THE

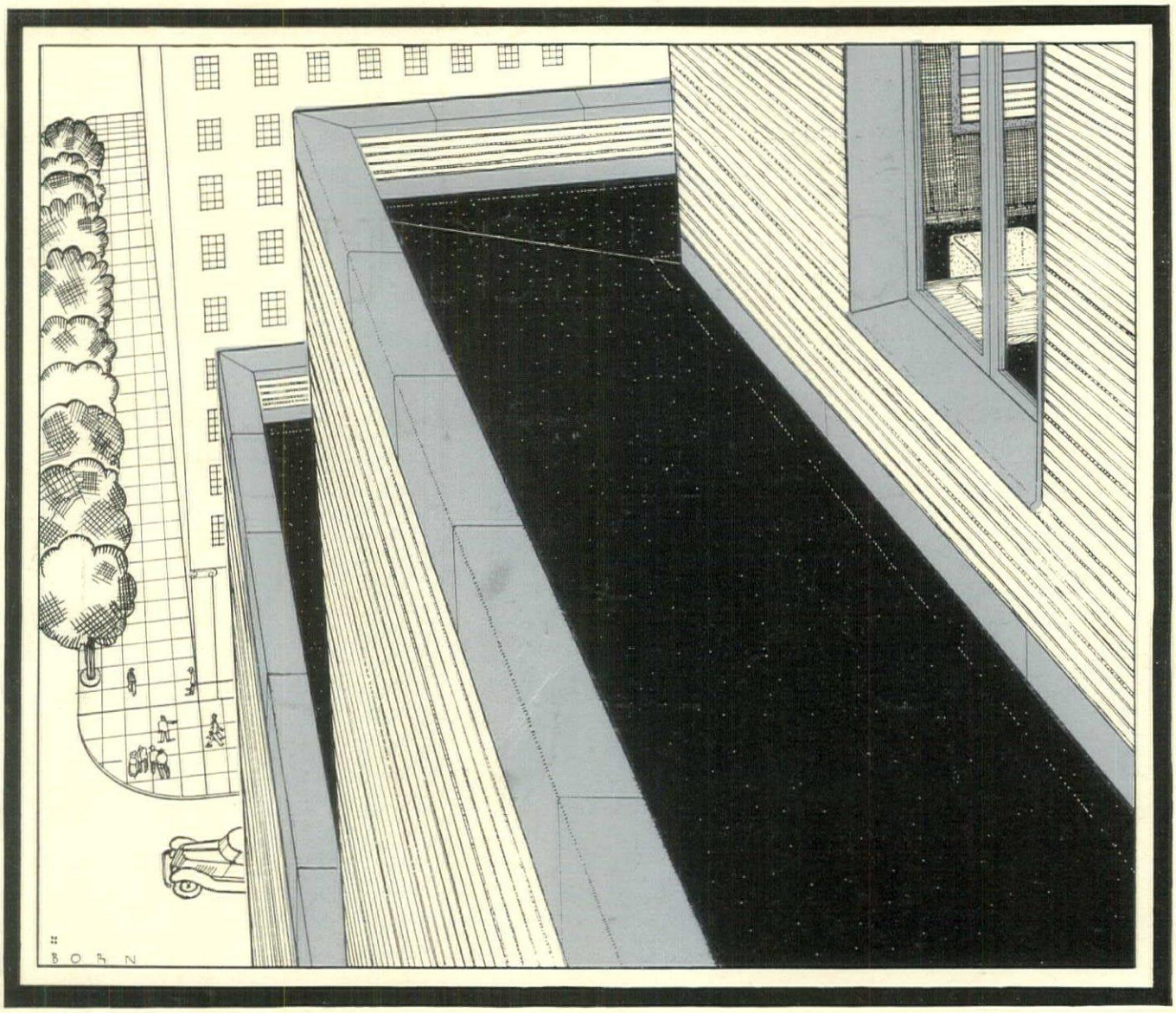
ARCHITECTURAL

FORUM

INCLUDING "BUILDING MONEY"

SEPTEMBER, 1935

A. SMALL HOUSES . . CENTRAL PARK ZOO . . WINE SHOP AND BARS . . FINLAND . . ERNST KAHN



THE COPING . . .

The inherent characteristics of Alcoa Aluminum point the way to eliminate maintenance on copings. The metal itself defies the corrosive attack of the atmosphere and its burden of smoke and fume. The manner of construction forever eliminates the cost of pointing ★ Requirements of individual design may be attained either in castings or extruded shapes that are light in weight ★ The amazing versatility of this metal gives the designer full scope at a cost that is entirely comparable with that of the more traditional materials. Aluminum Company of America, 1866 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

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ARCHITECTURAL FORUM

SEPTEMBER 1935

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Editor, HOWARD MYERS, *Managing Editor*, RUTH GOODHUE, *Associates*, JOHN CUSHMAN FISTERE, ALAN JACKSON, ERNEST BORN, MAX FORESTER, GEORGE NELSON, PAUL GROTZ, MADELAINE KROLL.

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VOLUME
Number

THE MONTH IN BUILDING

OLUME. Regardless of the index used, e first six months of 1935 were the best months since '31. The big difference tween the '35 figures and the '31 figures that this year's are on their way up, and 1931 they were on their way down.

Residential building, weakest of all the visions, continued its steady recovery, owing a gain of 58 per cent over the first months of last year. Figures for July re equally encouraging, more for their surance that a seasonal slump had not set than for the slight advance over June. The detailed total construction figures January through July as reported by dge are:

January	$99,774,000
February	75,047,000
March	122,940,500
April	124,098,000
May	126,718,600
June	148,005,200
July	159,249,900

Leaving out public buildings, which elled the figures in 1933 and 1934, each nthly total from March on has been ater than any previous monthly total ce mid-1931, chiefly as a result of the vate spending reflected in the residen- figures (see chart, p. 223). However, should be remembered that the latter on a fairly good-sized backlog of fig- s from U. S. housing projects, which are v getting well enough along to report.

OCKS. Wall Street is spending its l moments picking out a good building ck. The research divisions of all the kerage and investment advisory houses e during the last six months pried into ns-Manville, Crane, American Radiator, tsburgh Plate Glass, and dozens of er smaller companies, trying to find one best bet for the boom or boomlet ich they are convinced is on its slow but tain way.

No less than a dozen heavily charted ecasts have recently appeared, each lging the issue of when the $2,000,000,- home year was to arrive, but none ubting that it would be here before 1940. ferring to the many U. S. moves in alf of real estate and building, Biggs, hrman & Co. opined: "No abrupt up- n is anticipated, but rather a slow and dual recovery as the correction of ad- se factors proceeds and becomes more ective." Said Moody's, more specifi- ly: "It does not seem unreasonable expect the total for the year to be from per cent to 100 per cent ahead of last year. Next year should exceed this year somewhat, and 1937 should again exceed 1936."

Standard Statistics was not so optimistic. In view of last year's public works expenditures, it said, the total for 1935 would do well to equal the '34 figure. Standard Statistics' average for building stocks for the first time last month stood higher than its average for 421 general stocks. Rather than implying a bullish

Underwood

Victor Eccles

rise, this was taken to prove that the increase in private construction had resulted in a greater spread of business for the material manufacturers, and an all-around healthier condition.

MORTGAGE LIQUIDITY. The Banking Act of 1935, as finally passed by Congress last month, was still pretty much Eccles as far as real estate and building were concerned. The Federal Reserve Governor, who was brought to Washington first as Morgenthau's assistant because he knew all about mortgages, wanted to "do something" for mortgages just as his Utah Congressional colleagues want to do something for silver. And in the Banking Bill he did it.

After being pushed in and out of the bill a dozen times, the conference committee finally approved the Eccles fundamental that any sound asset of a commercial bank should be eligible for rediscounting with Reserve Banks. "Any sound asset" may mean a lot of things to a lot of people, but to real estate and building it means only one thing: mortgages.

It is too early to tell how effective the provision will be in giving liquidity to mortgages because the terms of rediscount are still in Eccles' head. One thing is certain: the FHA-insured mortgage is going to be highly favored.

Significant provisions in the bill:

1. The lending area for a commercial bank was expanded from a 50-mile radius to an unlimited one.

2. Exclusive of FHA loans, banks were permitted to make a 60 per cent loan for ten years, provided 40 per cent of the loan is amortized during the period.

3. The amount of money to be invested in mortgages was boosted to the full amount of paid-in capital stock plus the unimpaired surplus or to 60 per cent of its time and savings deposits, depending upon which figure is higher.

With these encouragements to commercial bankers to become mortgage lenders, other institutions were beginning to drive actively for business. Insurance company mortgage loans jumped phenomenally during June and July (see chart, p. 223). Savings banks and building and loans were advertising for mortgages. And operators with good risks were finding it easier to make terms than to accept them.

FRESH FUNDS. The problem of finding mortgage funds cheap enough for low cost housing will be over in ten years. For by that time the annuity funds which will come into being as a result of the social security legislation just signed by the President will be large enough for investment over a wide field which will undoubtedly include mortgages.

European experience is that such funds are ideal for long term financing, because the drains on pension funds are not erratic. Reaching the age of 65 is something that cannot be speeded or slowed by Depression. The funds are about the same as life insurance funds, with this one advantage from the mortgage standpoint—they are not subject to policy loans, nor can they be cashed in before maturity.

In the opinion of mortgage finance experts, there is no reason why social security funds cannot be lent out at between 2 and 3 per cent.

Of worrying by established lenders there was as yet little. Indeed alert ones among them had pencil close to paper last month, figuring how their lending terms might be recast to take advantage of the forthcoming pensions. Undoubtedly the assurance of annuities will go far to make the 20-year loan a more attractive proposition.

PRIVATE ENTERPRISE. Though Ickes is still just as sure today as he ever was that private enterprise, aided or unaided, cannot produce low cost housing, there are many equally respected men in Washington who disagree with him. One of them is Secretary Morgenthau. Another is Director of the Budget Bell. A third is Miles Colean of the FHA.

And from now on, what Ickes may think will be less and less important in U. S. housing policies. The signs point definitely to aid for private enterprise, largely dictated by Messrs. Morgenthau, Bell and Colean.

Direct subsidies to approved builders, probably in the form of interest grants, is the approach being given the most consideration. Following the appearance of the Kahn "Interest Subsidy Plan" in the August issue of THE ARCHITECTURAL FORUM, Mr. Kahn was called to Washington by the Secretary of the Treasury to tell all he knew. And what Mr. Kahn knows about the costs of housing and the reasons for their costs is based not on desk thinking but on actual experience with Frankfort, Germany's mammoth and successful projects.

NEW TECHNIQUES. Two big names stepped further into the housing business last month—and neither one was a prefabricator. R. S. Reynolds gave out the details of his "House with the Silver Lining" (see p. 216) and Copper Houses, Inc., a Kennecott subsidiary, revealed the hopes they had for houses covered with copper, the first of which, a Dutch Colonial, has been completed in Washington, D. C.

And General Electric gave a new twist to its Houses, Inc., which was at first intended to be a "holding company" sponsor for prefabricated houses. Its work, it seems now, will be the whole broad field of selling G-E equipment for homes, whether in prefabricated houses, "New American" houses, or just plain houses.

In the meanwhile, American Radiator and Johns-Manville sit silent but not inactive. The latter is particularly interested in developing use of its "Transite" wallboard for exteriors. Under somewhat mysterious circumstances three "Transite" houses were going up in Boston last month. Not sponsored by the Houses, Inc. affiliate, American Houses, which also uses "Transite," and which also is building three houses in Boston, they gave observers cause to wonder whether J-M might not be doing some laboratory work on its own.

FALSE ALARM. In Manhattan, newspapers headlined: "BANK LOWERS INTEREST RATE HELD AT 4 PER CENT, LENDS $800,000 AT 3½ PER CENT: LOWEST LEVEL IN YEARS." That morning saucers under New York bankers' breakfast coffee cups proved handy.

"In well-informed circles it is reported that this is a forerunner of a movement to release substantial funds at the 3½ per cent rate," read one article. But a prompt investigation by the Mortgage Conference proved the papers wrong. Not one, but two large loans, the Conference reported, had been granted in Manhattan at less than 4 per cent. Subject of the newspaper report was a commercial bank loan which the Conference found was made upon a shipshape, producing property conservatively valued at $6,000,000. A loan-to-value ratio of 13 per cent on such a property apparently demanded some concessions.

A loan made several weeks earlier, which caused talk but failed to get in the papers, was a $1,000,000 one by Chemical Bank & Trust on Madison Square Garden at 3¾ per cent. But the bank had received the Garden's fat deposit account as a result, the Conference revealed.

Decision was, that neither transaction could be construed to indicate a runaway break in rates, and the prevailing price of mortgage money in and around New York continued to bob closest to 5 per cent, the lowest it has been since 1919.

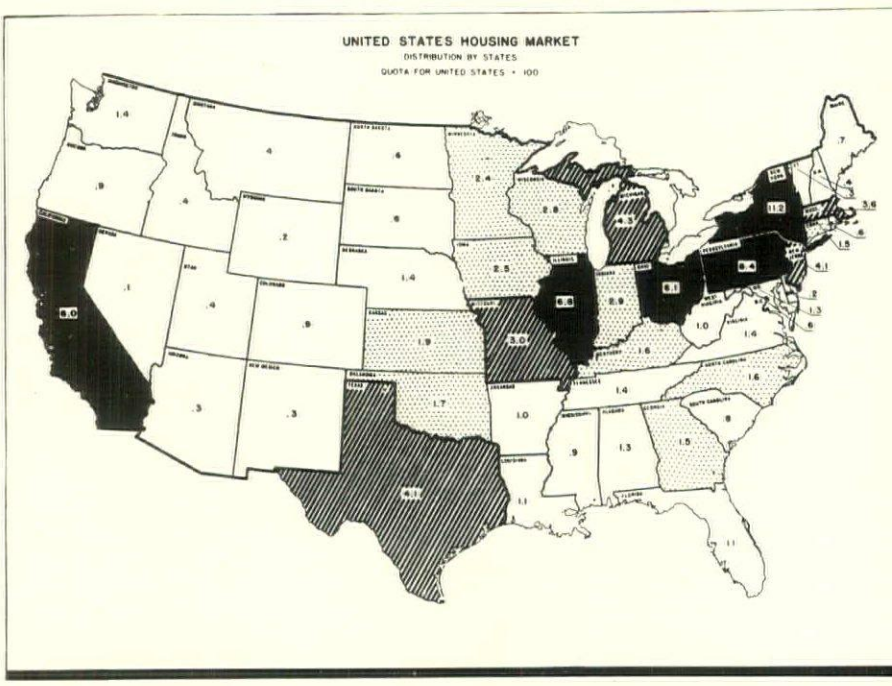
HOUSING MARKET. To aid manufacturers in promoting sales, the Federal Housing Administration has issued an analysis of the housing market which provides a ready way of determining the geographic inferences of a national program. The study, to which a number of publishing companies, national advertising agencies, a telephone company, and a number of Government statisticians contribut culminated in a map of the U. S. show which States were the richest potent housing markets (see below).

Five factors were enlisted to determ the size and location of the housing mark both for modernization and new buildi These were: (1) population; (2) number of existing one- and two-fam dwellings; (3) the value of these dw ings; (4) purchasing power, an index which was arrived at by combining number of income tax returns, number of residential telephones and number of automobile registrations; a (5) the number of existing sales outl in the building group.

Combined into one, these indices p vide a factor which may be applied any dollar quota for the U. S. wh present or future legislation may set. T actual figuring done for two Sta follows:

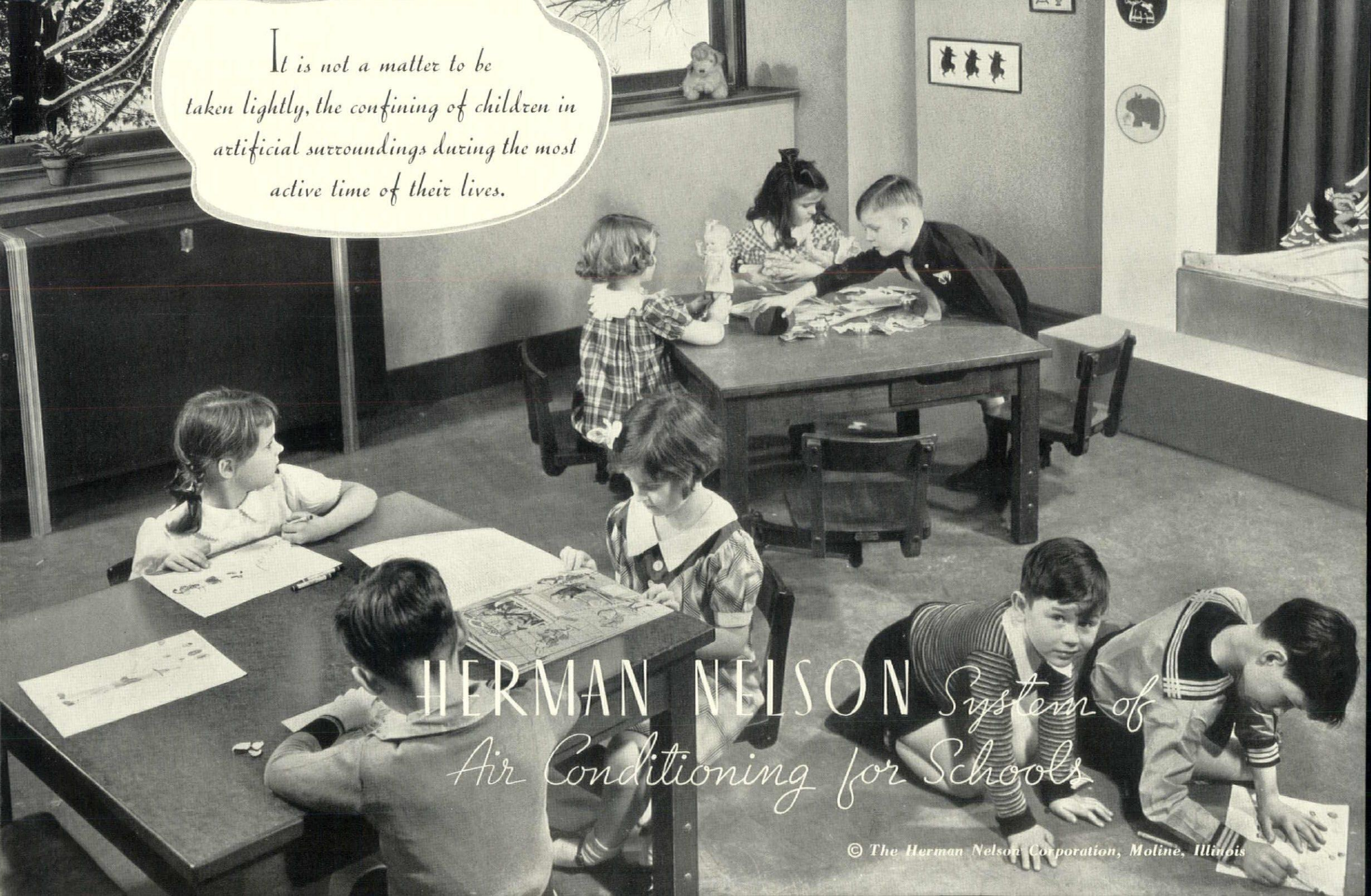
	U.S.	ALABAMA	NEW YO
Population	100%	2.16%	10.5%
No. of Dwllgs.	100%	2.25	6.41
Value of Dwllgs.	100%	.60	15.01
Purchasing Power	100%	.66	14.16
Sales Outlets	100%	.61	10.23
Average	100%	1.3	11.2

With allowances for purely local d turbances, factors affecting an individ product, such elements as the rate of co munity growth and the fact that much the data came from the 1930 Census, ma ufacturers, nation-wide lenders and s dents of the housing problem had in FH study a valuable aid in judging where spending would be done.



The U. S. Housing Market by Percentage Factors

In the black States, 6.0 per cent or over of the spending will be done. States are shaded where the factor is between 3.0 and 6.0 per cent, dotted where between 1.5 and 3.0, and white where the quota is less than 1.5.



...and in the new

U. S. NAVAL HOSPITAL

All the Navy's money is not spent on dreadnaughts and destroyers . . . The beautiful, modernly equipped new Naval Hospital at Philadelphia is the latest proof of Uncle Sam's concern for the health of the officers and men of his fleets. Walter T. Karcher and Livingston Smith were the architects of this magnificent new addition to the modern hospitals of America. • In the illuminating system Macbeth "Florentine" Monax Globes were used for the major lighting units and smaller units of Monax were selected for corridor lighting and other purposes. The "Florentine" Monax Globe is a very efficient and attractive unit, rating an overall efficiency of 82.5% by I.E.S. specifications. It is approved for use in accordance with specifications of the Supervising Architect's Office, U. S. Treasury Department. Detailed analysis will be sent upon request. MACBETH-EVANS GLASS COMPANY, Illuminating Division, Charleroi, Pennsylvania.

MACBETH

Monax Illuminating Globes

FORUM OF EVENTS

HOENIX BUILDINGS

ARTFORD, Conn. is a financially minded y. To most of its citizens the intricacies insurance are as simple as the telling of alphabet. But the wit that Hartford olies to insurance policies is by no means ited to this field. Hartford also can gle figures to advantage when it comes building. And nowhere has that ability n better demonstrated than by the y's Department of Parks, George H. llister, superintendent.

Mr. Hollister and his Department of therein much good material. From this asylum came all the new clubhouse's brick, all the doors, all the floor joists, rafters, rough flooring, roofers, slate on the caddy house and some of the copper flashing; the white oak paneling and trusses in the lounge, the stone and lintel on the sides and top of the fireplace. The toilet and shower bath rooms for both men and women were entirely lined and partitioned with marble salvaged from the old post office. From the post office too came the slate steps leading to the locker rooms and some of the slate in the piazza floor. The hand rails and balusters were designed from iron fences removed from lots in the public cemeteries. The trusses and purlins in the piazza were timbers formerly used under the dance floor at Pope Park.

HARTFORD'S KENEY PARK CLUBHOUSE
Balusters from cemeteries, trusses from a dance floor

rks had several buildings they wanted erect. They wanted a new golf clubhouse Keney Park and a new swimming pool d barn and workshop at Colt Park. As ich as a new lawn bowling clubhouse ey wanted a large storehouse and shed in zabeth Park. Pope Park needed a recreana! center. The pump house at Bushnell rk needed an addition.

All of which was very well. But Mr. Holter realized he did not have all the money the world to spend. It was then that inration came to him. Why not, he wonred, raze some of Hartford's old unused y-owned buildings and see what he could vage? Hartford's new buildings would e phoenix-like from the débris of the old. aving once found his idea, Mr. Hollister thwith put it into execution.

Down came the old orphan asylum on tnam Street. Down came a mattress tory. Razed was an old post office and dance hall. And the Park Department's rkshop in Colt Park got busy. Bricks re reshaped, slate and stone were cleaned d recut, timbers and boards were sand inted and rehewn. And then up in Keney rk went the new clubhouse. And in Colt rk the new swimming pool. And in ushnell Park the addition to the pump ouse.

The Keney Park clubhouse is a typical ample. Architect H. Hilliard Smith graitously offered his services to the Park epartment. He and Mr. Hollister inected the old orphan asylum, finding

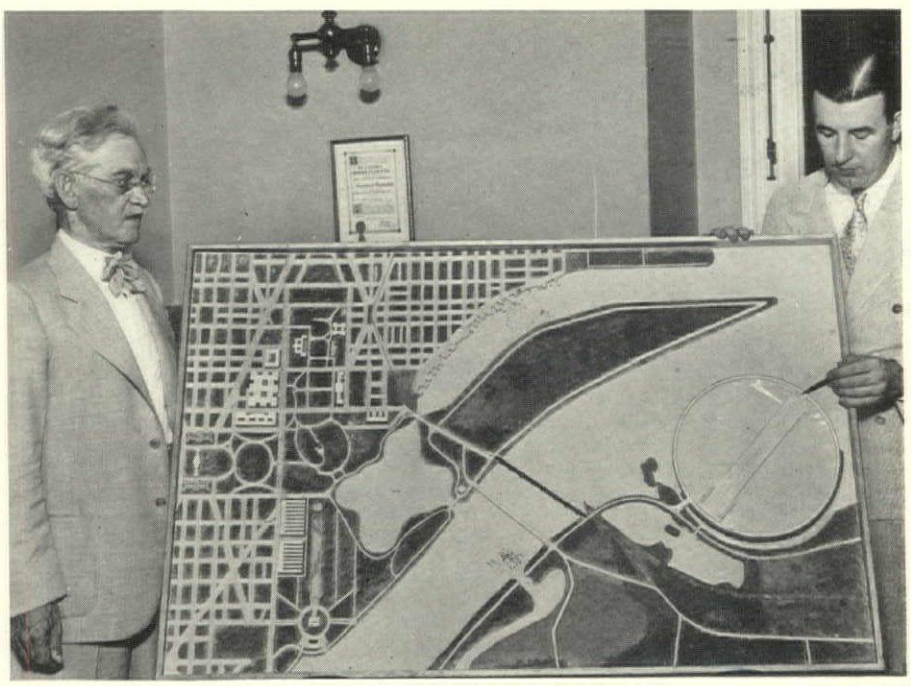
An allotment of $7,484 was granted by the Civil Works Administration for purchase of masons' supplies, plumbing and electrical supplies, finish flooring, window sash, casings, mill work, etc. The only appropriation asked for and granted by the Common Council was $735 for purchase of new slate for the roof. Receipts from the golf course were used for kitchen and lunch room equipment. Labor, with the exception of one plumber, was furnished by CWA and later by FERA. And when the clubhouse was finished the Park Department had a building roughly valued at $50,000.

Taking all its new buildings into consideration it was estimated that the Park Department gained a $150,000 return on a $22,000 investment. Which is a return sufficiently large to satisfy financially minded Hartford or any other community in the land.

FLOATING AIRPORT

CLEVELANDERS have to travel to the western limits of their city to reach their airport. New Yorkers have to go to Newark or through Brooklyn to Floyd Bennett Field. Yet both these cities have large areas of water conveniently close to their centers. The same, thought E. LeRoy Pelletier, Detroit inventor and one-time publicist, probably holds true for half a dozen or more cities throughout the land. The obvious thing, it seemed to him, was to build a floating airport on the convenient water since land airfields near the centers of towns are generally impossible because of prohibitive land costs. Last month in Washington Mr. Pelletier was exhibiting his solution to any

(Continued on page 8)



Harris & Ewing

Inventor Pelletier, Floating Airport (for Washington, D. C.) and Friend
(Rep. Jennings Blanchard, D., W. Va.)

FORUM OF EVENTS

(Continued from page 7)

member of the Department of Commerce who would pay him heed.

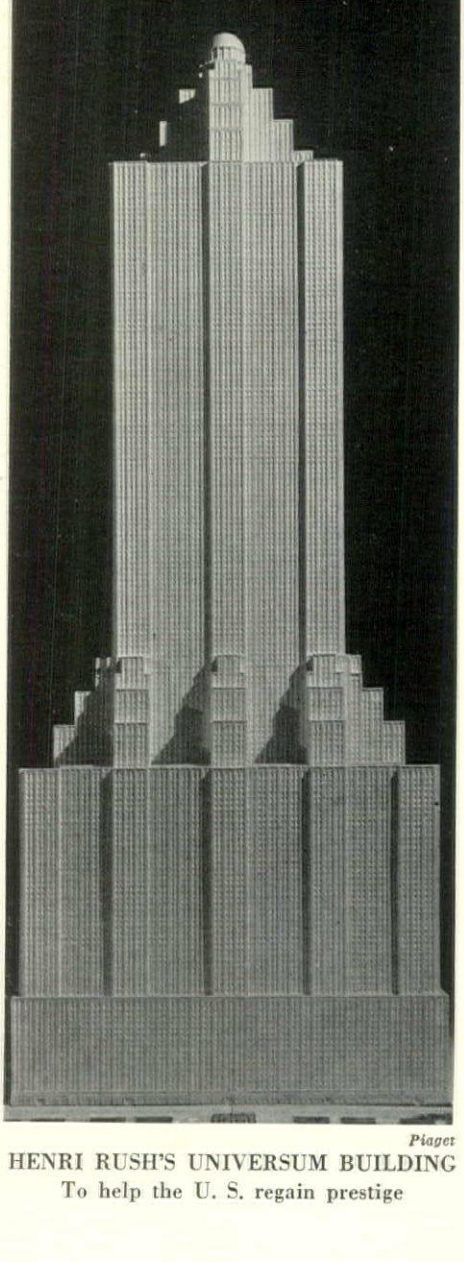
Mr. Pelletier plans a 4,000 foot arrow-shaped runway involving the use of hollow reenforced concrete blocks joined together by ball and socket joints. The arrow, 600 ft. wide, is to be anchored off center so that it turns in the wind (airplanes, of course, always land and take off into the wind). A small motor is provided for in case the wind is not sufficiently strong to swing the arrow (but a two mile wind velocity will head it windward). Steam pipes immediately beneath the surface will prevent formation of ice. A semi-circular breakwater with access from the land forms a half circumference to the arrow's diameter so that no matter where the arrow swings it is always in contact with the breakwater, hence with the shore. The field is to be used principally as a landing place where airplanes may discharge or receive passengers. Hangars and other equipment would remain on the already constructed land fields.

Mr. Pelletier estimates his construction costs at $1,250,000. Before his idea may be adopted by any Class 1 airport it must receive the sanction of the Department of Commerce. It is the Department of Commerce also, which has to render services in regard to a possible PWA loan. Unofficially, the idea has met with the approval of certain Army and Navy members. The attitude of the Commerce Department is not yet known. But Washington was last month freely predicting that Washington would never see the Pelletier arrow in the Potomac for too many Congressmen are angling for other airport sites.

Ernest Le Roy Pelletier knows he was born in 1867 but is not sure whether he was born in New Brunswick or in Maine. He was a staff reporter for the New York *Times* covering the Yukon gold strike in 1897. On the side he laid out several good claims which were taken away from him by Canadian claim jumpers. He finally drifted into the automobile business and was invited by Henry Ford to become a consulting engineer in Detroit. He turned out to be a better advertising man than engineer and remained with Ford in the latter capacity until 1908. To him are credited the circulation of many of the oldtime Ford jokes which indirectly played a strong part in publicizing the automobile. He still carries a card, signed by Mr. Ford, reading: "Pass Roy Pelletier and friends any place any time." Among his friends is Eddie Guest who has included Mr. Pelletier's anapestic name in many a homely rhyme. Another friend was the late Elbert Hubbard who once gave him a Windsor tie with the admonition that he always wear one. He generally does. For the past few years Mr. Pelletier has been a gentleman farmer famed for his Holstein-Friesian cattle, his Belgian horses, his Borzoi dogs and his champion cow, Wandermere Belle Hengervelde, who broke record cattle prices when she was sold for $18,300. Few months ago he sold all his Borzoi dogs. But he still keeps his Shetland ponies, is proudest of the fact that he has managed to raise a pure white and a solid black strain.

UNIVERSUM BUILDING

THE days of prosperity with skyscrapers in construction around every corner used strangely to stir the minds of architects. There was the spectacle, for instance, in Manhattan of William Van Alen's Chrysler Building fighting lustily to be higher than



Piaget

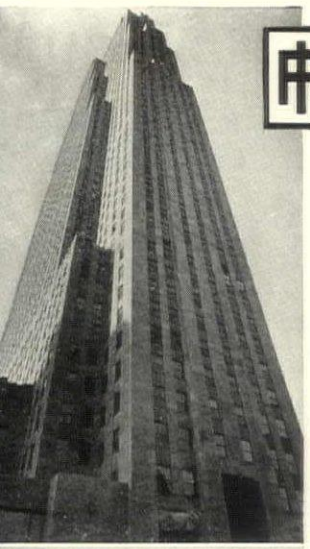
HENRI RUSH'S UNIVERSUM BUILDING
To help the U. S. regain prestige

H. Craig Severance's and Yasuo Matsu Bank of Manhattan Building only to ha Shreve Lamb & Harmon contemptuou dwarf them both with the Empire St. Building. Architects when they had noth else to do used to plan buildings that wou soar three or four times higher than a other building on earth. The Sunday su plements bristled with magnificent Hu Ferriss concoctions. Raymond Hood wou vehemently exclaim that buildings 7,000 high were logical.

Lately with the signal exception Rockefeller Center, skyscrapers have be little heard from. In Paris Henri Lossier a M. Faure-Dejarric are hoping to build 6,560 foot tower for the 1937 exposition h that is little more than the Eiffel Tow multiplied by six and a half. In St. Lou however, Depression instead of quelling h inflamed in one architect the ardor building a super-skyscraper. More th anything else in the world, Henri Rus A.I.A. wants to build his Universu Building.

The Universum Building (if it is bui will house approximately 250,000 peo (more than a quarter of the population St. Louis), have 195 stories and cost a proximately $233,000,000. Mr. Rush's pla call for an observatory dome 80 ft. diameter at the top and directly below two floors of high altitude research labor tories and radio stations. The 193rd floor a rotating platform with coupling facilit for dirigibles. A university for social stud national economy and commerce cours occupies the 192nd to the 168th floors. Po office, novelty shops on the 168th. T 166th is a dining hall seating 6,000 perso or 24,000 for one meal. The hall exten along the outside of the building with lar wired (in case of breakage) window area Eighty-eight stories down to the 78th flo contain apartments for those employed the building. A hospital with 4,000 b capacity occupies the 78th to the 59th floo There are twelve aseptic operating roor with glass lined walls and ceilings behi which the heating and cooling coils a placed. The 58th floor extending all arou the building provides an exercise and re reation platform. On the 57th and 56th large gymnasium and an indoor exerci hall with an area of 168,000 sq. ft. a a 24-foot ceiling height. On these floors al are club rooms, libraries, dance halls, mo ing picture halls, a bank, a church auditor um. The next 37 floors (down to and inclu ing the 20th) are given over to commerci and industrial enterprises, such as bakeri laundries, refrigeration plants, warehous factories. Along the outside walls, divid

(Continued on page 41)



Water-Vapor Refrigeration

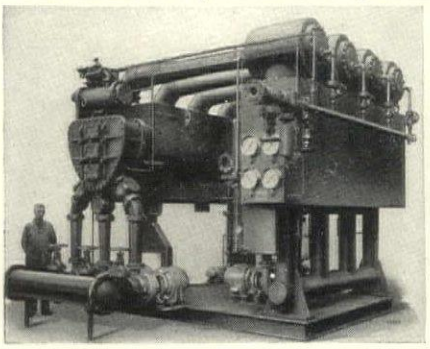
A simple, safe and economical method of cooling water for

AIR CONDITIONING

Cooling is accomplished by direct evaporation of a small quantity of water under a high vacuum, created by steam-jet boosters or a centrifugal compressor. Water chilled by this evaporation is the cooling medium and is circulated for direct use. No chemicals or brines are used. The system is simple, safe and economical.

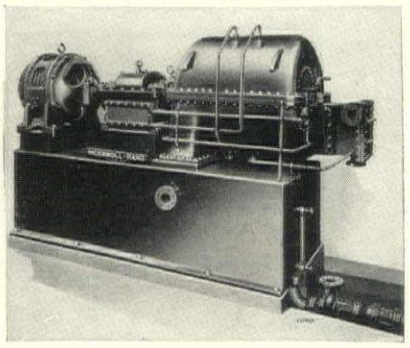
I-R Water-Vapor Refrigerating Units have been installed throughout the country for air conditioning in government building, stores, theatres, restaurants, in skyscrapers and office buildings, auditoriums, museums, hospitals, hotels, foundries, factories, aboard ships, and for cooling in manufacturing processes.

Two types of units—Steam-Jet and Centrifugal—permit the selection of the most economical equipment to meet widely varying conditions of steam or electric power, cooling water supply and cooling requirements.



STEAM-JET TYPE

Steam jet boosters compress water vapor from high vacuum to condenser vacuum. This type is free from moving parts, and is extremely flexible and reliable due to exclusive I-R features of design.



CENTRIFUGAL TYPE

A centrifugal compressor driven by a motor or a turbine, compresses the water vapor. Low in operating cost and condenser water requirements. Self regulation at part loads gives minimum power consumption without requiring automatic controls.

Let us tell you about the overload capacity, the sustained efficiency and other advantages of I-R Water-Vapor Refrigerating Units.

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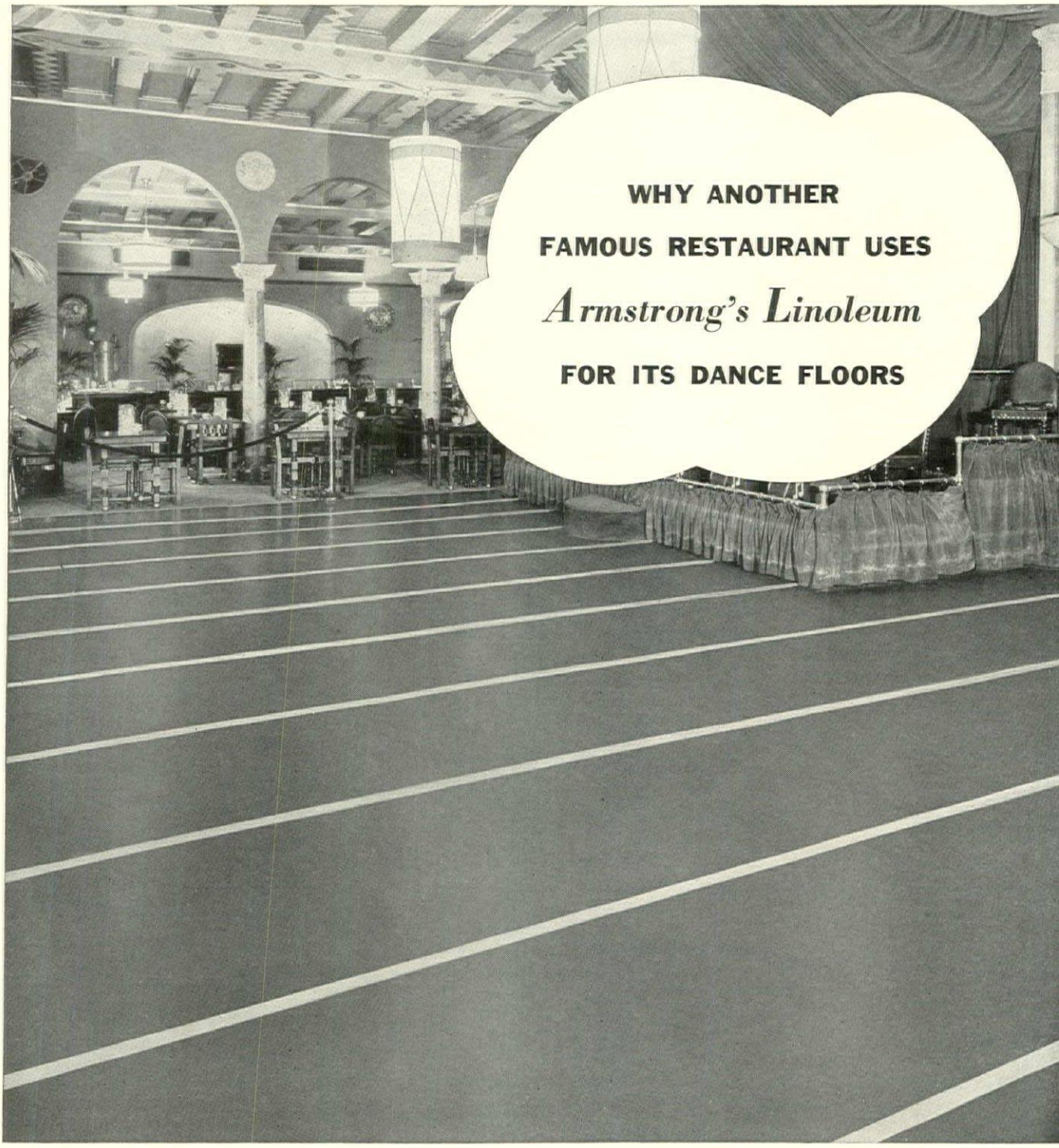

This smart dance floor of Armstrong's Linoleum in cadet blue with orange stripes gives Child's Restaurant at 1501 Broadway, New York an air of warmth and spaciousness. Armstrong's Architects' Service Bureau offers complete technical assistance in designing floors like this

IN this Child's Restaurant, the dance floor is Armstrong's Linoleum—a daring modern design in blue and orange. And here's why Child's installed it:

First of all, Armstrong's Linoleum makes a good floor for dancing. It's smooth. It's resilient. It's comfortable underfoot. And because it can be laid in distinctive, made-to-order designs like this one, it "trade-marks" a restaurant . . . makes patrons remember it and come back.

Furthermore, an Armstrong's Linoleum Floor is easy and inexpensive to maintain. It never needs sanding or refinishing. It doesn't buckle or warp. And an occasional washing with Armstrong's Floor Cleaner, and periodic use of Linogloss Wax, keep it smooth and beautiful for years. That's because the colors run clear through to the back, so that scuffing feet and scraping furniture cannot wear them off.

During rush hours, tables can be placed on an Armstrong's Linoleum dance floor without fear of denting it or ruining its dancing surface. Spilled things wipe right up without leaving a stain or spot.

Point by point, Armstrong's Linoleum offers economies and advantages you cannot find in ordinary floors. For complete information, write now for your copy of "Public Floors of Enduring Beauty." Armstrong Cork Products Co., Floor Division, 1203 State Street, Lancaster, Pa.

***Armstrong's* LINOLEUM FLOORS**

LETTERS

eft Handed Piano

orum:

It was with great surprise and amaze-ent that I read your recent advertise-ent in the May issue of a high priced agazine, FORTUNE.

In this article you write that architects ays and Simpson of Cleveland have won large amount of money on a contest for naller and better homes, etc. But I must ow ask who the bright person was who ew the grand piano backwards in their ouse plan or is it a new type of piano which I am not familiar. Anyone who ays the piano and saw that would surely e surprised I am sure. Possibly it would e better for them to stick just to drawings houses and not furnishings. Or do you ink so?

Also in a magazine such as FORTUNE is, vidently your copy man lets things slip hich is rather too bad as the magazine is o good for that.

In the future I would advise you might ok things over carefully before sending em to the East where we do see many ncongruous things from day to day. I hould be pleased to hear whether the rand piano is a new innovation to this ver changing world of ours.

MRS. R. J. MOORE

Tsinanfu, Chantung, China

The reply of Architects Hays and Simpson to Irs. Moore: ". . . A thorough and sweeping in-estigation of our organization has revealed that ne cross-eyed draftsman in our piano drawing epartment is not only left handed but is a freak f nature with his thumbs on the ulnar side of his ands and that he was wearing canvas gloves nd looking in a mirror when he drew the piano. ow we suspect that he may have a complete tus transversus, which only an X-ray examina-on can confirm. When we have had this made nd know the true conditions we will attempt to ive a complete explanation of this horrible mis-ake, and hope that it will not retard further rogress in our efforts to promote sane logical hinking in home building."

Chapel Hill vs. Modernism

Forum:

For the last fifteen years a small group here in Chapel Hill have been trying to make the University Town practically Georgian or Colonial architecture. This, with stone walls of our local stone and paint, we hope, will put the town on the map in a right way: we are not anxious to be any larger. We do want to be better so that while we do not advertise, we do in a small way correspond with retired profes-sors, school masters, and intellectual people in general, urging them to come here for the cultural advantages and quiet of the Uni-versity place. We are afraid that someone will start the "Modernistic" craze and hope that this will not be the case for it would sadly upset our "apple cart."

H. D. CARTER

Chapel Hill, N. C.

Colonial vs. Modernism

Forum:

I have been looking over the August issue of THE FORUM and have been enjoy-ing the photographs of the First Presby-terian Church at New Rochelle. THE FORUM has been showing so much modern-istic work recently that it is quite refresh-ing to again see a fine piece of Colonial work illustrated.

L. P. SMITHEY

Roanoke, Va.

Not one whit interested in "styles," THE ARCHITECTURAL FORUM presents distinguished architecture, whether traditional or modern, wherever it may be found.—ED.

Obsolescence vs. Modernism

Forum:

Congratulations . . . on the courageous editorial "Respectability vs. Architecture," and the excellent choice of illustrations. But gentlemen, yours is a voice crying in the wilderness. One telling indication of said wilderness is the impending Federal Reserve Building. Another, the enclosed clipping.

[The enclosed clipping quoted Robert C. Carlson, appraiser of Chicago, who up-held "evolution" in design as against "revo-lution." Mr. Carlson pointed out that the FHA standards for insured mortgages stipulated that the house involved "must be appropriate in its neighborhood set-ting," cited the example of a modern house set among brick Colonial residences. "In placing a value on this property," he said, "we had to figure on obsolescence of $4,-100 because of lack of conformity to neighborhood setting, lack of general ap-peal, over-improvement of site, require-ment of special furniture and lack of adaptability to ordinary furnishings."]

How has it come to pass that Tom the banker, Dick the broker, and Harry the contractor, can set themselves up as au-thorities, and be accepted by press and public as fit to pass solemn judgment on houses and building? The building of houses is a many-sided, complex job, and society has trained a company of men to be expert in all phases of this one compli-cated business, and called them architects. Now many others are expert in some one phase of building; the banker is an expert on financing, the engineer on structure, the contractor on construction methods—but they are not experts on building, as an integrated business. An architect must perforce know as much about finance as a banker knows about building—their two fields overlap to the same extent both ways—but Mr. Average Citizen does not ask or accept an architect's advice on his financial problems. Why then does he sit up and listen when a banker talks to him about building?

And what do they have to say, these visiting experts from other fields? The business man's fetish is Experience—past performances. The business man knows only what houses sold well and were a good risk during this period of depression, or any other past period. Therefore, he seeks to perpetuate or restore a frame-work of existing or past conditions, where-in he can move about with confidence. He may learn history but cannot learn from it; he disdains the quest of deep hidden causes; if reluctantly he admits the ex-istence of change, he cannot visualize trends and rates of change.

Mr. Carlson speaks ". . . of a house, modernistic [sic] . . . set up in the midst of high grade brick residences of English and Colonial design, surrounded by well kept gardens and lawns," and proceeds to show that "we had to figure an obsoles-cence of $4,100 because of lack of con-formity to neighborhood setting, lack of general appeal, over-improvement of site, requirement of special furniture and lack of adaptability to ordinary furnishings."

Now all this implies a bland assumption of the following amusing propositions:

1. That a modern house is *per se* not high grade.
2. That brick (in all probability brick veneer on wood frame, admittedly the worst sort of firetrap) *is* high grade.
3. That the gardens and lawns sur-rounding modern houses would not be well kept.
4. That neighborhood setting is un-changing in perpetuity.
5. That modern design lacks general ap-peal.
6. That a modern interior is *more* hostile to "period" furnishings than vice versa.

It is not necessary to enlarge upon the first three points. (It does not matter here which of the words are Mr. Carlson's and which are the *Herald Tribune's;* I am speaking of the wilderness.) Point 4 was discussed in your July editorial. The answer to point 5 is given by the manufacturers of furniture and accessories, refrigerators, toasters, automobiles and what have you.

Point 6 reveals most clearly the mental-ity I am discussing. It does not matter if a Louis XIV dining room set is placed in a "high class residence of English design"; if a house of "English" mass, plan, roof, etc., is given Colonial details (let's have the best features of each); the eligibility of the house for financing is not thereby im-paired. Bankers and appraisers were never insistent on purity of design and catholic-

(Continued on page 12)

LETTERS

(Continued from page 11)

ity of taste. Think of all the discordant trash that has been built into conservatively financed houses! "Anything goes" has always been their motto, so far as artistic harmony is concerned—if only the dreaded modern is avoided.

It never occurs to them that, in a "period" house, there is an elemental, fundamental "lack of adaptability to the ordinary furnishings" of our daily living: to radiators, electric lighting, modern dress, cylinder locks, resilient floors—an endless list; and it never occurs to them that, slowly but inexorably, an intelligent American public is coming around to a keen realization of this.

And finally, the limit is reached when an arbitrary $4,100 penalty is called an "*obsolescence.*" Which will be obsolete sooner, a 1935 automobile or a sedan chair?

In all the pronouncements of the FHA people (bankers, brokers, contractors mostly) we find the same fetishes:

"time-tested construction methods"
"conformity to neighborhood character"
"4:1 ratio of house to lot value"
"location in a well-developed community"
"proximity to churches, schools, stores"

Translated into terms of actual houses and modes of living, we know too well what these fetishes mean. They mean the perpetuation of "quaint" rubble and rubbish outside, bad stairways, poor lighting and lack of comfort inside our houses; they mean the perpetuation of the long driveway to shovel snow from, and of that peculiar curse, the Narrow Lot, with its exorbitant assessments for wasteful sidewalks and sewers, its sounds of the neighbors' bathroom and radio in our ears, its utter lack of that most sacred of human rights, privacy.

Is the immense power of the FHA millions being used to stifle the development of American home building?

ANDRÉ HALASZ

New York City

Friedlander Plan

Forum:

I note with considerable interest the variable interest rates plan described in recent issue of THE FORUM. This plan and identical schedule were developed many months ago by Mr. I. Friedlander, who is president of the Gibraltar Savings and Building Association of Houston, Texas, and was taken up by Mr. Irons and others, after associates of Mr. Friedlander had made a public address on the rating plan at the Chicago building and loan meeting, and after publication of the Gibraltar schedule. We think very highly of Mr. Irons, but, in fairness, it was Mr. Friedlander's constructive and progressive mind which developed the whole matter, and I thought you'd want this information.

MORTON BODFISH

United States Building and Loan League
Chicago

Who Built Liberty Hall?

Forum:

I seldom write regarding published articles that lead to, perhaps, controversy, but in THE ARCHITECTURAL FORUM for September, 1934, an article on Historical American Buildings has illustrations and reproductions of Liberty Hall in Frankfort, Kentucky, under which Thomas Jefferson is designated as the architect. I do not know what Fiske Kimball would say, but I am positive that Thomas Jefferson was not the architect of that building. He might have made some designs or offered some criticism, but they hardly could have been followed. This often happened to him as an architect.

Let me point out non-Jeffersonian features of this house. One glance at it indicates Maryland influence, or Tidewater Virginia. It does not have an order, except for the door, and does not have the full entablature; has flat arched window heads; the chimneys are not his type; the belt course at the second story he never used; he never made the traditional Wren type central pavilion with pediment; doorway including paneling is different from any existing Jeffersonian doorway; plan has no recognizable Jeffersonian features; the cornice in details have features which do not appear in any Jeffersonian ones; the interior details are distinctly non-Jeffersonian. It would take documentary evidence to convince me Jefferson had anything to do with this house. What is the evidence?

In the same number, it seems most unreasonable for Dr. [Rexford] Newcomb to bring Latrobe so far forward as to his part of the University. As a historian, my good friend, Newcomb, should do a little better. It seems evident Mills taught Cornelia Randolph drafting, but that his granddaughter helped Jefferson on drafting at the University is rather stretching the facts. She used his designs and redrew them as exercises in drawing, the same as Mills used Monticello and Shadwell designs when Jefferson had Mills as a pupil.

EDMUND S. CAMPBELL

Professor of Art and Architecture,
University of Virginia

THE FORUM pointed out that the ascription of Liberty Hall to Thomas Jefferson rested upon a "family tradition," did not suggest that this was incontrovertibly proved. Jeffersonians are invited to submit further information which will tend to clarify the doubts surrounding the origin of this historical American building. Fiske Kimball, not Rexford Newcomb, who had nothing to do with the preparation of the article and who has often expressed his doubts as to the Jeffersonian origin of Liberty Hall, stated that Cornelia Randolph occasionally "Tinted and shaded" Jefferson's drawings.—ED.

Financial Survey Origin

Forum:

I think you have done a very splen job on the Financial Survey data. [Fin cial Survey of Urban Housing, AR FORUM, Aug., p. 145.] There is only point of criticism which I have and t is the apparent misunderstanding of origin of the Financial Survey.

The project was initiated by the Bur of Foreign and Domestic Commerce a was, from the beginning, a part of Real Property Inventory. After we h decided to include this phase of the stu as a part of the Real Property Invento we sought the best qualified man could find to assist us with it. This prov to be Dr. [David Lawrence] Wickens the Department of Agriculture, wh services we borrowed to take care of t technical aspects of the Financial Surv

N. H. ENGLE

Assistant Director,
Department of Commerce,
Bureau of Foreign and Domestic Commerce

Forum's Design

Forum:

I have just received my August iss of THE FORUM. The material in this iss is, as usual, excellent, but the compo tion of the magazine and the manner which you have presented the materi has set a new high. FORUM has alwa been advanced in its selection of materi and now sets the pace in presentation.

Allow me to congratulate you and t members of your staff and to express m appreciation of the service FORUM is re dering.

CHARLES T. GRANGER, JR.

Austin, Texas

To Architect Ernest Born of THE FORUM editorial staff is due full credit for the design each issue.—ED.

Architect's Asset

Forum:

I wish to reiterate the feeling I hav that THE FORUM, to the architect wh desires to keep abreast of what is happe ing in his profession, is probably his mos valuable asset.

This publication does not confine itse to reproducing photographs of complete work, but covers a wide field, of interes to draftsmen and engineers as well a architects. I have in mind the "Maste Detail Series" which should be valuable t every office. Then again, "Buildin Money" Section should have a special ap peal to all in the profession and to many i other allied lines of work, when new legis lation for building financing is being give so much study and so many changes ar occurring in that connection.

The International Section familiarize one with some of the better work being done abroad and is of decided value to the designer.

MAXWELL A. NORCROSS

Cleveland

REVERE Thru-Wall Flashing*

Revere has developed a reasonably-priced flashing that ffers important new advantages for architectural plans. Briefly, hese are the advantages:

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The parallel ribs permit a water-tight interlocking joint with 2-inch overlap to form continuous flashing without the use of solder. The ribs also allow water to drain off quickly. These ribs and embossings make an unusually tight bond between mortar and flashing, prevent all lateral movement of the wall, and allow for expansion and contraction.

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Another advantage of this flashing is its availability through the country-wide organization of Revere Distributors. The well-known Cheney Flashing is also available at Revere Distributors and is reduced in price. These two flashings answer your requirements for every type of construction. If you would like more complete details, address our Executive Offices.

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Thru-Wall Flashing shall be provided below the parapet coping for counterflashing in masonry parapets and where low roofs abut the superstructure and elsewhere as indicated on drawings. That portion in the wall shall be bonded horizontally at intervals of not more than 3 inches by a series of ribs and raised projections three-sixteenths of an inch high, with ribs extending the full width of the wall. End joints shall be interlocking and over-lapping at least 2 inches so that a water-tight joint is made without soldering. The flashing shall be Revere Flashing (Revere Copper and Brass Incorporated), and shall be formed so as not to cause any accumulation of water on the horizontal surfaces and the transverse bonding ribs shall not be drawn or stretched.

Patent No. 1,928,589

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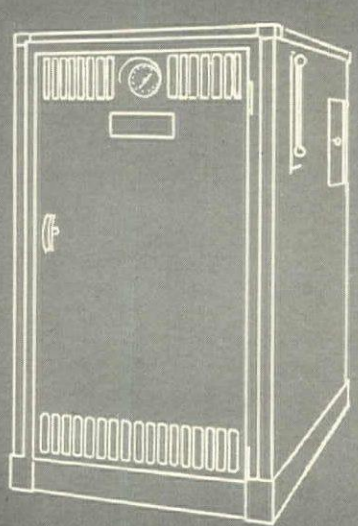
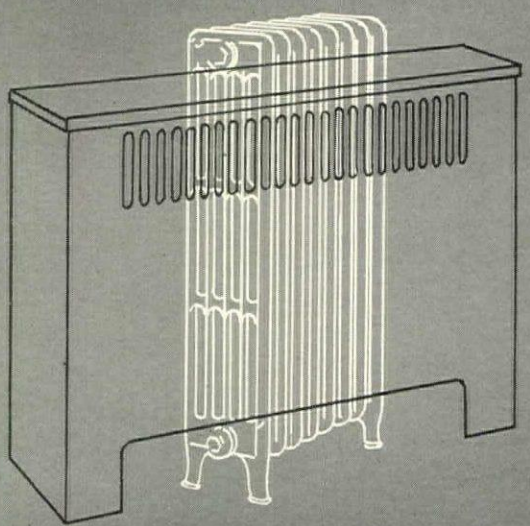


Radiators — Concealed and Free-Standing



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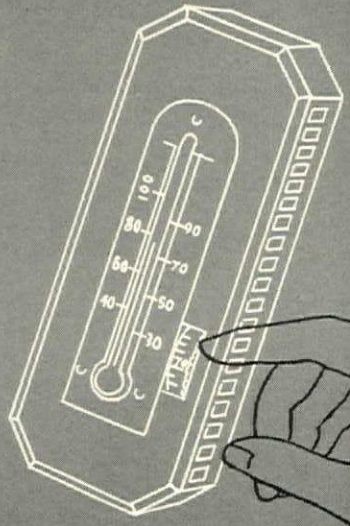

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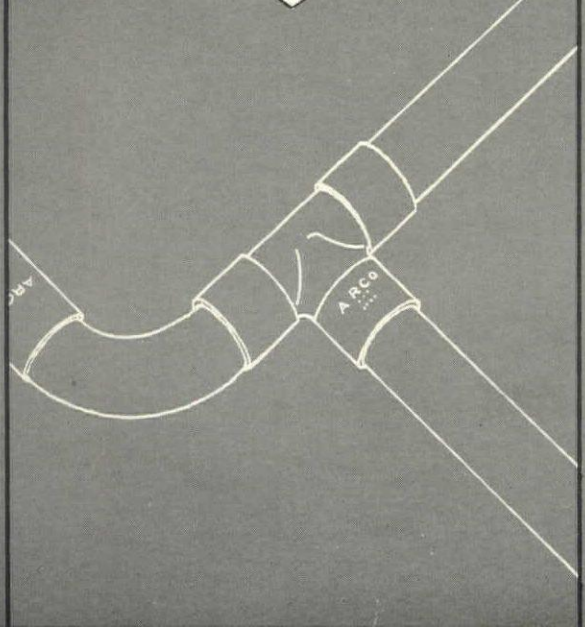

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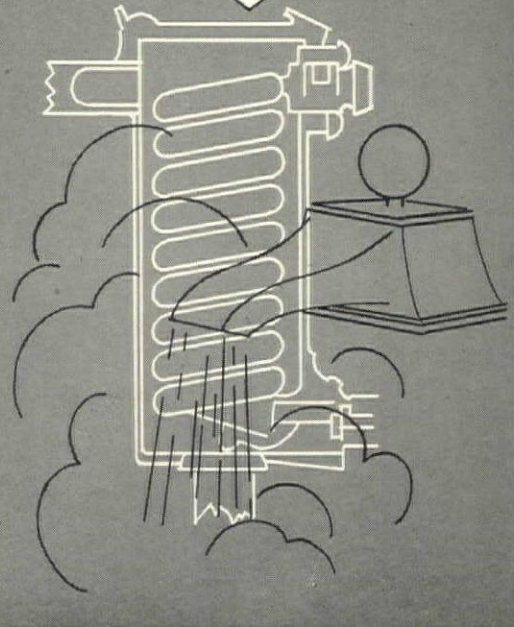
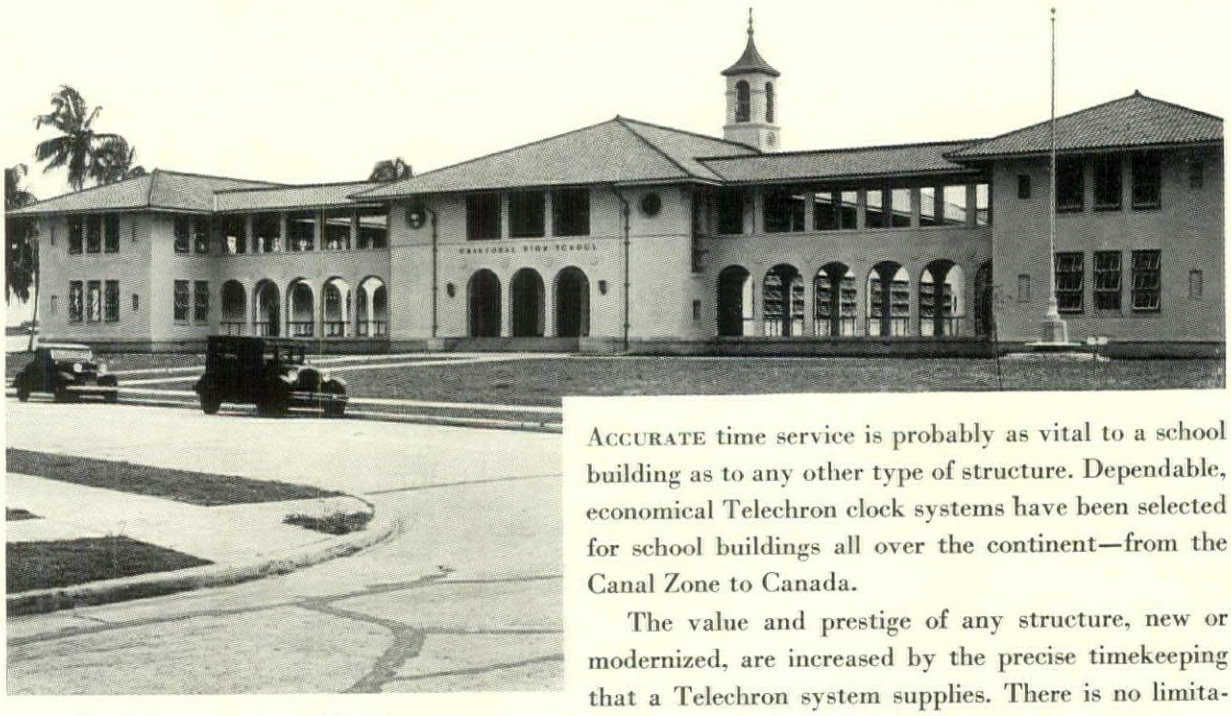


Telechron TIME

FROM THE CANAL ZONE TO CANADA



The Cristobal High School, Cristobal, Canal Zone, is equipped with an ADMR (Automatic Dual Motor Resetting) System, consisting of 42 Telechron clocks, two 4-circuit 24-hour program instruments, automatic central control and signal equipment. Installed in 1933.

