46	11- 0¼	96	23- 0	146	34-11¾	196	46- 9⅞			
47	11- 3⅛	97	23- 2⅞	147	35- 2⅝	197	46-12¾			
48	11- 6	98	23- 5¾	148	35- 5½	198	47- 3⅝			
49	11- 8⅞	99	23- 8⅝	149	35- 8⅜	199	47- 6½			
50	11-11¾	100	23-11½	150	35-11¼	200	47- 9¼			

AMERICAN ARCHITECT
TIME-SAVER STANDARDS

Serial No. 62

OCTOBER 1936

BRICKWORK—Quantities and Coursing Tables—2

PURPOSE

Material on this sheet includes dimensions of courses for ¾", ⅞", and 1" jointed brick masonry; scales for the above joint thicknesses, reading at ¼", ½" and ¾" to the foot; recommended mixes for brick mortar; and tabulated dimensions for modular brickwork.

MORTAR FOR BRICK MASONRY

The Brick Manufacturers' Association of New York recommends lime content in brick mortars for greater workability, lower cost and more damp-proof wall construction. Their recommendations for mixes (by volume) are:

	CEM.	LIME	SAND
Light load bearing superstructures	1	2	9
Foundations	1	1	6
Loads exceeding 250 lb. per sq. in.	1	0.15	3

The New York City Building Code requires cement mortar for all masonry for following purposes: Foundation walls and footings, ashlar faced walls, isolated piers, exterior walls of skeleton structures, curtain and parapet walls, chimneys above roofs and lining existing walls. Their requirements for cement mortar are:

> 1 part cement (by volume) to not more than 3 parts sand, in which not more than 15% (by volume) of cement may be replaced by lime.

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3" COURSE = 2¼" Brick + ¾" JOINT

DIMENSIONS						SCALES		
No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	¾"=1'-0"	½"	¼"
1	3	51	12-9	101	25-3			
2	6	52	13-0	102	25-6			4
3	9	53	13-3	103	25-9			
4	1-0	54	13-6	104	26-0		4	8
5	1-3	55	13-9	105	26-3			
6	1-6	56	14-0	106	26-6			12
7	1-9	57	14-3	107	26-9	4		
8	2-0	58	14-6	108	27-0		8	16
9	2-3	59	14-9	109	27-3			
10	2-6	60	15-0	110	27-6			20
11	2-9	61	15-3	111	27-9			
12	3-0	62	15-6	112	28-0		12	24
13	3-3	63	15-9	113	28-3	8		
14	3-6	64	16-0	114	28-6			28
15	3-9	65	16-3	115	28-9			
16	4-0	66	16-6	116	29-0		16	32
17	4-3	67	16-9	117	29-3			
18	4-6	68	17-0	118	29-6			36
19	4-9	69	17-3	119	29-9			
20	5-0	70	17-6	120	30-0		20	40
21	5-3	71	17-9	121	30-3			
22	5-6	72	18-0	122	30-6	12		44
23	5-9	73	18-3	123	30-9			
24	6-0	74	18-6	124	31-0		24	48
25	6-3	75	18-9	125	31-3			
26	6-6	76	19-0	126	31-6			52
27	6-9	77	19-3	127	31-9			
28	7-0	78	19-6	128	32-0		28	56
29	7-3	79	19-9	129	32-3			
30	7-6	80	20-0	130	32-6	16		60
31	7-9	81	20-3	131	32-9			
32	8-0	82	20-6	132	33-0		32	64
33	8-3	83	20-9	133	33-3			
34	8-6	84	21-0	134	33-6			68
35	8-9	85	21-3	135	33-9			
36	9-0	86	21-6	136	34-0		36	72
37	9-3	87	21-9	137	34-3	20		
38	9-6	88	22-0	138	34-6			76
39	9-9	89	22-3	139	34-9			
40	10-0	90	22-6	140	35-0		40	80
41	10-3	91	22-9	141	35-3			
42	10-6	92	23-0	142	35-6			84
43	10-9	93	23-3	143	35-9			
44	11-0	94	23-6	144	36-0	24	44	88
45	11-3	95	23-9	145	36-3			
46	11-6	96	24-0	146	36-6			92
47	11-9	97	24-3	147	36-9			
48	12-0	98	24-6	148	37-0		48	96
49	12-3	99	24-9	149	37-3			
50	12-6	100	25-0	150	37-6			100
						28		
								104
						32	52	
								108
						36		
							56	112
								116

7/8" JOINT + 2¼" Brick = 3⅛" COURSE

DIMENSIONS						SCALES		
No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	No. of Courses	Ft.–In.	¾"=1'-0"	½"	¼"
1	3⅜	51	13-3⅜	101	26-3⅜			
2	6¾	52	13-6¾	102	26-6¾			4
3	9⅛	53	13-9⅛	103	26-9⅛			
4	1-0½	54	14-0½	104	27-1		4	8
5	1-3⅞	55	14-3⅞	105	27-4⅞			
6	1-6¾	56	14-7	106	27-7⅛			12
7	1-9⅛	57	14-10⅛	107	27-10⅛	4		
8	2-1	58	15-1¼	108	28-1½		8	16
9	2-4⅛	59	15-4⅛	109	28-4⅛			
10	2-7¼	60	15-7½	110	28-7¼			20
11	2-10⅜	61	15-10⅜	111	28-10⅜			
12	3-1½	62	16-1¼	112	29-2		12	24
13	3-4⅝	63	16-4⅝	113	29-5⅛	8		
14	3-7¾	64	16-8	114	29-8¼			28
15	3-10⅛	65	16-11⅛	115	29-11⅜			
16	4-2	66	17-2¼	116	30-2½		16	32
17	4-5⅛	67	17-5⅜	117	30-5⅝			
18	4-8¼	68	17-8½	118	30-8¾			36
19	4-11⅜	69	17-11⅝	119	30-11⅞			
20	5-2½	70	18-2¾	120	31-3		20	40
21	5-5⅝	71	18-5⅞	121	31-6⅛			
22	5-8¾	72	18-9	122	31-9¼	12		44
23	5-11⅞	73	19-0⅛	123	32-0⅜			
24	6-3	74	19-3¼	124	32-3½		24	48
25	6-6⅛	75	19-6⅜	125	32-6⅝			
26	6-9¼	76	19-9½	126	32-9¾			52
27	7-0⅜	77	20-0⅝	127	33-0⅞			
28	7-3½	78	20-3¾	128	33-4		28	56
29	7-6⅝	79	20-6⅞	129	33-7⅛			
30	7-9¾	80	20-10	130	33-10¼	16		60
31	8-0⅞	81	21-1⅛	131	34-1⅜			
32	8-4	82	21-4¼	132	34-4½		32	64
33	8-7⅛	83	21-7⅜	133	34-7⅝			
34	8-10¼	84	21-10½	134	34-10¾			68
35	9-1⅜	85	22-1⅝	135	35-1⅞			
36	9-4½	86	22-4¾	136	35-5		36	72
37	9-7⅝	87	22-7⅞	137	35-8⅛	20		
38	9-10¾	88	22-11	138	35-11¼			76
39	10-1⅞	89	23-2⅛	139	36-2⅜			
40	10-5	90	23-5¼	140	36-5½		40	80
41	10-8⅛	91	23-8⅜	141	36-8⅝			
42	10-11¼	92	23-11½	142	36-11¾			84
43	11-2⅜	93	24-2⅝	143	37-2⅞			
44	11-5½	94	24-5¾	144	37-6	24	44	88
45	11-8⅝	95	24-8⅞	145	37-9⅛			
46	11-11¾	96	25-0	146	38-0¼			92
47	12-2⅞	97	25-3⅛	147	38-3⅜			
48	12-6	98	25-6¼	148	38-6½		48	96
49	12-9⅛	99	25-9⅜	149	38-9⅝			
50	13-0¼	100	26-0½	150	39-0¾			100
						28		
								104
						32	52	
								108
						36		
							56	112
								116

AMERICAN ARCHITEC
TIME-SAVER STANDARDS

BRICKWORK—Quantities and Coursing Tables—2

Serial No. 62
OCTOBER 1936

1" JOINT + 2¼" Brick = 3¼" COURSE

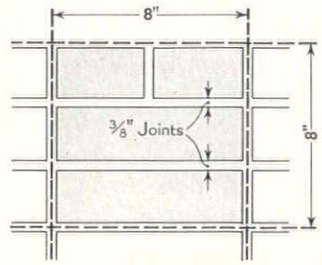
SCALES			DIMENSIONS			
¼"	½"	¾"=1'-0"	No. of Courses	Ft.-In.	No. of Courses	Ft.-In.
			1	3¼	76	20- 7
			2	6½	77	20-10½
4			3	9¾	78	21- 1½
			4	1- 1	79	21- 4¾
8	4		5	1- 4¼	80	21- 8
			6	1- 7½	81	21-11¾
12		4	7	1-10¾	82	22- 2½
			8	2- 2	83	22- 5¾
16	8		9	2- 5¼	84	22- 9
			10	2- 8½	85	23- 0¾
20			11	2-11¾	86	23- 3½
			12	3- 3	87	23- 6¾
			13	3- 6¼	88	23-10
24	12	8	14	3- 9½	89	24- 1¼
			15	4- 0¾	90	24- 4½
28			16	4- 4	91	24- 7¾
			17	4- 7¼	92	24-11
			18	4-10½	93	25- 2¼
32	16		19	5- 1¾	94	25- 5½
			20	5- 5	95	25- 8¾
36		12	21	5- 8¼	96	26- 0
			22	5-11½	97	26- 3¼
40	20		23	6- 2¾	98	26- 6½
			24	6- 6	99	26- 9¾
44			25	6- 9¼	100	27- 1
			26	7- 0½	101	27- 4¼
48	24	16	27	7- 3¾	102	27- 7½
			28	7- 7	103	27-10¾
			29	7-10¼	104	28- 2
52			30	8- 1½	105	28- 5¼
			31	8- 4¾	106	28- 8½
56	28		32	8- 8	107	28-11¾
			33	8-11¼	108	29- 3
			34	9- 2½	109	29- 6¼
60		20	35	9- 5¾	110	29- 9½
			36	9- 9	111	30- 0¾
64	32		37	10- 0¼	112	30- 4
			38	10- 3½	113	30- 7¼
68			39	10- 6¾	114	30-10½
			40	10-10	115	31- 1¾
72	36	24	41	11- 1¼	116	31- 5
			42	11- 4½	117	31- 8¼
76			43	11- 7¾	118	31-11½
			44	11-11	119	32- 2¾
			45	12- 2¼	120	32- 6
80	40		46	12- 5½	121	32- 9¼
			47	12- 8¾	122	33- 0½
84		28	48	13- 0	123	33- 3¾
			49	13- 3¼	124	33- 7
88	44		50	13- 6½	125	33-10¼
			51	13- 9¾	126	34- 1½
92			52	14- 1	127	34- 4¾
			53	14- 4¼	128	34- 8
			54	14- 7½	129	34-11¼
96	48	32	55	14-10⅜	130	35- 2½
			56	15- 2	131	35- 5¾
100			57	15- 5¼	132	35- 9
			58	15- 8½	133	36- 0¼
			59	15-11¾	134	36- 3½
104	52		60	16- 3	135	36- 6¾
			61	16- 6¼	136	36-10
108		36	62	16- 9½	137	37- 1¼
			63	17- 0¾	138	37- 4½
112	56		64	17- 4	139	37- 7¾
			65	17- 7¼	140	37-11
116			66	17-10½	141	38- 2¼
			67	18- 1¾	142	38- 5½
			68	18- 5	143	38- 8¾
120	60	40	69	18- 8¼	144	39- 0
			70	18-11½	145	39- 3¼
124			71	19- 2¾	146	39- 6½
			72	19- 6	147	39- 9¾
			73	19- 9¼	148	40- 1
128	64		74	20- 0½	149	40- 4¼
			75	20- 3¾	150	40- 7½

MODULAR BRICKWORK

The modular system employs an 8" square as a unit containing three courses or one soldier vertically, two headers or one stretcher horizontally. Dimensions are to centers of joints. The module maintains joint sizes as required by the type of brick used. Brick sizes vary to fit the 8"square (Compare Figs. 1 & 2 below).

Modular brickwork can be used when the brick size is unimportant to the masonry effect. Revision of working drawings, because of last minute changes in size of brick or joint, is not necessary. The system was developed by Frederick Heath, Jr., Executive Secretary of the Brick Manufacturers' Association of New England in cooperation with Henry H. Saylor, Associate Editor of American Architect and Architecture.

1.



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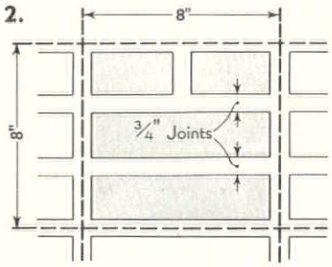

DIMENSIONS - MODULAR BRICKWORK

Stretchers	Headers	Courses	Ft.– In.	Stretchers	Headers	Courses	Ft.– In.
		1	0- 2⅔			46	10- 2⅔
	1		0- 4		31		10- 4
		2	0- 5⅓			47	10- 5⅓
1	2	3	0- 8	16	32	48	10- 8
		4	0-10⅔			49	10-10⅔
	3		1- 0		33		11- 0
		5	1- 1⅓			50	11- 1⅓
2	4	6	1- 4	17	34	51	11- 4
		7	1- 6⅔			52	11- 6⅔
	5		1- 8		35		11- 8
		8	1- 9⅓			53	11- 9⅓
3	6	9	2- 0	18	36	54	12- 0
		10	2- 2⅔			55	12- 2⅔
	7		2- 4		37		12- 4
		11	2- 5⅓			56	12- 5⅓
4	8	12	2- 8	19	38	57	12- 8
		13	2-10⅔			58	12-10⅔
	9		3- 0		39		13- 0
		14	3- 1⅓			59	13- 1⅓
5	10	15	3- 4	20	40	60	13- 4
		16	3- 6⅔			61	13- 6⅔
	11		3- 8		41		13- 8
		17	3- 9⅓			62	13- 9⅓
6	12	18	4- 0	21	42	63	14- 0
		19	4- 2⅔			64	14- 2⅔
	13		4- 4		43		14- 4
		20	4- 5⅓			65	14- 5⅓
7	14	21	4- 8	22	44	66	14- 8
		22	4-10⅔			67	14-10⅔
	15		5- 0		45		15- 0
		23	5- 1⅓			68	15- 1⅓
8	16	24	5- 4	23	46	69	15- 4
		25	5- 6⅔			70	15- 6⅔
	17		5- 8		47		15- 8
		26	5- 9⅓			71	15- 9⅓
9	18	27	6- 0	24	48	72	16- 0
		28	6- 2⅔			73	16- 2⅔
	19		6- 4		49		16- 4
		29	6- 5⅓			74	16- 5⅓
10	20	30	6- 8	25	50	75	16- 8
		31	6-10⅔			76	16-10⅔
	21		7- 0		51		17- 0
		32	7- 1⅓			77	17- 1⅓
11	22	33	7- 4	26	52	78	17- 4
		34	7- 6⅔			79	17- 6⅔
	23		7- 8		53		17- 8
		35	7- 9⅓			80	17- 9⅓
12	24	36	8- 0	27	54	81	18- 0
		37	8- 2⅔			82	18- 2⅔
	25		8- 4		55		18- 4
		38	8- 5⅓			83	18- 5⅓
13	26	39	8- 8	28	56	84	18- 8
		40	8-10⅔			85	18-10⅔
	27		9- 0		57		19- 0
		41	9- 1⅓			86	19- 1⅓
14	28	42	9- 4	29	58	87	19- 4
		43	9- 6⅔			88	19- 6⅔
	29		9- 8		59		19- 8
		44	9- 9⅓			89	19- 9⅓
15	30	45	10- 0	30	60	90	20- 0

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AMERICAN ARCHITECT
TIME-SAVER STANDARDS

Serial No. 63

OCTOBER 1936

LADDERS AND PEDESTRIAN RAMPS

PURPOSE

Design of ladders and pedestrian ramps is more directly influenced by conditions of location and use than by theory. Exact formulae have not been developed. However, data on this sheet give such information as has been found to be practical. Tabular material has been adapted from data formulated by Ernest Irving Freese (American Architect, March, 1934), from the New York City Building Code and from recommendations of the Workmen's Compensation Service Bureau. For the proportioning of stair treads and risers see T-S.S. Serial No. 55, August, 1936.

DEFINITIONS

Ramps as considered here are inclined pedestrian passages without vertical risers and of a lower pitch than stairs. In general, they are easier to ascend or descend than stairs.

Ladders have a greater pitch than stairs. No ladder is comfortable, though some may be easier to climb than others. They can be divided into two classifications:

(1) Stepladders are lower in pitch than 75° and require flat treads. Risers may be either "open" or "closed" (see below). Handrails may or may not be provided. In this classification belong most fire escapes and ladders for boiler rooms, fly galleries, attics, decks, etc.

(2) Rung ladders are pitched more steeply than 75°, require extremely narrow treads or round rungs to provide knee-room and do not require additional handrails.

LAYOUTS AND REQUIREMENTS

Ramps steeper than 10% require non-slip surfaces and handrails. If possible, these safety measures should be included in all ramps. Most building codes limit the pitch, the maximum being about 2:12 or 16 2/3%. See Table I for recommended pitches, widths, handrail heights and clearances.

Stepladders require handrails on both sides when not confined between walls or when risers are "closed." When risers are "open," treads or the ladder frame may serve as handholds. However, handrails should be provided wherever possible. Stepladders are normally "single-file" footways. Being used only where limitations of space will not permit installation of stairs they should be as narrow as possible. See Table II for dimensions and clearances. In all cases consult local building codes and fire regulations.

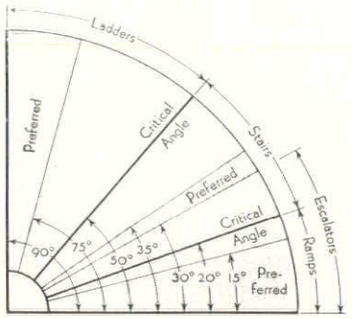


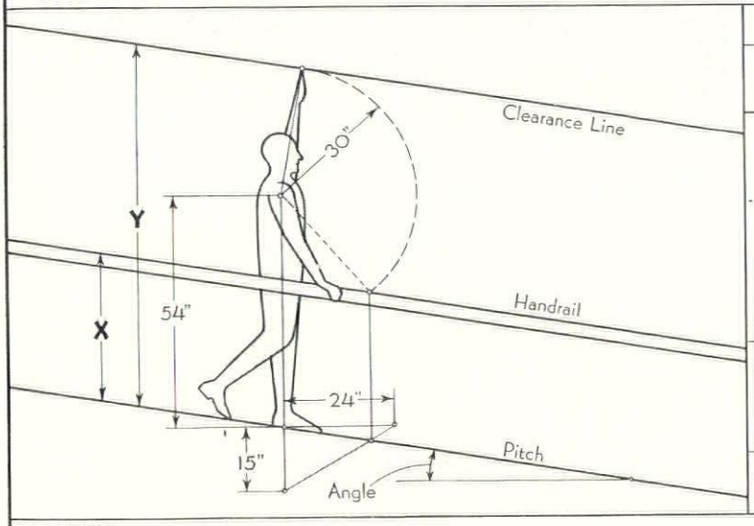
Diagram shows recommendations of the Workmen's Compensation Service Bureau for pitch of ramps, stairs and ladders. Pitches close to "critical angles" should be avoided wherever possible as these are uncomfortable and unsafe

Rung ladders should have round rungs if possible to provide a maximum of knee-room. Rungs need not be evenly spaced between floors, but irregular spaces should occur at the lower landing for safety. Rung spacing and clearances may be determined graphically as shown in Table III or taken directly from Table III, Columns 4 and 5. Ladders necessary for proper maintenance or fire safety of buildings are specified in most building codes and fire regulations.

