Heacock, Hokanson, and Sheuringer planned the beautiful new Ellis Hospital at Schenectady, New York. They know the importance of QUIET, consequently the ceiling of every noise center in the hospital is sound-conditioned with Acousti-Celotex Fibre Tile.

Lobby, dining room, nursery, wards, and corridors—all are potential sources of disturbing echoes—sounds of voices and footsteps which doctors and nurses are glad to have kept from their patients. Thousands of hospitals and other institutions subdue Noise with this famous paintable material, proved through years of service.

Whether your immediate acoustical problem be a hospital or a bank, a courtroom or a theatre, one of the Celotex acoustical products can meet your requirements exactly—both as to architectural effect and sound control. Our experience is yours to command, without obligation. Complete information on all Celotex acoustical materials should be in your files. A request from you will bring it by return mail.

The word Acousti-Celotex is a brand name identifying an acoustical product marketed by The Celotex Corporation.
CASTLE VILLAGE
A 569-family apartment project oriented to an 180° view. Reinforced concrete and cross planning carried to new highs.

ASSOCIATED AMERICAN ARTISTS
Controlled circulation and improved lighting in a new gallery.

MUSEUM LIGHTING
Special installations for picture and sculpture galleries.

RESIDENCES and SETTLEMENT HOUSE
A portfolio of distinguished recent work by Paul Schweikher and Theodore Warren Lamb of Chicago.

PRODUCTS & PRACTICE
Reinforced brick masonry...a rediscovered building technique which offers new design opportunities and economy in the enlarged application of man's oldest building material.

THE ARCHITECT'S WORLD
Supplementing Forum's record of what is being achieved in architecture, here is a digest of what is being thought and argued.

THE DIARY
Random comment of a peripatetic observer.

HOSPITALS
Recent trends in hospital design shown by a number of new institutions of widely varying size and function: Memorial Hospital for the Treatment of Cancer and Allied Diseases; Little Traverse Hospital; Surgical Floor, St. John's Hospital; White Plains Hospital; Hospital for Chronic Diseases, Welfare Island.

BUILDING MONEY
Home Building's most important financiers are the local savings and loan associations—their past, present and future...A 200-house subdivision with steel and concrete floors and vest-pocket heating plants...Brooklyn remodels an apartment, looks at its 50-year history of maintenance costs...A portable rental project plugs prefabrication in Reno...How the war in Europe is affecting building statistics in the U.S.

MONTH IN BUILDING
FORUM OF EVENTS
American Institute of Architects bestows offices and honors...News in pictures...Awards...Competitions...Educational...Personal.

BOOKS

LETTERS
BUILDING STATISTICS. Covering the first month of World War II, the trends of these building indices are particularly significant: wholesale material prices, up to the highest level since April 1938; rents, up to the highest level in twelve months; employment, unchanged; interest rates, down; mortgages selected for FHA appraisal, down. September trend of the last mentioned item, however, may reflect the coming seasonal lull. Despite the construction upsurge of 1938's second half, August 1939 permits (opposite), contracts and mortgage recordings all bettered last year's figures. See page 410.

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

<table>
<thead>
<tr>
<th>PERMITS</th>
<th>Monthly data</th>
<th>First eight months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aug. '39</td>
<td>Comparison with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July '38</td>
</tr>
<tr>
<td>Residential</td>
<td>1166.6</td>
<td>+20.9%</td>
</tr>
<tr>
<td>Non-residential</td>
<td>45.5</td>
<td>-22.0</td>
</tr>
<tr>
<td>Additions, repairs</td>
<td>32.8</td>
<td>+11.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>194.9</td>
<td>+7.5</td>
</tr>
</tbody>
</table>

Variations in ratios from city to city are attributable in part to differences in building ordinances, in their enforcement, in the use of permit valuations by tax assessors and in other local practices.

CLAN CALLING. September and October are habitually the months for Building's conventions. With the calling of seven clans, representing Building branches from labor to capital, September and October, 1939 were no exceptions.

AIA. Washington played host to the American Institute of Architects (see pp. 10, 378).

MBA. Composed primarily of insurance companies and their loan correspondents, title and trust companies, commercial banks, mortgage banking firms, realtors and farm mortgage lenders, the Mortgage Bankers Association met in Detroit. There they heard 1) from Speaker George W. Drennan that, thanks to the automobile, urban decentralization had already progressed much further than they thought; 2) from President Joseph M. Dodge of the Detroit Bank—Michigan's oldest—that there is much to be said for three- to five-year mortgages. . . . Renewal and extension forces a review of the loan value and makes possible an adjustment of interest and amortization in keeping with conditions; 3) from Retiring President Samuel M. Waters that many States "have mortgage and foreclosure laws that truly belong to horse and buggy days"; 4) from Dr. William G. Murray, professor of Agricultural Economics at Iowa State College that "a quicker rise (than during World War I) in farm prices and farm values can be anticipated now"; 5) from informal bar-room discussions that (much to USS&L's consternation) the Nation's banks and trust companies will increase their purchases of home mortgage loans; and 6) from a MBA survey that "fear of holding their jobs" is the primary reason why people shy away from home construction. Of all member institutions polled, 97 per cent offered this reason. Other reasons: the over-exaggerated high cost of labor and materials (74 per cent), cheaper to buy an old house (67 per cent), high taxes (46 per cent), renting is more attractive (29 per cent), and war (only "a few"). MBA's new president is Kansas City's Byron T. Shutz, "not yet 40 years old," the second youngest president of the 26-year-old association.

ABA. For their 65th annual convention the American Bankers Association chose Seattle. For their next president they chose Robert M. Hanes, president of Winston-Salem's Wachovia Bank and Trust Co. and brother of Under Secretary of the Treasury John W. Hanes. For criticism they picked out Government's easy money policy, agreed with Chase National Bank President H. Donald Campbell's words: "The thrifty and prudent have been penalized by its effect... And yet, low rates have not perceptibly increased borrowing." For the records, they opposed as "fundamentally unsound" current Federal proposals to insure or guarantee loans to small businesses, and
I'd heard a lot about Masonite Tempered Presdwood, but never saw it until I went to buy a chair. All the store's display rooms were made of it. The manager said they use Tempered Presdwood because it's a clean, dry board easy to install and they can get really beautiful walls and ceilings with it. What's more, it costs very little.

I suddenly realized Tempered Presdwood might enable Larry and me to have our whole bedroom done over, so I made some pencil sketches of those smart model rooms. Sure enough, we found that Tempered Presdwood could go right over the old walls. It's grainless and moisture-resistant too. It won't warp, chip, split or crack. And it can be painted.

You'd never know the old bedroom now. Our walls are Tempered Presdwood, scored vertically and painted deep blue. The ceiling is light grey. We have a built-in chest of drawers along one wall—Tempered Presdwood, of course. And a handy built-in shelf over our bed for radio and books. P. S.—Larry was so pleased that he bought me a whole suite of new furniture.

NO WONDER your clients recognize the name "Masonite" when you include it in your specifications. Lifelike, human-interest advertising carries the story of Masonite Products to millions of home-conscious people every month. Reproduced here is the advertisement that will appear in national home magazines in December. And below is a coupon for your convenience. Mark and mail it today for free samples and full information about these modern building materials.
advocated "not only . . . strict economies in governmental operations to lessen . . . taxation, but also the withdrawal of pressure on Government by special groups among our citizens urging the expenditure of huge sums for non-essential projects."

For institutional and private investors they announced their "continuing conviction that the bonds of our Federal Government are the safest of all investments."

USS&LL: Representing Home Building's No. 1 financiers, the U. S. Building and Loan League convened in Atlantic City, N. J. on September 25, spent the following week-end celebrating its day at the New York World's Fair, on October 1 went home rechristened the U. S. Savings and Loan League. For further information on the convention and its significance, see page 399.

AFL: Building's interest in the American Federation of Labor's Cincinnati convention centered upon the pow-pow of nineteen building trades union presidents. While the general convention lambasted the Roosevelt administration in general, this little group singled out two of its children for particular chastising: 1) The Tennessee Valley Authority was accused of actively discouraging craft union membership and of refusing to enter into closed shop agreements with the unions. 2) The U. S. Department of Justice was severely criticized for the anti-building-trust drive of Assistant Attorney General Thurman Arnold's Anti-Trust Division. AFL's attack was led by General Counsel Joseph A. Padway who characterized Mr. Arnold as a "crusader who sought and probably procured more indictments against labor unions than he has against capital and industry or other persons who are charged with violating anti-trust laws. . . Mr. Arnold is a college professor . . . trying to make a name for himself." Prayed Mr. Padway: "God deliver us from college professors." Of more significance, however, was Counsel's claim that the Clayton Act specifically exempted labor from anti-trust laws. Interestingly, AFL absolved Attorney General Frank Murphy of any blame in the building trades investigation, hoped that he would "perhaps suppress" the program.

CIO: Despite its recently foaled United Construction Workers Organizing Committee, the Congress of Industrial Organizations in convention at San Francisco had nothing to say concerning its entry into the building industry. From another source, however, came word that UCWOC has established itself in about 33 communities in eighteen States.

NAREB: Last convention of the month was the Los Angeles gathering of the National Association of Real Estate Boards. Highlights: confirmation of the fact that the World War II has already had a firming effect upon real estate prices; discussion in both general session and round table conference of Arthur W. Bins' plans to promote housing by private industry (Arch. Forum, Sept. 1939, p. 140); reconvene on November 1 of an "adjourned session" in Honolulu.

ROOM VALUES. No more enterprising body of mortgage bankers exists than the Group Five Mortgage Information Bureau whose membership includes most of the top-flight savings banks of Brooklyn, Queens, and Manhattan, N. Y. Latest enterprise of the Group was the adoption last month of "standardized room values" to be used in appraising and computing rooms in new apartment houses in those areas. Like its two-year-old dictum on minimum construction requirements which has materially improved the quality of local apartment building, the Bureau's agreement on room sizes should promote better planning. Thus, no member bank will consider a dining alcove or gallery a half room unless it (as well as the adjacent kitchen) has an individual window and unless the combined kitchen-alcove has an area of at least 140 sq. ft.

Other standardized room values: The dining room will be counted as a half-room if its area is less than 130 sq. ft. A kitchen with window is a half-room if it does not measure 7 x 10 ft. or the area equivalent. Unless it contains at least 220 sq. ft., a living room is not acceptable. A primary bedroom must have at least 180 sq. ft.; a secondary bedroom without individual bathroom, at least 130 sq. ft. A smaller area lowers the secondary bedroom to half-room rank. No room is allowed a bathroom, kitchenette (without window), foyer, dressing room or balcony.

LOW COST FILLIP. Analysis of World War II and its effects on Building commands these columns last month, forced many a newsworthy development to go unreported. Worth belated mention, however, is FHA's latest shot in low cost housing's arm—insurance of fifteen-year home loans upon a down payment of only 5 per cent.

In effect, the new program is merely a widening of FHA activities under Title I of the National Housing Act—generally associated with the insurance of modernization and repair loans which are designated by FHA as Class I loans. This title also authorizes insurance of loans for the financing of new construction to be used for other than residential purposes—Class 2 loans. But, these regulations relate to still another category—Class 3 loans for the financing of new construction to be used in whole or in part for residential purposes.

On September 1, FHA Administrator Stewart MacDonald upped the amortization period on Class 3 loans from ten years and thirty-two days to fifteen years and five months. He also announced that the recipient of such a loan must own the lot in fee simple or hold it under at least a 30-year lease and that his equity in cash or in land must be equal to 5 per cent of the appraisal value of the completed property. Otherwise, the rules and eligible for an FHA loan. The loan may not involve a principal amount in excess of $2,500, and the borrower may not be charged more than $35.50 per $1000 including interest, insurance premium (1/2 of 1 per cent), discount and all other fees. (The cost is equivalent to about 6.9 per cent per annum.) Proceeds of the loan may not be used to supplement another loan on the house nor for the purchase of land, but they may be used to pay for architectural services.

Under these provisions, a family owning a lot valued at $125 or able to purchase a $125 lot can obtain a loan covering $82,500 to finance construction of a house. If such a lot is not owned and is not available (as will more frequently be the case), this family can apply its $125 cash down payment toward the purchase price of the lot, write a second mortgage for the balance of the land cost, thus become eligible for an FHA-mortgage. The loan may not involve a principal amount in excess of $2,500.

Purpose of the new program is to assist low cost housing in areas that do not fully meet the requirements of other phases of the FHA program, particularly where building codes and neighborhood restrictions and land planning requirements are less rigid. Also, houses built under Title I loans are not subject to as strict FHA inspection and construction standards as are houses constructed under Title II. The lending institution makes the loans; FHA agrees to reimburse the lending institution for losses sustained by it up to a total aggregate amount equal to 10 per cent of the total amount advanced in the form of Title I loans.

Another low cost housing fillip may be expected in the near future when the Federal National Mortgage Association announces that it will serve as a discount agency for Title I home loans as well as Title II mortgages. FHA is currently trying to convince FNMA that such a step is in order and expects to succeed.

HOLC INTEREST. Last month the announced (Arch. Forum, Sept. 1939, p. 2) reduction in HOLC interest rates became effective. On October 16 all purchasers of HOLC-owned properties as well as all HOLC borrowers began reap the benefits of an interest rate shaved from 5 to 4½ per cent.
HANDSOME and permanent bathroom and kitchen walls of Formica are possible in more than 70 colors and with attractive inlays in color and metal where cost will permit it. This wainscot material has just been reduced in price by 20 per cent and is now available for many uses from which price formerly excluded it.

It will not stain with ordinary liquids; it is not brittle and will not crack if the walls shift; it is easily installed for modernization purposes in old houses.

Let us send you all the facts.

The Formica Insulation Co., 4620 Spring Grove Ave., Cincinnati, O.

FOR BUILDING PURPOSES

FORMICA

NOVEMBER 1939
"Sound" advice

...a service
that saves you a lot!

ONE JOB that no architect wants, is the engineering of a complex sound distribution system. Fortunately, there's no need for you to struggle with the countless technical problems involved.

TO RELIEVE YOU of such worries and to assure installations that are right, Graybar has sound-transmission experts who for years have worked with leading architects.

NO MATTER what the special problems involved in your project —no matter what the size of your building—you and your clients can count on the Western Electric equipment that Graybar will recommend, for highest quality sound reproduction and for lasting satisfaction. It's designed by Bell Telephone Laboratories and built by the maker of Bell Telephones.

WHEN YOU'RE READY for "Sound" advice, get in touch with Graybar Electric Company, Graybar Building, New York.

Western Electric
LEADER IN SOUND-TRANSMISSION APPARATUS
TAKE TWO EASY STEPS WITH BESTWALL

Get two extra advantages for houses you build or remodel this Winter!

Apply Bestwall on studding as soon as house is closed-in. Start any decorative treatment twenty-four hours after Bestwall is applied.

When you specify Bestwall — the original Gypsum Wallboard with improved Reinforcing Joint System — walls and ceilings are ready for decoration days earlier. And they are strong walls that delight the eye with straight, true smoothness.

Big, strong, resilient sheets of Bestwall go up fast, nail easily, speed up the job. There is no waiting period with tricky Winter temperatures to be constantly watched... the decorators can go to work the day after the final Bestwall panel is in place. And on remodeling work you give clients the extra advantage of no muss, no fuss, no dirt.

Strong, crack-resisting walls and ceilings of Bestwall have virtually rock-like permanence plus the characteristic fire-resistance of gypsum. That means lasting beauty and protection for the home owner’s investment... more satisfied clients for you!

Use coupon below for Bestwall samples and booklets.

Another timely tip for faster Winter building is “roof with Wood-Tex” — the fire-resistant asphalt shingle with the heavy grain actually built-up on the thick butt. With deep shadow lines and skillfully blended Wood-Tex colors, the house is cheery and inviting in even the bleakest Winter landscape!
Four rows of strong twine, stitched down the entire length of each Kimsul* blanket—a most important development in guarding against shifting, settling and the formation of heat escaping "transoms." Being many times stronger than needed to support the entire weight of the blanket, the stitching keeps Kimsul permanently in place.

Stitching permits Kimsul to be expanded only to its most efficient density. No farther! It makes the application of Kimsul more than ever a one man job. For even an inexperienced laborer can hardly fail to install Kimsul so as to get the full value of its unusual insulating efficiency.

By eliminating thin spots and preventing shifting or settling, Stitched Kimsul provides the snug, unbroken, evenly dense insulation essential to greatest fuel savings and greatest comfort.

OF SPECIAL INTEREST TO ARCHITECTS
Stitched Kimsul comes in various widths to fit snugly between studs . . . and, when expanded, Commercial, Standard and Double Thick. So the correct width and thickness, best suited to every job, is available.

Mail me copy of booklet describing Kimsul, also a full sized sample.

Name: ____________________________
Address: __________________________

City: ____________________________ County: __________ State: __________

PLEASE CHECK: ARCHITECT □  BUILDER □  DEALER □
For luxurious renovations of hotel interiors

Flexwood can be applied so easily and so speedily to new or old walls, flat or curved, that it is a boon to designers and owners of hotels, restaurants and other businesses catering to the public. The renovation of the Hotel Albany in Denver, by Burnham Hoyt, Architect, is a case in point. Flexwood was specified because it was adaptable to Mr. Hoyt’s designs, saved time and came within the budget. Several model suites and private dining rooms, the Bar and the Manager’s Office were transformed with 4,500 sq. ft. of Flexwood in such rare and exotic woods as Orientalwood, African Mahogany, English Oak, Curly Maple and Prima Vera. Result—charming design, and the luxury obtainable only with genuine wood. Complete data, and samples of Flexwood, will be sent gladly.

UNITED STATES PLYWOOD CORPORATION, 103 PARK AVE., NEW YORK
Manufacturers of Flexwood, Plywood, Armorply, 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.
Important architects, more often than not, look like bankers, as this photogenic gallery proves. In upper line at right: President Edwin Bergstrom, Los Angeles; Vice President Walter R. McCormack, Cleveland; Secretary Charles T. Ingham, Pittsburgh; Treasurer John R. Fugard, Chicago. New Regional Directors (second line): for Central States, Benedict Farrar, St. Louis; for Sierra Nevada District, Gordon B. Kaufmann, Los Angeles; for Gulf States, J. Fraser Smith, Memphis; for South Atlantic District, Rudolph Weaver, Gainesville, Fla.

NEWLY ELEVATED FELLOWS, A. I. A.

FREDERIC C. BIGGIN
Alabama Tech

PIERRE BLOUKE
HOLC

ERIC OUGLER
New York

ANDREW H. HEPBURN
Boston

GERALD A. HOLMES
New York

WM. TEMPLETON JOHNSON
San Diego

RICHARD KIEHNEL
Miami

FISKE KIMBALL
Philadelphia

EUGENE H. KLABER
FHA

EMIL LORCH
U. of Mich.

DOUGLAS W. ORR
New Haven

WM. T. PARTRIDGE
Washington

E. DONALD ROBB
Boston

MOTT B. SCHMIDT
New York

SUMNER SPAULDING
Beverly Hills

FRANCIS P. SULLIVAN
Washington

CARLETON M. WINSLOW
Los Angeles

Up goes NEW YORK CITY’S skyline!

IMPORTANT FACTS ABOUT CASTLE VILLAGE

Five dominating apartment structures overlooking the famous Palisades—three at 13 stories, one of 12, one of 11. All of reinforced concrete construction. Approximately 550 apartments. Every room an outside room.


All buildings heated by ten 24,200 sq. ft. oil-fired Fitzgibbons R-Z-U steel boilers.

HEATED BY

FITZGIBBONS STEEL BOILERS

Towering high above the Hudson, the boldly beautiful outline of Castle Village expresses the very best of modern living comfort. And a large part of this comfort will be due to the ten Fitzgibbons R-Z-U boilers which will heat these five majestic apartment buildings.

History repeats itself. The famous Paterno Castle which formerly occupied this commanding site, was also heated by Fitzgibbons Steel Boilers—so successfully, so economically, that in selecting boilers for Castle Village, the owner Dr. Chas. V. Paterno, unhesitatingly chose Fitzgibbons.

The detailed reasons for the selection of Fitzgibbons Boilers for installations like this would interest you. Ask us.

Fitzgibbons Boiler Company, Inc.
General Office: 101 PARK AVENUE, NEW YORK
Works: OSWEGO, N. Y. Branches and Representatives in Principal Cities

N O V E M B E R 1 9 3 9
Largely through the efforts of her dynamic Mayor La Guardia, New York will no longer depend on Newark for her airport. North Beach (Delano & Aldrich), largest WPA project, is costing $40 million.

Opposite Grand Central Terminal, where once stood Hotel Belmont, will soon rise what looks to us like a sub-treasury. For the guidance of unsuspecting travelers it is labeled "Air Lines Terminal."

In a Moscow park, girl landscapists keep alive this plant portrait and another of Lenin. A rose by any other name . . .

For their new headquarters at 595 Madison Avenue, New York, the American Institute of Decorators did this.

In a Cleveland restaurant, Designer Wilbur Henry Adams has given a thought to those who read while they eat.

The Rome-Berlin axis may be indistinct but the main axis and all the minor axes of Mussolini's 1942 World's Fair are being laid down in accordance with this model.

(Forum of Events continued on page 42)
Specifications call for building products by brand name and indicate sizes, types and models... but there is much more behind them than such identifying details. This is particularly true of Fenestra Fenmark Windows.

For example, “light” was not specified in this monumental building, yet Fenmark Windows provide it in abundance. The same with “fresh air,” yet Fenmark Windows provide it by easy-opening ventilators which afford 100% window opening if desired. Even when open, these better windows provide weather protection: in projected types, open-in vents form canopies over openings; open-in vents deflect drafts upward, shed water to the outside. And because of the “double weathering” of framing sections and cam-action hardware which draws the vents tight-shut, Fenmark windows are weather-tight.

And every demand of the architect for attractive lines and pleasingly proportioned glass areas is fully met. Fenestra Screens for all Fenmark Windows permit complete operation of vents without touching screens. Glass is easily and safely washed from within the room. Complete details will be gladly furnished upon request. See Fenestra Catalog in SWEET'S for 1939 (30th Consecutive Year).
BOOKS


This is no picture-postcard guide to Washington. It shows the main buildings, but comments: "It takes a young nation to build itself a symbol as solemn and irrelevant as the interminable perspectives of marble columns we made for ourselves." The inside of a boarding house gets as much space as the Lincoln Memorial. For every picture of the city, there is at least one from outside, showing the effect of Federal activities on the nation at large. Throughout the book it is activity rather than architecture which is stressed, an approach which seems quite suitable, because if Washington "looks like nothing else we ever built to use," the work of Government bureaus leaves no citizen unaffected. Thanks to the numerous pictures, one can read the book in under an hour; that a pretty good general idea of what goes on in the "nerve center" is given in less than 130 pages indicates the extraordinary potency of the infant art of pictorial journalism. If the author's terse descriptions occasionally seem too whimsical, the defect is minor in a stimulating book. To architects, accustomed by long training to express themselves in pictures and symbols, Mr. Rosskam's rapid word-and-photograph technique should be of unusual interest.

HOME: A VICTORIAN VIGNETTE, by Robert Harling. Constable, London. 166 pp., illustrated with contemporary prints. 5 x 7½. 6s.

Now that the Victorian period has achieved the respectability never denied any safely interred era, there are signs—and not only in the fashion magazines—that it may again come into its own. If it should, Mr. Harling's amused and amusing little book will be useful. Here are half-tester iron or brass bedsteads, "modern Gothic" wash-stands, color schemes ("blue and pink with brown, seaweed-like"), planting tips on selaginella, toad-flax and Aaron's beard; rustic window-boxes with enamelled tiles, and a host of other objects, customs and designs which made the Victorians "the most ingenious, most exhaustive and most fantastic race of elaborators the world has ever seen."

IN SEARCH OF A LIVING ARCHITECTURE, by Albert Frey. Architectural Book Publishing Co., Inc. 95 pp., illustrated. 8 x 10½. $3.75.

Both the title and subject matter of this book inevitably recall the earlier published works of LeCorbusier, which, beginning some fifteen years ago, attempted to explain the origins and functions of modern architecture. It is difficult to see how the present volume extends in any important way LeCorbusier's original contributions. Nevertheless the material is arranged in a stimulating and highly intelligible manner, and deals with abstract design, the value of traditional architecture and modern technics. The general technique is to present modern buildings and natural, primitive, or industrial forms on facing pages, emphasizing in each case the common underlying basis of design. A typical example is shown at the left, a desert structure illustrating the special problems presented by this environment.

(Continued on page 58)
Another Oil City, Pennsylvania, School Has Been Equipped with Herman Nelson Air Conditioners

Sixty-two Herman Nelson Air Conditioners have been installed to maintain ideal classroom air conditions in the Senior High School at Oil City, Pennsylvania. This is the fifth school in Oil City to be equipped with these units.

Architects and School Authorities in hundreds of cities select Herman Nelson Air Conditioners for all new school projects. They have learned through past experience that superior results and greatest economy can be secured only with Herman Nelson Units.

Herman Nelson’s 30 years of experience and nation-wide reputation for intelligent, reliable service in the heating, ventilating and air conditioning of schools are other reasons why these units are being selected today in preference to any others.
Smithsonian Gallery
Forum:
...It is difficult to add anything to the fine understanding of the competition stated so completely by your editorial. From my experience with the Section of Fine Arts which is based on the open anonymous competition method, the success of the results led me to believe that the same method would open the field of opportunity to the creative architects of the country as it has to the creative artists. I know the opposition and the arguments to the competition method by which I see that in the architectural field the results of the Smithsonian Gallery competition are the answer to that opposition. The inventiveness of the ideas brought out in this competition and the superb understanding of the problems involved and their solution in the Saarinen and Swanson could not have been brought out other than by competition.

As your editorial pointed out the important thing now is that the building must be built. With such a challenging design those who cannot see architecture for the columns will undoubtedly try to make the Smithsonian Gallery feel like an intruder on the classic serenity of Washington. However, for those of us who believe that architecture as well as art can sometimes be good if it grows out of life instead of a copy book, the Saarinen building will be an achievement in which I for one am proud to have been able to share.

Edward Bruce
Public Buildings Administration
Washington, D. C.

Esoteric
Forum:
As a lowly builder I feel somewhat hesitant about writing to so esoteric a publication as an architect's magazine. I suffer I suppose from the natural shyness of the layman when confronted by Art—as well as from the difference of the builder when called upon to speak before his peers and counselors. But having read The Forum for some fifteen years while waiting in the anterooms of practicing architects I have drawn some very pertinent conclusions about the magazine, particularly in its appeal to publics in my own field. I suppose that you include that peculiar appendage to the magazine known as Building Money in order to appeal to the building and financing fraternity. My experience indicates otherwise, although the section serves a very useful purpose as I will indicate below.

