

# FHE ARCHITECTURAL FORRUNI

## SEPTEMBER 1939

# Vorld's Most Modern Rayon Plan

GUARDS HEATING & AIR-CONDITIONING COSTS WITH CELOTEX ROOF INSULATION ...



### Industrial Rayon Corporation Relies on Celotex Insulation at its Painesville Factory

**M**<sup>ANUFACTURE of rayon requires close atmosphere control. Industrial Rayon Corporation has used Celotex Roof Insulation as a factor in that control over a long period of years. Satisfactory experience made Celotex Roof Insulation the logical choice for the Corporation's new windowless, air-conditioned plant at Painesville, Ohio.</sup>

This new 14-acre factory, constructed at a cost of \$11,500,000, contains the world's largest area of glass block. Every material used was subjected to *severest tests* before being finally selected by



the architects. 2" Celotex Cane Fibre Roof Insulation proved itself thoroughly qualified to prevent ceiling condensation or undue heat losses.

By actual record, this insulation has been shown to cut roof heat losses 35% to 75%. Figures are also available on its cost-cutting ability with regard to air-conditioning. It is permanently protected against termites and dry rot by the exclusive, patented Ferox Process. Write for complete specifications.

THE CELOTEX CORPORATION . 919 N. MICHIGAN AVE. . CHICAGO, ILL.

The word Celotex is a brand name identifying a group of products marketed by The Celotex Corporation.

Al-the New York World's Fair, be sure to see Celatez Exhibit House No. 17 in "The Town of Tomorrow,"

# SEPTEMBER 1939

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Barbara Hunt, Richard E. Saunders, Madelaine Thatcher, Allan Woolle, Tute AncOntrectouran, Fout as unbilished by Time Inc., Henry R. Lace, President; Roy E. Larsen, Eric Hodgins, P. I. Prentice, Vice Presidents; Charles L. Stillman, Vice President and Treasurer. Publication and Subscription Office, Eric Ave., F & G Streets, Philadelphila, Pa. Subscriptions may also be sent to 330 East 22nd Street, Chicago, Illinois, Executive, Editorial and Advertising Offices, Time & Life Building, Rockefeller Center, New York, Business Manager, H. A. Richter, Advertising Munager, Goorge P. Shuth. Address all editorial correspondence to Time & Life Building, Rockefeller Center, New York, Yoarly subscription, Payable in advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, \$4.00, Elsowhert \$6.00, Single issues, including Reference Numbers, \$1.00. All copies Malled Flat, Copyright under International Copyright Convention. All rights reserved under Pan American Copyright Convention, Copyright, 1939, by Time Inc. VOLUME 71-NUMBER THREE THE MONTH IN BUILDING

**BUILDING STATISTICS.** Unlike the volume of building permits (right), the trend of contracts awarded and mortgages selected for FHA appraisal dropped off during the latest months for which statistics are available (see page 216). On the other hand, the volume of mortgages recorded throughout the U. S. was up. Particularly significant is the fact that both the cost of labor and the cost of materials used in small house construction decreased, combined to produce the lowest figure since 1937. Also significant: the downward trend of interest rates; the biggest upward movement of rents in the last two years.

PERMITS

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

	Monthly data			First six months	
	June 1939 (millions)	Comparis May '39	on with June '38	1939 (millions)	Comparison with 1938
Residential	\$100.1		+42.7%	\$553.6	+45.1%
Non-residential	. 65.9	+40.7	+54.1	298.0	+16.7
Additions, repairs	. 30.9	- 6.0	+11.2	173.1	+ 8.0
TOTAL	. 196.9	+ 0.4	+40.0	1024.7	+28.5

FHA PARADES. Long and pompous was the parade of organizations which last month made headline building news (see below). At column's head came the Federal Housing Administration puffed with justifiable pride at having given Home Building its biggest break in many a month. FHAdministrator Stewart McDonald had announced that, effective August 1, only those home mortgages bearing interest at  $4\frac{1}{2}$  per cent or less would be eligible for Government insurance, that only those large scale rental housing mortgages bearing interest at 4 per cent or less would be eligible. Formerly the maximum rates had been 5 and  $4\frac{1}{2}$  per cent, respectively.

Small percentage-wise, these reductions grow big when translated into dollars and cents. Prior to July 1, monthly payments to interest, amortization and average FHA insurance premium on a \$5,000 mortgage would have come to \$8,970 during the 25-year life of the loan. Today the total is \$255 smaller.\* On a 20-year \$10,000 mortgage the interest rate reduction accounts for a total saving of \$648. (For a complete picture of today's FHA-insured mortgage costs and other monthly costs of home ownership, see page 212.)

Although FHA's reduction in maximum interest rates is not retroactive, home owners presently paying monthly installments on 5 per cent FHA-insured mortgages may refinance their loans on the new  $4\frac{1}{2}$  per cent basis. There are, however, two hurdles in their way: 1) As amended this year, the National Housing Act limits FHA's old-house business to 25 per cent of the total business on its books, and refinancers are already beginning to crowd that limit. 2) In many cases the cost of refinancing will about offset the savings to be obtained by the lower interest rate.

Since FHA lends no money, its recent action is a break for Home Building only if the Nation's lending institutions play ball with the new interest rates. Chances are they will. FHA insurance has virtually removed the cost-of-risk element from home finance; interest rates on other investment securities have been dropping steadily; and the cost of money to lending institutions (interest on deposits) is continually moving in the same direction.

RFC FOLLOWS. Whether or not private lending institutions will play with FHA's new ball (see above), Government's Reconstruction Finance Corp. has announced that its subsidiaries, the RFC Mortgage Co. and the Federal National Mortgage Assn., will. They stand ready to purchase from approved mortgagees at par and accrued interest home mortgages bearing interest at the reduced rate of 41/2 per cent, to allow their present service fee of 3/4 of 1 per cent. FNMA, which at June 30 already held \$125 million of FHAinsured mortgages, also stands prepared to buy 4 per cent large scale rental housing loans on the same terms and to initiate such loans itself.

**HOLC STRAGGLES.** Much against its will, the Home Owners' Loan Corp. was forced by the action of other Government agencies (see above) to join the parade, reduce its interest rates. Thus, last month came announcement that, "as soon as the necessary arrangements can be completed," HOLC will knock the 5 per cent rate on its outstanding loans down to 4½ per cent—at least as far as borrowers in good standing are concerned. The reduction will not be retroactive, nor will it be extended to mortgagors who are delinquent in their payments.

To good-standing HOLC borrowers this action means a saving of some \$6 million per year. To HOLC, already operating at a sizable deficit, it means reduced operating income. To the real estate and mortgage markets it means more than just a ripple, for HOLC has \$8,000 houses of which it must dispose. Since the agency has always made it a practice to sell its acquired properties for mortgages bearing the same interest rate as charged original borrowers, it is expected that the new  $4\frac{1}{2}$  per cent rate will go to all subsequent purchasers. And, HOLC's rate is a flat rate with no appraisal fees, insurance premiums or other costs attached, is therefore well below the total cost of FHAinsured mortgages which entails all these

items. For this reason, HOLC—one child of the Federal Home Loan Bank Board —may find itself in competition with its brothers and sisters, the Federal savings and loan associations. Interest rates charged by these associations are outside the control of FHLBB, today average above 5 per cent.

The impending HOLC rate reduction is something that Congress has long threatened to take into its own hands, but never did. Last month, however, it did take another HOLC matter in hand when it authorized the FHLBB to extend from 15 to 25 years the amortization period of HOLC loans. (Bulk of these loans were made in 1934 and 1935, now have ten to eleven more years to run.) The authorization means little to HOLC who can see no reason for extensions in the case of borrowers who have demonstrated their ability to pay nor in the case of those whose situation is apparently hopeless. There remains only a small in-between class of borrowers to whom the extended amortization period and accompanying lower monthly costs might bring salvation. They will probably get it.

USHA MARKS TIME. The U.S. Housing Authority itself made no news last month, but it was the subject of big news. Fresh from the kill of the President's "Great White Rabbit of 1939" (the \$3,860 million spend-lend bill), the House of Representatives laid low a Senateapproved measure designed to double USHA's \$800 million borrowing and lending power, to boost its annual subsidizing power from \$28 million to \$73 million. Most observers attributed USHA's first major defeat to the first major House speech of 31-year-old Albert Arnold Gore (D., Tenn.): "The USHA is in no respect self-liquidating. . . . Why, my eighteen-month-old baby will be lucky if he lives to see a single one of (its) contracts liquidated."\* In the lively name-calling contest that followed, USHA was dubbed a "blunder" and a "bare-faced fraud" that would eventually cost \$1,680 million as is,

<sup>\*</sup> On mortgages of \$5,400 and less the  $\frac{1}{2}$  of 1 per cent reduction in maximum interest rates was offset, in part, by a  $\frac{1}{4}$  of 1 per cent boost in FHA's insurance premium, which became effective July 1, 1939. The insurance premium on all home mortgages is now  $\frac{1}{2}$  of 1 per cent.

<sup>\*</sup> Some weeks earlier USHAdministrator Straus in a New Haven address had stated that USHA's "loans... are absolutely returnable —every dollar—with interest." The statement was quoted on the House Floor.



Bill : They certainly do dress-up railroad cars these days.

**Ed**: Yes. I understand they use Masonite Tempered Presdwood. Boy! That board has to be tough to stand up in a railroad car. It's light weight, too.



**Bill:** Our architect wants us to remodel our living-room with Masonite Tempered Presdwood. He says we can get a great many different, *expensive-looking* effects with it. And it won't cost much.

**Ed**: Why not try it, Bill? A dozen of my other friends have and they are completely sold on it. Tempered Presdwood can be painted or enameled. And it looks swell in its own natural, brown finish.



**Mere's Bill's Remodeled Living-room**—The upper walls and ceiling are durable, moisture-resistant Masonite Tempered Presdwood, painted gull-grey. The wainscot is the same material, unpainted. Ideal for homes with children, because Masonite Tempered Presdwood resists scuffing, and does not show finger marks. The built-in desk and bookshelves are Masonite Tempered Presdwood, clear-varnished.



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VOLUME 71 Number 3

### THE MONTH IN BUILDING

\$4,380 million if granted the powers authorized in the ill-fated amendments.

More conservative, the independent New York *Times* editorially attributed USHA's smarting defeat to the "widespread concern over the long-continued failure of the Government to put its ordinary finances in order." Concluded the *Times:* "The case for public housing grants and public housing subsidies remains as good as ever."

Having passed the Senate, the USHA bill theoretically need not go back to where it started when it is considered in the next session of the 76th Congress. But, practically, it must. Reasons: the Senate wrote into the bill a provision that \$200 million of the \$800 million boost in borrowing-lending power be earmarked for "rural" housing projects, and another provision that cities seeking USHA assistance must ante 10 per cent of a project's cost in cold cash (instead of 10 per cent in tax exemption as now is the case). USHA, itself, feels that the former provision would seriously cripple the amendment, that the latter would kill it altogethereven if passed. Few cities are rich enough to make outright cash contributions to the cause of housing.

Highlight of the Congressional hearings on the proposed USHA amendments (later quoted on the House floor) was USHAdministrator Nathan Straus' bland answer to a question as to what percentage of housing project occupants were coming from demolished slum dwellings; "I do not know. . . . It is not very important." The House thought it was important, and the name of Nathan Straus, already far from the top of Congress popularity list, dropped down several pegs. But, no matter what the position of his name on their list, Congressmen cannot fire Mr. Straus. He took office in 1937, still has three more years to serve with only the remotest possibility of dethronement. Thus, the U.S. Housing Act states that "The Administrator shall serve for a term of five years and shall be removable by the President upon notice and hearing for neglect of duty or malfeasance but for no other cause." Nathan Straus is the only Federal administrator sitting on such a cushion.

**CIO THREATENS.** Labor also marched in last month's parade of building news-makers. Thus, the Congress of Industrial Organizations outlined a Nationwide invasion of the ranks of Building Labor, chartered the United Construction Workers Organizing Committee to do the work, appointed jovial, bushy-eyebrowed A. (for Alma) Denny Lewis, 50-year-old brother of CIO's President John L., to head the drive.

UCWOC's purpose is to organize the 2.2 million unorganized building workers and perhaps reorganize some of the 800,000 already in the American Federation of Labor fold. Its ways and means: initiation fees will be non-existent (at least for the time being) and dues will be only \$1.50 per month—quite attractive in the fact of AFL's charges which run as high as \$500 for initiation and \$10 per month for dues. (Payments to AFL cover certain benefits such as retirement income, etc.) To attract public opinion particularly that of contractors—to their



UCWOC's Alma Denny Lewis

side of the fence, CIO put an over-size plank in its new platform eliminating the unauthorized strikes, jurisdictional disputes and lock-outs so prevalent in AFLcontrolled building labor.

All this is evident in the pages of promotional publicity which CIO dealt to the Press. But, informed observers see other motives in UCWOC's formation. CIO's attack upon Building may turn out to be a flanking attack aimed indirectly at other goals. One of these goals is held to be the organization of workers in plants which produce building materials. Another is elimination of discrimination by building trades against materials and equipment manufactured by plants already CIOorganized.

The flanking attack may be directed at the dethroning of "Big Bill" Hutcheson, ezar of AFL's huge carpenters union and AFL's strongest single leader—Mr. Green notwithstanding. With Hutcheson's downfall, the path to CIO-AFL peace and, perhaps, unity would be considerably cleared. If so, CIO's John L. Lewis would surely be top man in the reunited labor front.

The flanking attack may also be directed at the creation of improved public opinion toward CIO in general. Today it is generally considered more belligerent, more destructive and less reasonable than AFL, and employers (with the possible exception of builders) usually prefer the latter. If CIO can clean up the building labor situation, as it promises to do, accruing public favor will cast the whole CIO organization in better light.

The flanking attack may further be directed at the 1940 presidential elections. Mr. Lewis realizes that the official leadership of Building Labor is predominantly Republican, that CIO inroads into that field might convert many a construction worker to CIO-Liberal-New Deal ways of thinking—and voting.

Big question is whether or not CIO's attack will ever accomplish its goals. AFL thinks not. Its reasons: 1) CIO has quietly tried to organize Building Labor on a local basis many times before (notably in Louisville and Rochester), has failed each time. 2) Even AFL with a big head start has been unable to organize more than 10 per cent of the workers in the vast home building field.

AFL ANSWERS. While AFL words indicate that little fear is held for CIO's threatened invasion of the building field (see above), AFL actions speak otherwise. Meeting in Atlantic City, N. J. last month the Executive Council of AFL's Building and Construction Trades Department and the Labor Relations Committee of the Associated General Contractors of America came to an agreement which weakened the biggest plank in UCWOC's new platform, vied closely with FHA's interest rate reduction (see page 2, col. 1) as the biggest building news of the month. Reduced to four words, that all-important agreement read "no more jurisdictional strikes."

Also from Atlantic City came word that little-known John P. Coyne of the Operating Engineers Union had been elected as President of AFL's Building and Construction Trades Department to fill the vacancy left by the recent death of erstwhile conservative Joseph A. McInerney. In President Covne's hands rests the task of settling all forthcoming jurisdictional disputes, all of which will be referred to him for adjudication if local efforts fail.\* Crux of the no-strike agreement is the fact that, while disputes are being reviewed, the union handling the work in question at the time of the dispute will continue at work pending the decision. The contractors' part in the no-strike agreement is their promise to respect Coyne's decisions, enforce them.

At the close of the Labor-Contractor Conference Coyne translated the agreement into action, telegraphed unions on some 300 struck construction jobs to return their men (estimated at 15,000 to 20,000) to work. Then, commenting on what he called "a by-product of technical progress that has given us better building," Coyne said, "If, as I believe, we have

(Continued on page 40)

<sup>\*</sup> Former Referee Dr. John Lapp resigned months ago when several large AFL unions refused to abide by his decisions.



Two handsome branch banking establishments were recently designed for the Dominion Bank of Canada by Douglas L. Kertland of Toronto in which advantage was taken of the qualities of Formica as finishing material.

The rooms at Victoria, B. C., were finished in silver and black Formica — exterior and interior doors, partitions and wall covering and counter panels, baseboard, door trim and window trim. At Ottawa a lighter background color with dark inlays was used for much the same purposes.

Formica is modern; it is hard and durable; chemically inert and stain resistant, and will give long and satisfactory service.

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Home of Mr. F. H. McGraw, Middletown, Ohio, equipped with a roof drainage system of Armco Stainless Steel. Architect, Carl Martin.



#### The Owner:

When a man builds a house he likes to think of it as something that will be good to look at and good to live in for a long time. One of the "musts" on our building budget was lifetime roof drainage.



#### The Architect:

"Lifetime" roof drainage calls for a metal that will resist corrosion and abrasion and is strong enough to keep from sagging between the supports. This calls for stainless steel. To be absolutely sure, I specified ARMCO STAINLESS.



#### The Contractor:

That's what we used on this job-28-gage Armco Stainless Steel. It worked as easily as galvanized metal-easy to solder, and the joints are as neat and as strong as any job I've ever done. I'm proud of this job and I hope more architects specify ARMCO STAINLESS.

A canopy, too, is roofed with Armco Stainless

Armco Stainless Steel is taking its place on the *outside* (as well as inside) of more and more well-built homes these days. Architects find that this modern metal provides utmost durability and client satisfaction; that despite its great strength it shapes easily into neat construction and costs no more than other high-grade materials.

Since Armco Stainless is in itself attractive and versatile, it is no longer a difficult matter to adapt roofs, gutters, downspouts and flashings to the simple symmetry of modern homes. Painted or simply left in its natural soft, silvery finish, Armco Stainless enhances and blends with the beauty of line.

For more information about the possibilities of Armco Stainless, see the nearby Armco distributor, or write to us direct. The American Rolling Mill Co., 811 Curtis Street, Middletown, Ohio.



George Gove, Mgr. Met. Life Housing Projects, in charge. Architotiwal Commission—R. H. Shreve, Shreve, Lamb & Harmon, New York; Henry C. Meyer, Jr., Gilmore D. Clarke, Irwin Clavan, A. J. Eken. Engineers—Plbg-Htg. & Ventg.-Elec. & Elevators—Meyer, Strong & Jones, New York. General Contractors—Starrett Bros. & Eken, Inc., New York.

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FOR SPECIFIC CASES, there are many industrial plants. This one, a paper mill of the Chesapeake-Camp Corporation, is constructed with 450,000 feet of Wolmanized Lumber, used for roof decks, wood floors, and conveyors. joists, and subfloor, safeguarding the whole structure at an increase of less than 2% in total cost. For commercial and industrial buildings, it is especially valuable in combating damage caused by moisture due to modern insulation and air conditioning installations. It is clean, dry, odorless, paintable, and easy to handle. We will be glad to send you a file-size folder (A.I.A. indexed) giving the data on Wolmanized Lumber which you require. AMERICAN LUM-BER & TREATING COMPANY, 1425 Old Colony Building, Chicago.

\*Registered Trade-mark



Porcena Porcelain Enamel Toilet Partitions

Porcelain thamel foilet Partitions posess the natural structural strength as early not are an entural structural strength as early bond an opposite side or celain enropeous cree lerength which provides a that is part (four lerength structural by Provides and moisture four lerength structural by provides and moisture first hard, glass mooth structural and moisture fively impervious to odors, accide and moisture

Emotional Reaction

CREATIVE OR F LD OPENS NE

> Toilet room facilities are used jointly and on a basis of equality wherever people gather for work or play. Individuals either appreciate or resent toilet facilities. A toilet room environment that is out of step with present day standards for bet-



II Description of All efer to Sanymetal of Sweet's for 1939, atalog 20/21.

Sanymetal

ter living is a negative factor. It induces ill-will. Toilet room environments that arouse a sense of well-being and encourage thoughtful appreci-

ation of such facilities are being created with Sanymetal Porcena Toilet Partitions in all types of buildings. Unrestricted scope in designing toilet room environments is provided by Sanymetal's five

distinct types of toilet partitions. Three of these types are fabricated of the ageless material, porcelain enamel. "The Academy" is one of these types and provides a generous margin of years of sanitary service and protection against

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obsolescence. Sanymetal Porcena Partitions present a glass hard surface of porcelain enamel in a variety of fadeless colors that always looks new because these panels can be wiped clean as easily as the surface of a kitchen range. Furthermore, porcelain enamel is moisture-proof and rust-proof; resists the corrosive nature of ordinary acids; and cannot absorb odors.

TALENT

All five types of Sanymetal Toilet Partitions embody time tried features discovered by 23 years of research and experience in making over 45,000 toilet partition installations in every type of building. Modern toilet room environments are worthy of the space required for their installation. The Sanymetal representative in your vicinity is ready to help you plan suitable toilet room environments. Consult him. Write for Catalog No. 76 if you do not have a copy.

THE SANYMETAL PRODUCTS CO., INC. 1687 Urbana Road, Cleveland, O. OFFICE PARTITIONS



## FORUM OF EVENT







Start of a Fine Arts Center.—First unit in University of Indiana's projected group at Bloomington, Ind.—a Hall of Music. Eggers & Higgins, A. M. Strauss, associate architects; Lee Simonson, theater consultant. Future units: a Fine Arts Building and an open-air theater.

Limited service being offered the small home builder. Above, by Howard G. Elwell, Small Home Service of Southern California, Inc. Right, by Arthur E. Koelle of the St. Louis Chapter, A. I. A.





In the teaching of art, school activities point out new trends. Left, Moholy-Nagy's School of Design in Chicago works out machine cuts which permit cold bending of wood. Center, University of Southern California's College of Architecture and Fine Arts has advanced students modeling a future airport. Right, New York's Cooper Union students contribute to apartment space-saving with a folding telephone seat. (Forum of Events continued on page 12)



McCrory's outstanding unit in Miami Beach, of Brasco Stainless Steel Store Front Construction. Architect, W. M. Simpson, McCrory Stores Corporation, New York.



WHEN you select Brasco, you automatically help to assure a successful career for your client's business, by giving him every advantage of unfailing sales appeal and lasting beauty.

Brasco is far ahead in ultramodern design, the effective use of all the newer metals and finishes, in brilliant, harmonizing charm, sound strength, dependable glass safety.

Our complete and unified line in both Rolled and Extruded Constructions is the result of over 30 years' experience, and offers not only sash, jamb, sill and bar units, but every complementary item from sidewalk to coping, essential to the faithful interpretation of your store front ideas and designs. Coupon will bring Samples and Details.







One of the McMillan stores in the Detroit area. A modern "streamlined" store front of Brasco Alumilited Aluminum Construction. Architects, Giffels & Vallet, Detroit.

SCO	MANUF of Chicago)	ACT	URING	G CO.
BRASCO MF Send Sam Front Const	G. CO., Harvey, aples and Details	III. s of Brase	co Modern	Store
Firm				
Individual				
	SCO Y (Suburb BRASCO MF Send Sam Front Const Firm Address	SCO MANUF Y (Suburb of Chicago) BRASCO MFG. CO., Harvey, Send Samples and Details Front Construction. Firm Address	SCO MANUFACT EY (Suburb of Chicago) BRASCO MFG. CO., Harvey, Ill. Send Samples and Details of Brass Front Construction. Firm Address Individual	SCO MANUFACTURING Y (Suburb of Chicago) BRASCO MFG. CO., Harvey, Ill. Send Samples and Details of Brasco Modern Front Construction. Firm Address Individual

### FORUM OF EVENTS

(Continued from page 10)



The public liked these.—Of more than 400 murals in the New York World's Fair, these two won out as best interior and best exterior in a popular vote sponsored by Mural Artists Guild: Mobile mural in Ford building by Henry Billings; "Maintaining America's Skills" on the WPA building, by Philip Guston, under the direction of the Federal Art Project.



John M. Carmody, Administrator of Federal Works Agency in which are PWA, WPA, USHA, PRA and PBA.



W. E. Reynolds, now Commissioner of Public Buildings Administration, formerly in Procurement Division.



**Robert L. Davison**, "spark-plug boy," picked by Secretary Hopkins to see how we can pep up building industry.



If you've forgotten how the U. S. Senate Chamber looks, here's a replica of it made for the movie, "Mr. Smith Goes to Washington."



The circular bookcase goes round and round by motor and directories come out where wanted by *Importer's Guide* clerks.

(Forum of Events continued on page 14)



FOR RESIDENCES



AIR CONDITIONING UNITS - for one room-or for the entire house. Available with air-cooled or evaporativecooled condenser. G-E air conditioning units are unusually quiet in operation. efficient in operation. Heats, humidi-fies, filters and circulates warm air.

FOR STORES, SHOPS, ETC. 144 1

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of radiator heat plus winter air con-ditioning — A G-E Furnace (oil or gas) with Conditioner Unit. Summer cooling may be added. Priced right.

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### FORUM OF EVENTS



A dentist's waiting room, 1900-10, showing late Garfield influence.



Portrait of a bar, by courtesy of William A. Condron, whose grandfather opened it on First Avenue, New York, in 1880.



(Continued from page 12)

Victoriana

How the interiors of our grandfather's day appear to our sophisticated eyes is shown in a recent exhibition at Lawrenceville School. Sponsored by the WPA Index of American Design, the fifteen water color drawings included these four works by Perkins Harnly, well known for his interpretations of the Victorian interior. The rapidity with which public taste swings through its wide arc makes us a bit uneasy as to just how our own grandchildren will regard our efforts in tubular furniture and the sanitary austerity we choose as our background.



Early Victorian town house parlor. Settee and chairs designed by John Henry Belter.

Late Victorian bathroom, an adaptation of the English Eastlake manner.

(Forum of Events continued on page 44)





### HOW INSTALLATION COSTS ARE SAVED WITH Andersen



Set Unit In Wall .... Units are set by nailing weathertight wide blind stop to studs, which insures a weathertight joint.



Units Are Delivered ... Frames assembled, factory-fitted sash hung, with Silver-Seal weatherstrip and hardware applied.

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# 65,800 Fenestra Casements

• Scale model of "Parkchester," Metropolitan Life Insurance Company's new housing project in the Bronx, New York City. Architects: Board of Design, R. H. Shreve, chairman; Gilmore D. Clarke, Irwin Clavan, Robert W. Dowling, Andrew J. Eken, George Gove, and Henry C. Meyer, Jr., associates. General Contractors: Starrett Brothers & Eken, Inc.



# World's Largest House

### Metropolitan Life Insurance Company Secures Top Window Value for \$50,000,000.00 Investment

Some 65,800 Fenestra Bonderized Steel Windows-chiefly Casements in Fenestra Bonderized Steel Casings - are being installed in Metropolitan Life Insurance Company's "Parkchester," the world's largest housing project. Representing an investment of upward of \$50,000,000.00, the development will house about 50,000 people, in 12,269 apartments containing 42,000 rooms.

Metropolitan chose Fenestra Casements over other makes and types of windows both because Fenestra Windows are better suited for buildings erected for long-term investment purposes, and because Fenestra Casements afford many distinctive features for better living. The latter include.

1. BETTER VENTILATION-swing leaves open out, deflecting inward even breezes blowing parallel to the wall. Some casements provide 100% opening, as compared to 50% opening, maximum, for double hung type windows.

2. MORE DAYLIGHT-slender, steel frames and muntins provide larger glass areas. There are no weight boxes or other bulky construction.

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6. BETTER SCREENS-bronze mesh in Bonderized steel frames. Quickly, easily, safely attached on inside of Casements. No marking or numbering.

7. GREATER BEAUTY-graceful frames, muntins and hardware which add beauty inside and outside.

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## BOOKS

English week-end houses and vacation cottages . technical publications on air conditioning, libraries, college buildings, schools.



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### WEEK-END HOUSES, COTTAGES AND BUNGALOWS, edin

Alan Hastings. The Architectural Press, London. 112 pp., 160 tone illustrations, 120 plans.  $8\frac{1}{2} \times 11$ . 7s.6d.

There are probably dozens of times as many vacation cot in the U. S. as there are in any country abroad. Even a c survey of the number of summer houses on lakes, at the side and other resorts would suggest the existence of a far insignificant field of activity. Indicative of the lack of fessional interest in such work is the fact that only two b have appeared which even pretend to cover the subject, both of them were published in Europe. "Ferienhaüser". first, was reviewed in the issue of October 1937. It is still best in the field.

Most of our week-end houses and vacation cottages are without benefit of architect-or much else for that ma A few companies do a tidy business in furnishing readyinexpensive houses for this special market. It is unfortuthat the cheapness of the product has tended to discour architectural services, because from the design point of this type of shelter has unusual interest. It presents nice p lems in light but durable construction, and it offers op tunities for experimentation in both planning and design often encountered where a more ambitious year-round h is involved. Design for close relationship with the out of de for multiple, intensive use of space is probably more es studied in the week-end house than in any other type. T the mere fact of architectural attention does not necessa mean that these opportunities are met is well illustrated many houses selected by Mr. Hastings for his collection. thoroughgoing British ugliness of these examples comp very favorably with the worst our jerrybuilders have produ The reason the book has been given this much attention because it contains a number of houses, some of which illustrated here, which suggest the possibilities afforded by field.

The week-end house by Lubetkin and Tecton is one of a p built in a rural location outside of London, and has a reinfor concrete structure of unusual interest. A full-size two-bedro house, it is a de luxe version of the vacation cottage. Also s stantial, but less imaginative, is the house by Reginald Kir built at a seaside resort for week-end use by a group of people; the construction is that of a year-round house. Classif as a "bungalow"—presumably a small house for permanoccupancy—the pleasing design by Crickmay and Sons off many suggestions for vacation cottages. As indicated by the three examples, a defect of the book is the lack of good ind pensive summer houses of light construction, and with minimum of interior finish.

The book contains illustrations of about seventy buildin representing the work of over fifty architects. A good fifte of the houses are worth studying. The examples are divid into three sections; the first deals with houses and cottages England; the second with week-end houses on the continenthe third with bungalows. Each building is illustrated wiplans and photographs, and information is given on the simaterials, and costs. Most of the houses range in price from \$7,500 to \$2,500, and would cost more in this country. A briintroduction discusses some of the special problems present by the week-end house.