PREFABRICATED STAIRS AND LADDERS

Various types of counterbalanced disappearing stairs are available, as well as iron pit-ladders, fire-escape equipment, etc. Manufacturers' reference data should be consulted for necessary tolerances, structural requirements and recommended installation practices.

TABLE I - RAMPS - 0° to 20° Pitch



GRADIENT			HANDRAIL HEIGHT X (inches)	CLEARANCE Y (inches)
Pitch (ratio)	Grade (%)	Angle (deg. - min.)		
½ : 12	4⅙	2 – 23	35	
½ : 10	5	2 – 52	35	
1 : 12	8⅓	4 – 46	34½	
1 : 10	10	5 – 43	34½	84
1 : 8 } 1½ : 12 }	12½	7 – 7	34	
1½ : 10	15	8 – 23	34	
2 : 12	16⅔	9 – 28	34	
2 : 10	20	11 – 19	34	
2½ : 12	20⅚	11 – 46	33½	85
2½ : 10 } 3 : 12 }	25	14 – 2	33½	
3½ : 12	29⅙	16 – 16	33½	
3 : 10	30	16 – 42	33½	

NOTES:

Overhead clearances and handrail heights may be determined graphically from the diagram

Maximum pitch:

(1) Values below the dotted line ------ are prohibited by the New York City Building Code for theatre aisles, except for runs not exceeding 10' - 0" which may be pitched a maximum of 1:8

(2) Values below the dash line — — are prohibited by most other building codes

(3) All values above the solid line —— are approved by the Workmen's Compensation Service Bureau

Minimum width:

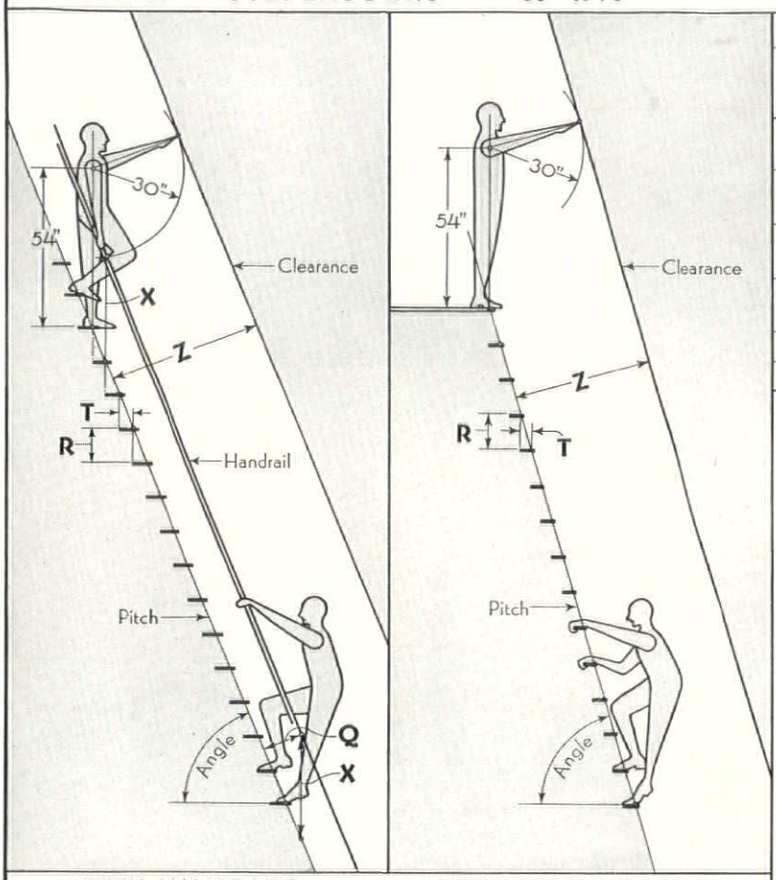
(1) For single file traffic = 30" }
(2) For furniture passage = 36" } determined by Ernest Irving Freese
(3) Preferred single file min. = 42" }
(4) For theatre aisles = 36", increasing 1½" every 5' - 0" of run (N.Y.C. Bldg. Code)

AMERICAN ARCHITECT
TIME-SAVER STANDARDS

LADDERS AND PEDESTRIAN RAMPS

Serial No. 63
OCTOBER 1936

TABLE II - STEPLADDERS - 50° to 75°



WITH HANDRAILS WITHOUT HANDRAILS

STEP DIMENSIONS		GRADIENT		CLEARANCE	HANDRAIL HEIGHT
Riser R (inches)	Tread T (inches)	Grade (%)	Angle (deg. - min.)	Z (inches)	X (inches)
9⅜ 9¾	7½ 7	125 139.28	51 – 21 54 – 19	64 62	34½
10⅛ 10½	6½ 6	155.75 175	57 – 18 60 – 16	59 57	35
10⅞ 11¼	5½ 5	197.72 225	63 – 10 66 – 2	54 52	35½
11⅝ 12	4½ 4	258.66 300	68 – 50 71 – 34	50 47	36
12⅜	3½	353.21	74 – 12	45	36½
12¾	3	425	76 – 46	42	37

NOTES:

Clearance and handrail height may be determined graphically if desired

Handrails are required on both sides of stepladders if risers are not left "open" or if not confined between side walls

Maximum and minimum widths:
With handrails: 21" to 24"
Without handrails: variable
Between sidewalls: 24" minimum

For fire escapes, etc., consult building codes and fire regulations

FORMULAE:

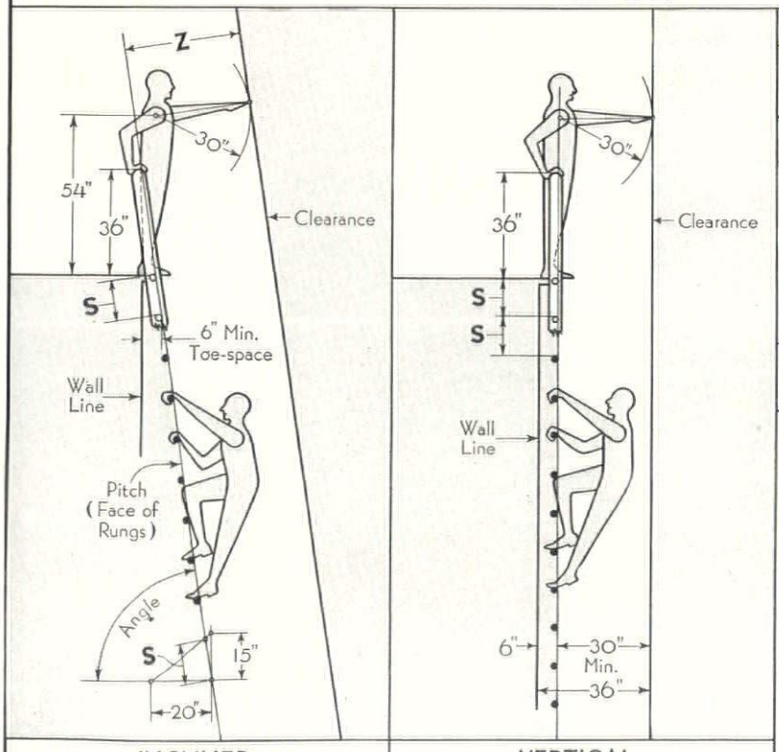
Tread = $T = 20 - \frac{4}{3}R$

Riser = $R = 15 - \frac{3}{4}T$

Perpendicular distance, pitch line to handrail =

$$Q = X \div \sqrt{\left(\frac{R}{T}\right)^2 + 1}$$

TABLE III - RUNG LADDERS - 75° to 90°



INCLINED VERTICAL

GRADIENT			RUNG SPACING S (inches)	CLEARANCE Z (inches)
Pitch (ratio)	Grade (%)	Angle (deg. - min.)		
12 : 2½	480	78 – 14	13¼	41
12 : 2	600	80 – 33	13½	39
12 : 1½	800	82 – 53	13¾	37
12 : 1	1200	85 – 14	14¼	35
12 : ½	2400	87 – 37	14½	32
Vertical		90 – 0	15 maximum 12 minimum	30

NOTES:

Clearances and handrail heights may be determined graphically if desired. Ladder frame should extend 3'-0" above platform

Widths:
Minimum = 15"
Desirable = 18"
Minimum between sidewalls = 24"

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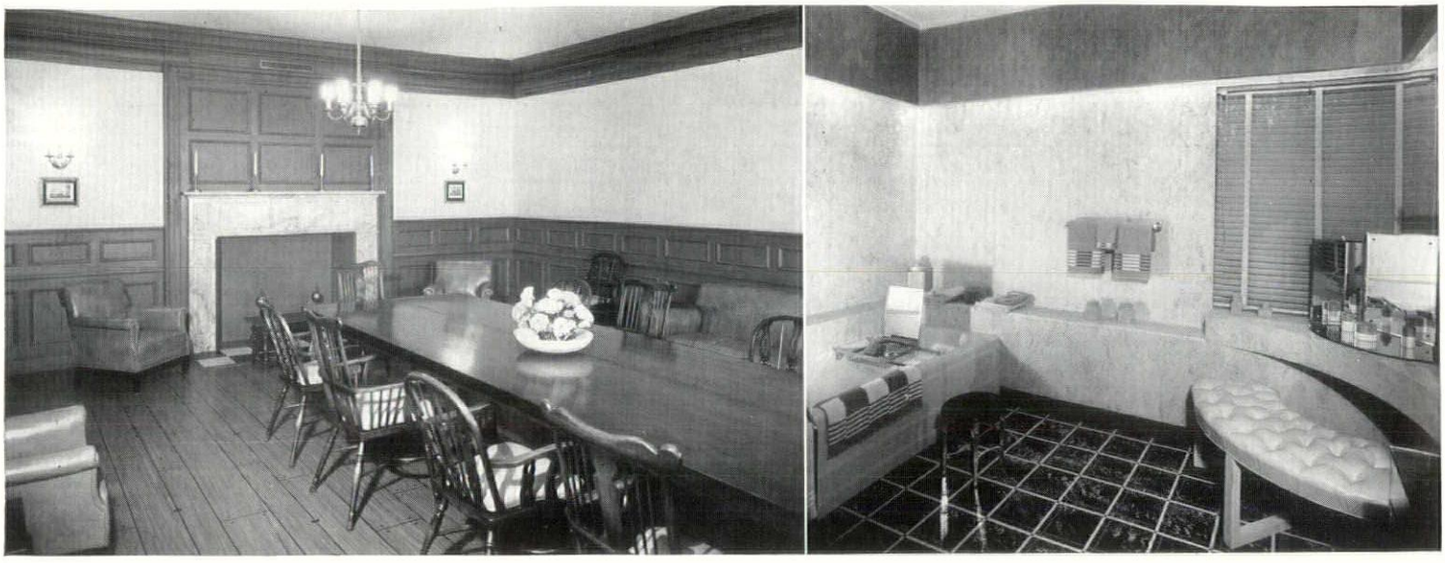
TECHNIQUES

METHODS • MATERIALS • RESEARCH • PRACTICES



(Left) Board of Directors' room showing the influences of colonial Williamsburg. (Right) The modern bathroom.

CONGOLEUM-NAIRN OPENS NEW SHOWROOM

Advanced methods of displaying floor and wall coverings feature the new showrooms opened in September by Congoleum-Nairn, Inc., on the 16th floor of the Textile Building, 295 Fifth Avenue, New York City.

Prominent in this new display are the suite of model rooms, the directors' room and the wall covering room. Each of these is designed to show the practical and decorative uses of the company's products. Linoleum floors throughout are accentuated by a liberal use of linoleum-type wall covering.

Planning this new showroom was an undertaking of several months. Due to its unique design, details of construction and lighting required considerable research and testing, complicated by a move of the New York offices. The decoration throughout was planned and carried out by the Interior Decoration Department of Congoleum-Nairn, Inc.

Conventional features of the display are combined with new and original placement. Individual niches for each roll of floor covering are elevated 26 inches from the floor giving, for the first time, eye-level display. Indirect, yet individual lighting throws the whole display into a dramatic setting that is colorful and appealing against the simple modern background.

One whole room is used for sample wall covering displays. There are twenty-six booths that show the adaptability of Sealex Wall Covering to all types of decoration.

The Company Board of Directors' room adjoins the display room and is used to illustrate one of the possibilities of linoleum and wall covering. The influences of colonial Williamsburg are shown in this room to the great advantage of the linoleum used. From the parchment colored walls to the "plank" floor, the colonial spirit is reflected.

A circular area at the opposite end of the showroom is employed to display Congoleum Gold Seal Rugs and Yard Goods. It forms a fitting contrast in its modern impression to the colonial influence of the directors' room. Here again, indirect lighting and modern treatment emphasize the patterns.

Completely decorated and furnished are the six rooms in the suite of model rooms. Hall, living room, dining room, as well as bar, kitchen and bath, are as modern as they are practical, and decorated with a fine discrimination of good taste and balance. From the unique bar to the very "workable" kitchen, the use of Sealex Linoleum for floors and Sealex Wall Covering on walls shows how easily the home may be made comfortable, livable and fresh in appearance.

The living room and dining room carry period decorations liberally employing linoleum. Bath is smart and in excellent taste. (*Continued on page* 116)

Individual display in main showroom.

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SIR RAYMOND UNWIN AT COLUMBIA

Public forums on housing and town planning have been inaugurated at the Columbia University School of Architecture as one of the principal activities of the Town Planning Studio, of which Sir Raymond Unwin, past President of the Royal Institute of British Architects, is director.

Discussion in which leading architects and town planners from New York and other cities will participate will follow a lecture by Sir Raymond at each of the meetings, to be held weekly on Thursday afternoons at 4 o'clock until January 14. Sir Raymond was formerly chief technical officer for housing and town planning in the British Ministry of Health.

The October lectures will deal with the general fundamentals of housing and town planning. Later the planning of one family and multiple family dwellings, neighborhood planning, and planning of towns and cities will be studied.

On Thursday, October 8th, Sir Raymond will speak on the scope and limitations applicable to planning a physical setting for human life and activities. At the initial conference, which took place Thursday, October 1st, the theme was "the nature of man, his life in the family and society" as the best basis for good housing and planning.

Design as involved in housing and planning will be discussed at the October 15th meeting, while the standard of housing needed for family life in modern communities will be analyzed October 26th.

Topics for subsequent forums will be as follows:

October 29th—"Planning should promote the best relations between housing, industry, commerce, culture, and the other elements of community life."

November 5th—"On what conditions can good housing be secured for all who need it?"

November 12th—"What is wrong with modern towns and cities? On what must better plans for them be based?"

November 19th—"Single family dwellings and their design."

November 24th—"Site planning for one family houses."

December 3rd—"Multiple family dwellings and their design."

December 10th—"Site planning for flat dwellings."

December 17th—"Neighborhood planning."

January 7th—"The planning of towns and cities."

January 14th—"Regional and state planning."

STORE REMODELLING CONFERENCE

The Pennsylvania State College and the Pennsylvania Retailers' Association will co-operate again in holding conference on the College campus on November 10, 1936. Store remodelling will be one of major themes.

The sixth annual conference for merchants and other business men in Pennsylvania is being planned under the joint supervision of the Pennsylvania State College, the Pennsylvania Retailers' Association, and other retail organizations.

Store remodelling, a problem that is giving many merchants much reason for thought at the present time, has been chosen as one of the major themes for discussion at the conference, both by the merchants themselves and by several prominent architects and designers.

Arrangements are being made to display at the conference

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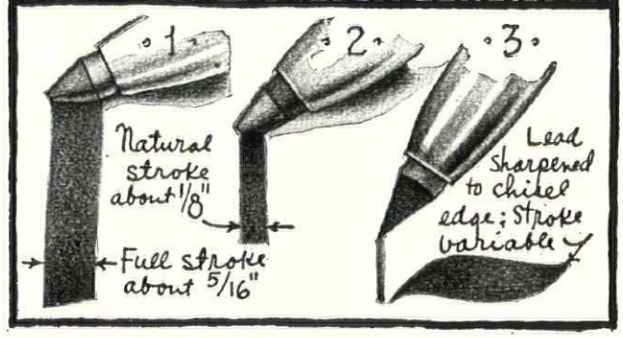

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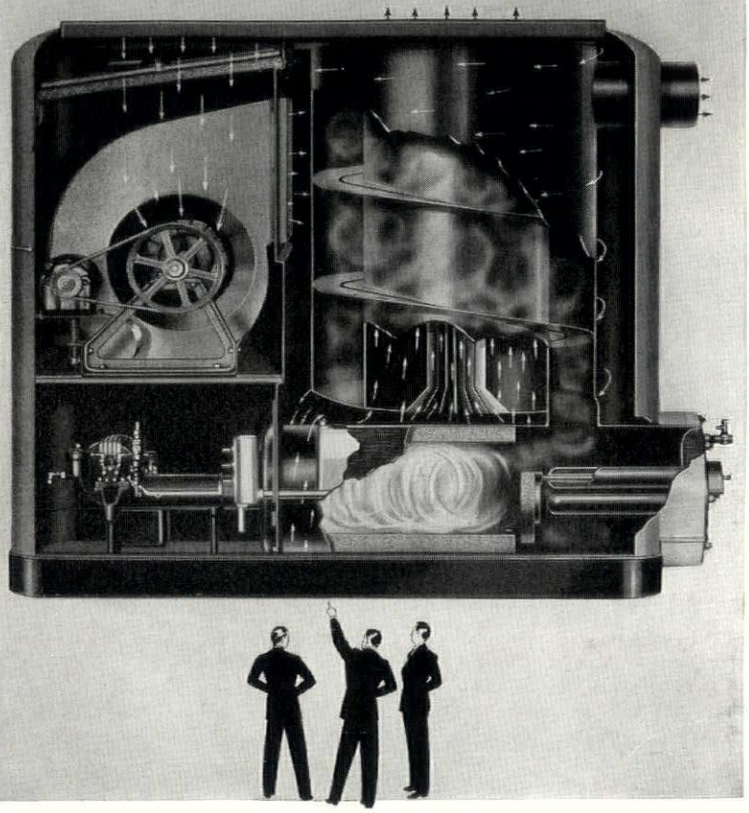

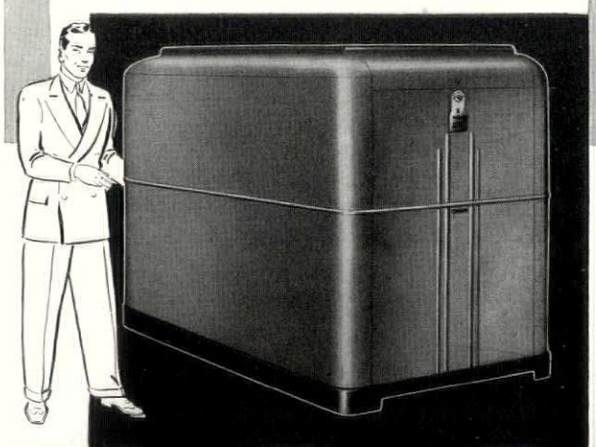

● It will pay you to investigate the Norge Fine-Air Conditioning Furnace. An inspection will quickly reveal many points of superiority over other units of its type. Visit the Norge dealer near you. Or, if you prefer, write for descriptive literature.

