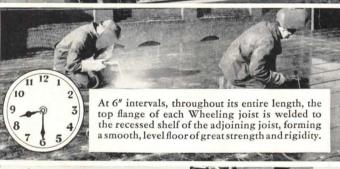
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RUSSELL F. WHITEHEAD EDITORIAL ADVISER

R A L P H W A L K E R E D I T O R I A L A D V I S E R

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I-O-F SPONSOI

THE SATURDAY EVENING POST

YOU CAN ENJOY ... eight more months of





When it's winter by the calendar—way below freezing by the thermometer—you can still have June in your home and keep it there! How?—By installing storm windows or double glazed sash. You put two panes of glass between you and winter. Between the two pieces of glass a wall of captive air is formed. This air space is one of the best forms of insulation.

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—And when you consider that "Window Conditioning" brings you greater fuel savings than any other single type of insulation—"Window Conditioning" is the first form of insulation you should consider when you build or remodel. To "Window Condition" your present home, call the nearest lumber dealer today. Let him explain how to arrange financing under F.H.A. with no down payment.

Quality Glass Is Important—With double

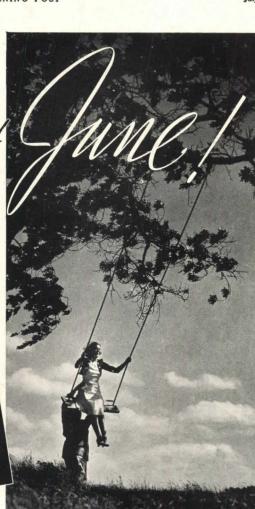
glazing, the quality of the glass is doubly important since you are looking through two pieces of glass instead of one. Because of an exclusive manufacturing process, L·O·F Window Glass is noted for its greater freedom from waviness and distortion, making it especially suited to "Window Conditioning." These advantages cost you no more but they add much to your permanent satisfaction with double glazing. Whether you buy winter windows or double glazed sash, make sure that each light bears the L·O·F label. It is your guarantee of quality in the glass in your windows.

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FEW PROSPECTIVE HOME BUILDERS KNOW THIS...

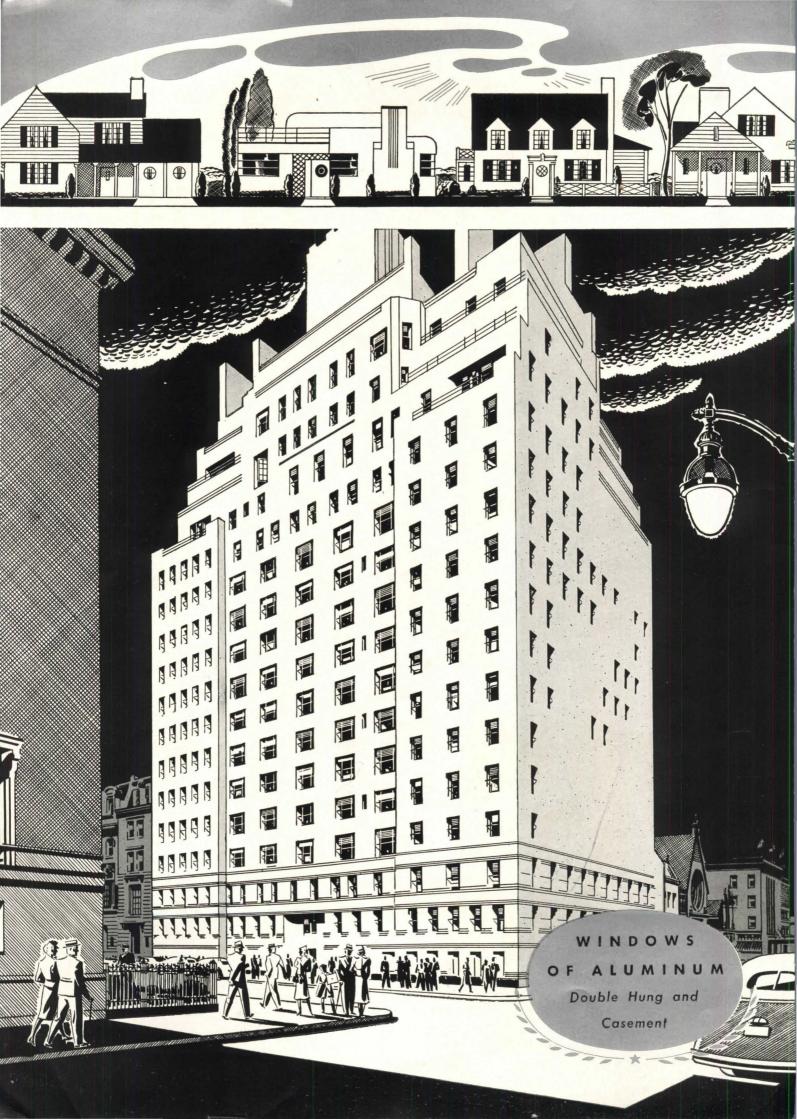
Window Conditioning brings a GREATER savings in fuel costs, shows a GREATER return on the investment and pays for itself in a SHORTER time than ANY OTHER SINGLE FORM OF INSULATION. It is ESSENTIAL for the complete enjoyment of the benefits of winter air conditioning.

NOW THE STORY WILL BE TOLD

Libbey Owens Ford has developed a comprehensive plan to bring the comforts and economies of "Window Conditioning" prominently to the public mind. The plan securés the cooperation of lumber dealers and heating contractors and capitalizes on the ever-mounting demand for winter air conditioning in the home.

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ONE IN RESIDENTIAL CONSTRUCTION
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 THAT
THE INDUSTRY HAS EVER OFFERED.





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Your clients will have occasion to think kindly of you many times in the years to come. Aluminum windows retain their youthful habit of opening and closing easily. There's no warping or swelling to cause binding during damp weather; no rattling looseness during dry. No rusting or rotting to require expensive replacement of parts.

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Aluminum windows are light in weight — easy operating. The extruded shapes used in their fabrication are strong. All parts are narrow, giving maximum glass area.

The first cost of Aluminum windows is surprisingly low. And that is the complete cost, for there are no extras to add for assembling knocked-down parts, hardware, weatherstripping, painting, fitting and refitting.

The book, "Windows of Alcoa Aluminum," lists the companies who manufacture Aluminum windows, describes their windows, outlines the benefits obtained. Thousands of people have asked for, and have received, copies of this book. We'll gladly mail a copy to you. Aluminum Company of America, 2198 Gulf Bldg., Pittsburgh, Pa.



ALCOA·ALUMINUM

To all architects who entered the

ALL-GAS HOME DESIGNING COMPETITION

—our sincere thanks

and congratulations on the splendid designs you submitted.

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HERE, THERE, THIS & THAT

Paris Prize Awarded To Socrates Stathes

Making the winning score by a wide margin, in the three esquisses of the final competition for the thirty-first annual Paris Prize offered by the Society of Beaux Arts Architects, New York City, Socrates T. Stathes, Architect, of Washington, D. C., and graduate of the Catholic University of America, has been granted the \$3,600 award for two and a half years of study at the Ecole des Beaux Arts in Paris. He also may travel and study in some other European center.

In the first of the three thirty-six-hour esquisses required of contestants, Stathes won first place among 10 finalists, with his design for a facade for a building for the A.I.A. at Washington, D. C. In the second esquisse, his design for a memorial curtain for a theater took fourth place and in the third esquisse, for design of an entire motion picture studio, he again took first place. Nine awards of \$50 each went to the remaining finalists chosen from a field of 300 contestants.

In order, they were: Joseph Caponnetto, of New York, pupil of Lloyd

Two of the prizes at the recent Washington exhibition of the Federal Architects went to Rees Weston's rendering, below, of the U. S. P. O. and Court House in Fresno, Calif., and to the model, right, by Bertram L. Keyes of the amphitheater of the National Cemetery, Fort Snelling, Minnesota

Morgan; Edward A. Moulthrop, Cleveland School of Architecture of Western Reserve University, pupil of Carl Guenthe; (tied for fourth place) Justin C. Fabricius, of Brooklyn, N. Y., a graduate of New York University and the Beaux Arts Institute of Design, and John J. Brady, Catholic University of America, pupil with Stathes of Fred V. Murphy; Sidney L. Katz, New York University, pupil of Lloyd Morgan; Alan B. Jacobs, Princeton University, pupil of Jean Labatut; W. F. Shellman, Jr., University of Virginia, pupil of Edmund S. Campbell; Martin S. Kermacy, University of Pennsylvania, pupil of Otto Fael; and Robert F. Cady, Cleveland School of Architecture, W. R. U., pupil of Tony Ciresi and Guenthe.

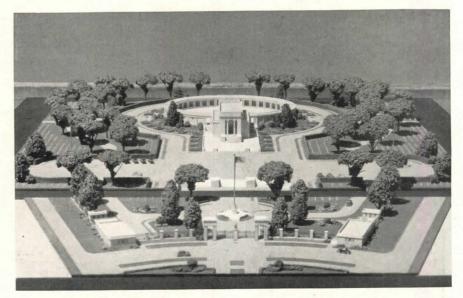
Stathes, whose parents came to this country from a Greek village near Sparta, had entered the Paris Prize competitions without winning since 1934. Since his graduation in 1933 he has been an instructor at the Catholic University and also has designed small dwellings and restaurant renovations.

Federal Architects Compare Designs

The Seventh Annual Exhibition of the Association of Federal Architects, held through May at Washington, was at once a "record of progress" for Federal Architecture and a welcome opportunity for comparison of works of the various Federal departments, in the opinion of Abraham Waronoff, of the Exhibition Committee, who reviewed the show for PENCIL POINTS, as follows:

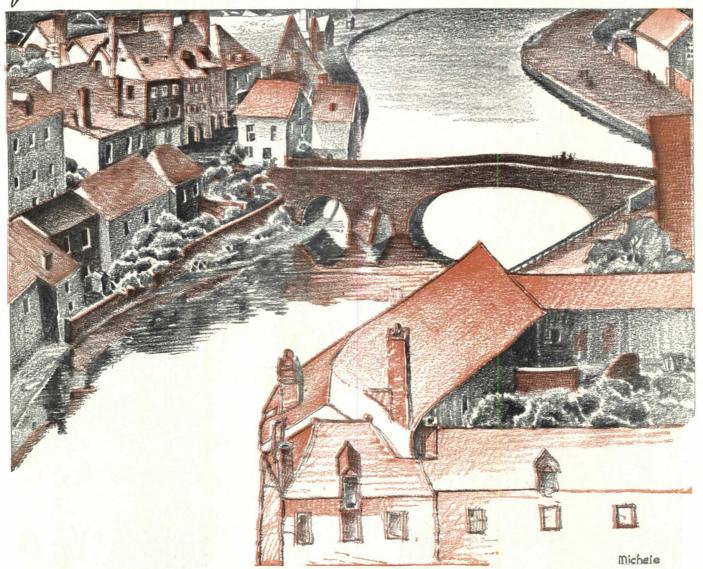
During the entire month of May, in the National Museum in Washington, the Seventh Annual Exhibition of the Association of Federal Architects was placed before the public. This "record of progress," was well received and of which it has been said that its showing is an indication of healthy progress for Federal Architecture.

By this yearly event the Association creates a friendly competition between the various departments and its (Continued on page 12)





From the KOH-I-NOOR Sketch Book





Don't Look Down . . .

The photograph is here to stay. Don't look down on it; use it. It gives most of us our only chance of sketching in Italy, France or

Norway. It helps to develop our "picture-eye" for those happy days of outdoor sketching, and greatly increases our technical practice by speeding the tedious work of laying out.

Since it is already a picture, the photograph is definitely helpful to people who like to draw but have difficulty in "picturizing" the great outdoors. With most people, the ability to see pictures in nature is developed by seeing pictures of nature. If used as a modern tool for more accurate, powerful drawing, the photograph is an aid which in no way detracts from the artistic merits of the results.

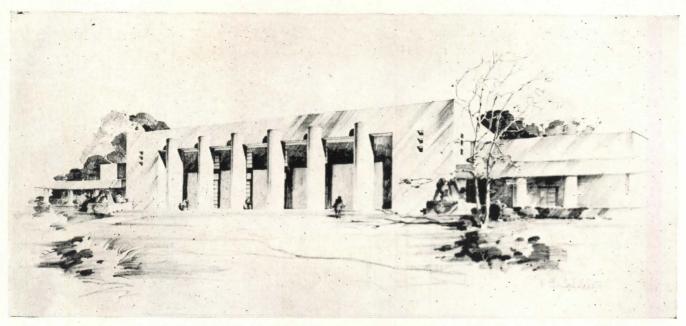
Koh-I-Noor "Negro" and "Sanguine" were teamed up

in making the picture above, which was sketched from a photograph and rendered on a medium-surfaced drawing bristol. The rich, warm color of the one is agreeably heightened by the velvet black of the other. A paper with a noticeable tooth permits a delicate blending of the two media, and many different "colors" are possible by varying the proportions of each, as on the bridge and the house-tops. No definite method was followed. I made a light outline drawing in pencil, and went to work filling in the planes with little regard for the photographic values, thinking mostly about making a clean, slightly formalized drawing of clustered houses around a river-bridge.

Julian Michele

This is the sixth of a series of drawings by Mr. Michele. Others will follow from time to time. Leaflet 521-P describing the new line of Polycolor Leads is now ready for distribution.

Koh I Noor Pencil Company Inc. 373 Fourth Avenue, New York







individual members to the extent that increased interest is manifested in Government work. It cannot be gainsaid that benefits are mutually derived by both the members and the Government bureaus employing those members. There is no doubt that this exchange of architectural ideas does influence a uniformity of feeling for certain fundamental designs which through their adoption and use become creditable factors in a possible design trend. On exhibition this year were designs for Federal buildings which bear out these conclusions.

The individual work, i. e. the personal work, done outside of office hours, such as water-colors, painting, sketches, photography, pottery, letter-

Exhibits at the recent Federal Architects' exhibition included the Navy Department's design for a subsistence and mess ball in Alameda, Calif., top; and the War Department's designs, below, for a rostrum at the Philadelphia National Cemetery, left, and a superintendent's lodge at the St. Augustine, Florida, National Cemetery

ing, etc. was unusually interesting. That the individuals displayed excellent pieces is indicated by the fact that the Jury bestowed a great many prizes and awards. The Jury was composed of Dr. Leicester B. Holland, Director of Fine Arts, Library of Congress; Theodore Irving Coe, Architect, President of the Washington Building Congress; and Louis Justement, Architect, President of the Washington Chapter, A.I.A.

A complete list of awards follows:

Association Medal: Navy Dept., Bureau of Yards and Docks.

Prize for official work by member of Association: REES WESTON of Treasury Dept., Procurement Div.: for rendering of U. S. P. O. and Court House, Fresno, Calif.

Prize for Individual work in Color: H. S.

CHANDLER, JR., Procurement Div.: for water color sketch of Federal Reserve Fountain.

Prize for Individual work in Monotone:
WILLIAM C. SUITE, War Dept.: for lithographic crayon sketch of Horsetail Falls-Villa de Santiago Mexico.

Commendations: Designs for U. S. Post (Continued on page 14)

They have to STOP THE CROWD





Above—CINE Theater, Chicago, Illinois. Rapp & Rapp, Architects.

Upper right—Varsity Theater, Milwaukee, Wisc. Grassold & Johnson, Architects.

Owens-Illinois Glass Company also manufactures Dust-Stop Replacement-Type Air Filters, Fiberglas Industrial Insulation and Power Products. World's largest manufacturer of glass containers.

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(Continued from page 12)

Office and Court House, Fresno, Calif., Procurement Div.; and Court of the Nations, New York World Fair Treasury Dept., P. D. Awards for Official Work—Design studies: First, Bird's-eye perspective for U. S. Naval Air Station, Alameda, Calif. O. A. DE LA Rosa, Navy Dept.; second, Bridge, WILLIAM M. HAUSSMANN, Interior Dept.

M. HAUSSMANN, Interior Dept.

Awards for Office Rendering: First, U. S.
P. O. & Ct. Ho. Fresno, Calif., Rees Weston,

Procurement Div.

First, Air Corps Hangar: by T. A. Pope, War Dept.; second, U. S. Forestry Buildings, Russellville, Ark., Rees Weston, Procurement Div.; third, U. S. P. O. Chester, Ill. WILLIAM S. HARTGROVES, Procurement Div. Awards for Architectural Models: First, Sketch Model U. S. Naval Air Station, Alameda, Calif. Bureau of Yards and Docks; second, Fort Snelling National Cemetery, Minnesota: Bertram L. Keyes, War Dept.

Awards for Working Drawings: First, Chapel, Fort Totten, N. Y. (Elevation) M. L. H. Boring, War Dept.; second, U. S. Marine Hospital, Boston, Mass., (Details of Entrance) E. B. Morris, Jr., Procurement

Div.

Awards for Individual Work: H. S. CHANDLER, JR., Procurement Div., First Prize, Water Color; J. R. Dodge, Agricultural Dept., First Award; Max Barth, War Dept., Second Award; J. E. Corey, Agricul-

tural Dept., Third Award.

ROY S. SKIPTON, Procurement Div., First Award, Pastels; WILLIAM S. SUITE, War Dept., First Award, Lithographic Crayon; H. A. PAGE, Navy Dept., Second Award, Pencil Sketch; DAN W. TWIDDY, Procurement Div., First Award, Pen-and-Ink; DAN W. TWIDDY, Procurement Div., Second Award, Pen-and-Ink.

J. E. Eckloff, Jr., Navy Dept., First Award, Linoleum Cuts; Joseph Hale Darby, Navy Dept., First Award, Lettering; Stafford H. Johnston, Procurement Div., Second Award, Lettering; J. R. Dodge, Agricultural Dept., First Award, Cover Design; Joseph Hale Darby, Navy Dept., Second Award, Poster; George Guppy, Procurement Div., First Award, Arts and Crafts.

L. M. LEISENRING, War Dept., First Award, Photographs; S. Julian Brown, Navy Dept., Second Award, Photographs; R. S. Johnson, Procurement Div., Third Award, Photographs.

For the past eight years, the construction of Federal buildings in the United States has been conducted on such a huge scale that it has surpassed any other field of architectural activity. In the February issue of PENCIL Points, Professor Talbot F. Hamlin of Columbia University's School of Architecture ably expressed his viewpoint on public buildings in America today. It bears rereading by all architectural men, particularly those who are not and have not been in the employ of the Federal Government. So far as the Federal architects themselves are concerned, Professor Hamlin put into written words that which they already feel and know and in which they have faithful credence. There is no doubt that Federal architecture as practiced today is a stimulating factor in a new style trend-a new rational modernism, vital and pleasing.

Simultaneous with the growth of Federal building activities, came the expansion and prominence of the Association of Federal Architects, proud

and sincere in its position as guardian, not only of the collective and individual rights of the members themselves but also of the architectural activities of the various departments under whose jurisdiction many buildings of a public or industrial nature are constructed. It is their rightful claim that, as an organized body, their influence may have a definite bearing on the development of an American "style" in Federal architecture that would be lasting—a simple, economical, utilitarian and dignified architecture of a great democratic people.

Science, Art of Air Conditioning Talked

Air conditioning was the topic of discussion from many viewpoints as leaders of the industry met with interior decorators and industrial designers at a National Air Conditioning Conference, June 7 and 8, at the Waldorf-Astoria Hotel. Charles S. Leopold, well-known air conditioning Consulting Engineer, presided at the two-day session.

Guest speakers included Ralph Walker, of the architectural firm of Voorhees, Gmelin & Walker, New York, who praised air conditioning as an added factor to alleviate industrial or travel discomforts but questioned whether the Average Family can yet afford a heating, cooling and humidity control system when many of the "acknowledged benefits of country life" are as obtainable through proper city and home planning. He stressed the importance of circulation of air and humidity control, for comfort and health.

The physiological importance of clean, fresh air at the desirable temperature was discussed authoritatively by Dr. Albert G. Young, Director of Corey Hill Hospital, Brookline, Mass., as he explained the results of extreme conditions on the human body and lauded efforts to turn more attention to obtaining a proper supply of the air we breathe.

Other speakers at the session included Lurelle Guild, Industrial Designer, who cited the lighter colors and more delicate decorations possible in the air-conditioned building; William A. Kimbel, Interior Designer, who described the difficulties encountered in combining air conditioning equipment with period rooms; and Mr. Leopold, who outlined the principal factors to be considered in an installation.

Harry V. Anderson, Editor of "Interior Design and Decoration," was host to the conference and guest speakers, assisted by William B. Henderson, Washington, D. C., executive vice president of the Air Conditioning Manufacturers' Association.

Dual Course Would Divide Architects

The beer gauge had dropped to midway during a recent confabulation of war vintage architectural graduates.

"In short," then said a tall man, whose words I record as closely as may be, "the schools are wetter than not in their idea of serviceability to the architectural student. They expose him to cultural influences from the lips of learned teachers and provide the benefits of competitive group-thought in problems of creative design. They give him a philosophical and theoretical groundwork, as well as a knack at pictorial delineation. Then he is eased into the world with a last, uplifting speech still ringing in his ears.

"The long and costly education is abruptly supplanted by an immediate and lifelong need to earn a living, preferably a good one. That is the main objective, and it looms as the central feature in the usual picture of success, flanked, but not buttressed, by the items of personal renown and intellectual gratification. Now the jigsaw puzzle of formal education is supposed to provide the fledgling with a formula for these attainments, but when he puts it together, after graduation, there are always a number of key pieces missing. They are the essential ones which tell a young man how to be of immediate value to a struggling architect, and how to become a struggling architect himself. Perhaps there is no perfect solution to the first but I have two strikes on the second." (Cries of "hear" and "beer," inextricably intermingled.)

"Well," continued the oracle, as the gauged Hulihan took a dip, "it is patent that a student's academic prowess has necessarily little to do with later proprietorship, for the head of many a scholastic oaf has been seen peering over the edge of some Jovian eminence, after his congenital strains of initiative and predaciousness have had a ten-year workout; indeed, some men have been able practically to omit

an apprenticeship.

"My theory, at long last, is to divide architectural students into two groups, one containing well-to-do lads, and the avowed celibates, t'other being made up of the deserving and monogamous poor.

"Group One would be given the usual academic dosage, and go forth to propagate the faith and defend

ideals.

"Group Two would have an infant's potion of the same medicine, but mostly a rigorous drilling in practical ethics and technic. Field work, to make palatable the unspectacular realism of working drawings

(Continued on page 35)



After you've enjoyed an ample quantity of delicious camp fare—after your pipe is lighted—after you have discussed the catch or bag of the day—conversation often turns to subjects related to your business.

Considered in the same calm, detached manner of camp-fire conversations, what are your opinions on the complicated subject of heating? Have you sufficient facts and information about modern bituminous coal or coke heating to formulate authoritatively your "professional viewpoint" on this type

of heating which is yearly becoming more and more important? Have you adequately considered the advisability of providing coal storage, no matter what fuel fad is in your client's mind at the moment?

For ready reference when designing homes for modern heating, we have prepared a portfolio

which explains the fundamental principles of designing for modern bituminous coal or coke heating, illustrated with isometric drawings and scale floor plans of typical modern basements. Send for your free copy today.

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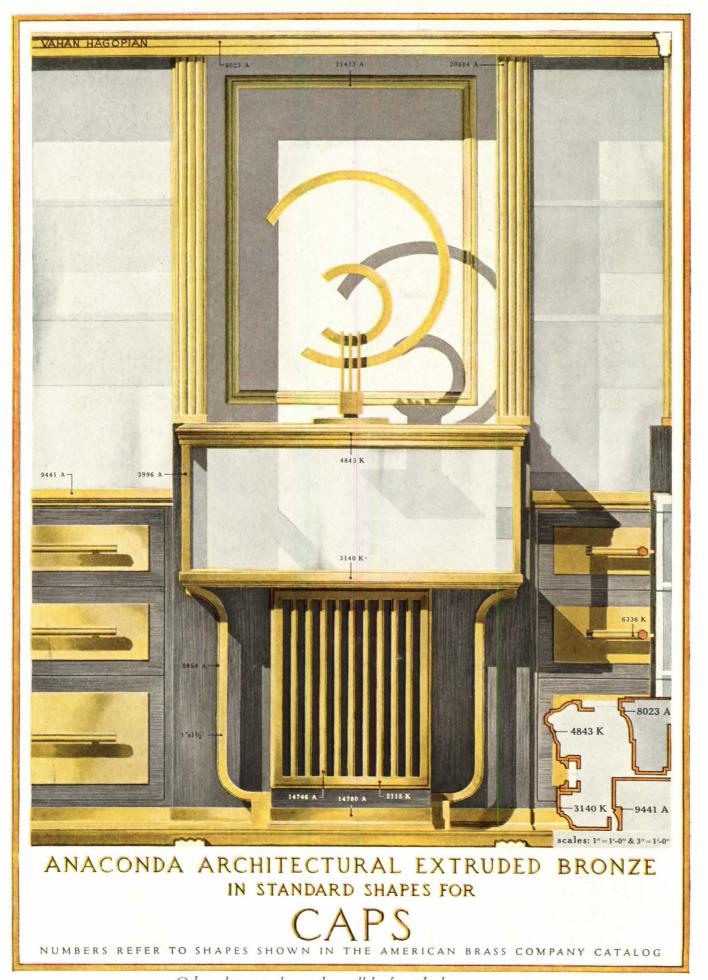
No WATERPROOFING admixtures are necessary when Brixment is used for mortar. Brixment mortar alone is permanently waterproofed with the most effective waterproofing agent known—which is integrally mixed with Brixment during manufacture. Leakage through Brixment mortar itself is therefore impossible. * But more important still in securing dry walls, Brixment helps prevent cracks between the brick and the mortar, through which water can penetrate. Brixment mortar gives a tighter, more durable bond between the brick and the mortar, because: . . . (1) It is so plastic that it assures a more

complete bedding of the brick. This gives an increased area of contact between the brick and the mortar. . . . (2) Its higher water-retaining capacity keeps the brick from sucking the water out of the mortar so fast, and prevents the mortar from drying out before a better, tighter bond is formed. . . . (3) It hardens slowly enough to permit deeper penetration and more thorough keying into the pores of the brick. * *

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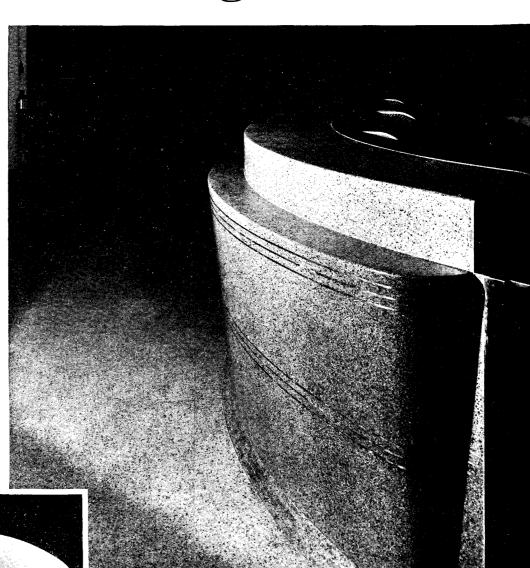
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Terrazzo, a tough customer, wears the high hat well



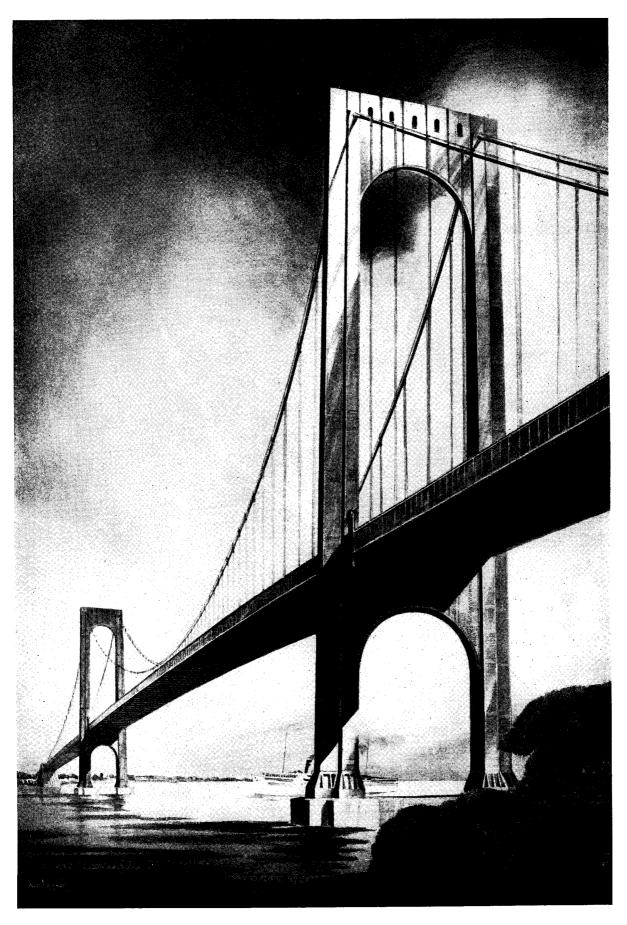
Terrazzo floors and counter fronts, risers and treads on stairs are important features of the new bank quarters recently opened in buildings at Rockefeller Center, New York.



TERRAZZO is an amazingly versatile material—a sort of "shirt sleeve" and "high hat" material in one. It can take the toughest kind of scuffling wear year after year. Yet at the same time it's as dressy as Beau Brummel—a perfect vehicle for the most modern design. Architects like these characteristics of terrazzo—

plus the fact that terrazzo can be as individual and as colorful as you care to make it. And clients like terrazzo for additional reasons—it is economical, hard to stain, easy to keep clean. For detailed information write the National Terrazzo and Mosaic Association, 1406 G Street, N.W., Washington, D. C.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION



An effect of extreme simplicity is given by the final design for the Whitestone Bridge, now under construction in New York, to be the third longest in the world

A E S T H E T I C D E S I G N OF STEEL STRUCTURES

BY AYMAR EMBURY, II

EDITOR'S NOTE: This article is the third and concluding discussion by Mr. Embury of the æsthetic phases of designs involving collaboration between engineers and architects. The author has been associated with leading American engineers on a number of important bridge projects and is especially qualified to discuss this subject. The articles also have appeared in "Civil Engineering," thus reaching both of the professions

ÆSTHETIC considerations were never completely neglected by designers of steel structures even in the days when county bridges were being built over every brook by fly-by-night steel companies whose sole apparent ambition was to get the most money for the fewest pounds of steel that would support a horse and buggy. Many of these cheap little bridges were not without a certain loveliness of their own, perhaps because the draftsmen felt proportion to a greater extent than they themselves realized, or perhaps because a perfectly honest and logical arrangement of members can never be hopelessly ugly.