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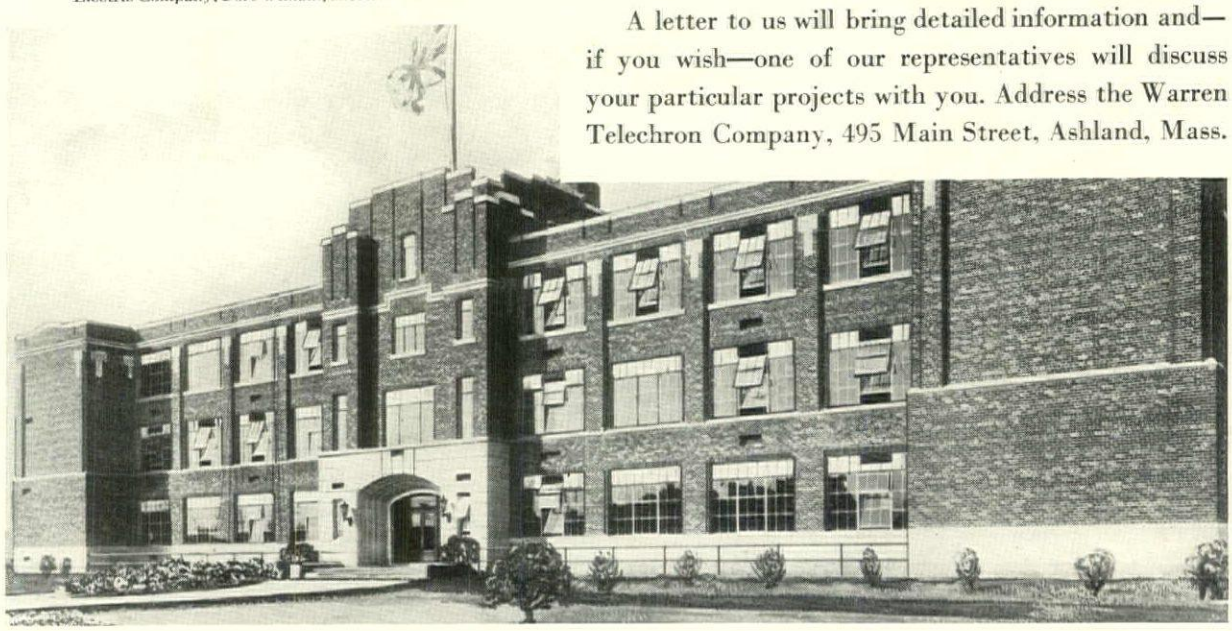
The Fort William Vocational School, Fort William, Ontario, Canada, has an ADFR (Automatic Double Frequency Resetting) System consisting of 64 Telechron clocks, a 6-circuit 24-hour program instrument and automatic central control. Installed July, 1931. Mahon Electric Company, Fort William, Electrical Contractors.



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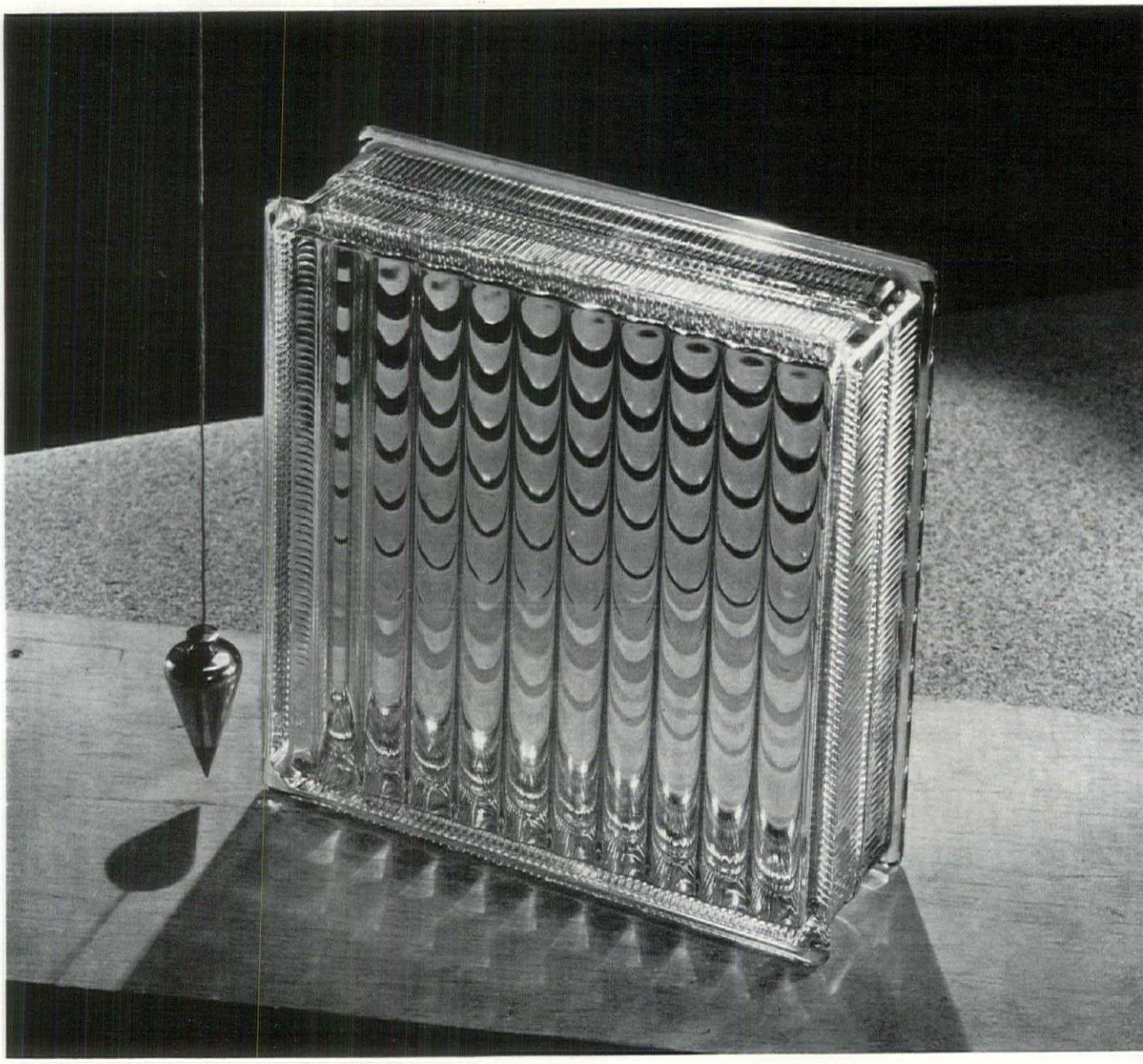
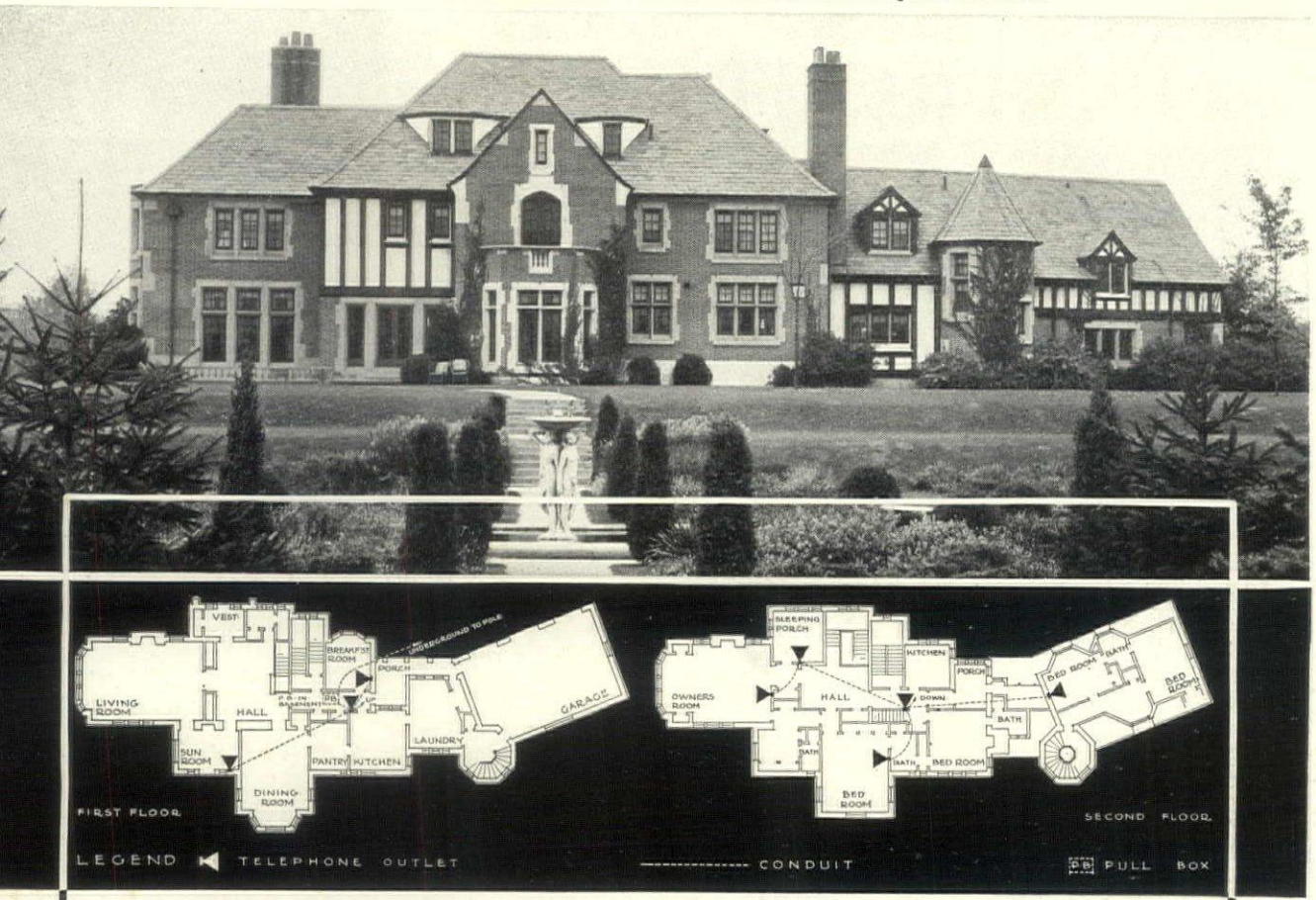


CORNING GLASS WORKS

Architectural Division, Corning, N. Y. · 718 Fifth Avenue, New York

uilt-in conduit and eight outlets provide for telephone convenience in the residence of Mrs. C. M. Kitselman, 2400 West Jackson Street, Muncie, Indiana. Fredrick Wallick, Architect, Indianapolis, Indiana.



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Incidentally, your local telephone company keeps trained telephone engineers always ready to work with you . . . on remodeling jobs or new construction . . . whether you're locating a second-floor outlet in a small house or planning an elaborate intercommunication system for a large estate. There is no charge, of course. Just call the Business Office and ask for "Architects' and Builders' Service."

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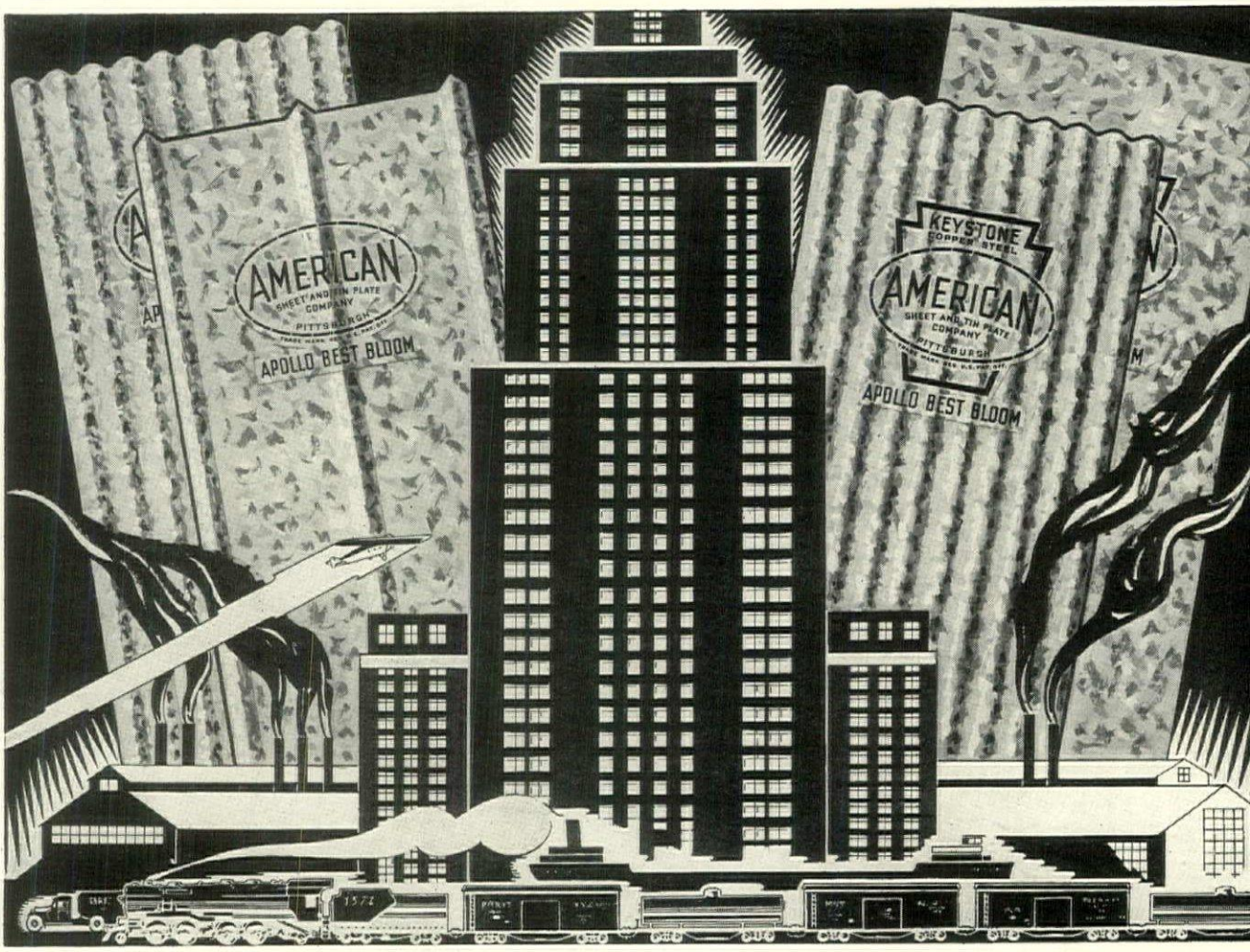

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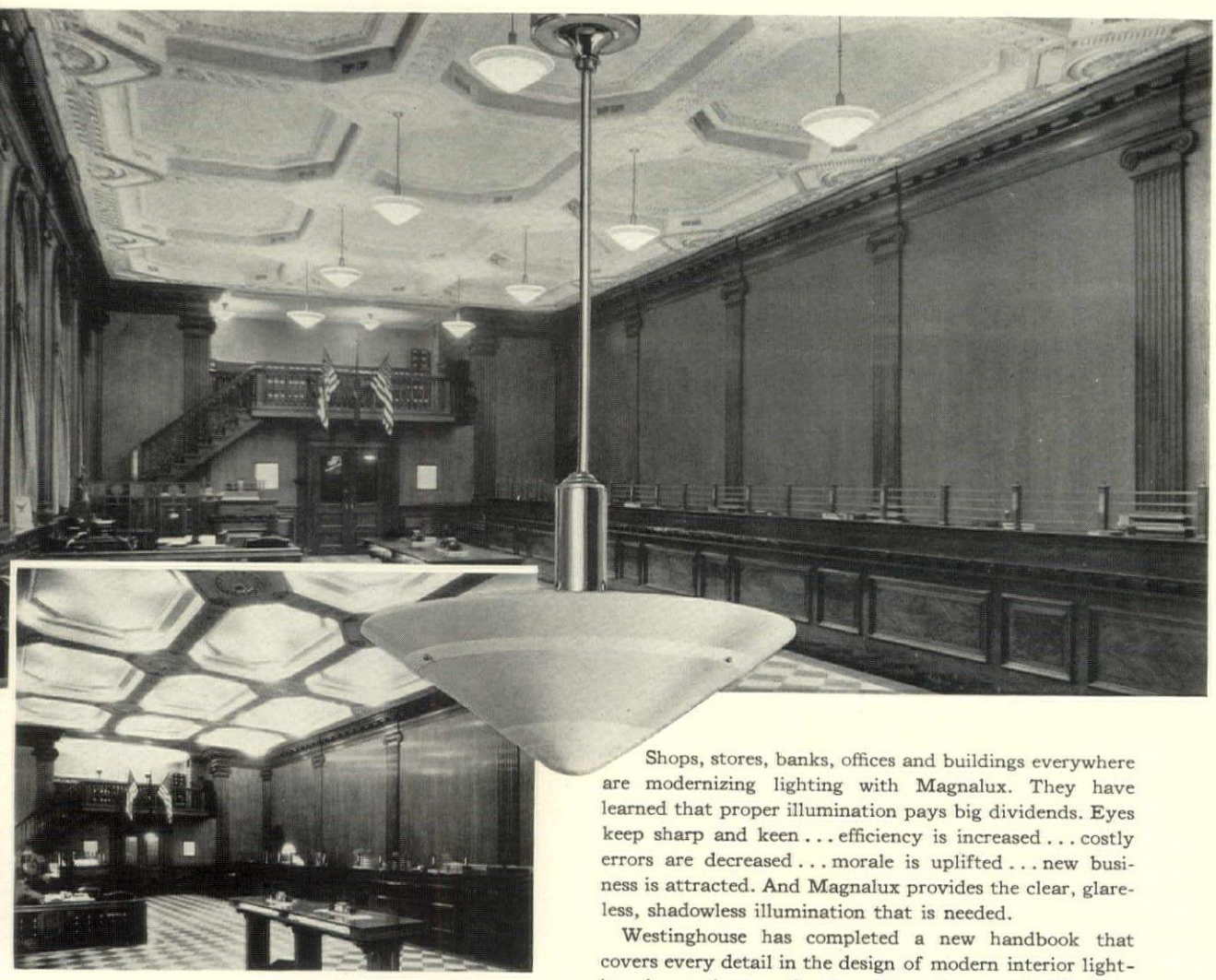


Here is the way this Banking Room looked before modernizing with Magnalux . . . 3½ foot-candles of inadequate light was replaced by 23 foot-candles of glareless, shadowless illumination.

Shops, stores, banks, offices and buildings everywhere are modernizing lighting with Magnalux. They have learned that proper illumination pays big dividends. Eyes keep sharp and keen . . . efficiency is increased . . . costly errors are decreased . . . morale is uplifted . . . new business is attracted. And Magnalux provides the clear, glareless, shadowless illumination that is needed.

Westinghouse has completed a new handbook that covers every detail in the design of modern interior lighting. A copy is yours for the asking. Also see the Westinghouse lighting section in the 1935 Sweet's Architectural Catalog, Section 28.

WESTINGHOUSE ELECTRIC & MANUFACTURING CO.
Lighting Division, Edgewater Park Cleveland, Ohio

WHEN YOU THINK OF *Lighting* THINK OF

Westinghouse

Now

A BILLIARD ROOM IN EVERY HOME

When clients ask for something unusual . . . the New Home Billiard Table is your answer

•

Architects, to meet home owner demands, are constantly seeking new ideas that add a touch of the unusual, the exciting, in house design. Entertainment must be provided . . . parties made more novel and exciting. Growing children need activity under parental supervision. The new home billiard table supplies a lasting solution to these and other home entertainment problems.

With this new table a score of exciting possibilities suggest themselves for the construction of new houses and the remodeling of old. It has beauty of color and line to harmonize with smart interiors. It has streamline strength and lightness. It has a utility top which makes billiard table suitable for table tennis, cards, buffet suppers, lunches, etc. And it is offered at a new low price of $195. Really the billiard room for any home, large or small, has arrived, in modern dress, to serve modern requirements and, best of all, at a modern low price.

5 INNOVATIO

FIRST: *Streamline Design.* Harmonizes modern home decoration. Chromium have screw adjustments to level table.

SECOND: *"I-Rest" Cloth.* Gray-Purp color. Perfected by Faber Birren, w famous color expert. Neutral to eye ne Soft and restful as twilight. Makes the fect background.

THIRD: *Light-Weight Table Bed.* Set in tion by two people in 6 minutes. Rese perfected new metals and new metho construction. The heavy, bulky, slate be old fashioned tables now obsolete.

FOURTH: *Utility Top.* Fits neatly over making table suitable for table tennis, c buffet suppers, etc.

FIFTH: *Low Price.* $195. Billiards can no enjoyed in every home at little expense.

The Brunswick-Balke-Collender Co.
623-33 South Wabash Ave.
Chicago, Ill.

Gentlemen: Kindly send me complet information on the New Brunswic Home Billiard Table.

Name.....

Street.....

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

PUT ON THE UTILITY TOP AND HAVE

The finest table tennis ground you ever played on.

An ideal party card table or buffet supper table.

THE BRUNSWICK·BALKE·COLLENDER CO.

623-33 S. Wabash Ave., Chicago, Illinois • Established 1845

Branches and Distributors in Principal Cities of the United States

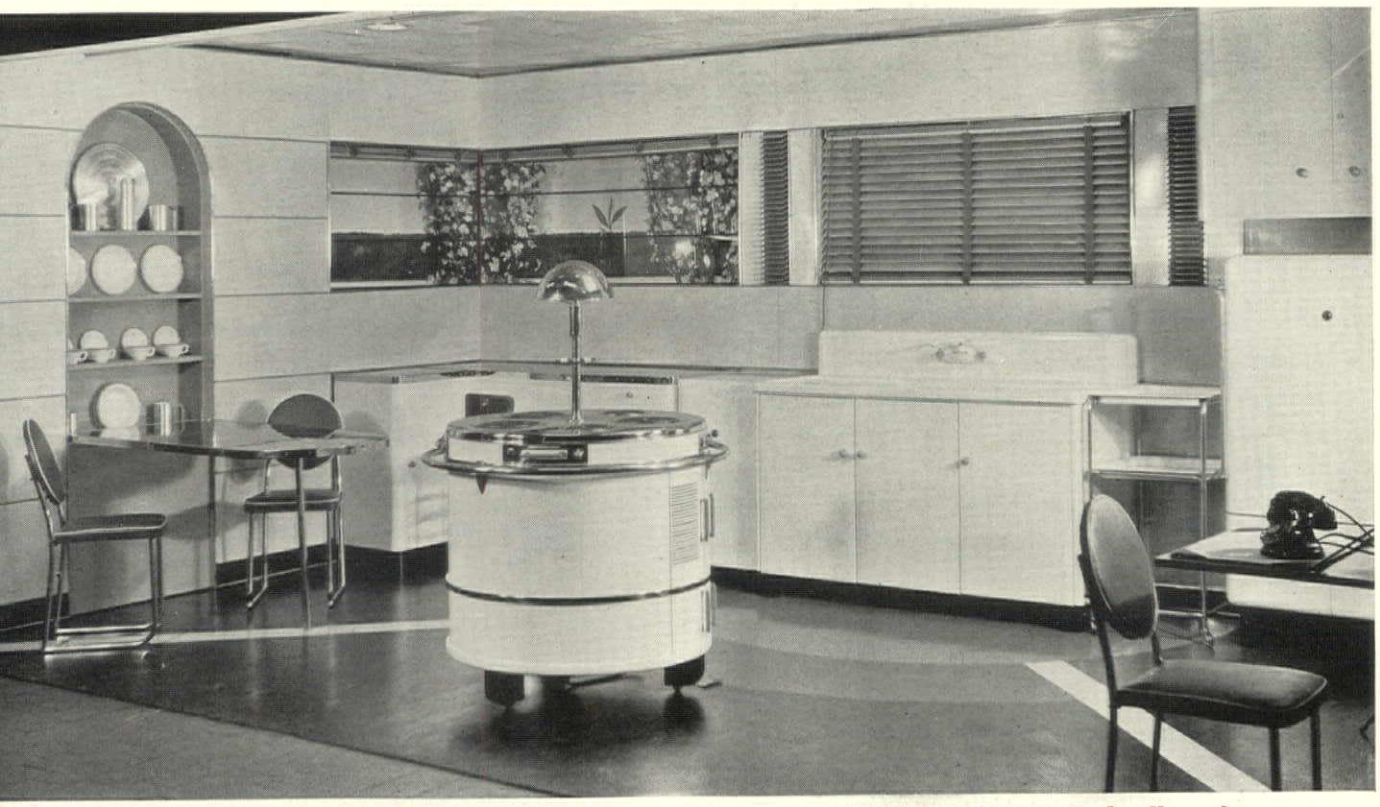
RAWN STEEL TUB, TOILET, LAVATORY, CABINET

Automobile production methods enter the building field, creating light-weight, drawn steel bath and kitchen fixtures in new designs.

ABOUT a year ago the Briggs Manufacturing Company cast an eye over the potentially rich building field and decided that its giant presses could squeeze out sinks as cheaply and quickly as they did automobile bodies. The result was a new line of plumbing ware, 65 per cent lighter than similar products of cast iron, with the consequent advantages of lower shipping and installing costs. The sinks were pressed from sheets of crystal-etched Armco Ingot Iron, and covered with a porcelain enamel finish claimed to be proof against acids, scratching and burning. The sinks were supported on chromium tubular legs, furnished in a variety of colors, and except for a few models that went in for fake mother of pearl, they were attractive and in good taste.

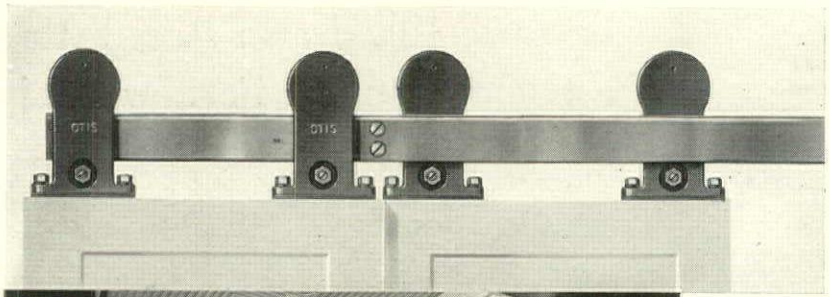
Recently, at the Plumber's Show in Chicago, Briggs showed how far it had progressed with its new line of products. Two model rooms were displayed, a kitchen and a bathroom, entirely outfitted with the company's stamped-out fixtures, and in addition the rooms themselves were made of the same material. When these metal wall panels, in addition to the existing line of fixtures, go into production, Briggs will have on the market what are virtually two completely prefabricated rooms. The lavatory has a cabinet under, fitted out with glass shelves for use in place of the usual medicine cabinet. A radically different toilet design is included in the line.

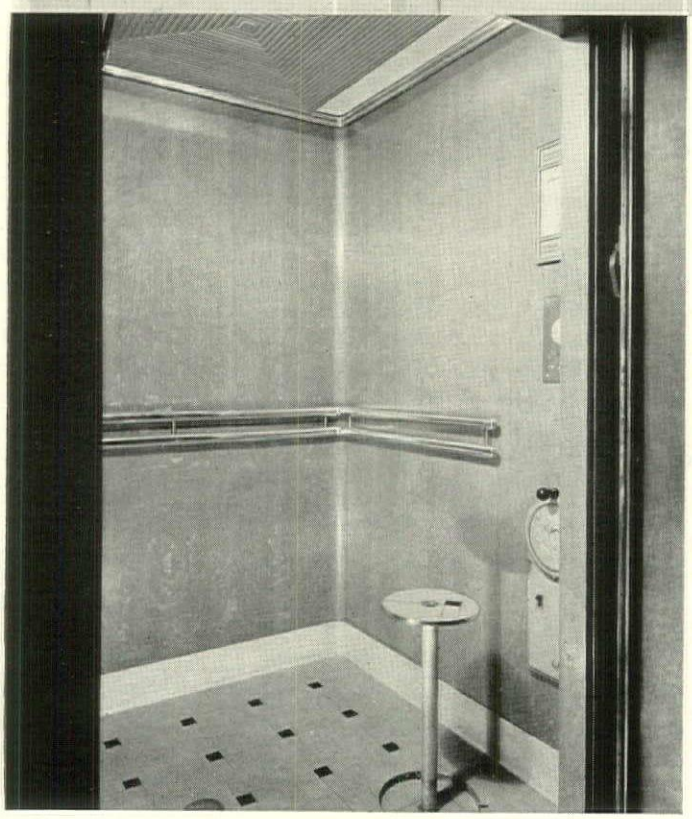
(Continued on page 48)

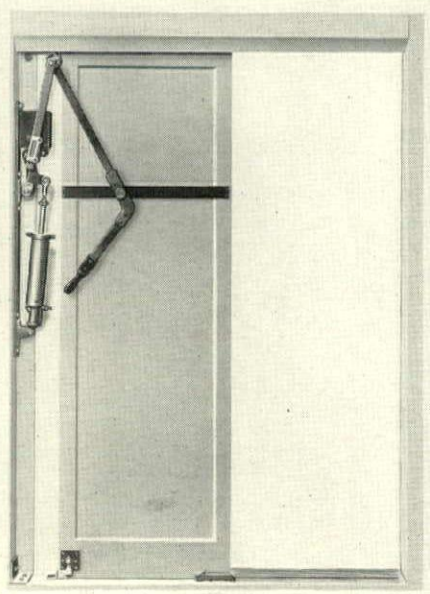


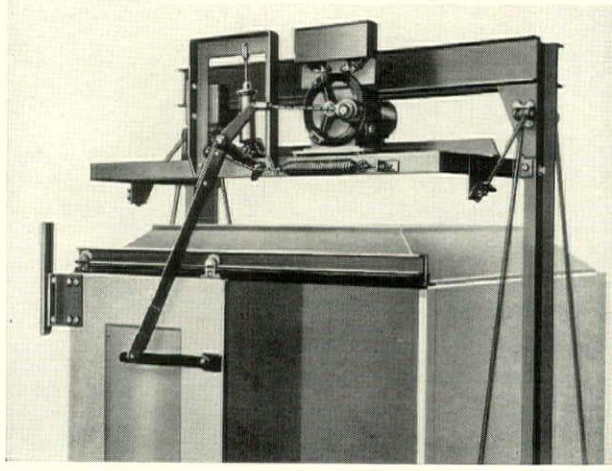
THE KITCHEN OF TOMORROW." The sink and cabinets are available. The circular range, refrigerator and wall panels not yet.

Elevator cars, car doors, door hanger and door-operating devices by Oti









WHEN you buy an Otis Elevator, you buy one of the finest pieces of machinery that money can buy. Its quality is recognized everywhere.

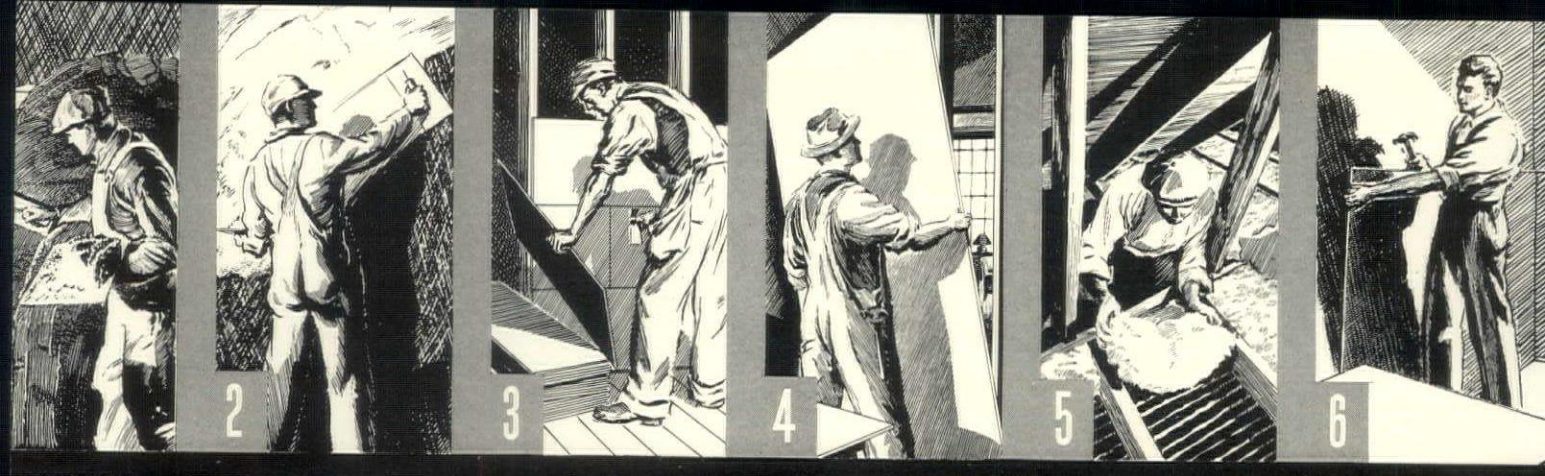
In order to make sure that not only the elevator machinery but a complete elevator installation of Otis quality is available, Otis has manufactured cars, car doors, door hangers, and door-operating devices for a number of years. Into this apparatus goes the same quality of materials and workmanship as into the Otis Elevator itself.

In designing cars and car doors not only quality of workmanship but also styling and design are important. And Otis craftsmen have developed a wide variety of modern treatments. From these you may choose a design that harmonizes with the architectural treatment of your building. Or, if you wish, you can have any special design executed. Cars ar available in metal, wood and metal, or all wood.

We wish to mention also that we make a wid range of door hangers and that in designing thes we have made every effort to minimize noise an turn out a product that will give lasting service Safety and silent operation are two important fea tures of Otis door-operating devices.

Your local Otis office will be glad to furnish complete details on any of the apparatus mentioned above. And may we suggest that you get an Oti proposal before buying any of this equipment fo either an elevator installation or an elevato modernization project?

Otis Elevator Company



You can now specify USG QUALITY
in all of these materials

USG MATERIALS AVAILABLE FOR YOUR SPECIFICATION

1-Plasters
- Red Top Cement Plaster
- Red Top Wood Fiber Plaster
- Red Top Prepared Plaster
- Bondcrete Plaster

2-Plaster Finishes
- Red Top Gauging Plaster
- Red Top Trowel Finishes
- Red Top Float Finishes
- Red Top Keene's Cement
- No. 1 Moulding Plaster
- Oriental Interior Finish
- Oriental Exterior Finish

3-Laths
- Rocklath
- Insulating Rocklath
- Weatherwood Insulating Lath
- Red Top Metal Lath

4-Wallboards
- Sheetrock, the Fireproof Wallboard
- Quarter-Inch Sheetrock
- Wood Grained Sheetrock
- Sheetrock Panelwood
- Sheetrock Tile Board
- T & G Sheetrock
- Sheetrock Joint Systems
- Red Top Fiber Wallboard
- Tiger Fiber Wallboard

5-Insulation
- Weatherwood Board
- Weatherwood Lath
- Weatherwood Plank
- Weatherwood Tile
- Weatherwood Roof Ins.
- Red Top Insulating Wool
- Thermofill (Dry Fill Insulation)
- Insulating Sheetrock
- Insulating Rocklath

6-Hardboards
- Weatherwood Hardboard
- Weatherwood Structoboard
- Weatherwood Densboard

7-Lime
- Masons Limes
- Finishing Limes
- Chemical Limes

8-Steel Products
- Red Top Metal Lath
- Red Top Metal Lath Accessories
- Red Top Metal Arches
- Red Top Basement Sash
- Red Top Coal Doors
- Red Top Expanded Metal
- U S G Metal Roof Decks

9-Paint
- Texolite Casein Paste Paint
- Duracal Washable Calcimine
- Textone Plastic Paint
- Cementico Cement Paint

10-Asphalt Roofing
- Asphalt Roofing
- Asphalt Shingles
- Roof Coatings
- Roof Cements
- Felts and Building Papers
- Built-up Roofs

11-Sound Control
- Acoustone Acoustical Tile
- Quietile Fiber Acoustical Tile
- Perfatile Metal Acoustical Tile
- U S G System of Sound Insulation

12-Gypsum Fire Proofing
- Pyrobar Partition Tile
- Pyrobar Roof Tile
- Pyrofill Poured Decks
- Pyrobar T & G Floor and Roof Tile
- Pyrobar Beam and Column Covering

Many new products have been added and many new mills put in production on USG Building Materials during last five years.

• This illustration will suggest materials you have not previously associated with U S G manufacture. Many have been added in the last five years — new insulation plants, new roofing plants, a felt mill, a new hardboard factory, a new fiber board factory, a new lime plant; new equipment for the manufacture of Insulating Sheetrock, Insulating Rocklath and Wood Grained Sheetrock. A new wool has been added to the U S G group of materials —in bat, bulk, strip and nodulated form.

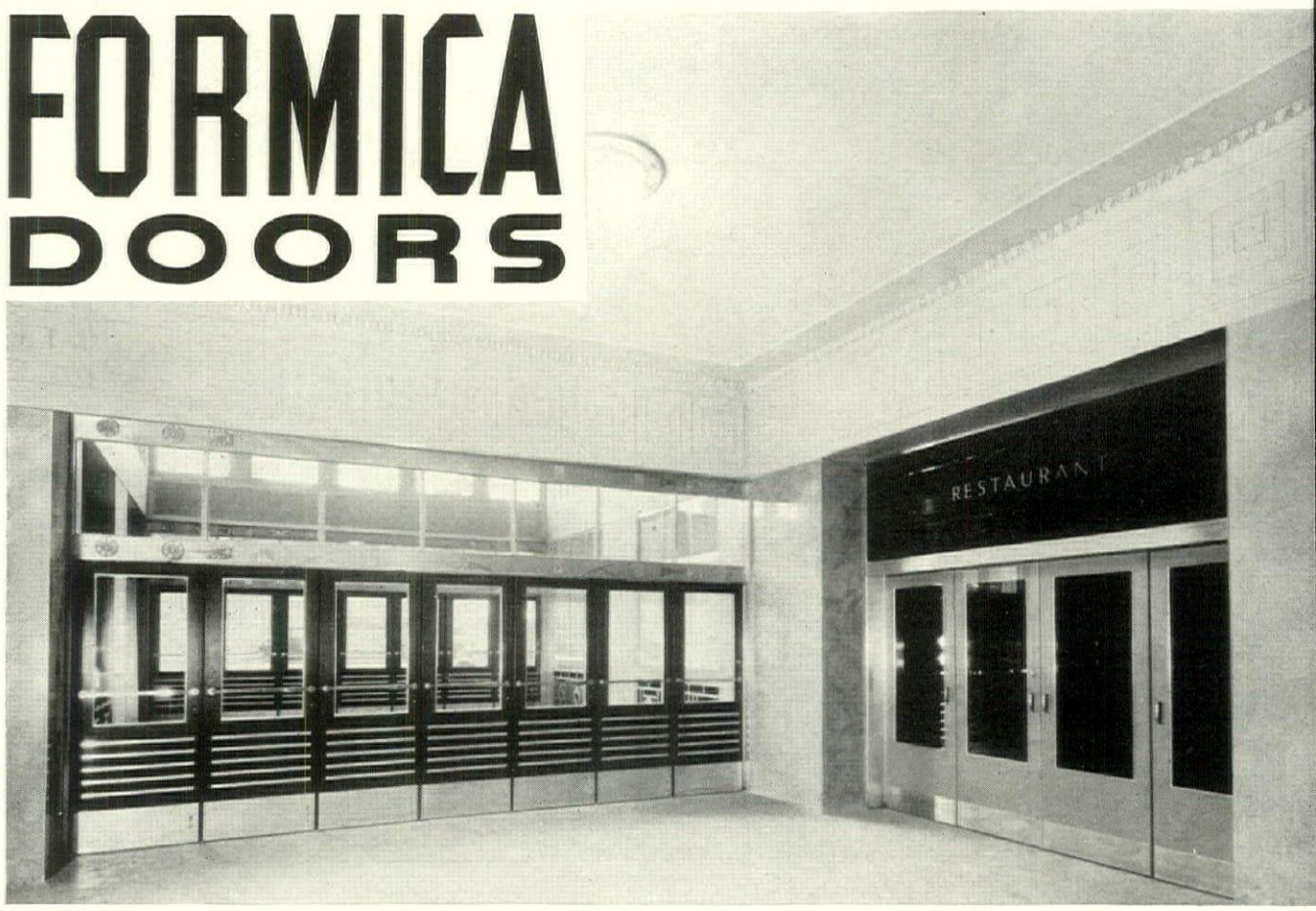
These and other U S G Materials are recommended on the basis that every material of U S G quality used in conjunction with other materials contributes measurably to the success of those other materials. A good plaster finish is not possible without a good plastering base. This is an argument for Rocklath, Insulating Rocklath, Red Top Metal Lath, Red Top Insulating Lath the U S G Resilient Plastering System.

The same logic applies to other U S G Materials. Each additional one used in a particular construction adds to the certainty of performance of the others, because all are made to a definite U S G quality standard.

USG

UNITED STATES GYPSUM COMPANY

FORMICA DOORS



THRUOUT THE PENN. STATION AT NEWARK!

FORMICA doors in red and gray refinishing stock were specified for all of the main exits and entrances of the new Pennsylvania Station at Newark, N. J. Similar doors were also installed about a year ago in the Pennsylvania Station, New York. They are made with a type of Formica sheet that is uniform in color and texture throughout its entire thickness, and will therefore maintain its original appearance indefinitely in spite of vigorous wear. These doors were made by veneering Formica sheet on wood cores. Steel fireproof doors can also be surfaced with Formica for locations where fire regulations require it. Architects are making use of Formica for table tops, counters, wall covering and many other uses. Write for the facts.

THE FORMICA INSULATION CO.

4672 SPRING GROVE AVE.
CINCINNATI • OHIO

FORMICA

FOR BUILDING PURPOSES

This Shows the BEAUTY..

Above—Interior view of Kansas City, Mo., National Training School for Deaconesses and Missionaries. Entire interior painted with Dutch Boy White-Lead and Lead Mixing Oil by painting contractor, E. C. Eades. School authorities reported well pleased with the job.

Right—Hotel San Pablo, Oakland, Calif. Exterior painted with Dutch Boy White-Lead and Lead Mixing Oil. Owner writes, "The appearance passed all our expectations and the paint is standing up well after an unusually severe winter."

..this proves the DURABILITY

of a vastly improved FLAT PAINT

● Gentlemen...we give you the flat paint of your dreams! A flat paint so rich and beautiful you'll want it for your finest interior jobs...and at the same time so durable it stands up outside, where it is used to seal and waterproof stucco, concrete, brick and stone.

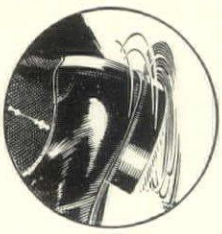
Its resistance to the weather outside gives you a good idea how it withstands repeated washing and hard wear inside. You never saw a flat finish that is harder to soil permanently. Ink stains, pencil marks, finger smudges, grease and dirt can all be completely removed.

All your painter needs to produce this superior "flat" is Dutch Boy White-Lead and its special companion product... Dutch Boy Lead Mixing Oil.

This combination not only gives extraordinary durability but a finish with the characteristic beauty of a white-lead "flat."

Other advantages: Easy to mix—just add Lead Mixing Oil to white-lead. Levels out smooth and even. Requires no stippling. Has excellent sealing qualities. Hides fire-cracks. Brushes with the ease and high spreading rate of all white-lead paint. Gives a white-lead "flat" at a reduced cost per gallon.

STANDS THE HEEL TEST!



You can actually grind your heel against a Lead Mixing Oil job that is thoroughly dry and then clean off the dirt without a trace of damage.

NATIONAL LEAD COMPANY

111 Broadway, New York; 116 Oak St., Buffalo; 900 W. 18th St., Chicago; 659 Freeman Ave., Cincinnati; 820 W. Superior Ave., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany Street, Boston; National Lead & Oil Co. of Penna., 316 Fourth Avenue, Pittsburgh; John T. Lewis & Bros. Co., Widener Bldg., Philadelphia.

DUTCH BOY *Lead Mixing Oil*

..for use with

Stainless Steel

FOR MODERNIZING STORE FRONTS

● The rustlessness and tarnish-resistance of stainless steel trim keeps the store face clean and attractive. Stainless steel is uniform in composition from its glistening front to its unfinished back. It does not pit, chip, or peel. It can be washed as easily as glass. No polishing and no protective coating are required to maintain its gleaming beauty. Modernization of store fronts with this metal brightens the customer's outlook as well as the store's... For twenty-nine years Electromet has pioneered in the field of ferro-alloys and alloy steels. The information on stainless steels and other alloy steels thus developed, together with the further help of Electromet Engineers in selecting suitable materials for your designs, is yours for the asking. A request today on your letterhead will bring it without obligation.

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
CARBIDE and CARBON BUILDING
30 EAST 42nd ST., NEW YORK, N. Y.

Electromet
Ferro-Alloys & Metals

THIS IS THE ROUND-CORNER ERA

"... clean, gleaming white"

Not so long ago, the editor of a leading women's magazine declared a new declaration of independence aimed at a long-suffered and unnecessary household evil—the square corner, that dirt-collecting, hard-to-clean spot in cupboards, stair cases, and at the baseboard. Much progress has been made in establishing the round corner principle. Today Crane Co. presents the housekeeper with round corners in another place where they are badly needed—the laundry tub.

The new Crane Porcelain (all clay) Laundry Tub, its glistening white, hard, glasslike surface impervious to strong alkalies, dyes, and acids, has well-rounded corners, inside and out, which make it as easy to clean as a dinner plate. Its all-clay composition eliminates all danger of rust. One-piece construction, in both single and double styles, is a further aid in cleanliness. Supporting frame is angle iron, but porcelain or painted cast iron legs are also available. The supply fixture is a new Crane development, precisely made, durable, and located above tub rim to prevent back siphonage.

At a price only slightly higher than cement tubs, the new Crane Porcelain Laundry Tub brings cleanliness and fine appearance to the laundry far in excess of the slight additional cost.

CRANE PLUMBING AND HEATING MATERIALS

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH ST.

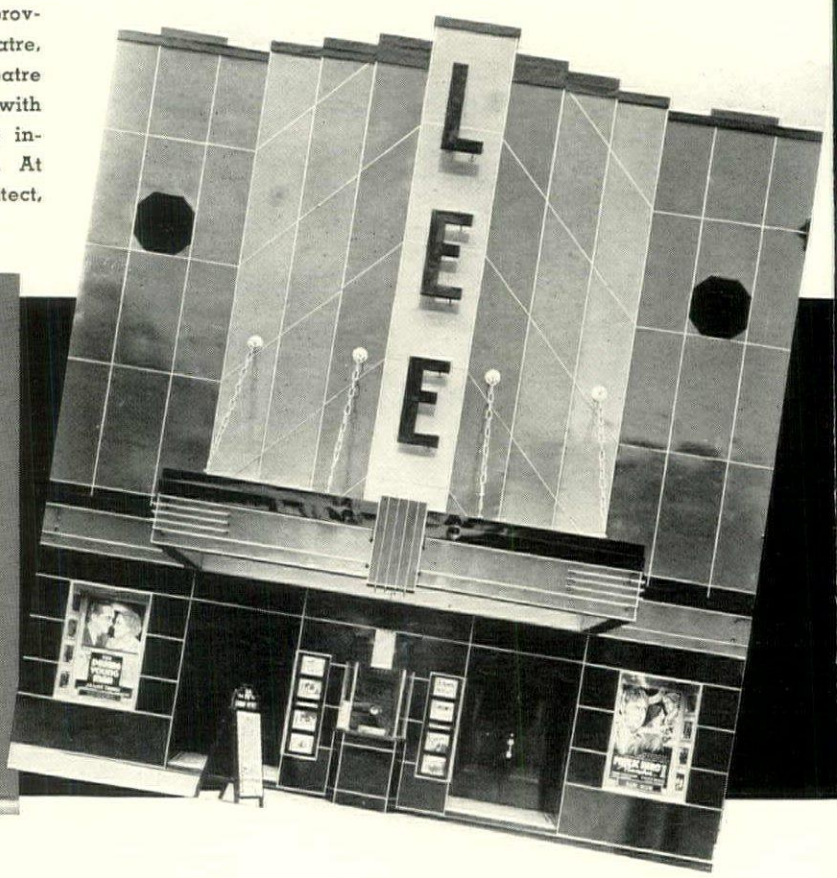
Branches and Sales Offices in One Hundred and Sixty Cities

SHOWING MISSOURIANS

THE BEAUTY AND VERSATILITY OF

GENUINE MASONITE TEMPERED PRESDWOOD

Genuine Masonite Tempered PRESDWOOD is proving a real box-office attraction for the Lee Theatre, Clinton, Mo. Modernizing the front of the theatre with 3/16" Tempered PRESDWOOD, decorated with unique color scheme, produced an immediate increase in patronage. Below: before alteration. At right: after alteration. Robert O. Boller, architect, Kansas City, Mo.



THIS one board offers an amazingly wide variety of uses . . . and ways of saving money. • For instance, if smooth-surface concrete is wanted, forms of Genuine Masonite Tempered PRESDWOOD produce it . . . without any finishing treatment. If walls and ceilings are to equal the beauty of fine panel-woods, the natural warm-brown surface of Masonite Tempered PRESDWOOD achieves the result. If the architect wants a surface for displaying ultra-modern decorative schemes and devices, he will find it in Genuine Masonite Tempered PRESDWOOD. For bathrooms, halls, sun-rooms and kitchens—gleaming, realistic tile effects can be had with Genuine Masonite Temprtile, enameled in desired colors. • Genuine Masonite Tempered PRESDWOOD comes in 1/8", 3/16", and 1/4" thicknesses. It is grainless . . . moisture-resisting. Will not warp, chip, split or crack. It can be varnished, painted or enameled with any standard application. Can be installed by regular carpenter . . . decorated by regular painter. It is light and durable. Easy to handle. • Write us today for a sample of Genuine Masonite Tempered PRESDWOOD. Masonite Corporation, 111 W. Washington St., Chicago, Ill.

Genuine **MASONITE** TEMPERED **PRESDWOOD**

AND INSULATION QUARTRBOARD CUSHIONED FLOORING TEMPRTILE STRUCTURAL INSULATION

MIRAMAR SCHOOL
Miami, Florida
Mayer & Dobson, Architects

DONOVAN *awning type windows* *by* TRUSCON

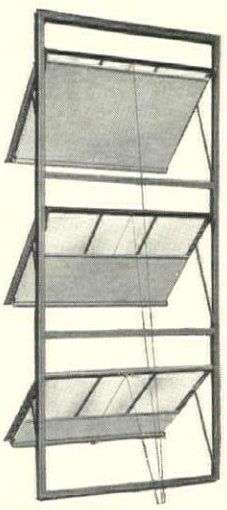
Designed to Exceed The "Ten Fundamental Requirements"

10 Fundamentals For School Windows

1. Must admit maximum fresh air and daylight.
2. Easily operated.
3. Easily and inexpensively shaded.
4. Weathertight under severe conditions.
5. Inexpensive to purchase.
6. Permanent in construction.
7. Low in maintenance cost.
8. Easy to clean.
9. Adaptable to screening.
10. Attractive in appearance.

It would be over conservative to say merely that Truscon has met the ten rigid requirements now regarded as essential to school window efficiency. In its Donovan Awning-Type Window Truscon has far exceeded these. And school buildings throughout America equipped with this advanced type of window bear witness to this fact continuously. A point by point comparison will indicate clearly why Truscon Donovan Awning-Type Windows should be your choice for any school construction you have in mind.

Write for information and details on Donovan Awning-Type Window by Truscon



Permits 100% ventilation with drawn shades—non-draft ventilation. Permits proper shading. Eliminates glare from sun but admits sufficient natural daylight.

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

BOOKS

A half million consumers set up their own architects' office to design shops, factories, housing, packages, furniture . . . . A new study of present-day hospitals from Italy . . . . The A.I.A. considers accounting in relation to the architect's problems.

SWEDISH COOPERATIVE WHOLESALE SOCIETY'S ARCHITECTS' OFFICE. Kooperativa Förbundets Bokförlag, Stockholm. 148 pp., photographs and plans, 7 color plates, 8½ x 11½, $2.50.

The various cooperative groups that exist in Sweden today have grown to an importance in the national economic set-up that would be difficult to overestimate. Like the chains in America, they are based on the principle that large-volume purchasing reduces buying costs; unlike the chains, however, they pass on these savings to the consumers who are members. The Swedish Cooperative Wholesale Society, as its name implies, is primarily a buying and distributing organization, and through its 750 retail affiliates it serves a consumer membership of over 550,000, directly affecting a large portion of Sweden's 6,000,000 population. When it finds that the price of a product is too high, or the quality not high enough, it steps out of its rôle of wholesaler and builds its own factories. At Kvarnholmen, shown in the drawing on the opposite page, it has not only its flour mills, macaroni and hard bread factories, but also housing for the workers, and facilities for recreation. As a member of the Scandinavian Cooperative Wholesale Society it can pool its needs for tea, coffee, and other foreign produce with those of Norway, Denmark, and Finland, and take advantage of the savings made possible.

As the Society grew, its building activities took on such proportions that it seemed advisable to establish an architects' office to take care of them; this was done in 1924. In the ten years that have passed the office has erected and fitted out 2,000 shops, 600 business buildings, 2,000 apartments, and 30 warehouses and factories. It has remodeled 500 business premises, designed packages, labels, furniture, and delivery truck bodies. The quality of the work is high; no better work is being done in Sweden, or anywhere else for that matter. In the early days of the office's activities it was found that the retail stores were not well designed, goods were badly displayed, and one of the first things done was to study intensively the problem of the retail store. The findings were incorporated into a standard set of drawings, with certain variations for different types of stores, and these standards set up were subject to revision at any time. So many improvements were made as new experience was gained that by 1931 the original set was scrapped and a new one adopted. Since shops are continually being built, two mills are on yearly contracts to supply equipment, and the savings made in this way are passed on to the retailers. No compulsion has ever been brought to bear on retail members to make use of the architects' office, but so obvious are its advantages that demands for its services have increased steadily. The office is divided into ten departments, each dealing with a separate branch of the Society's building activities; each department is under the direction of an architect. In charge of the entire group is Eskil Sundahl, a man whose high professional standing in Sweden is unquestioned. His ten subordinates enjoy a remarkable degree of liberty and responsibility, functioning as a group only when major questions of an economic or technical nature come up.

This book—printed, incidentally, in the Society's plant—deals with the work of these men. That this work is remarkably good is apparent instantly. Country stores look like what they are; simple wood frame construction is characteristic of nearly all of them, and they are modern in that they are clean, rational, and unencumbered by "architectural" motives. As arrangements of selling space they are models that might be followed with profit. The building of factory groups at some distance from town led to a study of housing for workers, and this in turn has led to experimental production of cheap well-designed furniture, glassware, and other household goods. All of these expanding activities are represented in the book. One criticism might be made: the compilers, perhaps assuming that the Swedish cooperatives are as well known in England and America as they deserve to be, have omitted much that would have been of interest. The outline of the cooperative organization might have been treated more fully; stock drawings of shops and shop equipment might have been reproduced in larger numbers, and much material of a technical nature, valuable because of the immense amount of research and experimenting behind it, might well have been included. But these are after all slight omissions, and the book as it stands is an excellent, if tantalizing, record of some of the finest commercial and industrial work that is being done in the world today.

OSPEDALI, by Bruno Moretti, Ulrico Hoepli, Milan, Italy. 91 buildings with illustrations. 292 pp., 300 plans and other drawings. 9 x 11, 120 lire.