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NORGE

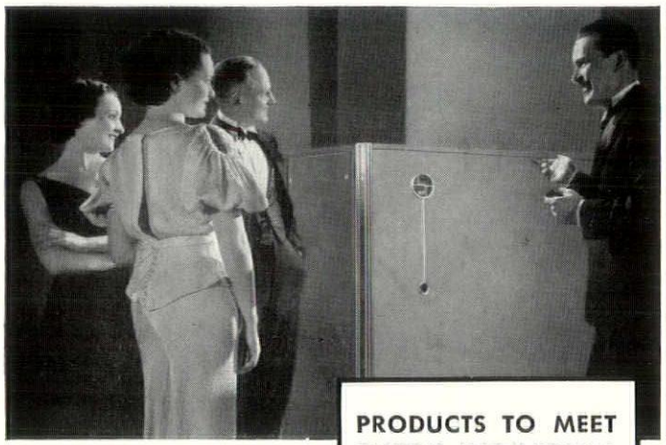
Fine-Air Conditioning Furnace Unit

Get the complete story of Norge Home Appliances for apartment or home installation. There are distinct advantages in standardizing on Norge equipment — apart from the exceptionally high quality of the products themselves.

A timely word about

AUTOMATIC HEAT

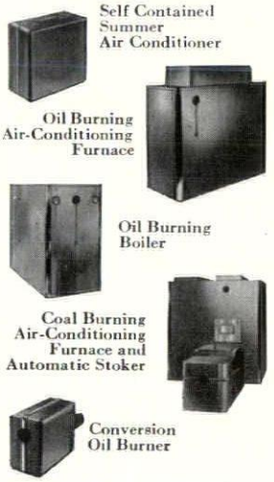
AND AIR CONDITIONING



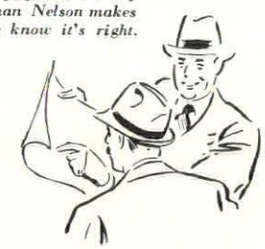
The importance of proper air conditioning upon the health of the family cannot be minimized. In fact, automatic heat and air conditioning is equally as important a factor in guarding the family's health as it is in providing convenience and comfort. That is why architects who for years have specified Herman Nelson Air-Conditioning Equipment for schools have welcomed the entrance of Herman Nelson in the residential and small commercial field. They know that Herman Nelson will bring to this field equipment of the same quality, efficiency and practicability which has revolutionized schoolroom heating and air conditioning.

Now *you* can recommend Herman Nelson Automatic Heat and Air-Conditioning products of the same quality and efficiency you have known for years. These products are made available through carefully selected distributors.

PRODUCTS TO MEET EVERY INDIVIDUAL REQUIREMENT



We can't go wrong on this equipment . . . If Herman Nelson makes it we know it's right.



HERMAN NELSON

Automatic Heat and Air Conditioning

GENERAL OFFICES AND FACTORIES AT MOLINE, ILLINOIS

a comprehensive exhibit of photographs of the modern Swedish co-operative stores. These photographs will all be large and should afford a good pictorial record of the co-operative movement in Sweden. This will be the first exhibit of this nature in America. The exhibition will be taken on a tour of American cities after the conference in State College. The exhibition will be available for any community or organization of business men which desires to sponsor it.

The exhibition will also show work accomplished in new and remodelled retail shops by a number of American architects. The display will include the work of the following architects: Kenneth Welch, Grand Rapids, Mich.; Reinhard and Hofmeister, New York City; Herbert Sobel, Chicago; Silverman and Levy, Philadelphia; Vahan Hagopian, New York City; Morris Sanders, New York City; Percival Goodman, New York City; B. Leo Steif and Company, Chicago, and Holabird and Root, Chicago.

Photographs will also be included showing the finest work of William Bayard Okie, Jr., recognized as one of the world's finest designers of display windows.

In the afternoon session, Allman Fordyce of Fordyce and Hamby, New York City, architects for the Pennsylvania Drug Company, will analyze the physical problems of "moving" merchandise.

Charles Swanson, of Chicago, known throughout the country as an outstanding store interior designer, will discuss his work. He recently completed work on the remodelled interior of the store of J. N. Adam and Company, Buffalo, N. Y.

Ely Jacques Kahn, New York architect, who is chairman of the American Institute of Architects Committee on Allied Arts, will give his views on the economic value of design in store modernization.

G. K. Gauff, President, Building Publications, Inc., New York City, will be chairman of the afternoon meeting. He is the publisher of "Building and Modernization."

Other speakers still to be selected will discuss the principles of store lighting and customer circulation as it affects sales.

After most of the major addresses, an opportunity will be given to the retailers attending to express their views on the subject and to request specific information on any point in which they are particularly interested.

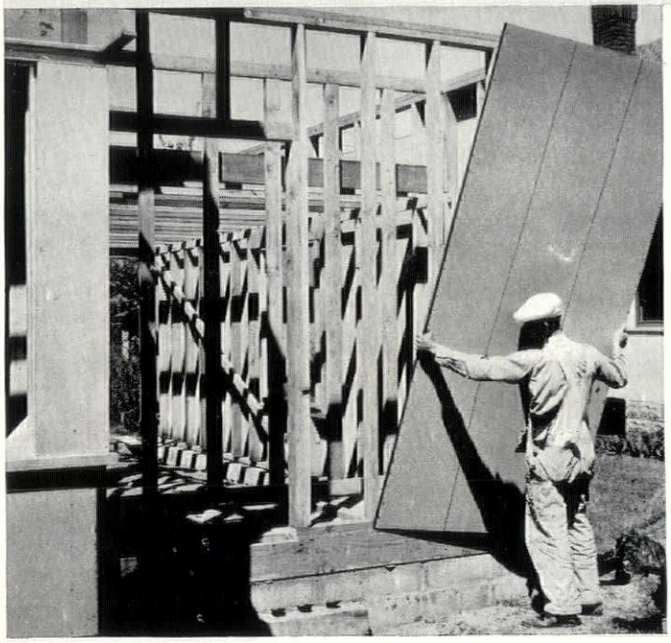
The advisory board of Pennsylvania merchants who are helping plan the conference includes the following: Charles H. Bear, Jr., President, Charles H. Bear & Co., York; Albert Coons, Vice President, Allied Stores, Lebanon; George Gable, President, The William F. Gable Co., Altoona; S. H. Heckman, Vice President and General Manager, Penn Traffic, Johnstown; John Leh, Jr., Promotion Director, H. Leh & Co., Allentown; John E. Means, Secretary, Pennsylvania Retailers' Association, Lancaster, and Charles Schlow, Proprietor, Schlow's Quality Shop, State College.

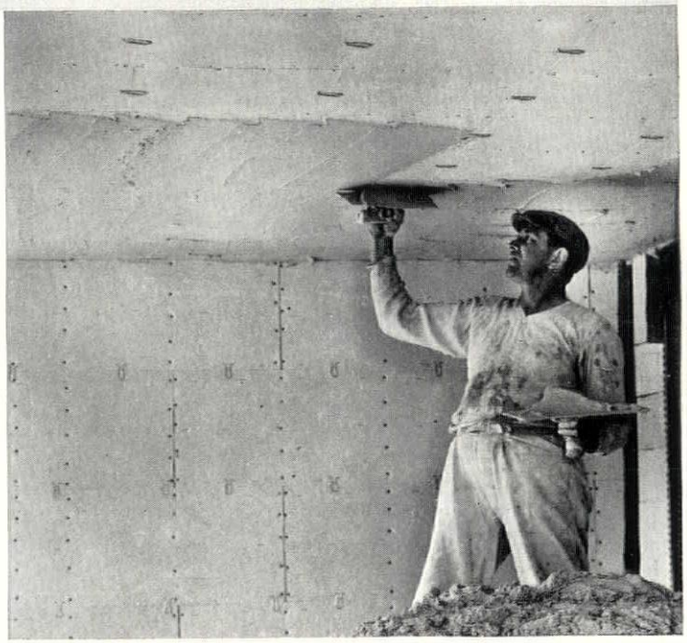
Harvey W. Stover, of the Extension Services of the Pennsylvania State College, is in charge of plans for the conference.

STANDARD ACCOUNTING ADOPTED BY AIA

The American Institute of Architects has officially adopted a standard accounting system for architects developed by Edwin Bergstrom of Los Angeles, the Treasurer of the

The Insulite wall of PROTECTION GIVES DOUBLE INSULATION





Bildrite SHEATHING on the outside

(AN INSULITE PRODUCT)

Save time and money for your clients by specifying Bildrite Sheathing. It assures better homes—with stronger, windproof walls—walls that really insulate against outside temperatures. Bildrite Sheathing is $25/32$ inch thick—no laminated courses to weaken it. And, it offers these important advantages:

1. **Four times the bracing strength of horizontal eight inch shiplap.**
2. **Far more insulation than lumber.**
3. **No open joints or knotholes.**
4. **Thoroughly waterproofed by a patented integral asphalt treatment.**
5. **Lower application costs.**
6. **One solid piece—No laminated courses to split.**
7. **Moderately priced.**

PROTECTED BY THE TERMILITE PROCESS
THE SAFE PERMANENT TREATMENT AGAINST TERMITES, ROT, FUNGI

Insulite products are treated against termites, rot and fungi.

LOK-JOINT LATH inside the framework

(AN INSULITE PRODUCT)

It's the safest base for plaster. Easily applied. Adds insulation value to the wall. Used in conjunction with Bildrite Sheathing it forms the Insulite Wall of Protection that adds far more to the value of the house than its actual cost. Consider carefully these important advantages:

1. **Reduces the passage of sound through walls and ceilings.**
2. **Permanent decoration.**
3. **High insulation value.**
4. **Adds to property value.**
5. **The cost is surprisingly low.**

WRITE FOR LITERATURE and SAMPLES

THE INSULITE COMPANY

DEPARTMENT AA66, BUILDERS EXCHANGE BUILDING · MINNEAPOLIS, MINNESOTA

IN ADVERTISEMENTS TO PROSPECTIVE BUILDERS WE SAY "IT WILL PAY YOU TO SEE AN ARCHITECT WHEN YOU BUILD OR REMODEL"

AMERICAN RADIATOR

presents

A NEW CONCEALED RADIATOR

which provides

SUN-LIKE *Radiant* HEAT

ARCO *Radiant* CONVECTOR

Here is the most important contribution to home heating and comfort since the introduction of American Radiator Conditioning Systems. A new type of radiator unites complete concealment, sturdy cast iron construction, and radiant heat. Its introduction comes as a result of important recent discoveries in *what makes people comfortable.*

TWO KINDS OF HEAT FOR COMFORT

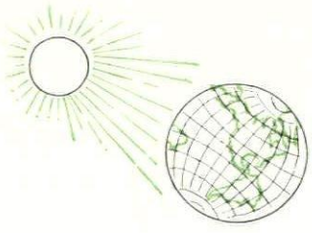
For many years, scientists and engineers have been carrying on experiments in comfort. From these they have arrived at the startling realization of the importance of the *two different methods of heat transfer* to the well being of the human body.

The first is Radiant Heat—the kind of heat we get from the sun or from any radiant surface. It is direct. It passes through space and through air without affecting the temperature of the air.

The second is Convected Heat. That is, the passage of heat by means of air. It is indirect. First, the air is heated by contact with a warmer body. Then in turn the air gives its heat to us by contact.

RADIANT HEAT A VITAL NECESSITY

Cut off from a source of radiant heat, animals have died of exposure—despite an air temperature of 70°. In specially constructed rooms, with air at 104° and walls at 57°, people have been cold; because cold walls take radiant heat from the body which warmer air cannot replace. Yet with conditions reversed, with air approximately 48°—and walls at approximately 80°, people are comfortable. Here the warmer walls radiated heat to the body, offsetting the otherwise chilling effect of cold air.



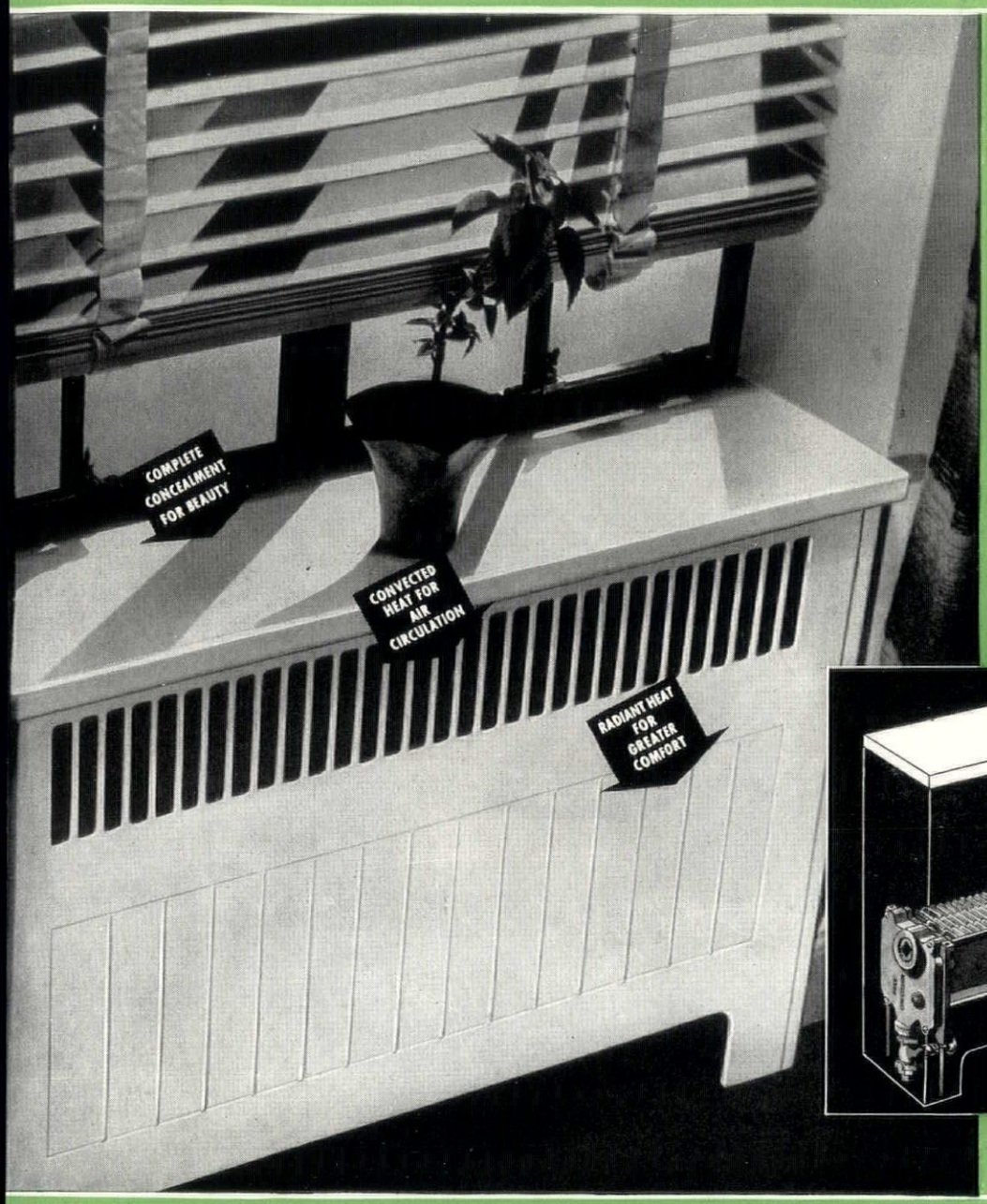
Radiant Heat—as from the sun—travels at a speed of 186,000 miles a second, directly to the earth, a cooler body.

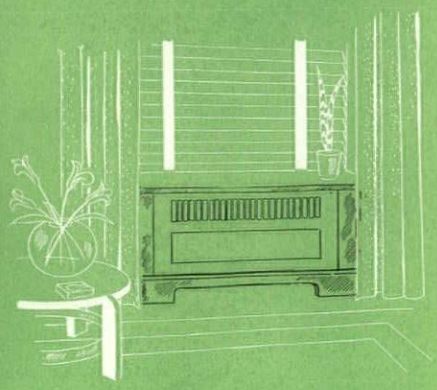
These are extreme cases, but they demonstrate that it is easier to create a feeling of comfort when people are in the presence of radiant heat. Maximum comfort comes from the correct combination of Radiant Heat first, and Convected Heat second.

The new Arco RADIANT Convector supplies both these kinds of heat directly and efficiently.

SCIENTIFIC HEATING DEMANDED THIS NEW PRODUCT

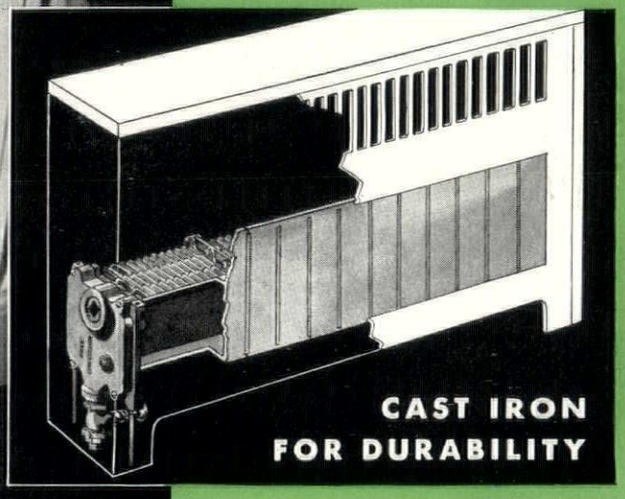
The Arco Radiant Convector is a new type of radiator that includes all the advantages of radiant heat plus high convection efficiency and complete concealment. It was developed especially for the new American Radiator Conditioning Systems, but is applicable in any radiator heating system. It is as easily installed as any other type of radiator, in any system; steam, hot water or vapor.





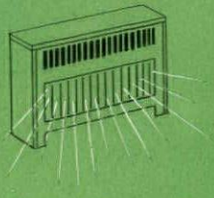
MATCHES THE MODERN INTERIOR

Completely concealed in the wall beneath the window where its heat offsets chill drafts and the cold of the glass. Enclosure may be painted any color . . . puts no limit on interior decoration.



Sturdy cast iron construction guarantees long life. Note simplicity of recessed installation.

Convected Heat (heated air) comes through the grilles of the new Arco Radiant Convector.



The Radiant Front sends out rays of radiant heat, just as the sun does, to warm comfortably.

Special information is being prepared that recounts the complete, absorbing story of radiant heat and the Arco Radiant Convector. You will find it a great help in providing these new advantages for the homes you plan. This new radiator when used as part of a new American Radiator Conditioning System enables you to provide radiant heat and air conditioning for average homes. "Time Saver" Standards are available for architects. Special information will be sent to builders on request. Write for the details today.

MANY STYLES OF ENCLOSURES

The large photograph and the two smaller sketches illustrate some of the variety of enclosures and panels that meet every decorative scheme and installation problem.

CONCEALED RADIATOR DIVISION

AMERICAN RADIATOR COMPANY

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

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Please send me complete facts on the new Arco Radiant Convector.

☐ I am an architect ☐ I am a builder

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NATION-WIDE RAIL-AIR SERVICE

Institute, and described as "pioneer work in the field of architectural practice."

"The issuance of this accounting system by the Institute indicates the architect's intention to maintain his proper position of dominance in the building operation," says an announcement by the Institute. "It marks recognition of the fact that an architect's function is much more comprehensive than is generally known.