The really bad days of steel design came later, when engineers began to be conscious of appearance and added extraneous ornaments derived from traditional architectural forms. Since practically all such forms originated in masonry design, the attempt to translate them into light steel members was completely anachronistic. This type of ornament was usually executed by treating steel as a plastic material, and consisted of curlicues, spindles, whorls, and curved members. These were not natural steel forms and their value was further reduced by the fact that they were made as light as possible to keep down costs. Ornament was merely a sop to public taste.

Every structure reflects the spirit of its age, and in these bridges we see the spirit of the Victorian period which, beginning with "Strawberry Hill Gothic" over-stressed ornament to a greater degree than any other style in the history of the world. The modernistic movement, in spite of the horrors perpetrated in its name, has likewise reflected the spirit of the time, in engineering design as well as in

other fields. Much of the talk about "streamlining," and "functional" and "spatial" architecture is far from profound, yet there is behind it the sound fundamental principle that structures should be honest expressions of their purpose.

Throughout the ages the mental processes of the designer have always been the same. At first, he scratches on a piece of stone or draws on parchment or paper what he feels to be a satisfactory solution of his problem, and then (if he has to) he rationalizes it. The "why" of his design is, at least during the period of design, an unconscious one, but if it is analyzed, it will be found to be a composite of what he has observed in the work of others, of the way he has been influenced by his own times, and of his personal equation as a designer.

Engineering structures have unquestionably been greatly benefited by the change in spirit of the times, which is today particularly sympathetic towards what we consider engineering as differentiated from architecture. In the design of the structures with which I have been associated, I have recognized certain elements which are fundamental to the æsthetic success of exposed steel construction. While I do not for a moment pretend that they have not been recognized by others, I know of no record of their discovery. These elements are:

- 1. The silhouette is the first essential. Engineering structures are almost always seen against a sky background which makes ornament valueless.
- 2. The use or meaning of the structure must be comprehensible to the layman.
- 3. The relations between the structural members and the spaces which they enclose must be agreeable.

To illustrate these points I propose to discuss the æsthetic, or as engineers choose to call it, the architectural reasons for the designs of several structures with which I have been associated, not because I think them the best of their kind, but because I know the reasons for the particular designs adopted.

Consider first the towers of the Triborough

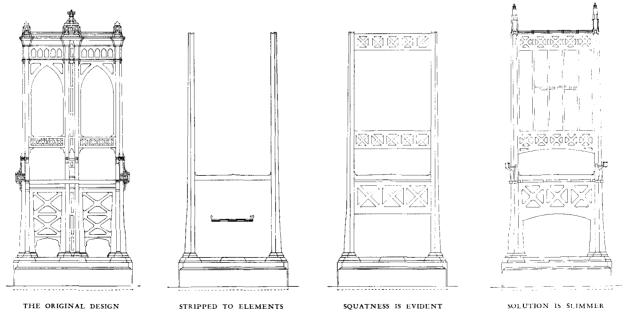
Bridge, in the design of which I was associated with Allston Dana, Engineer of Design. These towers had already been designed when the bridge was turned over to O. H. Ammann, Chief Engineer of the Triborough Bridge Authority, to be redesigned in a more economical and practical manner. Certain limiting factors were forced upon us at the beginning—the heights of the towers to the cables, the clearance of the bridge above the water (fixing the height of the roadway where it enters the towers), the width of the roadway, and the stone bases of the towers (limiting the lateral diameter of the towers). From this it is apparent that the towers are too low and the space from the roadway to their tops is unpleasantly wide for its height. The legs of the towers were placed too far apart for the best transference of wind loads from one leg to another, and comparatively deep trusses were accordingly necessary to tie them together, both at the portal of the roadway and at the top. When the connecting trusses were drawn in, moreover, the bad relation of width to height was sharply accentuated.

Now right here the æsthetic consideration comes in—the bridge would have stood up quite as well as it does today had it been built as first designed but it would have been awkward and ungainly, and might even have appeared weak to the general public, because of the slimness of the legs supporting the deep trusses. Furthermore, in this relation of parts there was something fundamentally unpleasing. Our problem was to so arrange the necessary steel, and to so break up the shape as to render it beautiful instead of ugly. One obvious requirement was that the towers should

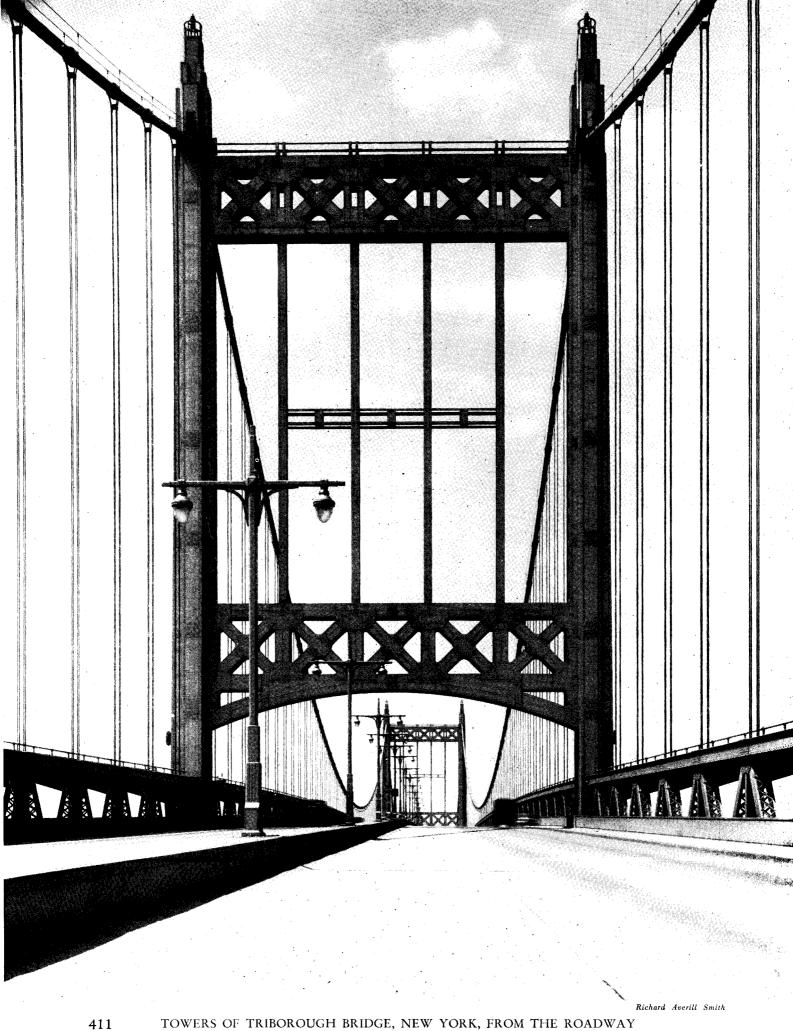
be extended above the top of the cables. Although there was of course no structural reason for doing this, we excused it because the extensions were to be beacon-light standards for aeroplane safety.

There was also the problem of how to trea the ugly space between the portal of the roadway and the bottom of the stiffening truss at the top of the tower. Since it would have been impossible to raise the upper truss without a sacrifice of strength inexcusable from a structural point of view, all our efforts were directed towards securing the lowest portal height that we felt would be acceptable to people driving over the bridge. Of the many sketches made, only two appeared to justify much study. The first of these was an all-over diagonal lattice treatment. The other design was the one finally adopted—because we felt that it most nearly succeeds in disguising the ugly spacing between the towers even thoug' the vertical members inserted there have little or no structural significance.

If we had been able to attack the problem from the beginning, we would have increased the pitch of the cables and thereby raised the towers to a point where so grave an æsthetic difficulty would not have arisen. The difference in cost between this bridge and one with higher towers is not easily calculated but it certainly would not be very great and might even be in favor of the higher towers. This is the sort of thing that the engineer and the architect ought to solve together, the engineer approaching the problem from the structural and cost point of view, and the architect representing the ultimate artistic judgment of the educated public. We followed this pro-



The evolution of the tower design for the Triborough Bridge in New York is illustrated by the drawings above



THE AESTHETICS OF STEEL DESIGN



Richard Averill Smith

cedure very closely in designing the Triborough Bridge. Also, we believe that the result is in keeping with the principles previously enunciated.

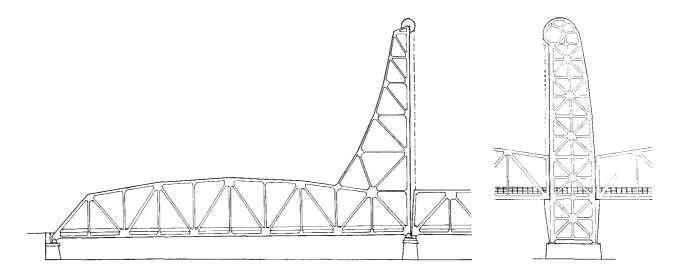
Within reasonable economical limits, there is considerable latitude in the widths of steel members. Where we felt that a wide member was more satisfactory æsthetically, we used it, and where we felt that curved gusset plates produced a better effect, we used them, with the result that the rather curious triangular spaces between the various members of the trusses form interesting patterns. Attention is called in particular to the design of the upper and lower bracing trusses, where the slope of the diagonals was preserved in an interesting way. Even the rivet spacings and their patterns on the plates were studied, especially in the portals over the roadways where they are fairly close to the eve.

The second structure to be discussed in this article is the lift span of the Marine Parkway Bridge, of which Waddell and Hardesty were the engineers. It is indisputable that of all the types of bridges in common use, the lift span is the ugliest. The reasons for this are not difficult to find. A lift span consists of steel posts tall enough to give whatever clearance the government requires when the bridge is up, and strong enough to support the weight of half the span and counterweight (in other words, each tower must be strong enough to

The completed Triborough Bridge in New York shows the effect gained by increasing the tower heights

support the full weight of the movable span). On top of these towers are great wheels over which the cables go down, on one side to the movable span, and on the other to the counterweight. The natural shape of these elements is peculiar. When the lift span is in the closed position it appears to be fixed and the functions of these elements are then difficult to comprehend. The lift span therefore violates the second basic element of design, which provides that the method of operation should be apparent. In many lift bridges the design is further confused by the fact that the supporting tower is anchored back to one of the panel points of the side-span trusses in a way which suggests that for some reason part of the truss is turned up on end. This makes it very difficult or impossible for a layman to guess how stresses are transferred.

In the Marine Parkway Bridge, however, the designers were able to separate the tie supporting the tower legs (the sway bracing of the legs) from the trusses flanking the movable span, and to enclose the counterweight within these limits. The unusual design of the side of the towers was adopted in an attempt to indicate how the machinery works. While the face of each tower towards the lift span was kept vertical, the back was inclined in a

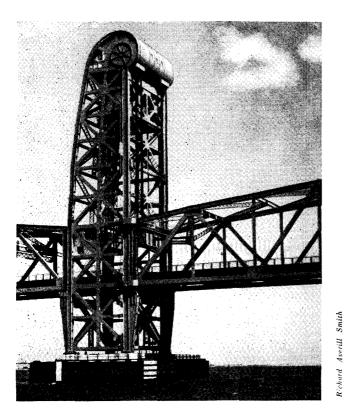


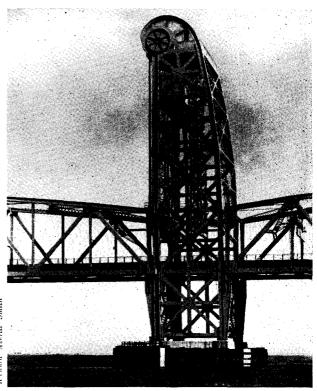
A tower of the Marine Parkway Bridge, Long Island, N. Y. (right), is compared with a typical design for a lift span bridge. The completed towers are shown below

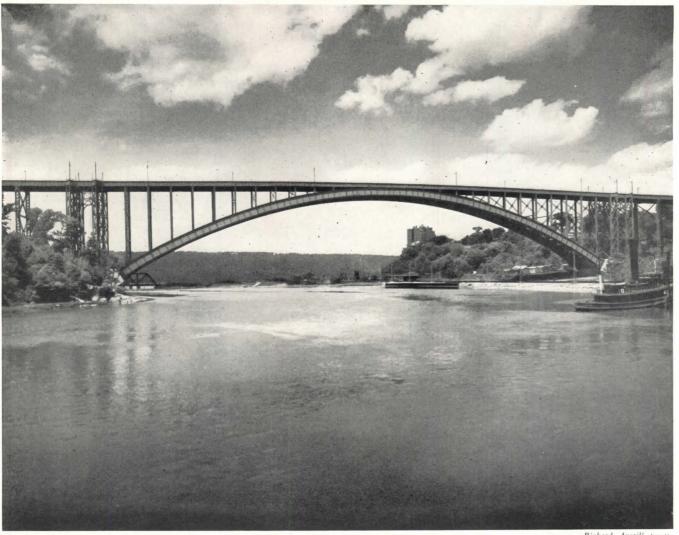
sort of spiral form, which was continued above the tower proper, curving around the great wheels which support the cables, and enclosing the machinery. In order that the silhouette of the structure might not be confused with those parts extraneous to its function, counterweights, access ladders, and elevators were painted aluminum, the rest green.

It can be seen that the various panels are of approximately similar proportions, although of unequal size; that the slope of all diagonal bracing is the same; and that there is a carefully studied relation between the sizes of the legs supporting the towers, their sway bracing, and the members tying the two together.

The third bridge which will illustrate our principles is the Henry Hudson Bridge, a single arch carrying a deck span over Spuyten Duyvil Creek. Robinson and Steinman were the engineers. It is hard to make an arch span really unattractive because the circle, of all the natural forms, is æsthetically the most satisfying, and there is no way that an architect can "improve" it. The design of a bridge in which an arch span is the principal feature is therefore confined to the disposition of the struts supporting the upper deck, the depth of the arch ring, the treatment of the deck itself, and (most important of all) the design of the approach viaduct and the transition







from one type of support resting on solid earth, to another resting on the arch ring.

In this case, as in all others, there were a number of limiting factors: First, the length of the span was determined by the property available; and second, the clearance was as usual fixed by the U.S. War Department.

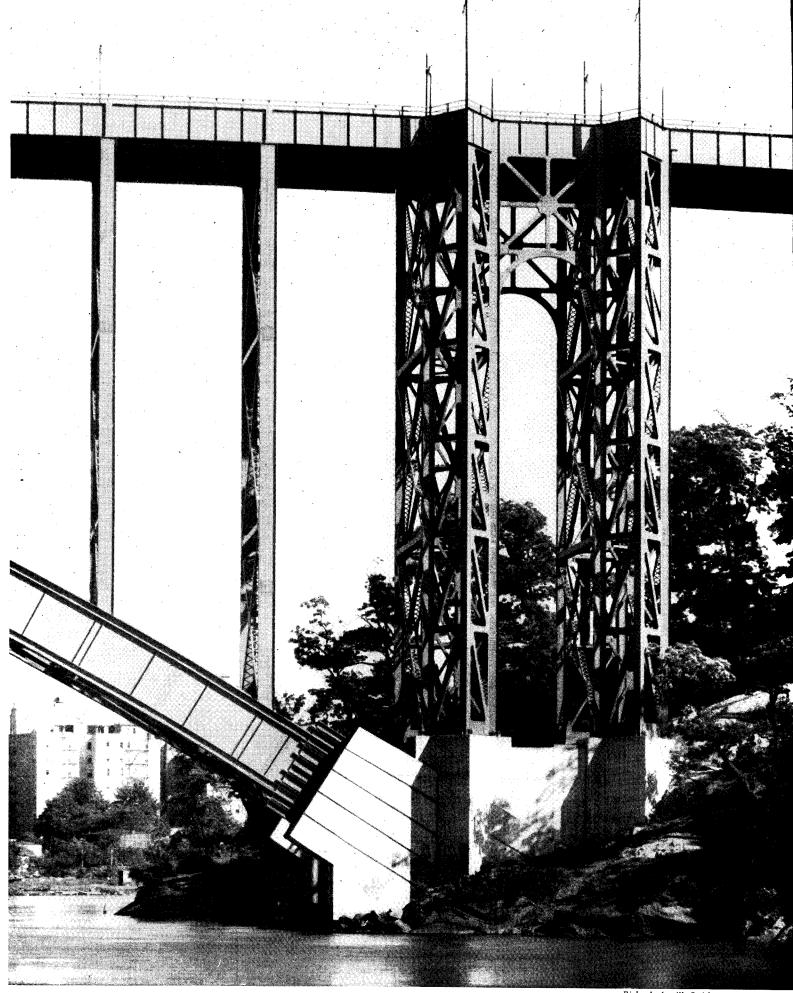
Design studies were made with the arch ring in the form of a latticed truss with a slightly greater depth at the abutments than at the center, but for the sake of greater simplicity of line, the plate-girder design was preferred, and was adopted as soon as its feasibility and economy were established. The depth of the plate-girder arch ring, 121/2 feet (the maximum width of large plates obtainable without prohibitive extras), was fixed by the limitations of both manufacturers and transportation. All this depth was needed, both structurally and æsthetically.

The design of the deck span was based on two fundamental considerations: First, that it would support an upper deck when traffic demanded it (this time has already come); and second, that it should be the most economical

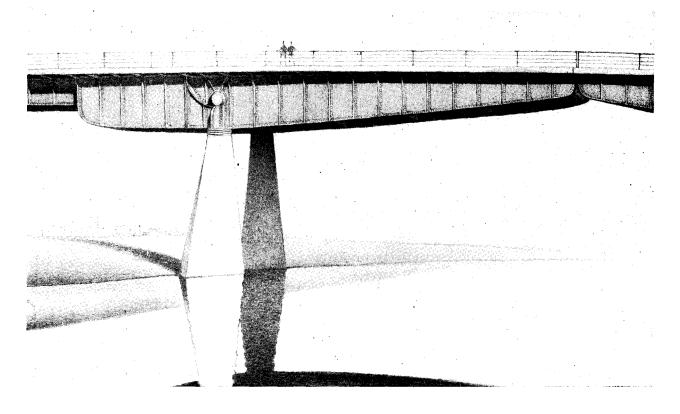
The Henry Hudson Bridge, New York, is a single arch carrying a deck span across Spuyten Duyvil Creek

construction within the lines thus fixed. Since there was to be an upper deck, the usual bracketing of sidewalk and guard rails from the main deck girders was impossible. These girders were therefore placed almost flush with the bents supporting them, so that they themselves form part of the bridge railing, making a sort of through span which is very satisfactory from the standpoints of both economy and ease in construction. The architect was permitted to fix the exact depth of these outside girders, since wide latitude existed between their economic limits. Since the bridge is comparatively high and narrow, it was essential that the type of design adopted should give sufficient width of bent for adequate wind bracing, and this was provided for.

From the asthetic point of view, however, the fundamental elements of the design were the transition from arch span to viaduct and the spacing of the supports in each part. The upper deck is to be supported on steel columns



Richard Averill Smith



rhythm in these spaces was felt to be absolutely essential from the æsthetic point of view. Obviously, since these columns could not well be spaced irregularly in relation to the bents, it became necessary to have a simple mathematical ratio between the spacing of the bents on the bridge and those on the approaches, in order that the columns supporting the upper deck might be uniformly spaced throughout. It was found that an economical structure could be erected with the approach bents spaced at almost any distance from 50 to 80 feet while for the water span any spacing from 20 to 35 feet was possible. A unit of 30 feet was therefore adopted for the water span, and one of 60 feet for the land spans, while the upper-deck columns on the approaches were spaced 30 feet apart. Structurally, deeper girders were indicated from the towers to the ends of the viaduct than over the bridge itself, but since such an arrangement would appear

resting on the lower deck girder, and equal

This disparity in spacing between the land and water bents obviously demanded some transitional feature, and this was supplied by the steel towers at the piers. The engineer and the architect have tried to convince themselves that some sort of tower is proper in connection with the expansion joints. There probably is a slight structural reason for the towers, but as a matter of fact, they were built

awkward and displeasing, all the girders were

held to the same depth, the land girders being

naturally much heavier.

Preliminary study for a bascule bridge over Flushing River was based on a circular form at the trunnion

for æsthetic reasons. Although masonry towers are generally used in such bridges, steel towers were chosen in this case for two reasons, the governing one being the decision of the client, Robert Moses, sole commissioner of the Henry Hudson Bridge Authority. The secondary reason was that they are more economical. The result is a rather novel solution.

The first design studied contemplated a single instead of a double tower, but no single tower motif could be found which would adequately mask the transition between the two systems of support. The double tower was therefore adopted as the most satisfactory treatment in steel found by the designers.

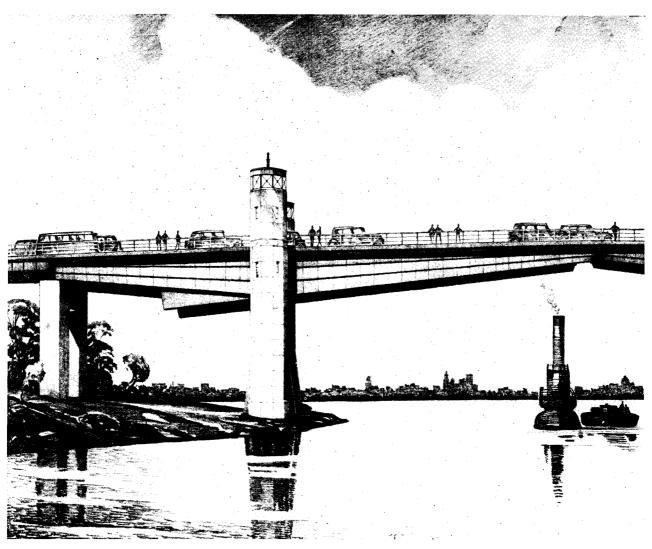
The relation of the members to the spaces between them was very carefully studied. Since the curve of the arch ring caused the bents to vary in height, a uniform breadth for the members forming the bents proved asthetically unsatisfactory. Their widths were accordingly made to vary from 36 to 15 inches, in proportion to their lengths. Similarly, the bents on the approach viaducts decreased in breadth as they decreased in height. For æsthetic reasons, the thickness of the bents of the approach span was made greater than was structurally necessary—great enough, in fact, to make the problem of bending due to expansion more difficult than usual. The engineers, however, found a way to take care of

this expansion which was structurally sound and not uneconomical, and at the same time preserved the desired asthetic proportions. One other factor often neglected was very carefully studied—that is, the arrangement of the X-bracing between the legs of the bents. Instead of using rolled sections (which perhaps would have been more economical), small lattice girders were used, so as to indicate very clearly the difference in function between the vertical struts and the bracing members. In the disposition of the bracing, a unit was adopted that could be repeated three times on the longest leg, two and a half times on the next, and so on, the angles of the diagonals being kept uniform throughout. The lower side of a bridge of this height is seen from both land and water to a much greater degree than is generally supposed; however, little thought is usually given to the appearance of the soffit. In this case the engineers used a system of Kbracing which forms a rhythmic pattern.

Of an entirely different character is the bascule bridge across the Flushing River, for which Waddell and Hardesty are the engineers. While the principle of a bascule bridge was of course familiar to the architect, the interesting and complicated arrangements of its mechanism was completely new. There is perhaps no reason to quarrel with the æsthetic effect of a span so well-designed, even though it is, as it were, sawn in the middle and weighted at each end so that it will tip. However, the architect felt strongly that the design should express a sense of movement by suggesting in its exterior the wheels and cogs.

In an attempt to express this movement, a number of drawings were made, based on a circular form at the trunnion with the supporting girder of the bascule projecting out from it like a wing. None of these attempts proved either practical or beautiful, and the architect did what he should have done at the start. He studied the actualities of the situation, and discovered that these of themselves led to a result which was æsthetically satisfactory to him, and to the engineers completely

Final design for a bascule bridge over Flushing River, N. Y., exemplifies a simple and original solution



practical structurally as well as exceedingly economical. In previous bridges of this kind the counterweight at the landward end of the tilting span has been concealed as far as possible. In this bridge it was made an integra part of the design. A single sharp diagonal line reinforced with further diagonal bracing, wa carried from the very end of the counter weight to the center of the bridge.

In designing a bridge of this kind, it is necessary to provide a girder of considerable size from the steel bent which supports the trunnions to the first pier of the approach span, in order to brace the pier supporting the trunnion. The water end of this girder actually is cut out to support the trunnion itself. Although the design of this girder was not much more economical than some other shape would have been, it was felt that the opposing diagonal lines overlapping at the trunnion not only expressed exactly what happened, but also created an exceedingly interesting combination of surfaces and shapes. It is unfortunate that the operating towers should in part obscure the function of the opposing diagonal lines, but the towers were made as small as possible and approximately circular in plan, so that their function might be understood. Since this bridge has not yet been completed, it is too early to be sure that the desired result has been achieved, but it is hoped that this simple and original method of designing a bascule bridge will be as satisfactory æsthetically as it is structurally.

When Robert Moses asked O. H. Ammann, Chief Engineer of the Triborough Bridge Authority, to make a rough study and estimate of cost for the new Whitestone Bridge, now under construction by the Authority, he presented Mr. Ammann and his associates with one of the most interesting problems that could possibly be offered to engineers and architects. In the first place, the bridge will be third in length in the world, exceeded only by the Golden Gate and George Washington bridges. In the second place, both anchorages and approach spans are in the clear, so that the structure as a whole will be visible to an extent that is true in no other case. Since the conditions at each anchorage are substantially alike, the structure can be almost completely symmetrical. Mr. Ammann indicated his desire for a design of extreme simplicity, in which plate girders would take the place of trusses in stiffening the roadway, in which no lattice bracing would be used (steel webs being substituted), and in which no wind bracing would be required between the legs of the towers near the roadway level, the sole connection being at the top, with the bracing in the form of an arch. The clearance of the span over the water was of course fixed by the War Department; the height of the saddles for the cables above the roadway was set at 300 feet and the width of the bridge was determined by traffic requirements as 82 feet from center to center of the cables.

These limiting factors were unusual in that they did not constitute a handicap to a free design, but on the contrary were both a guide and a stimulus. The plan adopted for each leg of the tower was a "T" on its side (¬¬), the cables resting on the cross bars of the "T's."

All the earlier designs had been based on the assumption that these legs were separate towers tied together at the top. As soon, however, as the designers began to think of a tower not as a pair of legs connected at the top, but as a unit with an enormous opening cut out of it, and reinforced at the sides by steel buttresses, the problem became easy. The adopted design is extremely simple; the width of the tower is uniform throughout its height; and the towers as a whole are battered only in the longitudinal direction of the bridge. The only extraneous feature is the enclosure of the gallery which leads across the portal from one leg to the other, at the top of each tower. It was found that extending the towers above the cables increased the dignity of the structure, and a reasonable excuse could be alleged in the enclosure of the gallery. Only the treatment of the stiffeners, sometimes enclosed and sometimes exposed on the tower above the arch, can be considered decorative; even these are structural.

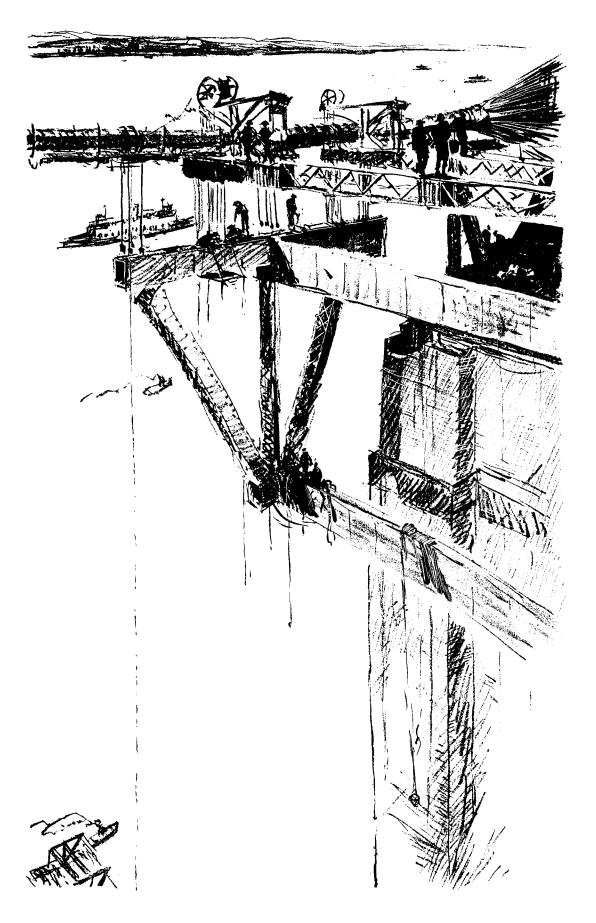
Certain architects who have seen this design have objected to the arched portal as "sweet" and "unfunctional." Actually a considerably greater depth is needed for riveting the portal bracing to the towers than is necessary or desirable at the center of the portal, and while this transition could be made by means of straight lines, correct distribution of the stresses through the portal bracing calls for a lower chord approximately circular in shape. The true circle was therefore not the result of an architectural whim but was asked for by the engineers. Other forms were studied, but in the opinion of the designers none appeared as satisfactory æsthetically.

In the designs here discussed we have applied principles which we feel are sound. We know that there is no argument in matters of taste. But we hope that this serious effort to analyze the relations between the pictorial and the structural elements of design may be useful to other engineers and architects.

