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The Cover

SEGOVIA, Spain, along the narrow road that winds below the ramparts of the town, offers a picturesque view that forms the subject of the sketch reproduced upon the cover. Its author, Andre Smith, was formerly a member of the firm of Smith & Ross, architects, of New York City.

The sketch was made on a sheet of smooth tinted paper of warm tone, drawn with a litho-crayon and very simply painted in watercolor. Some of the shadow washes are clear, while the whites and the lights are done in opaque color. The drawing was made on the spot and the color added later. Mr. Smith states that this method is more satisfactory for small drawings than that of adding the color "on the spot" since it avoids over-stressing the color details and the losing of the simplicity which the mind naturally retains as an after-impression.

Next Month

PUBLICITY—What A. I. A. chapters all over the country are doing and think should be done.

MAYAS—Three architects journey to "The Land of the Mayas," and Kenneth Clark tells of their adventures.

DAYLIGHTING — Some pointers that help to secure more of it.

ALUMINUM — The latest architectural advances of this new building material.

BENJAMIN FRANKLIN BETTS, A.I.A., *Editor*
ERNEST EBERHARD, *Managing Editor* H. J. LEFFINGWELL, *Advertising Manager*
RAY W. SHERMAN, *Editorial Director* EARLE H. MCHUGH, *General Manager*

In This Issue

Cover, a water color by Andre Smith

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A New and Improved Jacketed Boiler

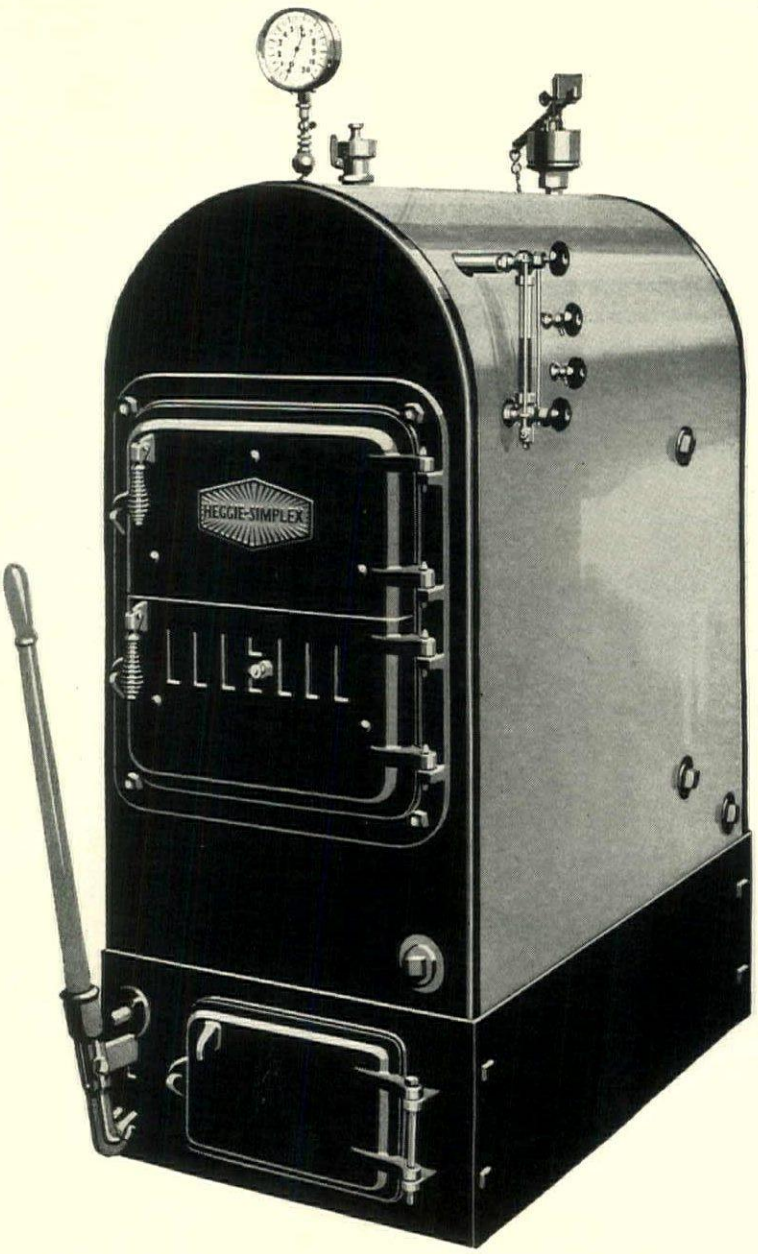
IT has always been a Heggie-Simplex policy to adopt new features as soon as they have been proved distinct advancements over the old. And now, Heggie-Simplex announces important improvements in its jacketed line of boilers.

The new design of the jacket makes this one-piece steel boiler the simplest of all jacketed boilers to install. The boiler itself is made to templates with every flanged opening located with jigs. The jacket is die-cut so that absolute accuracy of fit is assured. The insulation of mineral wool is already in place as a lining to the jacket. No separate handling, fitting or trimming is required.

The finish is of the same smart, yet practical dust-concealing French Grey that made the first Heggie-Simplex Jacketed Boiler so popular with women. In these new boilers, however, by a special enameling process, the finish is even more lustrous, beautiful and durable. Trimmings are jet black.