"At present, uniform and accurate data for intelligent comparisons of the costs of rendering the various architectural services do not exist. The system, which has been in preparation for the past five years, will produce an accurate, informative, and intelligible statement of the financial condition of a business at any date and of the results of its operations for past periods.

"The architect is engaged in the practice of a profession wherein he is dependent on others for the opportunity to create his art and give it form and substance. For such opportunity he is dependent upon the conditions that obtain in the industrial world, and for its successful conclusion he must rely upon his skill in administering the enterprise as well as upon his skill in applying his art. The manner in which he administers the enterprise is the gauge of his business standing.

"Only by means of a uniform accounting system can the architectural profession accurately determine and compare the prevalent costs of performing its various functions and know quite certainly what the cost of doing any particular type of architectural work should be.

"Until such universal cost data are available, the architect cannot determine with confidence what he should receive as compensation for doing any such work. With such data available, it may come about that the traditional scheme of charges now prevailing in the profession will be modified or discarded."

The system includes:

"Manual of Accounting for Architects," embracing the principles of accounting, the account, bookkeeping records, and the financial statements; the schedule of accounts; the asset accounts; the liabilities and net worth accounts; the income accounts; the expense accounts; cost accounting; journalizing and other recording; bank deposits and checks; and construction accounts.

Individual forms provided as standard documents, covering cash journal, voucher register, job cost ledger and insurance register in one binder; general ledger, overhead expense ledger, and construction contract register in the second; and pay rolls in the third.

LEO FREEDLANDER AT N. Y. U.

Leo Freedlander, sculptor, was recently appointed to the faculty of the New York University School of Architecture and Applied Arts, where he will be in charge of the Department of Sculpture. Mr. Freedlander is noted for his work on the Arlington Memorial Bridge, the R. C. A. Building of Rockefeller Center and the Methodist Episcopal Church in Berkeley, California.

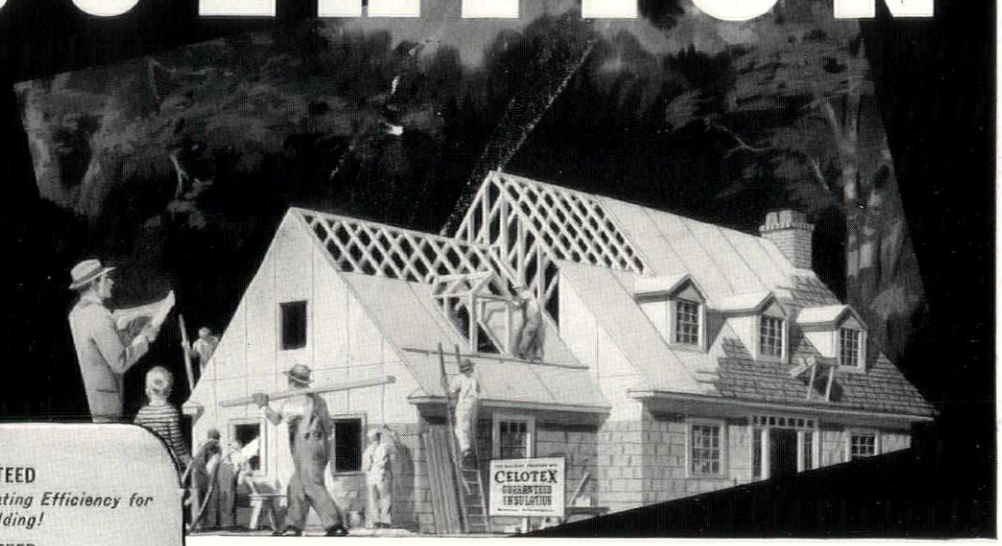
CORNELIUS FLYNN AT COOPER UNION

Cornelius M. Flynn, an architect known for his work in residential and ecclesiastical design, has been appointed to the faculty of the Night Art School of Cooper Union. Mr. Flynn, who was born and educated in Boston, will teach

NEWS!...of Vital Importance to Architects

CELOTEX NOW OFFERS GUARANTEED INSULATION

Guaranteed in Writing for the Life of the Building!



1. **CELOTEX IS GUARANTEED** *to Maintain Insulating Efficiency for the Life of the Building!*
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3. **CELOTEX IS GUARANTEED** *to give Lasting Fuel Economy!*
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The Celotex Guarantee, when issued, applies only within the boundaries of the United States

A Complete New Safeguard for the Insulation Investment of Every One of Your Clients

Here's the biggest news in the insulation industry! Now, Celotex Cane Fibre Insulating Board Products—Sheathing, Lath and Interior Finish—are protected by a powerful 10-Point Life-of-Building Guarantee!

You can now specify Celotex and give your clients positive written assurance that this superior insulation will be just as effective after 20 years—or more—as the day it is applied!

The Celotex Corporation, world's largest makers of building insulation, is fully warranted in offering this complete 10-Point Guarantee! They *know* what Celotex will do because, today, *more* homes are insulated with Celotex than with any other building insulation!

Insure extra value and permanent satisfaction for your clients with Celotex Cane Fibre Insulating Board Products backed by the complete 10-Point Life-of-Building Guarantee.

For complete information concerning this Guarantee and how it protects your clients, mail the coupon below.

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All Celotex Cane Fibre Products are manufactured under the Ferox Process (patented) and effectively resist damage by Fungus Growths, Dry Rot and Termites (white ants). Look for the brand name. Accept no substitutes.

architectural technics to advanced students at the Union, historic free institution founded by Peter Cooper and now entering upon its seventy-sixth academic year.

Mr. Flynn is the designer of St. Patrick's Church, Collinsville, Conn., and is a member of the architectural staff of the New York World's Fair, 1939, Inc. He was with the New York Department of Parks from 1932 to 1936. He studied at St. Peter's Parochial School and Boston College Preparatory School, and was graduated from Boston College with the degree of Bachelor of Arts in 1921.

Mr. Flynn received his architectural training at Massachusetts Institute of Technology. Boston architects with whom he has been associated include Shepard and Stearns, Fletcher Steele, Kilham, Hopkins and Greeley, and Edward T. P. Graham. Among the residences which he has designed is that of J. J. M. Morrow in Franklin, Mass. He has been an architectural designer and renderer for Filghman H. Mayer of Allentown, Pennsylvania, and has been active as critic in the Boston Architectural Club.

The appointment of Maurice T. Ayers as instructor in engineering drawing in the Institute of Technology and Night Engineering School of Cooper Union is also announced. Mr. Ayers was graduated from Massachusetts Institute of Technology in 1931 after winning in open competition in 1927 a $2,000 scholarship offered by the Westinghouse Electric and Manufacturing Company.

BUILDING CODE FOR NEW YORK FAIR

The New York City Board of Estimate and Apportionment has enacted a special building code governing the erection and use of temporary buildings for the World's Fair of 1939 in Flushing Meadows Park, Queens.

The New York Fair will be the first exposition, it is said, ever to function under its own code or to have complete jurisdiction over its buildings.

Prepared by World's Fair engineers in co-operation with city experts, the new code supersedes the regular building code of the City of New York and related city ordinances. It will be administered by the corporation itself, which will have complete charge of construction and use of all temporary structures at the Fair, with authority to take court action in the case of violations. The latter are classed as misdemeanors.

The special code does not apply to permanent structures on the Fair site, which must conform to the regular city ordinances. In the case of temporary buildings to be demolished after the Fair, it was recognized that neither the strength nor the durability of permanent construction was needed. Again, special precautions do not have to be taken to prevent decay, rusting or deterioration.

The new code, therefore, liberalizes the existing regulations in these repects. It also permits, for similar reasons, much greater freedom in the use of new materials, assemblies and types of construction. This does not mean that the Fair will experiment with questionable materials and methods. Everything will be subjected to rigid tests in the Fair's own laboratories before it is accepted a suitable material for Fair buildings.

Wherever practicable the code provides for adherence to the standards and requirements of nationally recognized authorities. In some instances the usual requirements have been increased. Thus, exit and standpipe requirements have been increased because of the lessening of structural and fire resistive requirements and because of the crowds expected

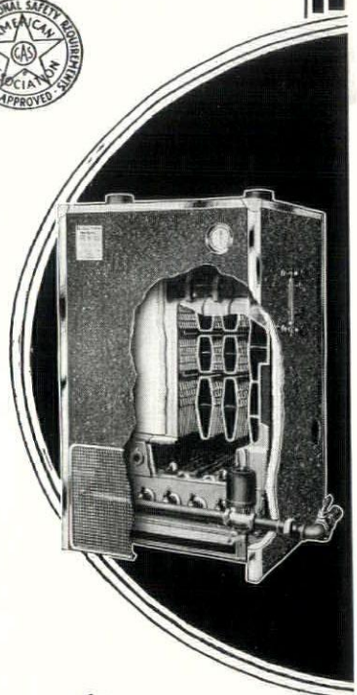
This *Burnham*

Further Lowers Gas Costs

THERE IS nothing new about the horn blowing claims of optimistic boiler makers. More than likely you are pretty much fed up on them, and sort of wish some of us would now and again speak in a little lower voice.

So we are not going to make any loud-pedal claims for this Gas Boiler. Just going to mention this fact. When this boiler was run through its first tests at our plant it did show an exceptionally low gas consumption. Naturally, those tests were made under favorable conditions. So we didn't expect it to match that behavior out on the job, and we rated it accordingly. The surprising thing is, it has proved to the contrary. Frankly, it is a far better boiler than we knew it was.

If then, these facts sound to you fair and frank, let us hope you won't have forgotten them, next time any of your projects require a Gas Boiler.



Representatives in All Principal Cities of the United States and Canada

Burnham Boiler Corporation

IRVINGTON, NEW YORK ZANESVILLE, OHIO

to attend the Fair. For the same reasons, occupancies have been confined to ground floors.

Because high comfort and health standards are so vital to a Fair, the provisions of the present city building code pertaining to ventilation and sanitation have been retained. All safeguards pertaining to safety precautions during building operations have been maintained, and the provisions of the Labor Law and the Industrial Code of the State, which relate to the safety of persons during construction, govern.

In general, the regulations for sprinkler and standpipe systems of the National Board of Fire Underwriters have been kept. The national electric code of the board governs. Emergency lighting requirements have been added which will insure illumination in the event of failure of the normal electric supply.

Fireproof structures are unlimited as to maximum area and height. Fire protected structures, a new class, are unlimited as to area but cannot be more than 225 feet above the grade of an occupied floor. Other types of construction are restricted in accordance with their fire resistant qualities.

The act empowering the Board of Estimate to establish a special Fair code—Chapter 544 of the Laws of 1936—provides that "all provisions of the Greater New York Charter, the code of ordinances of such city and all acts of the legislature and all local laws which may conflict with any provision of the such special code shall be and they hereby are suspended insofar as the area to be occupied by the World's Fair under the lease is considered during the term of the lease."

The code was passed on by the Corporation Counsel, the Fire Commissioner and the Chief Engineer of the Board of Estimate before it was approved by the Board itself. It was drawn up under the supervision of W. Earle Andrews, general manager of the Fair, by a committee, the members of which were:

William Wilson, Chairman, consulting architect and engineer; Colonel J. Franklin Bell, former assistant general manager of the Chicago Century of Progress; Victor J. Cucci, consulting mechanical engineer; Alfred H. Eccles, architect and engineer; Bernard J. Gillroy, consulting engineer; Phillip E. Langworthy, architect; Franklin E. Parker, Jr., of Parker, Finley & Benjamin; Amos T. Smith, consulting mechanical engineer; A. D. Stark, construction engineer, and Edward J. Sullivan, zoning expert. Herbert Brownell Jr. of Lord, Day & Lord, counsel to the World's Fair Corporation, also assisted in the preparation.

AIR-CONDITIONING APPARATUS AT ILLINOIS

One of the most complete pieces of air-conditioning apparatus in this country, installed during the summer months, will be available for the instruction of engineering students at the University of Illinois.

The working model is large enough to air condition a lecture room with a capacity for 100 students. It will be suitable for both summer and winter air conditioning. In addition to its availability for instruction of both graduate and undergraduate students, the apparatus may be used for research.

Members of the College of Engineering staff who designed and selected the apparatus, according to Prof. O. A. Leutwiler, head of the Mechanical Engineering department, are Prof. J. A. Polson, in charge of the mechanical engineering laboratory; Prof. W. H. Severns, in charge of courses

WHEN THE JOB IS WELL DONE

● If the owner smiles his satisfaction . . . if the architect points with pride . . . if the builder feels the job is well done . . . you can be sure of finding CHURCH SANI-SEATS in the bathrooms. They are the finishing touch to good bathroom design.

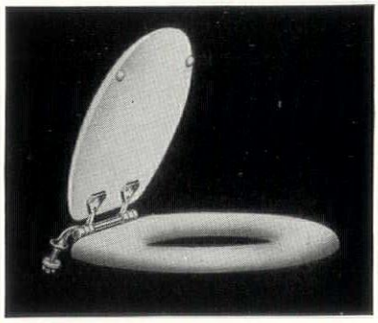
CHURCH SANI-SEATS are attractive and sanitary . . . moderately priced and remarkably easy to keep clean. Their wide range of attractive colors, with plain or pearl finish, places no limitation on the color scheme or decorative possibilities of your bathroom design.

Lasting Smoothness

The glistening ever-clean appearance of CHURCH *sheet covered* SEATS comes from its thick covering. It is not painted or varnished. It will not chip, crack or peel. Soap and water keep it sanitary.

For commercial and industrial jobs, CHURCH Sani-Black SEATS are recommended. Molded of hard rubber, they are impervious to acids, time or abuse. They outlast the building in which they are installed. Their first cost is the last.

There is a model of CHURCH SEAT to meet every need. Famous CHURCH quality and workmanship are present even in the lowest priced seats. Send today for catalogue showing complete line.



● CHURCH SHEET COVERED SEATS *in white and color will not crack, chip or peel.*

● CHURCH SANI-BLACK SEATS *outlast the building. Absolutely indestructible.*

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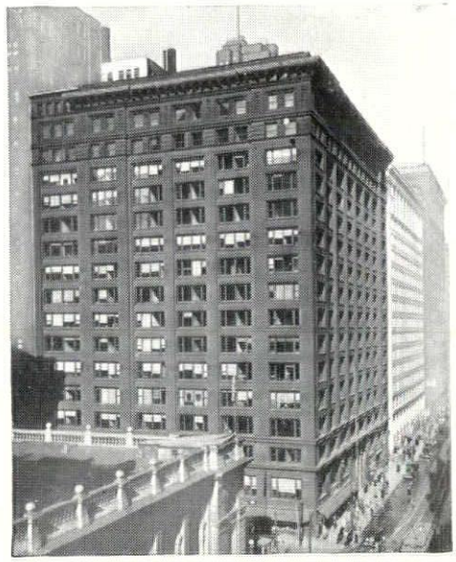
CHURCH *Sani* SEATS



Marquette Building, Chicago, Ill.

REDUCE HEATING COST $6,931.92 IN TWO YEARS

16-Story Chicago Building Uses Webster Moderator System to Slash Steam Consumption

CUTS COST OF INSTALLATION

Chicago, Ill.—The cost of heating Chicago's 16-story Marquette Building was reduced $6,931.92 in two heating seasons as a result of application of a Webster one-pipe Moderator System in the fall of 1934.

The Webster Moderator System was originally designed for two-pipe steam heating systems, but by incorporating certain modifications in the control it was possible to avoid the cost of installing separate return piping and at the same time produce results reasonably comparable with those obtained by controlled two-pipe systems.

During 1934-35, steam consumption was reduced 3,139,000 lbs., the equivalent of $2,594.29. Steam savings for 1935-36 were 4,846,000 lbs., a cash reduction of $4,337.63.

The method of computing the steam savings was developed by Mr. Earl Shultz, Vice-President of the Illinois Maintenance Company and agent of the Marquette Building. Mr. Shultz' method of measuring tne savings served as a basis for an article, "Determination of Heat Saving" in SKYSCRAPER MANAGEMENT, a leading building management publication. A few reprints of this article are available for interested building owners and managers.

In addition to reducing heating costs, the Webster Moderator System regulates steam circulation in the Marquette Building so that the entire building heats evenly and rapidly. The Marquette Building has 46,930 sq. ft. of installed direct radiation. William Lees, Inc., of Chicago, acted as modernization heating contractors.

PROOF that *One-Pipe* installations can be *orificed* and effectively controlled with the Webster Moderator System is afforded by the operating record of the Marquette Building.

A Webster Heating Modernization Program offers building owners and managers an opportunity to protect their property investment, keep tenants well satisfied and make a substantial reduction in heating expense.

Webster Systems have been installed in 70,000 buildings — new buildings as well as old.

If you are interested in heating *new* buildings, or in improved heating service and lower heating cost in your present building, address

Warren Webster & Company . . . Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities . . . Darling Bros., Ltd., Montreal, Canada

in air conditioning; Prof. H. J. Macintire, authority on refrigeration; A. P. Kratz, research professor of mechanical engineering, and M. K. Fahnestock, research assistant professor of mechanical engineering.

For use in the study of winter air conditioning, which consists of the control of the temperature, humidity, cleanliness, and circulation of the air, the unit will have a large fan, dry air filters, steam tempering coils, an air washer, and steam reheating coils.

For summer air conditioning it will have the same fan and dry air filters used for the winter conditioning plus equipment for three different methods of cooling and dehumidifying the air, only one of which will be used at a time.

Much of the equipment has automatic controls. Thermometers and thermo-couples for the measurement of air temperatures, will be inserted in the equipment for use in testing any or all of the individual parts. Special thought has been given to the measurement of the air handled.

The entire unit is approximately 42 feet in length. The casing and cooling coils of the unit are covered with two inches of insulating materials.

To facilitate the study of the operation of the equipment, inspection doors fitted with glass are located at convenient intervals in the unit, enabling the students to observe what is happening within it.

ANNOUNCEMENTS

Oliver O. Gauvin, Architect, announces the removal of his office to 72 Weybosset Street, Room 402, Providence, R. I.

Joseph J. Ott and **Robert T. Handren** announce the opening of an office for the practice of architecture at 49 West 45th Street, New York, N. Y.

Thomas Harlan Ellett, Architect, announces the re-opening of his office at 101 Park Avenue, New York, N. Y.

Munroe Walker Copper, Jr. and **Edward G. Conrad** announce the combining of their offices for the general practice of architecture at Hanna Building, Cleveland, Ohio.

The Benjamin H. Marshall Co., Architects, announce the removal of their office to 1515 Sherman Avenue, Evanston, Illinois.

Good and Wagner, Architects, announce the removal of their offices to 641 First Central Tower Building, Akron, Ohio.

Arthur K. Hyde & John A. Williams announce their association for the practice of architecture and industrial design at 318 Woodward—Boulevard Building, Detroit, Michigan.

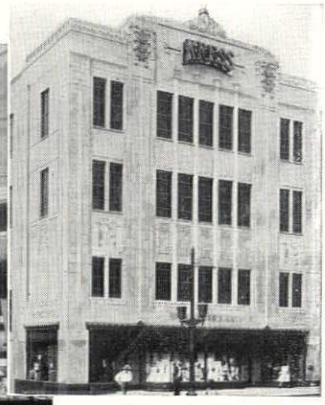
Alfred M. Marks, Architect, announces the re-opening of his offices at 541 Wood St., Pittsburgh, Pennsylvania and requests that manufacturers' literature be sent him.

