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ARCHITECTURAL CRITICISM

BY TALBOT F. HAMLIN

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PENCIL
POINTS

1938

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PENCIL POINTS

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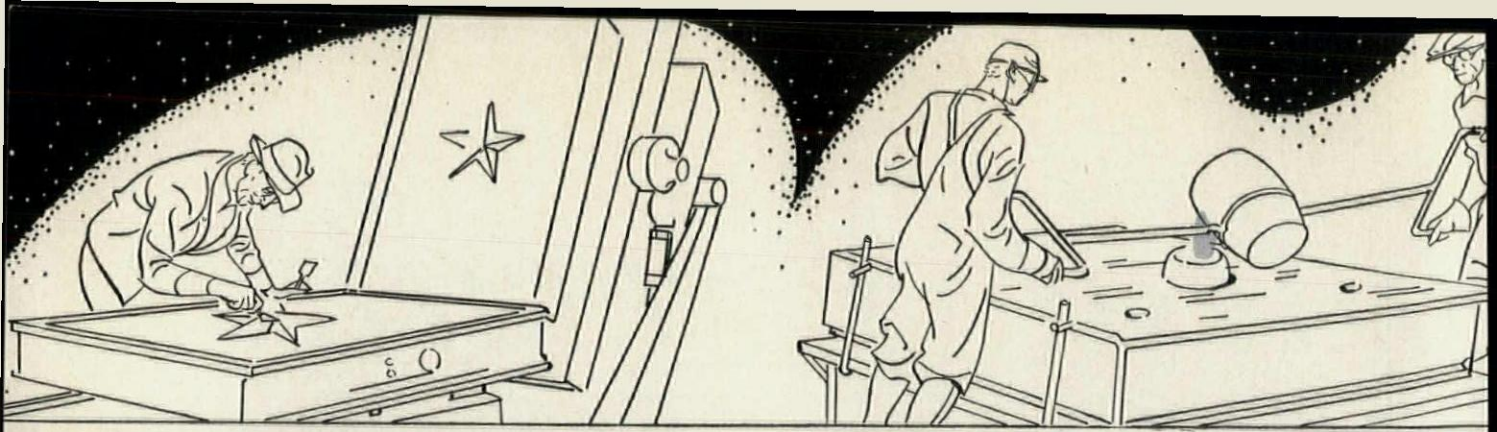
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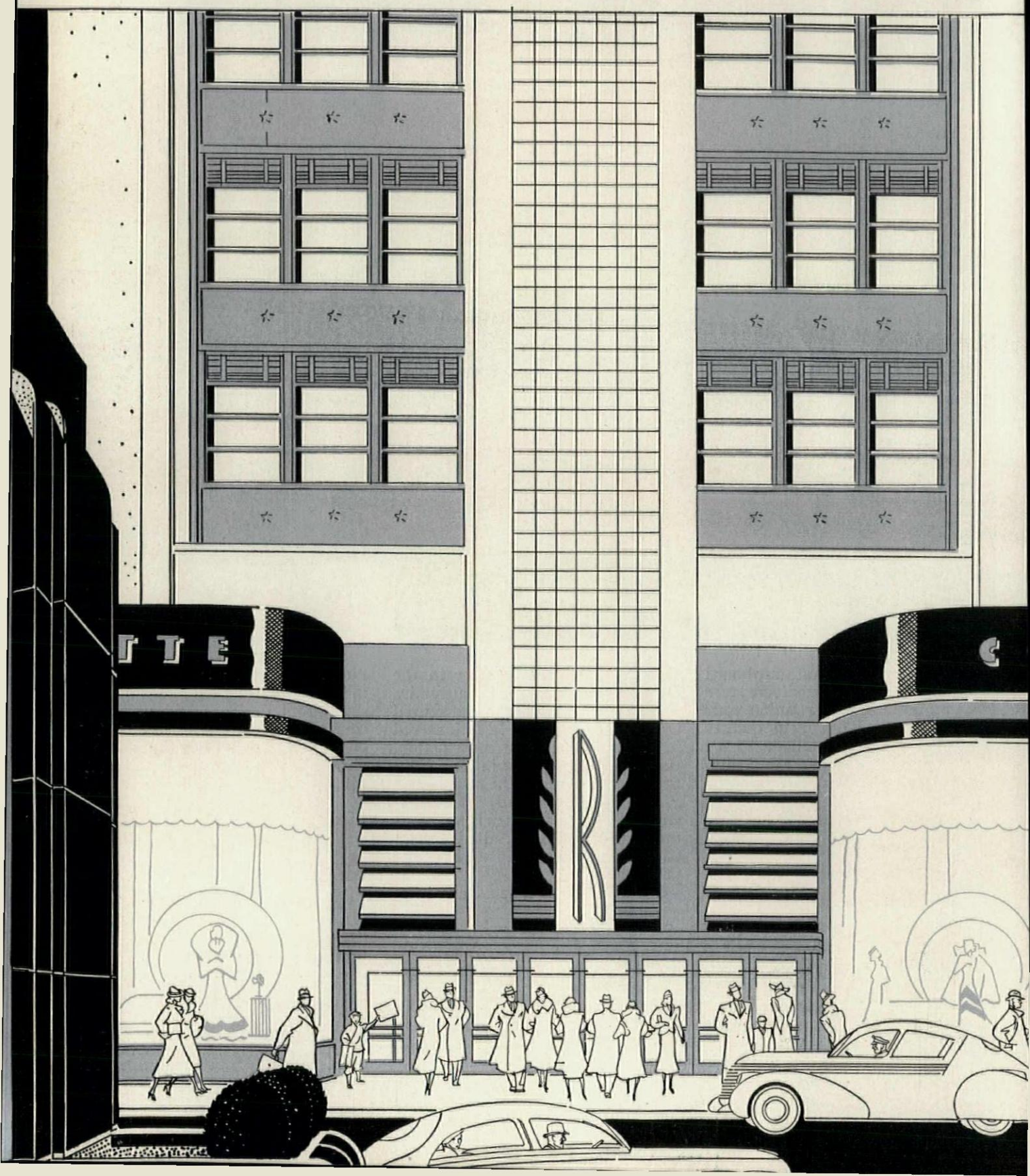
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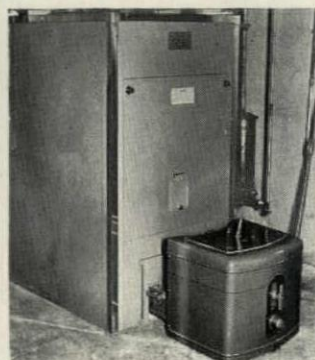


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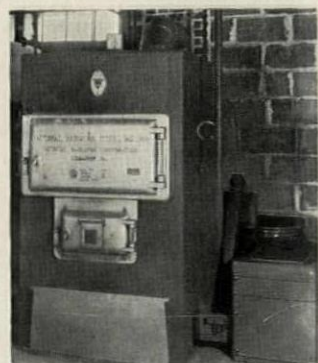
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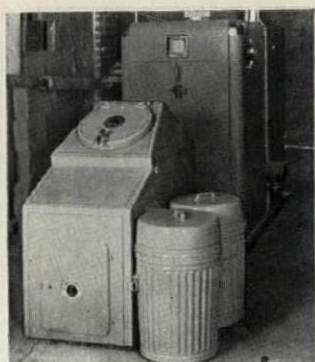
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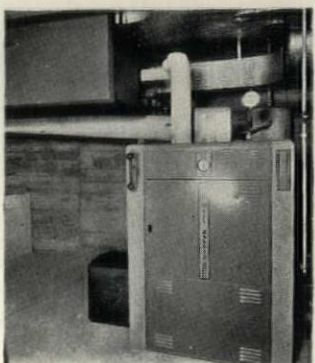
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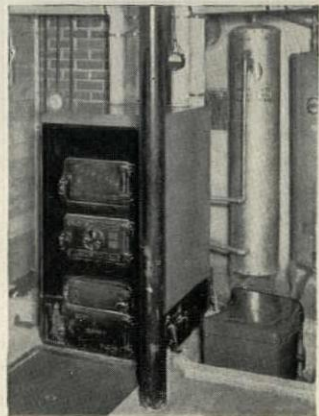
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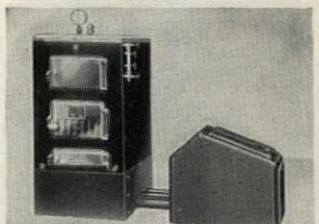
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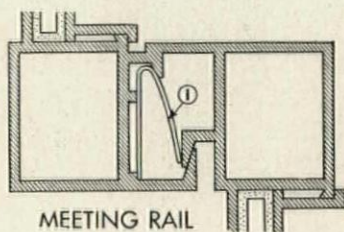
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HERE, THERE, THIS & THAT

Keach Discusses Boston's Draftsmen

H. L. Mencken captained an investigation, a few years back, which found Massachusetts just about the least worst state in the U. S. A. There seemed to be ample chances for absorbing enlightenment, and the public health was satisfactorily safeguarded. Chiropractors were not allowed to function in the medical profession, but anyone could, and can, take a flier in the realm of architecture. To be sure we have a registration bill that makes fitful appearances on Beacon Hill, as does the bill for licensing cats, but with inadequate defense they are both pushovers for the better organized opposition. Presumably speculative builders and real estate men are the ones who would view the establishment of minimum standards with the maximum of dismay.

Being wholly concerned with profits and the flash that sells, they seldom or never pay full commissions. Occasionally they acquiesce to a fair rate, for abridged services, if a reputable name is included, but the usual fee is a pittance. Besides knowing how to keep the gravy from spilling, their collateral gift for emphasizing just the right non-essential should not be overlooked. A musical toilet paper dispenser, a stream-lined bulkhead, or an iron pyrites-plated niche on the staircase, and the prospect is practically hypnotized. Says she, "Reach me the pen before I swoon," and looking down, sees it is already in her hand.

Few architects can dip into this field and emerge with a whole skin, so most of the spec and realtor creations are sweated out during the long watches of the night, by struggling draftsmen who must amplify their small weekly incomes, or bid a fond farewell to the new Ford. State registration might conceivably remove them from the scene, and force the payment of more reasonable fees for services rendered. That, in turn, would rock the gravy boat; it's really very simple.

Home offices, run by men of good training, who have gravitated into the dog's life of full-time sweating, would be helped by the law, for however much they have become inured to chiseling they have hardly gotten to love it for its own sake. "Big names" may have little concern with all this, but the great majority of

architects are not too far removed from it to profit by an improvement, their draftsmen along with them, if increased business means better wages. Particularly at this time, with threats of a boom in housing, and no other discernible signs of architectural booming, it might be expected that local practitioners would overcome their inertia or indifference, and line up for a real tug of war with the Philistines.

Of course the whole thing may be argued from the pecuniary point of view, but there is a dogged professional side, that has cost the organized architects dearly, in quite modern times, by circumscribing their defense against the inroads of aggressive and powerful usurpers. If this remnant of the old idealism is to be anything more than a weight about the neck it might be galvanized into positive action towards the general betterment of our smaller architecture. Not so much by the mouthing of sublimities as by boos; witness the practical technic of certain Boston politicians. They have been known to pack a public hearing room with city employees, under orders to make any sort of disturbing noise towards the confusion of the opposite side. Now any good draftsman can boo, and the chances are that a draftslady can hiss, if put to it, so the inference is obvious.

At the present instant, Christmas card originals are being slashed out on Strathmore, and office linoleum samples. Last December 26th ('36) about one hundred and eighty draftsmen made resolutions to do their own cards in 1937, and start early enough to avoid perspiration. Probably not one of them began early, and none

would have got going at all, but for the tireless prodding of his wife, beginning about Armistice Day. The best system for the luckless bachelor is to let Christmas go by and then leave himself receptive to procrastinator's remorse. Fleeting as this is, it will give him the impetus to get out a belated card, if caught in the flood. One shifts the accent a little towards "New Year's" and is in accord with Continental tradition. Best of all, by mid-January you know who your friends are.

Freddy Witton has deserted the downtown architectural world for suburbia, where crops are said to be more bountiful. He is reported to have found hen tracks on his board o' mornings, and an occasional egg, laid very cunningly in the intricacies of full size ornamental details.

Ray Esgar is the latest of that fortunate group of architectural men who build their own houses. The Casa Esgar is in Hingham, and will be graced by a mural from the hand of Harry Wijk, which is something to make even a spec house worth owning.

N. Y. Building Code Course

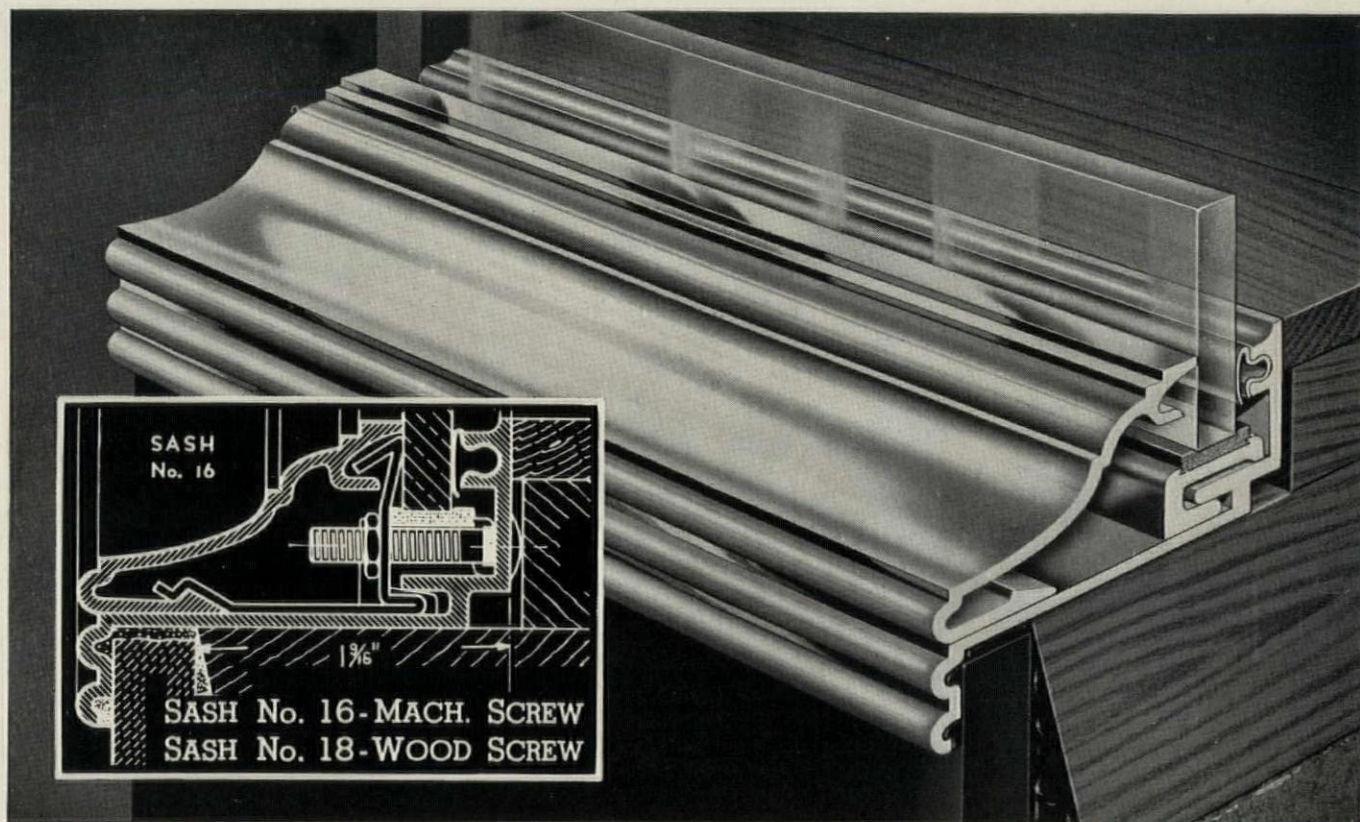
The New York Building School, 67 West 44th Street, announces a special course of 20 lectures on the new Building Code, to be given on Tuesday evenings. L. M. Bernfeld of the Department of Buildings, William A. Hoffberg and D. D. Kimball, Consulting Engineers, will be the instructors. The course will include a general analysis of the new Building Code and detailed study of its classification of buildings, materials, construction, air conditioning, and welding of steel.



R. E. Collins of Washington, D. C., managed to catch this salty scene while on a summer sketching tour. The original pencil drawing was done on cameo paper

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A Letter

Dear Mr. Walker:

I applaud you for bringing the ultra-modern and the Victorian together for comparison, as you did in your editorial in November 1937 edition of *PENCIL POINTS*. We all need to ponder over this relationship.

Did it ever occur to you that the Victorian is more expressive of a machine-age than the ultra-modern formula? In those days the carpenters let loose with their newly discovered, power-driven jig-saws and turning-lathes. What fun they must have had trying out all the various "ill-arranged details." But they were putting their machines to a test, and they were getting out a lot of stuff they hadn't been able to make with the old hand processes.

Now the ultra-modern formula closes its eyes to the possibilities of the machine. By limiting its vocabulary to smooth surfaces, straight lines, square and circular shapes it has expressed the limitations and not the potential powers of an age of machine production.

A more pertinent expression of machine processes would be to play with forms and ornament so very complex, that we would gasp at their intricate patterns and inwardly say to ourselves, "how wonderful for even a machine to create it." Since we have acquired this new machine skill, we should use our imaginations to force it beyond the powers of hand production. If it is easy for the machine to make it, we will soon be bored by it. We continue to marvel at some hand created forms, because we are awed by the skill displayed in their fashioning. We need to put more of this into the things we make with machines. We need to collaborate with the men in the laboratories to plan ways to get ornament and forms of such intricate beauty that only a machine can produce it and then only with the greatest of technical and artistic skill.

We had better go back to some of the Victorian ways of playing with the machine, until our imaginations have mastered their possibilities. There are some who justify the nakedness and paucity of ultra-modern forms by saying they reveal our restraint in design. But actually are we not displaying sterility of imagination and lack of appreciation of the powers of machine methods? Have we forgotten that it is the structural engineer who is always telling us that "it's impossible to build"? What has he always meant by this? Why, he has meant that as far as his limited technique is concerned he doesn't know how to figure it out. He classifies the designs of a fertile imagination with indeter-

minate structures or economically wasteful schemes, until he finds out a new formula for their solution. He is hemmed in by restrictions, and wishes to impose them upon the creative impulses of the fertile designer.

Economic restrictions and engineering limitations have pressed down upon us so heavily in these years of business depression that we ought to turn our thoughts again to the play-boys of the Victorian era. They weren't looking for limitations. They were trying out the new tools to see what they could do. As a stimulating corrective thought, we ought to compare the "plenitude" of the Victorian days with the "paucity" of our own. There are hidden away in some of the books of those days designs of extraordinary beauty and if we would pull them out, we might get a few new ideas to supplement the already boring few we have classified into the pigeon hole of ultra-modern.

Even the philosophy of the functionalists and the slogans of the pres-

ent day will be found to have their counterpart in the literature on architecture of the Victorian period.

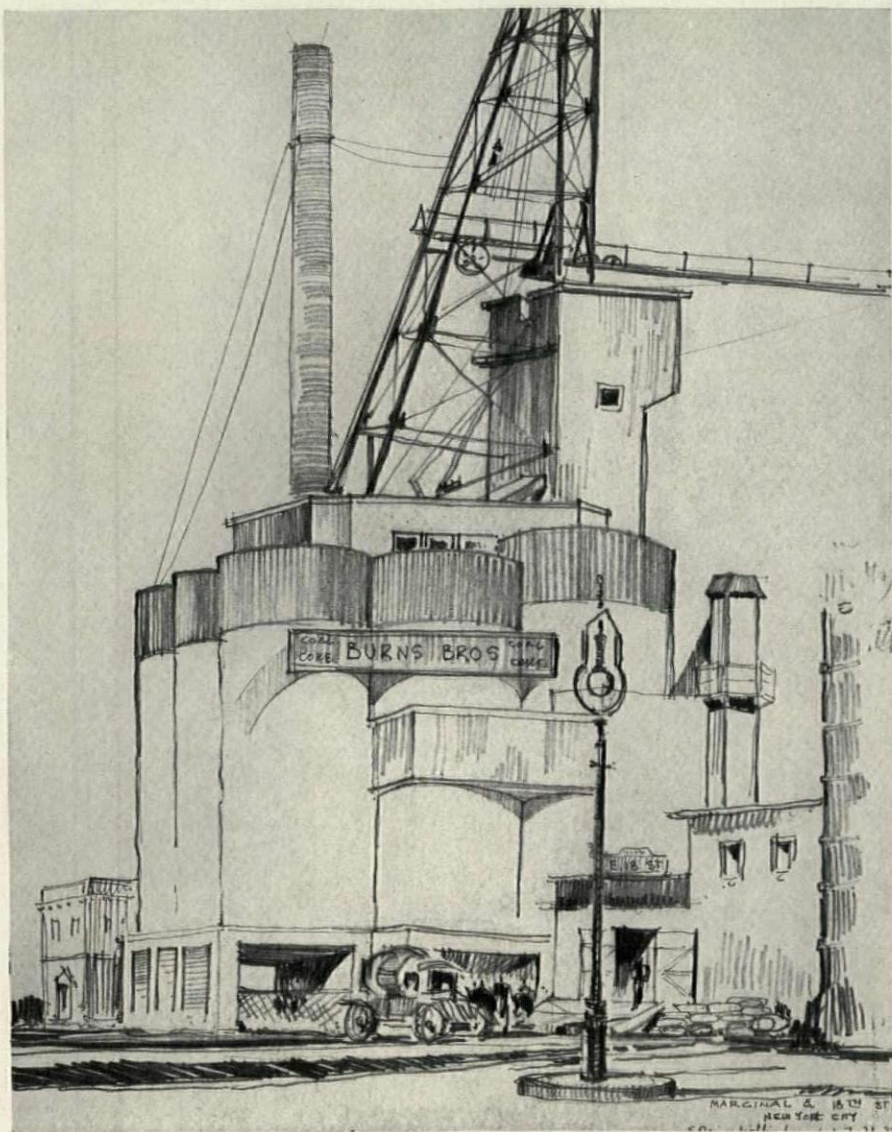
Yes, again I applaud you for bringing these two periods together for contemplation. We need to think a lot about it, and perhaps when we do we shall get a little more balance and perspective.

H. VANDERVOORT WALSH
New York, N. Y.

Columbia Institutes Course in Illumination

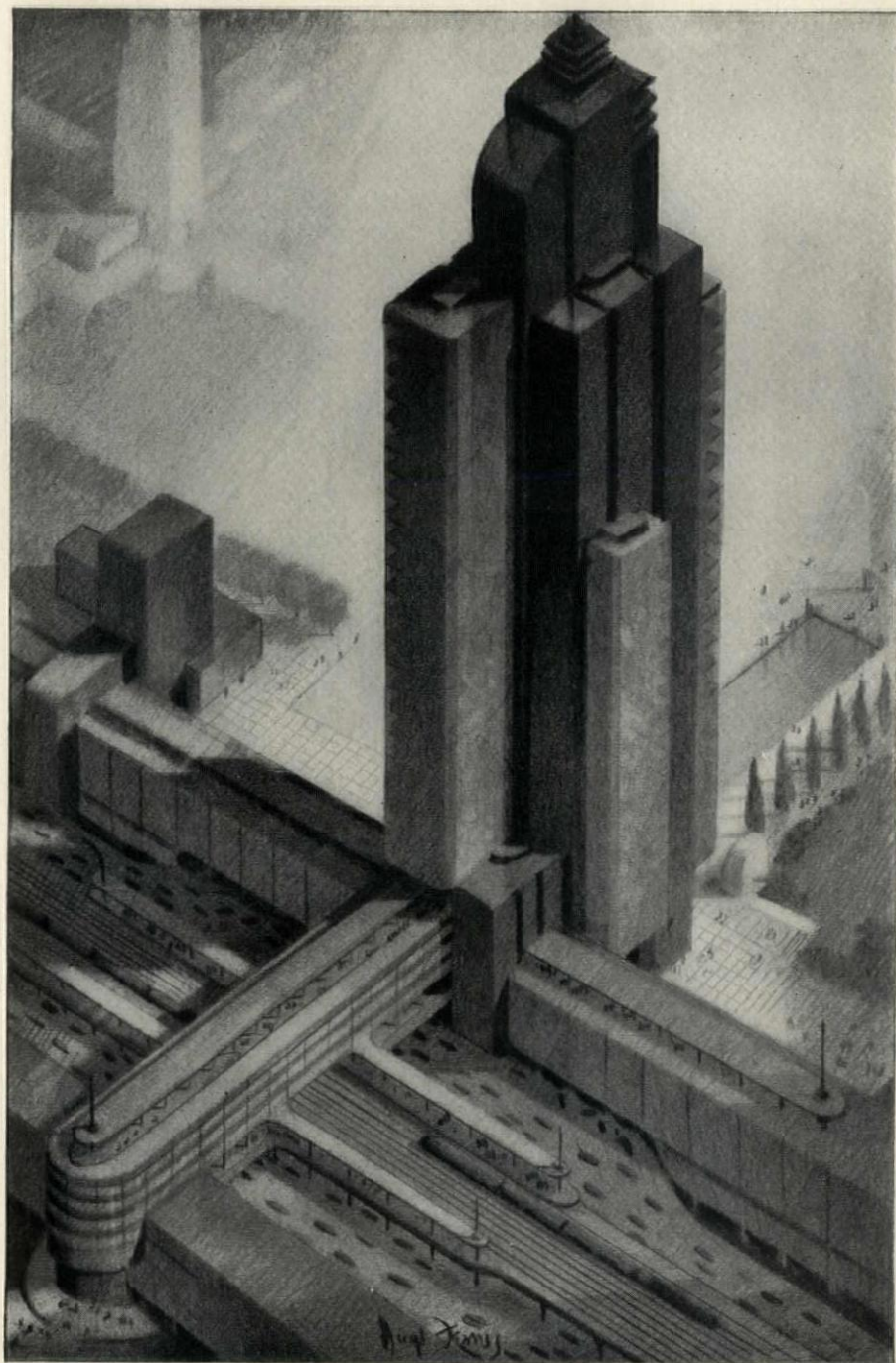
Columbia University will offer a course in lighting practice in the early part of February, 1938. The course covers the uses and possibilities of commercial, decorative, and residential lighting, and is intended for architects and designers but will also be interesting to the layman having to do with the "Illumination of Buildings," as the course is entitled.

For more information write G. M. Allen, Extension Architecture.



A scene at Marginal and 18th Street, New York City, as seen and sketched in pencil on cameo paper by a young draftsman from Georgia, O. S. Willingham

SOLVING THE
TRAFFIC PROBLEM
IN THE CITY
OF THE FUTURE



Hugh Ferriss, whose suggestions for improvements in city planning have won him international fame, gives here a suggestion for **"better organized commercial zones in which tower-buildings or skyscrapers will appear only at set intervals and in direct connection with rapid-transit systems."** Such a development would make possible a vehicular system capable of accommodating the increasing stream of traffic in modern urban centers with adequate provisions for parking and trucking requirements—the

elimination of grade crossings—and special thoroughfares for pedestrians.

The Microtomic Van Dyke Drawing Pencil used by Mr. Ferriss in making the above drawing is the favorite of discriminating architects and draughtsmen because of its superior strength and smoothness. It's finer-grained Microtomic Lead is more uniformly graded throughout and produces a cleaner, denser, more smudge-proof line. 18 degrees from 7B to 9H. Also obtainable with Chisel Point Leads in 4B, 2B, HB, 2H, 4H and 6H.

MICROTOMIC VAN DYKE PENCIL



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Red Sends Washington Xmas Cards and News

The picture along the Potomac isn't exactly a still life. Painted in terms social, political and architectural, this racy mural discloses social activities leading by a filibuster with the political playlet running a good second, by special request, and the architectural element just showing.

Of the social aspect, Washington Architects, either Government or private, are seldom seen in the gay places. They confine their activities to other things whatever they may be, but once in a while do step out *en masse* and do the thing up brown in one splash. As witness last month's Federal Architects' affair and this month's A.I.A. Special which G. L. Rodier and his committee of Young Turks engineered into a social event of rarity bordering on uniqueness. With the ladies present, all shop talk was abandoned by these sedate worthies. They let their hair down and had some fun. The exclusive use of "home" talent proved that the best entertainers are not for public consumption. As Agent 2X-1 reported "they had games and tricks and stunts and stuff while the walls were decorated with empty wine bottles that were drunk up."

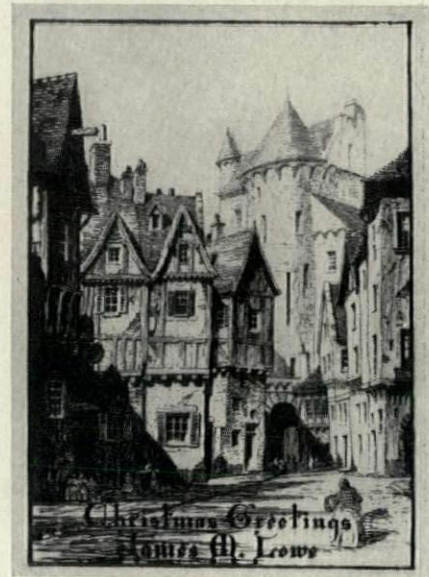
From the political angle, Congress and the FAECT are striving to aid in every way. The passage of the new Housing Act, which was designed to spur home construction, will, with proper handling, require recognized architectural services and that should help. The FAECT has launched its new legislative department with Milton Fischer in charge. According to the new bulletin recently issued, a very

comprehensive and thorough campaign is under way to promote the enactment of legislation in line with the aims of the FAECT.

Nearing completion, the new Government Printing Office Warehouse stands out as a fine example of Federal Building Architecture in concrete. Designed by Victor D. Abel, Consultant with Procurement, this



Xmas card of Moulton H. Balch



Xmas card of James M. Lowe

structure serves primarily as a production plant and warehouse, with a railroad siding within the building. The exterior treatment is a bold, broad motif compatible with concrete, yet properly ornamented to place it in the category of a Public Building. Eventually, with the future development of North Capitol Street, this building will become part of the scheme of Federal Buildings that will face on the Capitol's North-south axial thoroughfare.

It is a fact that some very worthwhile talent is hidden away in the Government service. About three years ago, when the "temporaries" be-

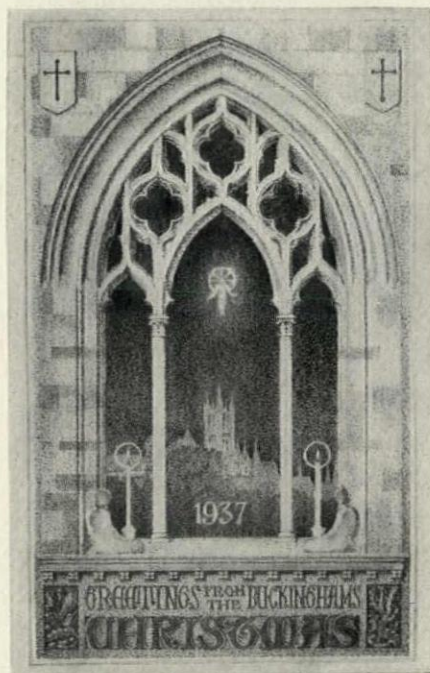


Xmas card of Art Tucker

gan to flock into Procurement, a very common discussion was one which centered upon the merits of Government draftsmen as compared with those working outside. It was generally agreed that the outsiders were more versatile, and more experienced. Without pursuing the argument, probably a better scheme would be to make direct comparisons. Therefore, this being the Holiday season, and the practice of making one's own Xmas Cards is still in vogue, I submit some of Procurement's better cards.

There is a definite movement afoot to save the Decatur House. The Professional Writers' Club of this city has launched a campaign to save this historic old building for posterity and rightly so. According to research made by the Historic American Building Survey, the Stephen Decatur House in Washington, D. C., is "considered . . . worthy of permanent protection." "This is further emphasized," writes Thomas T. Waterman of the H. A. B. S., "by the fact that the Survey has made complete architectural records of this distinguished and historic building for its Archives of the Library of Congress." The Decatur House, built in 1818, was designed by Benjamin H. Latrobe, one of the early planners of the U. S. Capitol and one of the architects responsible for the Greek revival in this country. The architectural significance of the Decatur House is made quite clear by Dr. Leicester B. Holland, Director of Fine Arts Division, Library of Congress, when he states—in effect—that the Decatur House is the only other building besides the Capitol of the United States that remains of the work of Latrobe. To destroy this building would be a crime against the culture of the United States. Whose pennies will save Decatur House?