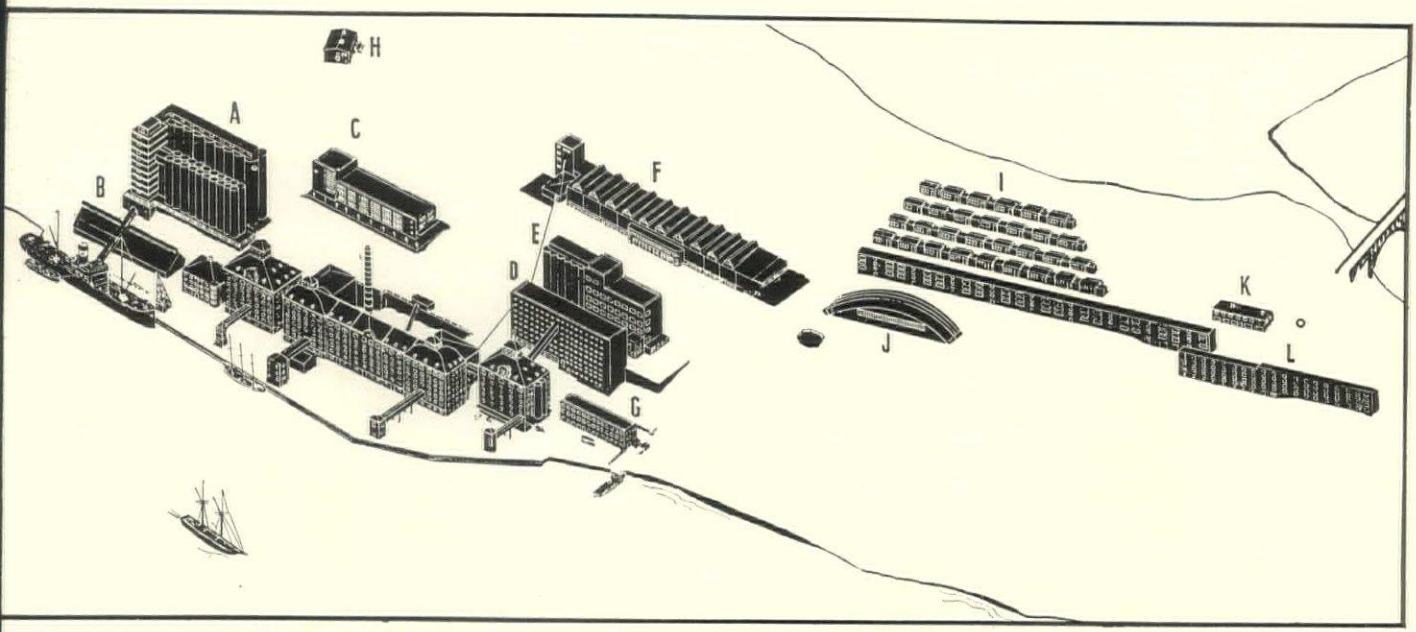
This new book on hospitals is the second of a series dealing with present-day buildings. It has a preliminary section devoted to the various problems confronting the designer of hospitals, discusses many types with the aid of comparative plans, summing up with considerable completeness the available data. America is represented by the Medical Centers of New York and two or three other large hospitals. The European structures include some of the happiest expressions of modern architecture which have yet been seen. Cantilevered balconies and large expanses of glass characteristic of reenforced concrete construction are frequently and fittingly used, and many of the planning problems have been solved with great ingenuity. Italy is, of course, very completely represented, and in general most creditably.

The completeness with which the subject is presented, and the advantages of having the latest examples of hospital design throughout the world collected in one volume make it well worthy of serious consideration. It contains a bibliography for those who wish to go into the subject more completely, and is well indexed.

MANUAL OF ACCOUNTING FOR ARCHITECTS, by The American Institute of Architects. Standard Document No. 978. 9¼ x 6½.

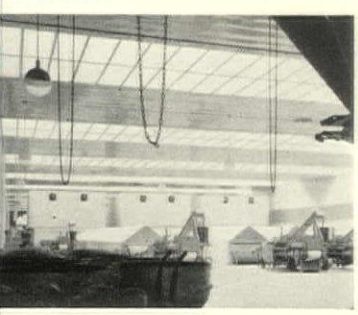
This book has been prepared by practicing architects, and follows closely the standard textbooks on the subject. Its purpose is to indicate the procedure of keeping accounts and to describe a practical system which will record the usual financial transactions of the architect's practice and will present essential cost data. It deals very briefly with the theory of accounting, restricting itself for the most part to the method of keeping the books. A most valuable part of this manual is the series of bookkeeping and accounting forms included, covering all the forms of which the architect is likely to have need.

As a service to interested readers, THE ARCHITECTURAL FORUM *will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable* to THE ARCHITECTURAL FORUM.

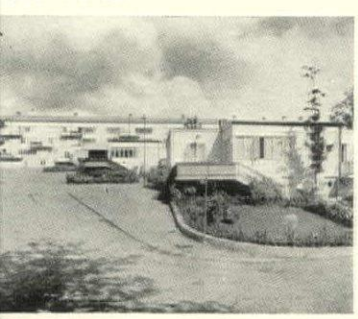


VARNHOLMEN: FACTORY AND HOUSING GROUP OUTSIDE OF STOCKHOLM

STORE



ACTORY



OUSES

LASS

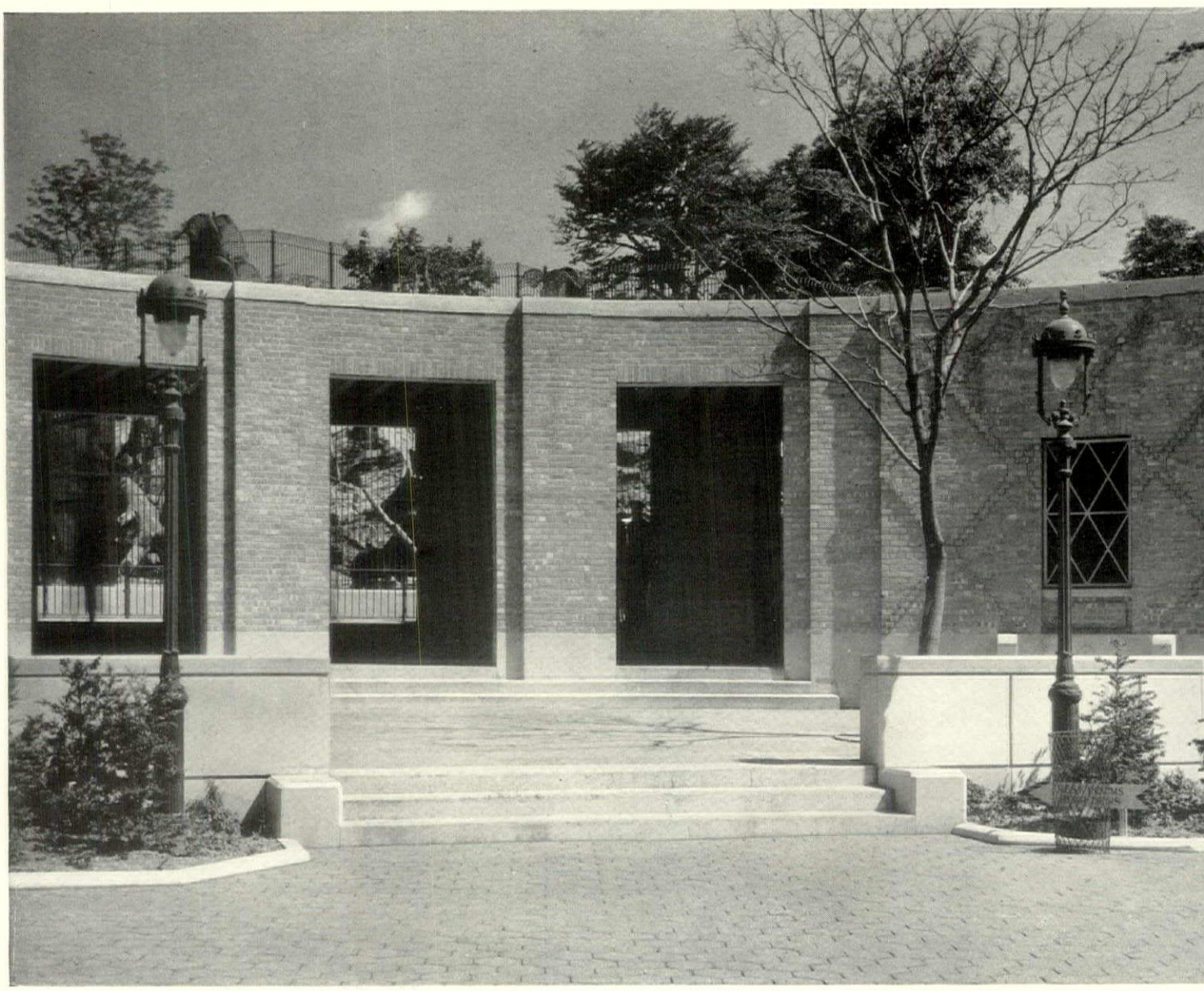
THE NEW CENTRAL PARK

ZOO

DEPARTMENT OF PARKS, CITY OF NEW YORK, ARCHITECTS

AYMAR EMBURY, II, CONSULTING ARCHITECT

GILMORE CLARKE, CONSULTING LANDSCAPE ARCHITECT



All photos, R. V

Two considerations governed the design of the New Central Park Zoo in New York City. First was the presence of the old Arsenal; second was the necessity of using relief labor, which meant that only basic materials could be used. Since brick is one of the cheapest of basic materials, the problem of harmonizing the new group with the Arsenal was automatically solved, and the result is a series of low, plain buildings, contrasting agreeably with the jagged skyline of mid-town New York. Work began in February of 1934, and by December of the same year the project was completed, something of a record for work done with relief labor.

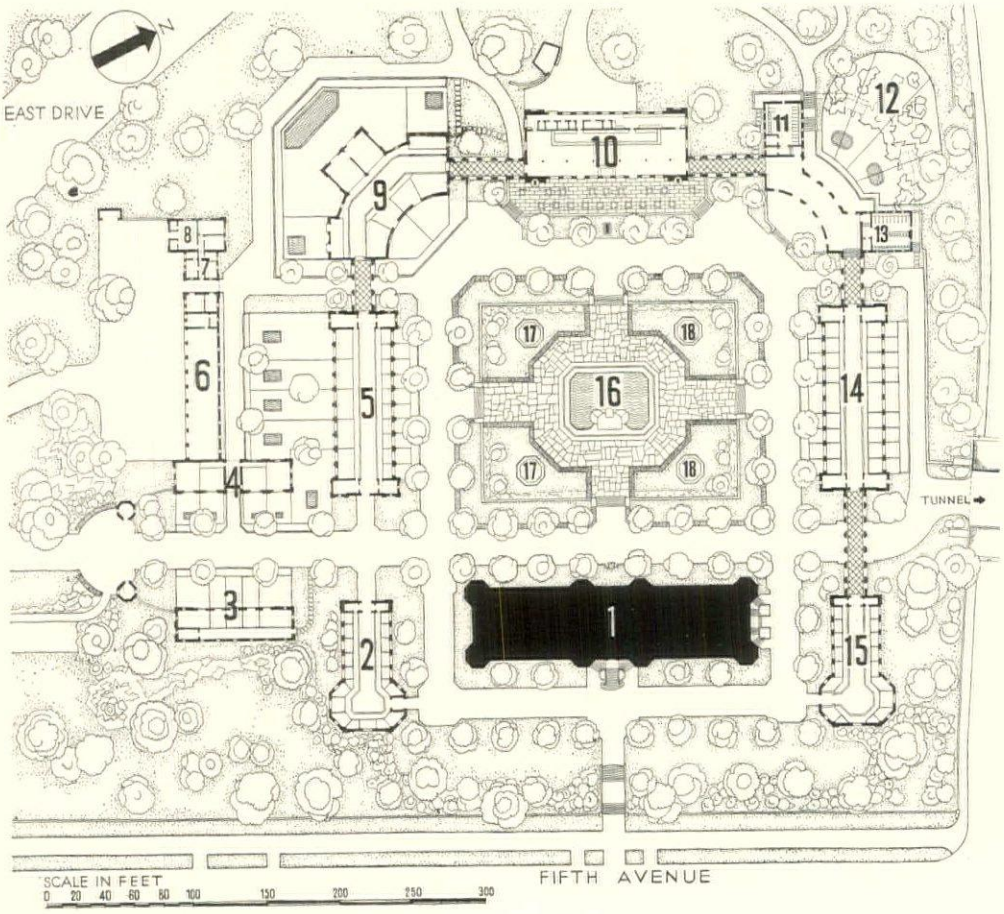
The problems attending the design of a group of buildings for a large number of animals did not exist in the Central Park project. The Zoo has no funds with which to buy animals, and must rely on gifts to fill out its collections. These, therefore, make no pretense to completeness and the aim of the Zoo's directors is to show specimens of the more common animals and birds, rather than to present groups for study. The animals are for the most part well-housed, and the ventilation throughout is excellent. The character of the collection indicates that the primary function of the Zoo is to provide a pleasant gathering place where a few animals provide the attraction; wide promenades, an open court, benches, and a low-priced cafeteria with an outdoor dining terrace are some of the features which have made it popular since it was opened.

It is in the attitude of the Park Department as revealed by this project that the Zoo's greatest significance lies. There is a growing recognition of the fact that open park space is not in itself enough for recreation. In Europe few parks exist where cafes and restaurants cannot be found, and the success of the cafeteria in the Zoo is an indication that the idea is a sound one for America. The Central Park Zoo is much more than a collection of animals: it is an important contribution to better living in a big city. For this achievement credit is due to the city's social-minded and energetic Commissioner of Parks, Robert Moses, and to his capable assistants.

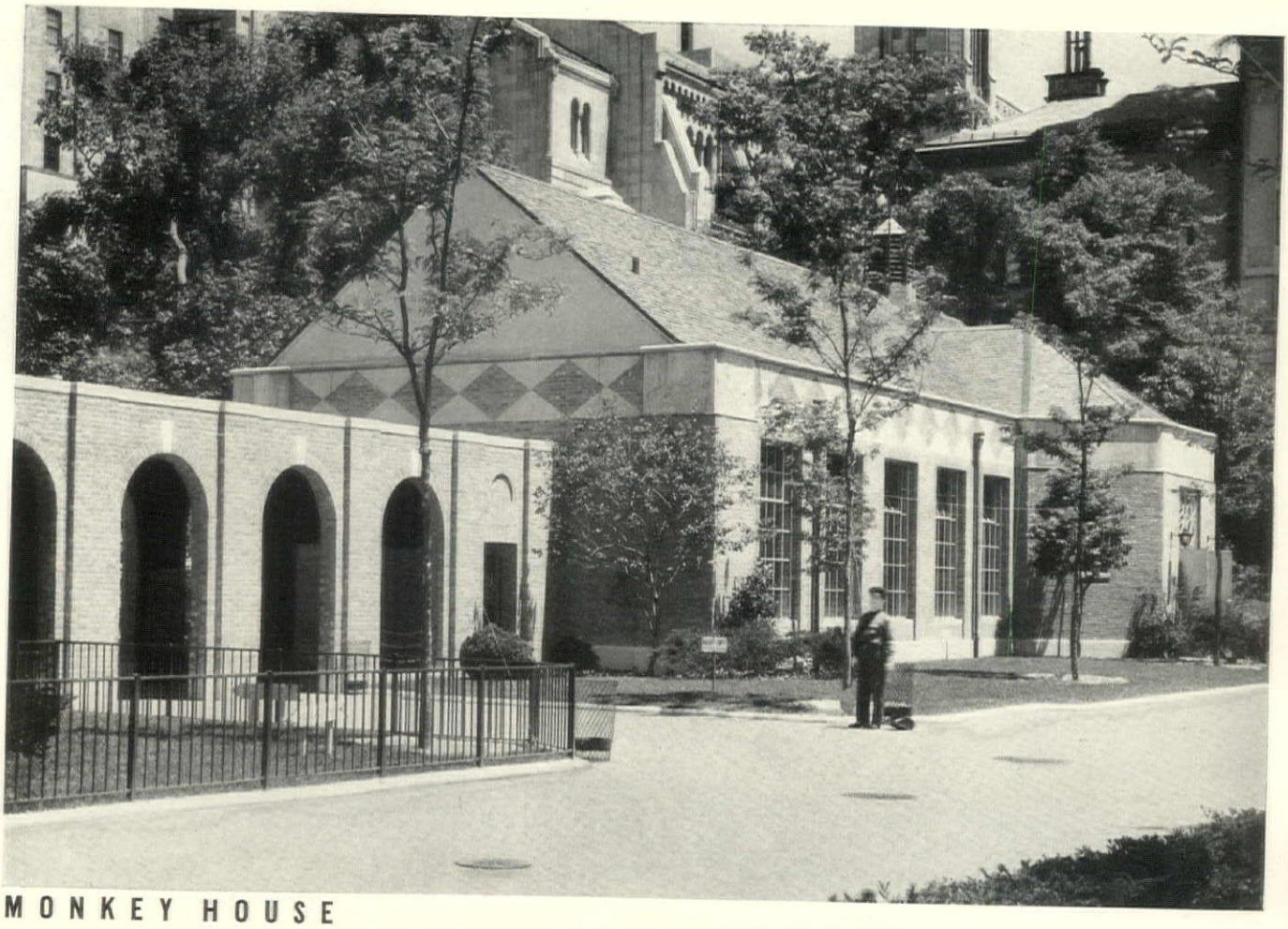
CENTRAL PARK ZOO, N.Y.

RESTAURANT

PLOT PLAN



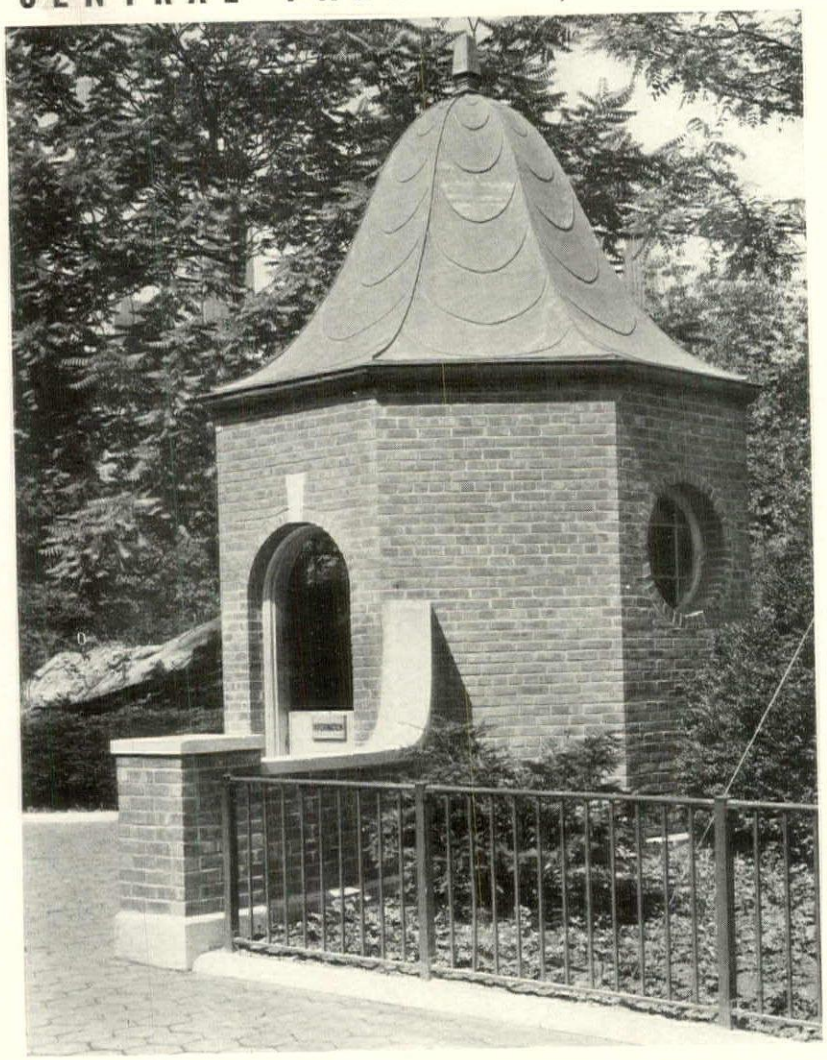
1. The arsenal
2. Bird house
3. Zebras, llamas, etc.
4. Camel, buffalo, etc.
5. Antelopes, deer, elk, etc. (south side)
   Small animals (north side
6. Garage
7. Offices
8. Animal food kitchen
9. Elephant, hippopotamus, alligators
10. Restaurant
11. Women's toilet
12. Bear dens
13. Men's toilet
14. Lion house
15. Monkey house
16. Sea lion pool
17. Monkeys
18. Birds

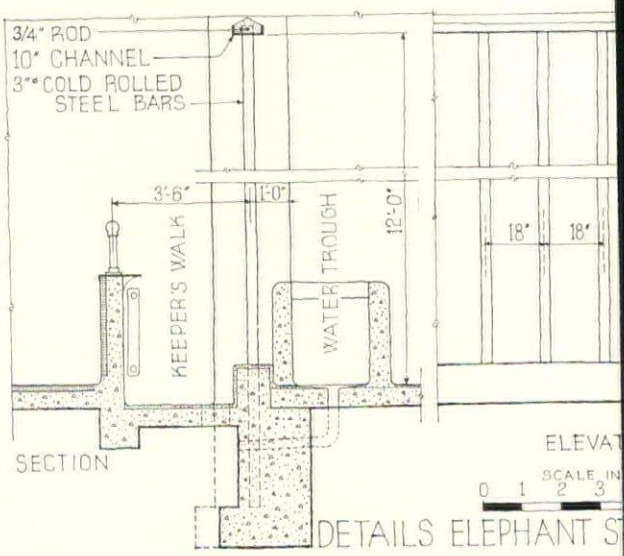


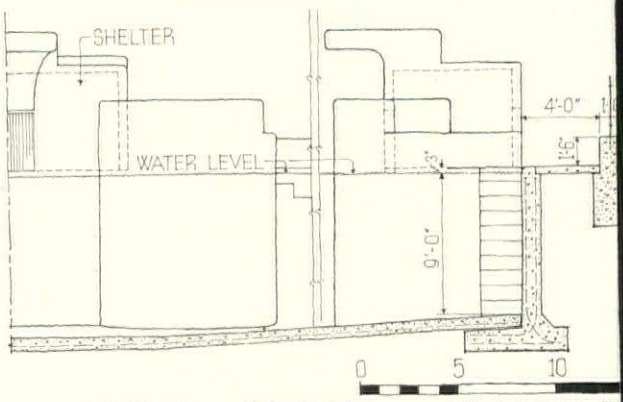
MONKEY HOUSE

LION HOUSE

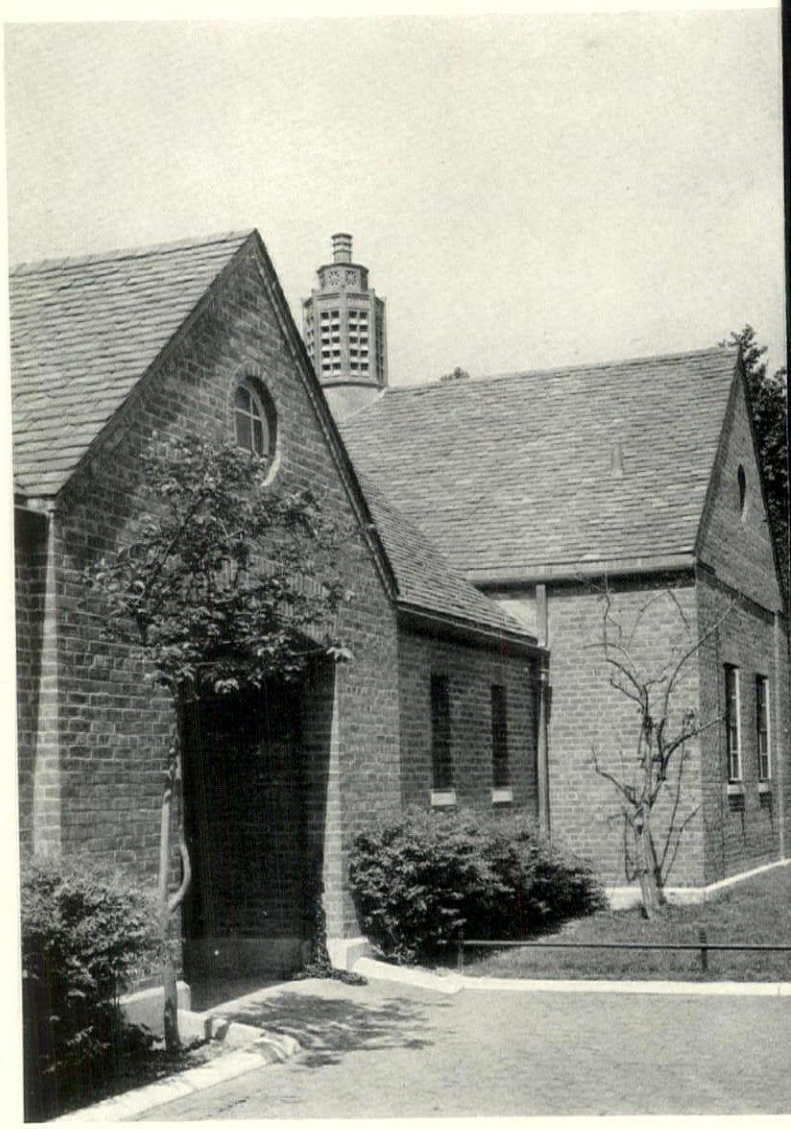
CENTRAL PARK ZOO, N. Y.

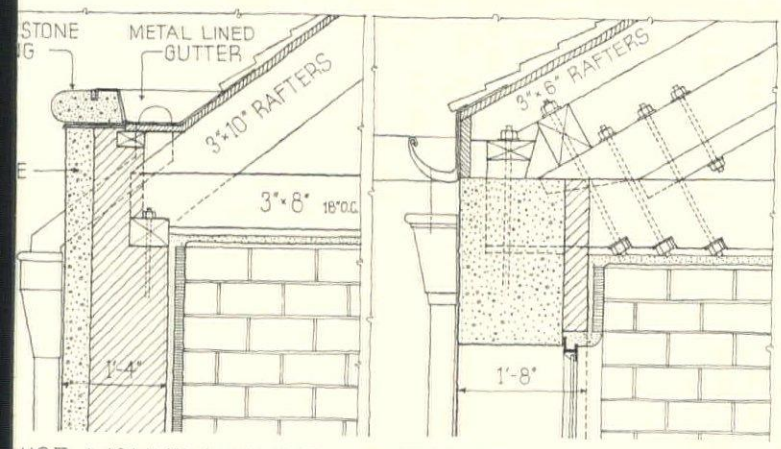




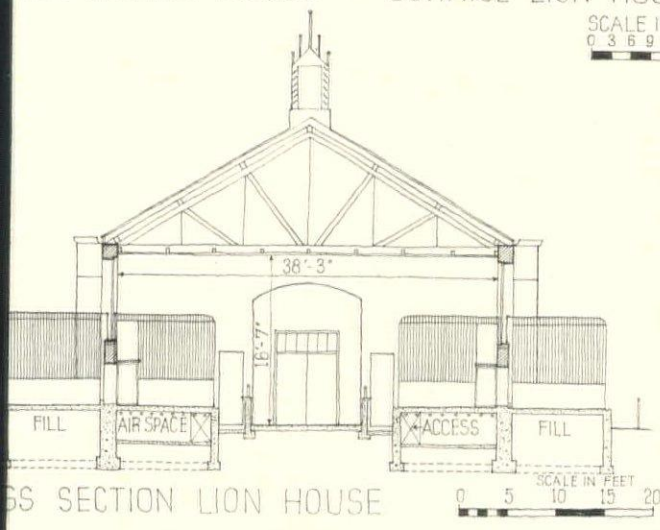


These three exteriors show how consistently the small scale of the buildings has been maintained. **1.** The information booth which is repeated on the other side of the path. **2.** Service quarters. **3.** Entrance to Monkey House. **4.** Interior Lion House. **5.** Interior Monkey House.

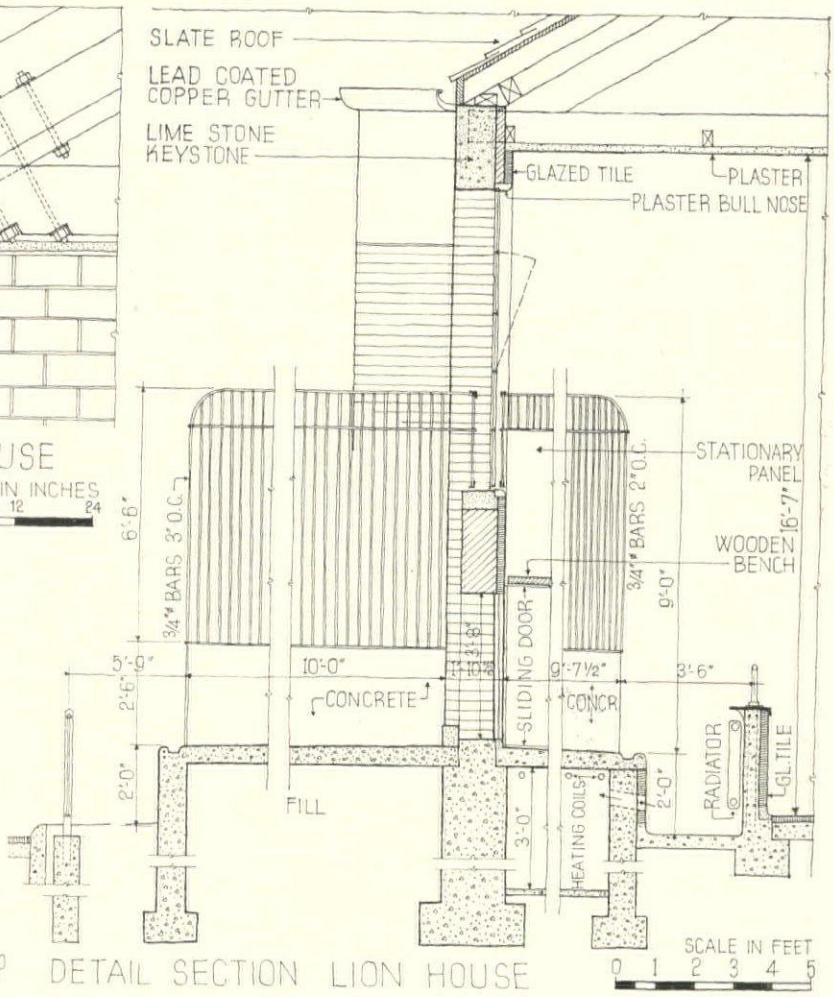




NICE MONKEY HOUSE CORNICE LION HOUSE

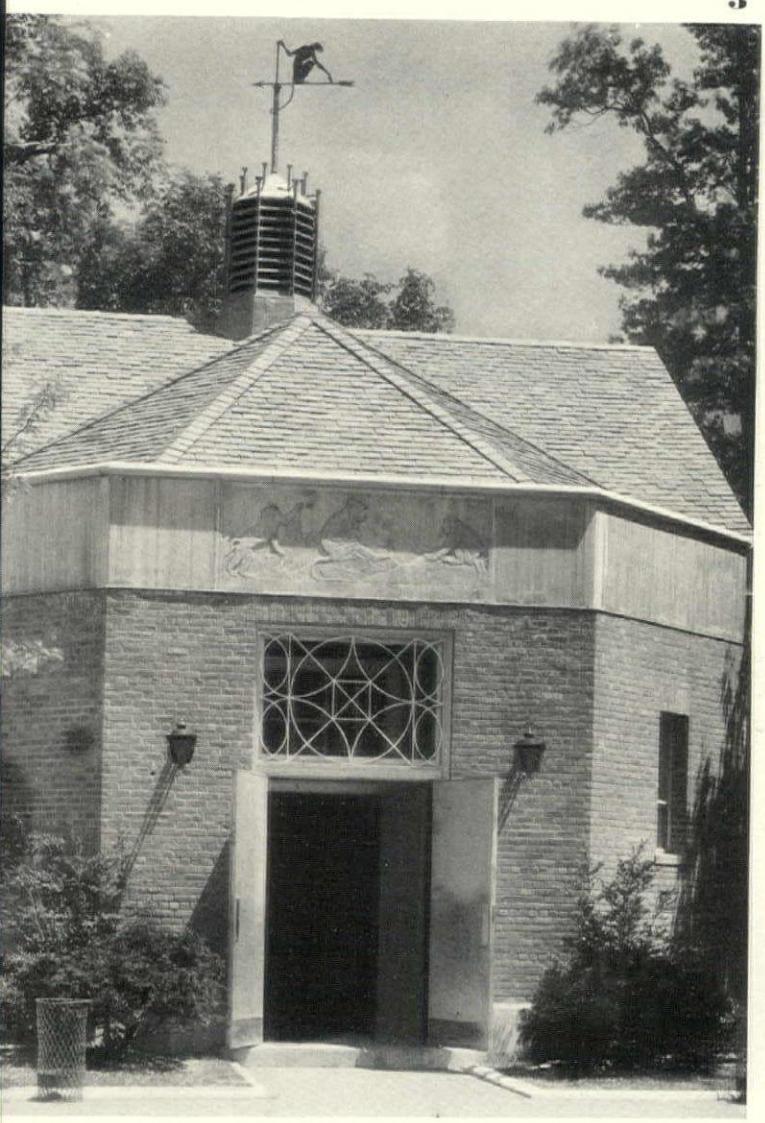


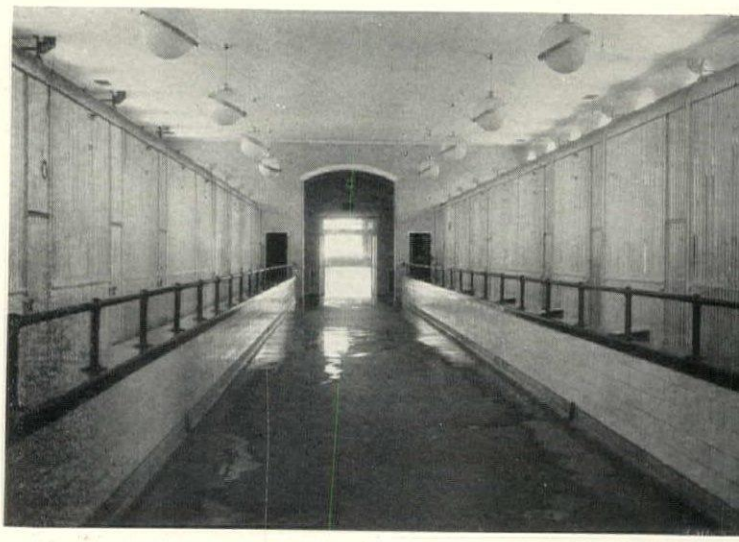
GS SECTION LION HOUSE



DETAIL SECTION LION HOUSE

3





5

ELEPHANT RUN

ELEPHANT HOUSE

SEA LION POOL

(All from Central Park Zoo, N. Y.)

The following data make no claim to exhaustiveness. Essentially, they represent minimum requirements, many of which were followed in the Central Park Zoo.

GENERAL

NATURAL LIGHT—Overhead lighting is most desirable as spectator gets a glareless view of animals. If skylights cannot be installed, windows should be placed as high as possible.

ARTIFICIAL LIGHT—Indirect light is preferable. Where direct lighting is used, the light source must be placed close to ceiling to avoid shadows and glare. Spot lighting may be used in certain cases where it is desirable to dramatize the beauty of the animal.

VENTILATION—Power ventilation is necessary for all buildings in addition to natural ventilation through windows and doors. It is important to arrange ventilators in windows so no draft endangers the health of the animal. (See Ventilation in "Monkey House.")

HEATING—Required temperatures for different kinds of animals are listed below. Steam heat is the best suited system. Radiators must be placed so that radiation provides an equal temperature distribution in the cages. (See notes below under "Floor Heating.")

WATER—Built-in porcelain enameled drinking fountains with running water, sizes given below. They must be easy to clean and special care has to be taken with overflow and drainage.

Sufficient water faucets at frequent intervals because cages have to be flushed often. To create natural rain conditions showers should be installed in the cages and stalls of all animals; they like it and they keep themselves much cleaner.

DRAINAGE—Waste pipes to be five or six times the normal size (see "Drainage" below) to avoid congestion from hair, dirt, etc. No traps are installed, the main sewage lines receive ball valves.

KEEPER'S WALK—A space in front of cages about 3 to 4 ft. wide (see below) is provided for the dual purpose of keeping the spectators from cages and giving the keeper an unobstructed passage.

MOATS—Where conditions allow, moats as a separation between animal and spectator are preferable to heavy iron fences. The unobstructed view tends to give some impression of the animal in its free state. (See sketches below.)

LION HOUSE

ANIMALS HOUSED—Lion, Tiger, Leopard, Hyena, etc.
SIZE OF CAGE—indoor: 10 x 10 ft., 9 ft. high, outdoor: 10 x 10 ft., 9 ft. high.
TYPE OF BARS—cold rolled steel, ¾" diameter.
SPACING OF BARS—3" on centers, 2" between cages.
TYPE OF FLOOR—indoor and outdoor cement, smooth finish.
FINISH OF WALLS—ceramic tile.
SIZE OF DOOR—2 ft. wide, 4 ft. high.
TEMPERATURE—winter, 70° to 75° F.
FLOOR HEATING—floor has to be kept in room temperature so it dries quickly after washing.
DRAINAGE—5" to 6" waste line.
EQUIPMENT—scratching post, wooden bench 1 x 1 ft., 6" deep drinking fountain, removable food trough.
KEEPER'S WALK—distance between cage and spectator —3 ft. 6".
MOAT—10 ft. deep, 21 ft. wide, filled with water, water level to be 5 ft. below level where spectator stands. (See sketch 1.)

ONKEY HOUSE

ly for smaller species. Gorilla and orang an require special cages. Most species e kept indoors in northern climate, each pe has to be kept in a separate cage.
YPE OF BARS—cold rolled steel, ⅜", ½", " diameter, depending on size of monkeys.
ACING OF BARS—2" to 3" on centers de-nding on size of monkeys.
IRE MESH—½" square between cages.
YPE OF FLOOR—cement, smooth finish.
NISH OF WALLS—ceramic tile.
EMPERATURE, winter—it is very impor-nt to keep an even temperature of 75° F.
LOOR HEATING—floor has to be kept at om temperature so it dries quickly after shing.
ENTILATION—the monkeys are very sus-ptible to all human diseases, especially to lds and pneumonia, therefore drafts must avoided. Entrance vestibules with re-lving doors are desirable.
RAINAGE—5" sewer line.
QUIPMENT—trees, wooden bench, swing d rope, drinking fountain.
EEPER'S WALK—Distance between spec-tor and cage—3 ft. 6".
OAT—as stated above monkeys are diffi-lt to keep outdoors in a northern climate, t certain species will stand it. Moats milar to the one sketched below (No. 1) e necessary, width depends on species.

RD HOUSE

topical birds are kept indoors, carnivorous rds can be kept in outdoor cages. The fferent species are segregated according to od and degree of sociability.
ZE OF CAGE—6 ft. x 10 ft., 18 ft. high.
YPE OF BARS—No. 8 Gauge Wire.
ACING OF BARS—¾ to 1" on centers.
IRE MESH—¾" square, ¼" for small rds. Where windows extend into the cage ey have to be covered with wire mesh.
YPE OF FLOOR—cement covered with nd.
NISH OF WALLS—ceramic tile.
EMPERATURE—75° F, for tropical birds to 80° F.
LOOR HEATING—floor has to be kept at om temperature.
QUIPMENT—trees, poles, in some cases tching boxes. Running water in remov-le galvanized iron pans, the same type ed for food.
EEPER'S WALK—Distance between spec-tor and cage—2 ft. 6".

ORNED ANIMALS

NIMALS housed—Buffalo, zebu, deer, ga-le, antelope, llama, etc., usually one male pt with four or five females.
mel and giraffe are housed under same nditions.
ZE OF CAGE—indoor 10 x 20 ft., outdoor x 40 ft. for large species, 15 x 20 ft. for nall species.
YPE OF BARS—cold rolled steel, ¾" di-neter, 3 to 4" on centers.
EIGHT OF FENCE—11 ft. for large spe-es, 6 ft. for small species.

WIRE MESH—1" square between cages.
TYPE OF FLOOR—indoor: cement, outdoor: dirt.
FINISH OF WALLS—ceramic tile.
SIZE OF DOOR—7 x 13 ft. for giraffe, 6 x 10 ft. for larger species, 5 x 7 ft. for smaller species.
TEMPERATURE—all horned animals can be acclimated to northern temperature. Giraffe and camel require 65° F. in the winter.
WADING POOL—6 x 10 ft., 3 ft. deep.
DRAINAGE—6" drain pipe.
EQUIPMENT—galvanized iron removable food trough, drinking fountain 1 x 2 ft., 12" deep.
KEEPER'S WALK—Distance between spectator and cage—3 ft. 6".
MOAT—6 to 8 ft. deep, 15 ft. wide, filled with water, water level to be 5 ft. below level where spectator stands (see sketch 3).

BEAR DEN

The same arrangement for Brown Bear as for Polar Bear. They are kept in the open throughout the year. Sloping ground is preferable where rocks can be arranged naturally.
SIZE OF AREA (approximate)—20 x 50 ft. for four or five animals.
SIZE OF SHELTER—7 x 8 ft., 5 ft. high.
TYPE OF BARS—cold rolled steel, ¾" diameter.
SPACING OF BARS—2" on centers.
HEIGHT OF BARS—8 ft. the top of the bars are curved inward extending 2 ft. and are sharply pointed.
POOL—for Brown Bear, 6 x 10 ft., 6 ft. deep; for Polar Bear, 12 x 20 ft., 9 ft. deep, steps leading into the water.
DRAINAGE—10" drain pipe.
EQUIPMENT—tree trunks, rocks.
MOAT—9 ft. deep, 12 ft. wide. Water level to be 5 ft. below level where spectator stands. (See sketch 3.)

ELEPHANT HOUSE

As a rule only female elephants are kept in zoos since bulls are harder to handle.
SIZE OF CAGE—18 x 20 ft. for one, height 20 ft.
AREA OF RUN—approximately 3,000 sq. ft. for one or two.
TYPE OF BARS—cold rolled steel, 3" diameter, 12 ft. high. Steel of the same type as for railroad rails has to be used for cages for bull elephants.
SPACING OF BARS—18" on centers.
TYPE OF FLOOR—indoor: cement, outdoor: sand.
FINISH OF WALLS—ceramic tile.
SIZE OF DOOR—7 ft. wide, 13 ft. high.
TEMPERATURE—winter: 70 to 75° F.
WADING POOL—15 x 40 ft., 4 ft. deep, stepped up ramp.
DRAINAGE—8" soil pipe.
EQUIPMENT—water trough 2 x 2 ft., 2 ft. deep.
KEEPER'S WALK—Distance between spectator and cage—3 ft. 6".
MOAT—10 ft. deep, 10 ft. wide, kept dry. (See sketch 2.)

SMALL ANIMALS

Fox, raccoon, porcupine, opossum, etc.
SIZE OF CAGE—indoor, 6 x 10 ft., outdoor, 10 x 10 ft., height 6 ft.
TYPE OF BARS—cold rolled steel, ⅜ ft. diameter, 2" on centers.
WIRE MESH—½" square between cages.
TYPE OF FLOOR—indoor and outdoor: cement.
SIZE OF DOOR—2 x 3 ft.
FLOOR HEATING—floor has to be kept at room temperature, so it dries quickly after washing.
DRAINAGE—5" drain pipe.
EQUIPMENT—wooden bench, drinking fountain, removable food troughs.
KEEPER'S WALK—Distance between spectator and cage—3 ft. 6".

HIPPOPOTAMUS

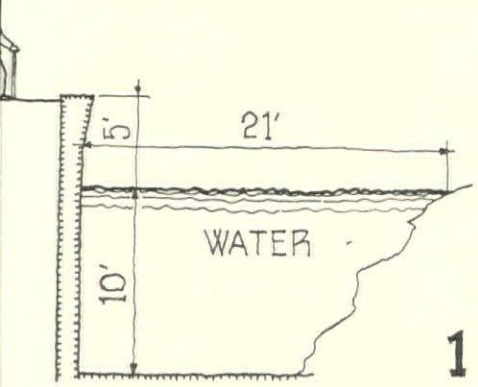
The cage can be located in elephant house.
SIZE OF CAGE—15 x 20 ft.
AREA OF RUN—18 x 20 ft.
TYPE OF BARS—cold rolled steel, 2" diameter 6 ft. high.
SPACING OF BARS—12" on centers.
TYPE OF FLOOR—indoor: cement, outdoor: sand.
SIZE OF DOOR—5 ft. wide, 6 ft. high.
TEMPERATURE—70 to 75° F.
POOL—12 x 18 ft., 6 ft. deep, 25° ramp. This pool can take up most of the area of the indoor cage.
KEEPER'S WALK—Distance between spectator and cage—3 ft. 6".
MOAT—15 ft. wide, 8 ft. deep, water level to be 5 ft. below level where spectator stands. (See sketch 3.)

ALLIGATORS AND CROCODILES

SIZE OF CAGE—indoor: 12 x 25 ft., outdoor: 30 x 30 ft. for ten to fifteen animals, depending on size.
TYPE OF BARS—cold rolled steel, ½" diameter, 1" on centers, 4 ft. high.
TYPE OF FLOOR—indoor: cement, outdoor: sand.
SIZE OF DOOR—3 x 4 ft.
TEMPERATURE—winter, 80° F.
POOL—4 x 10 ft., 3 ft. deep. One for outdoor, one for indoor.
DRAINAGE—5" drain pipe.

SEA LION POOL

Sea Lions stand a moderate climate better than Seals, which are used to the colder climate of Labrador. Both kinds can live in fresh water as well as in salt water. They are kept outdoors throughout the year.
POOL—40 x 50 ft. for six to twelve animals, 7 to 8 ft. deep, steps leading into the water. All stone or concrete edges should be rounded off.
DRAINAGE—10" drain pipe for a pool of above size.
SHELTER—10 x 10 ft., 5 ft. deep.
TYPE OF FENCE—cold rolled steel, ¾" diameter, 4 ft. high, 3" on centers.
KEEPER'S WALK—Distance between spectator and fence, 3 ft., 6".



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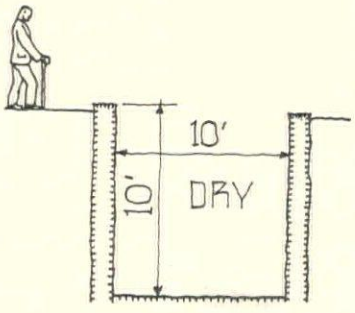

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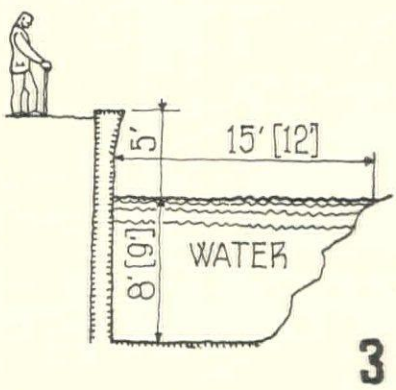


3

MOATS

TVA'S YARDSTICK FOR HOUSING

. . . is a cinder-block house costing from $2,325 for one story and fou rooms to $3,150 for two stories and five rooms. Brick veneer an frame houses, electrically heated and plywood paneled, are alternate at Norris, Tennessee.

by EARLE S. DRAPER*

HERE today and gone tomorrow is the life cycle of the average construction camp. The wreckers appear almost before the last builder is out of sight. This means waste, usually unavoidable, but waste nevertheless. At Norris, Tennessee (named like the dam it serves for the insurgent Senator from Nebraska), the circumstances seemed favorable to the establishment of a permanent town. The probability of the development of small local industries and craft shops; the need of housing facilities for the various forces engaged in reservoir protective work, such as forestry and erosion control; the operation, maintenance and administration of plants and properties in the reservoir area, and other TVA activities, together with the probability that the Norris area will develop as a tourist and convention center — all establish a need for a continuing, modern home community after the completion of the dam.

The building of Norris was a progressive development in more ways than one. All through the construction period plans and methods were constantly being revised and developed with the aim of producing better and cheaper houses. The fact that Norris was built during a period of rising construction costs helped to stimulate the search for cheaper methods. Thus, Norris was built in three stages, each representing a somewhat different approach to the low cost housing problem.

The first group of 151 houses at Norris were built from about a dozen basic types of plans ranging in size from two to six rooms, all of them of frame construction, though many are brick veneered and all are completely electrified. The second group consists of 80 cinder block houses of unusual construction which will be described later. The third group is based on three types of four-room houses of frame, cinder-block, and stone construction. In addition to these, ten duplex and five four-to-eight-family apartment houses were built and some two dozen farm houses on TVA property were modernized and repaired.

Before starting any building plans, the local conditions and customs were explored by members of the TVA architectural staff. Photographs and studies were made of the characteristic houses of the region. And the people — particularly the womenfolk — were interviewed and consulted in order to determine the functional relationship between the house and the local mode of living.

Prior to completion of the new TVA "freeway," one of the early problems at Norris was the transportation of building materials. Lying in a rather remote section away from paved highways, it was necessary to weigh the bulk as well as the fitness of the various materials to be used in the houses. This is one reason for the use of lighter materials than plaster for interior wall finish, and also for the use of brick veneer walls rather than solid ones. Other reasons were the slow drying out of plaster and the relatively deep space for wall insulation between the wooden studs.

TVA houses are intended to supply neither thrills n frills. They are straightforward, simple designs, well suit to the locality and the people — inexpensive to build, ea to maintain and comfortable to live in. Trim, for i stance, is sparingly used. In the design of entrances, ma tels and so on, only stock moldings are employed, and t results obtained have been surprisingly distinctive a good looking. Halls are reduced to a minimum through careful relationship of rooms. The rooms are not large, b in many cases are supplemented by porches which a space inexpensively. Generous windows and expansi views prevent any feeling of cramped quarters. Most att are made accessible by means of stairs, which though na row, make the attics far more useful than if only ceili scuttles were provided, as in most low cost houses.

Basements were eliminated from TVA houses. Electr heat makes space for a central heating plant and fu storage unnecessary. Furthermore, the Valley people d not consider them important or even desirable. Becau foundations in this climate need not extend more than in. below grade, an appreciable saving results from t omission of basements. The fact that, according to fi underwriters' records, basements are the most freque source of fires in dwelling houses also was considered.

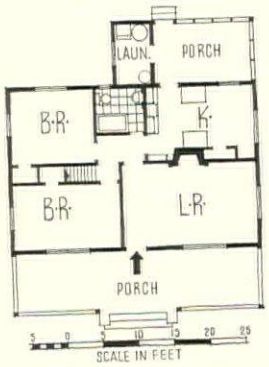
The actual costs of TVA fully electrified houses at Norr range from $3,836 for a three-room brick-veneer hou to $7,212 for a six-room house. The cinder-block hous range from $2,325 for a four-room, one-story house, t $3,150 for a five-room, two-story one. In the last group 49 one-story, four-room houses built at Norris, costs rang from $2,675 to $3,000.** These costs include all co struction overhead and water and sewer connections t street mains.

Rents at Norris range from $12 per family per month f a duplex type house to an average of $30.38 for the full electrified houses of the first group. This rental is based o a 7 per cent gross return on the cost of the town after d ducting the equivalent cost of a construction camp.

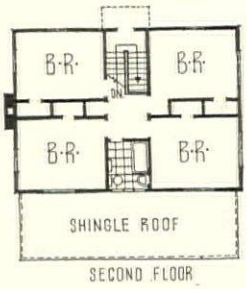
After the construction of the dam it is expected tha lease-holds for commercial and industrial purposes wi pay a large share of the taxes and administrative expens at Norris, so that the houses will pay only their norma share of this burden. Sir Raymond Unwin, for instanc says that the residential section of a well-balanced co munity should pay about one-third of the total taxes.

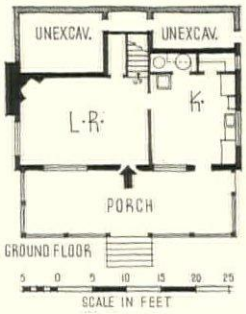
*Director, Division of Land Planning and Housing, Tennesse Valley Authority. Charles Barber and Roland A. Wank were th architects in charge of all houses.

**The above figures involve a number of unusual factors not normal the construction of houses. Final allocation of costs on Norris Dam a yet to be determined. Reducing the construction schedule on the Da from four years to two increased the difficulties of delivering material already accentuated by a ten-mile material haul from the nearest railhea



In spite of electricity TVA houses remain traditional. This design with wide front porch and sloping roof is typical of early houses in the region. Handsplit shingles replace traditional logs in the walls but the making of these shingles is a traditional occupation in the Valley.





A six-room, two-story house with the plain posts and heavy railing of the porch a distinctly local touch. The whitewashed brickwork reaches to the second story level. Upper walls of clapboard, painted to continue the whitewashed effect. Roof of split shingles. Due to slope only part of the first floor area has been utilized except for storage purposes.

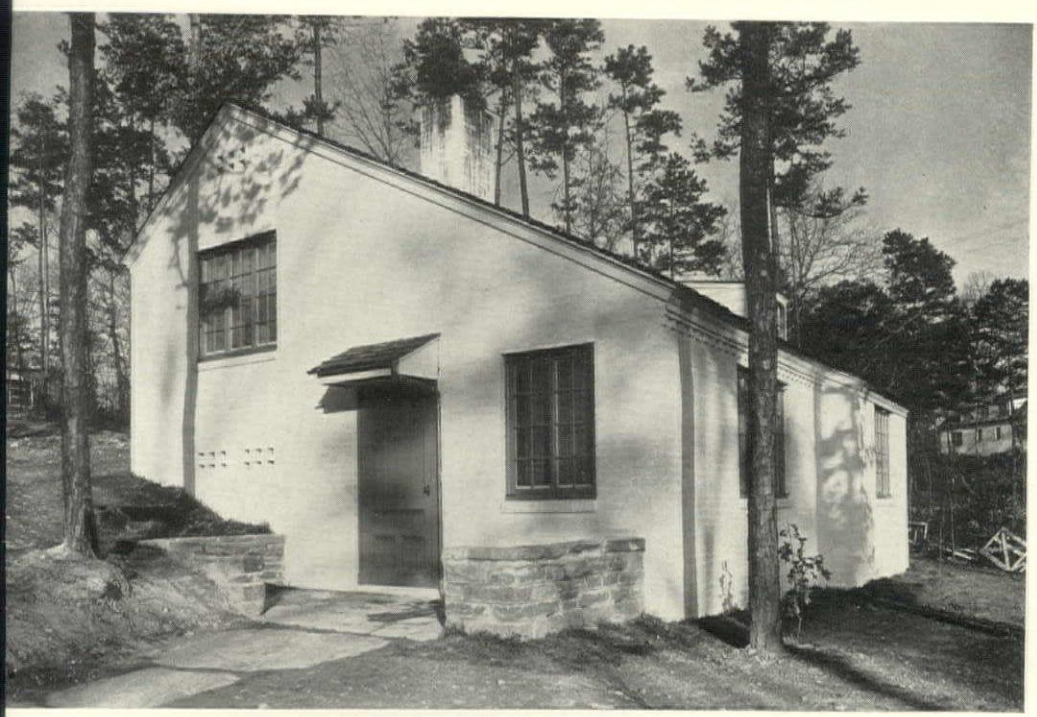
A typical room in a TVA house has an oak floor; a wide plank wainscot extending up to the window sill line, and plyboard panels above that point. Ceilings are of insulation type fiber board—all finished "natural." This room treatment forms an effective but unobtrusive background for almost any type of furniture and completely eliminates the bareness and cheapness so often associated with the interiors of inexpensive houses.

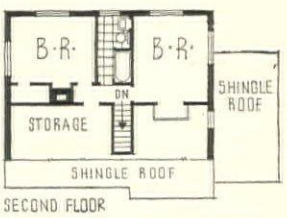
Any architect who has given his profane vocabulary a work-out while arranging wall board panels so that the finished surface will not look like a mesalliance between a jig-saw puzzle and a garden trellis, will recognize that by using this material as at Norris it is easy to confine the joints to room corners and the edges of openings where they are rendered unobtrusive.

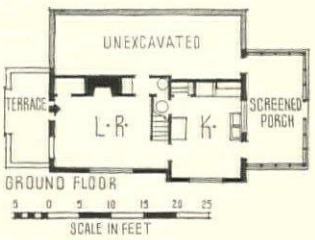
The sinks used in TVA houses are of the combination type with sink and laundry tub in one unit. Space nearby is provided for the storage of an electric washer. With an electric washer, the kitchen becomes a logical and convenient place for washing clothes, and the deep tub is always handy for washing and preparing vegetables, rinsing out a few pieces of clothing, etc.

Although expert advisers and consultants were called in to aid in the layout of kitchens, no attempt was made to devise a "standard" or "scientific" or "model" kitchen applicable to all houses. If anything, these kitchens emphasize the fact that people living in the same environment do not necessarily all think alike, live alike, eat alike, nor accomplish their work through following the same exact methods of procedure.

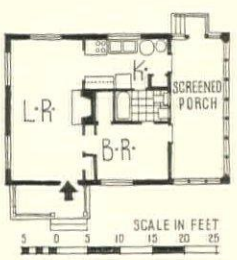
This doesn't mean that TVA houses are designed without attention to any rules whatever. Certain definite principles of house planning have universal application in creating convenient, comfortable, sani







ris, Tenn., stands on a high rugged plateau with sites varying from level ground to steeply sloping sides. Outcrops of stone and heavy wooded areas are frequent. This house takes typical advantage s site. The warm toned brickwork is laid slightly unevenly to add texture to the surface.



mon brick walls in slightly varied shades of red and slate roof with irregular edges. The long ened porch at the end is carried under the main roof, simplifying construction and adding to house's apparent length. The porch may be used for sleeping or dining purposes.

ary living conditions for anybody and verybody.