ERRATA

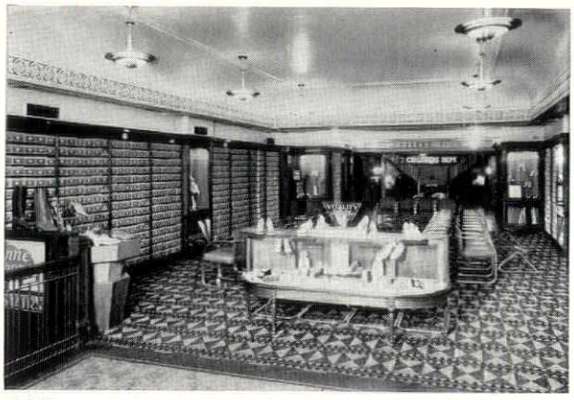
Among the church lighting fixtures illustrated in the Portfolio for September, there appeared on page 73, an illustration of a fixture from the Church of The Most Precious Blood of Our Lord, Philadelphia. In error this was credited to Henry D. Dagit & Sons. The church and the fixtures are, as is rather well known, the work of George I. Lovatt, F. A. I. A., Philadelphia architect.

AIR CONDITIONED BY CARBONDALE

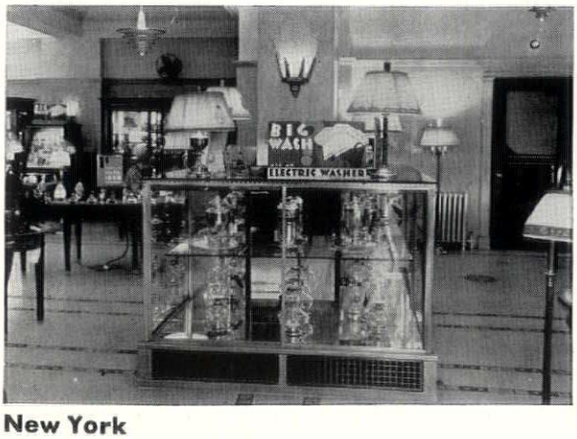
Virginia



North Carolina



Ohio



New York

THESE are representative examples of the many large and small stores that are successfully air conditioned by Carbondale equipment.

Carbondale specialists are available at all times for consultation on any problem pertaining to air conditioning.

Ask for bulletins, and let us know about your needs. There is no obligation.

CARBONDALE MACHINE CORPORATION

UNIT OF WORTHINGTON PUMP AND MACHINERY CORPORATION

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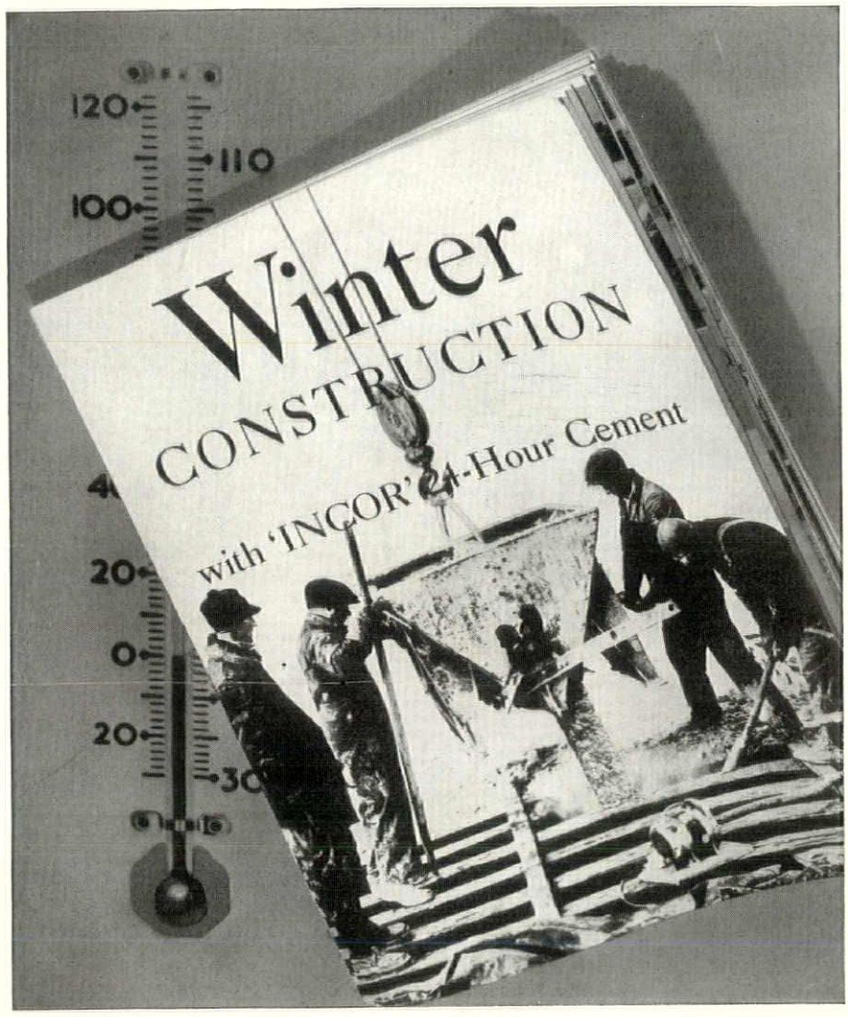
BUFFALO	DALLAS	HOUSTON	NEW YORK	ST. PAUL	
CHICAGO	DENVER	KANSAS CITY	PHILADELPHIA	SAN FRANCISCO	WASHINGTON



DOLLARS-AND-CENTS OF COLD-WEATHER CONCRETING

Concrete hardens through a chemical re-action between Portland cement and water. As concrete temperatures fall, this re-action is retarded; at or about freezing, it practically stops. To overcome the effect of low air temperatures, it is necessary to heat concrete materials and retain that heat until the concrete has hardened sufficiently to go it alone. It follows that the quicker concrete hardens, the less time and expense are required to maintain heat artificially.

Through a basic improvement in the process of making Portland cement, 'Incor' cures or hardens thoroughly in one-fifth the usual time. Thus, in erecting a concrete building, for example, 'Incor'* saves from two to five days' heating expense per floor. On a 6-story concrete frame, 100′ x 100′, coke and fire-tending labor average about $60 a day; so two days saved per floor means at least $120, or a total of $840 saved for six stories and roof. These savings in fuel and labor are usually accompanied by substantial form economies and by a reduction in erection time, which means reduced overhead costs as well. For details about cold-weather concreting advantages and simple precautions needed in cool, cold and sub-freezing weather, write for free copy of "Winter Construction"—address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2211, 342 Madison Ave., New York.

*Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

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

Air Conditioning Units

1115. . . . Bulletin No. 1122 issued by Carbondale Machine Corp., Harrison, N. J., gives data on Carbondale Unit Conditioners for restaurants, stores, offices and for modernization of old buildings. Mechanical specifications and dimensions are given.

Range Boiler and Tank

1116. . . . A new range boiler and tank made of Arcoloy, a new alloy, is featured in a four-page folder issued by American Radiator Company, New York. Capacities and roughing-in dimensions are given. Filing size; A. I. A. File 29-D-2.

Metal Mouldings

1117. . . . Cosalco Metal Mouldings for exhibits, interiors, fixtures, etc., are illustrated and described in a six-page broadside issued by Colonial Sales Corp., New York. Filing size; A. I. A. File 16-B-3.

Humidification

1118. . . . "The Science of Re-Humidifying Indoor Air" is the title of a new publication recently issued by The Monmouth Products Company, Cleveland, Ohio. It contains facts, accompanied by charts, on the fundamentals of indoor humidification. Brief data on Automatic June, the Hydrometric Humidifying System, are also included. Filing size; A. I. A. File 30-F-1.

Fireplace Unit

1119. . . . Details regarding the Covert Radiheater Fireplace Unit are contained in a new illustrated 8-page catalog issued by The H. W. Covert Company, New York. Filing size; A. I. A. File 14-E-2.

Welded Stainless Steel Tubing

1120. . . . Helpful data on the properties and use of Carpenter Stainless Welded Tubing are contained in a new brochure issued by The Carpenter Steel Company, New York.

Colored Pencils

1121. . . . A sixteen-page booklet issued by Eberhard-Faber, New York, gives brief information about various artists' materials and draftings supplies made by this company. Data on colored pencils, chalk sketching pencils and sticks, erasers, etc., are given.

Bakelite Molded

1122. . . . The seventh edition of "Bakelite Molded" has just been released by Bakelite Corp., New York. This is a 48-page booklet containing a detailed description of Bakelite molded, its characteristics, properties and applications in various fields of industry.

Prefabricated Piping

1123. . . . "A Story in Pictures of Prefabricated Piping" is a new publication released by Grinnell Co., Inc., Providence, R. I. It explains the value of prefabrication in meeting the exacting requirements of power generation and process piping. Filing size; A. I. A. File 34.

Asbestos and Magnesia Products

1124. . . . An informative new catalog has been prepared by Keasbey & Mattison Co., Ambler, Pa. covering the properties and uses of Asbestos and Magnesia products. Illustrated with drawings, diagrams and photographic reproductions of the materials, it shows a number of typical installations. Products include pipe, block and sheet insulations, cements, packings, corrugated roofing and siding, asbestos lumber, and the Ambler Olsen System for light weight structurally strong ceilings, walls and partitions.

Oil-Burning Boiler

1125. . . . The important features of the Pierce Oil-Burning Boiler are outlined in a 4-page folder just released by Pierce Butler Radiator Corp., Syracuse, N. Y. Ratings and dimensions are given.

Shower Cabinets

1126. . . . The complete line of Bathe-Rite Shower Cabinets, from low-priced units to cabinets made with aluminum walls and vitreous or terrazzo receptor, are cataloged in an 8-page booklet (No. 836) published by Milwaukee Stamping Co., Milwaukee. Eight models with all equipment and accessories are illustrated. Roughing-in dimensions are given.

Steel Casements

1127. . . . Illustrations and descriptions of Vento De Luxe and Simplex Casements, roll-screens, Redwood Surrounds, Insulpane, casement doors and other products are contained in a 36-page catalog (CW-36) issued by Vento Steel Sash Co., Muskegon, Mich. Installation details in various types of construction, standard types and sizes, specifications and other pertinent data are included.

Insulation

1128. . . . Information on the nature and uses of Weatherwood Insulation—plank, board, tile, sheathing and lath—is given in a new 16-page, filing-sized catalog issued by United States Gypsum Company, Chicago.

Southern White and Red Oak

1129. . . . The nature, characteristics, availability, distribution and uses of white and red oak are subjects discussed in No. 2 of the Southern Hardwood Information Series published by Southern Hardwood Producers, Inc., New Orleans, La. Filing size; A. I. A. File 19-A-21.

NO POSTAGE REQUIRED ON THIS CARD

AMERICAN ARCHITECT and ARCHITECTURE October, 1936

New York, N. Y.

Please have the following catalogs reviewed in this issue sent to me.

Numbers .....

.....

• I also desire further information about the new products described in this month's "Techniques." . . . (See pages immediately following this insert.)

Numbers .....

• I would like to have catalogs and information concerning the following products advertised in this issue. (Write page number or name.)

.....

☐ Check here for FREE copy of "WHEN YOU BUILD" booklet.

Name .....

Firm name .....

Address .....

City .....

Occupation .....

These NEW Catalogs may be obtained through

AMERICAN ARCHITECT and ARCHITECTURE

Wiring System

1130 . . . The various wiring devices which make up the P&S-Despard Wiring System are described and illustrated in a new 12-page catalog issued by Pass & Seymour, Inc., Syracuse, N. Y. A few of the P&S Alabax Porcelain Lighting Fixtures are also illustrated.

Shingles, Sidings, Roofings

1131 . . . The latest 32-page booklet released by The Barber Asphalt Company, Philadelphia, pertains to Genasco Shingles, Sidings and Roofings. All illustrations are reproduced in four colors and show various patterns and types available.

Structural Steel Specifications

1132. . . . A new Standard Specification for the design, fabrication and erection of structural steel for building has just been issued by the American Institute of Steel Construction, New York. It contains revisions incorporated in accordance with the recommendations of a Committee on Specifications.

Drains and Traps

1133. . . . The complete line of drains and traps for floors, roofs, urinals, showers, garages, swimming pools, hospitals, etc. manufactured by Josam Mfg. Co., Cleveland is incorporated in Catalog H, a 104-page booklet, issued by this company. Application data, dimensions and list prices are included. Filing size; A. I. A. File 29-C.

Air Conditioner

1134. . . . The Reynolds Air Conditioner, which heats, cleans, humidifies, circulates the air and offers optional dehumidification, is illustrated and described in a new 8-page catalog issued by Reynolds Corp., New York. Ratings and dimensions are included.

Unit-Air Conditioner

1135. . . . The features and functions of the Burnham Simplified Unit-Air-Conditioner Radiator System and of the Unit-Air Conditioner alone are outlined in a 12-page booklet recently published by Burnham Boiler Corp., Irvington, N. Y.

Cork Tile

1136. . . . A four-page, filing-sized folder issued by Armstrong Cork Products Co., Lancaster, Pa., discusses the advantages and use of Armstrong's Cork Tile for floors and walls.

Red Cedar Siding

1137. . . . Western Red Cedar Lumber, Seattle, Wash., has issued a four-page, filing-sized folder illustrating and describing Western Red Cedar Siding.

Tile

1138. . . . Printed in four colors, a new booklet recently released by the Cambridge-Wheatley Company, Cincinnati, Ohio, shows a number of typical bathrooms and kitchens in which Suntile Tile has been used. Complete descriptive data and specifications are included. Filing size; A. I. A. File 23-A.

Air Conditioning Controls

1139. . . . A new 20-page booklet issued by Julien P. Friez & Sons, Inc., Baltimore, Md., illustrates and describes the various Friez instruments and controls for air conditioning. The booklet is profusely illustrated with pictures of typical installations.

Painting Common Brick Masonry

1140. . . . Technical Bulletin No. 4 issued by Brick Manufacturers Ass'n of New York, Inc., New York, gives factual data on the subject of painting common brick masonry. Filing size; A. I. A. File 25-C-22.

Industrial Products

1141. . . . Johns-Manville Corp., New York, has issued the 1936 edition of its Industrial Products Catalog. This 60-page illustrated catalog contains information and recommendations on high and low temperature insulations, specifications on J-M Bonded Asbestos Built-up Roofs, and J-M Insulated Roofs; detailed information on J-M Corrugated Transite for roofings and sidings; on Transite Conduit, Asbestos Ebony and other electrical materials; on Transite Pressure Pipe; and on Steeltex Floor Lath. Sound control of mechanical equipment is also described.

Lighting Equipment

1142. . . . The Silvray line of indirect luminaires for commercial and industrial use are described and cataloged in a new 24-page portfolio issued by Silvray Lighting, Inc., Long Island City, N. Y. All luminaires illustrated have been designed for use with the Silvered Bowl Mazda Lamp. Numerous photographs covering installations made with various units of the Silvray line are included.

Ammonia Compressors

1143. . . . York Ice Machinery Corp., York, Pa., has issued a new bulletin on York Ammonia Compressors. The bulletin describes units ranging in size from 6" x 6" to 12½" x 14" with V-belt drive, synchronous motor drive, or flat belt drive. Details of construction and important parts of the machines are also illustrated.

Pine Paneling

1144. . . . Western Pine Association, Portland, Oregon, has issued two new brochures on pine paneling—one dealing with Ponderosa Pine and the second with Idaho White Pine. Both booklets are profusely illustrated with photographs of actual installations. Each has a foreword written by an architect. Suggestions on design, grade-types, finishing treatments, harmonious color schemes for furnishings in knotty pine rooms, and drawings of popular pine paneling patterns are found in both.

Stoker Unit

1145 . . . Combustion Engineering Co., New York, has just issued a new 24-page catalog describing its CE-Skelly Stoker Unit. The catalog is unique in that the various parts and features of the stoker are illustrated and described by a "stepped" arrangement of the pages which makes it easy to understand the various construction details. Drawings of application to various types of boilers and furnaces are appended.

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PERMIT NO. 5
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NEW YORK, N. Y.

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AMERICAN ARCHITECT and ARCHITECTURE

572 Madison Avenue
New York, N. Y.

IN THIS NEW LIBRARY BUILT ON PIERS

Cork locks out dampness . . . . aids air conditioning efficiency

Rundel Memorial Library. Architects—Gordon & Kaelber, Rochester, N. Y.

Rochester's new Rundel Memorial Library permanently insulated with Armstrong's Corkboard

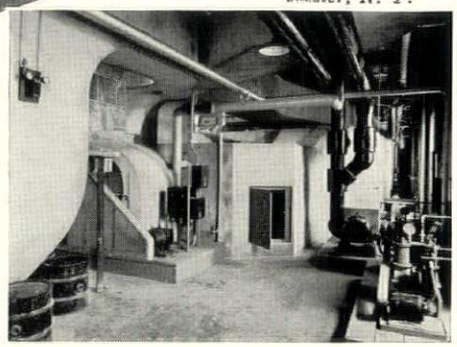
MORE than 100,000 board feet of Armstrong's Corkboard was used in the construction of the new air conditioned Rundel Library —first unit of Rochester's new civic center on the Genesee River.

This library is built entirely on piers and it spans both a broad mill race and a traction subway line which uses the abandoned bed of the old Erie Canal. To guard against the moisture and exposure resulting from this situation, the entire lower floor slab is insulated with 1½" corkboard.

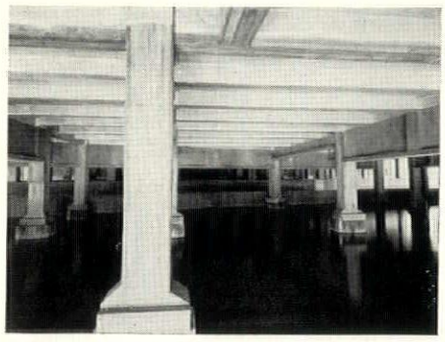
In addition, maximum efficiency and economy of the large Carrier air conditioning system is assured through insulation of all ducts, air-washers, and other equipment with Armstrong's Corkboard. Pipe lines in connection with this equipment are insulated with Armstrong's Cork Covering.

Thanks to the natural cell structure of cork, both Armstrong's Corkboard and Armstrong's Cork Covering provide *low* thermal conductivity plus a *high* resistance to the efficiency-destroying effects of moisture. As a result, they offer *permanent* insulating efficiency for all types of air conditioned and normally-heated buildings. For small air conditioning installations, the new Armstrong's DI Corkboard in ½" thickness is recommended. Write today for complete information and samples. Armstrong Cork Products Co., Building Materials Division, 926 Concord St., Lancaster, Pa.

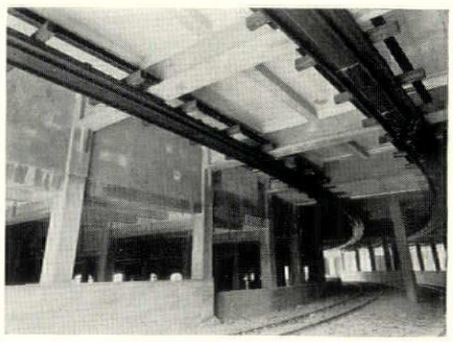
Rear view of Rundel Memorial Library, the first unit in Rochester's new civic center which will be built beside and over the Genesee River. More than 100,000 bd. ft. of Armstrong's Corkboard was used.



To assure efficient operation of air conditioning equipment, ducts and air-washers were insulated with 51,000 bd. ft. of Armstrong's Corkboard by Smith-Murray, Inc., insulation contractors, Rochester.