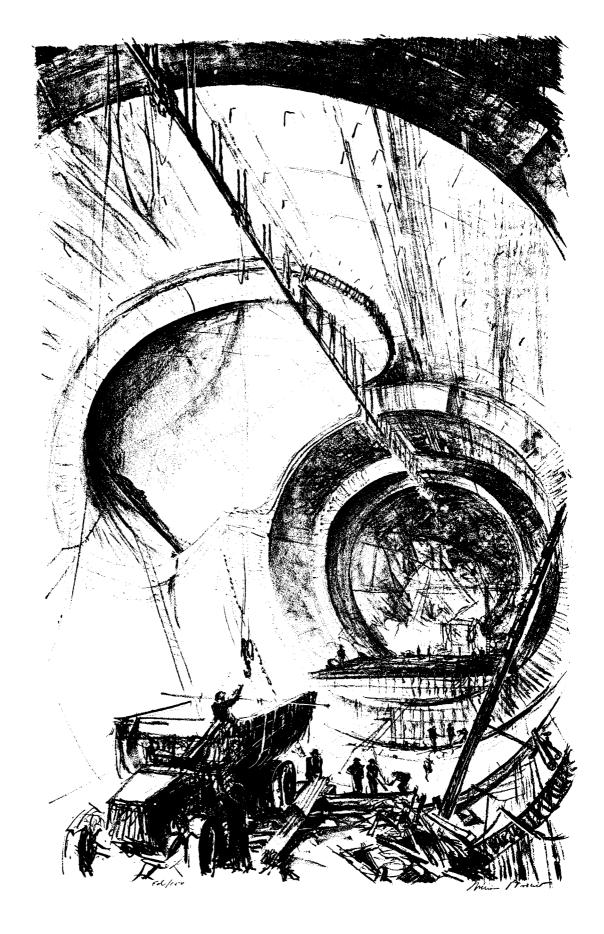


WILLIAM WOOLLETT RECORDS ENGINEERING PROJECTS WITH LITHOGRAPHS

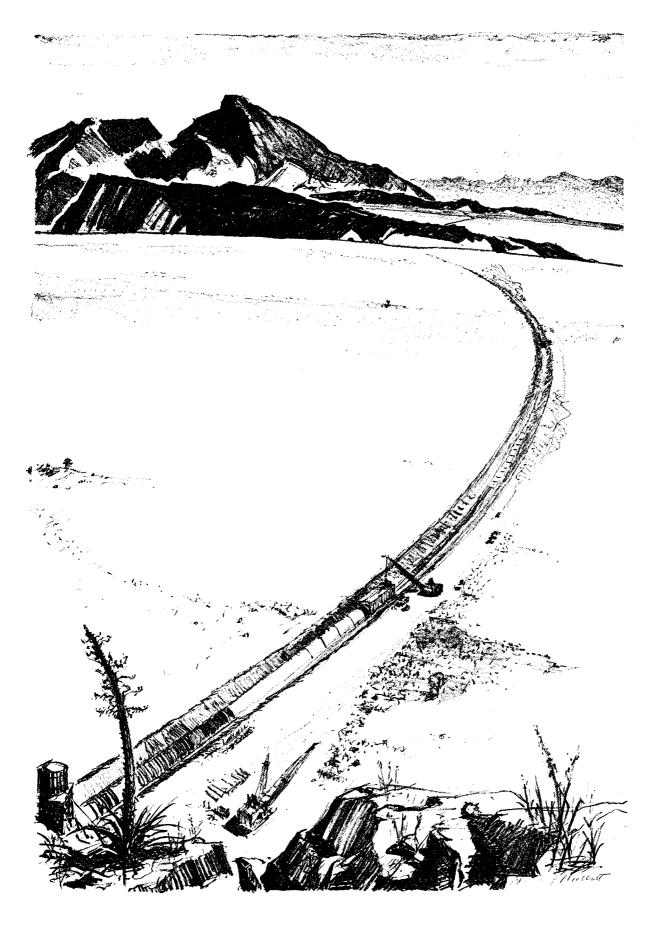
The four lithographs by William Woollett, Los Angeles, California, son of the prominent architect, William Lee Woollett, which are reproduced here from original prints have special significance as part of a graphic record of the development of major construction projects on the Pacific Coast. The lithographs were prepared by Woollett as the various works progressed. The view above, from a series on the San Francisco Bridge, is toward Yerba Buena Island through a suspension section of the giant structure. The cables had been spun and the next step was to tie the suspender ropes and raise the deck trusses. The towers average 540 feet in height and sway three feet in a strong wind



The center anchorage of the west bay span of the San Francisco Bay Bridge, shown above, is the meeting-place of the four individual 37-strand cables. A section of the deck trusses had just been raised here



This lithograph from a series on the massive Boulder Dam shows the interior of a diversion tunnel at its junction with one of the spillway shafts, down which the surplus waters pour back to the river bed



Woollett has pictured the Los Angeles Aqueduct "like a long snake winding in and out of mountains and through deserts swept by winds and furnace heat." It carries the Colorado River waters to California

IVORY TOWERS AND BLAST FURNACES

BY TALBOT FAULKNER HAMLIN

In this summer that is now with us, it is good to get away from the details of life. The warmth, the relaxation of the air, the sound of wind in the leaves and of waves on a shore, all bring a sort of hypnosis with them; under the beneficent sun, so much that we have deemed in stormier times important slips away and is happily forgotten. Even here in the heart of the city airs bearing new and magical fragrance occasionally steal, and an upward eye sees blues of new depth, clouds of new brilliance slipping by between the buildings.

Under such an atmosphere, mental patterns take new forms; even to the busiest of us hints of contemplation come, and the mind, apparently at rest, gets sudden new glimpses of spiritual and intellectual adventure.

Perhaps it is in this rhythm of the year's swing between bluster and ease, between enclosing cold and opening warmth, that one may find at least an approach to the answer to that troubling question of today, the part of the artist—and the architect as artist—in the modern striving, shifting, clamorous world. The "Ivory Tower artist" has become a current term of almost universal opprobrium describing one who has lost all sense of his human heritage, using his art as an excuse for a cowardly escape from responsibility. Come out of the Ivory Tower, is the cry today—the place of the artist is at the barricades, or, if not at the barricades, at least sweating in the steel mills or on the production line. Action is violently demanded—action in the name of democracy, of progress, of efficiency, of labor, of capital, of socialism, or of fascism—but at least action towards any end that the speaker holds dear.

Now there is one thing peculiar to all these supposed ends. That is, that they are all based on some ideal which has been somewhere, by someone, imagined and formulated. Furthermore, these ideals are all themselves relative—relative to human beings and human life. Almost all of them bear in themselves a hidden additional question: democracy for what? efficiency for what? progress towards what? If we are to act intelligently, the what is the

most important factor in the whole concept, unless, of course, action is to be considered an end in itself . . . One has visions of the mad rush of cockroaches in a dirty kitchen when the light is turned on.

We are to act, we are told, to improve human living conditions. It follows that human living conditions can be improved, and that, when they are improved as a result of our actions, action will no longer be necessary, and we can sit back for an eternity of what . . . We act to make action unnecessary . . . Is that the end of it all?

And it is right here that the usefulness of the Ivory Tower comes in. For in almost every case the definition of our final ideals can only come from the broad, unhurried view, the view over and above the accidents of the moment—the view from the Ivory Tower. Today, when the clamorings of the present are so extraordinarily loud, the calls for action so persuasive, and the need for action so pressing, it may be that we need more looking out from the Ivory Tower, not less. For it is only from the Ivory Tower — not from the blazing mouth of the Blast Furnace—that one can see the landscape stretching out and away to a far horizon, with the green fields beyond the factories, and the great clouds marching serenely above the rushing people. It is only in such a view that things fall into proper relations and one can see the wood and not the trees.

It is, I think, particularly the summer that can lead to such broader, quieter seeing. In the year's rhythm is perhaps the secret of all full living and all sane creation. We need contemplation as well as intellection, and a conscious relaxation of daily strains. Above all, we architects need it. It is one of the curses of modern architecture that in the hurly-burly of modern life—of refractory and pennypinching clients, in the confusion and contradictions of economic pressure and idealism, in the endless time-consuming details of running an office and getting out details—there is so little time for consideration of the larger matters of design. It takes a great architect and a strong man to fight through all this to serenity, to keep alive through all this the essential clarity of an architectural conception.

Particularly unfortunate is a custom, in much of the largest commercial work, of over-hurry in the preliminary design stages. Clients demand a "show drawing" almost as soon as the commission is given; to protests that the building or group is not yet designed, the answer is that it doesn't really matter, all they want is just a drawing "to show to prospects." So the drawing, ill-considered and undesigned, is made, and dolled up by a clever renderer, with trees and bright colors, or snappy darks and lights, to conceal its lack of design. Then, suddenly, the architect learns that this is the accepted design, and any attempt to change or improve, to re-study and vitalize, is rendered fruitless—the prospect has been already sold, and to make drastic changes would endanger the sale! How can good architecture come out of such a system? Architects must fight for the importance of the original period of study, and for their right to furnish the client the best building they can give him. What an ironic comment on things this condition is! We are paid to give our best talent, our creativeness and our judgment—and the very people who pay us for that then combine to prevent our doing it ... My, what intelligence!

In the Ivory Tower, one has a chance, too, to examine one's self, one's own ideas and achievements. Sometimes that is not pleasant. Occasionally—perhaps often—those who so savagely attack the Ivory Tower dwellers do so, and bury themselves in the constant shock of day-to-day action, merely because they are afraid to look at themselves in the quiet of the high sky . . . So, today, I'm going to look back over some of the criticisms of my criticism and comments on my comment.

Mr. Anderson takes me to task for demanding character in buildings; he claims that architecture is an art of sight, and that to demand a message from it is to make use of the "pathetic fallacy." I am full of admiration for his attempt to keep the fine art of architecture in its proper, and noble, place. I would agree with him in much that he says of it. Where I differ is, perhaps, chiefly in the basis for his æsthetics.

Mr. Anderson objects to my demand that buildings should have character. May I, in turn, object to his implied definition of beauty? According to the theories he follows, the æsthetic sense is something unique, unrelated to other mental processes. Apparently, I would understand from him, when a man stands in front of a building, he can take all

his complex reactions to it, separate and classify them neatly, and put them into the right pigeonholes unerringly — this into æsthetic feeling, or the feeling of beauty, this into association, this into reasoning, and so on. In my own case, I find it impossible to do so; the reactions shade into each other without definite lines. Since I cannot separate them, I am forced to doubt the universality of this hard and-fast codification of emotion.

To me, the experience of beauty is a complex experience, with ramifications into the entire body of consciousness, and even into physiological processes. It is an experience, it seems to me, whose very intensity is dependent on this richness of content. To attempt to abstract from this complex network only one element, and label that single element beauty, seems only to damage and impoverish the whole, for to me the experience of beauty is less a focusing mirror than a refracting crystal that throws out brilliant flashes of many colors in all directions.

Specifically, in architecture, a building has many patterns, existing as it were on different planes. There is the exterior form, the interior form of related spaces, the function or use pattern, the structural pattern, and finally the total pattern which cuts through and relates them all. If any one of these patterns is markedly false, or markedly awry, an instant discord is aroused, that makes us somewhere shudder; and that shudder, or the memory of it, gets in the way of our enjoyment of patterns on the other planes—in other words, reduces our æsthetic pleasure, or makes the whole less beautiful.

Moreover, the final and greatest pattern which architecture has is the great unifying conception by which all the other patterns are connected. That is a matter almost more of time than of shape; or, rather, it is the pattern of the succession of shapes seen, as the spectator little by little gets to know a building, inside and out, upstairs and down, in large and in detail. That is the greatest pattern in architecture, as it is the hardest to achieve, and it is basically a pattern of symphonic, almost musical type. Where that pattern holds strong in a building, so that all the patterns—outside and inside, form, use, structure, and everything else—have a basic and harmonious unity, then the building is "great"; it has achieved the richest beauty architecture can have, and such a building will inevitably have the character I am talking about, for without it a confusion of patterns would be present. No, I am not, I think, being traitor to beauty in asking for character, I am not falling a victim to the pathetic fallacy, I am merely seeking from architecture its greatest, and its most characteristic, beauty—the beauty which no drawings and no photographs can ever adequately express, but only the buildings themselves.

The reactions of the high school youths to my examples, cited by Mr. Alexander, are instructive. Like myself, they were led astray as to character, but, unlike myself, they felt this unimportant. Now nowhere had I upheld "domes and columns"; that the youths apparently disliked those does not destroy my argument. What they felt was that the patterns of steel construction and modern mechanical equipment were the dominant par terns of buildings today. Of course they are important, but to make them superior to th natural patterns of the uses for which the buildings were constructed seems like substituting means for ends, and putting the cart before the horse. Nothing could be more eloquent of its construction than Wright's Kaufmann house, "Falling Water," for instance; nor could anything be more eloquent of its purpose, its essential livable house-ness.

My explanation of what I meant by character will probably, I hope, help Carr Whitehead answer his questions of how forms in a building can express all the detailed functions of a criminal court. As for hospitals, the combination of ward wings and solariums, plus a simple, clean design, seems to give an unmistakable character recognizable in such different examples as the two great medical centers on Manhattan, the Los Angeles general hospital, and the new hospital on Welfare Island.

I am in the deepest sympathy with Carr Whitehead in what he writes about the small house. Basically, it is part of the whole problem of selling architecture to the great American public, in which, so far, we have made little progress—see above! If large, successful corporations will not let us architects do our best for them, what can we expect of the individual client? He has for so long been fed on twaddle and tosh by some of the magazines, so long taught that he can expect for his money twice what it will buy, that the problem is terribly difficult, and the way out terribly long. Every suburban dweller feels that he can be an English country gentleman on a 50 by 100 foot lot. It is our unpleasant duty first to tell him that this is an impossibility, and then patiently (or as patiently as he will let us) tell him what he can have, and how skillful planning and modern materials can give him a home much better than that of his dream "English gentleman." To give

him a trust in the essential livability of this house of today you are building for him means drawings, visits, perhaps interior as well as exterior models, and quiet, confident leadership. Only so can the problem be solved. And books on houses as places-to-live-in, not as style designs, nor as purveyors of "charm," are sorely needed. What, for instance, is a living room? What goes on in it? What would you like to see from its windows? How can it be designed to fulfill its varied functions? Ask a client these questions sometime. You will be surprised how little he has thought of rooms from this point of view; he has thought of his living room in purely pictorial, not in living terms, because what he reads tends to make him do so.

Yet architecture is not only an art, it is a profession. It is time to come down now from the Ivory Tower, and to get into the hum and flurry of the market place. So all praise to Mr. Freehof and Miss Walton for setting down so boldly some of the troubles of the architect.

Mr. Freehof's lament about chiselers in the profession brings up a subject that is both important and unpleasant. I wish I knew the answer; chiselers exist in all lines of business and in all the professions, but the architect's position is peculiarly vulnerable. I think the problem is almost hopeless so far as the smallscale shoe-string speculative builder is concerned. The hope lies rather in the growing amount of large-scale, carefully planned operations by "big" people who understand the value of the best technical service. It is these groups, and the banks and loan institutions, who must be approached first and taught the cost and the value of architectural services. Last summer, in England, I was astonished and delighted to see, in the real-estate advertisements, again and again the use of the phrase, architect-designed house, used as an obviously important sales point. Maybe eventually we can build up the same feeling here.

Miss Walton's diatribes against the free furnishing of architectural information and skill are understandable, but I think she overestimates the importance of these free gifts. I think our house competitions educate people in taste and in the value of architectural skill much more than they donate free plans. The real attack on this evil, it seems to me, should be against the custom of furnishing professional services as a "free" element in sales promotion by decorators and by mechanical equipment and building material people. But even here we architects ourselves are much to blame. How many times we let the heating contractor furnish the heating layout free!

And this, in its way, is just as illogical and just as anti-professional as the furnishing of stock plans by all kinds of dealers and developers. Here, I think, we must clean our own house first, before we attack the houses of our neighbors!

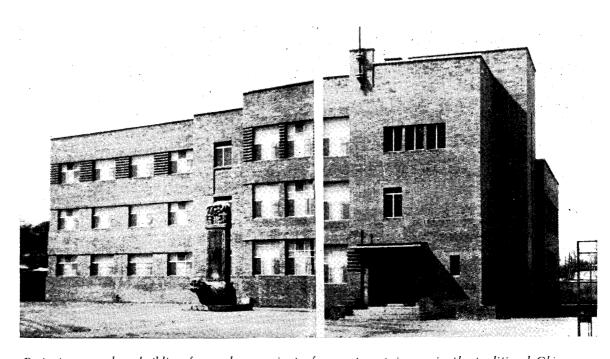
Thus architecture is a matter of the factory and the market place as well as of the drawing board and the creative design. The architect needs his term at the Blast Furnace as well as his ascent to the Ivory Tower. It is the year's rhythm again that we should, perhaps, take as our model—a winter-like period of hard, realistic work and practical interests, of dealing with and knowing well the complex economic and social background of our profession, as well as the technical minutiae; a summer-like relaxation of contemplation, of getting above the details, of digesting the knowledge we have, of achieving the far, serene view, in which the details of action and of day-to-day facts are seen in perspective.

For, after all, as architects we are creators. That which we, as creators, design only becomes a valid creation when it goes beyond engineering and takes on the art values of universality. To achieve this, no mere absorption in the day-by-day confusion can suffice.

In Winter In April, Robert Nathan's wise and tender story of a young girl and an ex-German secretary, who is driven finally by his conscience to Spain to fight with the Loyalists, there is a description of a song recital by Lotte Lehmann. It moves the girl and the young man profoundly.

"She is a great singer," said Eric suddenly. "She has kept, through all these histories, her art as it once was. The revolution does not exist for her; she sings still as the world used to be. I believe that is not easy for her"...

So the revolutionist pays tribute to the universality of art. And is not at least an occasional solitude of contemplation in the Ivory Tower a necessity for this universal view?



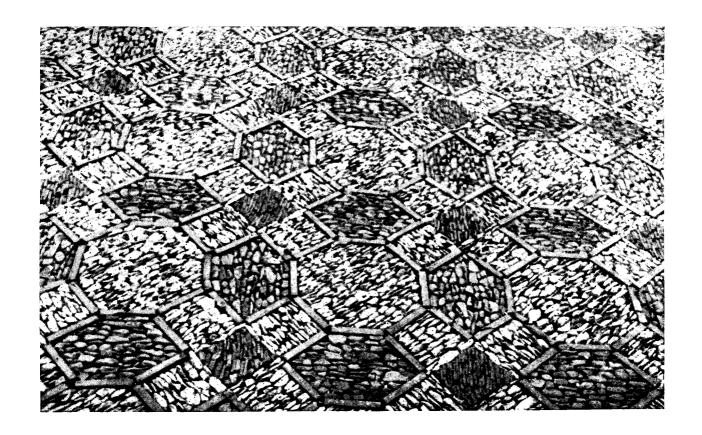
Designing a modern building for modern use in preference to copying again the traditional Chinese architectural masses and decoration, Liang Ssu Ch'Eng, the distinguished Director of Technical Studies of the Society for Research in Chinese Architecture, produced this pleasing Peiping school building. The gray brick that characterizes all the older work in portions of Peiping outside the Imperial City was used to insure harmony with the surroundings. The relation of the school building to the ancient dedication stone shown in the foreground of the photograph at the left is an example of the happy effect achieved by Mr. Liang in collaboration with his wife. Both hold architectural degrees from the University of Pennsylvania and Mr. Liang is widely known as an archeologist, architect and author. As war conditions have forced him to move from Peiping to Kunming, Yunnan, disrupting his scholarly pursuits, his American friends have arranged for Mr. Liang to come to this country next year as a lecturer in various schools and museums. This is more fully related in the news pages, outlining the plans of a sponsoring committee



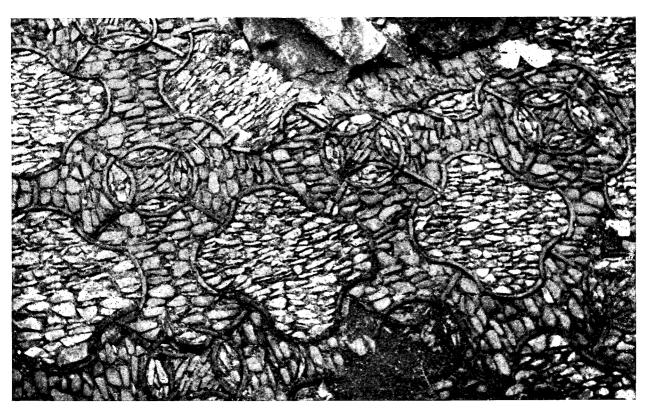
THE GARDENS OF SOOCHOW

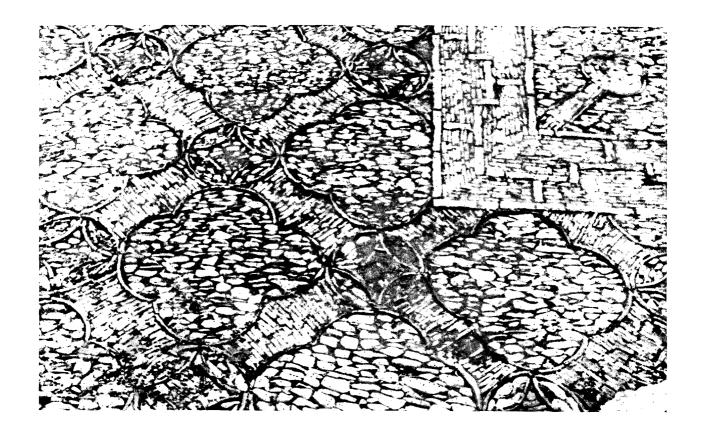
CHINESE PAVEMENTS PHOTOGRAPHED BY CLARENCE S. STEIN

Garden courts of China harmonize the picturesque irregularity of nature with the geometric form of the architecture that surrounds them. House and garden are tied together as one. The central feature of most gardens is some object or group of natural objects chosen because of a picturesque quality. Infinite care and art often are employed to simulate a miniature landscape, with tiny hills, crags, streams, trees, and lakes. The trees are trained to grow in free, flowing lines and the borders of the lakes and streams are given a natural sweep. The rocks are selected for natural irregularity: the Chinese particularly love stones that have been worn for ages by water into picturesque shapes

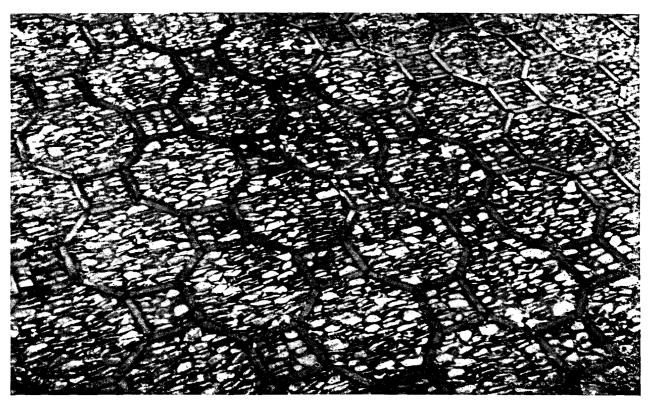


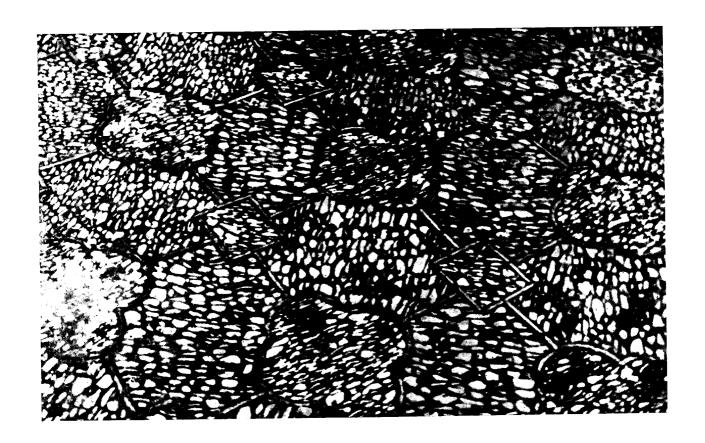
Separated from the narrow, crowded roads of Soochow by the blank walls that encircle all Chinese homes, the wealthy merchants and princes attempted in their gardens to simulate the countryside. They sought free, natural beauty and the problem of tying in this irregularity with architectural forms was solved by the design of the pavements, which are at once geometric in form and natural in material



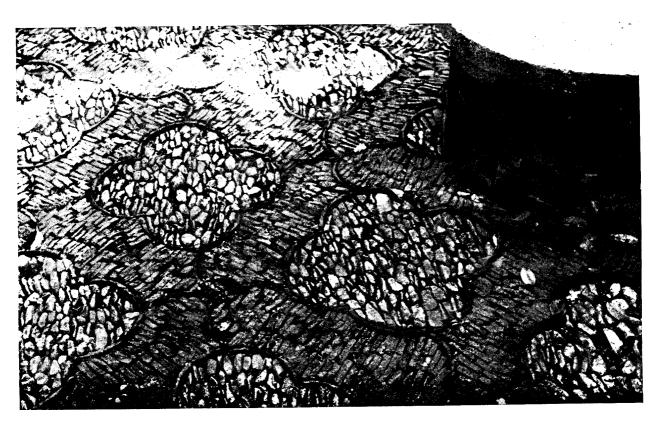


There is rhythm in the all-over repeating patterns marked by the thin lines of stones which then are filled with irregular-shaped pebbles and small stones left in their natural forms. But there is not any of the fixed formality that comes from regularly-cut materials. This is one of the reasons why the Chinese garden courts differ so greatly in character from the patios of Spain although similar in their general use





There is an infinite variety in the designs of the Soochow garden pavements, even in these few chosen from the many courts of a single house. The patterns are enhanced by varying the directions in which they are laid; by placing round stones against somewhat straight-edged ones; and by color and texture, when the reds of sandstones are contrasted with the whites and grays of carefully selected limestones



THE THRESHING FLOOR

A SECTION DEVOTED TO BRUTAL FRANKNESS

EDITOR'S NOTE: This department, inaugurated month before last, is de-signed to give readers a chance to discuss matters of professional interest with no limitation as to what they may say short of violating the laws of libel or the postal regulations. If something you have read in PENCIL POINTS or elsewhere irritates you or prompts you to comment pertinently, here is your opportunity to relieve your feelings and present your side of the argument before the profession. We believe that there are many matters of importance to architects that should be discussed openly for the benefit of all and stand ready to print contributions that are significant and sincere, even though we may disagree with the ideas expressed. In this respect our conscience is positively Voltairean, so speak your mind and be heard!

Just to prove the point, here is a piece by John J. Klaber, Architect, of 144 W. 55th St., New York. Mr. Klaber is against public subsidy for housing, while we are in favor of it, yet we are glad to publish his argument. Possibly some of you can answer him. We're not going to try.

MR. ISKOWITZ lives across the river in Williamsburg, with Mrs. Iskowitz and the three little Iskowitzes. Of course, their name isn't really Iskowitz, this is just a name I made up, but I think it sounds nicer than John Q. Public or Mr. Average Citizen, and we have to call them something. They live in a nice new apartment, in a fireproof building, with lots of light and air and a great big electric stove, and there is a new school on the next block, and a nursery school too, for the littlest of the Iskowitzes. It is all very nice, and I am glad the Iskowitzes can live in such a nice place.

I only wish I could afford to live in such a nice place too. My apartment is smaller than theirs, and it fronts on a narrow street, very noisy, and the building is old and not so clean, and not fireproof either. And I have all I can do to make enough money to

pay the rent and the other family expenses, even at that.

But the funny thing is that Mr. Iskowitz earns less than I do. Because, you see, my father could afford to give me a good education, and I learned to do work that was fairly well paid, but Mr. Iskowitz's father was very poor, so he had to take any work he could get, and of course you can't get very well-paid work when you have to do that. Of course, if he had been very smart and very lucky, and maybe a bit grasping and unscrupulous, he might be making lots more by now, but he is just sort of average.

So when you find him living in such a nice place, where the rent ought to be about eighty dollars a month, and you learn that he is only paying twenty dollars, you might think he was on relief, or something. But no, he is not on relief, he has a regular job, only it is in a trade that doesn't pay very well.

And it isn't just that he has a kind landlord, who thinks with such a large family, and working so hard and all, he ought to be given a better break than the other tenants. It seems all the tenants pay about the same rent. And the buildings belong to the Government, and it rents them to the Housing Authority for nothing, and of course there are no taxes, so all Mr. Iskowitz has to pay for is upkeep.

That is all very nice, and I wish they would let me do it too. But it seems Mr. Langdon Post picked the tenants on a point system, and I would not point up as well as Mr. Iskowitz. And there are only a few hundred apartments like that, and thousands and thousands of families that would like to live in them, so it will be a long time before people like me will get a chance at them. But they are building some more, or they will soon, anyhow, and Mr. LaGuardia has a scheme to tax everybody that has a business, so that they can build quite a lot of houses for people who can't afford to pay the rent the houses are worth.

Only, you see, I have been in the building business most of my life, and

I know how much it costs to build good houses like that. And I have seen the figures for the Williamsburg development, and they are even higher than I would have expected. But of course Mr. Ickes, who hired the people to build them, wasn't very experienced in such things, because he had spent most of his life prosecuting grafters in Chicago. But now they have hired Mr. Nathan Straus to build the next lot of houses, and he promises us they will not cost so much. I hope he is right!

I am really interested, you see, because even if I can't live in these houses Mr. Ickes and Mr. Straus and Mr. Post are going to let me help pay Mr. Iskowitz's rent, and the rent of all the other people who will live there. Only I really can't remember when they asked me whether I would like to do this, because I am sure if they had asked me I might have said no. No, I am sure they never asked me; they just took it for granted that it would be nice to build houses for the Iskowitzes, and I would be glad to help them do it. And of course that is all right, but I wish they had asked me.

Mr. Roosevelt says he sees one-third of the nation ill-housed, ill-clothed, ill-fed and all that. Of course that is just too bad, and we should all be glad to help and do something about it. But now the Iskowitzes are better housed than I am, and they seem fairly well-fed and well-clothed, though I don't care much for their taste in clothes, and I think the food they eat is awfully heavy and indigestible. Still, it is their food, and they have to eat it. I don't.

Anyway, I have nothing to do with paying for their food and clothes. But I do help pay their rent, and so do you and all the other taxpayers. So you see it's really quite a concern of ours.

One-third of the nation is about forty million people, or ten million families. And if it will cost five thousand dollars to house each of those families—and Mr. Straus says that is really hardly enough — that comes to fifty billion dollars. But of

course they can't do it all at once. Congress has only voted half a billion, so far, and that is supposed to last three years, so to do the whole job would take about three hundred years, at that rate. And of course the old houses the people are living in now won't last nearly that long, so if they want to do it that way they will have to speed it up quite a bit.

But of course Congress doesn't like to speed it up too much, because it would more than double the national debt, and everybody says the national debt is too high already. So they just vote a half a billion dollars, and hope they won't be called on very soon to vote any more. The trouble is they aren't allowed to get any rent for the houses, only just enough to cover the upkeep, so the property is no security because it produces no income. It is just like battleships and such things. You have to pay for them and just write them off. They don't like to admit that, so they have made a law that the Housing Authority pays so much a year, and the Government pays it right back again, so it costs nobody anything. Except of course the taxpayers. They pay for it all.

That would be all right, only the taxpayers who pay the rent aren't allowed to live in any of the houses. The houses must be for the people who can't afford to pay the rent. And none of my friends in the building business dare to build anything just now, because they are afraid people won't be willing to pay their own rent in new houses when they see other people in better houses and not having to pay their own rent. So by the time that Mr. Roosevelt's one-third has all been housed the rest of

A Japanese subscriber (whose name and address are signed at the left, below) sent us a letter which mystified us no end. We are passing it along so that someone, with a greater gift of tongues than we possess, may make proper and adequate reply.

us will be living in old tumble-down houses, and then we will be ill-housed, and I wonder who will pay for new houses for us.