Builders like The Forum for the same reasons that everyone likes the movies. It gives us a release from the humdrum business of building frame houses and filling stations, gives substance to our dreams of what we would really like to build. In thumbing through an issue we read what the architect's world is like; we boomerang into pure fancy with Photos, we admire glittering mansions, streamlined hospitals, and skyscrapers. And then we arrive at Building Money. It is like being shaken out of a sound sleep with the admonition that it is time to go to work.

I tell you, builders don't buy The Forum to read Building Money, but when we get to it it brings us down to earth, and, incidentally, gives us many a pointer on building houses instead of dreams.

Des Moines, Iowa
H. A. Walsh

More alert reading will reward gracious subscriber Walsh with pointers galore from cover to cover.—En.

Two Schools
Forum:
...It seems rather asinine when building operations are increasing, when labor is finding more employment, when there is an indication that we might be coming out of the throes of the terrible conditions that we have labored under for the last six or eight years, that there should be so much propaganda to the effect that practically the entire building industry is in the hands of racketeers.

It all simmers down, as I see it, to the difference between those two schools of thinking: the one that follows the idea that humanity is best served when prices are low, when everything is cheap and when no one is making a profit on any activity in which he is engaged; the other group follows the idea that humanity is best served when prices are high, when labor is generally gainfully employed, when goods are supplied in abundance and when profits are made as the result of industrious effort.

Underlying the whole thing is just the question of a true or false analysis of human nature. When we once get the human being to a point where he will exert his best effort, work tirelessly and endlessly for the good of humanity without expecting any reward, then the cheap low-priced philosophy will have its day. But since we know that human nature has not, and perhaps for many years will not arrive at this stage of development, we are going to have incentives that are of a little more substantial nature, that are more direct, and that will come a little closer to satisfying a proper human sel-fishness. As long as this condition obtains, the second school of thinking above referred to alone can best serve us.

To me, this is all very interesting, were it not for the fact that the butcher, the baker and the candlestick maker want their bills met on the first of the month. One wouldn't mind sitting calmly on the sidelines and watching the whole thing work itself out, but when you are in there pitching yourself and trying to get a little something out of life, it does seem rather discouraging to see that the industry that you are personally engaged in, is being so liberally maligned.

H. J. Reinhardt
Frank Adam Electric Co.
St. Louis, Mo.

TVA
Forum:
Having recently returned from an educational visit to the Tennessee Valley, I wish to compliment you upon your presentation of this subject. In many respects the information through your presentation was easier to comprehend than through a personal visit.

However, the Tennessee Valley Authority has been doing a considerable amount of research, particularly on the economies of building construction and even in such details as insulation which they have recently published for technicians. It would seem that your readers would be as much interested in these researches as they are in the overall views of the Tennessee Valley Authority accomplishments.

Wharton Clay, Secretary
New York City

The Forum attempted to explore not exhaust TVA in August. More anon perhaps.—En.

Forum:
...As one of your newest subscribers may we call attention to an error in your article on TVA. On page 75 you speak of “the heart of a valley 40,000 miles square.” Such a valley would have an area two and a half times the area of the total land and water surface of the earth.

Like many other features of the last seven years of the age in which we are living, even our areas seem to be assuming astronomical magnitudes.

Dozin Finley
Paraffine Company, Inc.
Eureka, Calif.

To Reader Finley, apologies for the astronomical error. TVA covers about 40,000 square miles.—En.
Penberthy Automatic Electric Sump Pump
Made in 6 sizes

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(Water or Steam operated)
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DOUGLAS FIR PLYWOOD is one of the most versatile materials I use...and so safe to specify, now that every panel is grade trade-marked

...George Wellington Stoddard

There is almost no limit to what you can do with Douglas Fir Plywood. Many architects declare it the most versatile of modern building materials because there is a trade-marked grade for every building purpose. For wall and roof sheathing, sub-flooring, concrete forms, exterior walls, interior walls and ceilings, cabinet work and fine paneling. Each grade is made in accordance with United States Commercial Standard CS45-3H and is distinctively trade-marked. You're safe when you specify this real lumber engineered for greater size and strength.

A new method using all of the grades of Douglas Fir Plywood is revolutionizing building practice. It is called Dri-Bilt with Plywood and is adaptable to every type of residence. This method slashes building and supervisory time as much as 6 weeks...adds amazing strength and rigidity...and gives your client more house for his money.

The basic principle of the Dri-Bilt method is the use of 4' x 8' standardized plywood panel as a module, which minimizes cutting, fitting, nailing and material requirements.


FHA has accepted Douglas Fir Plywood for home construction, and its use is approved in Uniform Building Code.

Richly finished select-ed panels of Douglas Fir Plywood add inviting warmth to the living room in the Stoddard-designed home of Mr. and Mrs. Romig Fuller which overlooks Puget Sound near Seattle. Here Plywood also is used effectively to give rounding lines and distinction to cabinets and bookcases.

In Seattle, the Lake Washington home of Mrs. Mark Reed is distinguished both for beauty of design and setting. Mr. Stoddard used Douglas Fir Plywood in entrance hall and for much interior cabinet work.
PRIZE-WINNING DESIGNS IN THE INSULUX GLASS BLOCK COMPETITION No. 2

CONDUCTED FOR OWENS-ILLINOIS GLASS COMPANY BY THE ARCHITECTURAL FORUM

MEETING in San Francisco, in September, the Jury selected eight prize-winning designs and made a report as given below. The authors' names were published in a preliminary announcement last month, and the drawings are reproduced in the following pages.

THE PROBLEM—Remodel parts of an old business block to provide modern fronts for a restaurant and an apparel shop and an efficient interior for a second-floor beauty shop.

REPORT OF THE JURY—"Generally speaking, the competitors gave evidence of a rather comprehensive understanding of glass block, whether used as a major element or merely as a minor one. As we review the eight prize-winning designs it becomes evident that the selections made, with one exception, show glass block as a predominating material; this fact represents no conscious intention in our deliberations nor any predilection for quantitative use.

"As to the apparel shop, there was one rather conspicuous fault in a large majority of the designs submitted: the Program stated that the store would face west—a stipulation that should have suggested to competitors a definite need for awning protection of display windows. Few designs showed provision for awnings, though in some of the others such equipment could be added without serious harm to these facades.

"Plans for the restaurant floor were generally interesting, and many of them displayed fresh and ingenious uses of the material. The use of plants as integral parts of the design was frequently noted, not only in the restaurant problem but in the other two as well.

"Comments upon the individual prize-winning designs appear with the reproductions; representing the expression of one or more of the Jurors, in which all concurred."

THE JURY

WALTER E. CHURCH, Portland, Ore.
STILES O. CLEMENTS, Los Angeles, Calif.
GARDNER A. DAILEY, San Francisco, Calif.
GORDON B. KAUFMANN, Los Angeles, Calif.
DONALD B. PARKINSON, Los Angeles, Calif.
TIMOTHY L. PFLUEGER, San Francisco, Calif.
GEORGE W. STODDARD, Seattle, Wash.
WILLIAM W. WURSTER, San Francisco, Calif.

The Jury meeting at The Family Club, San Francisco. Seated, l. to r., Chairman Pfleuger, Clements, Kaufmann; standing, the professional adviser, Dailey, Church, Stoddard, Parkinson, Wurster.
FIRST PRIZE—$1,000
JAMES A. MITCHELL
AND DAHLEN K. RITCHEY,
PITTSBURGH

JURY COMMENT—"An interesting form leads the eye nicely to the restaurant entrance, neatly framed in metal. Here is a good background for a sign and the designer has well placed the lettering of what he had to say.

"On the apparel shop facade full attention is drawn to the show window and it is given all the space that the frontage affords. Through the use of glass corner blocks, alternating direction, the designer has secured an arresting yet simple background for the neon sign.

"The plan of the beauty parlor, as in a majority of the designs, displays a less comprehensive grasp of the problem's requirements and potentialities."

MITCHELL: Educated at Carnegie Tech ('32) and Columbia ('33); winner of Columbia Graduate Scholarship in '32 and A.I.A. medal for highest B.A.I.D. rating in '32; Paris Prize finalist, '33; John Stewardson Traveling Scholarship, '34; registered architect in practice with Ritchey since '37. The pair placed third in Smithsonian Callery competition finals '39; won honorable mention in Insulux Competition No. 1.

RITCHEY: Educated at Carnegie Tech ('32) and Harvard ('34); Paris Prize finalist, '33; Nelson-Robinson Traveling Fellow from Harvard, '34.
SECOND PRIZE—$750
SIMON SCHMIDERER,
NEW YORK

JURY COMMENT—"An effective use of glass block, both outside and inside the restaurant. In the apparel shop a particularly interesting form is developed through the combination of blocks and plate glass, creating a sense of space that is achieved by no other design in the competition. A very practical use of the glass block is indicated in the beauty parlor."

SIMON SCHMIDERER. Studied architecture in Vienna; received degree and Austrian State Prize, 37. In U. S. A. since August 38, and at present employed by Cross & Cross, architects.
THOMAS spent one year at Duke University; degree B. Arch. from Carnegie Tech, '38, has been employed in office of Frampton & Bowers, Huntington, W. Va.; in office of Associate Architects, Charleston, W. Va.; and at present with Clarence B. Kearfott, Bristol, Va.

SHEAR: B. Arch., degree at Carnegie Tech, '38, followed by graduate study there in '38-'9. At present with Mr. Kearfott. Holder of fellowship for graduate study at Princeton for '39-'40.

JURY COMMENT—"A good restaurant plan and one not difficult of execution; its curved lines offset the narrow and deep area and provide good arrangement for seating and service.

"An effective facade for the apparel shop, its clear plate glass shaded by the exterior louvers, its tall wall of glass block a background for displays."

THIRD PRIZE—$250

JOSEPH F. THOMAS AND JOHN KNOX SHEAR,

BRISTOL, TENN.
FOURTH PRIZE—$100
M. RIGHTON SWICEGOOD,
NEW YORK

JURY COMMENT—"Restaurant's depth of plan made less apparent by departmental breaks. Simple restrained use of glass block with front planting, and effective lettering. Incidentally, a particularly good rendering.

"The apparel shop is one of a comparatively few which frankly expresses two floors, gaining thereby an unusually generous space for the sign. On the upper level the combination of ironwork lattice, planting, glass block and clear glass is pleasing."

SWICEGOOD won his B.S. in Arch. from Georgia Tech; M.S. from Massachusetts Tech. Winner of first prize in Brunswick-Balke-Collender bar competition, '34; first prize in modernize Main Street competition (drug store), '35; and second prize in small house competition sponsored by The Ladies Home Journal in '38.
ALDERMAN: B.S. in Arch, from Massachusetts Tech, '35; consultant on lighting to Metropolitan Edison, Reading, Pa., '35-6; M. of Arch, from Massachusetts Tech, '37; M.I.T. Traveling Fellow in Architecture, '37-8; instructor in design at M.I.T., '38-9; instructor in design at University of Washington in collaboration with W. E. Hartman, '39-'40. Received mention in William and Mary competition and honorable mention in Smithsonian Gallery competition. Has worked during summers in Boston offices of Coolidge, Shepley, Bulfinch & Abbott and of Perry, Shaw & Hepburn.

HOFFMAN: B. of Arch., Carnegie Tech, '36; graduate work at Massachusetts Tech, '36-7; won Boston Society of Architects Prize, '37, M. of Arch, at Mass. Tech., '39; now instructor in architectural design at Oklahoma A. and M. College, Stillwater, Okla.

JURY COMMENT—"Entrance to restaurant considered one of the best. The contrasting areas secured by different uses of glass block are ingeniously developed. More enthusiastic approval was expressed for this facade than for that of the apparel shop. "A provocative design and one that aroused much discussion was this apparel shop with its suggestion of a Brancusi abstract as the store's trademark. The partial penetration of the glass block plane by the rectangular space for window and entrance, calling for some structural ingenuity, would seem to offer a facade more notable for its eccentricity than for its appeal to enter and buy."
SIXTH PRIZE—$100
DONALD L. GRIEB,
MILWAUKEE

JURY COMMENT—"Restaurant exterior pleasing, if one is not too distracted by the over-generous background, leading one easily past a display window into the doorway.

"In the apparel shop a rather pleasing combination of light metal forms, planting and glass block, the latter adapted neatly to background for the sign.

"A beauty parlor plan reflecting careful study and developing unusual and effective booths."

GRIEB entered the University of Illinois June '36 and is now a senior there. Outside of the regular competitive work of the Beaux-Arts Institute of Design, this is his first try in a national competition.
JOHNSON studied at Art Institute of Chicago; won Barnhardt Scholarship; worked on exhibits for Chicago and New York World's Fairs; individual practice in design, including commercial work.

OLSON: registered architect; member of Nat'l. Council of Architectural Registration Boards. Studied at Pratt Institute, Columbia Extension Courses, and New York University. Has worked in offices of Penrose V. Stout, H. T. Lindeberg and Randolph Evans; now in practice alone.

JURY COMMENT—"Exterior of restaurant provides inviting access, but the deep hole behind the sign and the tangential meeting of block wall with party wall are questionable features.

"This design was premiated largely because of the island show window arrangement of the apparel shop, with the vestibule walls of glass block interrupted by a small accessory display. Absence of any provision for access to what seems to be a balcony, the space above the isolated show window, and the somewhat tortuous entrance, were questioned."

SEVENTH PRIZE—$100
ROY JOHNSON
AND ALBERT E. OLSON,
NEW YORK
DAVID BAKER won his B.S. in Arch. from Armour Institute; was presented on graduation with A.I.A. award for scholarship and Charles L. Hutchinson Medal for highest record in architectural design. One year of graduate work at Armour. Has been employed in office of Samuel A. Marx, architect, and with Alfonso Iannelli, sculptor.

EIGHTH PRIZE—$100

DAVID BAKER,
CHICAGO

JURY COMMENT—"An ingenious use of baffle walls of contrast—block and clear glass for both restaurant and apparel shop. Open to question is the use of steps up to and around the free-standing screen of block shielding the apparel shop entrance; also the effectiveness of the store front's muntined glass wall for display purposes.
The steel binding around GYPSTEEL PLANK* is turned down and clinched into the body, holding on with a bulldog-grip and forming a perfectly flat surface flush with the gypsum core. Thus, for all types of roof decks and for light load floors, PLANK provides an ideal surface for the covering materials. The center is reinforced with steel wire mesh.

PLANK’s smooth, unobstructed face and light weight make it easy and economical to handle. Erected like lumber—it can be cut, sawed, bored, or nailed and it is fireproof, termite-proof, and vermin-proof. It offers all the advantages of masonry (plus high insulation value) at much less cost and labor.

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Sanymetal "Normandie" Type Toilet Partitions, available in any one of 3 finishes, provide classic beauty wedded to utility. An installation of "Normandie" Type Partition provides the utmost in sanitary service.

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Sanymetal Flush Type Toilet Partitions have been installed in every known type of building throughout the length and breadth of this country. They are available in steel or aluminum usually finished with baked-on paint enamel finish throughout, but partition panels only can be furnished with porcelain enamel finish.

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Sanymetal offers more than a range of types. It offers a range of materials and a range of finishes that in turn permit you a heretofore unheard of freedom in working out what you have wanted to do in laying out these all-important facilities.

Everyone passes judgment on toilet environments. Sanymetal Toilet Partitions emphasize cleanliness, promote respect and appreciation of toilet facilities and often prove to be the keynote in maintaining the good-will of tenants, customers, employees, and others.

Through a Sanymetal representative, you may tap a wide and varied experience of 24 years acquired from making over 46,000 installations. Write for new Catalog No. 77.

OR A FULL DESCRIPTION OF EACH OF THESE TYPES REFER TO SANYMETAL SECTION OF SWEET'S FOR 1939, CATALOG 20/21.

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TOILET AND OFFICE PARTITIONS

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UNLIMITED DESIGN POSSIBILITIES—

with standard KAWNEER MOULDINGS!

The two store fronts illustrated show how easy it is to obtain striking effects with a few of the many standard Kawneer mouldings and shapes, available in aluminum, bronze and stainless steel. Such mouldings may be used alone, or in a wide variety of combinations—offering the designer great freedom in the development of his ideas.

In the Kawneer front above, Shape No. 7037 (face piece of the Kawneer Concealed Awning Bar) has been used to form an unusually attractive cornice and light box. In the store front shown at right, Shapes No. 7076-B, 7073, 7074, and 7075 have been used very effectively in combination.

PLATE GLASS PROTECTION

Show window glass in these fronts is securely and safely held by Kawneer RESILIENT EXTRUDED SASH and BARS. This type of sash, as well as the Kawneer Rolled Sash, provides a strong yet resilient grip evenly distributed along surface of plate glass—for maximum protection against glass breakage.

PORCELAIN ENAMEL IN 27 MODERN COLORS

K. Z. S. Architectural Porcelain Enamel also offers interesting possibilities for modern design. Adaptable to all types of store fronts. Panels are individually suspended. 27 appealing, modern colors! Standard or special shapes to meet all design requirements! WRITE FOR COLOR CARD AND BOOKLET.
MEN OF THE MONTH . . . from sentiment they filter out requirements
(page 351)

BUILDING OF THE MONTH . . . yesterday and tomorrow meet in today
(page 352)

TECHNIQUE OF THE MONTH . . . to other virtues, steel adds strength
(page 357)
Perched atop a 200-ft. Manhattan bluff just north of the George Washington Bridge, Castle Village enjoys a 180 degree view up and down the Hudson River. To capitalize on this prize possession the project is divided into five separate cross-planned buildings—high enough to dominate the skyline and orientated to the advantage of a maximum number of apartments. Ingenious planning has given 90 per cent of its apartments command of the view.

While site planning and apartment layout are Castle Village’s two focal points, the project is noteworthy on several other counts. 1) Provision has been made on the premises for dining and recreation facilities for its 569 tenant families and for the storage of 300 automobiles. 2) It is the tallest (as well as the largest private enterprise) apartment development ever built around a reinforced concrete frame. 3) Its historical background, centering around “The Castle” which once occupied the site and its builder who once occupied “The Castle” is worthy of a page in Building’s annals. The romantic and scenic aspects of Castle Village have been fully capitalized in its promotion, explain in part its 70 per cent occupancy one month after opening. These and other significant phases of this project are presented on the following pages.
An example of the trend toward super-block planning, Castle Village covers four ordinary city squares. Five buildings of identical plan but ranging in height from eleven to thirteen stories are set close to the street, leave 80 per cent of the site for landscaped lawns and garage roof terraces.

Most commendable feature of the development is its adaption to the scenic character of the six-acre site. Division of the project into five separate units increased exterior wall area, permitted unusually generous fenestration. Working within these detached cross plans, the architect arranged the 569 dwelling units so that 512 of them have an unobstructed view of the Hudson River and the New Jersey Palisades beyond. Minimum apartment view is 30 degrees.

Well integrated with the living facilities is the service building—a 300-car three-level ramp garage with restaurant (capacity: 500) and recreation rooms below, paved terraces above. Built into the side of the cliff, this four-story structure is, in effect, a continuation of the property's 75-foot retaining wall and does not interfere with the view of even first-floor tenants.
ORIENTED TO THE RIVER
CONSTRUCTION

Castle Village is the tallest apartment project ever built of reinforced concrete.

Reasons for choice of this system over the conventional steel frame construction:

1) It is claimed to be more economical (about 15 per cent at Castle Village) in a large project where the plywood forms may be used many times. 2) It permits shallower floor construction, reduces considerably the height of the buildings. 3) It produces more attractive flush ceilings unobstructed by the drop beams which go with steel frame construction. 4) It reduces the areas to be plastered—all elements of the concrete frame which form part of the walls are smooth enough to paint or paper. Only curtain walls and ceilings were plastered at Castle Village*.

5) Subtly suggests its builder: "This construction may be bombproof."

During construction the five buildings were divided into two groups, and each group was serviced by a scaffold bridge, necessitating only two temporary elevators. The three-building scaffold appears in the third picture, left. Fourth picture: concrete frame of the garage and social center.

* Original plan was to leave all ceilings unplastered, but union plasterers would not touch the walls unless allowed to plaster the ceilings as well.
LIVING ROOM-APARTMENT NO. 4. (See plot plan page 342)

FOYER-APARTMENT NO. 8.

FOYER-APARTMENT NO. 3.
AMENITIES AND COSTS

Castle Village's apartments have many amenities, the usual number of gadgets. Amenities: large living and bedrooms, generous closet space, corner triple windows commanding excellent views, cross ventilation in most living and bedrooms, two-way metal delivery boxes, tiled terraces on the roof, and laundry facilities and maids' rooms in the basement. Gadgets: built-in bathroom clothes hamper, disappearing kitchen towel racks, radio outlets, plastic door knobs, and two one-and-one-half inch steps between foyers and living rooms. To give the tenants an "at home" feeling, all windows are unfortunately divided with mullions. To impress visitors, all public space is carpeted and wallpapered.

Apartments range in size from two to five rooms, in rent from $60 to $150 per month including gas and electricity. Average rent per room per month: $28.

Total cost of the project is a guarded secret. A conservative guess of $5,200 per apartment would place the construction cost of dwelling facilities at about $3 million. The combination garage and social center plus landscaping and utilities probably came to another $1 million. Total guess: $4 million.

CONSTRUCTION OUTLINE


RAMPS: Garage—D'Humy ramp, Ramp Buildings Corp.


FLOOR COVERINGS: Kitchen—linoleum, Sloan-Blaxton Corp. Oak floors laid in mastic—W. M. Ritter Lumber Co. Public halls—base and border, asphalt tile; center, carpet, A. & M. Karagheusian, Inc.

WALL COVERINGS: Wallpaper—Imperial Paper & Color Corp.

TRIM AND DOORS: Pressed steel, Superior Fireproof Sash & Door Co.

HARDWARE: Interior—Catalin Corp. Exterior—Howard Lock Co., Inc.


ASSOCIATED AMERICAN ARTISTS' GALLERIES
NEW YORK CITY
VICTORINE & SAMUEL HOMSEY, DESIGNERS

All photos, F. S. Llurcién
Associated American Artists, an organization which sells prints and paintings at moderate prices, uses its galleries for sales as well as exhibition. A scheme of controlled circulation was so devised that prospective buyers would be sure to visit each room. The entrance is located on the upper level, with a control desk directly opposite the foyer. As the galleries are in conventional office space, it was necessary to leave beams and girders exposed as part of the general design scheme, although the effect of the ceiling is minimized by the directional lighting. The illumination throughout has been very carefully designed; a new feature of unusual interest is the combination of mazda and fluorescent lamps in the galleries, permitting a certain amount of color variation in the lighting.

FINISHES AND EQUIPMENT

Two successful lighting installations in the Whitney Museum of American Art, New York City, each specifically designed for its purpose. The painting gallery is illuminated to eliminate all glare; a combination of fluorescent and mazda lamps produces a close approximation of natural daylight. In the sculpture gallery both direct and indirect sources are used to build up a level of about 30 foot-candles. Each piece of sculpture is high-lighted by an overhead louvered spotlight to eliminate the monotonous flatness of the general illumination.
The office of Paul Schweikher and Theodore Warren Lamb has yet to round out its first decade. Both studied at the Yale School of Fine Arts, where they made brilliant records as students; both achieved national recognition with a grand prize in General Electric's house competition in 1935. In the few years following, the office has quietly turned out buildings — mostly residential — which have won the firm a secure place in the small group doing significant modern work. And in a very special sense their buildings are significant, because these architects have their own idea of what constitutes "modern." Their comments on this page and the houses which follow tell the story. There are few architects who can show a relationship so consistent between their theories and their practice.—The Editors.

"A building problem is seldom presented to us completely free of certain preconceived ideas of the client for its eventual solution. These we examine carefully in an effort to separate the ideas based on real requirements from those based on sentiment.

"Ensuing discussions find both architect and client trying to free the problem from any factors which would inhibit a satisfactory solution.

"During such discussions the principles which guide us in our work take form and expression.

"A working philosophy is made up of growing and changing ideas and we hesitate to crystallize it into irrevocable statements. Besides, the structure itself will proclaim its merit or lack of merit more emphatically than written or spoken text. Nevertheless, certain guiding principles which have influenced our work up to this time are set down here.

"Our first problem often is one of enclosing the greatest amount of usable space, with the least amount of enclosing material and therefore with the greatest economy. This space should be freed from all unnecessary subdivisions dictated by dogmatic preconceptions of room arrangement.

"We adhere to the essential principles of structure; that material shall perform the work for which it is best suited.

"We try to avoid the use of those new synthetic materials which seek to imitate others in texture or color, materials that pretend to perform work for which they are unsuitable.

"We believe that it is better to be satisfied with a closer acquaintance with a few basic materials such as stone, wood, brick, copper, tile, lead, etc., and to concentrate on the use of these rather than to be over-enthusiastic about new materials simply because they are new.

"If we solve the vital problems of satisfying the true requirements of the client, creating simple workable structure, orienting the structure to sunlight, to prevailing winds, and to the physical character of the property and adjusting these to social and economic influences we find little need for serious discussion of the building's 'style.'

"We prefer to justify the building as an expression and embodiment of the life and structure within rather than to attempt to justify it as an 'authentic' reproduction or rejuvenation of a past style."
Long considered suitable for nothing more dignified than chicken houses, the shed roof has been lately re-examined by a number of architects with an eye to extending its applications. Here it forms a major element in a design of considerable vigor, setting the character of the exterior. The combination of brick and wood is of unusual interest, and the manner in which these materials has been used was definitely conditioned by the roof. The brick, for example, has been used only in simple rectangular areas, rarely extending above the window heads, and is never laid in the triangular sections formed by the roof. Wood is used where its strength, light weight and workability make it more desirable. Few houses show a more intelligent use of materials.

The plan is equally well organized. The entrance hall is generous; there is a very flexible relationship between the three main rooms on
HOUSE FOR

HALL SECOND FLOOR
MASTER BEDROOM
the ground floor; the placing of kitchen and pantry for equally convenient access to the front door, dining room or living room is excellent. Upstairs there are two bedrooms arranged so that closets are outside the sleeping space.

A pleasing variety of forms has been achieved on the bedroom floor by sloping ceilings which follow the line of the rafters. Plywood sheets are the main interior finish, the joints being covered with batten strips. Cubage: 38,211. Cost: $20,866.
HOUSE FOR RALPH C. GUENTHER, PINE LAKE, LA PORTE, IND.
An enormous roof, suggestive of European cottage designs, indicates the freedom with which the architects approach the problem of enclosing their houses. The appearance of a traditional approach, however, is negated by the crisp details, by the allocation of bath and kitchen to the large bay at the rear, by the glazed end of the living room, and by the fenestration in general. The house occupies the highest part of a large, irregularly sloping plot, and faces the southeast. As shown by the photograph below, advantage was taken of the change in grade to place the garage below the study. Also illustrated in this picture is the use of fixed glass in the sides of the dormers to admit more light to the bedrooms. The interiors, one of which is shown on the following page, are largely finished in sheet materials. Cubage: 23,600. Cost: about $14,500.
HOUSE FOR WINFIELD FOSTER, HINSDALE, ILL.