The boiler itself, built of steel, fused by electric welding into one seamless crack-proof unit, incorporates the same principles of operation as the previous Heggie-Simplex Jacketed model. An extra large firebox, large heating surface, tubular flues and unrestricted water circulation assure a degree of efficiency which only the owners of large buildings, using large steel boilers, could heretofore obtain. The boiler is readily adaptable to use with any fuel—coal, coke, gas, oil—and to hand or automatic firing.

For full particulars write Heggie-Simplex Boiler Co., Joliet, Ill. Representatives in principal cities —telephone and address listed under "Heggie-Simplex Boilers."



The improvements now incorporated in Heggie-Simplex Jacketed Boilers represent the experience of thirty-eight years of boiler engineering. They anticipate the practical requirements which architects, heating engineers and owners will demand of jacketed boilers in the future.

HEGGIE-SIMPLEX
STEEL HEATING BOILERS

ARCHITECTS
Should SIGN their Buildings

By Benjamin F. Betts

SOME years ago the American Institute of Architects approved the practice of architects permanently placing their names on buildings which they have designed. In a few instances architects have taken advantage of this opportunity to identify themselves with their accomplishments. It is unfortunate that this practice has not become a well established custom by the profession.

The signing of creative work by its originator is not without precedent. Sculptors, painters, musicians, authors, manufacturers and others have recognized the value of identifying their names with their products. Michelangelo, Rodin, Leonardo da Vinci, Corot, Beethoven, Mozart, Vasari, Shakespeare and other illustrious names are well established with their achievements in the creative field of which they were a part.

TODAY, Cadillac, Gorham, Carnegie, Corona, Heinz, Wrigley, are standards by which others are judged. These names have been closely identified with their products and have become established in the minds of individuals as a guarantee of quality and dependability. The name of Packard is sufficient to eliminate further investigation of the quality of this particular automobile. No one questions the quality of a diamond with Tiffany on the case. Names such as these, in time, are looked upon and accepted by the public as a protective trade-mark.

So great has the influence of a signature become that the attaching of even an unknown name to a product has its value, for the purchaser senses that its maker thinks well enough of the product to want to be identified with it. In time the name becomes synonymous with a definite quality. A name attached to a product has a further v a l u e in that it is eventually more or less an inseparable part of an industry or an art.

WHEN architects do not sign their buildings they are wasting an opportunity for thoroughly establishing their own names and also an appreciation of architecture in the public mind. The signing of buildings by architects might one day lead to public acceptance of such signatures as evidence that the structure is correct in design, well built, and properly planned. It would then have a commercial value and it would all help the cause of architecture.

THE NEWSPAPERS reached "The Man in the Street"

• *The press of Philadelphia, both before and during the exhibition, gave it adequate support. This fact demonstrates that effective local publicity can be obtained by the profession for meritorious public service when the newspapers recognize that the public is interested. Reports indicate that the traveling exhibition is being given generous space in the local newspapers of those cities in which it has been shown.*

The American Architect will continue to present the methods by which the public is being reached by architectural organizations in various parts of the United States.

PHILADELPHIA EXHIBITED Architecture TO 15,000 PEOPLE

Department store location proves that public will visit exhibitions that are easy to reach

Based on an interview with

D. KNICKERBACKER BOYD

By Benjamin F. Betts

THE public is interested in architecture. It will patronize an architectural exhibition if held in a location that is easily accessible and in a place where people are accustomed to go. These are facts that were demonstrated by the Thirty-Second Annual Joint Architectural Exhibition of the Philadelphia Chapter of the American Institute of Architects and the T-Square Club of Philadelphia, Pa., which was held in the John Wanamaker department store.

Former exhibitions of these organizations have been held under conditions that required the public to make an effort to go out of its way to view them, with the result that such exhibitions attracted an attendance of possibly three or four hundred persons who were particularly interested in architecture. The recent exhibition was taken to a place ordinarily visited by the public and therefore attracted its attention. This idea was timely, for there is plenty of evidence that the public's interest in architecture is growing. This interest must be fostered and encouraged by the architectural profession.

There is no way of knowing how many persons viewed the architectural display in the street level show windows. It is known that during all hours of the day throngs of people three to five deep crowded around these particular windows. It is also known that fifteen thousand persons, or an average of almost a thousand a day, visited the exhibition in the Art Gallery on the seventh floor of the store—fifteen thousand persons who carried

THE EXHIBITION *was located on the seventh floor of the Wanamaker Department Store. The main gallery shown above was devoted to public and semi-public work. On the opposite side were the entrances to sections containing exhibits of domestic and landscape work, ecclesiastical, commercial and industrial work. The entrance to the domestic work section was through a doorway shown at the right below, removed from a Philadelphia house and loaned to the exhibition by officials of the Philadelphia Art Museum*

away at least a better appreciation of architecture and the work of architecture—fifteen thousand people who were more likely to use the services of an architect than they were before.

By request, the time of the exhibition was extended from two weeks to three weeks. By arrangement with the Committee on Education of the Philadelphia Chapter and the Board of Education of the City of Philadelphia, a special selection of exhibits was started on a tour of the Senior High Schools in the city. The exhibition was thus placed before large groups that should be benefited now and become future clients of architects. By request of the Southern Pennsylvania Chapter of the Institute, a portion of the exhibition was sent to the Public Library in Harrisburg. By arrangement with the Committee on Public Information of the Philadelphia Chapter and the American Federation of Arts, a special traveling exhibition, sponsored by the Federation, is being shown in numerous localities throughout the United States. This joint exhibition thus became more than local, its influence is radiating throughout the country.