Meanwhile our taxes will be getting more and more, and I just don't see how we are going to pay them. It isn't only the taxes you get the bills for, but all the taxes that are added to the cost of the things you buy. They seem to be finding more and more things to tax all the time, and I can't imagine where it is going to end, can you? Maybe Congress will stop it before it goes too far, only I'm afraid not, because these politicians do so enjoy spending other people's money.

And sometimes I ask myself, what was the use of my studying and working so hard, to get myself a good job? Maybe I would have been better off if I had been just an Iskowitz.

When Don Graf undertook to discuss bottle design in his May chit-chat, we had a feeling that he might strike a spark or two from an audience as reputedly familiar with the subject, in an amateur way of course, as the architectural profession. He did. Roland Gunther, of Albuquerque, N. M., was the first to accept the challenge, as follows:

In publishing your article in the May issue of Pencil Points entitled *The Disregard of the Obvious* I am afraid you have committed a most serious

The bottle you so deride was designed for a sparkling wine such as champagne. The fermentation that takes place within the bottle produces carbon dioxide gas. In order to force the wine to take up this gas, and later when it is consumed give it the property of effervescence, the bottle must be tightly corked and the pressure forced to rise very high.

The pressure being such an enormous one, you will understand that a

corner-shaped bottle would be out of the question, and you will admit, I am certain, that a slender bottle will withstand much higher pressure than one of larger diameter.

As for the bottom, and the liquid content, you will probably find that it is not a U. S. Quart, anyhow. The label will clearly state the correct content; most probably it is a liter. For the same reason that a steam boiler head is "bumped" outward, the wine bottle is "bumped" inward. (Outward would naturally be out of the question.)

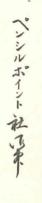
All these considerations are quite apart from wine-making technicalities that play an equally important part, the primary one being the question of what happens to the yeast while ageing and while pouring out the wine.

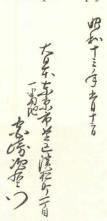
I hope the wine bottle, that is probably quite perturbed at having been spoken of so after all these centuries of respect and one might even say veneration for its excellent work, has been exonerated.

E. C. EMANUEL, of Armstrong Cork Products Company's Central Technical Laboratories, went into greater detail and has contributed some authoritative facts that we are sure architectural men will welcome.

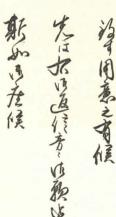
Example number one in the illustration reproduced on page 330 of May 1938 Pencil Points is a sauterne or cognac type bottle. It is sealed with a cork stopper. Corks used for sealing sauterne or cognac bottles are made over-size and are compressed before being inserted in the bottle neck. The stopper is driven flush with the lip of the bottle and is probably 1½ to 1½ inches in length to insure a tight seal that will safeguard delicately-flavored wines and brandies against spoilage due to the entrance of air or oxygen.

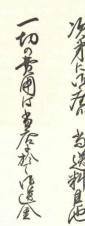
Sauterne, as well as other dry wines, is customarily consumed at one sit-

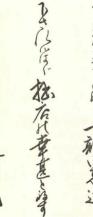


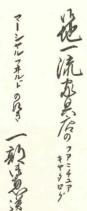
















ting. It is a light wine of relatively low alcoholic content that does not keep well after being uncorked. Sauterne bottles are not ordinarily stored in a refrigerator—but are cooled prior to use and emptied right away.

In the case of brandies which are not consumed at one sitting, common practice is to open the bottle and transfer the brandy to a decanter. Furthermore, it is natural for a vintner to use the same type of bottle for the various types of wines he produces.

Bottles of this type have for several centuries served the wine industry in the protection of wines. They were first blown by hand into molds and the "upside-down cup" in the bottom of the bottle was placed there deliberately to add strength-especially for the carbonated wines such as: burgundy and champagne. In the still wines, where strength was not so essential, the restricted area in the bottom of the bottle formed a space where the dregs or sediment of the wine could collect. Thus, this space aided in keeping the sediment in the bottom of the bottle and enabled the user to pour out the clear wine without clouding.

Although sediment is no longer a major problem—to many connoisseurs of fine wines, a bottle other than the sauterne or cognac type described above would seem a sacrilege and the contents would be suspected of doubt-

ful quality.

A very important protective measure in the packaging of wines and liquors is the allowance of proper head space in the bottle. A wine or liquor bottle filled to the top is impractical for the reason that an increase in temperature of the contents may cause the bottle to burst or leak. At least 5% of the liquid volume should be allowed in all containers for

The second bottle reproduced on page 330 of May 1938 PENCIL POINTS is of the continuous thread type finish. The shape of the bottle is similar

spirituous drinks.

to the sauterne or cognac type except that it does not have a "pushed-up bottom."

The most widely-used seal for this bottle is a metal cap although molded plastic caps are used in a few cases. The modern trend is to use "screwfinish" bottles for the less expensive wines. One reason for this is that (equipped with the proper liner) a metal cap will furnish an efficient seal and is less expensive than a cork.

Bottle number three should not be classed with the other two because it is a gin or whiskey type of bottle. It is indeed attractive and is not easily tipped over. Furthermore, it may be conveniently stored in a cabinet or on a shelf.

On the other hand, wine bottles are designed with small base dimensions because they are normally stored on their sides in wine cellars and other storage spaces.

It is true that the "working cork" referred to by Mr. Graf is a most practical closure for opening and resealing a bottle and enjoys widespread use for sealing whiskey and gin containers. Due to wine-sealing requirements, however, it is not practical for use with all wines. Commonly referred to by the trade as the "embossed-top cork," this type of liquor closure consists of a properly cut cork firmly attached to a knurled, hardwood top. For decorative purposes, the wood top may be embossed in a wide range of two-tone color combinations to reproduce the distiller's trade-mark or design.

Speaking of design, of buildings this time, ELY JACQUES KAHN, Architect, of 2 Park Avenue, New York, essays to clarify the current confusion as to the designer's objective.

To attempt another discussion on modern design seems a powerful invitation to a series of yawns or, from the group of conservatives, more arguments why contemporary architecture is terrible.

What prompted this burst of expression was an interesting remark of Ralph Walker in a recent copy of PENCIL POINTS, in which he rather caustically referred to certain rigid doctrines, in which modern architecture must consist of an absolutely bald and barren box where large glass areas are obligatory and any semblance of gracious decoration is an abomination that can only appear on reactionary buildings. The other school he noted is that of the pompous classic shell that scorns this modernism with lofty disdain and awaits the day when sanity and the Vignola will once more return to please the hearts of the men who were trained in the traditions of 1900. Another sub-branch of this latter school is the group that informs the real estate editors that modern design is a whimsy of the moment, soon to be replaced by the tried and trusty Westchester Colonial.

These various gentlemen are so far apart that it seems impossible to reconcile them. In the interim, architects, students and the public are sorely puzzled.

It can be stated rather safely, I believe, that the following are facts not to be disputed:

1. Urban work consisting of stores, mercantile buildings of every description, interiors of theatres, hotels, banks, new apartment structures including practically all housing developments of large scale, even structures for governmental use, are in large measure of the variety of design that no longer rests on Renaissance and classical prototype for inspiration. There is a broad variety, to be sure. Some buildings are strange excursions into the abhorred modernistic, but the fact remains that we seldom find straight historic inspiration such as was normal a few decades ago. For good or evil, that is the mode and we make the best of it.

2. In the schools, a project in



purely classical mood would be startling. The students, as evidenced in recent competitive work, are eager to learn how to design in the modern style. They have learned what new lighting is, for example, and no longer put symbols on their drawings to indicate that eventually some lighting fixture manufacturer will be let loose to suggest his version of the decorations that will so largely mark the character of his room. The students are no longer willing to absorb their classics as we did nor, I am told, are they drilled in the moulding by moulding memory tests that we went through. Perhaps they get but a surface conception of a new mood but what is important is that the students who in our day made meticulous drawings of Rome, Florence and Paris, today would not dream of answering a problem in the spirit that we, as students, approached it. Later we will discuss something that they may have lost in this system, but the fact remains.

3. Domestic work is, in large measure, based on traditional forms. No matter what the rest of our architecture may be, the moment you strike the fringe beyond the suburbs, a modern building looks strange, for the whole mass of houses one sees are Colonial of every type that our history has produced; Norman, English or the mongrel varieties that have just enough of known detail to please the home buyer. The very up-to-date, mass production steel or synthetic material buildings still boast their Colonial trim in steel, clapboard siding of asbestos board or other translations of contemporary material, forced into familiar shapes. Just try to have the builder think in terms of a purely modern house and discover first, the horror of his prospective neighbors, the concern of the wife, the cold stare of the mortgage institution. We have, therefore, two curiously distinct and opposing movements, side by side.

The experiments by the timorous souls who would try to marry the opposing elements have not been happy, for they have neither warranted the respect of the classicists nor the approval of the modernists. How could it be otherwise, actually? If one wants atmosphere, antique furniture, dusty dreams of the past, you can hardly run a line of steel casement windows around the corner of a room. You will note, of course, that the service portions of the house have ultra-modern equipment in baths, kitchens, pantries and cellars. The visitors are not supposed to be bothered by this departure from charm.

Is this paradox of conflicting tendencies one that indicates any real decision on the part of architect or layman, or is it anything but the cautious approach to a new viewpoint?

One is only too well-aware that a large proportion of all designs are but copies, feeble at best, of another individual's ideas. That criticism can be levelled with equal force at indifferent work of classical inspiration as at modern work. What, in the writer's judgment, appears to be a well-worn homily is that men of the past did design for problems of their day with contemporary materials. Roman architects studied Greece, of course, and the purist can scoff at Roman work as ineffectual Greek reproduction. He will, however, recall that the Roman brought concrete and the arch into a new expression. He will also note that our Colonial designers, many of them, like Jefferson, cultivated men who enjoyed their classics, had sentimental reasons for bringing some reminder of their cherished Europe to their new homes. In spite of their avowed purpose, they did, however, design as

their existing work clearly indicates.

What is, basically, the reason for this urge to modern forms? Is it not primarily the fact that our demands are different from those of the past, that the shell of yesterday is a false front for something radically different in structure and use in our own time?

Decoration or ornament is taboo, we are told. Is it not because the acanthus leaf has finally bored us to tears? Are we at all interested in pleasant trivialities of ornament forms that through uninspired repetition mean nothing whatsoever? The basis of decoration is pattern, shade, rhythm, and texture interpreted through designs that might say to us what ornament of another period did say to designers of any designated era.

The article reproduced below from the front page of the "Gazette and Bulletin" of Williamsport, Pa., for April 21 was considered "too good to keep" by STANLEY W. APRIL, of Williamsport, who kindly sent it to us.

Architects Usually Able To Put Something In Home To Serve As A Reminder

Architects are men who build uriantly in an architect's sketch, houses for other people to live in. This gives them much greater leeway than if they had to live in the houses they build. Of course, architects do not do the actual construction.

They long ago discovered that it was much easier to draw a design and leave the heavy work to others.

Then after a time they discovered that drawing, too, was tedious, so today as a rule the best architects, like captains of industry, confine themselves to conferences and gestures.

The architect's design is known as a blueprint. The blueprint is to architecture what the brief is to law. It makes something simple look very difficult and thus discourages the amateur designer and upholds the professional standard.

As few clients can read blueprints, the architect usually furnishes a sketch with several thousand dollars worth of trees and shrubbery thrown in and all the surrounding eyesores

A human being or two drawn a little below the normal size add greatly to the grandeur of the building. Grass always grows lux-him what is wrong with it.

and every one observes the zoning

Very naturally serious architects do not like to be mere coypists. They are artists who strive to put their personality into a building.

Frequently they are so successful that the owners have many occasions to remember them in years to come.

It is, however, a little hard on the owner that he should be required to stub his toe or butt his head indefinitely in order to realize that his architect was a genius.

The best architects concern themselves with artistic effects such as lines and surfaces.

It is well to understand this when searching fruitlessly for a closet or wondering why on earth they placed the bathroom where they did. It is also consoling when you have little inconveniences to put up with to know that the architect was most successful in "handling his masses."

However, the architect's life is not without its burdens. Long after he has completed a house he can' count upon the owner inviting him grandeur of the regularly to dinner in order to tell

Ornament is not sugar coating or mere embroidery. If our designers can evolve decorative forms that have some reason for existence, they will be respected. The modern reaction is against meaningless eruption of surfaces and absolutely senseless copying.

I agree again, with Ralph Walker, that decoration, sculpture and painting have a vital place in our architecture. Vital yes, if it is inspired. Sterility-plain baldness - is pure negation. What it does express, accurately, is the force of reaction from stupid copy-book repetition. If one could evaluate, clearly, what modern living demands-the requirements of space, protection, conveniences, also the spiritual factors that make living, working or buying normally agreeable parts of one's life - one would approach architecture not as a style-conscious activity but as a natural procedure to produce structures that; first, serve their purpose, and second, create agreeable settings for human beings to work and live in.

If we cannot learn from architectural history the reasons for doing what our forefathers accomplished, if we cannot grasp the spirit of great sculpture, architecture or painting, and merely use what examples we have, as documents for reproduction, we might as well brush them all aside as dead things. Shakespeare, Beethoven, Michelangelo and Phidias remain potent because one constantly discovers new things in them as one realizes what force, imagination and intellectual honesty they represented. They cover widely-separated cultures and epochs where political and social conditions were different, wherein the personal problems of the individuals, although of interest as human documents, mean nothing as against the fact that these men were alive to the demands of their day and were great and sincere artists.

We will accomplish nothing if we chatter about modern art as a style. Apparently the demand for an expression of our time is appropriate, for there would not be so much discussion about it were it merely the surface pressure of a few radicals. There are, of course, the reactionaries who are so embedded in their school-boy training that they cling ferociously to the only thing they know. They will pass on, simply because they will grow old. The radicals of the new school will also discount themselves, promptly enough, for the best test is use and public opinion. That, in domestic work, we still cling so tenaciously to traditional character, is not surprising. We can but remind the ladies who so often are responsible for the character of their homes, that they too discarded

curious articles of clothing, hair ornaments, and actually smoke. Not so long ago that would have been considered indelicate.

In short, modern architecture is not bound up with any man's personal whimsy nor that of a school of thought. Those elements of design which have always produced beauty in any art, still persist. Proportion, accent, rhythm and color are archaic and modern. If we can but appreciate the qualities that actuated other men's efforts, their keen desire to express their own problems in their own way, we could not see any other solution but that of studying our own with equal sincerity and using what skill we have, endeavor to build beautifully and practically as well.

WILEY THOMAS, JR., of Norris, Tenn., discusses the problem of archi-tectural education from the viewpoint of one who too often feels overlooked, the architectural student.

My ideas about education are vague, perhaps totally unsound, but with everyone giving an answer - none agreeing-and all these coming from the "top of the pile," it occurred to me that a student's viewpoint might help a little. So, here goes! Take it or leave it.

Last year some of us were called together to hear what an architect (the son of a great architect) had to say about architectural education; "New social order; new methods of construction; new materials; etc.'

There were over a hundred students, ten of whom soon fell asleep. The dean, planted firmly in front of the only exit, was noticeably embarrassed. Another hour passed; fifteen more sleepers. Finally, the lantern slides; "Well, anyway, we got out of a history lecture."

But why all this talk? Why an article in almost every issue of every magazine? Why all this talk among the students? Why did they dismiss more than half of our faculty at the end of last year? Who started all this?

Who really did discover that there was something wrong with the way architecture is being taught today? It was the students who discovered it and the real trouble is not that we have a new social order, or new materials, or new systems of construction, but simply that we students have changed. Let me explain.

Grandfather told Father that he should not tell lies, and Father accepted that as an indisputable fact. It never occurred to Father that Grandfather might be lying to him.

That one word accept sums up Father's every action, his education, his philosophy of life, his approach to every problem, and his undeniable fear of change. You taught Father that this building was beautiful, that this building had style, and that this other building had rhythm (whatever that is), and he accepted it. It never occurred to him to do otherwise.

Now, when a client comes to Father in search of a home, Father says:

'Well, you know, when I was in school I studied a mighty beautiful type of house. It has a door here in the center, a window here, and another window right here. We could put your living room behind this window and the dining room behind this other window-only you said you didn't want a dining room, didn't you? That's a tough one. I guess we'll have to try another one of those houses I studied about-or, wait a minute, maybe we could put your kitchen where they had the dining room.

"Yep, that's a mighty pretty type house. You'll be mighty proud of it. I think I did one for your brother just like that. Of course, we'll change the front door so they'll look entirely different. No, I never did like these shoe boxes they're doing these days-I'll stick to precedent."

Now Father says to me, "Son, haven't I taught you that you should-n't lie?" And I say, "Yes, Father, but

Why-here is a word that sums up our approach to every problem; our philosophy of life (if we have one); our challenge to education. You set up your courses to teach Father just exactly how he should do this and how he should do that-then I came along

and shouted, "WHY?"
You say this is beautiful—why is it beautiful? You say this has stylewhy does it have style? What is style anyway? What do you mean by style? You say this house has balance. What do you mean by a house having balance? Why should a house have balance? What is beauty? Revamp your courses to teach why instead of how and you'll have made a great forward

How can you expect an architect to design a building that has style unless he knows what style is; unless you have taught him not only that such a building has style, but why it has style. Of course he can do like Father, copy a pretty elevation from this style or that (out of a magazine, book, or out of his head-it makes no difference) and then get behind it with a shoe horn and "jigsaw" away.

Some one is going to say, "Yes, but

we teach Modern Architecture now

almost exclusively." And I say to you, "We don't care what kind of architecture you teach—Classic, Organic, Modern, or what—we can learn to copy one just as easily as another, and we can learn that from our fathers. Teach us the fundamentals of construction and design. Define your terms—teach us why."

Old acquaintance was renewed for JAMES D. BURT, of the New York State Department of Health, when he read the "Chronicles of a Eupeptic" by Hubert G. Ripley. He also contributes some notes on the past.

I have just finished reading your third article, "Chronicles of a Eupeptic," in Pencil Points. I have been following your articles quite faithfully for some time past, for years I suppose, because of their intrinsic interest and because I recall you as well as you seem to remember a vast number of those you have met in your wide career.

When you told of working for the World's Fair in Chicago, and how you came to be in Mr. Prettyman's office, and you mentioned the three or four men in that office, of whom I was one, I was more than ordinarily interested. You did not mention Campbell; possibly you had forgotten his name. I have always wondered what became of him.

Of course I recall Branitsky; one could hardly forget that name. I looked him up some years ago when I was in Chicago; he had a practice of his own over on the far west side, Archer Avenue, I think, where he made drawings for Polish contractors of low-price flat buildings. He wore a Prince Albert coat and a top hat, for the purpose, I suppose, of achieving a normal height. You remember he was a hunchback and short because of it. We called him "Willie" you may remember, and you and Campbell delighted to regale him with impossible tales. Perhaps I did my share too. He took it in good part and contributed his full share to the festive atmosphere of the dull old room. I recall that Mr. Prettyman came in one day and wanted Branitsky to do something but could not call his name. He said to you, "tell Him to do it." That was the old "Honore Building" across from the "Fair Building" which they were rebuilding while we were there. The Honore Building made way for the 16-story "Marquette Building."

I recall that when I came into that

office some one had started a perspective of Hunt's "Administration Building." Eldon Deane started me in on completing it but the system of perspective was different from the Wright's method, which I knew, so that I could not make head nor tail of it. I think that you completed it. But Deane was very nice and showed me the principles of that method and gave me the "Forestry Building" do and I did that by the new (to me) method and got along all right with it. Then I did the "Fisheries Building" which you mentioned and which you recall was a very unusual plan. I believe that you rendered both of these in pen and ink. I made a copy of my drawing and rendered it in warm sepia.

In 1900, I came to New York to take a Civil Service job at the Brooklyn Navy Yard where we worked on drawings for a naval station at Iona Island, 45 miles up the Hudson. I can look across the river from Peekskill where I have lived for the past 20 years and see the buildings I worked on then. I worked also for the General Chemical Co., George A. Fuller Co., the New York City Department of Health, and for the past 20 years for the New York State Department of Health.

I well remember your friend Mullgardt and your bringing him into that office; that's the only time I ever saw him. I read of his going to the West Coast and having an office of his own. I have not heard of him for many years. Yes, we who had the opportunity of brushing up against so many of those brilliant men who executed the amazing World's Fair of '93, have something to look back on. The designs being committed for the New York World's Fair, are as amazing as they are reprehensible. I wonder where we shall land artistically! Probably the designers to come will grope their way to something worthy, but in the

process-? Soon after coming to New York I looked up Eldon Deane, who was doing work as a free lance with a studio at the corner of 42nd and 5th Ave. He seemed glad to see me and we talked over the times at the World's Fair at Chicago and of each of the men in that office on Dearborn St. He recalled all of you very vividly. He seemed much older even then. His daughter, who as a little girl drank the water he had taken with them on a sketching trip at Edgewater in Chicago, for his water-color work, was then married.

I am glad to have read your articles; they are replete with rich and varied observation and experience. I suppose you are still living in Boston. Taking issue with one critic and lining up with another, James E. M. O'Hair II, an architectural student of 5001 Woodlawn Ave., Chicago, Ill., continues the controversy on the relation of function to structure.

After you have finished this letter, If you do, you will probably wonder why I wrote it. I cannot answer that, but after reading "Criticising the Critic," by R. L. Anderson, in the March, 1938, issue of Pencil Points, I decided to throw in my penny's worth, even if it does end up in the wastebasket! At any rate, getting this off my chest makes me feel better, so here goes.

I am only a second-year student in a school of architecture, so cannot vie with experienced architects when it comes to discussing what is wrong with architecture, why, and so forth. However, I listen attentively to what they have to say, and try to learn what I can, whether I agree with them or not. I have chosen for one of my final papers the theme "Language in Architecture," and in order to get material for said paper I have hauled out some of my Pencil Points.

In the January issue, Professor Hamlin states that buildings should speak to the people and tell them what purpose they (the buildings) serve. Right? Then in the March issue, Mr. Anderson says that the "character" that Professor Hamlin was talking about "is possible only in literature." Who is right? If I am not mistaken, there are not a few buildings in this world that tell the people just what their purpose is. In one way or another; by materials used, by uses of voids and masses, by relation to surroundings, these buildings lead the observer to understand that they are banks, prisons, theatres, churches, or

Last year I read several books on architecture and one of them (the title slips my mind at present) impressed me very much. It was on this very subject, and, it seemed to me, might be regarded as a primer of the language of architecture. Mr. Anderson used some mighty powerful words in his criticism, and at times I found myself lost in a maze of adjectives, so perhaps I missed out on a few of his points, if indeed you may call them that. However, it seems to me that he wandered at times from his charted course. Why, for instance, does he have to bring "literature" into the argument? I don't recall Professor Hamlin saying one blessed thing about literature! And then he (Mr. Anderson) takes a stab at Frank Lloyd Wright by stating, out of a clear blue

sky, that Wright's "Texas should have a Texas house" is a "third-rate rehash" of a 19th century Hegel-De Stael-Taine thesis. As yet, I haven't had the opportunity to read Mr. Wright's article, but the title suggests a possibility that sounds reasonable enough -to me, at least.

Then Mr. Anderson gets rather cynical at the top of page 175. I don't see any reason for those four paragraphs beginning with "If." I suppose the reason for my feeling as I do about Mr. Anderson's article is that I agree, to a great extent, with Professor Hamlin. And why shouldn't I? A bank, to me, means a safe place to keep money; and in order to be safe, it has to be strong. Hence, the use of strong materials. Banking also in-volves a certain amount of dignity, and most banks' architecture give that feeling. The same with hotels, churches, office buildings, factories, and so on far into the night. There is no fixed standard to the judgment of architecture; one cannot plank down a definite set of rules with which to judge architecture good or bad, and so it is more or less like most judgments -purely a matter of personal opinion. There is, to be sure, a great number of buildings that are considered to be of good architecture. There is also a number, possibly greater, of buildings that are considered to be of good architecture by some and of "not so good" architecture by others.

This latter group is the one we are concerned with—(or rather I should say; I am concerned with) -in this letter. It is the group of buildings that make up the greater part of the Loop in Chicago, of Manhattan Island in New York, and similar parts in other cities. These are the buildings we see every day, and consequently, we quite often fail to stop and give them the once over, so to speak, architecturally. Some talk, quite frankly, to the people and there is never a doubt but that this one is a bank, or that one is an office building. But then there are others that hide their real character (Yes! I said "character"!) behind a mask that often is quite disappointing. If we go into a spacious-looking building, expecting to find a huge room inside, and find instead a small, cramped lobby that leads only to a bank of elevators, we feel cheated! We had been led to expect one thing -and like the man who only got twenty-five dollars' worth of wear out of a forty-dollar suit-we were disappointed. The building lacked "character"! I like that word "character," it has great possibilities!

Buildings, to my mind, are a good deal like humans in several respects. For instance; a building serves a pur-

pose, but it does not always do so to the best of its ability or as well as some other building might. A man is a lawyer, or a banker, or a minister, but he may not be as good a one as he might if he worked harder at itor he may be as good a lawyer as is possible with his characteristics, and yet be only second-rate. In other words, we judge people by their characteristics and draw our conclusions accordingly. Why shouldn't we do the same with buildings? Often we meet persons who, by their dress and by other means, leave the impression that they are successful in business and in life; and we are somewhat disappointed to learn, afterward, that they are not at all what they seemed. We have been cheated and we don't like it!

The result? We no longer appreciate the beauty and charm set forth by the face because we know the reality of the function. We have a name for humans of the type I have just described - it's "fourflusher." Many buildings are "fourflushers" because their architects failed to recognize the relation of structure to function. Much can be said about the relation of structure and function, but this is neither the time nor the place for going into it more thoroughly. As it is, I have rambled on for the better part of three pages and am no nearer the solution than before so I think it high time to call a halt. Summing it all up, I guess it is the same old story—that there are always two sides to every question, and that everyone is entitled to his own opinion. Therefore, I line up with Professor Hamlin in this great battle of a century.

MORTIMER E. FREEHOF, Architect, of 415 Lexington Ave., scores the treatment of architects in news columns of the press and urges "fight."

IT seems to me that newspapers are guilty of rank injustice to architects and potential clients. Their attitude is the more reprehensible because the press is capable of exerting a tremendously helpful influence. The circumstance is not born of malice or intent, but of ignorance and apathy. It does not evolve so much from a positive policy of commission as from a negative one of omission.

Most of the meager items published about architects and architecture are completely cock-eyed. Even these are printed only if they do not crowd the publicity of some speculator's nightmare, served as a dividend of his purchased advertising space. Perhaps the reason is that those who establish newspaper policies belong to that great majority who need to be informed about architecture and its exponents.

It is no overstatement to say that there is less information about the architect and his work than about any other profession. Stand on the corner of Fifth Avenue and Forty-second Street and invite the first fifty persons you see to join you in a cocktail at your favorite damp spot. If you have the price, invite a hundred. After they have mellowed to loquacity spring a Professor Quiz act based upon the work of lawyers, doctors, authors, painters, actors, musicians, interior decorators, and architects.

You will get a fair percentage of correct answers on all non-technical questions until you come to the last classification. Replies about the others will reveal acquaintance with names, characters, technique, methods, professional standing and remuneration. When you touch upon architects you will draw a blank. Try such questions as, "who designed the Empire State Building?" and "What fee should an architect be paid on a private residence?" and "Give an outline of the services of an architect." If you get one set of intelligent answers, it will be because your dragnet accidentally has included an architectural draftsman or client.

There is no logic in the explanation that not one person in a hundred has ever had an architectural experience. Probably even fewer have had personal contact with sculptors, painters, and playwrights. It may be argued that most people attend the theatre, read books, and visit galleries. But people live in houses, too. They work in office buildings or factories, they are doctored in hospitals, their children are taught in schools. The entertainments and exhibits they attend are housed in buildings. Even outdoor activities are linked with club-houses, bathing pavilions, park structures and stadiums. Human beings spend the greater part of their lives inside buildings of all kinds, yet know practically nothing about them or their creators. Newspapers claim to be concerned with items of popular interest. Surely, here is a vast field, of enormous appeal, intimately touching people in every condition of life and human enterprise.

With this tremendous market of unquestioned news value, press cognizance is limited, mainly, to commercial real estate notices and certain social aspects. Rarely is there a work from the intrinsic architectural approach. There is neither competent comment nor critique; no informative discussion, no distinction between merit and atrocity.

On those rare occasions when architects and their work have been publicised, the very novelty arouses suspicion. Recently, a New York City daily carried six consecutive articles on architectural firms of high standing. We of the profession were delighted with the promise contained in the innovation. Subsequently, one suspected that the real motive might not be to give due credit and to inform the laity, but subtle political propaganda for public works and the World's Fair. If this be unjust criticism, the unique nature of the event is its excuse. The name of Stanford White is less known for his architectural genius than because he was murdered.

Let's examine the record. A recent Sunday edition carried a reproduction labeled "An architect's drawing of the new Blank Building." Below were photographs of sculpture and paintings in the building, each bearing the author's name. It would seem that the algebraic axiom is reversed and the parts become greater than the whole. Daily, newspapers carry pictures of buildings. For the most part, no mention whatever is made of the architect. When credit is given, it is limited to the misleading statement, "Erected from plans by John Doe." Most of the comments refer to the realtor, the vendor, the purchaser, builder, promoter, and financing

agency. Where the project is speculative, it is a safe bet that paid advertising of the same building will be found in the commercial columns. Usually there is some such qualification as "Beautiful Colonial Villa," or "Charming Tudor Apartment." More often than not, such comment concerns some heterogeneous assemblage of tacked-on gables, faked mansards, and ill-conceived miscellany. It appears that the degree of epithet in the news bears a direct relation to the size of the paid advertising item. A good job is apt to have much less ballyhoo than a speculator's delight. If it is called beautiful, there is seldom mention of the man who made it so. Do other news sections omit the names of authors, artists, or playwrights? Are other reviews promiscuous in superlatives? Years of publicity in such fields have brought an understanding which has resulted in popular demand for discrimination. The same procedure in architecture would go far toward duplicating the result.

Often space is devoted to sketch plans and elevations of small houses. These, variously, are good, bad, and

mediocre. All of them are described in glowing superlatives. Most of them indicate construction costs far below the truth. Where the cost conceivably is adequate, the house is not. No mention is made of the virtual impossibility of alleged palatial existence in a 10 by 13 living room and an 8 by 12 master bedroom. Readers are encouraged to obtain working drawings of these houses by sending ten cents in

A favorite error is to build up from the number of speculative small house developments the misconception that there is a building boom. This is never augmented by the information that production of most of these houses at bargain rates results from contracting for labor at less than a living wage. No mention is made of the fact that the architects of such houses are compelled to operate quantity production plan factories at about ten dollars per house. Don't the newspapers know that this sort of thing is the result of desperation and not of a building boom?