PAUL SCHWEIKHER AND THEODORE WARREN LAMB, ASSOCIATED ARCHITECTS

CORN BATTEN

COPPER FLASHING - WATER TABLE

CORNER DETAIL

SCALE IN INCHES

DETAILS - WINDOW

NOVEMBER 1939
While different in appearance from the other houses in this portfolio, the exterior of this residence shows the same imaginative use of brick in combination with wood. As in the Loewenstein house, the masonry has been restricted to plain rectangular areas, save for a garden wall which is laid up in a simple open pattern. Interiors are notable for their comfortable simplicity, discriminating use of materials and excellent fenestration. The plan shows a careful organization of living space, with living and dining rooms treated as a single large area. It was arranged to orient important rooms away from the street and toward a lawn in the rear and small garden to the south. Cubage: 41,150. Cost: $22,500.
HOUSE FOR DAVID B. JOHNSON, CHICAGO, ILL.
The formality of a two-story block in masonry has been relieved by a low wing containing the entrance, garage and maid’s room. A broad flight of steps between fieldstone blocks further helps to tie the house in with the setting. As indicated by the plan above, the first floor is remarkably open, the stair hall, living room, dining and breakfast rooms occupying one practically uninterrupted space. Located only a short distance from the street, the main wall of the living room is blank save for a few openings filled with glass block; ample light and air are provided for at each end of the room. The second floor is interesting for the concentration of flues and closets in the section least desirable for living purposes. Wall and storage space is more than adequate; closets, it will be noted, are almost all the efficient shallow type. Cubage: 50,000. Cost: about $20,000.
Emerson House is a community house providing activities for underprivileged children of Chicago’s crowded west side, and has a kindergarten and day nursery for the children of working mothers. Executed entirely in brick, even to the reinforced slab shown directly above, it is an excellent, unpretentious solution of a not uncommon problem. The main element of the first floor is a large kindergarten which can be merged with the reception room. In the well-lighted basement are placed rooms for sewing, handicrafts, cooking and other activities. Many of the interior walls are finished in the same brick as the exterior, an economical and attractive treatment also used by the architects in many of their houses. The third floor is given over entirely to staff quarters. Cubage: 66,000. Cost: $30,000.
It

KINDERGARTEN

OFFICE

DIN-RM

KITCHEN

FURNITURE STOR

RECEPTION RM

10' x 14' 1/2"

KINDERGARTEN

4'5" x 26'5"

FIRST FLOOR

BED RM

6'6" x 9'2"

BED RM

6'6" x 9'2"

BED RM

6'6" x 9'2"

SED RM

6'6" x 9'2"

DIRECTORS RM

14'6" x 17'2"

SECOND FLOOR

NOVEMBER 1939

365
### Living room, bedrooms and halls—carpeting on woodwork

- **Wiring system—** 220 A. C. Switches—General Electric Co.
- **All fixtures by** Kohler Co.

### Heating and air conditioning


### CONSTRUCTION OUTLINES

**HOUSES BY PAUL SCHWEIKHER AND THEODORE W. LAMB, ASSOCIATED ARCHITECTS**

<table>
<thead>
<tr>
<th>LOEWENSTEIN</th>
<th>GUENTHER</th>
<th>FOSTER</th>
<th>JOHNSON</th>
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<td><strong>WINDOWS</strong></td>
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<td><strong>FLOOR COVERINGS</strong></td>
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<tr>
<td><strong>WALL COVERINGS</strong></td>
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<tr>
<td>All walls—1/4 in. fir plywood.</td>
<td>Living room—No. 2 pine boards; remainder—1/4 in. white pine plywood.</td>
<td>Living room—1/4 in. birch veneer plywood. Master bath—Cararra marble-Pittsburgh Plate Glass Corp.</td>
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<td><strong>WOODWORK</strong></td>
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<td><strong>PAINTING</strong></td>
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<td><strong>ELECTRICAL INSTALLATION</strong></td>
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<td><strong>KITCHEN EQUIPMENT</strong></td>
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<td><strong>BATHROOM EQUIPMENT</strong></td>
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<td>All fixtures by Kohler Co.</td>
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<tr>
<td><strong>HEATING AND AIR CONDITIONING</strong></td>
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So far as basic building technique is concerned, the 1930's will probably go down in history as a decade of false starts and unfulfilled promises—a period which began with the prediction of a factory-fabricated house delivered in a streamlined truck and ended with a reassertion of the fundamental soundness of time-tested methods and materials. For those who look beneath the surface, however, the significance of the past ten years is greater than that. Changes have taken place—many and far-reaching changes—but those which show most signs of virility and growth have been evolutionary rather than revolutionary in scope; in fact, the extent to which such changes have found general application can be accurately scaled by the degree of their adherence to familiar practice. Many believe that this is as it should be, that the soundest pattern for progress is by such easily taken steps. In any event, it is a pattern forced on Building by its complex system of distribution: however practicable a given innovation may be it cannot hope for general application if it calls for materials not everywhere available or requires sweeping modification of other structural elements or dictates a certain type of design. Only those innovations have succeeded which offer real, immediate advantages and at the same time avoid all three of these pitfalls by the use of common materials obtainable in all parts of the country, by development along lines permitting their application without compelling changes in other structural parts, and by not tying the designer to any particular style.

Such an innovation is reenforced brick masonry, known to its intimates by the initials R-B-M. Reenforced brickwork offers real and immediate advantages in the form of tremendously increased flexibility in the use of an already-popular material with substantial cost-savings over other methods when properly employed. It uses only materials everywhere available: standard brick of all types and
The history of reinforced brickwork goes back to the early days of structural engineering. Its theory was developed about 1800 by Marc Isambard Brunel, an Englishman, once chief engineer of New York City. First major application of the principle occurred when he used it in building two shafts in constructing the Thames River Tunnel in 1825. These shafts, reinforced with wrought iron bolts attached to wooden curbs at bottom and top and by hoop iron laid in the brickwork, functioned as caissons. Built by the open method, their strength and cohesion were severely tested by uneven settling due to varying soil conditions. The shafts, however, were undamaged, the Tunnel successfully completed, and Brunel knighted by Queen Victoria. In the words of his biographer, "The fortunate combination of iron ties with brick and cement in the construction of the shafts . . . suggested to Sir Marc the idea of establishing a general principle of construction which should unite to an eminently degree utility and economy." Accordingly, in 1836 he proceeded to demonstrate the strength of the new masonry in a series of tests, notably by building the "Nine Elms beam," an inverted T-section, and a structure of two cantilevered half arches.

Brunel's Cantilevered Half Arches

The results of the Nine Elms beam experiment were reported to the Society of Engineers. The Society was skeptical, some members attributing the superior strength of the masonry to the use of Roman cement in the mortar, others refusing to accept the theory that two materials with widely different physical properties could act together as a structural unit. A year later Col. Pasley, of the Corps of Royal Engineers, definitely settled the dispute as to whether or not flat hoop iron strengthened brick beams. He constructed three beams, one of bricks laid in pure cement, the second laid in pure cement reinforced with iron, the third reinforced like the second but laid in mortar one part lime, three parts sand. Tested to destruction the second beam had carried the greatest load, showed that the metal had carried the full tensile stress, that lime-sand mortar was unsatisfactory for this type of masonry.

(Continued on page 378)

Shaft for Thames River Tunnel

regular reinforcing steel of the kind usually used in concrete work. It requires no changes in other structural parts and can be employed with any style of design. Moreover, experience has shown that the introduction of reinforcing steel into brick masonry can be accomplished without materially reducing the daily output of the mason and requires no special skill or training.

USES

Introduction of reinforcing steel into brickwork broadens the scope of its application in exactly the same way that the use of steel in concrete increased the adaptability of this material. Because of its relatively low tensile strength, masonry of all kinds is commonly limited in its structural applications to purely compressive loads; with steel rods properly placed to resist tensile stress, however, it may be employed for lintels, beams, slabs and other structural elements which are called upon to resist simultaneous compression and tension. Actually, as the history in the left-hand margin shows, this fact was first discovered in connection with brick masonry, but the development of reinforced concrete has been so much more rapid and widely publicized that it is convenient to indicate the potentialities of reinforced brickwork by comparison with its better known cousin.

Reinforced brickwork may be used everywhere, and with the same facility, as ferro-concrete. It develops approximately the same unit strength, and the limits placed on the size and spacing of reinforcing rods by their position in the mortar joints are not such as to interfere with efficient design. It may therefore be used as a complete structural frame, for columns, plain and cantilever beams and slabs, in lintels over wide or narrow openings, and wherever a structural member is required for the support of masonry or other loads. In addition, it may be employed to stiffen or strengthen ordinary masonry at trouble spots such as around floor slabs, at the top of parapets or chimneys, for earthquake-resistant construction, and in instances where a structural frame would otherwise be required. The peculiar advantages of R-B-M construction, however, suggest its use in a host of special applications where nothing else would do as well.

ADVANTAGES

First and foremost of these advantages is, of course, reinforced brickwork's attractive and weatherproof surface—an advantage so widely recognized that brick masonry is about as close as we have approached to a universal fireproof exterior wall. R-B-M gives this already popular structural medium the added quality of tremendously increased lateral strength, so that it may be used for columns carrying heavy loads, exposed beams and lintels where appearance is a factor, and even for monolithic slabs. It enables the designer who has chosen brick for its appearance and durability to
develop a consistent structure in which the brick walls and spandrels are not merely a protective veneer but serve a structural function as well.

The second advantage of R-B-M is its great saving in formwork. Forms need not be watertight and in many instances, such as beams and lintels, need be no more than a single board. This often makes reinforced brickwork cheaper than cast masonry, especially where complex shapes, otherwise calling for elaborate formwork, are involved. Even in cases where appearance or surface characteristics are not a factor, this advantage sometimes determines its choice as an economy measure.

Third advantage of R-B-M is light weight. A reinforced brick beam is about 20 per cent lighter than a concrete beam of similar size, and this weight-saving may add up to a considerable total in large buildings, producing a similar cost-saving which is not to be ignored.

Finally, there is the fact that R-B-M fits so nicely into the gap which has hitherto existed between skeleton-frame construction and load-bearing masonry. In many structures some stiffening of the exterior walls is desirable, without, however, justifying the use of skeleton construction. Here R-B-M fills a long felt need. Similarly, reinforcement of the bearing walls on lower floor may obviate the necessity for increased thickness, permit uniform wall thickness with added space and consequent simplification of lower floor plans.

DESIGN

Exhaustive tests on R-B-M slabs, beams, and lintels have established the fact that their structural performance is comparable with reinforced concrete. Design procedure and formulae used in calculating stresses and deflections in reinforced concrete are therefore applicable to the design of reinforced brickwork. The Structural Clay Products Institute has compiled and analyzed test data from various universities and independent laboratories and on the basis of these data prepared complete and convenient formulae and tables covering slabs, lintels, beams, and columns. These tables are available in handy form in "Brick Engineering," a handbook published by the Institute ($4.00).

Reinforced brick slabs are built 2½ in. (brick laid flat), 3½ in. (brick on edge), and 6½ in. (two layers, bottom on edge, top flat) in thickness, for spans up to 14 ft. Reinforcing rods are placed in the joints and regular brick employed, which may be exposed on both faces. Diameter of rods is usually ¼ or 5/8 in. In 6½ in. slabs, the top layer of brick may be placed in basket weave and other patterns. Cantilever slabs, such as projecting hoods over doorways, may be built in this way.

R-B-M lintels are formed by placing three or more light rods near the bottom of wall over openings. Lintels may be formed with equal facility with running bond, rowlock or soldier courses where desired for architectural effect. Such a lintel spanning 12 ft,
HISTORY (Cont'd)

Except for a few experiments, such as the beam tested at the Great Exposition in London in 1851, the theory was largely ignored until 1872 when N. B. Gorson deduced a value for the tensile strength of brick masonry as shown by previous tests and developed a formula for the design of lintels, published in his "The Strength of Brickwork."

During the next forty years reenforced brickwork was used with increasing frequency throughout Europe and to some extent in the United States. Indeed, it was for a time so common in the construction of high thin walls, columns, sills and tall chimneys that the sponsors of reenforced concrete referred to it as a convincing example in their arguments for combining metal and masonry in construction.

The present active interest in reenforced brick masonry dates from 1922. In that year A. Brebner published two volumes of "Notes on Reenforced Brickwork" which reported widespread use of the construction in public buildings and officials' dwellings in India. He came to the same conclusions reached by investigators in the United States and other countries: that the theory of reenforced masonry dates from 1922. In that year A. Brebner published two volumes of "Notes on Reenforced Brickwork" which reported widespread use of the construction in public buildings and officials' dwellings in India. He came to the same conclusions reached by investigators in the United States and other countries: that the theory was largely ignored until 1872 when N. B. Gorson deduced a value for the tensile strength of brick masonry as shown by previous tests and developed a formula for the design of lintels, published in his "The Strength of Brickwork."

In California, where reenforced brickwork has been used extensively in earthquake-resistant construction, a special brick, known as Grouthlock, has been employed with considerable success. These brick are made by a soft mud process, producing an open pore rough surface which develops an excellent hold with the grout.

To assure proper bond between the brick and mortar it is important that the absorption, or penetrability of the brick fall between certain limits and, to a lesser extent, that the brick have sufficient surface roughness. Best mortar bond is obtained with brick having absorption sufficient to prevent them from "floating" on the mortar bed but not over 50 grams per minute when laid flatwise, on edge, or on end) of 2,500 lbs. per sq. in. be used for structural members or slabs. Most clay brick exceed this figure by a comfortable margin.

In the United States reenforced brick masonry is used most extensively on the West Coast, where the Long Beach earthquake of March 1933 and California's earthquake law greatly stimulated the development of construction practices. Of these changes, introduction of the grouting method was most important. In the California area it is now the only method used to fill interior joints, and it is beginning to appear in other parts of the country in plain as well as reenforced brickwork.

R-B-M beams, columns, piers, and other structural members are constructed in the same way by placing rods, stirrups, and hoops in the horizontal and vertical mortar joints. "Brick Engineering" shows designs for 8 in. and 12 ½ in. thick beams of various depths from 13 ½ to 24 ½ in. for loads up to 3,500 lbs. per ft. and spans up to 30 ft. Data are given for the design of square and rectangular columns, reenforced brick footings and retaining walls, and other R-B-M structural elements.

MATERIALS

In general, the brick, mortar, and reinforcing steel used in reenforced brickwork are of regular type and quality and set up no stringent or special requirements. For the design of structural members of minimum dimension, however, it is important that the brick conform to certain minimum standards and that their structural characteristics be known. It is recommended that only well-burned brick having a minimum compressive strength (flatwise, on edge, or on end) of 2,500 lbs. per sq. in. be used for structural members or slabs. Most clay brick exceed this figure by a comfortable margin.

For interior joints in columns and beams, and for all joints in floor slabs, free in an 8 in. wall (no floor load) requires but three 3/4 in. rods, and lintels up to 25 ft. span and larger may be constructed in this way. Formwork consists merely of a single board, which need not be full wall thickness, adequately supported by shoring. The advantages of such construction over the usual combinations of steel angles and channels are obvious.

R-B-M lintels, spanning 11 ft., of reenforced brickwork, and typical R-B-M lintel construction, shown with decorative soldier-course over opening. Such lintels may be used for openings of practically any width with considerable saving in steel and simplification of detail.

LINTEL, spanning 11 ft., of reenforced brickwork, and typical R-B-M lintel construction, shown with decorative soldier-course over opening. Such lintels may be used for openings of practically any width with considerable saving in steel and simplification of detail.

(Continued on page 62)
Government housing has developed violent antagonists and equally violent advocates. And if the advocates are to achieve their aims they cannot avoid the dilemmas posed by the opponents simply by denying that they exist. . . .

The proponents of slum clearance too often assert that it will remedy all the ills of modern civilization, and they brand as economic royalists, or worse, all who dare to oppose it. Its enemies cry to heaven that to replace a tenement before it falls or burns down is rank Socialism. . . .

Without scientific systematic selection of the occupants, for example, the best housing project will fail. The entire purpose of government housing can be met or defeated in the selection of tenants. The first rule of course must be the need of those who apply. The New York City Housing Authority, after careful study, has developed a system which thus far appears to be working. It is called the Preferential Rating Method, and it attempts to take all of the numerous factors into account before an applicant is admitted to tenancy. . . .

But no family can be considered unless its head income is less than five times the rent or, if there are three or more children, six times the rent. That at least is the law. The maximum has been drastically lowered by a mandate from the USA in an endeavor to reach those with the very lowest incomes. In New York that means renting a large proportion of the dwelling units to families on relief or receiving other government aid. It means leaving in the slums the independent, self-supporting individual who is able to provide for his family, but not well enough to include a decent home. . . .

The officials operating a completed housing development must walk warily. On the one hand, their relationship toward the tenants should be strictly that of a landlord. Rents must be paid promptly and in full. But the fact to be remembered is that the occupants of subsidized dwellings are families who have not hitherto enjoyed the facilities of modern life. Obviously, there must be educative management to help them adjust themselves to their new environment. But if there is too much control, or if it is unwise, trouble is certain to follow. To put it another way, a little socialization is right and beneficial. Too much would be harmful and disastrous. . . .
the vicinity and not merely to the minority lucky enough to have been admitted to the new houses.

Costs, and the dangers in the financing of government-assisted housing is that of losing sight of real costs. Nobody denies that land on the outskirts of a city is cheaper per square foot. But selection of a housing site must depend on other matters as well. Let us assume that the new houses have been built at a total apparent cost lower than in some slum areas. Then it may suddenly be discovered that the city has been forced to lay out new streets, establish police and fire protection, build sewers and schools. The actual capital cost will have been much greater than if a higher price had been paid for land in a centrally located area.

Further, the resettlement of large numbers of people on the outskirts of a city may mean an intolerable burden on transportation facilities. The cost of improving these may be staggering. . . . To an extent, industry will have to be located so that the blessings of shorter hours will not be wholly dissipated in traveling to and from work. . . . Nor is it wise to shift large centers of population away from neighborhoods where shopping centers, of long standing and representing heavy investments, are located.

The great opportunity of clearing away slums and improving old neighborhoods may be lost if new houses are built only in cheap-land districts which are still sparsely settled.

The arbitrary ruling of Administrator Nathan Straus of the USHA that land shall not cost more than $1.50 a foot is short-sighted. A standard maximum price for land all over this varied country is out of the question. If safeguards are so rigid and inflexible that they make it impossible for the authorities to function when conditions vary from the normal, an evil about as great as bad housing itself is created.

Mr. Straus has also suggested that delay may effect a remedy. If the cost of land is too high where slum clearance and new housing are most needed, he has said, prices will be beaten down to $1.50 or less if nothing is done for several years. Such a form of enforced devaluation would seem unwise both economically and morally. It means that people would be forced to live in structures which deteriorate more and more each year, in states of health and morals. The cities too would suffer because of losses in taxation as the devaluation progressed.

Subsidized housing can bring relief from intolerable living conditions to, at best, a few hundred thousand people among the 11,000,000 American families now forced to remain in substandard dwellings. This is vastly valuable, but it offers no long-time cure for the situation. Housing will remain a semi-philanthropical, institutionalized movement unless it points to some path along which private enterprise can follow. The movement will not be continued very long, in view of the ponderous burdens on government, unless this is done.

One way is for subsidized housing to constitute a growing demand for experiments which private capital dare not risk. The USHA has missed an opportunity in failing to foster an experimental attitude. Housing authorities are now operating in the ten largest cities of the U. S. and in scores of smaller communities as well. Yet there is little unity. One authority receives small benefit from the discoveries or mistakes of the others. All data, of every nature, should be instantly available to every local authority and to the building industry.

The dollar is not worth today what it was worth a decade ago. The economic royalist gets smaller returns on his bonds and, if he is lucky enough to get any, lower dividends from his stocks. The building trades leaders are willing to have everything else changed. They oppose bitterly, however, nearly all new methods in building construction. This is quite apart from any willingness to cut wages. They oppose new methods because, they fear, their members may thereby lose their jobs or be forced to do other work. Without new methods the housing program will surely fail. Construction is today the one vital industry which has not been able to take full advantage of factory or mass production. . . . This is not to say that, for labor, houses could be turned out like automobiles. Industry too has been at fault and the prefabricated house does not yet seem to be a success. Sections and parts which make up a house can, on the other hand, be manufactured on a mass basis and thus represent the greatest single opportunity for economy in building. But the building trades oppose prefabrication in any form.

The building boom, so persistently predicted over the last decade, is not yet here and one of the main reasons for the delay is cost. Obviously, it will be profitable to the building trades if there is increased activity. Equally obviously, this activity must be calculated in round numbers for the entire country and for the building trades as a whole. It is true that certain trades will suffer. Some of them may disappear. Employment in general will be greatly stimulated though. One of the costs of progress is that the few shall suffer for the many. Unless that cost is paid the procession will be halted.

I approach my task with the respect of one who knows its honors and responsibilities. The presidency of the Institute is the greatest honor that a member can receive from his fellows, and I am profoundly appreciative of your giving it to me. It is also the greatest responsibility you can place on a member. . . .

The road ahead is not clear and the path may be more confused if reason does not prevail. We pray that our country will not be involved by untoward events beyond its borders, but if trouble comes, the Institute should be fully prepared to do completely the part it is fitted to do. We shall appoint a preparedness committee to develop means by which the profession may be of immediate service to the government.

We intend to examine our own house and seek out deficiencies in the services we render. These cannot be remedied until our objectives and our failures have been clearly defined, but we are determined that the profession shall render uniformly and universally better services.

We shall study seriously whether the long period of preparation for our profession is leading. The opportunities to demonstrate ability in the art of design seem far from commensurate with the many costly years spent in study and the acquisition of knowledge, and the period at which we are permitted to exercise our imaginative efforts is steadily being deferred until it looks as if not long hence many of our profession may be middle-aged before they can function as architects.

We shall continue the studies of the costs of performing the various parts of architectural services, for it has been clearly demonstrated that the minimum fees established twenty-five years ago for the profession are not adequate compensation today, especially as it is the tendency of minimum fees, over a series of years, to be considered as maximum fees.

We intend to continue vigorously our
The ideas of yesterday have made the institutions of today. The ideas of today will make those of tomorrow. We are aware therefore, as we stand here together that we are not quite detached from what we see before us. On the contrary, it is we who are responsible through our mind processes for the forms that will make up the detail—constructive, destructive, or neutral—in that future which from this distance looks so broad to us and so simple and serene.

If we are to be frank, as we must be, it is quite necessary first to examine into the prejudices of yesterday. Denial is no cure; it makes the mind think of the facts that have been denied and to fill the gaps in our training.

Our third prejudice, therefore, permits us to apply it to ourselves. A mechanistic conception provides us with plausible means. We are relieved of the requirement of expending the necessary labor upon the dire, but I may say fascinating, apprentice ship such as that which nurtured the genius of Leonardo. A gluttony of speech, a facility in phraseology of terms rushes in to fill the gaps in our training.

4) There is, fourth, the prejudice of intolerance. This inexcusable propensity works both ways against the middle. It provides no room for one's neighbor, it prevents us from profiting by his example, it frequently denies the achievements of the past, or in accepting the past too literally it denies all achievements of the present. It is a most reprehensible prejudice.

Divested of these prejudices what do we see? It is my belief, if I am able so to divest myself, that we should see a vast number of agreeable persons earnestly at work to our delight, surprise, and admiration. Have you, like myself, recognized in certain of the prominent men of our generation aptitude and capacity that you believe would have made great architects of them or perhaps artists? It is a diverting thought.

Our task today is to supplement the admirable quality possessed by the more patient of our contemporary colleagues by a greater admixture of the brilliance that has been heretofore more strongly at the command of artists. This more compassionate way can be done and in reasonably simple ways.

Consider for a moment a common cause which is to be found in the protests against architectural forms and philosophies in the past. These protests have generally been successful in leading to the adoption of other but not always new forms. You are familiar with these protests, those that resulted in the Renaissance, the Greek and Gothic revivals; Neoclassicism. It is popular impatience with the excess of these forms and philosophies which has given voice to these protests. That is the common cause. In the Renaissance it was impatience with the excess of flamboyance. In short, is that not the essence of the protest today? Flamboyance is an evidence of uncontrolled prosperity. All periods of prosperity put heavy demands upon creative genius. They overtax the available supply. The gap is filled by trained exhibitionists. The results are truly shocking, and therein the protest finds its plausible point of departure. But most protests in the past have gone too far. They have taken no time to guide themselves by examining and curbing their prejudices (the very four to which I have alluded). They have taken popular condemnation as their mandate, forgetting that in people as a group it is the eye that sees first and the mind that reasons afterwards. From flamboyance to severity—a quick scenic change. The popular eye is refreshed and its possessor applauds; the columnist eagerly heralds the new era. But slowly and surely the mind begins its analysis.

The trend that we recognize today is in many ways distinctly refreshing. This refreshing quality is that which appeals to me. It is perhaps refreshing because it is the first steps of the studied Renaissance could have been; for it is independent (sometimes so independent as to be even independent of thought); it runs by few rules and claims the horizon as its front yard.

There will be another period of prosperity, perhaps during our own lifetime. It will most certainly apply heavy pressure through demand for creative initiative. It will just as certainly overtax the available supply. It will nurture the seeds of its own artistic destruction by its fail-

The Modern Approach to Architecture

By William G. Perry

Excerpts from an address before the Society of Beaux-Arts Architects, New York, February 8, 1939
ure to control excess. To avert this, at least in some measure, we must plan at the bottom for a greater supply of competent architects to put into the field. The violent change of diet from gingerbread and cream to plain hardtack must not be permitted to fall upon us again.

In our efforts to create in America a thoroughbred architecture peculiar to ourselves, we have but to be patient and sensible. By trial and error; by careful selection we can take up the best of all available and adaptable strains, being oh!

**ARCHITECTURE: A CHANGING PROFESSION**

By John Summerson

Condensed from The Listener (London), April 20, 1939

This country [England] spends about four hundred million pounds a year on buildings, but produces little architecture; and of the architecture it does produce only a small proportion is distinguished enough to engage the attention of connoisseurs and critics. Yet it could be argued that it is not the occasional, exciting building but the general trend that really matters.