D. KNICKERBACKER BOYD, F. A. I. A.

Chairman of the Committee on Public Information of the Philadelphia Chapter and Managing Director of the Exhibition

Newspaper publicity given this exhibition both before and during its showing not only induced many to attend, but also directed the attention of many persons to architecture, who did not visit the exhibition. The extent to which the daily and Sunday press cooperated indicates that editorial support will readily be given meritorious public service of the architectural profession as a group. Reports also indicate that the traveling exhibition is being given reasonable editorial comment in all localities where it has thus far been held.

So far as can be determined this is the first important architectural exhibition ever held in a department store. The success of the venture demonstrates that an architectural exhibition can be (*Continued on page* 68)

• New equipment and unusual plans developed for the Beaux-Arts studio apartments, New York

DESIGNED, FINANCED and BUILT by ARCHITECTS

By Kenneth M. Murchison, F.A.I.A.

THE new Beaux-Arts Apartments facing each other on East Forty-fourth Street in New York City exemplify many new ideas—ideas in financing, ideas in planning, ideas in designing. A group of architects built these structures for themselves, buying the property and acting as owners throughout.

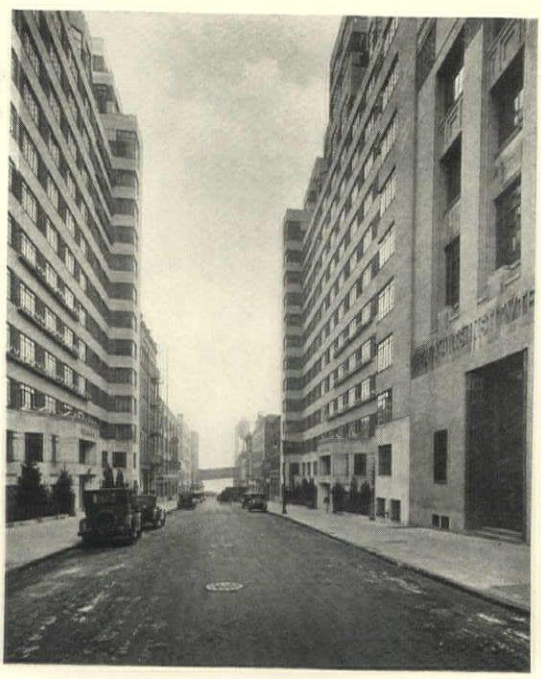
The inception of the project lay in the removal of the Beaux-Arts Institute of Design from its former location in East Seventy-fifth Street to somewhere nearer the architects' and draftsmen's zone of activity. Raymond M. Hood and the writer were commissioned by the Beaux-Arts Institute to find a new site, low in price and convenient in location, so we browsed around through the tenement house areas in the East Forties until we found what we considered the ideal site, at 304 and 306 East Forty-fourth Street. Then, casting our weather eye around in that appraising-like way architects boast of, we woke up to the fact that here was an opportunity of surrounding the Beaux-Arts Institute of Design with a group of studio buildings, thus creating a mid-town artistic center.

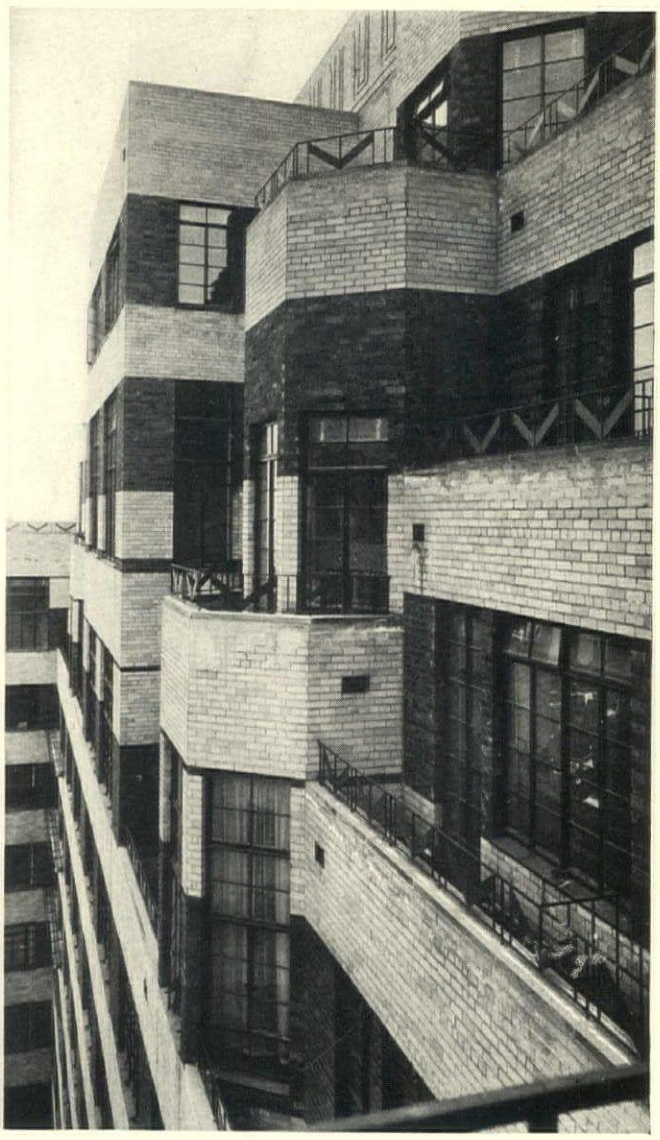
But who would finance it, was the next question. "Here," we said, "is a chance for the architects to go into a deal as owners and work for themselves for a change! Why not try it?"