There are additional misleading inferences of every variety. Items claiming to present revolutionizing innovations in design and construction describe stereotyped methods and devices. Period styles are misquoted. Housing statistics are jumbled. Causes of structural failures are erroneously stated and responsibility misplaced by innuendo.

Let us not prolong the tale. Everywhere is the mark of unfamiliarity with subject matter, the publication of superficial data, and the omission of qualified, accurate, helpful information. Practically all of these matters are grouped under the heading of Real Estate News. Most of it does not belong there. Real Estate is a commodity. Its relation to art and to construction per se is incidental. The real estate editor is, or should be, a person qualified as a reporter in his field, with a knowledge of property values and financing, and a working acquaintance with realty operatives. He ought to stay in his own back yard. To expect from him a profound understanding of fine arts and engineering practice doesn't make sense. The inclusion of these subjects within the scope of real estate must result in chaos. Most certainly it would insult the public intelligence to print book notices by copy readers, or play reviews by those who sell space in theatrical advertising columns.

Basically, it is a newspaper's job to publish news. It has been found advisable to extend the process to include

cultural subjects. To this end, most papers carry staffs of well-informed experts who write about the theatre, literature, painting, sculpture, music, dancing, interior decoration, in fact about all the arts except architecture, which affects more people than all of the others combined. Aren't people interested in buildings? The crowd around a steam shovel at work is witness that they would be.

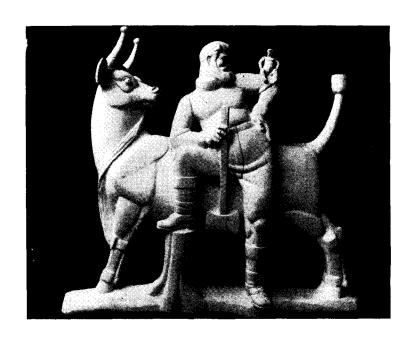
When a newspaper states that a building is being erected "from plans by" William Robinson, it is not doing its job. That meager mention simply confirms the readers' misconception that the architect's sole function is to furnish blue prints to the builder. They don't know that The Cloisters at Fort Tryon Park could never have been produced by a contractor with a set of quarter scale plans. Without the information necessary to establish a criterion, they have no understanding of what requisites to investigate

in choosing their architects.

Members of the profession do not advertise as individuals, and we do not have an adequate, organized publicity system. We cannot expect free advertising from the press. I think we can claim that authoritative information as to the architect's function, service, methods, fees, costs, office personnel, responsibility, relationship to client, training, education, and license requirements is news. It is news which should interest the public and be of use culturally and financially.

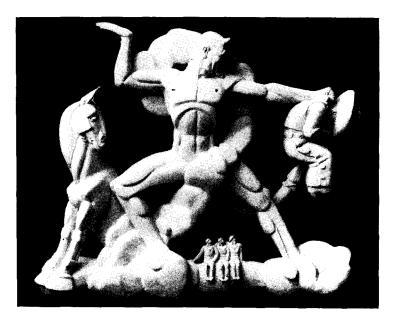
I think that if architects would combine in a serious effort to bring this matter to the attention of the press we might get results. The ultimate goal would be the establishment of an architectural section in every paper of large circulation. Success in this aim needs co-operation. Writing or talking as isolated individuals isn't potent. I know, because I've tried it. A suggestion for a beginning is that every architect keep watch for misstatements, omission of authorship, and the damning phrase, "from plans Make it your job to write a weekly letter to at least one newspaper pointing out the specific offenses and voicing disapproval. Flood the editorial offices to the point of forcing attention. If need be, let's have a clipping bureau in every community for the purpose.

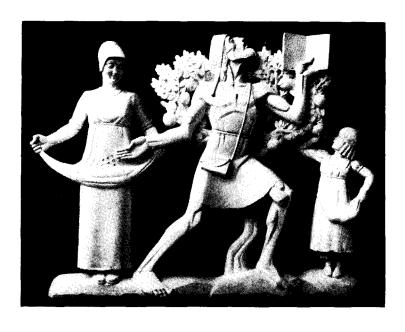
This is not a new condition. It has been going on for many years. Perhaps it took the tough times to uncover a bit of self-confessed smugness and make us fight. Many of our woes have their roots right down our own alley. Let's get together and dig.

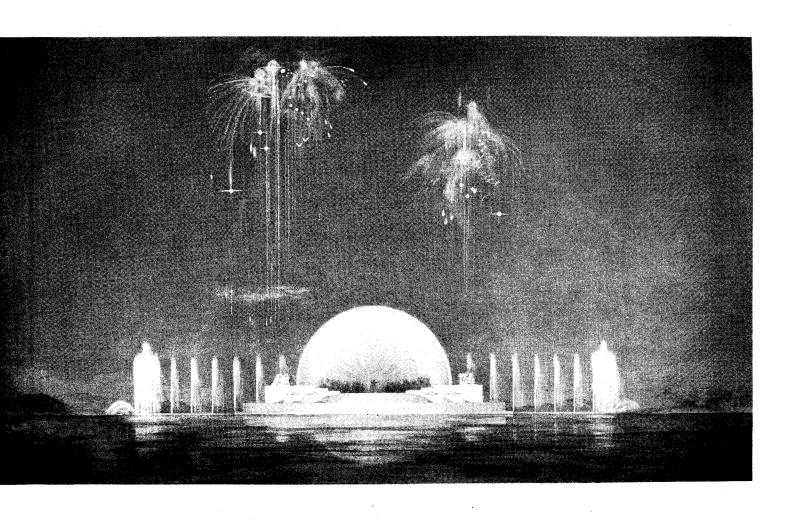


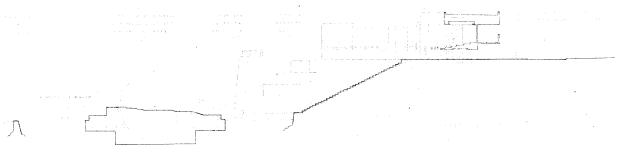
AMATEIS' SCULPTURE FOR WORLD'S FAIR

Three heroes of American frontier legend-Paul Bunyan, Strap Buckner and Johnny Appleseed-are vigorously depicted by Edmond Amateis, Sculptor, in these groups to ornament the facade of the Hall of Medicine and Public Health designed by Mayers, Murray & Phillip, Architects, for the New York World's Fair of 1939. The central figure in each is fourteen feet in height and they will be attached to a forty-foot wall. Paul Bunyan, immortal in the cycle of logging camp Tall Tales, is shown above with his mammoth Babe the Blue Ox whose "silken hair was a glittering blue, his tail brush was of a darker bue, it was like a heavily-foliaged cypress bough in the purple twilight: Babe was proud of this wonderful tail brush for he would twist it from behind him and stare at it by the hour." One of the minor characters of the legends, which reached a climax late in the last century, is shown on Paul's giant arm. No less invincible was Strap Buckner, roguish idol of cowboys, until he grew bold enough to challenge the Devil and was soundly spanked after a valiant attack. Satan assumed a gigantic height which even dwarfed Strap and his immense pony, as shown by Amateis in the center group. Third of the heroes, Johnny Appleseed, is one of the most lovable characters of frontier legend. Impervious to cold, heat and dangers of the wilds, he devoted his energy to expounding the New Testament and planting apple trees and various useful berbs in the wilderness of Obio, from 1801 until 1840



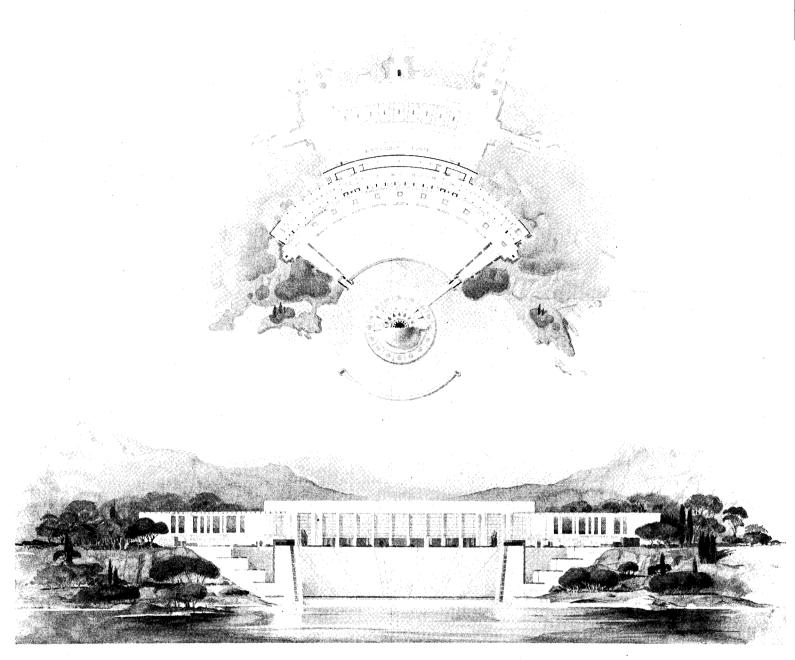






ROME PRIZE COMPETITION OF 1958

This design for a large open-air theatre with a restaurant, bar and shelters which would be located in the civic gardens or recreation area of a large city won for Erling F. Iversen, Brooklyn, N. Y., the William Rutherford Mead Fellowship at the American Academy in Rome. The site of the project on the shore of a lake, with the stage on a barge, suggests performances beyond the scope of the conventional theatre, such as water pageants, fireworks and complex displays. Note that the bandshell can be lowered from sight. Mr. Iversen will receive \$1,500 a year for two years, with free residence and studio at tha Academy, and opportunity for creative work, travel, and collaboration



ROME PRIZE COMPETITION OF 1958

Erling F. Iversen, whose prize-winning design in the American Academy of Rome competition is presented here, is 27 years old and a graduate of Pratt Institute, Beaux Arts Institute of Design and New York University. As he won the Princeton Prize competition in 1937, he has studied there for the past year as a pupil of Jean Labatut. His former patrons are Donald A. Fletcher, Lloyd Morgan, Will Rice Amon, Boris Riabof and Nicolas Vassilieve. Honorable mentions were won by Raleigh T. Daniel, Washington, D. C., Walker C. Cain, Lakewood, Ohio, and Ray Stuermer, Chicago, Ill There were eighty-three entrants and nine were final competitors



A carbon pencil sketch by Miles Sater testifies to the artistry and technical skill of this Chicago designer and delineator who is represented in these pages for the first time. Other examples of his work, drawings and lithographs, will appear in later issues

THE DESIGN OF THE CINEMA

THE PLAN, THE STAGE, AND SOME STATISTICS 3.

DON GRAF B Y

Editor's Note: This is the third of a series of articles on the design of motion-picture theaters to appear in PENCIL POINTS, the first two having been published in the May and June issues.

For some months the Society of Motion Picture Engineers has been conducting a survey covering about 600 theaters throughout the country. The purpose was to determine the existing conditions under which motion-pictures are presented and the scope of the survey makes it representative of the entire industry. This is the first really adequate survey of theater conditions. Its value lies upon the entirely safe assumption that the characteristics of the 50% group centering about the average, represent tolerable practice at present. Many millions of persons enjoy and pay for the performances that result from those conditions. The report of the survey thus provides great help to the architect and at the same time points the way to further research to determine improvements that can be made to arrive at more nearly ideal moving-picture theater design conditions.

Although the survey includes only about 4% of the total number of theaters in operation in the United States, care was taken that these 600 theaters would represent a fair cross section of all the theaters in the country. Theaters in every State and theaters of capacities varying from 200 to 4,000 seats are included in the survey. Averages computed from the survey at the point when 400 theaters were covered showed the same index values as when the number of theaters surveyed reached 600, indicating that the facts obtained are fairly representative of conditions generally.

The information obtained from the survey reveals the fact that basic theater forms, relative screen sizes and viewing conditions vary to a wide extent. There appears to have been considerable neglect, disregard or ignorance of motion-picture viewing principles in the design of theaters. The fulfillment of sat-

isfactory viewing conditions in theaters has been primarily a matter of chance. Only 16% of all the theaters surveyed proved to have satisfactory conditions for proper motionpicture presentation. A healthy trend was shown, however, in that considering only the theaters erected since 1930, the number having satisfactory conditions increased to 27%.

A number of circumstances has mitigated against-the design and construction of satisfactory theaters. The responsibility for the absence of recommended practices to cover some points of design and the obstacles placed in the path of any one attempting to discover other facts which are established, can be laid at the door of the very agents who are most vociferous in deploring the low state of theater design. If you don't believe it, just try to find out some definite and concrete bit of factual information from any source which could be reasonably expected to supply it.

Then, too, the restrictions of building laws have led to the erection of motion-picture theaters most unfortunate in design. As was pointed out in the first article of this series, practically the only "improvement" made in building codes which cover theaters has been to increase the required legal fees for maintaining and operating an establishment for motion-picture entertainment!

Laws governing theater construction often require that aisles, passage-ways and exit doors be so located as to cause a loss of valuable seating area. These laws have been made with absolutely no regard for their effect upon the proper functioning of the theater from the standpoint of motion-picture presentation.

Satisfactory viewing of a motion-picture depends upon the following factors which are under the control—or at least the influence-

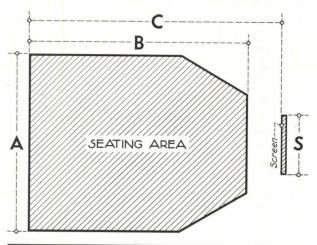
of the architect:

- 1. Screen size in relation to viewing distance.
- 2. Distortion of picture in viewing.
- 3. Distortion of picture in projection.
- 4. Non-obstruction of view.

1. Screen Size. Reference to Figure 1 shows that in the 50% of the theaters centering about the average, the distance to the most remote row of seats varied from 4.65 to 5.85 times the screen image width, with the average maximum viewing distance 5.2 times the screen image width. Screen image sizes in the theaters covered by the survey indicate a tendency toward sizes too small for the given viewing distances.

At this point the technical side of film image projection must be considered whether we like it or not. There are optical limits to the size of an image which can be projected from a film only about 11/2" wide, without creating unpleasant graininess. The theater survey indicated an average screen image width of 18'-6"—which it is unsafe to say represents a desirable magnification for it may be that this dimension proceeds from the theater size which is most nearly an average economic feasibility. Nevertheless, this 18'-6" dimension is the mean and as such has been proved optically tolerable by weight of actual use. Such a screen would make it possible to arrange about 800 seats in a single level or if a balcony were employed, the capacity would be increased to about 1,200 seats.

With a 25'-0" wide screen image a capacity



RATIO	MINIMUM	AVERAGE	MAXIMUM 2.35	
B/A	1.52	1.98		
A/S	2.50	3.00	3.50	
C/S	4.65	5.20	5,85	

FIGURE 1. The results of the SMPE survey are shown above diagrammatically and represent the limits of the 50% group of theaters falling about the total group average. A disparity will be noted if the A or S values are calculated from the two ratios in which they both appear. In a statistical compilation of this type such a disparity is natural. The shape of the seating area shown is for diagrammatic purposes only—it does not necessarily represent the forms encountered in the survey

of 1,100 seats could be arranged in a single level or about 1,700 seats with a balcony.

We may conclude, therefore, that a theater of 1,500 seats or less will make it possible to create viewing conditions which are representative of the average of operating theaters in

this country today.

2. Angle of View. It has been found that a person viewing the screen from an angle is conscious of his point of view, and instinctively makes a correction for some distortion of the image. Everyone has had the common experience that motion-pictures viewed from extreme front and side seats appear badly distorted. One inquiry into the subject of side seat distortion indicated that the average viewing angle for the most remote side seat was 34° at the screen center—an angle which makes the viewing angle of the opposite edge of the screen from the spectator considerably over the distortion limit. Obviously, the greater the screen width, the more unsatisfactory the extreme edge viewing angle will be.

Most people do not find a viewing angle of less than 30° to any part of the screen objectionable. An angle of 40° seems to be passable but the illusion of reality is destroyed if one is forced to see any part of the picture image

at an angle greater than 40°.

The extant material on theater design usually gives the maximum viewing angle, as 35° from the nearer screen image edge, as shown in Figure 2, which is based upon no logical system of reasoning. The dotted lines in Figure 2 show the proper method of arriving at the limits for side seats in which distortion is not unsatisfactory.

3. Projection Distortion. The question of projection angle has been frequently discussed before the Society of Motion Picture Engineers. A most thorough treatment of the problem was presented by the Projection Committee in 1929. Quoting from this report: "The Committee feels that in recommending 5% as the maximum increase in picture height (due to angular projection) it is erring on the side of laxity rather than that of rigidity." A projection angle of about 17° results in an increase in height of 5%.

Clifton Tuttle of the Kodak Research Laboratories has written: "From some points of view it seems indeed that the 5% increase in ratio of height to width is a lax enough tolerance. Consider for a moment the effect on the human figure. While the pictures of some of our Hollywood actors and actresses might undergo with æsthetic advantage a 5% increase in vertical to horizontal ratio, it hardly seems probable that the result would be highly satis-

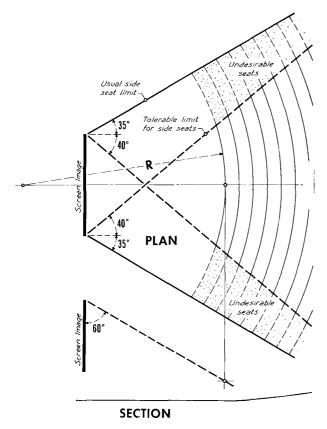


FIGURE 2. Side seats in which the observer sees any part of the screen-image at an angle greater than 40° have been found in a limited test to destroy the illusion of reality. The usual side seat limit employed in motion-picture design has been a 35° line from the edge of the screen, as shown. The hatched area showing undesirable seats should be kept to the absolute minimum

factory in the majority of cases. The 17° projection angle should, in its effect, be roughly equivalent to the once highly advertised 18-day grapefruit diet. Greta Garbo, Ruby Keeler, Joan Crawford and others in the lightweight class apparently lose 5 or 6 pounds by the treatment.

"There is a strong tendency on the part of the general public to accept what it sees on the motion-picture screen as the last word in fashion and beauty. Angles may, therefore, be largely responsible for the vogue for slender figures. It may thus be a grave responsibility upon the motion-picture engineer in the interest of public health to prevent the motionpicture screen from setting up an ideal of dangerous emaciation."

The survey of the SMPE indicates that the average projection angle for the 50% group was 10°30′ above the horizontal. Larger theaters are again handicapped in the projection of pictures since the projection angle is usually of necessity increased as the theater capacity becomes larger.

4. Non-obstructed Viewing. In the sec-

ond article of this series we treated the influencing factors on the proper sight-line clearance. It is interesting to know that the survey reveals an average of 5'-4" distance from the bottom of the screen-image to the floor at the first row of seats—verifying the recommendations in the foregoing article.

Notes on the Plan

There is another point which has been skilfully side-stepped by all writers on the subject of theater design. This point has to do with the radius of the seats in plan. Theater chairs are constructed so that a row of them may be "bent" to follow the curve of the rows. In hospital operating amphitheaters, a relatively small audience must be grouped as close to the center of interest as possible and for this reason theater seats can be arranged on a circular line which has a radius as small as 12'-0". In the commercial theater, however, no such condition will be encountered—the smallest usual radius being about 30'-0".

The seats in both the balcony and on the main floor follow a series of concentric circular segments so that the observers may sit approximately facing the action taking place on the stage or screen. The position of the center which is used in arriving at this series of concentric circular segments is the point which is to date missing from all theater literature insofar as this deponent has been able to determine. A purely empirical rule which has been followed by the author in the planning of a number of theaters has been to take the center 40'-0" back of first row chair-size line, and, of course, on the axis of the theater auditorium. This rule has no basis in logic or fact and it seems that when an accurate law is established for the position of the seat circle center, it will proceed from a careful working out on the basis of perspective laws. Here is an opportunity for some PENCIL POINTS reader to indulge in some original research.

The planning of the lobbies, foyers and entrance vestibules is more a matter of creating a suitable audience atmosphere and adequate facilities for controlling and holding waiting crowds than it is a specialized technical problem. In the small neighborhood "playhouse" the entrance features are reduced to a minimum. In the more pretentious theaters, it is good showmanship to create a feeling of awe and luxury as a patron proceeds to the auditorium—what the late Roxy called the "spell of the theater."

The Stage

Nobody but an architect could satisfactorily

explain this seeming paradox: As a professional man, the architect does not understand why an intelligent owner will entrust the design of a building to an engineer or a contractor or maybe a jerry-builder. As a specialist in such matters, he rails at such short-sighted. ness—and in the next breath may attempt the planning and detailing of a theater stage. If any part of the theater building presents a more specialized problem than the forest of ropes, beams, counterweights, electric wiring and stage machinery, it is hard to imagin what it might be. The architect will save himself from an appreciable amount of work and worry by calling in a stage equipment man: facturer at an early point in the proceedings.

The old empirical rule for proportion of the proscenium arch was something like this: The width of the proscenium should be half the width of the auditorium, the proscenium height should be four-fifths the proscenium width. Other tables have been published, giving the desirable proscenium width for different types of theaters. These figures usually vary from a 30'-0" wide proscenium for small intimate theaters, up to 60'-0" or 70'-0" for grand opera. Too often these rules were taken as being inflexible.

There is always a tendency to allot more width to the proscenium opening than the stage can well stand, with the result that the stage is short of wing space. Insufficient wing space makes it inconvenient and many times impossible to handle scenery and carry on the necessary back-stage activities.

As a matter of fact, the proscenium can be of any width or height—so long as the arch properly and artistically frames the stage entertainment and allows a minimum of 15'-0" for wing space. The following minimums may be established for proscenium widths:

Opera or musical comedy	45'-0"
Legitimate plays	40'-0"
Vaudeville	
Small art theaters	30'-0"

The movie theater proscenium would, of course, have to be only wide enough so that the edge of the arch would not cut off the sight-lines from the side seats-except that there is always a possibility that some form of living actor entertainment may be presented. The foregoing table will enable the designer to gage his proscenium dimensions, taking into consideration the seating capacity of the house, and the type of living actor entertainment that might be most likely attempted in any given theater.

On the rigging or prompt side (which is

usually at the right hand side of the proscenium as the actor faces the audience) the amount of space allotted is extremely critical. It is here that the switchboard should be paneled into the proscenium wall so that it will leave sufficient space for the asbestos curtain hoist and smoke pocket—both of which must be fastened to the proscenium wall close to the arch. More than the minimum 15'-0" is desirable if it can be obtained.

The adopted height of the proscenium opening must allow the projection of the motion-picture image on the screen. The asbestos curtain should be located not less than 5'-0" nor more than 8'-0" in front of the motion-picture screen. The true height of the proscenium arch may not be the same as the architectural height since permanent valanc or draperies are usually hung inside the arch

The floor of most stages projects forward through the proscenium opening to permit extreme front stage appearances and to house the footlights. This area is known as the apron and is often used for dancing. Therefore, the floor should be of maple or other hard wood with the flooring laid in an up and downstage direction. For the floor back of the apron to the rear wall hard pine is preferable, and should be laid cross stage. The floor in the wings should be of soft wood since it is often necessary to use stage screws or floor pegs which can be put into the wood easily.

The stage of many European theaters for legitimate productions is as large or larger than the actual auditorium in which the audience is seated. This maximum is far beyond the needs of the American commercial theaters and the old rule that the stage depth from curtain line to back wall should equal the proscenium width is entirely too generous for our ordinary purposes.

The minimum stage depth can be established as 8'-0", the motion-picture screen being located 5'-0" back of the curtain line and allowing 3'-0" for sound equipment. Such a

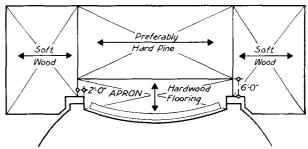


FIGURE 3. The material used and the direction of the flooring for the stage is very important. It is made to conform with the three types of activities which take place on the stage areas, as shown in the drawing above

minimum would only be used in a very small and economically constructed theater. A more reasonable minimum would be to allow 8'-0" for the distance from the curtain line to the motion-picture screen with 5'-0" from the screen to the back wall of the stage for the sound apparatus. In de luxe cinema palaces we rarely find a stage depth of greater than 25'-0" and a stage 30'-0" deep is remarkably large. Many theaters are equipped with paint frames that hang close to the wall, in which case it is necessary that the rear wall be free from columns or projections that will interfere with the raising or lowering of the frame. The hanging of the paint frame does not exclude the placing of doors in the lower part of the rear wall, inasmuch as the frame, when not in use, will fly above the doors.

The back or stage side of the proscenium wall should be square-faced and free from all projections to permit proper installation of the asbestos curtain rigging and smoke pockets. The rigging or prompt side wall should, if possible, be free of doors or windows to permit the installation of counter-weight

rigging.

The height of the stage is a matter of real importance and one that cannot be given too much consideration. The height of the gridiron above the stage door depends upon the treatment of the proscenium arch, as shown in Figures 4A, B, and C. The simplest case is shown in Figure 4A, where the soffit of the proscenium construction is also the top of the clear opening. In this case the bottom of the grid needs to be twice the proscenium height plus 3'-6", as shown in the drawing.

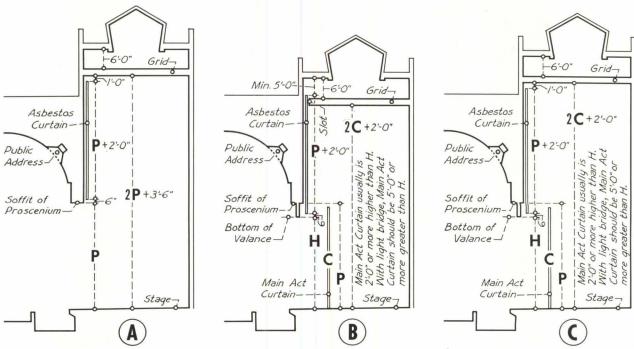
Many architects, however, prefer to build the arch high—especially on a wide stage, to give it a more graceful effect. A wide valance is then hung in the archway to cut the proscenium opening down to a suitable height. This arrangement is the most common one and produces a pleasing effect. If the valance is a fabric or other non-structural material, the asbestos curtain must lap the actual proscenium soffit 2'-0" in the down position. The valance can be built of structural and fire-proof material. Then the soffit of such a valance is, for purposes of determining the asbestos curtain installation, the bottom of the proscenium.

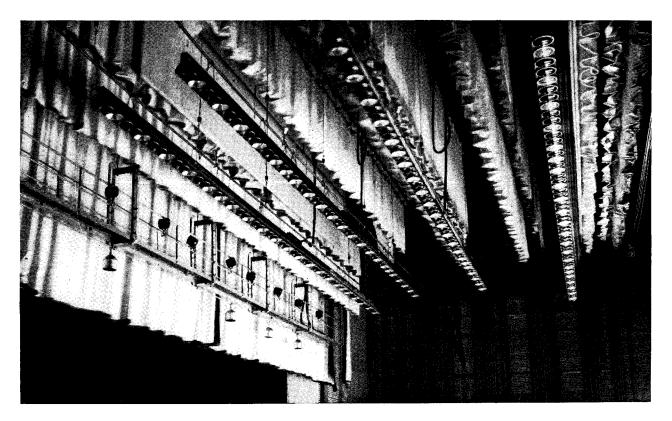
A saving can be effected, as shown in Figure 4B, by slotting the gridiron to allow passage of the asbestos curtain. Usually 3'-0" or 4'-0" in the height of the building can be saved and by this method the weight of the asbestos curtain is carried by the proscenium wall instead of the gridiron. With deep stages this is particularly important.

In Figure 4C is shown the gridiron without slotting for the asbestos curtain, necessitating added height of the stage construction.

Notice particularly in the diagrams that the public address speakers are placed in front of the proscenium arch. Oftentimes they are put backstage so that performers using the

FIGURE 4. This diagram shows three positions for the stage grid and how they are determined. The drawing B below will be found most economical since the slot allows the weight of the heavy asbestos curtain to be supported by brackets in the proscenium wall. It also saves several feet in the height of the construction





The illustration shows the bewildering arrangement of drops and border lights in a large stage installation. The rigging of this stage required 56,000 feet of cable, 70,000 pounds of counterweights and more than 5,000 feet of pipe. Notice the light bridge at the left, which is not required in the smaller theater

microphone on the stage apron will be in front of the loud speaker. This creates a feedback of energy which completely destroys the intelligibility of the voice and creates an unpleasant effect. By following the suggestion in the diagram this difficulty is obviated.

In the days before modern counter-weight rigging reached its present state of perfection, all theaters were equipped with manually operated rope sets, usually consisting of three or four single lines that tied off on a pin rail. Huge coils of rope would lay on the floor when the curtains were raised. To get this rope out of the way and off the stage, fly galleries came into use. They were a sort of balcony several feet above the stage on the prompt side. Here the "fly man" toiled and tugged with the ropes and heavy scenery in the dust and heat. Now the counter-weight rigging has rendered the fly gallery obsolete except in very large theaters where they are occasionally installed for the purpose of tying off secondary lines not intended to be used during a given performance.

The stage requires its dependencies in the

form of dressing rooms, toilets, carpenter shop, paint room and storage facilities. In the motion-picture theater the extent of these additional provisions will depend entirely upon the character of entertainment offered and the future possibilities of living actor presentation.

The stage must be planned in relation to some adjoining street or right of way to facilitate the handling of stage scenery and baggage. A loading door 8'-0" wide by 12'-0" high must be provided, preferably on the stage wall opposite the prompt side. Legally required exits must also be provided.

Grateful acknowledgment is bereby made to the American Society of Motion Picture Engineers for permission to quote and use the material from the "Journal" of June 1938; the material on Distortion in Projection and Viewing has been taken from a paper published in the SMPE "Journal" of September 1933, by Clifton Tuttle of the Kodak Research Laboratories, entitled "Distortion in the Projection and Viewing of Motion Pictures"; the material on the stage has been made possible through the cooperation of Mr. C. E. Tompkins, president of J. R. Clancy, Inc., Syracuse, New York

PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch.



THE DISREGARD OF THE OBVIOUS

TEACHER: And now, kiddies, what does this picture represent?

CLASS: It is a gent in a drugstore restaurant. TEACHER: How do you know he is a gent?

CLASS: His shoes are shined.

TEACHER: An infallible test. Are there any comedy possibilities in this situation?

or depends upon the position of the serven-image itself may be assumed position of the serven-image must to instrume of the first row of secretaring. The height of the serven-image tow of secretaring without from the last row of secretaring without from the serven-image tow of secretaring without from the last row of secretaring without from the last row of secretaring to the position of the serven-image must 3-8° alove the floor, and this will determine its row of secretaring to the secretaring the main floor. So to determining the main floor.

The slope of the first row the sight-line of

THEATER CHAIRS FOR MAIN FLOOR PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF Construction of the state of t

Theater chars are arranged with legs to fit all floor slopes in 34 intervals from 0" to 234" per foot for conventional inclines, and from 0" to minus 232" for reversed inclines. The legs are shortened or lengthened so that the theoretical eye-level will come 3'-8" above the level of the heel, as shown in the drawing above.