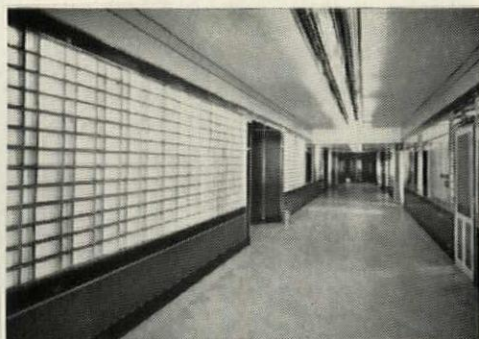
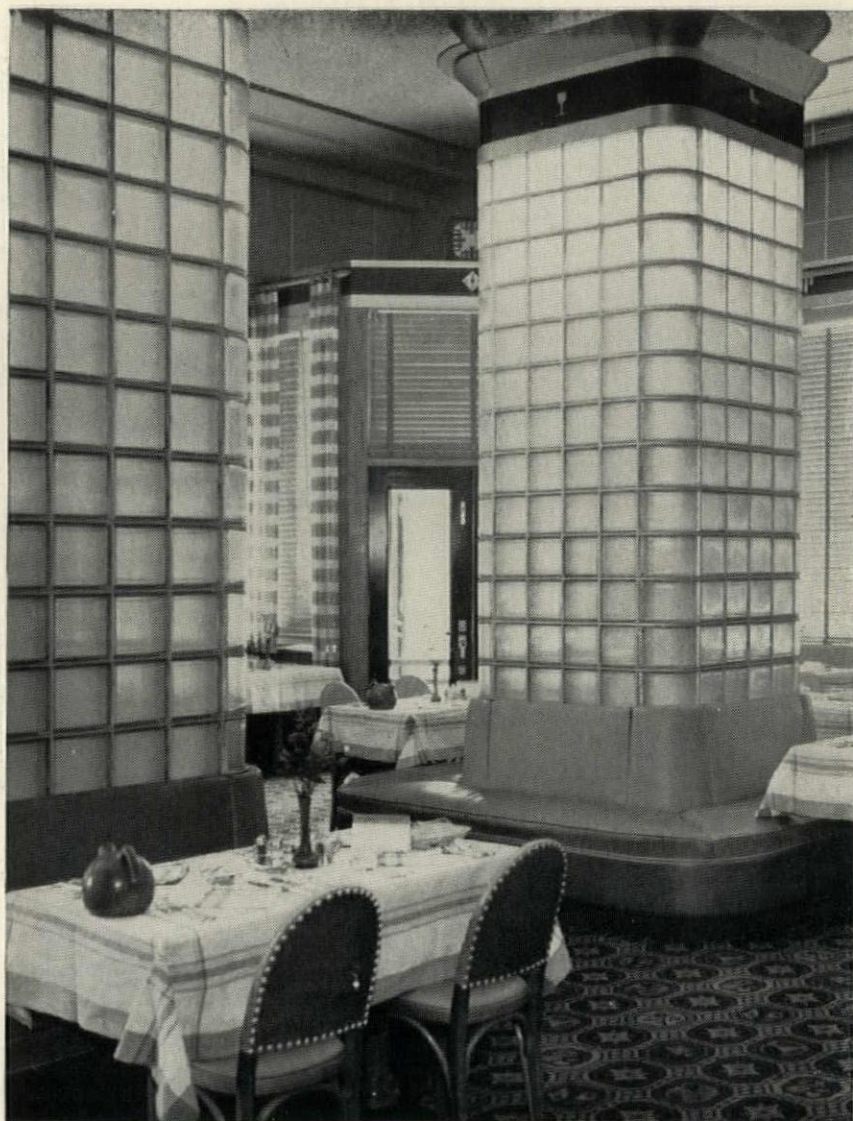
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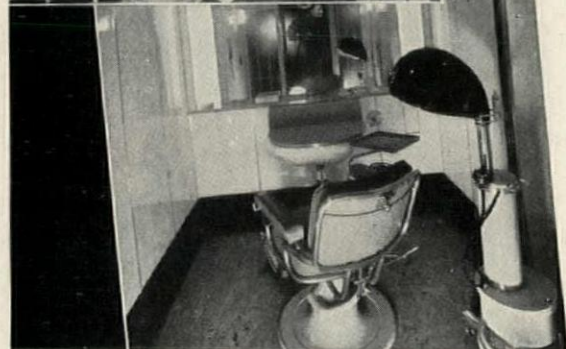


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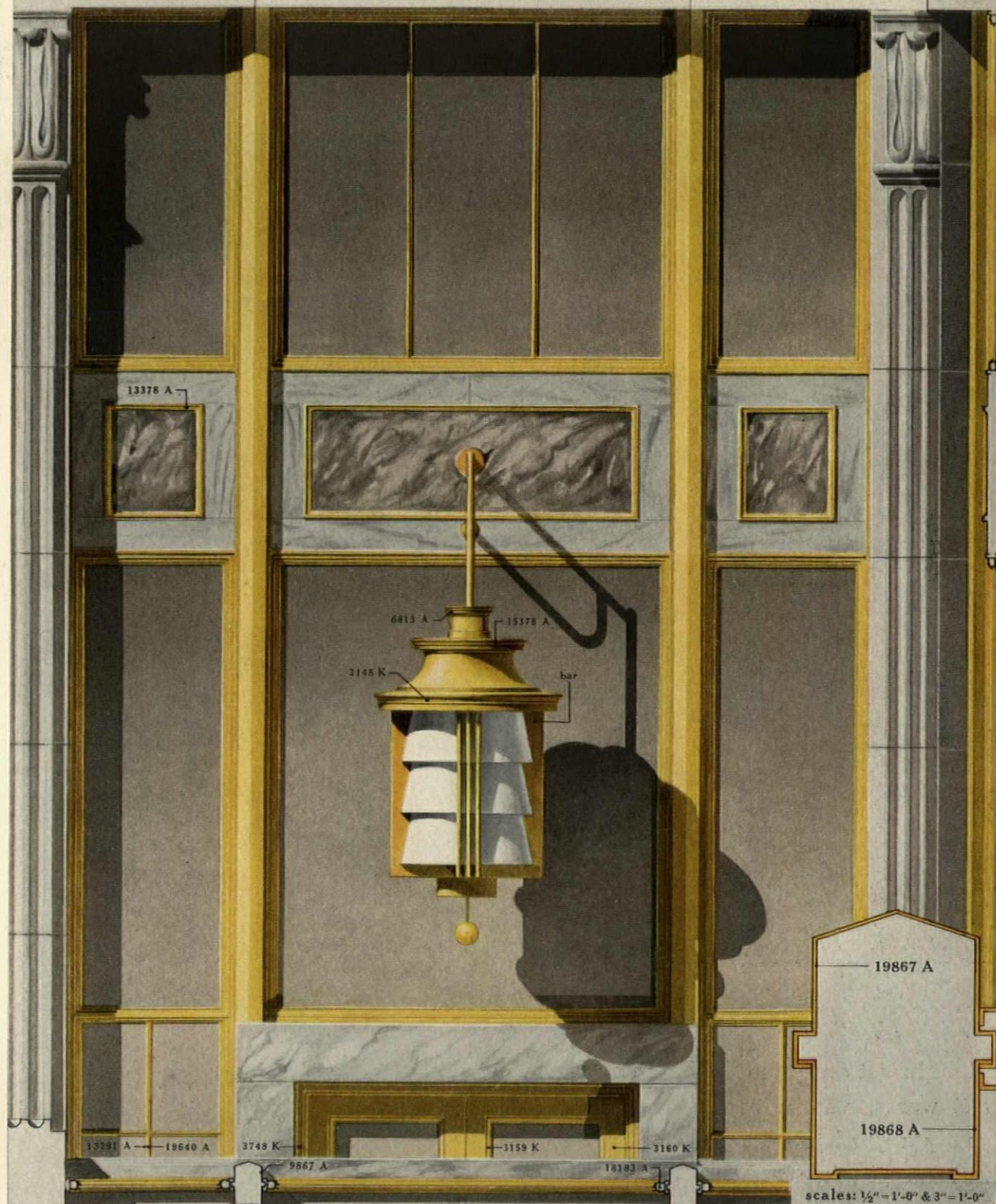
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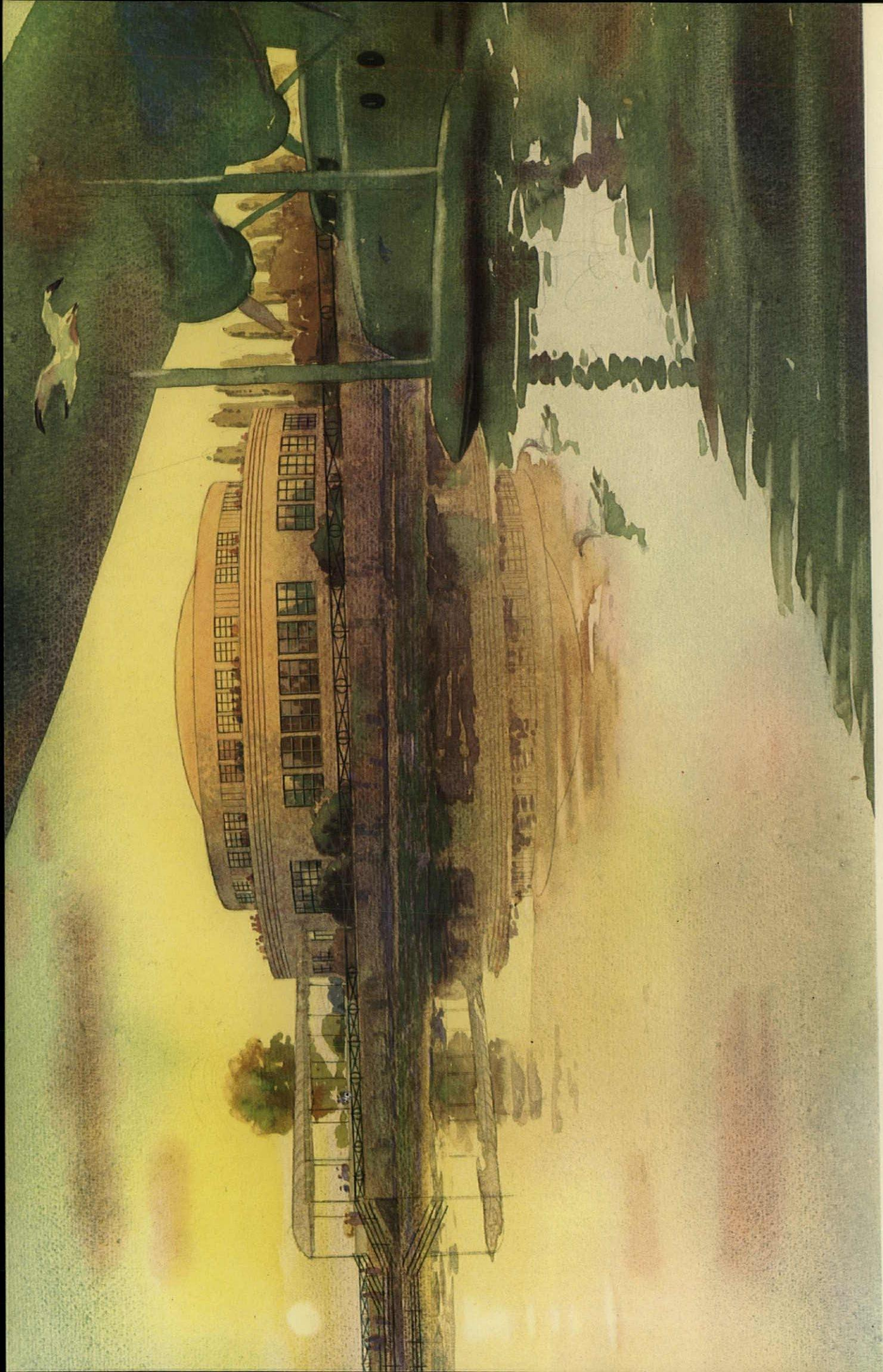
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J. Floyd Yewell's rendering in water color of a Proposed Seaplane Administration Building for an Air-port at North Beach, Long Island, which was designed for the W.P.A. of New York City by Delano and Aldrich, Architects

PROPORTIONS

BY RALPH WALKER, F. A. I. A.

ONE OF THE most interesting things about the Paris Fair of this last year was the amazing variety of ideas to be found within it.

My own viewpoint as to the desirability of attaining order in Fairs was changed completely for here was an interesting chaos, a chaos of new ideas, of purposeful ideas. They were helter-skelter and without relationship, except that they all were creations of today's world.

All this was unusual in that I had expected a certain sameness, an "I say so, therefore it is so" sort of thing, expressed as a fiat of the gods of steel and glass, and again expressed so as to leave no doubt of the growing oneness of the architectural ideal.

Brothers, I wish to report it wasn't so!

The modern world has no such goal immediately in front of it.

The one thing definite and dominant in Paris was the resurgence of the individual ego—national, provincial, industrial.

It was again a resurrection of the idea that man stands erect and that architectural proportions have to do mainly with the fact that he became and remains perpendicular to the surface of the earth.

Architecture there for a moment rose above the defeatism current in Europe, where a prostrate and symbolic Germany so well expressed the whole post-war mood in the war memorial at Munich, and in one factory-like building after another.

For what other than a complete sense of defeat could have created the proportions of the post-war architecture of Europe—proportions begat by a strong realization that victor and defeated alike had both lost the peace.

What other than a very strange debased sense of economy could have created an architecture so lacking in human qualities, a false idea of economy of effort, when at the same time millions of men were without work all over the world.

But more, an architectural concept engaging the minds of the architectural students in

America, most of whom have never seen an actual example except as printed in the illustrations of the architectural press.

So far, indeed, has architecture diverged from the intimate lives of the men who are preparing to make it their work.

There would seem to be a remarkable perversity in limiting the philosophy of today's architecture to a limited concept of what a machine can produce, especially so when manual skill after manual skill is dying out for the lack of opportunity.

There have been many skills devoted to ornament in architecture and which were developed to a very high degree. These are among the richest manifestations of man's cultural ability. The fine quality of manual dexterity, that precision of mind, eye, and hands working in unison in the creation of beauty, can never be totally replaced by that concept of the machine which can only think of articles put through the die, if metal, or the planer and sander, if wood.

There would seem to be growing a new race largely insensitive to what are desirable qualities in man, a race whose architectural thinking is expressed in this sort of metaphysical "unreasoning."

"Penetrations inward and outward secured in the reflections of the windows. It is no longer possible to keep apart the inside and the outside. The mass of the wall, at which all the 'outside' previously stopped, has now dissolved and let the surroundings flow into the building."*

Is it architecture or a photograph which is the basis for that philosophical paragraph? Surely it is the latter, but one wonders again and again at the architectural magnitudes achieved by the use of camera angles—at the architectural beauty attained by shots made from mouse or escaped canary bird points of view.

But in the Paris Fair most of the architec-

*The New Vision by Moholy-nagy—Text to illustration of Bauhaus at Dessau.

tural proportions were those which needed no camera tricks to enhance the feeling that man was man and that enclosed space could be a pleasant place in which to live, and that also at times it was majestically necessary to keep the outside from "inflowing."

All this was in happy contrast to the earth-bound horizontals of which the architectural magazines of the world are filled.

Nothing can be more depressing than the same looking building reproduced all over the world by the unthinking in the name of modern architecture.

Nothing can be more depressing than the picture of the same interior with the same bent pipe chair and table and the same hospital bed for a *chaise longue*, reproduced in every architectural magazine in the world as the final word in interior design. Especially when the interiors are more often than not faked for camera interest.

Materials have so little actually to do with proportions.

Proportion has to do with the spirit of man, and that spirit determines whether proportions are fine or mean.

Steel and glass were fine in spirit, very intelligent in the St. Gobain Building at Paris. It was inviting, lightsome and beautiful in proportion. The Czechoslovakian Pavilion, however, was uninviting, almost forbidding, and, moreover, a clumsy piece of steel construction in sharp contrast to the beautiful use of steel in the Iron and Bronze Building, where again fine proportions were achieved.

No! I am not maintaining that all buildings have to be tall or that some may not be horizontal. Not at all! But if you are oriental in emotion compare the fine horizontality of Frank Lloyd Wright's "Taliesin," or the exquisite lightness of Mies Van der Rohe's German Pavilion at Barcelona, with the work normally published in the magazines as representative of the new "lying down" architecture.

The spirit of man is surely enhanced by the one, whereas only some intellectuals are titillated by the others.

Man only rises from the ant-heap by achieving monumentality, and all through the Paris Fair that quality was arrived at with remarkable success.

In passing: To date, nothing in the New York Fair, although the buildings are bigger,

accomplishes the monumental characteristics of the Italian Pavilion.

There, the attempt was not to express materials, except only in so far as they aided in saying *Italy*. The statement of Italy and its purposes were the important factors and not the materials. The impression left by the forecourt, by the great room in the tower, was of a people who still realize what proportion means; a people still carrying on the creative tradition long associated with them. But more—a virile people, an individual people.

It is a building strangely without bombast, especially in contrast to the Russian Pavilion.

Another example of the appreciation of architectural proportion was Poland, whose heroic tower, display buildings, and whose tenderness toward the trees, all indicated a sensitive realization of the values architecture might have in explaining to foreigners what ideals and good qualities lie in Poland.

Of course, as you might expect, Corbusier's tent emulated a skyscraper and became a vertical statement of irrational and rampant ego. Erected as the Kaaba of a new religion, it made another, if but temporary, Mecca for youth. By what order of rationalism did one climb up and then slide down ramps after wading through an acre of loose gravel. Between the funny ramp inside and the dismal tent outside (the space was beautifully lighted) there was that same lack of understanding of proportion which was evident in his metal and glass monument to Columbus; the lack of appreciation of the spirit of the Russian people which was evident in his design for the Russian Capitol; and in the continued development of his megalomaniacal city plans. With what great walls does Corbusier think to entrap the freedom of man!!!

After such an experience one must ponder on the relationship between rationalism and insensitiveness.

* * * *

Great historical styles were capable of many proportions. They were of great flexibility, probably so because they developed naturally without much in the manner of fixation by the creators. They grew of course without many hard and fast principles, or at least until they were about to die when, no doubt, some Vitruvius or Vignola (those undertakers of creative architecture) fixed their features in composure before burial.

CHARACTER: WHAT IS IT?

DO WE NOT NEED IT IN OUR ARCHITECTURE?

BY TALBOT HAMLIN

EDITOR'S NOTE: Back in 1934 we began the publication of a series of critical articles by H. Van Buren Magonigle in which he contributed monthly comment on current architectural design. The series was calculated to supply regularly for the profession the sort of dispassionate analysis and appraisal of its works that playwrights, musicians, painters and novelists have long been accustomed to get from competent critics of their respective arts. Mr. Magonigle, who had at the time withdrawn from the active practice of architecture, was in a position to speak out plainly without fear or favor and his vigorous remarks stimulated widespread discussion among architects. Many agreed with him and many disagreed, but all parties seemed in accord with the principle that thoughtful and sincere criticism of architecture is healthy and helpful. He carried on nobly until his death in August, 1935.

We now launch a new critical series and have selected as our distinguished critic Professor Talbot Faulkner Hamlin of the School of Architecture at Columbia University. We believe that he is particularly well suited to undertake this work since he combines thorough scholarship in the historical background of architecture with a keen and alert understanding and appreciation of the contemporary world. His position at the University gives him, we feel, the right degree of detachment from which to form a properly objective view. We have invited him to speak freely and we invite you to read and reflect. Gentlemen—Professor Hamlin.

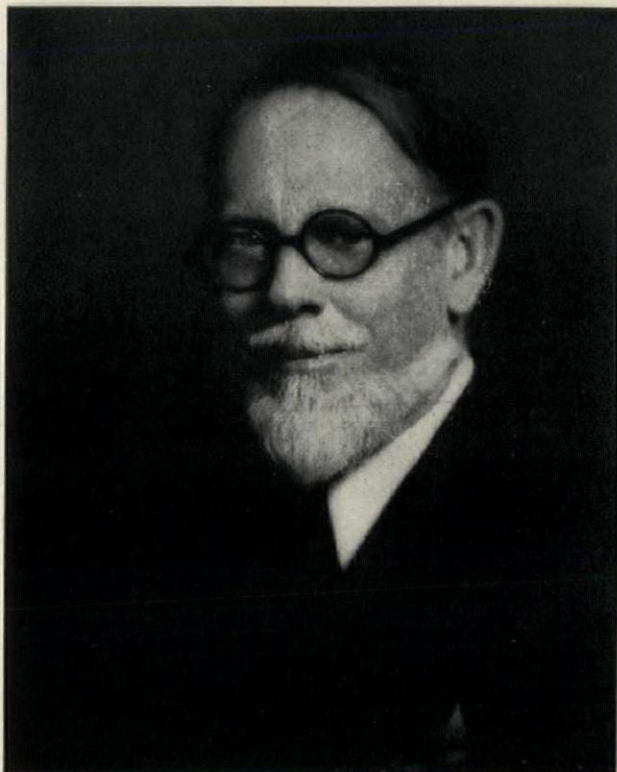


Photo by Kaiden Kazanjian

ALL of us approaching a new building, or a building new to us, instinctively ask ourselves, "What is it? What is it for?" The great buildings often tell us, easily and at once. They may not be specific, but they give us a hint. They say, "This is public, welcome"; or, "This is private, keep out." They say, "This is a place of large rooms, meeting places"; or, "This is a building of small units." They can say, "This is a public-purpose building—your building—existing for your service, your help, your government"; or else, "This is a building built for an owner's profit, square feet for rent, practical, business-like, attractive; come in and do what business you may have to do, or else come in and rent an office yourself." Some buildings even tell what they are built of, and how. The content of this message which each building broadcasts, its clarity, its perfection

of statement, constitutes the building's character.

What would the unknowing citizen, coming suddenly on any of these three buildings—Figures 1, 2, and 3—think of them? What message comes from them? They are all structures recently projected in New York City. Let us say this inquiring citizen knows his modern American cities; he knows the common language of contemporary American architecture. He sees in all three structures verticality of pier and window-row. He sees pleasant, even expensive, materials. He notes a growing weight and size in the lower floors, and a certain flurry of richness around the door. He would, if he were at all sensitive, realize that all three had a certain similarity of style, that all would fit harmoniously—at least without many discords—into the contempo-

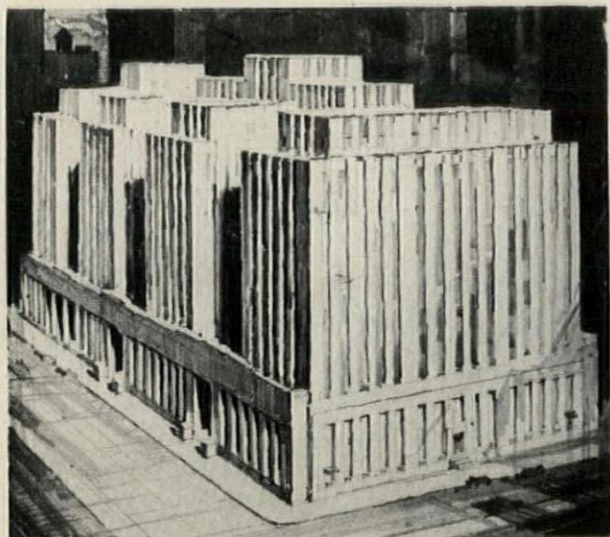


Figure 1. Criminal Courts Building, New York, as designed by Harvey Wiley Corbett and Charles B. Meyers, Architects. Soon to be erected to replace the "Tombs"

rary city picture. He knows that there are many other such vertical sweeps of limestone pier, and of window over window. Such-and-such an insurance company's building has them. The Grand-Ritz-Plaza-Gotham Hotel (or whatever its name may be) has carefully regulated set-backs like those in Figure 1. The new business building in the swell shopping district has a top much like Figure 2. And the X National Bank has much the same flurry of decoration as in all these three.

A little attention, and he would see more details—that legion of little windows, all alike and all equally spaced, speak to him of offices, of floors for rent, of standardized and impersonal practicality, perhaps of hotel rooms. A little thought, and he would begin to summarize what the buildings said. One, he might conclude, because of the size of its projecting wings and its deep courts, is a great and expensive hotel. Two, with its severe vertical simplicity, is obviously the better kind of business building. Three, with its greater richness and its sculpture at the base, would puzzle him more. Then suddenly he might think of the sculptured front of the Daily News Building, and say to himself, "Eureka! here is the building of a small, wealthy, and rather high-class publication."

And, of course, the fact is that all three are court houses.

II

How does it happen that these three important buildings have a character so elusive, so uncommunicative? What is character in architecture? There are critics today who claim that character, in the sense it has been used

here, is impossible in modern architecture and, even if possible, undesirable. Character, they claim, is a mere matter of sentimental association. Dome = capitol. Columns = bank. Tudor = college. Better be done with it all, forget character altogether. Let what character may come, come from steel bay spacing and glass and metal. Modern architecture need worry no more about such matters as what a building means to the average spectator. Let him do the worrying. And when, in some sore distress, he has to visit the Domestic Relations Court, let him walk by the entrance three times (while he is looking for it) and finally have to ask the traffic cop at the corner, because he thought it was merely another office building. He'll learn . . . especially if he has a subpoena.

But there is another attitude possible. Architecture, of all the fine arts, can least afford to become esoteric. Your average citizen can refuse to read Gertrude Stein. He can stay away (and does, in droves) from art exhibits which bore or puzzle him. But architecture is thrust at him in one way or another during all his waking minutes. It is, par excellence, his art. Nineteenth century architecture became esoteric in its minutiae of stylisms. Twentieth century architecture may become esoteric in its theoretical quality, with equally



Figure 2. Family Court Building of the Domestic Relations Court, New York, as designed by Charles B. Meyers, Architect, for 22nd Street and Lexington Ave.

disastrous results. It may be saved from that fate by seeing to it that buildings talk to people in clear, simple language, expressing the purpose for which they were built and what they may mean to these people—in other words, by seeing to it that they have “character.”

Character, seen thus, is not a matter of sentimental association, save only in a few instances. We architects tend to belittle the common sense of “the people.” No; character, as the element of clarity in building expression, depends on much deeper elements. Of course there is association, for without association any language, any means of communicating ideas, is impossible. But the associations which give meanings to buildings are but slightly the mere association with other buildings seen in the past; they are much more the association of certain building shapes and forms with certain definite human activities and with certain emotional states. Functions, adequately expressed, plus the peculiar emotional mood produced by certain lines, proportions, and forms in a building, give it character.

Now, court houses have definite jobs to perform. Court rooms must be of adequate area and, since popular respect for them is generally considered a social good, of adequate dignity—which usually means a somewhat more than sufficient height. Large court houses draw throngs of people; there must be adequate free space for their going and coming, and for that extended “waiting around” which seems almost a necessary part of having anything to do with the law. And, in addition, there must be all the required judge’s offices, jury rooms, lawyers’ rooms, record rooms, and so on. These, despite the fact that they require usually a greater cubage than do the court rooms, chiefly exist merely to serve them. The third example shown is, it is true, an appellate court only, where public throngs are less; yet, more than ever, as a great defender of the people against the evils of false or careless action on the part of the lower courts, one would think that dignity and ample size should declare its purpose.

Number One is the great criminal court center and jail of Manhattan Island. Here are not only court rooms, and all their services, but also all the myriad parts of a jail—cells, and visiting rooms, and services galore. How, from the simple size and arrangement of the masses of this building, could the observer get any of this, unless he were told?

Number Two is the Domestic Relations Court. Here, obviously, more small offices and interviewing rooms are necessary. Yet even



Figure 3. New building for the Appellate Division of the Supreme Court, First Judicial Department, to be erected on Park Avenue at Fortieth St., New York, from the design by Joseph H. Freedlander, Architect

here the court rooms exist and are important. And, in the shapes the spectator sees, there is little to tell him of them.

In all these cases, it would seem, shape-character is lacking. Structure-character is, roughly, present; the average spectator knows the form he sees as those of a skeleton structure, though there is little frank attempt to express the steel cage. But use-character—the expression of function—does not appear.

III

Mood-character is a more subtle, personal, subjective thing. It is quite true that, in music for instance, the same composition may produce different emotions in different people. Yet few would deny that, in general, a given work of art of any kind produces the same basic kind of feeling in the average person; if it fails to do so, it is a weak work-of-art. And this is as true of architecture as of the other arts. The sources of mood-character are difficult to analyze. Shapes, proportions, materials, colors, all have pronounced emotional effects; and their combinations, so as to give the desired mood-character to a building, is, consciously or unconsciously, one of the most difficult and one of the most rewarding of the architect’s creative tasks.

In the case of our three court houses, moreover, the exact mood to give to each might be a question to which we all could give sincerely different answers. Criminal justice to some means punishment, to some reform; to some the pursuit of the guilty, to some the protection of the innocent. Similarly, different people would have different interpretations for each of the other two buildings.

Yet one element these buildings have in common. All are expressions of a democratic civilization in its effort at self-protection. All exist for the people—for you and for me. They are built to serve us; they are a kind of expression of our mutual efforts to build an ideal life on a democratic basis. To that extent, they are precious, more precious than houses or business buildings or factories. They are, by their very nature, set apart somewhat from buildings built merely for gain or convenience.

So, in the villages of New England and Ohio

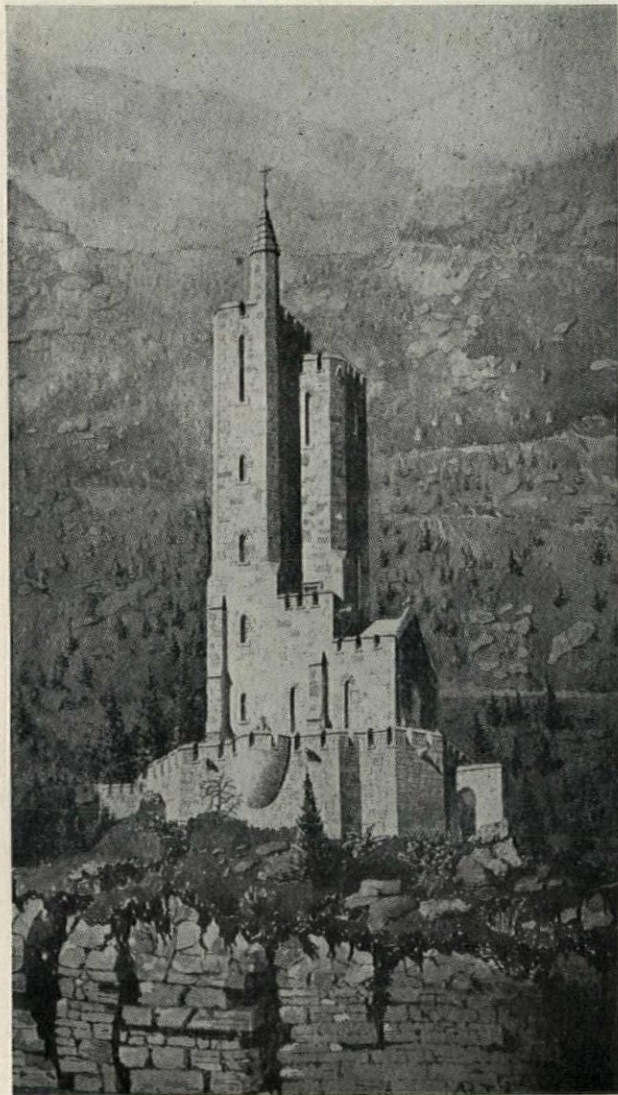


Figure 4. "Will Rogers Shrine to the Sun" designed by Charles E. Thomas, Architect; drawn by Earle Deits

and elsewhere in this country, court houses rose in the early decades of the nineteenth century in the most important positions, usually on the common or village square, set apart slightly from the neighboring buildings—court houses of gracious dignity, of ample size for current needs, using the same brick, the same kind of columns and cornices as the other buildings of the time, but combining them in ways that should make them what they were—not mere buildings, but expressions of faith. Their mood-character was perfect. Not forbidding, but gracious; monumental only in a simple, homely way, by their quiet largeness, their slight setting apart on the village green, which they shared with the church, they told of the respect, the love, which a democratic people felt for its common expression in government.

Today, we are told, respect for the courts is failing, and must be reestablished . . . If we put courts in buildings just like a hundred others, so that the people have to find what justice they get behind fronts just like those that shelter wealthy business, need we be surprised if people sometimes feel about both with a similar cynicism?

IV

Surely, if mood-character is anywhere necessary, it is in a memorial—especially a memorial to a single individual. Figure 4 shows a recent example—shall we say, a Rhenish castle grown too tall? To what antiquarian student of mediæval lore, to what modern Walter Scott may it be built? What European *loch* or *see* does it decorate? And what quaint mediæval high-roofed town does it overlook? No less, sirrah, than the quaint stadt of Colorado Springs, Colorado! From the heights of Cheyenne Mountain, up which the men-at-arms can struggle but slowly, weighted by their heavy armor, it rises, center of pilgrimage to that great Gothic scholar—Will Rogers—gum-chewing, lariat-twirling, debunking Will Rogers. "Of pink granite and steel" it is described . . . two excellent materials—for a Rhenish castle. And then, with one of those supreme bursts of creative sentimentality that are so—so, I am forced to say—"American," or at least "Hollywoodesque," the whole contraption is christened the "Will Rogers Shrine of the Sun," thus "perpetuating forever the name of the great humorist and actor"!

Shades of broad-faced, grinning, winning, bitingly satirical Will Rogers . . . Could it be that the projector of this fantasy did the whole thing as a great, a superlative, practical joke? Could the un-American form, and the

sentimental name, for a monument to the most American and most unsentimental of recent humorists, be a subtle dig at the credulity of us all? But that is hardly thinkable . . . All one can do is merely to realize that, somewhere in their particular part of the Elysian Fields, Will Rogers, Mark Twain, and Barnum are guffawing together with frank belly laughs, each pointing to the others and shrieking, between gales of laughter, "I told you so!"

V

We are not, I am glad to say, the only country to have an architecture so often blind to both use-character and mood-character; my last illustration is from Germany. This quiet brick and stone building in Bielefeld, with its gentle evidence of persisting German classic tradition, its large open window areas so formally arranged, would make an excellent town hall, perhaps, or rather an attractive if undistinguished library. It has a certain sense of studiousness, of quiet welcome; its mood would well befit a place to go and spend a quiet afternoon among books. Wrong again; it is a factory, and behind its serene modern classic front lie clattering machines and all the hurly-burly of modern industry.

This example is thus the direct opposite of those we started with. If they, as public buildings, aped the dress and forms of buildings devoted to mere money-getting, this is a money-getting building which apes the forms, and

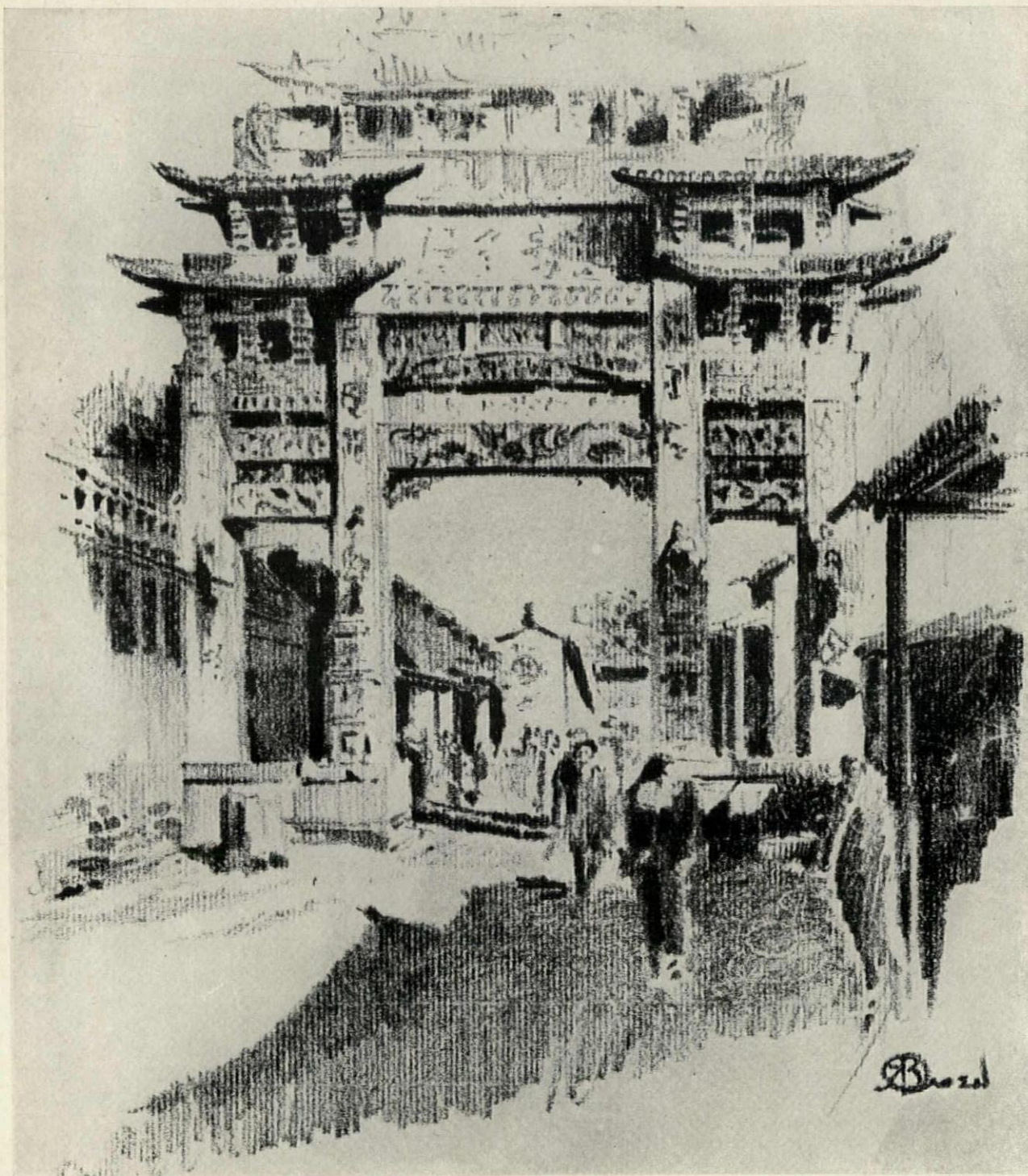
thus seeks to win the prerogatives, of a building built for public use. And of the two crimes against character in architecture, this would seem the more heinous, for false modesty is less evil than unfounded ostentation.

Why then do architects falsify character? Would it not be easier to be direct? In all the cases, it seems to me, a search for some superficial æsthetic pattern has been the cause. It is a complex task to integrate all the various and sometimes apparently discordant elements of a complex structure—a task requiring endless study and time for reflection. Time is the one element which it is most difficult for the modern architect to get; few buildings today receive the study they deserve — the endless trial and discarding of schemes until the final, inevitable solution is achieved. Lack of time too often forces a short-cut; and the easiest short-cut, in the search for a basic decency, if little more, is to impose a superficial pattern in accordance with a generally accepted way of designing—that is, in accordance with a popular style.