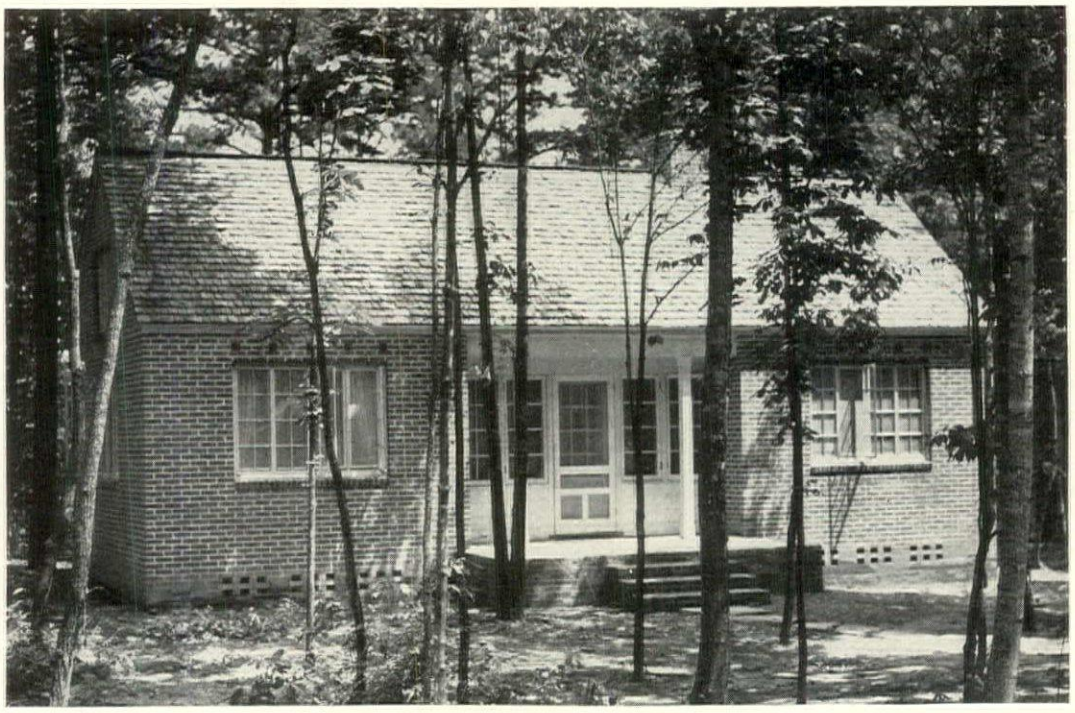
For instance, there is a lesson for us in he startling increase since the war of industry's capacity to produce. Much of this increased capacity is due to the time and motion studies of the production engineer rather than to new or improved plant quipment.

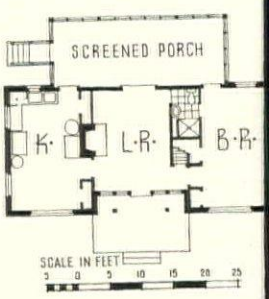
Therefore, time and step saving methods re employed in laying out TVA kitchens. he sequence of work, the relationship of quipment, the height and depth of work rfaces, the convenient and adequate storge of food and utensils; these are a few of the functions which are considered important in the design of TVA houses.

In the grouping of kitchen equipment in these houses, a few well-established principles have been adopted. In general, the sink together with its built-in wall-cases for the storage of dishes, utensils, packaged foods, etc., is considered as the work-center. At one side at right-angles to the sink, if practicable—is the food pantry and refrigerator; while on the other side is the electric range. In narrow kitchens, all or a portion of these items are placed along the inner wall opposite the sink.

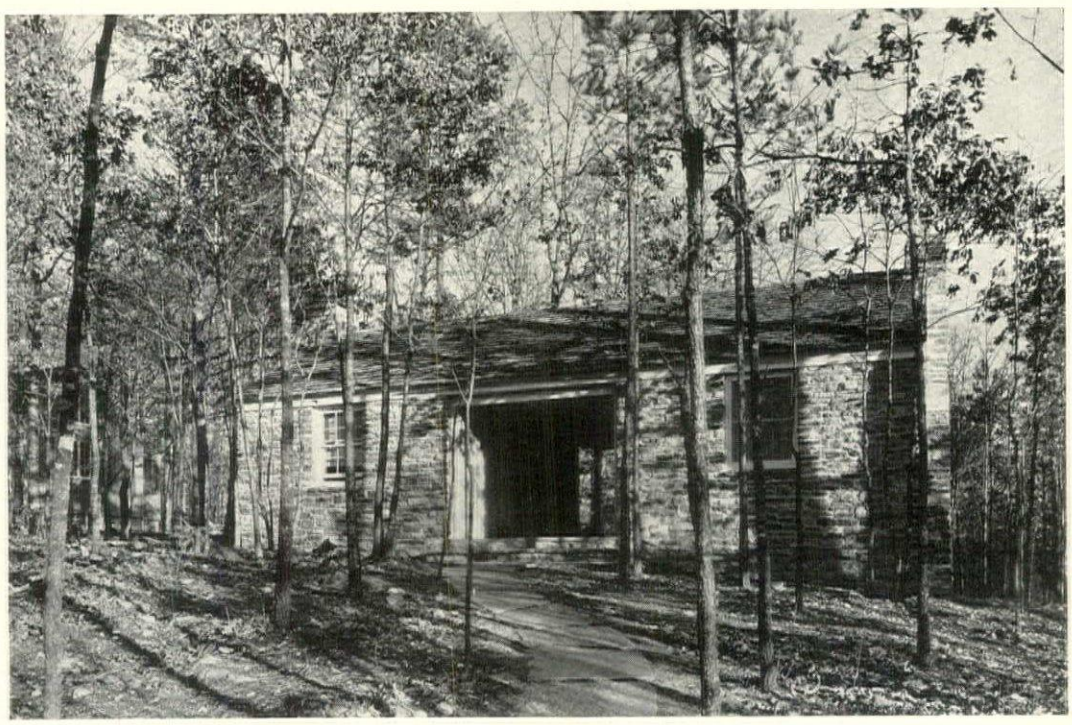
Porches are also important features of TVA houses. When the CWA asked Knox County farm people what repairs and improvements would be desirable if $500 were available, 24 per cent of them listed "porches" — and this in a region where it seems that almost every house already has a porch. But porches here are almost as useful as rooms, so TVA house plans usually contain at least one porch arranged in such a manner that it may serve various purposes — either living, eating, or sleeping; as the need may arise.

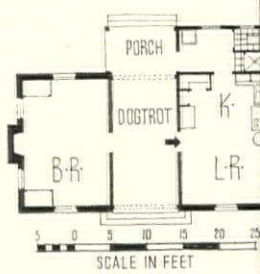
The porches are screened and may easily be glazed or enclosed with some form of glass substitute in winter, if desired. In





This brick house is a variant of the "dog trot" house below. The open gallery here has been closed but through circulation may be achieved by leaving the front door open and opening the door (on the center axis) to the screened porch at the rear.





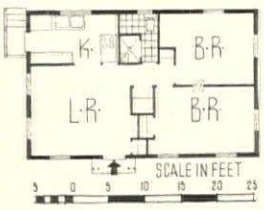
An adaptation in local stone found on the site of the Southern "dog trot" house with a covered gallery cut through the house for circulation of air. This extends to a porch. The protected walls of the gallery are of boards-and-battens painted white. Bedroom has windows on three sides.

some cases a small compartment is partitioned off on rear porches to serve as a laundry, providing space for set-tubs, electric washer, soiled clothes closet, etc.

The sinks in TVA kitchens are placed either on an outside wall immediately beneath a window, or against an inner wall with a window at one end, at right angles to it. This provides for the two schools of opinion as to the best location for a sink, some women maintaining that a sink against an inner wall provides full utilization of wall space for built-in cabinets and reduces fatigue due to the glare from a window facing a sink; but many other women insist that to be able to glance outdoors from time to time, merely by raising the eyes, makes work at the sink seem less monotonous and tiring, and that in summer it seems to offer a cooler place to work.

As a group, the permanent TVA houses have perhaps been more thoroughly insulated than have any other low cost dwellings in this country or abroad. Electric heat, even in a moderate climate and at low TVA rates, cannot be wasted or dissipated if electric bills are to be kept within limits that are reasonable for wage-earners to pay. Therefore, with the exception of the cinde block houses to be discussed later — all e terior walls and all ceilings immediately b low roof spaces are insulated with miner wool. This in addition to the insulati board used for ceilings and, in some cas for lining attics. First story wooden floo are insulated with aluminum foil betwe the joists.

Temperature tests run last summer in number of houses showed that the diff ences in temperatures were negligible b tween insulated attics or upper rooms a those below.



der block house with metal roof painted to match. These houses were the cheapest TVA built. The erior walls are of 6 and 8 in. thick cinder concrete blocks with 3 in. thick interior walls except that ond story partitions (see below) are of V-joint shiplap, laid in a double layer.

e majority of TVA houses have low ceilings (7 ft. 4 in.) and high set windows. This gives the illusion larger rooms and also provides space for furniture against the wall area beneath the window. In these ses cement paint is applied directly to the cinder-block surfaces, interior and exterior.

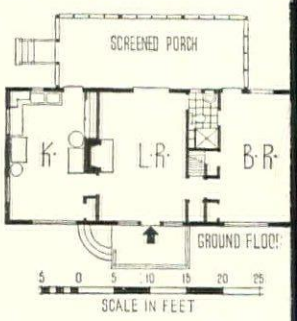
The ceilings of TVA houses are low — averaging about 7 ft. 4 in. — but the heads of the windows are placed close to the ceilings, thus insuring thorough air drainage from the upper portion of the rooms. The high-set windows also provide useful wall space for furniture beneath the sills. The low ceilings not only cut down construction costs, but make the rooms appear large, while making the houses easier to heat.

Many evidences of mingling the old with the new are found in TVA houses, both inside and out. For instance, the open, wood-burning fireplace — that oldest survivor of house heating devices — is often found in the same room with a built-in electric heater of the latest type. And these modern, insulated, steel-casemented houses are in most cases roofed with wooden shingles, rived by hand in the ancient manner.

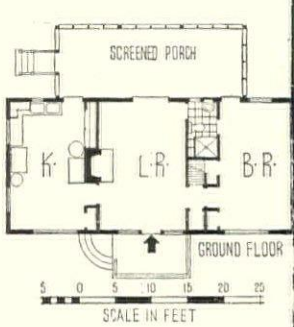
These seeming paradoxes, however, represent a facing of reality rather than concessions to tradition or a romantic gesture toward picturesqueness. The fireplaces actually supplement the electric heaters, and the split shingles — as thick as boards — offer considerable insulative value; both reduce electric heating bills.

Too, an extensive CWA survey of Knox County, Tenn., shows that more than 70 per cent of the rural houses of the region have fireplaces. The making of hand-split shingles is a traditional rural occupation among many people of the Valley, and the opportunity to stimulate local employment was one not to be overlooked.

In this section, as in many other parts of the country, termites offer a constant threat to the durability of any wood-framed building unless thorough precautions are taken against such damage. Therefore, all TVA buildings—including the semi-per-



Board and batten house with entrance into living room, and bedroom with triple exposure at right. All wooden framework is kept at least a foot above ground because of termites. Screened foundation vents provide air circulation in the space between ground and floor. No TVA house has a basement.



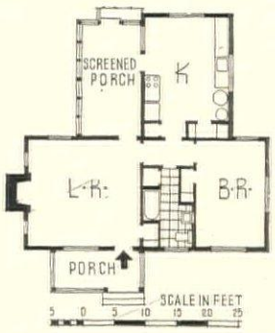
This house built of shingle has the same plan as the house above with the exception of a higher ventilated attic. The differences in building materials and in the treatment of the porch are typical of TVA's efforts to prevent monotony of design in their settlement.

manent construction camps — are built to resist termites. All wooden framework is kept at least a foot above the ground surface. Screened foundation vents provide air circulation in the space between ground and floors, and overhanging sheet-metal shields are built into all junctions between foundations and woodwork so that a continuous termite barrier is formed around the entire building — including the piers and posts.

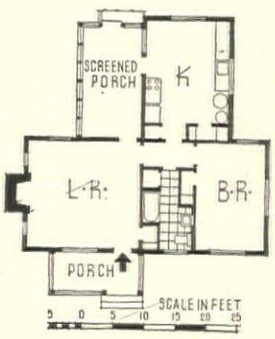
The group of 80 cinder-block houses at Norris is perhaps the most significant contribution that TVA has made to low-cost housing. They are simple and easy to build, good-looking, unusually durable, sanitary — in short, they offer clean, comfortable, homelike housing accommodations at very moderate cost.

In this group the exterior walls are of 6 and 8 in. thick cinder concrete blocks, with 3 in. thick interior walls of the same material, except that second-story partitions are of V-joint shiplap, laid in a double layer. The floors are of precast concrete joist and slab construction and the roofs are of sheet metal. The insulative and fire-resistant qualities of cinder concrete are well known, and the roofs of these houses are thoroughly insulated with a 2-inch layer of mineral wool between the ceiling joists. The wall finish of the houses of this group is simplicity itself. Cement paint applied directly to the cinder-block surfaces of the houses—interior as well as exterior—produces a finish that is inexpensive, durable, attractive and easy to keep clean and sanitary. Interior trim is narrow, and the woodwork is stained natural. The metal roofs are painted to harmonize with the surroundings.

Considerable study was given to the improvement of the shape of cinder-blocks. In order to speed up laying and to reduce



Wide board and batten construction with rough siding used for the gables. A screened porch at the rear may be used for dining or sleeping. An unusually successful plan with access from the small hall to every room including the bathroom. Each three rooms of the house has exposure on three sides.



This house which is almost identical with the one above is another example of TVA's efforts to break monotony. Here the front porch was cut off in order to save the tree standing by the entrance. This slight change gives the house an entirely different character.

the percentage of joints, a large size—12 x 24 in. face—block was tried out. But it was found that masons handling this over-size block soon became tired and the loss in efficiency offset the other advantages, so the large block was discarded in favor of the standard 8 x 16 in. size. A real improvement was effected, however, in eliminating solid through joints which cause much leakage in block walls. This improvement is effected by forming a deep indentation—about two inches — at one end of the block, leaving the other end flat. The projecting lugs at the indented end are placed against the flat end of the next block in the course, thus forming an air space. By breaking off a lug, a 2 in. deep offset is provided as a wind and water break around openings in the wall.

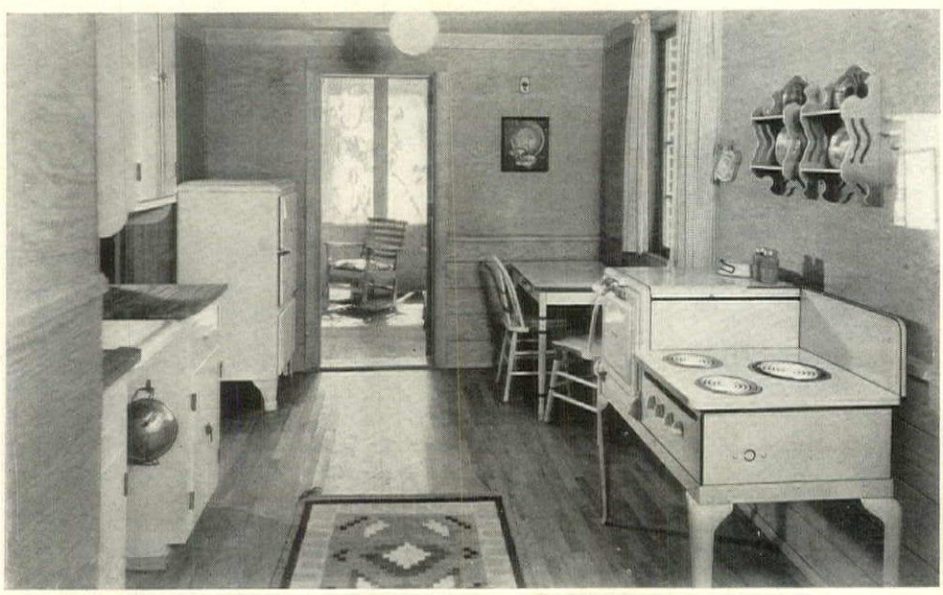
In some TVA low-cost houses, partitions have been made of two layers of matched boards with beaded joints — on one side a horizontal layer, the other vertical. Another space-saver is the use of copper-bearing wrought iron pipe, with threaded connections, for soil vents, thus largely eliminating the need for thick partitions.

There is a real need for the development of a foolproof fully automatic humidifier for use in connection with electric heaters. In several Norris houses the toilet float was connected to the evaporating pan by means of small diameter copper tubing.

Considerable difficulty was experienced in the selection of lighting fixtures for the first houses. Commercial fixtures for the lighting of stores and offices without glare were available, but these were hardly suitable for homes, so a number of fixtures were specially designed and made by hand at low cost in one of the colleges in the mountains of North Carolina.

A typical living room showing the screened porch to the rear. The advantage of the high set window is clearly expressed by the couch comfortably placed beneath it.

The fireplace has been retained. This is not merely a gesture toward tradition but actually supplements the electric heaters, thereby cutting electricity costs, an important consideration.

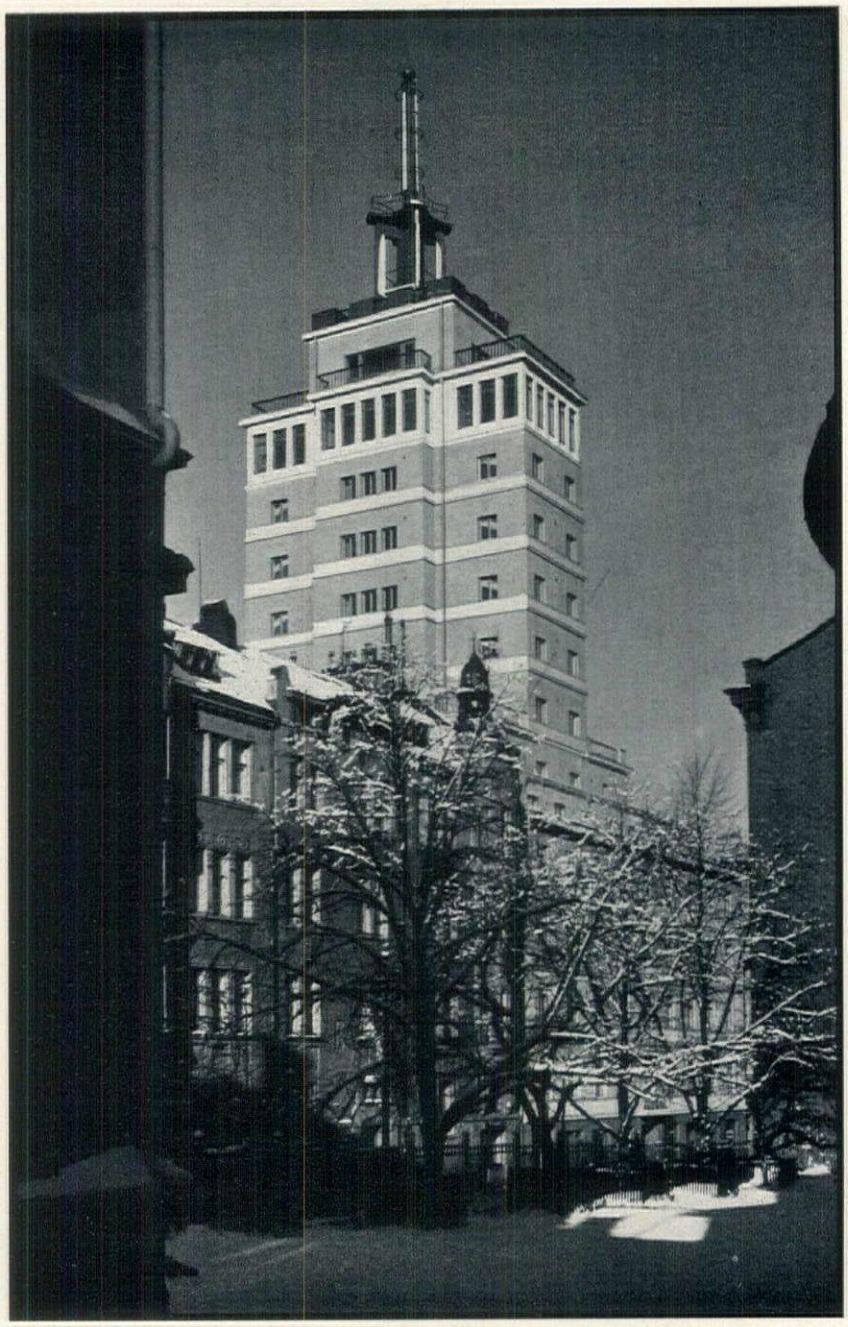


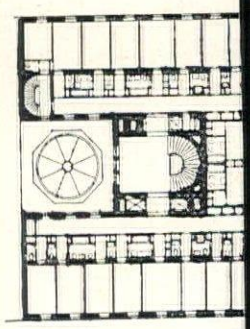
In general, the sink with its built-in cabinets for dishes, packaged foods, etc., is considered the work center. The electric stove is set to one side of the window to avoid glare.

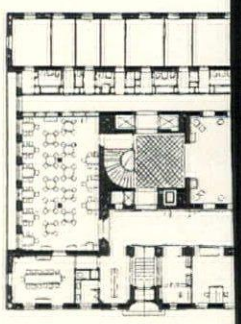
ARCHITECTURAL FORUM

FINLAND

INTERNATIONAL SECTION







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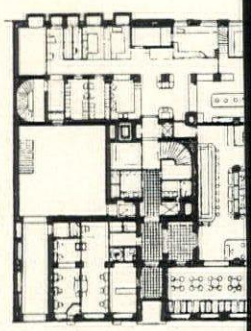


Hotel Torni, Helsingfors.

Architects: Jung & Jung.

The tower system of hotel building, deservedly popular all the world over, is doubly advantageous in a city between the forests and the sea.

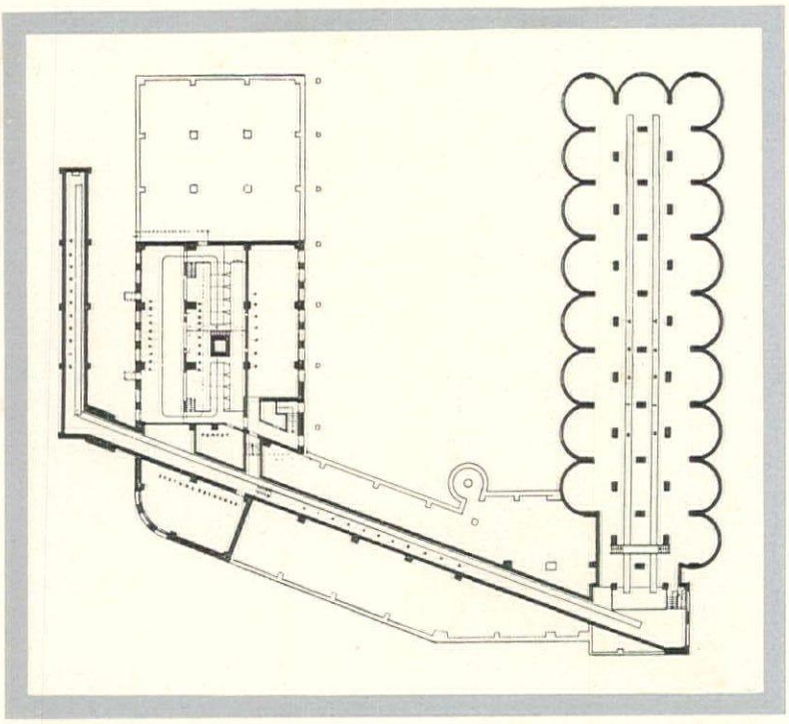
Located in the sparsely peopled region of forests near Oulu on the Bothnian Bay, the O. Y. Toppila Sulphate Pulp Mills stand out as a monument to enterprise in the Far North.

Architect: Alvar Aalto.

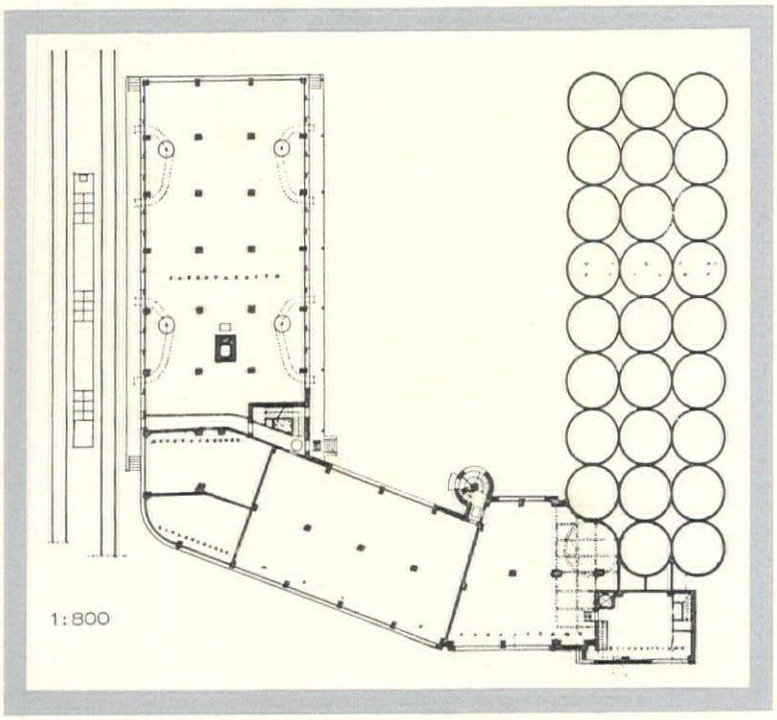
A coöperative flour mill and silo for sifted grain at Viipuri.

Architects: Valde Aulanko & Erkki Huttunen.

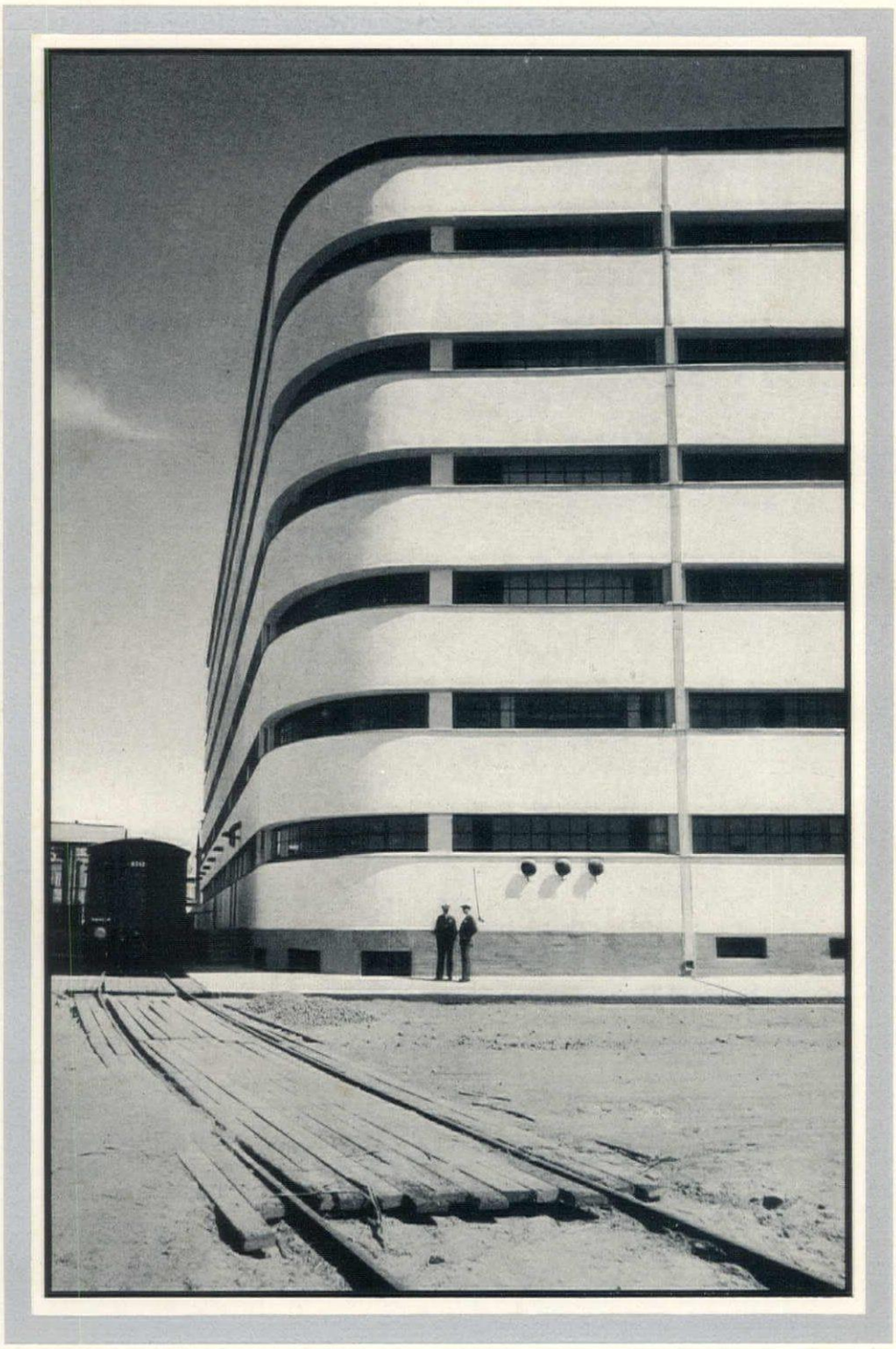
In Finland, where the relative scarcity of older architectural features has facilitated the triumph of functional solutions over decorative work, a harmonious effect is largely attained, in industrial architecture in particular, by simple means, generous outlines, and an apt utilization of the surface influence of materials. The suggestiveness of these immense towers of poured concrete cannot be ignored.



Observe the trolley-course, through the building, from sifting-towers to trucks.



The main street-front is across the top of the diagram.

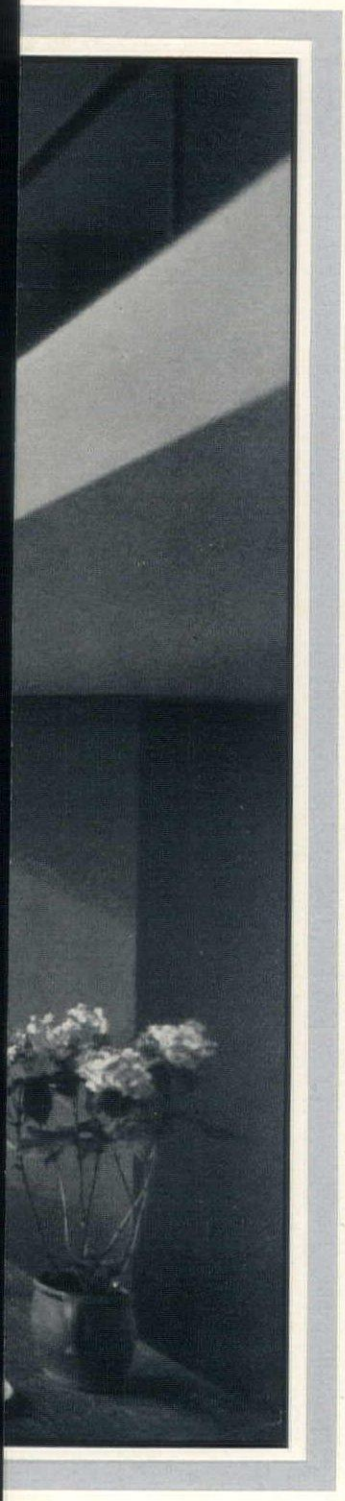


Itself resembling a gigantic liner with a wealth of decks and funnels, this imposing edifice occupies a commanding position in the city harbor. In a land of long winters, the storage of flour is a matter of national moment.

The Lalluka Artists' Home, Helsingfors.

Architect: Gösta Juslén.

In the short days of the northern winter, it is up to Finnish artists to get what light they can. This window merging in a skylight seems a particularly happy solution.



Whether employed as a studio or as a living-room, this apartment can claim both aesthetic and utilitarian assets. The half exposed staircase, continued downwards on the right, needs no apology for passing through the premises.

Day-room in the Paimio Sanatorium for Consumptives.

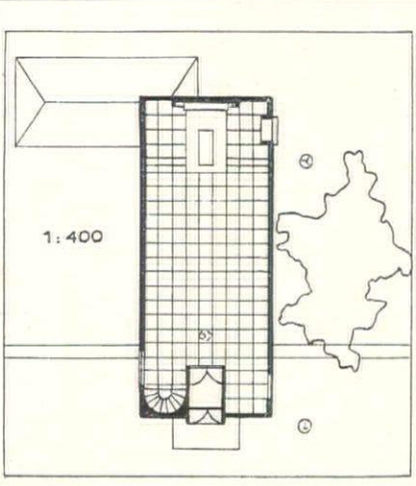
Architect: Alvar Aalto

Thanks to an exemplary heating-system and minute precision in regard to the closure of the gigantic windows, all available sunshine can be exploited without impairing the warmth of the premises when the snow is thick outside. The concertina screen of flexible material shuts off light and sound if need be. The atmosphere of clinical cleanliness is enhanced by both architecture and furnishings.

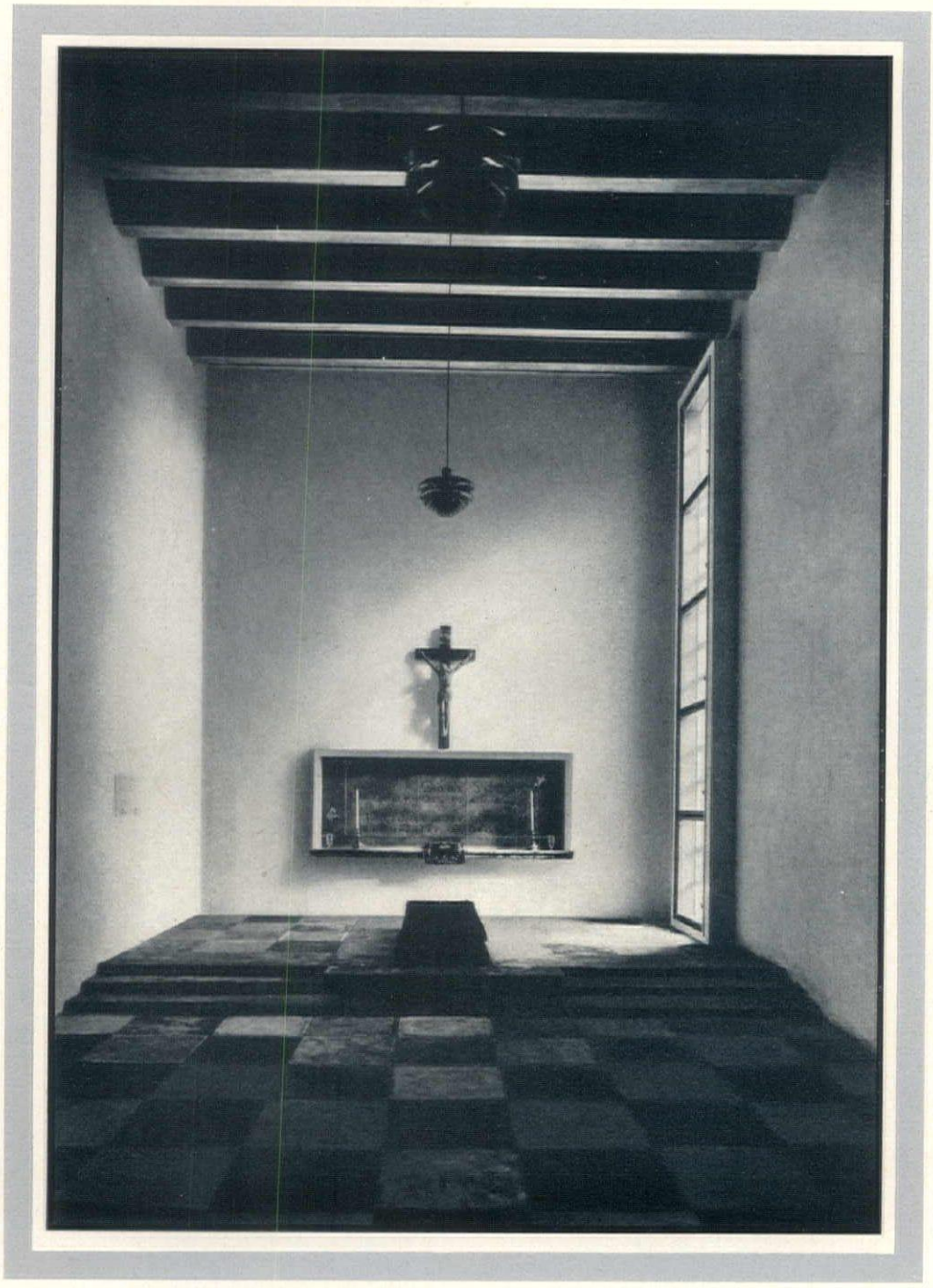
A concrete fortress of health in the heart of the forests, the ideal cure-house for a greater number of patients.

External View of the Mortuary Chapel at Parainen.

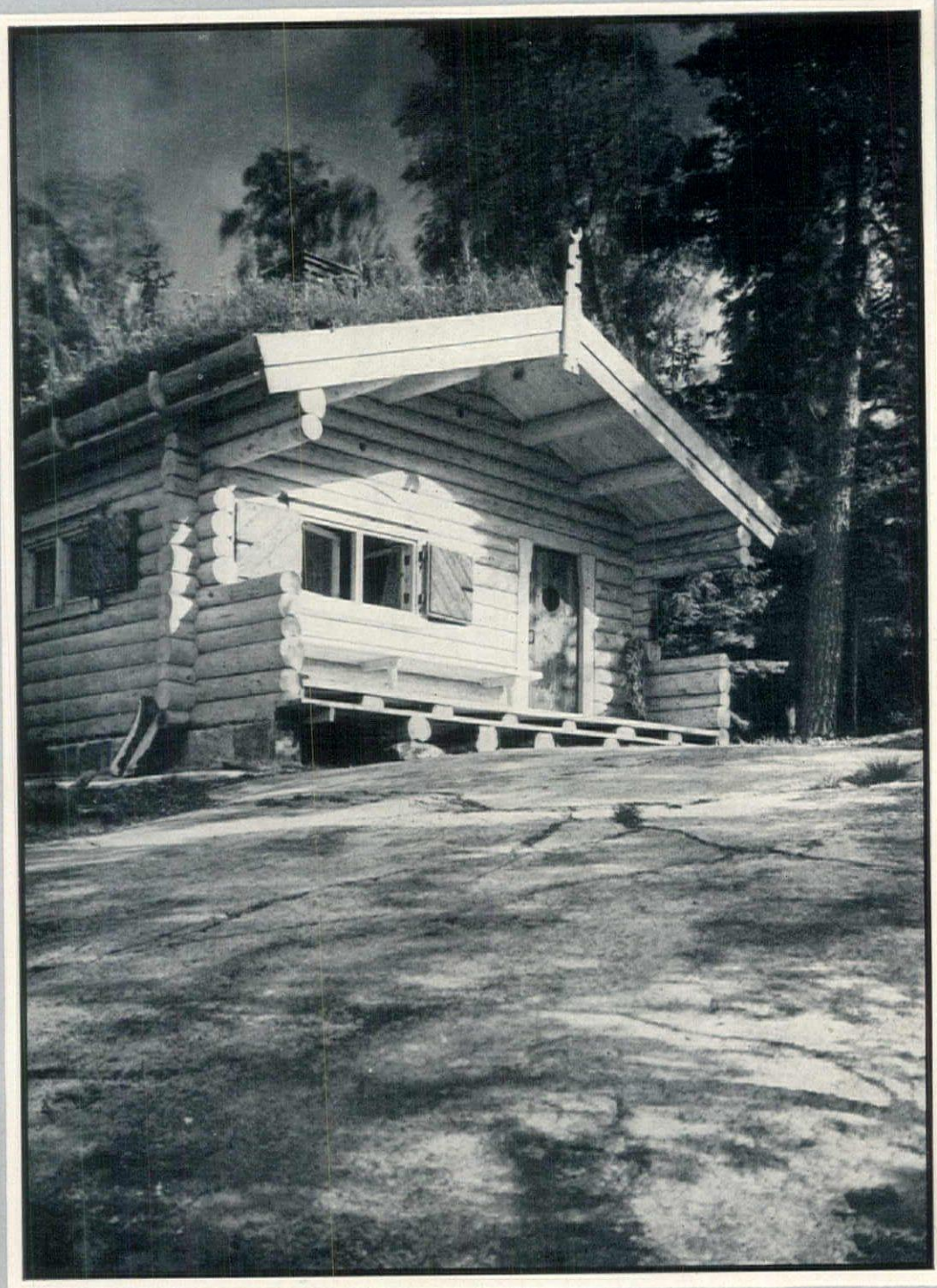
Architect: Erik Bryggman.



Severely unassuming in its tota
lack of any attempt at adorn
ment, there is pathos and piet
in the aspect of this pure whit
structure, whose simplicity i
strikingly typical of the primi
tive faith of a northern people
unused to camouflage the star
necessity of death.



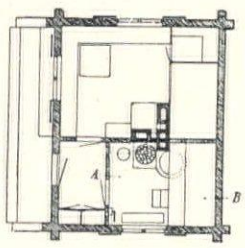
Within, the effect of a single window, shedding its light upon the bier, is poignantly symbolic.



Bath House, near Helsingfors.
Architect: Oiva Kallio.

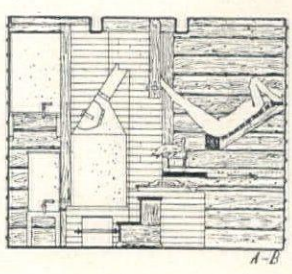
Lumber is even now Finland's main building material for rural purposes. There is something extraordinarily appealing about this log-cabin with its thatch of grass and flowers. Many features of the old peasant house are here preserved.

EVEN THE BASE OF THE OLD-WORLD STOVE IS FASHIONED OF WOOD, AS IS THE ENTIRE INTERIOR OF THIS "SHIPSHAPE" CABIN

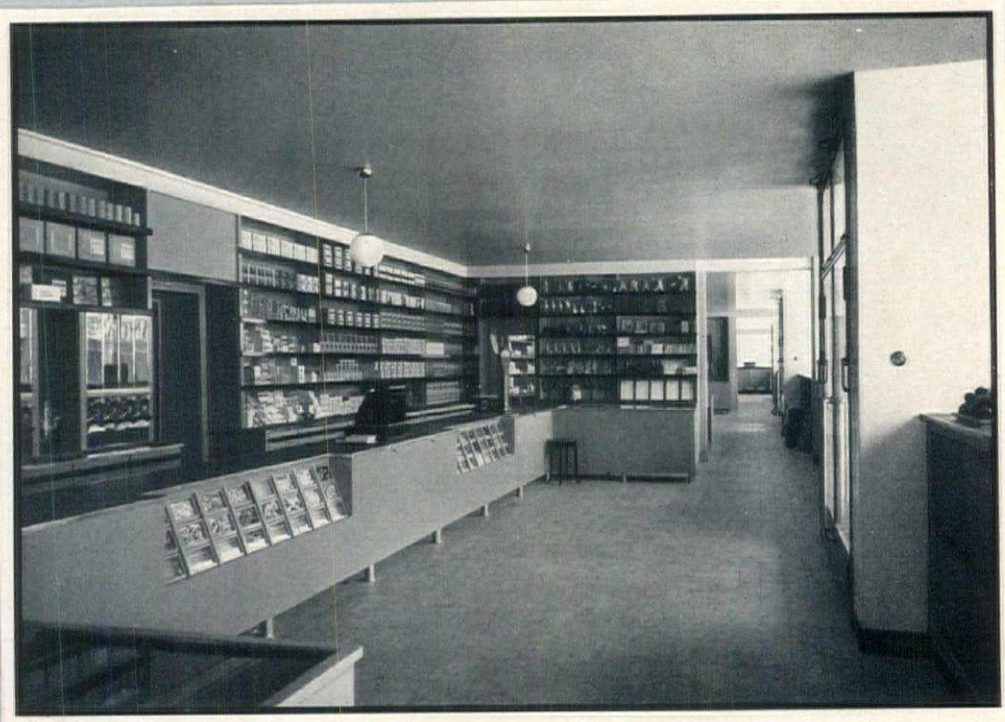


THE BATH-HOUSE IS A CUSTOMARY APPENDAGE TO THE TYPICAL FINNISH FARM. THE PREFERENCE FOR INDOOR BATHING IN A LAND OF LAKES MAY BE EXPLAINED CLIMATIC CONSIDERATIONS

IDYLLIC PATIO OF THE VILLA OIVALA



SECTION,
SHOWING THE POSITION OF THE BATHER. THIS METHOD OF BATHING IS CENTURIES OLD



Architects: Valde Aulanko & Erkki Huttunen. Coöperative store building at Terijoki, a small seaboard town close to the Russian frontier. The coöperatives are the backbone of retail business in Finland, as they are in Scandinavia. In the place of half a dozen more or less primitive stores, many a Finnish village boasts only its coöperative, which, however, is almost without exception neat, handsome, and progressive.

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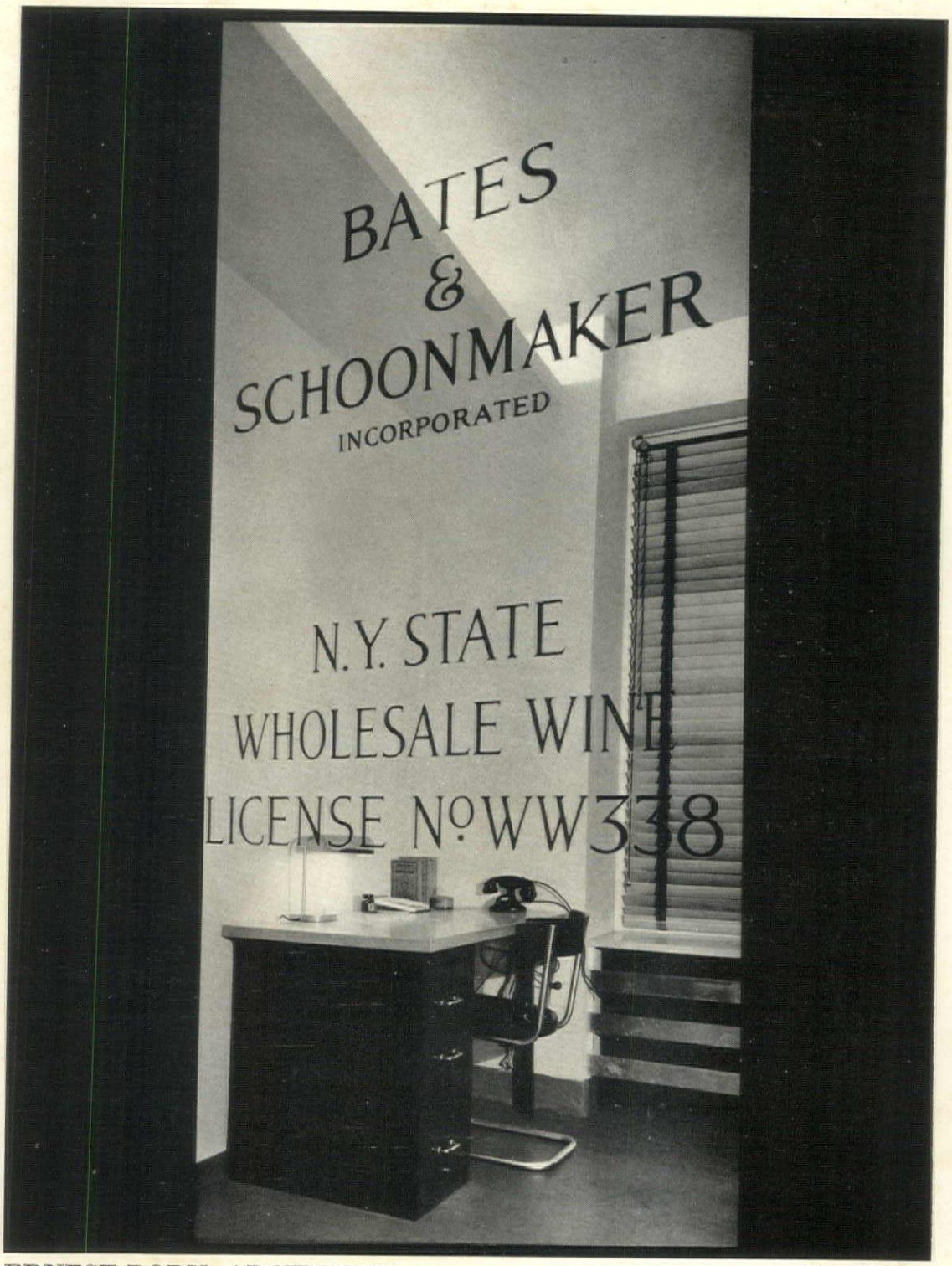
COÖPERATIVE STORE BUILDING AT TERIJOKI	VALDE AULANKO & ERKKI HUTTUNEN, ARCHITECTS

OFFICES AND TASTING ROOM FOR BATES AND SCHOONMAKER, N. Y.



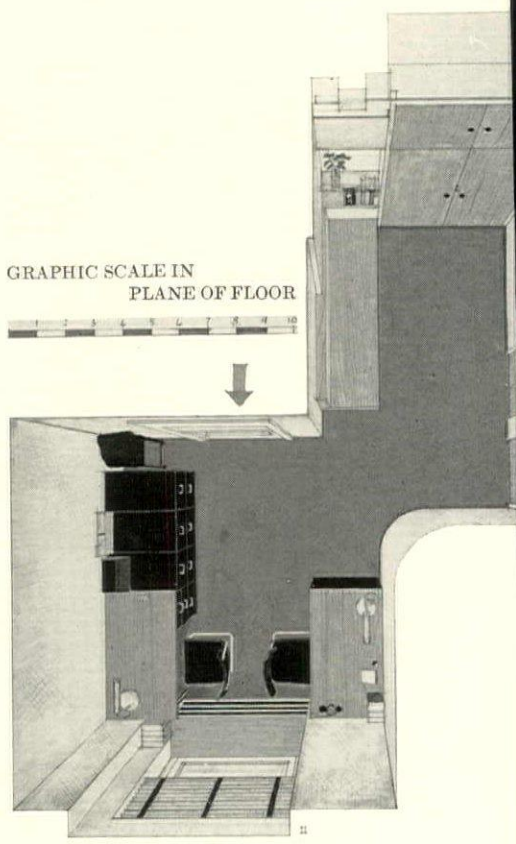
ERNEST BORN, ARCHITECT

Photos, Esther Born

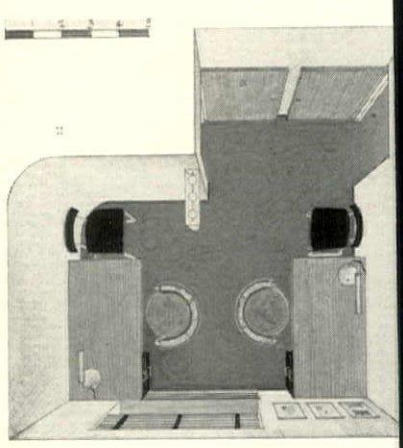
REPEAL created the need for smartly designed bars for the sale of drinks, and shops for the sale of wines and liquors. Hotel men and restaurateurs, wherever the law allowed, began building bars and new dining rooms or redecorating or remodeling old ones. In the last two years, they and the architects and designers they employed, achieved considerable success in the solution of the new bar as a design problem. But shops and stores for the retailing of liquor have seen little progress in decoration, design or architectural treatment. The simple formula of lots of shelves, lots of light, a cash register and a counter was considered sufficient. When the young firm of Bates and Schoonmaker opened its Manhattan offices, however, it demanded a less simple and superficial treatment. Fundamentally the architect's problem lay in the organization of a greatly restricted area and in the creation of an appropriate background for modern merchandising of a very special type.

BATES AND SCHOONMAKER OFFICES

OUTER OFFICE AND WAITING ROOM



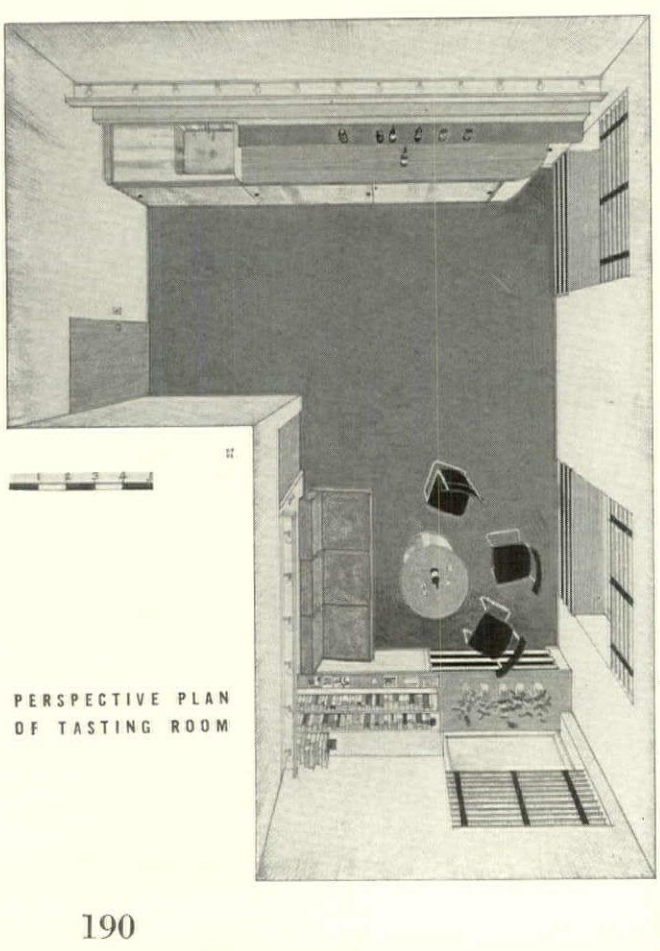
PERSPECTIVE PLAN OF OUTER OFFICE AND WAITING ROOM



PERSPECTIVE PLAN OF PRIVATE OFF

SEE PLAN AND DETAILS ON PAGE 194

The elimination of all non-essenti a color scheme of stark simplicity (color throughout, see technical no p. 194) and a pleasing sense of spa achieved in spite of an actually sm area, result in an atmosphere at hap variance with the jittery confusion 42nd Street just below. Contrasting w the dark wood paneling and hea clumsy furnishings of the traditio wine selling and tasting establishme these rooms are in sympathetic acc with the clean unaffected principles a constitution of the wares sold.

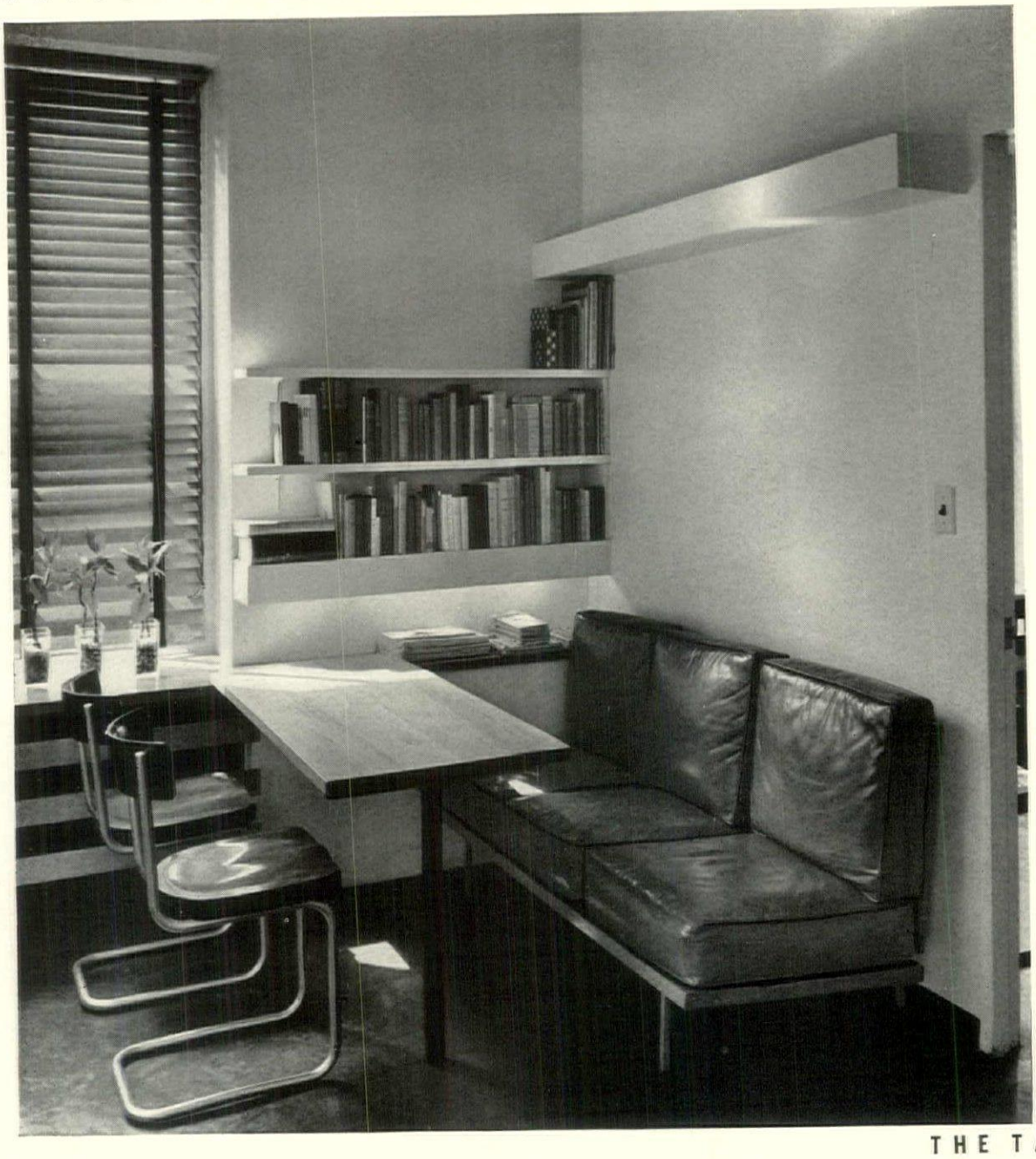


PERSPECTIVE PLAN
OF TASTING ROOM

"Bottled wine should ALWAYS be stored in a hor
position, so that the wine touches the cork." This
accounts for the fact that no wines are on open displa
selling room. A small group of wines under immedi
cussion is removed from the storage bins behind the
aluminum doors and stood on the middle level. As
lection is narrowed down to one or two or more wine
bottles are isolated from the others, placed on the low
and a conclusion reached by the customer with a mini
confusion. With several hundred different wines in st
obviously necessary to simplify selection by concen
attention on one wine group at a time. A compact refri
which in a half hour can chill to the lowest temperatu
required fits conveniently under the drainboard of a
metal sink. A glass cabinet (removable) fits betwe
sliding door and the sink trap.

The viticultural maps are a necessary part of the
equipment. Glasses appropriate for the serving of eac
may be placed on the top shelf in a position relative
wine on the shelf below.