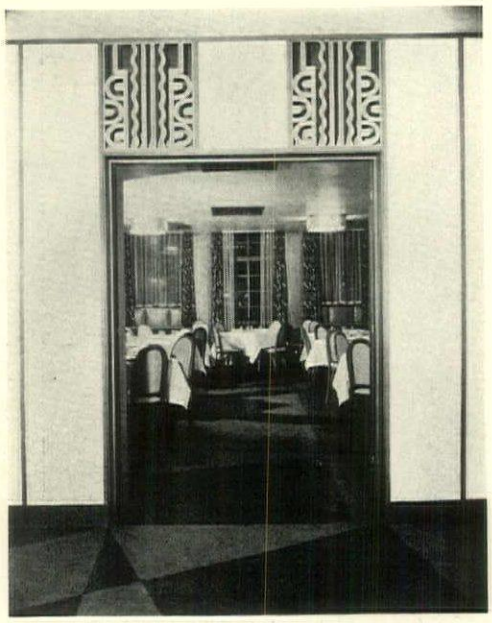
So we gathered a crew of big-timers together at

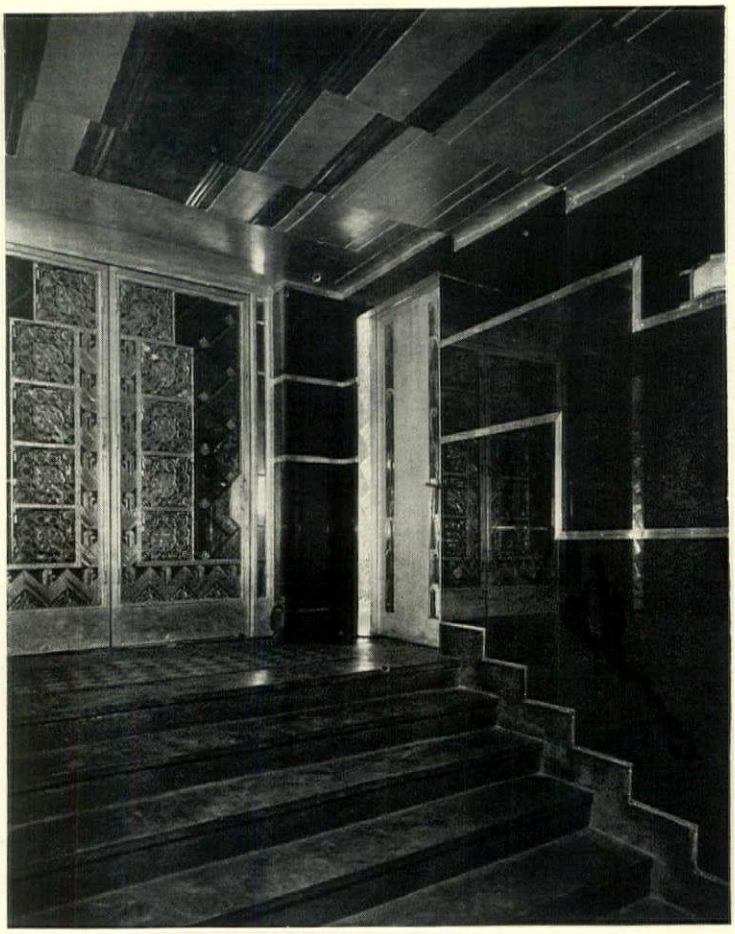
Above: main entrance by day . . . Below: detail of upper stories showing how the set backs have been utilized to afford balconies that add to the desirability of many apartments

Above: night view of the entrance to the Beaux-Arts studio apartment house . . . Below: general view looking east. Black and salmon colored brick combine into contrasting bands. The firm of Kenneth M. Murchison, and Raymond Hood, Godley & Fouilhoux, associated architects









Above: looking toward one of the dining rooms. Grill above the doorway is of white metal. At right: front entrance doors as viewed from the lobby; white metal, brass and metal painted red were combined effectively. Walls are of a black-brown imported glass divided by aluminum strips

lunch one day and propounded the question of being owners instead of just plain simple agents. The crew waxed enthusiastic. They all went in. We joined hands with the George A. Fuller Company and bought the property we wanted, one hundred fifty-eight feet on the north side of Forty-fourth Street and one hundred seventy-five feet on the south side, between First and Second Avenues.

WE then incorporated ourselves as the Beaux-Arts Development Corporation and Hood and the writer started on preliminary plans for the buildings. Everyone agreed that a purely "studio building" was too much of a risk in that locality but felt that a sure-fire winner would be two great caravansaries made up mostly of one-room apartments, with serving pantries and a restaurant on the ground floor and room service upstairs. We bowed to our artistic urge by having double-height studios on two of the upper floors only. We call every room in the buildings "studios," however, because under that name they seem to rent faster. "Drop in to my studio," sounds better than, "Have you seen my flat?"