Buildings so designed seldom actually hurt; they may even have some simple transitory pleasurable effect, like popular ballads. But seldom, too, do they move us deeply. They may have superficial good manners—the slick good manners of the day—but the manners are all too often synthetic, and in the end, because they have no character, like characterless acquaintances they can only bore. And heaven preserve us from bores!



Figure 5. Factory Building in Bielefeld, Germany, Paul Griesser, Architect. From "Moderne Bauformen"



San Francisco's Chinese are going to see that their mother country is well represented at the 1939 Golden Gate International Exposition. They are spending over a million dollars on their concession. Mark Daniels, A.I.A., aided by his associate Ralph Owen, has made a number of interesting "Studies in Architectural Character" for this China Village, the one above showing a great Pailou. Some of the other studies are on the following pages

CHINESE ART FOR GOLDEN GATE FAIR

BY MARK DANIELS, A. I. A.

"IN SHORT, so much of Chinese art work is good, and so little bad, that in a contest of artistry they (the Chinese) would surely be acclaimed the most gifted nation in the world."

Mr. R. L. Hobson, keeper of the Department of Ceramics and Ethnology in the British Museum, makes this statement in his work on Chinese art.

We occidentals have thought little of China as a center of culture except for fragments of her great art that we have gleaned from visits during the past four centuries or from reports of those who have returned from old Cathay.

We have no difficulty in quickly comprehending the development of arts and architecture in Egypt since the beginning of more or less recorded history in the year 2466 B.C. but most of us think of the arts of China as a few hundred years old, although Fu-hi began the building of temples and the establishment of a social order in China 2800 years before the time of Christ. Some savants claim that any records prior to the Hsia dynasty in 2205 B.C. fall in the legendary period but what is a matter of a few centuries to the true lovers of China.

During more than 4000 years the arts of China have developed along the only lines that can lead to greatness, the true love of beauty. Through thirty-four dynasties the greatest of oriental arts struggled for expression but during these forty centuries five great dynasties saw most of the development. These were the Han, T'ang, Sung, Ming and Ch'ing dynasties, whose marks are here shown as a slight aid to collectors and students.

Of the Han, paintings on silk, bas-reliefs in stone, and small carvings in jade are testimonials to a developed art. From 600 to 900 A.D. China was in all probability the most civilized country in the world. This was the classic period of the T'ang dynasty during which a school of landscape painting in color was founded and all the arts made strides commensurate with the age. The principal accomplishment of the Sung dynasty was the development of the "landscape with figures,"

漢

HAN
206 B.C. - 25 A.D.

東漢

EASTERN HAN
25 A.D. - 221 A.D.

唐

T'ANG
618 - 906

北宋

NORTHERN SUNG
960 - 1127

南宋

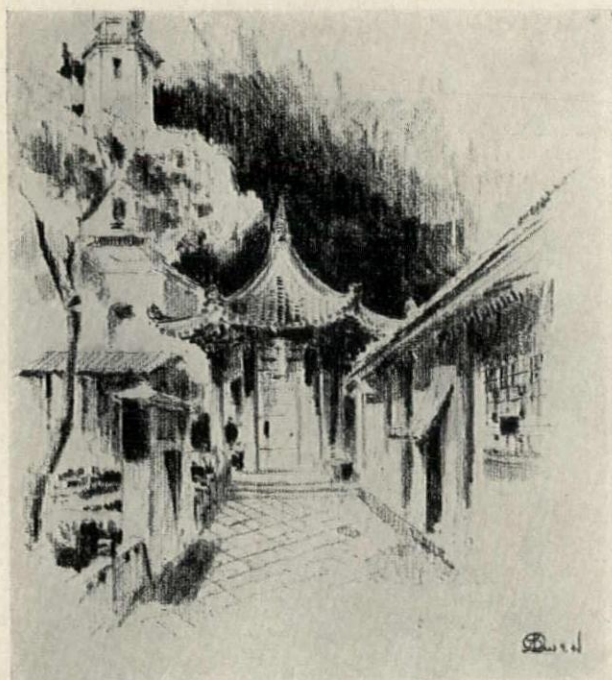
SOUTHERN SUNG
1127 - 1279

明

MING
1368 - 1644

清

CH'ING
1644 - 1912



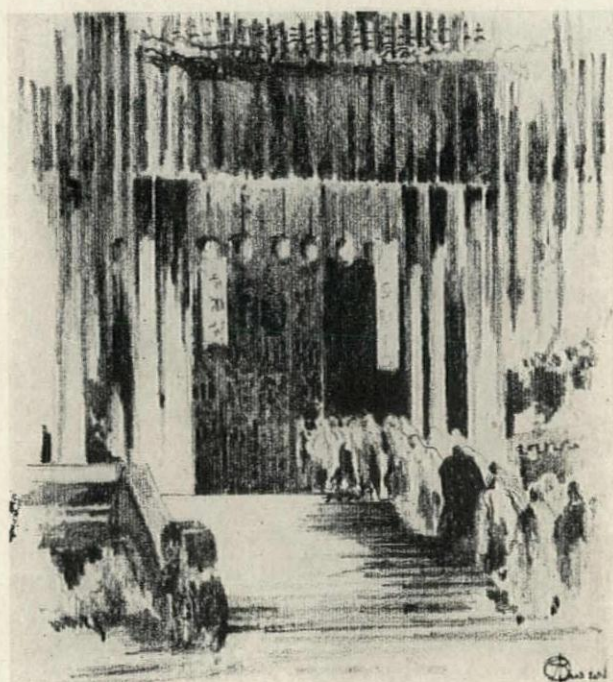
portrait painting and the highest attainment in sculpture. During the 280-odd years of the Ming dynasty the porcelains changed from monotone glazes to the glorious "three-colored ware" with raised and incised outlines.

One great authority, Mr. Binyon, says the painting of the Ming and Ch'ing periods "has given Europe almost all the floral motives in decoration that it knows."

The development of architecture was not so free and flexible as that of the other arts. The general practice of geomancy, religious influences over great periods and government restrictions held architectural styles to a

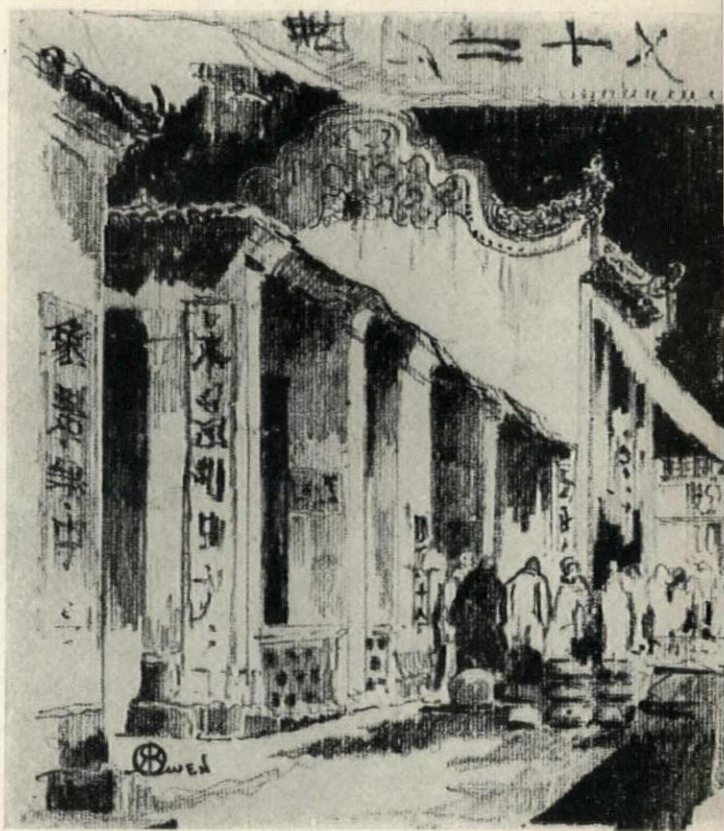
slower development. Roofs supported on upright timbers rather than walls, temples, pavilions and pagodas are the most characteristic structures.

Now the Chinese of San Francisco have undertaken to give to the people of the world, particularly those who have been unable to travel in China, an authentic illustration of what cultural China has had to give to the world during the past 4000 years. In the largest single concession granted at the Golden Gate International Exposition at San Francisco in 1939, the first concerted effort will be made by the Chinese of the Pacific Coast



to present to the anticipated 20,000,000 visitors to that exposition, the best examples that can be built of the results of cultural China and her influence on arts, architecture, and gardens. The Chinese of the United States now feel strongly that the time is ripe to show the visitors at expositions in this country some other picture of oriental life than the old, dark, ivory-colored wax dummy of a prostrate, pig-tailed Chinaman lying on the floor smoking his opium pipe. China, "The Mother of Gardens" and the Master of Arts, is going to be presented in the truest light possible.

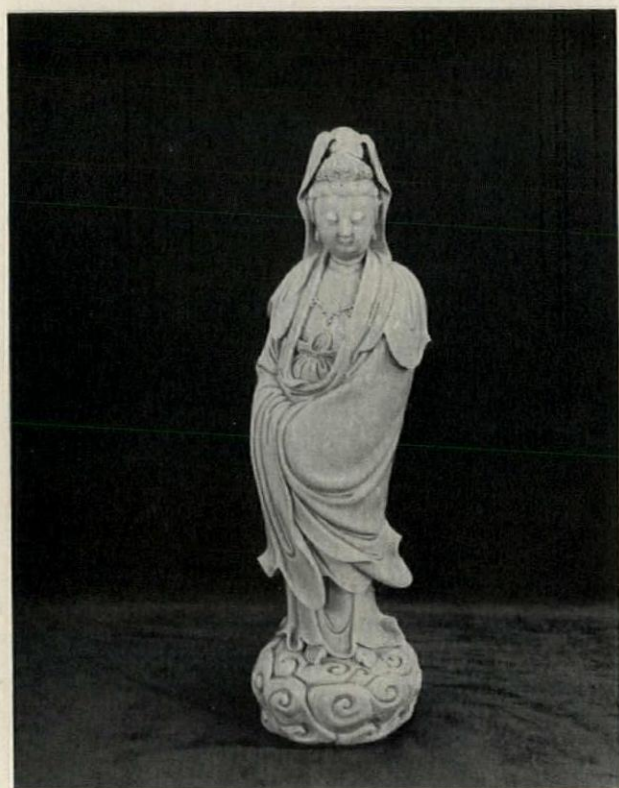
It is a big order. From the northern province of Chilhi, with its temple architecture of old Peking, to the province of Kuangtung in the south with the more formal walls of Canton, from Szechuan on the eastern borders of Tibet to Chiakiang and her Shanghai architecture, there is a greater variety of distinctive classes and styles in Chinese architecture, art and garden work than there is in almost any five different and distinct nations of the earth. Just what examples to choose from each of the various provinces in order to present a logical and clear illustration of the styles in those provinces is only one of the many problems confronting the architect and the committee. Obviously there is not sufficient area in any one concession of an exposition, no matter how large, in which to erect good examples of the best architecture of China. No sooner has the great pailou of Yenchoufu in Shantung been selected than along come tales of other pailous in other provinces



clamoring for recognition. After more than a year of careful research and study, the selection finally was made covering the general architecture of the major structures to be built at the exposition.

The principal outer wall along the major boulevard will be done in the style of the better walls in Canton. This also calls for an entrance pailou which will be done in the style of the same province of the neighbouring one, Hunan. Axed upon the major vista of the interior gardens will be a pagoda which will rise to a hundred or more feet above the surrounding buildings and which will house exhibits and a proper temple. This pagoda will be carried out in the style of the famous balconied pagoda in Shanghai, province of Kiangsu. It will act as the terminus of two vistas at right angles to one another.

The main entrance will be a pailou, over forty feet in height, done in the style of the great pailou of Yenchoufu, in the province of Shantung, where the uptilted corners and eaves take a more accented angularity, and which present more picturesque aspects from every angle than do the more severe and restrained ones of the south. The cafe will carry also a similar double-storied roof of curved eaves and corners, in the style of Szechuan and will be neighbored by small shops of the pavilion type, which will be detached from



The two famille rose jars and the little statue of Kuan-Yin, the Goddess of Mercy, will be on exhibition in the Chinese section of the Golden Gate Exposition. The jars belong to the Yung Cheng Period and are from the collection of Chingwah Lee and the statue is from that of Nathan Bentz

This grim Tibetan Lama God in gilt bronze and the rare jade carvings from the Ch'ien Lung Period (1736-1795) are to be included among the collection of Chinese art treasures which will be shown at the Golden Gate Exposition in 1939. Both are owned by the Nathan Bentz collection



major buildings. The lines of shops will be done in architecture reminiscent of streets in Canton, Hong Kong, Shanghai, and Peiping.

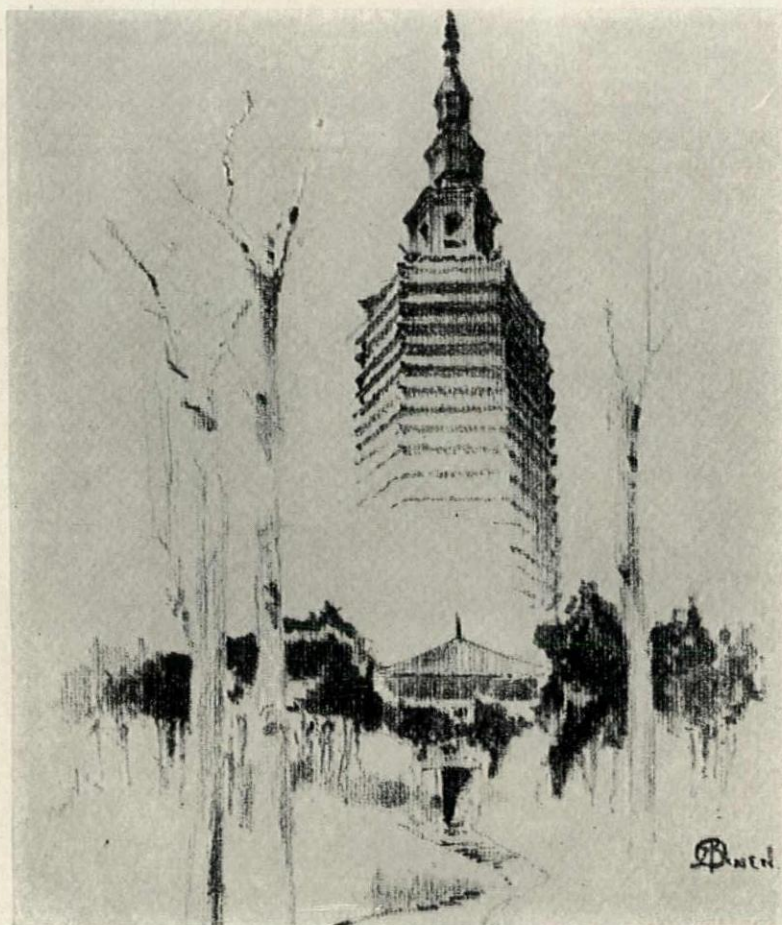
In order to maintain the true atmosphere of old China, the streets must of necessity be narrow but they debouche into small courts and plazas surrounding which are shops, cafés, and craftsmen's village buildings. One of these courts is the Court of Fortune in which Chinese games of amusement such as archery, penny rolling, turtle racing will be conducted. In another court will be an open-air platform whereon members of the troupes from the two theaters will perform in the open. In one theater will be Chinese motion pictures and the Chinese fan dance. In another, Chinese actors from Canton will present music and classic drama of old. A shadow puppet will operate alternately with the classic plays.

To the north of the pagoda is an area devoted to the "Village of the Good Earth." Here will be seen the peasant life and homes of handicraftsmen. The area is traversed by a small stream that widens into reflection pools

for a camel-back bridge, garden pavilions and floral displays.

Only sylvia and flora indigenous to China will be used in the gardens. The flora of China is far greater than is generally supposed. Due to the necessity in past years of procuring most Asiatic plants through Japan, the practice of using "japonica" as the second word of the name of many plants became general, such as "Camellia japonica." Yet most of such plants are Chinese.

The pine is a symbol of longevity as is the bamboo. The willow is a tree of legend and the plum of romance. The peach is an emblem of marriage and is given a prominent place in the mysticisms of the Taoists. Junipers, thujas, and persimmons may not be omitted. For flowers, essentials are the peony, chrysanthemum, lotus, artemisia, narcissus, jasmine, azalea, and many other varieties. They will all be used in the China Gardens, and that they thrive in the San Francisco bay district is another justification for the statement that the Golden Gate Exposition will glow with the brilliant blooms of many foreign lands.



COLLAPSE OF THE RELIGION OF ART

BY ROBERT L. ANDERSON



IN THE previous discussion, attention was called to the fact that men of the 19th century elevated art to the status of a high religion; even to the extent of confusing Christianity with æsthetics. While this 19th century Religion of Art made itself felt in many departments of thought, two developments were to have special significance for creative artists.

On the one hand, there were those who eventually were to carry the Romantic deification of instinct and emotion to æsthetic extremes. The more restrained desired simply to burn with Pater's semi-religious "pure, gem-like flame." The lunatic fringe irreligiously burnt their candle at the middle as well as at both ends. And in between, there were those whose major ambition was to flout and scandalize the average-citizen. The ancient *Civitas Dei* had become *La Vie Bohème*.

On the other hand, there were the scholars who, following the lead of Hegel, married art to history. The fruit of their labor was not æstheticism but archæology; instead of the Societies of Antiquaries and Dilettanti of a century before, Archæological Societies began to make their appearance. Champollion deciphered the Rosetta Stone in 1821; by the middle of the century excavations were under way in Egypt; by the third quarter of the century the great German excavations at Olympia had begun; by the turn of the century expeditions were going out from every country in Europe. For the first time men were uncovering factual evidence of their remote ancestry.

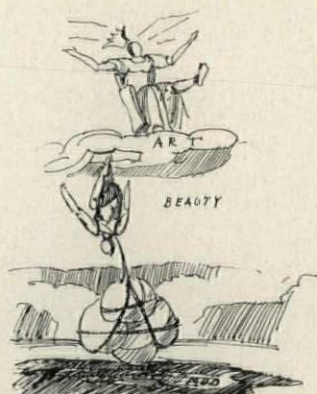
In the hands of these historically minded gentlemen, art became not a religion, but an exact science. By the end of the century, impaled on the iron pickets of history, art had become a "fatal box," to quote Anatole France, of indexed cards. And in '93 there descended upon Chicago that "white pall" of eclecticism which so infuriated Louis Sullivan; which was to infuriate men of the third decade of the 20th century.

Unfortunately, however, neither æstheticism nor archæology have much to do with those problems of the immediate world: food, clothing, shelter, a living wage, proper working conditions. Such problems have cried aloud for solution in every age, to be sure. During the 19th century, however, they had become enormously aggravated and multiplied as a result of the Industrial Revolution; a revolution which already had wrought profound changes in the ancient inherited order.

As the century progressed, these problems became increasingly acute. As the masses flocked to the cities and to centralized industry, a new class—the proletariat—was born. Shocked by the sufferings and the misery of this new working class born of the industrial and agrarian revolutions, a new social consciousness was born in the intellectuals and the idealists.

Gradually it became increasingly apparent that the Religion of Art was unable adequately to solve these problems which so desperately needed solution. And there began a scramble to escape the Religion of Art. Ruskin and Morris embarked on their attempts to revive craftsmanship and the guild system; marrying their new-found social consciousness to art, as well as to the ancient economic order.

As yet, however, the time had not arrived when the flight from the Religion of Art was to begin in earnest. Eventually, as an idea of destiny, Art was to be discarded for Socialism; just as traditional Christianity and 18th century Science had been discarded for art. But for the Ruskins and the Morrisises, and even for some contemporary men, social ends were viewed largely through æsthetic spectacles.



II

The Eclipse of Beauty

Not until the end of the century did the flight from the Religion of Art become a headlong rout. And even then it was not so much a flight from the Religion of Art as it was a flight from "æstheticism" and the bohemian life.

It was to result, unfortunately, in a flight from the pursuit of simple beauty as well. For the pursuit of beauty had been taken over by the æsthetic extremists and their cult of art for art's sake. The pot of paint which Ruskin charged Whistler had flung in the public's face was nothing compared to the vagaries and eccentricities of the later æsthetes. The cult was satirized in *Patience* in 1881. With the trial of Oscar Wilde in '95 it was to receive the *coup de grace*.

It was Ford Madox Ford, if I remember correctly, who recorded that he would "never forgive" Wilde for doing to death the principle of art for art's sake. Whether or not Wilde was solely responsible, it is quite possible that the scandal of his trial had much to do with the subsequent thesis that the creation of beauty could no longer be tolerated as legitimate occupation except for abnormal or anti-social individuals.

The ultimate result was that whereas at the beginning of the 19th century Keats could sing that "Beauty is truth, truth beauty" and receive the applause of society; the 20th century showers its applause on Thomas Mann's pronouncement that the pursuit of beauty is but a horrid *Death in Venice*. The artist, as artist, was no longer divine; he was merely a morbid, egotistic, abnormal eccentric. Beauty was eclipsed in mire.

Or, to those already imbued with the doctrines of dialectic materialism in one form or another, the artist was the kept-man of predatory capitalism.

In any case, all thought of the artist as creator of beauty evaporated in thin air. For

that was the hall-mark either of eccentricity, or anti-socialism, or both. Intellectually speaking, it is still considered to be such.

* * *

These things are, I venture to believe, matters to which contemporary men should give serious consideration. For there is evidence indicating that we are approaching the time when we must once more give serious consideration to the element of simple beauty in building.

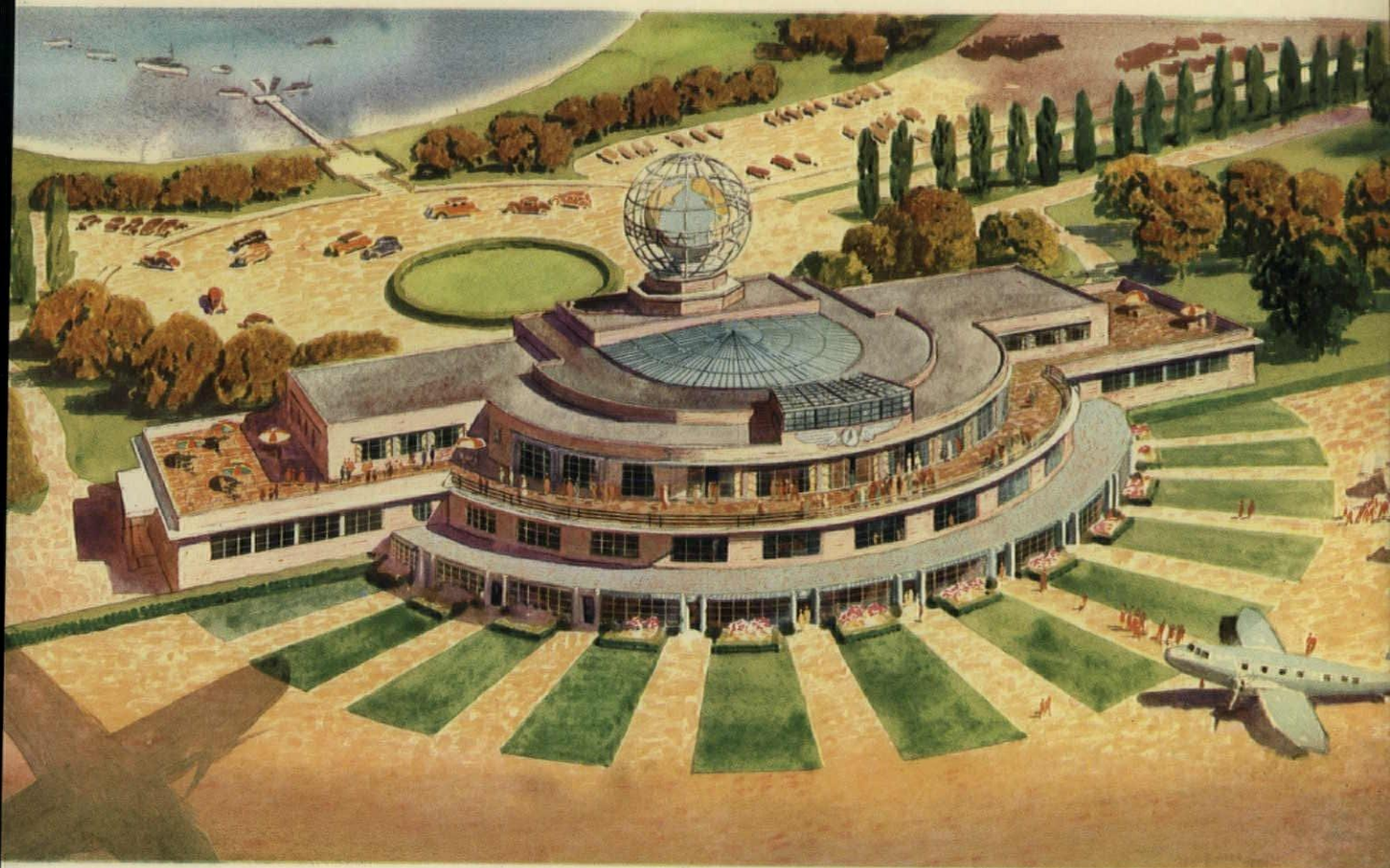
We are now emerging from the initial stage of one of those tremendous revolutions which radically alter the world of building. There have been few such revolutions in the past. One occurred when the Greeks refined the simple post and lintel system of construction into the Doric, Ionic and Corinthian orders. One occurred when the Romans discovered that as a structural system the arch possessed undreamed-of possibilities when constructed of concrete. One occurred when the mediæval peoples tried to construct the intersecting vaults they had inherited from the Romans with structural ribs instead of homogeneous concrete. One occurred when the Renaissance world suddenly rediscovered their Antique past, which they had forgotten. The most recent, possibly the most far-reaching, revolution occurred when men discovered that steel could be used for both vertical and horizontal support.

Always, when new technological discoveries have been made, there ensues a period in which men must bend their energies to mastering the new technique. Sooner or later, however, there comes the time when the new technique, the new structural principle, has been mastered.

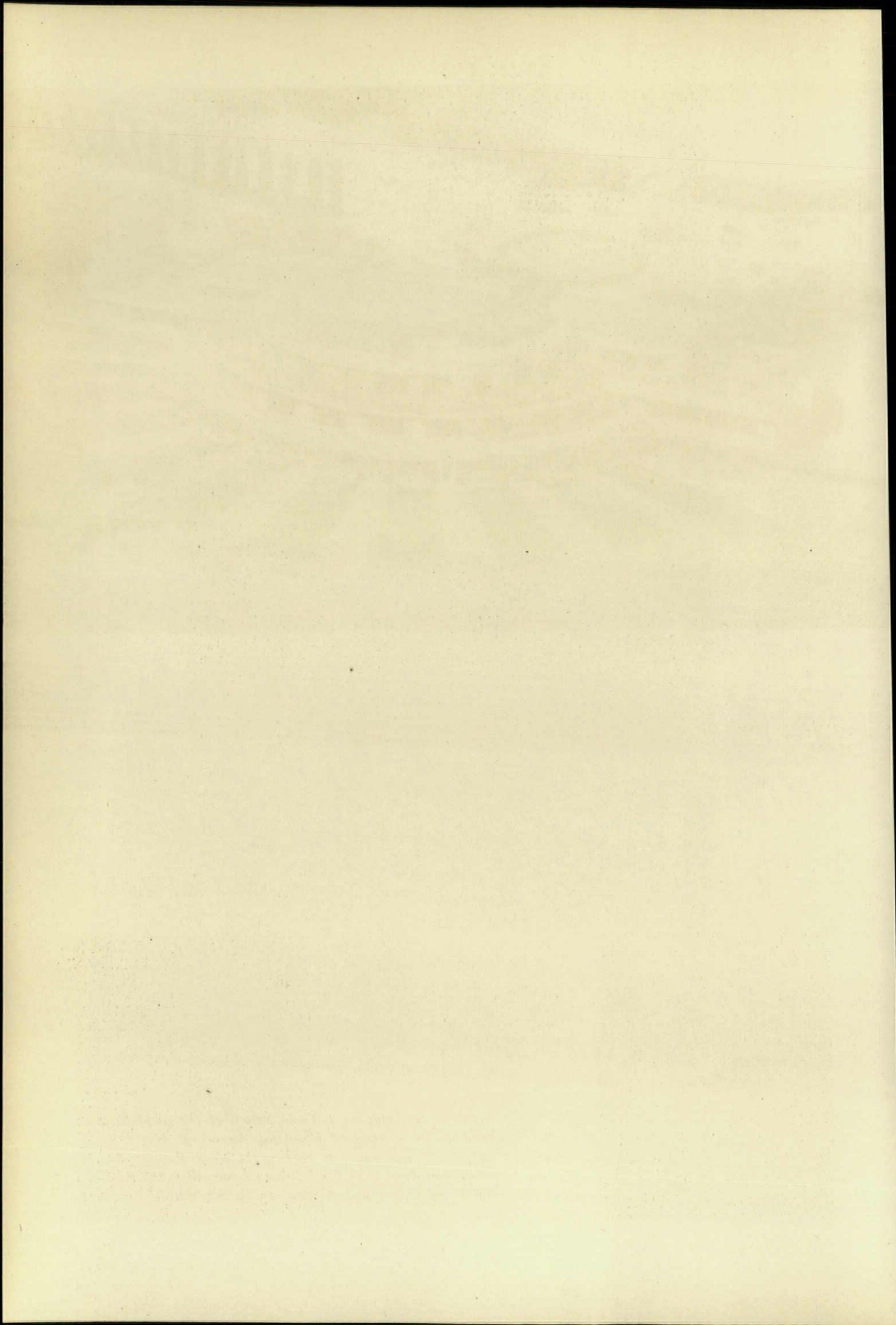
Thereafter men must bend their energies to refinement. They must seek to introduce the element of beauty into their newly mastered technical ability. And, just as they sought consciously to master the new technical method, so they must seek its refinement with full consciousness of the exact nature of their ambition. Otherwise they must fail miserably.

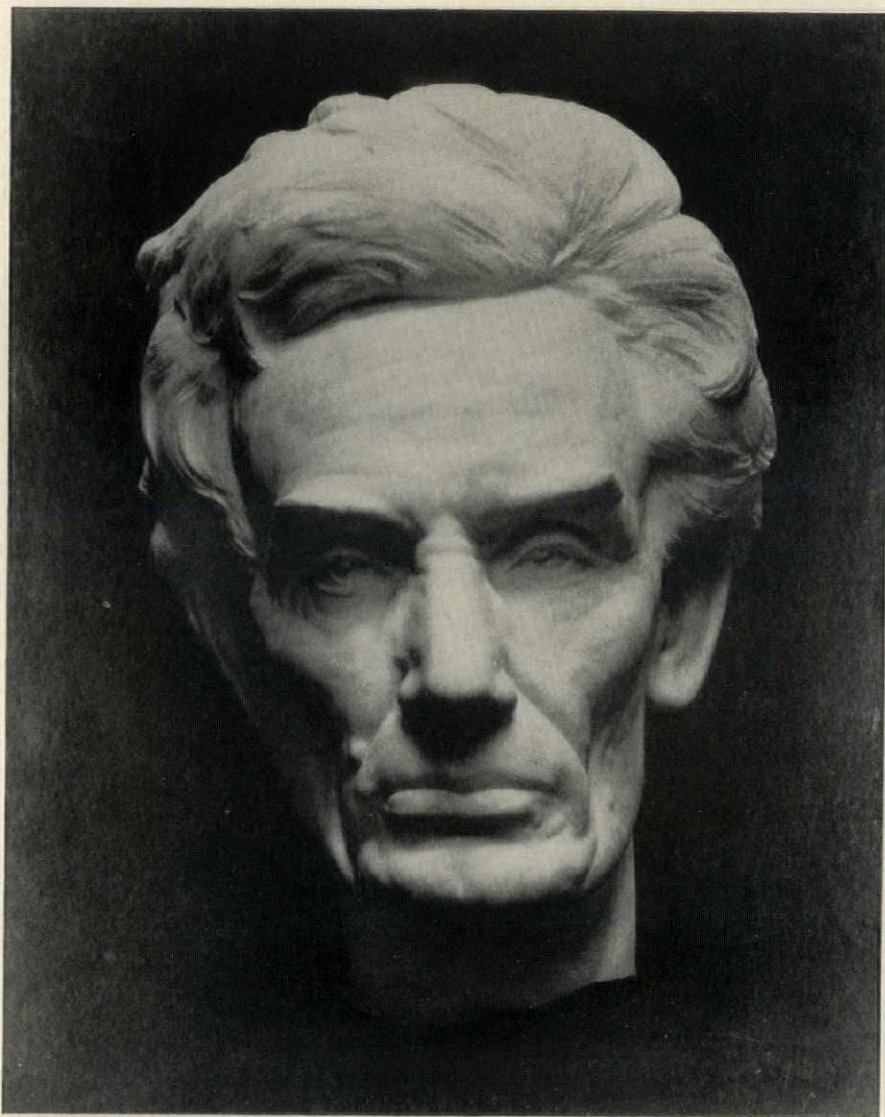
There is, I repeat, evidence that men are now turning toward that inevitable refinement of the new structural system. They are beginning to demand an æsthetic as well as a structural element in their building.

Yet before they can proceed in that direction, freely and with confidence, they will need to overthrow a good many beliefs which at present are still considered to be impregnable. One of them is the belief that the pursuit of beauty is somehow the attribute of an infantile and reactionary intelligence.