(Continued on page 56)



LLUSTRATED here in cross-section is the steel tongue and groove joint construction of GYPSTEEL PLANK\*. It makes a continuous 2-inch I-Beam that permits concentrated loads on one PLANK to be distributed over adjacent units because the steel tongue is always in direct shear—locked to provide a low-cost, uniformly strong surface for every type of roof-deck, and for office, apartment, residential and other floors.

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\*The term PLANK as applied to cementitious building products is a trade-mark of the American Cyanamid & Chemical Corporation.



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### LETTERS

#### Tomorrow Town Forum:

... I am sorry you did not mention my name as Coordinating Architect for the Town of Tomorrow. . . . I am proud of having been connected with it . . . and am one of its strongest defenders. . . . . Regarding your "Poll of Public Opinion," there seemed to be so many considerations, such as kind of weather. location of house in regard to the entrances, type of visitor questioned, the fact that a great many people were not even aware that there were fifteen houses, etc., that I assumed you would not go so far as to actually classify these houses into groups and thereby judge them for publication. Of course, it's not my headache that you classify a certain house as being in Group 3 and thereby give the impression that the architect of that house had a less acceptable job in the eyes of the public than one you place in Group 1, for I shall not face the possible resentment that those architects may hold against THE FORUM for making this hazardous judgment, but basing these conclusions on a two days' trial with so many loopholes isn't fair to the public, the Fair or the manufacturers.

I do not criticize the point of view you take regarding the choice of type, or for saying that it is more a Town of Today than a Town of Tomorrow, and it is your editorial prerogative to attempt to give the impression that the public interest seemed to be mostly among the modern houses. I had assumed, however, that THE FORUM would have gathered two very important points. The first was that this was a purely commercial venture. These were to be "demonstration houses" showing contemporary building materials in houses of varied design. (The misnomer "Town of Tomorrow" was a publicists' idea, not ours.) The Fair authorities specified that this project had to pay its own way, and you know how far from rosy the building materials manufacturers' game was and is today. Unlike a good many ventures tackled by the Fair in which the attitude was taken that the "dream" was paramount and to hell with the expense, we looked at this thing from a purely practical point of view and faced the facts. You will be interested to know that the Town of Tomorrow was paid for by the manufacturers' participation fees amounting to \$325,000, before the houses were opened. This is a record which few projects in this Fair or any other can point to. Secondly, you will be particularly interested to know that the so-called modern houses

appealed least to the manufacturers and that we had great difficulty in selling participation in them. I would go so far as to say that had all the houses been of a modern type, which you or I might have preferred, the whole project would have been a flat failure....

OTTO TEEGEN

#### New York, N. Y.

THE FORUM cannot see eye to eye with Architect Teegen in discounting its poll of public opinion. Procedure was typical of usual practice in such matters and should have given an accurate reaction. Certainly the research was undertaken objectively. THE FORUM printed the facts as it found them. It would be a fine idea if the Fair could manage a larger poll over a longer period by providing facilities for Fair-goers to express their preferences regarding its houses. The information would be useful to everyone in the building business. The FORUM has enough faith in what it did, however, to wager a thin dime that the results of such a poll would check substantially with THE FORUM'S. THE FORUM regrets if it has given offense to any of the architects involved, but if this professional journal is to be completely deprived of its critical function, then it might as well turn the job over to the women's magazines which find nothing but romantic beauty in every house published.

It may be a matter for rejoicing that The Town is a financial success, but THE FORUM is sorry that those who were responsible for making it what it is today (not tomorrow) will find in that fact fresh encouragement to go out and do the same thing next time. The opinion remains that something more forward looking also would have been a financial success and might have made a contribution to one of the most important problems in the U. S.—selling home ownership to the public. —Ed.

#### Women and Children First Forum:

... As an enthusiastic disciple of modern, I see the need for more constructive criticism of accomplished work, and welcome the July FORUM'S innovation of architects' and owners' comments on the Modern Houses in America. Here we have material which is very important to such criticism.

Take the evidence of William Roger Stoll and Walter J. Kohler, Jr.

"Due to plain surfaces and many windows, the modern house is easier to clean and for the same reason harder to keep clean looking than the traditional," says Mr. Stoll.

And Mr. Kohler: "Mrs. Kohler says

it is much easier to clean but that di is more apparent. I would put both of the credit side." So, probably, would mo men and a few obsessed and otherwis unoccupied women. But I wish to spea for myself and, I am sure, the large ma jority of housewives who would like to consolidate their gains and not have mon housework added to take up the slad left by each labor-saving device.

Mr. Stoll specifically mentions pla surfaces and many windows as especial dirt-revealing. This is no news to anyon who has long been actively engaged i the never ending struggle against Demo Dirt. Why are my girls' school and pla dresses always of a patterned cloth? B cause one can find very charming prin and plaids which do not show stain superficial soil, or mends as readily as plain material. Likewise for the moder house, texture or pattern for more su faces will relieve the eye as well as the cleaning department. We have stunning fabrics and wall papers and veneer a-plenty to respond to the ingenious a rangement of architect or decorator. An what we do not have we will get if the demand is created. At present, undoub edly, the plain colored linoleum is muc more attractive than any of the all over patterns on the market. But it is crue to put the former on a kitchen floor. Le us have a few moments between mon pings!

I hope that over indulgence in glass now recognized by most architects a something to be guarded against. In th first place, its charm is gone with th first finger mark. It shows everything and you cannot just wipe it off. Th whole surface must be washed. Happily glass brick neither shows such superficia dirt nor is it so difficult to wash. So i is a solution where light is the only de sideratum. But there have already been heard complaints simply of too much sun Soon the howls about breakage and re placement expenses are due. I am evilly waiting for the first news from a cocktai party of one of our football huskies walk ing right through a glass floor-to-ceiling job while innocently advancing to pick a flower in the outdoors that has been so successfully allowed to "penetrate."

What do the insurance people think of the current cult for super-shiny floors. The hazard is twofold: capricious glare and skiddiness.

How can the next generation learn to walk on these floors? We will have to equip them with skates. And have you ever seen a dog try to walk across one (Continued on page 64)

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THE JURY —Alfred A. Hahn, Toledo J. Byers Hays, Cleveland Charles T. Ingham, Pittsburgh Albert Kahn, Detroit Robert H. Macdonald, Montreal Walter R. McCornack, Cambridge Eliel Saarinen, Cranbrook

REGISTRATION is necessary —It insures your receiving the technical information needed and the title lettering. (It does not obligate you to submit drawings.) Write Henry H. Saylor, A.I.A., Professional Adviser, 9 Rockefeller Plaza, New York, N. Y., indicating your entry as architect, architectural designer, or architectural draftsman.

> Approved by A. I. A. —This competition has been approved as a Secondary Competition by the Special Committee for Secondary Competitions for the territory of the New York Chapter, American Institute of Architects. Full participation is permitted to all Institute members.

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HIS house has been described as possessing a certain richness of detail and as representing a personal interpretation of traditional forms — a liberty an architect is free to take when he designs a home for himself. Essentially Colonial, the exterior has been varied by the two large bays, a very ornate cast-iron trellis and a vigorous doorway, all combined with skill and good taste. It is both significant and gratifying that in this architect's own home

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FAMOUS KAWNEER FEATURES: ing satin finish, admit more daylight. steel) -27 appealing standard colors, satin finish, modern, easy to keep clean.





MAN OF THE MONTH . . . clearing slums and 10 per cent (page 149)



Richard Averill Smith STRUCTURE OF THE MONTH...design for avoiding New York (page 146)



PRODUCT OF THE MONTH . . . curves curb chronic curse (page 201)




McLaughlin Air Service

# BRONX-WHITESTONE BRIDGE

FOR THE TRIBOROUGH BRIDGE AUTHORITY: O. H. AMMANN, CHIEF ENGINEER ALLSTON DANA. ENGINEER OF DESIGN AYMAR EMBURY, ARCHITECT

The Bronx-Whitestone bridge is the newest link in the system of express highways being built to relieve the congestion in New York's metropolitan area. As the map shows, the bridge makes it possible for traffic between Long Island and points north of Manhattan to avoid entirely the overloaded routes through the city. Comparatively small against the overwhelming background of the Triborough bridge, the new structure more than holds its own as a design. The amazing delicacy of appearance and the drastic simplification of the towers set a new high for suspension bridges, and effectively demonstrate the effectiveness of collaboration between architect and engineer.

### BRONX-WHITESTONE BRIDGE

Details of the bridge show the completeness with which the design process has been carried through. The concrete arches at the right repeat the form of the steel towers and the glass-walled toll booths are in character with the larger elements. Down to the spacing of the rivets a consistent note of order has been maintained. An interesting transition is shown in the illustration at the bottom, where the wood lighting standards of the parkway change to the steel standards of the bridge.







Photos Richard Averill Smith

TOLL-LONG ISLAND





# PRIVATE ENTERPRISE CLEARS A SLUM

and a 10 per cent profit. One man gives 500 rehabilitated houses to Philadelphia Negroes at rents of \$3 to \$5 per room per month, cuts a pattern for many U. S. cities.

Gottse



In one of the turbulent sessions which last month wound up Congress, the House of Representatives wastebasketed a bill that would have doubled the slum clearance and low rent housing program of the U. S. Housing Authority.<sup>1</sup> Although by far the sharpest slap in the face yet given Government's housing efforts, this attack was but one among many launched during the agency's two-year life. And, like most of the others, it was not supported by constructive suggestions for an improved or substitute program.

To this there was one notable exception: Realtor Arthur W. Binns of Philadelphia—not because he disbelieves in almost every phase of USHA's activities (which he does), not because he broadcasts his anti-USHA feelings at every opportunity (which he also does), but because he has engineered a slum clearance and low rent housing program all his own, and at costs and rents that would pin back many a Government houser's ears.

Arthur W. Binns does more than preach; he points to his ten-year record in the heart of Philadelphia's most degenerate slum conditions. He points to some 500 dwelling units purchased and smartly rehabilitated at an average total cost of not more than \$1,500 each and now rented at from \$3 to \$5 per room per month.<sup>2</sup> He points to the fact that all this was done with private capital, that all his properties are paying taxes and that the 500-house investment is producing a tidy profit well above 10 per cent. Finally, in contrast, he points to USHA's projects whose tax-free, subsidized dwelling units will cost the public an average of \$4,800 each, will rent for an average of \$3.33 per room per month, excluding heat, light and water.

Obviously the work of a single individual is not going to give USHA any serious competition; nor is it going to give the U. S. the low rent housing it needs. But it will prick the social consciousness and business-mindedness of private enterprise by showing the welfare and profit possibilities which are tied up in a nation-wide application of this one man's work.

With but few exceptions, such as New York City's Manhattan with its multi-story tenement slums, Binns' rehabilitation program is readily adaptable to every sizable city in the country.<sup>3</sup> First-hand research has convinced Binns that it is adaptable to Baltimore, Brooklyn, Cincinnati, Chicago, Milwaukee, St. Louis and Washington-to name but a few. In common with Philadelphia, these cities are infested with slums of two-story, brick row houses whose only assets are their structural timbers and their masonry shells. In Philadelphia alone there are more than 20,000 such houses which can be purchased with land for \$100 to \$500 apiece. By applying modern materials and methods of improvement, an expenditure of \$500 to \$1500 could convert most of these sadly sub-standard houses into clean, efficient, and comfortable living places. And, they could be profitably rented at less than \$5 per room per month. It has been done in Philadelphia; it can be done elsewhere. Let those who would try it-as well as those who would doubt it-heed Pioneer Binns' experiences and rules.

All Binns' rehabilitation activities are concentrated in Philadelphia's 34th and 44th Wards—the Negro section of the city—close to the downtown area, still closer to the University of Pennsylvania campus. Divided into large blocks which are sub-divided by through-alleys, these Wards were originally respectable residential sections. White families were row-housed along the main streets and their Negro servants, along the narrow paved alleys. Long since, however, the Whites have moved to the suburbs, their places taken by more Negroes.

Most of these properties have depreciated to substandard levels; and, in the light of present-day plumbing codes, most of them were always substandard. Bathrooms usually contain only a water closet, frequently are nothing more than indoor privies. Windows are broken and boarded up; roofs leak; plaster of interior partitions is cracked and falling; heat is supplied by living room stoves of dubious efficiency; and dark, filthy rooms have not seen a broom in years. The central portion of the blocks, bounded by the

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<sup>&</sup>lt;sup>2</sup> Excluding a few more costly projects where rents are higher. <sup>3</sup> In 1935 the government-financed New York City Housing Authority tried its hand at rehabilitating East Side slum dwellings, but its "First Houses" project flopped miserably. Reason: too much rehabilitation; walls were sound-proofed, doors fireproofed, whole stories added, built-in bath tubs and incinerators installed, No. 1 oak flooring laid. Result: rehabilitation costs soared to \$6,458 per dwelling unit. (see ARCH. FORUM, Jan. 1936, p. 67 et seq.)



Bird's-eye view of Realtor Binns' North 40th Street project today looks like this. Yesterday the bird would have seen dirty, tumbledown buildings, no walks, no grass, no trees.

<sup>1</sup> See page 2, col. 3.



BEFORE







North 40th Street plans originally made provision for only two families in each of the three-story buildings. By doubling up, six Negro families were poorly accommodated—two to a floor. With a minimum of work and money Binns made room for eight.



LIV-RM-BEDRW B-LIV-RM-LIV-RM-BEDRW BEDRW BEDRW BEDRW BEDRW BEDRW BEDRW



BED RM- BED PM

NORTH 40TH STREET PROJECT



row houses, is honeycombed with high board fences, isolating the backyard of each house. (Since all houses abut the narrow sidewalks, front yards are non-existent.) Half of each backyard is piled fence-high with rubbish. The other half is frequently the unkempt home of ducks, dogs and goats. Sole relief in these block interiors is a beautiful fullgrown tree here and there whose foliage somehow flourishes above the six feet of debris which surrounds it.

It was into these slum conditions that Arthur W. Binns moved when in 1929 he deviated from his main line of run-of-the-mill real estate business. His rehabilitation beginnings were modest. He purchased a few odd lots of cheap row houses, rehabilitated them, found that they were prime investments even when rented at uncommonly low figures. So he purchased and rehabilitated more—and more.

By this time experience had taught him several rules-ofthumb which he then applied to most of his subsequent deals. Foremost was his determination of a workable relationship between costs and income. The resultant ratio: cost of purchasing the property plus cost of rehabilitating it should not exceed five times the gross annual income which it will produce. When this rule was followed, Binns found that gross income less all operating costs, taxes and 5 per cent for depreciation would leave an annual net return of not less than 10 per cent. (In some cases he lets the ratio go as high as 8 to 1, and still makes 10 per cent







Back of North 40th Street's three-story apartments Binns found eight row houses (top, above), chopped off their rear bays, moved the bath rooms inside. Back of them—on Sloan Street he rehabilitated seven more dwelling units.





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NORTH 40TH STREET PROJECT



### COST BREAKDOWN

PROPERTY COST	\$30,367.75
REHABILITATION COST	
Partial demolition & cleaning	1,228.48
Masonry	2,826.05
Carpentry & lumber	6,918.90
Roofing	790.00
Plumbing & heating	11,671.74
Electrical work, fixtures, etc.	2,359.88
Plastering	1,864.50
Flooring	1,700.00
Papering & painting	3,647.50
Weatherstripping	600.00
Blinds, shades & screens	604.10
Linoleum & carpet	575.00
Hardware	774.60

Stokers	1,308.60
Ranges	841.50
Refrigerators	1,432.95
Landscaping, etc	1,927.19
Other contracts	1,751.20
TOTAL REHABILITATION \$4 (per dwelling unit-	2,822.19
31 units\$	1,381.36)
OTHER COSTS	
Fees, insurance, interest,	
operation, taxes, advertis-	
ing, etc\$	2,784.13
TOTAL COST\$	75,974.07
(per dwelling unit\$	2,450.78)



BEFORE



#### CONSTRUCTION OUTLINE

FOUNDATION: Cellar floor-3 in. concrete

on 4 in. cinder fill. STRUCTURE: New partitions—2 x 3 in. studs, 16 in. o.c., U. S. Gypsum Co. rock lath and hardwall plaster.

ROOF: Covered with 4-ply felt, pitch and

slag roofing, Barrett Co. SHEET METAL WORK: Leaders—Toncan, Republic Steel Corp. Flashing—tin. INSULATION: Weatherstripping — Quaker

City Weather Strip Co. WINDOWS: Glass—single strength, quality B, Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Main rooms—hard-

wood. Kitchen and bathrooms—linoleum. WALL COVERINGS: Main rooms—wall-paper. Kitchen and bathrooms—Wall-Tex,

Columbus Coated Fabrics Corp.

WOODWORK: Interior doors - 2-panel

Douglas fir. Exterior doors—white pine. HARDWARE: By Independent Lock Co. PAINTING: Interior sash—Shrack Paint &

Varnish Co.

ELECTRICAL INSTALLATION: Wiring sys-tem—General Electric Co. and Steel City Mfg. Co. Switches—Bryant Electric Co.

KITCHEN EQUIPMENT: Range — Magic Chef, American Stove Co. Refrigerator— Frigidaire Corp. Sink-Standard Sanitary Mfg. Co. BATHROOM FIXTURES: All fixtures by

Standard Sanitary Mfg. Co.

PLUMBING: Hot and cold water pipes-

copper, Chase Brass & Copper Co. HEATING: Hot water, circulated by H. A. Thrush & Co. circulator, 3 zone control. Boiler, radiators and thermostat—American Radiator Co. Hot water heater-Taco Heaters, Inc., H. A. Thrush & Co. circulators.



BEFORE





—see p. 153.) Experience also taught him that the original purchase price and cost of rehabilitation were about 80 per cent of the battle, that condition of the property and demand for low rents each rated about 10 per cent in importance.

Best way to grasp the principles of Binns' program is to examine case histories. They clearly show in dollars and cents what he purchases, how he modernizes, how he rents and operates. For this purpose THE FORUM has selected two of Binns' larger projects—one on North 40th Street, the other on Linmore Street. While these projects are more costly than the many others and while one of them is far above his average in rents, they are typical of Binns' most recent rehabilitation ventures. Furthermore, they are his most convincing projects—inside and out.

### NORTH 40TH STREET PROJECT

A look at the pictures atop page 149 is evidence enough of the original condition of Binns' North 40th Street property. They show present-day conditions within 50 ft. of the project's rear entrance.

Back in the middle Twenties this property sold for \$100,000. After a decade of depression and added depreciation, it went to Binns for about \$30,000. Searching through the rubbish, he found that he had bought two six-family apartment houses facing North 40th Street, seven row houses on Sloan Street and eight more row houses in between—on no street. Of the 27 dwelling units, about half were tenanted, yielding a meager income.

Preliminary steps to modernization were demolition of backyard fences and sheds, a general house-cleaning of the entire project—top to bottom. From the drawings of Architect Morris J. Rosenthal partitions in the two threestory buildings were shifted to make room for eight apartments in each. Then followed many a major improvement to all the buildings: Brick walls were re-pointed, painted white; roofs were made water-tight; windows were re-glazed, weatherstripped; plaster partitions and ceilings were patched and papered or painted; linoleum was laid in the kitchens and bathrooms, oak flooring elsewhere; modern gas and electric equipment and three-piece bathrooms (tubs are of the inexpensive, four-legged variety) were installed in all dwelling units. While a warm air heating system was built into each of the Sloan Street houses with a coal-fired boiler in each basement, a motor-stoked central heating plant was provided to serve all other units. Having been stripped of their fences, the backyards were pooled and simply but effectively landscaped as two public courts.

As shown in the accompanying cost breakdown (page 153), Binns spent a total of \$42,822.19 on actual rehabilitation, an average of \$1,381.36 on each of the 31 dwelling units. Including the cost of the property and all other incidental expenses, his total outlay came to \$75,974.07, or \$2,450.78 per dwelling unit.

Justification of this expenditure is seen in a brief analysis of its dollar return. The seven Sloan Street five-room row houses rent for \$5 per room per month, produce \$2,100 per year. The eight four-room interior row houses rent for \$8.75 per room including heat, hot water and janitor service, produce \$3,360 per year. Designed for a still higher class of Negroes (several tenants boast doctors' degrees, annual incomes in excess of \$2,000), the sixteen units on North 40th Street rent for \$9.25 per room and up including apartment service, produce \$5,328 per year. Simple addi-





nuel H. Gottscho Photos

**On Linmore Street** Binns purchased 20 vacant houses at \$100 each, remodeled and land-scaped them at \$1,381 per unit, rented them at \$4 per room per month, showed a profit exceeding 10 per cent.

### LINMORE STREET PROJECT





#### COST BREAKDOWN

PROPERTY COST\$	1,926.28
REHABILITATION COST	
Partial demolition & cleaning	948.89
Masonry, bricks, cement, etc.	5,980.50
Carpentry & lumber	2,405.57
Roofing & heating	2,125.00
Plumbing	5,680.00
Electrical work, fixtures, etc.	1,009.08
Plastering	880.00
Flooring	1,105.00
Painting, etc	640.36
Weatherstripping	400.00
Sewer	1,297.00
Linoleum	310.00
Decorations	1,300.00

Ranges	491.73
Iron railing-porches	369.50
Landscaping	676.23
Fence	245.00
Other contracts	1,761.53
TOTAL REHABILITATION	
COST\$	27,625.39
(per dwelling unit-	
20 units \$	1,381.27)
OTHER COSTS	
Fees, insurance, interest,	
operation, taxes, advertis-	
ing, etc\$	1,072.73
TOTAL COST\$	30,624.40
(per dwelling unit\$	1,531.22)

#### CONSTRUCTION OUTLINE

FOUNDATION: Cellar floor-1 in. concrete

on 4 in. cinder fill. STRUCTURE: New partitions—2 x 3 in. wood studs, 16 in. o.c., U. S. Gypsum Co. rock lath and hardwall plaster.

ROOF: Covered with 4-ply 30 lb. felt and

asphalt, Barrett Co. SHEET METAL WORK: Leaders—Toncan iron, Republic Steel Corp.

INSULATION: Weatherstripping - Quaker City Weather Strip Co.

WINDOWS: Sash-double hung wood. Glass -single strength, quality B, American Window Glass Co.

Wood. Kitchen and bathrooms—linoleum. WALL COVERINGS: Main rooms—wall-

paper. Kitchen and bathrooms-Sanitas base, Standard Coated Products Corp., wallpaper above.

WOODWORK: Interior doors—2-panel Doug-las fir. Exterior doors—white pine.

HARDWARE: By Independent Lock Co.

PAINTING: Interior sash-Schrack Paint & Varnish Co. Exterior walls-Dutch Boy, National Lead Co. KITCHEN EQUIPMENT: Range — Magic

Chef, American Stove Co. Refrigerator-Frigidaire Corp. Sink-Ford Porcelain Co. BATHROOM FIXTURES: Lavatory-Ford Porcelain Co. Tub and toilet-Standard Sanitary Mfg. Co.

PLUMBING: Hot and cold water pipescopper, Chase Brass & Copper Co. HEATING: Royal cast iron warm air heater,

Hart & Crouse, with heat run to each room.

tion puts the project's annual gross income at \$10,788. Although this figure does not jibe with Binns' 5-to-1 costto-gross ratio, it proves that the rule-of-thumb is only a safe rule-of-thumb. It is a fact that, while costs are seven times gross income, the 100 per cent occupied project is netting Binns more than 10 per cent.

### LINMORE STREET PROJECT

Due to its seemingly hopeless "before" condition (see pictures, page 154), and its lower rents "after," the Linmore Street project is a more convincing case for slum rehabilitation than the larger North 40th Street project. When the 20 row houses were purchased for a shade under \$100 apiece, they were in a vandalized, boarded-up condition, had been completely vacant for eight years. Only salvageable elements were the brick bearing walls, the interior framing.

Although new doors, windows and porches were applied to the re-pointed brick facade, most modernization time and money was spent on the rear elevation and interior. The ungainly second-story bathroom bays were stripped off the building, and the resultant sheer wall was dressed up with a white coat of paint. Interior modernization was much the same as that undertaken at North 40th Street. The size of one bedroom in each unit was reduced to make way for a new bathroom; and part of the basement, which is above grade at the rear, was converted into a play room. Each dwelling unit was fitted with its own warm air heating system. The rear yard, which abuts the Pennsylvania Railroad right-of-way, was leveled, landscaped and fenced.

Total rehabilitation costs (see breakdown, page 155) came to \$27,625.39, or \$1,381.27 per dwelling unit. (Coincidentally, the latter figure is within 9 cents of the unit rehabilitation cost at North 40th Street.) When to this is added property cost and other incidental expenses, Binns' total bill foots up to \$30,624.40, or \$1,531.22 per dwelling unit. Rents are low—\$4 per room per month in each of the 20 five-room units—but they produce an annual gross income of \$4,800. Here again, Binns exceeded his 5-to-1, cost-to-gross rule-of-thumb, but nevertheless is netting well above 10 per cent on his total Linmore Street investment. Today, the project is 100 per cent tenanted by Negro families whose annual incomes average about \$1,000.

There are two big obstacles to national application of this slum rehabilitation program:

1. The dearth of capital which is willing to go into slum investment. Most of Binns' money (some \$500,000) has been obtained from small three-year FHA-insured modernization loans at the high cost of 9.6 per cent; the balance, through loans on his life insurance and from his wife and other interested individuals. Big white hope of a national program is the fact that FHAdministrator Stewart McDonald last month dispatched a lieutenant to Philadelphia to report on Binns' achievements, promised to make room for slum rehabilitation, if possible, under the large scale housing section of the National Housing Act. This would mean 4½ per cent money on a 28-year basis.

2. The dearth of men like Arthur W. Binns. Although not a rich man by many a dollar, Binns is as much a philanthropist as he is a realtor. Of course he is in the slum rehabilitation business to make money—but not all the money possible. (Among the 504 applicants for the 20 Linmore Street houses there were at least two dozen who offered to pay \$5 per room per month instead of \$4.) A fool in the eyes of other more penny-eager Philadelphia landlords, Binns is a Quaker who boasts the sociological returns of his program as much as the financial.

And Binns does boast. Atop his Linr ore Street project in full view of passing trains he erected one huge sign\*:

### COMPLETELY MODERN PRIVATELY FINANCED LOW RENT HOUSING \$4 PER ROOM PER MONTH ARTHUR W. BINNS, INC,

Said Binns: "I hoped some of our . . . friends, riding down to Washington in their Pullman seats, would see it and give it some thought."

\* Recently replaced by the less boastful sign shown on page 155.

ARTHUR W. BINNS' NEXT PROJECT



Before



# REMODELED HOUSES

Hedrich-Blessing Photos



JAM E S







The striking transformation of this 19th century row house was accomplished with comparatively little alteration of the original plan. A major improvement, for instance, was effected by shifting the main entrance to the basement level, thereby permitting the extension of the living room to the full width of the house. A generous and intelligent use of glass is particularly appropriate where windows are restricted to two walls. All interiors have been entirely redesigned. The compact walled garden, well integrated with the interior and furnishings, provides a controlled vista through the glass wall of the dining room. Not only a highly successful remodeling, the house is an excellent example of thoroughly unified modern design.

### RCHITECT, CHICAGO, ILL.



COND FLOOR





### CONSTRUCTION OUTLINE

DECKS: Built-up Celotex Corp. Traffic Top. SHEET METAL WORK: Flashing, gutters, leaders and ducts— Armoo iron, American Rolling Mill Co. INSULATION: Outside walls—Celotex Corp. insulating lath. Attic floor—Red Top, U. S. Gypsum Co. Weather-stripping—bronze, Revere Copper & Brass, Inc. Sound insulation—Grant W. Ison. WINDOWS: Glass—¼ in. plate, Pittsburgh Plate Glass Co. and ¼ in Lowyrey Blue Bidge Glass Div. Libber, Owens, Ford Class Co.

in. Louvrex, Blue Ridge Glass Div., Libbey-Owens-Ford Glass Co. HARDWARE: Yale & Towne Mfg. Co.

PAINTING: Interior-Moleta, Monroe, Lederer & Taussig.

ELECTRICAL INSTALLATION: Fixtures—Solar Light Co. KITCHEN EQUIPMENT: Range, refrigerator and ventilating fans -General Electric Co. Sink-Crane Co. Cabinets-Dietrich Steel

Kitchen Cabinet Co. Sink—Crane Co. Cabinets—Dietrich Steel Kitchen Cabinet Co. LAUNDRY EQUIPMENT: Sink—Crane Co. Washing machine and drier—General Electric Co. BATHROOM EQUIPMENT: All fixtures by Crane Co. Cabinets—

Hess Warming & Ventilating Co. HEATING AND AIR CONDITIONING: Split system, hot water and warm air; complete air conditioning, humidifying and cooling, General Electric Co. Filters—Owens-Illinois Co. Radiators—American Radiator Co. Hot water heater-General Electric Co.

Hedrich-Blessing Photos



BEDROOMS





GARDEN

HOUSE FOR H. N. CAPPEL, CHAPPAQUA, N. Y.



BEFORE





An ingenious combination of two cottages and two barns produced the completed house shown above. The hillside cottage was the starting point of the group, and the second dwelling was moved and attached to it. A new shed passage was built to link the house and barn, the latter having also been moved from another part of the property. The second barn was taken down to provide wide floor board and adzed timbers for the house interiors. Total cost of the remodeling, which provided some 40,000 cubic feet of space, came to about \$15,000, and included all exterior and interior changes and moving.