Then the next burning question was the financing of it. Should it be done by a mortgage or a bond issue or what? Negotiations were begun with the National City Bank and their wizards of finance evolved a new scheme of financing, one in which there is no mortgage whatsoever, one in which it is practically impossible for the participants to be wiped out by a foreclosure.

This financing has been explained in magazine articles during the past year but a brief resume might not be amiss here:

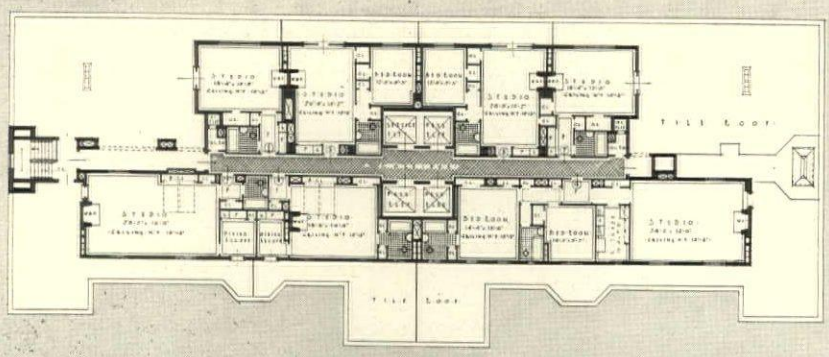
Say the cost of the whole deal would be $5,000,000.00

• *The Beaux-Arts studio apartment buildings won the third annual award for apartment houses offered by Building Investment Magazine. They present sixty per cent more glass in the front facades than is generally found in such structures and make use of lavatories, electric refrigerators and other equipment specially designed by the architects and manufactured in accordance with their specifications.*

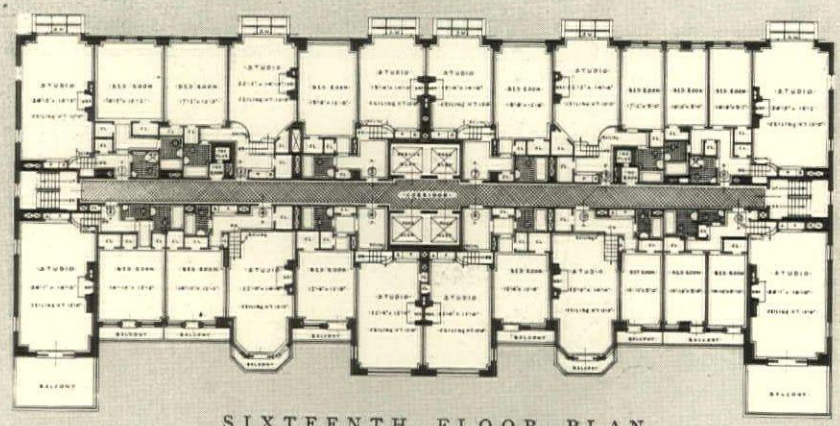
First Preferred stock was issued to the amount of 75% or.....	3,750,000.00	
and sold by the Bank.		
Second Preferred stock was issued for the remaining 25% or.....	1,250,000.00	
Common Stock was issued to the First Preferred on a ratio of 1 to 1 or	37,500	shares
And to the Second Preferred on a ratio of 3 to 1 or.....	37,500	shares
And the Bank's Management Company got.....	18,750	shares
making a total of.....	93,750	shares

As to income: all maintenance costs, including taxes and interest and operating, are paid first; then 6% interest is paid on the First Preferred; then 6% interest on the Second Preferred. The balance is used for the amortization of the two preferred stocks, 75% to the First and 25% to the Second.

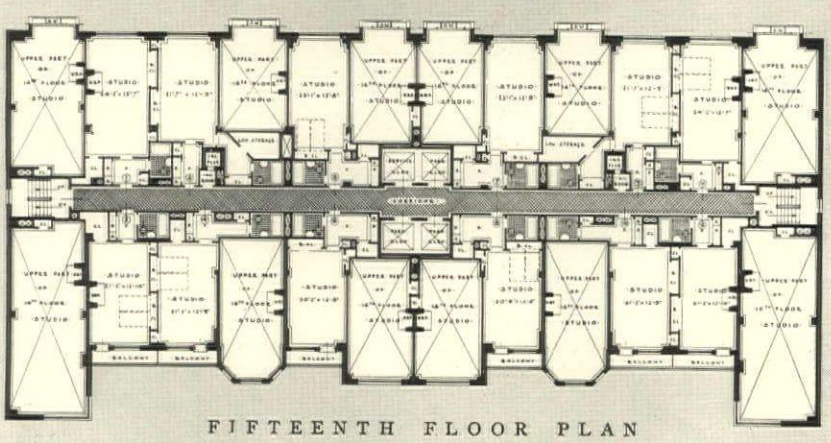
When the First is reduced one-third, thus making it