A colored rendering by J. Floyd Yewell of the Administration Building for a Proposed Municipal Airport at North Beach, Long Island, which is to be built by the Works Progress Administration of New York City. Brehon Somervell is the Administrator and Delano and Aldrich are the Consulting Architects

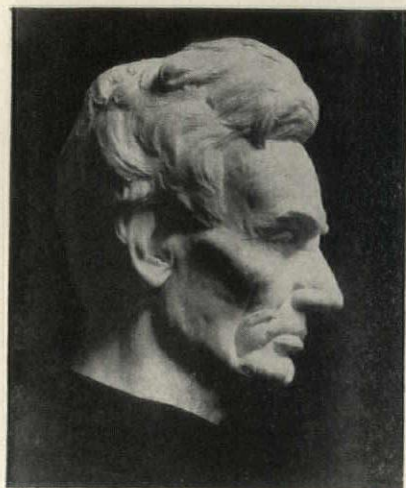




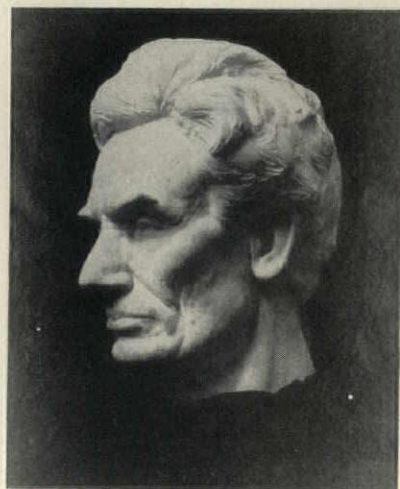
THE LINCOLN SHRINE

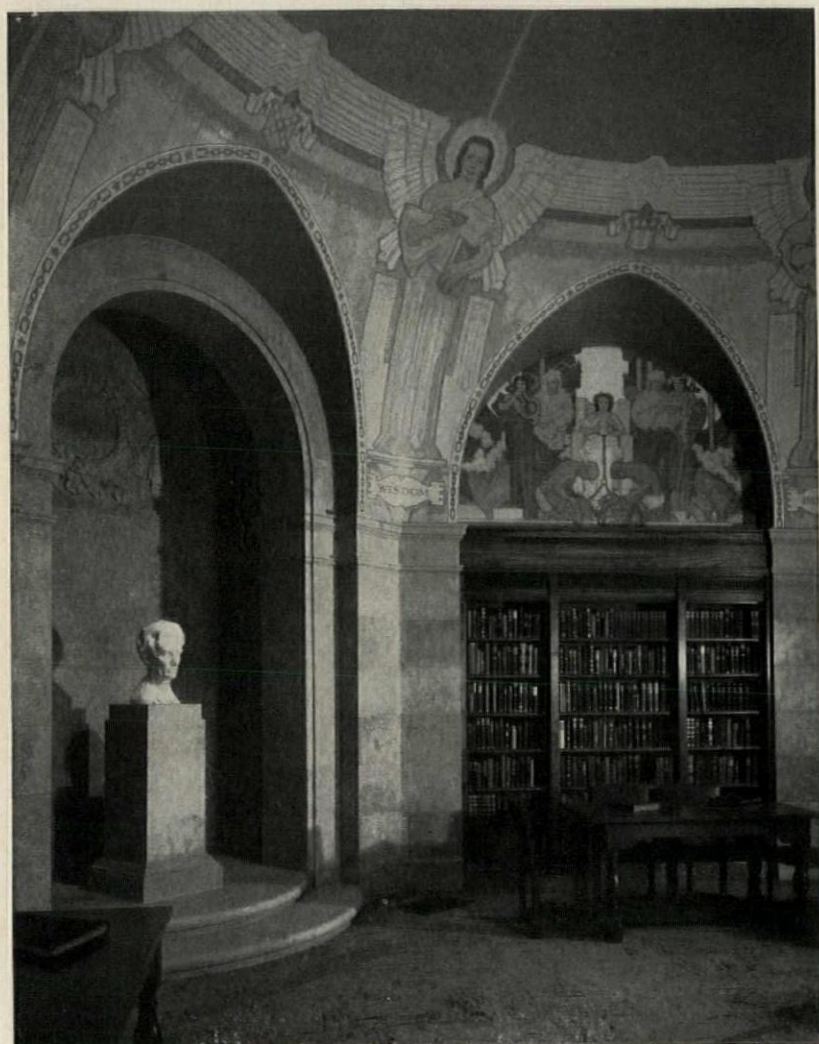
at

REDLANDS, CALIFORNIA



Three views of a head of the Great Emancipator sculptured by George Grey Barnard. This remarkable piece of statuary forms the focal point of the Lincoln Shrine at Redlands, California, which was designed by Elmer Grey, Architect, and has incorporated in it murals by Dean Cornwell and sculptured fountains by Merrel Gage. Illustration of these will be found on the following three pages





The central portion of the Lincoln Shrine, above, was built in 1932 but it was not until a few months ago that the wings and terraces were finally completed in accordance with the plans of Elmer Grey, Architect. The view of the interior, at left, shows the bust illustrated in detail on the preceding page and Dean Cornwell's mural arrangement

At right is "Justice," a mural by Dean Cornwell. The sculptured fountain, below, is one of the two executed by Merrel Gage, and is a recent addition to the Lincoln Shrine





Studies of two more murals commemorating two of the many great services that a great President rendered his country painted by Dean Cornwell for the Lincoln Shrine designed by Architect Elmer Grey. The one above is "Preservation of the Union" and the one below, "The Emancipation of the Slaves"



OPEN SPANDREL BRIDGES OF ANCIENT CHINA—I

THE AN-CHI CH'IAO AT CHAO CHOU, HOPEI

BY LIANG SSŪ CH'ENG

INTRODUCTORY NOTE:—The following article was recently received from China where its author, a well known Chinese architect who is Director of Technical Studies in the *Society for Research in Chinese Architecture* is now one of the many scholars who have been obliged to evacuate Peiping.

Mr. Liang, son of the famous scholar and political reformer, Liang Ch'i-ch'ao, came to America after the completion of his Chinese education and took the degrees of Bachelor and Master in Architecture at the University of Pennsylvania in 1927. After extensive travel in Europe he returned to China and founded its first modern school of architecture, at the North-eastern University in Mukden, Manchuria, where he taught for three years.

Moving to Peiping in 1931 as a result of the Manchurian invasion, Mr. Liang became associated with the *Society for Research in Chinese Architecture* and began pioneer researches in the structural development of Chinese architecture. At the outset, not only were many of the key architectural monuments literally unknown, but the ancient treatises on building methods, insofar as they were couched in obsolete carpenter's terms, had

become incomprehensible. Before publishing in 1935 his definitive book on the architecture of the Ch'ing Dynasty, Mr. Liang was obliged to reconstruct, with the help of old Palace workmen, what he could recover of this traditional architectural vocabulary in order to compare his own measurements with the recorded official building regulations of the Manchus.

On a succession of field trips throughout North China during the last five years, Mr. Liang and his colleagues have discovered and published detailed descriptions and measurements of a great number of early temples, pagodas, and other monuments of primary significance in the history of Chinese architecture. The first clue to the existence of these monuments was often found through painstaking examination of local records, but sometimes, as in the present case, a simple folksong suggested their search.

This article was originally published in Chinese in the *Bulletin of the Society for Research in Chinese Architecture*, Vol. V, No. 2 (December 1934, Peiping) and is here for the first time made available in English in this translation.

WILMA C. FAIRBANK

THERE are in North China four famous historical landmarks known to everyone through the familiar jingle:—

*"The Ts'ang-chou lion, the Ying-chou
pagoda,
The Cheng-ting Buddha, the Chao-chou
bridge."*

Of the four I had already had the opportunity of studying two. (1) The 73-foot bronze figure of Kuan-yin at Cheng-ting is not only impressive in itself, but the buildings of the temple, Lung-hsing Ssu,* in which it is situated, are important remains of the early Sung Dynasty (Xth century). (2) The Wooden Pagoda of Ying-hsien, built in the 2nd Year of Ch'ing-ning (1056) of the Liao Dynasty, is the oldest wooden pagoda existing in China, and must be considered one of her national treasures.

Finally, at Chao-chou,† I encountered the third of these landmarks, the astonishing and superb An-chi Ch'iao, an open spandrel bridge of the Sui Dynasty (590-618 A.D.)! Omit-

ting mention of the Ts'ang-chou lion which I have not yet seen, I cannot but be overcome with admiration at these three wonders celebrated in the folksongs.

The An-chi Bridge

According to Chapter I of the *Chao-chou Chronicle*** (Kuang-hsü edition), "The An-chi Bridge is located five *li* south of the city over the River Chiao. It is also called the Ta-shih Ch'iao (Big Stone Bridge). It was constructed by Li Ch'un, a builder of the Sui Dynasty. It is unique, ingeniously constructed and strong; it is first under heaven . . ."

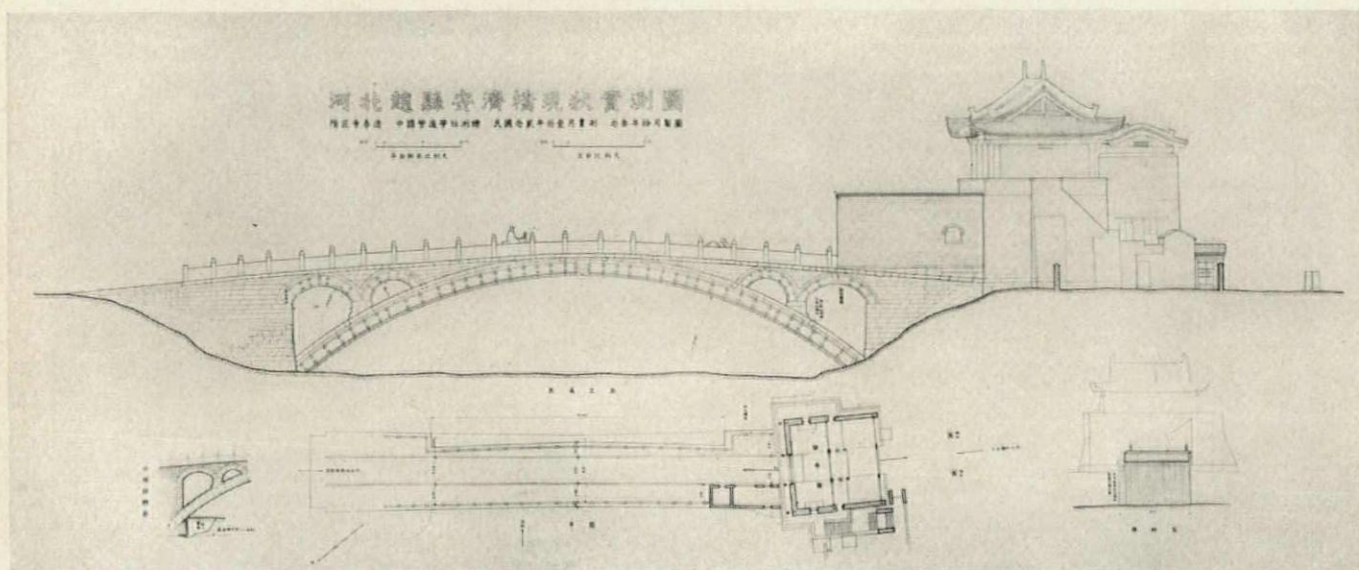
*A brief analysis and description of the Lung-hsing Ssu by the author was published in the *Bulletin of the Society for Research in Chinese Architecture*, Volume IV, No. 2.

†Chao-chou, a small city in the Province of Hopei, is situated about 25 miles southeast to the junction station of Shih-chia-chuang on the Peiping-Hankow Railway.

**The "chronicle" or chih is a combined geographical-historical record of a place giving information for almost everything concerning the place. An empire, a province, a fu, a hsien, or even a mountain or a temple may have a chih of its own. It is customary to revise an official chih every forty years.



The An-chi Ch'iao at Chao Hsien, Hopei Province, China, shown here in photograph and plan is the work of Li Ch'un, builder of the Sui Dynasty (590-618 A.D.). The main arch measures about 37.50 meters and the spandrels are pierced by two smaller arches. It is the oldest known open-spandrelled bridge in the world, the oldest European bridge of this type having been built in 1321. The An-chi Bridge gives an appearance of great elegance and grace, and looks more like one built today than 1340 years ago. The southern end is guarded by Kuan-ti, the God of War, whose dignified statue sits in the building, built in the early XIVth century, which may be seen at the right-hand side of the photograph



There exist many songs, poems and essays about this bridge, among which the most important is a citation by Chang Chia-cheng of the T'ang Dynasty: "The stone bridge over the Chiao at Chao-chou is the work of the Sui Builder Li Ch'un. Its construction is so strange that nobody knows how it was built. Just look at the ingenuity with which the stones are handled! They are dressed into perfect forms, and these well-fitting blocks interlock with one another, forming a lofty arch without the help of columns—how astonishing! . . . They are laid in lime mortar and held together by iron keys. The two ends are penetrated by four arches, for the purpose of reducing the forceful onrush of the ferocious current. Without great wisdom and foresight (of the builder), the construction would not have been possible. The balustrades and the posts are carved in the forms of dragons and beasts, winding, crouching, interlacing and flying as though alive . . ."

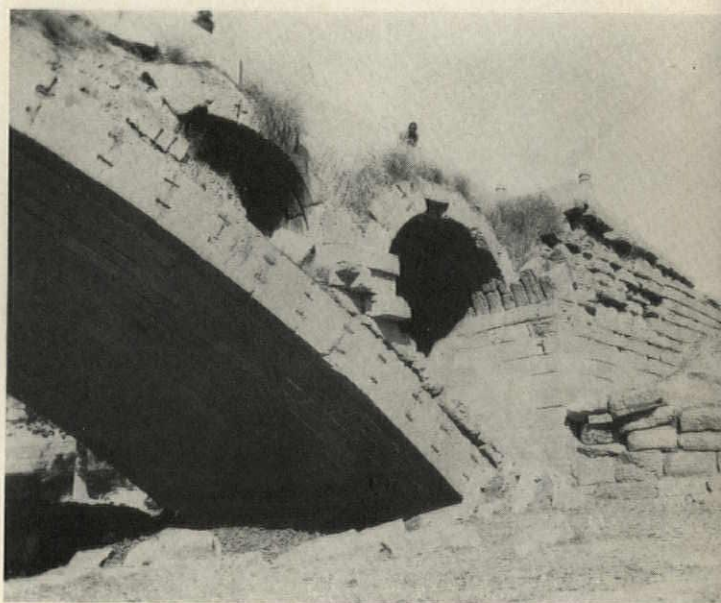
Chang Chia-cheng was appointed *Chung-shu-ling* (Prime Minister) in the eighth year of K'ai-yuan (720 A.D.) in the reign of Hsüan-tsung. It was then barely one hundred years after the downfall of the Sui dynasty. His citation should therefore be reliable, and certainly much of his description answers exactly to the appearance of the bridge today with the exception of the beautiful balustrades for which new ones have been substituted. At the south end of the eastern side there may still be seen two old panels. These may possibly be the "jade balustrades" celebrated in the *Hsiao Fang Niu* (Little Cow-herd), a rural comedy well known in North China, but they cannot be older than the Ming Dynasty (1368-1644). As to the statement that "its construction is so strange that nobody knows how it was built," it is an evidence that the construction of the bridge is truly the work of a genius. It is not the stereotyped structure of the ordinary artisan following the tradition of the period in which he is living. There are contained in the *Chao-chou Chronicle* three more T'ang Dynasty citations on this bridge. Although none of these wrote about its construction or history, their writings can be taken as proof that the bridge even as early as the T'ang Dynasty was considered extraordinary. Carved on the abutments of the smaller arches are numerous poems and citations written by visitors. Among them are dates as early as Ta-kuan (1107-1110) and Hsuan-ho (1118-1123) of the Sung, and many of Chin, Yuan, and Ming dynasties.

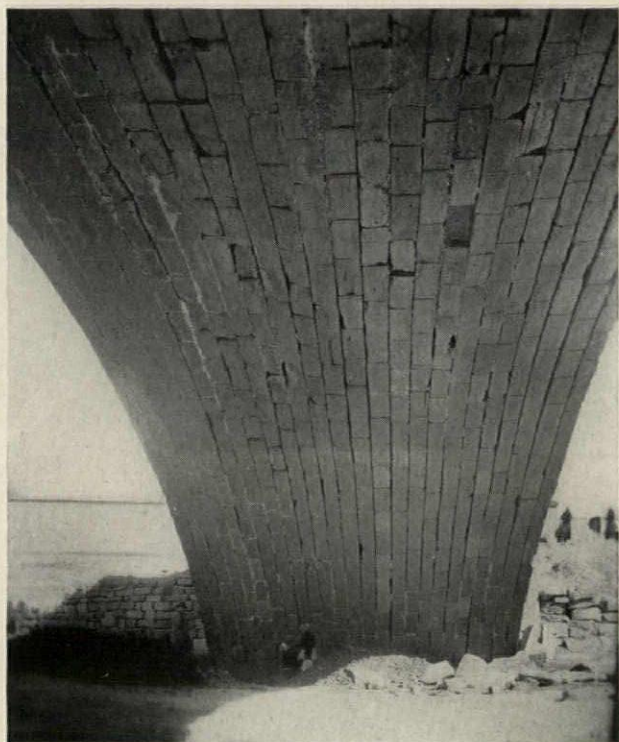
This bridge was probably as late as the be-



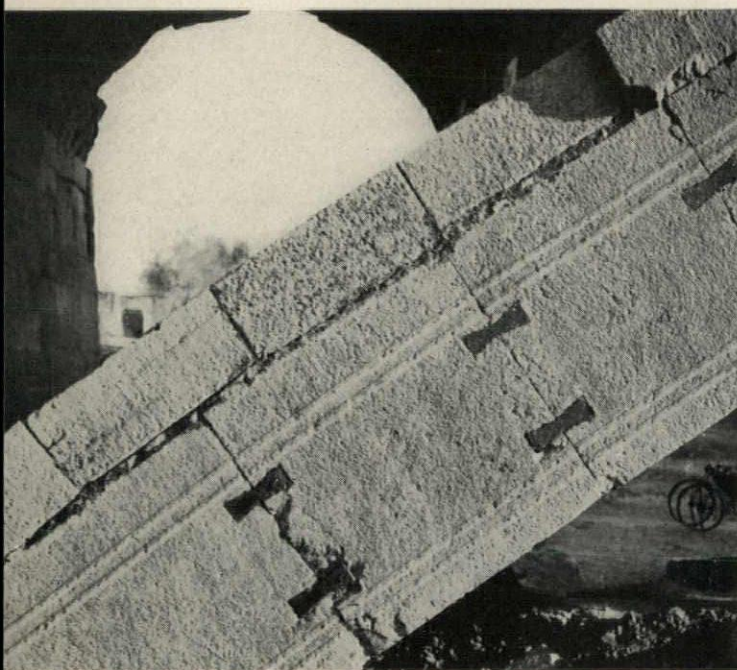
The original "balustrades and posts, carved in the forms of dragons and beasts, winding, crouching, interlacing as though alive," have long since disappeared. They were replaced by new ones in later ages. At the south end are two old panels, but they are probably not older than the Ming Dynasty which extended from the years 1368-1644

The eastern side of the An-chi Ch'iao fell off about 200 years ago, revealing the inner strings of arches, every stone of which is joined to the next one by two iron keys. The fallen stones still lie in a row in the dry river bed. It would not be very difficult to restore them





The arch-vault of the An-chi Ch'iao is built in the Roman way of placing 28 separate rings of arches side by side. The width of the bridge is reduced considerably at the crown so as to create an inward falling tendency of the rings, thus to prevent them from falling apart. The five rings on the western (left) side of this amazingly well engineered bridge were restored in 1600



The voussoirs of the main arch are joined to one another with iron keys. The surface is decorated with two slightly raised continuous mouldings. Above the main arch is laid another course of slabs called the fu. At intervals the fu is made with a "hook" to keep the rings in place. A fu with its broken "hook" is at the upper right

ginning of the Ming Dynasty and still is in very good condition. The first record of repairs in the *Chao-chou Chronicle* is written by Chang Chü-ching of the Ming Dynasty. It says:

"At the beginning of the (Ming) Dynasty a woodseller anchored his boat at the foot of the bridge. The load caught fire, causing a slight crack in the stone of the bridge, thereby damaging some of the iron keys. At the same time the top of the bridge is very much worn by the heavy traffic it has to bear. My father saw it and said: 'If this is not repaired, it is going to fall!' In the year of *Kuei-bai*, he, together with Tu Jui of the town, started a movement for its restoration, but some years afterwards the stone was again broken. My brother and I in our turn asked Magistrate Li to take up the work. We made the monk Ming-chin collect contributions, and Prefect Wang sponsored the restoration. The work was started in the autumn of *Ting-yu* (1597 A.D.) and completed in the winter. Thus the famous soaring arch is restored to its former glory."

This is the only record we have of any restoration on this bridge, and the injury recorded is no more serious than "a slight crack in the stone" and "damaging some of the iron keys."

The western side of the bridge is very new. According to the country people, it fell down at the end of the Ming Dynasty, possibly sometime after the 1597 restoration, and was repaired in the time of Ch'ien-lung (1736-1795), but there exists no record of this repair. The eastern side is said to have fallen down in the Ch'ien-lung period, probably soon after the restoration of the other side, and it has remained unrepaired up to the present. The stones that have fallen down still lie in rows in the river bed.

The river Chiao which the bridge spans is now nothing more than a dried up river bed. Not until we had dug down more than two metres did we reach the water level. This makes the "forceful onrush of the ferocious current" somewhat difficult to imagine. But light is shed on the original necessity for constructing this bridge by the *Shui Ching Chu*†† which points out that "the River Chiao does not originate in the mountains but collects all the torrential rains from the nearby hills. Whenever there is a heavy rainfall an immediate flood rushes down flowing in swirling currents which cannot be checked."

††Shui Ching Chu, or *Notes on the Book of Rivers*, by Li Tao-yuan of the North Wei dynasty (386-554 A.D.).

The present bed of the Chiao River is undoubtedly much higher than at the time the bridge was constructed. The two ends of the main arch are now deeply buried in the silt deposited over thirteen-hundred years. The actual length of the span is difficult to ascertain. According to my measurements, the distance from the abutment of one of the final spandrel-arches to that of the other is 37.47 metres. But beyond that the main arch continues to go downwards. Its clear span is therefore greater than the above-given figure. That there should be found a single arch of this dimension in China where the post and lintel system has always been the principal method of construction and that this arch should have been erected almost thirteen-hundred and forty years ago is really extraordinary.

The oldest known use of the arch in China is to be found in the tombs of the Chou (1121-249 B.C.) and Han (204 B.C.-220 A.D.) Dynasties. Examples are fairly numerous. But as to the genesis of the arched bridge we have neither written records nor actual remains on which to base an opinion. Whether or not it developed as a result of foreign influence is yet to be established. The oldest description we have of an arched bridge is to be found in the *Shui Ching Chu* under the Ku River:

"... and then further to the east, it joins the Ch'i-li Creek from the left. The creek is spanned by a stone bridge known as the 'Travellers' Bridge.' It is located about six or seven *li* from Loyang. Constructed entirely of large stones, it is curved underneath for the water to pass through. It is inscribed 'Finished at the beginning of the 11th month, 3rd year of T'ai-kang' (282 A.D.)."

The contents of this quotation leave little room for doubt that it refers to an arched bridge. Considering that throughout the later periods it has always been the custom in describing arched bridges to give the number of arches, it is more than possible that we have recorded here a single span. In the multiple-arched bridges of later periods, the thrust of the arches is taken up by piers placed at even intervals across the stream bed. But possibly the oldest record we have of this type of pier is a description of the T'ien-tsin Bridge at Loyang, built in the T'ang Dynasty, 14th year of Cheng-kuan (640 A.D.), in which "stone masons are ordered to pile up stone blocks for the foot" (of the arches). I am tempted to believe that the arched bridges of the Six Dy-



The fu is laid with its principal joints perpendicular to those of the main arch-vault, and the slabs are also joined to each other by iron keys. The surface of these slabs is glossy with centuries of polishing by visitors and neighborhood children climbing into the smaller arches



At about 70 centimeters below the present river bed a stone wall was unearthed at the north end under the main arch. Under the wall no strong foundation was found. It is merely a device for guarding the true foundation and could not have been intended to carry the thrust



nasties, before the invention of this method, consisted each of a single span stretching from one bank to the other, and that, although the dimensions and method of construction of the An-chi Bridge may have been unusual, its single span form was probably the only form then in use.

The vaults, both large and small, of the An-chi Bridge were built in the Roman way of a number of separate rings of arches placed side by side. These rings of arches number twenty-eight altogether, each measuring a little more than 35 cm. in width, while the depth is approximately 103 cm. throughout the entire length of the arch.

The limestone voussoirs of the main arch, however, vary from 70 to 109 cm. in length. Within each arch ring the blocks are joined to one another with iron keys. The keystone on the western side is decorated with an animal mask. On the outer face of the voussoirs are two slightly raised continuous mouldings which may be in imitation of the original treatment. On top of the arches are laid larger slabs of stone, measuring about 33 cm. in thickness, with transverse joints which are roughly continuous across the entire width of

The smaller arches at either end, like the main arch, are made up of 28 separate rings. The depth of the small arches is uniformly 60 centimeters, with an additional 20 centimeters of fu. The end voussoir of the larger spandrel-arch at the north end (left), apparently an original stone, is equal to the combined depth of the two

the bridge. The use of this extra course of slabs has survived to the present day. It is now known by the Ch'ing Dynasty technical term, *fu*. The function of this *fu* seems to have been that of preventing the individual arches from falling outwards, but it does not seem to have accomplished this.

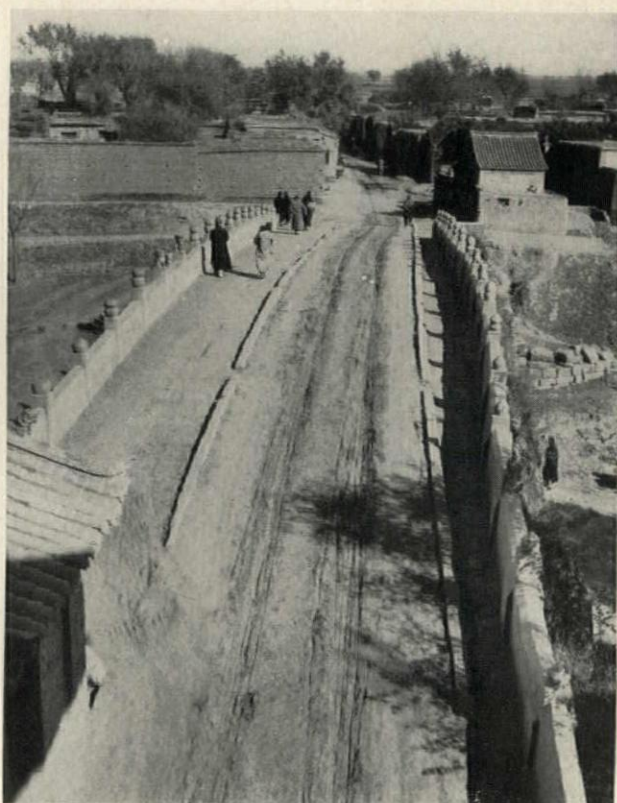
The foundations at the ends of the main arch must have to be very deep. It is obvious that they do not end at the spot where they touch the bank; but I could not share the credulity of the country people who have a legend that the circle completes itself underground. I excavated at the point where the arch enters the ground at the north. At about 70 cm. below the present riverbed, a stone wall underneath the arch was unearthed. It consisted of only five courses, measuring altogether about 1.58 metres high. Each course receded a few centimetres from the edge of

the one below, and no strong foundation was found underlying the whole. It is evident that this wall was merely a device for guarding the true foundation and could not have been intended to carry the thrust of this disproportionately large arch. At about 40 cm. below the lowest course the water level was reached. Our work served to indicate that only by excavation on a much larger scale can the actual status of the foundation be discovered. My disappointment at my failure was only rivalled by that of the local onlookers who had anticipated confirmation of the folktale with which they were all familiar.

Of the two smaller arches at either end of the bridge, the outer (nearer the bank) is somewhat larger than the inner one. Like the main span, they are also made up of twenty-eight separate rings and are segmental. At the end nearest the bank the outer arch is met by an abutment and in the other direction it rests on a small impost block resting on the main arch, which also serves to support the outer end of the inner arch. According to my measurements the four smaller arches are not entirely regular segments of a circle. But of the two at the north end, the radius of the outer one is roughly about 2.30 metres and its clear span 3.81 metres; the inner one has a radius of about 1.50 metres and a clear span of 2.86 metres. The spring-lines of the arches are all slightly inclined, the inner ends being higher than those towards the bank; that is to say, the imposts of the two ends of the arches are not on the same level. The depth of the small arches is uniformly 60 cm., with an added depth of 20 cm. of *fu*. However, at the west side of the north end of the bridge, the depth of the end voussoir of the outer arch, which is apparently the original stone, is equal to the combined depth of the two. Here is clearly shown the difference between the original and the restored parts. The carved animal mask on the keystone seems also to be the original.

The slope of the top of the bridge is, roughly speaking, determined by the line connecting the crown of the main arch with those of the smaller arches. The spandrels between the five crowns are built up with stone to the pavement level, where slabs measuring 27 or 28 cm. in thickness form a surface resistant enough to withstand the continuous wear and tear of the cart traffic.

Since the main span was constructed simply by placing rings of arches side by side without an effective bond, the designer was faced with the problem of finding means to prevent the outward fall of the arches. Besides the *fu* mentioned above there are incorporated in the



From the terrace of the Kuan-ti Ke is seen the top view of the bridge. The east (right-hand) side walk is seen reduced to a narrow strip with the fall of the three rings on the east side, and at present the next few rings are also, in their turn, beginning to incline outward

bridge three more devices for checking this tendency. First, at regular intervals along the face of the *fu* are interspersed long stone blocks with their ends carved into an overhanging hook, designed to clutch the stones of the face ring and hold them in place. Second, between the *fu* and the arches at or near the crowns are visible large round iron spike-heads, suggesting the use of long iron rods to take care of the outward falling tendency of the arches. It is evident that the effectiveness of these two methods can be only very limited. It is the third method, however, which most deserves attention. Our measurements show that the bridge is narrower at the middle than at the two ends. The face of the bridge is divided into three lanes as we have noted above. The distance between the balustrades at the north end is 9.02 metres, while the corresponding measurement at the south end is 9.25 metres. But the width at the crown, assuming that the sidewalk on the east side, of which three arch-rings have fallen off, was the same width as that on the west side, should measure 8.51 metres, smaller than the two ends by 51 cm. and 74 cm. respectively. I am convinced that this reduction of width at the

crown, far from being the result of careless workmanship, is an evidence of the foresight of the designer, who, being aware of the outward-falling tendency of the arch rings, deliberately reduced the width near the centre, thus creating an inward thrust to counteract this danger. But in spite of these careful precautions, even so impressive a triumph of engineering as this, has through the centuries fought a losing fight against the destructive forces of nature. Five arches on the west side toppled over at the end of the Ming Dynasty, but were restored not long afterwards. In the Ch'ien-lung period of the Ch'ing Dynasty, the three outermost arches on the eastern side fell off in their turn. At present, from the terrace of the Kuan-ti Temple, the central

portion of the bridge near the eastern side shows an outward falling tendency already clearly marked. If this is not taken care of immediately, the gradual disintegration of the bridge will soon progress still another step.

There are two buildings in connection with the bridge: (1) the Kuan-ti Temple at the southern end. The present building consists of two separate parts, the northern part being the principal one. Judging stylistically, I venture to date it at the end of the Yuan or beginning of the Ming Dynasty (late XIVth century). The front portion seems to be of a much later date. (2) Adjacent to the Kuan-ti Temple on the south end of the bridge is a small building on the western sidewalk, probably of the XIXth century.



Winter, North Toronto 7/100

W. F. G. Godfrey

From a wood-block print by W. F. G. Godfrey of Toronto, Canada

TIME RHUMBAS ON

THE GREAT ARCHITECT CELEBRATES NEW YEAR'S

BY EUGENE RASKIN

SQUIRMING helplessly, we were carried along by the Times Square crowd. The Great Architect managed, somehow, to turn his head in my general direction, and shout, "Skzrm blgrzx ot!"

At least, that was what it sounded like, above the New Year's Eve din. To get a rough idea of the acoustical setting, try this mix: 1 part horns, 1 part bells, 2 parts yells, 2 parts whistles and assorted clangs. Add a dash of high-pitched giggles, shake well, sprinkle with dented fenders, and serve. The effect is guaranteed to knock you cold, or your money back.

"I didn't hear you!" I cried.

"What?" screamed the Great Architect.

"I can't make out a word you say!" I howled.

"Oh," he nodded brightly, "yes, I think so, too."

Taking advantage of a temporary easing of the pressure, I snared his elbow and yanked him into the comparative peace of a doorway, flanked on one side by a sign that proclaimed ANY ITEM 35c, and on the other by one which read 50 BEAUTIFUL GIRLS 50. Whether or not there was any connection between the two I have yet to learn.

The Great Architect drew a deep breath and gazed out over the human bedlam.

"You know," he said, using that sincere tone he turns on and off so readily, "this is really inspiring! Makes one realize the tremendous vitality and drive of our race. Overflowing . . . Surplus of everything. Surplus energy, surplus ambitions, surplus vanities, surplus numbers . . ." He waved his hand in a broad theatrical gesture.

"Let's get going," I interposed. "Our party will be wondering what's become of us. Pretty soon they'll start looking for us you-know-where, like last time. Remember?"

"No," he said, coldly. "And I don't wish to be reminded. You are amazingly insensitive, my dear boy, to the mood of the moment. This is a time for affirming ideals, for high resolves—not for nasty reminiscences."

"Well," I said, resignedly, "if you must, you must. But please make it snappy . . . I've got some celebrating to do. Could you sort of walk along while you affirm, or do you need a plinth?"

"Not only are you insensitive, my young friend, but rude as well. However, tonight being tonight, I shall overlook your petty sarcasms. The occasion is one for lofty thoughts, for envisioning a noble future, for high resolves . . ."

"You said that before," I put in.

"What of it? There's nothing wrong with repetition, as such. In every one of the arts—music, painting, literature, sculpture, architecture, the dance—repetition is used to give emphasis, to create rhythm, pattern. Why, I myself make extensive use of repetition in my own designs."

"Yes, I've noticed that. Your last few buildings have been as alike as tom-tom beats. What rhythm! What pattern!"

The Great Architect glared at me, while the veins on his forehead throbbed dangerously.

"For the sake of our past friendship," his voice was tense, "I shall ignore that remark. I shall try to imagine that it was never uttered. Perhaps in time I shall succeed."

We strode on in silence for two or three blocks. By that time the joyousness so efficiently being demonstrated around us had worn away his bitterness. His head was up again; the glow was back in his eyes, and colorful speech trembled on his lips. Seeing this, I abandoned the pretty apology I was busy framing, and prepared to hear the inevitable discourse. As it turned out, I didn't have long to wait.

"Let us hope," he began, "that 1938 will be a great year for building. That slum clearance will really get under way . . . That housing will come into its own . . . That public taste will demand, and receive, better architecture . . . That designers will finally learn the difference between functionalism and fad-ism . . . That a system of open competition overcomes

the arteriosclerosis afflicting the body of public work . . . That wholesale sneering at architecture of the past becomes a thing of the past . . . That the architectural profession organizes to do something more than just organize."

I was about to ask, "For instance?" but the Great Architect had merely paused for a quick inhale before resuming.

"These, however, are general aims, which are to be desired from a collective point of view. As individuals, too, we should strive, in this new year, to develop our talents, clarify our philosophies, adjust ourselves to a changing world and broaden our knowledge, so that we may become better fitted to serve as architects. You, for example . . ."

"Never mind me for the time being," I interrupted. "I'd much rather hear what you plan for yourself. Maybe I can get some pointers to guide me."

"I? Well, offhand, I don't know . . ." he hesitated. "Of course, I shall continue the honorable discharge of my professional obliga-

tions, and, er . . . try to live up to the ideals of . . ." His voice died away.

"How about that studying you were going to do?" I urged. "Remember you were going to brush up on your construction? Seems to me you said something about learning how to figure a beam—bending moments, shear, deflection—that stuff?"

"Ridiculous," the Great Architect murmured weakly. "What do we have handbooks for? And engineers?"

"And how about reviewing your history? You know you get confused when people mention Rouen, or Chartres, or St. Mark's."

"Silly." His voice was barely audible. "Cluttering up one's head with useless information."

"And financing. Weren't you going to find out how to make a financial set-up? And how to figure maintenance against rent?"

The Great Architect turned to me brusquely.

"Say," he snapped. "Are you going to blab all evening? You know our bunch is waiting for us. Get moving, and stop this vaporizing."



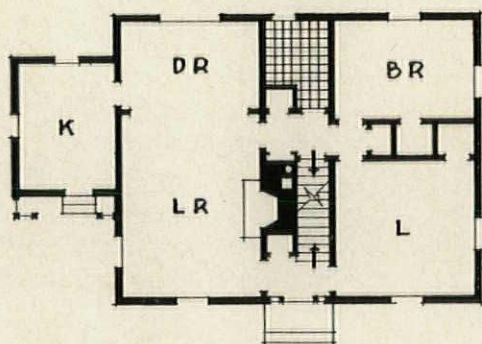
From an etching by George Sheldon Lewis, made during his travels on the Rotch Scholarship



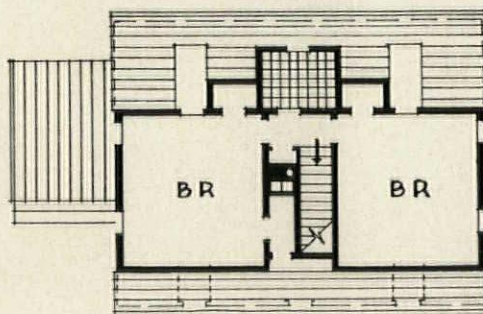
Edwin G. Johnson of Boston has caught the spirit of New England in this etched plate which he has appropriately entitled "Five Miles from Boston"



*A small house designed and rendered by
Matthews M. Simpson of Summit, N. J.*



FIRST FLOOR PLAN



SECOND FLOOR PLAN

ORIENTATION

A METHOD FOR MAKING IT A SIMPLE MATTER

BY GEORGE E. EICHENLAUB

ARCHITECTURAL juries frequently allude to orientation in their reports and often we find it in our books, but never, oh never, do they explain wherein, why for, or elucidate at length so we all can grasp the precise significance of the always more or less vague allegations.