### MELVIN PRATT SPALDING, ARCHITECT

#### CONSTRUCTION OUTLINE

ROOF: Covered with Perfection 18 in. shingles. CHIMNEY: Common brick. Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing, gutters and leaders—Anaconda copper, American Brass Co. INSULATION: Attic floor—rock wool, Eagle—

Pitcher Lead Co. Weatherstripping—Chamberlin Metal Weather Strip Co. Sound insulation—Cabot Quilt, Samuel Cabot, Inc.

WINDOWS: Glass—single strength, Pennvernon, Pittsburgh Plate Glass Co. Screens—copper mesh. WALL COVERINGS: Living room—knotty pine. Bedrooms and halls—wallpaper, Thomas Strahan. WOODWORK: Mostly old pine, some by Curtis Companies, Inc.

HARDWARE: By P. & F. Corbin.

FAINTING: Pine walls—stained and waxed. Ceilings—paint, E. I. Du Pont de Nemours & Co. Floors—Minwax Co. Roof—creosote, Samuel Cabot, Inc.

KITCHEN EQUIPMENT: Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. PLUMBING: Pipes—Anaconda brass, American Brass Co.

HEATING: Steam system. Boiler—Fitzgibbons Boiler Co. Radiators—Arco, American Radiator Co. Thermostat—Minneapolis-Honeywell Regulator Co.

### HOUSE FOR KENNETH R. DAVIS, MENTOR, OHIO



BEFORE

Remodeling here shows little in the way of exterior change save dormers, a bay window and paint. Inside, however, the architect has produced an excellent plan with a minimum of expense. Most interesting single feature is the combined kitchen, bar and dining room, an informal and efficient solution. Also worth noting is the fireplace nook, originally a bath. Cost of alteration, including equipment and appliances: \$3,285.

#### CONSTRUCTION OUTLINE

CHIMNEY: Brick, terra cotta flue lining. Damper—Donley Bros.

INSULATION: Outside walls and attic floor —Gimco rock wool, General Insulating & Mfg. Co.

WALL COVERINGS: Living room—knotty pine. Halls and kitchen—plaster and pine wainscoting. Laundry—Masonite, Masonite Co.

PAINTING: Interior: Paneled walls—Minwax Co.; remainder—semi-gloss. Ceilings—casenite. Floors—stain and varnish. All paints by Sherwin-Williams Co. Exterior walls—Glidden Co.

ELECTRICAL INSTALLATION: Wiring and switches-General Electric Co.

KITCHEN EQUIPMENT: Range, refrigerator, sink and dishwasher—General Electric Co.

LAUNDRY EQUIPMENT: Sink—Crane Co. Washing machine—General Electric Co. BATHROOM EQUIPMENT: All fixtures by

Crane Co. Shower—Fiat Metal Mfg. Co. HEATING: Warm air existing, new Viking Air Conditioning Corp. blower and filter. Hot water heater—General Electric Co.

### KITCHEN











DINING



### HOUSE, BARN AND STABLES FOR JOSEPH L. EASTWICK,



### HESTER COUNTY, PA. JOHN LANE EVANS, ARCHITECT





BEFORE





A dilapidated farm group, built in the traditional early Pennsylvania manner, formed the basis of this alteration. The barn and stables were required to house a number of riding horses, a tack room, and the customary elements necessary for the operation of a farm. An excellent farmer's house was inexpensively provided by reconditioning the old dwelling. Most notable feature of the remodeling, aside from the arrangement of the required elements, is the fidelity with which the character of the original architecture has been maintained. Cost of alteration: farm house \$5,380, barn and stables \$15,703.

### CONSTRUCTION OUTLINE

STRUCTURE: Farm house—existing local stone, old stucco removed, old plaster on interior, no furring. Stud partitions, gypsum lath, U. S. Gypsum Co., white coat plaster. ROOF: New rafters—fir, covered with red cedar shingles.

CHIMNEY: Old brick reused, terra cotta lining. Damper—H. W. Covert Co. SHEET METAL WORK: Flashing—tin, 40

Ib. coating. Pole gutters-40 lb. tin over wood.

INSULATION: Roof—Johns-Manville rock wool.

WINDOWS: Sash—double hung and case ment. All millwork, except stock size sash, made to detail by Frank C. Andrews & Co. FLOORS: Kitchen—maple strip laid in mastic over waterproof concrete slab. Bathrooms—ceramic tile, Robertson Tile Co. HARDWARE: By Russell & Erwin Mfg. Co.

HARDWARE: By Russell & Erwin Mfg. Co. PAINTING: Interior: Walls and ceilings casein paint, Devoe & Raynolds Co. Floors stain and varnish, H. K. Jones. Trim and sash—Dutch Boy white lead, National Lead Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—toggle, Pass & Seymour. Fixtures—Walker-Kepler Electric Co. and George I. Johnson. KITCHEN EQUIPMENT: Range — coal,

KITCHEN EQUIPMENT: Range — coal, Andes Range & Furnace Co. Sink—Kohler Co.

BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinet—Steel & Wike Co. PLUMBING: Hot and cold water pipes—

copper tubing, Chase Brass & Copper Co. HEATING: Gravity warm air system. Hot water heater—dome top cast iron for coal, James Spear Co.



SECOND FLOOR



THIRD FLOOR

### TOWN HOUSE FOR J. H. LOUCHHEIM, JR., PHILADELPHIA, PA.



BEFORE

Like the Eppenstein residence (p. 157) this alteration has retained only structural elements; it will also be noted that a similar plan change has been made with the shift of the entrance to the basement. The logic of such an arrangement is particularly clear in this instance, where an extremely restricted space made it desirable to give the living room a maximum of exterior wall area. The new interiors are of interest for the effect of spaciousness produced under difficult conditions. Cost of alteration: \$18,509. Cubage: 50,706.

### CONSTRUCTION OUTLINE

EXTERIOR WALLS: Front—sand-lime brick,  $\frac{1}{2}$  in. parging, U. S. Gypsum Co. expanded metal lath on furring strips, gypsum plaster. New partitions—studs, expanded metal lath, gypsum plaster, U. S. Gypsum Co.

SHEET METAL WORK: Flashing—Anaconda 16 oz. copper, American Brass Co. Gutters and leaders— Toncan iron, painted, Republic Steel Corp.

INSULATION: Roof—1 in. cork. Weatherstripping— Chamberlin Metal Weather Strip Co. WINDOWS: Sash—steel, Hope's Windows, Inc. Glass

WINDOWS: Sash—steel, Hope's Windows, Inc. Glass —Pittsburgh Plate Glass Co. Glass blocks—Pittsburgh-Corning Corp. Screens—Hope's Windows, Inc.

FLOOR COVERINGS: Dining room and kitchenlinoleum. Bathrooms-rubber tile, U. S. Rubber Co. Entrance hall-asphalt tile, Johns-Manville and Armstrong Cork Co.

WALL COVERINGS: Bedrooms-wallpaper. Bathrooms-tile.

WOODWORK: Trim—birch. Cabinets—Birdseye maple and birch. Interior doors—Birdseye maple, birch, quartered white oak. Exterior doors—red oak.

HARDWARE: Interior—Schlage Lock Co. Exterior— P. & F. Corbin.

PAINTING: Walls and ceilings—Wallhide, Pittsburgh Plate Glass Co. Sash—enamel, Pittsburgh Plate Glass Co. Floors—sheilac.

ELECTRICAL INSTALLATION: Existing wiring system supplemented with Greenfield and BX; dead front switch with automatic throwoff in place of fuses. Fixtures—J. Garde; lenses by Holophane Co.

KITCHEN EQUIPMENT: Range—Tappan Stove Co. Refrigerator—electric, Leonard Div., Nash-Kelvinator Corp. Sink—Kohler Co. Cabinets—Kitchen Maid Mfg. Co. BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—Mlami Cabinet Div., Philip Carey Co. and Charles Parker Mfg. Co.

PLUMBING: Hot and cold water pipes—Anaconda copper, American Brass Co.

HEATING: Forced hot water, General Electric Co. boiler and burner. Radiators and valves—American Radiator Co. Grilles—Tuttle & Bailey Mfg. Co. Thermostat—Minneapolis-Honeywell Regulator Co.





EXISTING NEW WORK





### HERBERT SPIGEL, ARCHITECT; MILTON GLASER, ASSISTANT DESIGNER





SECOND FLOOR HALL

### INTERIOR DECORATION BY MME. MAJESKA



ER

1 9 3 9



Schnall Photos



### HOUSE ON MACKENZIE FARMS, HAMPTON, N. J.

A very well studied development of the original house is shown by the plans below. In addition to the necessary alterations to the existing structures, a link has been built between the two units, and new space has been added for a kitchen and bedrooms. There was no question of "modernization" in the general design treatment: the handsome lines of the old house strongly indicated a tactful restoration as the best solution. Where modern equipment was required, as in the kitchen, bathrooms and heating plant, it was unobtrusively installed to create a thoroughly livable house without doing violence to the original character. Cost of alteration: about \$12,000. Cubage: 42,000.



BEFORE





EXISTING NEW WORK

MUSIC ROOM



### CALEB HORNBOSTEL, DESIGNER



LIVING ROOM



### CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—field stone, stucco outside, furred with wire lath and plaster inside; existing walls plastered direct on masonry. ROOF: Covered with Pennsylvania slate.

CHIMNEY: Damper—H. W. Covert Co. SHEET METAL WORK: Flashing, gutters and leaders—copper, Chase Brass & Copper Co. INSULATION: Outside walls and ground floor—

INSULATION: Outside walls and ground floor— Celotex Corp. Attic floor and bathroom partitions —Red Top rock wool, U. S. Gypsum Co.

WINDOWS: Sash—Morgan Sash & Door Co. Glass—Pittsburgh Plate Glass Co. FLOOR COVERINGS: Living rooms—random

cak. Bedrooms and halls—random white pine. Kitchen—linoleum. Bathrooms—Accotile. WALL COVERINGS: Bathrooms—Arco unit

WALL COVERINGS: Bathrooms—Arco unit panels, The Accessories Co., Inc., div. of American Radiator Co.; remainder—plaster.

PAINTING: Walls and ceiling—casein paint, Muralo, The Muralo Co. and Craftex, Craftex Co. Sash—oil paint, Sherwin-Williams Co.

KITCHEN EQUIPMENT: Range—General Electric Co. Sinks—Standard Sanitary Mfg. Co. Cabinets—Washington Kitchen Cabinet Co.

Cabinets—Washington Kitchen Cabinet Co. BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Shower—Fiat Metal Mfg. Co. Cabinets —Arco, American Radiator Co. PLUMBING: Hot and cold water pipes—copper

PLUMBING: Hot and cold water pipes—copper tubing, Chase Brass & Copper Co. Pump—Deming Pump Co. Septic tank—Kaustine Co.

HEATING: Two-pipe system. Oil burner—Electrol, Inc. Boiler, valves, radiators and thermostat—American Radiator Co. Hot water heater— Taco Heaters, Inc.

### HOUSE FOR L. LIVINGSTON GEORGE, ARCHITECT, WESTPORT, CONN.



BEFORE



Drastic changes were required to adapt this house to the requirements of modern living. Stairs and partitions were removed to obtain rooms of adequate size; a new dining room was constructed; heating equipment, plumbing and a new chimney were installed. A bay window in the living room and corner windows in the dining room were put in to admit more light. For maximum privacy the house entrance was placed on the garden side, only the service door facing the road. Cost of alteration: \$5,000. Cubage: 17,200.





Alfred Cook Photos

#### CONSTRUCTION OUTLINE

STRUCTURE: New partitions-U. S. Gypsum Co. rock lath and plaster.

ROOF: Covered with wood shingles. CHIMNEY: Damper-H. W. Covert Co.

SHEET METAL WORK: Flashing, gutters and leaders-copper.

INSULATION: Attic floor—Alfol insulation Co.

WINDOWS: Sash—casement, Andersen Corp. Glass—No. 2, quality B. STAIRS: Risers—pine. Treads—fir, painted.

FLOOR COVERINGS: Main rooms-pine. Kitchen and bathrooms-linoleum.

WALL COVERINGS: Dining room—paneled pine with molded strips laid over Masonite, Masonite Corp.; remainder—plaster. Bathrooms—cement and tile.

WOODWORK: Trim and doors—pine, Morgan Sash & Door Co. Cabinets—Kitchen Maid Corp. HARDWARE: By P. & F. Corbin.

PAINTING: Oil paint and U. S. Gypsum Co. Texolite throughout.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—General Electric Co. fixtures—Cecil K. White Co.

KITCHEN EQUIPMENT: Range—Universal, Landers, Frary & Clarke. Refrigerator— Frigidair Sales Corp. Sink—Standard Sanitary Mfg. Co. Cabinets—Kitchen Maid Corp. BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Cabinets—United Metal Box Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—copper tube, Revere Brass & Copper Co. Pump—Penberthy Injector Co. HEATING: One pipe steam system. Boiler and radiators—American Radiator Co. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Taco Heaters, Inc.

### HOUSE FOR F. F. TURRELL, NEW VERNON, N. J.



BEFORE

The problem of this alteration was to produce a comfortable residence at minimum cost. The tower and porch were removed, a library and new porch were added, and the necessary closets and baths were installed. Aside from these modifications, the house was left unchanged except in small details. Cost of alteration: \$11,097.

### CONSTRUCTION OUTLINE

FOUNDATION: New portion—poured concrete; remainder—masonry. Cellar floor—tamped earth. STRUCTURE: Exterior walls—studs, sheathing, building paper and siding; inside 3 coats hard finish plaster.

ROOF: Frame covered with shingles. CHIMNEY: Common brick, terra cotta lining. Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing, gutters and leaders—copper.

INSULATION: New walls—rock wool. Weatherstripping—American Weather Strip Co.

WINDOWS: Sash—wood, double hung. Screens fixed copper wire mesh. FLOOR COVERINGS: Kitchen and bathrooms—

linoleum. PAINTING: Walls and ceiling—lead and oil.

ELECTRICAL INSTALLATION: Wiring system— BX.

BATHROOM EQUIPMENT: All fixtures by Briggs Mfg. Co. Cabinet and accessories—G. M. Ketcham Co.

PLUMBING: Soil pipes—cast iron. Cold water pipes —galvanized wrought iron. Hot water pipes—brass.





### A. MUSGRAVE HYDE AND W. E. SHEPHERD, ARCHITECTS





HOUSE FOR GRAHAM REID, FAIRFIELD, CONN.





BEFORE

The dilapidated barn at the left was turned into a summer house as an income-producing venture. Successful financially, with a rental of about \$800 per season, it is also of interest for the skill with which the original character has been preserved. The living room makes use of the full height of the barn, while the sleeping and service portion has been divided into two floors. Major additions are the large stone chimney and the porches. Cost of alteration: \$6,500.



### REINHARD M. BISCHOFF, ARCHITECT





#### CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-redwood over old barn siding. Interior partitions-studs and pine boarding.

ROOF: Cedar shingles laid over old roof. CHIMNEY: Field stone with clay flue lining. Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing-copper. Gutters-wood. Leaders-Toncan iron, Republic Steel Corp.

INSULATION: Second and attic floor and por-tion of roof—rock wool, Johns-Manville, Inc.

WINDOWS: Sash—double hung. Glass—quality B, Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Main rooms—pine. Kitchen and bathrooms—linoleum.

WALL COVERINGS: Main rooms-knotty pine.

Bathrooms—Insulite Co. hardboard. HARDWARE: Sargent & Co. and Stanley Works. ELECTRICALINSTALLATION: Switches—Harvey Hubbell, Inc. Fixtures—hand wrought, David Kojan.

David Kojan. KITCHEN EQUIPMENT: Range—Westinghouse Electric & Mfg. Co. Refrigerator—General Elec-tric Co. Sink—Standard Sanitary Mfg. Co. BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—Ketcham

Mfg. Co. PLUMBING: Hot and cold water pipes-copper

tubing, Chase Brass & Copper Co. Pump-Duo Pump Co. Hot water heater and tank-Westinghouse Electric & Mfg. Co.

### HOUSE FOR GEORGE KUHRTS, LOS ANGELES, CALIF.



### MILTON J. BLACK, ARCHITECT

R. H. Stone

R. H. Stone



BEFORE



An unusual remodeling job in that the house had already been twice altered. The present problem was modernization and the addition of two bedrooms and a bath, the latter being solved by an extension of the second floor. The face-lifting operation was thorough, inside and out; the mission tile was removed from the roof, rough plaster was brushed smooth, and new lighting fixtures were installed. Cost of alteration: \$9,500.

#### CONSTRUCTION OUTLINE

ROOF: Tile removed, under roof mopped and covered with El-rey built-up roofing, Elrey Products Co. Sash-steel, Druwhit Metal WINDOWS: Products Co. Glass-Libbey-Owens-Ford Glass Co. Screens—Inviso roller, Inviso Screen Co. FLOORS: Main rooms—select plain oak. Bathrooms—tile, Wheeling Tile Co. WALL COVERINGS: Living room and halls -Sanitas and grass cloth; remainder-Sani-tas, Standard Coated Products Co. HARDWARE: Partly new, Schlage Lock Co. PAINTING: She:win-Williams Co. paints. BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. HEATING: Recessed No. 22 unit heaters,

Williams Radiator Co.











## COOLSPRING SCHOOL, LA PORTE CO., INDIANA JOHN LLOYD WRIGHT, ARCHITECT



### COOLSPRING SCHOOL





CLASSROOM

AUDITORIUM - GYMNASIUM



A number of technical innovations distinguish the Coolspring School, most interesting of which is a special heating and ventilating system. Concentrated in a single large chamber above the corridor, the heating apparatus forces warmed air through this plenum into the classrooms and other spaces. Before the foul air is discharged from the building it is passed through the attic space to provide effective and economical insulation. Admirably supplementing this system are the insulating walls of glass block which admit a maximum of diffused light without undue heat loss; also worth noting in this connection are the small transparent glass areas in each classroom which give a view of the out-of-doors. The exterior, faced with a smooth,

load-bearing hollow tile, is a direct expression of the simply organized plan. Here as elsewhere in the building, maintenance costs have been reduced to a minimum. Building costs were \$250 per pupil, 26 cents per cubic foot, and \$4.60 per square foot of floor area, with labor costs established above the \$1 per hour local wage for the skilled trades.





PLENUM CHAMBER



Johnson Photos

BOILERS

### CONSTRUCTION OUTLINE

FOUNDATIONS: Reenforced concrete slab. Waterproofing—3-ply tar membrane over cement grout directly on sandy ground.

STRUCTURE: Exterior walls—standard 8 x 5 in. x 12 in. hollow, load bearing, smooth face tile, Ayer, McCarel, Regan Co., and glass blocks, Owens-Illinois Glass Co. Columns—reenforced concrete and tile.

ROOF: Wood joists over classrooms, steel trusses over assembly room, covered with bonded tar and gravel membrane roofing, Ruberoid Co.

SHEET METAL WORK: Flashing and ducts-galvanized iron. INSULATION: Roof-Celotex and U. S. Gyp-

INSULATION: Roof—Celotex and U.S. Gypsum Co. rock lath. Sound insulation—Celotex perforated Acousti-tile ceiling, Celotex Corp. WINDOWS: Sash—projected steel, Campbell Metal Window Co.

FLOOR COVERINGS: Asphalt tile throughout, except grain wood blocks in basket ball court, Thomas Moulding Co.

WALL COVERINGS: Structural tile walls, Ayer, McCarel, Regan Co.

HARDWARE: Cast bronze throughout.

ELECTRICAL INSTALLATION: Wiring system—steel conduit. Switches—General Electric Co. Fixtures—Benjamin Electric Co.

PLUMBING: Water pipes—A. M. Byers Co. Toilet fixtures—Standard Sanitary Mfg. Co. Toilet partitions—steel, Henry Weis Mfg. Co. Kitchen equipment—The Hoosier Mfg. Co. Pump—Fairbanks Morse Co. turbine deep well pump. Hot water heater—Taco Heaters, Inc.

HEATING: Split system of special design; circulates pre-heated foul air through roof space as insulation before discharging to outside. Automatic fresh air intake, recirculating for night operation. Boilers—oil burning, Crane Co. Radiators—tubular fin type, New York Blower Co. Thermostats—Johnson Service Co. Valves—Crane Co.



# DORMITORY CHERRYLAWN SCHOOL, DARIEN, CONN

OSCAR FISHER, DESIGNER





A certain flexibility was required in the planning of this small dormitory, since it is used as a private residence during the summer. The problem was essentially one of expanding and contracting sleeping space, and was met by the use of built-in bunks, folding partitions and other devices indicated on the plan. Structurally the building is of unusual interest, with plywood inside and out on a frame of four by four posts, spaced four feet on centers. According to the designer, the successful use of plywood involves provision for movement of the material, and the details above illustrate some of the methods of fastening and calking. In heating the building, use was made of the radiant effect of warm floors by running an uninsulated steam main through the unexcavated space below the floors. Both increased comfort and economy are claimed as a result of this procedure. Cubage: 29,448. Cost: \$6,500 at 22 cents per cubic foot.

#### CONSTRUCTION OUTLINE

FOUNDATION: Exterior walls — concrete block with concrete footings. Concrete block set on end for ventilation openings in partially excavated portion.

STRUCTURE: Exterior walls—"Weldwood" plywood, resin bonded ½ in., U. S. Plywood Corp. Frame of 4 x 4 in. posts every 4 ft. with 2 x 4 in. girts at window sill and head lines. Exterior plywood used horizontally with shiplap joint, wedges tapered on every post for solid nailing; vertical joints calked with plastic calking compound. Plywood nailed with resin coated nails every 4 in. Interior partitions—¼ in. "Weldbord" plywood, U. S. Plywood Corp., butt-jointed and filled with Savagran Co. putty.

ROOF: Plywood sheathing, roofers felt and asphalt strip shingles. Barber-Genasco.

SHEET METAL WORK: Flashing—copper. Gutters—wood.

INSULATION: Ceiling—1 in. Balsam wool waterproof blanket type insulation, Wood Conversion Co.

WINDOWS: Sash-double hung with balances and storm windows.

PAINTING: Exterior—white lead and oil over aluminum primer. Doors—varnish. Interior plywood left natural finished with flat varnish, Keystone Paint & Varnish Co. Floors—Penetrating floor varnish, Benjamin Moore & Co.

SPECIAL EQUIPMENT: Disappearing stair to attic storage space, Frazier, Inc. Special cabinets and furniture built-in, wardrobes and radiator enclosures removable. Bunks and couches built with storage space underneath. Bathrooms—tile, Keasbey & Mattison Co.

ELECTRICAL INSTALLATION: Wiring-General Electric Co.

PLUMBING: All fixtures by Standard Sanitary Mfg. Co. Hot and cold water pipesbrass.

HEATING: Steam. Boiler and radiators-Weil-McLain Co., Hoffman Specialty Co. oil burner; thermostatic controls. Heatilator in fireplace, Bennett Fireplace Co.

### DORMITORY CHERRYLAWN SCHOOL



LIVING ROOM





DSCAR FISHER, DESIGNER

**CALIFORNIA HOUSES** For the residential exhibit at the San Francisco Fair an intelligent and unique idea was developed. Instead of building a series of dwellings on the exposition grounds, later to be dismantled, a project was initiated to build model houses in the various Bay Counties, the entire group to be visited as a tour. In this program architects, builders, realtors and the Fair authorities collaborated and about twenty-five houses were constructed. Eight are shown on the following pages.



WILLIAM WILSON WURSTER, ARCHITECT

### GARDNER A. DAILEY, ARCHITECT







One of the largest houses in the exposition group, this luxurious one-story residence is also among the best. The four main elements of the plan, spread loosely over a twoacre plot, contain quarters for living, sleeping and service, and a "garden room" which is intimately related to the swimming pool and dressing rooms. The exterior is finished with flush siding and the general treatment shows the sophisticated simplicity characteristic of much recent California work. The large windows have horizontally sliding sash; following neither the proportions of so-called "modernized traditional" nor conventional modern, they are the most important elements of a very successful design. Cubage: 47,000. Cost: (not including special equipment) about \$23,000 at approximately 49 cents per cubic foot.

14300

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#### CONSTRUCTION OUTLINE

FOUNDATION: Waterproofing—Pabco membrane and termite preventative, Paraffine Companies.

STRUCTURE: Exterior walls—braced Douglas fir, and redwood T. & G. siding; inside—  $\frac{1}{2}$  in. Sheetrock, U. S. Gypsum Co.

ROOF: Pabcoweld, Paraffine Companies.

INSULATION: Ecof and ceilings—asbestos wool, Paraffine Companies. Weatherstripping —interlocking bronze, Chamberlin Co. Sound insulation—heavy Quilt, Samuel Cabot, Inc. PAINTING: Paints by Frank W. Dunne Co. ELECTRICAL INSTALLATION: Wiring system—BX and flexible conduit: Nofuse multibreaker, Westinghouse Electric & Mfg. Co. Switches—Bryant Electric Co.

KITCHEN EQUIPMENT: Range, refrigerator, sink, and washing machine—Westinghouse Electric & Mfg. Co. Cabinets—Whitehead Metal Products Co.

BATHROOM EQUIPMENT: Standard Sanitary Míg. Co.

WINDOWS: Sash—sugar pine. Glass—Aklo plate and crystal sheet, Libbey-Owens-Ford Glass Co. Louvrex, Libbey-Owens-Ford Glass. WALL COVERINGS: Living room—bleached Philippine mahogany 3-ply veneer, Philippine Mahogany Import Co. and grass cloth. Servant's bath—Linowall, Armstrong Cork Co.; remainder—Vitrolite, Libbey-Owens-Ford Glass Co., Vitrolite Div.

HARDWARE: Sargent & Co. and Grant Pulley & Hardware Co.

HEATING AND AIR CONDITIONING: Delco oil fired conditioner, warm air, Delco Frigidaire Div., General Motors Corp.

### ALLEN C. COLLINS, ARCHITECT






Some of the advantages of the elongated plan are illustrated in this house, where through ventilation in the main rooms and a very usable rear terrace have resulted. Also of interest as a device for making the kitchen less conspicuous is the recessed window on the garden side. Somewhat less easily understood are the complicated bedroom plan and the rather arbitrary changes in window sizes. Cost: approximately \$10,000.

### CONSTRUCTION OUTLINE

FOUNDATION: Tee type reenforced concrete.

STRUCTURE: Exterior walls—Frame and stucco, Wolmanized lumber, American Lumber & Treating Co., Oregon pine studs, 16 in. o.c., T. & G. matched sheathing, 30 lb. felt and stucco and brick veneer; clapboard on gables. Interior-plaster on U. S. Gypsum Co.'s sheet rock, fastened to studs with clips. Floor construction random width select grade oak plank and select T. & G. oak.

ROOF: Covered with terra cotta shingle tile, Gladding, McBean & Co. CHIMNEY: No. 1 common brick. Damper—Miller Damper Co.

SHEET METAL WORK: Flashing-16 oz. copper and 24 and 26 gauge galvanized iron.

WINDOWS: Sash-wood, double hung. Glass-single strength, quality A, Libbey-Owens-Ford Glass Co. Screens-flat wood, hung on outside, millmade except Roll-a-way in kitchen, Rolscreen, Inc.

FLOOR COVERINGS: Kitchen-linoleum. Bathrooms-sheet rubber, Goodyear Tire & Rubber Co. WOODWORK: Cabinets—wood, Peerless Mfg. Co. Doors—6-panel, in-

terior 13% in. thick; exterior 134 in. thick.

HARDWARE: By Schlage Lock Co.

PAINTING: Interior: Walls and ceilings—paint, Sherwin-Williams Co. and U. S. Gypsum Co. Floors and sash—Sherwin-Williams Co. ELECTRICAL INSTALLATION: Switches—General Electric Co.

KITCHEN EQUIPMENT: Range-Magic Chef, American Stove Co. Refrigerator-Westinghouse Electric & Mfg. Co. Sink-Crane Co. Cabinets-Peerless Mfg. Co. Fan-Pryne & Co., Inc.

LAUNDRY EQUIPMENT: Sink—Crane Co. Washing machine— Bendix Home Appliances, Inc. BATHROOM EQUIPMENT: All fixtures by Crane Co. Seat—C. F.

Church Mfg. Co.

PLUMBING: Cold water pipes-galvanized iron. Hot water pipescopper.

HEATING: Sunbeam overhead unit in attic; warm air with blower fan and screen filter, Fox Furnace Co. Boiler-gas fired, Crane Co.





# WILLIAM WILSON WURSTER, ARCHITECT









site, this house has its main entrance on an intermediate level between the first and second floors. It is one of the most interesting plans in the exposition group, with an excellent living room well related to the dining room. The bedrooms, it will be noted, have ample closet space and cross or through ventilation. An especially practical and handsome detail is the

entrance door set in a glazed frame.

Planned for a difficult and irregular



### CONSTRUCTION OUTLINE

FOUNDATION: Continuous concrete footings. Waterproofing—asphalt hot coat on outside of high footings.

STRUCTURE: Exterior walls—1 x 10 in. rabbetted beveled redwood siding, 30 lb. waterproof building paper, 2 x 4 in. Douglas fir studs, 16 in. o.c. Floor construction— Douglas fir joists and 34 in. sub-flooring. ROOF: Covered with 34 in. No. 2 Douglas fir solid sheathing and Gladding, McBean & Co. Plymouth shingle tile. Decks—mineral surfaced roofing over 3 sheets roofing paper. CHIMNEY: Common brick, terra cotta flue lining. Damper-Bichardson Damper. Co.

lining. Damper—Richardson Damper Co. SHEET METAL WORK: Flashing—16 oz. copper. Gutters, leaders and ducts—galvanized iron.

WINDOWS: Sash—sugar pine wood casements. Glass—Pennvernon, quality B, double strength; plate in bay window, Pittsburgh Plate Glass Co.

STAIRS: Treads—oak. Risers and stringers —Douglas fir.

FLOOR COVERINGS: Main rooms—oak. Kitchen and bathrooms—linoleum covered. WALL COVERINGS: Living room and stair hall—canvas. Bedrooms—wallpaper.