There is truth in this, though we must not forget that without the rare innovator there would be no trend. In any case, it is to the general condition of architecture rather than particular instances that I want to draw attention here, and especially I want to show how certain changes in the architectural profession are likely to modify the character of the architectural output of the future.

There are no accurate statistics relating to the designers of buildings, but it is certain that professional architects are responsible for a very small percentage of the buildings erected in this country. The reasons are simple. First: speculative house-building, which is responsible for a large proportion of the whole output, is carried on by building firms who use stereotyped designs for detached and semi-detached villas which have varied only superficially during the past 150 years. Second: many buildings of the factory type are mere assemblages of mass-produced materials—steel columns and roofs, patent glazing and asbestos corrugated together by the contractor on lines suggested by the building owner. Third: the building works of local authorities are often undertaken by employees with engineering qualifications, sometimes with, but very often without, architectural assistance.

There remain the more expensive categories of building in which architects are so careful before we mix the blood with elements which are purely alien or poisonously indigestible. We can use our horse sense first and the essential nature of cool logic to all problems. Upon this firm peg we can then hang (but not before) other desiderata: good planning, scale, proportion, grace, color and all sorts of specialized knowledge.

Underlying this, like the Arabian strain, must be the element of imaginative creativity, not in the mean art with which it must be a clear picture of the goal that we are seeking.

What is an architect? There are two answers—one historical, the other legal. Historically, the architect is a respectable profession. Architects in this country number about 13,000. They vary considerably in their economic relation to society and in their professional outlook, and these variations are of interest as one of the chief underlying causes of the different characters of the quality of the buildings continually going up in town and country.

Alas! There is a bias, and a bias is by no means always an evil. Wealthy individuals with dynastic aspirations are rare: nobody builds great country houses. On the other hand, vastly more money is spent by local authorities and by big businesses, both of whom demand a service from the architect of a less personal and more comprehensive kind. So it is not surprising to find that the character of the architectural profession is changing.

It is changing in two ways. In the sphere of "private practice" the tendency is for the firm to supersede the individual. The firm is often built around one successful practitioner who enlists a group of partners and whose office becomes a large organization probably incorporating one or two engineers and surveyors. The other change is the great increase in the size and importance of official departments, attached either to public authorities or to big business concerns.

There is, of course, nothing new either about private architectural firms or public architectural departments. They have been with us for a generation or more. But what is new, and what I would specially distinguish as a factor affecting the future of English architecture, is that collective or communal practice is beginning to be recognized as normal and characteristic and, in short, a good thing. It is used to be the custom to regard the architectural "firm" as necessarily commercial and philistine—an architectural "business." In the same way, the official department was opposed by the cognoscenti to us, at the best, a safe berth for efficient hacks, who had not the ability to succeed in private practice. Even today such views are widely held, and are, indeed, justified in certain cases. But the trend of opinion, young opinion especially, follows the need of the day, which is for big, well-organized offices giving consistent service independent of the whims and limitations of individuals, yet preserving the freedom and integrity of the individual designer.

Already there is a movement in favour of the "group" office, and there is anything up to half-a-dozen young men, sharing their overheads and pooling whatever specialist experience each has gathered, but retaining their individuality as designers. Some heads of well-established practices are wisely recognizing the group principle and putting work into the hands of assistants, not to the mean capacity of "ghosts," but with proper acknowledgment of the individual's responsibility.
But still more important than the tendency toward reorganization in private practice is the growing prestige of the official department. Here discouraging traditions still hold which cannot be uprooted in a day. There is the conventional pretense, for example, that all the work done in a department is the work of the chief architect whose function is, in fact, largely administrative; there is the tradition of the "safe job" and "safe" design; and there is the tradition of inadequate remuneration and petty classroom discipline. But set against this is a contrary movement not only in the architectural profession, which wants its services to be used with the greatest possible advantage to the public, but among enlightened administrators as well. The problem is to devise a type of organization in which the training and abilities of the individual architect will have their proper scope. Enough has already been done in this direction to show that such organizations will attract the best brains and produce architecture as good as any which private practice has achieved. I am not saying that private practice, even of the one-man type, is finished. It is not, and is never likely to be, so long as people are free to make or mar their own lives. But the bulk of the architectural work in the future will come from big offices, and the best work will be from those offices where the relation between the individual designer and the organization as a whole is most satisfactory.

It remains to ask what kind of architecture we may expect as these changes develop. Clearly, the changes will not in themselves affect architectural style, though they will tend, perhaps, toward impersonality and will certainly bring about a closer relationship between the teaching in the schools of architecture and the idioms of current practice.

YE OLDE MODERNE

From "Notes and Comment" in The New Yorker for August 12, 1939

Looking at one of the newer buses, streamlined to cleave the trade winds that sweep Fifth Avenue, we wondered again what another generation will think of the Ingres "Yale" and its flowing draperies. To a man it was a masterpiece in its own time. It was small, it was a work of art, and it was the kind of work that appealed to us, the young people of the twenties. But today it is just that so little of it was made. It was rare—it was just that so little of it was exhibited in Tiffany's windows before it was placed on the monument.

If that cap had been made ten years previously, it would have cost $53 an ounce. But even at the greatly cheapened price, it was still a curiosity; and if anyone had predicted that men then living would see that precious metal made as cheaply as ten cents an ounce, he would have been laughed at. The metal wasn't rare—it was just that so little of it was used that much labor went into purifying and perfecting it.

Yesterday that same metal was quoted at less than two cents an ounce. It is aluminum.

THE TRAINING OF AN ARCHITECT

By William Emerson

RETIRED DEAN OF THE ARCHITECTURAL DEPARTMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Excerpts from an address at the Seventy-first Convention, A. I. A., September 24, 1939

In this day of sudden and revolutionary changes in governmental as well as in educational policies, it might be appropriate to point out those characteristics that have marked the School's policy in recent years, not in an assumption that they thereby differentiate it from other schools, but merely to clarify its objectives.

Obviously the major purpose of our teaching is to so equip our students that upon graduation they may be provided with such methods of work, habits of thought, and standards of performance as will enable them to cope competently with current professional problems and achieve leadership in their profession. What was adequate in curriculum or method twenty years ago is evidently unsuited to the needs of today, but the fundamental principles of good architectural design are the same—will always be the same. Such touchstones as economy of space, directness of circulation, simplicity of construction, convenient interrelation of spaces, suitable character and proportion, are as properly applied to the buildings of this century as to those of any previous age.

Believing this to be fundamentally true, our methods and curriculum from year to year have echoed the changing needs of a changing civilization, of new materials, of new methods of construction. We have thus endeavored to keep our minds open to new opportunities and resources without being carried away by current fads and fancies; convinced that in evolution founded upon considered experience we shall find the safest, the most inspiring guidance for our teaching.

ALUMINUM

Condensed from Better Methods

Fifty-four years ago, the Washington Monument was finished. As the crowning achievement of the period, a special white metal cap was cast for the 530-foot shaft, so precious that it cost $1,10 an ounce, and so rare that it was exhibited in Tiffany's windows before it was placed on the monument.

If that cap had been made ten years previously, it would have cost $53 an ounce. But even at the greatly cheapened price, it was still a curiosity; and if anyone had predicted that men then living would see that precious metal made as cheaply as ten cents an ounce, he would have been laughed at. The metal wasn't rare—it was just that so little of it was used that much labor went into purifying and perfecting it.

Yesterday that same metal was quoted at less than two cents an ounce. It is aluminum.

THEY SAY—

"Only the very young are altogether modernists, and only the old men are the traditionalists: the wise man takes the good and avoids the bad in both."—Pray Thomas, past president, R.I.B.A.

"We are all agreed that the government ought never to step in wherever private business and private economy can and does handle the situation. It still is true that the government is best which governs least."—Adolf A. Berle, Jr.

"If we regard ourselves as doctors called in to treat specific cases, public confidence in us will increase. On the other hand, public confidence in us will decrease if we regard ourselves as reformers justified in spending other people's money upon what we think they ought to want."—H. S. Goodhart-Rendel.
"The steep red roofs of the first garden suburb, that at Bedford Park, Chiswick, were widely suspected of sheltering Bohemian and subversive philosophies. Nowadays Bohemian and subversive philosophies seem ill at ease under any roof that is not flat."—H. S. Goodhart-Rendel.

"Although the architects of the Washington Plan desired to impose a general form and system upon the buildings of Washington, it was certainly not their intention—and still less the intention of L'Enfant—to burden all future buildings in Washington with an armature of granite and classic form."—Joseph Hudnut.

"The architectural profession, almost without exception, has heretofore revolved around the dominant thought that the juicy plums come from the rich, and has lost sight of the requirements for elementary shelter which are the basic justification for the profession's existence."—Alfred Kastner.

"You cannot speculate in the things sacred to life. You cannot make ground a speculative commodity; you cannot make money a speculative commodity; you cannot make the ideas by which we live a speculative commodity; without getting the kind of thing we have. It is inevitable."—Frank Lloyd Wright.

"Modern art is an adventure of the eye and mind. Like many adventures it is beset with pitfalls and quicksands, false starts and blind alleys—many of which are really imaginary difficulties born of our general reluctance to face anything new or strange. Understanding modern art does not require any great effort of the intellect. The theories back of most apparently abstruse paintings can usually be expressed in a few sentences. But understanding modern art, or for that matter the art of the past, does require some initiative and imagination. Modern art is not for the timid or complacent man who does not want to be disturbed, but for the alert, the youthful-minded, the adventurer."—Alfred H. Barr, Jr., Director of the Museum of Modern Art.

It has been expounded, and not without merit, by several architects of repute that the present system of examination and licensing of architects in the State of California is not stabilizing the architectural profession and is driving many worthy men capable of rendering a service to society, into an obscure field; making plans for contractors or owners at a mere wage, which encroaches upon the architect's practice.

It is the belief of these gentlemen that there should be set up two classifications for architects admitted to practice: one obtained by a minor examination which would permit a practice in a restricted field; and a more technical examination which would have no restrictions except the ability of the recipient to perform.

They point out that there is some precedent for such differential which may be found in other professions. A lawyer may be admitted to practice before the Municipal or Superior Courts; by qualifications he may be permitted to practice in State and District courts; and, from experience in these courts and ability, may reach the highest command in his profession and practice before the United States Supreme Court. The medical profession likewise has some stepping stones. There are those who practice osteopathy, medicine and surgery. There are internes in hospitals or medical clinics, all leading in the direction of practical experience before entering into professional practice. Then too, in the educational field there are limitations for those who may be permitted to teach in the grade schools; by added experience and credits, be advanced to teach in high schools; and by more exacting requirements may enter the realm of teaching in colleges and universities. Any such system would set up some fine points in jurisprudence. The elements of construction are not gradient, except in the most mediocre work. Any foundation should be required to sustain the load. Columns, beams and girders have but one formula for each, be the building small or great.

Suppose a junior certificate holder be permitted to practice only in the field of domestic architecture, and that restricted also as to cost; he has a client, to whom he has given satisfaction in that capacity, who prefers to retain him for work of greater magnitude; would it not be embarrassing for the architect to admit that he had but a minor qualification to practice? The temptation would be great to conceal the fact and to carry on, preferring to take a reprint or subject himself to any penalty that may be applied.

In casting about to ascertain what other system than type of building and limit of cost might be invoked, the natural appeal would be that of professional comradship, heretofore known by a fine word, "mentor," in architectural parlance.

Assuming then, that out of the most worthy young draftsmen, 600 junior certificates to practice were issued, each good only when used in collaboration with one holding an unlimited certificate to practice architecture, would it not electrify the whole profession?

To issue 600 junior certificates would not mean 600 newly established offices, but it would mean that 600 good draftsmen would eventually be withdrawn from the drafting boards of the speculative builders. Each could find one who would become a comrade and help the junior to be absorbed into the profession of architecture to which he justly belongs, but now lends himself helplessly to its disadvantage.
En route across the Continent, Monday, August 21.—The train paused in Kansas City tonight for an hour or so—just long enough for me to walk across the plaza and have another look at Van Magonigle's great Liberty Memorial, bearing aloft its symbolic flame. It looks even better than I had remembered it, and now Edmond Amatie's bas-relief extends across the long base wall on the steep slope of the hill. I walked around it, sensing again the delicate variations from the horizontal and perpendicular which Magonigle, following the Greeks, gave to his arizes. Robert Aitken's sculpture, high up on the shaft, is cut most effectively, but it was with particular interest that I looked again at Magonigle's own hooded sphinxes flanking the monument on the plaza side. They reminded me again of Magonigle's fifteenth century versatility—architect, painter, sculptor.

San Francisco, Thursday, August 21.—My first sight of the Golden Gate International Exposition, by night, when both Fairs are at their best. The first question, in the inevitable comparison between New York and San Francisco: What is the basic purpose of a Fair? There are two answers, and those responsible for the East Coast show have apparently accepted one, those for the West Coast the other. In New York the exhibits are the important goal, the architecture subordinated to serve as a convenient setting for what is to be seen of "the world of tomorrow." The designers of the Golden Gate Exposition have held to the other—people visit a Fair for the spectacle as a whole, and when they come away from it they want to remember it. They cannot escape the everyday realities, to feast their eyes upon a dream city. Each group of Fair builders has followed through with these contrasting convictions and the results at New York and San Francisco reflect them accurately and efficiently. A member of the Eastern Fair's Board of Design, in answer to a visitor's question about the architecture, said, "There isn't any; the buildings are efficient showcases." In the Western Fair, on the other hand, there is little incentive to see what is inside the buildings; the showcase is beautiful—so much so, particularly at night, that the exhibits would have to be superb to entice one indoors, and with a few exceptions they are not that good.

One observer's opinion as to a comparison of the two Fairs is of little significance. Nor do the figures prove anything. New York's being a $150 million fair on 1,200 acres and the midsummer daily attendance 125,000; San Francisco built a 850 million fair on 400 acres and draws 45,000. (The cost figures are not mine—apply your own discounts.)

San Francisco, Saturday, August 26.—If the exhibits out here in the Golden Gate Exposition are, as a whole, nothing much to write home about, there are a few blaz ing exceptions. One of these I examined casually today with the man who designed it, René D'Harmoncourt. It is a pictorial representation of the Indian in America, housed in a wing of the Federal Building. As a result of the designer's rare gift for dramatic and meticulously detailed presentation, the visitor gains a vivid impression of the varied civilization that ended with the settling of America—the totem worshippers of the northwest, the fashioned tribes of the plains, the men who knew the woods and the rivers, the cliff dwellers, the gentle people of the mesas. It is a story told by artifacts. The textiles, metal working, accoutrements of pageantry, woodcarving, the fine art of utilizing animal skins, pottery, sandpainting—museum specimens of all these creative activities—are a whole new revelation to one who knows little of Indian arts beyond Hoboken-woven Navajo blankets, curio-seekers' pottery, and Albuquerque's vast stock of turquoise-studded silver bracelets. Best news of all is that this accumulation is the basis of a permanent public collection.

San Francisco, Monday, August 28.—Another one of the Golden Gate Exposition exhibits that in itself is worth the trip across the Continent is inside the Palace of Fine and Decorative Arts. Eight galleries are filled with arts and crafts from the fifty countries of the Pacific's rim, assembled I am told by Langdon Warner of the Boston Museum of Art. When one can bring under one roof such spectacular treasures as a gold-lacquered howdah from Siam, great carved stone lintels from Cambodia and from seventh century China and Guatemala, turquoise-encrusted golden goblets from Peru, Maori woodcarvings, American Indian beadwork and the like, there is no lack of visitors. Add to this a train of galleries in which one comes face to face with Botticelli's Birth of Venus, Raphael's Madonna of the Chair, Titian's Portrait of Paul III, Michelangelo's Madonna and Child with Young St. John, and one does not have to worry about the attendance. It was a heartening sight to find that of all exhibits on Treasure Island, the Arts, in spite of its extra admission fee, was the most crowded. And inside the building space—large enough for an airfield—it seemed to my casual eye that those seeking a view of modern art were outnumbered by those seeking the old masterpieces by about ten to one.

San Francisco, Sunday, September 3.—I went out toward the Presidio today to see what remains of the 1915 Exposition. The Palace of Fine Arts—by Bernard Maybeck—is all that is left—a typical example of what we used to think of as "exposition architecture." Very Beaux-Arts; a tour de force in the utilization of every motif, every carved molding known to classical architecture; brash with applied sculpture; nevertheless it still radiates a certain grandeur. No longer does it shelter treasures of art. On its smooth concrete floor are a dozen or more tennis courts where, under city sponsorship, new champions are being built.

San Francisco, Wednesday, September 6.—The judgment of Insulux Glass Block Competition No. 2 has added for me one more to an unbroken line of convictions that a group of eminent architects is of the salt of the earth. Any faint doubts I may have had as to the safety with which Los Angeles and San Francisco architects might be closely commingled were wiped out—the only real argument that broke the unanimity of opinion had to do with the relative hazards of driving a car up and down San Francisco's hills or through Los Angeles' crowded traffic. In architectural matters, Styles Clements, Gordon Kaufmann and Donald Parkinson of the South formed no battle line against Gardner Dailey, Timothy Pflueger and William Worster of the Bay, nor called for the balance of power in Walter Church of Portland and George Stoddard of Seattle.

San Francisco, Saturday, September 9.—Two local phenomena are sure to strike the visiting architect in the city inside the Golden Gate. One is the fact that a level building site is the rare exception. Gardner Dailey showed me a house he is building on a plot 32 by 85 ft., and one corner of the site is just 30 ft. higher than the corner diagonally opposite. What with such topography and the need for protection against earthquake, the foundations of a modest home are likely to cost more than superstructure, fittings and furniture. The other phenomenon is the building of row after row of houses in which each wooden end wall is separated from its neighbor by just one inch. How are they built that way?—by laying the framework on the ground, covering its outer side and imitating the old barn raising method of New England.

Salem, Ore., Monday, September 11.—Dropped off to have a look at Oregon's new capital, and see whether a statehouse
without the traditional Renaissance dome really looks like a statehouse. Recalling the flood of words, spoken and printed, at the time Tryonbridge & Livingston and Francis Keally of New York won the competition, it was the more anxious to see what Oregon had got for her money. It's a grand job, and now that the smoke has all cleared away, Oregon knows it. Leo Friedlander's massive sculptured groups have just been unveiled; Ulrich Ellerhusen's heroic figure of a York pioneer has just been glided—was the will, I trust, not too long in toning down. The rotunda murals by Frank Schwartz and Barry Faulkner, though showing each artist's individuality, are miraculously blended into a unit. In front of the capitol a large sunken garden is being planted, and one of the two buildings that are to complete an open-square composition is now finished—the Library designed by Whitehouse & Church. So all is well in Salem.

Portland, Ore., Tuesday, September 12.—Walter Church was good enough to bring together the architects he could reach for an impromptu luncheon, fitted in between wide-ranging and speedy inspection tours of the city and its outlying sections. Messrs. Brookman, Church, Crowell, Doty, Holford, Whitehouse and I talked of architecture, depression, convention, building codes, the need for young blood out west, but of war, which out here seems far away and of little import. Nevertheless, while sojourning along the Pacific I have come to believe that if Japan should go in on either side, the whole West Coast would rise almost as one man to enter the war on the other.

Seattle, Wash., Wednesday, September 13.—Another one-day stand, motoring over the particularly beautiful sections where the people of Seattle live, with a luncheon sandwiched in to renew acquaintances and form some new ones among architects Aiken, Bain, Holmes, McClelland, Narimore, Loveless, and Overturf.

I'm beginning to realize how widely a typical architectural problem varies with the geography of this broad land. Lest anyone should imagine that the moderate size house might simmer down to more or less of a nation-wide standard type, witness the Pacific Coast differences. About Los Angeles and its suburbs the first consideration of the architect is a defense against sun and reflected heat; about San Francisco Bay it is the west wind from which the home-builder must be sheltered, with every effort to trap the sun in the lee; moving up the Coast, the architects about Portland and Seattle give the problem a secure defense against driving rains. The variety and individuality of these Pacific Coast houses never ceases to surprise one accustomed to typical repetition in the East, yet there is very little seen of the merely bizarre—what Wade Pipes says we shall in a few years be calling "Ye olde moderne."

Washington, D. C., Monday, September 25.—In spite of the cancellation of the Fifteenth International Congress of Architects, the A.I.A. Seventy-first Convention is well attended. Hotel Mayflower's broad lobby seats with delegates, members, guests, Producers Council members and the press. What the architects may lack in sparkling color of dress is made up by the identification badges—a different color for each of the above classifications plus white for the visitors from abroad. Registration totals 732 this year, as compared with 726 last year at New Orleans, 305 in Boston, 1937, and 545 at Williamsburg in 1936. Meanwhile, the Institute membership has made no such proportionate advances. What brings them? Is it the hope of learning the answers to the present crop of questions facing the profession? I doubt it. Certainly, one of the strongest magnets is the opportunity for meeting face to face one's fellow practitioners who, beneath a layer of serious purpose, turn out to be human beings who speak our language.

Washington, D. C., Tuesday, September 26.—There is a certain machine-level of dullness in these regular convention sessions; a delegate is either listening to a committee report, briefed by the Board and capped with an appropriate resolution—to which he votes "Aye," or else he is listening to a bylaw revision in which it is proposed to strike out the words "if" and "but" and substitute in the third line the word "perhaps." The time-honored procedure rolls on and the hours pass—hours in which one would prefer to be seeing any one of the three or four exhibits spread for our eyes in other parts of Washington. This evening, in the session given over to the Committee on Education, a delegate turned to me and said. "That's the first time I've heard the word 'architecture' mentioned in these two days of Convention business." It recalled a remark by one of our Scandinavian visitors to a Convention of several years ago. After a half day of treasurer's report and its ramifications, he expressed his surprise that a body of architects could find such sustained interest in the subject of dollars.

Washington, D. C., Wednesday, September 27.—If it were possible to excope from the record of this Convention all words by President Maginnis—which, thank Heaven, it is not!—this meeting would go down in history as the great Dust Bowl of all A.I.A. Conventions. From his opening address, through his countless impromptu "asides" regarding the impediments of parliamentary procedure, and including his banquet speech tonight, the sharp flick of his wit and the sororous majesty of his diction must have repaid even those who journeyed from the farthest chapters. One is always charmed by what Mr. Maginnis has to say, but one listens with positive delight to the rare and luminous words with which he clothes his thought. "Clothes" is an inadequate word here; "elegance" is more the mark.

If the Convention has seemed an occasion of uninteresting—though perhaps necessary—business routine, it should be remembered that the war is to blame. All of the inspirational ingredients that had been put in to make the draught palatable were removed when the International Congress was canned. Such an unfortunate combination of circumstances could hardly occur twice in our lifetime. We have been eating our salad—or was it merely spinach?—without the French dressing. Next year—in Detroit, perhaps—the chefs will not be so frustrated.

Washington, D. C., Thursday, September 28.—Close students of convention routine must have observed that a resolution on any subject—perhaps two resolutions on diametrically opposite subjects, actually voted by the Resolutions Committee in the closing hour. Delegates have reached the coma wherein any call for a vote brings an "Aye" and no argument. How, otherwise, could the American Institute of Architects have voted a resolution to the effect that, "there shall be no other national body of architects?" In past years there have usually been two or three of the elder statesmen awake and watching these final resolutions, to guard against those too complaisant "Ayes."

Possibly, hearing the oft-repeated insistence that the younger men be permitted to rule, they are standing back to see what will happen.

The ceremony of raising members to Fellowship has been gaining in importance during the last few years, and to many of us is the high point of a Convention. Rather less impressive, it seemed to me, in having been moved from the banquet night to a morning business session. Honors seem to comport better with evening dress and the ladies' presence than with pipe and tweeds after breakfast.

Highlights of accomplishment in the four days seem to have been: 1) embarkation upon a wellcharted course of small house service—a service that weaves together design, finance, certified construction and supervision; 2) material progress toward a better understanding of what unification of the profession does and does not mean; 3) the realization that a subcommittee's clinical type of convention would be worth trying; 4) a willingness to crown with laurel the man who will de- vise a system by which bylaws, committee resolutions and other noncontroversial matters can be executed by mail; and 5) the renewing of established friendships, the inception of new ones.
THE MEMORIAL HOSPITAL FOR THE TREATMENT OF CANCER AND ALLIED DISEASES, NEW YORK CITY

JAMES GAMBLE ROGERS, INC., HENRY C. PELTON, ASSOCIATED ARCHITECTS
Major trend in hospital design, as the examples in this portfolio indicate, is toward the large, specialized institution, like this mammoth plant devoted to the treatment and study of cancer and allied diseases. As the first modern building designed especially for this purpose, Memorial is exceptional both as to type of equipment and emphasis on research—a fact which accounts for its vast proportions despite a patient capacity of but 168 beds. Bulk of the space is used by the out-patient, X-ray, and laboratory departments, all of unusual importance in cancer work.

In keeping with its midtown location, the building has been designed in a modern set-back scheme of unusual vigor and distinction. This makes possible a sharp separation between those facilities which require the most in the way of light, air, and outlook and those which are best grouped together on large floors, and permits full utilization of premium ground space. Thus office space, laboratories, and services are collected in an extensive three-story unit grouped around several courts while wards, patients’ rooms, staff housing and the operating suite occupy the ten-story tower.

Built to house, among other things, two “largest in the world” items—largest amount of radium used for treatment and most powerful X-ray equipment—Memorial Hospital is also the center of cancer treatment in America, with an educational program including yearly symposiums on cancer for undergraduate medical students and weekly clinical conferences open to the medical profession.
MILLION VOLT X-ray machine, for deep therapy, especially designed for Memorial's cancer treatment, extends through ceiling into machine room above.

X-RAY DEPARTMENT for private patients. Controls are located between pairs of treatment rooms. Two dressing rooms per treatment room assure steady use of facilities during peak periods.

RADIIUM PACK ROOM. Like the X-ray room, this space must be surrounded in a continuous lead envelope to bar the escape of dangerous rays.

HEAD AND NECK CLINIC, the busiest in the hospital and in use every day. Opens directly off general clinic waiting room (visible through doorways at end) and surrounded with treatment and recovery rooms.
CONSTRUCTION OUTLINE


ROOF: Covered with promenade quarry tile and slag.


INSULATION: Roofs—cork. Sound insulation—acoustical plaster and tile.

WINDOWS: Sash—double hung by Campbell Metal Window Co. and projected steel. Detroit Steel Products Co. Glass—double strength, quality A.


WALL COVERINGS: Reception, dining, special rooms and offices—wallpaper.

WOODWORK: Doors—wood generally, some hollow metal and bronze.

HARDWARE: Bronze throughout.

PAINTING: Walls and ceilings—lead and oil. Trim and sash—enamel.