Being curious, we look into Webster's little book and he says in effect, "Facing the East," from which we deduce that a house or building should somehow face toward the East, which we are privileged to think is plain silly.

Since there are so many designers who have discovered that a building with windows or a doorway should take account of varying angles of sunlight, and winds, and storms peculiar to a region or site, it becomes valuable, even necessary, that the subject be specifically pinned down to promote better common understanding.

Since 1908, the writer has been interested particularly, has acquired some skill as a practical yacht navigator, has found orientation an absorbing subject and one upon which architects as a class, when drawn into it, will talk learnedly, but with little true conception thereof. In the interest of better design, better planning, better salesmanship, you are invited to peep into my bag.

First off, a building does not have to "face toward the East" but—which sides look East, North, etc., is MIGHTY important, depending upon its character of occupancy, plan arrangement, local site conditions, etc.

The Engineer always (usually) fixes his North Point in Plan toward the top of his drawing; the Architect finds it more convenient, usually, to lay down his plan with the main entrance to the building at the bottom of the sheet regardless, so that the approach, main street, or front yard is below, let the top of the sheet look where it will. Too frequently, there is not even an arrow to show the North Point and too often an elevation is lettered "Right Side" or "Left Side" without any reference to any point of the compass. This is particularly true of published books of "House

Plans." From all of which we may then adduce that the architects and publishers concerned do not think of sunlight directions or any other directions. They have made plans mainly to collect a fee. Too true—too often.

Did it ever occur to you, since first lessons in Geography long since forgotten, that the sun does not rise in the same spot every day? Or set in the same spot? Too elementary? Well, just point out with some sureness from where you now are, where the sun does rise on June 21st? December 21st? Point out with a mite of sureness, just where the sun hangs at noon of those two days and then do the same for March and September 21st?

If you can do that, this argument is wasted on you; look at the pictures and pass on.

Long ago and in between, when this architect wanted to find out, he questioned the older men and rummaged around and found durn little to tie to. He blamed the libraries and himself. Plain dub!

Only comparatively recently (1931) was anything found of real value. A prowl through the wonderful Avery Library at Columbia disclosed the profound work called "A Regional Survey of New York and its Environs" and there Messrs. Wayne D. Heydecker and Ernest P. Goodrich, in order to get the assigned material for The Commission, had to start in just where we did, many years before. Their results are published in Volume VII, dated 1929, entitled "Sunlight & Daylight for Urban Areas."

They, too, complicated the thing just a trifle by putting down too much on a single drawing, but the essentials are there. Latitude of New York, of course (41° North).

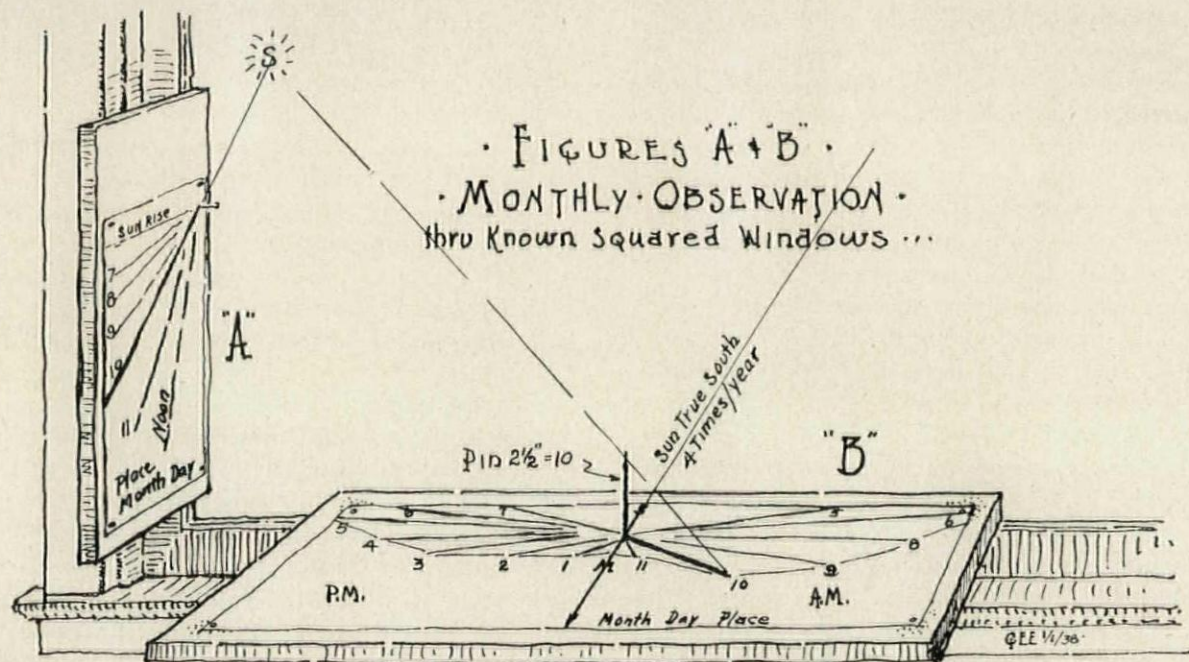
Information can also be had from the U. S. Naval Observatory at Washington; and Prof. David P. Todd of Amherst College Observatory is most kind, but—don't bother them unless you are well versed in higher "Math." with plenty of accent on the "High." When my old Math. Prof. saw some of their simple letters of explanation, he rose up and laughed

the willing confession; "Where we left off with our spherical trig., these chaps are just beginning. Nope, I can't clarify this for you." If it sinks the teacher, it surely enough sunk me, so you are invited to go ahead, consult the Navy and get washed overboard too.

The point here is that Heydecker and Goodrich went deeply into celestial lore, Bowditch, etc., just as I did, and got better results. The

observations through seven days in all, of sunrise, sunset, and noon altitude, with hourly observations in between if interested. We might call it the "Pin and Shadow Method."

It is better, although not necessary, to establish a station point of observation where an horizon is present so as to effect fairly close results. The error even then will shock any astronomer, so don't brag about it. Select any



trick is to make it simple for simple people.

In the last few years, to make it all plain and sure, so even a lady client could get a grasp of the thing, we went way back to the crude instruments of Copernicus. With this rudimentary equipment, we set out to "shoot the sun" on the three important days of December 21st (for minimum azimuth and altitude), June 21st (for maximums), and March 21st (for the mean, which equals September 21st). Only these three days are necessary.

What we mean is this: The sun moves around, apparently, and so begets varying shades and shadows (quite different from mathematical "Shades & Shadows" as taught by the Whitneys to embryo architects to embitter their college days no end), and such movements can be calculated for the hourly position of the sun from day to day throughout the year. It is much easier to plot practically a few key-positions through a half-year from December 21 to June 21, which then are good for every full year of any architect's normal lifetime and a bit longer.

One way to find and plot the local variables of direction and length of shadows in sunlight and have some fun as well, is to make seven

solid vertical such as a door—or window-jamb, or the corner of a building checked with a plumb-bob. Get a squared board (any hard wall-board) from 12" to 24" on a side; drive a 4" or 5" finishing nail nearly through the board in one corner and another halfway between the ends and a little to one side. Square the nails carefully with their points $2\frac{1}{2}$ " (ten $\frac{1}{4}$ " units) above the plane of the board's surface. Let the nailheads stick out an inch or so from the driven (obverse) side so the board can be used for vertical and horizontal double-duty observation and record.

Now take the board and place an edge against the chosen vertical. Observe and trace the shadow cast on the board by the projecting nailhead together with the date and hour of the observation.

The illustrations, Figures A and B, show the board placed against the convenient inside of a window sash, where one does not have to endure the discomfort or slight inconvenience of a cool day outdoors. Deluxe observations; too simple.

The lines as marked on the board (or on paper tacked to it) will constitute a permanent, unchanging record of the sun's altitude

angle for that day and hour (or minute) on the nailhead (obverse) side of the board, used vertically (Figure A).

Now reverse the board and place it quite truly horizontal as a sun-dial (Figure B) and draw the line of shadow of the nail point, punching a hole where the shadow ends and recording date and hour. That gives permanent record of azimuth and length of shadow in ratio to height of nailpoint, furnishing a check on sun's altitude angle.

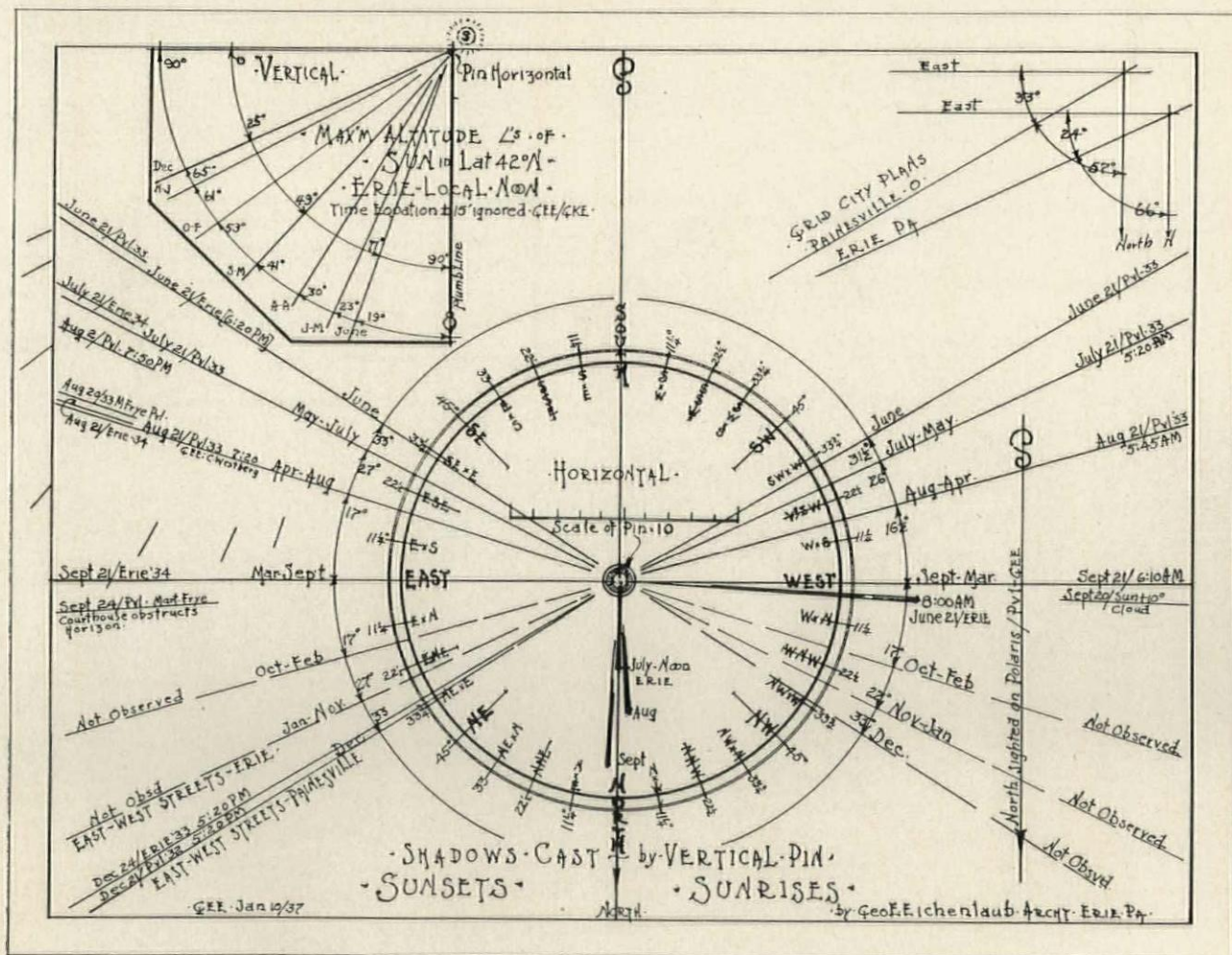
If observed hourly from sunrise to sunset, the points will show a beautiful diagram curve on the board that will surely promote thought.

As a basic item, it might be remembered that due South is exactly opposite due North (Umm-m!), anyway, at the Solar Meridian Noon, the sun always bears due South from your station. Since 360 degrees are one day of twenty-four hours, for our purpose, it follows that fifteen degrees of longitude are one, count 'em, ONE hour of time to which Greenwich (and U. S. A.) Standard Time is tied up.

Note particularly the seventy-fifth meridian West, because it (passing through Philadelphia) becomes the Standard Noon which coincides with Mean Solar Noon and is the basis for our artificial "Eastern Standard" Time according to which we live and our Eastern USA watches are set.

If you are in 80° West Longitude (Pittsburgh-Erie-Miami), the local solar noon will be five degrees or one-third hour LATER than standard time based on 75° W. Long., within a plus or minus fifteen minute maximum variable called Equation of Time.* In other words, when the sun is azimuth, North 180° or South 0° , zenith altitude and due South from your station on this 80th meridian, the Solar Noon will occur twenty minutes AFTER Mr. Sun jumps the 75th degree. Simply this: At 12:20 P. M. by the watch, the sun is due South—highest altitude for the day—and the time to use the board, IF in Pittsburgh, Erie,

*The funny figure 8 found on Globes. Usually in the Pacific Ocean. The Analemma.



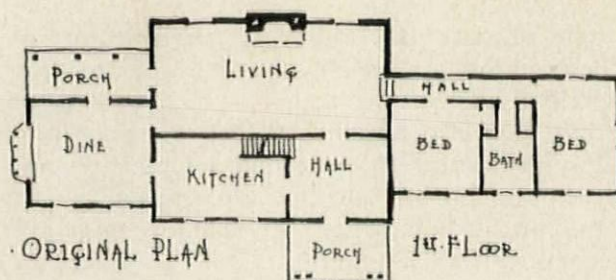
NOTES: Traced off the Board without corrections - Errors not large enough to affect ordinary Planning... Made without use or benefit of Instruments - plumb-bob used to bring down North Star... Equation of Time not considered... Solar Time coincides with Std. Dec 25; Apr 20; June 15; Sept 2.

Miami Longitude. A few minutes more or less do no harm, but an hour is fatal. Better to use the next day's noon.

If the observer is in Philadelphia 75° W. Long., the town-clock is the same as the Solar Time; if in Portland, Maine, the clocks will read about twenty minutes slow on that 70th degree West Longitude, because the sun truly hopped over that great circle one-third hour before it arrived on the 75th or standard-time meridian, at Philadelphia and—if you would get your bearings at Portland—take the reading on the board at twenty minutes BEFORE twelve (E.S.T.) to get the Solar Noon there. New York on the 74th degree West has Solar Noon at four minutes before twelve on the local clocks, by the same loose reckoning.

Any other meridian on Earth can be corrected plus or minus in similar manner.

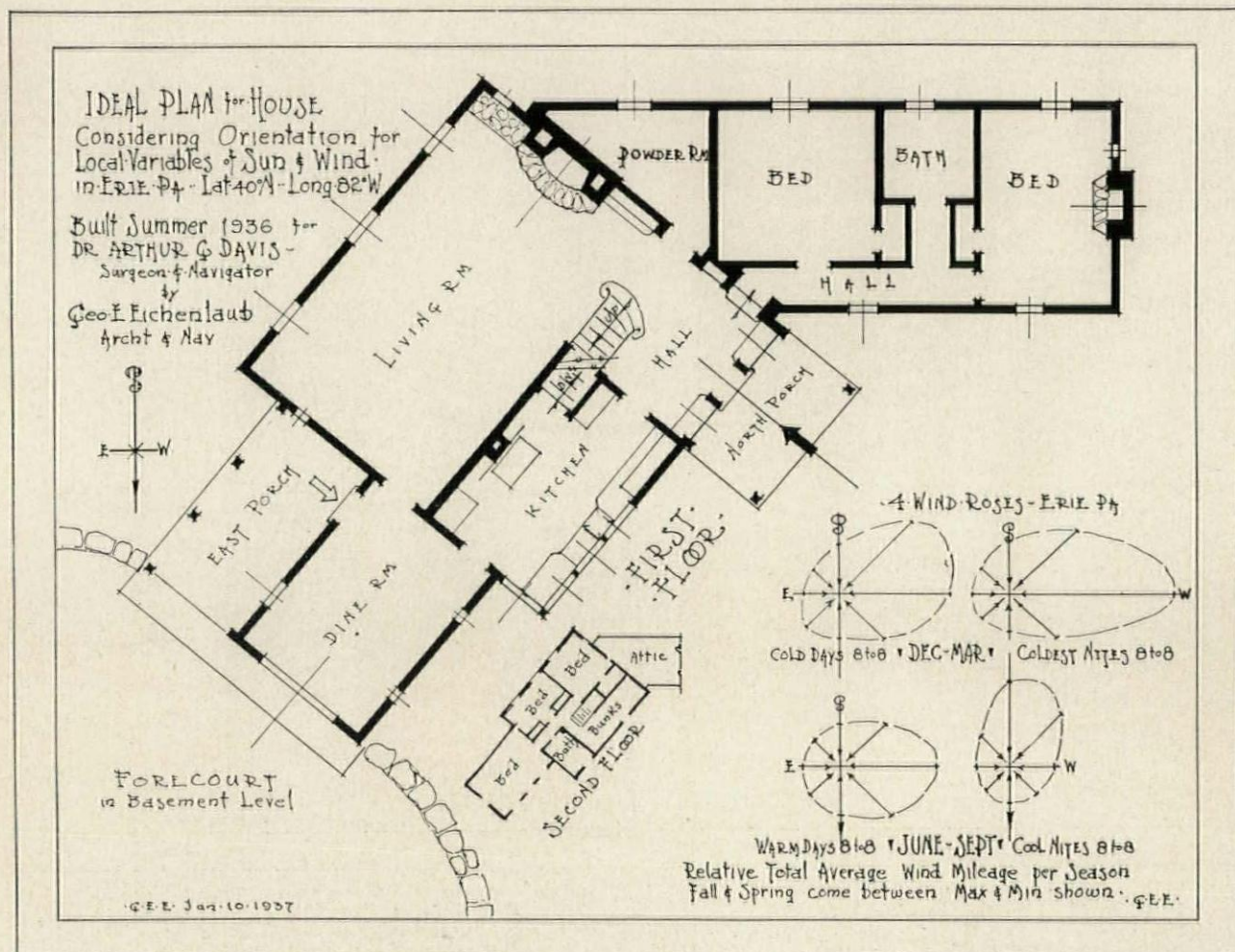
Where windows are used for observation, they had best be oriented toward South-east and South-west, since it will be discovered that the sun rises and sets some 30° NORTH of the true East-West line in the Summer. The flat roof of an office building and the corner of a penthouse with horizontal brickjoints work out well too. The night-man or janitor



The "Magazine Plan," referred to in the text, which was changed around until it became properly adapted to the site. The text explains just how it was done

can be fixed to mark the early sunrises for Summer. Then again, a start may be made at 6 or 8 A. M.

It was noted that Don Graf brought out a data-sheet with some of this information (PENCIL POINTS, April, 1936) which, like enough, stirred no one. But, it surely would if someone in the office were assigned to the simple task outlined above, which would create discussion and interest with a dose of amazement, too, with resulting better design and architecture all around, due to this essential, elementary planning information brought



down to the designer's own particular locale—by the designer himself.

Because of the importance of this thesis, it is considered expedient to design Plan Sheets with South at the top of the sheet—to confound and annoy our engineer friends—as in the drawing herewith reproduced "Sunrises—Sunsets at Erie, Pa."

Practical Application

The House Plan also here illustrated shows how these principles were practically applied to a small house designed last year, in which the time figures above quoted were used, the South (and North) point located, and the house laid down in the field accordingly, without compass or instruments of any kind except a dollar watch. Later checking with an instrument and a sight on the North Star, showed our work good within two degrees, which is well enough for a domestic plant and saved the expense, trouble, and delay of employing a surveyor besides.

In this instance, the Owner was a sailor and navigator, which set us off to a good start. He at least knew the language.

He cruised the country-side and located some six acres, the best in the township, which this architect accepted with some reservations at first and then, with conviction. Fine view of the sea (Lake Erie) some six miles off to the North'ard. The Doctor had a workable plan and good pictures out of a garden magazine, suited to his family requirements. Now to locate this house on the land.

Jam number 1: Architect talks: "Nope!

You can't face the house that way. We need and want *all* the Winter-sun, low and weak, that we can get. Next: The Summer-sun through July and August during the afternoons, in this latitude (42°N), gets warm and sometimes mighty hot until six and seven P. M. This sun is high and bright and we can do very well without its direct rays; not only that, but if the house be so placed that its shadows can be used during such afternoons, then we clearly augment our chances for pleasurable and happy living. That's one reason why you want to build this house. Wot?"

"Of course," says he.

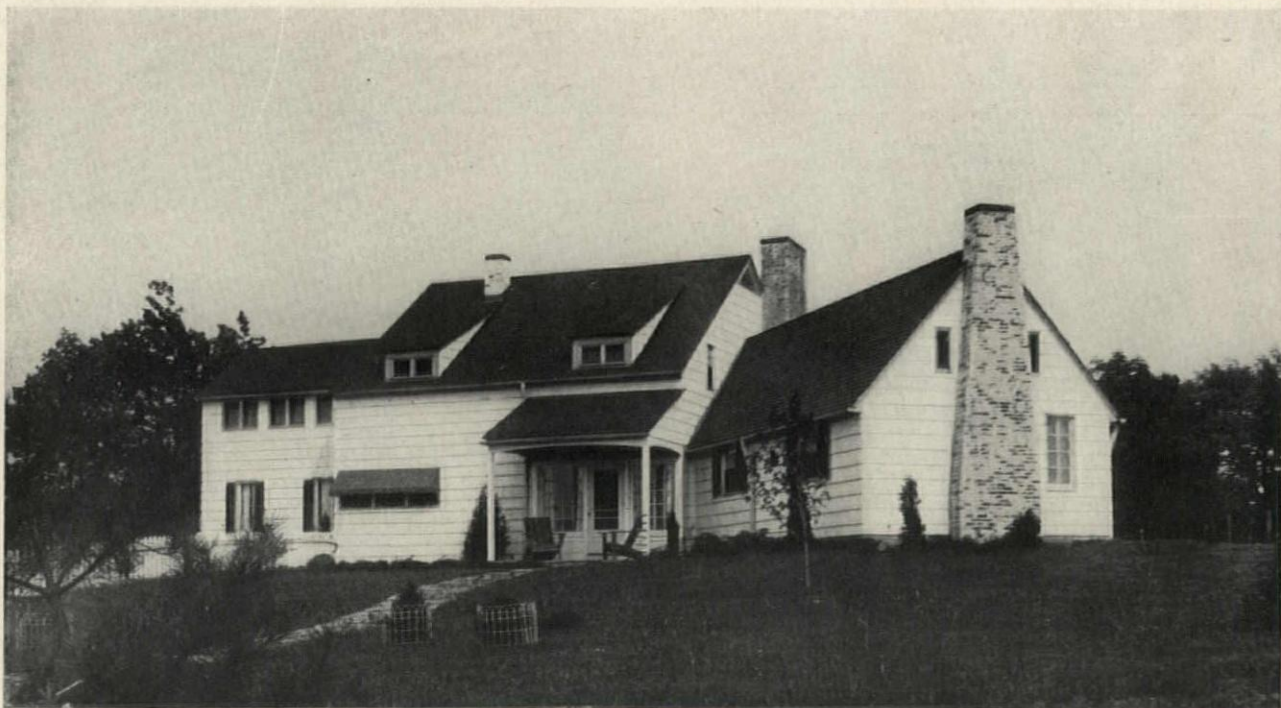
So the house was swung around through some ninety degrees, to face the Living Room South-easterly.

"But," the Doctor wants to know, "whereat is this here sun? How does she bear on *this* land? It's 11:30 A. M. by my watch now, this 4th day of March, and—that West wind is plenty sharp too."

"Ah!" grins the architect, "that brings us right to it. Watch my stick in this snow-patch and you do the checking-up. At 12:20, because we are close to 80° West Longitude, we'll verify our compass-points and—you'll know."

So was the thing first laid down, out on the land; sketched into notebook and taken to town and then—the work was really started,

View of the residence of Dr. A. G. Davis at Erie, Pa., taken from North-west on July 9 at 3:30 P. M. Compare with the winter afternoon view on the next page





View of the Davis House from North-west on December 31 at 2:30 P. M. The sun is where it is needed most

to firmly show the stuff an architect is made of. Now first did we have something definite to tie to, other than the Owner's wishes, ideas, and vague vaporings.

Now we take that magazine plan and pictures (none of which *ever* show the time and date of the picture), so we can orient the building from its shadows and shades, which incidentally make the architecture and the picture (the published Plans never or seldom ever, show the north point arrow to help out).

We stagger over such omissions and set the plan to paper with Living Room toward South-east; now the room has no outlook toward the sea and the "tearing down process" gets under way. The good plan, to fit this location and sun, must obviously become quite a different plan to be good for us here.

The closed Entrance Hall quickly becomes an integral part of the Living Room, so opening up the view therefrom to the Lake with vast benefit to the whole house. This gives im-

The other side of the house as seen at the same time as the view above—the camera is looking from South-east



proved cross-ventilation, social values, artistic worth, circulation, etc., and saves money in the construction, heating, and maintenance.

The Dining Room now gets the welcome, full morning sun and a glimpse of the worthwhile sunsets, but not the hot sunshine of Summer days.

The Kitchen gets reflected or borrowed light with a touch of Summer sun AFTER its fierceness is lost.

The Bedroom Wing was in line with the house proper. We now find it reversed so the morning sun is no longer blocked out by the corridor arrangement. And yet, while sun rightly used is a most valuable asset to any bedroom, still it is not so welcome about five or six of a morning when one normally rises at seven or eight. Drawn shades are not the proper answer; merely an admission of weak thinking. They always interfere with sun we want and should have.

The Owner here helps with "Let's swing the Wing around. What about it?"

So we revolve the Wing to fit sun and wind to our particular needs and desires. It becomes re-oriented to an axis about due West and that solves that—in the right way. These Bedrooms now get ALL of the Winter sun; they get Summer sun from 8:00 A. M. until around 4:00 P. M. and then cool off until bed-time.

Other advantages that accrue are a Corridor that now takes departure from the Hall

From the South on December 31 at 2:30 P. M. The bedroom wing in sunshine—and will be until sundown



On February 28 at 11:30 in the morning, looking from the East side. The sun has already swung to the South

and not off from the Living Room as in the original. Corridor acts as a good, practical insulator from excessive cold winds in Winter and it no longer soaks up desired sunshine. The Wing-structure itself now shields the Main Entrance and house from prevailing South-westerly cold winds, not a mean item as the wind-roses quickly indicate.

Only one bedroom gets the full force of the hottest sun and the coldest winds. Since this has become plainly apparent on the Plan, it now gets more than its share of window opening and also is given a special small fireplace as well. Finally, the added architectural value is the by-product which, however, counts for much in prideful ownership and real dollar values.

Next, the Garage is trimmed off the magazine plan and placed in the Basement, facing



North-east because this practically fits the contours of the site best. With doors to leeward, the cold Winter winds will not hit one in the face, first crack out in the morning and the early sun welcomes when these doors are first opened. True, the snow will lie here a few days longer in Spring, but overdoor protection is provided and, true again, snow will drift in to stay. That is why a break of trees and shrubs is planted judiciously off to West and North, incidentally building up our picture so the snow-fences now used will soon be dispensed with.

Knowing where the sun will be; knowing where the winds blow; knowing where the shadows fall and when—permits the designer to create with intelligence and economy.

Shade and Shadow

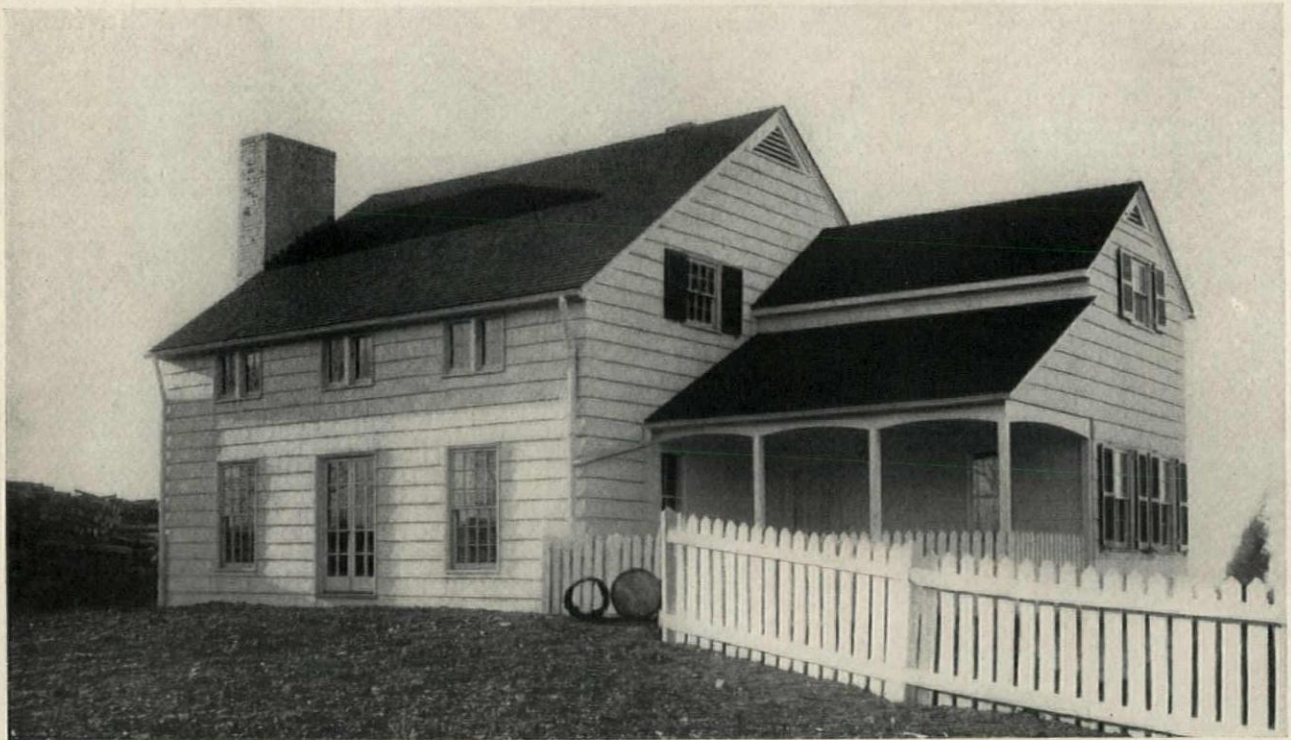
While the sun has its own properties, the concomitant shades and shadows have theirs as well, none of which are patented. They too are here seriously considered. Therefore, the Outdoor Living-yard lies to South-east of house proper. In Winter this Yard gets all the sun there is, every day; in Summer it has the benefit of sun BEFORE it gets too hot. About 2:00 P. M. the shadows from the house begin to steal across the clipped lawn-space and, by the time Old Sol begins to sizzle, this yard-

space is in moving, cool shadows of interesting design or shape and also broadly open to any wayward breezes, so operating to make this space as comfortable a spot as may be found—truly air-conditioned by nature. And—it costs us not a cent. An architect merely has to know. It is his job—his stock in trade.

The writer notes Mr. Wright's interesting article (*House & Garden*, January, 1937) emanating from The Pierce Foundation, in which it is argued that main rooms may well be given South-westerly orientation in the vicinity of New York. Maybe so, but many architects have gone on record for the Southeast exposure and a little board with a nail in it, coupled with a bit of observation from the office windows, will soon disclose that a 10:00 A. M. sun and a 2:00 to 4:00 P. M. sun are far from overhead and must be reckoned with too. No doubt, the article was cut down to fit available space—and therefore is so incomplete that it may mislead many.

Another time we may discuss these principles as applied to commercial, industrial, institutional structures and others to point out how it might be well to begin by making studies of the building *en bloc* for natural values BEFORE the studies for pure architecture are begun. The results would soon show higher return in earnings, through better habitability and desirability and, surely, better American Architecture. For, as Prof. Osborne of Penn said, "Good architecture is the result of successful fitness to its geographic locality."

Mr. Eichenlaub's house for Dr. A. G. Davis as seen from the East on December 31 at 2:30 in the afternoon





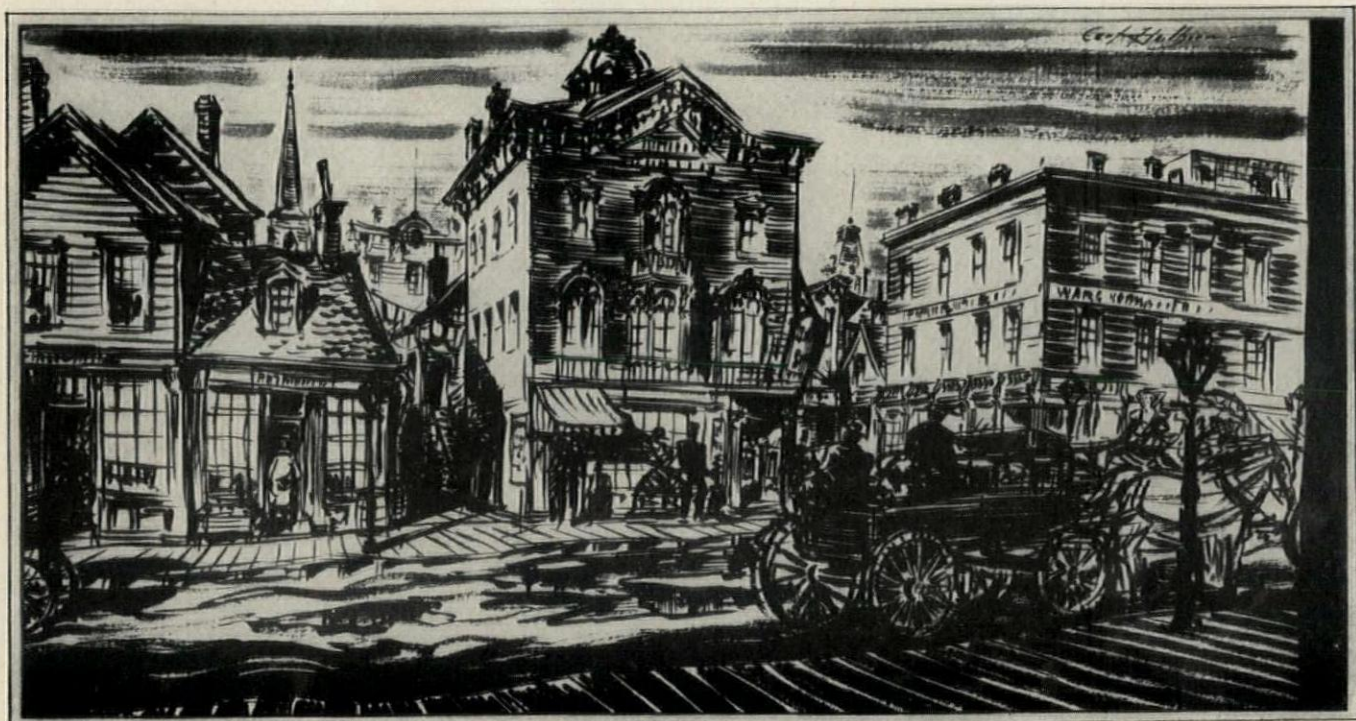
SKETCHES FOR MOVIE SETS

BY CARL WESTDAHL HEILBORN

Several years ago we had the pleasure of reproducing a number of drawings by a young and promising architectural delineator from the west coast, Carl Heilborn by name. We recently learned that he has been working for the past two years for the Twentieth Century-Fox Corporation where his creative talents have been directed to the designing of movie sets. On this and the following pages are presented a group of his sketches made for the new picture "In Old Chicago." The view above shows the O'Leary Homestead in "The Patch."