WOODWORK: Trim. cabinets, interior and garage doors—Douglas fir. Exterior doors sugar pine.

HARDWARE: Supplied by Sargent & Co. and Stanley Works; garage door hardware by Frantz Mfg. Co.

PAINTING: Interior and exterior-lead and oil.

ELECTRICAL INSTALLATION: Wiring system—knob and tube. Switches—General Electric Co.

KITCHEN EQUIPMENT: Range, refrigerator and dishwasher—General Electric Co. Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—Hallensheid & McDonald.

PLUMBING: Cold water pipes—galvanized steel. Hot water pipes—copper tubing. HEATING: Forced warm air system, Aladdin Heating Corp.

# CARL F. GROMMÉ, ARCHITECT



Despite its exotic title, the "Irish Cottage" follows conventional local precedent fairly closely. With bedrooms and bath grouped in a suite and a combined living and dining room it presents a workable solution for the one-story house, although the bedroom without cross ventilation is unfortunate. Doors to the bedrooms and kitchen are well removed from the main living area, and the kitchen is placed in convenient proximity to both main and service entrances. Cost: 28 cents per cubic foot.







### CONSTRUCTION OUTLINE

FOUNDATION: Walls-concrete.

STRUCTURE: Exterior walls-stucco, 15 lb. asphalt paper,  $2 \times 4$  in. studs, wood lath and plaster. Interior partitions— $2 \times 4$  in. fir studs, wood lath and plaster. Floor construc-tion—T. & G. sub-floor over wood joists.

ROOF: Rafters, 2 x 6 in., covered with Mon-

terey redwood shakes, Pacific Lumber Co. CHIMNEY: Brick, terna cotta flue lining. Damper—Superior Fireplace Co. SHEET METAL WORK: Flashing, leaders

and gutters—galvanized iron. WINDOWS: Sash—casement, sugar pine. Glass—single strength, quality B, Libbey-Owens-Ford Glass Co. Venetian blinds— steel, National Blind Co.

FLOOR COVERINGS: Main rooms-oak. Kitchen, laundry and bathrooms—linoleum. WALL COVERINGS: Main rooms—plaster. Bathrooms-Linowal wainscot, Armstrong Cork Co.

WOODWORK: Trim, cabinets and interior doors-fir. Exterior doors-sugar pine. Gar-age doors-Allith-Prouty Co.

HARDWARE: Schlage Lock Co.

ELECTRICAL INSTALLATION: Fixtures-direct, Phoenix Day Co. BATHROOM EQUIPMENT: Fixtures by

Crane Co.

PLUMBING: Soil pipes-cast iron. Hot and cold water pipes-galvanized steel.

HEATING: Warm air, floor furnaces, Atlas Heating & Ventilating Co.

### WILLIAM WILSON WURSTER, ARCHITECT







LIVING ROOM



Despite the apparent complexity of the plan, it is actually a simple rectangle with the living room as the sole projecting element. The irregularity of the space occupied by this room and the dining room is characteristic of many houses by Mr. Wurster, and as shown in the photograph below, it offers excellent possibilities for furnishing. The assured simplicity of the exterior design represents a high level of domestic architecture; thoroughly contemporary in approach, it presents a practical solution well within the capabilities of the average small builder.

### CONSTRUCTION OUTLINE

FOUNDATION: Continuous concrete footings. STRUCTURE: Exterior walls-1 x 12 in x 7/8 in. flush, shiplap, redwood siding, Redwood Mfg. Co., 2 x 4 in. Douglas fir studs, 16 in. o.c.; inside painted plaster. Interior partitions—painted plaster on 2 x 4 in. Douglas fir studs, 16 in. o.c. Floor construc-tion—1 x 4 in. T. & G. diagonal sub-floor, 30 lb. building paper, Blake, Moffit & Towne, No. 1 white select, random width finish flooring.

ROOF: Covered with solid sheathing, building paper,  $V_2$  in. heavy copper ridges and hips, and Marshall Shingle Co. Douglas fir cedar shakes. CHIMNEY: Brick, Port Costa Brick Co., terra cotta

flue lining. Damper-Richardson Damper Co.

SHEET METAL WORK: Flashing, leaders and ducts-galvanized iron. Gutters-redwood. INSULATION: Sound insulation-rock wool, 4 in.,

Johns-Manville Co. WINDOWS: Sash-sugar pine, wood casement. Glass-single strength, quality A; plate in large living room window, Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Kitchen-linoleum. Bath-

rooms-tile, California Art Tile Co. WALL COVERINGS: Breakfast room-wallpaper.

Bathrooms-ceilings painted canvas, walls tile. WOODWORK: Trim and cabinets-vertical grain Douglas fir. Doors-"Sturdibilt," M. & M. Wood-

working Co. Garage doors-built-up, sliding on light frame.

HARDWARE: Supplied by Schlage Lock Co.; garage door hardware by Controlador Corp. PAINTING: Walls and ceilings—3 coats lead and

oil, flat finish. Floors-lead and oil, rubbed off, shellacked. Sash-lead and oil. All paints by Benjamin Moore & Co. Exterior walls-Samuel Cabot, Inc. bleaching oil. ELECTRICAL INSTALLATION: Wiring system-

knob and tube conduit. Fixtures-flush direct for ceiling, remainder by Thomas Day Co.

KITCHEN EQUIPMENT: Range and refrigerator-Frigidaire Corp. Sink—Kohler Co. LAUNDRY EQUIPMENT: Washing machine—

Bendix Home Appliances, Inc.

BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—Hall-Mack, Hallensheid & McDonald. PLUMBING: Hot and cold water pipes-copper tubing.

HEATING: Forced warm air system, Aladdin Heating Corp. Boiler-gas fired.

### JAMES H. MITCHELL, ARCHITECT





Unlike the other houses in the exposition model homes group, this has been built at the Fair grounds. The plan is a not unfamiliar one, making use of the garage as part of an architectural scheme based on a small protected court. It is unfortunate that the living room must serve for circulation between the front door and the bedrooms, but the rigid space restrictions made a more workable solution impossible. Cubage: 18,260. Cost figures are not available; the contractor's estimate is \$7,400 including architect's fee.





### CONSTRUCTION OUTLINE

FOUNDATION: Walls-redwood sills.

STRUCTURE: Exterior walls— $2 \times 4$  in. Douglas fir studs, 1 in. sheathing, building paper, Johns-Manville, Inc. asbestos clapboard. Floor construction-wood joists, I in.

sub-floor, building felt. ROOF: Wood frame, 1 in. solid sheathing, building paper, Johns-Manville weathered black asbestos shingles.

SHEET METAL WORK: Flashing and leaders—galvanized iron. Gutters—redwood. INSULATION: Outside walls and roof-Ful-Thik rock wool, Johns-Manville, Inc.

WINDOWS: Sash-wood casements. Glass-single strength, quality B, Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: Kitchen and bathrooms-linoleum.

WALL COVERINGS: Living and dining room ceilings—glazed tile; walls—panel board and insulating board. Bedrooms and halls—Steel-tex and 3 coats plaster. Kitchen and bathrooms-Flexboard. All material by Johns-Manville, Inc.

WOODWORK: Douglas fir throughout. HARDWARE: By Ry-lock Co. and Sylvester. PAINTING: Trim—lead and oil.

ELECTRICAL INSTALLATION: Wiring system-knob and tube. Switches-Bryant Electric Co.

KITCHEN EQUIPMENT: All electric equipment by General Electric Co.

LAUNDRY EQUIPMENT: Washer-Bendix, Home Appliance Co. BATHROOM EQUIPMENT: All equipment

by Crane Co.





The superior living qualities of the one-story plan are again demonstrated in this house, whose interior has been most efficiently organized. The bedrooms, for example, have ample light and ventilation with privacy, and are conveniently related to the main body of the house. Where the simple outlines of the plan have been broken, as in the case of one bedroom and the dining room, the architect had good reasons for doing so. Arrangement of the service unit is excellent. Cubage: 40,000. Cost: \$23,100, at about 58 cents per cubic foot.





#### CONSTRUCTION OUTLINE

FOUNDATION: Walls and cellar floorconcrete.

STRUCTURE: Exterior walls-4 in. brick, waterproof paper, sheathing, 2 x 4 in. studs, 1/2 in. drywall or 3/4 in. plank. Interior partitions-drywall or plank over studs. Floor construction-2 x 8 in. joists, 1 x 4 in T. & G. sub-floor.

ROOF: Wood rafters, 1 x 6 in. plank, 3/4 in. shingle tile, Gladding, McBean & Co. CHIMNEY: Brick, terra cotta lining. SHEET METAL WORK: Flashing, gutters

and leaders-copper.

INSULATION: Roof-rockwool, U. S. Gypsum Co. Weatherstripping-integral on steel sash.

WINDOWS: Sash-Soule Steel Co. Glasssingle strength, quality A, Libbey-Owens-Ford Glass Co.

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

WALL COVERINGS: Living room--Calif. Ponderosa white pine. Dining room-Flexwood, U. S. Plywood Corp. Halls-redwood plank.

WOODWORK: Trim, cabinets and doorscedar, white pine or birch.

HARDWARE: By Schlage Lock Co. PAINTING: Walls and ceilings-Textolite over Sheetrock, U. S. Gypsum Co., stain and varnish over wood. Floors-fill, stain, shellac and varnish. Kitchen-4-coat enamel.

ELECTRICAL INSTALLATION: Wiring system-BX. Switches-tumbler type. KITCHEN EQUIPMENT: Range-

-gas, Wedgewood, James Graham Mfg. Co. Refrigerator — General Electric Co. Sink and cabinets-Whitehead Metal Co.

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

PLUMBING: Hot and cold water pipescopper.

HEATING AND AIR CONDITIONING: Mars forced air furnace with air filters and humidifier, Pacific Gas Heating Co., thermostat and humidistat in living room, Minneapolis Honeywell Regulator Co. Hot water heater Day & Night Heater Co.

## PAUL HAMMARBERG, ARCHITECT



With a conventional facade for the neighbors and a glass-walled living room for the occupants, this house illustrates a type of eclecticism common in much new residental work in California. The plan is definitely oriented to the garden, is especially commendable for the manner in which services and sleeping quarters have been arranged for accessibility and privacy. Cubage: 24,000. Cost: \$8,-800, at about 37 cents per cubic foot.

### CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—stucco and shingles, paper, Sisalkraft Co., sheathing and plaster.

SHEET METAL WORK: Flashing, leaders and ducts—Armco, American Rolling Mill Co. WINDOWS: Sash—white pine and Fenestra steel, Detroit Steel Products Co. Glass— Libbey-Owens-Ford Glass Co.

WALL COVERINGS: Kitchen-Sanitas, Standard Coated Products Corp.

HARDWARE: Schlage Lock Co. PAINTING: Sherwin-Williams Co., National

Lead Co. and local manufacturers. KITCHEN EQUIPMENT: Range, refrigerator, and dishwasher—General Electric Co. Sink—Standard Sanitary Mfg. Co.

LAUNDRY EQUIPMENT: Washing machine and drier—Bendix, Home Appliance Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—Paramount Fixture Co. and Hallensheid & Mc-Donald.

HEATING AND AIR CONDITIONING: Forced warm air, Atlas Heating Co., filtering only. Grilles—Anemostat Co.





# THE ARCHITECT'S WORLD

### LET'S HAVE A VULGAR ART

### By Faber Birren

What bothers me is how it all happened. What changed art from an expression of all society to the sophisticated vanity of a few egoists? What changed the artist from a democrat to an aristocrat?

I am told that the Greeks were all Greeks, cobblers, sculptors or whatever. One man dug marble out of the earth, another chiseled it, another coated it with a film of colored wax, still another set it up. Possibly with equal credit to all—if any credit were necessary.

Previous to the Renaissance all the arts spoke the beliefs and feelings of all the people. Jewelry was concerned with talismans and charms. Sculpture was the fashioning of effigies, the personification of gods and demigods. Painting and design were guided by the Mysteries, the history of races, the symbolization of life and the universe. Art was society at large, its superstition, its science and philosophy.

The difference was this: the job of the craftsman was to interpret what all men believed, not to cater to his own particular fancies. That is, until Fifteenth Century Italy. Then art got lost in a bog of individualism and self-expression—and mankind was disdained and forgotten.

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Strange paradox. We in America are trained out of the cradle to the principles of Jefferson, Franklin, Lincoln. A union of States and of people sharing a common destiny. We are taught to vote, to cooperate, to dwell in harmony with the prevailing views of the majority of people.

Yet what is attempted in art? Let every man dig out for himself. Let him be as unlike his neighbor as possible. Let him defy the commonplace and glorify the anomalous.

In ethics, morality, economics, government, we teach democracy.

In art we do our damndest to tear it down and fling it apart!

Keep an eye on any artist. Watch him think. It is a foregone conclusion that he will give no thought to the world of people, the common herd. Yet without knowing people or even presuming to understand them he will at some time or other pride himself as the savior of culture, the edifier of the multitude.

He will frown upon the art of his own time. Unlike the scientist he cares not a rap about building with others toward a common end. Indeed! Art caters not. It is genius laboring against the curse of technology, regimentation, mechanization. So he dwells apart, and his audience dwindles. He must resort to the spectacular, to the freakish. He must manipulate art forms that stun if they do not edify.

And to save face he must argue that the rest of us are ignoramuses who fail to comprehend his subtlety. He who cares nothing about our feelings would have us pay homage to his.

Little wonder that men stand before art today and admit in their hearts that here is something in which they have no participation—something apart from understanding and therefore apart from life. Where some outside judgment must prevail, as in an architectural competition, we let the votaries of the craft do the deciding. The people who will see the edifice, pay for it, be expected to inhabit it—they are too ignorant. Art must give them what they *need*. Art doesn't have to bother itself to find out what they might want.

When we develop a product, sound out political opinion, we go to Dr. Gallup and others. But in art or architecture—one hundred million people might show preference for a red Supreme Court building and be denied. Art isn't concerned with humanity except through its own presumptions. Art is never an interpretation; it is always an expression.

We chuckle at Surrealism and laugh out loud at modern sculpture. Why not? All this is too remote from life. We are louts no doubt. But louts populate the world and always will. Be smug about all this if you dare, but know that beauty is just as much the property of every man as life, liberty, and the pursuit of happiness. Art today kicks at the heels of civilization. It has become a nuisance, forced upon men in the guise of culture, eulogized for what it is supposed to be and never for what it really is. The artist with the soul of an autocrat tries to proselyte among instinctively democratic humans. Men reared in the social and political mess of Europe try to tell us, across the Atlantic, what art means.

Bucks among swine, perhaps. But surely misfits out of the Renaissance who fail to realize that the old order is dead, that art must serve life, people, that the true artist must be a Greek among Greeks.

It may be that we fail to acknowledge any universal or eternal principles for beauty. We are not apparently trying to get anywhere. Merely do we refuse to go where we have been. Mad scramble. People exist by the millions upon the face of the earth. Yet the artist scampers wildly among them, never once pausing to take a deep breath and think objectively —art is for people; what of great beauty would be commonly understood by them?

Art in a democracy has got to be democratic. The artist has got to wander like Jesus, Buddha, Mohammed, among his own people. He has got to know people, feel their despair, suffer to devote himself to their longings. There will be no coin tossing, no soap-box wrangling. Art will have to blossom out of life itself. There will be no nauseating patronage of slums and emaciated derelicts.

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Art will neither pamper democracy nor shame it. It will be as genuine, as earnest and as vulgar as life.

### **CUBISM AND FUNCTIONALISM**

### By Clive Bell

Excerpts from the author's article in The New Statesman and Nation (London)

It is sometimes said that functionalism is the child of cubism. That is not true. What does seem to be true is that functionalism, as a movement, has absorbed cubism. Cubism is moribund; whereas functionalism, as a movement, as a program, is lively enough and is likely to leave a mark on the face of Europe and America.

The story goes that Princet, the actuary, who certainly was mixed up with the young painters at the beginning of the century, was working out a geometrical problem in a café, when Picasso looked

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over his shoulder and remarked, "Cest beau." Though the mathematician imagined that the compliment was intended for his solution, it was in fact addressed to the diagram; and cubism was born.

About functionalism the name only is new, the idea having been current these fifty years at least. Ever since architects took to smothering their buildings with ready-made decoration supplied by the yard, decent people, in the name of reason and taste, have been beseeching them to give over. Before the war Roger Fry had called attention to the Kodak building in Kingsway, suggesting that it might be the best bit of modern architecture in London: its merit consisting, he said, in "sheer reasonableness." And even I, about 1911, pointed out the esthetic superiority of a tin shed in Francis Street to the row of ornate Gothic shops which had sprung up hard by.

How well such sentiments accord with the cubist doctrine is clear. Cubism likewise denounced superfluity. Ornament was anathema. In the 'twenties, therefore, it was natural for young and austere architects, in revolt against the benighted purveyors of ready made old-world beauty and resolved, making no mystery of their methods, to work in the materials of their age-steel, concrete and glass-it was natural, I say, for these to ally themselves with a sympathetic school which enjoyed already a name and some standing. Also it seemed appropriate that these allied painters and craftsmen should be charged with the furnishing and plenishing-for I must not say decoration-of the new functionalist buildings.

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Though it was natural for functionalism to ally itself with cubism, it was quite illogical; for a cubist picture is the most unfunctional sort of picture imaginable. It is the only sort which cannot possibly have any function whatever other than esthetic. It cannot be useful; it can only be beautiful.

Functionalism was bound to be a wider movement than cubism because, for one thing, whereas cubism was, or rather had been, esthetic, functionalism was an ethical affair; and for one person who takes an interest in art ten thousand take an interest in morals.

The functionalists maintained that a block of flats by Le Corbusier or a hospital by Wells Coates was superior to Hampton Court or the Salute because it was more candid in construction, better adapted to its purpose, and did not pander to a base lust for ornament. Politics soon were dragged in, and almost anyone can get excited about politics. So was biology; and the products of the Bauhaus were pronounced by no less an authority than Professor Moholy-Nagy to be "biologically correct." Thus irrelevant decoration, which we had been content to call ugly, was now found to be baleful, bourgeois and unbiological. Besides, was not ornament of any kind frivolous and extravagant, an example of what Veblen considers the ruling passion of the rich and calls "conspicuous waste?" Whereas the honest, unadorned art of the functionalists expressed the aspirations of a class-conscious proletariat; though for the moment, it must be admitted, laborers appear to prefer the public-house style.

Nevertheless, functionalism performed for young architects much the same service that cubism had performed for painters. It eliminated a deal of trash and called attention to essentials. That done, all was done that could profit art and artists; for there is no more one right way of building a house than there is of making a picture or cooking an egg. As an artistic force functionalism was spent; but not as a moral. So functionalists became righteous, too often self-righteous; and when righteousness comes in at the door we all know where art goes. What takes its place is craft, the puritan's substitute. Puritan dislike of ornament, of delight for delight's sake, is notorious.

At a recent exhibition of modern building and planning in the New Burlington Galleries I was oppressed by some ubiquitous spirit, neither esthetic nor utilitarian, which seemed to give unity to the display. For a while I could not make out what it was. Gradually I was reminded of exhibitions by guilds of art and craft, and I realized that the pervasive offense was the smell of conscious virtue. These towns and houses, these door-knobs and garden seats, were made by the good for the good. The new world, as forecast by this exhibition, would certainly not be beautiful, and did not look to me as though it would be particularly comfortable; but it was to be high-minded.

This odor of uplift, however, was not the first thing to strike my sense as I entered the gallery. Like everyone else, presumably, I was hit first in the ear by the drone of a sort of cuckoo-clock lugubriously repeating an apothegm of Sir Henry Wotton's (paraphrased from Vitruvius) -- "Commoditie, Firmenes, Delight:" the modern craftsmen insisted on the oldworld spelling. The firmness of these steel and concrete buildings may, I fear, be taken for granted. And of the commodity it is for those who live in glass houses to judge. But where was the delight? Absence of delight from cubist painting and functionalist building and furniture accounts, I believe, for the mortal sickness of one and unsatisfactoriness of the other. For delight, rightly or wrongly, is what the heart desires, and an art without delight is born wanting. Delight, in one of its ten million transformations, is, I suspect, the living content of art; the things which lack it are, like machine-made goods, empty. Now "vulgar," "sentimental," "extravagant" are all damaging epithets, and with none of them can cubist or functionalists productions justly be fitted. But "empty" is lethal. And empty is just what most cubist and functionalist productions are felt to be. We can respect them, but I defy anyone to delight in them; for, as we learned at school, Nature-and Nature includes human nature-abhors a vacuum. That, I am persuaded, is why the desperate imaginings of the Surrealists and the contortions of Neo-Baroque stand a better chance with the future than the honorable canvases of Léger and the virtuous villas of Le Corbusier.

### THAT AMERICAN STANDARD OF LIVING

### By George H. Gray

VICE CHAIRMAN COMMITTEE ON FEDERAL PUBLIC WORKS, AMERICAN INSTITUTE OF ARCHITECTS

What American standard of living? Upper Park Avenue or Hester Street? Beacon Street, Back Bay or South Boston? Peach Tree Street or the former shacks of Techwood? Is it a package of gadgets delivered between four walls and a roof? Certainly none of these. What then?

We must search for a physical standard of living which should produce what we pride ourselves on as the outstanding American characteristics, those that caused the settlement of this country, its determination of a form of government, and its phenomenal development under that form of government.

Character determines a peoples' way of living, and the way of living of one generation is a determining factor in the character developed in the succeeding generations. Any social betterment which we plan must, as a prime objective, foster these characteristics. Without them all the achievements of our civilization up to the present will degenerate, and ultimately other more vigorous people will overtake us.

And how did the Colonists live—the Revolutionists, the pioneers of the great West? Just as so many people of the same characteristics live today, not only in this country but the world over—in great simplicity, in thrift and hard work, getting their satisfaction in life, not in seeking to bypass the obstacles, the hurdles of life, but taking them in their stride. The house for such people is planned around the day's work and the family life.

So what particular groups, if any, are those which, having the primitive virtues on which we insist, have also the opportunity to develop just the kind of home they would want in order to meet their way of living? I think we can single out two such groups—two which happen to be wide apart in their place in the social organism. They are the small but reasonably prosperous farmer, and the city dweller who finds his summer recreation in the wilds, in as primitive conditions as are accessible to him.

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This farmer does not have to limit himself to minimum dimensions of space for his house. A principal element of the structure is a room large enough for a cook stove, sink, work table, dining table, shelves conveniently placed for kitchen utensils and table service; for table chairs, some easy chairs and maybe a couch. This is kitchen, dining room and living room. The cook stove keeps a movement of air through the room and up the chimney. He and his wife have a bedroom large enough for their bed, a crib for an infant, and possibly a small bed for a toddler. If the family grows there will be, as necessity requires, a bedroom for boys and a bedroom for girls. In this day and generation he will be apt to have a bathroom. He will probably have a small warm air furnace to warm the rooms other than the central room. He lives wholesomely and healthily. He works hard and has stamina to throw off minor ailments or to ignore them. The children help the parents with their chores outdoors and in the kitchen; they may have to walk some distance to the highway to catch the school bus-to the lasting benefit of their health and character.

That other group, the city dweller whose sojourn is in the wilds, is dodging urbane conventions, seeking vigor and inspiration in a life as near to primitive nature and simple ways of living as he can get. He is likely to be a professional man, an intellectual, or an artist. However luxuriously he may live in the city, this is the life that gives him what he wants most. Some of his time is spent cutting trees, clearing and developing the place, and in the more prosaic chores of the routine of living. But the point is that the center of a delightful family life is that same room which we found in our farmer's house, where the family gets the meal, eats, washes the dishes and enjoys most of its indoor leisure. All other facilities are equally simple. The water works and its sanitary appendages may be quite primitive.

Our small farmer and our camper may be widely separated in many ways, but they have found the same general pattern for an effective and worthwhile way of hiving. Other groups in America have found the same way. It may be said to be the universal pattern of self-sufficient, self-respecting work-a-day people the world over. The principle is as adaptable to urban life in a multi-family housing project as to a rural or suburban way of living. In the apartment the kitchen end of that allpurpose living room will find itself in an alcove at one end or side of the room, possibly separated only by a drop partition, with a vent assuring a positive draft upward.

Not only is the one large room more efficient and livable, but it is more economical in space and construction than two or more rooms for the same purpose. It makes planning far more flexible. It is incompatible, however, with the practice of using the living room as an auxiliary bedroom.

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### WHAT DO YOU READ?

Referring once more to the work of A.I.A.'s Committee on Education in gathering recipes from literary gourmets in the profession, here is Pope Barney's list of reading matter he has found profitable and enjoyable:

Sounding Stones of Architecture

	Philip N. Youtz
Architecture in the Balance	Towndrow
Art in the Western World	Robb & Garrison
Significance of the Fine Art	s A.I.A.
Outline of Town and City 1	Planning Adams
Stream of History	Parsons
Works of Man	March Phillipps
American Architecture	Thomas Tallmadge
Modern Architecture	Kimball & Edgell
Housing	Katherine Bauer
Architecture of Humanism	Geoffrey Scott
Reintegration of Architectu	re Hitchcock
Toward a New Architecture	e Le Corbusier
The City of Tomorrow	Le Corbusier
The City of Tomorrow	Ferriss
The Story of Architecture	Whitaker
Kindergarten Chats	Louis Sullivan
Princeton Lectures F	rank Llovd Wright
Modern Architecture	Paul P. Cret
Monographs on Modern An	chitects
and Designers	Pencil Points Press
Contemporary Professional	Maga-
zines and Official Organs	of the
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A.I.A. and R.I.B.A. The Frozen Fountain International Architecture Sticks and Stones Houses in America Gardens and Designs S Flight from the City This Ugly Civilization

Bragdon Sheldon Cheney Lewis Mumford Robinson Shepherd & Jellico Ralph Borsodi Ralph Borsodi

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### PRO BONO PUBLICO

It is a well-founded British tradition that men write to the *London Times* on any subject that happens to be bothering them at the moment. It is perhaps an omen that we find in a recent issue a full column given over to a discussion of architecture, a very small section of which follows.

"In our time we have around us too many of the lifeless attempts to revive

these so-called styles after their force is spent. That must not happen again. What the architect has to do is to keep his eyes steadily fixed on the same principles as his predecessors, and these have never varied. Are they not to recognize and develop contemporary building resources and gradually to bring them to the greatest abstract beauty of form of which they are capable? Never has this end been attained as soon as the new method is introduced. It demands experience, and that means time. Today our trouble is that vast new possibilities are crowding in faster than they can be assimilated-the steel frame, reenforced concrete, synthetic materials, and so on. On top of this, the economics of building are a more clamant consideration than ever before. They force the use of these new methods before sufficient evidence of their permanence has accumulated. An illustration of this is to be found in the design of two important permanent buildings now in the contractors' hands. The new Bodleian Library is a steel frame building to be faced with rustic stone. The new London University, while its appearance may suggest this construction, is in fact built of solid masonry and wood in the traditional manner and owes little to the engineer.

There can be no suspension of activity. As buildings are required the architect must provide them. He needs courage as never before, and he has it. That courage must be tempered with experience, and there's the rub. Our generation cannot evade the raw experiments out of which a new and finer architecture will surely grow. But so long as design is responsible and sincere, and not allowed to become a matter of flippancy and fashion—above all, so long as novelty is not pursued for its own sake, there is no fear of presentday buildings disgracing our generation in time to come."—Vivian H. Seymer.

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### THEY SAY-

"Two questions for the professions, before they worry too much about other things: 1) What part should each take in the natural basic framework of civilization? 2) How can each best perform its task?" ----C. RONAL WOODS.

"The confusion in the world today resulting from the many different architectural styles makes it necessary for a person to state whether or not he is a 'modern' architect. It would be ridiculous to expect a lawyer to say 'I am a modern lawyer' or a surgeon to claim he was a 'modern surgeon'."—WILLIAM LESCAZE.

"Carving photographic likenesses of America's great men on a mountain does not add an inch to their stature unless the artist has some creative vision of his own to contribute. The public cannot be made to understand the greatness of these men simply through enlarging their photographs."—WILLIAM ZORACH.

"We observe that in our art the flat roof and the staircase enclosed in a greenhouse, which to some seem just that and nothing more, to others hold deep implications of a re-ordered world."—H. S. GOODHART-RENDEL.

"If the American public were less prone to be satisfied with the credistic morality of ages gone by and more inclined to think of the real, hard, cold facts of living in this present day, we would add to those wise commandments against theft, covetousness, and adultery a decree that thou shalt not as a people permit the human family to live in squalor."—Dr. ROBERT W. KELSO, University of Michigan.

"Nothing more becomes a man than the generous praise of his rival, whether in sport or business. And in the end we always lose when we withhold it. All of us encounter moments when it is clear some one is preferred before us, and, not seldom, it is one of whom we can honestly speak well. The good word honors both in the estimate of the public."—CHARLES D. MAGINNIS.

### WHY IS A MUSEUM OF ART?

### By Paul J. Sachs

PROFESSOR OF FINE ARTS, HARVARD UNIVERSITY

Excerpts from an address to the Trustees, Museum of Modern Art, New York, May 8, 1939

In America, museums, whether devoted to the art of the past or to the art of the present, continue to be not only exhibition centers and repositories of treasures, as in Europe, but also educational centers.

The problem, as I see it, for American museums in the future, is how to develop within their walls a more severe discipline; how to avoid the sentimental.

Will you, then, join me in self-criticism, in the hope that we may thus start to find remedies for two closely connected fundamental weaknesses which are at the root of all our misgivings. I refer 1) to museum collecting, which falls short, in a maintenance of standards, when viewed in light of the achievements of our sister institutions abroad; and 2) museum scholarship, which also falls short in American museums, when appraised by any reasonable international standard of performance.

The museum worker, if he is honest and self-critical, soon becomes aware that "a *laborious training* of every native talent is necessary in order to retain the public favor, though it may be attained for a short period"—Shall we say for the first ten years of the life of a museum?— "through good fortune."