CÔTE DE BEAUNE
RIOJA

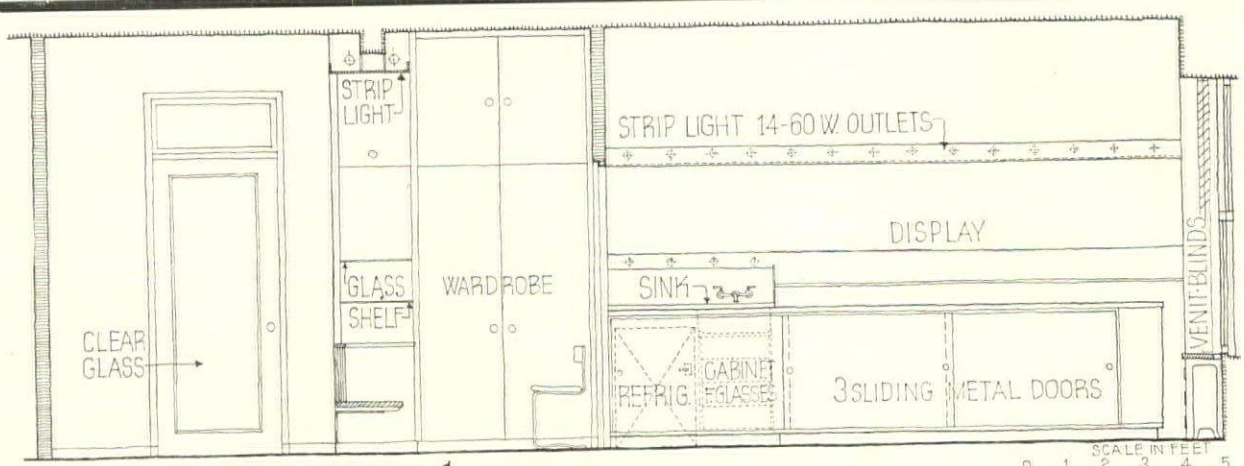


THE TASTING CORN

Here is where the serious business of tasting takes place after preliminary discussion at the "bar" at the opposite side of the room. Naturally not every purchase is pre-tasted. In the case of rare or costly wines a day is usually set when a group of interested prospective customers may attend the tasting of a particular wine. Also in some cases a light luncheon or certain special foods in conjunction with certain special wines are served at the small table shown above. Ordinarily, however, the method shown at the right is employed.

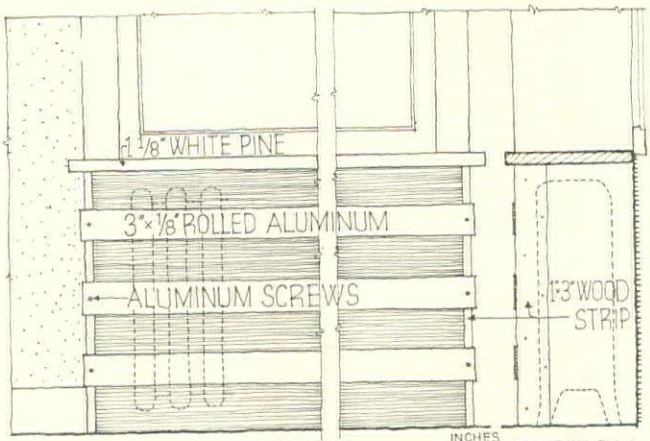
Trade periodicals and a small wine library are shelved above the leather seat. Their bright colored bindings and the gay colors of the wine maps are the only notes of positive color in the room, a legitimate dramatization which forces attention on the bottle under consideration. The use of the cushioned seat to help create a sense of leisure was not accidental. Whisky may be gulped on the run but not wine.

Although Bates and Schoonmaker operate under a wholesale license, this merely means that all wines must be delivered, and does not restrict the sale of small quantities or single bottles. The selling technique employed is based more upon retail sales, rather than large wholesale orders, and the intimate and personal nature of the offices is a direct reflection of this policy.

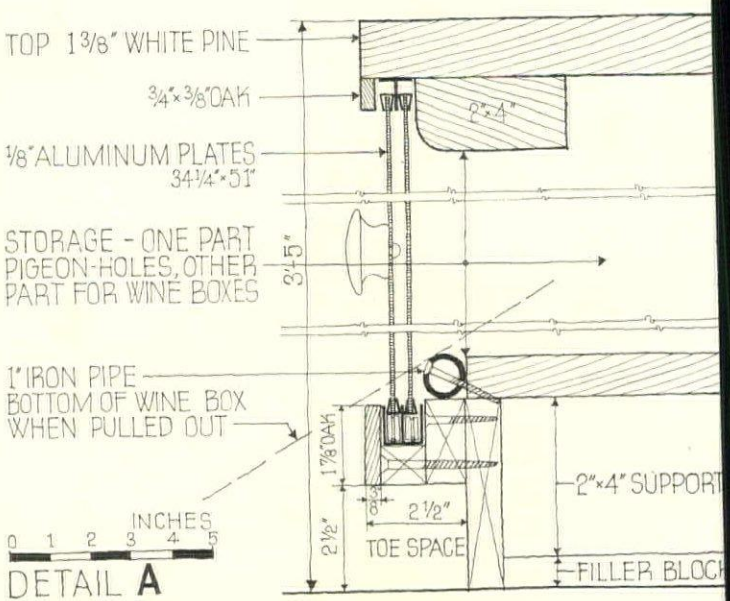


ELEVATION ON SECTION **1.**

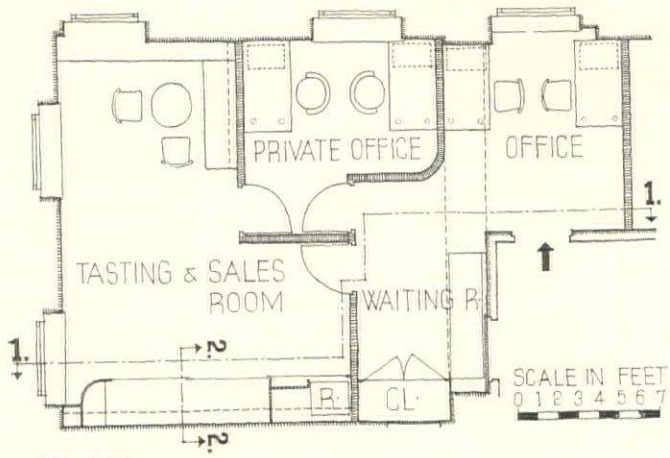
SECTION



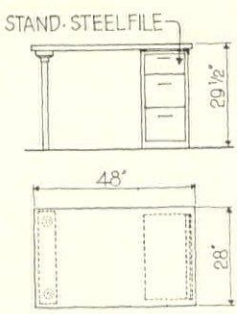
RADIATOR ENCLOSURE SECTION



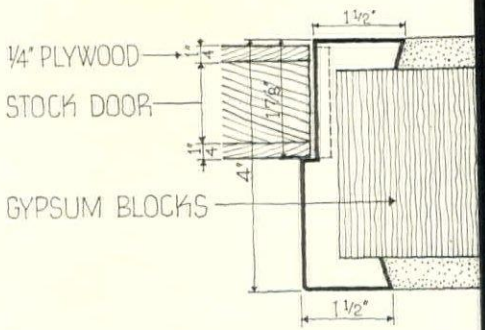
DETAIL **A**



PLAN



OFFICE DESK



METAL DOOR BUC

CONSTRUCTION OUTLINE

The plan required that there be three definite parts: 1. A space for two girls, secretary and stenographer, which space would also act as an entry and waiting room. This space must have outside light for the workers. 2. A private office for Messrs. Bates and Schoonmaker, to accommodate two clients, must be directly accessible to entry and secretary and also the Tasting Rooms. 3. A general sales space and tasting area. This should be accessible to the entry and the private office.

COST—About $1,650 including furnishings.

DEMOLISHING—and removing about 400 sq. ft. of 5" tile wall, removing radiator enclosure, lighting fixtures, all cornices, moldings, base boards and projections.

NEW WORK—

WALLS—construction of approximately 550 sq. ft. 3" gypsum block wall plastered on both sides, patching walls and otherwise making all walls smooth, patching after all electrical work. 3" run cement base, on new and old walls.

DOORS—flush metal trim and bucks of smooth hospital type. Doors, flush white pine, built by carpenter with ¼" plywood on stock-mill door (about one-third cost regular flush door).

RADIATOR ENCLOSURE—top of 1⅛" white pine varnished (Valspar) with ⅛" aluminum strips, see detail—radiator and recess painted flat black.

SEATS, WARDROBE, DESK TOPS—white pine, Valsparred.

VENETIAN BLINDS (Watson Mfg. Co.)—natural wood, Valsparred, black ribbons.

STEEL FILES (National)—black, chromium hardware.

FLOOR—covered with terra cotta color linoleum, waxed. All floors same color.

ILLUMINATION—all indirect by built-in strip lighting, except in private office, where a special fixture in satin chromium v used (Egli Co., who also made the ta lamps).

CHAIRS—satin finished chromium, bl lacquered wood parts, leather upholstery natural color leather — all by Tho Brothers. Seat cushions also by Thonet.

PAINTING—ceilings, all in sunflex, p white except in entry which is lemon yell Walls all stippled oyster white. Base pa to match floor.

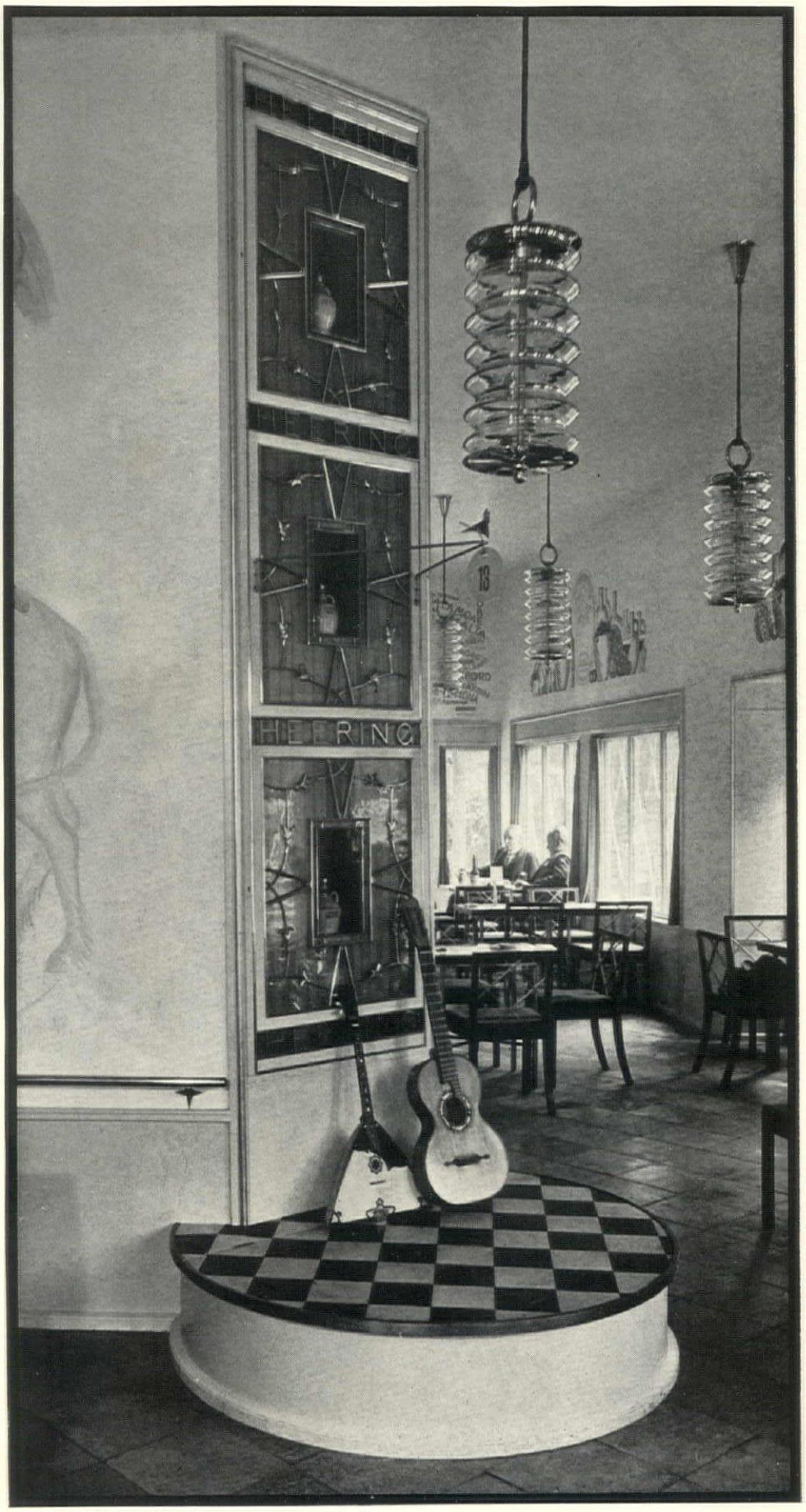
HARDWARE—stock, satin chromium ished. All new doors equipped with dr flush handles because of compactness to avoid traffic bumps. Ordinarily these d handles would be criticized as impracti but after a few months of use no object has arisen.

PLUMBING—including sink and faucet all work and materials. INCO C-2048L s and non-suction trap.

REFRIGERATION—Norge Model S-310.

BARS

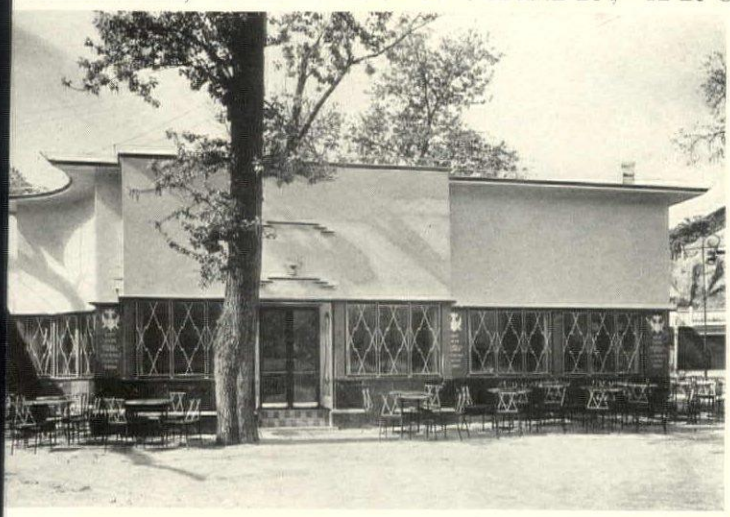
AND SOME EATING PLACES



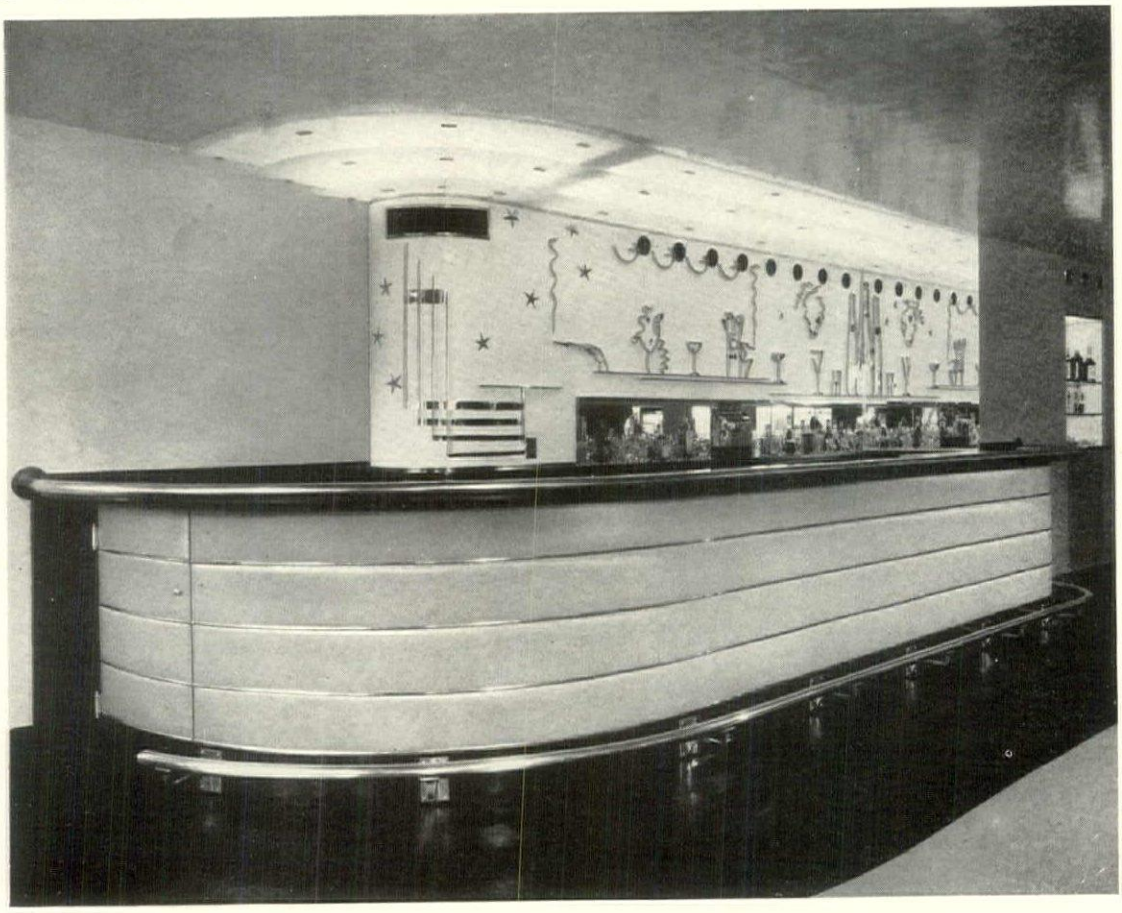
BARS • *LIKOR PAVILLONEN*, COPENHA

All photos, Jonals Co.

Built over a decade ago, the Heering Liquor Pavilion in Copenhagen has a freshness of design and that rare quality of style which continues to deceive visitors into thinking that it is one of the newest buildings in the city. While obviously "modern" in the sense that it has no recognizable precedents, it nevertheless has the strong individuality which is characteristic of Scandinavian work and is one of its greatest charms. The architect, Helweg-Moller, long known as one of Denmark's most gifted architects, not only designed the building, but did all of its accessories, such as the furniture and the very successful lighting fixtures. The pavilion is of white stucco with a gray marble base; its windows, with black metal frames and silver-painted grilles, can be raised into wall pockets, thereby opening the pavilion almost completely. The interesting concave shape was not arrived at for esthetic reasons, although it looks very well, but was used to save an old tree on the property. The murals were designed to preserve the integrity of the plain wall surfaces, and illustrate the products that go into the manufacture of Heering's liquors; they were painted by the Danish sculptor and ceramic artist, Jais Nielsen.




CURAÇAO
REERINO



The long clean lines of this new bar in the Empire Hotel in New York have been given emphasis by the refreshing simplicity of the room. The bar face, with its covering of bright orange fabrikoid sets the color note, echoed in the lighter portions of the linoleum floor. Both the footrail and bar edge are of brass, and bar top is mahogany. The back bar is white fabrikoid on which designs in strips of chromium-plated metal, conceived and executed by Ted Weidhaus, have been applied. The portholes and grilles which form part of this decorative scheme are used for air conditioning. The main lighting fixture consists of three separate tiers of glass which run the length of the bar; lights are concealed in a pocket in the ceiling. The upholstery of benches and chairs is a green-blue fabrikoid, and the yellow walls with a black base complete the color scheme of the room.

BARS • FORT HAYES HOTEL, COLUMBUS, OHIO

OMAN & LILLIENTHAL, ARCHITECTS

This new cocktail lounge is designed to serve food as well as liquor. In addition to the chairs and tables in the center of the room there are ten booths, each accommodating from eight to twelve people, and equipped with special ventilation. Illumination is furnished by two chromium light troughs, each 60 feet in length. Other lighting, also indirect, is furnished by neon tubes.

A. KIMBEL & SON
DECORATORS

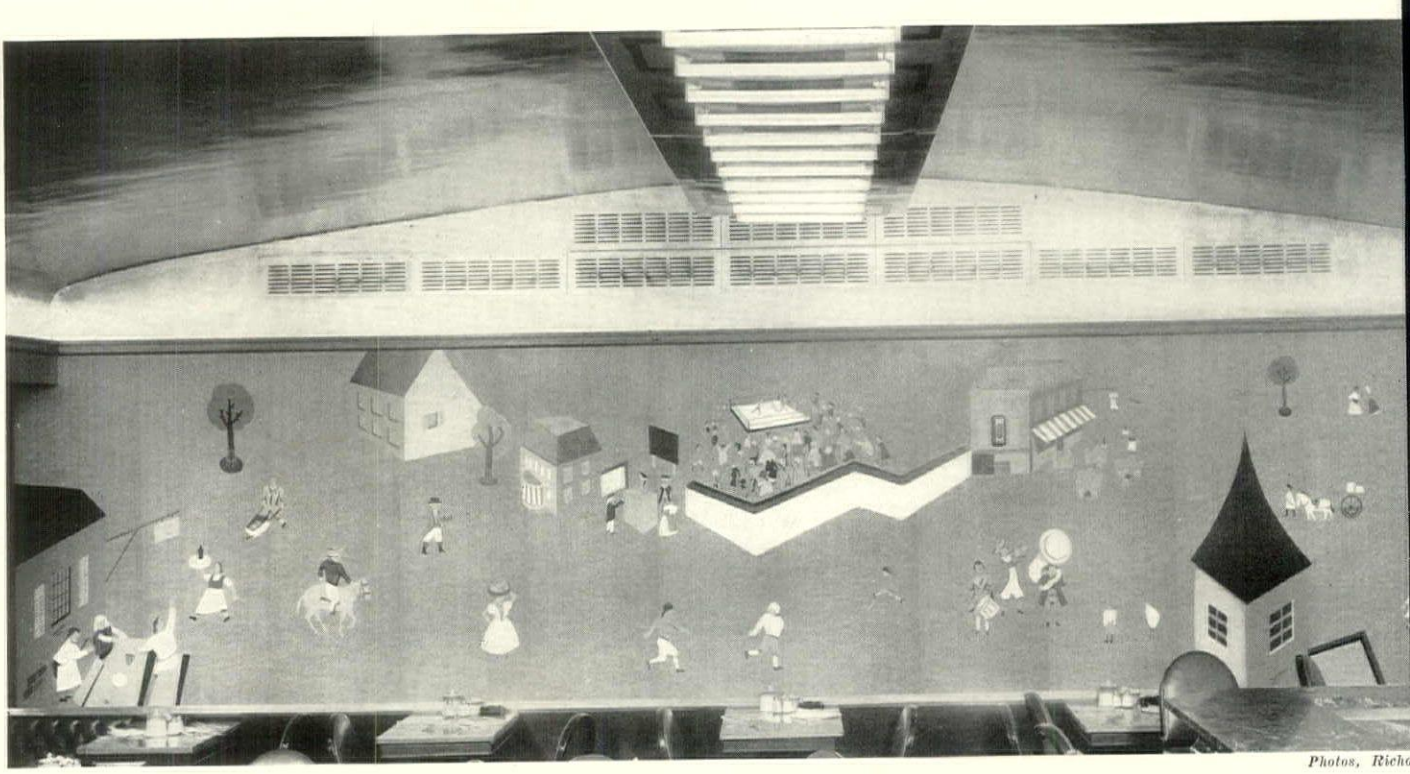
P. S. Lincoln

lighting in this room dominates the decorative scheme. Behind the frosted glass plates are reflectors oncealed light troughs in which a series of bulbs of three colors are set. These are controlled from the stra platform, and by means of switches and rheostats almost any color or light intensity may be ob- d. The general color scheme is blue; the ceiling is a deep blue, the backgrounds of the murals are ions of the same color. The mirrors, set on the columns, are dark blue with gold foil moldings. The l paintings, depicting the various national dances, are in a number of colors which are picked up in the er upholstery, carpets, and draperies.

• HOTEL TAFT TEA ROOM, NEW YORK

MORRIS B. SANDERS, ARCHI

MURAL PAINTINGS BY WILLIAM GROPPER



Photos, Richo

The successful use of two new products characterizes the new Tea Room in the Hotel Taft. Structural glass brick appears as the main mate rial in the soda fountain, employed in a manner which realizes some of its many decorative possibilities; the use of mirrored backs gives grea depth and brilliance to the blocks, and the ease of cleaning its surface is an added point in its favor. The new lumiline lamps which wer brought out last winter form the chief light source of the room; their use in conjunction with the aluminum leaf-covered ceiling is ver effective. This type of lamp has been in common use in Europe for a number of years, both in straight and curved forms, and its introductio in the U. S. will undoubtedly result in a number of interesting developments in decorative lighting. An amusing series of murals by Willia Gropper, based on the Georgian period in England, cover the walls of the room. The gaily colored painting was done directly on the lac wood walls.

HE UPKEEP OF HOUSING

. in the U. S. is twice what it is in Europe. It need not be, the opinion of Frankfort's onetime housing czar, who lays wn seven different methods of reduction.

ERNST KAHN

his is the second of two articles by Ernst Kahn who, in- d to this country by the National Association of Housing cials, has been studying American housing in the light of experience as former general manager of housing in nkfort, Germany. Last month, Mr. Kahn advocated in Architectural Forum for the first time the abandonment direct Federal building and financing in favor of a unique rest subsidy plan for private enterprise. The plan is now g considered by the Administration in Washington as an rnative to its present PWA policy.

he interest subsidy plan is based on the principle that low ts in housing are based primarily on cheap money. There- , he proposed that the Government should make direct rest grants to approved builders to reduce the effective rtgage rates from the prevailing level to about 3 or 3½ per t. The complete plan is presented in the August, 1935 e, pp. 89-94.

THE ardent discussion of how to approach the huge oblem of low cost housing there is just one rather impor- nt person who seldom is consulted: the future adminis- tor or manager of all the wonderful houses the reform- dream of. This omission may turn out to be the hole the dike, for success or failure is vastly dependent on e way it is administered.

In fact the real problem only starts when the architect ves his job. The task of the administrator is difficult d far-reaching because of a fundamental distinction tween his function and the business of the ordinary operty manager. Whereas it is up to an efficient man- er to secure for his boss as high a return as possible, e manager of those new low cost housing developments all have in mind can never forget the noble aim of the ole rehousing movement they are supposed to serve.

The outlay of many billions, partly out of the tax- yer's pocket, hardly would be justified, if rehousing re to confine itself to replacing old structures by new es. Rehousing in a broader sense aims at producing a w generation, fundamentally happier and better than e old one through the instrument of a home contrast- g the hopelessly insufficient, overcrowded, ill-planned vellings of our days with shelter not only at lower rents, th more space, light, and amenities, but also by the couragement of a sound community life.

But a satisfactory conception alone of the management oblem will scarcely guarantee success. Rehousing is bound to fail unless based on sound business principles and unless the management is aware of the profound shortcomings in human nature. The tenant seldom is an angel; he has to be guided diplomatically, educated, sometimes forced into the right way.

Again and again one has to keep in mind that housing is no charitable institution. Unless the capital invested in housing can expect at least a moderate return, and unless in the course of the years sufficient reserves are accumulated, no housing scheme will work. No country is rich enough to establish and carry through a program large enough to meet its citizens' housing needs, if not primarily calculated to be self-liquidating.

U. S. Rents Based on Double The Return Required of Foreign Housing

The calculation of rents varies widely in different countries. No matter how ingenious he may be, a manager can alter certain items only with difficulty, if at all. Others vary widely with the efficiency of the individual administrator. To illustrate both the chances and the limitations of reducing the expenses of low cost housing we may start safely with a somewhat crude comparison of European and American charges in housing. Such a compilation simultaneously may explain why rents in this country so vastly surpass those in Europe. It goes without saying that the instances given apply by no means to all actual developments. The table does not claim to offer any kind of "scientific" average. It just attempts to show the characteristic differences in dealing with low cost housing on both sides of the Atlantic.

RENT CALCULATING IN EUROPE AND U. S. (BASED ON TYPICAL CASES)

	U. S.	Europe
Interest and profit on invested capital	8.5%	4 %
Depreciation on invested capital	2 %	.5%
Repairs on invested capital	1.5%	.7%
Management on invested capital	.8%	.4%
Taxes on invested capital	2 %	2 %
Losses on vacancies on invested capital	.7%	.2%
Losses on arrears on invested capital	.8%	.1%
	16.3%	7.9%

Interest rates have started downward in this country, but similarly, European mortgage money is also cheaper for low cost housing (in England between three and three

and a half, in Germany not higher than three). So that generally speaking capital invested in real estate yields twice as high a return in this country as in Europe. Since the cost of building surpasses the European level by 100 per cent, one easily understands the alarmingly high rents in the U. S.

Inexpensive Construction the First Element in Low Rents

Before exploring the possibilities of reduction in expenses we may observe that an administrator should use his influence to obtain as inexpensive construction as possible without endangering the durability of the project, realizing that any additional capital expenditure involves additional charges for interest and depreciation. This seems to be one reason (out of many) why the future manager should be consulted as soon as the drafting of the future development starts.

As to the current charges, there is comparatively little chance to cut down the interest rates prevailing in a country. This is primarily a question of more efficient organization of long term credit. It undoubtedly is beyond the power of an individual person to replace a say 8 per cent mortgage by a 4 per cent one as long as market conditions cause those high charges. Yet, this does not mean a complete impotence on the administrator's part. In the first place, a mortgagee prefers to lend his money to an efficiently managed property even if he must accept lower interest rates. The chance of bettering borrowing conditions will certainly improve if any form of government assistance is to be expected, and it is up to the administrator to show the authorities how essential lower interests are in housing the unprivileged. A difference of only 1 per cent may enable him to lower the monthly rent per room by 80 cents (based on a price of $1,000 per room). (ARCH. FORUM, August, 1935, p. 94.)

Depreciation Figured on a 60-year Instead of a 30-year Basis

The table on p. 203 shows a striking contrast in calculating depreciation on both sides of the Atlantic. European experts feel entitled to reserve not more than ½ per cent of the capital invested for depreciation, thus spreading the lifetime of the houses over a period of 60 years. There are cases where even a depreciation of 100 years is approved by the authorities (Germany). Frequently the depreciation only is based on the actual cost of structure thus leaving aside the cost of the land. In America one usually calculates rather above than below 2 per cent on the entire cost (including land).

This difference in method naturally has a significant influence on the rents. If based on a cost price of $1,000 a room, the adoption of Europe's method would bring the monthly rent per room down by $1.25. How is that strange discrepancy to be explained? Does the American way of building have a considerably shorter lifetime than the European technique? This does not seem to be the case. On the contrary, even the average American frame house is often of more solid construction than most of the English brick cottages.

It safely may be assumed that the quick depreciation generally expected in America is based not so much on poor physical structure as on the social structure of the country. There are plenty of instances in practically every American town where the influx of a race or a nation considered as inferior suddenly drives down the value of entire neighborhoods. This often is combined with overcrowding by proletarian elements who quickly run down the property. In Europe such depreciating influences do not exist.

Granted then that depreciation in America is almost wholly due to outside influences rather than to inherent weaknesses in the construction, the problem of retarding obsolescence by the management becomes clear.

When Reform Accompanies Housing The Useful Life Is Longer

Low cost housing, rightly conceived, should automatically diminish practically all the dangers of a premature depreciation. First of all, housing reform cannot tolerate overcrowding. Further, one of the principal aims of American low cost housing managers should be to fight the quick shifting of the population and to insist on congeniality of his tenants. In this point he certainly is in a decisively better position than the individual proprietor who is powerless if his neighbors take in heterogeneous tenants causing a removal of the old established population in this particular section.

This danger point in American housing can easily be avoided if only one agency deals with the management and renting of an entire neighborhood. Influx of undesirable tenants, wholesale shifts of population, intrusion of non-conforming structures can be minimized, if not prevented entirely. In view of these virtues of large development, it seems unreasonable to insist on as large a depreciation reserve as 2 per cent. One to one and a half per cent should be adequate.

One often meets the objection that too low a depreciation rate may be dangerous considering the quick technical progress in our time and more especially in this country. This pessimism does not seem to be borne out by experience, as there are many older housing developments which still serve their purpose despite having gone through several technical revolutions. The most famous instance is the Fuggerei in Augsburg (Bavaria), a foundation which built row-houses for the poorer classes more than four hundred years ago, which is still serving its original purpose in a most satisfactory way, although the lighting system has changed successively from burning chip to candle, from candle to oil, from oil to gas, from gas to electricity.

An Annual Repair Fund is a Prime Essential in Keeping Costs Low

The third item in our table refers to "Repairs." Once more we find over here an outlay twice as high as in Europe. To limit repairs to a tolerably low expenditure without endangering the property is one of the fundamental problems of any housing manager. The experiences of some of the older demonstrations in Europe show

rve as a warning. They show only too clearly that re-ir expenditure may easily endanger the financial struc-re of a housing company. One should not be misled by e comparatively moderate requirements during the first ars. After a period of fifteen to twenty years even model ructures sometimes require major repairs absorbing in e year twenty and more per cent of the rent. One cause costly repairs can be eliminated: the architect should ot be given too free a hand in considering the new devel-oment as *carte blanche* to experiment with all kinds of w ideas. Rehousing should not be hostile to progress, t it easily may cause heavy losses if those experiments rn out to be failures.

There cannot be any doubt that the most efficient safe-ard against premature repairs is a solid structure. For is reason the German low cost housing regulations de-and from the contractor a three year guarantee. Should y repairs become necessary during this period, the con-actor is liable.

Right from the beginning a scientific management ould establish a repair account and endow it regularly o matter how low the actual need may be for the time eing. Interest on the fund naturally accelerates an ac-mulation of a sufficient reserve for forthcoming require-ents.

The accumulation of such a repair fund simultaneously elps towards the solution of another problem otherwise ot easily dealt with. The slow depreciation rate advo-ated above frequently may contrast with a considerably uicker amortization, demanded by the mortgagee, thus ausing a gap between income and actual obligations. The epair fund, not required for many years, may fill this gap. ater, when the actual repairs surpass the yearly assign-ent out of the revenues, the amortization of said mort-ages will have been completed. Thus the money bor-owed by the amortization fund from the repair fund an be easily redeemed when required by the rising ex-enses for maintenance.

To be on the safe side it is good practice to strengthen oth the depreciation and the repair account out of ex-raordinary profits whenever they may arise. Those spe-ial profits are by no means out of the question in housing! ometimes the renting of stores yields a higher return by he square foot than calculated, sometimes a premature eimbursement of mortgages with a discount is possible.

hould Tenant or Management lake Minor Repairs?

So far, in discussing methods of keeping repair costs within certain limits, we have dealt only with the financial ide of the problem. Important as this certainly is, re-airing is primarily an administrative and technical task. The administrator must decide whether he has to under-ake any minor repairs or whether this should be left to he tenant. There is, of course, no hard and fast rule in lealing with this question. The decision is to a certain legree dependent upon local customs, the type of lodgers ne has to deal with, etc. As to the technical side, there re wide possibilities. Again it is an open question whether hese repairs should be executed by one's own staff or by the trade. As a rule, it may be wise to steer a middle course avoiding both overstaffing and too much contract work.

Keeping the structure always in good order not only saves money, but pleases the tenant. This is of the great-est importance as a contented tenant is the surest guar-antee against abnormal repair expenses, because each turnover involves heavy extra repair. European instances show how in times of a crisis and consequently serious shrinkage in income repairs required at least twice the amount as in normal times because the heavy turnover required redecoration for most of the dwellings which changed hands. One of the leading German housing cor-porations figured out that each change in occupancy equals the rent of fully one month. In America it may run even higher.

Large Scale Management Reduces The Estimated .8% for Overhead

The table puts the cost of management including all other overhead expenses in this country at .8 per cent of the capital invested as compared with only .4 per cent in Europe. To base overhead expenses on the invested capi-tal is a somewhat uncommon method, as they usually are brought in relation to the rents. We select this method in order to enable a better comparison with the other items. Anyhow, we again arrive at distinctly higher charges over here. This may be due partly to the con-siderably lower compensation a European manager receives. His salary sometimes seems to be in striking contrast to the heavy moral and financial responsibility burdened on the manager's shoulders. This certainly is the case in England at least where the female manager has to live on an income not so very different from a skilled laborer's wage. Yet, the main reason why overhead expenses compare unfavorably with Europe lies in the smaller size of the developments. America, the classical country of highly concentrated capital and consequently huge units in industry, up to now possesses only a very few housing companies comprising more than a thousand housing units, whereas England, Germany, Austria and Holland show instances enough where many thousands of dwellings are under one management.

Vienna's city-owned and centralized housing comprises 66,000 dwellings; in Birmingham (England) nearly half of this record figure is handled from one desk; in Germany one single corporation, inaugurated by trade-unions, con-trols as much as 20,000 units all over the country, whereas some local demonstrations in Cologne and Frankfort (Main) show some 15,000 each under one board. This concentration naturally cuts the overhead expenses mate-rially as an increase in the number of tenants does not raise the staff accordingly.

The concentration of many units under one manage-ment involves other advantages, the most important one, as compared with smaller companies, being a certain spread of the risk. These large corporations are in a posi-tion to build different types of dwellings and single family houses and apartments, smaller and bigger units, devel-opments on the outskirts and in the center, cheap and more expensive dwellings. Such a variety of types enables the companies to act as a kind of a clearing house for their

clients. All these obvious advantages make a similar evolution highly probable for this country.

Improved Housing Is in Itself a Weapon Against Vacancies

The European housing expert, visiting this country, is at first amazed at learning the considerable losses on arrears and vacancies his American colleague considers as normal. Whereas the European model demonstrations claim that their average losses on rents are limited to 1 per cent of the rents, one again and again is assured that a loss of 5 per cent is considered normal (the contrast in vacancies being somewhat less pronounced). Gradually one grasps the reason for this striking difference. The tendency of shifting from one neighborhood to another obviously is much more pronounced in America than in Europe. This tendency undoubtedly leads to vacancies.

As to the higher arrears in this country, they may be principally caused by the absence of a compulsory social insurance protecting the workman and employe against the hazards of employment, sickness or accidents. In times of depression when many of his tenants lose their jobs, it is one of the major problems for a European housing manager to come to an understanding with the relief administration as to which of the rents of those out of work are fully or partly paid out of public means.

Such an understanding is much easier to be achieved if the authorities have to deal with a comparatively small number of large housing corporations, as compared with a multitude of single house owners.

Combating the Ever-Present Problem of Rent Arrearages

The prevalence of the latter type in America certainly is another reason for the abnormally high arrears. The landlord would rather run the risk of losing the rent than to have his dwelling empty, as the depreciation of vacant units sometimes is alarming. This is especially true with single family houses in slum districts. To the visitor from abroad one of the strangest sights is to see in distressed quarters houses uninhabited only a few weeks or months already deprived of their windows, doors or even roofs by some friendly neighbor who was short of fuel. It goes without saying that fear of these deprivations never would induce a European housing manager to follow a lenient policy in rent collecting, as dangers of that type do not confront large developments. On the other hand any experienced manager realizes the moral and economic dangers of rent arrears. He knows in the first place that it is harmful to the tenant to let arrears start, as it involves him in debt. That is why the very first delay must be dealt with energetically. There are many ways the problem can be solved. In many cases a mere warning persuades the slow tenant to find the overdue rent somewhere. Quite often, however, an investigation will show that he positively cannot pay the full rent any more and the family has to be moved, as a matter of common interest, to a cheaper shelter. This, of course, is much easier with a big company which has a variety of dwellings at its disposal. To collect rents weekly seems to be anoth effective method of keeping arrears down. Some Europe administrators succeeded in arranging the payment rents in advance which naturally is, to a certain extent safeguard against losses.

Manifold as the methods to fight arrears may be, tests a manager's abilities to keep the losses down to tolerable percentage. Even the most efficient is bound fail if political or other influences interfere. No matt how social-minded a housing demonstration may be, ren have to be collected fearlessly if the project is to succee

To summarize: The essential point in solving the hou ing problem for the unprivileged is low rent. Any a tivity in this field, therefore, has to start with the utmo effort to eliminate unnecessary charges.

Tenant Associations a Frequent Cure for Operating Ills

Granted cheap rents based on sound financing and e ficient management the art of handling the tenant is th next most important quality in low cost housing. N measure should be omitted to make the tenant feel happ in his specific surrounding. He has to be convinced tha the administration always acts in his interest and tha even the punctual and full payment of rent is a "must as it is the basis of social-minded housing.

To further such mutual understanding, permanent in tercourse between both parties must be maintained. Ob viously the manager of a large development is not in th position to deal personally with all the tenants' sorrow But he can act wisely by constantly keeping in contac with representatives of his tenants. No matter how bus he is, he should visit typical dwellings regularly. Furthe more, he should encourage his clients to form associatio and elect representatives to discuss their problems wit him. Meetings of this kind offer a splendid opportunity fo better understanding. As the manager learns the com plaints of the tenant, the tenant easily becomes convince that everything possible is being done to cater to hi wishes. It is only one step further to induce the tenant t cooperate with the administration in saving money an even in educating and, if necessary, fighting disagreeabl elements.

Tenant strikes obviously cause heavy losses and lowe the development's standing in public opinion. The should not if the management establishes confidence Here is an instance from our experience in Frankfort One day, in the midst of the depression, the rather youn Communist representative of a largely unemployed hous ing section announced his intention of starting a ren strike in order to fight the company which, he explained the section considered a typical capitalistic proposition My assurance that the company was managed exclusively in the tenants' interest was met with skepticism. Where upon I offered to instruct his constituents and thei friends in the elements of housing management based on the actual figures and facts of our corporation. They ac cepted my suggestion, the class began, my new pupils bringing along as much skepticism and opposition as pos sible. After the first two or three lectures of the course they admitted that a rent strike would positively be

ainst their own interests. Furthermore, they requested e to continue the classes. Some of these opponents soon came my most devoted helpers in that specific housing ction. I, personally, would not confine myself to a loose operation with the tenant but would go much further offering their appointees one or two seats on the board the housing corporation. The eligibility should be subct to certain conditions, such as a punctual payment of e rent, permanent tenancy, etc., in order to avoid the ection of mere demagogues and professionals. These embers of the board would be valuable advisers in many actical questions and most likely would assist the manement more efficiently than other members of the board ss familiar with the needs.

Families accustomed to poor housing conditions, living eir lives in run down dwellings, may be inclined to treat e new surroundings no better than the old and thereby use premature depreciation of the new houses. The dander clearly indicates the desirability of a certain guidance the tenant's life. Even a hundred per cent business man ithout any social understanding can appreciate what arm his development is bound to suffer if the children e not offered kindergartens, playgrounds, etc. Children, eing children, will damage the property if they are not ealt with properly and are retained within the apartents or compelled to play in narrow courtyards or on the reets.

plitting the Cost of Community ctivities with the Tenants

Naturally, all improvements cost money and increased arrying charges. Any expenditure for community life has o be within the narrow limits of the calculation. As a rule nts in low cost housing seldom allow more than 1 per ent of these rents to be spent for social purposes unless here are extra revenues; in some European cases extra rofits, drawn out of the rents for stores, are put aside in rder to finance community life.

The problem arises whether there are not other possiilities to secure the necessary funds. It will sometimes be ossible to assure the cooperation of local social or regious agencies. In special cases the municipality may be nduced to give its help. There is at least one American ity (Cincinnati) which lately offered at a cost of one illion dollars a park with playgrounds to improve a ederal housing demonstration under consideration.

The most desirable way to promote community life is o secure cooperation of the tenants themselves. If posible, the tenants may be induced to take the lead, financially and otherwise. Experience shows that participation n community life is considerably keener if their own noney is involved. It therefore seems to be advisable, both rom a financial and an educational point of view, to encourage the formation of clubs or associations to promote ommunity life. The principal contribution to be expected rom the management consists of the rooms required, whereas the current expenses should primarily be divided etween local agencies and voluntary contributions of the lub members. Sometimes even a modest aid will carry he purpose pretty far.

In discussing the importance and the necessity of permanent tenants, one is usually assured that the average American likes to move much more often than the European, thus facing the American manager with a hopeless task. This assumption is not fully borne by the facts. The American tenant like the European can be induced to move less, *if* the right type of shelter is offered to him at a price he can meet.

Two Forms of Rent Rebates For Prompt Tenant Payments

Considering the overwhelming importance of permanent tenants, special inducements and advantages calculated to retain them may be justified. Naturally, the most efficient instrument to keep turnovers within reasonable limits is a discount on the rent to be offered after a certain number of years. Such an allowance can easily be counterbalanced by the advantages of permanent tenants. A family staying say ten years in the same flat and paying all minor repairs out of its own pocket, saves the owner as much as one to two years rent, as compared with five families staying only two years.

Each turnover requires considerable expenses for redecoration and involves the possibility of temporary vacancy—quite apart from charges of advertising, paying the agent, etc., and quite apart also from the bad impression too quick a turnover leaves with present and would-be tenants.

The type of discount to be offered and when it should begin is a question of accounting. Naturally the rebate should never surpass the actual savings on repairs, vacancies, etc., by the permanent tenants as otherwise the budget would be endangered.

Similar effects may be achieved by a somewhat different reward; instead of actually reducing the rent, it might prove less risky to present the conservative tenant with stock in the corporation. For example, offer a discount of 5 per cent granted on the rent after ten years. Based on an annual rent of $400, this would amount to $20. In case the discount should be increased by 1 per cent at intervals of two years, the tenant would receive:

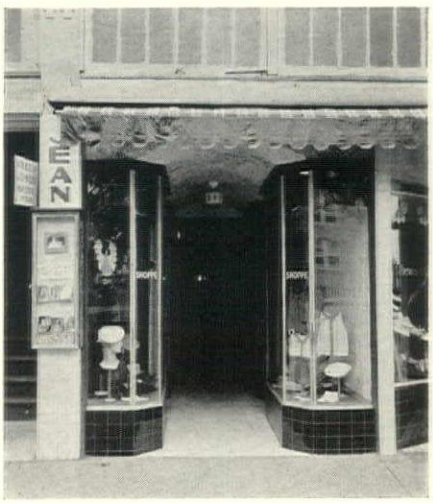
After the 11th year	$20 in shares
" " 12th "	20 " "
" " 13th "	24 " "
" " 14th "	24 " "
" " 15th "	28 " "
" " 16th "	28 " "
" " 17th "	32 " "
" " 18th "	32 " "
" " 19th "	36 " "
" " 20th "	36 " "
Total after 20 years	$280 in shares

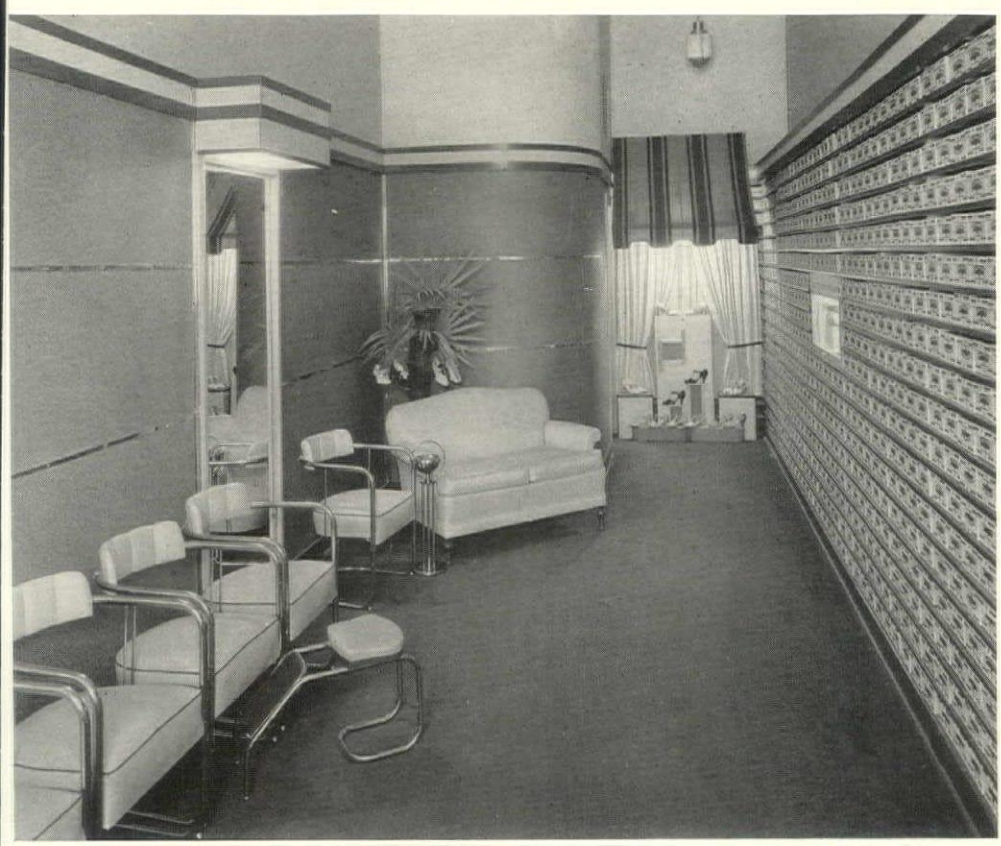
From the company's point of view this system may be preferable to the first one for these reasons: the actual revenues are not reduced as the tenant has to pay his full rent; the tenant receives a dividend on his share only if and as long as the company shows a net profit and can consequently afford it. Furthermore the tenant becomes a partner of his landlord which, from a psychological point of view, is certainly important. Finally the shares, which remain as a deposit with the management as long as the tenant stays with the company, may serve as a guarantee against arrears.

SHOE SHOP, TYLER, TEXAS

SHIRLEY SIMONS, ARCHITECT

By raising the vestibule one step and decorating it with flowing directional lines the architect endowed what had formerly been a commonplace shop with importance and chic. When the interior was remodeled the architect discovered an unattractive dark spot at the rear, a flaw in design which was cleverly eradicated by the installation of a lighted display case. The lines of the stacked shoe boxes on the wall, broken at intervals by small lighted display areas, tend to lead the eye to the more important display at the rear.





Materials: Front, Micarta by Westinghouse, Plate Glass by Binswanger, "Brasco" sash trim, Wooster metal trim, X-Ray Reflectors. Cost: $1,200. Interior: Masonite wall panels, Lightolier Fixtures, Soss Invisible Hinges, Bigelow-Sanford Carpet, Royal Chrome Steel Furniture. Cost: $1,300.

APARTMENT HOUSE, NEW YORK CITY

HERMAN M. SOHN, ARCHITECT

The entire interior of this old apartment house in downtown Man hattan was demolished, the old partitions were scrapped to make wa for a new layout of which the main feature was the installation of a elevator. The exterior was shaved of the old-fashioned cornice and fla pediments over the windows and the stores were flushed to the sidewal where before they fronted on grated sidewalk openings. The new co nice motif is apple green and black and the brick wall was repainted i buff. Previously this wall was bright yellow with the brick joints picke out in a darker color. The store front treatment of black Carrara glas base with large areas of plate glass and white metal molding carrie out the general simplification of the entire job. Cost: $60,000.

BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

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JOHN CUSHMAN FISTERE
Editor

Harris & Ewing

Man of the Month FREDERICK M. BABCOCK (**see** Page 212)

THE RISK RATING OF MORTGAGES

gives promise of being the greatest lever ever devised to lift the standard of U. S. homes. The science developed by Babcock.

A LAYMAN'S chances of knowing what he is buying in a house—either an unbuilt one or one that is fully clothed in paint and gadgets—are slim to the point of vanishing. Yet for the average man, not only does the down payment constitute the biggest single check he ever writes, but the cost of financing and maintaining the house is an annual budgetary annoyance.

Because in the ordinary house there are 47 separate items to be purchased, no layman could educate himself to buy wisely. Someone's word has to be taken—a friend's, his architect's, a salesman's—for everything. If only some wholly unbiased agency could pass on the construction, the design, the planning, the equipment, the location, and the dozen other factors that give value to a piece of property, his worries would be over.

It was not such a Consumer's Research Bureau that the framers of the National Housing Act had in mind when they invented the idea called the risk rating of mortgages. They were trying to conceive a way of judging the comparative security of different mortgages. Nevertheless, should the full implications of mortgage risk rating ever be realized, the result will be as accurate a yardstick of property values as has ever been devised.

This new semi-science of risk rating, which has been added to the already intricate business of property appraisal is equally intricate, and equally dependent upon a nice balance of formula and common sense. Whereas a mortgagee's appraisal is made primarily to indicate to a lender how much, if anything, he ought to advance on a piece of property, risk rating seeks to forecast the comparative chances of the mortgage remaining in force throughout its scheduled life. As yet the new science is pretty much of a secret among the underwriters, valuators and architectural inspectors of the FHA. But so far-reaching are its probable consequences that last month the FHA decided to tell the public all.

As every building man and mortgage man ought to know by now, Title II of the National Housing Act provides for the insurance of mortgages on 1- to 4-family houses and moderate rent apartment houses. Insurance premiums (½ of 1 per cent a year) are paid by the mortgagors along with interest and amortization. The accumulated insurance premiums are used by the FHA as collateral for bonds which it issues to a mortgagee whenever an insured mortgage is foreclosed. Instead, however, of dumping all the premiums into one pot, the FHA assorts all insured mortgages according to their chances of going sour, or more formally, their risk characteristics. The best or "A" mortgages are in one group, the "B" mortgages in a second, and the "C" in a third. The worst group, "D," is rejected. The reason they are so classified is that mortgage insurance is mutual, and whatever is left over in any fund after losses through foreclosure are paid, is credited to the account of the non-delinquent mortgagors in the group. The FHA believes that good risks should not be penalized by having to share the losses incurred by less promising investments.

It is important to remember, however, that any mortgage insured by the FHA, whether it be rated "A," "B" or "C" is a reasonably good mortgage. Experienced lenders, who once thought that they would use FHA insurance only when they were on the fence about a loan, have come to the conclusion that FHA's valuators and risk raters are even more penetrating in their appraising than their own men. In more than 90 per cent of the cases, FHA's valuations are lower than those made by mortgagees' appraisers.

Significance. Concerned as it is with the dry stuff of actuarial accounting, risk rating is not an exciting topic. None the less, its significance to every unit of the building industry and its financial counterpart is immediately great and prospectively greater. Forgetting for a minute the use to which it is put, risk rating amounts to an official ranking of houses on the basis of design, construction and equipment, plus factors of neighborhood, the character of the borrower, and the type of mortgage. Further than that, it places a dollar and cents value on these things in addition to their influence in valuating the property.

For instance, on a $10,000 mortgage running for 20 years, the mortgagor pays $50 a year insurance premium—$1,000 during the life of the loan. Should his mortgage be rated "A" and be placed in a group that suffers very few losses, he will receive back most of his $1,000 (minus charges for operating costs). If on the other hand, his mortgage is "C" and his group suffers heavy los may lose a greater part, or even $1,000. That, in brief, is the mean risk rating to the owner. What the losses in any group may be has n been established because the fund not been operating long enough. building industry, it has other me

Architect: Because risk rating i tially, not entirely, based on good tecture, it gives a cash value to ar tural services, makes pecuniary the ence in good and bad site layout, planning, design, construction, and ment. If, through paying an archit fee, an owner can save a significan of the ½ of 1 per cent a year face value of his mortgage, which h pay for mortgage insurance, archit service steps out of the luxury cl his mind into something close to cessity.

Contractors: That too familiar the "jerry builder" is not to be th kind of contractor who will feel the ding of risk rating. For while he is not to have his houses insured at a contractor whose work is even less the best is certain to earn a lower The "71%" house, while it may b constructed, has not the sales app the house which rates "93%" in con tion. And the contractor who has a of nothing but high rating houses past is a much more valuable man architect or owner than his less c competitor.

Developers: The man with a " house for sale in a "90%" comm will find a whole lot less sales resis than his competitor whose house rated "71%" and his development "

Lending Institution: "A" mort will sell quicker than "C" mortgages the discount percentage (either th the Federal Home Loan Bank Syst present, or through whatever discou agency is set up in the future) will ably be slightly higher for "A" mort than for the other classes.

Manufacturers: For producers of ity materials, the promotional possib of risk rating are equally obvious though the FHA is far from it now time may come when construction rials and items of equipment will be rated or formally approved by the

until that time comes the broad im-
vement of construction engendered by
rating is of vital concern to every
ufacturer.

hus, no element in the building indus-
is left untouched by the implications
isk rating.

cock. Unlike the general theories of
ual mortgage insurance, parentage of
ch is claimed by nearly everyone
se opinion was ever asked about it,
science of risk rating belong alone
Frederick M. Babcock. The notion of
king mortgages by risk is not his,
e it was contained in the original Na-
al Housing Act—but for the develop-
t of the method, he alone deserves
lit.

Whether someone else claimed it or not
wouldn't care, for while not holding
self modestly, he is unbothered about
t other people think. Son of the well-
wn William H. Babcock, whose real
te consulting firm in Chicago was one
he pioneer appraisal outfits in the coun-
Fred Babcock has been a practical
economist all his life. Years of train-
with his father's firm, which inci-
tally made the famed land use survey
Los Angeles in 1926, equipped him to
te a book in 1923 on real estate ap-
isal, which though as good as anything
ts day has been superseded in 1932 by
t is probably the best book on valua-
in the U. S. If it has a peer it is Philip
skern's "Real Estate Appraisal."

When 1931 came along, William H. Bab-
k & Sons found itself with a much re-
ed staff and little business to carry.
e result: The office was further reduced
its affairs left entirely to Partner
ry A. Babcock (Fred's brother and an
ally significant factor in U. S. apprais-
). It was an opportune closing for Fred
bcock was retained by the University
Michigan to write a book on appraisals.
er a year of work, the Prudential Life
urance Company hired him away from
cloisters and returned him to practical
lications of his methods.

He had scarcely mussed up the point on
desk pen when the Federal Housing
ministration sent out a hurry call for
n to come down to Washington to write
appraisal manual for the field staff.
ke everyone else who went there Bab-
k became immediately enthused by the
er brilliancy of the planning of the
A. He threw himself into the task as
ef of the underwriting section, a job he
not quit to return to Prudential.