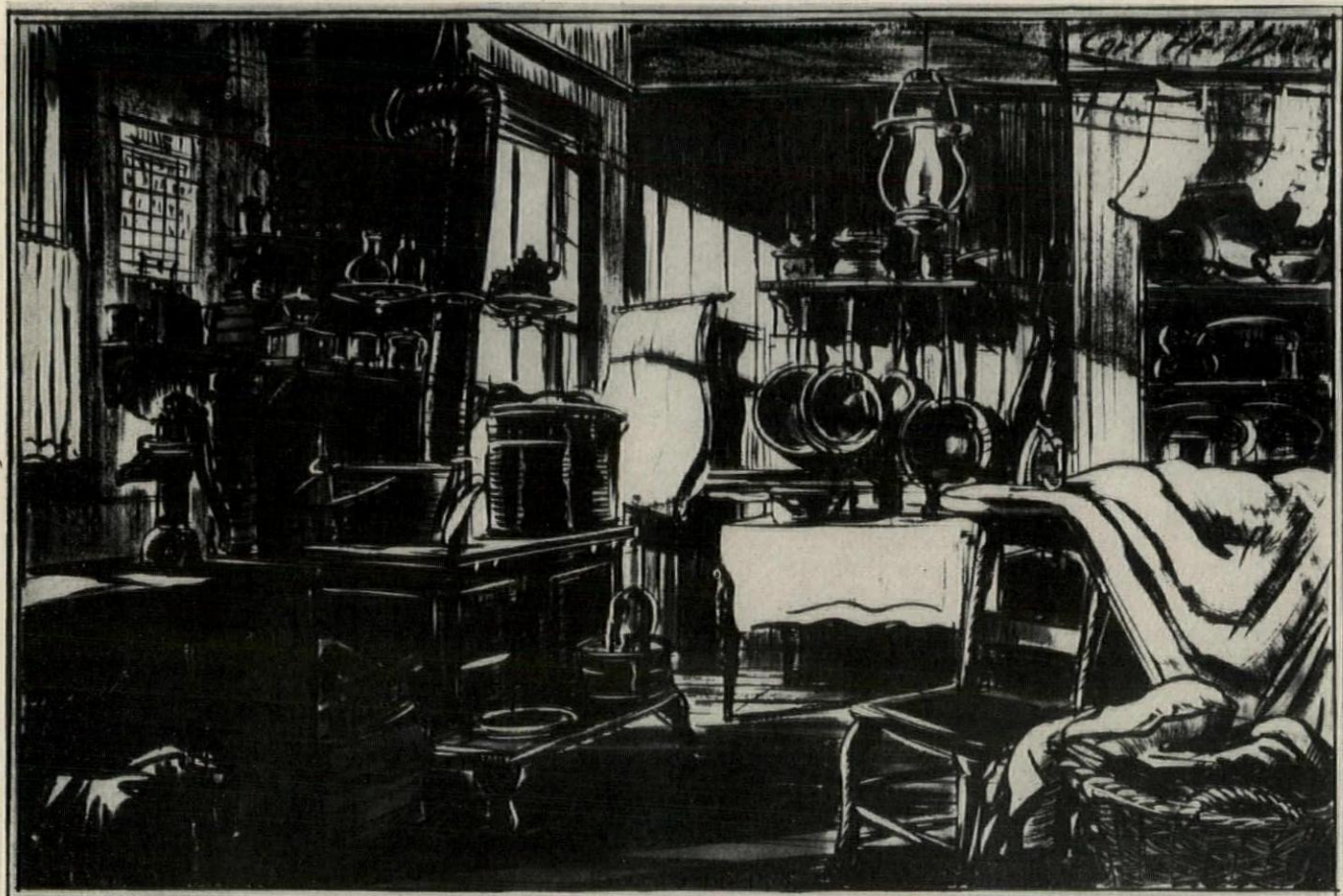


Chicago, as it was in 1854, particularly in the area surrounding the O'Leary Home, was not especially admirable as an architectural creation. The sets for the picture "In Old Chicago" were built from working drawings developed from these sketches in which Carl Heilborn visualized the city's pre-fire architectural appearance





The O'Leary Barn, in which lived the famous cow that started all the trouble, was a picturesque structure that lent itself to a handsome arrangement in black-and-white as sketched by Carl Heilborn



The kitchen of the O'Leary Home as sketched for the 20th Century-Fox picture "In Old Chicago" by Carl Heilborn speaks eloquently of the life that was lived within its walls



The O'Leary living room would obviously not win any prizes as a piece of interior decoration yet, as Mr. Heilborn has sketched it here, it was definitely a place to be lived in



A busy corner "In Old Chicago" forms the background for some of the action. Carl Heilborn's sketch was the basis from which the actual set was built



A street "In Old Chicago" in the middle of the nineteenth century as sketched by Carl Westdahl Heilborn for the new Twentieth Century-Fox picture

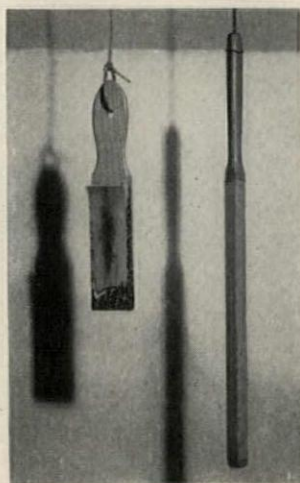


A close-up of the O'Leary Barn shows another interesting possible camera angle visualized by Carl Heilborn before the sets were constructed for the new historical picture "In Old Chicago"

PENCIL POINTS DATA SHEETS

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

THE DISREGARD OF THE OBVIOUS



Freddie Winsor and I used to work in the same office. The Great Architect who paid for our time was so viddy, viddy social, that between his infrequent appearances at the office, Freddie and I had ample opportunity to contemplate and discuss—among other things—the inadequacies of drafting room equipment.

Take the scratch-pad for instance. Some sort of a gag could probably be made up of the combination of ideas . . . scratch-pads . . . scratching for a living . . . but I have time to work it out. Anyhow, was anything ever more poorly conceived for its purpose than this little sliver of rough unpainted wood with its 12 dabs of coarse sandpaper loosely stuck in place? A lead-pencil point is maybe a quarter or even a half an inch wide, so the scratch-pad has always been made an inch and a quarter wide. This neat recombination of function results in scratching the wood of the pencil as well as the lead—smoothing it with pencil grit which eventually finds its way onto your drawing. The unpainted handle too is excellent for absorbing dirt. And then there's the cover. This is the one thing on the scratch-pad that really sticks—but it sticks to the top sheet sandpaper.

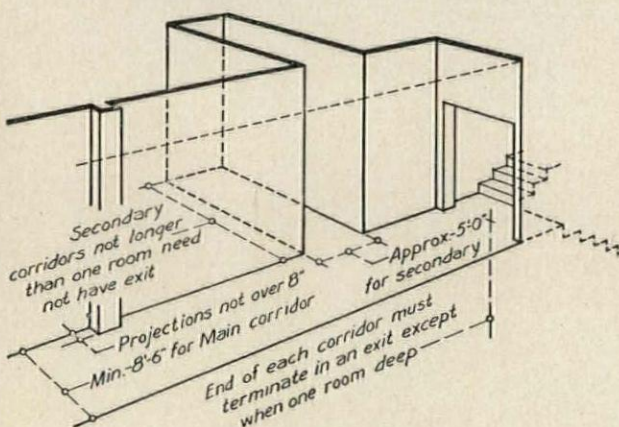
Freddie and I designed a stream-lined scratch-pad, shown in the photograph. It is a half inch square in section, has sandpaper on four sides in 00 grading, and has a pair of handles. The sandpaper is really stuck down, giving you almost three linear feet of 100 useful scratching area. The design is not copyrighted and I commend it to any person.

SCHOOL BUILDING CORRIDORS

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PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



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CORRIDOR CONSTRUCTION.

In buildings of more than 2 stories high, construct corridors of "fire-proof construction" with walls of approved masonry or reinforced concrete. Structural members must have a fire resistance of not less than a 4-hour rating for bearing walls, isolated piers, columns and wall-supporting girders; a 3-hour rating for other walls and girders than those already specified, and for beams, floors, roofs, and floor-fillings; a 2-hour rating for fire partitions.

WIDTH OF CORRIDORS.

The minimum clear passage-way of the main corridor or corridors of any school building containing 4 classrooms or more, should be 8'-6".

The minimum clear corridor width of secondary corridors will vary with the length of such corridors and the number of classroom doors leading to them, but such secondary corridors should be approximately 5'-0" wide.

TERMINATION.

Each end of each corridor should terminate on an egress or stairway, excepting that "pockets" not to exceed the length of 1 classroom may be planned when conditions dictate.

LIGHTING.

Corridors and passage-ways should be well lighted. Outside windows are always desirable. Artificial illumination of 3 foot-candles intensity is recommended.

WALL PROJECTIONS.

No projections should extend beyond the face of the corridor walls in excess of 8".

CORRIDOR EQUIPMENT.

No radiators, drinking fountains, wash basins or other equipment should be placed on corridor walls unless the walls are recessed to receive them.

SCHOOL BUILDING LIBRARIES

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PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

LIBRARY ROOM FOR ELEMENTARY SCHOOLS.

The minimum desirable floor area is approximately the same as size of a standard classroom.

The pupil capacity of a library room is computed on a basis of 15 to 25 square feet of net usable floor area per pupil.

LIBRARY ROOM FOR HIGH SCHOOLS.

For high schools having an enrollment of less than 200 pupils, a separate classroom or an end of a study hall should be fitted with shelving, tables and chairs.

For an enrollment of from 200 to 500 high school pupils, there should be a separate library room equipped with shelving, tables and chairs. In addition thereto, there should be a charging desk, bulletin board and other essential office equipment.

As the enrollment increases, work rooms should be provided. A work room is very desirable, and, whenever provided, lavatory facilities should constitute a part of the equipment. Whenever the enrollment and the size of a library justify it, separate small conference spaces should be added.

ACOUSTICS.

Careful attention should be paid to the acoustics of the library room. A noiseless type of floor should be selected.

BOOK-CASES.

Book shelving in library room should be the open type, as shown in the illustration at the left.

Shelves should be movable in 1-inch adjustments.

Provide 1 shelf for each 10 inches in height.

Allow 8 books to the shelf foot computing capacity.

A limited number of sections should be provided which are 12 inches and 12 inches deep in addition to the 8-inch deep sections.

EQUIPMENT

Reading tables should not have glossy surfaces.

Suitable chairs, librarian's desk, card catalog case, magazine rack and closets should be provided when needed.

A bulletin board at least 4'-0" x 3'-0" should be provided.

LIGHTING.

Provision for natural lighting should be made on the same basis as for classrooms.

Artificial lighting should conform with the standards established by the American Standards Association.

Tables and desks should be planned that pupils will not be obliged to face the windows.

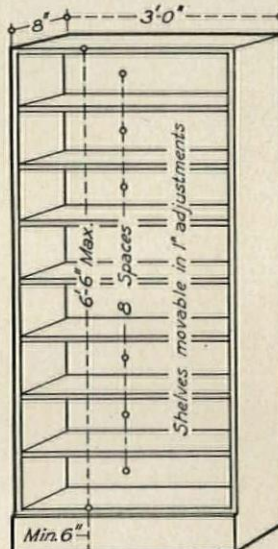
CLASSROOM LIBRARY FACILITIES.

In elementary school buildings in which a separate library room is not provided, and in cases where the educational program requires it, basic reference facilities should be made available in each classroom.

The minimum shelf space should be determined by the requirements. Such classroom shelving should be made readily accessible to pupils and should be of the closed, locking type.

A reading table should be placed in the elementary classroom.

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who likes the delicious feeling of whittling soft pine, or to any manufacturer who wants to have a free for commercial use.

decided that a lot could be done to improve the com- efficiency of the "architect's assistants" by rede- drafting tables. Discarding entirely the idea of g them so that they could be used to sleep on, there ain desirable and basic requirements. First, a draft- ble should be solid. Draftsmen have knees and you agine no more pathetic sight than a man the size of

Hogg trying to curl himself daintily on a stool so s knees fit under the table and not on top of it. The f the makers of such furniture always seems to re- n apron about four inches deep running across the ace where your legs can fit. One of these com- told me rather curtly, I thought, that *they* liked the heir tables were designed, the many architects who ferred to improve their product to the contrary not- anding.

s skip the matter of wobbly-headed T-squares, tri- that are out of plumb, thumbtacks that a bobsled

would not slide over, round pen holders that roll off your table, triangular scales and other similar curses, proceeding directly to the bottle of ink. Time was when each two bits that went for drawing ink brought lagniappe in the form of a pen-wiper. This was an eminently sensible idea since ink and pen-wipers are more closely related in the scheme of things than birds and bees, ham and eggs, or Walla Walla. But under the spell of that popular human error that something different is something better, we now receive for our quarter an ounce and three-quarters of the midnight fluid in a square box with a little note saying that you may have your pen-wiper if you write in for it. And now, the new stream-lined bottles will no longer fit into my cast iron inkstand. Will ink makers please give us back our pen-wipers and keep the boxes?

DATA SHEET NO. D2m. The official rules for table tennis do not provide for the dimensional requirements of rooms in which to play the game. Thru the courtesy of Mr. C. Schneider of the Table Tennis Association, we are able to present these figures authoritatively, for the first time.

BATHROOM PLANNING

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PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

POSITION OF BATHROOMS IN HOUSE PLAN. The location of bath- rooms over each other, adjacent to each other, and over the kitchen and laundry plumbing, results in the greatest economy. However, it is not suggested that convenience and utility be sacrificed for the economy of piping. Usually good planning and piping economy are natural com- ements.

It is desirable to locate the bathrooms so that soil stacks do not come partitions adjacent to rooms used for entertainment since bathroom sounds may be heard. Where this condition is impossible to avoid, piping should be heavily wrapped with hair felt, using studs large enuf so that e hubs of the pipe do not touch the lathing.

SIZE AND SHAPE OF BATHROOM. Bathrooms somewhat larger than ose ordinarily regarded as minimum are desirable. The care of children and invalids often requires greater space for convenience than the inimum.

CHECK LIST OF EQUIPMENT.

Lavatory	Dressing table
Toilet	Dental basin
Bathub	Manicure table
Tub with shower over	Exerciser
Separate shower compartment	Sun lamp
Bidet	Sun lamp and couch
Separate toilet compartment	Scale

ULT-IN CONVENIENCES.

Medicine cabinet over lavy- tory	Full length mirror
Medicine storage cabinet	General illumination fixture
Linen cabinet	Fixtures for local illumina- tion at mirror, in shower, at dressing table
Towel bars	Outlets for curling iron, elec- tric razor, water heater, vi- brator, razor blade sharp- ener, hair dryer, etc.
Soap dish with draining lip	Exhaust fan if no other means of ventilation is provided (fan may be in attic, con- trolled from bathroom)
Paper holder	
Toothbrush and glass holder	
Grab bars at tub	
Hooks for strop, douche, clothing	
Electric heater	
Clothes chute or hamper	

WINDOWS AND DOORS. Never locate a window over a bathtub nor n a shower enclosure, nor behind the toilet. The window should be ocated on a clear wall so that it may be approached for opening and closing. The stool of bathroom windows should never be less than 4'-0" from the floor. Glazing should be obscure glass.

No bathroom should ever have more than one door. If it is to serve more than one bedroom, it should be entered from a common hall.

TYPES OF FIXTURES. There are 4 basic materials used in the manu- facture of bathroom fixtures.

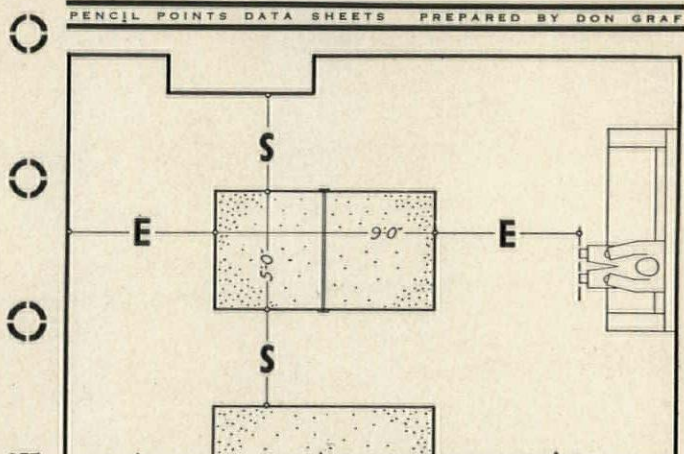
1. Porcelain
2. Vitreous china
3. Enameled cast iron
4. Porcelain enameled steel

BATHROOM HEATING. Radiators should be under the window, enclosed in such a way as to eliminate any possibility of burns—bare radiators should never be used in bathrooms. The heating should be designed to take care of at least 2 air changes per hour and should be able to provide an inside dry bulb temperature of 80° F.

TABLE TENNIS

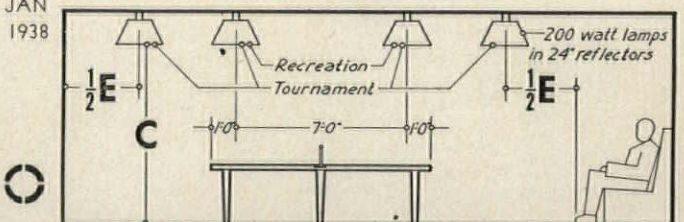
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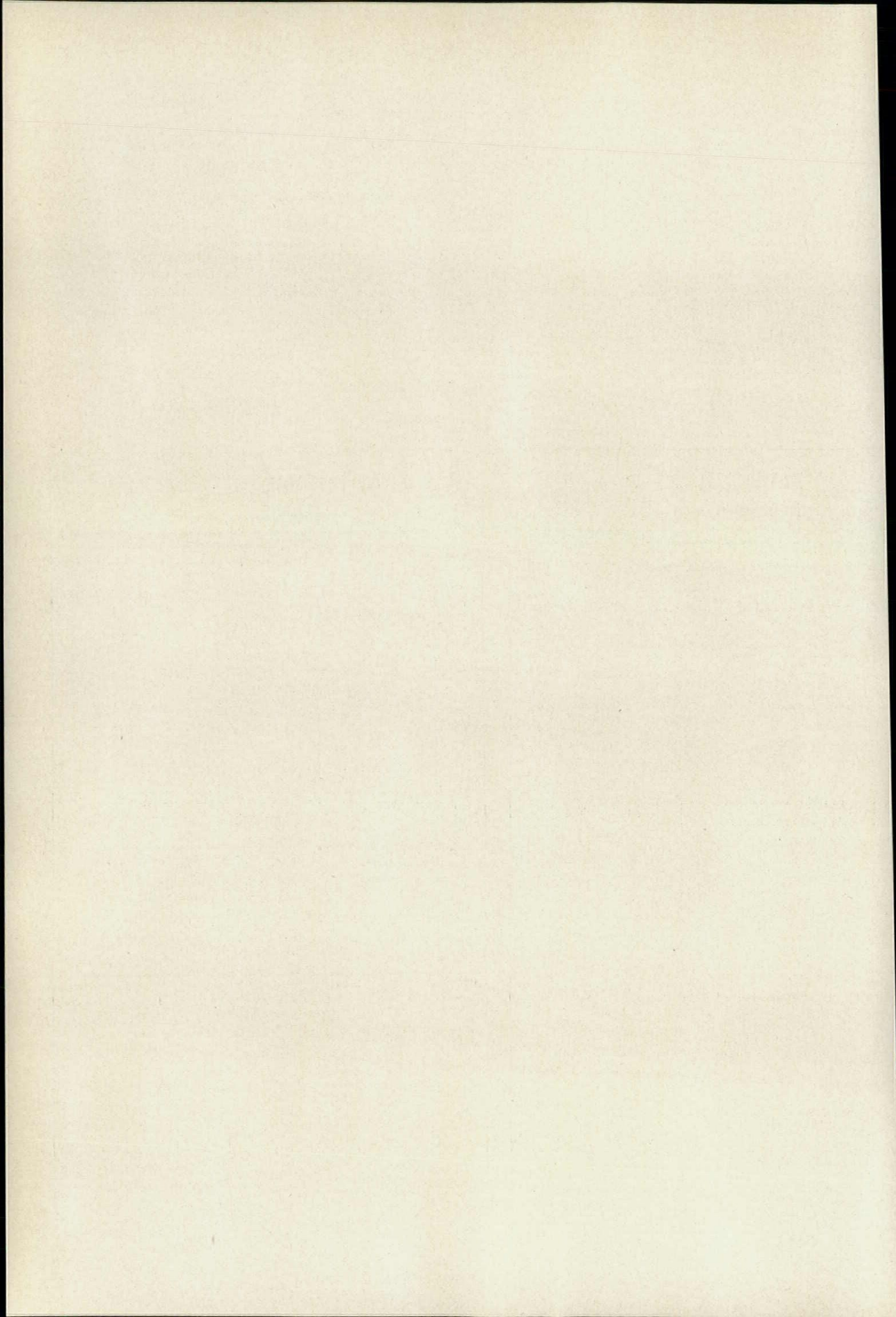
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PLAN



ELEVATION

	Unobstructed space		
	E	S	C
Advanced tournament play, late rounds	20'0"	10'0"	8'6"
Advanced tournament play, early rounds	10'0"	6'0"	8'6"
Beginners for tournament play	6'0"	6'0"	8'6"
Advanced and average players for recreation	10'0"	6'0"	7'6"
Dub players for recreation	5'0"	3'0"	6'6"



THE ARCHITECT CAN COLLECT

BY LEO T. PARKER

VARIOUS higher courts have held that an architect is one whose profession is to make plans and designs for buildings, and to supervise the construction thereof. He is presumed to render valuable services for which he is entitled to reasonable compensation. The law also presumes that an architect is possessed with the requisite artistic and technical knowledge to perform his duties properly.

In accordance with the legal rules with respect to employment contracts, the higher courts have established the law that a person who employs an architect to draw plans and specifications is required to pay for the rendered services, irrespective of whether the building is erected. On the other hand, the architect has no valid right of legal action to collect for his work if the plans are not made in accordance with the employer's directions.

Sometimes litigation arises where an owner requests an architect to perform special services as where the architect agrees to submit plans or sketches and it is understood that the owner has a right to accept or reject the plans or sketches. Under these circumstances, if it is clearly understood that the architect shall receive no compensation if the plans are rejected, he cannot collect for the special services rendered, but may get compensation for other services requested by the owner.

For example, in a quite recently decided case, it was disclosed that an architect submitted drawings in response to a general request for designs of a building. It was clearly understood that the owner had the privilege of rejecting or accepting the plans. After the plans were submitted, but not accepted, the owner authorized the architect to make several trips to dealers in building materials to ascertain the cost of equipment and materials to be used in the building. Later, the owner decided not to construct the building, owing to the excessive cost, and he refused to pay the architect for the services rendered.

The architect instituted legal proceedings to collect compensation for the plans and the time he had consumed in making the errands especially requested by the owner. The court

decided that he was not entitled to compensation for the plans, inasmuch as they were not accepted, but he was awarded payment for the time and expenses consumed in performing the special services.

Right to Recover Compensation

It is important to know that the legal right of an architect to demand and receive remuneration for his work is based on the contractual relation, verbal, written, or implied, that exists between him and his employer.

For example, in *Jones v. Tucker*, 84 Atl. 1012, it is interesting to observe that the court defined a contract as follows:

"A contract is defined to be an agreement between two or more persons, for a good and sufficient consideration to do or not to do a thing. It is not necessary that a contract be in writing, and may be either expressed or implied. An express contract is one where the terms of the agreement are stated in so many words; and an implied contract is where the law presumed a promise on the part of the party benefited."

If no actual contract exists wherein the architect is to receive payment for plans and specifications which he prepares, generally, he is entitled to no remuneration where his work is not accepted. However, if he is given authority by the owner or his agent to prepare drawings, plans, or specifications, he may demand commissions or compensation whether or not the work is accepted, provided his offerings are not so defective as to render them useless for practical purposes.

As to whether or not the plans are defective and useless is a matter that may be decided by the court, or the decision may be rendered by a referee or other authorized arbitrator.

On the other hand, plans and specifications that are materially defective are deemed valueless. Therefore, in a recent controversy where a referee decided that plans were defective, the court held that it was not proper to arrive at the amount due the architect by taking the value of perfect plans and then deducting the expenses to complete and correct them. In other words, an architect may re-

cover reasonable compensation for slightly defective plans, but if the same are vitally defective the architect may recover no compensation, and if the owner suffers financial losses from the defective plans the architect may be liable in damages to the owner.

Duty of Architect

An architect is required to fulfill all agreements with the owner, otherwise he is not entitled to compensation for the work performed. For example, in one case where an owner specified an amount that he desired to spend for the erection of a building, and the architect prepared the plans and specifications of a building that exceeded the owner's specified cost, the court held that the architect had breached the contract, and the owner had the privilege of accepting or rejecting the plans. In this case the owner rejected the plans and he was under no obligation to pay anything.

On the other hand, in another case involving a similar point of the law the owner accepted the plans and proceeded with the construction of the building. In this case the court held the architect entitled to full payment in accord with the original agreement.

In another recently decided litigation, an owner gave an architect permission to use his own judgment in preparing plans and specifications for the erection of a building. The architect proceeded with the work in good faith, but the owner refused payment because he was dissatisfied. The court held that an architect must not be deprived of payment for his services simply because the owner expected a different appearing structure, or that the building should have been erected in a specific time, or at an agreed cost unless it can be shown to the satisfaction of the court that the architect was inefficient, negligent, or did not perform his duties according to contract.

Architect Recovers Salary

The fact that an architect is being paid a stipulated weekly or monthly salary does not alter his legal right to recover from a person who breaches an employment contract.

For example, in the late case of *Miller v. Indemnity Ins. Co. of North America*, 190 S. E. 866, it was disclosed that an architect alleged that he was employed to draw plans and specifications for the building of a house; that he was to have supervision of the building and construction of the house, and the owners were to pay him a stated amount each week for his services. He alleged further that the owners without cause dispensed with his services before the completion of the house, and that therefore he was entitled to recover.

The higher court held the architect entitled to recover from the owner an amount equal to the agreed salary for the number of weeks he would have been employed had the owner not dispensed with his services.

Commissions Payable

Usually, an architect may recover full anticipated profits where the owner without justification breaches a valid contract.

In the late case of *Cope v. Sutter*, 274 Pac. 750, it was disclosed that an owner entered into a contract agreeing to pay an architect \$9,960 for preparation of plans, specifications and performance of other services.

After the architect had completed a portion of the work and received payments amounting to \$4,000 the owner refused to make further payments. The architect abandoned the job and sued to recover \$5,610 anticipated profits.

The owner attempted to avoid liability on the contention that the contract contained no clause which prevented discharge of the architect. However, it is interesting to observe that the court held the architect entitled to recover the full anticipated profits, saying:

"Respondent (owners) contend that they had the right to terminate the contract at any time because there was no provision in the contract that the owner may not discontinue the work or discharge the architect. There is no merit in this contention. There is no provision in the contract which permits the owner to discontinue the work or discharge the architect, and in the absence of such provision in the contract, it could certainly not be terminated and the architect discharged without cause."

On the other hand, the situation is different if the architect designs a building which will cost more than the owner's original price.

For illustration, in *Rapp v. Board*, 284 Pac. 761, it was shown that an owner had available to perform construction work the sum of \$100,000, of which an architect was advised when asked to prepare preliminary sketches.

After completion of the plans and specifications the owner advertised for bids on the work. The lowest bid amounted to more than \$135,000, and therefore the owner was unable to proceed with the construction work, on account of lack of funds.

The architect sued to recover the agreed five per cent. commission of the contract price. However, the court held the architect not entitled to a recovery, stating the following important law:

"The fact that the plans and specifications

... would cost more than \$135,000 would seem to preclude plaintiff (architect) from recovery in this case under the well-recognized rule that an architect must prepare plans which may be constructed within the agreed sum, or otherwise he cannot recover."

Owner Liable for Payment of Architect's Fees

As previously explained an architect is not entitled to recover compensation for preparing plans and specifications for a building more costly than the limit of expenditures indicated by the owner when he employed him. However, if any part of the plans and specifications are utilized, then the architect is entitled to recover full payment.

For instance, in *Nolan v. Southern Company*, 127 So. 98, it was disclosed that a company contracted to pay an architect fourteen per cent. for preparing plans for a factory not to exceed \$25,000 construction cost. The architect prepared the plans and the lowest bid received, as a result of competitive bidding by contractors, was \$37,926.

At this time the company refused to place the contract but subsequently, and without notice to the architect, it erected a building at a cost of \$19,000.

The architect sued to recover \$1,365 and the officials of the company endeavored to avoid liability. However, since it was shown that the contractor who constructed the building had studied the plans the court held the company liable, saying:

"The contractor who built the structure testified that the Nolan (architect) plans and specifications had been submitted to him If no use was made of the Nolan (architect) plans and no other architect was employed by defendant (company) it would appear unlikely that a satisfactory building, costing \$19,000 could be erected, and more unlikely that defendant (company) would have been willing to intrust the building of its factory and the expenditure of this relatively large sum of money to a part-time contractor without architectural guidance."

Double Payment

If an architect performs work of a character usually performed by persons other than architects, and no agreement is made as to his compensation, then he may demand and receive payment in consideration of the established customs of the trade in which the special duties were performed.

For instance, in a recent case it was shown that an architect also acted as a contractor. A contract existed between the architect and

the owner in which it was specified that the architect was to construct the building at a fixed amount according to certain specifications that he had prepared. The court held the architect *not* entitled to recover compensation for the plans in addition to the amount specified in the contract because if the contract does not specify that the architect shall receive additional payment he cannot recover double compensation.

On the other hand, if by reading the contract it may be determined that the original intentions of the owner was to pay the architect additional compensation it is valid.

For illustration, in a late case, it was shown that a contract existed between an owner and an architect which specified that the architect was to supply a preliminary sketch of a building for a certain percentage of the estimated cost of construction. The contract also stated that a stipulated amount was to be payable as soon as the sketch was accepted and that further payment was to be made for competent workmanship, drawings and specifications. The contract further specified that the architect was to supervise the construction of the building for a percentage of the cost. When the owner refused to pay the architect for each separate item, the latter filed suit. The court held that since each of the stipulations were distinct, the architect was entitled to receive separate payment for the plans and specifications, the preliminary sketch, and superintending the construction.

Controversy frequently results where an architect proceeds to prepare plans and specifications without an agreement as to the amount of compensation which he is to receive. Under these circumstances, the architect may recover a *reasonable* value for the services rendered, irrespective of whether it was understood that he was to receive any pay. The same is true where an owner requests sketches or plans and specifications, expecting but not indicating that he will only pay the architect if the work is accepted. In cases of this kind where an owner requests an architect to perform work, the latter always may collect compensation, unless specifically agreed that the services are to be performed gratis.

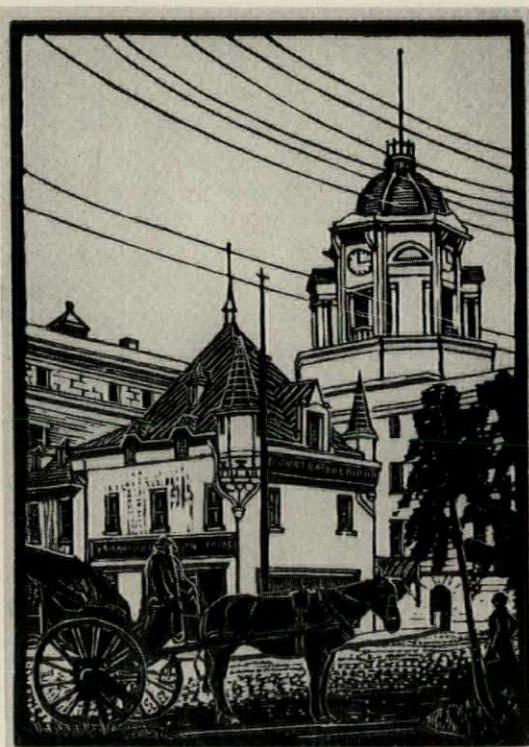
For illustration, in the recently decided case of *Weinberg v. St. Louis*, 116 S. W. 461, the court said:

"In such cases, unless it appears the party rendering the labor intended it should be gratuitously performed, the law will imply a promise to pay. In such a case, though it is certain there was no meeting of the minds, the law implies a contract to pay."



on the Don. 11/10

W. F. G. Godfrey



10/100

W. F. G. Godfrey

Two block prints by W. F. G. Godfrey of Toronto, Canada, are good examples of the skill this architect has developed in using the woodcutter's burin and gouge for black-and-white composition

PERSPECTIVE IN REVERSE

TO TRANSLATE A PHOTOGRAPH INTO A SCALE DRAWING

BY ERNST JONSON

A SINGLE photograph does not determine, the proportions of a three-dimensional object. To define such an object a side view must be added. Thus, for example, a picture of a cube may be taken to represent a prism, shorter or longer than the side of the cube and with angles which are not right angles. Most architectural subjects, however, imply assumptions which are highly probable and which, if true, would make the picture a complete determiner of the subject. Thus certain angles may safely be assumed to be right angles, upright lines may be taken to be vertical, the eye point may be assumed to lie somewhere on the vertical center line of the picture and certain figures may be assumed to be quadratic, or octagonal, or circular.

A photograph of a rectangular object is most easily translated into a scale drawing

when no principal plane of the object is parallel with the plane of the picture. First of all find the vanishing points of horizontal lines in two principal planes which form a right angle. These points, of course, are found by extending two horizontal lines in each plane to intersection. The points of intersection are the vanishing points. Thus let figure 1 represent a picture of a cube $ABCDEF$. By extending AB and EF to intersection, the vanishing point G is found. Similarly the vanishing point H is found by extending BC and DE . These vanishing points lie on the horizon. In locating them the horizon also has been located.