And now I come to the very heart of my argument this evening—the need of greater cooperation between museums and universities to the end that we may develop scholarship, combined with connoisseurship plus a greater insistence on standards; that is, our future curators and directors need more time for study in youth; quiet, untroubled study; in order to form scholarly habits.

The period has come, so it seems to me, when we should take a leaf from the practice of medical schools. No man's medical education is considered complete unless he has served an interneship in a hospital, after a thorough training at the medical school of a university. My suggestion is this:—that the Museum of Modern Art take on one or more men and women to serve an interneship or apprenticeship for a series of years at an adequate remuneration. I believe that great benefits would accrue not only to the student who serves such an apprenticeship, but for the senior worker as well, who will be stimulated in his collecting and publication by a young, enthusiastic, eager investigator. This need is greater in the field of modern art than in any other area.

If you choose in this fashion to cooperate with the universities in training an elite you have it in your power to lead the world in the coming generation—in museum administration, museum collecting and museum scholarship. It has been well said that "All government calls for an elite; business calls for an elite"; and I might add that sound museum administration and scholarship must rest upon an elite.

If we review the extraordinary achievements of our first decade here we are not surprised to find that the primary interest of the trustees has been in painting, sculpture and the graphic arts. If, however, we pay attention to the attitude of the rising generation it seems clear that in the coming decade energy and funds must be allocated with enthusiasm on a larger scale to films, to architecture, to photographs and to the library; for it is through these that the greatest number of young people can be reached:—a fact, I fear, which too few of our generation appreciate.

We are all aware that the particular activity that has given the Museum of Modern Art its influence and its national and international reputation is the production of its Catalogues. Hundreds of young men and women who never get to New York to see the exhibitions are influenced by these catalogues . . . If we believe in such a program it must be clear to all of us that what the Museum of Modern Art needs above all else is to secure a real educator to head and to develop this important work; and to procure such a man we should proceed as if we were choosing a college president.

And finally I come to something vaguer, though not less important. To one who lives in the provinces the time seems to have arrived when the tempo of the Museum of Modern Art might well be less hectic. It seems wise to take more time to breathe:--for unless the tempo--the typical New York tempo—is not modified we are sure to burn out our able personnel, as so frequently happens in American law and American industry. I suggest with great earnestness that our staff be given more time for work; more time for holidays; more time for taking thought; and in saving this I have in mind every member of the professional staff from top to bottom.

May I point out also that as the Museum of Modern Art grows older and larger it is likely to face subtle but serious dangers. Let us be ever watchful to resist pressure to vulgarize and cheapen our work through the mistaken idea that in such fashion a broad public may be reached effectively. That is an especially tempting error because of the intense competition for public attention in American life. In the end a lowering of tone and of standards must lead to mediocrity and indeed to the eventual disintegration of the splendid ideals that have inspired you and the founders.

The Museum of Modern Art has a duty to the great public. But in serving an elite it will reach, better than in any other way, the great general public by means of work done to meet the most exacting standards of an elite.

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Let me finish on the note on which I started. The museum of the future-the thing that has been characterized as an "educational institution in a treasure house"-should be a comprehensive and enduring community of scholars, embracing in addition to traditional and well understood museum functions those of study, teaching and research. Indeed, since a museum, in addition to its temporary or permanent collections is like a university-primarily a group of men and women-emphasis should continue to be placed on the quality of its staff. The quality of the service which a museum offers will be proportional to the capacity and the distinction not only of its director and curators, but of its investigators as well. Our Museum should continue to be a place in which youth and adult may gain discrimination. Such a conception of the Museum of Modern Art points clearly to the need of attracting distinguished young scholars; to the desirability of freeing them from a tempo that is too hectic.

# THE DIARY

SEPTEMBER 1939

Monday, July 17 .- In the Julien Levy Gallery, not long ago, hung two exhibitions. In one room the work of Salvator Dali was surrounded by gaping observers -plenty of them-who showed not even a spark of pleased comprehension. Dali's paintings are at the moment the thing to see. In the other room were some of Walt Disney's drawings on celluloid and in color, of Ferdinand the Bull, the Ugly Duckling, and Brave Little Sailor. In this room sometimes there were one or two observers, sometimes none. In circling rapidly through the Dali room and wandering very slowly and enjoyably through the Disney room, I wondered what would be the corresponding attendance in a retrospective exhibition of each man a quarter century from now.

Wednesday, July 19.—Aymar Embury appeared before the League at lunch today, facing a hostile audience in the matter of the proposed Battery-Brooklyn Bridge. Nor was the hostility all on one side, for Embury made it very clear that he felt the action of the League in opposing the Bridge had been taken without thorough knowledge of all the facts. Even though the War Department had killed the project, the points at issue were so interesting in themselves that an exceptionally large gathering came to hear and to argue.

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Friday, July 21.- The interior decorators ought to have a publication of their own along the lines of Daily Racing Form. A spring survey by a questionnaire that brought in over 600 replies assures us that Colonial remains firmly in first place with Modern second; that wallpaper stripes are very much in; that a sweeping "color cycle" is under way-"not vivid, primitive colors, but rich, deep tones and in particular the sophisticated off-shades"whatever they may be. Isn't it about time the interior decorators do a little thinking on their own account rather than watch for bulletins of fashion? (We might have asked that of the architects five years ago, but not now.)

Saturday, July 22.—A few months ago there seemed abundant evidence that the profession craved a chance to compete in design for public buildings. Activities of the spontaneously organized National Competitions Committee, A.I.A. Chapter resolutions, letters and vociferous demands from individuals far and wide, led many of us to believe that architects of the younger generation at least were rarin' to show their stuff.

"Competition for public works is the obvious method of selecting architects in a democracy."

"Here is the way to discover hidden genius in the profession," and so on and on.

In answer to these pleas came the announcement of a series of Regional Competitions. A post office and court house for Leavenworth, Kansas was the first problem—a \$250,000 job on which the winner would be paid \$5,200 for his design and for occasional supervision of the working drawings as made in Washington. True, it was not the full and independent service sought, but it opened a door long closed against the private practitioner.

Of the 750 registered architects in Region No. 8, some 60 signified their intention of entering the competition. Only 25 drawings were submitted. I had the privilege of seeing all of them after the jury had made its award, and I thought they were a pretty sad lot. The problem was not difficult, the program clear and specific, the requirements as to drawings simplified to the limit, the jury a group of five eminent architects drawn from private practice in neighboring states.

Second of these Regional Competitions will have been judged before these notes appear in print—a \$600,000 post office and court house for Evansville, Ind. A third competition calls for a \$400,000 building for Montpelier, Vt., open to the architects of New England. Pacific Coast architects will probably have the next chance.

The private practitioner is on trial. Can he or can he not aid in the creation of better public buildings? Thus far he seems not even trying.

Monday, July 24.—The Architects' Journal, London, throws a brick at the New York World's Fair: "On a site which was limited considering the number of exhibits, the Beaux Arts' layout has obviously had disadvantages. . . . In Europe the Beaux Arts plan has been long considered unsuitable for an international exhibition. New York proves it, and transfers architectural interest to the individual buildings."

Which probably, if it came to the notice of the Advisory Board of Design, brought threats of apoplexy. For if there was one thing avoided above all else in planning the Flushing meadows site, it was the im-

position of a preconceived pattern. The Fair plan took form inevitably from needs and limitations of the problem-as inevitably as an appendectomy follows the specialist's diagnosis of its need. Here was the need of bringing vast numbers of people together, keeping them circulating, avoiding congestion, and yet not attempting the impossible task of herding them in a fixed path. The latter consideration ruled out at the start all forms of what might be called the museum type of plan -whereby individuals are poured in at one end, kept in a channel and discharged at the other end. The New York World's Fair plan has a main axis, a mall on which to reorient oneself after devious meanderings, a vista nearly a mile long between two major elements. If these facts label it as a Beaux Arts plan, so be it.

Stenny Sc! Saylor

### \*

Washington, Thursday, July 27.—After walking around the Department of Justice Building it seems to me that inscriptions wherein the thought is continuous but the lettering is not, are dangerous things. One looks up at the building to find the words

FRAMED THROUGH

MUTUAL CONFIDENCE

This is mildly disturbing, though the next ones seem fair enough:

SANCTIONED BY THE

LIGHT OF REASON

However, turning the corner, one is told that

NO FREE GOVERNMENT

CAN SURVIVE THAT

Just what the inscriptions are trying to prove is rather nebulous until one comes to the next one:

IS NOT BASED ON THE

SUPREMACY OF THE LAW

I felt tempted to retrace my steps and start from the beginning, but it was a hot afternoon.

Friday, July 28.—Malvina Hoffman, that indefatigable producer of fine sculpture, has not been content with merely creating it, but is now showing to as much of the world as happens to be interested how it is done. Went down to her studio today to find that she has put on an exhibition of techniques that would be a credit to any large museum. Not one of these, so far as I know, has attempted anything so comprehensive. The studio is officially closed for the summer, but will open again in the fall, and continue showing to classes of students, other sculptors, and the interested lay public, all the mysterious processes that lie behind finished sculpture: the lost wax method of casting bronze; molding and firing terra cotta; striking medals; molding glass; all the tools used in wood carving; the intricate apparatus used in reproducing from a clay model at any desired scale. It is a broad education in the amazing intricacies of sculptural processes.

\*

Saturday, July 29.-The bathtub, long maligned as the most prolific source of accidents in the home, has been acquitted. Researchers of the National Safety Council have an insatiable curiosity about these things, and their last findings grew out of a study of 4,600 home accidents occuring in Chicago. They charge stairs and steps with 23 per cent of these accidents. Next comes the yard with 19 per cent, then the kitchen with 18 per cent, followed by 9 per cent in the living room, 7 per cent on the porch, 7 per cent in the bedrooms, 6 per cent in the basement. The remaining 11 per cent occurs in dining room, bathroom, pantry, vestibule, and halls.

Monday. July 31.—The fifty-foot English elms planted in front of Rockefeller Center in March look as if they had been dieting—a bit thin and peaked. Yet I am told that they have made a growth, in spite of a prolonged drought, of six to eight inches. The Sixth Avenue Association has cast envious eyes in their direction, and is talking of establishing a border of trees along their de-eled thoroughfare. New York City, in spite of Frank Lloyd Wright, may eventually justify its existence.

Wednesday, August 2.—Are we seeing the end of the country estate era? Otto Kahn's French chateau at Huntington has become a refuge for Sanitation Department employees; Viscount Astor is considering closing, as an economy measure, Cliveden on the Thames in Buckinghamshire. The original Cliveden, built by George Villiers, Duke of Buckingham, burned in 1849, when the Duke of Sutherland was its owner. He built the existing house from the designs of Fairchild Barry and it came into the Astor family when Viscount Astor's father purchased it in 1893 from the late Duke of Westminster.

Thursday, August 3.—Contracts for new buildings are not so plentiful at the moment that we can ignore one signed today for \$6.934,000. It provides for the construction of the Ida B. Wells Homes in Chicago, a low-rent housing project approved by USHA.

Saturday, August 5.—I am not sure just what good it would do to know this, but glass cracks at the rate of nearly a mile a second, according to high speed photographs made by Frederick Barstow, holder of a Fellowship at M.I.T. Sunday, August 6.—Publicity is a twoedged blade. In the case of the New York World's Fair one edge increased attendance, but the other has kept people away. Exaggerated stories of food expense and the failure of gate receipts to reach overly optimistic estimates may have been played up by newspapers whose interest lay in keeping readers from spending money outside of the home town. As to attendance, one significant fact seems to have been soft-pedalled: Chicago, from May 27 (its opening) to June 15 drew 1,312,152; New York for the same period drew 2,711,150. It's a big show and a good one.

\*

Monday, August 7.—There were snickers when the great flat roofs of some of our recent post offices were kept clear of superstructures for the purpose of making them landing platforms for the air mail. The snickers are fading, for with the aid of a special autogiro the Philadelphia Post Office is shuttling mail between the Camden airport and its own roof. The autogiro makes the six-mile flight in less than ten minutes; trucks take forty to fifty.

Tuesday, August 8.—Mr. Farley has announced his intention to issue postage stamps bearing portraits of Americans famous in fields other than statesmanship. He mentions sculptors, poets, authors, musicians, scientists, inventors, and educators. Architects seem to have slipped his mind in making up a list of possibilities. I nominate Charles Bulfinch.

Wednesday, August 9.- "Master specifications" is a subject that has beckoned many minds over many decades. In my first year as a cub draftsman I worked at the boss' elaborate card system, designed to make specification writing a pleasurable relaxation. Now and again I come upon an architect who believes-or at least says-he has achieved the goal. Just jots down a series of numbers on a pad and the typist does the rest. The trouble is that any such system has to be revised every time a specification is written. Like a building code, it is out of date the day after it is written. Nevertheless, the master specification still beckons. It beckoned the HOLC technicians in their reconditioning activities, and they answered the challenge. Pierre Blouke sends me a copy of the third edition of "Master Specifications for Reconditioning," a printed booklet of 246 pages. Five or six years of use have ironed out most of the kinks and have brought about an efficient working tool. A contract for reconditioning-perhaps including considerable new construction-makes clear on its own condensed form just what is to be done and how, by reference to numbered paragraphs and a few individual notes. There's a pattern here for the architectural groups who would furnish a limited service in small house design and supervision. If for sale, which it is not, the book should be an architectural best seller. It necessarily covers a wide field in the geographical variations of building techniques; in it I found how to specify adobe walls, how not only to anticipate the termite but to undo his depredations, how to call for a mechanical stoker without mentioning trade names, and many other such specification nuggets.

Friday, August 11.—I wonder how many architects on both sides of the water have realized that the past two years have seen two presidents, of A.I.A. and R.I.B.A., who have been outstandingly vocal. It is by no means a thing to be taken for granted that the presidents of our societies shall be men who think and also speak well. Since 1937 we have had, in Maginnis and Goodhart-Rendel, men who are scholars, philosophers mellow with humor, and eloquent speakers. Certain words of both should go down in history:

### MAGINNIS:

"It is perhaps the single weakness of steel that, with all its thrilling capacities, it cannot make for interesting ruins."

"... The cold narrative of Ferguson which always left the impression that a traditional architectural system, finding itself in a predicament, meekly acknowledged its invalidity and gave up the ghost."

"Architecture in its readjustment with the past has merely cast aside the trappings of tradition for a space, to sit contemplatingly in its skin."

GOODHART-RENDEL:

"There are probably quite enough Ionic and Corinthian columns in England to last us for a long time."

He deprecates "the kind of originality that has no origin," and "architectural nudism."

"If the architectural students of today do not change before they become the architects of tomorrow, the man who wants a house planned for him will soon have to look out if he is not to have his life planned, his dietary prescribed, his clothing overhauled, and his habits severely criticized, as well. Architecture, too long divorced from sociology, is now in danger of becoming exaggeratedly sociological."

\*

Monday, August 14.—Lost, a pair of windows. They happen to be thirteenth-century windows filled with stained glass, and they were temporarily removed from the Ursulines Chapel in a chateau at Rouen, France, early last April. Carefully packed in cotton wool, they were shipped from Paris to be shown at the New York World's Fair, and since that time they seem to have disappeared from the earth.

*Tuesday*, *August 15.*—The U. S. is not the only country facing a shortage of dwelling units. Germany, as you may have noticed, has been building armament instead of homes, and now finds herself short 3,000,-000 units.

# PRODUCTS AND PRACTICE

Last month THE FORUM published the first of two articles, on architectural acoustics, a series designed to show the profound effects of recent advances in this field on contemporary design. This article was devoted largely to the theoretical background of the subject: the nature of sound, design criteria, principles governing sound conservation and dispersion, absorption materials, and so forth. This month's article shows how these principles have been applied under widely varying conditions in actual current practice.

For the examples shown, and for detailed analyses of the factors determining the chosen acoustical design in each instance, THE FORUM is indebted to C. C. Potwin, acoustical consultant for Electrical Research Products, Inc., of New York. Mr. Potwin, one of the country's foremost authorities on acoustical correction, is also a leading exponent of the position that good acoustics may best be achieved in new work primarily by way of functional design rather than by relying solely on corrective materials. For this reason, his approach to acoustical problems should be especially interesting to architects and others whose greatest concern is with the fundamentals of shape and proportion.

### ARCHITECTURAL ACOUSTICS: 2

It is no exaggeration to say that the application of acoustical science to architecture has advanced further in the past ten years than in the preceding ten thousand. A pat explanation for this is that the functional approach to design has freed the architect from tradition-dictated forms unsuited to modern purposes. True as far as it goes, this explanation neglects much that is pertinent: it fails to say among other things—why traditional forms, *per se*, hamper the development of good acoustics; also, it fails to take into account the fact that as much of this development has taken place in existing, traditional buildings such as cinemas converted for sound as in weirdly-shaped broadcasting studios and Hollywood sound stages.

Actually, the ancients took a beating on acoustics because they were licked at the start by a purely fortuitous combination of circumstances, and our grandfathers ran afoul of the echo more because of their propensity for the grandiose than through any lack of originality. Masonry con-



Voder Room, A.T.&T. Building, New York World's Fair 1939: acoustically perfect despite its circular plan. Description next page.

struction, calling as it did for prime acoustical offenders like vaults and domes, left little choice in such matters before the advent of steel. And the robust Nineties were more concerned with creating sheer awe-inspiring space than with tradition or the problems of the singer who was asked to fill their vast halls with sound—an error which even the functionalists have shown a tendency to repeat.

Thus while it is true that functional design in its highest form is the application of science to building, it is rather early for the modern style to claim credit for the remarkable acoustical advances of the past few years. Rather, credit belongs with the sound-cinema and radio broadcasting studio whose exacting requirements have forced the trend, often *despite* architecture of every type. Indications are, however, that this situation is about to be reversed, and that the architect is now in a position to make a major contribution.



VODER ROOM, A. T. & T. BUILDING; N. Y. WORLD'S FAIR 1939 Voorhees, Walker, Foley & Smith, Architects



Next to a room with a dome, a circular room is about the worst possible shape from the acoustical standpoint. Despite this fact, it was selected for the presentation of "Voder"—the mechanical voice—at the New York World's Fair 1939 because it was visually ideal for the purpose and because modern absorption materials plus detailed re-shaping of the room surfaces were felt to be capable of correcting this inherent defect. Convexed, tilted wall panels to disperse reflections and direct them over the heads of the auditors, tilted windows and balcony rail, and scattered absorption panels arranged as shown by dotted areas in the diagram above, justified this belief by producing a room which Bell Telephone engineers pronounced as nearly acoustically perfect as any they have worked in.



In sharp contrast to the Voder Room (above), the shape of the New Kleinhans Music Hall is the result of close collaboration between the architects and their acoustical consultant\* in an effort to arrive at a scheme as nearly ideal for its acoustical purpose as could be devised. Even the balcony, usually a questionable feature because of its tendency to "blanket" the rear seats on the first floor, has been worked out actually to improve sound-reception at this point, by supplying needed reflections from a ceiling sloped up toward the orchestra. Stage and auditorium have been designed as a single unit, with the sidewall splays and convexly curved rear wall of the stage designed to direct first reflections of sound uniformly to the audience area. The stage ceiling is designed partially to direct and partially disperse the sound. All surfaces are constructed of heavy plywood with irregular bracing to assure uniform resonance. Walls and ceiling of the auditorium are shaped and treated to disperse and absorb sound with a small amount of absorption material distributed non-uniformly in panels of various sizes.

\* Acoustical consultants for all of the illustrated projects, Electrical Research Products, Inc.



NEW KLEINHANS MUSIC HALL, BUFFALO, N. Y.

Prior to the appearance of sound-on-film, acoustical correction was usually confined to belated attempts to compensate for gross errors in design through the use of crude absorption materials such as draperies. In the hectic days of 1928, when motion-picture exhibitors all over the country were installing sound apparatus in theaters of every conceivable shape and size, it was natural for acoustical engineers to concentrate their attention, first of all, on the development of improved corrective materials.

With the gradual perfection of this *corrective* technique, there was a tendency to rely almost entirely on absorption materials, and, for a time at least, little was done to improve the basic acoustical design of most structures—to employ a *constructive* approach. More recently, however, it has begun to be generally recognized that there are at least four excellent reasons why the latter method is much to be preferred: 1) data are now available which make it an easy matter to design for good acoustics, 2) appreciably better results can be obtained in this way, 3) it gives the architect greater freedom in selecting finish materials, and 4) it is more economical all along the line.

It is thus squarely up to the architect to familiarize himself with the constructive approach if only in order to save his clients money. Fortunately, from his point of view, this is a fairly easy matter; and, far from involving basic compromise with any of the other factors—esthetic or practical—which control design, fits in remarkably well with current trends.

### **RULES OF THUMB**

The two factors fundamental to functional acoustic planning are *shape* and *volume*. The rules which govern these two fundamentals are exceedingly simple; moreover, in almost every instance in which acoustics is likely to be a critical factor, they may be followed with little restriction on architectural ingenuity.

**Shape** is controlled by about the same laws which architects have traditionally employed for best visual effect: rooms and auditoria which are "good" acoustically generally have proportions of width to length falling somewhere between the limits of 1:1.4 and 1:2, assuming the source of sound to be from one of the narrow ends. In rooms where the length is greater than twice the width, difficulties are likely to arise from sound reflections between the side-walls. In squarish rooms (especially auditoria) which are shorter than 1.4 times the width, it is difficult to distribute the sound properly to all parts of the room.

In rooms with non-parallel walls and irregular outlines, this rule may be applied to the average width and length, bearing in mind the function of the sidewalls in forcing the sound back into the room and the importance of minimizing reflections from overlylarge rear walls.

Shape in the sense of vertical cross-section is largely controlled by desirable volume. It is thus dependent upon the proportions of the plan and cannot be stated as a fixed proportion to width



or length. Excessively high rooms are always to be avoided from the acoustical standpoint, and in most large rooms, such as auditoria, ceiling heights should be kept to the minimum consistent with visual and esthetic requirements.

**Volume** has only recently come to be assigned its true importance in the problem of designing for good acoustics. In reference to large rooms such as auditoria, theaters, and music halls, the importance of this factor cannot be overstated. Excessive volume (per unit of floor area or per seat) has—with concaved curves such as domes and vaults—long been the cause of most acoustical problems arising in such rooms, and in new work where these forms are largely avoided it is the underlying reason for most of REFLECTOR, SEVERANCE HALL, CLEVELAND, OHIO Designers, Electrical Research Products, Inc.



The mistake of employing concave shapes, such as half-domes, as orchestra sound-reflectors has been repeated so often that it is almost standard practice. It is bad because such surfaces tend to concentrate sound at definite points at or near the center of curvature, and produce marked "spottiness." Reflectors should be made up from flat or convexed panels arranged for uniform reflection as in the example above, planned by acoustical engineers for the Cleveland Symphony Orchestra.

UNITED ARTISTS REVIEW ROOM, NEW YORK, N. Y. Ben Schlanger, Architect.



Photos, Monroe Carrington



Big sound in a small room is likely to sound rather strange unless special precautions are taken to avoid this effect. In this example, a relatively small room used exclusively for reviewing sound pictures, an effort has therefore been made to simulate full-sized theater conditions, by non-parallel and tilted walls and broken surfaces to control light and disperse high-frequency sound reflections. Picture at left shows detail of wall treatment, with tilted upper and lower portions. NORMANDIE THEATER, NEW YORK, N. Y. Rosario Candela, Architect Ben Schlanger, Associate



Typical of the small, up-to-the-minute motion picture theater designed for sound, the Normandie (above and below) also represents best practice in acoustical design for this class of work. Wall and ceiling areas are segmentally splayed and shaped to diffuse sound reflections and direct them towards absorbent areas, are also used in the decorative lighting scheme. Sound absorbing material is used on the rear wall only to eliminate direct reflection. Principal absorbents, however, are the highly efficient seats and carpet, giving the theater the same acoustical characteristics regardless of the size of the audience.



the acoustical difficulty. In fact, it can almost be stated categorically that the greatest contribution which architects can make to better practice acoustics is to work out ways in which volume can be reduced to a minimum without sacrifice of visual effect and the sense of space desirable in rooms of this type. The optimum volume for a motion-picture theater of medium size under average conditions\* lies between 120 and 130 cu. ft. per seat. A recent study of 100 such existing theaters showed that in the majority of cases volume was 145 cu. ft. per seat or more, while in almost one fifth it was 175 cu. ft. or larger.

Optimum volume-per-seat varies with the purpose and capacity of the auditorium. As the desirable time of reverberation goes up as in auditoria intended for organ, symphony, and opera—volume may be increased somewhat above the figure for sound picture theaters. As the desirable reverberation time goes down—as in auditoria planned for speech only—it should be decreased accord ingly. It is, however, important to avoid excessively low ceilings because of their tendency to "cramp" sound and bring first reflections too close to the auditors' heads.

### ABSORPTION MATERIALS

The emphasis on shape and volume in the foregoing is not intended to imply that the use of absorption materials will not continue to play an important part in the solution of acoustical problems. Rather, it is intended to show where the architect can make the greatest contribution, leaving the question of the final shaping and disposition of absorption materials in the hands of the acoustical engineer, where it properly belongs—while at the same time underscoring the fact that the use of such materials can be reduced to a minimum if proper attention is given to the acoustical factor when determining basic design.

Recent work along these lines has revealed that in addition to saving money, this approach gives improved overall results. Scattered, nonsymmetrical absorption and dispersion areas which leave some areas of sound reflection in all parts of a room give it more "life" acoustically and obviate the effects of overcorrection and spottiness often present in rooms with large, uniform absorption areas. The design problem which such scattered areas of absorption material presents is one calling for close cooperation between the architect and his acoustical consultant.

With the widespread use of absorption materials characteristic of the past several years, there has been a tendency downwards in what are regarded as the best times of reverberation for various types of rooms. As acoustical designs are gradually refined, however, there is every indication that this trend will be reversed, and that desirable times can probably be somewhat increased. The chart below has been prepared with this in mind, and represents values slightly higher than were regarded as ideal in the recent past.

\* Actually, a 900 seat theater with seating equivalent in absorption to two-thirds that of an average person per seat.



Desirable times of reverberation for various kinds of sound presentation in various size rooms, frequency 512 c.p.s. (average). Times should be reasonably uniform for other frequencies, especially in broadcasting, sound recording, and lecture rooms, increasing slightly at low frequencies with increase in room volume.

# BUILDING MONEY

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# FIRST AID FOR THE HOME OWNER

### is administered by thirteen States. Medicine: homestead tax exemption. The patient recovers \$50 million a year and Government gets a headache.

N INETEEN hundred and thirty-three was the country's blackest year for home ownership: 252,400 homes were foreclosed, only 40,000 were built. But it was also the year that two States boldly undertook both to help the owner hold his home and to encourage new home construction by exempting owned homes from taxation. Since then, this tax exemption has blossomed out in eleven more States, has been seriously considered in 21 others. And, because it is tacitly favored by the Nation's 14 million home owners, it keeps popping up every year for reconsideration, even in the U.S. Congress. This spring Senator Morris Sheppard of Texas resubmitted his favorite Constitutional Amendment that would exempt from taxation \$5,000 worth of every owned home. The proposal was shelved, but it gives full evidence of the movement afoot to lighten the home owner's tax burden.

Popularly titled "homestead tax exemption" (in modern parlance a homestead is any owner-occupied home), this movement affects not only the status of U. S. home ownership but also the revenue of State and local government. To the home owner, who pays an average annual property tax of \$27 for every \$1,000 of home value, it can mean a reduction in costs greater than his annual heating bill. To the thirteen States and their many local governments, it means a good \$50 million loss of tax revenue every year.

Such a reduction of income hits the States themselves only a glancing blow, for they derive but from 5 to 10 per cent of their income from property taxes (see chart, below). But it hits the local governments—made up of counties, towns, cities and school districts—squarely on the chin. They depend almost entirely on the property tax for revenue, can ill afford to lose any of it.

Thus, on the *pro* side of the scales are the benefits of homestead tax exemption to the home owner, and on the *con* side are its effects on tax revenue. The latter side is helped a bit by the fact that homestead exemption is aimed specifically at home owners and thus discriminates against tenants, but in general those two main points determine the balance of the scale, and hence are the principal basis

### SOURCES OF U.S. TAX REVENUE



for argument about the movement's merits. In the past, that balance has depended more on wishful thinking than on facts. Today, however, with a background of several years of operation, a good measure of those facts are available.

THE ARCHITECTURAL FORUM herewith presents homestead tax exemption's pros and cons, shows its effect in the thirteen "original" States on tax revenue, home owners, tenants and new construction, and dissects the State of Oklahoma to show in detail what happens under a homestead tax exemption law (page 208).

**Precedents.** In the name of public welfare, politicians have long played favorites with certain limited groups of property owners. Educational, charitable and religious institutions are generally exempt from property taxes, and some localities even attempt to attract new industries by exempting them from taxation for limited periods. As widespread home ownership is also considered for the public welfare, homestead tax exemption has a well-established historical precedent.

More direct precedents, however, are the laws passed by a few States to foster new home construction. For example, Vermont passed a law in 1917 that permits local taxing districts to exempt newly built homes from taxes for a period of five years. In 1929 this law was amended to include all dwellings, old or new, but, as it applies to both owner occupied and tenant occupied property, it is not strictly homestead exemption, misses many of the consequences of giving owners preferential treatment over tenants.

Texas and West Virginia ran neck-andneck as pioneers of the homestead exemption movement, for the laws of both were passed in November 1932, were made effective in 1933. Right on their heels came Mississippi in 1934, then Louisiana and Florida in 1935, and Alabama in 1936. But 1937 was the movement's big year, as six States—Arkansas, Iowa, Minnesota, Oklahoma, South Dakota, and Wyoming—adopted tax exemption. Last year only one State, Georgia, entered the list, while Mississippi and Louisiana both expanded the provisions of their homestead laws.