In calculating the floor slope, the eye is assumed as 3'-8" above the floor on a vertical line thru the eye, involving an apparent discrepancy. However, no important error results since it is only the equivalent of moving the entire floor as designed a distance of 1'-6" nearer the screen. Lines in plan and section to indicate seat rows should represent "chair-size" lines rather than the backs of the scats as is customary, because on this line nominal chair width coincides with actual width.

Many building laws specify 2'-6" from back to back of scats as the minimum allowed. For extremely-low-admission-price theaters equipped with veneer-wood-back seats, this distance probably represents an economic feasibility. However, for the average theater employing padded-back seats and enjoying an average to high-class clientele, the back-to-back spacing of 2'-8" is little enuf, 2'-10" would represent a better normal condition, and 3'-0" might be regarded as an attainable ideal.

The width of seats on the "chair-size line" will vary from 18" to 24" in 1" intervals. 11/2" is allowed for each end standard. 18" and 19" wide seats are uncomfortable and their use should be limited. Since row lengths vary in any given seating layout, the variation in seat widths allows adjustment to fit,

авеші паалос

CLASS: Yes. If the guy doesn't quit leaning on the table, he will get his cup of coffee right square in the puss.

TEACHER: How many times have I told you not to refer to a man's mush as his "puss"? Why will the liquid chicory be deposited on the chap's person? CLASS: Because there is no table leg on his side of the

TEACHER: And what is the I.O. of a table designer who puts 3 legs on a 4-sided table?

CLASS: Minus 5.

TEACHER: Who is the customer at the table?

CLASS: West Wind.

TEACHER: Cut out the Mah Jong. What happens if East Wind leans on the opposite edge?

CLASS: He could go to sleep on his edge of the table without danger.

TEACHER: What about North and South Wind?

CLASS: They will spend their entire time at table trying to get the chair leg to go around the table leg.

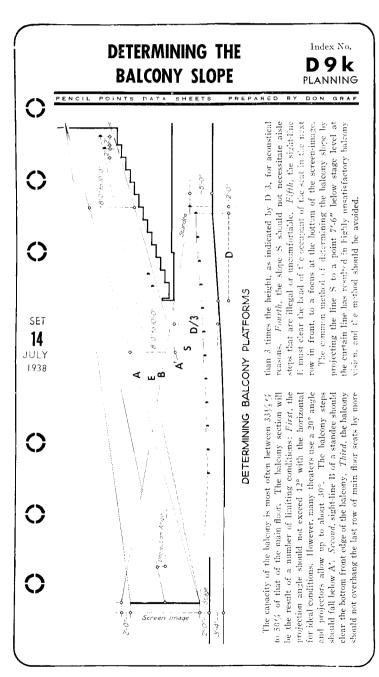
Then they will give up trying to get their anatomy close enuf to the table edge so they can eat without dribbling in their laps.

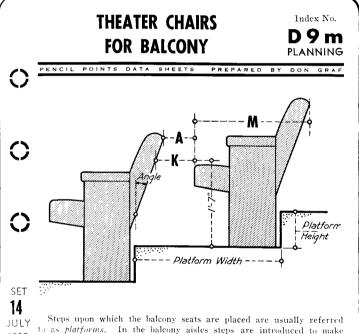
TEACHER: Is there anything else sour about the table design?

CLASS: Yes, Teacher—the little 3" apron which runs around under the edge was conceived by a charter member of the Just-Try-To-Cross-Your-Legs-While-You-Are-Eating Society, Emily Post Chap-

TEACHER: An excellent lesson. Will the entire class please all go to the head of the class.

REMINDER. If you haven't sent for your Rotary Lift, Porta-Bilt or Elkay Data Sheets better do it now. Elkay Sink and Cabinet Tops, Porta-Bilt Unit Kitchen Cabinets and Rotary Lift Elevators are all products you will want to have information about in Data Sheet form so that you can find it quickly when you want it.





ta as platforms. In the balcony aisles steps are introduced to make circulation possible. Building laws usually limit the height of a single step to 7½" or 8". With 2 such risers for each balcony seat platform, the maximum slope of the balcony would be between 15" and 16" in height for each 32" to 36" horizontally.

Older theaters for legitimate productions often have 3 steps for each scat platform, making a rise of 21" to 24" per platform. Such a pitch results in discomfort.

The knee room for balcony seats is measured on a line 1'-7" above the platform. Whereas raising the platform height does not affect the aisle width "A" for any given platform width, it does reduce the knee room "K". Thus it becomes important to have definite chair dimensions in mind before deciding on the platform width. The platform width is established so that "A" will be not less than 61/2" nor "K" less than 81/2".

The usual chair-back slope for the platform seats is 514" in the height of the seat-back, making an angle of 14°-8′. This requires that platforms from 2" to 11" high should be not less than 31" wide; platforms $11^+\S''$ to 16" high should have 33" as a minimum platform width. The overall dimension "M" and the slope of the seat-back should be known before the balcony platforms are decided upon.

The first row in the balcony should have from 2" to 6" wider platform, so that toe room is provided and also so that people passing between the balcony rail and the seat occupants will not feel any danger of tripping and falling. If there is no rear cross-over, the platform width for the last row of seats against the rear wall will have to be from 61/4" to $9\frac{\pi}{2}$ greater to accommodate the pitch of the back seat.

THE EVOLUTIONARY FORMULA: FUTURE TENSE

BY ROBERT L. ANDERSON

Whatever else may be said against it, the greatest difficulty with art as the expression of society is that practically no one is willing to accept it as valid for the present. Perhaps such statement will appear paradoxical in the extreme. For, parrot-like, contemporary people have repeated the formula interminably.

The mere fact that people repeat a formula, however, does not necessarily mean that they believe what they are repeating. Often they may believe the exact opposite. Scratch any of the contemporary pronouncements that art is the expression of society and you will find, I think, that what actually is being said is that "art is the *impression* of society."

You will not find it stated in so many words, to be sure. For we memorized the Hegel-de Staël æsthetic formula, using the word "expression." To substitute *impression* for *expression* would be to insult our education as well as our intelligence.

Nevertheless, generally speaking we no longer believe art to be an expression of society. On the contrary, many of us believe it should be an "impression." Yet, like a needle stuck in the groove of a phonograph disk, we repeat, repeat, repeat the word "expression" long after we stopped believing it.

We stopped believing it for the simple reason that such formula is too static, too conservative—even too reactionary. Limiting art to an expression of society anchors it to the contemporary status quo. We believe, at least some of us believe, that the present status quo is irrelevant. That is, it is irrelevant in face of that state of society which, it is hoped, will be established in the near future. It is toward this future condition of society that most of our present activities are directed.

These things being so, the æsthetic formula of expression becomes a gigantic mill-stone about our collective neck. Encumbered with its weight, we sink with the contemporary status quo; sink, instead of floating downstream to that more beneficent society which lies around the bend, a decade or two in the future. Or, if your sympathies are truly left-

wing and you prefer the Marxian phraseology, you can say concerning art as expression of society what Marx said of religion: "the opiate of the people." For as the expression of society, art, like religion, tends to perpetuate the existing state of affairs.

Active realization of these facts leads, on the one hand, to outright pessimism on the part of those who continue to insist that art is the expression of society. Such pessimism, as has already been pointed out, culminates in the pronouncement that in our day there can be no great art.

The majority of human beings, however, are constitutionally incapable of supporting a doctrine of undiluted pessimism. Like kittens, we manifest an aversion to being drowned.

Is the formula of art as expression of society a millstone submerging us with the contemporary status quo? Then by all means let us make an inner tube of it and float off downstream to express the status quo of the future. "Art no longer shall be the expression of contemporary society," we argue subconsciously, "it shall be the expression of a future society. We shall build not the world of today, but the World of Tomorrow."

Thus, having inflated our inherited formula with the wind of prophecy, we can keep on repeating that "art is the expression of society" and, at the same time, escape drowning. For while we are still expressing society, we are not expressing contemporary society; which would be the death of us. On the contrary, we are expressing the society of Tomorrow; which will save us all. The inventiveness of the human mind, like human folly, is inexhaustible.

What we have done, of course, is to conjugate the Hegelian evolutionary doctrine in the future tense. Karl Marx did the same thing some sixty years ago when he stood Hegelian evolution on its head and produced politico-economic revolution.

Like the Marxians, we too are revolutionaries. For by conjugating the Hegelian æsthetic formula in the future tense we get: "art is

the expression of future society."

The usual way of stating this formula is to say that "art is propaganda." Architects are a most conservative crowd, however. We may venture the opinion that "form is a process by which men overcome the chaos of the experienced world." We shrink, however, from the words "propaganda" and "revolution"; although such words and such ideas have been current in the other arts for almost two decades. The only specific reference I have seen to "revolution" in an architectural magazine was in R. L. Duffus's "The Architect in a Modern World," *Architectural Record*, Sept. '36: being a literary man, however, perhaps Mr. Duffus should not count.

This leaves our record clear. According to Hegel the artist was, like Hegel himself, a philosopher-historian. We have been conjugating the Hegelian formula in the future tense (see The Messianic Present, PENCIL POINTS, Oct. '37, p. 650). Outside the world of architecture such conjugation turned the philosopher-historians into propagandists and revolutionaries. Architects are less militant. Our conjugation has made us merely prophets.

Now it would be possible at this time to argue that, in turning prophet, architects are slitting their professional throats. It would be possible to point out that in determining to build the World of Tomorrow, we forfeit our claim to the building being done today. It would be possible to argue that, since architects obtain their bread only as they receive contemporary commissions, they would do well to leave prophecy to the prophets, and the architecture of the future to their successors.

As I say, it would be quite possible to argue in such manner. Yet it is doubtful whether such argument would persuade us to cease conjugating Hegel in the future tense; it is doubtful whether we would cease thinking of ourselves as prophets and begin to think of ourselves simply as builders—as did all the architects of the past. For we are dealing with contemporary ideologies. Ideologies, being quasi-religious in character, are usually impervious to argument.

However, for those unwilling to bolt contemporary ideologies without the proverbial salt, it may be pointed out that for architects of today to set themselves up as prophets of the future was perhaps inevitable.

It has been pointed out (The Evolutionary Catapult, PENCIL POINTS, Feb. '38, p. 108) that art became the "expression of society" in consequence of the great 19th century doctrine of evolving society. According to this evolutionary doctrine, existence was conceived as the most recent stage of that process of life and thought which had evolved through the ages from primordial silence.

It must be remembered, however, that the 19th century doctrine of evolution, though of tremendous significance for the future, was, in its beginnings, primarily retrospective. It did not speculate concerning the future; it investigated the past. Darwin's epochal work was *Origin of Species*, not the Future of Species. By the same token, 19th century architectural history is starred with archæological research, and with Greek, Roman, Romanesque, and Gothic "revivals."

I realize, of course, that present fashion dismisses archæology and the "revivals" as pure "romanticism." To my mind at least, contemporary people are in error. They generalize too facilely from literary classifications. Confronted with the historical passion and perspective of the 19th century, they can think only of the romances of Walter Scott. They should broaden their point of view.

It was inevitable, however, that sooner or later men would employ the doctrine of evolving society in the prospective sense. It was inevitable that sometime they would cease investigating the past and turn to speculation concerning the future. Having learned whence they came, they were bound eventually to speculate whither they were going.

Thus the scientific investigations of the 19th century were followed by the prophetic literature of the early 20th century. Our grandfathers roamed backward through the past with the scientists and the historians. We have raced into the future with the novels of H. G. Wells. Retrospective evolution has been succeeded by prospective evolution. Hegel has been conjugated in the future tense, and the architects have become prophets.

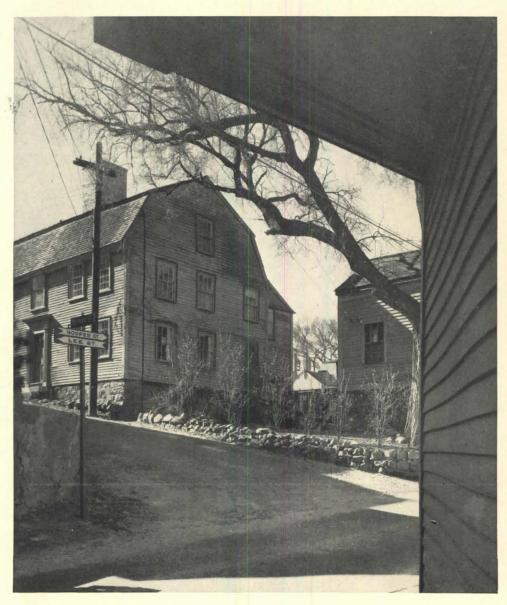
But will the world accept us as true prophets? I doubt it.

THE MONOGRAPH SERIES Records of Early American Architecture

Edited by Russell F. Whitehead, A. I. A.

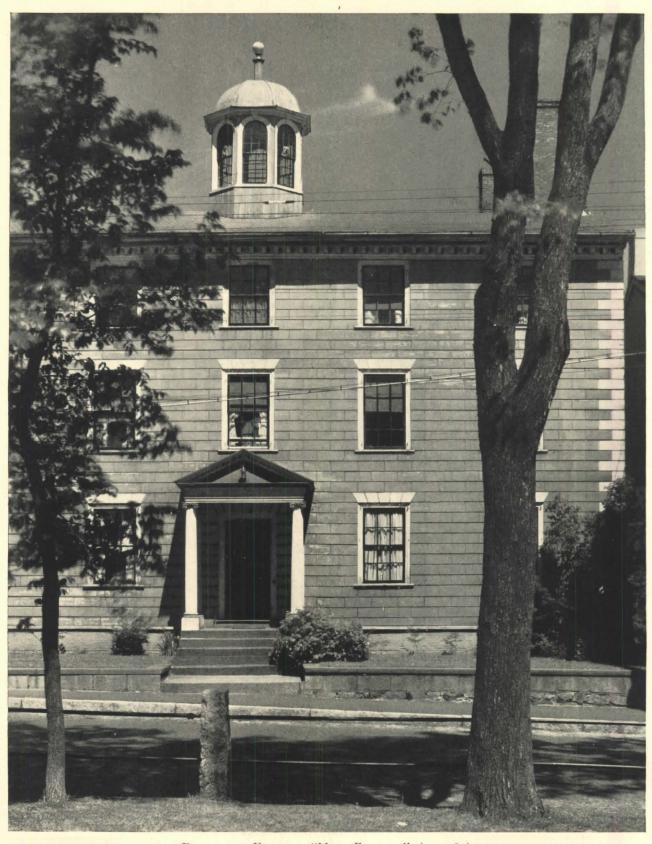
Measured Drawings by Frank Chouteau Brown, A. I. A., Associate Editor Photographs by Arthur C. Haskell, Architectural Photographer

Volume XXIV · Number 3



TUCKER, HOOPER AND LEE STREETS MEET IN FRONT OF "LAFAYETTE HOUSE," AT RIGHT, MARBLEHEAD, MASS.

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DETAIL OF FACADE—"New Portion" (c. 1780) COL. WILLIAM R. LEE HOUSE—1745—MARBLEHEAD, MASSACHUSETTS [130]



Old Marblehead, Massachusetts

Part II

by FRANK CHOUTEAU BROWN, A. I. A.



by the "Little Harbor" at Marblehead (the larger anchorage lies open to gales from the North-East) was appreciated from the beginning by the fisherfolk from the English

Channel Islands who were its first settlers; yet, despite their occasional increase by newcomers, probably from Lincolnshire, the growth of this portion of the Salem settlement seems to have been very slow. A nineteen year old graduate of Harvard college-Mr. John Cotton, a grandson of Cotton Mathercoming to teach at Marblehead about 1698, wrote in a letter of six years later, "When I came to this place —the whole township was not much bigger than a large farm, and very rocky, and so they are forc't to get their living out of the sea, not having room to confound the fisherman with the husbandman, and so spoil both as they do in some places. It has a very good Harbour which they improve to the best advantage for Fishing both Summer and Winter - - -And finally it is one of the best country places to keep school in, providing a man be firmly fix't in principles of virtue and religion, which I heartily wish were more abundant among them in the life and power of it."

There are various stories as to the derivation of the name of Marblehead. A quotation from a letter of the Rev. Francis Higgenson, written in 1629, is often given as its basis. He wrote, "here is plentie of marblestone in such store that we have great rocks of it and a harbour nearby; our plantation is from thence called 'Marble Harbour' "—a name that shortly after appeared changed to Marblehead, possibly because of the number of adjoining headlands locally termed 'Heads'—such as 'Goodwin's Head,' 'Naugus Head.'

After the death of the first Minister, Parson William Walton, in 1668, Mr. Samuel Cheever, an Harvard graduate was appointed, at 80 pounds the year (much of which he had to accept in merchandise—probably largely of fish!—on account of shortage of currency). This is known because of an existing town

record, "resolved that 70% of Mr. Cheever's salary should be paid in cash. Those refusing to pay in coin to have 25% added to their tax which is to be paid in good merchandise, the value thereof fixed by two impartial persons."

He was succeeded by Parson John Barnard in 1716, who continued till his death in 1770. He refused the presidency of Harvard in 1737, which was then accepted by Edward Holyoke of the Second Congregational Church—also of Marblehead. Meanwhile, St. Michael's (the oldest church building in New England) was built in 1714, cruciform in plan, and with frame and materials sent from England. It still retains its ancient reredos, with credo and decalogue, black with age,—although the original plan has been rather obscured by an addition added across one end. The Rev. David Mossom, its second rector, afterward removed to Virginia, where he married George Washington and Martha Custis.

Beside St. Michael's, the oldest church building now existing in Marblehead is the structure known as "The Old North," on Washington Street, not far from the Old Town House, in the Square, and just beyond the Capt. Trevett House. This is the third edifice of the First Congregational Church, and dates from 1824. It has a granite facade, with an interesting tower or belfry, with a part of the sounding board from the second church pulpit, and an old fish weathervane now on the tower, which was also taken from the second building, built in 1695. Of the original structure of the "First Church," or Meeting House, there have been preserved several portions of the panelled fronts and doors of the old Oaken Pews, taken from this original building of 1648—which have never been painted, with the exception of the oval back of the pew number. While the mouldings and styles differ somewhat, yet they all exhibit a fine precision of workmanship,—and are perhaps the oldest bits of ecclesiastical architectural detail remaining in New England. The original pulpit of the third edifice, of rosewood, is in use in the present building.

It happens that we have another word picture of

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Marblehead; that given by Mr. Barnard, also when he arrived in the town, in November of 1715. He wrote, "There were two companies of poor, smoke dried, rude, ill clothed men without military discipline. There was not one proper carpenter, mason, tailor, nor butcher in the town nor any market worth naming. They had their houses built by country workmen, their clothes made out of town and supplied themselves with beef and pork from Boston, which

this time still exhibit,—though it is to be remembered that it was during his ministry that the men were encouraged to take their own ships farther afield; and so secure to themselves the profits from their work, and bring back the much needed cash in exchange. It was from these ventures, finally, that the first merchant fortunes of the town were derived.

One of the most famous residents among the many who came from Marblehead, was the Col. John



COL. WILLIAM R. LEE HOUSE—1745—WASHINGTON STREET, MARBLEHEAD

drained the town of its money. Nor was there a foreign trading vessel belonging to the town. The people left the merchants of Boston, Salem, and Europe to carry away the gains by which means the town was always dismally poor and as rude, swearing, drunken and fighting a crew as they were poor."

It seems the more remarkable that from such rude surroundings should arise such fine dwellings—and especially so many early dwellings of three story height—as the early houses that have come down to Glover, of the Fourteenth Continentals, of Revolutionary fame, who headed the "Amphibious Regiment" of Marbleheaders whose knowledge of the sea, and its tricks, made possibly two of the most famous exploits of Washington's army; and may have been instrumental in winning the war of Independence. These were, of course, the secret ferrying across the river from Long Island of the entire American army of 9000 men, with horses, cannon and supplies, in one foggy night, of thirteen hours; and the equally impossible

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THE STAIR HALL
COL. WILLIAM R. LEE HOUSE—1745—MARBLEHEAD, MASSACHUSETTS

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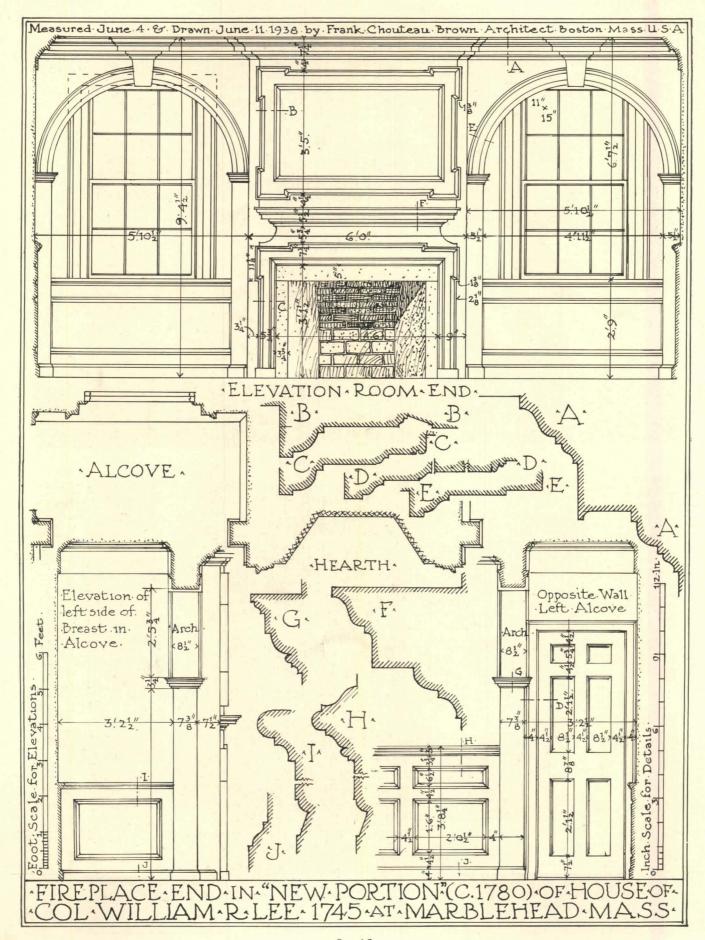


OLD STAIRCASE, REAR OF SECOND FLOOR

THE COL. WILLIAM R. LEE HOUSE—1745—WASHINGTON STREET, MARBLEHEAD, MASSACHUSETTS



FIREPLACE END IN "New Portion" (ABOUT 1780) MEASURED DRAWINGS ON PAGE 136.
THE COL. WILLIAM R. LEE HOUSE—1745—WASHINGTON STREET, MARBLEHEAD, MASSACHUSETTS



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THE DRAWING ROOM



SOUTH EAST ROOM—SECOND FLOOR COL. WILLIAM R. LEE HOUSE—1745—MARBLEHEAD, MASSACHUSETTS [137]

feat of crossing the Delaware in a winter storm on Christmas Day and surprising the Hessians, secure in their winter quarters at Trenton, outside Philadelphia.

John Glover was born in Salem, November 5, 1732. With his three brothers, he came to Marblehead; worked as shoemaker, fisherman, merchant, and served in the militia, becoming a captain in 1773. He ended the War as a Brigadier-General, and served on the Court-Martial that tried Maj. Andre. The front

and Agnes Surriage, who in later years married Sir Harry Frankland, whom she met when he—as Collector of the Port of Boston—was often in Marblehead while superintending the construction of Fort Sewall, at the entrance to the Harbor, in 1742.

Of the several old Lee family houses in Marblehead, the "Lee Mansion," was built in 1768 by Jeremiah Lee, who died in 1775; and while the one perhaps best known to visitors from being the home of the Marble-



WALL PAPER IN THE DRAWING ROOM
COL. WILLIAM R. LEE HOUSE—1745—MARBLEHEAD, MASSACHUSETTS

of his house may be seen at the right of the illustration at the bottom of Page 118, (Monograph Series, Vol. XXIV, No. 2).

Other famous Marbleheaders would include Commodore Samuel Tucker, Col. Azor Orne, Capt. John Selman, Gov. Elbridge Gerry, Maj. John Pedrick, Judge Joseph Story, Chief-Justice Sewell, and Peter Jayne. Two more, who belong almost to the legendary group, would be Skipper Ireson of Whittier's poem

head Historical Society, and well filled with its treasures,—yet the home of Colonel William R. Lee, which was earlier known as "The House on the Hill" for thirty years or so before the Mansion was built, is one of the most notable of the older landmarks of the town. Placed looking south over the old Training Field, it was originally a narrow two-room-to-the-floor, three-story dwelling, with its end to the street; and was certainly built as early as 1745,—and even

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may have been the house that was mentioned as being upon this site still twenty years earlier.

The house was built by Col. Lee's grandfather, Samuel Lee, and originally faced south-west,—while parts of the old stairway and Hall, with the old front door, are still to be seen in their proper locations in the old building. But shortly after Jeremiah—who was the Uncle of Col. Wm. R. Lee—built his Mansion House further down the street, Col. Lee—who had

ous newel and unusual baluster spacing that appears in the photographs. The new room at the south-east corner was given a new chimney and end treatment, with deep arched recesses, and the larger room across the hall was furnished, a few years later, with the gorgeous and unique oriental scenery paper known as "The Pilgrimage of Omar" showing a view of the Bosphorous and old Stamboul, which still retains all its striking colorfulness. It was probably made about



WALL PAPER IN THE DRAWING ROOM
COL. WILLIAM R. LEE HOUSE—1745—MARBLEHEAD, MASSACHUSETTS

formed the local artillery company—took off the easternmost room of the old House and built the "new front" facing south-east upon the street, and the old "Training Field"; raising the story heights, and taking the older carved balusters of the lower flight of the old stairway to use them over again in the new stairway and Hall of the front part of the building. The "new stairway" was built about 1790, shortly after the front portion was occupied; and has the curi-

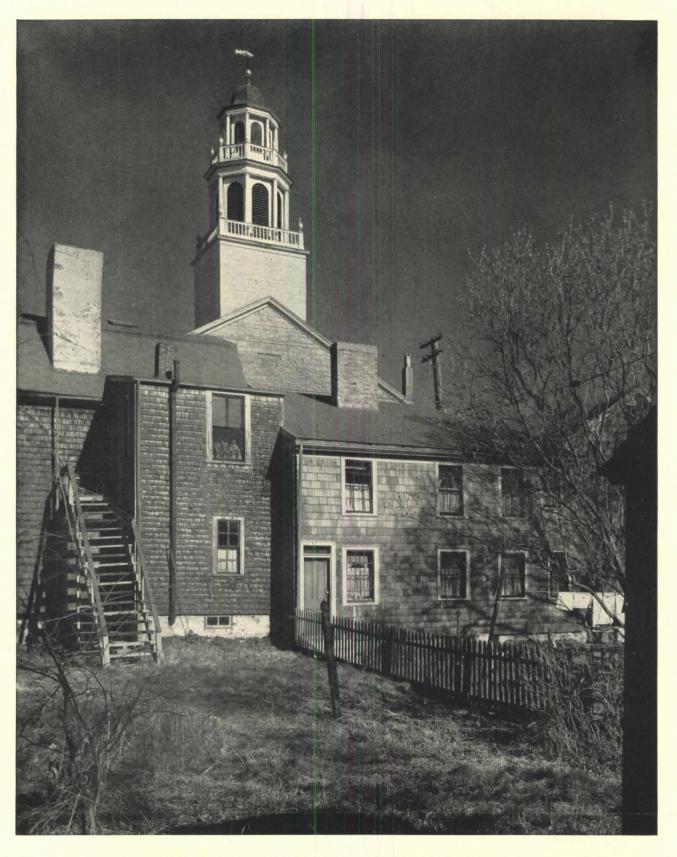
1800—perhaps by Defour—and is not duplicated elsewhere in New England.

The Lee family originally came from Manchester, Massachusetts; and it was Justice Samuel L. Lee (1667-1754) who was also known as a builder and owner of numerous pieces of property,—as well as for being the father of thirteen children—who built the house now best known as the Colonel William Raymond Lee Dwelling. When the latter altered it, and

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THE OLDEST EPISCOPAL CHURCH IN NEW ENGLAND ST. MICHAEL'S CHURCH—1714—MARBLEHEAD, MASSACHUSETTS [140]



OLD NORTH CHURCH—1824—MARBLEHEAD, MASSACHUSETTS [141]

added the new three story front sometime about 1780 to 1790, he greatly increased the story heights, making the new first floor 9' 5" high where the old one was only 7' 6", and so occasioning many interesting—and unexpected!—differences of level in going from one portion of the house to another, as well as requiring several short flights of stairs;—the last of which leads up to the level of the Banquet Room, which ran the entire width of the new front upon the upper story, between fireplaces of the same design placed at both ends.

The "Lee Mansion" below the Hill, and nearly across "Bank Square" from the "King" Hooper House, is one of the most-visited dwellings in New England. Its wide and spacious hallway (the first run of the staircase is over six feet wide, with mahogany balusters and trim-see Monograph Series, Vol. XIX, No. 5) with its old paper, which gray and white design is continued into the two front rooms upon the second floor, is justly famous. The Banquet Room here is upon the first floor, and the opposite room or parlour has a fine mantelpiece with pilasters, very much like one that was in the now vanished "Lindens" at Danvers. Even the Kitchen has a magnificent paneled end, over a fireplace that is six feet long and four and a half feet high. This Kitchen, by the way, opened at the rear, into an old passage that led to the Slaves Quarters and Cookhouse,—a lower brick two-story building, still existing, at the right of the

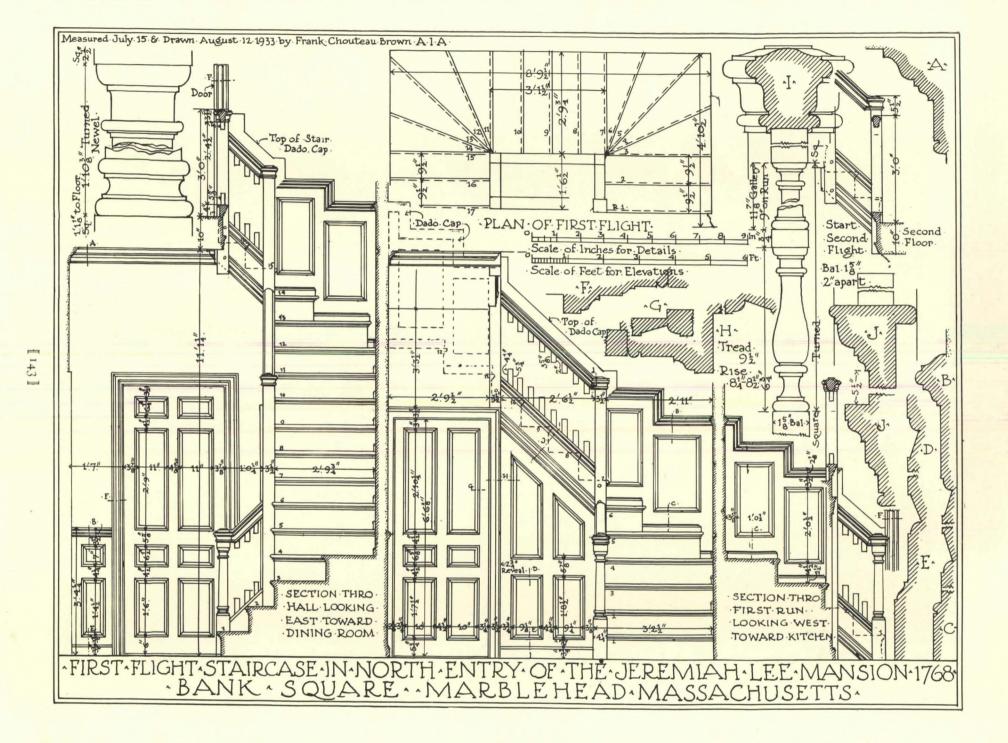
main house, then providing shelter for the coach on the lower floor, and for the sleeping quarters of the slaves above it.