ELECTRICAL INSTALLATION: High and low voltage wiring system, including paging system, telephones, X-ray and nurses calls. Fixtures by Geo. Ainsworth and Edward F. Caldwell.


HEATING AND AIR CONDITIONING: Heating—steam and hot water systems. Air conditioning for operating rooms 12th floor and for laboratories 2nd floor—Carrier Corp. Hot water heater—Patterson-Kelley Co.
BIO-PHYSICS LABORATORY indicates Memorial's emphasis on research. The entire second floor is given over to laboratories, animal, record and study rooms.

CHILDREN'S WARD is divided into individual cubicles just large enough for bed and work table, and varying in size for various size beds, with glazed partitions between.

CANCER MUSEUM opens off the library, may be used as an extension of the latter for large meetings by moving aside a folding partition (shown open in picture below).

X-RAY VIEWING and record room. Since diagnosis and treatment depend so largely on photographic examination, this room has been conveniently located on the main floor near the X-ray department.
LITTLE TRAVERSE HOSPITAL, PETOSKEY, MICH.

ENTRANCE

THE ARCHITECTURAL FORUM
In this case the problem of the small, rural hospital was complicated by two distinct types of patronage—the year 'round needs of the native population and a peak summer demand including vacationists. This called for a flexible scheme planned for minimum maintenance and operating costs during the winter “slump” and maximum summer capacity, to which was added the not unusual requirement of a small budget fixed by a fund-raising campaign.

The result is a straightforward exterior of admirable simplicity and an interior distinguished by attention to detail. Focus of interest, inside and out, is the attractive and well-lighted entrance lobby, and the treatment throughout is commendable for its logical use of appropriate modern materials. Rear of building faces lake view to the west. Cost, $282,000 at 70½ cents per cu. ft.

**Lobby**
Probably the biggest step forward in hospital design in recent years has been the abandonment of the aseptic interiors formerly considered necessary in favor of a more homelike atmosphere. This is well illustrated by the handling of the nursery, typical patient's room, and living room shown at the left, where comfort rather than forced cleanliness has been emphasized.

**CONSTRUCTION OUTLINE**


**ROOF:** Covered with built-up and gravel roofing, Koppers Co.

**INSULATION:** Roof—cork. Sound insulation—Acoustone, U. S. Gypsum Co.

**WINDOWS:** Sash and screens—Campbell Metal Window Co.; entrance—bronze, General Bronze Corp. Glass—double strength, quality A and 1/4 in. plate. Glass blocks—Pittsburgh-Corning Corp.

**STAIRS AND ELEVATORS:** Stairs—metal frame, terrazzo treads. Elevators—Otis Elevator Co.

**FLOOR COVERINGS:** Corridors—linoleum; remainder—terrazzo.

**WALL COVERINGS:** Living room—Flexwood, U. S. Plywood Co., Inc. Solariums—wallpaper. Operating rooms, etc.—ceramic tile.

**WOOD AND METAL TRIM:** Trim and doors—Metal Door & Trim Co. Entrance door—General Bronze Corp.

**HARDWARE:** by Yale & Towne Mfg. Co.

**PAINTING:** Interior paints by Arco Paint Co. Exterior sash—Pittsburgh Plate Glass Co.


Operating suite layout, once held to be among the major mysteries of hospital design, has reduced itself to a standard grouping of two operating rooms with sterilizing rooms and scrub-up between, the latter opening off the corridor. That the surgical department of a modern hospital is by no means simple, however, is indicated by the plan below, which illustrates an unusually complete setup for a general hospital of 374 bed capacity. General practice is now to concentrate this department on one or two floors, and, in institutions large enough to permit it, to separate the rooms according to septic and clean type. Thus, in St. John's Hospital, the ninth floor contains two major septic operating rooms, a minor septic operating room, two dental operating rooms, and eight specialists' operating rooms; the tenth floor six clean major operating rooms, a fracture room, and an orthopedic surgery room. An exception to this, made where conditions warrant, is an emergency operating room located near the ambulance entrance. In the detail plan and photographs, note provision for recessed sterilizers, which—besides being more attractive—are more readily cleaned.
HENRY R. HELMLE, ARCHITECT

FINISHES AND EQUIPMENT

WHITE PLAINS HOSPITAL, WHITE PLAINS, NEW YORK

Wurl Bros. Photo
A vexing problem often encountered in general hospital work is the desire to enlarge and replan an existing building without interference with its use during building operations. This often results in a compromise between the best arrangement and what is possible in view of existing facilities. In this instance, however, the architects are to be congratulated for meeting and surmounting this problem with considerable success, since the resulting scheme may well be considered a model for the medium-size general hospital, despite its having been so largely dictated by the position of the original building.

As will be seen on the key plan on the page opposite, the old building here forms one lug of an enlarged building shaped like the Greek letter Π, a scheme which has the advan-
The plans show a commendable segregation of the multiplicity of departments required by the modern city hospital, and here each of these units has been exceptionally well provided with service facilities. Easy circulation through well-lighted corridors, the convenient arrangement of the large wards, and generous use of compact single rooms are other noteworthy features.

An especially interesting detail is the use of the sawtooth plan for the larger private rooms on two floors at the back of the main building. This provides a private sun terrace for each of the rooms overlooking the landscaped courts without sacrifice of light in the rooms.

Equipment, such as lockers, cabinets, and work tables, has been beautifully worked out and detailed, and an attractive color scheme, with variations for rooms of differing purpose, replaces the all too common "hospital white." Glass brick has been employed to maximum advantage, especially in the operating rooms.
LARGE AND SMALL PRIVATE ROOMS
Crank operated, awning type windows have been used throughout, and prefabricated metal closets, especially designed by the architects, provide maximum facilities in minimum space.
Unique from the functional as well as the physical standpoint, this latest unit in New York's gargantuan system of public welfare is the first in any city to be devoted solely to the treatment of chronic diseases. The design problem faced by its architects consequently had two main aspects—to utilize to the utmost the advantages of a really superb site and to develop an entirely new type of institution.

A glance at the air-views on the opposite page will suffice to demonstrate how well the first of these requirements was met. The wings of the unusual chevron-shaped ward buildings are turned to take advantage of both the river view and an unobstructed southerly orientation. Four such buildings, grouped on either side of the central administration building, comprise a unit as much to be envied for its compact simplicity as for the unusual amenities afforded the wards. A special feature of the scheme, indicated by the arrows on the lower picture, is the location of small buildings for the reception of visitors between each pair of ward buildings, an arrangement which relieves the central administration unit of the considerable visitors' traffic.

The second requirement has been satisfied by borrowing many features from the tuberculosis sanatorium. The treatment of exclusively chronic diseases has much in common with the treatment of tuberculosis, since in each case patients are hospitalized for long periods and in the majority of cases not entirely bedridden. For this reason, patients have been segregated in special ward buildings and service facilities developed as separate buildings.

Most important of these is, of course, the central administration building, the plans of which appear at the right. This building contains not only the administrative offices, but also admitting rooms, kitchen, clinic, and internes' quarters. It is connected to the ward buildings by basement, first and second floor corridors, in which circulation is carefully segregated for maximum efficiency and convenience.
The typical plan of the ward building floors, shown at the left, concentrates wards and dayrooms on the southerly side of the unit, with continuous balconies overlooking the river view, and places service rooms in the less desirable space at the back, quiet rooms at the center. Beds are in all cases placed parallel to exterior walls and are separated by dwarf partitions into groups of four and six, each group having separate access to the balcony and each bed a separate, hooded reading light. On the ground floor, broad terraces are provided in place of the balcony. Ambulant patients, will, in general, be housed on the lower floors for access to the grounds. Balcony rails are provided with a broad, rounded top member of wood, which can be leaned upon in comfort, and a baffle to protect patients using the balcony from the stiff river breeze.
Circular dayrooms are provided at the middle of the ward building wings, commanding the river view. Photo above shows the sweeping terrace at the ground floor level, directly accessible from the wards occupied by the most active half of the hospital’s patient population.

**CONSTRUCTION OUTLINE**

**STRUCTURE:** Exterior walls—4 in. face brick, Freedenburg & Lonsbury, 8 in. sand lime backup brick, air space, 4 in. terra cotta furring and plaster or tile, interior partitions—4 in. terra cotta, salt glazed or slip glazed blocks. Structural steel—Harris Structural Steel Co. Floor construction—Knickerbocker Concrete Arch Co. arch with Aerocrete slabs and fill, Aerocrete Corp. Ceilings—metal furring and plaster, Brown Plastering Co.

**ROOF:** Concrete slabs, promenade tile and slag, New York Roofing Co.

**INSULATION:** Roofs—Perfotile, U. S. Gypsum Co. Sound insulation—Cork Insulation Co.

**WINDOWS:** Sash—double hung, bronze, General Bronze Corp. Glass—double strength, quality A, flat drawn sheet, Pittsburgh Plate Glass Co. Screens—bronze, Russell-Pepper Co.

**STAIRS AND ELEVATORS:** Stairs—iron, Virginia greenstone treads. Elevators—Westinghouse Electric Elevator Co.

**WALL AND FLOOR COVERINGS:** Tile by Leitch Asphalt Tile Co., U. S. Quarry Tile Co., Hanley Co. and Ketcham & Co., Inc.

**FURNISHINGS:** By Herring-Hall-Marvin Co., General Fireproofing Co. and Excel Metal Cabinet Co.

**WOOD AND METAL TRIM:** Trim and metal doors—Art Metal Construction Co. Wood doors—Sloane & Moller, Inc. Exterior doors—bronze, General Bronze Corp.


**PAINTING:** All paints, Keystone Varnish Co.

**ELECTRICAL INSTALLATION:** Wiring contractor—Arc Electrical Construction Co. Switches—Arrow, Hart & Hegeman Electric Co. Fixtures—The Simes Co.

F. H. V. to the high real estate taxes

improving long-term, low-down-payment jirogram of being opposed to extension of the USHA's executive Vice President Morton Bodfish

NOVEMBER
to the extreme stay in it, "to and home loan business and expect "savings and loan associations have been only expected adverse influences per cent money will bring us called TVL for more than 100 years the savings in commercial bankers, warned them that "savings and loan associations have been for more than 100 years in the savings and home loan business and expect to stay in it."

Unanimously they went on record as being opposed to extension of the USHA's public housing program, to the extreme long-term, low-down-payment program of FHA, to the high real estate taxes imposed by most municipal governments, and unanimously they agreed to correct a 100-year-old grammatical error in the League's constitution and elected Atlanta's George W. West the 1940 president. Finally, but without unanimity, they voted to rename their organization "The U. S. Savings and Loan League."

THE DILEMMA

Despite its new monicker, the League still serves the same purpose for the same people: it is the national trade association for some 4,000 local savings and loan institutions, representing about one-half the business in numbers, about 85 per cent of it in total assets. While both numbers and assets bulk large, this business, despite 150 years of improvement, still continues as the least known, the most misunderstood branch of U. S. Finance. Thus, despite the fact that there are 8,951 savings and loan associations in the country, representing practically every community of any import, and that 113 of them from coast to coast each have assets of more than $5 million, close to 60 per cent of the urban U. S. population has never invested a cent in them, and one in three people cannot even name one local association. These associations hold more than $41.6 billion of savings, but only 10 per cent of the public would recommend them for such a purpose. And, with a volume of more than 81 billion in new savings and loan mortgages appearing every year, it is somewhat surprising that only 20 per cent of the public would go to one of these associations to borrow for home construction or purchase.

Still bigger thorns in savings and loan's side are the facts that, although the books of all associations are subject to State or Federal supervision (or both) and although most of their accounts are Government-insured, 20 per cent of those people who are familiar with savings and loans are suspicious or afraid of them and that a far greater percentage of the U. S. public knows nothing at all about this big business. In view of these many inconsistencies and misgivings and this widespread ignorance, The Forum herewith presents a fast-moving, brief explanation of the savings and loan movement.

CRASSUS TO FHLLBB

Every organization is proud of an early founding. Some rather rush savings and loaners point as far back as Crassus, fancy their origin in his reputed ownership of half of ancient residential Rome which he bought in depression and sold on the installment plan during prosperity. More reliable is the claim that the idea came from building societies in Birmingham,

By reference to "savings and loan associations" The Forum herein refers to building and loan and Federal savings and loan associations and homestead associations whose only major differences are their names.

5Ratios presented are based upon a 1934 nation-wide sampling in 102 communities of persons in all but the lowest income group by the American Savings, Building and Loan Institute.
England, which date back to 1781. Not until the prosperous year of 1891, however, did U. S. savings and loan history begin. By that year the stage was set: cooperation and the cooperative movement were growing; the first mutual savings bank was fifteen years old; population was increasing rapidly, making the cities and in horde to the Middle West where President Andrew Jackson was offering Government-owned land at $1.25 per acre; transportation, commercial enterprise and manufacturing were being developed; most important, there was emerging the working class with regular wages but without property ownership. And, in that year the first savings and loan association was founded—the Oxford Provident Building Association in what is now Philadelphia—by two manufacturers, a physician, a surgeon and a lawyer. Purpose of this "building club" was to help subscribers manage their small wages in the local textile industry, to save and to build or buy houses. To this end shares of $500 par value were issued to subscribers who agreed to pay a $5 membership fee and $3 per month on each share held. Money accumulated by the association was loaned to the highest bidders among stockholders, but not more than $800 for each share held and only for home ownership within a five mile radius. Every one was supposed to build a house, so when there were no bidders for loans, the names of those who had not borrowed were placed in a hat from which the name of the next borrower was drawn. When every one owned a house and all the shares had matured, the affairs of the association were wound up, the profits divided among members.

Following closely the Oxford's purposes and pattern, other associations were set up in step with the country's growth. The movement reached the Middle West in 1849 when Illinois' first association was founded and the West Coast in 1865 with California's first. During this period of cross-country expansion there was much experimentation within various savings policies and loan plans. Although each step was a step forward toward better financial operation and although there is still a residue of these early forms, a modern standard organization for savings and loans has gradually developed and is generally accepted. (See detailed explanation, page 801, column 2). To explain the intricacies of its many prototypes would only add to the confusion which has long been Savings and Loan's No. 1 curse.

Suffice it to say that associations became permanent capitalized organizations, that dividend payment plans were adopted, that additional resources were built up through the sale of paid-up shares, those reserves were accumulated, and that these improvements were accompanied by considerable publicity which attracted new members, money and general interest to the savings and loans.

By 1893 there were 5,889 associations in the country with an average age of between six and seven years and with assets totaling about half a billion dollars. Also by that year the famous (or rather infamous) "national" associations were well on their way to record-breaking expansion and ruin. Capitalizing on the increasing popularity and growth of local associations, moving slowly to call themselves "building and loan associations" with which they had many features in common. But, there were salient differences: Their operations covered larger areas through the aid of paid agents; they allocated up to 8 per cent of members' "promissory" to "promissory"; they made profits up to 58 per cent; they advertised uncommonly low interest rates to borrowers (as low as 14% per cent); they made loans for higher percentages of value. Obviously, many of them were frauds, and after 1896 the whole movement collapsed; there were 5,889 associations with as set totals.
This Depression downside between 1931 and 1938, inclusive, was accompanied by a drop in average of 766 associations with an average loss of 818 million. In view of these sad statistics it was small wonder that in 1932 Congress, by approving the Federal Home Loan Bank Act, created a system of twelve banks to serve as a permanent Federal reserve of home mortgage credit for all savings and loan associations which apply and are approved. These associations are members of the Federal system. Today more than 4,000 associations are members of this system. Of this number, 1,386 are Federal savings and loan associations—which either began business under a Federal charter (690) or voluntarily switched to the Federal charter (796) and which are required by law to prefix their corporate titles with the word "Federal." All 4,000 associations subscribe to stock of the FHLBanks and are eligible for Bank advances secured by home mortgages or U. S. Government obligations. In brief, the Banks, which obtain their capital through public sale of debentures, serve as discount agencies for the country's savings and loan associations and thus promote home mortgage liquidity.

With the passage of the National Housing Act (FHA's creator) in 1934, another Governmental savings and loan agency was formed—the Federal Savings and Loan Insurance Corp. At this time the insurance of bank deposits was siphoning funds out of the savings and loan associations and thus out of the housing field, and the corporation was designed to correct this lopsided state of affairs. FSLIC insures the depositors' losses up to $500,000 on the accounts of individual investors in all Federal savings and loan associations and State-chartered associations which apply and are approved.

**Building's No. 1 Financier**

Despite the fact that savings and loan failures and voluntary liquidations last year were numerically larger than ever before, Federal credit, supervision and insurance are bearing fruit. Thus, last year's losses through failure totaled only $11 million dollars, as compared with $16 million losses in 1935 and $44 million in disasters of 1933. Furthermore, not one Federal association got into trouble last year.

Currently downward, the trend in the number of associations causes the business no concern. On the contrary, it looks with satisfaction upon this trend, claims that if it should return to the troubles of 1933, it is now well equipped to handle them better.

The savings side of the association's business is restricted to residential property loans for purchase, new construction, remodeling, etc. (See Figure 4, page 400.) In the case of a home purchaser, his credit status and title to the lot are examined and neighborhood trends are analyzed. Where the borrower is to build a house, his plans and specifications are also studied. If all are satisfactory, the loan is negotiated. Under a new construction loan, the association makes payments to the builder as the building progresses and is approved by association inspectors. (All savings and loan association loans are, and always have been, long-term loans amortized at regular intervals—now universally amortized each month.)

The savings side of the association's business is equally simple. There are generally three savings plans, all based upon the purchase of shares in the association:

1. **First** is for the individual who wishes to invest a lump sum. At the end of two years, his share of the organization's earnings is a dividend and usually ranges between 3% and 4% per cent. If the individual invests $10 per month and receives 3% per cent dividends, his account will total $1,457 at the end of twenty years.

2. **Second** savings plan is for the individual who wishes to invest a lump sum which may run as high as several thousand dollars. While dividends on such an account are usually made in cash, this association will allow the dividends to ac-
cumulate in the account if it is desired.

The third plan is designed for individuals whose income is not steady (professionals, farmers and seasonal employment). They, moreover, save their savings whenever they wish and will have dividends credited semi-annually to the amounts invested.

While this association is prepared to repay money whenever needed, it will probably require 30 days' notice of intention to withdraw. This is in the case of a real emergency on the part of the saver. It is in this respect that the association differs primarily from the local bank. Thus, the savings and loan association is essentially an investment medium for long-term savings and cannot be used for depositing weekly or monthly pay checks, most of which will be withdrawn during the course of the month.

Annual statement of financial condition of this average association will show approximately the same percentage distribution of assets and liabilities as tabulated in Figure 8, page 401. This sample breakdown of assets and liabilities is based upon a consolidation of reports from ten associations having assets of from $500,000 to $1,000,000, and was prepared by the U. S. Savings and Loan League.

HEADACHES

In many more important aspects, all savings and loan associations, regardless of size, are alike—they all have the same problems:

Within every business there is competition and the business of home finance is no exception. Moreover, savings and loans' competition is double-barreled. In addition to such long-standing savings competitors as insurance companies and banks, they now have to contend with Government Baby Bonds and the U. S. Postal Savings System (see Figure 3, page 400). And, while savings banks have always been loan competitors, not until recently did commercial banks and insurance companies seriously enter the home mortgage field. Two factors led them there: 1) FHA mortgage insurance and 2) their pre-Depression outlets for funds—commercial and industrial loans—have dried up.

Problem No. 2 of the savings and loans has been the continually downward trend of interest rates. Since they pay dividends at a rate not greater than the interest rate on the local savings banks. In most communities that means roughly 3 to 3 1/2 per cent. And to earn that dividend an association must charge a mortgage interest rate of 5 to 5 1/2 per cent. In other words, the operating expenses and the creation of necessary reserves require that the association maintain a two point spread between the two rates. Many a savings and loan antagonist has argued that, if the British building societies can operate successfully on a spread as low as 1 1/2 per cent, so can the U. S. savings and loans. But these antagonists overlook the facts that in England mortgage lending risks are smaller, that foreclosure costs are nominal, that foreclosures can be negotiated in much less time, that mortgagee moratoriums are non-existent and, finally, that English communities are generally more stable than their U. S. counterparts. Also, the building societies are not burdened with expensive supervisory activities and, in the main, operate in much larger units—the two largest being Halifax and Abbey Road Societies. All these factors contribute to the low cost of mortgage lending in England.

While the Treasury's easy money policy is the prime mover behind the low interest rate trend, FHA and HOLC have swung the settler into the field of home finance (Arch. Forum, Sept., 1939, p. 2). Interestingly, HOLC takes its orders from the FHLLB which, as shown above, is now the guardian of most savings and loan associations. To the Convention statement of FHLLB Chairman John H. Fahey that "reduction of interest rates . . . is one of the most outstanding incidents in mortgage lending history . . . a record of which you have a right to be proud," the savings and loans through their retiring League President Rice replied "five thrifty people (have) had their incomes cut in two as a result of the attention given to one borrower."

The inflationary effects of war may solve the savings and loans' interest rate problem.

World War II may solve another savings and loan problem—owned real estate. The anticipated War inflation will bring higher property values with it, making the disposal of foreclosed properties more attractive than it is in today's rather depressed market. In any event, the volume of owned real estate will probably continue the encouraging downward course established in 1937. In 1936 it totaled $1,114 million; in 1938, $943 million.

Another problem concerns the publicity given by FHA to its insurance of long-term, high-ratio mortgages (25-year loans covering 90 per cent of appraised value). Holding their loans down to twelve years and 70 per cent of value (average maximum), the savings and loans discourage interest rate competition.

By taking 20-25 years to pay off a mortgage, the borrower is "doubling his chances of losing the house because he is increasing the possible number of periods of poor business through which he will pass."2 It is easier to make substantial payments of the principal of the loan in the early years when repair bills are low.2 When foreclosure costs and incidental expenses (taxes, repairs, sales cost, etc.) are high, they may easily produce losses for the mortgagee when 70-75 per cent loan ratios are exceeded.

The policies of FHA and the savings and loans do not jibe, the latter do only a small business with the Government insurance agency (see Figure 7, page 401). Most associations are FHA approved lending institutions; they paste the FHA shield on their show windows to attract loan prospects; but, once inside, these prospects are pressured the advantages of the orthodox uninsured savings and loan mortgage, are given an FHA-insured mortgage only as a last resort—to meet competition.

The next depression will tell whether or not the savings and loans' opinion of long-term, high-ratio loans holds water.

Home ownership is the backbone of the savings and loan movement, and the associations are convinced that the only sane argument against owning a home is the high cost of taxes. Thus, the average purchaser of a 30,000 house and lot must figure on paying $414 in real estate taxes each month, and he must not be surprised if the tax item runs to $42 per month—the average for high-tax cities. To solve this problem the U. S. Savings and Loan League urges its membership to campaign for lower municipal government costs, urges the State legislatures to consider homestead tax exemption laws (Arch. Forum, Sept., 1939, p. 305).

Since business buildings and apartment houses were the Savings and Loan's biggest Depression headaches, the associations are currently steering clear of commercial property mortgages (the Federals must) and are viewing with alarm

(Continued on page 34)
LOW COSTS AND NEW PRODUCTS

sell out a subdivision. An experiment in steel, concrete and heat.

With prices as low as $4,355, with floors of steel and concrete and with a heating system unique in many details, the 196 semi-detached houses collectively called "Westmont" again push Arlington County, Va., into Home Building's foreground. Fifteen minutes and ten cents by bus from the heart of Washington, D. C., this newsworthy subdivision is aimed at the ever-increasing number of the Capital's white collar workers (average income: about $8,100) and bull's-eyes the market with the lowest prices in local history.

Westmont was sired by Mace Properties, Inc., a well-knit building organization whose prime purpose is to produce non-philanthropic low cost and low rent housing. To this end it has several design, construction and procedure axes up its corporate sleeve. For fifteen years a reputable builder of individual houses, Mr. Merwin Ardeen Mace year before last decided that low cost housing was more than a one-man job, hence called in Architect Adolph Frederick Thelander, a well-known Washington free lance and Promoter J. (for Joseph) William Elenman. Together they are Mace Properties, Inc.—president, vice president, and secretary, respectively. And, better to round out their technical personnel, the trio recently adopted Heating Expert Gerald Joseph Monteith from the McCord Radiator and Manufacturing Co.

First undertaking of Mace Properties, Inc., was an Arlington County row house development—104 five-room units built and sold in one year at prices of $4,900. Capitalizing on experience gained in this project, Builder Mace (his competent assistants notwithstanding, he and his money are the mainsprings of Mace Properties, Inc.) last spring set out on project No. 2—Westmont. However, since Arlington County in the meantime had passed an ordinance outlawing the furtlierance of cut-rate row houses, the company was forced to change its low cost tactics. Logical was the turn to the next cheapest type of housing—semi-detached or two-family housing. While Archi-

* Situated across the Potomac River from Washington, D. C., Arlington County, Va., is largely responsible to the Capital's top-flight rank among U. S. home building centers. Today the County's $13 million assessed valuation is the largest in the State, is exceeded by only three of the 24 cities in Virginia—Richmond, Norfolk and Roanoke. Assessed valuation jumped 10 per cent last year, will jump again this year due to the completion of Arlington Village (ARCH. FORUM, Aug., 1939, p. 130), an addition to Buckingham (ARCH. FORUM, Feb., 1938, p. 128), the Westmont development and its successors and the County's many other housing projects.

tect Thelander prepared designs for two basic double houses (one with five rooms, the other with six), Mace went shopping for land. At a bargain price he picked up 20 acres of corn field strategically located near both elementary and high schools and bounded on two sides by main thoroughfares.

Setting aside two acres at the intersection of these highways for future business building, he platted the balance with 106 lots, laid out moderately curved streets and a few back alleys. Reserved for five-room houses, 160 lots were made an average of 25 ft. wide, and each of them was allocated about $37 for the cost of the eighteen residential acres. The remaining 38 lots for six rooms were made 30-30 ft. wide, and their share of the land cost was set at about $925 each. Utilities were laid in two trenches under the streets, concrete gutters and curbs were poured, and cement sidewalks and driveway aprons were provided—all at a cost of about $175 per lot. Thus, before construction began, each five-room house started out with a cost of $3775 for land and utilities; each six-room house, with a cost of $8700.

Prices. In addition to the wholesale purchase of land and installation of utilities, Mace relied on most of the other well-known aids to cost reduction:

- Standardization of simple, rectangular house designs was carried to an economical extreme. From basement floor to second-story ceiling all houses are identical. But, through variation in details, the subdivision does not give the appearance of so
many cheese boxes. Three styles of roof

• A complete house-building organization.
• Mass production and a systematic con-

struction method, with experiments in
material dealers who advertised their prod-
suicide by manufacturers and local ma-

ters, orders went directly to material and equip-

opment manufacturers.