Medium height, medium color, medium
his manner, Fred Babcock is a rare com-
ation of practical economist and execu-
e. His ability to make things clear either
the printed text or in a speech before his
ntinuing classes in real estate valuation
the FHA offices does not detract from his
pacity to run the underwriting staff in
offices. Around him in Washington he

RATING OF PROPERTY

	FEATURE	REJECT	1	2	3	4	5	RATING
FITNESS	GENERAL LAYOUT	O	3.0	6.0	9.0	12.0	15.0	
	DESIGN OF PROPERTY	O	1.6	3.2	4.8	6.4	8.0	
	SUITABILITY TO CLIMATE	O	1.4	2.8	4.2	5.6	7.0	
FUNCTION	LIVABILITY	O	3.0	6.0	9.0	12.0	15.0	
	LIGHT AND AIR	O	1.6	3.2	4.8	6.4	8.0	
	MECHANICAL EQUIPMENT	O	1.4	2.8	4.2	5.6	7.0	
	ACCESORY	O	.6	1.2	1.8	2.4	3.0	
	SPECIAL EQUIPMENT	O	.4	.8	1.2	1.6	2.0	
DURABILITY	STRUCTURAL SOUNDNESS	O	4.0	8.0	12.0	16.0	20.0	
	RESISTANCE TO ELEMENTS	O	2.0	4.0	6.0	8.0	10.0	
	RESISTANCE TO USE		1.0	2.0	3.0	4.0	5.0	
							TOTAL RATING	%

RATING OF NEIGHBORHOOD

FEATURE	REJECT	1	2	3	4	5	RATING
STABILITY OF THE NEIGHBORHOOD	O	5	10	15	20	25	
PROTECTION FROM ADVERSE INFLUENCES	O	4	8	12	16	20	
ADEQUACY OF TRANSPORTATION	O	3	6	9	12	15	
APPEAL OF THE NEIGHBORHOOD	O	2	4	6	8	10	
SUFFICIENCY OF UTILITIES AND CONVENIENCES	O	2	4	6	8	10	
LEVEL OF TAXES AND SPECIAL ASSESMENTS	O	2	4	6	8	10	
PRESENCE OF CIVIC, SOCIAL, AND COMMERCIAL CENTERS	O	1	2	3	4	5	
TOPOGRAPHY AND SPECIAL HAZARDS OF NEIGHBORHOOD	O	1	2	3	4	5	
						TOTAL RATING	%

RATING OF RELATION OF PROPERTY TO NEIGHBORHOOD

FEATURE	REJECT	1	2	3	4	5	RATING
CONFORMITY AS TO TYPE	O	3	6	9	12	15	
CONFORMITY AS TO USEFULNESS AND FUNCTION	O	3	6	9	12	15	
CONFORMITY AS TO PHYSICAL CONDITION	O	2	4	6	8	10	
CONFORMITY AS TO ARCHITECTURE	O	2	4	6	8	10	
RELATIVE ADEQUACY OF UTILITIES AND MUNICIPAL IMPROVEMENTS	O	2	4	6	8	10	
RELATIVE ACCESSIBILITY TO NEIGHBORHOOD CONVENIENCES	O	2	4	6	8	10	
RELATIVE FREEDOM FROM NUISANCES	O	2	4	6	8	10	
CONFORMITY AS TO LOT CHARACTERISTICS	O	2	4	6	8	10	
CONFORMITY AS TO PROBABLE REMAINING USEFUL LIFE	O	1	2	3	4	5	
CONFORMITY AS TO PLACING OF BUILDINGS ON LOT	O	1	2	3	4	5	
						TOTAL RATING	%

RATING OF BORROWER

FEATURE	REJECT	1	2	3	4	5	RATING
CHARACTER	O	6.0	12.0	18.0	24.0	30.0	
ATTITUDE TOWARD OBLIGATIONS	O	3.0	6.0	9.0	12.0	15.0	
ABILITY TO PAY	O	3.0	6.0	9.0	12.0	15.0	
PROSPECTS FOR FUTURE	O	2.4	4.8	7.2	9.6	12.0	
BUSINESS HISTORY	O	2.0	4.0	6.0	8.0	10.0	
RATIO VALUE OF PROPERTY TO ANNUAL INCOME	O	1.4	2.8	4.2	5.6	7.0	
RATIO MONTHLY MTGE OBLIGATION TO INCOME	O	1.2	2.4	3.6	4.8	6.0	
ASSOCIATES	O	1.0	2.0	3.0	4.0	5.0	
						TOTAL RATING	%

RATING OF MORTGAGE PATTERN

FEATURE	REJECT	1	2	3	4	5	RATING
RATIO OF LOAN TO VALUE	O	30	35	40	45	50	
RATIO OF USEFUL BUILDING LIFE TO LIFE OF MTGE	O	4	8	12	16	20	
INTEREST RATE	O	3	6	9	12	15	
AMORTIZATION PROVISIONS	O	2	4	6	8	10	
SERVICE CHARGES BY MORTGAGEE	O	1	2	3	4	5	
						TOTAL RATING	%

The Five Rating Grids

has grouped a handful of non-political, competent aides.

Though the FHA's underwriting organization is intelligently decentralized, bales of problem cases pour in on the Washington office for review. Sometimes the fault is some violation of a principle in the minimum standards prescribed by the Technical Division. Since one such violation causes rejection of the application, the Underwriting Division works hand in glove with the Technical Staff straightening out rejections.

Though disappointed critics flay the FHA's slow motion, the truth is that the practice of valuation and risk rating has been reduced to as few moves as possible, the typical application should take not more than seven days to get from the lending institution through the Chief Underwriters Office and back again. Tricky applications take more time, are more often the cause of complaint than the others.

Science. The system of rating properties has been cut out of whole cloth by Babcock and his aides, with worthy contributions from Technical Director Miles Colean. Any appraiser worth his salt would be able to tell which of two houses was the better mortgage risk, but to invent a scheme that could be used for measuring houses all over the U. S. was something that required more than experience as an appraiser. The basic principles are outlined on the five rating grids which are shown on p. 213. The over-all risk is composed of five different elements:

1. The property
2. The neighborhood
3. The relation of the property to the neighborhood
4. The borrower
5. The mortgage pattern

Each of these divisions is covered in a separate grid, and under each division are listed from five to eleven specific considerations affecting the percentage rating in each case. Each of the determining features is assigned a maximum percentage of weight (see column 5 on grids), which added together equal 100 per cent. For less than perfect ratings on each of the features diminishing percentages are assigned (see columns 1 to 4 on grids). The FHA official making the report checks the ranking he would give to the different elements, carries out to the end column the assigned percentage, and adds them up to get his percentage for that particular grid.

If, for example, the design of the house were found to be average and typical, the inspector would check No. 3, and carry out the assigned percentage (4.8) to the margin. Skimpy closets might persuade him to rate the house No. 2 in livability, and hence a 6.0 per cent would go out in the margin.

The "Rating of Property" grid is filled out by the FHA's architectural inspector at the same time he is making an estimate of the replacement cost. The grids on "Neighborhood" and "Rating of Property in Relation to Neighborhood" are filled in by the staff or fee valuator. Those on the character of the borrower and the mortgage pattern are the responsibility of the Mortgage Risk Examiner. When all grids have been filled in, they are sent to the Chief Underwriter of the local insuring office, who summarizes the findings:

If one or more of the individual risk features is rated "Reject" insurance of the mortgage is automatically turned down. If the percentage of any one of the grids is less than 50 per cent, the application is likewise rejected and marked "D." If the average of the grids is between 50 and 70 per cent, the rating is "C." If the average percentage hits between 70 and 85 per cent, "B" is the rating. For 85 and over percentages, the rating is "A."

Interpretation. Obviously as in any form of appraising, risk rating is not an exact science. Personal opinion based on experience is still the yardstick. Although the FHA has issued minimum standards for all properties, compliance with the minimum standards does not fix the rating. In its "Underwriting Manual," for instance, the FHA goes as far as it can in setting up guide posts, but it does not yet chart an undeviating path.

Sample guide posts:

Under "Design of Property": "If the exterior of the house is a simple, direct expression of the plan and of the materials used, its design should rate high. Low rating should be given in the case of houses that are 'shirt-front' designs, in which the appearance of the building has not been considered from all sides. The use of false effects of roofing, false half-timber work, or tricky handling of materials may affect rating as to design adversely.

Under "Mechanical Equipment," an excerpt from the paragraphs on the heating system: "The presence of the following elements will tend towards higher ratings; proper design for distribution of heat, protection against heat loss by covering of pipes or ducts, substantial support of pipes and ducts; ease of operation by householder; avoidance of damage to structure in installation; good workmanship in installation; apparatus made by well-established manufacturers who can furnish replacement parts."

Under "Structural Soundness" comes: "The rating should be influenced by the probability of maintenance cost being high or low. For instance, a tile roof will have a longer life and will involve a lower maintenance cost than a shingle roof. Although brick or stone walls require occasional pointing, the upkeep is likely to be less than for shingles or siding. Fireproof floor construction is likely to require less interior repair than wood-floor construction."

In broad generalities which state the purpose, but not the specific metho be followed in fulfilling the purpose manual proceeds thus to outline the for rating.

In only one category, the "Rating o Mortgage Pattern," has the FHA see to become definite. Instructions to ators allow no room for discretion.

The specific rulings, however, are u going alteration.

Future. Could all the risk character be calibrated as neatly as they are in ing the mortgage pattern, the buildin dustry would be equipped with as si cant a set of standards as had ever devised. Obviously, such sharp defini are not possible in the other rating sions. What, for instance, could be the lished standards of design? Or what ma matical formula could be applied t the neighborhood rating, or the rel of a piece of property to the neighborh In only one division does the opportu loom large for acceptable standard-se —in the construction and equipmen houses.

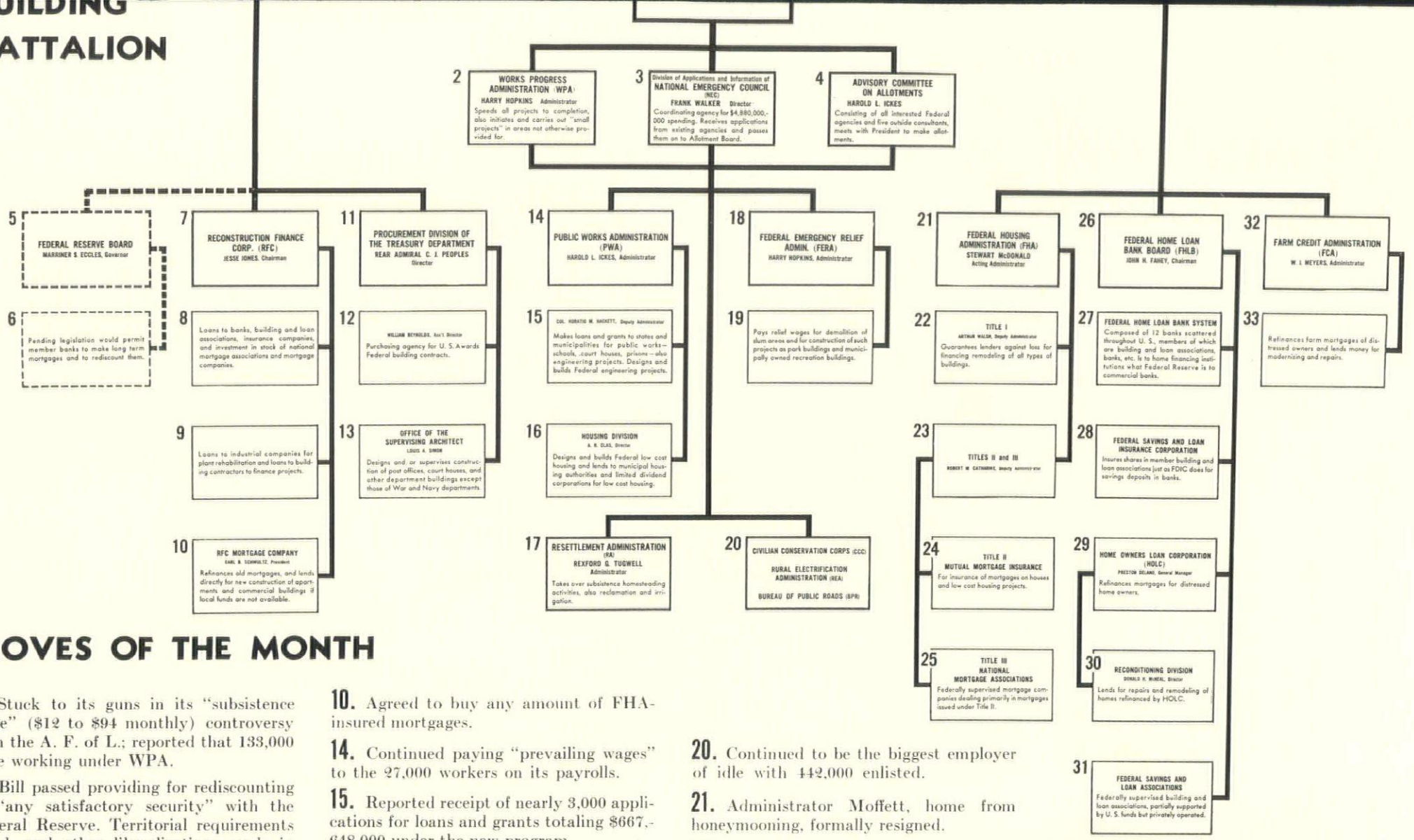
And that, curiously enough, is the division where the possibilities for nat improvement are the greatest. As an who has ever labored over a building knows, the complexities of getting proval for different types of construc can be unending. Similar difficulties w face the FHA's underwriting div should it attempt to frame standards rating.

It requires little imagination to envi the possibilities for improved construc if it were generally known to the pu that the Federal Housing Administra was rating houses according to their sirability, that certain types of const tion were regarded higher than others. yet the problem is not insoluble, prov the FHA sets up performance standa and does not attempt to admit methods of construction and new type equipment by special tests for each p uct. It is well known that building c have retarded progress of construc more than any other single factor.

If the FHA were to say that it made difference what the physical characteris of a wall system were, so long at it c meet specified performance standards would rate high for construction. I failed in some degree, it would be inclu in a lower rating. What this would d the advance in building construction easily appreciated.

Some such plan is reported to be turn over in the minds of FHA technical r and appraisers. For the material manu turer and dealer, the developer and financier it promises to be equally imp tant as a business-producing lever as it c an uplift to U. S. home construction wave of opinon from the building indus itself would do much to encourage the F to undertake the mammoth task.

BUILDING BATTALION



MOVES OF THE MONTH

2. Stuck to its guns in its "subsistence wage" ($12 to $94 monthly) controversy with the A. F. of L.; reported that 133,000 were working under WPA.

5. Bill passed providing for rediscounting of "any satisfactory security" with the Federal Reserve. Territorial requirements lifted, and other liberalizations made in Senate version. (See p. 3.)

7. Announced that it would ante $1,000,000 towards the formation of a $2,000,000 National Mortgage Association, but had no takers up to the middle of last month.

10. Agreed to buy any amount of FHA-insured mortgages.

14. Continued paying "prevailing wages" to the 27,000 workers on its payrolls.

15. Reported receipt of nearly 3,000 applications for loans and grants totaling $667,648,000 under the new program.

16. Announced a $2,000,000 project for Oklahoma City, and a $400,000 one for Enid, Okla. Appointed former Virgin Islands Governor Paul M. Pearson to be assistant director, succeeding nobody.

20. Continued to be the biggest employer of idle with 442,000 enlisted.

21. Administrator Moffett, home from honeymooning, formally resigned.

22. With July its biggest month, reported total modernization credit insured of $113,071,642.

23. With July its biggest month (see above) reported insured mortgage applications of $112,518,711. Applications now averaging between $3,000,000 and $4,000,000 daily.

27. Total loans outstanding reached new high for year, $79,952,592.

FROM ESKIMO PIES TO HOUSES

is the path of R. S. Reynolds, who has launched a new non-prefabricated house company.

On one side are the prefabricators who insist that tomorrow's houses will be built like Fords. On the other are the seasoned veterans of the industry for whom the old time religion is still good enough. And in between is an ever growing block that is sympathetic to advances in construction technique, and yet which feels that there are some practical truths in the old-time religion.

If the latter group has a single standard under which all can march, it is that residential construction advance must be made by the standardization and mass production of parts, but not of the complete house.

For the last six months the industry has been passing around rumors that the Reynolds tobacco people were about to launch a multi-million-dollared company to build houses. Whether they were to be prefabricated or not, nobody knew. About all that was definitely known was that the houses would be insulated with the aluminum foil which has been on the market for about three years.

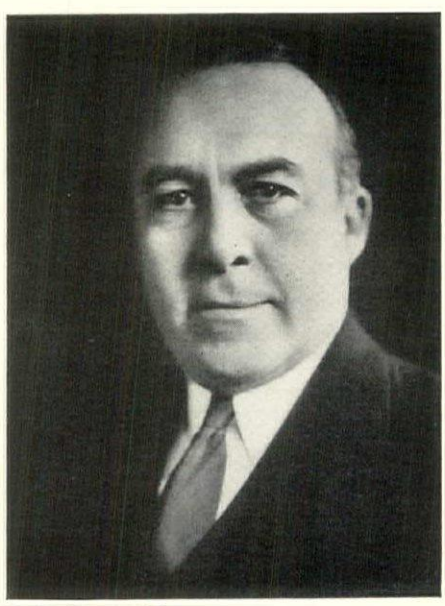
Last month the rumors ended with the announcement by R. S. Reynolds that two new companies had been added to the forty-million-dollar string. One was the Reynolds Corporation, which manufactures and sells a complete structural and mechanical system; and the other was the Reynolds Fiscal Corporation to finance houses "only when local financing is not available." From the announcement, it appeared that Reynolds was neither on one side, nor the other, but squat in the middle.

Prime feature of the plan is its adaptability to the building industry as it now exists. It will supply its structural and mechanical system through local lumber and material dealers, and only for houses designed by architects, built by local contractors. The system itself is fireproof, termite-proof, completely insulated; and the mechanical equipment includes complete year round air conditioning, and a plumbing system that is noteworthy for such gadgets as a thermostatically controlled shower mixer.

Reynolds. From cigarette wrappings to Eskimo Pies to insulation to a complete home construction and equipment system is the peculiar path along which Richard Samuel Reynolds has been led by aluminum foil. Nephew of the founder of the tobacco firm, R. S. Reynolds in 1912 threw up a $100,000 a year job with his uncle to start in business for himself making cigarette wrappings. He came to Wall Street to be a banker and broker in 1926 with 15 years of successful foil making behind him, due only in part to the whopping contract he received annually from his uncle.

One of his biggest foil customers was the Eskimo Pie Corporation, manufacturers of that novel confection which swept the country ten years ago. Shortly thereafter Mr. Reynolds found himself owning the company.

It was not because foil kept the ice cream from melting that Eskimo Pies were wrapped in shiny brightness but it was that facility which led Mr. Reynolds into investigating the insulating possibilities of his packaging. Immediately he discovered that in Germany shiny foil, because of its high reflective power, had long been used as an insulator in building, marine and industrial construction. Anticipating large volume, he set up a building division and within three years boosted his insulation business from $30,000 to $300,000 a year.



R. S. Reynolds

. . . a new name in building.

He soon discovered, however, that selling to the building industry was a much more expensive process than selling bulk orders of foil for package wrapping, and while he anticipated increased volume in building insulation, he realized the necessity for diversifying his products in that field to cut down the overhead per sale.

His first expansion was the acquisition of a wire-backed paper lath; then a plumbing company; later the manufacture of temperature control devices. The rapid expansion, coupled with the constant mumbling about prefabrication, suggested to him that the future path for him to pursue was manufacture of all the materials for ho While the company has stopped shor finish materials and has definitely s away from prefabrication, it does n materials for what the company terms basic house," which simply means the plete structural and mechanical eq ment.

System. Specifically the company manu tures these materials:

1. Fireproof framing and struct flooring
2. A paper-backed wire lath
3. Metal foil insulation
4. Complete heating and air condi ing system
5. Complete plumbing including tures and fittings

Finish materials are all optional the buyers of the houses.

The company has no stock houses, no plans to sell. It simply takes architect's plans, prepares working d ings for all its equipment and mate and sends an engineer to assist the a tect and contractor in the constructio

The framing members are steel- units filled with a cementitious compo that can be nailed, sawn, and other handled just like lumber. The struct flooring consists of precast cementi slabs, 1¼ in. thick, 15½ in. wide, a ft. long, cast on sheets of the plaster fabric. After the foundations have completed, the framing goes up in same way as a semi-balloon wood fr Sills are laid directly on the founda to conform with whatever finish is t used on the exterior, brick veneer, stu etc.

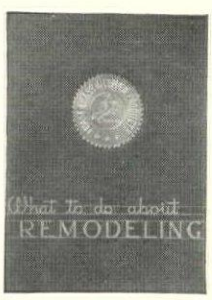
Floor joists are placed on the sill ft. on centers, bridged every 8 ft. wit gauge steel, 2 in. wide. The longest s is 18 ft. Floor slabs are laid directly the joists with the 4 ft. shiplap dimen at right angles to the joists. The out framing consists of a series of conc studs (all but the window and door s which are flat on one side) placed on ters either 16 or 24 in. Interior partit are framed with smaller studs on 16 o in. centers, secured by a shoe on the f and a plate at the top. When the fr is completed the plaster base, which have a metal surface on one side, is na directly to the studs. When air condit ing ducts are to be run through the pa tions, plates are cut out to admit pass of the ducts, and tied together with st tural angles at the side. Plumbing is stalled in the same manner as in w construction. When foil insulation is u it is placed in the wall construction, under the rafters.

Probably the neatest trick in the wh Reynolds house, which is to be mark as "The House with the Silver Lini is the air conditioning system. Every i in the system, including the ducts

THE PENALTY OF *"Skin-deep"* MODERNIZATION

emodeling plans must take into account the hidden enemy – RUST

Building modernization without *rust-proofing* is only "skin deep". It covers up flaws but does not correct them. Foresighted owners, managers and architects look on modernization as an *opportunity* to replace rustable metals with rust-proof brass and copper throughout — in roofing, plumbing, heating and lighting.

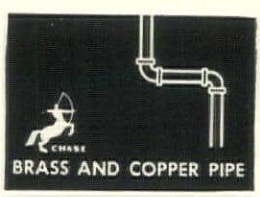


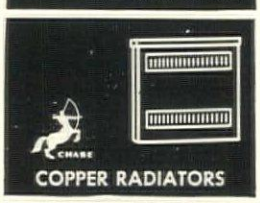
Complete, practical information for the man in charge of modernization. Write for your copy of this valuable book today.

Rust is costly; it increases expense for maintenance and repair. Rust is ugly; it decreases the chance to rent or sell. The toll it takes may easily make the difference between profit and loss on income property.

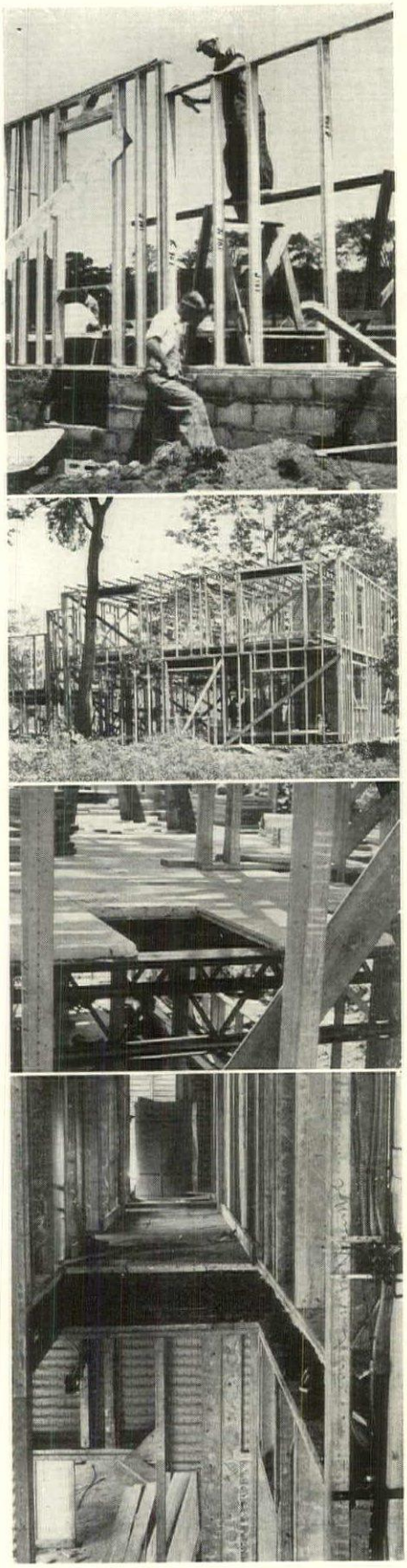
This is why more and more modernization plans are being written with the specification "Chase Brass and Copper". The name is a guarantee of quality manufacture, sound design and thorough satisfaction in service.

CHASE





CHASE BRASS & COPPER CO.
Waterbury *Incorporated* **Connecticut**
Subsidiary of Kennecott Copper Corporation



Four Steps

. . . in the building of the "House with the Silver Lining"—fireproof, termite-proof, insulated and air conditioned. Right: sectional isometric of a Reynolds house, revealing the "basic core" which Reynolds supplies, including structural framing and flooring, insulation, plaster base, complete plumbing and air conditioning.

standardized, so that the design of a system consists simply of the specification of the proper units. The air conditioner unit is complete in itself, except for the condenser, which is placed adjacent to the conditioner, and connected with a pipe.

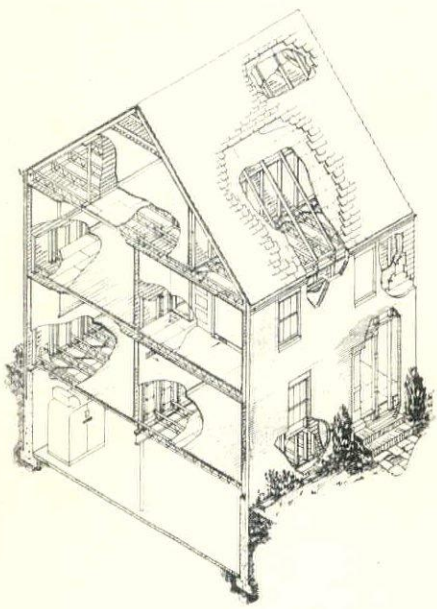
After months of experimentation, Reynolds engineers worked out a series of standard duct units that would combine to meet the requirements of any layout. The units are all stocked by the company, and shipped ready to be assembled by a patented snap-lock that eliminates soldering, etc.

How much the fireproofness, the ter proofness, the insulation, and the air ditioning would cost the home bui extra, there was no positive indicat but it was somewhere between 5 anc per cent. Whatever it cost, a New Je developer (see below) was able to b one to sell for $5,950.

Progress. Omitting the usual publicity fare that accompanies the announcemen a new system of construction, the comp has already sold between 40 and 50 hou ten of which are under construction,

Reynolds House No. 1

. . . designed by Oliver Reagan for a New Jersey development to sell for $5,950.



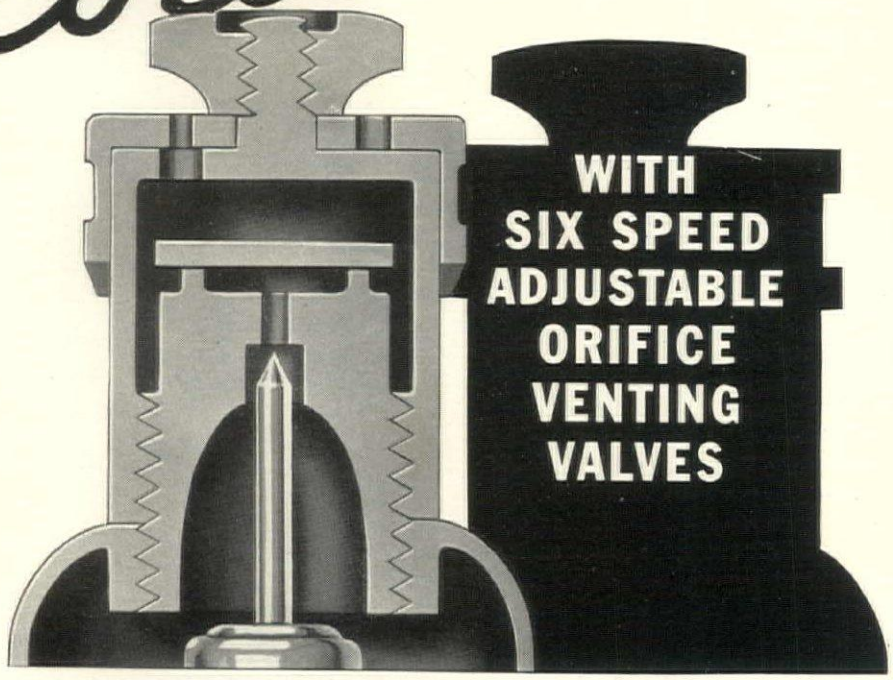
two completed. The system is adapt to any design or size of house.

Though there is no official confirmat from the company, it is generally un stood that Reynolds will continue its pansion policy until it will be able to o finish as well as structural materials roofing concern is said to have rece been bought, and negotiations are un way for window and trim manufactu outfits.

Associated in the development of company are Roe Black and Gardner Taylor, both veteran building men. Bl is vice president and general manage the Reynolds Corp., and Taylor, besi being vice president and general mana of the fiscal company, is vice presiden charge of housing for the Reynolds C as well.

The Reynolds construction system parently represented an entirely approach to the problem of home build and yet an approach based on using existing agencies of the building indus For the first time one agency has seen way clear to assume the responsibility coordinating the work of manufact architect, contractor, dealer and mortga Which should bring about no revolu such as is proposed in prefabrication, b distinct advance in U. S. home buil technique.

HOFFMAN Scores AGAIN!



FOR "FASTER" OR "SLOWER" VENTING OF ONE-PIPE STEAM RADIATORS

Simple, Visible Adjustment eliminates guesswork in selecting and setting the proper Vent Port

Hoffman engineering again contributes a great advance to heating efficiency. All Hoffman Radiator Valves, both air and vacuum, are now equipped with new Six-Speed Adjustable Orifice Venting Ports—making it possible to *accurately* "balance" one-pipe steam systems.

Now, by a simple adjustment of the Hoffman Valve Cap, *the rate of venting can be varied,* which in turn controls the rate of steam flow into the radiator. By this means, the venting of large radiators can be accelerated and that of small radiators reduced, so that in a given time the same proportion of each radiator will be heated.

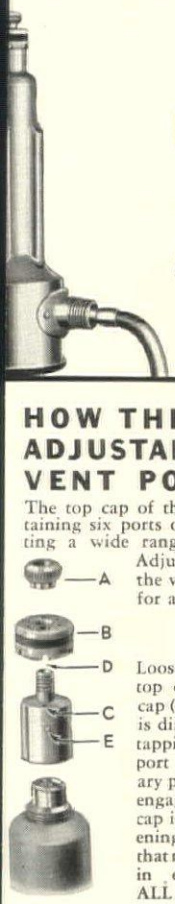
Especially valuable on automatically fired systems and concealed radiation

Where oil or gas-fired boilers are used, venting of radiators in the room where the thermostat is located can be retarded and venting of the more remote radiators accelerated to assure proper distribution of steam during each period of burner operation. Likewise the relatively small air content of convector type radiators makes retarded venting desirable and often imperative.

For information on Hoffman Adjustable Port Venting Valves, write for new catalog. Hoffman Specialty Co., Inc., Waterbury, Conn., *Makers of Venting Valves, Supply Valves, Traps and Hoffman-Economy Pumps—sold everywhere by leading Wholesalers of Heating and Plumbing Equipment.*

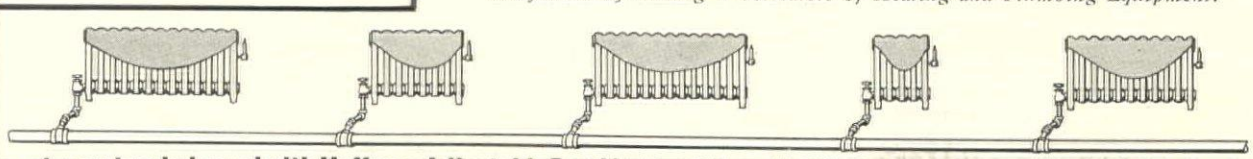
HOW THE HOFFMAN ADJUSTABLE ORIFICE VENT PORT WORKS

The top cap of the valve is a shutter containing six ports of varying sizes, permitting a wide range of venting capacity. Adjustment is so simple that the valve can be instantly set for any desired venting speed.



TO ADJUST

Loosen knurled nut (A) on top of Valve, lift and turn cap (B) until the desired port is directly above the radiator tapping. This permits the port to line up with stationary port (C) and notch (D) to engage with nib (E) when cap is lowered. Before tightening nut (A) make certain that notch (D) and nib (E) are in engagement. THAT'S ALL THERE IS TO IT.



ne-pipe system balanced with Hoffman Adjustable Port Venting Valves distributes steam proportionately to all radiators

MORTGAGES IN RETROSPECT

A Brooklyn title company reviews its 28-years of lending, finds the loans it made in depression years and its loans on homes the hardiest.

A LOW, institutional-type building on Brooklyn's Willoughby Street houses the Home Title Guaranty Company. In contrast to most New York guaranteed mortgage companies the Home Title Guaranty Company has a healthy atmosphere about it. Its offices are no newer than many of its brothers', and the people are possibly no younger, but they are efficient people and they go about their business in such a way as to leave no mistake about it: the Home Title Guaranty Company has its head up and is going places.

To get the full import of this one must go back a little. Two years ago Home Title Guaranty was the Home Title Insurance Company, a name which reporters were wont to include in citing evils of the guaranteed mortgage "racket," and in reviling its perpetrators. Formed chiefly to service the great log jam of mortgages of its predecessor company, which is still in rehabilitation under New York's State Insurance Department, Home Title Guaranty is controlled by the same officers who ran the old company, including its president, shrewd, hard-hitting Henry Joralemon Davenport, son of the man who founded the business almost 30 years ago.

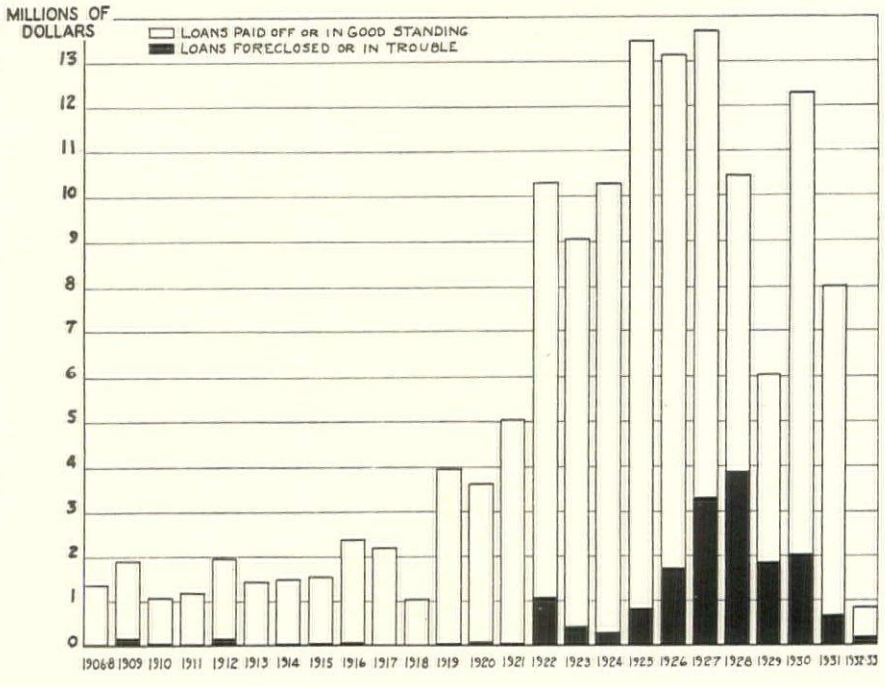
When Home Title Insurance Company was formed the 1907 panic was just around the corner, but the company stepped in and during those early years made some of the best loans in its history. Until around 1918, when participation certificates in guaranteed mortgages were made legal investments for the funds of life insurance companies and savings banks, Home Title loaned consistently between one and two million dollars a year. After the War its volume steadied for a time at from four to five million annually, then jumped and stuck at around ten million for the ten succeeding years. The high point was in 1927, and here Home Title distinguished itself by applying the brakes some years before its fellow companies did.

A little more than a year ago Home Title's Davenport sat in a witness stand and distinguished himself again by frankly admitting before the Governor's Moreland Act Commissioner the ineffectuality of those brakes. Home Title's mistakes were not among the worst, but mistakes they were, nonetheless.

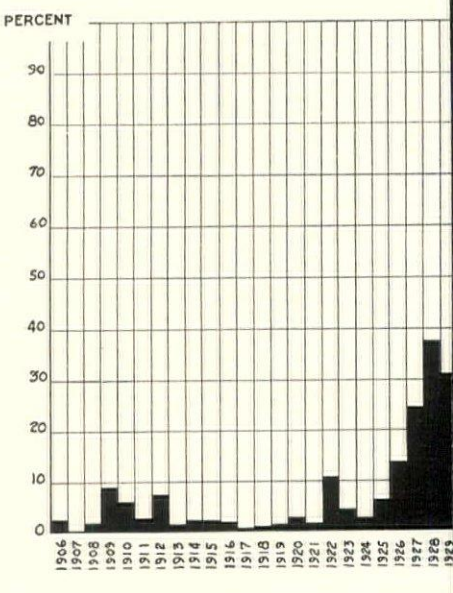
Guarantor Davenport won the commission's praise that day by his frank s ments, including a complete assumpti personal responsibility for everythin company had done while he was at the of it. Prideful of his company, he read the record a statement clearing its life management of any personal graft, extolling its "most efficient force, wo night and day with a crusading spir produce the best possible result fo investors." But of course the staff w Mr. Davenport so sincerely lauded wa crusading at the old job of making selling mortgages. The business which occupied it down through all its 28 had come to a stop for Home Title.

Looking Back. The servicing of H Title's mortgages, with the greatest per of them in history in default, is a job w would tax any organization. With th chief task since its formation last Home Title Guaranty has also been i ing titles, and is making loans unde National Housing Act. But besides the company has been looking back up 28-year record with a critical and searc eye.

1 AMOUNT OF LOANS MADE BY YEAR MADE



2 PERCENTAGE OF FORECLOSED AND TROUBLE LOANS ACCORDING TO YEAR MADE



1906-21 Middling to Palmy Days; 1922-27, Up Mortgages; 1925-27, Up Trouble; '28 Onward, Boil & Bubble

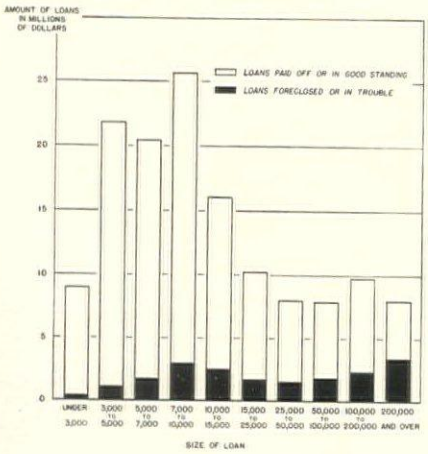
facing a report of a study completed
nonth by Comptroller Edgar A. Lodge
staff of after-hours workers, President
nport sounded this keynote:
he present moment and present con-
ns seem to furnish a unique oppor-
y to search for the facts of experience,
alyze them, and to disclose the results

Brooklyn Daily Eagle

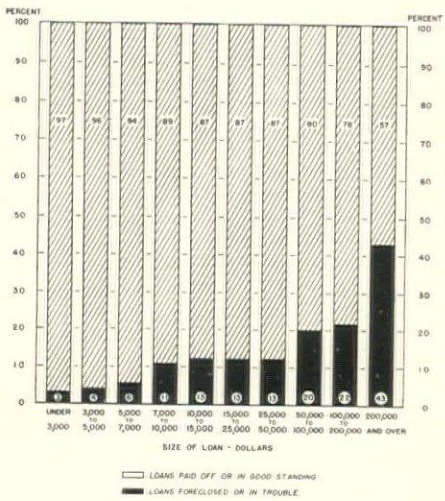
ne Title's Davenport

he permanent value they may have to
e of us who are determined to do a
r job than we have done in the past in
naking and handling of that best of all
investments, the real estate mortgage."
ne record of his company Mr. Daven-
had good reason thus to extol the
gage as an investment.
uring its 28 years of existence the Home
had made more than 19,000 loans
egating $138,000,000 and of an average
of $7,047. Two-thirds of the number
more than one-half of the amount were
ne- and two-family dwellings. The loans
sold guaranteed as to principal and

3 AMOUNT OF LOANS MADE BY SIZE OF LOAN



4 PERCENTAGE OF FORECLOSED AND TROUBLE LOANS ACCORDING TO SIZE OF LOAN



The Larger the Loan, the More Likely a Loss

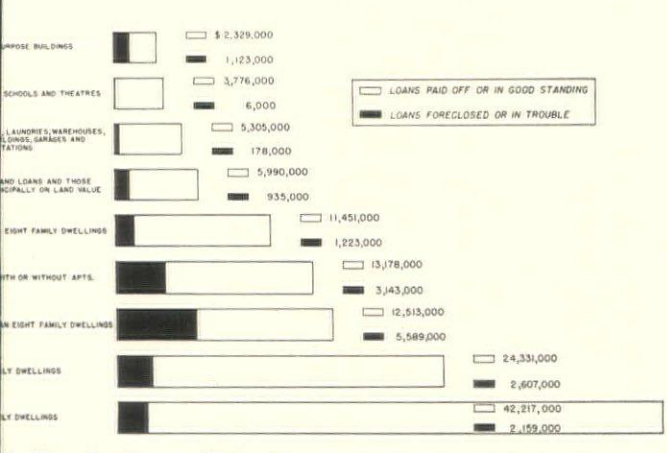
interest to banks, insurance companies, institutions and individuals, two-thirds of the total amount going to the first three groups, and one-third to some 4,000 individual investors. Approximately 90 per cent of the amount sold were in the form of whole mortgages and 10 per cent in participation certificates; no certificates were issued against groups of mortgages. The company's outstanding guarantees reached a peak of $86,000,000 in 1931.

Between 1906 and 1933, holders of the company's guaranteed mortgages and certificates received an average annual interest rate of approximately 5.40 per cent. Reductions brought the average for 1934 down to 4.71 per cent, which, combined with the former figure, gives an average rate of 5.36 per cent over the life of the company. During this period owners paid off mortgages totaling $47,956,000, or an amount equal to nearly 35 per cent of the total mortgages made. Principal repayments in 1934 totaled $1,200,000, exclusive of $3,200,000 in Home Owners Loan Corporation refinancing.

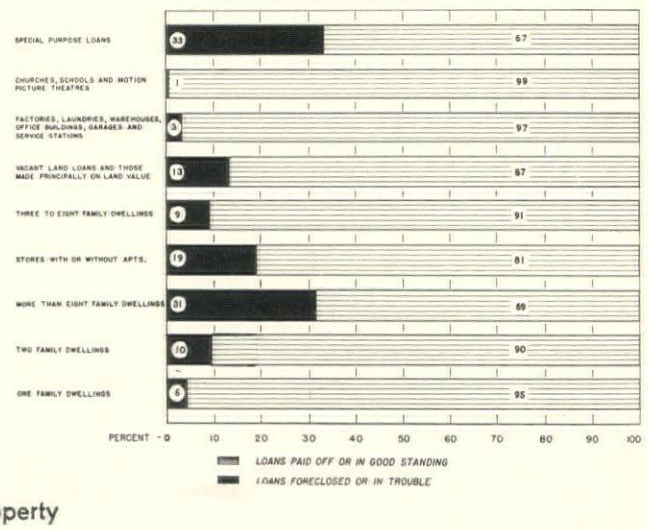
Twelve and three-tenths per cent of all mortgages made by Home Title since the beginning have become trouble cases. Loans in trouble are classified as those involving foreclosure, or in connection with which rents from the property have been assigned to the company, or if interest is past due for ten months or more. Summing up, the study gives this bird's-eye view of the company's activities over the period from 1906 to October 1, 1934:

	Amount	Per Cent of Total Mortgages Made
Mortgages paid off at 100%	$47,956,000	34.7%
Mortgages on properties in possession of owners, not under foreclosureorassignment of rents and with interest not more than ten months past due	73,134,000	53.0%
Mortgages foreclosed or in trouble	16,963,000	12.3%
	$138,053,000	100.0%

AMOUNT OF LOANS MADE BY TYPE OF PROPERTY
INDICATING THE AMOUNT OF EACH TYPE PAID OFF OR IN GOOD STANDING
AND THE AMOUNT FORECLOSED OR IN POOR STANDING



6 PERCENTAGE OF FORECLOSED AND TROUBLE LOANS BY TYPE OF PROPERTY



le-Family Homes Take Honors in the Analysis by Types of Property

Classified in three ways—by year made, by size of loan and by type of property—the trouble loans were immediately to be marked off as having possibly resulted from 1) investment in boom years, 2) excessive lending, or 3) investment in the wrong type of property.

Loans by Year Made. Chart 1 (p. 221) shows the amount of loans made each year from the organization of the company until the present time, with the amount of each of the totals which fell into trouble. In Chart 2 the percentage of trouble loans in each year is given. Up to 1925, the percentage of trouble loans per year exceeded 6 per cent only once—in 1922. From 1926 on, however, it rose sharply to a peak of 37 per cent of the loans made in 1928.

Proud is the company of the fact that in 1928 it reduced its volume by almost 25 per cent, and in 1929 by more than 50 per cent of the 1927 figure. The loans it did make in those years fared worse than those of any other period. Loans made in depression years, with the exception of the past depression, proved to have made the best records. This is to be noted by the good records of the loans made in 1907, 1913-14 and 1921.

The peaks and valleys in the percentage of trouble loans recorded for various years serve to indicate the fact that general business conditions are highly important as a factor influencing the safety of mortgage investment, and that accurate general indices of income and value are well worth watching as a guide to scientific mortgage lending.

Loans by Size. Classifying its loans by size, the company discovered that the larger the loan, the greater was the percentage of the total amount loaned causing trouble. Two-thirds of the company's mortgages were under $15,000 in size, but with approximately $40,000,000 in mortgages of a greater amount there seemed sufficient basis for the comparison.

The situation, depicted in Chart 4, may be summarized as follows:

	Per Cent Foreclosed or in Trouble
Under $7,000	4.3%
$7,000 to $50,000	12.5%
$50,000 to $200,000	20.5%
$200,000 and over	43.0%

Thus, only 4.3 per cent of the total amount of loans made for sums under $7,000 got into trouble, as compared with 43 per cent of the total amount of loans for $200,000 and over. This, of course, does not mean that the company actually lost these percentages of the amounts invested. It simply means that there were difficulties encountered in recovering, in the case of loans under $7,000, $2,229,000 out of $51,827,000 invested; and, in the case of loans of $200,000 and over, $3,560,000 out of $8,279,000.

Experience by Types of Property. The excellent experience which the company has had with its loans on one-family dwellings was the most striking of the facts revealed in the classification of loans by types of property. Out of $44,000,000 of loans made over the 28-year period on this class of property, only $2,000,000 or 5 per cent got into trouble; whereas 27 per cent of the loans on stores went awry (see Charts 5 and 6).

Actually the record made by the single-family home group was bested by several others, including the loans on office buildings; churches, schools and theaters; garages and service stations; and factories, laundries and warehouses. So great a portion of Home Title's loans ar residential property, however, that more credence was to be given the r for dwellings than for miscellaneous of this type. The record for vacant was likewise somewhat better than it be expected to be in most cases.

The company points out that the cipal reason for the high percentage of on large apartment houses being clas as in trouble was its policy of obta control of such properties when they f arrears of interest or taxes to insure th net rents were applied toward the pay of carrying charges.

For its own use, and for that of the eral Housing Administration, which interested in the survey for what figu might yield of value to its mortgage i ance program (see page 212), the com went further to figure the actual and a pated dollar loss to total loans mad each type of property.

In estimating the losses to be susta on properties foreclosed but not as sold, and those under rent assignment process of foreclosure, there was adde operating loss equal to 50 per cent of sustained to date on the properties, pl sales loss on the former equal to one one-half times the actual sales loss on p erties already sold, and a sales loss on latter estimated on the same percen basis for each type of property as ex enced on properties already sold.

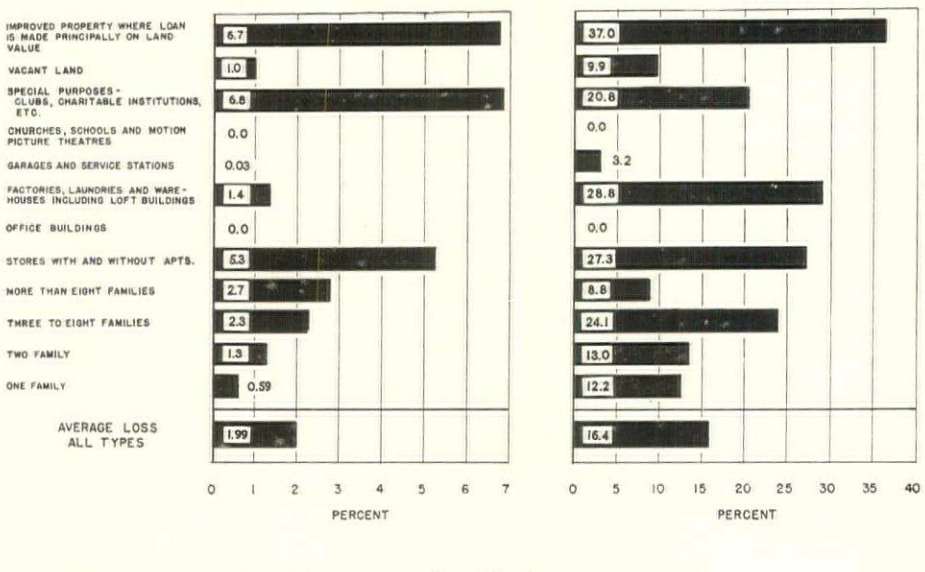
Based on these estimates, total and tual sales and operating losses amounte $2,752,000, which is equal to 1.99 per of all loans made, or 16.2 per cent o mortgages in trouble, during the 28- period.

These losses were incurred from loan various types of property as is show Charts 7 and 8. Chart 7 furnishes the cent of losses to total loans, and Cha that to all mortgages foreclosed o trouble. A remarkable showing was a made by the one-family house group, a record of losses on only 0.59 per cen total loans.

Although loans on this type of prop constituted 32.2 per cent of total l made, they accounted for only 12.7 per of the total of all foreclosed and tro loans and for only 9.57 per cent of the t dollar losses from all types of prope Therefore, the percentage of the amoun one-family dwelling loans foreclosed o trouble to the total of all one-family l made, was less than one-third of the a age for all other types of property. And percentage of dollar loss sustained on family dwellings to the total of all l made on this type of property was less t one-fourth the average for all types of p erty. The percentage of dollar loss on one-family foreclosed and trouble loans 12.2 per cent. This figure and the per of loss to total loans compare with a ages for all other types of properties

7 PERCENT OF DOLLAR LOSS TO TOTAL AMOUNT OF ALL LOANS MADE ON EACH TYPE OF PROPERTY

8 PERCENT OF DOLLAR LOSS TO AMOUNT OF MORTGAGES FORECLOSED ON EACH TYPE OF PROPERTY



Losses Compared to Total Loans and Trouble Loans

2 per cent and 2.65 per cent respec-
y.

bout twice as bad as the losses on one-
ly houses, but still less than the aver-
or all types of property, were those for
family houses, in terms of their ratio to
loans on the latter. For three- to eight-
ly houses, the percentage of losses to
loans was four times as large as in one-
ly houses; for apartments it was almost
times as big. Stores made the poorest
ing next to a "Special Purpose" group,
ding loans for clubs, charitable insti-
ns and the like, and one called "Im-
ed Property Where Loan Was Made
cipally on Land Value."

ficance. Many a banker and insurance
utive with the responsibility of a siz-
mortgage portfolio, as well as many
traight mortgage banker, has been
ped by the problem of how to go about
job of analyzing his loans for the pur-
of uncovering past mistakes and of
eloping a more scientific approach to
gage lending. To those so stumped
e Title's job provides both a method
a basis for comparison.

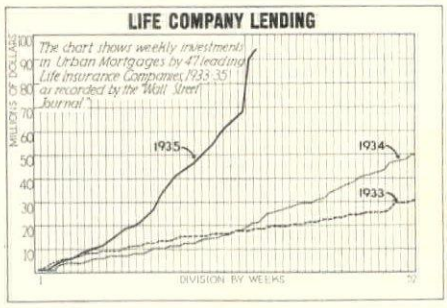
owever, it will readily be noted that it
ides neither in fullest measure. To such
nalysis there scarcely could be said to
n end. The study might well have gone
or instance, to provide exemplary data
etermining the effect of amortization;
tion, age and tenancy of property;
rest rate and total effective cost to
borrower; and percentage of loan to
raised value. The latter two items,
ch it would have seemed logical for
e Title to have taken up, were not
uded, according to the company, be-
se "there was no great variance in
n during the period under study."

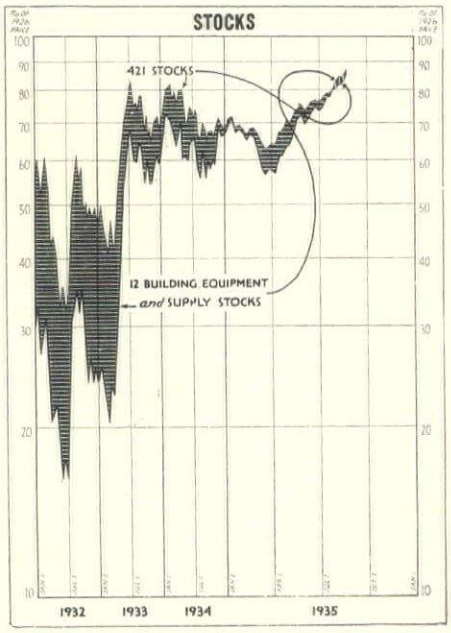
aturally, much as to the methods to be
loyed in making such a study depends
n the kind of records kept. Ill-kept
ks have undoubtedly forestalled more
n one such survey. Fortunately for its
ly, however, Home Title had been un-
continuous ownership and management
ughout its existence, and its records
e fairly intact.

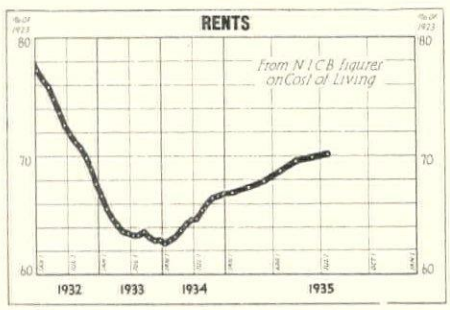
overing as large a group of mortgages
t did, and reflecting the application of
nsistent policy in the making of these
s and the administration of them,
e Title's survey has set up some
wers of universal interest. The FHA,
its job of fixing adequate rates on
tgages to be insured under the National
using Act; New York's new State Mort-
e Commission, charged with recom-
nding legislation for prevention of
ther guaranteed mortgage fiasco; and
groups as the Mortgage Conference
New York (ARCH. FORUM, August,
5, p. 152) which is now busy collecting
ious data from a membership includ-
all types of mortgage lenders, are all
to find Home Title's mortgage analysis
invaluable guide.

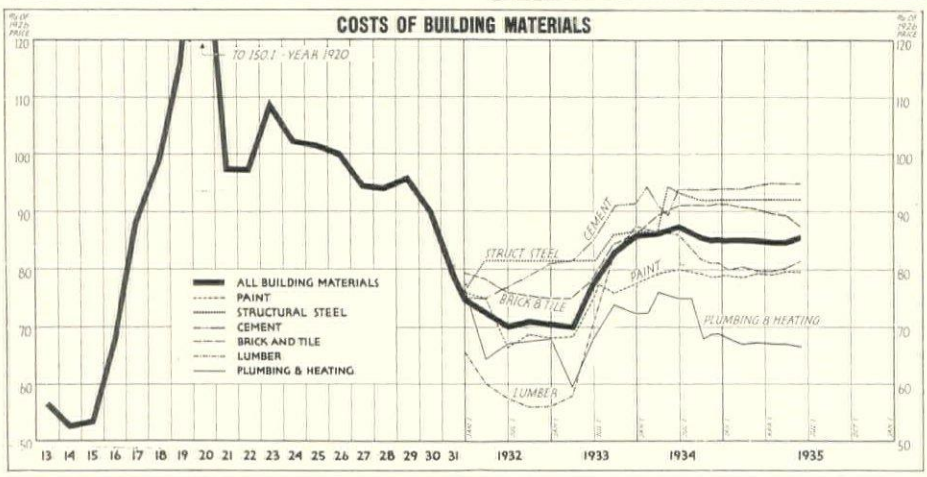
HOME BUILDING CONTINUES

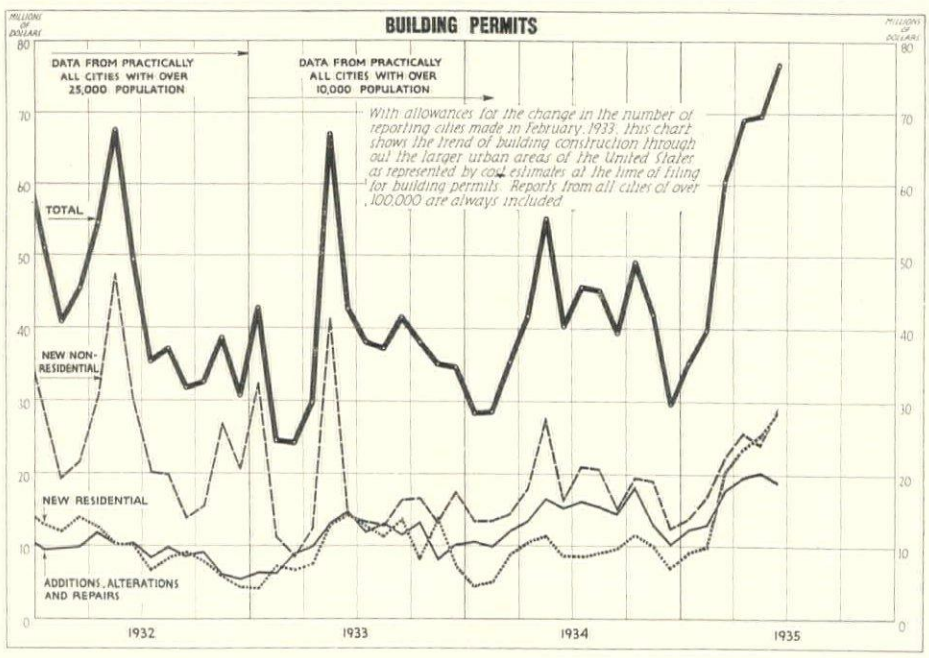
to soar, amid other exciting statistics. Building stocks top general stocks; life company loans exceed '33 plus '34.











AN OPERATING COST CONSENSUS

to ward off Washington rent restrictions, provides a primer of expenses for figure-shy apartment owners.

FINGER-TIP familiarity with operating costs is mandatory for skyscraper architect, financier, realtor and building manager. Nor can they be overlooked in any appraisal of the state of the building business. Last month out of neither a primary interest in costs nor an attempt to paint the state of the industry, but a clinched battle to keep a bill from passage by the 71st Congress of the U. S., came a fund of apartment operating cost statistics, the like of which has never before existed, save in the office building business.

Made primarily to marshal facts against the Ellenbogen bill, which still threatens (although most observers think not dangerously) to impose on Capital apartment owners the rule of a rent commission similar to that which operated in D. C. during the War, a Washington survey covering completely almost 300 apartment houses provided the industry an opportunity to test the worth of making like compilations periodically in all centers.