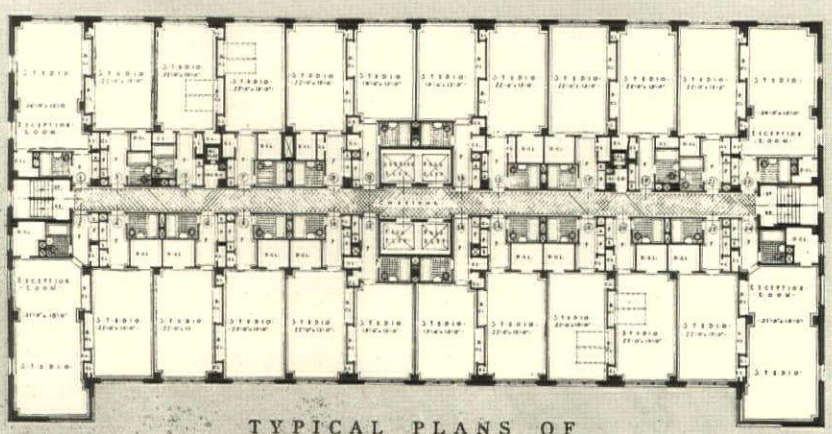
PENT HOUSE FLOOR PLAN



SIXTEENTH FLOOR PLAN



FIFTEENTH FLOOR PLAN



TYPICAL PLANS OF
SECOND TO TWELFTH FLOORS

Corner windows have proven popular. Vertical members of these windows have been minimized to avoid obscuring the view. The decorative treatment of these windows is similar to that of the ordinary type

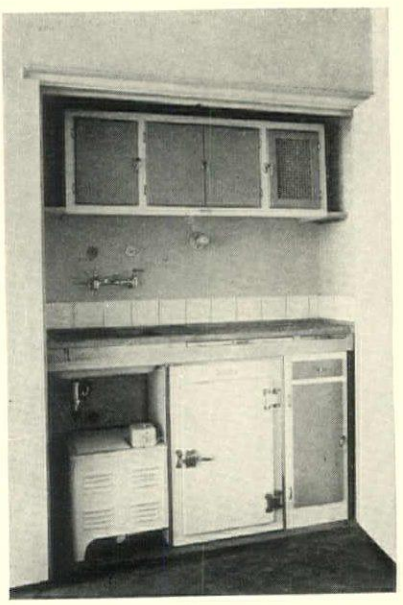
Living rooms on some floors are nearly a story and a half high. In the room shown above the entrance to the apartment is at the balcony level. The serving pantry, bath room and bed rooms are on the same level as the entrance

●

The floor plans of the Beaux Arts Studio apartments are interesting because of the variety of apartments that have been provided. Apartments vary in size from one to three rooms. No bath room opens directly from a living room. Each apartment is provided with a serving pantry and many have a wood burning fireplace

Story-and-a-half living room in the Beaux-Arts apartments which shows the unconventional handling typical of many of the rooms. No attempt has been made to conceal offsets, jogs and angles by furring

The lavatory was designed by Kenneth Murchison as a space-saving unit. It has a narrow rim with dimensions from front to back that are less than usual



A one room apartment. The doors of the doorbed, shown at the right of the room, slide on a track notched to take the down-swung bed supports, thus permitting the doors to be closed when the bed is in use

Service pantries have a refrigerator designed by the architects and are provided with an unusual amount of working space for a unit of this type

at that point represent 50% of the total cost of the project, its amortization ceases on the theory that it might be easily converted into a mortgage if money conditions justified it. This should happen in about seven years after completion, if things go well.

AT the end of about ten years the Second Preferred should be entirely amortized and then the common begins to earn from three to five dollars a share. So, in a way, you have your cake back and are still eating it.

It is a safe and sane way of financing, perhaps a bit more expensive to the owners than an ordinary mortgage but at the same time requiring less cash at the outset.

The old rookeries on the site were torn down last March and the buildings were ready for occupancy January first of this year.

This was somewhat of a speed record as the work of the mechanical trades was complicated and the setbacks and staggered floors were enough to drive a strong man to utter despair.

The lower twelve stories are what is known in the trade as "one-roomers." They consist of a room twenty-two by thirteen feet with metal casement windows occupying the entire street end of the room, and with a foyer opening from the corridor. Off this corridor is the bath (never off the room itself.) Also off the foyer is a coat closet, a pantry and a dress closet almost as big as the bath. Inside the room is a closet with shelves from floor to ceiling, for artist's materials . . . or perhaps bottles, who knows? . . . And a closet with sliding doors behind which are concealed two disappearing beds, or, as they were called in *"The New Yorker,"* "Flop-downs."

So you see, there you have the entire apartment for one or two persons of economical and perhaps cozy habits. When the sliding doors are shut, where is the bedroom? It's not there, that's all. The beds are standing comfortably on their heads, with plenty of ventilation; the clothes and the shoes and the hats and the lingerie are all in the big dress closet and the whole ship is trim and snug.

The beds, when down, are all the way out of the closets and when the doors are slid shut behind them, there is an air space of seventeen inches between you and your neighbor as a sound-or snore-protector. On the other side of the room the single partition is soundproofed by an air space with the walls resting on a thick sound-absorbing material (*Continued on page 76*)

A NEW FORMULA THAT TELLS

How Much Insulation to Use

by PAUL D. CLOSE

Technical Secretary, American Society of Heating and Ventilating Engineers

• *The American Society of Heating and Ventilating Engineers receives more inquiries about insulation than any other subject. So Mr. Close made an extensive investigation to determine facts that would reduce the subject of insulation to a formula. It is the first insulation formula to be developed and is presented here.*

ARCHITECTS are frequently called upon to select the proper thickness of insulation for the walls and roof of a building. But judging from the many types and thicknesses of insulations being used, even under apparently similar conditions, opinions differ widely on this question.