Now the vertical dimensions are easily translated into scale dimensions. By extending the planes of the two visible sides of the cube to intersection with the plane of the picture

FIG. 1

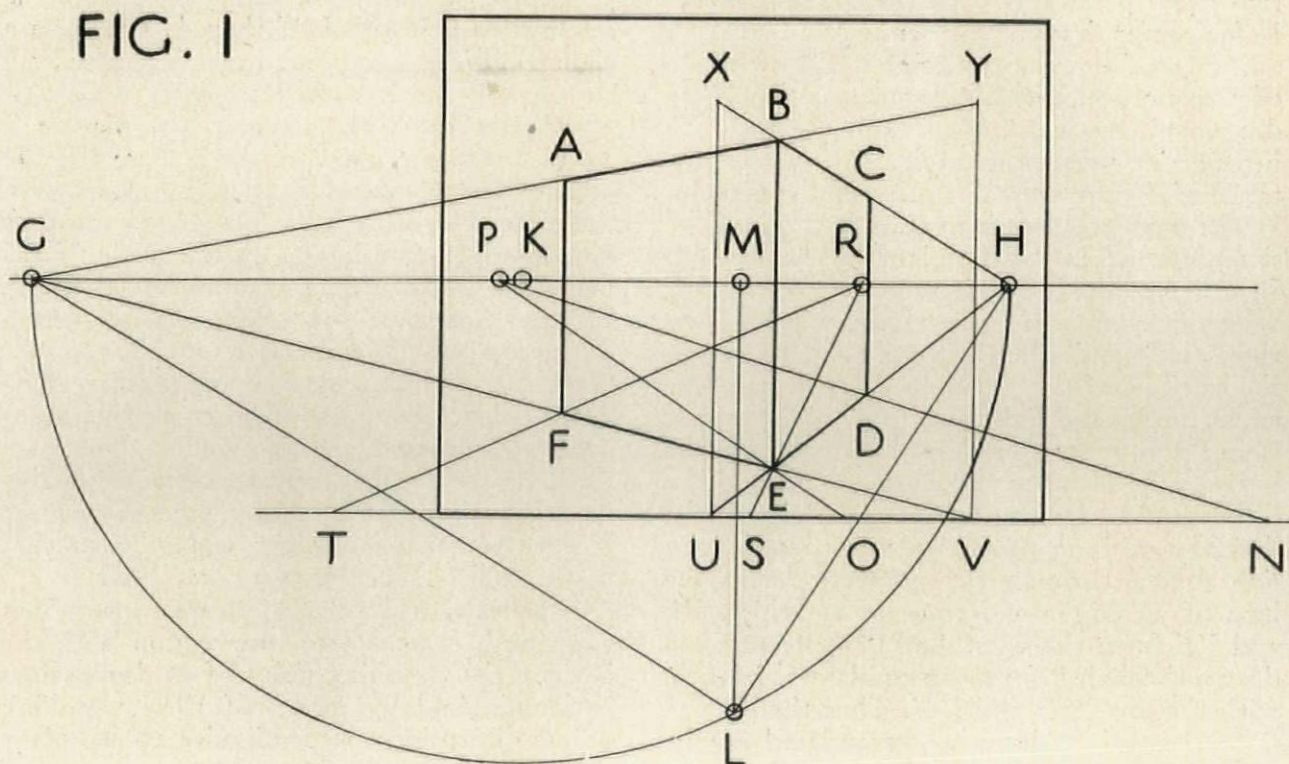
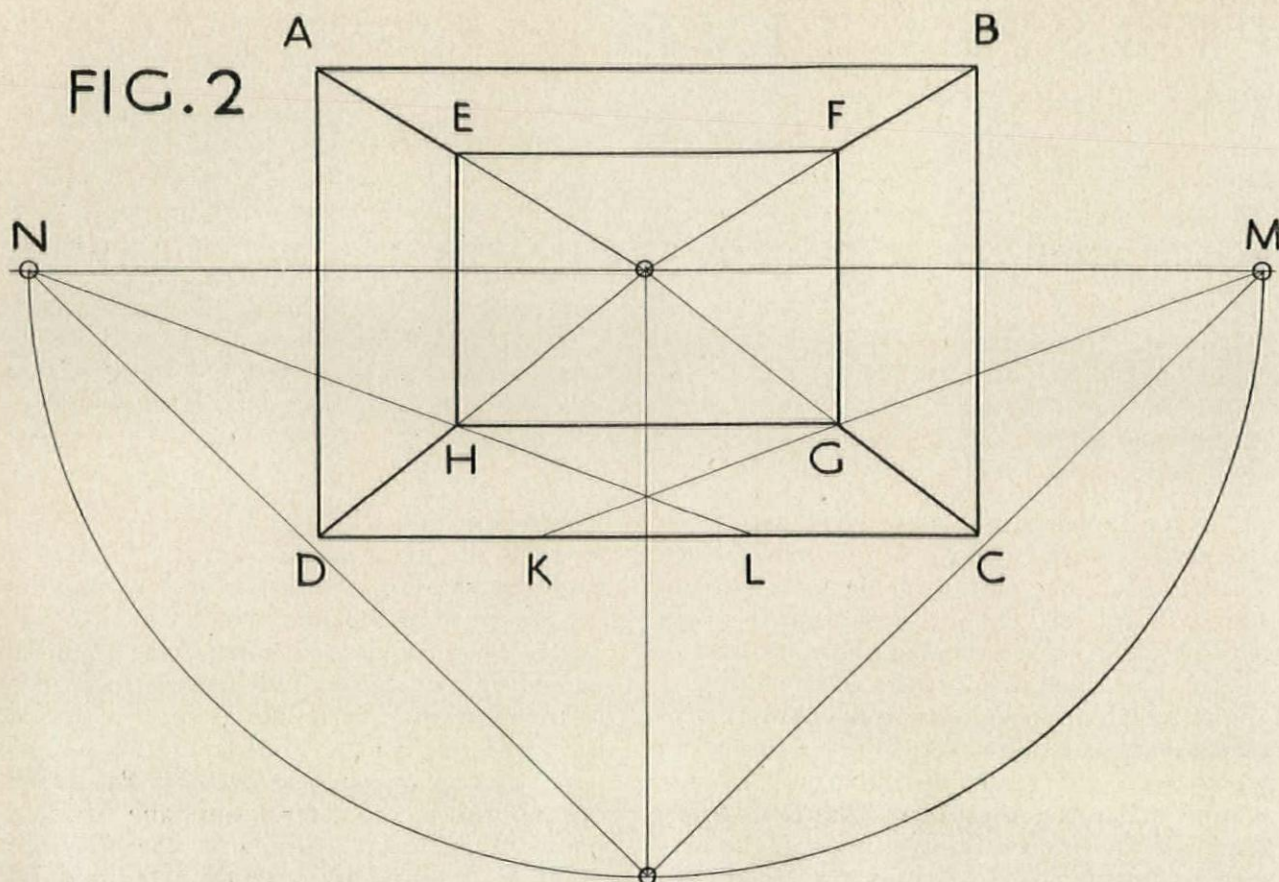


FIG. 2



the vertical dimension of the cube is found in the lines UX and VY .

In order to translate the horizontal dimensions DE and EF into scale dimensions it is necessary to find the eye distance. This distance is found by dividing the distance GH into two equal parts and with the dividing point K for center drawing the semicircle GHL . If, as is most likely, the eye point is in the middle of the picture, the eye distance is found by drawing a vertical line through the point to intersection with semicircle. ML is the distance of the eye from the plane of the picture.

The next problem is to transfer the dimensions DE and EF to the plane of the picture. In order to do this it is required to find the vanishing points of lines which, when drawn through D and E and E and F , mark off on the base line of the picture the dimensions NO equal to DE and ST equal to EF . These vanishing points are found by laying off on the horizon the distance HP equal to HL and the distance GR equal to GL , P and R being the desired vanishing points. In other words, any line drawn through the point R forms the base of an equilateral triangle of which VF and VT form the sides. And likewise any line drawn through P forms an equilateral triangle with the lines UD and UN . Thus the dimensions DE and EF have been translated graph-

ically into the scale dimensions NO and ST .

Should it seem advisable to check the assumption that the eye point is located in the middle of the picture this may be done by drawing a horizontal projection of the lines DE and EF by reversing the usual perspective procedure. If these lines form a right angle the assumption is justified. If they do not form a right angle the eye point must be shifted till the angle becomes a right angle.

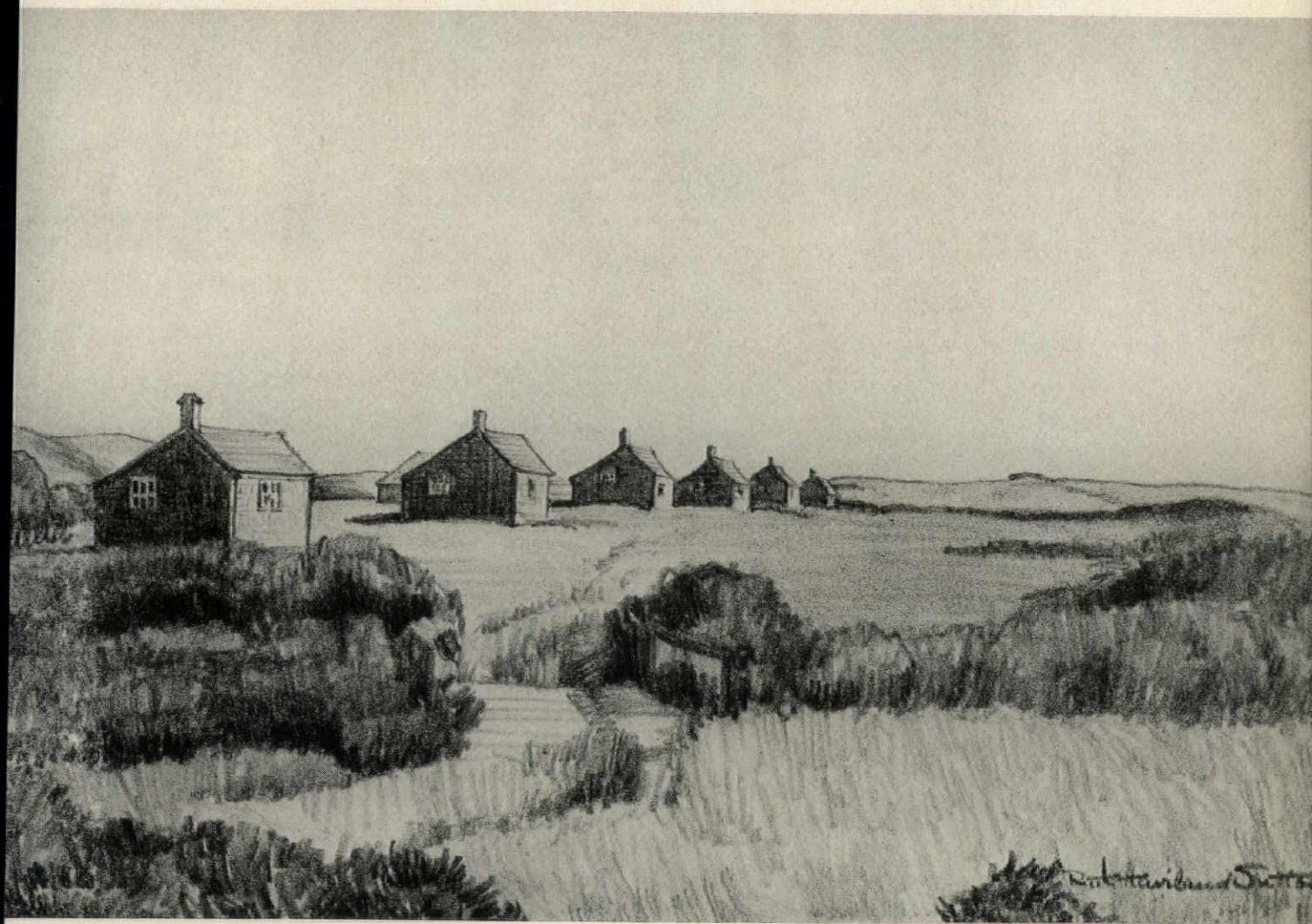
When a principal plane in the picture is parallel with the plane of the picture and the other principal planes form right angles with the picture plane, it is not possible to translate dimensions perpendicular to the plane of the picture into scale dimensions unless something be known of these dimensions in relation to a dimension which is parallel to the picture plane. Such relation may be indicated by window or door openings, pilaster or panel spacings, column bases, ceiling paneling, floor patterns or some other arrangement which involves equality of a dimension parallel with the picture plane and one perpendicular to that plane. When such equality has been found it is possible to draw a 45 degree line. When this line is extended to intersection with the horizon the vanishing point of 45 degree lines is found. And by means of these vanishing points dimensions perpendicular to the plane

of the picture may be transferred to the plane of the picture. Let figure 2 represent the picture of a room $ABCDEFGH$. By extending the lines AE , BF , CG , and DH to intersection, the eye point and the horizon are found. Then, if it be known, for example, that the depth of the room be two-thirds of its width, lay off the depth on the base line from C to K and from D to L . Since CK is equal to CG and DL equal to DH , the lines GK and HL will incline 45 degrees to the plane of the picture. When these lines are extended to intersection with the horizon the points M and N are the vanishing points of 45 degree lines. Hence any line drawn through M will divide CG and CK

equally and likewise lines drawn through N will divide DH and DL equally, which means that dimensions on the lines CG and DH have been translated into scale dimensions.

The scale dimensions obtained by taking the lower edge of the picture as the base line of the plane of the picture may, most likely will be, some odd scale which cannot be conveniently measured. To overcome this difficulty all there is required is to move the plane of the picture till the dimensions on it fit some standard scale. This naturally is done by drawing lines from the eye point, through C and D and extending these lines till the horizontal distance between them fits a standard scale.

"Cranberry Pickers' Houses, Nantucket"—Litho pencil sketch by Ruth Haviland Sutton





These pencil sketches by Whitman Bailey, Stamford, Connecticut, artist, have the merit of being honest and unmannered. They were both made at Stonington, on the east end of the Connecticut coast





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S E R V I C E D E P A R T M E N T S

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale or desiring to purchase books, drawing instruments, and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed free of charge.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire.

Notices submitted for publication in these Service Departments must reach us before the fifth of each month if they are to be inserted in the next issue. Address all communications to 330 West 42nd Street, New York, N. Y.

PERSONALS

BEHEE & KRAHMER, Architects, have moved their offices to larger quarters at 27 Washington Street, Newark, N. J.

WALTER J. KONRADY, Architect, formerly of Voorhees, Gmelin and Walker, has been appointed architect for Presbrey-Leland Studios, 681 Fifth Avenue, New York.

PAUL W. JONES, Architect, has opened an office for the practice of architecture at 111 9th Street South, Fargo, N. D.

PAUL LASZLO, Interior Decorator, has moved his offices from the Fox Wilshire Building to 8576 Wilshire Boulevard, Beverly Hills, Calif.

GILBERT D. FISH and ELWYN E. SEELYE, Engineers, have formed a partnership to practice consulting engineering in the welding field, with offices at 101 Park Avenue, New York. Their practice will include designs, inspections, estimating, and details.

THOMAS L. HANSEN, Architect, has been appointed Head of the Department of Architecture, North Dakota Agricultural College, Fargo, N. D. Professor Hansen was formerly associated with the faculty in the Department of Architectural Engineering, The State College of Washington, Pullman, Wash.

G. M. GRIMES, Architect, has moved his office to Room 905 Republic Building, Louisville, Ky.

THE MART

We will pay 35c each, plus postage, for copies of the July, August, September and October, 1937, issues of **PENCIL POINTS**. Must be in good condition. Communicate with Subscription Department of **PENCIL POINTS**.

G. S. Jacobson, 370 Central Park West, New York, has 12 Piranesi prints, plate size 16" x 24", guaranteed original, which he will sell for \$10 each.

Stanley Cobb, 22 Barry Road, Scarsdale, N. Y., has the following copies of **PENCIL POINTS** for sale: March, 1935, through April, 1937, in perfect condition. \$6.50 for the lot.

James C. Armstrong, jr., 337 S. Winebiddle Avenue, Pittsburgh, Pa., would like to obtain the issues of **PENCIL POINTS** for January and February, 1935, and the reprinted *Comparative Details* for 1932, 1933, and 1934.

E. J. Brown, 514 Gramatan Avenue, Mt. Vernon, N. Y., has for sale, *Brochure Series of European Work*, in first class shape, 86 numbers, from 1895 to 1903. Kindly make offer.

Jim D. Vowell, 318 Rosenwald Bldg., Albuquerque, New Mexico, would like to obtain the following books by Hool & Kinne: *Steel and Timber Structures; Movable and Long Span Steel Bridges.*

B. G. Twyman, 6317 Kenmore Avenue, Chicago, Ill., has the following copies of **PENCIL POINTS** for sale: September through December, 1930; 1931 and 1932 complete; January through November, 1933. In perfect condition, intact. No reasonable offer refused.

FREE EMPLOYMENT SERVICE

POSITION WANTED: Lighting engineer, 10 years experience in design and calculation of lighting systems, desires position with a designer or architect in the New York area. Thorough knowledge of lighting engineering. Box No. 1.

POSITION WANTED: Architectural designer-draftsman. Architectural engineering and design training, 15 years drafting room experience. Desires to connect with architect or corporation requiring services of high quality, hard working assistant capable of taking charge of office. Will furnish references as to qualifications, character, etc. Any location. Moderate salary. Box No. 2.

POSITION WANTED: Architectural and engineering draftsman, 30 years old, 10 years experience, registered architect, desires tryout in middle western or southern office with opportunity to work into responsible position. Particularly in the production of structural drawings. Thorough practical knowledge of structural design and detail. Box No. 3.

POSITION WANTED: Young man, 25, B.Arch. Cornell '36 construction major, 1 year experience automobile design at General Motors. Available for commercial design or architectural work (preferred) anywhere in U. S., small city preferred. Box No. 4.

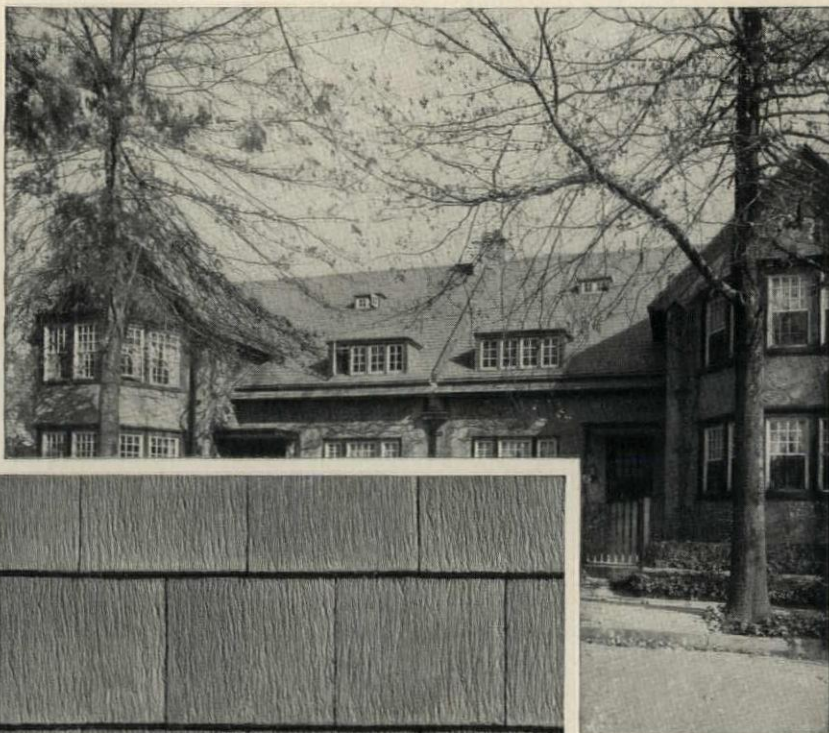
POSITION WANTED: Secretary Stenographer, young, six years' experience, college graduate, knowledge of accounting, desires employment with engineer or architect. Box No. 5.

POSITION WANTED: Architect, graduated in Europe with office and building experience here and abroad, wants position as designer or draftsman. J. Heinrichsdorff, 378 Central Park West, Apt. 3C, New York.

POSITION WANTED: Architectural draftsman, 25, desires connection with firm in New York City or vicinity. B.S. Degree in architecture and two years' experience in residential and commercial work. Box No. 6.

(Continued on page 34)

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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.*

NOW IT CAN BE TOLD.—Valuable new booklet for architects, dealing with the subject of piping problems, outlines the service rendered by the Reading Iron Company's commercial research department, which not only points out the places where its product is most suitable but also recommends products which would do a better job in installations where the company's products could serve. 18 pp. Reading Iron Co., 401 N. Broad St., Philadelphia, Pa.

MILCOR SOLID PARTITION AND FURRING SYSTEM.—Folder announcing and describing a new, simplified method of erecting a fireproof plaster base for solid partitions, also making possible the erection of an absolutely free-standing furring wall. 4 pp. 8½ x 11. Milcor Steel Co., Milwaukee, Wis.

CELOTEX CEMESTO.—Folder announcing and describing an asbestos-cement clad insulation board especially designed to assure permanent insulation and resistance to moisture and fire and recommended for interior and exterior wall construction for factories, homes, garages, spandrels, also as a flat roof surface for industrial buildings. Application data and details, load bearing capacities, etc. 8 pp. 8½ x 11. Celotex Corporation, Chicago, Ill.

CHICAGO FAUCETS.—A.I.A. File No. 29-h-5. Catalog F illustrates and describes in detail a complete line of lavatory faucets and fixtures, bath and shower fixtures, sink and laundry faucets, stops, tank fillers, valves, drinking fixtures, handles, repair parts, etc. Indexed. 64 pp. 8½ x 11. The Chicago Faucet Co., 2700 N. Crawford Ave., Chicago, Ill.

BOILER PROTECTION.—New catalog B-727 C showing how the Webster boiler protector gives protection against damage and annoyance resulting from accidental low water in low-pressure heating boilers. It describes the construction of Model M for hand-fired boilers and the new Model 34C-1 with electrical cut-out switch for oil and stoker-fired boilers. Included are capacities, application data and information for ordering. 8 pp. 8½ x 11. Warren Webster & Co., Camden, N. J.

ONE HUNDRED AND ONE USES FOR WROUGHT IRON.—New brochure containing more than a hundred photographs showing how and where wrought iron is used in both new construction and in maintenance replacements. 32 pp. 8½ x 11. A. M. Byers Co., Pittsburgh, Pa.

IDEAL OIL BURNER NO. 11.—A.I.A. File No. 30-C-1. Catalog illustrating and describing the outstanding features of a line of oil burning boilers designed to be part of a complete American Radiator conditioning system. Rating and dimension tables, etc. 8 pp. 8½ x 11. American Radiator Co., 40 W. 40th St., New York, N. Y.

NEW MESKER STEEL SASH.—New publication announcing the result of an exhaustive survey on the maintenance cost of windows. It describes a new method of protection against rust and explains in detail the new Mesker steel sash with genuine puddled wrought iron sill members. The Mesker Brothers Iron Co., St. Louis, Mo.

Published by the same firm, "Mesker's Metropolitan Casements." Reference manual for architects covering Metropolitan series M and P casements, also a line of custom built casements. Included are specifications, standard designs, installation details for various types of wall construction, hardware, etc., together with data on casement doors. 32 pp. 8½ x 11.

"Mesker Insulaire Storm Sash." Folder with descriptive data, designs and application details covering a line of storm sash. 4 pp. 8½ x 11.

BENJAMIN ELECTRICAL PRODUCTS.—Newly revised edition of Benjamin catalog No. 26 includes data on the latest improvements and lighting developments of the past twelve months. A veritable encyclopedia of industrial lighting, flood lighting and signals covering illumination problems of every conceivable type. In addition to supplying complete commercial data on the Benjamin line, the book thoroughly details a vast number of specifications, engineering recommendations, floor layout plans, intensity formulae, cost and labor-saving hints, lighting efficiency curves and installation illustrations. Sectionalized and cross indexed. Looseleaf. 352 pp. 8½ x 11. Benjamin Electric Mfg. Co., Des Plaines, Ill.

TRANE CONVECTORS.—Bulletin No. 110, just issued, describing the advantages, applications, design and construction of Trane convectors. A large number of convector installations are listed and illustrated. 24 pp. 8½ x 11. The Trane Company, La Crosse, Wis.

Published by the same firm, "The Trane Torridor." Bulletin No. 75 covering a line of blower type unit heaters for heating large spaces. Construction and location data, specifications, capacity tables, wiring diagrams, roughing-in dimensions, etc. 24 pp. 8½ x 11.

BRICK SCALES.—Set of two brick projection and detailing scales for use in laying out brick work. Brick Manufacturers Association of New York, 1716 Grand Central Terminal, New York, N. Y.

N S W NON-STICK WINDOWS.—Catalog containing descriptive data, construction details and specifications covering a line of complete double-hung window units, equipped with overhead spring balances and completely weatherstripped. 8 pp. 8½ x 11. N. S. W. Co., 2137 Gratiot Ave., Detroit, Mich.

MODERN MATCHED CABINET HARDWARE.—Catalog No. 202 describing and illustrating a line of cabinet hardware in chromium and colors for use in kitchens and bathrooms. 4 pp. 8½ x 11. American Cabinet Hardware Corp., Rockford, Ill.

STANDARD METHODS ADOPTED FOR CENTRIFUGAL FANS AND BLOWERS.—A.I.A. File No. 30-d-1. First edition of NAFM form X-12. Complete bulletin presenting standard methods of designing discharge and rotation for centrifugal fans and arrangement of drive; fair comparison chart for various commercial fan sizes of the multi-blade and non-overloading design, both single and double width; and operating limits for class I, II, III and IV fans. 8 pp. 8½ x 11. National Association of Fan Manufacturers, 5-208 General Motors Bldg., Detroit, Mich.

(Continued on page 32)



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A million American dinners tonight, of delicious deep-sea fish, would never be eaten except for steel. First the old fisherman must mend his nets with a steel needle. Then he puts to sea in a steel boat, unloads his catch into a steel trough, cleans and prepares the fish with steel implements, and finally ships the fish in steel cans plated with tin.

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PUBLICATIONS ON MATERIALS AND EQUIPMENT

(Continued from page 30)

MODERN ANTHRACITE EQUIPMENT.—Illustrated brochure listing and describing such varied equipment as thermostatic controls, warm air furnaces, forced warm air circulation systems, boilers for steam, vapor and hot water, magazine feed heaters, automatic burners with ash removal and bin feed conveyors, air conditioning, automatic domestic water heaters, space heaters, fireplaces, stoves and ranges. Included is section devoted to modernized basements. 32 pp. Anthracite Industries, Inc., Chrysler Bldg., New York, N. Y.

MINNEAPOLIS-HONEYWELL CONDENSED CATALOG AND PRICE LIST.—A.I.A. File No. 30-f-2. New edition contains a complete arrangement of all Minneapolis-Honeywell controls and control systems including its new National pneumatic controls and Brown indicating, recording and controlling instruments. Several new price changes and instruments have been included with this printing among which are the new Minneapolis-Honeywell types V435 and V835 magnetic gas valves, packless seal water circulator, angle flow valve and the newly designed National pneumatic thermostats and humidity controllers. 48 pp. 8½ x 11. Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. *Published by the same firm, "And Then—We Turn on the Heat." New booklet dealing with the Minneapolis-Honeywell heat accelerating thermostat, explains just what heat acceleration is, and how it works, when applied to thermostatic control.* 22 pp.

BRYANT NOFUZE LOAD CENTERS.—Folder with descriptive data and drawings covering a line of multi-breaker load centers for use in homes, apartments and small commercial establishments. 4 pp. 8½ x 11. The Bryant Electric Co., Bridgeport, Conn.

PYLE NATIONAL FLOODLIGHTING PROJECTORS.—Catalog No. 211 presents descriptive data, dimensions and specifications covering a complete line of floodlighting projectors. Price list. Spiral Bound. 48 pp. 8½ x 11. The Pyle National Co., Chicago, Ill.

DESIGN OF WELDED PIPING.—Complete new handbook of information on design and layout of piping for welded connections accompanied by more than 100 drawings and tables. Features of interest to architects and draftsmen include standard joint designs; typical headers, expansion bends and riser connections; anchors and supports; a typical heating system layout showing symbols for welds; two sample time-saving specifications; and principal dimensions of pipe, flanges, and welding fittings. Subjects treated of interest to engineers are fundamentals of welded joint design; welding metallurgy; standard welded pipe connections; design data on welding cast iron, galvanized iron, stainless steel and non-ferrous piping; advantageous layout; fabrications and erection considerations; welded anchors and supports; and welding speeds. 200 pp. 6 x 9. The Linde Air Products Co., 205 E. 42nd St., New York, N. Y. *Published by the same firm, "Welded Piping." New publication discussing the advantages of welded joints in installing piping systems. Subjects of particular interest to architects and engineers are treated in sections on: pipe and services to be welded; lighter than standard weight pipe; fast, economical welding methods; layout, drawings and specifications; welded joints and fittings; plan of construction; shop and field fabrication, and piping erection.* 12 pp. 8½ x 11.

AUTOMATIC CONTROL FOR SMALL OR MEDIUM SIZED COOLING SYSTEM.—Bulletin No. 83-A describes a simple, inexpensive central fan cooling system and gives complete information pertaining to selection and installation of the necessary controls, and the operation of the system as a unit. 8 pp. 8½ x 11. Detroit Lubricator Co., 5900 Trumbull Ave., Detroit, Mich.

ARMCO GALVANIZED PAINTGRIP SHEETS.—Folder explaining the advantages of a new Armco galvanized sheet metal that is readily paintable without special acid treatments or weathering. Forming qualities, soldering practice, welding, cleaning and finishing operations are described. 4 pp. 8½ x 11. The American Rolling Mill Co., Middletown, Ohio.

WESTERN PINES.—Profusely illustrated reprint from The Timberman describing the history and research activities of the Western Pine Association, production methods of Western pines and their uses for architectural woodwork and home building. 16 pp. 8½ x 11. Western Pine Association, 510 Yeon Bldg., Portland, Ore.

MITCHELL-RAND RUBBERSEAL COPPER.—A.I.A. File No. 29-h-3. Folder with descriptive information and detail drawings covering a waterproofing material for shower pans and shower rooms, also for spandrels, window head and sill pans, sheathing for shingle, stucco and brick veneer construction, etc. Specifications. 4 pp. 8½ x 11. Mitchell-Rand Mfg. Co., 51 Murray St., New York, N. Y.

MANUFACTURERS' DATA WANTED

JOHN K. WELKER, Architect, 303 Delmar Avenue, St. Bernard, Cincinnati, Ohio. (Data on store modernization, exterior and interior.)

KNUTSEN & BRUNET, Architects, 228½ S. Broadway, Rochester, Minn. (Data for A.I.A. file.)

ROBERT L. MCCLELLAND, Architect, Box No. 4, North Point, Pa.

THOMAS L. HANSEN, Architect, Head of Department of Architecture, North Dakota Agricultural College, Fargo, N. D.

LABORATORY OF MODERN MATERIALS, Pratt Institute, Brooklyn, N. Y.

JOSEPH DALIS, Draftsman, 2141 Prospect Avenue, Bronx, N. Y.

HARRY L. KESSLER, Draftsman, 411 Alleghany Street, Hollidaysburg, Pa.

V. MARTENSON, Draftsman, 2726 University Avenue, San Diego, Calif. (Data for A.I.A. file.)

THEODORE L. YORIO, Draftsman, 3963 Bell Avenue, Bronx, N. Y. (Data for A.I.A. file.)

CLIFFORD BRIGHT, Draftsman, Clementon, N. J.
LAWRENCE F. NULTY, Student, 518 East 114th Street, Chicago, Ill.

H. K. KELLUM, Student, 2720 S. Michigan Avenue, Chicago, Ill. (Data for A.I.A. file.)

WM. H. DENNIS, 48 Riverview Road, Rocky Hill, Conn. (Data for design and construction of small Colonial homes and Spanish homes.)

LOUIS S. EGEE, The Louis Store, Northville, Mich. (Data on products suitable for use in low-cost house designs.)

JUANITO B. QUE, Merida Central School, Merida, Leyte, Philippines. (Data for A.I.A. file, also data on architectural and building materials.)

GEORGE L. NEWMAN, Architect, 200 Huntington Avenue, Boston, Mass.

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FACTS OF INTEREST

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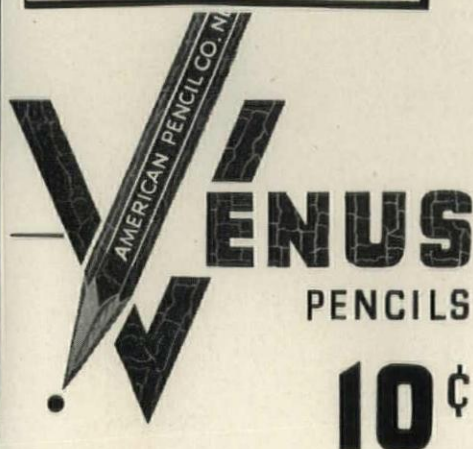
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POSITION WANTED: Architectural draftsman, 25 years' experience, wishes position in New York City or Jersey. All-around work, designing, working up drawings, also reinforced concrete and steel construction. Box No. 7.

POSITION WANTED: Architectural draftsman, 14 years' experience, Philadelphia, Washington and vicinity. Familiar with all types of construction. Good designer. Prefer south, southwest or eastern location. Box No. 8.

POSITION WANTED: Junior architectural draftsman and designer, age 20. Graduate of two-year trade school and textile high school course in architecture and applied design. Regent's diploma. Nicholas J. Colorafi, 5614-4th Ave., Brooklyn, N. Y.

POSITION WANTED: Draftsman and engineer, age 44, married, 20 years' experience all types of structures, especially industrial plants. Preliminary surveys, plant layout, design, drawings, details, specifications, supervision of construction, estimating. Registered C. E. and M. E. Location southeast. Box No. 9.

POSITION WANTED: Junior draftsman. Year and a half experience with prominent architect. Graduate of Mechanics Institute, now attending Pratt. Box No. 10.

POSITION WANTED: Architectural designer-draftsman, 23 years' experience in residential, public and commercial buildings. Ability attested by references. Location south or southwest. Box No. 11.

POSITION WANTED: Architectural draftsman, 34 years old, 14 years' experience varied types of buildings; supervision, rapid, accurate, details. Handle work from sketches through completion, meet clients. Desires connection with architect offering permanent position and possibilities of advancements. Prefer southwest or west. Box No. 12.

POSITION WANTED: Registered in New York State. Excellent draftsman and designer, 16 years' experience in well known New York offices, all types of buildings, 3 years in Government Department, Washington, D. C. Box No. 13.

POSITION WANTED: Architect, American University graduate, 3 years' European practice. Made extensive study of European capitals. Free to travel. Box No. 14.

POSITION WANTED: Architectural draftsman and designer, 20 years' experience in highest type offices. Handle any type of job from sketches to completion. Registered in New York State. Box No. 15.

POSITION WANTED: With an organization who can use an industrious and earnest young man, 34 years of age, with the following qualifications. College training in architecture at Armour Inst. of Technology—color design and sketch work at Art Institute of Chicago, coupled with 12 years of architectural experience in planning layouts, design and details on residences, apartments, schools, hospitals and commercial buildings with Chicago and Indiana architects. Four years of specialized training in kitchen planning and design (layouts, estimating and sales). Salary commensurate with ability; will go anywhere. Box No. 16.

POSITION WANTED: Twenty years old, intensely interested in architecture, desires position as draftsman and renderer. Salary of no importance. At present attending college evenings. William Lawrence, 1447 Macombs Road, New York City.

POSITION WANTED: Young man, 18, High School graduate, good mathematician, now attending Cooper Union Night School of Architecture, desires position with an architect in New York or vicinity where he will endeavour to make himself a good investment. Several months intensive study and practical experience in architect's office. Box No. 17.

WANTED: Renderer and designer. Applicant must be good on small house work. Prefer young man living at home as salary will be small until the proper proficiency has been attained. Would also consider an applicant who is a registered architect in New York experienced in small house work, leading to partnership. Advertiser is a Westchester architect, well established. Box No. 18.

POSITION WANTED: Architect and engineer, 18 years' experience as architectural and construction draftsman, six years' specification expert, five years' clerk of works and superintendent of construction. Expert on large buildings, can handle job inside and outside office. Location in east with large architectural or construction office. Box No. 19.

POSITION WANTED: Available at once, architectural draftsman and designer, 23, single, graduate Pratt Institute 5-year course, 4 years' experience, willing to travel anywhere in U. S. Box No. 20.

ARCHITECTURAL STUDENT, free evenings and Saturday afternoons wishes to get work, drafting, lettering, rendering and designing. Has proper schooling and can show results and work done. City work only. R.D. 3593 Bainbridge Avenue, Bronx, N. Y.