• Mass purchasing of materials and equip-

ment was expedited by the size of the pro-

ject and by the fact that all its houses were essentially alike. Many Mace orders went directly to material and equipment manufacturers.

• A complete house-building organization, Mace Properties Inc.'s office personnel of 20 is equipped to handle every function from design to sales, thus saves many an outside fee and reduces customary overhead allowances.

• Reenforced concrete floor construction, while about equal in cost to conventional framing, eliminated waste, served dual purposes and facilitated other phases of construction (see below).

• Garages were omitted in step with the Arlington County trend. Instead, a wide gravel drive-way serving two houses was run between each two-family unit. (Although there is ample room for a garage at the rear of each lot, no purchaser has yet indicated his intention to build one.)

• A heating system was installed which boasts low initial cost (about $750 per five-room house) as well as low operating cost (see below).

• The building of double houses is in itself economical. Thus, in Westmont, an 8 in. party wall of cinder block supplies two exterior brick walls, and excavation and roofing problems are simplified.

Combination of all these elements made it possible for Mace to market his 11,800 cu. ft. five-room houses at $4,332 to $4,485 depending on roof design ($828 per month on a 25-year FHA-insured mortgage), his six-room 16,600 cu. ft. houses at $5,600

($835 per month) including land and improvements. And the marketing was easy—all of the 160 five-room units were sold before completion, and the last of the 36 six-room units went shortly after. Three factors made it so: 1) The obvious appeal of low prices combined with the fact that no new houses in the entire Washington area offered any price competition. 2) Convincing sales talk was woven around such qualities as brick, steel and concrete fireproof construction, steel cabinets, steel insulation, porcelain enameled steel window-sheets in bathrooms, steel casement windows, bronze screens, cross ventilation in every room but kitchen and bath, filtered forced air heating, copper piping throughout, oak flooring, and sodded, landscaped yards.* 3) A ten-page advertising supplement to the Washington Times-Herald loudly and effectively at-
ttracted the public to the project in its first month. It included by Mace's department-store-furnished model houses. The biggest real estate advertise-

ment ever carried in local papers, it cost Mace $3,000, but the expense was shared by manufacturers and local ma-

terial dealers who advertised their pro-

ducts and the part they played in the con-

struction of Westmont. So easy was the disposal of his self-selling houses, that Builder Mace allocated only 8,510 per house to the cost of sales—less than the usual 5 per cent sales commission.

Fireproof Floors. Like nine out of ten other houses in metropolitan Washington, the Mace houses have 8 in. brick veneer walls atop cinder block foundations. But, unlike all the rest, they have reenforced concrete floors, whose system of construction has much to commend it.

Steel rib trusses 6 in. deep and factory fabricated to required lengths are set 24 in. on center much as are conventional wood joists. Asbestos "fillers," or inverted U-shaped panels (about 3/4 in. thick), are then laid between the trusses resting upon the lower flanges of the steel members. When the entire floor has been so covered, a quick-hardening concrete is poured to the top of the trusses. (One cu. yd. of concrete covers about 150 sq. ft. of floor area.) The resultant reenforced monolithic slab is flush on the top but vaulted between trusses underneath. This vaulting not only cuts down the weight of the floor construction to about 30 pounds per sq. ft., but also provides space for ducts, plumbing, wiring, etc.

At Westmont this new system of floor construction is covered with oak shorts laid in a mosaic pattern over hot mastic. Before applying ceiling lath to the under side, wood furring strips 34 in. long are inserted between the lower flanges of the floor trusses which are left exposed after the pouring operation. Since these strips hold the lath over 1/2 inch below the trusses, there is ample room to run wiring between the lath and the trusses.

Claimed advantages of the floor construction are many: It is fire-, termite- and sound-proof; it does not shrink in the drying process as does wood; it is more substantial than frame construction; it offers good thermal insula-

tion; it reduces fire insurance rates (about 30 per cent at Westmont); its fac-
tory fabrication minimizes waste; it is easily installed with unskilled labor; left as a ceiling, it gives a better, more finished appearance than con-

ventional frame construction. Further-

more, when, as at Westmont, a "vault" is enclosed with flat sheets of asbestos, it becomes a well insulated heating duct.* Due to the reduced thickness of the floor construction, the height of the building is lowered and materials are saved (an im-

portant saving when multiplied by 198

houses). Bathroom floors are ready for tile or other finish without the usual concrete fill used with joist construction.

A firm believer in this new floor con-

struction, Builder Mace holds that its ad-

vantages place it ahead of conventional wood framing with which it is a cost com-

petitor.** He does, however, point to one disadvantage—the fact that, despite the

* When it is necessary to run a duct across
the trusses, the asbestos U-shaped "fillers"
may be turned around to make a vault per-

pendicular to the other vaults. The open-
webbing of the trusses permits the facile

passage of air through such a duct.

** Average cost, Westmont's floor construc-
tion: materials, 16 cents per sq. ft.; installa-
tion, 10 cents, sub-total, 26 cents; less 3 cents
saving in other materials; total, 23 cents.
use of quick-drying concrete, FHA requires that reinforced concrete floors must set for 48 hours before work progresses.

**Heating System.** Equally significant with the floor construction of Westmont houses is their heating equipment—a combination hot water and forced air circulation system developed especially for low cost houses. Water at a temperature of 190-200° is generated in a small (2½ inch diameter) copper coil "boiler" in the basement, in which is a wall-flame rotary burner. Thus heated, water circulates by gravity through oversize (one-and-one-half-inch) copper pipes to copper coils in a heat-exchanger and an animator situated in a corner of the kitchen directly above the "boiler." And, after a temperature drop of about 25° the water then flows back to the boiler, completing the cycle. The entire heating system has a capacity of only five gallons.

The animator, enclosed in a ceiling-high steel closet, occupies 15 x 22 in. of floor space. In it is a ½ hp. electric motor which drives a squirrel cage blower. Cold air is drawn from the return ducts built into the first floor, is forced through a spun glass drawer-type filter, thence past the copper heating coils and through short ceiling and wall ducts to the various rooms. Outlets are high on the interior walls of rooms; return intakes are low—in the baseboards. (Bathrooms and kitchens have no returns intakes, an open window taking their place.)

Hot water for domestic purposes is generated in a 21-gallon tank held vertically above the boiler and enclosed neatly in a continuous jacket (see picture, right). During hot weather, closure of a hand valve excludes hot water from the animator, permits its use as a cooling device. Since provision has been made in the animator for a pan-type humidifier, it is possible to obtain the effect of air conditioning—both summer and winter.

Total heat loss is calculated at 38,000 BTU's per hour per house—the equivalent of about 235 sq. ft. of hot water radiating space. (Continued on page 38)

**CONSTRUCTION OUTLINE**

**FOUNDATION:** Walls—12 in. cinder block, Washington Concrete Products Co. Cellar floor—4 in. concrete atop gravel fill.

**STRUCTURE:** Exterior walls—6 in. common brick veneer on 4 in. cinder blocks, West Bros. Brick Co.; 1 in. x 2 in. furring strips. Lathrite and plaster, Ebsary Gypsum Co.; paint, John W. Masury & Son. Interior partitions—ordinary 2 x 4 in. stud partitions. Floor constructions—(see text for description): Steel rib trusses, Bethlehem Steel Co. and U. S. Steel Corp.; asbestos pans, Ruberoid Co.; concrete; Oak shorts laid in hot mastic, McBride and Moody Corp. Ceilings finished with lathrite and plaster, Ebsary Gypsum Co.

**ROOF:** Flat—Tilecrete, covered with 4-ply built-up roofing, 15-pound felt and slag finish. Gable and hip—frame, covered with triple-sealed asphalt shingles, Celotex Corp. CHIMNEY: Brick and 6 in. round clay Bell tile.

**SHEET METAL WORK:** Flashing, gutters, leaders, downspouts, ducts—20 gauge galvanized iron.

**INSULATION:** Roof—Ferro-Therm sheet steel, American Flange & Mfg. Co. Weather-stripping, Quaker State Co.

**WINDOWS:** Standard Lupton steel casements, Michael Flynn Mfg. Co. Glass—double-strength, quality B. Screens—bronze, wicket type, metal frame, A. W. Barnhardt Co.

**STAIRS:** Main stair—oak treads and risers, Bethlehem Steel Co. and U. S. Steel Corp.; 1 in. x 2 in. furring strips, Lathrite and plaster, Ebsary Gypsum Co.

**HEATING AND AIR CONDITIONING:** (see text for description): Boiler and firing unit—Timken Silent Automatic "BER" Heating unit, Timken Silent Automatic Div. The Timken-Detroit Axle Co. Heat exchanger and animator, (Manufacturer's name supplied upon request.) Thermostats—Julian P. Friez & Sons, division of Bendix Aviation Corp.

**SHEET METAL WORK:** Flashing, gutters, leaders, downspouts, ducts—20 gauge galvanized iron.

**INSULATION:** Roof—Ferro-Therm sheet steel, American Flange & Mfg. Co. Weather-stripping, Quaker State Co.

**WINDOWS:** Standard Lupton steel casements, Michael Flynn Mfg. Co. Glass—double

Floor construction: 1. Steel rib trusses are laid in place atop party wall, temporarily secured by wood spreaders. 2. Asbestos pans, or filters, are inserted, resting on bottom flanges of trusses. Note formation of heating duct in foreground by prior insertion of flat asbestos panel. 3. After poured concrete has dried, wood furring strips are fitted between trusses as foundation for ceiling finish. Note BX cable within floor construction. 4. Second floor ceiling is insulated with sheet steel, covered with board lath and plaster. 5. Basement ceiling is left unfinished, gives a vaulted appearance. Below: a typical section through exterior wall and first floor of a Westmont house.
A TENEMENT TURNS OUTSIDE IN, takes tenants for a walk through the park. A 50-year financial history of Brooklyn apartments remodeled from red to black.

"IMPROVED dwellings for the laboring classes"—thus philanthropist Alfred T. White unpretentiously tagged his late nineteenth century venture into low cost, limited dividend housing. Planning for a modest savings-bank return, he spent $600,000 on the construction of 499 apartments in two Brooklyn, New York, projects titled Tower and Homes, and Riverside. Sixty years have shown that the projects have not only lived up to their delinition and purpose, but that in one respect they were three score years ahead of their time. In an era when "railroad" and "dumbbell" tenements were the norm, Alfred T. White built around a landscaped court, produced a prototype of today's popular garden apartments.

More important, White and his heirs have kept a careful count of income and expenses which throws needed light on the long-term trend of profits and maintenance in low rent housing.

Today, Tower and Homes and Riverside Apartments have particular significance, for they are being remodeled for the first time in their 69-year history. Started in 1923, modernization to date has been carried to 80 of the 319 Tower and Homes apartments, and to 120 of the 280 in Riverside.

Construction: 1890. Construction of the two projects was carried out over a thirteen-year period, beginning with Tower and Homes in 1877, ending with Riverside in 1890. Designed by Architects Wm. Field & Son, they are both six story walk-ups with similar facades dominated by iron-railled balconies upon which circular stair wells open at each floor level. (For Riverside's facade, see drawing, facing page.) Ground floors of both are largely devoted to stores.

Unheard of in that day for low cost dwellings was Riverside's attractive interior park; bargains were the apartments at rents of $2 to $4 per week; a luxury was the running water and lavatory in every unit. Nonetheless, apartments were without hot water, baths and heat. Tenants had to bathe under basement showers, had to haul coal as many as six weary flights upward, and had to burn it in a living room stove or fireplace. Those unpleasant features were, however, common in tenement of that day and did not affect occupancy. Setting no restrictions on tenants except that they make good neighbors, A. T. White grossed $89,056 in rentals from Riverside that first year, netted $10,754 after a generous allocation for depreciation.* That was 5 per cent on his $150,000 investment in the project.

Profits: 1891-1935. Significant in Riverside's financial history are two facts illuminated by the chart below: 1) The real estate depressions of 1903 and 1910 were unable to drag the project into the red. 2) The trend of repairs and other expenses has been inexorably upward, making them the determining factors in the project's long-range earning power.

During Riverside's first 20 years gross income was relatively stable, never getting out of the $30,000-$40,000 bracket. Variations in profits resulted principally from fluctuations in expenses. With the World War, however, the trend took a more violent turn. Income shot up during the inflationary 20's, but expenses were right on its heels. Net profit, therefore, only crawled to new highs. Yet, even during this prosperous period, Riverside showed evidences of waning popularity. Tenants were hard to get and keep. When the depression corner was turned, that trend showed its full force. Tenancy and income fell off, even though hot water was installed, constant repairs made. Profits stepped down year in, year out, until in 1932 the project's 45-year earning record was broken; it lost $2,064.

Remodeling: 1935-1939. It was during 1935 that the White Estate hatched plans to remodel completely the interior of the buildings, but to leave the exteriors alone. In that year 25 Riverside units were modernized; during the following four years, the number was increased to 180, finishing the work in one of Riverside's three buildings.

Responsible for the planning was New York Architect Cameron Clark, whose biggest problem was to make the entrances to the project more enticing (grim brick facades gave no inkling of the pleasant park within, caused a prospective tenant to turn away.) Blue ribbon solution of Architect Clark was to switch the entrances from the street side to the court side of the buildings. Tenants and visitors now enter from a side street (see plans, opposite), gain access to the remodeled building via a raised walk which the sloping ground made necessary. With the building facing inward instead of outward, tenants are more prone to play and relax in the park than when their only access was through the cellar or around the block.

Total cost of remodeling one of Riverside's three buildings was $181,505. Of that amount, $100,000 went for the eleved walk and new entrances; $2,098 for two heating plants, the remainder for construction, fire escapes, fixtures, and the like. Remodeling cost per room of specifically dwelling facilities came to only $410.

When the White Estate first planned the remodeling, they applied for an in-

*To avoid confusion, the subsequent discussion is limited solely to Riverside Apartments. The histories of both have been generally parallel.

Ups and downs in income, expenses and limited profits write the 50-year history of Brooklyn's Riverside Apartments. Trend through 1934 reflects the rental of cold-water flats, the gradually increasing cost of upkeep. Upward jogs after 1935 are attributable to general business betterment and the remodeling into modern apartments of about 30 units per year. Capital value (at chart's bottom) did not exceed project's original cost until the time of modernization. Expansion of capital value in 1935 and 1937 reflects remodeling expenditures which were partially carried by current earnings. Only once (1935) did Riverside's financial curve dip into the red. And that dip was only $2,000 deep.
sured mortgage, but FHA ruled against six-story walk-ups, turned down their thumbs. Rather than hunt around for mortgage money, the Estate took 71 per cent of the remodeling cost from current earnings, shelled out only $52,500 from its own pocket. (The $62,000 loss during 1935 was partially attributable to remodeling, was also pocket money.)

Belying FHA’s decision is the fact that the remodeled building has been continuously rented from top to bottom. Guess of Architect Clark is that the stairwell opening on the balconies at every flight makes the climb seem easier, helps keep the upper stories tenanted. But, low rents and pleasant apartments certainly have had something to do with it. Furthermore, tile baths with showers, electric refrigeration and modern gas stoves are a far cry from the old apartments, are better than most of New York’s inexpensive apartments.

Profits: 1938. Rents are not, however, at the old $2-$4 per week level. New rent schedule for the remodeled apartments is from $2 for two rooms and kitchenette to $57 for four rooms, excluding utilities. Increased rents have helped boost gross income from $41,492 in 1935 to $70,099 in 1938—a new high for Riverside.

During most of that period the unre-modeled apartments struggled along as best they could with vacancies running high. This year, however, there has been a sudden demand for them. Probable reason: the low rents (now $3 to $4.80 per week) are attractive to families recently cut from WPA rolls. Only seven of the 160 unheated apartments in Riverside are currently vacant. (All those in Tower and Homes that are considered habitable are occupied.)

Although Riverside’s earnings are currently excellent, payment of part of remodeling costs from earnings has eroded net return to the level of 1930. In 1938, the project’s books showed a profit of $11,439, which was 3 per cent of the $402,500 capital value (original cost plus remodeling costs).

In view of its recent financial trend, Riverside’s prospects are bullish. The 160 apartments that have so far felt the plasterer’s trowel will certainly need a minimum of serious repair work for some years to come, will help carry their unremodeled neighbors until they too have their turn.

John Beurow Photos
PORTABLE RENTAL HOUSES make their first stop in Reno, command high
rents, produce tidy return. A plug for prefabrication.

When California orchardist Roland Giroux decided to supplement his apple
growing with some other form of investment, he turned to rental housing in Reno, Nevada. In so doing, he brought a fresh viewpoint into the field, for instead of building conventional apartments, he built single-family houses of prefabricated construction. And even more significant, he chose prefabrication, not to satisfy a whim, but to fill a need for structures that could be taken apart and moved if need be. Project's name: El Reno.

Giroux purchased the one and one-half acre plot air-viewed above because he had high hopes for a future increase in land value. But he also had hopes for its present earning capacity via temporary rental housing that would reap the rewards of the present and permit him to bow out when the rewards of the future came along. Hence these qualities for the buildings: 1) high salvage value, 2) low maintenance costs, and 3) attractive appearance. Meeting them to a lintel were the steel houses of Los Angeles Prefabricator W. F. Lea, whose building technique was adaptable not only to the project's fifteen dwellings, but also to the other buildings—a caretaker's cottage, boiler house and garage.

Basis of the project's final form as well as of Giroux's tidy (33 per cent) net return, is Reno's unique rental market. As an unusually large part of the town's population is transient, and as a large number of those transients stay for a month rather than a day, there is a heavy demand for furnished apartments. Giroux set out to skim the cream off that market by providing attractive furnished single-family houses with all the conveniences of apartments. With rents of $100 a month (which includes garage and all utilities) he has so far skimmed deep enough to keep his houses 94 per cent occupied despite a rapid tenant turnover. Majority of his tenants are retired business men, innocent tourists, and the like. (The city's notoriety as a divorce factory obscures its popularity as a resort.)

Plot and Plans. Investor Giroux's block-sized piece of property cost him a cool $20,000, even though it is located in only a sporadically developed residential section one mile from downtown Reno. Reasons: It is in the path of the city's development, is near junior schools and fronts an important through street.

Problem of arranging the eighteen buildings on the odd-shaped property was solved by giving the development a focal point in the form of an unlandscaped semicircular lawn around which seven of the houses are arranged. The remaining eight houses face side streets, with garages and utility buildings at the back.

All fifteen houses as well as the caretaker's cottage are Lea Steel House stock models designed by Los Angeles Architect Paul Williams. Fourteen of the houses are identical. Measuring only 21 x 38 ft., they are well within the small house field, but in plan they do not exhibit the most common small house cost-saving characteristic: instead of being side by side, the two bedrooms are separated by the living room, and one has a full bathroom, the other a lavatory. The fifteenth house is a smaller edition, has only one bedroom. Hence, it rents for $85 a month instead of $100 as do the rest.

Fabrication. Although Steelbuilder Lea's construction method is patented and unique, the El Reno buildings were assembled on the site with local union labor under two Lea Steel House supervisors*. This use of local labor was possible because about 70 per cent of the fabrication was done in the company's Los Angeles factory, 600 freight miles from Reno. Thus, each structural part was as complete as possible, short of actual assembly. Windows, for example, were glazed and caulked, needed only to be anchored in place.

* For a detailed analysis of the Lea Steel House system see ARCHITECTURAL FORUM, July 1938, p. 20.
Blanket charge made by Lea for all the buildings in El Reno was $90,000. In addition, Giroux spent $1,000 per dwelling on furnishings and electrical equipment. All floors are carpeted or linoleum, all furnishings are out of Montgomery Ward’s catalogue. Kitchens are electrically equipped down to ventilating fans.

**Heating.** Because Reno, Nevada, is 4,500 ft. up in the midst of the Rocky Mountains, residents there have heating problems a little harder than those of New Yorkers, a little easier than those of Chicagoans. Hence, heating plays an important part in the operating costs of El Reno. That it is also an important factor in keeping those costs to a minimum is well proved by Giroux’s heating cost record: last winter he paid out only $50.93 per dwelling unit for 6-cents-a-gallon fuel. For all fifteen houses and caretaker’s cottage, heating costs average $500 a year.

Two factors contribute principally to those low costs—insulation and a flexible heating system. The houses are all well mineral-wooled, both walls and roof, while a battery of four boilers (see four bl.

**Finance.** All told, Investor Giroux shelled out $90,000:—for land ($20,000), buildings ($50,000), landscaping ($5,000) and furnishings ($15,000). On top of that capital investment he pays annual operating expenses that total $5,300:

- Maintenance and management... $1,500
- Heat ...................................... 500
- Hot water ............................... 400
- Utilities ................................ 1200
- Taxes and insurance ................... 1,000

Since Giroux paid for the entire project out of his own pocket, mortgage costs are conspicuously absent from the list. Also missing is an allocation for depreciation. Assuming run-of-the-mill maintenance, a conservative estimate of the life span of the steel houses is 50 years, in which case total depreciation of the buildings could be covered by setting aside $1,000 each year during that period.

If Giroux’s apartments were always 100 per cent occupied, he would gross $17,820 per year. In practice, however, his annual take is nearer $16,750. Looking at El Reno’s profit picture from its blackest period (1934), Giroux feels that his parcel of land has appreciated enough in value to make sale profitable, he can loosen a few bolts, pick up bag and baggage and operate his house-hotel somewhere else.

**CONSTRUCTION OUTLINE**

**FOUNDATION:** Concrete slab.

**STRUCTURE:** Exterior walls—Lea Steel Products Co.’s prefabricated panels of 22 gauge galvanized sheets backed with Insulite boards, Insulite Co., galvanized steel studs, 2½ in. mineral wool. Insulite board interior. Interior partitions—Same with Insulite board on each side, Insulite Co. Floor construction—sub and finished wood flooring. Insulite board ceiling.

**ROOF:** Steel framing, Lea Steel Products Co.; solid wood sheathing and shingles, Flintkote Co.


**FLOOR COVERING:** Living room, bedroom—carpeting, Alexander Smith & Sons Carpet Co. Kitchen, bathroom—linoleum, Armstrong Cork Products Co.

**WALL COVERINGS:** All interior wall finish—Insulite board, Insulite Co.

### Building's Charts and Tables

#### Permits—Residential (000,000)

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<td>96.4a</td>
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<td>114.6a</td>
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#### Contracts—Residential (000,000)

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#### FHA Mortgages—Real Estate Held (000,000)

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#### Employment

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<td>1938</td>
<td>156.74</td>
<td>157.74</td>
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#### Footnotes:

1. Valuation of building permits in each 2,000 community; source, U. S. Department of Labor.
2. Number of permits issued by large U. S. city; source, F. W. Dodge Corp. via U. S. Dept. of Commerce.
3. Number of dwelling units covered by permits; we estimate 1.5.
4. Home mortgage selected for FHA approval under Title II, Section 206; source, FHA.
5. Home mortgages accepted for insurance under Title II, Section 206; source, FHA.
6. Large-scale rental housing mortgages being premium paid under Title II, Section 207; source, FHA.
7. Prepayment agreements loans insured under Title I.
8. Non-farm mortgage recordings of $20,000 or less based on 500 counties (168 Cities); source, FHLBB.
9. Number of mortgage records for all largest U. S. mortgage companies; source, FHLBB.
10. Value of mortgage lending by member companies of the Amer. Fed. of Mortgage Presidents.
12. National average based on six-room house of $2,000 cost, unfinished; source, FHLBB.
13. Rates at which new rental contracts are made; source, National Industrial Conference Board.
14. Rates at which some 1,369 non-farm communities; source, FHLBB.
15. Foreclosures in metropolitan communities; 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, FHLBB.
17. Average price of 206 total, office building and theater bonds; source, Ameri-Baker & Co.
18. Average price of 105 building material manufacturers' stocks; source, Standard Statistics Co.
20. Source, American Federation of Labor.
23. Source, Federal Reserve Board.
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SAVINGS AND LOANS
(Continued from page 402)

the widespread expansion of rental housing. Also, rental housing is at odds with the savings and loans' campaign for home ownership. This fact, coupled with reported failure of purpose, prompts the business to denounce the building of USHA "poor farms." Its answer to the public housing question is best expressed in the words of League Spokesman Morton Bodfish: "Savings and loan associations find 70 to 80 per cent of their borrowers for owned homes among people who make less than $82,000 a year. And this is in spite of the contention of housing authorities that people living on less than $82,000 cannot afford to provide their own housing." The business is against increasing USHA's borrowing and lending powers but, if USHA must go on, it recommends that "no Federal subsidies of any sort be poured into a community for its housing without the approval of the voters."

Although savings and loaners originally asked for and obtained Federal and State supervision, today they think that they are getting an overdose of it. The business admits that supervisory authorities should undertake complete examinations, take civil or criminal action if necessary, but, in eyes of Convention Speaker Horace Russell, "it is all wrong for somebody in Washington or the State capital to tell us in 'Pebrik' who will manage our money as directors or who would do the work of officers or employes of ours whom we must employ and pay." The submission of "confidential reports" concerning various associations directly to Washington without the knowledge of association directors was also decried. Mr. Russell's solution to the supervision problem: "Open and frank dealings between supervisors and the directors and officers of institutions..." Adds Mr. Bodfish: "Confidential reports and the building of secret records in regard to businesses have a tinge of un-Americanism which does not appeal to the savings and loan mentality."

Of most recent vintage is the war problem. Practically every Convention address was introduced with some reference to the declaration of World War II and its probable effect upon the savings and loan business. Consensus was that, barring U. S. participation, the trend of residential construction would continue up and that in many industrial localities home building would reach boom proportions. From a credit standpoint the savings and loans are well prepared for war. Thus, if the business experiences a shortage of deposit funds through war investment competition, the twelve FHLBanks could float more debenture issues, lend the proceeds to the member institutions for home financing purposes. Should these debenture..."
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(Continued from page 34)

tures also prove unattractive to the public, the U. S. Treasury, through a pending Congressional amendment to the FHLB Act, could be authorized to purchase and carry them.

PROGNOSIS

Trends, of course, are the biggest problem. Informed savings and loaners see these in their crystal globes:

• The number of associations will continue to decrease, leaving only the stronger associations. Branch banking beyond its present extent will not develop in the savings and loan business. (Contrary to general conception, many associations already operate outside their own bailiwicks—many in the Middle and Far West cover their entire States, many others operate in three or more nearby States. The business of new Federals, however, is limited in large part to a 50-mile radius.)

• Efforts will be made to increase the liquidity of members’ investments.

• Larger reserves will be established.

• Increased emphasis will be placed upon informed management. A straw in the wind was the Convention election of a management-type man over a lawyer for a key position in the U. S. Savings and Loan League.