The exploitation by manufacturers of certain vaguely defined insulation principles probably is one of the reasons for the 57 varieties and thicknesses of materials being used. But aside from this influence it seems that there has never been established a simple rule or formula for determining the proper thickness of building insulation to use, and in most cases the selection has been purely arbitrary.

The insulations now on the market generally are classified as fills, cork board flexible, and rigid or board insulations. These materials have various unit efficiencies and range in commercial thickness from a fraction of an inch to several inches; they vary in cost from about 4 cents per inch to 15 cents per inch of thickness per square foot installed. It would be difficult in most cases to decide which type of insulating material is best adapted to a given kind of construction when considered solely from the standpoint of insulation, but it is a comparatively simple matter to determine the proper thickness of insulation to use for any specified set of conditions.

Obviously, the proper economic thickness of insulation depends on many factors. Maine requires more insulation than Missouri. More insulation is usually desirable in a gas heated house than one heated with coal or any other less expensive fuel, whereas a wall of low heat resistance requires more insulation to obtain the proper economic balance than a wall of relatively high heat resistance. The cost of the insulation also has an important bearing on the thickness required, for it is obvious that if the cost is too high, additional fuel will be cheaper than insulation. Competitive conditions, however, control the latter condition to some extent, for to be salable the ratio of cost of the insulation to the efficiency must of necessity be within certain limits. It is apparent, therefore, that the intelligent selection of an insulation material depends on factors which include geographical location, kind and cost of fuel burned, type of heating system, wall construction, and insulation cost and efficiency.

The return on the investment for a given thickness of insulation is equal to the monetary value of the fuel and other tangible savings derived from the insulation, divided by the cost of the insulation. If the desired return on the investment is assumed, the problem can be reversed and the thickness of insulation required to give this return can be readily calculated. Thus, to solve a problem, it is only necessary to decide upon a minimum reasonable return on the investment, and to substitute in a simple formula the proper values for the conditions involved.

The following formula (1) has been developed by the author on this basis for determining the correct thickness of insulation:

$$y = AU - \frac{k}{U}$$

where

y = thickness of insulation required in inches

U = coefficient of transmission for uninsulated con-

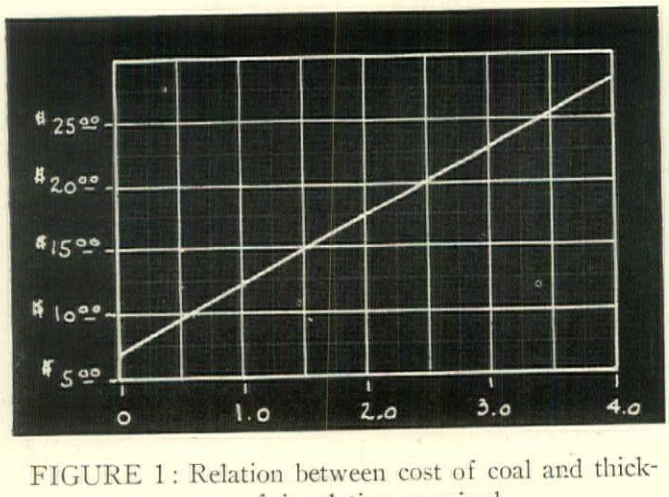


FIGURE 1: Relation between cost of coal and thickness of insulation required.

Based on the following conditions: Location: Chicago. Walls: 8 in. brick, furring, metal lath and ¾ in. plaster. Cost of insulation installed: 10c per sq. ft. per 1 in. thickness. Conductivity of insulations 0.33 B.T.U. per hour per square foot per degree Fahrenheit per 1 in. thickness. Return, 20 per cent.

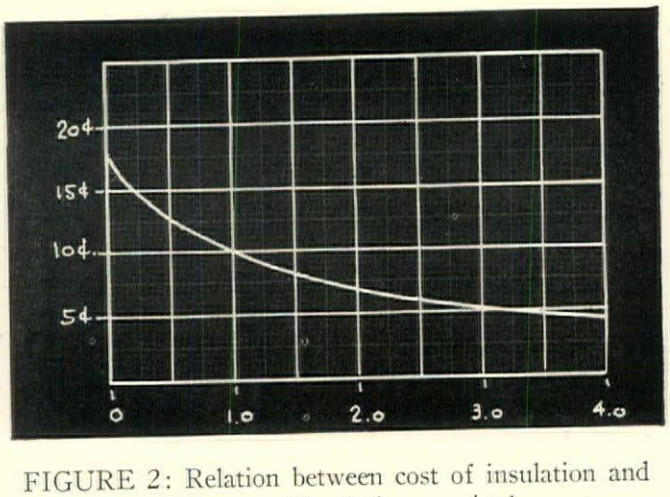


FIGURE 2: Relation between cost of insulation and thickness of insulation required.