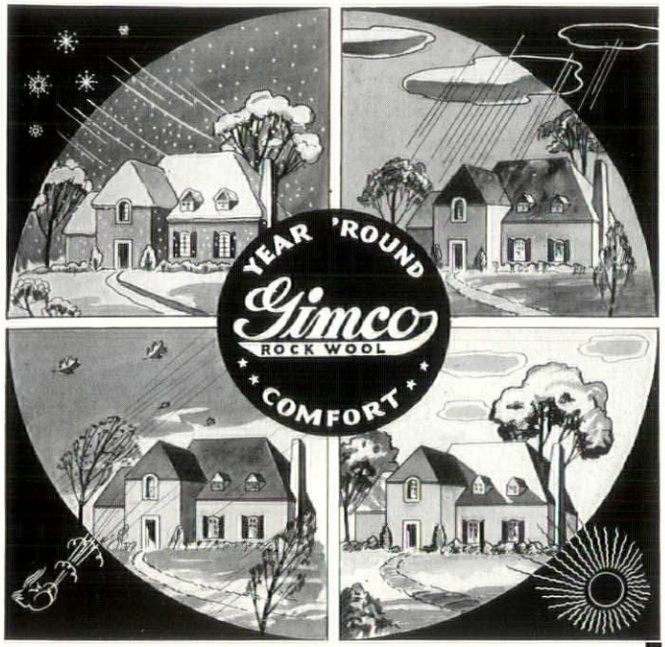


Mill race beneath new Rundel Library. To guard against dampness and heat loss, entire lower slab is insulated with 1½" Armstrong's Corkboard; 1" Corkboard extends 12" down all beams.



Subway under new Rundel Memorial Library. Entire lower slab, beams, and suspended pipe spaces, as well as all radiator recesses in building, were corkboard insulated by Hunkin-Conkey Construction Company.

Armstrong's CORKBOARD INSULATION



4 SEASONS ARE REASONS FOR *Gimco* ROCK WOOL

Throughout the seasons Gimco Rock Wool will provide adequate protection against extremes in temperature. It tempers the inside temperature of the home through the blizzards of winter, the vagaries of spring, the heat of summer and the chill of fall.

Heating unit costs in the home under construction can be materially reduced where adequate home insulation is specified.

Gimco Sealal, the semi-rigid, fluffy, fire-proof "bat" type of insulation is especially adapted to homes under construction. Sealal's uniform density, uniform size, ease of application and high efficiency mark it America's outstanding insulation.

Sealal is excellently applicable to the unfinished attics of existing dwellings. There is no waste, the bats can be quickly cut to fit any irregular space.

MAIL THIS COUPON TODAY

General Insulating and Mfg. Co., Alexandria, Indiana

Please send complete data on Gimco Rock Wool House Insulation.

NAME .....

ADDRESS .....

CITY .....

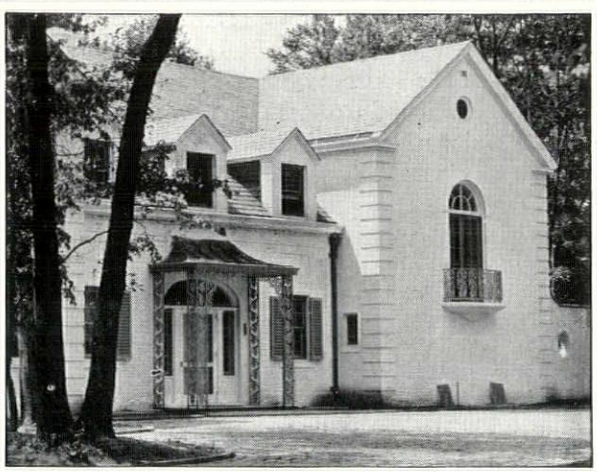
GENERAL INSULATING & MFG. CO., Alexandria, Ind.
WORLD'S LARGEST EXCLUSIVE MANUFACTURERS of ROCK WOOL PRODUCTS

OBITUARIES

Horace Chase Gardner, Architect and Engineer, died recently at his home in Chicago. Born in Bentonsport, Iowa, he studied engineering under his father, David Noble Gardner. In 1884, Mr. Gardner became a member of the construction and materials department of Swift & Co., Chicago. He became interested in architecture in 1897 and 1909 became a member of the architectural and engineering firm of Gardner & Lindberg, from which he retired because of ill health, in 1931. Mr. Gardner was one of the leaders in the movement for the Great Lakes-St. Lawrence Tide-Water Association, promoting the international seaway, and from 1919 to 1926 served as president of the association.

Peter Schreiner, Architect, died recently at his home in College Point, N. Y. Mr. Schreiner who was 83 years old, was born in the old village of College Point. He had learned building and architecture from his father, Mathius Schreiner, a German immigrant, who settled in College Point in 1840. He designed St. Paul's Protestant Episcopal Church, the Odds Fellows Hall, and several factories in Queens.

William F. McCullock, architect, died recently in his home in Hempstead, Long Island, N. Y. Born in Gilbertsville, New York, sixty-five years ago, Mr. McCullock was graduated from Cornell University in 1895. He was associated with the firm of Hopping & Kohn, New York architects, for more than twenty years. For the past eight years he practiced in Long Island. He was President of the Long Island Society of Architects and Vice President of the Nassau County Art League.



Bradley Delehanty, Architect

CAST IRON VERANDAS AND BALCONIES

Smyser-Royer Company cast iron verandas and balconies have a wide variety of applications in architectural design. Write for our new catalogue.

SMYSER-ROYER COMPANY

Main Office and Works, York, Pa.
Philadelphia Office, Architects' Building, 17th and Sansom Sts.

"I've got a Bone to pick with YOU...

"You didn't tell me—I had to find out for myself . . . how many ways stainless steel could save money in this building!"

MR. J. P. FINDLEY *is operating manager of the Jenkins Arcade, one of Pittsburgh's busiest buildings. "Don't forget," he says, "the owners judge me by my cost of operation. I grant you stainless steel costs more at first . . . but at the end of just 12 months I can show you a net saving."*

"REMEMBER the flood last March? It left our old-style hardware badly worn and corroded. So we tried equipping the whole lower floor with kickplates and push-plates of USS Stainless Steel. Now we plan to standardize on stainless steel for letter chutes, plug plates, locks, window mouldings, switch plates, door hinges — even hinge screws—as soon as we can get them.

"Stainless steel saves us money in these four ways (and he ticked them off on his left hand):

(1) *Cleaning cost.* Polishing our old-style hardware now takes the time of four men. Stainless steel never needs polishing; a damp cloth wipes off finger prints and makes it sparkling new again.

(2) *Supplies cost.* Stainless steel needs no metal polish — an expense which now runs into three figures every year.

(3) *Refinishing cost.* Polishing around old-style hardware sooner or later leaves an unsightly ring of rubbed-off varnish. When we get completely equipped with stainless steel, we'll have fewer doors to refinish.

(4) *Replacement cost.* See that barrelful of discarded hinges? That tiny bit of play may not seem important, but it means we must either plane a door out of true or rehang it on new hinges. Stainless steel hinges (and other hardware) are so strong and tough they should outlast the building.

"Why don't you tell the world about these savings . . . tell them that stainless steel is not only beautiful but practical . . . that for economy alone every new building should be completely equipped with stainless steel!"

All right, Mr. Findley, we will tell the world. We believe the architect—the man responsible for equipping new buildings — will be keenly interested in the experience of the man who manages them. So here is your story in your own words.

. . .

Architects, building owners and managers are invited to write our stainless steel department for interesting suggestions on how to keep buildings looking young, reduce operating costs with USS Stainless Steel.

USS STAINLESS STEEL

AMERICAN STEEL & WIRE COMPANY, *Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
NATIONAL TUBE COMPANY, *Pittsburgh*

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

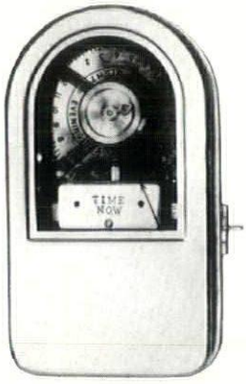
TECHNIQUES

(*Continued from page 96*)

ALL-METAL GARAGE DOOR

All-Steel Rol-Top is the trade name of a new all-metal sectional upward-acting type of garage or service door. The door sections are rolled from heavy gauge steel sheets and then heavily galvanized. A heavy roll on the edge of each section provides a continuous interlocking hinge and also serves as a substantial reinforcement against deflection or warpage. Operating on ball-bearing rollers traveling in steel vertical and horizontal tracks, the door raises easily up, over the back, being counterbalanced by means of two matched tension springs that lie parallel to the horizontal tracks. Vertical tracks are mounted on a continuous angle assembly to which an adjustable sloping metal weatherstrip is attached. This strip engages the end of the door, which is also graduated, forming a "Keystone" sealing arrangement. Hardware is bolted and riveted to the door. Locking is accomplished with a tumbler lock operating on lock-bars that engage a slot in the track angle on both sides of the door. Parts on the outside are cadmium plated. The Kinnear Mfg. Company, Columbus, Ohio, is the manufacturer of the new All-Steel Rol-Top. **669M**

ELECTRICAL



MULTI-BREAKER LOAD CENTER

A small low-priced Multi-Breaker Load Center has been announced jointly by Westinghouse Electric & Mfg. Co., East Pittsburgh, and the Square D Company, Detroit. The new unit, hinge mounted in a cabinet, consists of one or more small automatic circuit breakers grouped in a sealed molded housing and each capable of interrupting 5000 amperes at 115 volts a.c. The load centers are provided with solid mains up to 70 amp. and for 2-wire 115-volt or 3-wire 115/230 volts a.c. solid neutral service. The load centers are manufactured with varying number of circuits and circuit ratings to suit all ordinary residential demands. The branch circuits are provided in ratings from 15 to 30 amps. Only line and branch load terminals are exposed inside of the metal cabinet, all other connections being sealed within the circuit breaker housings. Main terminals are protected by insulating covers removable for wiring during installation. The new Load Center is particularly applicable for residential service as a substitute for the conventional 115/230 volt a.c. entrance and branch circuit protective equipment. Because of its pleasing appearance, it may be conveniently mounted in the kitchen or in a hallway close to the natural center of the distributed load. **670M**

ELECTRICAL CIRCUIT CONTROL

The daily automatic control of electrical circuits is achieved with the new Little Giant Tork Clock. It operates without winding or regulating, and may be set on variable schedules without the use of tools. The day is divided into four sections of six hours each covering morning, afternoon, evening and night. The entire device is made of non-corrosive materials including heavy clock brass, stainless steel, and molded bakelite. A non-magnetic housing prevents distortion of the strong magnetic currents which drive the motor. The device has 5000 watts capacity for either single- or double-pole service and is

✓ CORRECT

FROM COAST TO COAST

CALIFORNIA

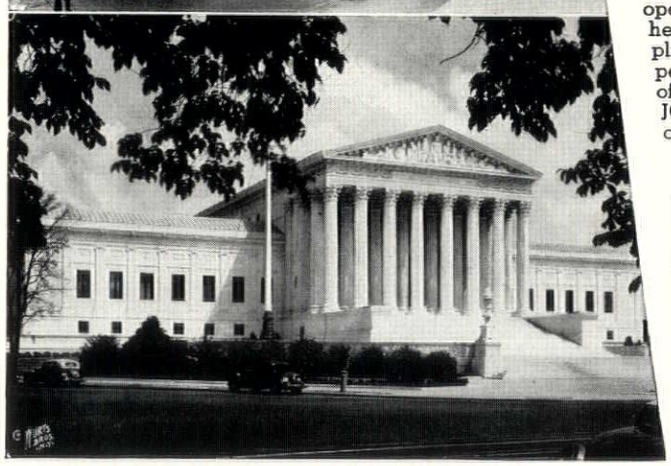
Alameda County Court House, Oakland. Will G. Corlett, Henry A. Minton, James W. Plachek, Wm. E. Schirmer, and Carl Werner, architects. G. M. Simonson, consulting engineer. Alta Electric & Mechanical Company, heating contractors; Ace Sheet Metal Works, ventilating contractors; San Francisco.

JOHNSON automatic temperature and humidity control systems have stood the test of actual service in thousands of buildings of every conceivable type, in every part of the continent. Regardless of climatic conditions or of the particular problems involved, JOHNSON apparatus is available for every application in the automatic regulation of heating, cooling, ventilating and air conditioning. . . . The three outstanding buildings illustrated, fine in appearance and equally fine in equipment, are examples of the confidence reposed in JOHNSON systems by individuals and by city, state and national officials.

MISSOURI

Municipal Auditorium, Kansas City. Gentry, Voskamp & Neville; Hoit, Price & Barnes, architects. W. L. Cassell, consulting engineer. U. S. Engineering Company, heating and ventilating contractors.

In the Alameda County Court House, JOHNSON controls temperatures for five central ventilating systems, and operates thirteen heating-cooling units for both "summer" and "winter" service, while JOHNSON "Duo-Stats" regulate eight heating zones in accordance with the relationship between outdoor and radiator temperatures. . . . . At Kansas City, 239 JOHNSON room thermostats operate an equal number of valves on direct radiators and unit heaters, but most of the heating—and all of the cooling—is accomplished by eight JOHNSON-controlled central fan plants. . . . Temperatures in Justices' suites and other important rooms in the home of the U. S. Supreme Court are regulated by nearly half a hundred JOHNSON thermostats, and JOHNSON valves and dampers are in command at the ten air conditioning systems.



WASHINGTON, D. C.

U. S. Supreme Court Building. Photograph used by permission of Mr. Cass Gilbert, Jr., architect. Carrier Engineering Company, air conditioning contractors.

JOHNSON SERVICE COMPANY
Milwaukee, Wis., and All Principal Cities.

JOHNSON

AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL

For Heating - Cooling - Ventilating & Air Conditioning Systems

housed in a cadmium-plated case with unbreakable window. A large wireway and five plug buttons for ½" and ¾" conduit connections facilitate installation. The Little Giant Tork Clock is a new product of the Tork Clock Company, Mt. Vernon, N. Y. 671M

"COMBINATION" LIGHTING UNIT

In the new "combination" lighting unit just introduced by the General Electric Vapor Lamp Co., Hoboken, N. J., mercury vapor light and incandescent light are combined in a single unit, producing daylight effect. The mercury vapor light source is a straight 33-inch Cooper-Hewitt tube, 1-in. in diameter, mounted horizontally beneath a new designed reflector of Alzac aluminum. The incandescent light sources are four 150-watt Mazda lamps, located diagonally in a horizontal plane above the mercury tube. Due to the use of the long Cooper-Hewitt tube and well-spaced incandescent lamps, a total output of 11,200 lumens is evenly distributed through the 650 sq. in. of diffusing glass which forms an angular channel beneath the lamps. Even when the light source is directly within the line of vision, there is said to be no glaring or blinding effect. A correctly spaced room layout of these lamps is said to provide practically shadowless lighting, maintaining the desired illumination level uniformly throughout the working area, the overall effect, in both distribution and color characteristics, being that of an "artificial skylight." 672M

CONDUIT-BOX CONNECTOR

The National Bondhub is a new type Conduit box connector with which rigid conduit may be firmly and permanently connected with a box. It consists of three parts: A hub with one end threaded to fit on the conduit, a telescoping flange sleeve, and a Wedgscru. The threaded end of the hub is screwed onto the conduit and the sleeve is slipped through the knockout hole of the box into the hub. The Wedgscru is then driven through the hub into a counter sunk hole in the sleeve. The farther the Wedgscru is driven, the tighter the flange draws the hub against the box. Two holes at different places in the sleeve take care of varying box wall thickness. A key in the hub and two slots in the sleeve bring these holes directly under the Wedgscru. The new device is offered by National Electric Products Corp., Pittsburgh. 673M

FINISH

NEW OIL PAINT

The Wilbur & Williams Co., Boston, Mass., has just announced a new oil base paste paint that is said to do away with one of the most obstinate difficulties in painting. This paint, called Bondlite, can be successfully applied directly over solid calcimine without any preliminary preparations such as sizing or washing down. It is claimed that one coat will provide complete coverage even when used over rough, porous or water-stained surfaces. An unusually wide brush may be used in application. In addition to being a sealer over calcimine and a sizer over porous surfaces, it provides flat, semi-gloss or gloss finishes when mixed properly with turpentine, varnish or mineral spirits. White, buff and ceiling ivory are the colors available, and it can be easily tinted. 674M

HEATING

RADIATOR VALVES AND ELBOWS

The new "Balancing" Elbows, made in ⅜", ½" and ¾" sizes for radiator return connections, are said to make it possible to provide the correct flow of water to each radiator after installation on either gravity or forced circulation jobs. With the adjustable baffle, it is possible to choke the flow to radiators closest to the boiler and provide a free flow to radiators as the distance from the boiler increases, thus assuring a proper distribution of heat. The new "Tight-close" Radiator Valves, made in both packless and packed types for ¾" and ½" pipe connections, employ the patented "swinging plate" feature, without the circulation hole used on the usual

(*Continued on page* 122)

Castell Drawing Pencils

guaranteed for depth of color

It is an occcasion for no great surprise to us when an architect or engineer brings in a beautiful drawing or rendering and says: "I did that with a 'Castell' about twenty years ago. Look how fresh it is—how it has retained its depth of color."

We know such examples are not accidental. The reason is the remarkable graphite that goes into every "Castell" Drawing Pencil. Specially milled, refined by numerous processes and graded into 18 positively accurate degrees. A pencil whose hardest degree is smooth and whose softest will not flake or crumble. A pencil that is the overwhelming favorite of craftsmen the world over—because it is the world's standard of quality.

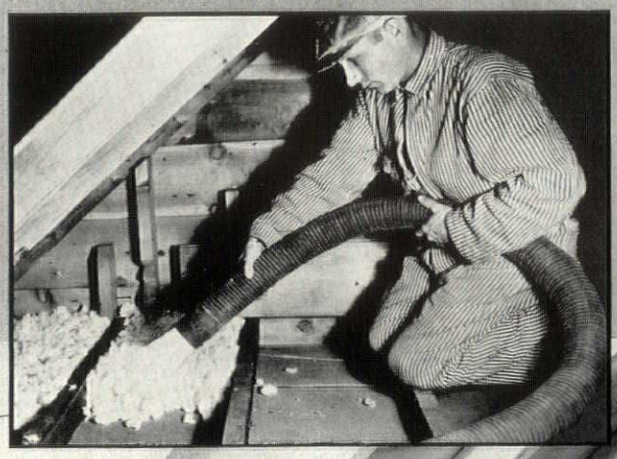
No. 9022 "Castell" Artists' Refill Pencil and No 9030 Leads—in 16 degrees. This is the most efficient pencil for artists on the market. Note the knurled grip which prevents slipping. This exclusive feature gives you a firm grip and enables you to work smoothly and easily. U. S. Patent Office Trade Mark No. 323640. Ask your dealer to show you one.

A. W. FABER ★ Made in Bavaria in 18 degrees NEWARK, N. J.

RED TOP INSULATING WOOL

Gives greater insulating efficiency,

Pays for itself in savings on fuel



■ To know just how superior Red Top Insulating Wool is you have only to consider this fact: a standard four-inch thickness has eight to ten times the efficiency of typical half-inch insulations. And the installed cost is so low that Red Top soon pays for itself in fuel saving.

SPECIAL TYPES. Red Top is now made in new special types with special advantages—Junior Bat Wool, Strip Wool and Bat Wool. Junior Bats offer new convenience and economy in hand packing. Strip Wool fits snugly between studding, floor to ceiling, in easy-to-apply nine-foot strips. Both Strip Wool and Bat Wool units have a tough waterproof facing with flanged edges for nailing to studs or rafters. All have outstanding insulation efficiency.