So far this year, no new States have been added, although at least 10 States have considered and rejected homestead exemption laws. North Carolina and Utah have permissive constitutional amendments, but as yet no activating laws.

The Laws. Because provisions of the thirteen State homestead tax exemption laws were conditioned by local needs, policies and politics, they are far from uniform. Hence, a direct comparison of the effects of homestead tax exemption is usually impossible, always difficult. However, the laws have several broad provisions in common. They limit the value and area of homesteads covered by the exemptions and define the taxes from which those homesteads are exempt—for full details see the digest on the facing page.

Reflecting the aims of the law makers to aid the small home owner in preference to the large one, and at the same time to minimize the State's potential tax loss, all the States except South Dakota and West Virginia set specific limits to the amount of exemption. Simplest method of limit-setting is to free a definite amount of assessed home value from taxation. A majority of the States take that easy

#### EFFECT OF VARYING THE AMOUNT OF HOMESTEAD TAX EXEMPTION



way, exempting from \$500 to as much as \$5,000 of a homestead's assessed value.

In Minnesota, however, homesteads are assessed for taxation at a lower proportion of true value than non-homestead property, while in West Virginia and Iowa homesteads are taxed at a lower rate than other property.

In many a State, limits on homestead area serve to keep large owner-occupied homes outside the exemption laws. Those area limits range from one-half acre of urban property to 200 rural acres.

In addition to value and area limits the laws are fairly definite in restricting tax exemption to owner-occupied property, but many a border-line case has not been properly provided for. This is particularly true where part of a homestead is used for business purposes, as a store or farm. West Virginia passes on a farm. vetoes a store. South Dakota and Iowa permit home shops, although the latter limits their value to a paltry \$300. Most equitable policy is that followed by Oklahoma where valuations are split between home and business and taxed accordingly. but as a result, the assessor's headache is doubled. Usually, however, the fine dividing line between home and business is left up to the attorneys general who base their opinions on court decisions, prior opinions, etc.

As a fourth and final limit, the homestead laws define the State and local taxes from which the homesteads are exempt. Four of the States offer only their State taxes for exemption, make all homesteads pay the local taxes. Hence they are little different from the eleven States that have no State property tax at all. Three States, Georgia, Mississippi and Louisiana, go a little further and provide exemption from all State and some local taxes. The six remaining States—Florida, Oklahoma, Wyoming, Iowa, Minnesota and West Virginia —are the only ones that go the whole hog and give homesteads complete exemption.

Effect on Taxes. Biggest body of evidence as to the effect of homestead tax exemption concerns the loss of State and local revenue. Hence the opponents of the movement, faced by a sizable army of proponents in the form of home owners, make up with ammunition what they lack in numbers.

They have the proof—charted above that homestead exemption reduces property assessments, and thus tax revenue, by as much as 22 per cent. The chart, covering eleven of the thirteen States, shows the striking variation in assessment loss from a low of 3 per cent in Wyoming to Minnesota's 22 per cent high. Nonetheless, it tells only a fraction of the story, for the wide variations in assessment loss between the States mirror equally great variations within the confines of any one of them. In Lancaster County, Nebraska<sup>\*</sup>, for

\* Nebraska has no homestead law; figures are based on a survey of the potential effects of tax exemption.

### EFFECT OF HOMESTEAD TAX EXEMPTION ON ASSESSED VALUES



<sup>1</sup> Taxable personal property included with taxable real property.

2 Based on true value, not assessed value; public utilities taxed on gross earnings, not property value.

<sup>3</sup>Taxable personal property excludes intangibles and personal property used in agriculture.

example, a \$1,000 exemption would mean a 5 per cent assessment loss in rural school districts, and a 10 per cent loss in city school districts, while a \$5,000 exemption would reduce assessments by 21 per cent in village school districts and 23 per cent in the urban ones (see chart, left). A major cause of these local variations is the difference in average value between urban and rural homes. When the exemption is small, areas with the lowest average homestead values are hardest hit, but when the exemption is large it more nearly covers all homestead values, thus tends to equalize the reduction of assessments.

Generally, schools tend to be hardest hit by tax exemption because they lean most heavily on the property tax-in contrast to towns and counties which often have secondary income sources. This may not be self-evident in terms of percentage revenue loss, but it is in terms of dollars. Thus, the average loss of tax revenue by Oklahoma schools was slightly below the State average. But as schools get 55 per cent of the total property tax income, their loss is serious and demands some form of replacement. The possibility that such replacement might not be made is the basis for a major criticism of homestead exemption.

Rather than tighten their belts, most States hunt about for ways and means of making up the tax loss due to home-(Continued on page 34)

DIGE		517	ATE HOMESTEAD	TAA EAEMPT	IUN LAWS		
STATE	YEAR	LAW1	PROPERTY E	TAXES AFFECTED			
	EFFECTIVE		VALUE LIMIT	AREA LIMIT	TAXES AFFECTED		
	1936	Stat.	First \$2,000 of assessed value (\$3,333 true value)	160 acres	All State.		
ARKANSAS	1937	Con.	First \$1,000 of assessed value (\$2,000 true value—ratio set by corporation commission). Legislature has power to increase exemption to \$2,500 assessed value.	None	All State.		
FLORIDA	1935	Con.	First \$5,000 of assessed value.	Rural: 160 acres. Urban: one- half acre.	All State and local except for local debt service and special benefits.		
GEORGIA	1938	Con.	First \$2,000 of assessed value. If fiscal conditions of State, counties, or schools warrant, may be reduced to \$1,250.	None	State, county and school district except for prior debt service.		
IOWA	1937	Stat.	PREFERENTIAL TAX RATE: First \$2,500 of assessed value taxed 25 mills less than general real property rate. Preference may be less, depending upon ratio of total ex- empi assessed value to funds in "Home- stead Credit Fund." Owner equity must be at least 10%.	Rural: 40 acres. Urban: one- half acre if homestead is as- sessed at more than \$2,500.	e- All State and local. Is-		
LOUISIANA	1935	Con.	Up to \$2,000 of true value. Varied ac- cording to size of "Property Tax Relief Fund".	160 acres	State, parish, special dis- tricts, and city of New Orleans		
	1939	Stat.	Newly constructed or improved home- steads tax exempt for three years. Must be built at prevailing wages, and Amer- ican-made materials used.	None	All State and local.		
MINNESOTA	1937 1937	Stat. Stat.	PREFERENTIAL ASSESSMENT: Rural: First \$4,000 true value assessed at three- fifths of general property level. Urban: First \$4,000 true value assessed at five- eighths of general property level. EXEMPTION: Rural: First \$800 of as- sessed value (\$4,000 true value). Urban: First \$1,000 assessed value (\$4,000 true	None	State, for prior debt serv- ice and all local. State, except for prior debt service.		
MISSISSIPPI	1934- 1938	Stat.	First \$5,000 of assessed value.	Rural: Farming, 160 acres; non- farming, 5 acres. Urban: prop- erty contiguous.	State, county, road dis- trict and school district.		
OKLAHOMA	1937	Stat.	First \$1,000 of assessed value. May be increased, but once established cannot be decreased for 20 years.	Rural: 160 acres. Urban: one acre.	All State and local except for local debt service.		
SOUTH DAKOTA	1937	Stat.	None.	Rural: 160 acres. Urban: one acre, property contiguous.	All State.		
TEXAS	1933	Con.	First \$3,000 of assessed value.	200 acres	All State.		
WEST VIRGINIA	1933	Con.	PREFERENTIAL TAX RATE: Rural: total value taxed at two-thirds of general real property rate. Applies to tenant occupied as well as owner-occupied farms. Urban: total value taxed at one-half of general real property rate.	None	All State and local. Levies for prior debt service im- posed at one-half regu- lar rate.		
WYOMING	1937	Stat.	First \$500 of assessed value. Replacement revenue provided by "Homestead Prop- erty Exemption Fund."	None	All State and local.		
NORTH CAROLINA <sup>2</sup>	1936	Con.	No more than \$1,000 assessed value.		All State and local.		
UTAH <sup>2</sup>	1936	Con.	No more than \$2,000 assessed value.		All State and local,		

SOURCES: National Association of Assessing Officials. "Exemption and Preferential Taxation of Homesteads", Bul. #20. Federal Home Loan Bank Review, Oct. 1937. "Tax Systems of the World", Seventh Edition, 1938.
<sup>1</sup> When a State constitution does not explicitly require homestead exemption, or when the amount of the exemption is at the discretion of the legislature, the law is designated as statutory (STAT.). Otherwise it is Constitutional (CON.).
<sup>2</sup> Constitutional amendments passed, but not self-executing. Action of legislature needed to make effective.



OKLAHOMA

symbolizes the efforts of Government to foster home ownership, for the famous land rush of 1889 took place there. Decorating every American history book is the picture of land-hungry settlers lined up in Oklahoma territory for the race to stake out a homestead. That

picture forms a backdrop for all later attempts by the law makers to help citizens get and hold a stake in the land, and particularly for Oklahoma's own homestead tax exemption law, adopted in 1936.

In that year the State legislature passed a bill providing \$1,000 of exemption for owner-occupied properties of no greater area than 160 rural acres or one urban acre. First effective for the 1937-38 fiscal year, that exemption relieved the tax burdens of 171,000 home owners out of the State's total of 225,000 owners.

To measure the consequences of such tax relief and to show its effect on the State's tax structure, the Oklahoma Tax Commission has been tabs-keeping the past two years. The body of information it has collected is a revealing record of the effects of homestead tax exemption. Hence THE FORUM'S choice of that State as a guinea pig.

As the State of Oklahoma has no property tax, the direct effects of the homestead law have been felt only by the three local taxing jurisdictions—county, municipal, and school district. Single fact that stands head and shoulders above all others in the reports of the Oklahoma Tax Commission is the unequal effect of the \$1,000 exemption on those local jurisdictions. The exemption has shoved their assessed value tax base and tax income around in explicable but unexpected ways.

Taxes. In 1938 homestead tax exemption chopped 61.3 per cent of assessed home values from the tax rolls, crossed out \$120 million (9.8 per cent) of the State's \$1,224 million assessment total. Not crippling as a State average, that reduction of the tax base has, nonetheless, hit the assessments of many a county a stunning blow-given in a county-by-county report in the map on this page. Washita County in southwestern Oklahoma, with a 16.5 per cent reduction in assessments, was the heaviest loser. Reason: the ratio of home assessments to total assessments is high. Osage County, on the other hand, lost only 3.8 per cent of assessments as much of its valuation is personal and public service corporation property, Also, rural home-

steads are used for grazing and average 440 acres in area —far beyond the 160-acre legal limit of the exemption law.

Such reductions in the tax base would logically result in comparable reductions in tax income, but the tax-takers were not to be caught napping. For the 1937-38 fiscal year—the first year homestead exemption was in effect—they upped the tax rate 13.7 per cent over 1936-37. Result: Tax income, instead of falling, rose 2.45 per cent. This action on the part of the local taxing bodies arose from necessity. Their financial requirements forced them to shift the burden to those not exempt by increasing the tax rate, and they overshot the mark a bit.

Biggest share of those increased tax returns went to the counties, second biggest to the schools. The latter, however, received a special \$1.8 million appropriation from the State, provided for in the homestead act to cover their expected loss of revenue. Municipalities, on the other hand, took a trimming with a 27.9 per cent drop in revenue. Reason for this inequality lies in the fact that Oklahoma's tax rate is apportioned by county excise boards, and municipalities 1) have less pull with them and 2) can make up the tax loss more easily than counties and schools.

The effect of homestead exemption on the State itself follows principally from the present necessity of helping schools and the potential necessity of helping the other local bodies as well. With a State deficit for 1937-38 of \$8 million, Oklahoma does not look forward to doing either.

Home Ownership. In 1937, 171,000 homesteads were granted exemption out of a total of 225,226 owned homes (assessments of that year were the basis of the 1937-38 tax). In 1938 that number rose 6 per cent to 181,000. Reasons: 1) the registration of home owners who failed to do so the first year, 2) the normal increase in ownership, 3) homestead exemption.

ASSESSMENT LOSS OF OKLAHOMA COUNTIES



The city dweller and the farmer did not benefit equally from Oklahoma's homestead tax exemption law because of the difference in the value of their homes. The average rural homestead was assessed at \$1,364, contained 102.2 acres. The average urban homestead was assessed at only \$940. As a consequence, the farmers received exemptions averaging \$778 apiece, while each urbanite had the assessed value of his home reduced by only \$672. The urbanites, however, accounted for 62.8 per cent of homestead tax exemption's beneficiaries.

### **EFFECT OF HOMESTEAD TAX EXEMPTION IN OKLAHOMA\***

(\$000 omitted from amounts)

	and the second sec	Percentage Tax Reduction					Ratio:		Homesteads		Per cent	
	Total	1 croom	age tan					-Real to	Tax Rate (mills)	A Number Exempt	Average Assessed Value <sup>2</sup>	of d Home Ownership
	Property Tax <sup>1</sup>	\$500 Exemp.	\$1,000 Exemp.	\$1,500 Exemp.	\$2,000 Exemp.	\$2,500 Exemp.	Complete Exemp.	Total Property				
Counties	\$8,595	6.3%	10.1%	12.4%	13.8%	14.7%	16.8%					
Cities and Towns	1,772	8.3%	12.9%	15.5%	17.0%	18.0%	20.9%	71.4%		102,076	\$ 965	43.0%
School Districts	12,667	6.4%	10.3%	12.5%	13.9%	14.7%	16.8%					
State Total	23,034	6.5%	10.4%	12.7%	14.1%	15.0%	17.1%	61.0%		181,164	1,156	39.9%
Cities and towns:			-									
Oklahoma City (185,000 pop.	355	5.6%	9.7%	12.6%	14.2%	15.2%	17.9%	74.1%	3.2	13,137	1,505	37.6%
Tulsa (141.000 pop.)	501	4.7%	8.3%	10.8%	12.5%	13.5%	18.9%	76.5%	4.9	10,548	1,816	37.5%
25.000-100.000 pop. (avg.)	92	8.3%	14.1%	17.4%	19.2%	20.2%	22.4%	72.1%	5.8	2,933	1,209	48.3%
10.000- 25.000 pop. (avg.)	27	9.9%	16.2%	19.5%	21.2%	22.1%	24.1%	70.0%	4.5	1,280	1,042	42.6%
5,000- 10,000 pop. (avg.)	9	11.1%	17.0%	19.5%	20.6%	21.3%	22.6%	70.2%	3.7	617	921	45.1%
2,500- 5,000 pop. (avg.)	4	13.0%	18.6%	20.5%	21.2%	21.6%	22.1%	69.5%	3.7	345	726	49.3%

\* Estimates made by Oklahoma Tax Commission prior to adoption of homestead exemption law.

1 Excludes property taxes levied to retire prior debts, which all homesteads have to pay, regardless of exemption.

2 Average Oklahoma assessments are 50 per cent of full value.

### **HENRY FORD BUILDS**

### with traditional tools, design.

If any name stands for mass production and a low cost product it is Henry Ford. Consequently, rife have been the speculations as to what would happen should Ford enter Building, and many have been the rumors that he planned to do so. Today, those rumors have indirectly become fact, for the Ford Foundation has turned subdivider on a 1,069-acre tract two miles from Dearborn, Michigan. Immediate plans, in two parts, call for both singlefamily houses and apartment buildings. Part one, now under construction, will include 111 houses and 203 apartments. Part two will have 117 houses and 158 apartment quarters.

But hopes that the name of Ford would carry its production magic into building are doomed to disappointment. The Ford subdivision (name: Springwells Park) has no more the stamp of a factory than nearby Greenfield Village, Ford's townsize collection of Americana.

Most noteworthy feature of the development is its land planning. The single house lots (minimum size: 50 x 120 ft.) are platted around cul de sacs, are backed up by an interior block park. Eighty per cent of the apartment area is devoted to parks, and, in addition,  $7\frac{1}{2}$  acres have been set aside for a future school. The development will also include a shopping center.

As the land, which Henry Ford bequeathed to the Foundation in December 1937, is currently valued at only \$2,000 an acre, the 44 acres in the first part of the project capitalize at \$88,000. To that will be added construction costs of \$1,525,-000. Part two will cover 48 acres, and is expected to cost \$1.5 million.

Springwells Park is not low cost housing by many a dollar; sales prices of the single-family houses will range from \$5,500 to \$12,000; apartment rents, from \$35 to \$75 a month. Expectation is that occupants will be drawn from Detroit eight miles distant. If drawing power is good, Ford Foundation will not stop with plan two, but will expand Springwells Park until it houses some 16,000 families.





**One of many** is the house sketched above, for under the aegis of Ford Foundation's Staff Architect Fillmore Harty, plans are developed for 111 houses ranging in price from \$5,500 to \$12,000. Near the bottom of that price scale, this house may have its garage either built on, as shown, or unattached. Plot plan below represents part one of the project. Covering 44 acres, it uses only 4 per cent of Springwells Park's potential area. Lots may be purchased for \$700 to \$1,200. Panorama at the bottom shows one of the fifteen apartment buildings.









### CONSTRUCTION OUTLINE

FOUNDATION: Walls—8 in. hollow cinder block with solid masonry piers under steel beam. Cellar floor—4 in. gravel, building paper and concrete. Waterproofing—2 coats Ironite, Western Waterproofing Co.

STRUCTURE: Exterior walls—4 in. brick, 1 in. air space, or Johns-Manville asbestos shingle or siding; 30 lb. builders felt,  $1 \times 8$ in. dressed sheathing,  $2 \times 4$  in. studs, 4 in. Johns-Manville rock wool in stud space; inside—15 lb. builders felt, U. S. Gypsum Co. rock lath, brown coat and white coat plaster, wallpaper or paint. Floor construction— $2 \times 8$ and  $2 \times 10$  in. with diagonal  $1 \times 8$  in. dressed sheathing on both floors; sub-floor on first floor covered with 15 lb. builders' felt. Ceilings—rock lath and plaster.

ings—rock lath and plaster. INSULATION: Outside walls and attic floor —4 in. rock wool, Johns-Manville, Inc. Weatherstripping—Chamberlin Metal Weather Strip Co.

WINDOWS: Fenestra Simplex Fenwrought

steel casement and screens, Detroit Steel Products Co. Glass—double strength, quality B, Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: Main rooms-Meadow River clear plain white oak. Kitchen-linoleum. Bathrooms-Robertson Tile Co.

WALL COVERINGS: All rooms—washable wallpaper. Bathrooms—Robertson Tile Co. HARDWARE: Brass, P. & F. Corbin. KITCHEN EQUIPMENT: Range — Magic

KITCHEN EQUIPMENT: Range — Magic Chef, American Radiator Co. Refrigerator— Electrolux, Servel, Inc. Sink—Standard Sanitary Mfg. Co. Cabinets—Colonial Products Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—Miami Cabinet Div., Philip Carey Co.

HEATING AND AIR CONDITIONING: System includes heating, filtering, circulation and humidifying. Direct gas fired winter air conditioner with provision for summer circulation.—General Electric Co.

## **76 STANDARDIZE**

The address of many a Government dignitary, Massachusetts Avenue in Washington, D. C., serves one of the city's swankest residential sections. Fifteen minutes by automobile from the White House, it runs into the Montgomery County, Md. line which, since 1934, has been the scene of a one-man building boomlet. The man: Realtor-Builder Albert W. Walker. The boomlet: one subdivision of 150 houses, another of 50, a third one of 76 and still another as yet unborn.

In a price bracket lower than its predecessors, subdivision No. 3 is today the most noteworthy. Before its five- and six-room houses selling for \$5,450 and \$5,990 complete with lots were marketed, Washington home-seekers had difficulty finding anything but small bungalows in this price field. Called Green Acres, this subdivision is a logical sequel to Walker's two big-house ventures. Westmoreland Hills, his first, was primarily a lot project aimed at upper incomers; its houses have cost \$13,500 to \$40,000. To supply the next lower income group, Mr. Walker crossed Massachusetts Avenue, platted subdivision No. 2, dubbed it Westhaven. Here no individual lots were sold; all houses were Walker-built; all sold with land for \$10,000 to \$12,000.

Then in the summer of 1938 came Subdivision No. 3, separated from Westhaven by twenty acres of elementary school property. For two main reasons top house and lot price in Green Acres was held to \$5,990: 1) inquiries from home-seeking visitors to his other developments indicated that there was an active demand for housing at that price level (annual income of Washington's 140,000 Federal employes averages about \$2,100), and 2) FHA had recently been authorized to insure 90 per cent mortgages on houses and lots valued at \$6,000 and less.

Forthwith the project's 35 acres were divided into some 200 lots measuring either 50 x 100 ft. or 55 x 921/2 ft. Coworkers with Walker in Subdivisions Nos. 1 and 2, Architects Schreier & Patterson handled the Green Acres platting, then turned their attention to the design of two basic houses (one of five rooms, the other of six) which would lend themselves readily to variations in exterior treatment, fenestration and orientation. To minimize construction costs the architects let standard material sizes (joists, studs, rafters, and masonry units) dictate dimensions of the designs. Furthermore, the balloon frames were so detailed that either brick veneer or asbestos shingle siding could be applied without altering the structures.

Month ago, close to the subdivision's first birthday, 82 houses had been sold, 76 had been finished—53 five-roomers, 23 six-roomers. While 51 of the completed (Continued on page 38)

# OUSES KEYNOTE WASHINGTON'S ONE-MAN BOOMLET



FIRST FLOOR

BASEMENT

1



SIX-ROOM HOUSE-COST \$6,140 WITH PORCH.



FIVE-ROOM HOUSE-COST \$5,775 IN BRICK.





To minimize costs Architects Schreier and Patterson produced simple designs, Builder Walker repeated them. Green Acres' 82 sold houses are all based upon the plans above. Standardization and careful detailing permitted power-saw pre-cutting of all lumber and the easy interchange of bricks and asbestos shingles or siding as exterior finish.

# MONTHLY HOME OWNERSHIP COSTS

HOUSE	MAXIMUM	AMORTIZATION PERIOD IN YEARS										
& LOT	MORTGAGE	10	15	17	19	20	25					
	\$1,000	\$10.59	\$ 7.88	\$ 7.26	\$ 6.77	\$ 6.57	\$ 5.81					
\$3.000	2,700	28.59	21.28	19.60	18.28	17.74	15.69					
3,500	3,100	32.83	24.43	22.51	20.99	20.37	18.01					
4.000	3,600	38.12	28.37	26.14	24.37	23.65	20.92					
4,200	3,700	39.18	29.16	26.86	25.05	24.31	21.50					
4,400	3,900	41.30	30.73	28.31	26.40	25.62	22.66					
4,600	4,100	43.42	32.31	29.77	27.76	26.94	23.82					
4,800	4,300	45.54	33.88	31.22	29.11	28.25	24.98					
5,000	4,500	47.66	35.46	32.67	30.47	29.57	26.15					
5,200	4,600	48.71	36.25	33.40	31.14	30.22	26.73					
5,400	4,800	50.83	37.82	34.85	32.50	31.54	27.89					
5,600	5,000	52.95	39.40	36.30	33.85	32.85	29.05					
5,800	5,200	55.07	40.98	37.75	35.20	34.16	30.21					
6,000	5,400	57.19	42.55	39.20	36.56	35.48	31.37					
\$6 200	\$5.500	\$58.25	\$43.34	\$39.93	\$37.24	\$36.14						
\$0,200	5 700	60.36	44.97	41.38	38.59	37.45	1.0					
6,400	5,700	61.42	45 70	42 11	39.27	38.11	- 10					
6,600	5,000	62.54	47.78	43.56	40.62	39.42						
6,800	6,000	65.66	48.86	45.01	41.97	40.73	ŝ					
7,000	6,200	66.72	40.64	45 74	42.65	41.39	/ear					
7,200	6,500	60.72	51.22	47 19	44.01	42.71	01					
7,400	6,500	60.04	52.01	47.92	44.68	43.36	u					
7,600	6,600	72.01	52.01	49.37	46.04	44.68	tha					
7,800	7,000	74.12	55.16	50.82	47 39	45.99	lore					
8,000	7,000	74.15	55.05	51 55	48.07	46.65	of n					
8,200	7,100	75.19	57.57	53.00	49.47	47.96	us o					
8,400	7,300	77.51	50 21	53 72	50.10	48.62	terr					
8,600	7,400	00.10	50.90	55.18	51.45	49.93	for					
8,800	7,600	80.48	61.46	56.63	52.81	51.25	ble					
9,000	7,800	82.60	62.25	57.25	53.48	51.90	ig.					
9,200	7,900	05.00	62.23	58.81	54 84	53.22	e					
9,400	8,100	02.18	64.62	59 52	55 51	53.87	ss a					
9,600	8,200	00.04	66 10	60.98	56.87	55.19	9					
9,800	8,400	01.07	67.77	62.44	58.22	56.50	°					
10,000	8,600	91.07	07.77	02.44	50.24	50.50	\$5,40					
\$11,000	\$8,800	\$ 93.19	\$ 69.34	\$ 63.89	\$ 59.58	\$ 57.82	for					
12,000	9,600	101.66	75.65	69.70	64.99	63.07	ages					
13,000	10,400	110.14	81.95	75.50	70.41	68.33	ortg					
14,000	11,200	118.61	88.36	81.31	75.82	73.58	m					
15,000	12,000	127.08	94.56	87.12	81.24	78.84	Univ					
16,000	12,800	135.55	100.86	92.93	86.66	84.10						
17,000	13,600	144.02	107.17	98.74	92.08	89.35						
18,000	14,400	152.50	113.47	104.54	97.49	94.61						
19,000	15,200	160.97	119.78	110.35	102.90	99.86						
20,000	16,000	169.44	126.08	116.16	108.32	105.12						

### MONTHLY MORTGAGE COSTS

### EXPLANATION:

This tabulation shows the maximum FHAinsured mortgages which may be secured by houses and lots of various appraised values and the monthly cost of these mortgages over various periods of years.

To be eligible for FHA insurance, home mortgages must be written in multiples of \$100, must bear interest at  $4\frac{1}{2}$  per cent or less, must be amortized in monthly installments. Cost of such insurance is  $\frac{1}{2}$  of 1 per cent. Monthly payments shown include interest, repayment of principal and average insurance premium and are calculated to retire the entire mortgage by its maturity date.

Amount of these monthly payments is dependent upon the original principal amount of the mortgage and the term or duration of the mortgage. Both of these, in turn, are dependent upon the value of the property which secures the mortgage. Thus, houses and lot appraised by FHA at \$6,000 or less are eligible for FHA-insured mortgages whose principal amount may be as large as 90 per cent of appraised value and whose term may be as long as 25 years. Upper section of tabulation shows the largest mortgages which may secure houses and lots appraised at \$3,000 to \$6,000 and monthly payments required to retire these mortgages within various periods of years.

Houses and lots appraised at more than \$6,000 but not more than \$10,000 are eligible for FHA-insured mortgages whose principal amounts may be as large as 90 per cent of the first \$6,000 of value plus 80 per cent of the balance of value. Maximum term of these mortgages is twenty years. Center section of tabulation shows monthly payments required to retire maximum mortgages of various terms secured by such houses and lots.

Houses and lots appraised at more than \$10,000 but not more than \$20,000 are eligible for FHA-insured mortgages whose principal amounts may be as large as 80 per cent of value, whose terms may be as long as twenty years. Lower section of tabulation shows maximum mortgages and monthly payments for such houses and lots.

Monthly payments required for mortgages other than those listed may be determined by simple interpolation or by multiplying the monthly payment rate per \$1,000 (first line of tabulation) by the amount of the mortgage. Thus, payments required for a \$7,500, 20-year mortgage would be half way between those for a \$7,400 and a \$7,600 mortgage or would be equal to 7.5 times \$6.57—\$49.28.

While more than 90 per cent of all mortgages which FHA insures are for terms shown in the tabulation, FHA will also insure mortgages with terms of five, eight, twelve and twenty-four years. (Monthly payment rates per \$1,000 for such mortgages are \$18.86, \$12.64, \$9.23, and \$5.93, respectively.) With but few exceptions, mortgages with terms other than the ten already mentioned will not be insured by FHA. Herewith THE ARCHITECTURAL FORUM presents two aids to appraising the total monthly cost of home ownership: 1) a tabulation covering exact mortgage interest, amortization, and insurance payments, left, and 2) a tabulation covering approximate tax, heat, maintenance-depreciation and fire insurance payments, below. Their simple application to various priced houses and lots is best explained by examples: Take a \$5,000 frame house and lot in a northern city whose tax rate is comparatively high. In the tabulation to the left, it is seen that the largest FHAinsured mortgage which this property may secure is \$4,500, that the monthly cost of a 25-year mortgage is \$26.15.

### **EXPLANATION:**

This tabulation shows average monthly costs, other than mortgage costs, which must be included in the total cost of home ownership. Taxes are based upon 1938 adjusted rates in 274 cities classified as to population groups; average of the low rates in these groups is \$14 per \$1,000 per year, average of the high rates is \$49, average of the average rates is \$28. Cost of heat is based upon the hypothetical division of the U. S. into three temperature bands, the figures shown being the average monthly cost of heating insulated houses in each of these bands. Maintenance and depreciation are based upon 1 and 2 per cent of Then referring to the tabulation below, it is seen that "average high" taxes will cost \$20.40 per month, that "average north" heat will cost \$5.60, that "2 per cent" maintenance-depreciation will cost \$6.83 and, finally, that fire insurance will cost \$.86. Adding all these figures together, the total monthly cost of owning and operating this \$5,000 house will come to \$59.84. If the same property were built of brick in a southern city with a comparatively low tax rate, figures for "average low" taxes, "average south" heat and "1 per cent" maintenance-depreciation would be substituted, and the total cost per month would come to \$38.22. Fire insurance rate is average in both cases.

house valuation per year. Fire insurance is based upon a national average rate of \$2.50 per \$1,000 of house valuation per year—it may range from a low of \$1.20 to a high of \$20 per \$1000. House valuation used in computing heat, maintenance and depreciation and fire insurance costs is assumed to be \$2,500 for the \$3,500 house and lot; for the others, \$800 is added to house valuation for each \$1,000 added to valuation of house and lot. While all figures in this tabulation are based upon reasoned estimates and accepted rules-of-thumb, they are only approximate averages and will vary greatly according to local conditions.