• To obtain and maintain better management and personnel, higher rates of compensation will be paid.

• To help meet loan competition, more associations will adopt the principle of variable interest rates—commensurate with the risks involved.

• Mortgage interest rates will rise slightly but will remain comparatively low for several years.

• The monthly amortized mortgage will increase in popularity. In 1929 about 20 per cent of the associations used it; today 85 per cent are in this group.

• The term and mortgage-to-value ratio of savings and loan mortgages will continue far below FHA’s 25-year and 90 per cent maxima. Shorter terms and lower ratios may be expected as the country approaches the next real estate depression which the savings and loaners have scheduled for “sometime in the Forties.”

• Mortgages carrying FHA insurance will continue to be written only as a last resort to combat competition. In fact, FHA may expect decreasing business from these institutions.

• Competition for both savings and loans will continue from all sides. But, since no competitor (with the possible exception of the savings banks, 70 per cent of which are concentrated in three Eastern States) can boast comparable experience in home mortgages, it is more than likely that the Nation’s savings and loan associations will weather the competition and fortify their current position as the No. 1 branch of Home Finance.

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In announcing the PRECIPITRON, Westinghouse brings to reality the first commercially practical electrostatic method of removing dirt, dust and similar air-borne impurities in ventilating systems. So efficient is this new achievement that microscopic particles, as small as 1/250,000 of an inch in diameter and including even tobacco smoke particles, are removed from the air stream.

The efficiency of the PRECIPITRON in removing air-borne foreign matter is illustrated by the three test swatches above. The “Blackness Test”, as applied by the U. S. Bureau of Standards, was used to measure the relative amount of dirt in atmospheric air in the three conditions photographed.

In practical applications the PRECIPITRON’s efficiency answers the mass air cleaning problems of commercial, industrial and public buildings using forced ventilation or air conditioning duct systems. In commercial and public buildings the PRECIPITRON protects documents, decorations and merchandise. In industry it protects machines, production and stocks. In all applications, it reduces maintenance and cleaning costs and improves working conditions.

You can obtain complete information about the PRECIPITRON from your local Westinghouse Office, or by writing direct to Westinghouse Electric & Manufacturing Company, Precipitron Department, Edgewater Park, Cleveland, Ohio.

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Odorless Cooking

Set Pureaire into the wall ANYWHERE. It thus occupies almost no floor space. Tenants can cook the finest meal you ever ate without allowing odors or vapors to escape into the room. Pureaire’s patented ventilation whisk them all away into the outer air. So less decoration costs, and do tenants like these odorless Pureaire apartments! . . . Remember, Pureaire is complete—stove, oven, sink, refrigerator and unit, ample storage. All-steel, built like a battleship, installs in one piece, no extra doors. . . . Models for all-gas, all-electricity and combination. Write!

THE PARSONS COMPANY
Detroit

Patented and patents pending

FIREPROOF HOUSES

(Continued from page 405)

... Thus, with a capacity of 60,000 BTU’s, the small compact heating unit specified by Mace is more than ample for its purpose. Designed especially for low cost homes, it boasts a half-dozen economical features: 1) The “boiler,” burner and hot water tank are factory assembled in one piece, delivered as a unit, installed at low cost. 2) Occupying less than 4 sq. ft. of floor area, standing about 6 ft. high, and weighing only 345 pounds, the unit fits handily into a small basement or first floor utility room. 3) The firing rate is low—one-half to three-fifths of a gallon per hour as compared with the small house average of 1.33 gallons. 4) Comparatively inexpensive No. 2 oil is burned. 5) With but one moving part, the fan and oil distributor rotor of the shaded pole motor, maintenance costs are minimized. 6) This motor is small (1/60 hp.), consumes but 60 watts per hour—less than half the average.

Preliminary estimates indicate that during an average year at Westmont this unique heating plant will consume about 900 gallons of oil at a cost of about $54. Westmont home owners benefit cost-wise by the fact that one company has the oil contract for the entire subdivision. This company maintains in its offices a record of each house’s consumption and delivers fuel whenever its degree-day compilations show that the supply is running low. Oil is metered from a truck to the house’s basement tank through an outside connection, and a printed receipt goes to the purchaser. Thanks to this service, the home owner need never concern himself with the level of his fuel supply.

So successful have been the Westmont houses and their many new departures that Mace Properties Inc. is currently planning two other projects of 150 similar dwelling units. Their purpose is to sop up the overflow demand for Westmont’s 198 low cost houses, but, unlike the original houses they are to be built for “outside” investors who have come to Mace for building assistance.* Beyond the planning stage is still another Mace undertaking—the initial phase of an Arlington County rental housing project which may eventually make room for some 2,000 families. Brick walls and reenforced concrete floors are already well along for the first 132 dwelling units scheduled for January occupancy at rents averaging less than $111 per room per month. Thus, Builder Merwin Ardeen Mace is not only giving Washington its lowest cost houses but also its lowest rent apartments. More important, his rental project will set a new low in the rent scales established to date by all FHA-insured housing projects.

* Construction loans for the Westmont project were made by a local building and loan association.

When the Indiana Bell Telephone Company wanted to move their building at Indianapolis, they called in Eichleay. The building, weighing 12,000 tons, was moved 52 feet and pivoted 90 degrees. Telephone service, steam heat, water and sanitary services were maintained.

Eichleay moves large buildings and small with equal facility. The savings to owners are in many instances remarkable.

Consult us if street widening or any other reason might make it advisable to move your property.

EICHLEAY ENGINEERING CORP.
311 Ross Street
Pittsburgh, Pa.
Branch Office, 1600 Arch Street, Philadelphia, Pa. 
PITTCO Store Front Metal members are distinguished by a fluid, sweeping beauty of line; by clean, sharp contours; and by a pleasing relationship and harmony of design between all units. Yet in achieving the unique beauty of this quality store front metal, strength was not sacrificed. The sturdiness and proven durability of Pitco members are as noteworthy as their attractive appearance. In the wide variety of mouldings, bars and sash offered by the Pitco Store Front Metal line, the architect will find suitable units to meet every need encountered in store front work. And he will discover, in the versatility of this outstanding metal, new design possibilities.

DETAIL:
Cross-section of a typical Pitco Metal moulding, illustrating the combination of beauty and strength for which Pitco Store Front Metal is noted.

PITTSBURGH PLATE GLASS COMPANY
"... and we're specifying Milcor Partition Systems to give the client a better job at low cost"

Now - full two-hour fire rating at costs that compete with any construction

...with Milcor Plaster-on-Steel Partition Systems

Now you can plan for fire-safety on almost anything from bungalows (for non-bearing partitions) to skyscrapers — and please your clients with the surprisingly low cost... Using a construction principle always preferred by the building industry — the solid plaster partition — but too costly until now to compete with other types of construction — Milcor makes possible a revolutionary cost reduction in the fireproof field, and opens up new possibilities for fireproofing. Introduced a year ago, this new method has set amazing cost records on large-scale housing projects. Using three simple, prefabricated members, one man can erect as many as 150 channel studs per hour... It becomes economically practical to give your clients all the well-known advantages of a solid plaster wall, on an interlocking web of steel that makes it practically a one-piece construction... The new Milcor Steel Stud makes a similar improvement in the mechanical efficiency of erecting fireproof hollow plaster partitions. A single unit serves a studding, ceiling runner, floor track... There are other possibilities that you should know about when you talk to clients. Write today for the colorful Milcor Solid Partition and Hollow Partition Bulletins.

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HAVE A CASE?

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Real lumber, Wolmanized Lumber*, now suits requirements for even the most permanent types of construction. Wolmanized Lumber is protected by dependable pressure treatment with Wolman Salts* preservative against decay and termite damage. The cost of using it is remarkably low because it is applied only at points where moisture fosters damage, to protect the whole structure. In an ordinary dwelling it is used for sills, joists and subfloor, increasing the total cost less than 2%. For industrial and commercial buildings it is proving especially useful and economical as a safeguard against damage caused by moisture condensation due to modern insulation and air conditioning installations. Get complete details by sending today for the new booklet "Wood Preservation," which fully describes all phases of the use of Wolmanized Lumber.

AMERICAN LUMBER & TREATING COMPANY, 1425 Old Colony Building, Chicago.

* Registered Trade-mark

ANOTHER EXAMPLE is this ultramodern hosiery mill of the Red House Manufacturing Company, Eleanor, West Virginia. All lumber, including roof decking, trim, etc. (about 95,000 feet) is Wolmanized. Alfred M. Marks, Pittsburgh, was the architect.
• • • The Best Things in Life are FREE!

OTHER NATURE is mighty generous with her gifts. Even a barefoot country boy can enjoy the crisp air of early Fall—the crystal clearness of a flowing stream—the keen adventure in an afternoon’s fishing. Yet, some of us refuse the gifts of Nature and pay hard-earned cash for things which she offers free in profusion.

Take casein paint, for example. Some people buy it in paste form and pay a good stiff price for water (common ordinary river water) added by the manufacturer. Others, more shrewd perhaps, buy Modex, the modern casein paint in powder form and save substantially by adding their own water (one of Nature’s most generous gifts). The saving is about 25%—one quarter of your entire paint cost. For an interesting booklet about Modex Powder Casein Paint, write The Reardon Company, 2200 North Second Street, Saint Louis, Mo.

FORUM OF EVENTS

(Continued from page 12)

AWARDS

HENRY ADAMS SCHOLARSHIP ($1,000) for travel and study, particularly of ancient ecclesiastical architecture in Europe, under the direction of the American Institute of Architects, to Professor Arthur Herrman of the University of Washington.

MILTON B. MEDARY SCHOLARSHIP ($400) for graduate study under the direction of the American Institute of Architects, to Miss Susan Salle of Washington University, St. Louis, who will specialize in housing problems.

HOOVER MEDAL, “awarded by engineers to a fellow engineer for distinguished public service,” to Gano Dunn, president of the J. G. White Engineering Corp. and of Cooper Union, New York.

WILLIAM CAMPBELL FELLOWSHIP for research in metallurgy, under the direction of Columbia University, awarded for the first time this year to Warren H. Mayo, Westfield, N. J.

WILLIAM PETIT TROWBRIDGE FELLOWSHIP for study in engineering, under the direction of Columbia University, to James C. Hicks, Webster Groves, Mo.

SAMUEL WILLARD BRIDGAM FELLOWSHIP for engineering research, under the direction of Columbia University, to David L. Atwood, Winsted, Conn.

JULIAN CLARENCE LEVI, architect of New York, chairman of the A.I.A. Committee on Foreign Relations, has been made an Officer of the Legion of Honor of France. Mr. Levi has been a Chevalier of the Legion, cited for his services at the Paris International Exposition of 1937.

COMPETITIONS

INSULUX GLASS BLOCK COMPETITION No. 3—A Dairy; $2,500 in prizes; conducted by The Architectural Forum—request of program on request; closing date November 20, 1939.

U. S. GOVERNMENT REGION No. 3 COMPETITION—a post office and court house building for Jamestown, N. Y., at an estimated cost of $500,000. This, the fifth in the series initiated by Secretary Morgan and carried forward by John M. Carmody, Administrator of the Federal Works Agency, is open to registered architects in Region No. 3. Regions Nos. 2 and 3 are the only ones of the ten into which the U. S., for purposes of these competitions, is divided on other than State lines. Region No. 2 includes New York City and Long Island, southern half of Ulster County, southern half of Dutchess County, and Westchester, Rockland, Putnam, Orange and Sullivan Counties; Region No. 3, in which this Jamestown competition is held, includes the remainder of New York State. A detailed Program is in preparation and will be available probably before November 15. Copies may be had upon application to “Commissioner of Public Buildings, Federal Works Agency, Washington, D. C.” Personnel of the Jury, drawn from private practitioners in neighboring Regions, will be announced therein, also a closing date; in the preceding competitions it has been customary to allow six weeks to two months after issuance of the Program for the study of the problem and submission of simplified drawings.

(Continued on page 44)
Why NOFMA HARDWOOD FLOORING protects your Specifications for Beautiful Floors

1. Shrinking and swelling in the finished floor are minimized by controlled seasoning and conditioning of the hardwood lumber before it is run through the flooring machines.

2. Improved methods of seasoning preserve natural texture of the wood; no case-hardening, no splitting at nails, no torn grain in trimming at end of each course.

3. Tongue and groove are designed to match flush, without forcing in drawing up; prevents surface checking and cupping.

4. Evenly conditioned texture protects hardwoods' original color, figure and flower, and provides uniform absorption of applied finishes.

5. Foregoing steps mandatory upon manufacturers of NOFMA hardwood flooring before they may identify their products by attaching the NOFMA copyrighted label.

6. This label, see below, certifies manufacturing standards as approved by the U. S. Bureau of Standards (CS-56-36) and guarantees the grade stamped on the flooring.

NOFMA hardwood floors are immediately available from local distributors throughout the United States, in NOFMA guaranteed grades of Oak, Beech, Birch, Hard Maple and Pecan. Authentic data for specification writing is furnished in the NOFMA Master Work Sheet, AIA File 19-E-9, which will be mailed on request.

WRITE FOR THE NOFMA MASTER WORK SHEET

AIA FILE 19-E-9

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1120 DERMON BUILDING, MEMPHIS, TENNESSEE
THE IMPROVED Payne
ZONEAIR
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Here is a gas-fired Payne Unit which is a jack-of-all-trades—and master of them all! It heats—filters—ventilates—circulates—and humidifies, all automatically.

The improved Payne Zoneair gives the homeowner year 'round weather control—24 hours a day—from bedroom to basement. Used individually to heat separate groups of rooms, it provides zoned winter air conditioning.

Architects and builders everywhere are acclaiming the improved Payne Zoneair as the last word in modern home comfort-insurance.

MECHANICALLY, HERE'S WHY:

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For further information see your Payne dealer, or write
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FORUM OF EVENTS

(Continued from page 42)

EDUCATIONAL

CHADSTOCK ACADEMY OF ART, Bloomfield Hills, Mich., offers a scholarship for the study of advanced sculpture under the direction of Carl Milles. The scholarship consists of free tuition, board and room, December 1, 1939 to June 30, 1940. Application forms, which may be had from the Academy, must be filed not later than November 15, 1939.

COOPER UNION, New York. Five appointments to the faculty of Cooper Union Arts Schools are announced: Simon de Vaulchier, industrial designer, succeeding Paul Feeley who has joined the faculty of Bennington College; Leo Katz, mural painter and author; Douglas Grant, director of the Merriwold Summer Art School; Russell Mitchell; Saul Yalkert, designer.

CHOUINARD ART INSTITUTE OF CALIFORNIA, Los Angeles, Harwell H. Harris will conduct a course in architecture and interior architecture during the coming semester. Collaboration between advanced students of this and the painting and other departments of the school is possible on certain projects.

CORNELL UNIVERSITY. Ithaca, N. Y. Appointments to the staff of the College of Architecture: Eric Gugler, F.A.L.A., as associate professor of architecture, F. H. Bosworth being on leave of absence for the current year; James O. Honey, assistant professor of fine arts; A. Henry Detwiler and John Udall, instructors in architecture.

METROPOLITAN MUSEUM OF ART, New York. In a series of lectures on Historic Styles in Modern Decoration, which started October 28, Nancy V. McClelland will speak November 12 on “French Styles: Nineteenth Century”; on November 19 Leonard C. Brothers on “English Styles: Nineteenth Century.” Lectures at 3 p.m.

THE NEW YORK SCHOOL OF INTERIOR DECORATION, Evening sessions beginning with the coming semester include three Practical Training Courses: Section A, for beginners; Section B1, a continuation of the former; and Section B2, supplementing the practical, historical, and compositional training included in the other two Sections. The instruction is under the direction of Sherrill Whiton, with Louis Bouché as associate director aided by a large staff.

OZENFANT SCHOOL OF FINE ARTS, New York. Amédée Ozenfant has transferred his Paris and London schools to New York, where students may receive instruction in drawing and modeling, painting, colors, framing, murals, besides general lectures on various phases of art, photography, music, typography, ceramics, and the like. Further information may be had from the Secretary, 208 East 90th St., New York, N. Y.

UNIVERSITY OF NOTRE DAME, Notre Dame, Ind. Frank Montana, 29th winner of the Paris Prize, Beaux-Arts Institute of Design, has joined the faculty of the Department of Architecture, where he will teach architectural design and water color.

CALENDAR

December 4-8. Sixtieth Annual Meeting, American Society of Mechanical Engineers at Bellevue-Stratford Hotel, Philadelphia.

(Continued on page 46)
BEAUTY is a commercial asset for buildings catering to the public—but it must be attained without sacrificing economy or low upkeep. That is why hundreds of new stores, offices, theaters, and other "public" buildings are going concrete.

CONCRETE DELIVERS!

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A national organization to improve and extend the uses of concrete—through scientific research and engineering field work.
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This stimulating Idea Book is packed with photographs of interesting floor designs. Many are reproduced in full color. It contains suggestions for smart, colorful floors in stores, display rooms, lobbies, etc.; interesting ideas for offices, schools, public buildings; restful designs for churches and hospitals. The book includes color plates of the 57 plain and marbleized colors of J-M Asphalt Tile which make it easy for you to select just the color combinations you need to carry out your ideas of interior treatments. It shows why J-M Asphalt Tile floors are quiet and resilient, give long years of service with little, if any, upkeep expense.

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JOHNS-MANVILLE ASPHALT TILE FLOORING

FORUM OF EVENTS

(Continued from page 44)

January 22-26, 1940. Sixth International Heating and Ventilating Exposition, Lakeside, Cleveland, Ohio, held under the auspices of the American Society of Heating and Ventilating Engineers, in conjunction with their annual meeting and the national meeting of the National Warm Air Heating and Air Conditioning Association.

DEATHS

Raymond F. Almirall, architect, 69, in New York, N. Y. Born in Brooklyn, Mr. Almirall's architectural education was had at Brooklyn Polytechnic Institute, at Cornell University, and at L'École des Beaux-Arts in Paris. Mr. Almirall practiced in Brooklyn excepting for a period some years after the World War, when he lived in France. While there he was one of a group of architects commissioned to rebuild the Palace of Versailles.

He was a member of the American Institute of Architects and of the Society of American Engineers. France had made him a Chevalier of the Legion of Honor.

Charles H. Bauer, 59, architect, in East Orange, N. J. Mr. Bauer was born in Philadelphia, was graduated from Columbia University, and, until illness forced him to retire in 1933, he was affiliated with the firm of Guilbert & Betelle, architects in Newark. He was a member of the American Institute of Architects.

Jean Bouchot, 69, sculptor, in Paris. Internationally known for his sculpture, he was also a professor at the L'École des Beaux-Arts. Among his best known works are the "American Volunteers" and the statue of the revolutionary leader, Camille Desmoulins, both in Paris.

John V. Davies, 76, consulting civil engineer, in Flushing, N. Y. A native of South Wales, he was educated at Wesleyan College, Taunton, England, and the University of London. He came to the U. S. in 1889, and is credited with a great number of achievements in engineering, largely in the hydraulic field. He built the first tunnel under the East River, an eleven foot tube for the East River Gas Co., in 1893. He designed the four tunnels underneath the Hudson, and supervised the building of the Hudson Terminal, New York. His profession honored him with the Norman Gold Medal of the A.S.C.E., and with the Rowland Prize of the same organization. He also received the Tifford Gold Medal of the Institute of Civil Engineers.

Victor Frisch, 63, sculptor, in New York. Born in Vienna, Mr. Frisch studied art there and in Munich and Paris. From 1894 to 1914 he worked in Rodin's atelier as an assistant. He came to the U. S. in 1915, and subsequently became a citizen. Among many famous achievements in portrait busts, he designed the bust of Rodin which the master desired to have on his grave.

Irving Kane Pond, 82, architect of Chicago, died in Washington, D. C. while attending the A.I.A. Convention. Mr. Pond was one of the most widely known figures in the architectural profession, receiving his first degree as a civil engineer at the University of Michigan in 1879. Among many buildings designed by the firm of Pond & Pond, in which he was associated with his brother, Allen B. Pond, are Hull House and the Chicago Commons in his home city; the Federal Building at Kankakee, Ill.; the Michigan

(Continued on page 48)
FORMED IRON PLUMBING WARE fits perfectly into your plans for modern houses of all sizes — for these reasons:

1. It is colorful. There is a wide choice between delicate pastels and rich, deeper colors, plus two-color combinations that give added decorative possibilities to your modern bathrooms.

2. It is graceful. There are many distinctive designs with flowing lines and new styling.

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4. It is formed from ARMCO Enameling Iron — a special-purpose metal that has long been the world’s standard for the enameling industry.

The ARMCO label on Formed Iron Plumbing Ware is a symbol of basic quality. For more information about the use of Formed Iron Plumbing Ware — whether for bathtubs, laundry tubs, sinks or lavatories, write to The American Rolling Mill Company, 1881 Curtis St., Middletown, Ohio.
For the first time in the history of the industry, here is a simplified, easy reference catalog of cylinder locks. It shows the most complete, thoroughly modernized line on the market, catalogued in a condensed, systematic style that makes selection and specification a surprisingly easy job.

More than three hundred locks—standardized for metal or wood, heavy duty or standard grade—flat, armored or rabbeted fronts—plain or antifriction latch bolts—locks for Underwriters' labeled doors—all these condensed and arranged for quick identification on twenty-eight pages.

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**FORUM OF EVENTS**

(Continued from page 46)

Union and the University of Michigan League Buildings at Ann Arbor. He was the author of "The Meaning of Architecture," "A Day Under the Big Top," and "Big Top Rhythms," the latter two books arising from his lifelong interest in the circus and its possession of little recognized art forms. Mr. Pond was a Fellow of the American Institute of Architects and one of its former presidents; a former president of the Chicago Chapter; a founder of the Cliff Dwellers Club and of the Chicago Architectural Club. The University of Michigan conferred on him the honorary degree of Master of Arts in 1911 and of Doctor of Architecture in 1920. He was honored with an honorary corresponding membership of the Institute of German Architects, the Royal Institute of British Architects, the Central Society of Austrian Architects.

**PERSONAL**

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

The new firm of Ditchy-Perry-Sidnam, architects of Detroit, Mich., is announced as the successor of Ditchy-Farley-Perry, architects. The members of the partnership include Clair W. Ditchy, Leo L. Perry, and Verne H. Sidnam.

Waldron Faulkner announces a partnership with Slocum Kingsbury for the general practice of architecture under the firm name of Faulkner & Kingsbury at 917 Fifteenth St., Washington, D. C.

Nairne W. Fisher, architect, announces the removal of his office to 323 Excelsior Boulevard, Minneapolis, Minn.

James W. Follin, who has become widely known to architects through his work with the Federal Home Loan Bank Board in Washington, D. C., as chief of the Home Building Service Division, has been appointed managing director of The Producers' Council. Mr. Follin is a graduate professional engineer, a past president of the Philadelphia Section, A.S.C.E., and for several years he was assistant engineer to the Pennsylvania Department of Highways. He also served as secretary of the Construction Code Authority, Inc., the administrative and coordinating agency created by the Construction Code.

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

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

Antonin Raymond, architect, has removed his office to 132 East 48th St. in New York City, his residence and studio to New Hope, Pa.

Hobart A. Walker of East Orange, N. J., and Augustus R. Archer of Somerville, N. J., announce that they have associated for the practice of architectural and engineering work with offices as noted above.

White & Weber, architects, announce a change in the name of the firm to Bertram A. Weber, architect, with offices at 820 North Michigan Avenue, Chicago, III. (Continued on page 50)
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LIGNOPHOL
For Wood Floors
The one application wood finish that preserves and beautifies—and leaves nothing to wear off. Lignophol gives permanent protection, costs little to apply and less to maintain.

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

You can insure results and keep costs down by specifying Sonneborn's Tested Floor Products—Lignophol, Lapidolith and Cemcoat—whoe outstanding worth has been proven on numberless jobs, from coast to coast, over a long period of years.

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Write Dept. F11 for descriptive literature and scientific tests.

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FORUM OF EVENTS

(Continued from page 48)

A BUILDER LOOKS AHEAD

On Construction Day at the New York World's Fair, Arthur C. Tozzer, vice president of the Turner Construction Co., gave an address under the above title. From it we quote his remarks on the subject of jurisdictional disputes.

"For years many vexing problems have plagued the industry, but no one has been so expensive, wasteful, and useless as that of the Jurisdictional Dispute—the dispute between crafts, as to which shall do a particular part of the construction work.

"Originally structures were made of stone or wood only, and there were then two classes of craftsmen, the mason and the carpenter. Then there was no dispute, because the division of work was clear-cut. Individual craftsmen of the fundamental trades attained skill in certain lines and were hired primarily for work calling for those specialties. It was natural that the specialists would seek to monopolize the work for which they were fitted, until these classifications became recognized as separate crafts.

"As labor became organized these specialty crafts became separate unions. Always one of the principal activities of the unions has been to hold work for their respective members and resist encroachment from other trades, and to absorb the employment created by the introduction of new materials and equipment.

"These jealousies and controversies which we know as jurisdictional disputes are arguments between unions, not between employers and employees, and are abhorred by all.

"Over the past twenty years, a number of plans have been set up to correct this evil and prevent this stoppage of work. Employers and employees have come together and tribunals have been established to settle craft disputes. These plans have had some temporary success, but have lapsed for one reason or another.

"For a long time union officials had been anxious to stop jurisdictional disputes. It was evident to them that problems could not be settled for an individual project; or even for a separate area, without a means of settling questions on a country-wide scale, since many of the issues at stake were considered of national importance. While the officers of the nineteen international unions in the Building and Construction Trades Department of the American Federation of Labor have long considered this of extreme significance, it is regrettable to admit that they have sometimes been divided and lacking in their efforts to clear up the issues involved.

"Without going into detail, let me report that last August the Labor Relations Committee of the Associated General Contractors of America and the Executive Council of the Building and Construction Trades Department of the A.F.ofL., sat around a table in Atlantic City and through frank discussions unanimously agreed on the fundamentals of a plan which is being put into effect to prevent stoppage of work by jurisdictional disputes, and to arbitrate them.

"Both parties recognized that continued progress in the construction industry will inevitably bring differences of opinion as to which craft should do specific parts of the work. But both sides recognized, now as never before, the necessity for preventing stoppages of work.

"I cannot say today that since the understanding was reached that there has been no stoppage of work because of jurisdictional strikes. But the number of strikes, taking the country as a whole, has been drastically reduced, and their duration has been shortened. The plan will work."