FIREPROOF, PERMANENT. There is no other insulation quite like Red Top Wool. It is unique in its light weight . . . only eight ounces per square foot four inches thick . . . in its life, its resiliency and in its clean white appearance. Red Top stays in place to give long and efficient service. It is a wool made of fine blown sterile mineral fibers — no shot — no non-insulating impurities. Red Top Wool is fireproof, vermin-proof, permanent.

A PRACTICAL INSULATION. Not a one purpose insulation, Red Top helps to solve many problems . . . insulation of the new home, reconditioning the old home, blown-in wool installations, economical use of automatic heat, reduction of fuel costs in homes expensive to heat, and always the achievement of comfort summer and winter.

COMPLETE SPECIFICATION DATA. Send for specification book pictured below. Bat Wool, Strip Wool, Junior Bat Wool, Nodulated and Granulated Wool are all described and a specification is provided for each. To insure proper application USG approved applicators all over the country are at your service.

UNITED STATES GYPSUM COMPANY AA-10
300 West Adams Street, Chicago, Illinois

Please send me, free of charge, a copy of USG Red Top Insulating Wool Specification Book.

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Address.....

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

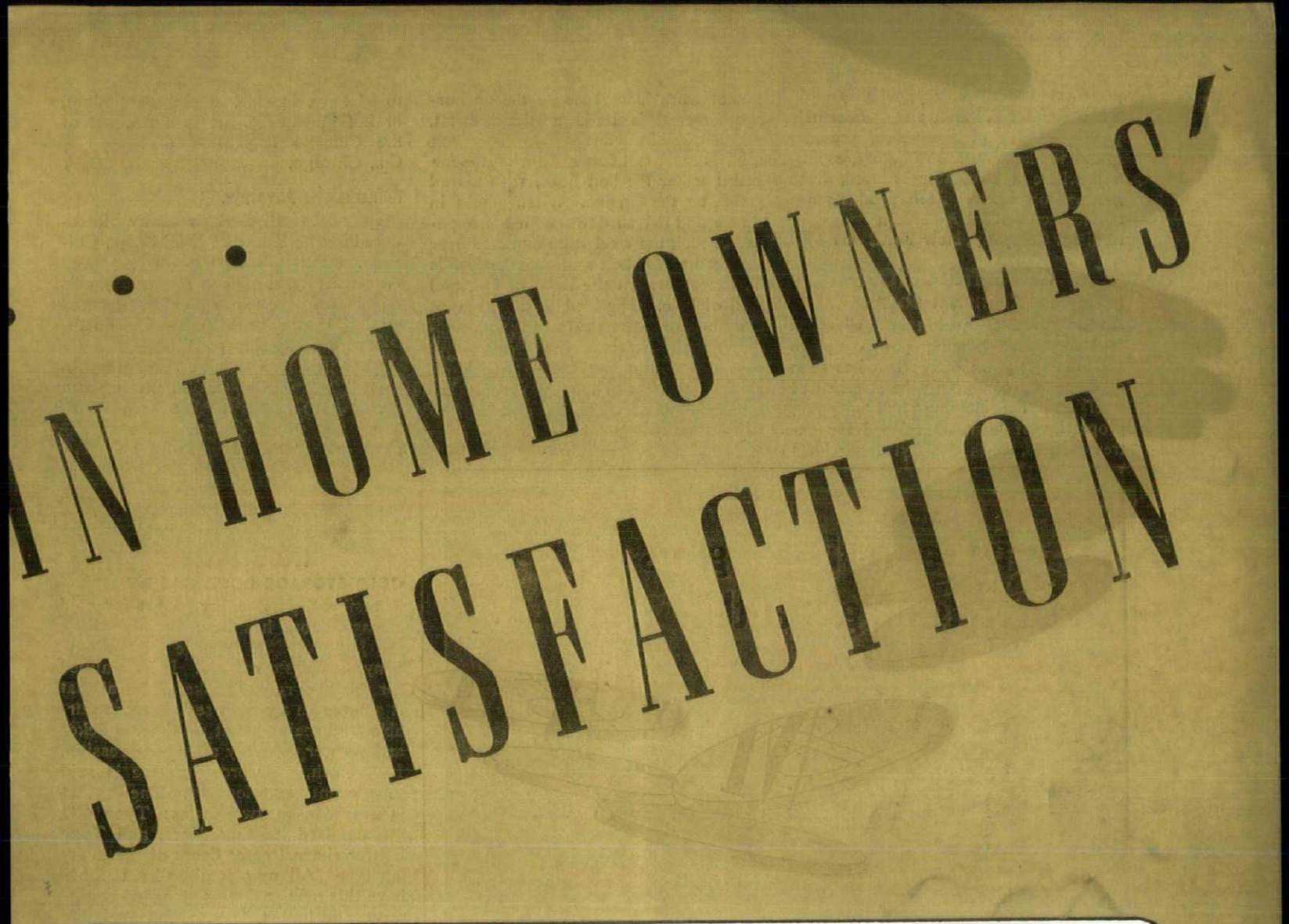
UNITED STATES GYPSUM COMPANY

SUCCESS IS MEASURED

GENERAL ELECTRIC

RADIAL WIRING SYSTEM

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT



Specify a Wiring System That Will Bring Savings to Your Clients

The happiness and comfort of any home that you design is reflected in your prestige . . . and your profits. If your client finds that his home is more convenient and livable, he evidences his pleasure by recommendations. Visitors to the homes you have planned judge your work by the feelings of the home owner.

A great many of the demands which you must interpret are expressed in terms of electricity. Appliances . . . an increasing number of them . . . are necessary. Lighting must be complete. All of today's electrical servants . . . as well as those that will be developed . . . must operate efficiently and economically.

The G-E Radial Wiring System should be included in your plans . . . and specifications. This modern wiring plan is more than a theory. It is an actually tried and proved system, that assures the greatest benefit from lights and appliances.

Use the G-E Radial Wiring System as an electrical foundation for better living . . . and greater business. With this modern background, appliances do their work more completely . . . more quickly. Lights do not flicker or dim. Adequate current is supplied without danger of overloading.

Electricity does not go to waste when you have specified the G-E Radial Wiring System. Correct wire sizes . . . intelligently planned circuits . . . assure the delivery of all the current for which your clients are paying. The satisfaction of real electrical benefits . . . economically realized . . . builds your reputation and insures your success.

Write for complete information on the practical G-E Radial Wiring System. Write to Section CDW-9010, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

(*Continued from page* 118)

hot water valve. This plate, concentric with the bore of the valve, provides means for keeping the radiators, especially where a circulator is used, from getting too warm. Both products are developments of the American Radiator Company, New York. 675M

CONSTRUCTION

IMPROVED EXPANSION BOLT

An improved expansion bolt which is said to assure holding power up to the breaking point of the bolt has been developed by combining the strength of steel and the flowing and gripping properties of lead. Developed for extreme loads, it is claimed these bolts cannot work loose because the anchorage material is lead, a dead metal, which absorbs vibrations. The bolt itself is steel and has a thin, steel-cone jacket under the bolt head, with a lead jacket on the outside. When placed in a hole and driven down with the application tool, the steel cone expands over the head of the bolt and completely fills all space between the head of bolt and wall of hole. The lead jacket expands and flows over the steel cone completely filling the hole around the shank of the bolt. A washer is provided to give a good bearing for driving and expanding the lead jacket. This bolt, called the Life-Time Expansion Bolt, comes in sizes ¼" to ½" in diameter and 1½" to 8" long, finished in plain, cadmium, or hot galvanized. It is a product of the Chicago Expansion Bolt Co., Chicago. 676M

PORCELAIN PLYMETL

Porcelain Plymetl, recently introduced by the Haskelite Mfg. Corp., Chicago, consists of porcelain enameled sheets firmly bonded to plywood panels which are backed with light-gauged steel. This structural unit offers an interior and exterior paneling especially suited to store fronts, backgrounds, canopies, and exhibits. All waving and buckling are said to have been eliminated. The back of galvanized steel is extended beyond the edge of the panel to allow it to be fastened to building framing by means of screws. A variety of colors are available. 677M

INSULATION

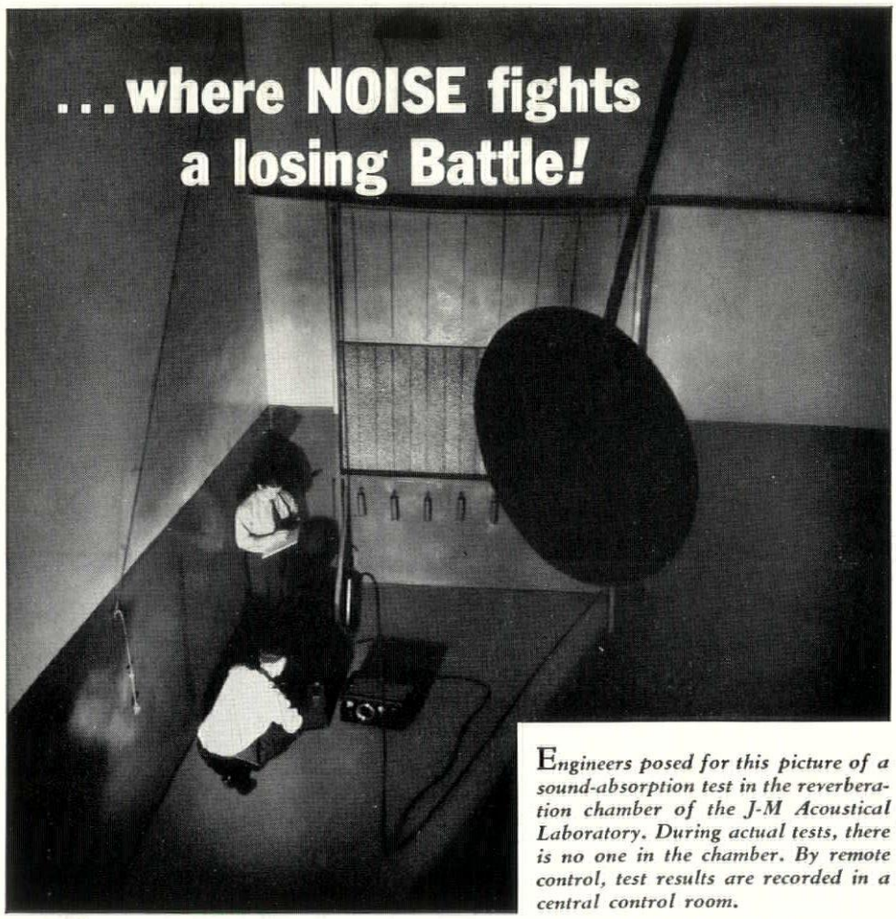
COLD STORAGE DOOR GASKET

A resilient, pure-rubber gasket for cold storage doors has been introduced by the Jamison Cold Storage Door Company, Hagerstown, Md. It is claimed for this new rubber gasket material that it assures an air-tight seal, is more durable, and maintains at all times quicker and greater recovery after compression. Its smooth, waterproof surface is said to prevent waterlogging. The gasket is available in two forms: Type CD for standard infitting doors, and Type SF for sharp freezer doors of the overlap type. All new Jamison-built doors have this new gasket as standard equipment, and both types are also available for replacement on doors now in service. 678M

AIR CONDITIONING

OIL-FIRED AIR-CONDITIONING UNIT

The Series Twenty, a new oil-fired, air-conditioning unit to sell at moderate price, has been announced by the L. J. Mueller Furnace Company, Milwaukee. The unit consists of furnace, fan, filters and air moistener. It accommodates practically any gun-type burner, and is furnished with or without burner. The outer casing or cabinet is completely insulated. An inner casing encloses the heater body, reducing the area and assuring positive impingement of air



Engineers posed for this picture of a sound-absorption test in the reverberation chamber of the J-M Acoustical Laboratory. During actual tests, there is no one in the chamber. By remote control, test results are recorded in a central control room.

TYPICAL of the exhaustive research carried on at the J-M Acoustical Laboratory is the test pictured above. It is by experimental work such as this that sound control has progressed from the pioneer stage to an exact science. Today, J-M Sound-Control Materials, and the experience gained by J-M Engineers in their development, provide the solution for your own specific acoustical problems.

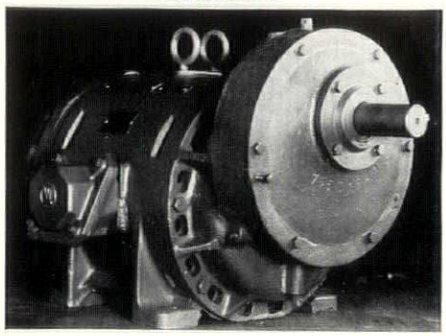
The interesting story of research in sound control at Johns-Manville is told in our booklet, "Noise Fighters." For your copy, address Johns-Manville, 22 East 40th Street, New York City.

JM PRODUCTS **Johns-Manville**

SOUND-CONTROL MATERIALS AND ACOUSTICAL ENGINEERING SERVICE

delivered by the fan on the heating surface of the body and radiator. A series of tubes in the radiator provides increased heating surface. The tubes are in two rows, with a vertical baffle plate between the rows, compelling the products of combustion to come in contact with the entire surface of each tube before escaping to the chimney. The drum is of heavy gauge steel, riveted and welded. Radiator is welded at all joints. 679M

SAFETY



EXPLOSION-PROOF GEARMOTORS

A new line of single reduction explosion-proof gearmotors ranging in size from 1½ to 75 hp has been announced by the Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa. For application in Class 1, Group D hazardous locations where speed reduction is required, these gearmotors have many uses. Built to carry the maximum torque the motors will develop, the gears are of the single helical type, heat treated by a special "tough hard" process to provide maximum load-carrying capacity and resistance to wear and shock. Anti-friction bearings maintain correct gear center distances. The new gearmotors are suitable for use in hazardous atmospheres containing gasoline vapors and other gases or vapors having equivalent or less hazard such as petroleum products, ethyl alcohol, methyl alcohol, acetone, and lacquers. 680M

FOAM FIRE TOOL

A new method, mechanical rather than chemical, of making foam for fighting flammable liquid fires and suitable for use with long or short lines of ¾" to 2½" hose, has been announced. A water stream is converted into a continuous foam stream by coupling a patented nozzle, known as the Phomaire Play Pipe, to a water line supplying 75 lbs. or more pressure at the play pipe. As the water passes through the play pipe, Phomaide—a new foam-making solution carried by the operator in a hip pack, and air are automatically drawn into the water stream in the proper proportions to form foam. Only one person is required at the play pipe. Water may be pumped from suction, hydrant or water tank. Only about 20 gals. of water per minute are required. One gallon of Phomaide Solution makes 350 gals. of foam. This is a development of Pyrene Mfg. Co., Newark, N. J. 681M

PLUMBING

AUTOMATIC URINAL FLUSH VALVE OPERATOR

The new Thermo-O-flush is a thermostatically operated device that automatically operates the flush valve to flush the urinal each time the urinal is used and only when used. It derives its action from the heat of the urine passing over the thermostat installed in the waste outlet. The thermostatic action operates a valve placed in the relief pipe line to relieve the pressure in the dome of the flush valve, thus giving the same flushing action as would be accomplished by manual operation of the flush valve handle. The Thermo-O-flush is not affected by variations in water pressure. It may be used with any standard urinal except types which mirror recently introduced. The mirror of the unit are made of non-ferrous metals. The standard finish is natural brass. Fulton Sylphon Co., Knoxville, Tenn., has introduced this new product. 682M

MISCELLANEOUS

DRAFTING MACHINES

Features which are claimed to result in a 25% to 40% saving in drafting time are included in the new Bruning Drafters. Each of the new machines is equipped with an adjustable brake mechanism to prevent the protractor head from sliding excessively when used on inclined board. Each machine also has adjustable skid buttons for leveling the scales, New Departure precision, fully enclosed ball bearings, lubricated for life, and an elbow leveling device. Pulleys are fully enclosed, and bands may be changed, if necessary, without disassembling the machine. All parts are of dull-finish aluminum or baked enamel, entirely eliminating reflection. These Drafters, consisting of new models of the Standard Drafter, the Civil Engineers' Drafter, and the De Luxe Civil Engineers' Drafter, are manufactured by the Charles Bruning Company, New York. 683M

NEW KIND OF COLORED PENCIL

The use of colored pencils is becoming so important a part of the work of many architects that you will want to read carefully these facts about a new pencil that saves you time, and produces the same neat, impressive renderings as water colors, with less trouble.

ARCHITECTS everywhere are enthusiastic about this new colored pencil. It has four unusual advantages. *First*, you can actually PAINT with a Mongol Colored Pencil. By simply going over pencil masses with brush and water, watercolor effects for foliage, façades, etc. are produced perfectly. *Second*, Mongol Colored Pencils come in 24 different colors, so that there is no wasting of time in blending, as is necessary with water colors. *Third*, the Mongol Colored Pencil sharpens neatly either to a chisel-point or needle-point, speeding up shading and permitting minute detail and delicate line work. *Fourth*, its sharp point is also strong, will not wear down quickly, or snap off readily.

Many architects have discovered that by quickly pencilling in different colors to indicate different materials on specification plans, builders can follow specifications more easily—make less mistakes. Have you tried it?

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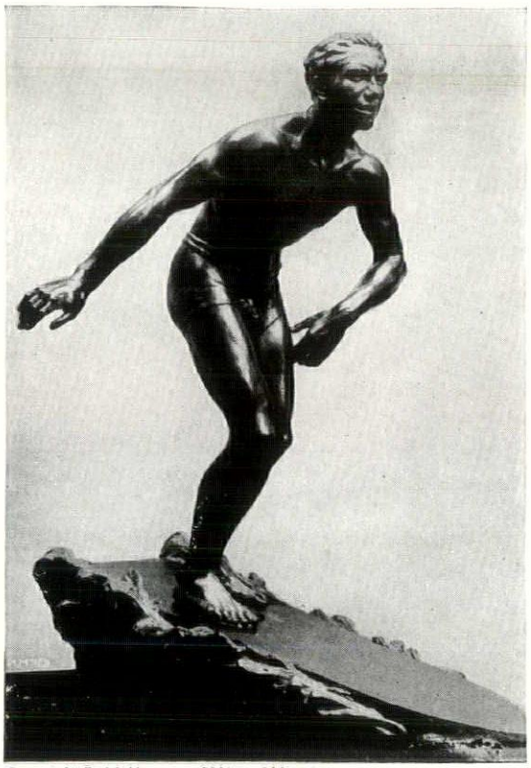

Copyright Field Museum of Natural History

by

MALVINA HOFFMAN

•

Art, science, travel, adventure and humanity are superbly combined in this absorbing autobiography of an internationally famous American sculptress whose fascinating life story leads the reader from the sidewalks of New York, through the studio of Rodin, to South Sea island jungles and golden cities of the Orient. Much of the book is devoted to Miss Hoffman's amazing world-wide quest for the racial types that now appear in the bronze statues of the Hall of Man in the Field Museum in Chicago. The 128 pages of illustrations rival the brilliant text in interest. $5.00

English Church Screens

Being Great Roods, Screenwork and Rood-Lofts of Parish Churches in England and Wales

by **Aymer Vallance**
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This complete and authoritative work by one of England's leading authorities on ecclesiastical art and architecture will, without doubt, become the standard work on the subject. Profusely illustrated, there are more than 250 pictures in black and white and a number of color plates. $10.00

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by

R. Randall Phillips

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Seventy selected modern English homes falling within the $2500 to $7500 price range are fully described and illustrated with photographs and floor plans by the famous author of "Small Family Houses." Many styles including modern, Georgian and cottage style are presented to give a complete picture of the English small houses being built today. $2.75

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BOOKS

THE MOSAICS OF ST. SOPHIA AT ISTANBUL. II. The Mosaics of the Southern Vestibule. By Thomas Whittemore. 59 pages, 9 by 12 inches, and 20 pages of plates. Illustrations from photographs. Paper binding. Printed in Great Britain. Paris: 1936: Printed by Oxford University Press for The Byzantine Institute, 199 Washington Street, Boston. $3.50.