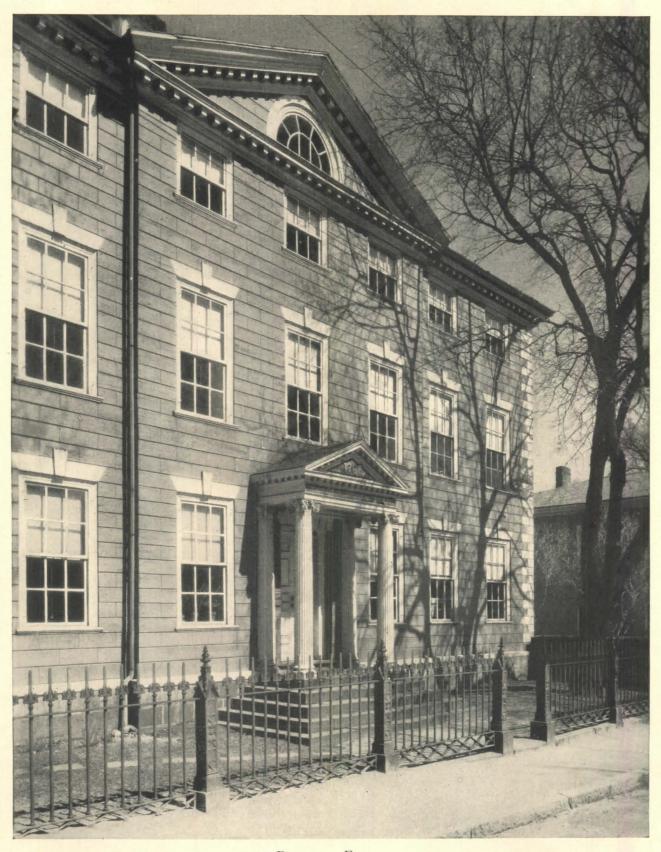
Not the least detail of interest in this fine old dwelling is the Side Stairway, that runs from the fine entrance on the Northeast end, up to the third story, while the same baluster and post design continues from the middle of that floor up into the roof Cupola. This stairway has an unusual, yet simple and practical, treatment of the wall dado, that has particular architectural interest. It should be noted that the main staircase does not continue above the second floor hall; the upper floor being reached only by this Side stairway, or by means of a so-called "secret" stairway, off a closet beside the chimney between the bedrooms at the opposite end of the building.

These two principal front bedrooms are beautiful and spacious interiors, though the mantel pieces are much simpler than on the floor below, having only the large panels extending to the ceiling to mark their importance, compared to the pilasters framing the Parlour fire-opening in the room at the right; and the fine and high relief carving, after the English manner, that ornaments the Banquet Room fireplace. In design and treatment the latter much resembles the carved oak mantel in the "Bishop's Palace" in Cambridge, Massachusetts,—although the work is here executed in pine, which is now grained, although originally believed to have been painted white.



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DETAIL OF FACADE

THE JEREMIAH LEE MANSION—1768—BANK SQUARE, MARBLEHEAD, MASSACHUSETTS

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ELDORADO SCOOPS

SOILLESS GROWTH OF PLANTS

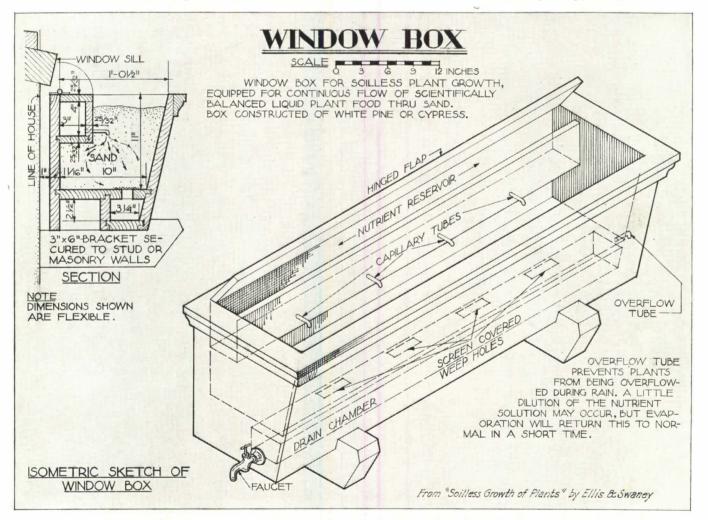
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JULY, 1938

PUBLICATIONS ON MATERIALS AND EQUIPMENT

of Interest to Architects, Draftsmen and Specification Writers

Publications mentioned here will be sent free unless otherwise noted, upon request, to readers of Pencil Points by the firm issuing them. When writing for these items please mention Pencil Points.

HOW TO PLAN AND CONSTRUCT MODERN STORE FRONTS.-Valuable reference book for architects on the subject of modern store fronts, presents much technical information on planning, construction and the use of modern materials-extruded metal and glass. The manual is divided into three parts: Part I, devoted to the principles of store front design, contains valuable data on show window sizes, entrance vestibule locations and dimensions, illumination of signs and facades and methods of creating luminous store fronts; Part II gives complete infor-mation about Extrudalite, the complete system of extruded metal members which form show windows, doors, marquees and signs and which is designed to support L. O. F. glass products, whether used for building facings from sidewalk to coping or as interior finishes. A pocket on the inside back cover contains detail sheets useful for tracing in the drafting room; Part III provides full information about L. O. F. glass products which may be used in any part of a store, including plate glass, clear and colored mirrors, Aklo heat absorbing plate glass, Vitrolux color fused tempered plate glass, Vitrolite structural glass and Blue Ridge decorative glasses. Careful indexing of each page and section, accurate scale drawings and details and explicit recommendations regarding both the uses and limitations of each L. O. F. product are features incorporated to save the architects' time and to simplify his work. Spiral bound. 64 pp. 8½ x 11. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo, Ohio.

LUPTON RESIDENCE CASEMENTS AND CASE-MENT DOORS.—A.I.A. File No. 16-e-1. New catalog covering a complete line of residence casements and casement doors, also winter, basement and utility doors. Specifications, detail drawings, sizes and designs, 24 pp. 8½ x 11. Michael Flynn Mfg. Co., Allegheny Ave. at Tulip St., Philadelphia, Pa.

BRIGGS BEAUTYWARE PLUMBING FIXTURES.— New brochure describing and illustrating a complete line of bathtubs, lavatories, closets and combinations, medicine cabinets, sinks, laundry trays, kitchen cabinet units and fittings. Roughing-in dimensions, color chart, etc. 52 pp. 9½ x 11. Briggs Mfg. Co., Plumbing Ware Div., Detroit, Mich.

WILSON SECTIONFOLD OVERHEAD DOORS.—Folder presenting detailed description of the construction and operation of a line of overhead doors for private and public garages, fire and police stations, factories, warehouses, filling stations, commercial buildings, etc. Specifications. 8½ x 11. The J. G. Wilson Corp., 1841 Broadway, New York, N. Y.

SEDGWICK LECTROMELT RESIDENCE ELEVA-TOR.—Folder giving descriptive data, plan and specifications covering a new type of automatic residence elevator which is within the reach of the home owner of moderate means. 4 pp. 8½ x 11. Sedgwick Machine Works, Inc., 164 W. 15th St., New York, N. Y.

BARBER GENASCO SHINGLES, SIDINGS AND ROOFINGS.—An attractive catalog for architects, engineers and contractors, just issued, describing the complete line of Barber asphalt shingles, roofings, sidings, floorings, waterproofing materials and protective products. A feature of the catalog is a description of the Weatherometer, a mechanical device used by the Barber Asphalt Corp., and recognized as one of the most reliable methods of reproducing conditions that parallel those extreme weather conditions to which a roof is exposed. The catalog consists of two sections, the first section containing 36 pages gives complete information about the Barber line of asphalt shingles, roofings and sidings while the second section, consisting of 20 pages, gives detailed informa-tion concerning weights, colors, packages in which roofings and sidings are shipped as well as complete information on the vast number of other asphaltic products. 56 pp. 81/2 x 11. Barber Asphalt Corp., Philadelphia, Pa.

WATROUS FLUSH VALVES. — A.I.A. File No. 29-H-21. Catalog No. 448 just issued, describes and illustrates 36 different flush valve combinations for the different styles of Watrous flush valves. Eighteen type variations of flush valves are likewise shown. New features of the catalog include a complete line of modern seat action combinations and also the latest foot pedal equipment for exposed or concealed installation. Another new feature is the complete description of the Imperial vacuum breaker, adaptable to all types and makes of bowls and flush valves. Included are roughing-in dimensions and complete date on flush valve connections, syphon-preventing shut-offs, closet seat bumpers, repair parts, Watrous prison brass combinations and Watrous liquid soap dispensers. 24 pp. 8½ x 11. The Imperial Brass Mfg. Co. 1200 W. Harrison St., Chicago, Ill.

ANNOUNCING LEHIGH MORTAR CEMENT.—Folder announcing and describing the advantages of an all-purpose mortar cement. 4 pp. 8 ½ x 11. Lehigh Portland Cement Co., Allentown, Pa.

TERMITE PROTECTION WITH COPPER SHIELDS.—A.I.A. File No. 19-a-34. A new handbook of useful information for the architect on the application of sheet copper for termite protection. Enclosed in pocket of book is set of blueprint sketches showing the basic design of copper termite shields and also their application to various construction details. 12 pp. 8½ x 11. Copper & Brass Research Assn., 420 Lexington Ave., New York, N. Y.

JAMISON COLD STORAGE DOORS.—Bulletin No. 110 describing and illustrating a line of can and crate passing doors, ice cream can passing vestibules and vertical sliding doors. The Jamison Cold Storage Door Co., Hagerstown, Md.

STANDARD SPECIFICATIONS NO. 4, 5 AND 6 FOR JOSAM DRAINS AND SPECIALTIES.—Series of thirteen standard specification brochures covering plumbing drainage systems for every type of building. No. 4 features a system for educational and scientific buildings; No. 5 for hospitals and remedial buildings; No. 6 for commercial and mercantile buildings. 8 ½ x 11. Josam Mfg. Co., Empire Bldg., Cleveland, O.

(Continued on page 29, Advertising Section)



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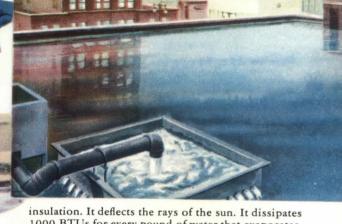
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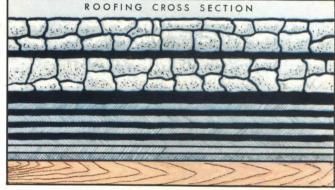


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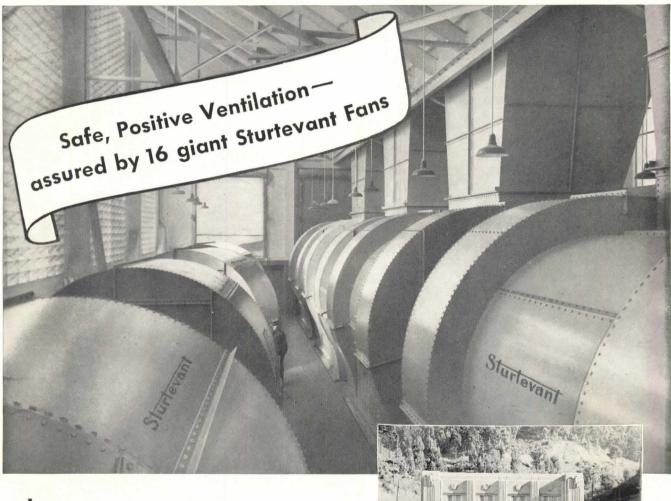
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PUBLICATIONS ON MATERIALS AND EQUIPMENT

(Continued from page 26, Advertising Section)

- HOFFMAN HOT WATER CONTROLLED HEAT.

 —Bulletin announcing and describing the operation of the new Hoffman hot water controlled heat system. Installation diagrams. 8 pp. Hoffman Specialty Co., Waterbury, Conn.
- VON DUPRIN SELF RELEASING FIRE AND PANIC EXIT LATCHES.—A.I.A. File No. 27-c-5. Catalog 35V addenda to catalog 28V describes and illustrates a complete line of self releasing fire and panic exit latches including new drop forged devices. Indexed. 32 pp. 8½ x 11. Vonnegut Hardware Co., Indianapolis, Ind.
- WEBER COSTELLO BLACKBOARDS.—Catalog No. 17A, just issued, presents specifications, details, typical plans and technical data covering a complete line of blackboards. Indexed. 40 pp. 8½ x 11. Weber Costello Co., Chicago Heights, Ill.
- THE ULTIMATE IN LIGHTING.—A.I.A. File No. 31-F-23. Catalog No. 34, superseding all previous issues, describes and illustrates a large and varied assortment of commercial and industrial lighting equipment. Included is data on light planning together with prices, dimensions, etc. 34 pp. 8½ x 11. The Edwin F. Guth Co., 2615 Washington Blvd., St. Louis, Mo.
- NEW WATERFALL DOOR CASINGS IN CURVED PLYWOOD.—A.I.A. File No. 19-e-13, 19-e-5. Folder with detail drawings and descriptive information covering a new line of door casings made in curved plywood. 4 pp. 8½ x 11. Jamestown Veneer and Plywood Corp., Jamestown, N. Y.
- IRON FIREMAN DE LUXE HEATMAKER.—Folder announcing and describing the outstanding advantages of a new line of automatic coal burners. 8 pp. Iron Fireman Mfg. Co., 3152 W. 106th St., Cleveland, O.
- MILCOR STEEL PRODUCTS AND PERSONNEL.—Attractive spiral-bound brochure presenting the products and the personnel of Milcor, manufacturers of sheet metal building products and fireproof building materials. 9 x 12. 24 pp. Milcor Steel Co., Milwaukee, Wis.
- CRANE STOKER-FIRED BOILERS.—New descriptive folder covering a line of stoker-fired boilers. General dimensions and data for stoker application, with explanatory diagrams, are included. 4 pp. 8 ½ x 11. Crane Co., 836 S. Michigan Ave., Chicago, Ill.
- NORTHWESTERN TERRA COTTA.—A.I.A. File No. 9. Number 6 of a series of architectural data folders illustrates the entrance feature and walls and panels of the Terra Cotta Room, Building Material Exhibit, Chicago, designed, manufactured and erected by the Northwestern Terra Cotta Corp. Other illustrations show portrait panels of the late Will Rogers made for the Will Rogers High School, Tulsa, Okla. 4 pp. 8½ x 11. Northwestern Terra Cotta Corp., 1750 Wrightwood Ave., Chicago, Ill.
- RECESSED LIGHTING EQUIPMENT.—Useful reference manual for architects and lighting engineers covering a line of recessed lighting equipment for schools, churches, public buildings, theatres, restaurants, stores, shops, etc. General specifications, installation suggestions, etc. 20 pp. 8½ x 11. Curtis Lighting, Inc., 1123 W. Jackson Blvd., Chicago, Ill.

- WESTERN PINE CAMERA VIEWS.—The 1938 edition, a thirty-page, plastic-bound portfolio, is a pictorial presentation of home building ideas based on actual installations of Idaho white pine, Ponderosa pine and sugar pine, which comprise the soft-textured Western pines. This edition contains an entirely new set of illustrations. It shows attractive, low-cost homes as well as more pretentious structures together with new treatments for sidewalls, enameled woodwork, formal paneled rooms, cabinets, cheery, modern kitchens, built-in bunks and knotty pine playrooms. A copy will be sent free to any interested organization if the request is written on the firm's letterhead and sent to the Western Pine Assn., Yeon Bldg., Portland, Ore.
- A NEW FINISHING SYSTEM FOR ARCHITECTURAL IRON AND STEEL PRODUCTS.—A.I.A. File No. 25-c-31. New brochure dealing with the subject of Parker process treatments, describes Bonderizing, a new development in the finishing of architectural iron and steel units, as well as zinc coated surfaces. 16 pp. 8½ x 11. Parker Rust-Proof Co., Detroit, Mich.
- TRANE CLIMATE CHANGERS.—Bulletin S303 presents detailed description of the operation of a line of air conditioners suitable for a large variety of applications, including homes of all sizes, apartments, hospitals, hotels, office buildings, etc. 16 pp. 8½ x 11. The Trane Co., La Crosse, Wis.
- TUPELO AND BLACK GUM FROM SOUTHERN HARDWOOD FORESTS.—A.I.A. File No. 19-a-2. Bulletin No. 4 of Southern Hardwood information series discusses the nature, characteristics, availability, distribution and uses of tupelo and black gum. 8 pp. 8½ x 11. Southern Hardwood Producers, Inc., 805 Sterick Bldg., Memphis, Tenn.
 - Published by the same organization, "Southern Oak for Paneling and Interior Trim." A.I.A. File No. 19-2-a. Bulletin No. 5 of Southern Hardwood information series illustrates a number of well-designed interiors for which Southern oak was used for the paneling and interior trim. 8 pp. 8½ x 11.
- ANCHOR FENCE SPECIFICATION MANUAL.—
 A.I.A. File No. 14-k. Specification manual No. 100
 prepared especially for architects and engineers gives
 specifications and details covering a complete line of
 chain link fences and iron fences. 48 pp. 8½ x 11.
 Anchor Post Fence Co., Eastern Ave. and Kane St.,
 Baltimore, Md.
- A NEW MONEY SAVING IDEA FOR HOME BUILDERS.—Bulletin describing the advantages and wall construction of Vapor-seal lath and Vapor-seal sheathing. 8 pp. 8½ x 11. The Celotex Corp., 919 N. Michigan Ave., Chicago, Ill.
- VICTOR IN-BUILT VENTILATORS.—A.I.A. File No. 30-d-1. Bulletin with descriptive and specification data covering a line of in-built home ventilators. Installation details. 8 pp. 8½ x 11. Victor Electric Products, Inc., 712 Reading Road, Cincinnati, O.
- CARRIER HEAT DIFFUSERS.—Useful new reference manual presenting the latest engineering details in connection with unit heating with heat diffusers. Four models of the Carrier heat diffuser are shown. Detailed construction is shown through diagrams and dimension tables. Steam basic ratings are also given for all units. Several pages are devoted to pipe size, application, connections and erections, and operating instructions. 32 pp. 8½ x 11. Carrier Corporation, Syracuse, N. Y.

(Continued on page 30, Advertising Section)

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PUBLICATIONS ON MATERIALS AND EQUIPMENT

(Continued from page 29, Advertising Section)

RICHARDSON SCOTLO BOILER.—Descriptive bulletin covering a type of steel heating boiler which combines the principal features of the Scotch marine and locomotive type boilers. Dimension and rating data. 4 pp. 8 ½ x 11. Richardson & Boynton Co., 244 Madison Ave., New York, N. Y.

SUPERFEX OIL BURNING WARM AIR CONDITIONERS.—New brochure describing the construction and operation of a type of oil burning air conditioning heating plant especially adaptable for small homes. Specifications. 12 pp. 8½ x 11. Perfection Stove Co., Cleveland, O.

KOMPAK AIR FILTERS.—Bulletin K-120 describes and illustrates Model C of a line of air filters of the dry fabric type with renewable medium. Engineering data, specifications. 8 pp. 8½ x 11. Independent Air Filter Co., 228 N. La Salle St., Chicago, Ill.

RADIANT PRECISION LAMPS.—New catalog listing and illustrating a complete line of precision lamps for floodlight, spotlight, projection, airway and general lighting service. 12 pp. 8½ x 11. Radiant Lamp Corporation, 25-15 Lexington St., Newark, N. J.

MANUFACTURERS' DATA WANTED

STORK & LYLES, Architects, 409 Masonic Temple Building, Columbia, S. C. (Data for residential, commercial and school buildings, and for A.I.A. file.) JOHN H. HOWE, Architect, 25 Cross Street, West Orange, N. J.

PIER L. CHERICI, Architect, 2060 Ocean Parkway, Brooklyn, N. Y. (Data for complete A.I.A. file.)

JAMES I. PARK, Architect, Sai Dai Mon 2nd Mai 1-58, Seoul, Korea. (Data with plans and elevations on modern homes, hospitals, stores, etc.)

JOHN J. TRICH, Architect, 14 Chestnut Street, Rutherford, N. J. (Data for A.I.A. file.)

CHAS. I. THIELE, Architect, 558 Northampton Street, Buffalo, N. Y. (Data for A.I.A. file.)

FRIDTJOF TOBIESSEN, Architect, 262 So. 17th Street, Philadelphia, Pa.

L. R. S. BARNES, Architect, 322 Brooklyn St., Sharon,

GRAY & BENNETT, Architects, 2017 West Gray, Houston, Texas.

EARL D. McGINTY, Supervising Construction Engineer, Juneau, Alaska.

DEPARTMENT OF BUILDINGS AND GROUNDS, Oberlin College, Oberlin, Ohio.

FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION, Architectural Department, 96 Orange Street, New Haven, Conn. (Data for complete A.I.A. file on residences.)

SESTO TONINI, Draftsman, 224 Powers Street, Brooklyn, N. Y. (Data on homes, residential work and small buildings, for A.I.A. file.)

ALBERT LA TORRE, Student, 153 Union St., Lawrence, Mass.

JORDAN R. KILBRICK, Student, 577 Warren St., Roxbury, Mass.

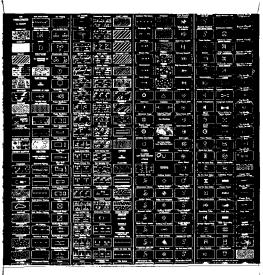
NORMAN A. BUFE, Student, 2296 Loring Place North, New York, N. Y. (Data for A.I.A. file.)

EUGENE N. BROOKS, Student, 5010 Cary St. Rd., Richmond, Va. (Data for A.I.A. file.)



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Each design submitted in the Contest will participate in three distinct judgments with three distinct sets of prizes; three 1st Prizes, \$200 each; three 2nd Prizes, \$100 each; three 3rd Prizes, \$50 each; three sets of six Honorable Mention Prizes, \$25 each.

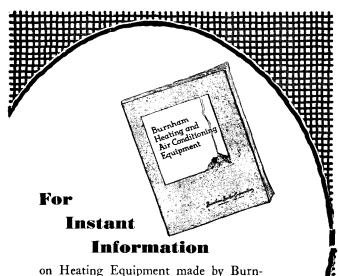
The Contest closes September 1, 1938. Announcement of the Prize Winners will be issued at the annual convention of the Memorial Craftsmen of America at the Stevens Hotel, Chicago, Illinois, on the afternoon of December 1, 1938.

A Book of Rules and Information for the Contest will be mailed upon request. It contains general information concerning memorials together with helpful illustrations.



The Barre Granite Association, Inc., sponsors of the Contest, is an organization of leading quarriers and manufacturers in the world famed Barre granite district, Barre, Vermont. Memorials produced by members of this organization are nationally advertised as "Select-Barre" Memorials.

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- YOUNG English lady, 29 years of age, six and a half years' experience as secretary to well-known architect in London, now permanent resident in U. S. A., Elsa Kad, care Goe D. Byson, 417 Park Ave., New York City.
- SENIOR architectural draftsman, designer and delineator, Christian, many years' experience. Box No. 702.
- STRUCTURAL engineer and draftsman, thoroughly experienced industrial and public buildings, all types, checker and designer on steel and concrete. Box No. 703.
- ARCHITECTURAL draftsmen seven years' experience with architects and builders designing and supervising the highest class of residential work in Westchester County and New York City. Box No. 704.
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- SUPERINTENDENT or general foreman, 31 years' experience all types construction, steel and general. Frank Blair, 3220 Northwestern Ave., Detroit, Mich.
- SECRETARY-stenographer, five years' architectural experience, including specification writing and office management. Box No. 706.
- DRAFTSMAN, 34, married, Columbia trained, 13 years' architecture. Position in south and southwest. Good all round man for small office. All types and phases of work. Box No. 707.
- YOUNG draftsman experienced on residences and apartments. Unusual ability in planning workable layouts. Earnest, ambitious, hard worker. Box No. 708.
- ARCHITECT, registered New York, graduate Cornell University, 6 years' office experience, good designer, renderer, supervisory experience. \$32 weekly. Handle job from sketches to completion. Box No. 709.
- ARCHITECT, Pratt Inst. and M. I. T., 10 years chief draftsman, 8 years building maintenance manager, 18 years charge evening architectural classes. Available immediately, consider any offer. Box No. 710.
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(Continued from page 32, Advertising Section)

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AMBITIOUS young man, student at Chicago Tech., knowledge engineering drawing, building construction, plan reading, estimating, general office work. Box No. 714.

ARCHITECTURAL draftsman, registered architect. Good on design and construction, over 15 years' practical experience. University graduate, trained at Columbia and Harvard. Box No. 715.

LANDSCAPE architect, college graduate, 27 years old. Three years' experience roadside improvement work, one year private work of responsibility. Wilbur Wahl, 423 West Main, Chanute, Kansas.

YOUNG man, graduate of Cass Tech. Junior architectural draftsman, will gladly furnish working drawings and some renderings. Willing to learn and work hard. Robert Rienecke, 3736 Maybury Grand, Detroit, Mich.

JOB for July or August. University instructor with M.S. in architecture and 3 years' experience, desires office work in residential or school design, preferably in central portion of the country. Age 26. Box No. 716.

SECRETARY-stenographer, neat, rapid, responsible. Studying Cooper Union. Desires connection with architectural office. Edward E. Krause, 2114-B Aqueduct Ave., New York, N. Y.

ARCHITECT, registered in Illinois, age 35, desires position or partnership. University graduate architectural engineering, 10 years' experience all types buildings. Box No. 717.

SECRETARY-stenographer, wishes temporary or substitute work during summer. Architectural experience, competent, good education, knowledge of bookkeeping. Box No. 718.

GRADUATE architect, 12 years' sales and engineering experience wishes to contact manufacturer of high grade building specialty desiring representation in large Middle Western City. Box No. 719.

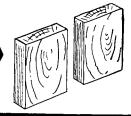
ARCHITECT, New Jersey registration, college graduate, desires connection with manufacturer as sales representative or estimator in building field. Box No. 720.

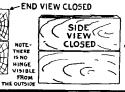
JUNIOR draftsman, three summers' experience, detailing store fronts and fixtures. Prize winner 1937-1938 N. Y. University Architectural Design Contest. Box No. 721.

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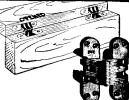






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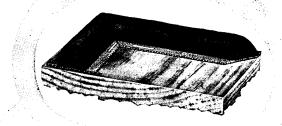
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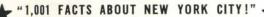


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PENCIL POINTS

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(Continued from page 14) in 'office practice' courses, and point the difference between economic waste and the pop-up: long hours of study on the business side of architecture, the insidiousness of 'overhead,' and the desperate fight to net two per cent; locales and specialties for professional endeavor, with their virtues and demerits; information on devices for getting clients, and how far you can pay for your commission by cutting rates or buying life insurance from a committee chairman, and still come through with a whole skin. The

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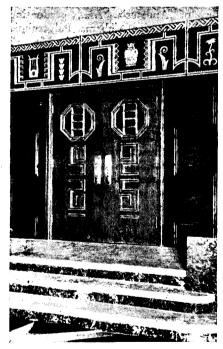
and character acts to fit any occasion;

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a business man, chew tobacco with a politician, keep your little finger crooked while drinking tea with an impressionable woman, be an enthusiastic baby dandler before a mother; all things to all men.

"At graduation there would be two orators, one to spout rarefactions at

orators, one to spout rarefactions at the wahabites, the other to deliver a good fight-talk and slip hot tips to the shock troops. That is the realistic approach, and it's virgin territory."



This frieze decorating a paneled wall in the McCaskey High School at Lancaster, Pa., designed by Henry Y. Shaub, Architect, of that city, illustrates a new use for linoleum as a medium for artistic expression. The 300-foot frieze was sand-blasted on Armstrong's Linoleum, mounted on composition board. The panels are of Linowall, a special product, here in walnut

The recent Technology graduation placed emphasis on the passing of Rogers Building, original core of the old M.I.T. (1865-1916), and since then headquarters for the architects. One last mess of victuals was served there to an architectural group, and many ultimate words rolled through Huntington Hall. This year's prize winners were Merton S. Barrows, F. S. Chapin, Jr., James H. Fisher, B. W. Irvin, Jr., James J. Souder, Richard L. Steiner, Harry M. Weese, and C. H. Wheeler, Jr.

Charles D. Maginnis gave the Commencement Address from which I quote the following excerpts:

"If architecture is still an art and not a by-product of engineering, beauty cannot be a dispensable interest." Relative to the international style, "One can only speculate on the degree to which national individuality will permanently submit to a uniformity which makes no acknowledgment of race or clime or geography. We may wonder also, whether the thin artistic content of this technological system is adequate to the entertainment of two hemispheres" . . . "The architecture which is impending is without eloquence and its meager geometry will presently appear a poor exchange for the arches and vaults of the old masonry."

At the dedication of the Architectural Department's new building there was an address by Harry J. Carlson, who was associated with Welles Bosworth on the work, and is a life member of the Corporation.

Thayer Richards' transformations in the foyer of Tech's Eastman Building are now in receipt of admiring comments. Besides the bronze wall decorations, previously mentioned (which portray man's study of the chemical elements and his discovery of the physical laws), the entire room and its furniture bears the Richards touch; there are "benches, not too comfortable." Earlier remarks about a mural untainted by political propaganda came true, even though one of the men responsible for its artistic success is a very considerable dignitary of the local Communists.