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WHEN YOU SPECIFY Seal-O-San you safely put your trust in the one wood finish that for years has met every demand made by hospital administrators. Penetrating deep, Seal-O-San actually becomes part of the wood ... leaves no surface film to chip or crack. Sealing the wood cells, it puts an end to hidden crevices that harbor germs or dust ... thus permits easy cleaning. Free-flowing, it leaves a natural finish — a finish as smooth and polished as on a piece of polished furniture. And the ease of application — without mixing or preparation — brings worthwhile labor savings. You'll earn the thanks of everyone charged with hospital management when you insist on Seal-O-San. For specifications and complete details, write today.

FOR THE INITIAL FINISH ON MASTIC FLOORS SPECIFY NEO-SHINE WAX

The higher wax content in Neo-Shine provides greater protection for new hospital floors. That's why 6 hospitals out of 10 prefer Neo-Shine.

MADE EXCLUSIVELY BY
The HUNTINGTON LABORATORIES Inc
DENVER • HUNTINGTON INDIANA • TORONTO

50 THE ARCHITECTURAL FORUM
HERE IS KRESGE'S
triple answer
TO FLOOR WORRIES

Is it durability, quietness, or low cost you want? One of these resilient tiles will do the job.

WHEN specifications are being made up, and you decide that only a resilient non-ceramic tile will do, then comes the question "Which type?" Armstrong makes it easy for you to decide by offering three from which to choose.

Special Floors for Special Needs

If extra resilience and a rich glossy finish are of primary importance, and the installation must be the finest possible, it will pay to use Armstrong-Stedman Reinforced Rubber Tile.

If heavy traffic and dent-resistance must be considered, and if you want a flooring that will stand up, year after year, use Armstrong's Linotile (Oil-Bonded).

And if you want a combination of good qualities at low cost, to fit a tight budget—or a material for installation on or below grade, the answer is Armstrong's Asphalt Tile.

All three of these resilient floorings have the following qualities in common. They are beautiful and offer a large variety of colors and patterns. They are durable. The rich colors run through the full thickness of the composition. Scuffing feet can't wear away their freshness or mar their original beauty. And all are easily kept clean and serviceable with only a daily sweeping and occasional washing and waxing.

Write for Suggestions

For further suggestions, we invite you to consult with Armstrong's Architectural Service Bureau, which will gladly give you unbiased help on the type of floor best suited to your plans. Also see Sweet's Architectural Catalog for detailed information, or write now for illustrated literature. Armstrong Cork Company, Building Materials Division, 1204 State St., Lancaster, Pennsylvania.

RUBBER TILE • LINOTILE (OIL-BONDED) • ASPHALT TILE

Armstrong's LINOLEUM
and RESILIENT, NON-CERAMIC TILES

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS

NOVEMBER 1939

With women especially, it's "love at first sight" when they see homes ready furnished with all-gas, all-convenience kitchens like this.

**PRIZE-WINNING ALL-GAS HOMES ARE SALES-WINNERS, TOO!**

Builders everywhere are discovering that homes "ready to live in" are far easier to sell than unequipped houses.

Prospects become ready customers when "Gas does the 4 Big Jobs," because they know that gas is the modern fuel that lets them enjoy life!

They know, too, gas is clean, silent, odorless, fully automatic and the most economical fuel in the long run.

Modern gas ranges, refrigerators, water heaters and house-heating equipment are compact, beautifully designed and equipped with the latest automatic devices and work-saving features... They help "complete the picture" and transform a barren house into a livable home.

_A complete picture... an easier sale!_

You make quicker, easier, bigger profits when you sell gas-equipped homes. Ask your local gas company for facts and figures.

**AMERICAN GAS ASSOCIATION**
How to get the most out of the filter installations you specify

1 Watch your client cut capers when you specify Dust-Stop Air Filters. Why? Because they cost approximately 1 cent per CFM to install (including frames): and less than 1/10th of a cent per CFM to maintain. Compare these costs with permanent and mechanical installations!

2 Facts for your client’s entire management! Dust-Stops are safer because the all-glass filtering medium, Fiberglas®, and the patented adhesive will not support combustion.

3 How about efficiency? Dust-Stops strain out virtually all "nuisance" dusts (including hay fever pollen). Capacity—2 CFM per square inch of area at 300 ft. FPM. Resistance (in water gauge per in. of depth)—.045 to .050 clean to .11 to .12 dirty.

4 You'll never have to take the blame for stained walls and ceilings, due to "bleeding" of the filtering adhesive, when you specify Dust-Stops. Likewise, there'll be no worry about the serious fire hazard of filtering oil blowing and settling in minute drops in the duct system.

5 Dust-Stops are as easy to change as a razor blade. Being a "throw-away" filter, Dust-Stops eliminate cleaning, recharging, draining, expert supervision, and the need to keep a supply of "spares." They fit all types of "L"—and "V" frame assemblies. These facts are good news to clients!

6 Dust-Stops are available everywhere. Your clients can get them at a moment's notice. For more technical data about No. 1 Dust-Stops (1-inch) and No. 2 Dust-Stops (2-inch), consult us. Write today to: Owens-Corning Fiberglas Corporation, Toledo, Ohio.

FIBERGLAS DUSTOP AIR FILTERS

Made by Owens-Corning Fiberglas Corporation, Toledo, Ohio

NOVEMBER 1939
GET YOUR SHARE OF INTERIOR FINISH JOBS with INSULITE

WINTER is here! Building moves inside. Now is the time to remodel, redecorate, beautify. Interior finish jobs command the attention of every architect, builder and dealer.

You will find quick sales by meeting this demand with Insulite Interior Finish materials. Insulite taps new markets because of its infinite variety. Five surface textures — variegation — design — patterns — make sales in every market. All right in your town — your neighborhood.

Easy, quick application. Beautiful interiors — bring satisfied customers that tell others — sell more jobs for you. Insulite profits are cumulative.

And, as you know, Insulite not only decorates but INSULATES — reduces and quiets sound — saves fuel.

Write today for literature and samples about INSULITE. The Insulite Company, Dept. AFI19, Minneapolis, Minn.

INSULITE PRODUCTS INCLUDE:

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For Schools, Shops, Stores, Restaurants, Tap Rooms, Bedrooms, Basements — everywhere — where comfort is important.

INSULITE STRUCTURAL: LOK-JOINT LATH • BILDRITE SHEATHING
A MESSAGE to Architects

A successful operator* who has succeeded in providing outstanding theatres at astonishingly low per-seat cost tells us that by using our consulting service he saves more in building cost than the price of the chairs he installs—and he buys the finest—American Bodiform Chairs.

He writes that his first step is to make a topographical survey of the selected site. "This, together with the land survey, we took immediately to your Engineering Department. We told them approximately how many seats we wanted ultimately to get and asked them to lay out seating and floor plans giving us the maximum number of desirable seats, the ideal pitch of the floor and sight lines and the height of the screen. From this plan we actually started and around same the architect made plans for the building of the theatre."

We will be pleased to extend to you, without charge or obligation, consulting assistance as to maximum efficient seating capacity, sight lines, slopes, ventilator connections, riser dimensions, and floor constructions best adapted for dependable seat attachment. Inquiries regarding all public seating problems are invited.

American Seating Company

Grand Rapids, Michigan

Pioneers and pacemakers in theatre, auditorium, school, church, stadium and transportation seating

Branch Offices and Distributors in Principal Cities

*Name on request
"Window Conditioning cut my coal bill in half . . . !"

"And now we don't have to worry about Drafts, Frosted Windows and Uneven Temperatures"

That's what W. D. Caswell, Manchester, N. H., says about Storm Sash. That's what thousands of satisfied users are saying clear across the country.

When you specify Window Conditioning for the new homes that you plan you bring your clients more winter comfort, greater economy than is offered by almost any other item of comparable cost.

The comforts are freedom from chilly drafts... the elimination of excessive condensation on windows... the maintenance of more even temperatures throughout the house. Its economy represents substantial savings in fuel costs.

And the small added cost of the Storm Sash or Double-Glazed Sash is often more than offset by the resultant use of smaller and less costly heating equipment without impairing heating efficiency.

Since your clients will be looking through two panes of glass instead of one, the quality of that glass becomes doubly important. L-O-F Quality Glass is today as it has been for many years, Clearer, Brighter and Flatter than any window glass that the industry has ever offered. These superior qualities make it ideal for Window Conditioning.

Libbey-Owens-Ford Glass Company, Toledo, Ohio

ROSSFORD, O.
"Water used to run down the windows but now there is no condensation at all."
—F. R. McLaughlin

MARLTON, N.J.
"I'm a builder and I always recommend Storm Sash because of savings and comfort."
—Lewis Peters

KANSAS CITY, MO.
"With Storm Sash we sit by the windows in comfort."
—Earl W. Allen

LIBBEY·OWENS·FORD
QUALITY GLASS
LOOK FOR THE LABEL

THE ARCHITECTURAL FORUM
IT REALLY WASN'T NECESSARY
TO CHEW UP THIS NICE PENCIL!...

Tough heating, air conditioning or commercial refrigeration problems are easily solved by G-E.

When you get to the pencil-chewing stage—beware! Chances are you're wasting time. But that's not necessary. General Electric can help settle most all of your heating, air conditioning or commercial refrigeration problems. All you do is 'phone, wire or write — and zip — in comes the answer—backed by facts and figures to prove G-E is the right answer to your problem. Oil-fired units now cost no more to buy than many other makes ... cost less to operate.

General Electric Company, Division 190-313, Bloomfield, N. J.

FOR RADIATOR HEAT

G-E FURNACE (oil or gas) for steam, hot water or vapor. Probably the most beautifully designed furnace you've ever seen. Compact—easy to install — economical to operate.

FOR RESIDENCES

AIR CONDITIONING UNITS — for one room—or for the entire house. Available with air-cooled or evaporative-cooled condenser. G-E air-conditioning units are unusually quiet in operation.

FOR WARM AIR HEAT

G-E WINTER AIR CONDITIONER (oil or gas). One of the most popular of all G-E units. Compact in size—highly efficient in operation. Heats, humidifies, filters and circulates warm air.

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INSTALL A G-E "PACKAGED WEATHER" unit for low cost air conditioning. Available in a complete range of sizes. Low installation costs. Low operating costs.

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

AIR CIRCULATORS

FOR ATTIC VENTILATION in homes, for exhaust service and air circulation in commercial establishments. Two sizes and various models, all using G-E Aphonic Fan for unusual quietness.
TOUGH AS A FULLBACK

All-American fullbacks are noted for ruggedness. So are JAMISON-BUILT DOORS, the champions in the cold storage door field.

To withstand constant abuse and rough slams by the he-men who use them, cold storage doors have to be rugged. JAMISON-BUILT DOORS are designed to put maximum strength where it's needed. They're built sturdy as oaks, with insulation that stays put. The conforming resilient pure-rubber gasket outwears old types many times.

Wherever cold storage doors are used—including new locker and quick-frozen plants—JAMISON-BUILT DOORS maintain their leadership through rugged performance. Send for free descriptive bulletin to JAMISON COLD STORAGE DOOR CO., Hagerstown, Md., or to branches in principal cities.

NEW YORK CITY GUIDE, by the Federal Writers' Project, WPA. Random House. 708 pp., illustrated. 5½ x 8. $3.00.

A prodigiously detailed guidebook, well up to the high standard set in the earlier volumes of the series. The book begins with a general information section, devoted to the instruction of tourists on how to get where, restaurants, theaters, hotels, etc. The main part of the guide is broken up into five sections dealing with the five boroughs of Manhattan, of course, so the bulk of the pages. It should be of particular interest to architects because there is hardly a building or monument of any importance which is not described in detail. Although the book makes no claims on this score, it is probably the best architectural guidebook to the city that has yet appeared. In addition there are 39 maps, and over 175 illustrations, most of which are excellent. Supplementary material includes a section on the New York World's Fair and a bibliography.

NOTRE-DAME OF NOYON IN THE TWELFTH CENTURY, by Charles Seymour, Jr. Yale University Press. 202 pp., illustrated. 8 x 11. $7.00.

A detailed study of one of the important early Gothic cathedrals, designed in the twelfth century and brought virtually to completion around 1210. While the interest of such a work is limited to a very restricted group, it represents something of a pioneering effort in that it attempts to relate the cathedral to the social and economic conditions of the time. It is copiously illustrated with photographs, plans and other architectural drawings. The church was bombarded during the World War, and World War II finds it partially restored and almost ready for new bombardments.

LEXINGTON AND CONCORD, by Samuel Chamberlain. Hastings House. 73 pp., chiefly photographs. 6½ x 7½. $1.25.

NANTUCKET, by Samuel Chamberlain. Hastings House. 73 pp., chiefly photographs. 6½ x 7½. $1.25.

Two more books in the "American Landmarks" series, which now numbers seven titles. Like their predecessors, these are handsome collections of beautifully reproduced photographs, standard in format. Mr. Chamberlain, already well known for his etchings and illustrated books, is the author-photographer, and is undoubtedly responsible for the successful design of the books as well.


First published in England, this book is intended for the designer and cabinet maker rather than the amateur furniture builder. Copious illustrations show photographs of a variety of furniture, with drawings of construction details. The book is almost unique in that the examples are in good taste. Both traditional and modern pieces are illustrated.

As a service to interested readers, The Architectural Forum will undertake to order copies of books not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to The Architectural Forum.
Be far-sighted when you choose interior paint. Make sure that the "flat" you specify is really washable. Walls that can be kept clean do not need to be repainted so often. Therefore, real washability means real economy for your client.

Flat paint made with Dutch Boy White-Lead and Lead Mixing Oil is washable in both senses of the word. (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.”

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—800 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.

DUTCH BOY WHITE-LEAD AND LEAD MIXING OIL

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.
Los Angeles Union Passenger Terminal
Protects its Future with Toncan Iron

Nineteen thirty-nine saw the completion, at a cost of more than $11,000,000, of a new Union passenger terminal in Los Angeles, Cal. It ranks as the finest on the Pacific Coast and serves the needs of the Atchison, Topeka & Santa Fe, the Southern Pacific and the Union Pacific railroads in this community of 1,300,000 population.

The new station, reflecting the spirit of Southern California, is of Mediterranean architecture—a rambling effect with broken roof lines and colorful exterior and interior treatment. It sets back 200 feet from the street line, affording a striking vista of the tropically landscaped structure and providing ample drives, walks and parking area.

The same influence is carried out in the interiors of the different units—exposed roof construction, the extensive use of colorful tilework in wall bases, wainscoatings and floors and the general treatment of walls and ceilings.

Winter heating of all the station buildings is provided by means of three four-drum water-tube boilers. All heating of the main public areas is by the indirect method, employ-

TONCAN IRON
AN ALLOY OF REFINED OPEN-HEARTH IRON, COPPER AND MOlyBDENUM ... THAT GROWS OLD SLOWLY
MACKIN PREMIER BLINDS
Consider these Distinctive Features
When You Buy Venetian Blinds

- Slats are easily removed.
- No cords to wear or jam.
- Equalized, positive lift.
- Firmly positioned with metal guides.
- Long-lasting tapes, and many other exclusive features.

FROM HUNDREDS OF INSTALLATIONS,
Here Are a Representative Few.

Radio City—each successive building since 1933.
Western Electric Co. and the Bell Telephone System, extensive users since 1929.
University of Pittsburgh.

For samples and information, write
SEE FOR YOURSELF!

MACKIN
VENETIAN BLIND COMPANY
Factory: BRADLEY, ILL. Mail Address: KANKAKEE, ILL.
Sales Offices in Principal Cities

REZ revolutionizes wood-finishing!
Here is "magnified" proof that REZ seals by penetration, binds down soft Spring wood fibers. When untreated wood comes in contact with water or ordinary finishing liquids, the result is grain raise, uneven surface. No amount of paint could smooth it. Now look at the REZ treated part! REZ penetrates deep into wood fibers, anchors them down. Notice the smooth even surface that takes lacquer, varnish, wax or paint beautifully. It "finishes like hardwood." The REZ treated board is preserved, protected from decay, abrasion, binding, moisture. Write for free REZ sample and further information.

HOW REZ PREVENTS GRAIN RAISE

The REZ Line
(Synthetic resin finishes)
REZ, sealer, primer.
REZITEX, exterior plastic paint
REZIST, stucco, etc., paint
PLASTEREZ, plastic wall paint

For samples and information, write
LAUX SALES CO.
(Division of J. F. Laux, Inc.)
Seattle, Oakland, Los Angeles, Chicago, Minneapolis, Houston, Portsmouth, Va., Vancouver, B. C. Stocks available nationally: Harbor Plywood Corporation, distributors and wirehouses in 32 leading cities; other leading distributors.

Firmly positioned with metal guides.
Equalized, positive lift.
No cords to wear or jam.
Long-lasting tapes, and many other exclusive features.

REZ, sealer, primer.
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REZIST, stucco, etc., paint
PLASTEREZ, plastic wall paint

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PRODUCTS and PRACTICE
(Continued from page 370)
flowing grout has been used successfully to replace stiff mortar, and this practice is now recommended because it assures freedom from voids which would seriously weaken structural members. This grout was first produced by adding water to a cement-sand mixture. It has since been found, however, that the addition of lime up to 5/4 of the cement by volume adds to the fluidity of the grout without materially reducing its strength.

Reenforcing steel used in R-B-M is exactly the same as that used in reenforced concrete. In addition to round and square bars, wire fabric, and—especially in slab construction—expanded lath have been used with success. In general, size of rods is kept small enough to fit within the regular joints in the masonry, but where heavier steel is needed joints are sometimes increased to accommodate rods up to an inch or more in diameter.

CONSTRUCTION
As has been indicated above, the only special precaution to be observed in laying up reinforced brickwork is to see to it that interior joints are completely filled with mortar or grout, to eliminate voids. Bars may be placed in the joints as the wall goes up, or may be placed in advance of the mason and temporarily wired in position. Formwork may be exceedingly simple since it need not be watertight. Forms for slabs may therefore be built from square edge boards which need not be tightly fitted and side forms for beams and lintels are not required.

It is important that the absorption factor of the brick used be known and that brick be wetted if necessary. Naturally, all materials must be kept clean and where work is interrupted the top surface of the wall must be kept free of mortar or grout. When forming such horizontal construction joints in structural members it is well to rake back vertical joints about 1/2 in. to form a key for the new work. In other respects, R-B-M is identical to ordinary brick masonry and requires no special skill or training. Supervision need not be so strict as in the case with reenforced concrete since the design-position of the reenforcement is nicely regulated by the joints in brickwork. It has been the experience of most contractors that the mason's output is not materially reduced and that the added cost of reenforced over plain masonry is no more than the cost of the reenforcing rods and the expense of putting them in place.
One of the big advantages of using white lead paint on exteriors is its self-cleaning characteristic.

When white lead paint is exposed to the weather, its top surface slowly wears away by gradual powdering, commonly called "chalking."

Thus dirt which collects on the surface is sloughed off, and this aids to keep the paint clean.

This in itself helps to preserve the beauty of a white lead paint job—but there is another advantage as well.

As the surface grime dusts off, the tough, white lead film beneath stays smooth and elastic—free from brittleness and cracking.

As a result white lead paint provides a smooth, unbroken surface for repainting.

There's no need for costly burning and scraping—there's a solid base of white lead to paint on.

Thus white lead paint insures the double economy of longer life and lower-cost repainting. That’s why “you’re money ahead when you paint with white lead.”

LEAD INDUSTRIES ASSOCIATION
420 Lexington Avenue, New York, N. Y.
“...and here, Gentlemen, is why we can promise a long-lived heating system”

The U-S-S Copper Steel label means greater protection against rust and corrosion... longer life for heating and air conditioning systems.

WE needed a material for duct work that would resist the corrosion caused by high humidity and wet-air condensation of modern heating systems. A material to successfully combat the corrosive atmosphere of a large city. A material to make the ducts last as long as the building itself. And yet, we couldn’t afford to pay a high price for it. We specified U-S-S Copper Steel Sheets. They met the requirements perfectly.

The discovery by metallurgists long ago that a little copper added to molten steel greatly increases the life of the steel has made the problem of specifying steel sheets an easy one for the architect. He can be sure of a more durable material—at only a slightly higher cost—by standardizing on U-S-S Copper Steel. And his clients readily accept a product bearing the well-known U-S-S label.

Architects everywhere are finding U-S-S Copper Steel ideal for gutters, downspouts, roofing, siding and flashings. The chart on this page gives you a picture of the extra life that may be obtained from it. U-S-S Copper Steel Sheets are available, plain or galvanized, for quick delivery in principal cities. For further information about U-S-S Copper Steel write to one of the companies listed below.

U-S-S COPPER STEEL SHEETS

Carnegie-Illinois Steel Corporation, Pittsburgh and Chicago
Columbia Steel Company, San Francisco
Tennessee Coal, Iron & Railroad Company, Birmingham
Scully Steel Products Company, Chicago, Warehouse Distributors
United States Steel Products Company, New York, Export Distributors

United States Steel
VARIABLE CAPACITY Mechanical Pressure Atomizing BURNER with

1. UNLIMITED FIRING RANGE without change of
   1. Burner tips
   2. Oil delivery pressure
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2. AUTOMATIC CONTROL without loss of efficiency over all firing ranges

Highly satisfactory performance* under varying conditions proves the Todd Variable Capacity Burner offers decided advantages of economy and efficiency in the burning of liquid fuel. Eliminating intermittent firing by means of an exclusive "variable range" feature, this remarkable burner can maintain constant steam pressure regardless of demand... can meet changing load requirements at a moment’s notice.

Designed and operating on the basic principles of standard type, mechanical pressure atomizing burners, Todd Variable Capacity Burner installations, like all Todd combustion equipment, is individually engineered to specific requirements.

Todd engineers are always available for consultation on your combustion problems.

*TODD VARIABLE CAPACITY BURNER INSTALLATIONS INCLUDE:

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NEW YORK MOBILE NEW ORLEANS GALVESTON SEATTLE BUENOS AIRES LONDON

NOVEMBER 1939
Write for information about the new modern finish that not only beautifies, but actually preserves and hardens the surface. Makes floor maintenance easier and less expensive, too.

Franklin Research Company
PHILADELPHIA, PA.
Manufacturers of "RUBBER GLOSS WAX", "RUBBER GLOSS CLEANER" & a complete line of floor finishing & maintenance materials

Pre-sealed
Ric-wil
Insulated
PIPE UNITS
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Pre-Sealed Units for underground steam lines, in standard lengths, complete with steam pipes and all accessories.
Armco Hel-Cor Conduit of heavy gauge pure ingot iron, with protective coatings to resist all forms of deterioration.
Water-Tight, light in weight, yet amply strong to bear abnormal stress and strain, even in shallow trenches.
Pipe Support Guides are removable, give permanent pipe alignment, and seal ends of units.
Insulation 85% asbestos with roofing jacket, or any other standard commercial insulation specified.

Important!—Ric-wil Units have heavy protective coating of asphalt, but do not depend on this material (which is not strictly a solid, but has many of the characteristics of a liquid under all conditions) for their structural strength. Ric-wil is a correctly engineered system, mechanically sound, rigid, and durable.

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NUMBER ARE STILL AVAILABLE

ADDITIONAL COPIES OF THIS
EXCITING BOOK WITH 336 PICTURES OF BOTH GREAT 1939 FAIRS MAY BE OBTAINED FOR $2 EACH.

EDITION IS LIMITED. SEND YOUR ORDERS TO

THE ARCHITECTURAL FORUM
TIME & LIFE BUILDING, ROCKEFELLER CENTER, N. Y.
ARCHITECTURAL authorities place a frank emphasis on the importance of the modern floor covering, especially as it affects the interior appearance of a business establishment. So, when FRANK BROS., large and prosperous men's-wear shop in the large and prosperous State of Texas, undertook to remodel their entire store recently, their capable architect was delighted to find his clients had already made a study of various types of floor covering available.

We are "mighty glad", as one says in Texas, that both client and architect were in complete accord in selecting AZROCK TILE as the floor covering to be used throughout. AZROCK, the modern mastic tile, owes thousands of installations throughout the nation to just such careful examination, by thoughtful architects and builders.

Durable, long-lived, with beautiful colors penetrating the entire thickness of tile for permanence, AZROCK TILE is resilient for quiet and comfort underfoot, close-laid and micro-cut for sanitation, moisture-proof, fire-resistant, easily cleaned, easily maintained... a floor covering that gives a minimum of trouble and a maximum of downright self-satisfaction for the choice that was made. And it costs no more than many ordinary floor coverings.

AZROCK
Manufactured by Uvalde Rock Asphalt Co.
(Do Business Since 1912)
Gen. Offices: San Antonio, Texas; Mines: Blewett, Texas; AZROCK Plants: Houston, Texas; Distributing Contractors: in principal cities of U. S. A.
WHEN appropriate, attractive decoration is added to good design, the result is pleasing to all concerned. This desirable objective was easily and economically accomplished in the above apartment building with Pratt & Lambert materials and color schemes that are modern, harmonious and refreshing. There is a Pratt & Lambert finish for every type of surface. Constructive, whole-hearted co-operation with architects for many years makes Pratt & Lambert architectural service something more than a mere term. This practical aid is quickly available to any architect seeking maximum decorative results at minimum cost. Contact the office nearest to you.

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ARCHITECTS SPECIFY

BAR-Z-SYSTEM
OF HOLLOW PLASTERED PARTITIONS

IN HOSPITALS where freedom from noise is a vital essential, the Bar-Z-System—the original system of hollow plastered partitions—offers adequate sound deadening qualities at a saving in floor loads.* Consisting of Bar-Z-Studs and Bar-X-Lath—the diamond mesh lath with twin welded reinforcing bars—the Steelcrete Bar-Z-System has no elements in it to burn. Tests by the Bureau of Standards, Washington, D. C. prove that Bar-Z-Partitions, plastered with 3/4" gypsum plaster provide one hour fire rating. This safer, more rigid construction also assures lasting protection for the beauty of plastering which it reinforces. Write the nearest office for full details.

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Note, in the illustration on the opposite page, the louvre type ventilators which are operated mechanically by turning the small handle located near the center of the window sill. The operating handle may be attached permanently or made removable, as desired. With the single operating handle controlling the simultaneous movement of all ventilators in multiple unit assemblies up to 10 feet in width, quick and convenient ventilation control is always afforded. Each ventilator is pivoted at the top and is limited to 15 inches in height. Detention Type Windows of the same basic construction, are made with glass heights as low as 5 or 6 inches. In this form, the “MAXIM-AIR” design is particularly suited for use in psychiatric or other institutions where ample ventilation plus restraint against egress are important considerations. When the window is in a fully closed position, the head member of each ventilator provides full double-contact weathering for the sill member of the ventilator immediately above. The ventilators open to a maximum of 60 degrees. Each ventilator runs the full width of a multiple unit. Intervening mullions, set inside of the vents, are connected to and support each vent on pivoted brackets.

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