The Byzantine Institute has undertaken a task of considerable magnitude, and one that requires not only great skill and knowledge of the subject, but also a prolonged period of time. It was possible to work within the building only from about the middle of April until late in November, since there is no artificial heat. This is the second preliminary report, covering work done in 1933 and 1934. The first report, published in 1933, dealt with The Mosaics of the Narthex. A third report will deal with Imperial Portraits in the South Gallery. Four technical assistants have been engaged upon this work uncovering, cleaning, recording and restoring these mosaics. Some of the difficulties may be imagined when it is recalled that the use of liquids for cleaning has always been strictly excluded. The subject of this southern vestibule composition is a group of two emperors, Justinian the First, and Constantine the Great, flanking the Mother of God enthroned with the Infant Savior.

PERSPECTIVE AND OPTICAL ILLUSIONS OF DEPTH. By Theodore M. Edison. 44 pages, 6 by 9 inches. Illustrations from photographs and drawings. Pamphlet binding. West Orange, N. J.: 1936: Calibron Products, Inc. 50 cents.

A paper constituting issue No. 3 of *A Calibron Notebook*. Here have been gathered together many facts interesting to the architect about perspective, its derivation, its practical applications, and the various means of achieving it graphically.

CERTIGRADE HANDBOOK OF RED CEDAR SHINGLES. By Bror L. Grondal and W. W. Woodbridge. 84 pages, 5 by 7¾ inches. Illustrations from photographs and drawings. Pamphlet binding. Seattle, Wash.: 1936: Red Cedar Shingle Bureau. 50 cents.

The manufacture, seasoning, storage, and recommended practices in application of a brand of western red cedar. The instructions, tables, estimating rules, and other data are unusually complete.

FURNISHING THE COLONIAL AND FEDERAL HOUSE. By Nancy McClelland. 164 pages, 7 by 10¼ inches. Illustrations from photographs, old prints and a color frontispiece. Philadelphia: 1936: J. B. Lippincott Company. $3.50.

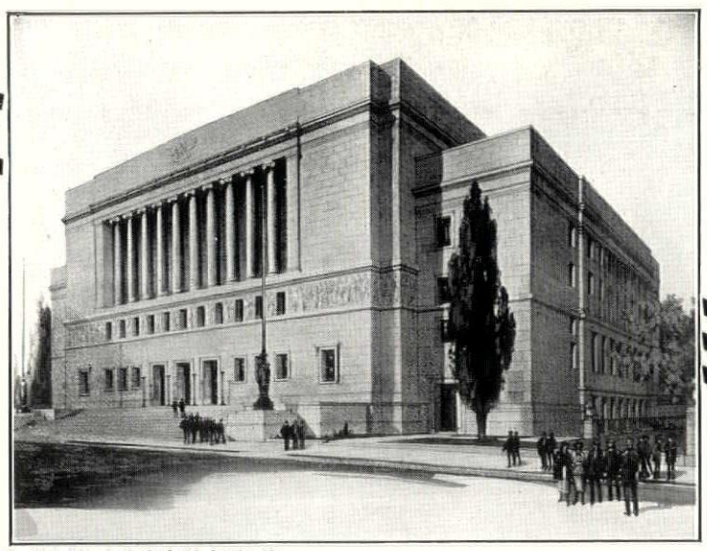
Miss McClelland is a New York decorator known nationally for her work, a prominent figure in the American Institute of Decorators, and the author, among other works, of "Historic Wall-Papers." Her book is not the usual collector's volume, but rather a practical treatise upon how to achieve satisfactory furnishing whether the budget be large or small. It is particularly interesting to see that Miss McClelland has not been thrown off her balance by international and modernistic tendencies of the moment. She points out that if you ask an Englishman what sort of furniture is most popular in England, he replies, "The English styles." The Frenchman assures us that French styles are preferred in France; an Italian declares himself for Italian styles; a Hollander for the Dutch. How about America? Miss McClelland feels that within the last decade there has been an increasingly notable swing back to American furniture and American styles—due possibly to the revival of nationalism that followed the World War. Her book, therefore, deals with furniture, wall coverings, floor coverings, color, decorative accessories that have their background in our national history.

Why

Why does this imposing and enduring building have a Genasco Standard Trinidad Built-up Roof?

The Scottish Rite Cathedral is one of the showplaces of St. Louis, Mo. The finest materials were used in its construction. That's why Genasco Standard Trinidad Built-up Roofing was specified for the roof . . . and why after 13 years it is still in excellent condition.

Constructed to last . . . with alternate layers of Genasco All-Rag Felts and genuine Trinidad Lake Roofing Asphalt . . . that's why Genasco Standard Trinidad Built-up Roofing is specified for enduring buildings throughout America.



Scottish Rite Cathedral, St. Louis, Mo.
Roofed with Genasco Standard Trinidad Built-up Roofing.
Architect: Wm. B. Ittner, St. Louis.
Roofing Contractors: Insulating & Materials Co., St. Louis.

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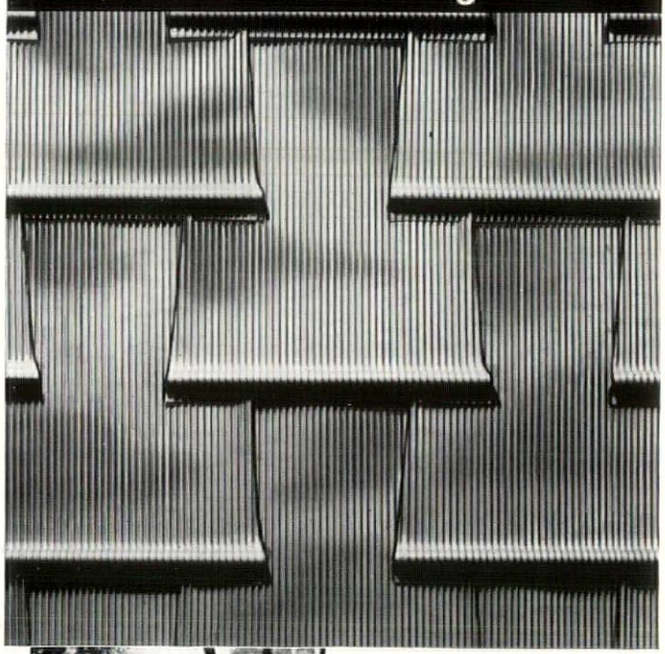

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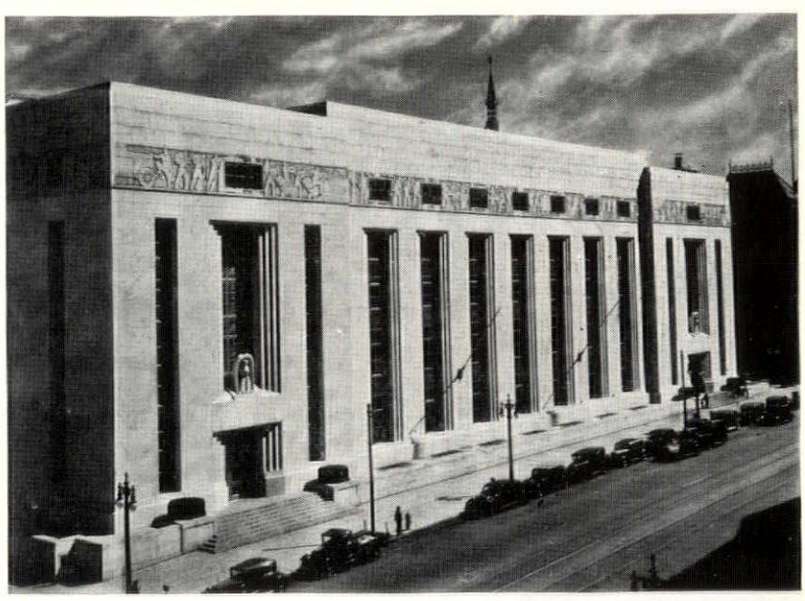

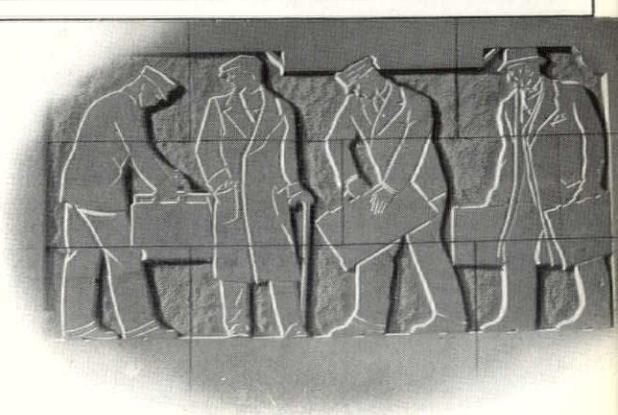

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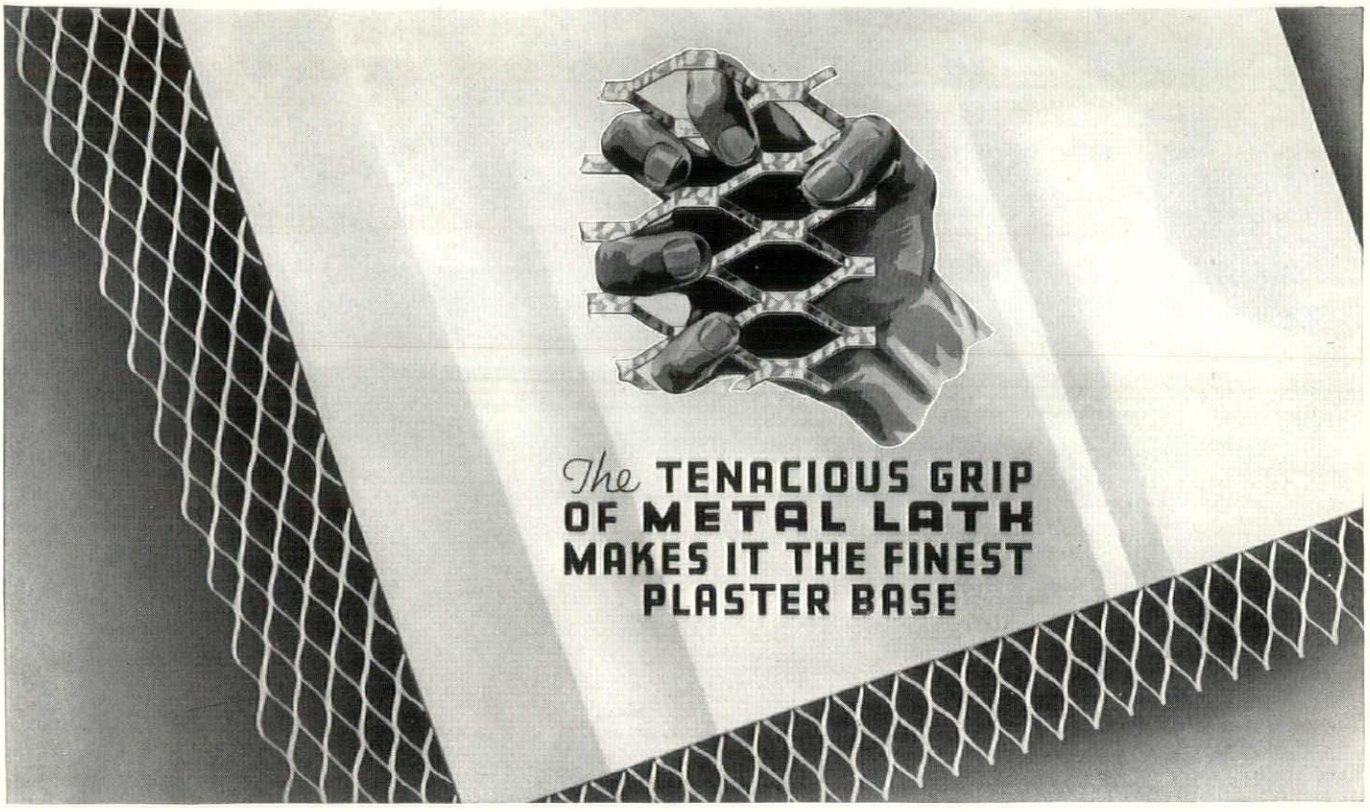

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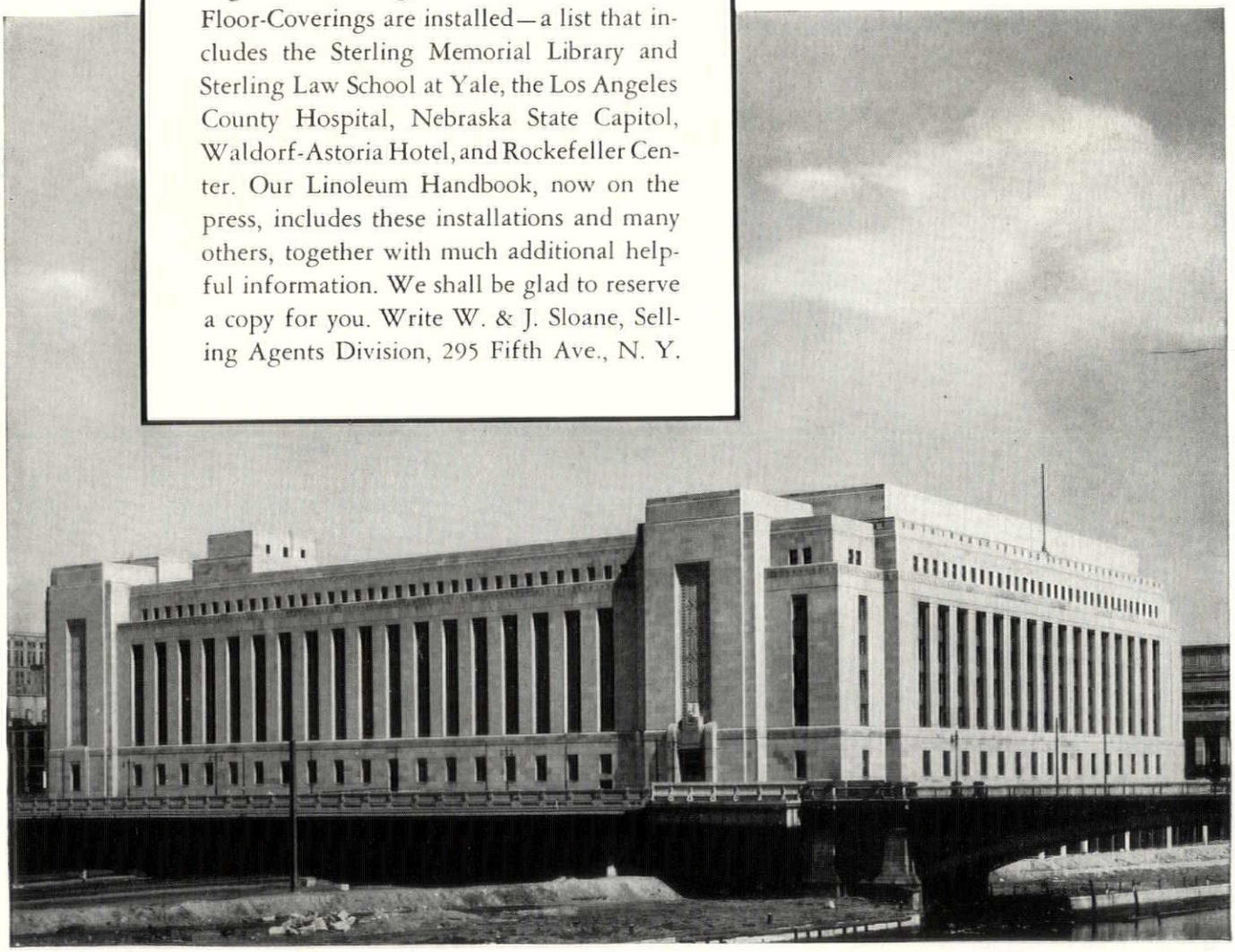

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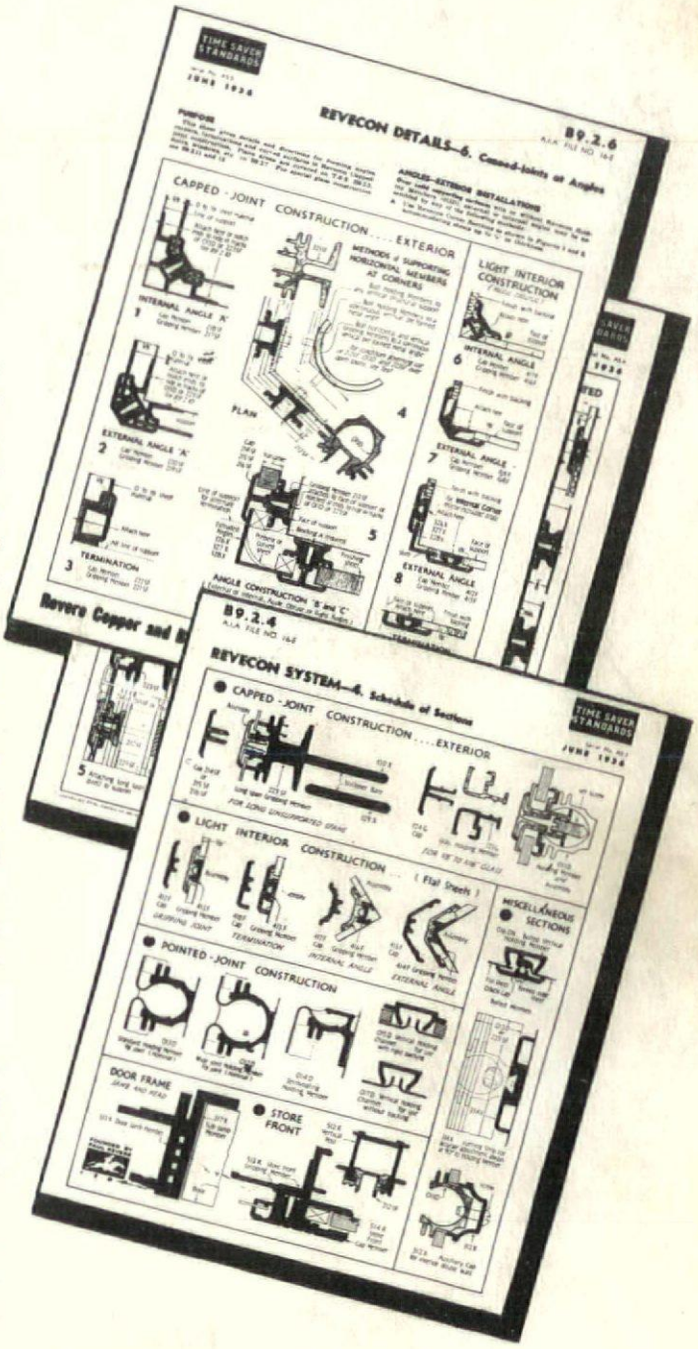

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