Stout to maintain that rents began to fall shortly after the old rent commission's demise, and that new building, and not the commission, was responsible for the decline, the Real Estate Legislative Committee of the Washington Taxpayers' Protective Association has sharpened its argument with the claim that rent restrictions have heretofore stifled building in the District, and will do so again if reimposed. As part of the fact-finding done to back up this and the contention that present Washington apartment profits are not exorbitant, a survey of costs and incomes was initiated. Its results the committee's chairman, Manager Edward C. Baltz of Washington's mammoth Perpetual Building Association, summed up last month as follows:

In 1934 when Washington apartment buildings had an average occupancy of over 95 per cent—the best in over ten years—the net earnings of 274 buildings, having an assessed valuation of over $42,000,000, was 4.89 per cent on the assessed value (see Table 1). Two and one-half per cent of the value of the buildings was allowed for depreciation. These same buildings earned 3.03 per cent in 1933. Pointing to how new building now in progress (ARCH. FORUM, August, 1935, p. 136) is keeping pace with the increase in the number of Government employes, the committee saw no chance of as marked a rise in 1935 as in 1934.

But building men attached far more than momentary value to the figures enmassed for this defensive. Those familiar with the office building figures regularly distributed by the National Association

Washington Daily News

Lobbyist Lusk

of Building Owners and Managers felt that Rufus S. Lusk, who carried out the survey, had done a pioneering job. Organizer of Washington's taxpayers' association two years ago, after two years as nat publicity director for the "Crusaders," seven previous to that as secretary o Operative Builders' Association of the trict of Columbia, Mr. Lusk is also e tive chief of the Washington Bui Owners and Managers Association, k lobbying and the building business eq well. Building statistics have long his hobby.

The difficulties incidental to carr out the Legislative Committee's su were a challenge to his statistical ing ity. More or less standard method office building construction have r possible the interchange of office bui statistics on a square foot basis. Bu apartments, no such adequate a com denominator has been generally emplo Unused to applying scientific opera methods, most apartment owners never bothered to figure out the sq footage in their buildings, and buil managers are agreed that it would mule-team job to get them to do it.

In view of the various sizes of ap ments, figures by dwelling units are viously open to objection. Equally leading are the familiar "per room" ures, a fact nowhere more apparent in the small room sizes resulting in m of the current low cost housing.

In the end, Mr. Lusk decided to ploy the most exact of all units of s measurement, and the job he did is haps most notable for the figures it sents on a cubic foot basis. A factor n ing these especially logical was the re availability of cubic footage figures at assessor's office.

The figures were classified through both by types of tenants and by buil heights. Apt for 27 per cent Neg Washington, but not of interest nation the tables by types of tenants have l

TOTAL AMOUNTS OF RENTAL SCHEDULES, ACTUAL COLLECTIONS, COSTS AND ASSESSMENTS OF BUILDINGS OF DIFFERENT HEIGHTS

ITEMS	ALL BUILDINGS	UNDER 5 STORIES	5 STORIES	OVER 5 STORIES
Number of Buildings	274	171	29	74
Number of Units	11,362	3,451	2,073	5,838
Number of Rooms	33,722	11,219	6,293	16,300
Number of Cubic Feet	122,387,000	34,963,000	22,133,000	65,271,000

	1933	1934	1933	1934	1933	1934	1933	1934
Rent Schedule	$7,632,184	$7,173,208	$1,971,306	$1,829,652	$1,496,729	$1,391,636	$4,164,149	$3,951,
Rents Collected	5,761,907	6,496,220	1,423,546	1,624,700	1,035,253	1,235,878	3,303,108	3,635,
Total Maintenance	4,420,206	4,399,646	1,121,307	1,120,340	862,293	878,161	2,436,606	2,401,
Fuel	348,071	391,909	135,603	146,543	56,858	69,377	157,610	175,
Salaries	758,761	752,911	134,879	135,722	142,754	146,482	481,128	470,
Current	219,066	224,381	48,312	46,447	45,213	47,789	125,541	130,
Repairs	739,690	780,341	186,379	203,570	149,691	160,366	403,620	416,
Insurance	64,412	64,725	15,194	14,514	13,585	13,411	35,633	36,
All Other Expenses	651,835	648,074	183,015	181,863	109,342	121,567	339,478	344,
Taxes*	749,476	653,637	189,226	167,767	154,622	135,416	401,628	350,
Depreciation **	912,895	883,570	230,699	223,914	190,228	183,753	491,968	475,
Net Income	1,341,701	2,096,574	302,239	504,360	172,960	357,717	866,502	1,234,
Total Assessment	44,295,943	42,883,521	11,353,090	11,032,232	9,204,209	8,851,048	23,738,963	23,000,

* - Real estate taxes only.
** - 2½ per cent of assessed value of improvements.

1 The Figures Gleaned from 274 Buildings, by Building Heights

COMPARISON OF AVERAGE RENTAL SCHEDULES, ACTUAL COLLECTIONS, COSTS AND NET INCOMES PER ROOM PER MONTH FOR BUILDINGS OF DIFFERENT HEIGHTS *

ITEMS	ALL BUILDINGS		UNDER 5 STORIES		5 STORIES		OVER 5 STORIES	
ber of Buildings	274		171		29		74	
ber of Units	11,362		3,451		2,073		5,838	
ber of Rooms	33,722		11,219		6,203		16,300	
	1933	1934	1933	1934	1933	1934	1933	1934
t Schedule	$18.86	$17.73	$14.64	$13.59	$20.11	$18.70	$21.29	$20.20
ts Collected	14.74	16.05	10.57	12.07	13.91	16.60	16.89	18.59
al Maintenance	10.92	10.87	8.33	8.32	11.58	11.80	12.46	12.28
el	.86	.97	.99	1.09	.76	.93	.81	.90
laries	1.87	1.86	1.00	1.01	1.92	1.97	2.46	2.41
rrent	.54	.55	.36	.34	.61	.64	.64	.67
pairs	1.83	1.93	1.39	1.51	2.01	2.16	2.06	2.13
surance	.16	.16	.11	.11	.18	.18	.18	.19
l Other Expenses	1.56	1.60	1.36	1.35	1.47	1.63	1.74	1.76
xes **	1.84	1.62	1.41	1.25	2.08	1.82	2.06	1.79
preciation ***	2.26	2.18	1.71	1.66	2.35	2.47	2.52	2.43
Income	3.32	5.18	2.24	3.75	2.32	4.81	4.43	6.31

- See Table No. 1 for figures on which these averages are based
- Real estate taxes only.
- 2½ per cent of assessment on improvements only

COMPARISON OF AVERAGE RENTAL SCHEDULES, ACTUAL COLLECTIONS, COSTS AND NET INCOMES PER CUBIC FOOT PER MONTH FOR BUILDINGS OF DIFFERENT HEIGHTS*

ITEMS	ALL BUILDINGS		UNDER 5 STORIES		5 STORIES		OVER 5 STORIES	
Number of Buildings	274		171		29		74	
Number of Units	11,362		3,451		2,073		5,838	
Number of Rooms	33,722		11,219		6,203		16,300	
Number of Cubic Feet	122,387,000		34,963,000		22,153,000		65,271,000	
	1933	1934	1933	1934	1933	1934	1933	1934
Rent Schedules	cents .520	cents .488	cents .470	cents .436	cents .563	cents .523	cents .532	cents .505
Rents Collected	.392	.442	.339	.387	.389	.465	.422	.464
Total Maintenance	.301	.299	.267	.267	.324	.330	.311	.306
Fuel	.024	.027	.032	.035	.021	.026	.020	.022
Salaries	.052	.051	.032	.032	.054	.055	.061	.060
Current	.015	.015	.011	.011	.017	.018	.016	.017
Repairs	.050	.053	.044	.049	.056	.060	.052	.053
Insurance	.004	.004	.004	.004	.005	.005	.005	.005
All Other Expenses	.043	.044	.044	.043	.041	.046	.043	.044
Taxes**	.051	.045	.045	.040	.058	.051	.051	.045
Depreciation ***	.062	.060	.055	.053	.072	.069	.063	.061
Net Income	.091	.143	.072	.120	.065	.135	.111	.158

* - See Table No. 1 for figures on which these averages are based.
** - Real estate taxes only.
*** - 2½ per cent of assessment on improvements only.

Per Room and Per Cubic Foot Averages for 274 Buildings, by Building Heights . . .

inated here, as have others in the ey covering vacancies, assessments and lar matters of purely local interest. eginning with the comparison of the

AVERAGE RENTAL SCHEDULES, ACTUAL COLLECTIONS, COSTS AND NET INCOMES PER ROOM PER MONTH FOR 1931, 1932, 1933 and 1934 FOR 147 BUILDINGS*

5,994 Units 17,200 Rooms

ITEMS	1931	1932	1933	1934
Rent Schedules	$20.62**	$20.62	$19.23	$18.06
Rent Collected	18.25	17.33	14.45	16.33
Total Maintenance	11.98	11.31	10.62	10.72
Fuel	1.01	.96	.85	.98
Salaries	1.91	1.81	1.79	1.78
Current	.53	.51	.53	.54
Repairs	1.99	1.57	1.68	1.82
Insurance	.14	.23	.12	.13
All OtherExpenses	1.84	1.66	1.67	1.75
Taxes***	2.10	2.11	1.81	1.60
Depreciation ****	2.46	2.46	2.17	2.12
Net Income	6.27	6.02	3.85	5.61

* -See Table No. 1 for figures on which these averages are based.
** -Schedule for 1931 assumed to be same as 1932.
*** - Real estate taxes only.
**** - 2½ per cent of assessment on improvements only.

PERCENTAGE RELATION OF MAINTENANCE COSTS AND NET INCOME TO RENTS ACTUALLY COLLECTED IN 1931, 1932, 1933 and 1934 ON 147 BUILDINGS*

147 Buildings 5,994 Units 17,200 Rooms 59,085,000 Cu. Ft.

ITEMS	1931	1932	1933	1934
Rents Collected	100.00%	100.00%	100.00%	100.00%
Total Maintenance	65.66	65.23	73.48	65.64
Fuel	5.51	5.53	5.90	5.99
Salaries	10.49	10.47	12.37	10.87
Current	2.89	2.92	3.66	3.27
Repairs	10.90	9.07	11.66	11.16
Insurance	.75	1.30	.84	.80
All Other Expenses	10.09	9.58	11.54	10.73
Taxes **	11.53	12.15	12.52	9.79
Depreciation ***	13.50	14.21	14.99	13.01
Net Income	34.34	34.37	26.52	34.2

* - See Table No. 1 for figures on which these percentages are based.
** - Real estate taxes only.
*** - 2½ per cent of assessment on improvements only.

AVERAGE RENTAL SCHEDULES, ACTUAL COLLECTIONS, COSTS AND NET INCOMES PER CUBIC FOOT PER MONTH FOR 1931, 1932, 1933 and 1934 FOR 147 BUILDINGS*

5,994 Units 17,200 Rooms 59,085,000 Cu. Ft

ITEMS	1931	1932	1933	1934
Rent Schedules	cents .600**	cents .600	cents .560	cents .526
Rents Collected	.531	.504	.421	.475
Total Maintenance	.349	.329	.309	.312
Fuel	.029	.028	.025	.028
Salaries	.056	.053	.052	.052
Current	.015	.015	.015	.016
Repairs	.058	.046	.049	.053
Insurance	.004	.006	.004	.004
All Other Expenses	.054	.048	.049	.051
Taxes ***	.061	.061	.053	.046
Depreciation ****	.072	.072	.063	.062
Net Income	.182	.175	.112	.163

* See Table No. 1 for figures on which these averages are based.
** Schedule for 1931 assumed to be same as 1932
*** Real estate taxes only.
**** 2½ per cent of assessment on improvements only

. . . and for 174 Buildings from 1931 through 1934

total amounts reported by all buildings, by building heights, the tables worthwhile nationally include first a comparison of averages of the figures for 274 buildings

PERCENTAGE RELATION OF MAINTENANCE COSTS AND NET INCOME TO RENTS ACTUALLY COLLECTED ON BUILDINGS OF DIFFERENT HEIGHTS *

ITEMS	ALL BUILDINGS 1933	1934	UNDER 5 STORIES 1933	1934	5 STORIES 1933	1934	OVER 5 STORIES 1933	1934
nts Collected	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
tal Maintenance	76.71	67.72	78.77	68.96	83.29	71.06	73.77	66.04
uel	6.04	6.03	9.39	9.02	5.49	5.61	4.77	4.84
alaries	10.17	11.59	9.47	8.35	13.79	11.85	14.57	12.95
urrent	3.80	3.46	3.39	2.86	4.37	3.87	3.80	3.58
epairs	12.84	12.01	13.09	12.53	14.46	12.98	12.22	11.45
nsurance	1.12	1.00	1.07	.89	1.31	1.08	1.08	1.01
llOther Expenses	10.96	9.98	12.86	11.20	10.56	9.84	10.28	9.48
axes **	12.94	10.06	13.29	10.33	14.94	10.96	12.16	9.64
epreciation ***	15.84	13.60	16.21	13.78	18.38	14.87	14.89	13.09
t Income	23.29	32.28	21.23	31.04	16.71	28.94	26.23	33.96

* - See Table No. 1 for figures on which these percentages are based.
** - Real estate taxes only.
*** - 2½ per cent of assessment on improvements only.

PERCENTAGE RELATION OF EACH COST ITEM TO THE TOTAL MAINTENANCE COST OF BUILDINGS OF DIFFERENT HEIGHTS*

ITEMS	ALL BUILDINGS 1933	1934	UNDER 5 STORIES 1933	1934	5 STORIES 1933	1934	OVER 5 STORIES 1933	1934
Total Maintenance	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Fuel	7.87	8.91	11.91	13.08	6.89	7.90	6.47	7.33
Salaries	17.17	17.11	12.03	12.11	16.86	16.68	19.75	19.61
Current	4.96	5.10	4.31	4.18	5.24	5.44	5.15	5.42
Repairs	16.73	17.74	16.62	18.17	17.36	18.26	16.57	17.34
Insurance	1.46	1.47	1.36	1.30	1.58	1.53	1.46	1.53
All Other Expenses	14.29	14.73	16.32	16.23	12.68	13.84	13.93	14.36
Taxes **	16.87	14.86	16.88	14.97	17.93	16.42	16.48	14.60
Depreciation***	20.65	20.08	20.57	19.99	22.06	20.93	20.19	19.82

* - See Table No. 1 for figures on which these percentages are based.
** - Real estate taxes only.
*** - 2½ per cent of assessment on improvements only.

Ratio of Each Cost Item to Total Cost

4 Ratio of Costs and Income to Rents . . .

for 1932 and 1934, which is elaborated by a compilation, more interesting historically, of yearly averages back through 1931 for 174 of the reporting buildings. These are followed by tables giving the ratios of maintenance costs and net income to rents collected, both by building heights and over the period of years, 1931 through 1935. A special chart of national interest details the percentage of the cost of each maintenance item to total maintenance costs.

¶ Coupled with those from Washington, a set of operating figures from Chicago last month gave observers a better feeling about the vast going industry of existing buildings than they have had in full five years.

Since the first of 1932 the Chicago Title & Trust Co. has been keeping figures on the cost of operating 30 identical apartment buildings in its tow. Last month it felt for the first time like releasing them. Two tables on these buildings (see below) footed up a report in which the bank had combined its own with other Chicago surve substantiate definite occupancy gains rising rentals. The first of these reco costs per room per year for each m tenance item, which, in the second, matched up against the income figur

An average increase in expenses 1932 to 1934 of 3.7 per cent was reve including a decrease of 7.5 per cent two- to six-flat buildings, a 13.7 per increase for twelve- to 26-flat build and a 7 per cent increase for 37- to 46 structures. Greater income figures for latter group brought it out ahead of twelve- to 26-flat group, however, in final accounting.

Reporting 8 per cent of the incre income due to elimination of concess alone, the bank declared that incre occupancy and firming rents had rend negligible the rise in operating costs, fo the additional factor of "unpreceden potential demand for housing rigidly ited by high replacement costs" fram "a good picture of the future of real est investment in Chicago."

As in the Washington tables, the comparatively high cost of fuel for the smaller buildings is striking in the Chicago operating figures (right), which are combined with income figures on the same buildings below.

OPERATING COSTS PER ROOM PER YEAR
30 BUILDINGS - 2 to 46 FLATS -
UNFURNISHED WALK-UP HOUSEKEEPING TYPE

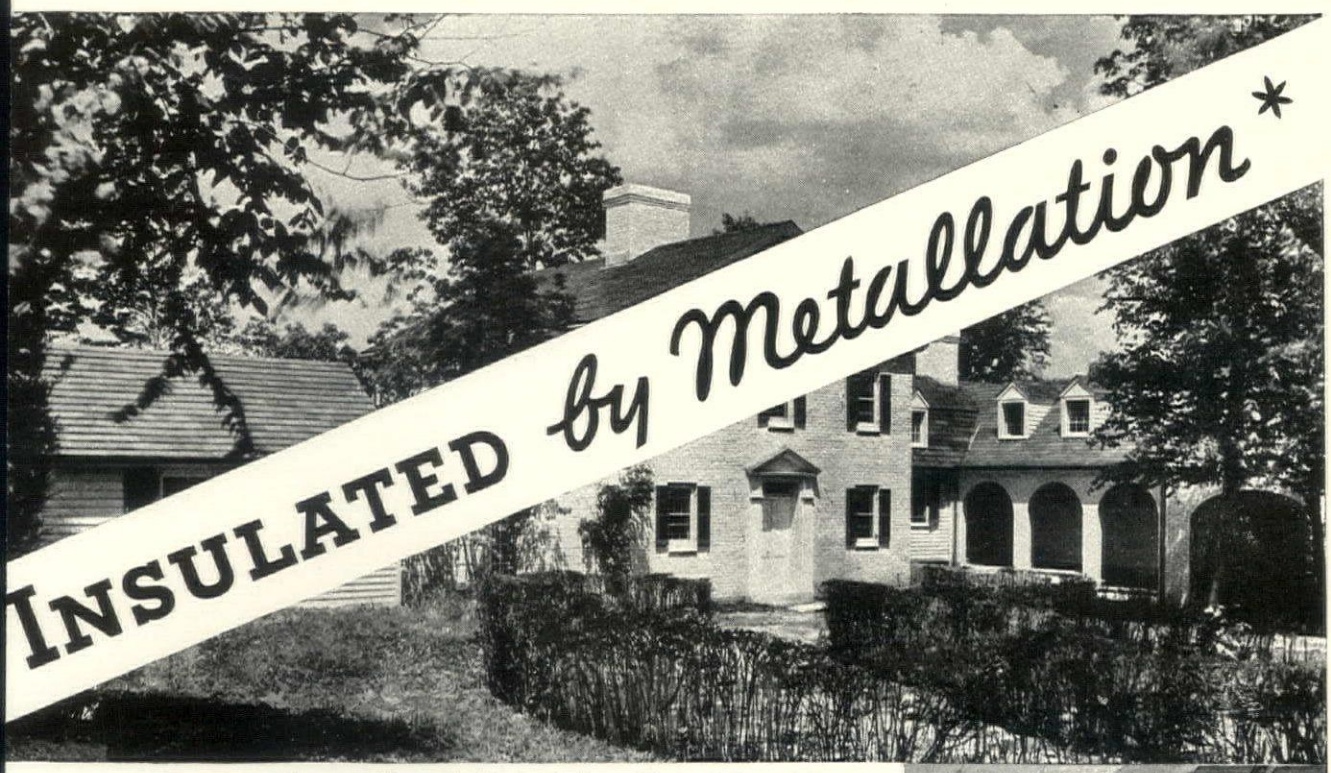
	2 to 6 FLATS			12 to 26 FLATS			37 to 46 FLATS		
	1932	1933	1934	1932	1933	1934	1932	1933	1934
Fuel	18.39	17.14	20.96	12.13	11.92	16.22	11.21	12.03	14.44
Ash Removal	.19	.17	.77	1.33	.24	1.29	1.04	.97	.97
Water	1.67	2.08	1.68	1.23	1.62	1.85	1.77	1.83	2.38
Electricity	2.62	2.90	1.19	3.55	3.98	1.58	2.72	2.35	3.05
Gas				.42	.63				.42
Decorating	10.93	12.40	8.06	8.30	9.50	11.89	13.16	13.15	14.78
Janitor's Salary	14.12	12.93	10.40	11.89	11.06	9.88	12.74	11.09	10.73
Supplied	.99	1.98	1.30	.92	1.51	1.70	1.69	1.96	1.58
Repairs - Replacements	4.59	6.30	5.11	2.89	3.46	3.10	4.17	5.07	4.67
Exterminating	.36	.33	.22	.22	.21	.42	.35	.17	.28
Manager's Salary							2.48	1.29	1.52
Advertising	.61	.38	. 01	1.80	1.42	.29	1.47	1.06	1.04
Miscellaneous			.63			.81			.67
Total Operating Expenses	54.47	56.61	50.33	44.78	46.55	50.94	52.80	51.27	56.53

INCOME STATEMENT PER ROOM PER YEAR
30 BUILDINGS - 2 to 46 FLATS
UNFURNISHED WALK-UP HOUSEKEEPING TYPE

ITEM	2 to 6 FLATS			12 to 26 FLATS			37 to 46 FLATS		
	1932	1933	1934	1932	1933	1934	1932	1933	1934
Total Annual Rent Roll 100% Occupied	$153.40	$128.35	$84.10	$135.84	$106.72	$99.79	$178.07	$124.09	$125.84
Loss Through Vacancy	26.83	14.05	11.26	27.72	18.79	8.98	30.00	23.30	9.52
Loss Through Bad Accounts	9.84	3.66	7.13	9.64	4.08	3.44	20.30	2.96	3.50
Effective Income	117.03	110.64	65.71	97.98	83.85	86.77	127.77	97.83	113.02
Total Operating Expenses	54.47	56.61	50.33	44.78	46.55	50.94	52.80	51.27	56.53
Net after Operating Expenses	62.56	54.03	15.38	53.20	37.30	35.83	74.97	46.56	56.49
Capital or Non-Recurring Expenses									
Refrigeration Contracts	3.05	1.91	2.80	2.24	2.18	3.78	6.70	3.99	1.11
Decorating and Replacements	2.26	.68	.30	1.34	.44	.57	2.78	1.17	.38
Repairs	.30	.65	5.41	1.54	.76	2.77	1.13	.44	1.38
Miscellaneous	.91	-0-	1.94	.53	.18	.59	2.54	.15	.32
Total Capital and Non-Recurring Expenses	6.52	3.24	10.25	5.65	3.56	7.71	13.15	5.75	3.79
Other Expenses									
Special Assessments	1.69	-0-	5.95	1.07	1.07	1.36	.62	.62	1.19
General Taxes, as Billed	35.96	28.89	12.94	27.20	21.93	12.41	28.08	21.24	14.16
Insurance	3.27	3.73	3.46	2.90	3.05	2.44	2.86	2.87	2.06
Management	5.96	6.92	3.13	6.04	4.85	7.60	5.32	5.32	8.82
Total Other Expenses	46.88	38.54	25.48	36.21	30.90	23.81	37.78	30.05	26.23
Net Income	9.16	12.25	20.35*	11.34	2.94	4.31	24.07	10.76	26.47

* - These are actual losses for the year, less bad accounts of preceding year which were collected during the year.

Increased Income Offsets Slight Maintenance Cost Increases in Chicago



Lawrence Moore, Architect, of the architectural firm of Evans, Moore and Woodbridge, New York, completely insulated his own home in Wilton, Conn., with Reynolds Metallation and Ecod Fabric.

Less bulk, less heat absorption, moisture-proof...yet saves approximately **50**% *in cost*

Check the definite advantages of Reynolds Metallation, the silver-like insulation that reflects heat just as a mirror reflects light.

No other insulation offers the advantage of less bulk. Reynolds Metallation is thin as a calling card. No other insulation so effectively guards against heat absorption—Reynolds Metallation reflects about 95% of the radiant heat. No other insulation completely combats atmospheric moisture. (Moisture absorption greatly reduces the efficiency of ordinary insulation.)

And with all these advantages Reynolds Metallation reduces insulation costs approximately 50%.

Reynolds Metallation is installed in homes in two forms — strips nailed right over the rafters, roof joists, studs or sheathing—or as Metallated Ecod Fabric which combines Metallation with an electrically welded, metal reinforcing plaster base.

Metallation and Ecod Fabric are only two of the Reynolds Architectural Products that architects are choosing to give the public better values in construction and modernizing work. Learn about them all. Write for descriptive folders.

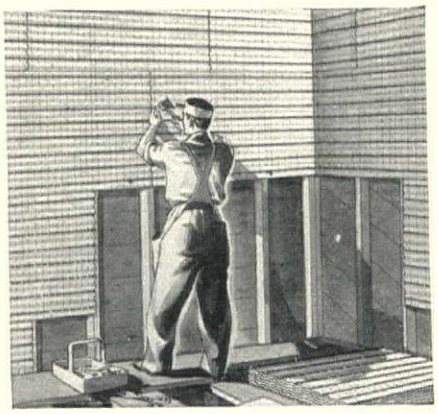
•

For complete specifications

See 1935 Sweets, Catalog 11, Section 13

*Trade Mark Reg. U. S. Pat. Off.

You apply Reynolds Metallation right over the rafters, roof joists, studs or sheathing. It is clean and easy to handle and install. Only snips, nails and a hammer are required.



Reynolds Ecod Fabric is supplied in sheets. Quickly installed Metallated Ecod combines efficient insulation with metal plaster base for only 6/10 of a cent extra per square foot, over plain lath.

REYNOLDS ARCHITECTURAL PRODUCTS . . .

- **Reynolds Metallation** — Efficient insulation at 50% less cost.
- **Reynolds Ecod Fabric** — The insulated, reinforced Plaster Base.
- **Reynolds Metal Wall Coverings** — Decorative, washable, moisture-proof.
- **Reynolds Liquid Metallation** — Protective, bright, the modern paint miracle.

REYNOLDS CORPORATION

19 Rector Street • New York, N. Y.

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INCOME VALUATION

for taxation is pushed as the final point in NAREB's program.

ADMITTING with Benjamin Franklin the blunt inevitability of *la mort et les impôts,* some ways of dying and some ways of being taxed are more obnoxious than others. Real estate men, for instance, regard current methods of property taxation as comparable to murder by slow torture. Along five different fronts (see box) the National Association of Real Estate Boards has for a year been hammering for reductions. Last month they opened up on Point No. 6 in their program: tax assessments based partially on income.

Property owners of the U. S. pay an average annual tax bill of between four and five billion dollars on property assessed at about $125,000,000,000. In the year 1931, for instance, the National Association of Real Estate Boards pointed out that total property taxes were $4,550,000,000 on property assessed at $129,393,000,000, or an average rate of 3.51 per cent. The known income for real estate, including rental values of owner-occupied buildings, in that year was $4,754,000,000. Thus NAREB figured out that real estate was paying 95 per cent* of its income for taxation.

As an argument for its income method of assessment NAREB pointed out that if the value of the property was established on the basis of income the real value of the property would be only $95,080,000,000. This assumes that real estate earns 5 per cent on money invested in it. Hence its value would be 20 × $4,754,000,000 = $95,080,000,000. And if the average tax rate, 3.51, held, taxes would have amounted to $3,138,000,000, a reduction of nearly 30 per cent.

Direction. To direct its campaign Paul E. Stark, Madison, Wis., realtor, was named chairman of the NAREB's tax committee, a job vacated by Dayton's Adam Schantz. A veteran among NAREB members, Realtor Stark was once president of the National Association. One of the most popular men in the real estate business, Mr. Stark is tall and angular, good humored and a hard worker. His office in Madison is one of the largest home building outfits in Wisconsin. If he has a reputation outside his immediate business it is as an expert in real property values.

Though reduction in taxes is the weapon with which he hopes to stir up action among property owners, Chairman Stark is laying his campaign on a much more altruistic base. Among his most potent arguments in urging State legislatures and courts to recognize the income method are:

1. That it will tend to minimize favoritism and fraud by assessing officials.

2. That it will tend to measure taxes by the ability to pay.

3. That it will simplify assessing procedure both in the initial assessment and appeals because the factors will be more easily demonstrable.

4. That it will necessitate annual reassessment.

Fortunately, Chairman Stark's committee is not starting at scratch. In five States the income method is already recognized by law. In ten others it is recognized by courts and tax boards.

Few States have any legal prohibition against the income methed but selection of assessing officials on the basis of political qualifications rather than experience in appraising has hindered general acceptance.

Apart from bombarding legislatures with briefs asking recognition for the income method, Chairman Stark's Committee urged all property owners to file an action requesting that their assessments be made partially on the basis of income, believing that if enough decisions in enough States support the method laws need not be enacted. Even if the income method should be adopted, three major problems still remain unanswered:

1. Shall net or gross income be used?

2. What percentage constitutes the proper capitalization base?

3. Shall actual or potential income be used?

NAREB's Six Points

1. We propose in each State an agency with the right, upon appeal by taxpayers, to review any proposed tax levy and to revise it downward, and to veto bond issues entirely.

2. We propose in each State a constitutional amendment specifically limiting the total tax on real property for all purposes in any one year to a fixed percentage of the true value.

3. We propose in each State a broader use of State taxing powers to provide funds for educational purposes, and that Federal assistance be obtained to further this.

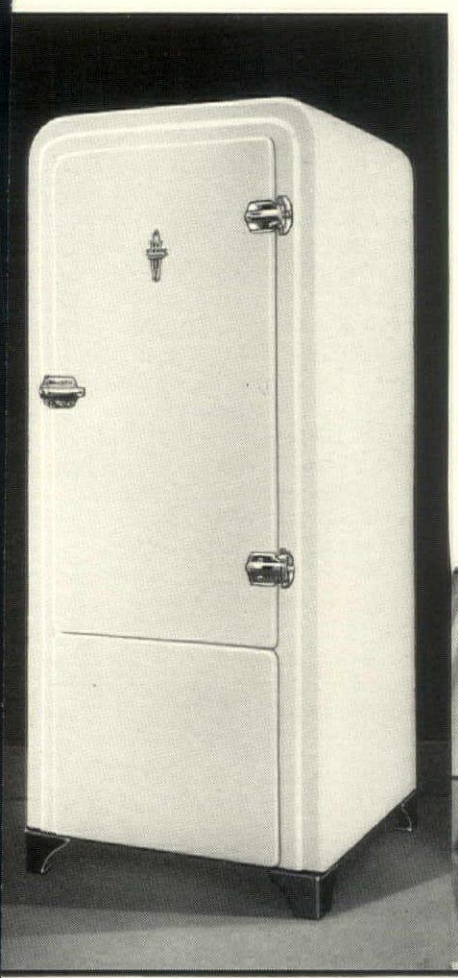
4. We propose in each State using funds obtained from gasoline and vehicle taxes for maintenance and construction of urban streets as well as for rural roads and highways.

5. We propose in each State that improvement assessments shall require the written consent of owners representing more than one-half the property proposed to be assessed.

6. We propose in each State that the valuation laws be amended so that in valuing property for tax purposes the income or annual use value shall be a major consideration.

*A misleading, though significant conclusion. What percentage of the taxed property was owner-occupied and hence had no actual income was not listed.

TENANTS PREFER SILENT REFRIGERATION



ELECTROLUX

is Permanently Silent

because it has no moving parts to cause noise or become noisy

AND LOOK

at these other important ways Electrolux offers MORE for tenants and for owners!

FOR TENANTS:

1. **Low operating cost**
2. **Finest modern beauty**
3. **Every worthwhile convenience**

FOR OWNERS:

1. **No moving parts to wear**
2. **Long life**
3. **Gas Company service**

IF YOU want to avoid the disadvantages of noisy refrigeration—and what owner or operator doesn't?—choose Electrolux for your properties.

Thanks to its simpler, more efficient operation, Electrolux is silent the day you install it . . . and silent after long use! For a tiny gas flame takes the place of all moving parts!

This freedom from noise is one of the big reasons why, in New York City alone, more than 4500 apartment buildings are equipped with this modern gas refrigerator. And there are other important reasons, too!

Electrolux appeals strongly to tenants and prospective tenants because of its unusually low running cost . . . its smart modern beauty . . . its many worthwhile conveniences.

Consider these important rental appeals of Electrolux! And then consider, too: since Electrolux has no moving parts to *wear*, this cause of interrupted service and shortened life is eliminated. In addition, your local gas company backs and services every Electrolux it sells! Another assurance of complete tenant satisfaction . . . another big advantage for you!

See the new Electrolux models on display at your gas company's showroom! Servel, Inc., Electrolux Refrigerator Sales Division, Evansville, Indiana.

NEW *Air-Cooled*
ELECTROLUX
THE SERVEL *Gas* REFRIGERATOR

FOUR NAMES

and a landscape architect collaborate on a swank subdivision.

If names make news, the biggest news of last month was the completion of a house at Westbury, Long Island, for what may turn out to be the smartest subdivision on that sandy strip of land. The nominal developer, although his interest in it was something less than intense, was Stewart Iglehart, son of the Grace Line owner, the finest amateur hockey player in the U. S., and close to the finest polo player as well.

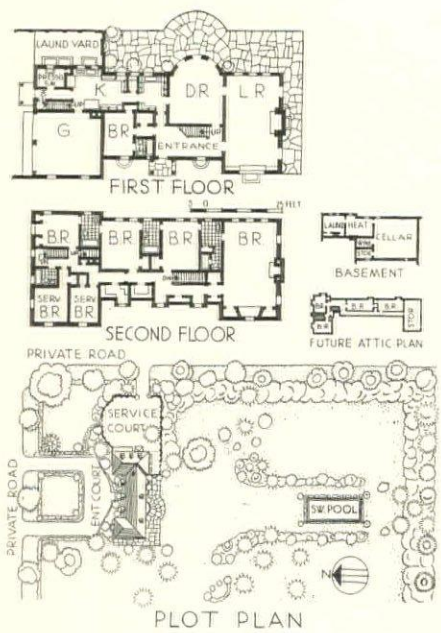
But his name was not the only one. Architects for the house were William Adams Delano and Chester Holmes Aldrich, who together compose the faultless firm of Delano & Aldrich, and who share with John Russell Pope the social honors of the profession.

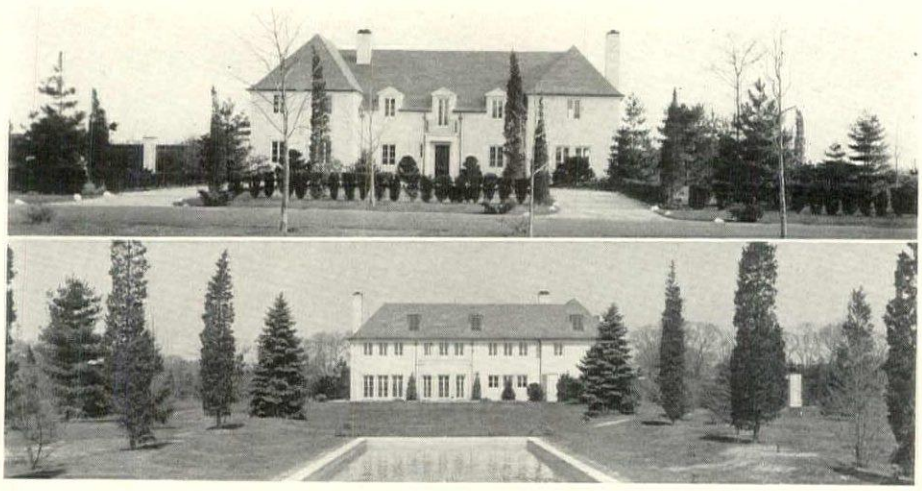
Nor did their names complete the list of newsworthy ones. Agent for the house turned out to be Nancy Heckscher, recently married daughter of the octogenarian Manhattan real estate man, August Heckscher, at present on her honeymoon.

Last month, the house was unsold—not for lack of prospects, but because the prospect who finally buys will have to measure up in other ways than simply having the $60,000 it will take to buy it. For the house rises up on Jericho Turnpike, a mallet's drive from the estates of the horsiest families on Long Island. It was to prevent undesirables from moving into the property that Poloist Iglehart built the house in the first place.

Whether the rest of the 40 acres which comprise the proposed subdivision will ever be developed depends on how quickly House No. 1 sells, and how much time Hockey Player Iglehart can spare from his skates and his horses. If he does go ahead, he will undoubtedly lean heavily on the experience of the landscape architect who is in charge of all the Iglehart properties, and who landscaped the grounds around the first house, Richard S. Burns, who though no celebrity, is an able planner and designer.

Acme





Iglehart, the Plan and the House

CONTINUED BETTERMEN

of building profits backbones record rise in stocks.

Assuming that the state of building sto could be counted upon to provide an ex measure of the health of building, the dustry might well have sat up in bed a eaten what it pleased last month. For t first time in five years the most trustwort of all indicators of trends in stocks, Sta ard Statistics' weekly stock price indic recorded a rise for its 12 Building Equi ment & Supply stock classification over 421 General Stocks (see chart, p. 223 The reaction seemed less a bullish one th it did a logical result of the steady increa in material manufacturers' profits, whi Wall Street has been hungrily charting f over a year.

Actual earnings figures seemed mo than to justify the rise. The followi companies have reported their earnin for the first six months of 1935, which a compared below with figures for the sa period of 1934:

(000's omitted; D = deficit)

	1935	1934
Armstrong Cork	$1,523	$1,401
Bohn Aluminum & Brass	953	1,138
Bridgeport Brass	375	307
Briggs Manufacturing	6,545	3,638
Brunswick-Balke-Collender	159D	21
Certain-teed	54D	486
Congoleum-Nairn	1,356	1,346
Cook Paint & Varnish	223	....
Devoe & Raynolds (6 mos. ending May 31)	202	269
Dresser, S. R., Manufacturing (owns Bryant Heater Co.)	9D	29
Evans Products (flooring, etc.)	257	1,270
Flintkote (28 wks. ending July 13)	625	15
Formica	62	37
General Paint	115	80
Heywood-Wakefield (theater seating, etc.)	53D	59
Johns-Manville	798	174
Libbey-Owens-Ford	4,284	2,532
Minneapolis Honeywell Regulator	271	206
National Gypsum	296	184
National Lead	2,615	2,066
Otis Elevator	115	295
Parker Rust-Proof	574	550
U. S. Gypsum	1,627	1,142
Westinghouse	6,265	31

Outstanding fact about such a compilation—a fact not evident in many a depression moon—was the tendency for those companies most wholly interested in building, and especially residential building, to show up best. Attesting to this were such healthy gains as made by General Paint, Johns-Manville and U. S. Gypsum, in contrast to such reports as issued by Brunswick-Balke-Collender and others less vitally concerned with building.

TWO VIEWS IN CONTRAST

Massachusetts v. Rhode Island in a test of amortization.

It is well-known that, as far as savings banks are concerned, Massachusetts is the citadel of the straight loan. Less generally appreciated is the fact that in nearby Rhode Island the amortized savings bank mortgage is a commonplace, and, indeed, the general rule. Catering especially to New England savings bankers, Boston's *United States Investor* landed a well-aimed punch last month by matching up figures on the mortgage troubles of the savings banks of these two States.

Crediting Massachusetts' moneymen with having "picked their bonds, their mortgages and their other investments with such painstaking care that they have won the profound respect of the whole banking and business fraternity," the *Investor* matter-of-factly added: "It is only when you compare their experience under the common form of mortgage with the experience of Rhode Island's banks under amortization that you discover a way in which the Massachusetts' record could have been bettered."

Rhode Island's banks began as early as 1918 to insist upon amortization. Mortgages are generally written in Rhode Island for a single year, without reduction of principal during that period; then they are renewed with the provision for payment of 2½ per cent of the principal at once and for further payments of 2½ per cent each succeeding six months. Semi-annual interest is collected in advance from the beginning of the loan. In contrast, loans in Massachusetts have been allowed to run indefinitely, so long as mortgage payments and taxes were kept up. Danger to building lay in the fact that Massachusetts' banks were not getting back a regular flow of funds for further lending.

Comparative figures reveal the dangers to the banks themselves inherent in pursuit of the old plan. As of February 9, 1935, Rhode Island's banks held 28,065 mortgages. Same date, the number of foreclosed properties on their books totaled 699, or 2.49 per cent of the total number of mortgages.* Against the value of the Rhode Island banks' mortgages—$100,404,000—foreclosed properties amounted to $4,730,000, or 4.7 per cent. Opposite these figures, Massachusetts' record as of October 31, 1934, revealed $109,842,666 in foreclosed properties against $1,132,251,649 in mortgages, or 9.7 per cent.

Further figures, gathered in a confidential survey last December by the National Association of Mutual Savings Banks, were cited to clinch the point. These, compiled in answer to the question as to what per cent of deposits was represented by real estate acquired through foreclosure, gave a graphic picture of savings bank mortgage troubles in the eight Eastern States where savings banks are strongest:

Maine	2.00%
Rhode Island	2.41
New Hampshire	2.74
Connecticut	4.25
New York	5.26
New Jersey	6.21
Massachusetts	6.33
Vermont	20.02

In the extreme situation in Vermont, due not so much to lack of amortization provisions such as had boosted Rhode Island up to second place as to the many Western and Southern farm loans which its banks made nearly a decade ago, the *Investor* saw a strong argument against the Steagall provision in the Banking Bill, allowing banks to lend wherever they choose. Vermont's experience obliged the adoption of careful safeguards in lending under this provision, which won out last month in the final stages of the bill's adoption.

* Broken down, this figure revealed some interesting facts as to the relative stamina of loans on different types of property. As in the mortgage analysis of Brooklyn's Home Title Guaranty Co. (see p. 220), one-family home loans showed up best. One hundred and ninety-five of the 699, or .69 per cent of the total number of mortgages, were of this type. Four hundred and ten, or 1.46 per cent of the total mortgages, were multiple dwelling loans. The remaining .34 per cent were commercial properties, which of course would show up more heavily in a dollar accounting.

FORUM OF EVENTS

(Continued from page 8)

om the interior by sound and fireproof walls are a number of oms arranged with separate elevators for service. These may used for offices, studios, art exhibitions, etc.

From the 19th floor down to ground level a World's Fair suggested. This could be turned into a profitable world mart. ghty halls 120 by 120 ft. and 100 by 120 ft. may be combined to even larger space. Total exhibition space: 12,000,000 . ft. The first floor is divided into many small permanent terior sales exhibits and compartments with 132 outside ops. Separate lobbies are provided with 126 passenger elevars. There are 20 large entrances to promenades 40 ft. wide.

The underground stories (which reach solid rock) are occpied by street car and bus stations. Freight depots with platrms for trucks and trains are directly connected with wareouses and factories above by means of 72 freight elevators. welve thousand autos can be parked in this underground ea. The lowest underground story where much ground water ay be encountered will have swimming pools, properly ated. A large plaza surrounds the building. Automobile cess to the building is underground only.

Mr. Rush figures that his building would keep 100,000 illed workers busy for four years. It would also enlist the rvices of 1,000 architects and engineers to prepare working rawings. The architect sees the Universum Building as a eans whereby "many now unemployed mechanics will again come self-sustaining and off the relief lists." He adds: "Let s also remember that our nation must do something to reover its prestige in the world. The erection of such a buildg as a world market and international trading center is ound permanently to help our foreign trade."

MORMON MEMORIAL

CUMORAH HILL, in Palmyra, N. Y., marks the birthplace of Mormonism. Here, last month, was dedicated a memorial to he event. Designed by Sculptor Torlief S. Knaphus, a Nor-

Wide World Photos

JOURNEY'S BEGINNING AND JOURNEY'S END

vegian convert to the church, the monument consists of a 1 ft. light gray granite shaft surmounted by a nine foot ronze statue of the angel Moroni who delivered the gold ecords to Joseph Smith, September 22, 1827. These records oseph Smith translated by means of Urim and Thummim

(Continued on page 42)

FORUM OF EVENTS

(Continued from page 41)

(objects mentioned in the Old Testament in connection wi the breastplates of the high priest; they are supposed to ha been precious stones used in casting lots) and the translati of the records was made in Palmyra during the winter 1829. Bronze plaques at the base of the monument descri the translation which resulted in the Book of Mormon.

It was in 1847 that Brigham Young arrived in Utah, now t seat of Mormonism. At the spot where he first saw the futu site of Salt Lake City there stands another Mormon memori And close to this memorial J. Edgar Hoover, director of t Federal Bureau of Investigation, found $90,700 which t Weyerhaeuser family paid to the kidnapers of their chil George.

ARTISTS INCORPORATED

When, in the course of human events, an artist faces D pression he has to think fast. Painting, decorat on, sculptur cabinet work are among the first ornaments of civilizatio with which the public starts to dispense. Commissions a rare; payments are apt to be slow or grudging. Prices dro Sometimes the Government launches a scheme like the la not forgotten Public Works of Art Project but that is, at best, temporary. And the work, once done, is Government property and goes into Washington galleries or public schools and museums where it is not too likely to find an admirer who might also be disposed to look up the artist and give him a commission. The artist, in other words, has a fairly tough time during Depressions. In Manhattan, an Italian-born U. S. citizen, Alphonso T. Toran, artist,

Harvey Horto

TORAN STUDIOS AND TORAN
Murals covered the pipes' ganglia

one-time dancing teacher and world war veteran, pondere these matters and came upon an idea. He would form corporation of other artists who like him were hard pu to it to find jobs. They would share profits (with larger share going to the actual creator), help one anothe

(Continued on page 43)

FORUM OF EVENTS

(Continued from page 42)

ride the work. The idea is perhaps not startling but the cision of its execution merits attention.

The first thing that a corporation needs is a home. Mr. ran found one in New York City's Hell Kitchen, an unused y-owned machine shop near the Hudson River. Rent to the y was $25. In order to participate in the corporation an ist was required to pay $30 for stock. Several artists were ling and anxious to do so, one selling a ring to raise the ney. Toran Decorative Arts Studios, Inc. moved into its w home which was a mess. But the artists were willing to rk. They whitewashed the dingy walls, painted the ganglia pipes that lined ceiling and walls, hung panels and murals. corporation has to have a desk. Toran Studios numbered ong its members a cabinet maker. He built the desk. Last arch the corporation gave an exhibition of its works. Next nth it will invite the public to see its second exhibition. is second show will not take place in the converted machine op. Mr. Toran has moved his artists to new quarters be- use the city condemned their old building. It is significant at this very moving did not disrupt an organization founded such frail beginnings.

The Toran group is Depression-born and expects no huge mmissions. It announces "No contract too large—no job o small." But while the group tries to do jobs at reasonably w rates, it allows no chiseling, expects that every job will ake a small profit over the cost of materials and the slight erhead. Already in Manhattan are many examples of the ork of Toran artists. José Maria Sert's murals for the Wal- rf-Astoria were a little small for their destined space. A ran artist added to them. Toran Artists are also represented the Chrysler Building, the Sherry-Netherlands Hotel, the nk of Manhattan Building. One of their last jobs was paint- g a portrait for a Midwest client. He sent a photograph of s wife and no comment as to the color of her hair, etc. Toran essed. It turned out all right and the client was immensely tisfied. Anne Morgan has shown interest in their work. So s President Roosevelt. One of the proudest Toran exhibits a letter signed by the President ". . . I congratulate you the energy and resourcefulness which you are using to help ourselves at this time, and assure you of my sympathy and terest in the difficult situation which confronts you." Now umbering 32 members, Toran Studios is prepared, at the op of a commission, to do a mural, portrait or screen, to dvise on and execute interior decoration, to do commercial ork and posters, to sculpt or do cabinet work.

ARATOGA OPENING

THE completion of this great institution is a notable event the history of our State. It is notable from the standpoint f social service, for it adds to an already incomparable ublic health service another unique agency. It is notable

Wide World

FREEDLANDER'S SIMON BARUCH LABORATORY

rom the standpoint of conservation, for this spa is evidence f recognition by a State that there are other natural re- ources vital to the public interested than the timber, water

(Continued on page 44)

FORUM OF EVENTS

(Continued from page 43)

power and minerals which we commonly associate with th term."

The speaker was Governor Lehman of New York. T setting was Saratoga which last month made its official b for recognition as a spa second to none in Europe. Th Governor Lehman should speak of conservation showed l familiarity with one of his State's pet projects. In 1909 Ne York purchased 122 springs of the 175 which give Sarato the distinction of having the only natural carbonated wat east of the Rockies. By that act the State saved its sprin from depletion at the hands of commercial interests. Ne

Wide Wo

BAUM'S RECREATION CENTER

York left the springs alone until they were rich enough spurt water into the air. Now the State expects to sell 400,0 cases of bottled water a year (a 24-pint case: $4), shou find no difficulty in repaying the $3,200,000 RFC loan whi made possible Saratoga's Springs' gala opening and ga point to Governor Lehman's enthusiastic speech last mont

Saratoga Springs water was venerated by Mohawk India and esteemed by George Washington who tried to buy th site whence they issued. By 1883 Saratoga boasted hote with a total capacity of 12,500 and an annual attendance about 100,000. The famed Saratoga racetracks were built i order to entertain them.

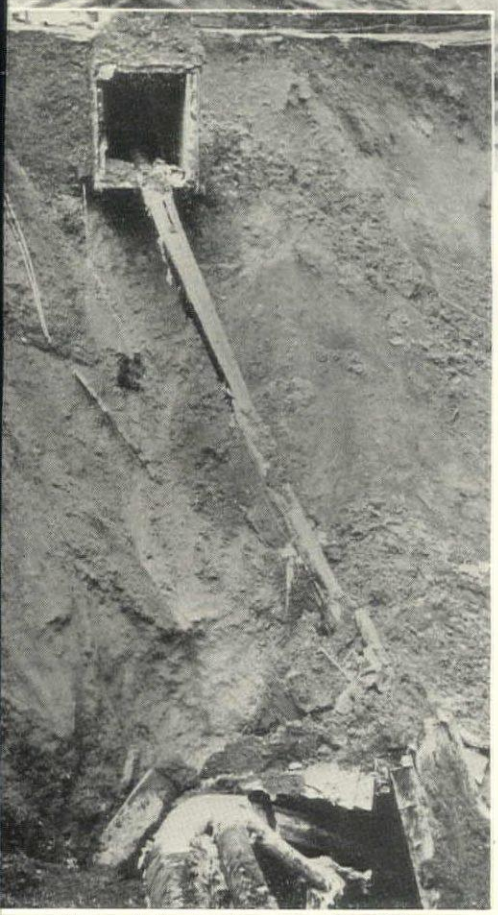
The racetracks held little interest for Dr. Simon Baruc father of Bernard Mannes and Dr. Herman Benjamin. Wha interested him were the waters and their efficacy in cardia therapy. Last month, had he been alive, he would hav rejoiced to see Saratoga's waters finally honored with a gre bathing and drinking establishment.

This establishment cost approximately $8,500,000. Its tw new bathhouses have raised the spa's capacity to 5,000 peop a day. Research will continue in the new Simon Baruc laboratory. Joseph Freedlander's $900,000 Hall of Spring houses huge bulbs in which the spa's several waters wi continually wash and a balconied orchestra. From Dwigh James Baum's recreation center and golf house cardia patients may go to a "therapeutic" golf course, flat bu trick. And in Marcus Reynolds' new Gideon Putnam Hot the same patients may find more modern comforts an surroundings than are offered by the more famed Gran Union and United States hotels.

That Saratoga will become a paying proposition is ev denced by the sober prophecy of many astute observer that within five years it will see 25,000 people paying $5,000 000 a year into its coffers. More concrete evidence is supplie by the fact that for the fiscal year ending June, 1934, Sara toga gave 101,449 treatments (90,000 were baths) and sol 870,298 bottles of water. Business this year is approximatel 15 per cent up. Last summer, in July and August alon 6,000 people took 50,000 baths. Architecturally the spa

(Continued on page 47)

Nature's test of AIRCOWELDING

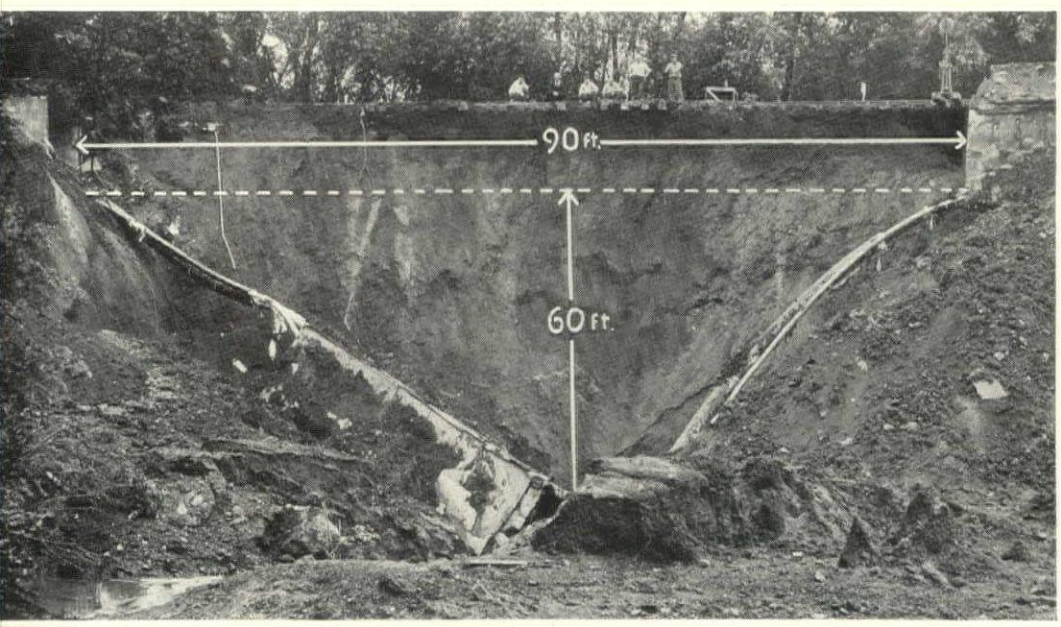


Above: A view looking across the gap from one broken end of the tunnel to the other. Below: A photo which gives a clearer idea of what happened to the tunnel and pipe lines.

Right in the path of the flood which recently ravaged a large section of Northern New York, is the State Hospital at Willard. When this modern hospital was built a comparatively short while ago, the heating and power piping was AIRCOWELDED throughout. The contractor was John W. Danforth Co., Buffalo, N. Y.

Part of this piping ran through a tunnel. With devastating force the flood washed out a section underneath the tunnel 90 feet wide and 60 feet deep. The tunnel collapsed, forcing the pipe line to support the entire weight of the concrete tunnel, which hung upon it in sections like an enormous string of beads. *Yet not a single weld parted.* In fact the drag of this tremendous weight, sagging the pipe line 60 feet below normal, threatened equipment to which it was connected, and the line was cut for safety's sake, on both sides of the wash-out.

The welds in those lines must have been subjected to tremendous strains and stresses. Yet *not a single weld broke or cracked.* Nature has proved, beyond the possibility of doubt, the STRENGTH of AIRCOWELDED piping. Furthermore, a 500 ft. emergency line for temporary laundry and kitchen service, was AIRCOWELDED and operating within twelve hours. Speed as well as strength is a feature of AIRCOWELDING.

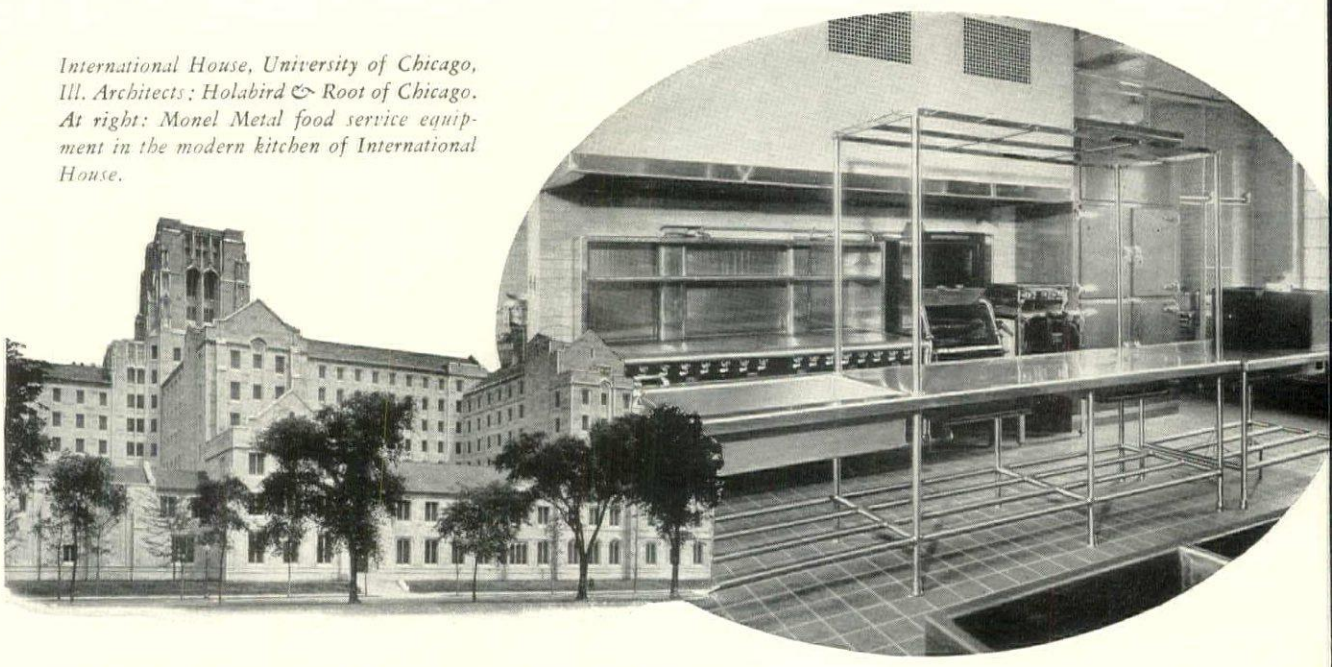


Get the facts about AIRCO-WELDING

AIR REDUCTION SALES CO., General Offices: 60 East 42nd St., New York, N. Y.

DISTRICT OFFICES and DISTRIBUTING STATIONS in PRINCIPAL CITIES

International House, University of Chicago, Ill. Architects: Holabird & Root of Chicago. At right: Monel Metal food service equipment in the modern kitchen of International House.



HIGH STANDING
in Halls of
HIGHER EDUCATION

MONEL Metal for food service is o
point on which even West Point a
Notre Dame agree. So do Harvard and Ya
All these great schools (not to menti
Leland Stanford, Tulane, Rutgers, Chica
and many others) have installed Monel Me
equipment in cafeterias and kitchens.

Food displayed on a silvery Monel Me
counter always looks more appetizing. Fu
thermore, these smooth surfaces are exce
tionally easy to keep clean and sanitary. A
hard usage means nothing in Monel Meta
long life. It is rust-proof, chip-proof, crac
proof, accident-proof.

We have recently published an inform
tive booklet entitled, "The Selection of Fo
Service Equipment" – profusely illustrat
with actual photographs. A copy is yours f
the asking.

THE INTERNATIONAL NICKE
COMPANY, INC.
67 WALL STREET NEW YORK, N.