POSITION WANTED: Architectural draftsman, A.B. and B.Arch. Columbia, 27 years old, married, 4 years' office experience, fine residential work, schools, hospitals, design, detailing. Handle complete job. Box No. 22.

POSITION WANTED: Architectural graduate of leading university 29 years of age, unmarried, is interested in position in foreign land. Six years' intensive experience in positions of responsibility, thoroughly capable in design, detailing, specifications and office practice. Unusually good experience on high grade industrial work. Box No. 23.

POSITION WANTED: Junior engineering draftsman, B.S. degree, wants experience with industrial buildings designer in metropolitan area, good detailer, accurate and quick, well versed in engineering calculations. Harry Silk, 60 Clinton Street, Paterson, N. J.

POSITION WANTED: Young man, 20 years of age, High School graduate, studying architectural drawing, desires employment in architect's office or allied line. Norman Greenfield, 1952 East 12th Street, Brooklyn, N. Y.

POSITION WANTED: Architectural draftsman, American, single, 3 years' architectural and 10 years' varied drafting experience, neat and capable at layout work, good letterer, tracer. Knowledge of design, color rendering and perspective drawing. New York or Connecticut preferred. Box No. 24.

POSITION WANTED: Young woman, secretary to architect. Six years' experience, 10 months with Small House Associates. Interested in public housing. Free lance specifications typed. Experienced in Interior Decoration. Box No. 25.

(Continued on page 36, Advertising Section)

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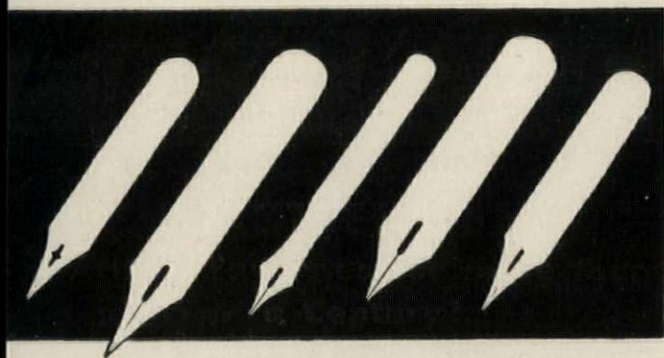
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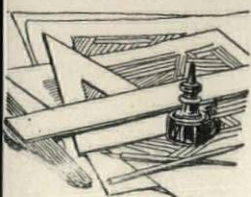


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FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

(Continued from page 34, Advertising Section)

POSITION WANTED: In Daytona Beach, Florida. Young man, 35, married. Eight years' experience in Hartford Insurance companies. Evening experience in America's oldest newspaper 9 years. Well versed in property maintenance and small construction. William H. Dennis, 48 Riverview Road, Rocky Hill, Connecticut.

POSITION WANTED: Capable all-round draftsman on general work, checker of shop drawings and architect's superintendent on alteration and new work, also inspector of real estate, trust company experience. Box No. 26.

POSITION WANTED: Architectural designer and draftsman, age 27, educated in leading technical school, reproduction specialist, desires position with architect or construction firm, located in Washington, D. C. Box No. 27.

POSITION WANTED: Architectural designer-draftsman, 25 years' experience, specializing in schools and public buildings, also residential work, 8 years' charge of drafting room. Christian, married. Box No. 28.

POSITION WANTED: Varied experience in the design and presentation of all phases of residential work including low cost housing, prefabrication and higher cost work is offered by a University graduate. Background includes a period of successful professional rendering and a position of complete architectural responsibility, entailing client contacts, sketches, working drawings, rendering and detailing. New York City and vicinity preferred. Box No. 29.

POSITION WANTED: Architectural designer and draftsman, 25 years' experience in U. S. and abroad, 5 years as chief estimator for construction, practical knowledge of mechanical trades, specification writer, experience in field measure and design for alteration of old tenement houses. Have designed and supervised construction of up-to-date tanneries and breweries, thorough knowledge of all machinery and equipment for these industries. Supervised construction of large hydraulic power plants, schools, apartment houses and public buildings. Technical college and business school training. Knowledge of accounting and office organization. Wishes connection with architect or builder where a man is required to make a complete set of plans and supervise the construction, or management of, and maintenance of real estate holdings. Box No. 30.

POSITION WANTED: As a designer-draftsman, Master's Degree at leading University, Beaux Arts Institute certificate, 3 years' drafting experience, 7 years' instructor of architectural design at leading Universities, registered architect and excellent delineator. Finest experience. Box No. 31.

A BRILLIANT YOUNG INVENTOR having a wide range of creative ability is searching for a clearly defined outline of problems of an industrial, architectural or merchandising nature, or a definite sphere wherein he may bring forth new or correlated ideas. The individual or organization who feels that they can profitably expose appropriate problems to an inventive mind, may cooperate on a single project, on commissions or continuous employment. Box No. 32.

POSITION WANTED: Architectural designer and draftsman, 12 years' experience on all types of buildings, broad education in architecture, desires position with architect, builder or contractor. Box No. 33.

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POSITION WANTED: In the south or southwest by architectural designer-draftsman. Renderings, perspectives in any medium. Capable of carrying job through sketch-study stage to careful execution. Well seasoned in both New York State and the south. Age 38. Married. Leslie Edward McIntosh, Font Grove Road, Slingerlands, N. Y.

POSITION WANTED: Junior draftsman seeks opening in Greater New York. Willing to start at bottom at moderate salary to show what he can do. Box No. 34.

POSITION WANTED: Registered architect and draftsman, licensed New York State and New Jersey, 30 years of age. Varied practical, theoretical and executive experience among leading architects, general contractors, cut stone and marble contractors on some of the finest building in U. S. and Europe. Drawings, co-ordination, checking, general architectural drawings, steel, mechanical; shop drawings, etc. Box No. 35.

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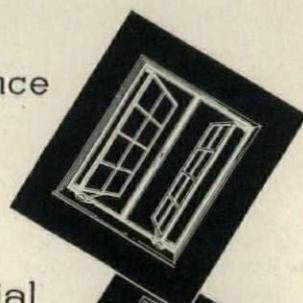
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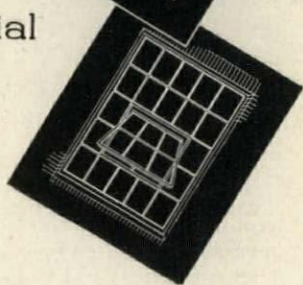
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Wittenberg & Deloney, Architects

Note Duriron Drain Pipe installed from ceiling and Durimet
Ducts connecting with hoods.

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Studying the theory of chemistry the students have before them at all times a very practical and scientific application of it. For in both of these splendid laboratories Duriron Acid-Proof Drain Pipe and Durimet Acid-Proof Duct are wisely used to convey wastes and fumes from sinks and hoods.

Every day the students see chemicals causing many astounding reactions, acids eating away fabrics, wood and even ordinary iron, but Duriron impervious to it all. They learn that Duriron is positive assurance of a lifetime of trouble-free acid-handling service.

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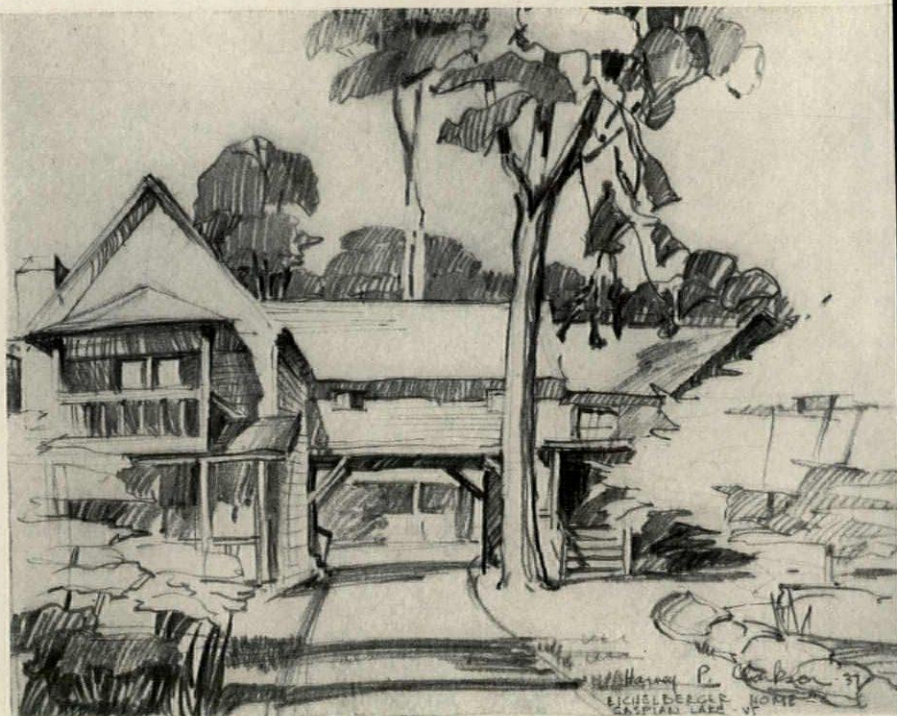
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These sketches form an interesting study in two of the many pencil technics. Above is the Eichelberger Home, at Caspian Lake, Vermont, drawn by Harvey P. Clarkson. Below is H. Koether's conception of St. John's in Milwaukee, Wis.



Competitions for Public Buildings

EDITOR'S NOTE: For an earlier sequel on this subject of competitions for the selection of architects for public buildings see page 21 in the November, 1937, issue of PENCIL POINTS. Leading a nationwide movement for the selection by competition of architects for public buildings, the New York Chapter of the American Institute of Architects has recommended to Secretary Morgenthau that the competitive method be applied experimentally to six Federal projects in the State of New York.

This action followed the adoption by the Chapter of a resolution declaring that "architectural competitions are the best method of selecting designs for, and architects to superintend the erection of, buildings where public funds are involved."

The architects, according to a statement by the Chapter, "feel that their profession has been menaced by State and Governmental agencies, which have set up bureaus to take over work which more properly belongs to the architect in the field of private practice." The Federal Government has usurped the functions of the architect, and this policy is being aped by States and cities, it was declared.

The jobs which, the architects submit, would fairly test the worth of architectural competitions, involve the construction of post-offices, and are included in the scheduled activities of the Procurement Division of the Treasury. Two are to be carried out in New York City. The location and cost of each follow: Gloversville, \$270,000; Tonawanda, \$185,000; Great Neck, \$175,000; Woodhaven branch, Jamaica, \$175,000; Wakefield branch, New York City, \$210,000; Station I, New York City, \$650,000.

"Competitions among architects with offices in New York City would result in the selection of architects for the New York City jobs. Competitions among architects outside the City would determine the choice of architects for the other jobs."

In England, France, Italy, and other countries, the Chapter statement said, competitions have proved stimulating.

"Employing this practice, the Royal Institute of British Architects has successfully solved England's architectural program. Since the World War, 470 open competitions to select architects for public buildings have been held in England, and have resulted in better architecture and lower costs. The United States should profit.

"It is paradoxical that in this country, where free competition has been the backbone of success, the architects should be forced to fight

for Federal and State recognition of the fairness and value of competitions.

"Under the pressure of emergency, the Office of the Supervising Architect in Washington developed from a small supervising unit to the largest architectural planning factory in the world. Before the present Administration came into power, it was the usual practice to hire private architects for all large work and most small work.

"Now architectural design has become the function of the Procurement Division of the Government, which has swallowed the Office of the Supervising Architect. Under present conditions it is practically impossible for a private architect to obtain Federal work from the Procurement Division.

"A similar situation exists in New York State, which no longer hires private architects. The Department of Public Works at Albany maintains an architectural organization ranking second only to that of the Federal Government in size. Public architecture in the State is under the direct control of an army trained engineer.

"The new Charter of the City of New York unless modified will make it impossible for the private architect to participate in City work. Civil service employees, underpaid and undertrained for the tasks involved, will take over the complete handling of the City's architectural problems. The public is unmindful of the implications of this transition, and does not realize that it is subscribing to a principle of control which is entirely un-American and subversive of excellence in civic architecture.

"The growth of the bureaus which are now controlling and designing public architecture is a phenomenon of the depression. It was inevitable since haste and speed were essential to the distribution of emergency jobs and money. The method of the old political spoils system was too slow.

"It is the aim of the architectural profession to bring about a return to the policy of employing private architects in governmental work. The existing system, which excludes architects from a sphere of public service which is preeminently their own, should be abolished."

The Philadelphia Chapter of the American Institute of Architects has gone on record in favor of competitions, and has expressed disapproval of "bureaucracy" in government architecture. Other Chapters of the Institute are expected to support the New York and Philadelphia groups.

Wesley S. Bessell has been named chairman of a New York Chapter committee to direct the movement. Other members are Lorimer Rich and Frederick J. Woodbridge.

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OPACITY is what you need to "hold that line" when reproducing direct from pencil drawings. And in Mars Lumograph Drawing Pencils opacity is achieved by a secret light absorbing element added to the finely ground particles of choicest graphite.

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Mars Lumograph is a pencil for better work. It resists smudging. It has a strong, easy gliding, long lasting, absolutely gritless lead. It erases cleanly. It is accurately graded—every pencil in every box and every lead in every pencil is uniform all the way through. It is beautifully finished with the degrees marked on all six sides of the tip. 17 degrees—15¢ each—\$1.50 the dozen. Ask your dealer or write for a trial order.

J. S. STAEDTLER, Inc.
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Photomicrograph of Lumograph line (upper), and other drawing pencil (lower); Proving Lumograph's superior opacity.



MARS LUMOGRAPH



Producers' Council Starts New Drive

The adoption of a program of expanded activities by The Producers' Council, Inc., was announced by Marshall Adams, newly elected Managing Director of the Organization.

The Producers' Council, Inc., is the organization in the building industry which represents the producing group. It has grown until it now includes 55 of the leading manufacturers of building materials and equipment, and associations—and is affiliated with the American Institute of Architects.

Mr. Adams stated that the expanded activities will include the organization of additional Council Clubs in principal cities of the country, in addition to those now in existence.

These Clubs are composed of the local representatives of national members and enjoy the cooperation of the local chapters of the American Institute of Architects as well as contact with engineers, builders, Chambers of Commerce, realtors and civic bodies.

The expanded program was made possible by the adoption of a sliding scale of dues at the 14th Semi-Annual Meeting of The Council in Washing-

ton, on November 19th, whereby the members contribute in proportion to their volume in new construction and modernization. That this amendment had the sponsorship of the larger members was considered an indication of the value which the membership places on the Council's services.

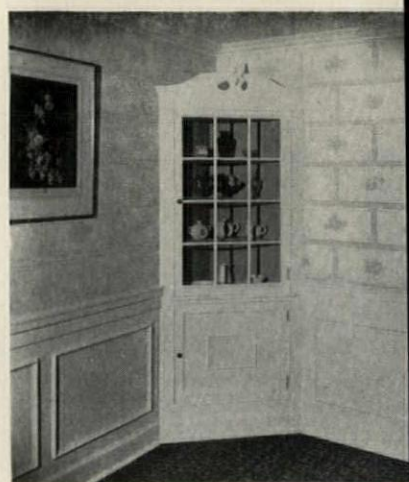
A New Course at Pratt

Pratt Institute has inaugurated in its Architectural School a course of study in Socio-Economic Architecture.

In this course, Architecture is studied primarily as a use-architecture based upon human needs and fabricated within the frame of modern machine production, because it is believed that the canon of beauty requires the expression of the generic, not the eclectic.

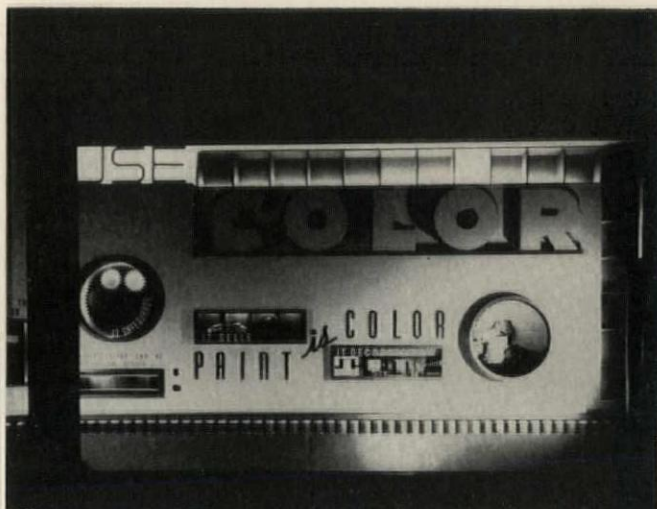
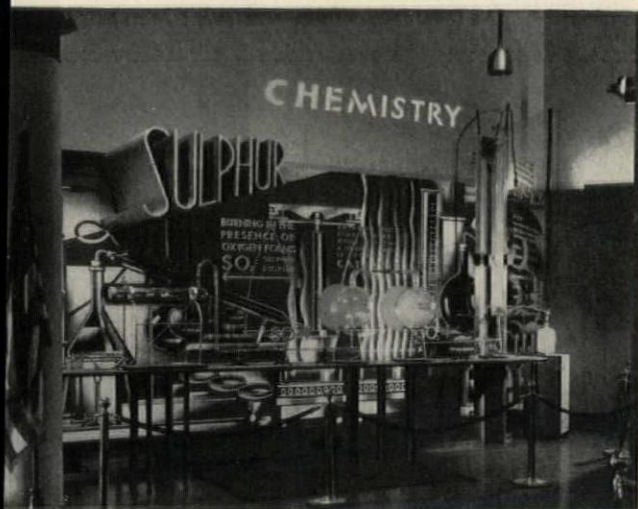
Maladjustment and blight of rural, urban, and industrial life are some of the chief problems with which our civilization is confronted. As viewed from the potentialities of modern techniques, many of our existing building patterns are obsolete.

Toward a possible rational solution of these problems, detailed designs and plans of dwellings, communities, towns, and cities are projected.



When the manufacturer of building materials turns to a really able architect and commissions him to design a whole line of products, that's legitimate news. The intelligent organization in this instance was the Curtis Company and the distinguished designer was Dwight James Baum, F.A.I.A. Four of the many well studied standard details he developed for the Curtis line are shown by the illustrations contained on this page.





The 1939 New York World's Fair has set up the four exhibits shown on this page in the lobby of the Administration Building to show the possibilities of commercial presentation. The chemistry display, at upper left, was designed by Louis Skidmore and shows the entire process of producing sulphuric acid. Raymond Loewy's color display, upper right, is framed in representation of the spectrum and is intended to show the safety, beauty, and preservation that color gives. At lower left Henry Dreyfuss demonstrates what can be done with an exhibit entitled "Fashion and Fabrics." Walter Dorwin Teague, member of the Fair's Board of Design, dreamed up the clock display at lower right. It reveals the time in cities throughout the world, shows the course of the sun in relation to the globe, demonstrates several important mechanical features of a watch, and ticks off the seconds still remaining until 1939 in electric lights on the rim of the big, central clock.



League Plans Annual Exhibition

The ambitious plans for the 52nd Annual Exhibition of the Architectural League of New York in 1938, as well as the 1939 exhibition, have just been announced by Francis Keally, Chairman of the Annual Exhibition Committee:

Mr. Keally says, "The League Exhibition this year will be of unprecedented national interest to architects, builders, and manufacturers. Plans call for regional exhibits from all over the United States, the material to be selected by local juries in the seven regions — Pacific Coast, Rocky Mountain Section, Middle West, South Atlantic, Far South and Southwest, New England, and New York—into which the Committee has

divided the country. Local committees appointed by the Exhibition Committee of the League in each city will select their own material.

"Selections made by these juries to send to the Exhibition in New York will include architecture and the allied arts—sculpture, mural painting, landscape architecture, and the decorative arts and crafts.

"The object of this arrangement is to have all regions of the country represented by work which they themselves consider truly representative of their locality. The Exhibition Committee believes that in this way the show will be of greater public interest and reflect in a more dramatic way what is being accomplished in America than if the exhibits were selected by a New York group alone, as was the practice of selection for the past shows.

"A parallel object in organizing the Exhibition in this new way is to build up, out of the 1938 juries, a National Jury which will help in selecting out of the 1938 show, material to form the nucleus of the United States section of the 1939 Exhibition.

"In 1939, the year of the World's Fair and the conventions of the International Congress of Architects and the American Institute of Architects in New York, the show will be all inclusive of the Western Hemisphere."

De Postels Renders Again!

Our old friend, Theodore de Postels, Architect and Master Delineator, has recently resumed his free-lance rendering activities and has opened a studio at 644 Riverside Drive, New York.

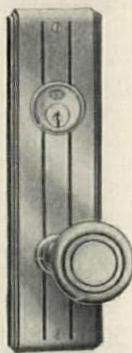
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Changes in Personnel, etc.

MODERN HARDWARE DESIGN CREATED BY CORBIN

P. & F. Corbin Division of The American Hardware Corporation, New Britain, Conn., announces the development of a new hardware design to be known as Barre design. It was created to fill a definite and distinct need; namely, an inexpensive hardware design worked out along modern lines artistically, for stores, office buildings, factories, apartments etc. in which equipment which will follow a modern architectural style is desired. While Barre design is a wrought trim made from sheet brass, bronze or steel, its sharp clean lines resemble those of a cast trim and at the same time, its cost is said to be considerably lower than a corresponding trim of cast brass.

It is made in sizes for various types of doors such as store doors, residence entrance doors, interior doors, etc. with door pulls and push plates to match. It can be had in complete sets including locks for all these various types of doors either with metal or glass knobs and can be furnished in any of the usual hardware finishes including chromium, either bright or dull. In most of these finishes the vertical lines down the center of the plate are finished dark while the broad surfaces are polished in the natural metal color. This gives an effective relief to the pattern. Where it is desirable to work color into the hardware, this design can be treated with the incised lines in red both on the escutcheon and the knob.

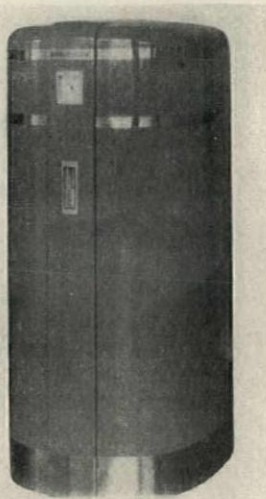


NEW OIL FURNACE UNIT FOR SMALL HOMES

A new small oil furnace, known as type LA-3, designed for installation in small homes where space is at a premium, has been developed by the General Electric air conditioning department, Bloomfield, N. J. It both heats the house and supplies hot water by utilizing the same method of burning oil as the present larger types. It was styled by Ray Patten, a well-known designer, and in appearance departs radically from conventional types of home heating equipment.

The new furnace is for operation with steam, vapor, or hot water heating systems, or for indirect heating with air conditioners, either singly or in multiple, depending on the heating requirements. It has a maximum rating, at the boiler outlet, of 100,000 b.t.u. per hour, equivalent to steam radiation of 417 sq. ft. or hot water radiation of 667 sq. ft. It will supply 150 to 300 gallons of domestic hot water per day, for steam and hot water systems, depending on the size and location of the storage tanks.

The boiler is of welded steel construction and is com-



pletely equipped with an indirect heating coil for domestic hot water, safety relief door, safety valve, pressure gauge, low water cut-off, a water level indicator for steam furnaces, and an altitude gauge and thermometer for hot water furnaces. The boiler is of the vertical type, with concentric flue surfaces, and the firebox is of steel with a tensile strength of 55,000 pounds per square inch. A one-inch asbestos air cell provides insulation.

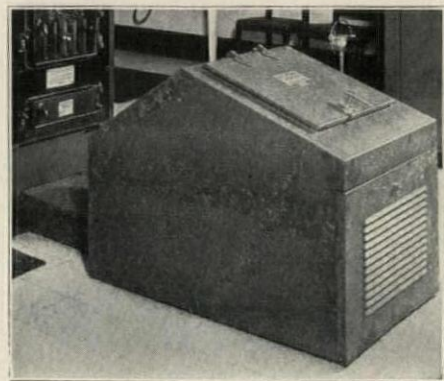
The controls include a master control and integral flame detector mounted inside the jacket, a limit control mounted on the domestic hot water coil housing, and, for steam furnaces, a low water cut-off mounted on the limit control panel.

NEW AUTOCOAL STOKER

Crane Co., Chicago, is now serving all divisions of the automatic heat market with the addition of the Autocoal stoker to its heating line. Modern design as well as economies in operation and maintenance are claimed for the new stoker.

Thermostat control insures even, comfortable temperature regardless of changes in the weather. Over-firing is avoided by the automatic operation. Five sizes of the Crane Autocoal automatic stokers are available with hopper capacities of 350 and 500 lbs. with varying coal feeds per hour, depending on amount of heat required.

Each stoker is provided with room thermostat, one-half fire control and one limit control as well as a clinker tong. Economy of operation and maintenance is a major advantage advanced by Crane Co.



NEW ASBESTOS CEMENT CLAD INSULATION BOARD

Cemesto, the new product recently announced by The Celotex Corporation, Chicago, Ill., is now in full production in the company's plant at Metuchen, N. J. Composed of an insulating core of Celotex, surfaced on one or both sides with fire-resistant asbestos-cement, Cemesto is recommended for interior and exterior wall construction for factories, homes, garages, filling stations, cabins, vent ducts, spandrels, and for industrial drying and conditioning rooms. It may also be used as a flat roof surface for industrial buildings, combining insulation with a wearing, protective surface.

Its dense, light gray, stone-like surface has, it is stated, high reflectivity, good wearing qualities and is bonded to its rot-proofed, termite-proofed Celotex core by means of a waterproofing adhesive, providing a permanent, all-weather laminated construction. Cemesto may be drilled and otherwise handled on the job with regular wood working tools. It is applied with nails, screws or bolts, depending on the base to which it is secured. Extremely rigid, with high load bearing capacity, it is particularly useful in wide spaced steel and wood construction.

It is manufactured in panels four feet wide and from six to twelve feet long. It comes in four thicknesses of Celotex, from 1/2 in. to 2 in., surfaced one or both sides with 1/8-inch layers of asbestos-cement.

NEW TOUCH CONTROL FOR THE HEATING OF BUILDINGS

With a control panel like a modern radio including dials that illuminate when the switch is on, the new HYLO Control Cabinet recently developed by Warren Webster & Company, Camden, N. J., gives building operators "touch control" over the heating of many buildings formerly without control or with inadequate "on-and-off" control.

By setting a dial for the prevailing outdoor temperature once or twice a day, the building operator supplies exactly the right amount of heat to all radiators to keep every section of the building comfortably warm.

The HYLO Control delivers steam continuously to all radiators and keeps radiators fractionally filled when less heat is desired. It is claimed that wasteful overheating during mild weather, and underheating or "cold 70" are avoided.

The "Variator" dial takes care of special conditions. Advanced, it provides for rapid heating-up. Retarded, it adjusts the steam supply for reduced night heating. An operating schedule specially worked out for each building is provided on the front of each HYLO Cabinet.

The HYLO Control Cabinet is attractively finished in crystalline lacquer and can be placed at any convenient operating point—next to a PBX telephone operator, for example.

Made by the makers of the Webster moderator controls for large buildings, Webster HYLO steam variator control is applicable to smaller office buildings, apartment houses, hospitals, deluxe residences and similar buildings where low-pressure steam, either vapor or vacuum, is circulated through two-pipe orificed systems. With modifications, it can be used to directly control stokers, or blowers and motor-operated draft dampers on hand-fired boilers.

TWO NEW MILCOR PRODUCTS

Of particular interest to the architectural profession and building industry is a new, simplified method of erecting a fireproof plaster base for solid partitions announced by the Milcor Steel Co., Milwaukee, Wis. This system also makes possible the erection of an absolutely free-standing furring wall.

In three simple operations the steel members are erected for solid partitions. Three units provide the steel to hold the metal lath in the Milcor solid partition system. These are the ceiling angle runner, the specially slotted channel stud and the continuous crimped floor runner. The exceptional saving in time effected by this Milcor method is readily apparent from the fact that a regular worker can erect 1500 yds. of iron in an 8-hour day.

The same units as used for solid partitions may be employed in erecting furring walls up to 8-ft. ceiling heights. The furring wall may be placed at any desired distance from the outside wall and does not have any contact with it.

In Milcor cove lath, the Milcor Steel Co. has produced a perfectly formed material which can be rapidly applied to wall or ceiling. It is made from 3.4 lb. dia-

mond mesh lath which is electrically welded to curved channel sections spaced 16 in. on center. The cove is made with radii of $6\frac{3}{4}$ in., $8\frac{3}{4}$ in. and $10\frac{3}{4}$ in. for a finished plaster surface of 6, 8 and 10 in.

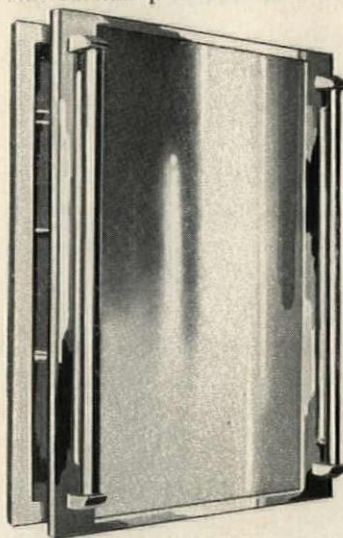
There are numerous advantages to this pre-formed cove lath. It provides a better way to make perfect coves. It is simple and easy to use and saves all of the fussy time ordinarily consumed in cutting wood brackets and forming the cove on the job. It insures a steel base joining at wall and ceiling, and can be used over any type of base.

A. W. FABER SPONSORS SHATTER-PROOF SLIDE RULE CURSOR

A. W. Faber, Inc., Newark, N. J., announces something new in slide rule cursors—windows made of transparent plastic. Since the introduction of slide rules, cursors have always had glass windows. Consequently, accidental dropping or shock led to breakage. This new transparent plastic is practically unbreakable, hence reduces replacements to a minimum. This change was the result of numerous requests by engineers, draftsmen and other slide rule users.

NEW PARKER BATHROOM CABINET

The introduction of a new bathroom cabinet, No. 7001, is announced by The Charles Parker Co., Meriden, Conn. This cabinet provides for 2-18 in. Lumiline bulbs, one



on each side of mirror which furnishes balanced light entire length of mirror eliminating all shadows. These bulbs are shaded with chromium plated brass shades which swivel to direct the light or can be placed to shield all glare, from the user's face. A light slot is provided in back of door to illuminate inside of cabinet. The chromium plated brass frame door with Evalast electro copper backed mirror sets close to wall as no wiring is required

in cabinet flange. Sufficient light is furnished to illuminate a small bathroom eliminating other light fixtures and the source of light is where most useful. This cabinet can be furnished with switch and convenience outlet. Bulbs are available in 40 and 60 watts.

Cabinet box is finished in white Parkeroid duco base lacquer. Three adjustable glass shelves with chromium plated brass shelf supports. Splice box is furnished on top of cabinet easily accessible from inside for making wiring connection. Cabinet is completely wired and carries Underwriters Label. Over-all size $17\frac{3}{4}$ x 23 in., rough opening required $15\frac{3}{4}$ x $21\frac{3}{4}$ x 4 in.

JENKINS BROS. OPENS NEW ATLANTA BRANCH

With the recent opening of a new branch office and warehouse, at 376 Spring Street, Atlanta, Ga., Jenkins Bros. gives Southern users of Jenkins Valves the advantages of close contact with a local service branch. An important function of branch manager C. B. Yardley and his staff and stock of repair parts and valves will be to cooperate with Jenkins' distributors in the South.



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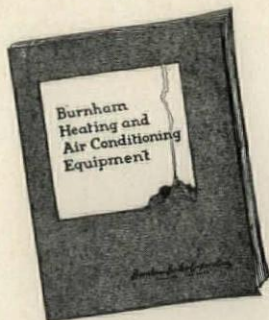
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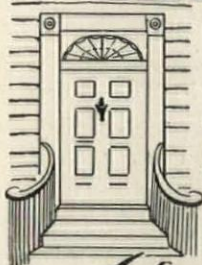
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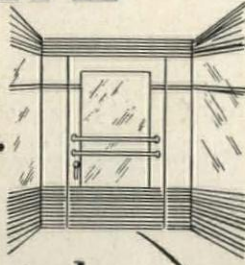
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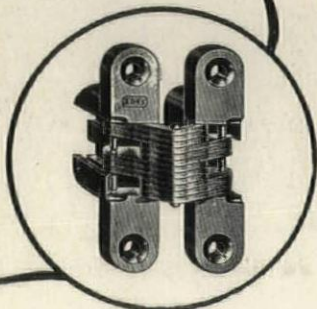
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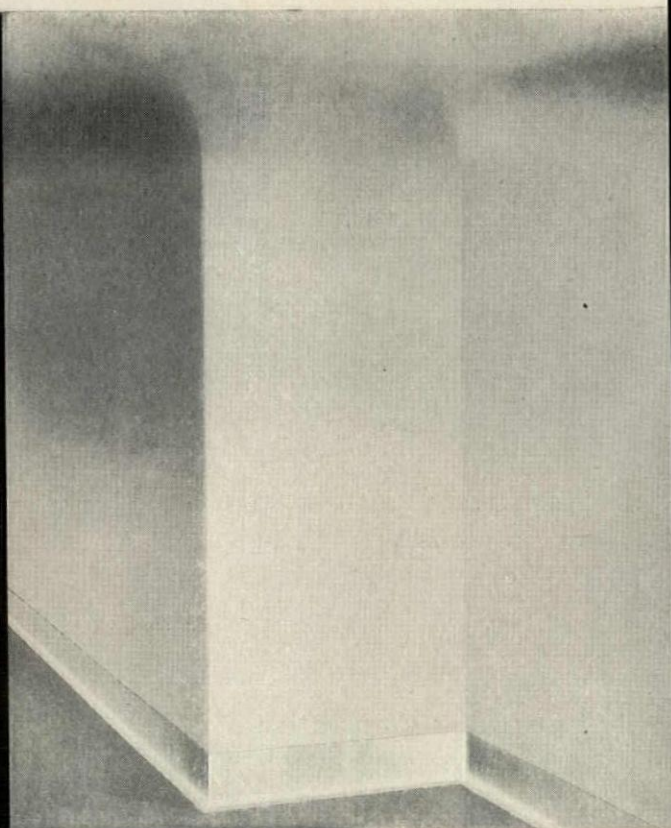
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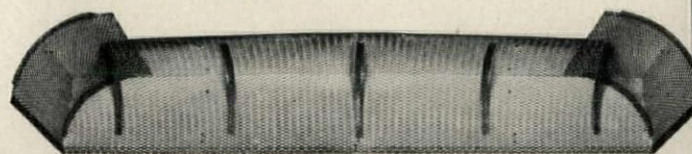


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Let's say this is you burning the midnight oil over a rush job that is on your boards. Let's say you're going to specify a freight elevator for this particular job. You look like you're busy and we don't want to interrupt, but we'd just like to ask what will be your duty and platform specifications for that elevator?



If you're not quite sure, you're going to have to leave the board and do a little investigating of freight elevators in buildings of similar size and where the freight problem is similar to what can be expected in this new building you're working on.



We've been doing some pretty intensive investigating for about 10 years on this subject and we've studied a good many installations in that time. And we think we've uncovered something worth while for everybody concerned—the owner, the contractor, ourselves and other elevator manufacturers, and yourself. For instance, we've found that for average freight service in the smaller buildings one of two duty specifications generally fills the bill: (1) 2500 pounds capacity at 50 feet per minute, and (2) 3000 pounds capacity at 40 feet per minute. Also that two platform sizes cover the needs of most installations—either 5 feet, 6 inches

wide by 6 feet, 9 inches deep, or 6 feet, 6 inches wide by 7 feet, 6 inches deep.



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