### OTHER MONTHLY COSTS

HOUSE	TAXES				HEAT		MAINTEN	FIRE	
LOT	AVERAGE LOW	AVERAGE	AVERAGE HIGH	AVERAGE SOUTH	AVERAGE	AVERAGE NORTH	1 %	2%	ANCE
\$3,000	\$ 3.51	\$ 6.99	\$12.24	\$ 1.66	\$ 3.33	\$ 5.00	\$ 2.08	\$ 4.17	\$ 0.53
3,500	4.10	8.16	14.28	1.73	3.44	5.15	2.42	4.83	61
4,000	4.68	9.32	16.32	1.80	3.55	5.30	2.75	5.50	69
4,500	5.27	10.49	18.36	1.87	3.66	5.45	3.08	6.17	78
5,000	5.85	11.65	20.40	1.94	3.77	5.60	3.42	6.83	86
5,500	6.44	12.82	22.44	2.01	3.88	5.75	3.75	7.50	95
6,000	7.02	13.98	24.48	2.08	3.99	5.90	4.08	8.17	1.03
6,500	7.61	15.15	26.52	2.15	4.10	6.05	4.42	8.83	1.11
7,000	8.19	16.31	28.56	2.22	4.21	6.20	4.75	9.50	1.20
7,500	8.78	17.48	30.60	2.29	4.32	6.35	5.08	10.17	1.20
8,000	9.36	18.64	32.64	2.36	4.43	6.50	5.42	10.83	1.20
8,500	9.95	19.81	34.68	2.43	4.54	6.65	5.75	11.50	1.57
9,000	10.53	20.97	36.72	2.50	4.65	6.80	6.08	12.17	1.53
9,500	11.12	22.14	38.76	2.57	4.76	6.95	6.42	12.83	1.55
10,000	11.70	23.30	40.80	2.64	4.87	7.10	6.75	13.50	1.70
11,000	12.87	25.63	44.88	2.78	5.09	7.40	7.42	14.83	1.87
12,000	14.04	27.96	48.96	2.92	5.31	7.70	8.08	16.17	2.04
13,000	15.21	30.29	53.04	3.06	5.53	8.00	8.75	17.50	2 21
14,000	16.38	32.62	57.12	3.20	5.75	8.30	9.42	18.83	2.37
15,000	17.55	34.95	61.20	3.34	5.97	8.60	10.08	20.17	2.54
16,000	18.72	37.28	65.28	3.48	6.19	8.90	10.75	21.50	2.71
17,000	19.89	39.61	69.36	3.62	6.41	9.20	11.42	22.83	2.88
18,000	21.06	41.94	73.44	3.76	6.63	9.50	12.08	24.17	3.05
19,000	22.23	44.27	77.52	3.90	6.85	9.80	12.75	25.50	3.21
20,000	23.40	46.60	81.60	4.04	7.07	10.10	13.42	26.83	3.38

# RALEIGH'S RENTAL HOUSING GOES MODERN

Of the 231 large scale rental projects which have been financed to date with FHA-insured mortgages, a few are particularly significant. By virtue of its modern architectural treatment, Raleigh Apartments serving the capital of North Carolina has earned a prominent place in this upper crust of rental housing.\*

Expanding State governmental activities, southward industrial migration and gradual obsolescence of existing facilities have combined to produce in Raleigh an acute shortage of housing for middle incomers. Capitalizing on this condition, a group of local business men two years ago incorporated as the Raleigh Housing Corp., set out to find appropriate land for an apartment project and an able man to design it. The site was found two miles from the city center: a grove of tall pines and a 30 ft. down grade to a bounding stream made the property esthetically attractive. Its strategic location met all other requisites: an elementary school two blocks distant, a high school immediately adjacent, a municipal bus line one block away and a shopping center one block further. And to design it, the Raleigh Housing Corp. chose A. Mitchell Wooten of nearby Kinston. With the aid of Associate John J. Rowland he designed six buildings of various sizes, orientated them in a Y-shaped pattern to enclose the pine grove, follow the site's contours (see air view right).

To determine the number and size of the dwelling units, the company canvassed local real estate agents, found which way public demand was blowing. As a result, Architect Wooten made provision for 96 three-and-a-half-room units, 36 four-anda-half-room units, and eighteen two-room units—a total of 150 units with 534 rooms.

Beyond an economical arrangement of these units (see plans, right) and the elimination of decorative architectural motifs, gables and garages, no noteworthy cost reduction attempts were made. All six buildings were started simultaneously in April, 1938, all were finished six months later. Total cost, excluding land, came to \$725,000, or \$4,833 per dwelling unit, \$1,358 per room, 38 cents per cu. ft. A 4½ per cent FHA-insured mortgage represents \$575,000 or about 80 per cent of the cost.

Rents average \$14.02 per room per month, will give the project a gross annual income of about \$90,000. Tenants also pay an average electric bill of \$5 per month covering light, cooking and refrigeration. Operating expenses of the Raleigh Housing Corp., on the other hand, will amount to some \$25,000 per year.

Two facts prove that Raleigh Apartments hit the market at which they were aimed: 1) the project has been 100 per cent occupied since completion and 2) its waiting list is long.





### CONSTRUCTION OUTLINE

FOUNDATION: Walls—17 in. brick on concrete footings. Basement walls and cellar floor—concrete. Waterproofing—2 coats Hydrocide, L. Sonneborn Sons, Inc.

STRUCTURE: Exterior walls—face brick backed by load bearing clay tile, 13 in. solid brick parapets. Interior partitions—4 in. stud partitions and plaster on rock lath, U. S. Gypsum Co. Floor construction—wood joist, sub-floor, deadening felt and strip oak finish flooring. Ceilings—plaster on rock lath, U. S. Gypsum Co.

ROOF: Wood rafters, sheathed, covered with built-up composition roofing, Barrett Co.

INSULATION: Attic floor—4 in. rock wool, Philip Carey Co. Sound insulation—resilient metal clips used to hold rock lath on partitions between apartments.

WINDOWS: Sash—Economy type casements, Detroit Steel Products Co. Glass—double strength, quality A, flat drawn, Libbey-Owens-Ford Glass Co. Glass block—Owens-Illinois Glass Co. Screens—steel frames, sliding panels.

FLOOR COVERINGS: Living rooms and bedrooms—oak. Halls—promenade tile on first floor; asphalt tile above. Kitchen and bathrooms—linoleum. WALL COVERINGS: Bathrooms—linoleum wainscot.

HARDWARE: By Russell & Erwin Mfg. Co. PAINTING: Interior: Walls and ceilings—2 coats Texolite, U. S. Gypsum Co. Floors sanded, 2 coats varnish and 1 coat wax. Sash—2 coats Dulopake, 1 coat Persian high gloss enamel, Benjamin Moore & Co. Txterior walls—2 coats Bondex, Reardon Company.

ELECTRICAL INSTALLATION: Lights, telephone and radio, yard lighting, 3 phase 220 volts, 60 cycles for power in boiler room, pump room and pump stations. Fixtures— Lightolier Co.

KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co. Sink—built-in. Cabinets—pressed steel.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Cabinets—Hess Warming & Ventilating Co.

HEATING: Two pipe system. Boiler—Kewanee Boiler Mfg. Co. Coal stoker—Iron Fireman Mfg. Co. Radiators—American Radiator Co. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Richmond Engineering Co.

<sup>\*</sup>For other noteworthy projects, see Arch. Forum, Mar. 1939, p. 227; May 1939, p. 370; Aug. 1939, p. 135.



In the upper crust of FHA's large scale rental housing projects are the Raleigh Apartments, whose principal claim to fame is their modern architectural treatment. One unusual reason which influenced the design was Architect Wooten's belief that interesting shadows cast on the buildings by the site's numerous pine trees would make such details as cornices super-

fluous. The finished project bears out this contention, and the simple horizontal lines of the white-painted brick units offer pleasing contrast with the tall pines in the enclosed court. The character of the site made extensive landscaping unnecessary. Note that rear elevations and service entrances (lower picture) are equally attractive as the courtyard facades.

## **BUILDING'S CHARTS AND TABLES**



	LATEST MONTH*	PRECED. MONTH	CORRES MO. 193	CUML 1939	ILATIVE 1938		LATEST MONTH*	PRECED. MONTH	CORRES. MONTH-1938
PERMITS_residential (000 000)1		\$116.4	\$70.2	\$553.6	\$381.5	INSURANCE CO.—real estate held (000,000)10	\$1,743.0ap	\$1,738.0	\$1,780.0
non-residential "	65.9	46.8	42.8	298.0	255.5				00.2
alterations "		32.9	27.8	173.1	160.3	COSTS—wholesale materials (% of 1926)11	89.711	89.5	87.2
total "	196.9	196.1	140.8	1,024.7	797.3	housing—labor (% of 1936)12	111.3ju	111.5	111.5
ibidi						materials "	102.5	102.7	104.6
(000 000)2	e111.01.	6122.0	COE 7	SLAA E	0.9053	total "	105.4	105.6	106.9
CONTRACTS-residential (000,000) <sup>2</sup>	\$111.910	\$133.8	385.7	\$044.5 E14.4	433.7				
non-residential	92.8	/6./	01.0	510.0	433.7	RENTS-new leases (% of 1923)13	86.31	86.0	86.6
engineering	83.6	97.9	83.5	538.3	401.5				
total	288.3	308.4	251.0	1,699.4	1,274.2	EORECLOSURES-non-farm (% of 1934)14	49.4ju	54.9	55.6
						metropolitan (% of 1926)15	161.0	165.0	177.0
DWELLING UNITS-total (000)3	26.6ju	31.1	18.2	152:6	105.6	menepennen tve			
						INTEREST RATES_NYC mortagges (%)16	4.4511	4.4	8 4.65
5111 (000 000)4	\$ 94 51	\$101.5	\$94.2	\$686.5	\$549.4	INTEREST RATES-INTER. INCOMESSION (18)			
FHA-mortgage selections (000,000)		97 3	60.6	420.4	338.1	POND PRICES and estate 17	\$326.011	\$325.0	\$320.0
mortgage acceptances		3.0	4.8	38.2	25.7	BOND PRICES-real estate	derete l'		
rental housing mitg's	24.4	22.2	14.6	131.8	67.9		114.98	88.8	100.2
modernization loans	20.4	23.3	10.0	131.0	07.17	STOCK PRICES-bidg, materials (% of 1926)-0	07.0[1	0010	
							\$0 49 00	\$0.6	8 5.6
MORTGAGES-						WAGE RATES-common bldg. labor (per nr.) 45	\$0.070g	1.4	A 14
bldg. & loan assns. (000,000)8	\$113.5ju	\$109.7		\$545.3		skilled bldg. labor (per nr.)	1.44	1.4	- I
insurance cos	30.0	29.9		157.1				70.0	15.0
bank & trust cos. "	89.6	85.4		448.8		EMPLOYMENT-bldg, unions (% of total) 20	77.011	/8.0	65.0
mutual savings bks. "	12.0	12.2		58.7					
individuals "	59.0	59.5		322.7		COST OF LIVING-(% of 1923)21	84.911	84.7	86.5
other mortagges	56.8	52.8		265.6					
total		349.5		1,798.2		PAYROLLS-factory (% of 1923-25)22	84.4ma	84.9	72.9
iorar									
(000)9	21.25.	24.0	175	155 3	144.1	PRODUCTION-industrial (% of 1923-25)23	98 ju	94.0	77.0
MARRIAGES-38 cities (000) 9		54.0	17.5	100.0	10011		. to long	11 July	August
						*Designation of latest month: ap—April, ma—Ma	y, Iu—June,	II-July, d	19-August

- 1—Valuation of building permits in some 2,100 communities; source, U. S. Department of Labor.
  2—Valuation of contracts awarded in 37 States; source, F. W. Dodge Corp. via U. S. Dept. of Commerce.
  3—Number of dwelling units covered by permits. See footnote No. 1.
  4—Home mortgages selected for FHA appraisal under Title II, Section 203; source, FHA.
  5—Home mortgages accepted for insurance under Title II, Section 203; source, FHA.
  6—Large scale rental housing mortgages becoming premium paying under Title II, Section 207; source, FHA.
  7—Property improvement loans insured under Title I; source, FHA.
  8—Non-farm mortgage recordings of \$20,000 or less based on

- 500 counties (48 States); source, FHLBB.
  9-Number of marriages recorded in 38 largest U. 8. cities; source, ARCHITECTURAL FORUM.
  10-Total real estate holdings by member companies of the Assn. of Life Ins. Presidents.
  11-Composite index of wholesale building material prices; source, U. S. Department of Labor.
  12-National averages based on six-room house of 24,000 cu. ft. unfinished; source, FHLBB.
  13-Rates at which new rental contracts are made; source, National Industrial Conference Board.
  14-Foreelosures in some 1,500 non-farm communities; source, FHLBB.
  15-Foreelosures in metropolitan communities with population in excess of 100,000; source, FHLBB.

16—Average interest rate on all recorded New York City mortgages of \$10,000 or more; source, N. Y. Mortgage Conference.
17—Average price of 200 hotel, office building and theater bonds; source, Amott-Baker & Co.
18—Average price of twelve building material manufacturers' stocks; source, Standard Statistics Co.
19—Source, Engineering News-Record.
20—Trade Union members employed; source, American Fed-eration of Labor.
21—Covers clothing, food, fuel and light, housing and sun-dries; source, U.S. Dept. of Labor.
22—Combined unadjusted index; source, Federal Reserve Board.



This candidate doesn't indulge

CLEA

*real washability* is a big advantage of flat paint made with Dutch Boy White-Lead and Lead Mixing Oil.

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WASHABILITY

Real washability means two things. (1) The beauty of this paint is not destroyed by hard scrubbings. (2) Those scrubbings actually get you somewhere. The test panel at the right shows how stubborn stains and dirt really do "come out in the wash." Walls that can be kept clean do not need to be repainted so often. Therefore, real washability means a real economy for your client.

But there's more to the story of Dutch Boy money-saving than that. This paint has all the durability for which white-lead has long been famous. It mixes quickly, spreads easily and has high coverage—300 sq. ft. per gal. on smooth plaster. Those three qualities mean low first cost. Then add long wear and real cleanability, and you have *long-run* economy also.



This is the slogan of the national advertising campaign on white-lead now being conducted by the Lead Industries Association. The purpose of this campaign is to promote a wider understanding of the advantages of white-lead paint.



This test panel is a piece of wallboard painted with Dutch Boy White-Lead and Lead Mixing Oil. Horizontal streaks show how it was defaced with various enemies of interior paint. Swath shows marks completely removed by washing with soap and water.

# AND LEAD MIXING OIL

#### NATIONAL LEAD COMPANY 111 Broadway, New York; 116 Oak St., Buffalo; 900 West 18th St., Chicago: 59 Broadway, New York; 116 Oak St., Buffalo; 900 West 18th St., Chicago:

659 Freeman Ave., Cincinnati; 1213 West Third St., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co.. 800 Albany St., Boston; National Lead & Oil Co. of Penna., 316 Fourth Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Phila.

### HOMESTEAD EXEMPTION

(Continued from page 206)

stead exemption. The Oklahoma analysis underlines the fact that the easiest way to do it is to raise the property tax rate, which hurts tenants and large home owners alike. More equitable technique is that adopted by Iowa and Louisiana which have set up special credit funds from the proceeds of other taxes. The amount of money available in those funds determines the size of the exemption.

This method of compensating for tax loss permits the State to cut the exemption to fit its pocketbook; if the treasury cannot afford a large exemption it is not law-bound to give one. On the other hand, a credit fund is somewhat more expensive to administer than straight exemption, and a variable exemption is also harder on the home owner who cannot gauge his next year's tax payment. Wyoming also has a credit fund, but the exemption is always \$500 regardless of the amount of revenue available. None of the other States have been as direct in replacing revenue losses, but many of them have seen to it that certain of their obligations were not jeopardized. Five States-Minnesota, Florida. Oklahoma, West Virginia and Georgiaexclude levies for the servicing of prior debts from the general exemption laws.

**Effect on Owners.** Although the constant plaint of the economists is that homestead exemption will not help the home owner as much as the law makers think it will, Mr. U. S. Homeowner is of a different opinion. Taxed down to an even smaller barrel than the average citizen, he can well use the concrete dollars and cents he does not have to pay under a homestead exemption law. As a farmer in Iowa owning a modest property assessed at \$2,013 (the average) he used to pay \$45.70 each year in taxes. Under homestead exemption he has no tax at all, thus saves that amount. As an urbanite in the same State, domiciled in his own home which is assessed at \$1,461 (also the average), Mr. Homeowner is not quite so fortunate, for instead of having his tax eliminated he has it cut in half: from \$67.64 to \$31.11. Nonetheless that \$36.53 saving is not to be sneezed at.

However, some economists raise a question: Is Mr. U. S. Homeowner going to pass that saving on to the next owner of his home? Their answer is no. Although they have no figures to prove it, their theory is that home values will go up in proportion to the tax reduction. A new owner will pay more for his home, which will partially cancel the benefits of exemption. If such a trend in home values takes place, it follows that it will be very difficult for any State to scrap homestead exemption sometime in the future. For its elimination would send home values back to the pre-exemption levels, hence, would be fought just as hard as any considerable increase in the property tax rate. However, other factors such as building and financing costs, supply and demand, contribute their dimes' worth to house costs, make it safe to say

### LOSS OF REVENUE FROM HOMESTEAD TAX EXEMPTION (\$000 omitted from amounts)

		Number of	Total Assessed		Total General
		Homesteads	Value of Exempt	Loss of	Property
	Year	Exempt	Homesteads	Revenue	Revenue: 19361
STATE TAXES ONLY:					
Alabama	1938		\$154,569	\$ 1,000	\$ 6,252
Arkansas	1937		21,860	188	3,906
South Dakota	1938		202,955	41	
Texas	1936		609,306 <sup>2</sup>	778	16,127
STATE AND SOME LOCAL					
TAXES:					
Georgia	1938		173,817	3,498	42,588
Louisiana	1937	170,274	113,631	3,555	
Minnesota	1938		218,000	11,000	110,769
ALL STATE AND LOCAL					
TAXES					
lowa	1937	316,357	497,643	11,663	87,721
Oklahoma	1938	181,474	122,011	2,254	47,681
Wyoming	1938		10,504	339	

Source: Preliminary report of Kansas State Planning Board; based on questionnaire to States with exemption laws. No reports received from Fla., Miss., and W. Va.

1 "Tax Systems of the World", seventh edition. First three figures, State revenue only; remainder, State and local revenue. Not directly comparable with column showing loss of revenue because of difference in time covered.

<sup>2</sup> Total value of all homesteads.

<sup>8</sup> Loss: State, 1 million; country, \$1.7 million; schools, \$0.8 million.

that any rise in prices will not be traceable solely to the homestead movement.

Effect on New Construction. If homestead tax exemption helps produce a building boom, one of the major contentions of its advocates will have been proved, and the balance will swing in its favor despite the weight of evidence on the other side. To date, however, the records of the States with exemption laws show no booms, but indicate in some cases a better than average rise in home construction volume. Texas, which adopted homestead exemption in the depths of the depression, is currently making the best showing, may claim a boomlet.

Six States adopted exemption laws in 1937, and in all of them more new homes were built in urban areas in 1938 than in 1936-the year before the law went into effect. But only three could boast a volume of new homes above the country's 24 per cent average increase between those two years. Nearest to boom proportions was Wyoming with a 90 per cent rise, second was Minnesota with 65 per cent. But both South Dakota and Oklahoma dragged along behind with a paltry 3 per cent increase in new home building. These figures give little ammunition either to the proponents or opponents of the movement

It is the opinion of the latter (again the economists) that any rise in building volume resulting from homestead exemption may be quickly checked. Their reasoning: the exemption would prove an incentive for tenants to become home owners; vacancies would be created in rental properties; landlords would be forced to lower rents; and ownership would be less profitable. Therefore new building would stop. Another argument is that new construction depends primarily on the capital or credit of existing tenants, and without such equity no amount of special incentives will produce a building boom.

The Tenant. Orphaned by homestead tax exemption are the tenants. And it is in their favor that an important criticism of the movement has been made. For regardless of the advantages of home ownership both to the country and to the owner, many a man has not a big enough jingle in his jeans to make home ownership possible. And he is the one who has to dig down and make that jingle even less to help carry the tax burden of the owner, whether in the form of an increased property tax rate or new sales and income taxes.

Any estimates as to the effect of homestead exemption on rental levels are still based on fiction. It appears, however, that they might go down, that they would hardly go up. In that indirect way, the tenant may benefit.

Pro and Con. If the advantages and disadvantages of homestead tax exemption (Continued on page 36)
# Extra Strength ... for Heavy Duty EXTRA Strength ... for Heavy Duty STEEL-Riveted BOILERS

 In the Kewanee Plant gigantic hydraulic riveters squeeze everlasting known strength into the steel plate seams of these boilers.

and in the capacious space where the steam bubbles up, fighting for release to useful work, additional stout stays and braces further insure that strength which adds so many extra years of life.

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tells the customer all she wants to know about that. Our years of national advertising have given her the story. And our free, color-illustrated book will give *you* the rest of the story and many clever room designs as well. Write now to Armstrong Cork Company, Building Materials Division, 1203 State Street, Lancaster, Pa.

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(Continued from page 34)

are put on the scales again, and to them are added the opinions of experts in the field of taxation, the balance would tip against the movement. For their vote on the movement is "Nay." Among the factfinders who have with varying degrees of vehemence turned down their thumbs are Brookings Institution, The Twentieth Century Fund, and the National Tax Association. In addition, professors of public finance in the Nation's colleges are two to one against homestead exemption: a survey published by "Tax Systems of the World" shows that 35 such professors are for exemption, S1 are against it, and 11 are undecided.

Starting from the well-established premise that the home owner's tax burden should be lightened, it follows that the most logical ways to do it would be to reduce the costs of local government or to transfer the burden to some other form of taxation. But slight is the possibility that either step will be taken, and in the meantime the home owner pays his taxes. To help him now, there is no surer way than homestead tax exemption.

Regardless of the merits or demerits of homestead exemption, it still has the potential backing of the Nation's home owners, is still political dynamite. Hence, the odds are better than good that it will be on the agenda of many a future State legislature, that it is here to stay as a permanent part of the tax structure of thirteen States.

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For roofs of character, Certain-teed developed fire-safe Wood-Tex Shingles with a heavy, built-up grain that casts strong shadow lines. For structurally strong insulation, Certain-teed developed C-S-I, Certain-teed Structural Insulation, a complete line made by the exclusive CaneWeave Process to meet every insulation requirement. For smooth, strong, crack-free walls, Certain-teed improved Bestwall, the original Gypsum Wallboard, with Reinforcing Joint Systems, to conceal joints.

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### TWO New Gas-Fired Winter Air Conditioners\_

• The "Aristocrat," illustrated above, is entirely redesigned to incorporate refinements that afford every convenience, together with improved efficiency and greater fuel economy. Cast iron heating element assures durability and safety. Finished in smooth gray enamel.

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Write for new literature just off the press.

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### STANDARDIZED HOUSES

(Continued from page 210)

houses were sold for less than \$6,000, the demand for optional extras (itemized below for the basic five-room house) pushed the other houses above this mark.

Porch	\$150
Garage	.250
Fireplace & chimney	200
Brick veneer	325
Painted brick veneer	375
Heated recreation room	128
Outside basement entrance	75

Interesting is the fact that most Green Acres purchasers have demanded one or more of these accessories. Thus, 64 houses are brick veneered, 42 have porches, twelve have finished recreation rooms; while all but four families have automobiles, only four have garages.

A sales breakdown of the completed units shows that 44 houses have been purchased with 10 per cent cash down payments, 20 purchases were accompanied with 10-15 per cent cash, eleven with 15-30 per cent, one with 100 per cent. The 10 per cent cash purchasers of the basic five-room house pay \$29.66 per month for interest, amortization and insurance of the 25-year 5 per cent mortgage, \$6.55 for estimated taxes and \$1.02 for fire and windstorm insurance—a total of \$37.23. Purchasers of the basic six-room unit pay \$32.68 plus \$7.25 and \$1.13 respectively a total of \$41.06 per month.

Mr. Walker knows more about his client families than do most subdividers. He knows that the large majority were formerly apartment dwellers paying rents of from \$45 to \$75 per month; that some of them had been living with their parents; that three of them were newlyweds; that in slightly less than half the families both husband and wife are employed; that the average family income is \$3,120 per year; that half the husbands are employed by the Federal or District Government; and that family heads are, for the most part, in their late twenties or early thirties.

Although many of these families and many other would-be purchasers have requested tailor-made houses, Subdivider Walker has consistently stuck to his two basic plans. Reason: he could not produce a large volume of "special" houses at the prices quoted on his custom-built units. However, just as inquiries concerning lower cost houses at Subdivision No. 2 were, in part, responsible for Subdivision No. 3, so current inquiries are prompting Mr. Walker to consider a fourth subdivision. Many a Green Acres visitor has sought a two-story house with two bedrooms and a bath on the first floor, with unfinished rooms on the second. To satisfy this increasing demand, Walker now has his eye on a 22-acre tract one-and-onehalf miles from Green Acres, has his mind on \$7,500 houses and lots.



**E**XAMINE the mortar of the next few buildings you pass and you will find shrinkage cracks. These cracks — the results of too much water in the mix are the real cause of leaky brickwork, Reduce mixing water sufficiently and a tight bond is produced.

Omicron Mortarproofing cuts mixing water, at the same time improves workability of the mortar — and this checks shrinkage cracking. It means "tight" brickwork. It is time-tested, economical, easy to use . . . the best "brickwork insurance" for your projects. Send for full information or see our catalog in Sweet's — reference 5/15.



McPherson High School, McPherson, Kansas Archt. — Lorentz Schmidt, Wichita, Kansas

Mr. Lorentz Schmidt reports: "My office has recently completed the McPherson High School Building in which we used Omicron Mortarproofing and our results have been very satisfactory. There have been no leaks in any of the walls and the bricklayers liked to work with the mortar... this material has been of a distinct advantage in securing a first class job."





The one application wood finish that preserves and beauti-fies—and leaves nothing to wear off. LIGNOPHOL gives permanent protection, costs little to apply and less to

The original chemical liquid floor hardener and dustproofer for concrete floors, makes them wearproof, dustproof and waterproof. A compound\* that will penetrate deeper and give your floors an everlasting granite hardness. \*U.S. Patent Applied For



durable, decorative treatment for floors subjected to heavy traffic—in attractive colors—made to outlast conventional floar paints . . . and inexpensive to use.

# L. SONNEBORN, SONS INC.

Actual tests of Lignophol, Lapidolith and Cemcoat Filler and Dustproofer by leading architects and building contractors over a period of years in both residential and commercial buildings have conclusively proven how excellently these floor products perform—how definitely they can be relied upon to gain and hold complete customer satisfaction.

Professional opinion not only endorses Lignophol, Lapidolith and Cemcoat but it heartily recommends all of Sonneborn's Tested Products-tested and found A-1 at the crucial point—on the job!

Write for descriptive literature and scientific tests. Dept F9

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### Built Like Your Motor Car

It went in, a flat sheet of sturdy motor car body steel. It comes out of the big press trimmed, flanged, and with openings cut for all connections-a Parsons Pureaire Kitchen back. . . . The graceful panelling of Pureaire doors is attained in the same way. . . . Result, no supplementary cutting and fitting. Everything absolutely interchangeable. And no service problems. . . . Standardization-that's the secret of Pureaire high quality and low cost. Standardization we also practice in our service to the automobile industry for which we build more than fifteen-million parts and assemblies yearly. So Pureaire cooks, refrigerates, stores, washes dishes, whisks away all odors and vapors, and lasts a lifetime. Are you planning a multiple dwelling, new or remodeled? Or a small home project? Write! Today!

### THE PARSONS COMPANY



Patented and patents pending



### MONTH IN BUILDING

(Continued from page 4)

cleaned up the immediate situation and cleared the way for permanent cure of the jurisdictional dispute evil, it is the most progressive step taken in the history of our department."

Meanwhile, AFL's Central Trades and Labor Council in Rochester, N. Y., undertook a local counterattack against CIO's efforts to organize Building Labor, levied a \$1 assessment on all members to fill an \$18,000 anti-CIO war chest.

HOUSING COUNT. Although the 76th Congress, by cubbyholing the USHA amendment, made housing news of a negative nature (page 2, col. 3), it also wrote positive housing headlines. In the closing hours of its first session it authorized the Director of the Census to count houses as well as noses in 1940, gave the Bureau \$800 million of the Treasury's money with which to do the colossal job. But, that is about all the short (25 lines) act provided; details as to what housing data will be corralled are yet to be determined by the Census Director. Chances are, however, that he will cover most of the items suggested by the act's sponsors:

► Characteristics of housing: number of structures; number of dwelling units; type of structure (single-family, row house, apartment, etc.); size of units (number of rooms); age; condition or state of repair; equipment (running water, water closets, heating and electrical equipment, etc.).

► Occupancy of dwellings: tenure (rented, owned or vacant); number of persons; overcrowding (persons per room); doubling-up (extra families).

► Values and rents: value, if owned; monthly rental, if rented; facilities included in rent (water, heat, etc.); cost of facilities paid for by owner or tenant (water, heat, electricity, gas, etc.).

▶ Home financing: mortgaged or free; type of mortgage (straight or amortized); interest rate; holder of mortgage (building and loan association, savings bank, life insurance company, HOLC, etc.).