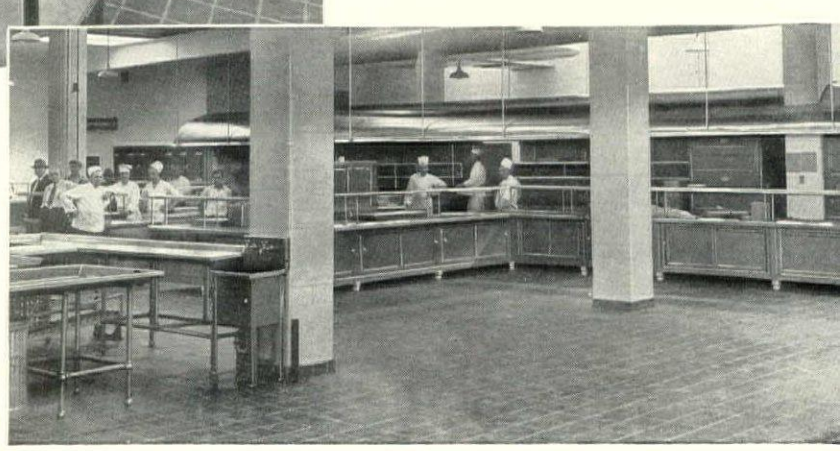
MONEL METAL

Monel Metal is a registered trade-mark applie
an alloy containing approximately two-thirds Ni
and one-third copper. Monel Metal is mi
smelted, refined, rolled and marketed solely
International Nickel.

Above: The Monel Metal kitchen in the Administration Building of the Board of Education, Philadelphia, Pa. Architect: Irwin T. Catharine, Philadelphia, Pa.

* * *

From this spacious Monel Metal kitchen comes the food which helps keep Notre Dame's famous athletes in championship condition. Note the 58-foot Monel Metal canopy over the range. Architects: Maginnis and Walsh, Boston, Mass.



FORUM OF EVENTS

(Continued from page 44)

utely conscious of its Colonial history, has remained conrvative. Financially, it looms as a success. And socially and herapeutically it promises to break the stranglehold which uropean spas for years have had on ailing (physically or sychologically) citizens of the U. S. Governor Lehman and resident Roosevelt, who as Governor, fostered the project, ad good reason to be pleased with Saratoga last month.

ILSON AND HOUSES, INC.; AMES IN THE NEWS

HARLES E. WILSON, vice president of General Electric Co. a been elected chairman of the board of Houses, Inc., ith Foster Gunnison, president. Other officers are James A. lagar and J. A. Olson, vice presidents. Directors include P. D. eed, J. W. Lewis, and T. K. Quinn, G. E. vice president. At he time of this announcement a statement signed by Owen D. Young and Gerard Swope indicated the general field of ctivity in which Houses, Inc. will be engaged. Of no concern o the company will be the enclosure of houses. Since the comany's main interest is the interior mechanism of the house, refabricated, partly prefabricated or traditional exteriors are qually acceptable. The statement of policy clarified a conusion, causing some to think that Houses, Inc. intended buildng modern houses, arising from the exhibition of a prefabriated Houses, Inc. home in Wanamaker's Manhattan store. Houses, Inc.," said Messrs. Swope and Young, "will not itself ngage in the construction or sale of houses. It will undertake o help others in worthy projects and to carry on fundamental ork and experiments for the particular benefit of those interested in perfecting modern houses."

Mayor Fiorello La Guardia of New York City appointed Dr. John Erskine, author and president of the Juilliard School of Music, and Carl Paul Jennewein, sculptor of the bronze doors for the British Empire Building, Rockefeller Center (ARCH. FORUM, Aug., p. 95) to the city's Municipal Art Commission.

J. M. Hopwood, president of the Hagan Corp., Pittsburgh, announced the appointment of Dr. Everett P. Partridge as research director of Hall Laboratories, Inc. He will be associated with Dr. Ralph E. Hall, managing director of Hall Laboratories, with the staff of Hagan Corp., the Buromin Co. and Calgon, Inc. (all allied organizations) and also with the incumbents of the Industrial Fellowship on Calgonizing sustained by Calgon, Inc., at the Mellon Institute of Industrial Research.

James A. Wares, architect, announces the opening of his office at 11528 Normal Ave., Chicago.

Francis Rassieur Roberson, architect, has opened an office at 3412 Humphrey St., St. Louis.

Keist & Co., engineers, have opened offices in Albany, Ill.

Allen John Strang and Hamilton Beatty announce the opening of an office for the practice of architecture and city planning at 610 State St., Madison, Wis., under the name of Planning Associates.

Howard L. Cheney, Chicago architect, now with the procurement division of the Treasury Department, has been awarded the Czechoslovakian Order of the White Lion for his share in the construction of the Czechoslovakian exhibit at the Century of Progress Fair.

Claire Bates Manning, architect, announces the opening of new offices in the Spiva Building, Joplin, Mo.

The Public Works Officer, U. S. Naval Air Station, Pensacola, Fla. would like complete manufacturers' catalogues.

Erratum. The July FORUM, p. 58, erroneously attributed the remodeling of the Hanscom Bake Shop, New York, to Architect Horace Ginsberg. Apologies are made to Horace Ginsbern, whose name was misspelled.

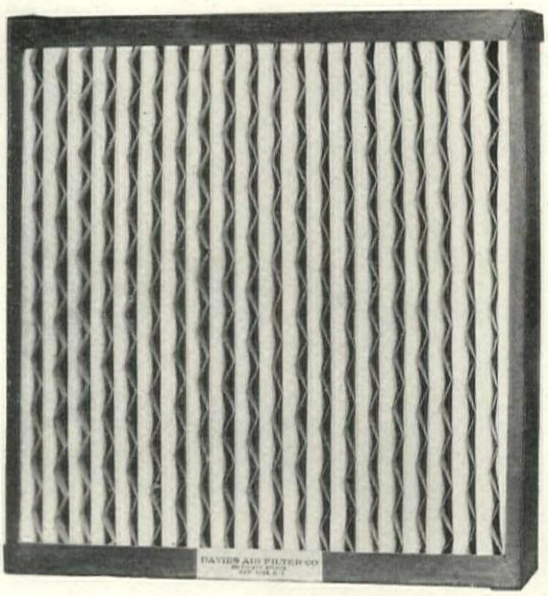
PRODUCTS AND PRACTICE

(Continued from page 23)

In the "Kitchen of Tomorrow" several departures from cu tomary arrangements have been made. A circular stove o casters, based upon the idea that a movable unit would in crease the efficiency of the room, is the most interestin Not in production, offered by the company as a sugge tion to the industry, it is an exceedingly handsome innovatio whose practicability is open to discussion. All cabinets, c course, are steel, and the dishwasher is housed in a simp casing developed by the company's designers. An excelle space-saving device is the table which folds against a wal cabinet when not in use. A built-in clock is placed in the met panel over the window, and suggests the possibility of in corporating other indicators and instruments into simil panels.

Although these metal rooms were developed as a backgroun for the company's fixtures, and are not yet in production, i their suggestions of further applications of mass-productio methods to kitchens and bathrooms, they are most significan

901. AIR FILTER



Davies Air Filter Corp. announces the improved Airplex filter, of the replaceable dry type, in which the medium is a specially processed cotton which has been found to operate successfully even when filtering air at 100 per cent humidity. The standard frame, 20 x 20 in., exposes 30 sq. ft. of pleated surface to the incoming air. From 500 to 1,000 hours of active service, depending on operating conditions, are claimed for each cell. For larger installations, steel frames containing from two to twenty-five cells are furnished.

902. MIXING VALVE

The Babbin thermostatic mixing valve, distributed by the Evry-Use Products Co., Inc., automatically regulates the delivery of hot water from copper coils or tubes submerged in the hot water boiler. Adapted to domestic as well as manufacturing uses, it will deliver the water at any desired temperature from 140 to 190 degrees, a larger range than that possessed by any other type of tempering valve. It has only one moving part, is of all bronze construction, and is guaranteed for two years.

(Continued on page 51)

PUT PEACE OF MIND INTO YOUR PLANS

TODAY the architect can provide, even for his client whose budget is limited, the peace of mind that comes from living in a fire-safe home. At an almost negligible difference in building costs, Kalman Steel Joists make any dwelling virtually immune to fire.

Any blaze that may start in a home built with Kalman Steel Joists quickly burns itself out. It cannot spread because the stories, and particularly the first story and the basement, are separated by a barrier that fire cannot pass—a floor structure consisting of Kalman Steel Joists, concrete floor slab, and plaster.

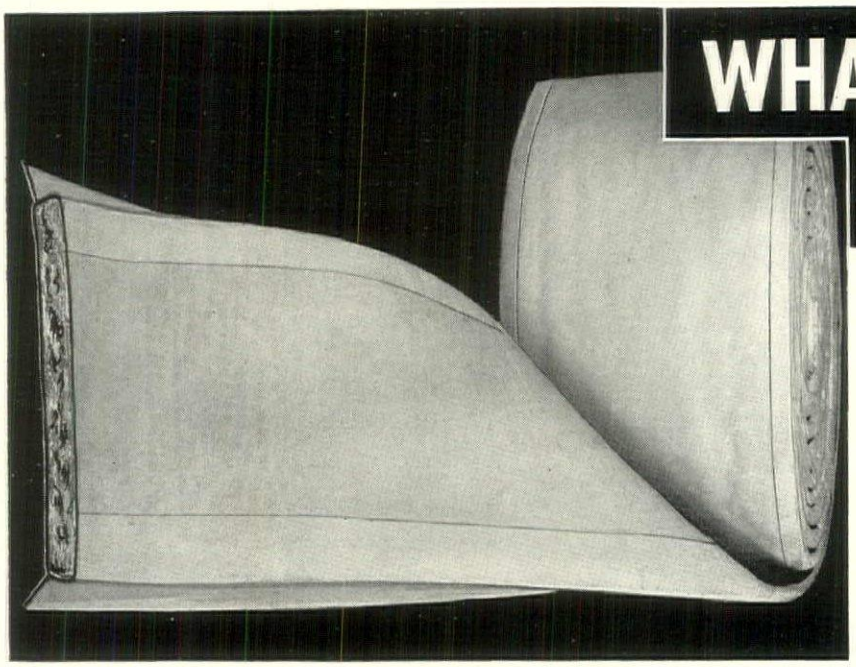
The peace of mind that comes with security against fire is only one reason why the owner of a home built with Kalman Joists has reason to be grateful to his architect. These joists make a home better to live in and a sounder investment, because it is less subject to swift obsolescence. Ugly cracks never form where floor and walls meet. Floors never creak or sag. There's no possibility of damage by termites.

Kalman Steel Joists can be economically applied to any type or size of dwelling.

KALMAN BUILDING STEEL

BETHLEHEM STEEL

KALMAN STEEL CORPORATION, *Subsidiary of Bethlehem Steel Corporation. General Offices:* Bethlehem, Pa. *District Offices:* Albany, Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Houston, Milwaukee, Minneapolis, New York, Philadelphia, Pittsburgh, St. Louis, St. Paul, Syracuse, Washington. *Pacific Coast Distributor:* Pacific Coast Steel Corporation, San Francisco, Seattle, Los Angeles, Portland, Honolulu. *Export Distributor:* Bethlehem Steel Export Corporation, New York.



WHAT WILL IT DO ON THE JOB?

A FEW UNVARNISHED FACTS ABOUT INSULATION

We have plenty of laboratory figures to show why BALSAM WOOL is better insulation. But your clients don't want labo ratory figures. They want insulation efficiency—*on the jo*

Here are a few questions every architect should ask . . . he is interested in giving his clients more insulation valu per dollar:

Is It Moisture-PROOF?

We know—and you know—that moisture destroys the effectiveness insulation. We know—and you know—that moisture gets into any ins lation which is not adequately protected *as a whole.* BALSAM-WOOL completely and permanently protected from moisture . . . *sealed* in a wate proof covering. In addition, it is chemically treated to make it vermi proof and fire-resistant.

Is It POSITIVE in Application?

To be effective, insulation must have no weak spots—leave no loopho for wind, heat or cold to get through. But you cannot be sure of co tinuous insulation with materials that are merely poured or dumped in b common labor. BALSAM-WOOL is positive in application—*fastened in pla* by qualified carpenters who know their business. Flanged edges now mak it even easier to apply than ever before.

Is It Permanent in EFFECTIVENESS?

Materials that settle or that change their form, cannot be permanentl effective. BALSAM-WOOL lasts as long as the building in which it is applie —*stays where it is put* and does not change its form.

Does It Offer the RIGHT Thickness for the Job?

For every home and every climate, there is a *right* thickness of insulation beyond which it does not pay to go. BALSAM-WOOL comes in thicknesses to fit eve y insulation need, everywhere.

Let us tell you *all* of the facts about BALSAM-WOOL. We believe you will find them worth knowing!

BALSAM-WOOL
WOOD CONVERSION COMPANY
ST. PAUL · · MINNESOTA

WEYERHAEUSER FOREST PRODUCTS

Made by the Makers of **NU-WOOD**

PRODUCTS AND PRACTICE

(Continued from page 48)

. DESK LAMP

Wilbur Henry Adams & Associates have designed a new uminum desk lamp. It is of the open top variety acting as a flector as well as a direct lighting unit. The lamp is housed a shell Monax glass which gives a diffused light down the desk surface. It has a clamp arrangement which leaves e top of the desk unobstructed while making possible any osition desired for the lighting source.

4. ELECTRIC ORGAN

The Hammond Clock Company has developed an electric rgan operating on a wholly novel principle. It is built to conrm to established pipe organ standards and requires pipe rgan technique in the playing, but is operated by electricity nd has no pipes, reeds or other vibrating parts. The instruent permits the enormous variety of tone colors necessary render the great works of classical organ literature. It consts of a two manual console with pedal clavier and a power abinet. The organ can be produced at less than the cost of a rand piano and it is claimed that the instrument will revotionize the organ industry, as the large spaces formerly quired for the installation of pipes are no longer needed.

5. RUBBER PUTTY

A new type of rubber putty, known as Plastikon, has been nnounced by the B. F. Goodrich Co. It is claimed to be ighly resistant to moisture, corrosive chemicals, and fumes, nd is offered as the solution to the problem of properly seal-g windows against air leakage in air conditioned buildings. is similar in appearance and consistency to ordinary paint-rs' putty and may be applied with a knife in the same anner. It adheres equally well to steel or wood surfaces and ecause it contains little oil, requires no mixing.

(Continued on page 52)

PRODUCTS AND PRACTICE

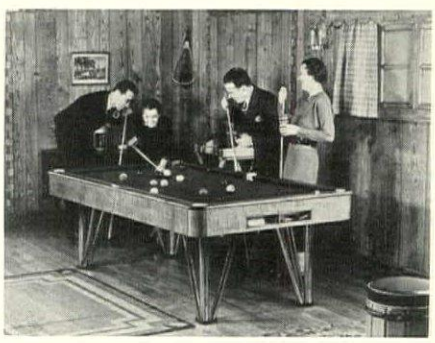
(Continued from page 51)

906. ESSWOOD

The Driver-Harris Company has put a new natural wo veneer on the market. It comes in thickness of 1/80 in. to 1/1 and is not mounted on paper or fabric. The veneer is appl like wall paper to walls, metals, or other surfaces, and into sharp corners and over rounded and irregular surfac After cutting, a special chemical treatment renders it durab and immune to shrinking and warping and it is claimed to extremely flexible both with and against the grain. Due to extreme thinness it does not materially increase the fire haza and can hence be applied to fireproof steamship cabins, sta rooms, and airplane interiors. It is obtainable in lengths eight, ten and twelve feet and in widths of from eight fourteen inches, depending upon the size of the log fr which the veneer is cut.

907. BILLIARD TABLE

A radical departure in billiard table design has been a nounced by the Brunswick-Balke-Collender Co. Their n table has light metal construction replacing the usual massi supports and can be used not only for billiards, but, sin it has the new utility top, also for general use and for pin pong. A new material in place of the slate bed which has be used up to the present time provides a playing surface th is quite as rigid as slate and weighs much less. A claret-color cloth claimed to be easier on the eyes than green complet the radical changes incorporated in this new table.

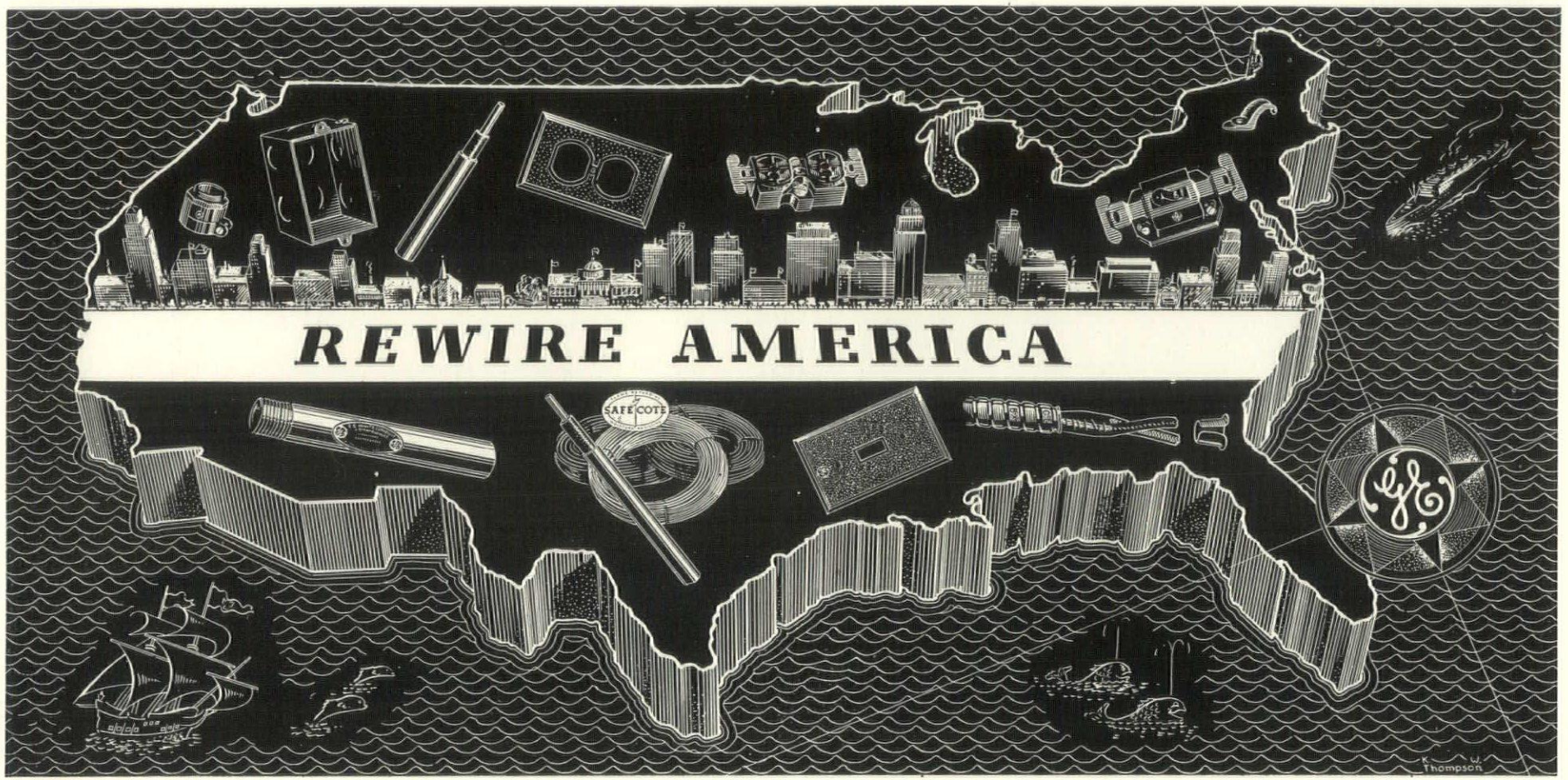


BILLIARDS

SNACKS

PING-PONG

(Continued on page 55)

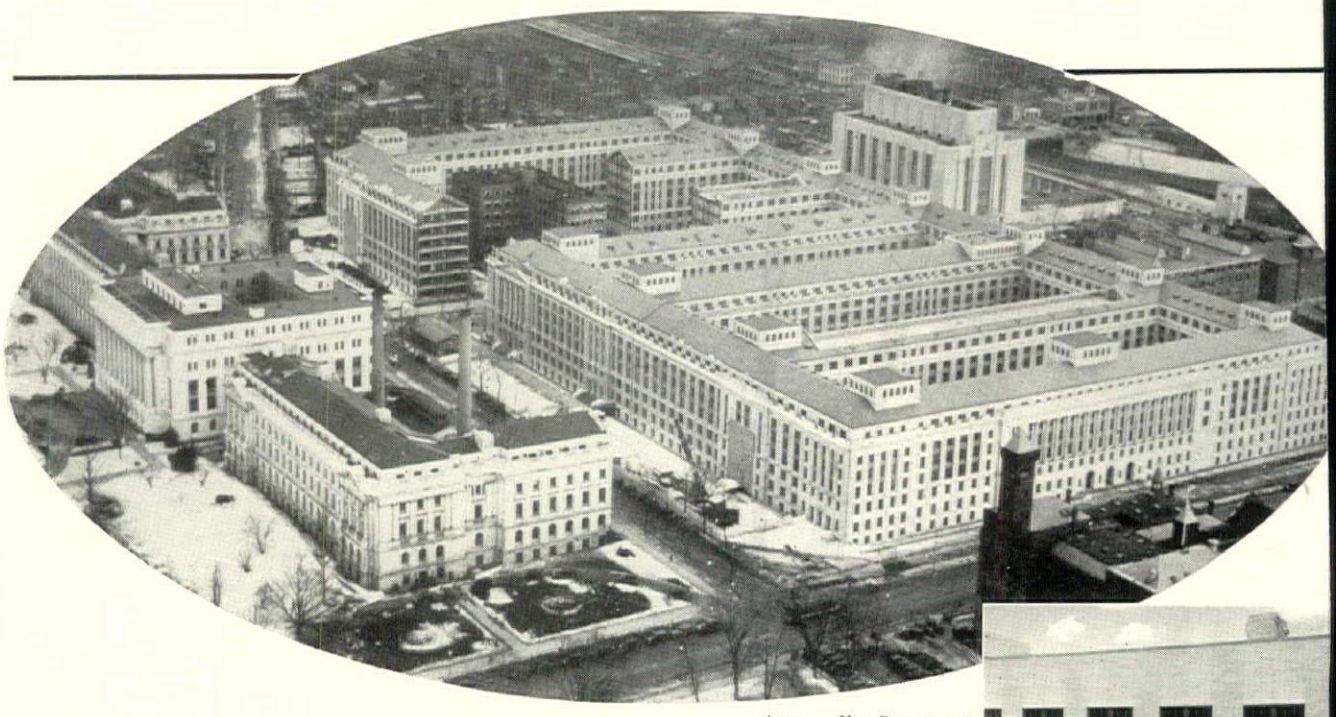


The electrical and structural modernization of America's business property is under way. Through the Federal Housing Administration, the money is available. Business men and the Government are stressing Modernization for one purpose: To create better business for all. Architects are being asked to draft the plans.

Electrical adequacy is necessary to profitable business. You will find that the General Electric Line of Wiring Materials meets all requirements. Specify: General Electric "Safe-cote" Code Wire, G-E White Rigid Conduit and Fittings, Switches, Convenience Outlets. Send for complete information today. Write Section CDW-229, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC WIRING MATERIALS

TEMLOK ROOF INSULATION PROVIDES ADEQUATE THICKNESS *Without Lamination!*



ABOVE—*New Department of Agriculture Extensible Building, Washington, D. C., which is guarded with 190,000 sq. ft. of Temlok Roof Insulation.*

ABOVE—*Temlok Roof sulation increases sum and winter comfort in new Post Office, Worth, Texas.*

ABOVE—*59,000 square feet of roof area are insulated with Temlok at the Topeka City Water Works.*

* * *

RIGHT — *Better working conditions are assured in the Twin City Machine Company Building, Minneapolis, thanks to Temlok Roof Insulation.*

This efficient, low-cost material for roof decks is fabricated in solid 1½" and 1" boards.

CHOICE of full inch or one and a half inch Armstrong's Temlok Roof Insulation insures greater comfort and fuel savings for any type of building—commercial, residential, industrial, public or semi-public!

And it does more! It reduces installation costs by eliminating the necessity of building up with thinner layers where more adequate insulation is desired. Most important, the structural strength of this thicker insulation permits a reduction in density, thus giving lighter insulation and greater insulating efficiency. Also its light weight makes Temlok easy and economical to handle and minimizes the weight on the roof slab.

Armstrong's Temlok Roof Insulation is also furnished in ½" thickness, as well as solid 1" and 1½". Temlok is made from the heartwood of the southern yellow pine, the fibres of which are super-charged with resin. It is this natural resin-impregnation that gives to Temlok the high resistance to moisture necessary for a roof insulation that is permanently efficient.

For complete information about Armstrong's Temlok Roof Insulation—and the other insulating products in the complete Temlok line—write today to Armstrong Cork Products Co., Building Materials Division, 900 Concord Street, Lancaster, Penna.

Armstrong's

TEMLOK ROOF INSULATION

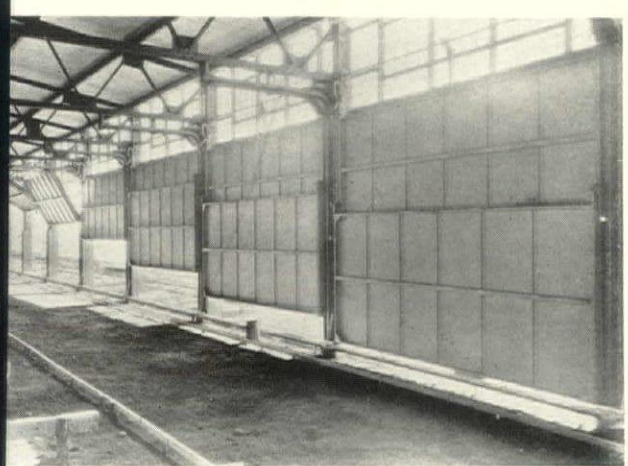
PRODUCTS AND PRACTICE

(Continued from page 52)

. GARBAGE ELIMINATOR

he Specialty Appliance Department of the General Elec- Company has announced a new electrical device which nds waste foods, thereby eliminating the garbage can m the home. The device is installed beneath the kitchen k and can be attached to existing sinks. It grinds and pifies all waste foods including citrus fruit skins, chicken es and chop bones. Reduced to a fine pulp the waste food lushed by water and carried away as part of the sewage eam. The grinder is a rugged high-speed device. Its speed, h the centrifugal action, results in aerating the food solids, ich causes greases in the garbage to coagulate into com- t particles which pass through the pipes without coating clogging. Water used in the grinding and flushing processes lmost negligible and the company claims that its average t of operation per month will be about half that required operating an electric clock. The unit weighs about seventy- pounds and is driven by a ¼ horsepower electric motor.

. STEEL DOORS



The Kinnear Manufacturing Company has recently com- ted one of the largest installations of steel doors in the untry. These doors were used in the giant pier in New York rbor, built especially for the docking of the *Normandie;* doors consist of two sections. As the lower section tele- pes with the upper one, the two sections slide to the over- ad position on heavy steel tracks. The doors are so counter- lanced by the concealed weights that only 15 pounds of ergy are required to open them. A feature of special interest the safety drop lock which minimizes the hazards of rais- g and lowering doors of such great weight. It is similar to an vator lock in that it prevents the door from dropping ould the lifting chains accidentally break.

0. WALLBOARD

The Upson Company announces the production of a new d basically improved wallboard. By the use of a formula veloped by the company the board has been so treated that oisture absorption has been reduced to a point hitherto un- own in fiber wallboards. It is claimed that water immer- on tests have shown that other boards have a capillary rise irty-one to eighty times greater than this new product. In dition, a new surface has been developed which eliminates e necessity of a sizing or priming coat of paint. Each board mes with two surfaces, one smooth and the other pebbled, ther one of which can be used depending upon the texture sired. A new method of application for this product has so been developed which will permit the installation of ilings without visible cracking or joints.

MANUFACTURERS' PUBLICATIONS

AMONG the manufacturers' publications recently received interest to the architectural profession were the following:

912. GYPSTEEL PLANK

From the Structural Gypsum Division of Americ Cyanamid & Chemical Corporation a catalogue showing t uses of Gypsteel Plank on various types of buildings.

913. HEATING

From the Spencer Heater Company a new booklet entitl "Heating the Multiple-Family House," dealing with the he ing problems of owners and managers of dwellings, off buildings and stores.

914. FLASHING

From Revere Copper & Brass Incorporated a booklet sho ing typical details of Thru-Wall Copper Flashing.

915. DOORS

From C. V. Hill and Company a new catalogue of th new and complete line of cold storage doors.

916. PORCELAIN ENAMEL

From the Porcelain Enamel Institute a new brochure titled "Sales Manual for Porcelain Enamel" describing t history and application of this material.

917. REFRIGERATING UNITS

From the York Ice Machinery Corporation a new series bulletins, A.I.A. File No. 32, with specifications and other da on York Refrigerating Units.

918. PUMPS

From the Worthington Pump and Machinery Corporati a booklet on the company's deepwell turbine pumps.

919. FOLDING PARTITIONS

From the Richards-Wilcox Manufacturing Company a n catalogue, A.I.A. File No. 19-E-61, describing their comple line of folding partitions and doors, with details and phot graphs of numerous installations.

920. MANUAL

"Manual of Timber Connector Construction" from t Timber Engineering Company.

921. PIPING

From the Air Reduction Sales Company a new bookl "Facts About Piping for Buildings."

922. WINDOW

From the Kawneer Company a new booklet describing t new Light Sealair aluminum or bronze double hung windo

923. CONTROLLERS

From the A. W. Cash Company Bulletin No. 963 on th New Type 100 Series of Cash Standard Controllers for aut matically operating valves, rheostats, stokers and other a paratus.

924. CONCRETE

From the International Cement Corporation a new bo with a simple non-technical discussion of fundamentals concrete construction.

(Continued on page 59)

SENSATIONAL PAINT TEST

One of Indiana community homes painted with Eagle Pure White Lead. Two years er, when other paints had cracked and peeled badly, Eagle White Lead showed almost signs of wear.

Shows architects how to avoid premature paint failures

[Mail coupon for complete picture story.]

● Architects can heave a big sigh of relief and forget about paint troubles. A remarkable paint test made on a whole community settles the question once and for all. It proves what house paint will stand up best under all conditions.

The test was made in a northern Indiana mill town. The 100 homes in the community were divided into 3 sections. Each section was painted with a leading kind of paint. In a short time, two of the paints used had cracked, peeled or discolored badly. They had to be touched up within two years. During the same period, the third paint — 100% Eagle Pure White Lead—showed little sign of wear. The houses in this section did not need repainting until 5 years later!

The initial cost of Eagle Pure White Lead was approximately the same as the other paints, but its final cost was much less. It went on giving good service 3 years after the other two paints had failed.

There is a definite swing to quality paints everywhere. Save yourself the embarrassment of premature paint failures by specifying Eagle Pure White Lead for exterior work on all your houses.

Remarkable paint test was made here

• There are 100 homes in this northern Indiana community. Bothered with costly paint failures, the real estate management determined to find out once and for all what paint was most durable, most economical. Of the 3 paints tested, Eagle Pure White Lead was the only one that gave satisfactory service. Mail coupon for complete story.

EAGLE *pure* WHITE LEAD

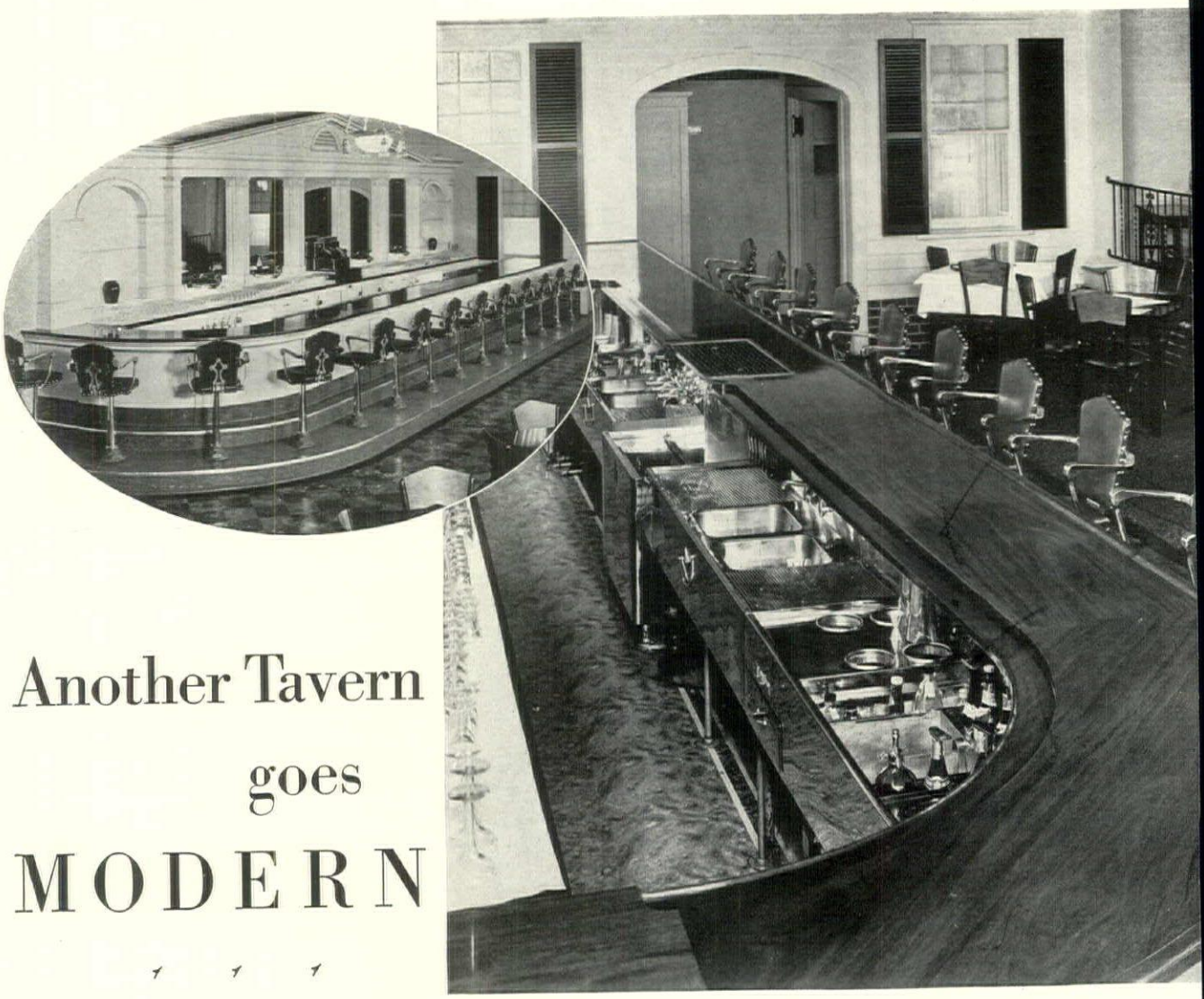
Boost the Better Housing Program in your community

MAIL THIS COUPON ● The Eagle-Picher Lead Company, Dept. AF9, Cincinnati, Ohio. Please send me a copy of the folder that tells the complete story of the Indiana Community Paint Test.

*Name*_____

*Address*_____

*City*_____ *State*_____



Another Tavern goes MODERN

with the help of Russ and G·E BAR PLANNING SERVICE

OWNERS of the Southern Mansion, Omaha, wanted a truly modern bar—attractive, efficient and including a beer dispensing system that was dependable and economical. The local architect and builder called upon Russ and G-E Bar Planning Service. Pictured above is the answer—a modern, skillfully laid out, thoughtfully planned Russ Service Bar equipped with General Electric refrigeration, Russ Beer Dispensing Apparatus and complete facilities for cocktail service.

General Electric refrigerated Russ Bars are made in all standard sizes or fabricated and built of any special materials to your specifications. A complete bar pla ning service that covers every type of bar where liquo and draught beer are served is offered to architec and builders. The service includes detailed informati and specifications on the laying-out of bar interiors how to plan cocktail service and beer service statio —where to locate beer stations—and how to space working units for most efficient operation. Phone t nearest G-E refrigerator distributor for details or wi direct for full information. The Russ Manufacturi Co., Dept. 935, 5700 Walworth Ave., Cleveland, Oh

RUSS BARS AND BEER DISPENSING APPARATUS
EQUIPPED WITH GENERAL ELECTRIC REFRIGERATION

sold exclusively through . . .

GENERAL ELECTRIC

REFRIGERATOR DISTRIBUTORS

ANUFACTURERS' PUBLICATIONS

(Continued from page 56)

STEEL CEILINGS

new booklet from the Edwards Manufacturing Co. de- ing in detail their line of steel ceilings with tables for puting the area required and cost.

HUMIDISTATS

ulletins A and AT/R describing the new range of Friez Mounting Humidstats and Friez Relays and Complete trol Assemblies for use in conjunction with their humidi- and thermostats.

ELEVATORS

rom the Sedgwick Machine Works a new general catalogue ng their line of dumb-waiters, freight elevators, and book

CAFETERIAS

new booklet from the John Van Range Co., A.I.A. File , entitled "Practical Planning for School Food Service." booklet contains a number of articles on the practice of teria planning, copiously illustrated with photographs and iled plans of a number of schools of various types in which problem of serving large numbers of students had to be ed. This booklet is one of a series of five, the others dealing restaurants, clubs, hospitals and churches.

WIRING

rom the Bryant Electric Co. a new booklet, "Home Mod- ization for Wiring Convenience," with illustrations of vari- switches, receptacles and outlets manufactured by the pany.

AIR CONDITIONING AND HEATING

folder from the Perfection Stove Co. containing material its air conditioning equipment and fuel oil heating plant, .A. File 30-F-1.

GLASS

From the Lord & Burnham Co. a new booklet on "Glass closures" for sun rooms, conservatories and glass gardens, strated with many photographs showing the use of their ss units, both as separate buildings and connected to idences.

SHEET GLASS

From the Scohy Sheet Glass Co. an interesting little book- describing the use of sheet glass for lighting fixtures, win- ws, furniture, passe partout, glass shelves, wall murals, and uariums.

STEEL CONDUIT

From the Rigid Steel Conduit Association two new pam- lets giving advantages of standard rigid steel conduit over other methods of wiring.

DURACAL

From the United States Gypsum Co. two booklets explain- the advantages of Duracal, the new wall and ceiling paint.

STEEL BOILERS

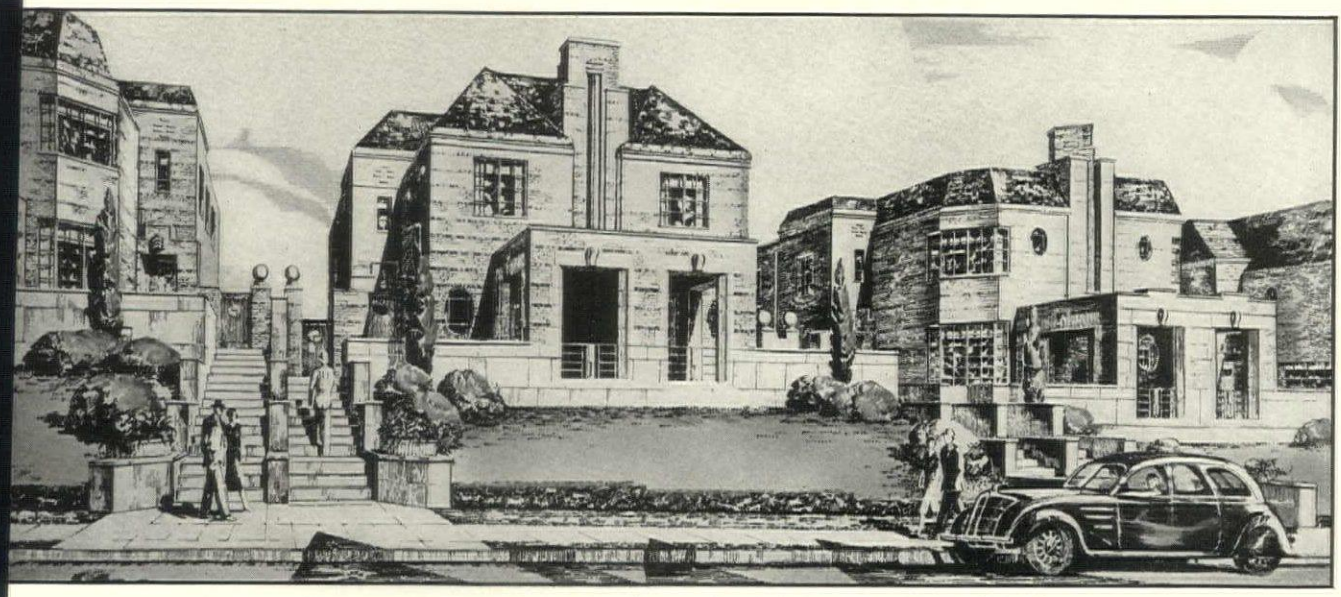
From the National Radiator Corp., a new catalogue giving e sizes and complete measurements of their line of steel eam boilers.

MOTORS

Bulletin No. 601 from The Louis Allis Co., dealing with e special characteristics of electric motors for centrifugal ives.

(Continued on page 62)

The World's First Large Home Development WITH *Complete Year-round Air Conditioning*



Section of the community of semi-detached dwellings equipped with year-round G-E Air Conditioning now being completed in Washington, D. C., by Washington Builders, Inc., Harry Sternfeld, Architect.

THERE is pleasing variety in the appearance of forty-eight semi-detached homes which Washington Builders, Inc., are erecting on a tract overlooking Rock Creek Park, but all the houses have at least two things in common: They sell for less than $12,000, and they have complete summer-and-winter General Electric Air Conditioning.

The G-E equipment comprises a Gas Furnace, a Central Plant Air Conditioner and a Condensing Unit. The air conditioning system is laid out with dampers so that in summer the first floor may be cooled during the day and the second floor at night.

Frank Koplin, head of Washington Builders, Inc., believes that homes without air conditioning will soon be obsolete. He is providing it now because purchasers want it and the cost is much less than after a house is built. He is stressing health and comfort factors and the economical operation of G-E Air Conditioning.

And (note this, progressive architects) he is selling these fully air conditioned houses at a price comparable with that asked a year or two ago for houses of similar grade with only ordinary steam heating.

Architects will find in the complete and flexible line of G-E Air Conditioning equipment exactly what is needed for any home. A unique dealer service in your town, with G-E-trained engineers, works with you on any phase of air conditioning. For details see G-E Air Conditioning section in your 1935 Sweet's Catalog. Or write to General Electric Company, Air Conditioning Dept., Division 42415, Bloomfield, N. J.

GENERAL ELECTRIC AIR CONDITIONING

MANUFACTURERS' PUBLICATION

(Continued from page 59)

937. FURNITURE

From the Charak Furniture Co. a new catalogue on t line of period furniture.

938. WASHFOUNTAINS

From the Bradley Washfountain Co. a new catalo showing group washing fixtures including washfountain showers.

939. VALVES

From the Fairbanks Co. Catalogue No. 21 illustrating t line of bronze and iron valves.

940. TOILET SEATS

From the New Process Rubber Co. a folder describing t new line of solid rubber toilet seats, with list prices.

941. LEAD

A new illustrated booklet containing information on l pipe and other lead plumbing supplies, issued by the L Industries Association.

942. PORCELAIN STEEL

From the Porcelain Steel Buildings Co. an illustrated ca logue showing the application of their products to mod business units.

943. CONCRETE HOUSES

"22 Low Cost Concrete Homes" a new booklet publish by the Portland Cement Association, suggesting designs f all types of small concrete masonry homes.

944. STAINLESS STEELS

From the American Rolling Mill Co., a folder listing t advantages to be expected from the use of Armo stainl steel.

945. LINOLEUM SPECIFICATION

From the Linoleum and Felt Base Manufacturers Ass ciation, subscribed to by the leading companies in the indu try, standard specifications for linoleum installations.

946. HEATILATORS

From the Heatilator Co., a new booklet with many exampl of the uses of its heat circulating fireplaces.

REQUEST FOR DATA

To obtain any of the publications reviewed on these pages, indicate the number and send coupon to THE ARCHITECTURAL FORUM, 135 East 42nd St., New York

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IN THIS *toilet room, White Carrara Structural Glass has been used for attractive, easy-to-clean walls, and for sturdy, sanitary partitions. Cap and base of rich Black Carrara contrast smartly with the large white areas.*

Toilet Room Walls and Partitions of CARRARA are

Lastingly **BEAUTIFUL**
Structurally **STRONG**
Easily **CLEANED**

CARRARA Structural Glass has won the approval and enthusiastic endorsement of architects throughout the country. A structural glass which is ground and polished, which has brilliant, reflective surfaces, a hard, durable, fine-textured finish, Carrara is an ideal medium not only for use in executing new toilet rooms of distinction, but also in remodeling old toilet rooms which have become outmoded.

When the toilet rooms in a building are finished in Carrara, they will never give away the building's age by their appearance. For Carrara installations will look as fresh, new and unblemished thirty years from now as they do today. Carrara never checks, crazes, stains, fades, absorbs odors or moisture. It is unaffected by chemicals, oils, pencil marks. And to keep it clean . . . merely wipe it occasionally with a damp cloth! No cleaning powders, no special preparations necessary . . . which means a big savings in upkeep.

You will like Carrara especially well because of its versatility, the wide scope of possibilities for original and effective treatments it offers you. We invite you to send the coupon below for our interestingly illustrated booklet on Carrara Structural Glass, which contains complete information.

CARRARA

The modern structural glass

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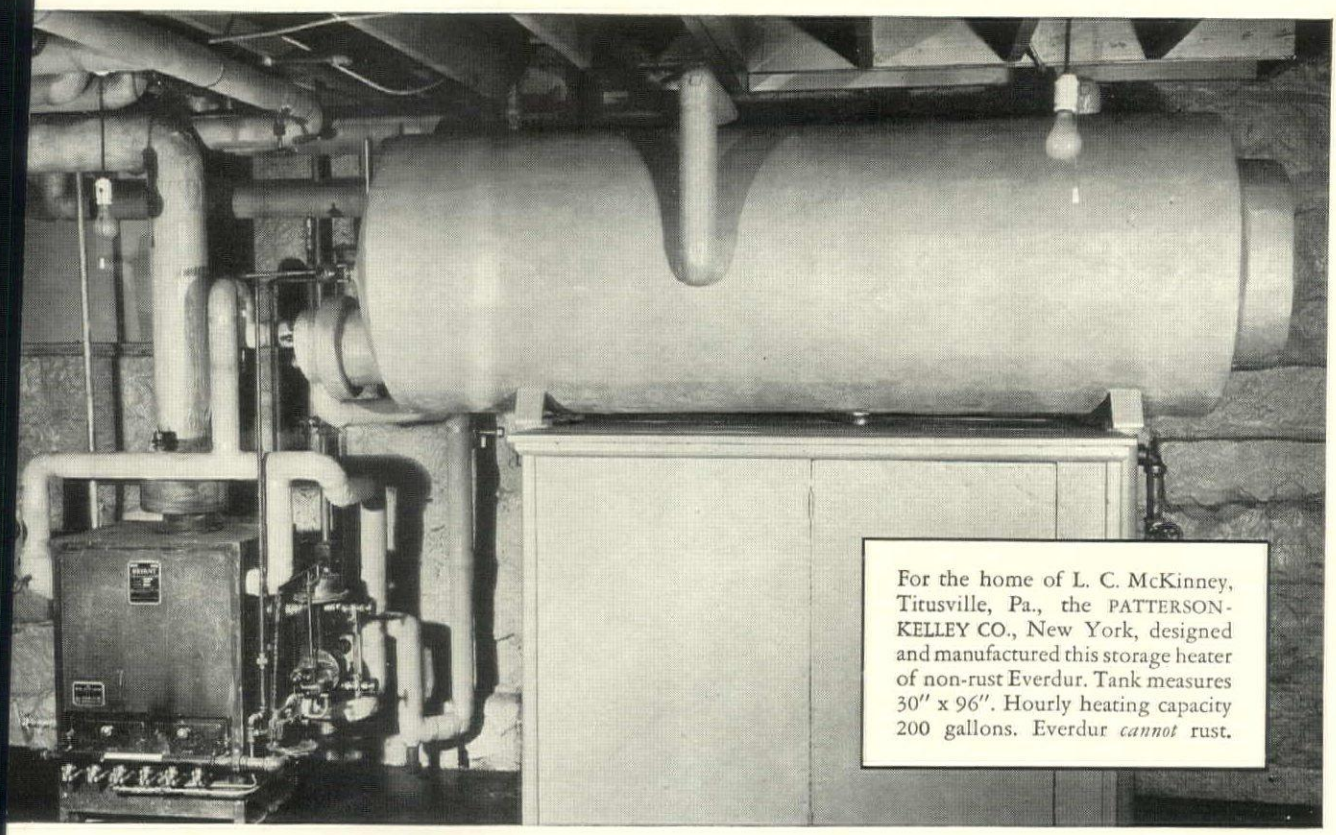

For the home of L. C. McKinney, Titusville, Pa., the PATTERSON-KELLEY CO., New York, designed and manufactured this storage heater of non-rust Everdur. Tank measures 30" x 96". Hourly heating capacity 200 gallons. Everdur *cannot* rust.

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Storage Heaters of EVERDUR METAL

ssure plenty of rust-free hot water indefinitely

In hospitals, stores, public and semi-public buildings . . . in small homes and large residences, storage heaters of Everdur Metal have proved the economy of this strong, not-rust metal of moderate cost.

Nearly all copper, alloyed with silicon, Everdur possesses the strength of medium carbon steel. Since it is readily welded by all commonly used methods, this unusual Anaconda Metal fulfills *all the requirements* for durable, rustless storage heaters, domestic storage tanks and tank units in automatic heaters. And all are available today from leading manufacturers.

Equally successful is the use of Everdur for air-conditioning equipment, drains and ducts, electrical conduit, smoke washers, masonry anchors, window cleaner bolts, etc. Additional data on any specific use of Everdur furnished on request.

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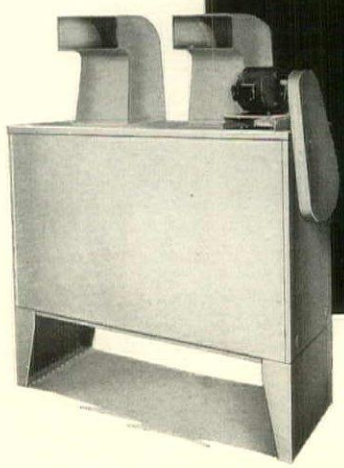
The Floor Line Spread Series available in Floor and Suspended Models.



The Torridor Series available with the exclusive Trane Features of Multiflex and Flexitrol Control

. . . . bring many exclusive features to your clients

YOUR clients have the right to expect heating equipment that is stylish — that is quiet — that is economical — that delivers the heat in a manner that assures maximum comfort.

Trane engineers realize these facts — that is why you get more in a Trane Unit Heater. "Floor Line Spread," for instance is one of the major developments in unit heater design. The grille which produces it not only looks better than louvers but it actually causes the heat to be delivered and distributed in the living zone. In announcing this 1936 line of unit heaters — both propellor and blower type fan units — we believe that we are placing in the hands of architects and engineers the most modern heat distributing equipment available whether for fashionable shops or for factory installations.

Construction: The same famous Trane Heat Transfer coil that has been accepted as a standard of heat transfer in the unit heater field as well as by many of the leaders of the air-conditioning industry for their own units is employed in the Trane Unit Heaters. Casings are heavy gauge steel. Fans are improved and higher efficiency.

Quiet: Completely enclosed fan on propellor units makes possible a lower decibel reading than before available in a unit heater.

Unbiased Recommendations: Trane has av able every type of unit heater. Suspended and Fl type propellor fan units. Wall, Ceiling, and Floor T Blower Fan units with either direct or belt drive. will pay you to call a Trane engineer into your of on your next heating installation. His recommen tions of the proper type of unit will be unbiased — cause Trane has a unit heater to fit any job.

Complete Data: Here is complete working da for the drafting and consulting departments coveri every phase of unit heater selection and applicati Your letterhead or the coupon will bring all of t valuable working information without cost.

TRANE UNIT HEATER

40 PAGES OF WORKING DATA

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Ira Crosse, Wis., Dept. 9.

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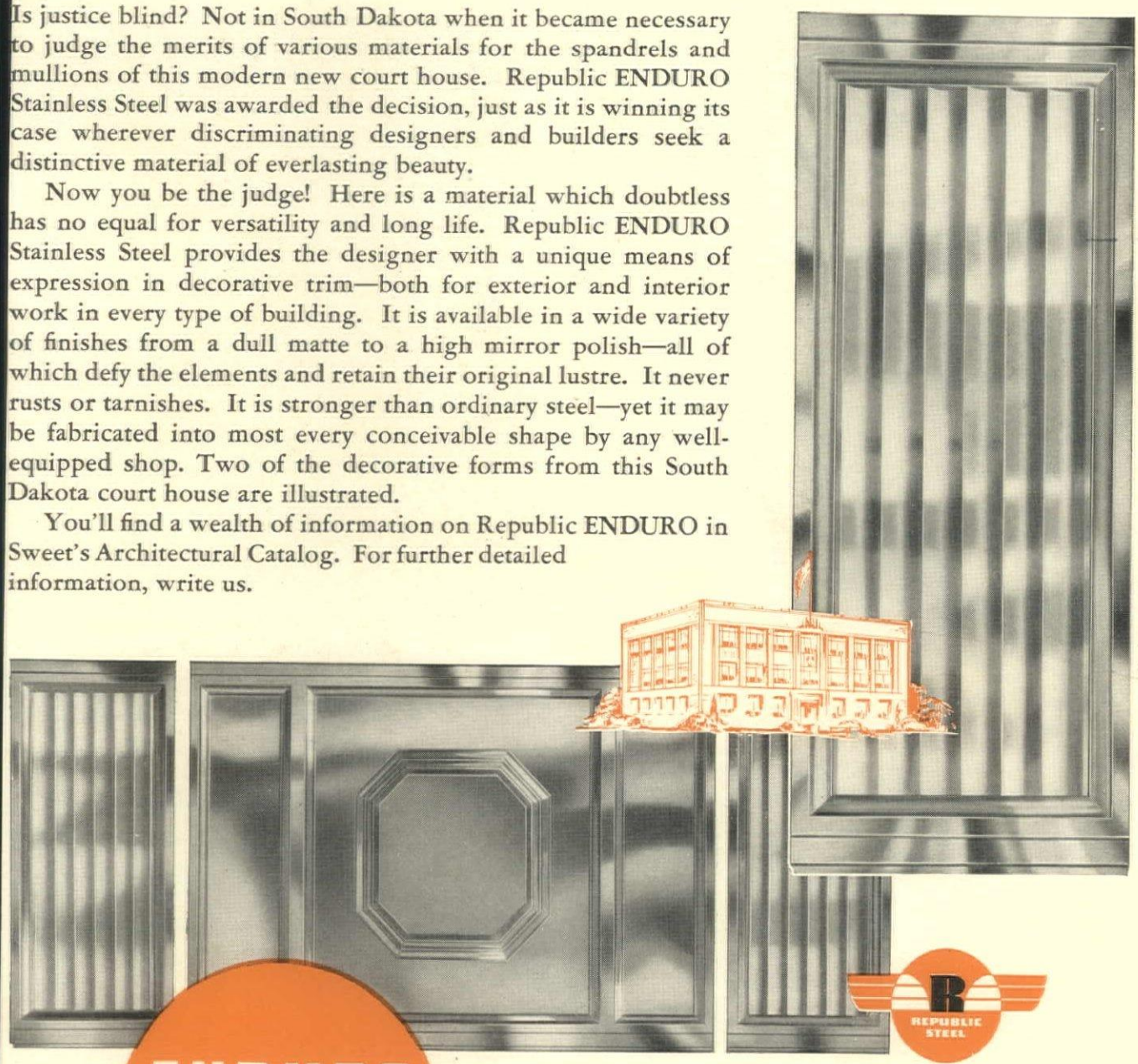
ENSHRINES THE SCALES OF SOUTH DAKOTA JUSTICE

Is justice blind? Not in South Dakota when it became necessary to judge the merits of various materials for the spandrels and mullions of this modern new court house. Republic ENDURO Stainless Steel was awarded the decision, just as it is winning its case wherever discriminating designers and builders seek a distinctive material of everlasting beauty.

Now you be the judge! Here is a material which doubtless has no equal for versatility and long life. Republic ENDURO Stainless Steel provides the designer with a unique means of expression in decorative trim—both for exterior and interior work in every type of building. It is available in a wide variety of finishes from a dull matte to a high mirror polish—all of which defy the elements and retain their original lustre. It never rusts or tarnishes. It is stronger than ordinary steel—yet it may be fabricated into most every conceivable shape by any well-equipped shop. Two of the decorative forms from this South Dakota court house are illustrated.

You'll find a wealth of information on Republic ENDURO in Sweet's Architectural Catalog. For further detailed information, write us.



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"Bridgep

Water ran r
..Old pipes star
leaking..Apartm
lost tenants c
money..Then–
both back b
REPLACIN
WATER LINES WITH

PLUMRITE BRASS PIP

THE history of this 100-family apartment house, built in 1923 (name and location on request), shows the importance of modern plumbing, and points an interesting moral in protecting an owner's investment.

After 12 years, the hot water ran rusty, and the pipes, almost eaten through in many spots, were so clogged in other places that the water could scarcely flow. Tenants complained and then moved out; rent receipts dropped with alarming speed. But—the owners saved the situation, in the spring of 1935, and won back many of their old leaseholders by *replacing all hot water lines with rust-proof brass*—Bridgeport Plumrite Brass Pipe being used throughout.

On *any* piping job, new or old, Bridgeport Brass Pipe is the finest material obtainable, especially in larger buildings, where utm strength and generations of service are requir Where building budgets are limited, Brid port Copper Water Tube, with soldered tings, is advised. It gives a rust-proof job prices competing with rustable pipe. Excelle for underground service, steam and hot wa lines, fuel oil piping, etc.

Bridgeport engineers have studied plumbi problems from every angle. Write for free boo lets, "Water Pipe Sizes" and "Bridgeport Co per Water Tube." They contain valuable da

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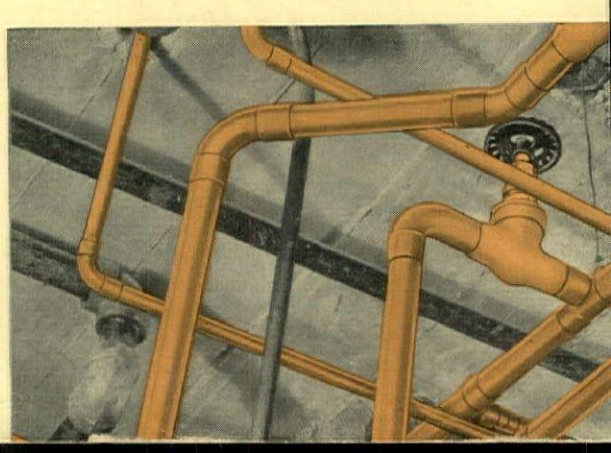
Bridgeport Copper Water Tube is recommended for a good-looking, rust-proof job where costs must be kept down. Can be used with any standard make of soldered or flared fittings that are made according to government specifications.



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