The Architectural Club's Great Hall is now cool and deserted, with summer coming on and all activity over until autumn. There were about fifty present at the Annual Meeting, on June 7th, to re-elect Russell H. Brown as Secretary, and to install Clifford Albright, H. Daland Chandler, and Joe di Stefano in the Board of Directors. Clarence H. Blackall and President John T. Whitmore of the B.S.A. were guest speakers.

Louis W. Ross has adopted the slogan, "Eat more onions." Called in by (Continued on page 36)



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(Continued from page 35)

a New England community to evolve a town hall (actually asked to do it in these times), Mr. Ross had solved all his problems and was quietly awaiting town meeting approval, with a ten-cent seegar going, when the bottom fell out of the onion market. By sheer ill luck the path of totality resulting from this occultation of the onion ran plumb through the hitherto smiling countryside above-mentioned, so that on "town meetin' day" every last farmer came roaring in a'shoutin' "No" to everything.

Robert Jigger has made us painfully aware of our light courts and city noise by picturing the wooded hillside he sees from Jens Frederick Larsen's office, at Hanover.

Already away on his Rotch Prize pilgrimage, Malcolm Robb has selected the inspirational lands of Sweden, Finland, and Denmark, as a starter.

Wendell Holt, who left a Boston practice to go westwards on his climb to fame, is now designing for Sears & Roebuck in Chicago.

Silvio Zanetti has slipped quietly into the connubial state, but not precipitantly. We had catalogued him as a hardened bachelor, albeit with an eye to pulchritude. He is now running

a test on the rule that two can live as cheaply as 1.8 individuals.

Donald C. Goss, who invented this law in 1920, has since expanded it to read, "six can live as cheaply as 5.97."

After a fellow has had to be an ordinary white man all fall and winter he revives the fetish of the lobster or brownish complexion in the April ski fields or the later spring beaches. At L Street the municipal bathing enclosures permit a cosmopolitan display of fig-leafed gentry who are more interested in changing their color than in ablutions. One of Boston's architectural dabblers in repigmentation dashed over there of a recent noontime and adjusted his leaf for a halfhour's basking. But soothing Old Sol lulled him into the sweet sleep of childhood until late afternoon, when he crawled back into the drafting room under tables and behind wastebaskets, and got his pencil going.

Among the four hundred and thirty-odd names of guests invited to the fabulous Clark-Roosevelt fracas of recent date about two per cent were architectural. A cursory survey seemed to indicate that all of the architects invited could achieve the required mode out of their own moth-bags, without recourse to Read & White's.

LEON KEACH



This pencil sketch by Harold T. Holzinger, of Williston Park, Long Island, N. Y., depicts an ancient structure at Ralston, N. J., which the artist was told is the "Oldest Post Office Building in the United States," having been built in 1776. It was first used by John Ralston as a storeroom for grist from an adjoining stone mill, which is in a fair state of preservation, and was not designated a post office until 1890, when the late Peter DeMott was named the postmaster. His widow, Mrs. Millicent E. DeMott, who continues to handle the mails at 90 years of age, furnished the historical data and added that the building also was used as a general store until a few years ago and "was the nightly meeting place where the affairs of the county were expertly settled by the fathers, who sat and smoked and chewed around the pot-bellied stove." Her home was built in 1781

Six Men, N. Y. Woman Receive Langley Awards

Seven Edward Langley scholarships to foster advanced study, travel and research in architecture have been awarded by the A.I.A., for 1938-39, to six men and one woman, representing six of the ten Regional Districts of the Institute.

Elisabeth Coit, Architect, of New York City, received a grant for continuation of research in economical design and construction of single family dwellings and apartment houses, undertaken under a Langley scholarship awarded to her in 1937.

Clement Johnston Ford, Architect, of Atlanta, received a grant for travel in Europe to study housing and J. T. Jacobsen, Architect, of Seattle, received a grant for travel in Northern Europe and Eastern United States to study low cost housing.

Jack Donald Gilchrest, a draftsman of Santa Barbara, Calif., is to study at Harvard, Columbia or University of Pennsylvania while Charles A. Pearson, Jr., a draftsman of Pittsburgh is to study at Harvard.

James D. Murphy, of Pontiac, Ill., graduating student at the University of Illinois, will study under Gropius at Harvard and James L. Murphy, Jr., of Andalusia, Ala., graduating student at the Alabama Polytechnic Institute, is to study toward a Master's Degree at an American college.

The Langley scholarships, established by a \$104,000 fund set up by the late Edward Langley, Scranton, Pa., architect, "to develop better, and not more, architects," are open to architects, draftsmen, graduate students and teachers of architecture in the United States and Canada. No more than ten grants, none exceeding \$1,500, are made annually. There were 66 applicants this year.

K. C. Black Elected By Michigan Society

Kenneth C. Black, Architect, of Lansing, was elected president of the Michigan Society of Architects at the annual convention of that body held at Battle Creek. The office has been filled only once before by a man living outside Detroit.

He graduated from the University of Michigan College of Architecture in 1925 and won the George G. Booth Traveling Fellowship, spending the following year in foreign travel and study, including four months at the American Academy in Rome. He was formerly a designer in the office of James Gamble Rogers, in New York, and is now associated with his father, Lee Black, Architect, in Lansing.

Two Young Draftsmen Win Wheaton Award

Richard M. Bennett and Caleb Horn-bostel, two young architectural draftsmen in New York offices, were the winners of the important Wheaton College art center competition and have received the commission for the \$500,000 building at Norton, Mass.

Specifications for the center were that it might be a single building or group of buildings providing an auditorium seating 500 persons, a smaller theater, a library, exhibition galleries, art and music studios, workshops and classrooms suited to the needs of the New England community and the small college established in 1834 "for advanced education of females." The size of the student body is limited to 500 and particular attention is paid the arts.

The winning design was considered a brilliant solution, on the basis of its plan arranging all the functions in one building. A close second was the design submitted by Walter Gropius and Marcel Breuer, famous architects who are now professors of architecture at Harvard University.

Other awards in the art center competition were announced in the following order: Paul Wiener, John W. Stedman, Jr., and Pierre Bézy, New York; Alexis Dukelski, New York; Percival Goodman, New York, Lyndon & Smith, Detroit, and Eero Saarinen, Bloomfield Hills, Mich.

Those given honorable mention were Robert Green and Gordon Bunshaft, New York; Robert T. Handren, New York; Carter Edmund Hewitt, Peoria; George Howe, Philadelphia; Richard J. Neutra, Los Angeles; G. Holmes Perkins and Frances W. Hartwell, Boston; John B. Rodgers, W. T. Priestley, Jr., and Carl F. Brauer, New York.

Hornbostel, 33, is the son of Henry Hornbostel, the architect for Hell Gate Bridge, New York, who has won more architectural competitions than any other contestant in this country. At his son's present age, he produced the winning plan for the Carnegie Institute of Technology. The son is a draftsman in the office of Norman Bel Geddes and formerly practiced as an architect in this country and in France. He is a graduate of the Carnegie Institute and of l'Ecole des Beaux Arts.

Bennett, 31, is a draftsman in the office of Edward Stone, Architect, and lectures on architecture at Columbia University and at Vassar. He is a graduate of the Harvard School of Architecture and has studied architecture in Europe.

Jurors for the competition, which was conducted by the Museum of Modern Art and the Architectural Forum, were John McAndrew, curator of the Museum of Modern Art, chairman; Dr. Walter Curt Behrendt, Buffalo, N. Y.; John W. Root, Chicago; Edward Stone, New York; Roland Wank, TVA Chief Architect; Stanley R. McCandless, Professor in the Yale Drama School; and Dr. Esther I. Seaver, Wheaton College. George Nelson, of the Architectural Forum, was the professional adviser.

Potomac Patter

It is not improbable that due to the present rush of work, the Federal boys may be asked to hold their summer vacations in abeyance. Such a calamitous request would go hard with some of the "permanents" but the personal plans of most of the recalled "temporaries" would not be disturbed. They've just had their "vacations" too long. Being in that blissful state of remunerative employment again is contentment of the first order.

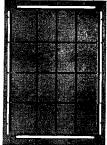
The new arrivals seem over-ambitious but, as your correspondent sees it, the reaction agitated by a change in circumstances contributes to their seemingly ostentatious behaviour and the wondrous power of time will soon allay the worst of their symptoms.

Paul H. Solon, in charge of Decorative Painting for Procurement's Public Buildings, recently put his right foot forward, took a fresh "holt" and wrangled a decision of "not yet" from a toughy named pneumonia. He came through with flying colors-'though a bit washed out. Upon the usual inquiry regarding his health, he responded in this wise, "Thank youh, I jolly well feel swell (he's English) but did you see the new murals in the Archives Building?" "No," sez I. Sez he, "Do you realize that never before has mural painting in America had the opportunity to become the favored child of architecture?"

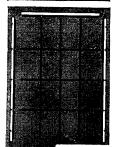
Buildings of all types are playing host to "polychromaddicts." The Federal Warehouse, which used to be just that, is now the Procurement Building, housing Procurement's Branch of Supply and the offices of the Supervising Architect, Public Building Branch. Its entrance lobby has been embellished recently with a set of colorful murals. These murals depict the activities of the entire Procurement Division, both from the Supply and the Public Buildings point of view. In a drafting room scene there is a remarkable likeness of Kenneth G. Abernethy, Procurement's outstanding golfer. Whether or not the muralist actually passed the building looking for subject matter—and found K. G. A. working as depicted—is a matter of conjecture. To remove any doubt as to who painted these murals, Mr. Harold Weston portrays himself actually working on this project.



The 10 to 1 Story behind RUST-RESISTING STEEL SASH



These 10
STEEL BARS
when assembled
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COMPLETE
STEEL SASH



These 9

are essential to the window construction but are subjected to less than 10% of the total damage caused by rust.





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Lectures Are Planned for Chinese Scholar

Arrangements for the distinguished Chinese architect, archaeologist, and author, S. C. Liang (Liang Ssu-Ch'-Eng), to come to this country for several years to lecture in various museums and universities are being completed by a committee composed of William Emerson, Dean of the School of Architecture at M.I.T.; Paul P. Cret, Architect, of Philadelphia; and Clarence S. Stein, Architect, of New York City, with the assistance of Mrs. John King Fairbank, of 41 Winthrop St., Cambridge, Mass., acting as secretary.

The time is considered propitious for this undertaking as Liang has been forced by war conditions to move from Peiping to Yunnan Province in South China the main office of the Society for Research in Chinese Architecture, of which he is the Director of Technical Studies. The Fogg Art Museum of Harvard has offered Liang a lectureship for the second semester next year and the sponsoring committee has arranged other lectures and appearances.

Important new discoveries and studies in the field of Chinese architecture have been made in the last few years by the Society for Research, and the sponsors are interested in getting this material before American audiences. At present, Liang's work and the publications of the Society for Research are available in detail only to those who read Chinese, with the exception of the article on Chinese bridges translated by Liang for the January and March issues of PENCIL POINTS. He speaks English fluently and has had wide teaching experience since his graduation from the University of Pennsylvania.

Until the Japanese occupied Peiping, the Society for Research maintained headquarters in a section of the Imperial Palace, including offices, a library, small museum of models and a drafting-room where drawings were prepared for the six volumes of the Society's Bulletin devoted to the architectural monuments of seven provinces in North and Central China. Liang is prepared to lecture on many phases of the architecture of his land, using 300 slides and 1000 rare photographs. Further details may be obtained from members of the sponsoring committee or Mrs. Fairbank.

The son and a pupil of the distinguished scholar-reformer, Liang Ch'i-Ch'ao, Liang graduated from Tsing Hua University, Peiping, then studied for five years in this country, receiving the degrees of Bachelor and Master of Architecture from the University of Pennsylvania in 1927. While

there he also worked in the office of Cret. Liang later studied with Langdon Warner at the Fogg Museum and traveled in Europe before returning to China in 1928 to establish the first modern school of architecture in that country. The school building shown on page 426, which he designed in collaboration with his wife, also a graduate of the University of Pennsylvania, is an example of Liang's work as a practicing architect.

Deskey Will Teach

The appointment of Donald Deskey, designer of the Radio City Music Hall interiors, and modern furnishings, as head of a Department of Industrial Design at the New York University School of Architecture has been announced by Dean E. Raymond Bossange. He was one of the first designers to collaborate with industry in mass production of sound modern design and sees the "trained artist with the factual approach of the scientist" as the desired product of a course in industrial design.

Artist Interprets Major Construction

In the belief that people are more stirred by an artist's interpretation than by a photograph, William Woollett, of Los Angeles, Calif., has done series of lithographs recording the progress of construction of several major projects in that section of the country. Four of these are reproduced on pages 419-422.

"It is my opinion that the undergraduate, by having the opportunity of viewing and studying the contemporary monuments of building in a form which is both artistic and as authentic as the medium allows, can grasp a much truer sense of his relationship between his regular curriculum studies and the work of the field, than could his predecessors," Woollett writes.

In 1930, he decided to make a graphic record of the development of construction projects and he has since done two series of lithographs for the Federal Government on Boulder Dam and on the San Francisco Bay bridges, as well as a series for the Los Angeles Bureau of Power and Light on the Boulder Dam Transmission Line. He also has done a number of lithographs of other current projects. Woollett's work has been exhibited at the National Gallery, Washington, D. C., the Engineer's Club and the Architectural League, New York City. For the last 18 months two traveling exhibits have been shown in about 40 engineering and architectural schools of the United States and Canada.

Government Offers \$10,000 for Murals

Immediately following the conclusion of the Federal Government's \$10,000 competition for two monumental statues to adorn the facade of the Federal Building at the New York World's Fair of 1939, which was won by Harry Poole Camden, Sculptor, of Parkersburg, W. Va., a second national competition offering \$10,000 for mural designs for the Great Halls of the building has been announced by the Section of Painting and Sculpture, Treasury Department Procurement Division.

The Federal Building will be entered by visitors through the Hall of the Judiciary or the Hall of Legislation, both on monumental scale, and the heroic mural paintings sought will be located in these Halls opposite the entrances. Each mural will be 105 feet high and 37 feet 5 inches wide, lighted by a battery of flood lights whose intensity can be varied to suit the artist.

For each of the winning designs, the Federal Government will pay the artist \$5,000, which is to cover all preliminary costs and the cost of supervision by the artist. The murals, in accordance with the policy adopted for the Fair, will be executed by a group of competent painters under direction of the competition winners.

The competition will be anonymous and is open to all American artists, who may obtain full information from the Section of Painting and Sculpture, Treasury Department Procurement Division, Washington, D. C. Each must signify his intention to compete by writing to Edward Bruce, Chief of that Section. The competition closes September 1.

The recent sculpture competition was won by Mr. Camden, a former instructor at Cornell University, with a model representing Government guarding the family. This won over 424 other entries. He was awarded \$5,000 for this design and commissioned to design another monumental statue or group symbolizing Peace, for which he will receive an additional \$5,000. He also was commissioned to execute designs, in cooperation with the architect of the Federal Building, Howard L. Cheney, Washington, embracing variations of the Great Seal of the United States and four panels in relief symbolizing Agriculture, Husbandry, Manufacturing and Natural Resources.

Special commendation was given by the jury to Louis Slobodkin, Sculptor, New York City, for a statue of the young Lincoln joining two split fence rails, as a symbol of Unity.

Most Beautiful Steel Bridges Are Selected

Jurors designated by the American Institute of Steel Construction to choose the spans which shall be marked this year with the honorary stainless steel plaques of the A. I. S. C. have announced that "the most beautiful bridges of steel" opened to traffic during 1937 are:

Golden Gate Bridge, San Francisco, Calif.; Little Hell Gate, Low Level Bridge, New York City; Chesterfield-Brattleboro Bridge, New Hampshire; and Marine Parkway Bridge, Long Island, N. Y.

The awards were made in four classes: monumental, medium, small size and movable bridges. In the second class, honorable mention was accorded the Northern Boulevard Bridge over Intramural Drive, Flushing Meadow Park. Honorable mention in the fourth class went to the Shark River Bridge, Monmouth County, N. J.

The Jury selecting the prize-winning bridges for the tenth annual A. I. S. C. awards included:

Prof. H. E. Wessman, College of Engineering, New York University; William H. Yates, Consulting Engineer; L. Andrew Reinhard of the architectural firm of Reinhard & Hofmeister; William Lescaze, Architect; and Kenneth Reid, Editor of Pencil Points, all of New York City.

Home, Neighborhood Plans Awarded \$13,700

The award of twenty-seven prizes totaling \$13,700 in two competitions for architects sponsored by the American Gas Association has been announced. The first competition was for design of an "All Gas Home" for the average American family; the second was for a neighborhood plan for families in income brackets from \$2,000 to \$7,000 a year.

In the section of the first competition for design of a home containing 18,000 to 24,000 cubic feet and completely equipped for heating, cooking, refrigeration and water heating by gas, the designers were to specify the particular makes of equipment they preferred. In this class four prizes of \$1,000 each went to:

Alden Becker, Los Angeles; W. C. Houtz, Arthur McVoy, and Leonard Wayman, Cranbrook Academy of Art, Bloomfield Hills, Mich.; John Stenken, Leonia, N. J.; and Clarence W. Jahn and Edwin A. Wagner, Architects, Milwaukee.

In the same section, four prizes of \$300 each went to:

Henry P. Poli and James J. Steven-

son, Pittsburgh; Frank S. Dougherty, Wilmington, Dela.; George D. O'Connor, Architect, Washington, D. C.; and Herbert Struppmann and Herbert Neuman, New York.

In the same class, four prizes of \$200 each went to:

Frederick E. Emmons, Jr., Architect, and Don Emmons, Los Angeles; J. Herschel Fischer, Austin, Tex.; Hays, Simpson and Hunsicker, Archichitects, Cleveland; and Tallie B. Maule, Sand Springs, Okla., and George W. Edwards, Oklahoma City.

In the second class of this competition, for design of a similarly-equipped home of 24,000 to 32,000 cubic feet, four prizes of \$1,000 each went to:

Hays, Simpson and Hunsicker, Architects, Cleveland; Joseph Shilowitz, Architect, Jersey City; Hugh Stubbins and Marc Peter, Jr., Boston; and Clarence W. Jahn and Edwin A. Wagner, Architects, Milwaukee.

In the same class, four prizes of \$300 each went to:

Stephen J. Alling, New York; R. C. Levanas, Los Angeles; John Hironimus, New York; and Marshall H. Walker, Shreveport, La.

In the same class, four prizes of \$200 each went to:

Maxwell Arden Norcross, Architect, Cleveland; Malcolm P. Cameron and Howard A. Topp, Architects, Los Angeles; Yukio Kako, Los Angeles; and Lois Wilson Worley, University of Oklahoma.

In the neighborhood planning competition, the first prize of \$1,000 went

W. Stuart Thompson, Architect, Donel McLaughlin, Architect, and Joseph Whitney, Town Planner, all of New York.

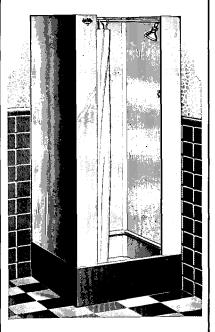
Second prizes of \$500 each were awarded to:

George W. Wickstead, Philadelphia; R. Andrew Bustard, Collingdale, Penna.; and S. Dale Kaufman, Philadelphia.

A third prize of \$200 went to: James M. Berkey, Spokane, Wash.

H. Roy Kelley, Architect, Los Angeles, Calif., was chairman of the jury and other members of the jury included: Dean Joseph V. Hudnut, of the Harvard Graduate School of Design; Eric W. Haldenby, Toronto, Canada; Richard Koch, New Orleans; Alfred P. Shaw, Chicago; and Otto Teegen, New York, all Architects; Walter J. Collett, Scarsdale; Hugh Potter, Houston, Tex.; and Waverly Taylor, Washington, all home developers; Clarence S. Stein, Architect and Town Planner, New York; and Howard Myers, Editor-Publisher of the Architectural Forum, as competition adviser.

An Extra BATHROOM at Low Cost



Ample bathing facilities are a necessity in every home, but too often, even in the largest homes, space is not available for that extra bathroom. Here, then, is the solution to your space problem. The installation of an

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UNIT VENTILATORS FOR LARGE INTERIORS

The new auditorium unit ventilator, announced by B. F. Sturtevant Co., Hyde Park, Boston, Mass., has large capacity and is designed for heating and ventilating auditoriums, gymnasiums, assembly halls and similar large interiors, where the use of smaller unit ventilators

is impractical.

The unit consists of an inlet, filter, fan, heater and discharge outlet. The entire assembly is enclosed in a duco-finished furniture steel casing as shown in the illustration. Fresh or recirculated air is drawn through the unit by means of a motor driven fan located inside the casing. Before entering the room the air passes through a filter and heater and is introduced into the room free from dust, offensive odors and other matter, and heated to the required temperature.



The fan is driven by a V-belt type electric motor. A separate casing, easily removable, encloses and protects the belt drive mechanism and permits easy access to

the sheaves. The heating element is a fin type steam heated radiator with die-formed copper fins forced over elliptical tubes. Heating element is dipped in a tin and lead bath which protects the entire element against corrosion and seals the bond between the fins and the tubes. Filters supplied are either of the dry or oil filter type. Dry filters are made of cloth, glass or paper, and are easily replaceable when dirty. Oil filters are of the allmetal type. They are non-rusting and charged with filter oil which is odorless, fireproof and a powerful

Auditorium unit ventilators can be installed either horizontally or vertically and can be mounted on the wall or ceiling. Grilles or duct connections on either intake or discharge ends can be furnished if desired.

NEW GRADE OF DOUGLAS FIR PLYWOOD SHEATHING

A substantial contribution to the current demand for practical low-cost housing is shown in the development of a new grade of Douglas fir plywood sheathing which is being grade-marked and scored under the name Plyscord. Announcement of the availability of the new product was made recently by W. E. Difford, managing director of the Douglas Fir Plywood Assn., Tacoma, Wash.

The new grade has been standardized by all members of the association to meet the needs of architects, contractors, and builders for a sheathing that is easy to apply, economical to use and which will, at the same

time, add strength and rigidity to homes.

Each panel of Plyscord will be plainly marked and scored with parallel lines across the panel. The lines are spaced 16 in. apart and when the carpenter lays the panel horizontally over the studs, the lines indicate their exact location for nailing. The scoring is also helpful in locating studding when siding is to be laid over the

Plyscord will be available in standard 8 ft. lengths, 32 in. and 48 in. widths and in 5/16 in., 3/8 in. and 5/8

in. thicknesses.

LEHIGH ANNOUNCES ALL-PURPOSE MORTAR CEMENT

In the Spring of 1937 Lehigh mortar cement was put on the market in the Middle Western states. The success met with in the use of this material prompted the manufacturers, the Lehigh Portland Cement Co., to announce that this product is now available for shipment over virtually the entire territory served by the Lehigh

The manufacturers claim the product to be an allpurpose mortar cement of the highest quality, passing both the U. S. Government and A. S. T. M. specifica-

tions for mortar cement.

It is packed in 70-lb. multi-wall paper bags and can be obtained in mixed carloads, with Lehigh cement, or Lehigh early strength cement, or both.

INSULAIRE AIR SPACE INSULATED WINDOWS The Insulaire Co., 2423 McKinstry Ave., Detroit, Mich., has recently introduced a new line of patented double windows equipped with weatherstrips and requiring no

weights or pulleys. It is claimed that Insulaire windows, as the new line is known, insulate against cold,

heat, dirt and noise.

The frames are of standard depth of 51/4 in. from face to face and fit any wall from standard frame construction to the thickest masonry wall.

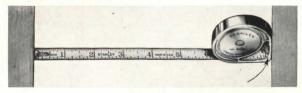
In the frame are installed two sets of double hung-sash which freely slide in the channels on each side. This novel construction provides a dead air space of 25/8 in. between the outer and inner panes

The sash are faced on each side, along the stiles, with non-rusting metal that travels in the metal channels of the jambs. This principle eliminates wood rubbing against metal or wood and insures

free, easy non-sticking and non-wearing action at all times. The metal facings are made in a manner that takes care of expansion and contraction of the wood parts because of constant and continuous pressure between the sash and jambs. This construction is said to form virtually a valve-seat fit of metal against metal and a tight seal against air passage and eliminates rattling.

NEW STANLEY DIRECT READING RULE

The new Stanley No. 6386 Pull-Push Rule introduced by Stanley Tools, New Britain, Conn., has a direct reading feature for inside measurements. When the case and blade butt against the work, a red indicator on the case points to the exact inside measurement. There is nothing to add—no chance for mistakes.



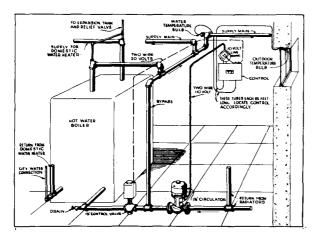
The flexible-rigid steel blade has a white baked enamel surface against which the black graduations stand out and are easy to read. The blade is ½ in. wide, 6 ft. long, and is graduated in inches and 16ths on both edges for the entire length. On the upper edge the blade is also graduated in 32nds for the first six inches.

NEW HOFFMAN HOT WATER CONTROLLED HEAT SYSTEM

The Hoffman Specialty Co., Waterbury, Conn., announces the introduction of the Hoffman Hot Water Controlled Heat System, a new development in forced hot water heating systems.

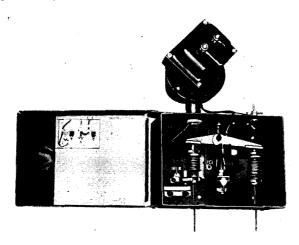
According to the manufacturer, this new system will successfully maintain a uniform room temperature under all conditions. Its basic principles are: 1. Continuous circulation of water in the system; 2. the boiler is bypassed from the rest of the circulating system; 3. temperature control based on a balanced condition between outdoor and radiator temperatures.

The accompanying diagram shows that three units of



equipment are required by Hoffman Hot Water Controlled Heat—a Hoffman circulating pump—a Hoffman control valve—and a Hoffman temperature controller with outdoor and water temperature bulbs. An expansion tank and relief valve should, of course, be installed as with all other forced circulation systems.

In operation, the boiler is maintained at a constant temperature, in accordance with the desired BTU heat emission. The pump runs continuously, except when the outdoor temperature rises to about 65°. At this point the pump stops and does not start again until the temperature goes below 65°.



The piping differs from the conventional layout in that a by-pass and a Hoffman control valve are installed between the pump and the boiler. Unless the control valve is open, the water circulating continuously through the piping and radiators does not pass through the boiler.

Water circulating through the pipes and radiators is automatically held to the temperature which exactly offsets the heat loss of the building at any given outdoor temperature. If outdoor temperature is 40°, the water circulating through the radiators of a Hoffman system designed for 10° below zero will be 118°—enough heat to keep the house at 70°.

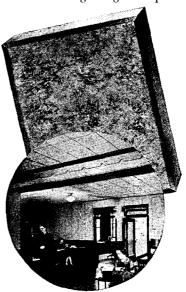
This control is accomplished by the water temperature bulb, installed in the supply main close to the boiler. When the water in the circulating system drops below the required 118°, the water bulb sends a call for heat to the Hoffman temperature controller. The temperature controller, shown in the photograph, in turn, causes the control valve to open, admitting hot water from the boiler into the circulating system.

When the circulating water is again restored to 118°, the control valve closes and cuts off the boiler from the rest of the system. This control is said to be so accurate that for any constant outdoor temperature, radiator temperature is practically constant!

Hoffman Hot Water Controlled Heat also offers the extra economy of indirect domestic water heating. Radiators cannot heat up during summer operation because of the control valve in the return main and the "drop" design of the supply main.

NEW INSULITE ACOUSTICAL MATERIAL

A new product, known as Acoustilite, recently announced by The Insulite Company, Minneapolis, Minn., is said to be gaining widespread use in offices, shops,



schools, churches, and other public buildings. Applied to walls and ceilings, it absorbs sound, reducing echo and its consequent confusion.

Beautiful interiors are also achieved by the application of this new material on walls and ceilings. It is made in two attractive finishes, one with the appearance of soft-surfaced Travertine stone, and the other an openmesh fabric covering. Both are painted a neutral buff shade, and further decora-

tive stenciling in cold water flat paints may be done without impairing the acoustical properties. Furnished in squares and rectangles of various sizes, the tile-like boards can be arranged to form almost any pattern desired.

As an insulation, Acoustilite is said to effectively combat heat loss from the building in winter and protect against heat entry during the summer months.

NEW DISTRIBUTORS FOR JAMISON

The Jamison Cold Storage Door Co., Hagerstown, Md., announces the appointment of two new distributors. The Asbestos Supply Co. with offices at 1st Ave., South and Jackson St., Seattle, Wash.; South 10 Bernard St., Spokane, Wash.; and 221 S. W. Front Ave., Portland, Ore., will represent Jamison in the Pacific Northwest territory covering the states of Washington, Oregon, northern and southwestern Idaho, western Montana, and Alaska.

In the Omaha, Nebraska, area the new distributor is the Central Ice Machine Co., 4911 South 25th St., Omaha.

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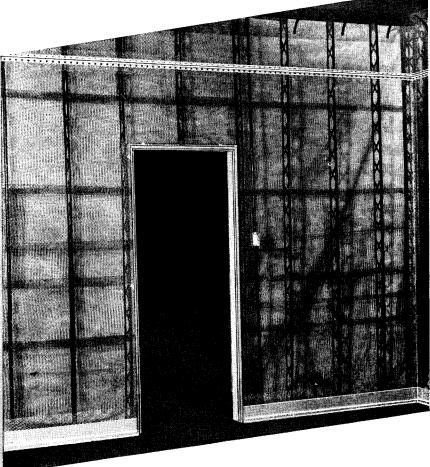
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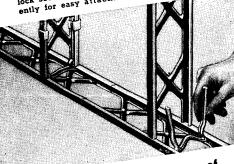
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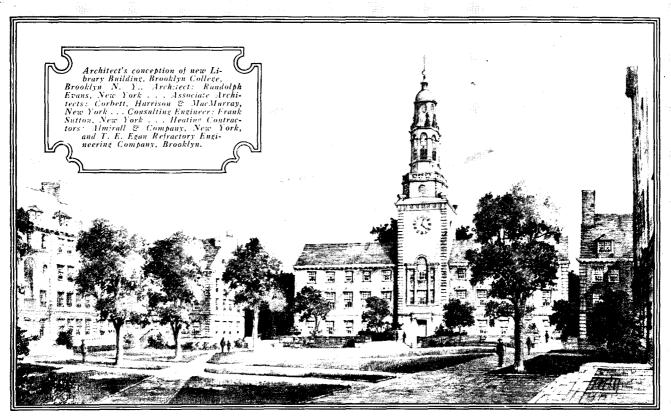
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