If any of these items are not covered, they will be those relating to types of mortgages and condition of houses—the latter might depend too greatly upon the judgment of individual census takers, while all other items would be matters of fact.

Long sought by every branch of Building, the housing data to be obtained in the 1940 census will become the market bible of manufacturers, builders, realtors and financiers alike. For an industry where reliable and complete statistical data are sadly lacking the meaning of the forthcoming house count cannot be overemphasized.



SERV

Kinnear Rolling Doors to give my clients the kind of door performance they want — and, at the same time, to go easy on their pocketbooks.

Kinnear Rolling Doors eliminate door problems. I like their wide adaptability . . . their efficient, spacesaving design . . . their rugged, allsteel construction . . . their resistance to fire, weather, damage and wear. Another thing. Whether a building is traditional or ultra-modern in architecture, the clean-cut, straightline design of Kinnear Rolling Doors not only harmonizes with its appearance, but actually adds to it.

I've also found that their efficiency and economy makes them first choice among building owners, and those who use the doors!

If you want real efficiency in doors, I suggest Kinnears. Send for the new Kinnear catalog today, it contains useful information you may want to apply to your present jobs.



Offices and Agents in All Principal Cities **The KINNEAR MFG.CO.** 1640-60 Fields Ave., Columbus, Ohio Factories: Columbus, Ohio; San Francisco, Cal.



# 10,500,000 HOMES AGO Began the Home Loan that is Paid-back-by-the-Month!

"10,500,000 homes ago" was in 1831 when Savings, Building and Loan Associations had their beginning at Frankford, Pennsylvania. And home loans, paid off over a long term on a monthly or weekly basis, have been the backbone of our business for nearly 110 years!

Sound lending practices and convenient terms have made this group of financial institutions the world's largest home financing system. And these statistics prove it!

Since the first of 1936, one out of every twenty-nine American families has borrowed money for home ownership or repairs from Savings or Building and Loan Associations.

In the past three years, these institutions have financed *more than half* of the one and two-family dwellings built.

In 1937, 55.82% of America's home loans, made by financial institutions, were made by our group.

But statistics aren't everything—something else has contributed to the building of this great nationwide group of savings and home financing organizations! It is the service—the promptness with which applications are approved, the speed with which money is advanced. Here is a summary of that service, available right in your own community—

- 1-No red tape to delay your schedule.
- 2-Easy-to-understand plan.
- 3—Loans on a convenient rent-size repayment basis over a long term.
- 4—Friendly service—where borrowers are friends, not just numbers.
- 5—Local service—advice and assistance in your own community by people who specialize in home financing.

These points add to long-time satisfaction, both for you and for the people whom you serve. Can any other source of building money offer you all of these features?

Be your own judge! Let a local member of the United States Building and Loan League handle a loan for one of your customers or clients. See for yourself why Savings or Building and Loan Associations are America's largest and most popular source of money for home ownership.

**ARCHITECTS**—We are as close as your telephone. Whether it is financing for new home construction, home buying, home remodeling or to refinance present homes—let us have a chance to show you how we work.



When you support Your Local Savings or Building and Loan Association—You help local business!

# BUILD IT RIGHT WITH-INSULI

There is satisfaction and profit for you in this room because the walls are built right with INSULITE'S Lok-Joint Lath and Bildrite Sheathing, the perfected insulation combination.



Two products so widely accepted and quick in turnover as INSULITE'S Lok-Joint Lath and Bildrite Sheathing bring active sales to the dealer, and a lasting credit to the architect and builder.

BUILD A BETTER HOME. Lok-Joint Lath provides a smooth, safe base for plaster, insulates against heat loss in winter and heat penetration in summer. Bildrite Sheathing, waterproofed throughout, builds strong, rigid exterior walls that insulate and protect against all weather.

BUILD IT FASTER. Lok-Joint Lath and Bildrite Sheathing apply so quickly and easily that speedy construction is accomplished and costs are lowered.

SERVICE. Insulite exemplifies prompt, courteous service, and immediate deliveries of orders to all parts of the country.

You'll find many imitations, but INSULITE is the only wood fibre insulation board that has been perfected from 25 years' experience. Write today for samples and complete information about INSULITE. The Insulite Company, Dept. AF99, Minneapolis, Minnesota.

INSULITE MATERIALS INCLUDE: **Bildrite Sheathing** Lok-Joint Lath

Interior Finishes:

Graylite



Ins-Lite



THE satisfaction of a client when winter rolls around often depends on how well and how economically his home is heated. Architects have found that winter comfort is better assured when the whole heating system is designed and installed as a unit—when all of its parts carry the name Crane.

#### ADVANTAGES OF A CRANE SYSTEM

Crane Complete Heating means a unified system—a system where the boiler, the oil burner or stoker, the radiators and convectors, the controls, even the valves and fittings are designed to work with each other. It means a system that is engineered to operate with utmost efficiency.

The breadth of the Crane line makes possible the designing of a heating system to suit every size home as well as every kind of fuel. Boilers may be had specially designed to burn coal or coke—oil or gas. Or it is possible to install a highly efficient Crane boiler for hand firing of coal and later convert it to automatic heating by adding an oil burner or stoker.

#### BOTH YOU AND YOUR CLIENT BENEFIT

Architects whose specifications read "Crane Complete Heating" are assuring their clients of maximum heating efficiency and satisfaction. One source of supply—one high standard of quality—one responsibility —all recommend Complete Crane Heating for the houses you design. Consult your Crane Architect's Catalog or bring your clients in to see the dis-

play of Crane Heating Equipment at your nearest Crane Display Room.



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NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

CRAI



(Continued from page 14)

### EXPERIMENTAL HOUSE BY THE JOHN B. PIERCE FOUNDATION







Developing a construction system first publicized at the Yale-Life Conference on Building Techniques (ARCH. FORUM, March 1939), the John B. Pierce Foundation has recently completed another in its series of experimental prefab houses at Lebanon, N. J. Basis of the structure is a special wood frame, consisting of supporting posts braced by horizontal ribbon members which form window sills and heads, into which light-weight wall panels are set to complete exterior walls.

Panels used in this house consist of  $\frac{5}{8}$  in. phenol plywood, forming a single-thickness wall whose only other insulation is afforded by built-in book shelves and cabinet work around the lower part of the rooms, so that the occupant's heating bills are in inverse proportion to the size of his library: a left-handed encouragement to culture in the low-cost field.

Best features are a novel wiring system which provides base outlets every 8 in. around the rooms by use of a special covemold containing conductors, horizontally sliding vent-sash, and the provision of three bedrooms, unusual in a house of this size. The reported cost, \$2,000 for the unit built singly without basement, builder's profit, or land, compares favorably with conventional hollow-wall construction and includes much built-in furniture not ordinarily provided. It is hoped that quantity production of the prefabricated units would reduce this to \$1,750, make a real bid for the low-cost market. (Continued on page 48)





# MORE THAN 40,000 "SILENT PARTNERS"

Todd Combustion Equipment plays a major role in the success of thousands of organizations...industrial, commercial and maritime ...whose economical production of heat and power is of vital importance to profits.

Individually engineered to specific requirements Todd installations make the burning of liquid or gaseous fuels an efficient, inexpensive operation. By eliminating high maintenance costs, stepping-up boiler per-

NEW ORLEANS

formance and reducing waste, Todd burners and units have earned a world-wide reputation in the field of combustion equipment.

When Todd "joins the firm" cooperation is sure...results are evident...savings are certain.

Todd engineers are always available without obligation for impartial surveys and consultations on combustion phases of furnace operation.

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750-1000 watt sizes, this Westinghouse GB Luminaire employs the new Hi-Flec Glass for better lighting.

4 High Lighting Efficiency.

High intensity, glareless illu-

mination is created by this Magnalux Luminaire with Hi-Flec Glass in 200, 300, 500, 750 and 1000 watt sizes.

### NEW BEAUTY ... NEW EFFICIENCY

Advancing still another step in improved design and efficiency, Westinghouse Commercial Lighting units are now equipped with the new Hi-Flec Glass — the latest development in Conditioned Lighting. Because this new glass provides a psychologically cooler light - its color is neutral ivory when lighted and because it harmonizes with all architectural interiors, Magnalux and GB Luminaire applications are practically unlimited. This new glass assures a surface brightness which blends with ceiling brightness . . . and it sets new standards for high intensity, glareless, shadowless, properly distributed illumination.

A wide range of luminaire styles is available in Magnalux with screw-base lamps and a variety of basin designs and hanger types. The GB is designed to utilize effectively the characteristic spread of illumination from the Bipost lamp. You will find both units ideally suited for offices, libraries, public buildings and schools.

### NEW LIGHT CUTOFF CONTROL

The new Variable Light Cutoff is an exclusive feature. Clevis pins of two-hole construction are provided for attachment to the basin support rods. By installing the support rods through the upper hole in the pin the angle of cutoff is increased. For a lesser angle of cutoff the lower hole may be used. Write Westinghouse Electric & Mfg. Co., Lighting Division, Edgewater Park, Cleveland, Ohio.









Photo: Robert M. Damora

Quartered Oak and Macassar Ebony Flexwood treatment, Club Room, S.S. Panama, Panama R.R. Co., interiors designed by Raymond Loewy and decorated by Irving & Casson.

S.S. Panama, the first fireproof passenger steamship, initiates a new era in American shipbuilding in standards of safety, efficiency, comfort and attractiveness. "Nothing to burn but the fuel" is the slogan of the Panama R.R. Co. for whom George G. Sharp, N. A., designed S.S. Panama and two sister ships, now building. Macassar Ebony Flexwood decorates the walls in the main Salon and the Lounge, and is used for soffits in the intimate Club Room with walls of quartered Oak Flexwood applied over steel. Meeting every design requirement and putting no strain on the normal budget, Flexwood plays its part in this outstanding example of American shipbuilding art. Samples, and data, are yours for the asking.

UNITED STATES PLYWOOD CORPORATION, 103 PARK AVE., NEW YORK Manufacturers of Flexwood, Plywood, Armorphy, Weldwood, and kindred products



Flexwood is thin wood mounted on cloth and made flexible for direct application to flat and curved surfaces . . . it takes any wood finish. Wood in no other form approaches Flexwood in cost, ease and speed of application in modern wood treatment.



### FORUM OF EVENTS

#### (Continued from page 44)

#### AWARDS

REGIONAL COMPETITION No. 1. A \$250,000 Post Office and Court House for Leavenworth, Kan. won by William B. Ittner, Inc., St. Louis, Mo. Three entries were given Honorable Mention: Arthur R. Mann and Robert E. Mann, Hutchinson, Kan.; Joseph D. Murphy and Kenneth Wischmeyer, with Charles Lorenz, associate, St. Louis, Mo.; Robert B. Bloomgarten and D. Kent Frohwerk, Kansas City, Mo. The Jury: Charles F. Cellarius, Cincinnati, Ohio, Robert F. Daggett, Indianapolis, Ind., Gerrit J. DeGelleke, Milwaukee, Wis., Albert Kahn, Detroit, Mich., and John O. Merrill, Chicago, Ill. Region No. 1 includes the States of Minnesota, North Dakota, South Dakota, Kansas, Iowa, Missouri, and Nebraska.

#### COMPETITIONS

THOMAS JEFFERSON MEMORIAL SCULPTURE. In the first stage six sculptors were selected from a field of 101. The six will prepare models, due December 31, and each will receive \$1,000. The winners of the first stage now competing in second stage: Rudolf Evans, New York; Raoul Jossett, Chicago; Lee Lawrie, New York; Maurice Sterne, San Francisco; Sidney Waugh, New York; A. A. Weinman, New York.

INSULUX GLASS BLOCK COMPETITION NO. 3-A Dairy, \$2,500 in prizes, closing Nov. 20. (See pages 24-25).

### EDUCATIONAL

COOPER UNION, NEW YORK. Peppino Mangravite, painter, has been added to the faculty, succeeding Ernest Fiene, and will give instruction in advanced painting. Twice awarded a Guggenheim Fellowship for study in Southern France, Mr. Mangravite has served as art director of Sarah Lawrence College and other educational institutions.

HARVARD UNIVERSITY. Two well known landscape architects have been appointed to strengthen the curriculum in landscape architecture: Christopher Tunnard of London, and Norman T. Newton of New York City.

NEW YORK UNIVERSITY announces a course of lectures on Building Superintendence by Samuel L. Becker, engineer and lawyer, Wednesday evenings beginning September 27. For further information address School of Architecture and Allied Arts, New York University, 1071 Sixth Avenue, New York, N. Y.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY will establish as an elective subject next fall a graduate seminar on housing in its relation to sociology, economics, architecture, city planning, construction, and public health under the leadership of authorities in these fields. The faculty committee is under the chairmanship of Prof. Frederick J. Adams; Prof. John E. Burchard will be in administrative charge of the subject.

#### MISCELLANEOUS

THE ARCHITECTS OF THE U. S. are invited to attend the 15th International Congress of Architects in Washington, September 25 to 28. The meeting is under the immediate auspices of the U. S. Government. At the same time and in the same city, will be held the 71st Convention of the American Institute of Architects. The programs for the two gatherings

(Continued on page 52)

# STANLEY Early American or Colonial Hardware



HARDWARE FOR CAREFREE DOORS

### IN FACTORY, HOME OR POWER PLANT . . .

Glass Blocks have earned a place!



TYPICAL PC Glass Block installation in "B" Sub-station TVA Distributing System, Memphis Light, Gas and Water Division, Memphis, Tenn.

INTERIOR view of "B" Sub-station, showing PC Glass Blocks in control room.

Glass Blocks are one of the most versatile building materials ever developed. In their various patterns and sizes, they present an exceptionally attractive appearance, making them a valuable contribution to architectural beauty. And the combination of practical advantages they provide is without precedent in a single material.

High heat insulating value . . which aids temperature and humidity control, simplifies air conditioning, cuts heating costs in buildings, does away with moisture condensation. Effective insulation against sound. Elimination of dirt infiltration at light areas. Easy cleaning. Low maintenance. And with all these ... the ability to transmit *daylight* generously, and diffuse it well while guarding privacy. Small wonder that, with such a range of advantages, PC Glass Blocks have an almost universal application . . . in the factory as well as the home, the public building as well as the power plant.

For architects throughout the country, these all-glass, crystal-colored blocks, with their fused glass seals and unique edge construction for "keylock" mortar joints, are proving a happy means of building light, beauty and usefulness into the structures they design. Why not send the coupon for our free booklet describing-uses, installation methods and



properties of PC Glass Blocks? PC Glass Blocks are manufactured by Pittsburgh Corning Corporation.

At the New York World's Fair, see the Pittsburgh exhibits in the Glass Center Bldg., the Forward March of America Bldg. and the Pittsburgh House of Glass. At the Golden Gate International Exposition, see them in the Homes and Gardens Bldg.

#### Distributed by

### PITTSBURGH PLATE GLASS COMPANY and by W. P. Fuller and Co. on the Pacific Coast



• This is how the First Baptist Church, Atlantic City, N. J., looked when remodeling started. Below, you see the same church only a short time later.

Another

Remodeling

Miracle! WITH **ATLAS WHITE** 

STUCCO

• Presto! That clean modern exterior is stucco... made with Atlas White. Architect: Charles H.Adams. Gen. Contractor:S.A. Lippincott. Dealer: Concrete Supply Co.-all of Atlantic City.

F you walked past this First Baptist Church in Atlantic City after this remodeling job was completed, you'd likely exclaim, "A miracle!" You'd never believe it was the same building.

Yet this remarkable improvement was brought about with just a few structural changes-and an exterior application of portland cement stucco, and Atlas White stucco for the finish coat.

Next time you have a modernizing job, re-

member this miracle in remodeling-and plan to use portland cement stucco, made with Atlas White. You'll find that it-

TRST BAPTIST CHU

- · provides a sturdy, fire-safe and weather-resisting exterior covering
- can be applied in a wide range of colors and textures
- is low in first cost and needs practically no upkeep • endures in any climate!

Universal Atlas Cement Co. (United States Steel Corp. Subsidiary) Chrysler Building, N.Y.

A FACTORY-PREPARED STUCCO IS PREFERABLE





T. Q.7



#### NEW. STRUCTURAL BENDS OF TEMPERED MASONITE STRONG • DURABLE • PRACTICAL EASY TO USE • ECONOMICAL

...16 Curved Designs from 12" to 48" widths, 8 feet high. Produced by an exclusive process (patent pending) from genuine, strong, smooth, tempered Masonite. Easy to cut, construct, finish and install.

Price per 8 foot length, \$1.90 to \$6.00

free ... 20 page fully illustrated booklet ... Write for your copy today.



### NEW. . Decorative Plaques

FOR HOMES • OFFICES • CLUBS Inspired by the modern mural technique of the World's Fair and the popular Swedish Modern influence. Subjects carved in deep relief from fine selected woods, mounted on wood panels...16 designs...animals, characters, flowers. Priced at \$10.00 to \$12.50 each—Sets of 5 and 6



### FORUM OF EVENTS

#### (Continued from page 48)

have been closely correlated, and to all of the sessions and social events the architects of the U. S. are cordially welcomed. Details of the tentative program have been published in *The Octagon* for July, and have been sent in the form of a brochure to all members of the profession.

CONSTRUCTION DAY, NEW YORK WORLD'S FAIR. Tuesday, October 3, following Architects' Day, has been designated as Construction Day, New York World's Fair. In the Hall of Special Events, Stephen F. Voorhees, chairman of the World's Fair Board of Design and vice president of the New York World's Fair 1939, Inc., will preside over a morning session. Speakers on the program include Col. John P. Hogan, Robert D. Kohn, Bassett Jones, and Walter Dorwin Teague. Ely Jacques Kahn is chairman of a Committee on Arrangements and Program.

#### CALENDAR

September 25-28. Fifteenth International Congress of Architects, Washington, D. C.

September 28. International Congress of Architects as guests of the A.I.A. leaving by steamer for Old Point Comfort.

September 28. Preview of members' exhibition, the Architectural League of New York, 115 East 40th Street.

September 29. International Congress of Architects as guests of the A.I.A. in Williamsburg, Va.

October 2. Architects' Day at the New York World's Fair.

October 3. Construction Day at the New York World's Fair. October 3-6. Annual Convention of the Mortgage Bankers Association of America at Detroit.

October 11. Architects' Day at the Golden Gate International Exposition, San Francisco.

October 30-31. Fall meeting of the American Society of Heating and Ventilating Engineers in Atlanta, Ga., with the Atlanta Chapter of the Society.

January 22-26, 1940. Sixth International Heating and Ventilating Exposition, Lakeside Hall, Cleveland, Ohio.

#### PERSONAL

John P. Brown, architect, has moved his offices to 37 Pearl Street, Boston, Mass.

Sidney B. Hayslip, architect, has moved his offices to 303 Postal Building, Portland, Ore.

The partnership of Landefeld & Hatch, architects, was dissolved as of August 1. Mr. Don E. Hatch will continue practice in the same offices at 152 West 42nd Street, New York, N. Y.

Harry Ray Nay, architect of Wheeling, W. Va., has opened a branch office with Ray A. Shaw associate in Cove Theater Building, Hollidays Cove, W. Va. Mr. Shaw will welcome manufacturers' catalogues and samples.

William O'Neil, industrial designer, has moved his offices to 50 Rockefeller Plaza, New York, N. Y.

Frank G. Pierson and A. Hamilton Wilson have terminated as of June 19, the partnership of Pierson & Wilson, architects. Both architects will practice individually, maintaining joint offices at 1621 Connecticut Avenue, Washington, D. C. Of striking beauty . . . "new" as the latest edition . . . is this firesafe concrete home of the LaCrosse, Wisc., *Tribune* & *Leader Press.* Kruse and Parish of Davenport, Iowa, architects. Boyum, Schubert and Sorensen of LaCrosse, associate architects. Theodore J. Molsahn & Sons, contractors.

BEAUTY.... FIRESAFETY... ECONOMY... Get <u>all three</u> – build with CONCRETE

I isn't a matter of deciding between beauty and economy when you build with Architectural Concrete. You get both—plus a high degree of firesafety and storm-proof permanence.

Concrete buildings are consistently low in first cost—as shown by awards of scores of new stores, offices, theaters, industrial plants, schools and other buildings. And low maintenance is also assured when the walls, frame, floors and detail are cast as one rugged reinforced concrete unit. Concrete can be adapted to any architectural style—can be molded into any decorative shape or wall pattern desired. Write for booklet, "*The NEW Beauty in Walls of Architectural Concrete*" (furnished free in U. S. or Canada), or ask for one of our engineers to call.

### PORTLAND CEMENT ASSOCIATION

Dept. 9-7, 33 W. Grand Ave., Chicago, III.

A national organization to improve and extend the uses of concrete through scientific research and engineering field work.





### New 1-inch thick Dust-Stop Filter lowers replacement costs

The Well-KNOWN 2-inch Dust-Stop filter has been generally conceded by maintenance men to be the most efficient replaceable air filter on the market.

But its new 1-inch brother—called the No. 1 Filter—offers users the same operating efficiency, and savings on filter replacements of as much as 30%.

How?

The 2-inch filter, it has been found, catches the bulk of the dirt in the first inch of the pack. And when this first inch gets loaded with dirt, the whole filter has to be changed. The No. 1 filter stops this waste. The front half of every 2-inch depth is now a filter by itself. When it gets dirty, only the front inch is discarded. And since this 1-inch filter costs 30% less than the 2-inch Dust-Stop, users save \$3 on every \$10 they previously spent on filter replacements.

When used together, two 1-inch filters have the same efficiency as a single 2-inch filter. Their resistance at 300-foot velocity is virtually the same: .095" to .1" water gauge.

They should be used on all *supervised* installations where filters are changed regularly. The 2-inch (No. 2) Dust-Stop filters should be used on *unsupervised* and domestic installations, because it can hold *more* dust between changes.

These No. 1 Dust-Stops fit into the same "L" and "V" frame assemblies now used for the 2-inch filters. They are made with Fiberglas in two layers, coarse and

See Fiberglas at the Fairs - New York and San Francisco

fine, in order to collect a maximum of dust and dirt.

Specify these new No. 1 Dust-Stop filters on your jobs. Your client will appreciate the saving. Write us direct for full information.





# ... proves Copper Steel's superior resistance to corrosion

IN 1916, at Annapolis, Maryland, under the supervision of the American Society for Testing Materials, Committee on Corrosion of Iron and Steel, a number of leading metals were put "on the rack". Among them, four which are commonly used today to fabricate duct work and housings: copper steel, open-hearth copper iron, non-copper steel and open-hearth noncopper iron. The chart on this page shows what happened! 21 years of continuous exposure proves copper steel definitely superior.

Ducts and housings in modern heating and air-conditioning systems face corrosive conditions very similar to those under which these metals were tested. They must meet the constant attacks of air and water—alternately and combined. Adequate defense against rust is a prime requisite if you want metal work to last.

 $U \cdot S \cdot S$  Galvanized Copper Steel provides ducts and housings with double protection against corrosion ... a durable coat of galvanizing, plus a base metal that resists rust should the galvanizing become damaged in use. And it's easier to work, uniform in ductility, gage, size ... makes possible true bends, tight seams, neat joints. Specify  $U \cdot S \cdot S$  Galvanized Copper Steel Sheets on your next job

. . if you want ducts and housings to last the life of the building in which they are installed. We will be glad to give you any further information. PROVING GROUND. Here's where many different types of sheet metal were tested —subjected to various kinds of corrosion. 21 years' exposure proved Copper Steel the ideal material for modern heating and air-conditioning uses.





# You'll want this FREE BOOK

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(Continued from page 20)

AIR CONDITIONING, Second Edition, by Moyer and Fittz. Mc-Graw Hill Book Co. 455 pp., illustrated. 6 x 9. \$5.00.

AIR CONDITIONING, by Charles A. Fuller. Henley Pub. Co. 577 pp., illustrated. 6 x 9. \$4.00.

AIR CONDITIONING FOR COMFORT, Third Edition, by Samuel R. Lewis, Keeney Pub. Co. 285 pp., 6 x 9. \$2.50.

Two of the above publications are revised editions. All three cover the theory of air conditioning and illustrate present methods of design. Mr. Fuller's book is of particular value for its extended discussion of cooling methods and equipment. In the study by Professors Moyer and Fittz emphasis is placed on designing for specific types of interiors, including restaurants, theaters, mills, railroad cars and residences.

AIR CONDITIONING ENGINEERS' ATLAS, by Clifford Strock and C. H. B. Hotchkiss. The Industrial Press, New York. 76 pp., 18 maps in color. 9 x 12. \$2.00.

A valuable and well-presented compendium of weather data for use in the design and operation of heating and cooling plants. The atlas has eighteen sections, each with a map of the U. S. in color accompanied by relevant information in tabular form. Nine of the sections deal with summer conditions and nine with winter. Among the subjects covered: days in a normal heating season; frost penetration in ground; lowest temperatures of record; relative humidity in July; temperature and availability of well water.

**STANDARDS FOR COLLEGE BUILDINGS**, by Evenden, Strayer and Engelhardt. Bureau of Publications, Teachers College, Columbia University. 226 pp. 6 x 9. \$2.25.

The fifth of a series of standards for school buildings published at Teachers College, this book provides a complete check list for evaluating the adequacy of college buildings and equipment, and a very useful aid to the architect engaged in this type of work. An appendix gives supplementary standards for the physical plants of normal schools and teachers' colleges.

### COLLEGE AND UNIVERSITY LIBRARY BUILDINGS, by Edna

Ruth Hanley. American Library Association, Chicago. 152 pp., illustrated. 8<sup>1</sup>/<sub>2</sub> x 11<sup>1</sup>/<sub>2</sub>. \$4.50.

A study of the essentials of college library planning. It contains plans and photographs of 42 library buildings, with descriptive notes and critical comments. There is also a bibliography of articles on library planning, and a list of descriptive material on buildings constructed between 1917 and 1938.

**SCHOOLS,** by R. W. Sexton. Architectural Book Publishing Co., Inc. 100 pp., illustrated.  $8\frac{1}{2} \ge 11$ . \$6.00.

A collection of 105 plans of 35 new schools, with 73 halftone illustrations of interiors and exteriors. Brief captions supplement the information given on the plans. The book is prefaced by a short article on modern trends in school design. As a monograph on school buildings the book leaves much to be desired regarding both type and quantity of information.



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### LETTERS

#### (Continued from page 22)

of these modern shining floors? Then there's the cleaning problem again.

A polished floor in a normally active household must be dusted daily, just for looks. No one would argue the necessity on sanitary or hygienic grounds. Also, it must be washed and waxed periodically. Routine cleaning is not necessary nearly so frequently on rugs or carpets.

There is only one disadvantage to fabric floor coverings and that comes when liquids are spilled. But even this disadvantage is minimized with the greater degree of imperviousness in the newer carpeting and the convenient cleaning materials now available. The only real threat is a bottle of ink. Better an ink spot than a broken pelvis. Speaking of horrors, what of the skeleton stairway and its corollary the rudimentary railing? They are beautiful, exciting, but, I imagine, a little too exciting when a child is on the scene. There is often nothing to stop him from falling out under the railing to his destruction, nor to stop a slipping foot of young or old from crashing through the open string or riser. Father Gropius' outdoor spiral in his home in Lincoln suggests rather a trap than

#### a stairway.

Sometime I should like to weigh the pros and cons of built-in furniture generally. But here I shall mention only one type, for which I can think of no pros, only cons. This is the bed with one side and one or both ends built into the wall or an alcove. Pullman porters make up beds from one side, but they are longarmed men specially picked for the job; their mattresses are lighter in weight than ours, and narrower. It is next to impossible to make up a bed properly from one side only. And any woman who tries very hard is being unfair to her back and her disposition. Needless to say, the disposition of the person who sleeps in a poorly made bed is also being tried.

Speaking of backs brings me to my most daring criticism of all. I admit that I am touching the untouchable-that practically packaged article-the kitchen found in all 1939 houses, Modern, Colonial, or Terrible.

Let's begin with the tabletop stove. Here the salesmen's pretty pictures have betrayed the cooks of the country. Why bend or kneel half way to the floor with the hot and heavy oven products? Why bend or kneel even to look at them, turn them, or baste them? A grandmother of my acquaintance remembers the acclaim with which the high oven was presented to and received by our housewives only a generation ago. Their backs were grateful. How long before ours rebel?

How about the sink under the window? There are two objections: First, the light that hits you in the face. Second, the splatters that hit the window. We do not face a light when reading or writing; why do it when dishwashing?

My next kitchen heresy is a preference for open shelves and hanging utensils. It seems to me that the kitchen should be the first place we would want penetration -not of the outdoors with the indoors, but of the work area with tools and materials. The popular cupboards gain us nothing except hidden dirt in the place where we should most scrupulously avoid it. We do not find them in other workrooms nor laboratories. They lose us time when we have to go down the line opening the whole series looking for the tapioca. They lose us our tempers when, in our hurry, we bump our heads against one of their open doors. Our pots and pans lose an attractive airing. And each stylish white door presents two unnecessary surfaces for cleaning which, however easy, is nevertheless another job.

Modern architecture already has its clichés. Let us not be fooled that familiarity with them is a substitute for the thoroughgoing integration of form, materials, and function which is its sine qua non.

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Illustration: Style AE, Multiple Valve Register, Grille Book, Page 192

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SEPTEMBER 1939

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## NEW HOUSES



# THE ARCHITECTURAL FORRUNI

## SPECIFICATION AND BUYING INDEX

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IN AN EASTERN city recently, the maintenance crew of one company reported that one of the company's roofs was in doubtful shape. A couple of executives looked it over, remembered that it was bonded and decided to take a chance.



**THE WINTER** was pretty hard on the roof and when spring came, there wasn't any question that the roof would have to be re-roofed. So the bond was hauled out and the roofer was called in.



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