Based on the following conditions: Location: Chicago. Walls: 8 in. brick, furring, metal lath and ¾ in. plaster. Coal: $12.00 per ton. Conductivity of insulation: 0.33 B.T.U. per hour per sq. ft. per degree Fahrenheit per inch thickness. Return on investment: 20 per cent.

struction, B.T.U. per hour per square foot per degree Fahrenheit difference in temperature

k = conductivity of insulation in B.T.U. per hour per square foot per degree Fahrenheit per inch thickness

A = a constant, which for coal is $= \dfrac{4.2 \times c \times (t - t_a)}{rz}$

where

c = cost of coal per ton, dollars

t = average inside temperature, degrees Fahrenheit

t_a = average temperature during the heating season, degrees Fahrenheit (see Table on page 100)

r = return on investment, percent

z = cost of insulation installed per square foot per inch thickness, in cents

A PRACTICAL application will illustrate the use of formula (1). Assume that the walls of a residence to be constructed in Chicago are to be 8 in. solid brick, with plaster on metal lath for interior finish. A coal fired heating system is to be installed, and the cost of the coal in this instance is $12.00 per ton. If an insulation having a conductivity of 0.33 B.T.U. per hour per square foot per degree Fahrenheit per inch thickness is contemplated, what thickness will be required if the cost of this insulation per square foot installed is 10c per inch of thickness, assuming that a minimum return of 20 per cent on the investment is desired.

In this case, $U = 0.261$, $k = 0.33$, $t = 70$, $t_a = 36$, $c = 12$, $z = 10$ and $r = 20$.

Substituting these values in the formula:

$$A = \frac{4.2 \times 12 \times (70 - 36)}{20 \times 10} = 8.57, \text{ and}$$

$$y = 8.57 \times 0.261 - \frac{0.33}{0.261} = 0.98 \text{ in.}$$

The nearest commercial thickness to the theoretical thickness required would, of course, be selected and in this case it would probably be either ⅞ in. or 1 in.

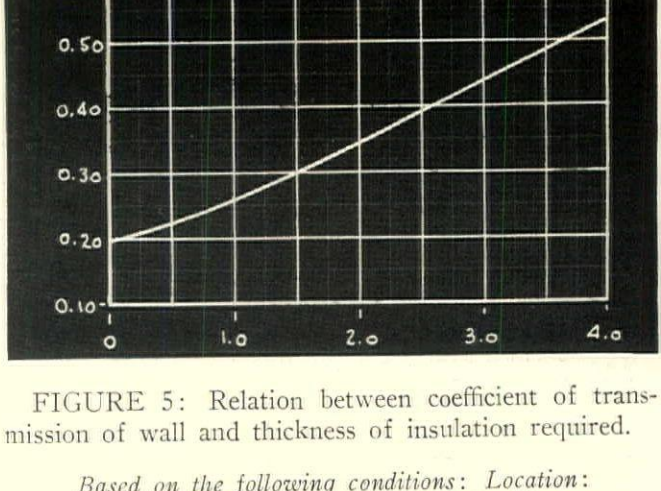


FIGURE 5: Relation between coefficient of transmission of wall and thickness of insulation required.

Based on the following conditions: Location: Chicago. Cost of insulation installed: 10c per square foot per 1 in. thickness. Conductivity of insulation: 0.33 B.T.U. per hour per square foot per degree Fahrenheit per inch thickness. Coal: $12.00 per ton. Return on investment: 20 per cent.

Many useful deductions can be made from Formula (1). It is interesting to note the variation in the thickness of insulation required with the variations in the various factors entering into the problem. Figs. 1 to 6, inclusive, show the relation between the thickness of insulation required and each of the variables which govern the thickness for the assumptions used in the problem cited. In other words, each figure shows the increase or decrease in the thickness of insulation required with the corresponding increase or decrease in one of the factors involved, when the others remain constant. For example, Fig. 1 shows the variation with the cost of coal. With coal at $12.00 per ton, the thickness of insulation required is approximately 1 in. as previously stated, whereas if coal can be purchased for $6.77 per ton, it would not pay to install the insulation

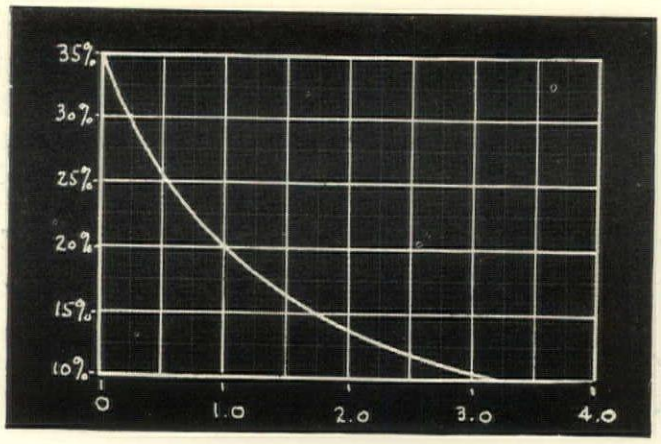


FIGURE 3: Relation between return on investment and thickness of insulation required.

Based on the following conditions: Location: Chicago. Walls: 8 in. brick, furring, metal lath and ¾ in. plaster. Coal: $12.00 per ton. Cost of insulation installed: 10c. per sq. ft. per 1 in. thickness. Conductivity of insulation: 0.33 B.T.U. per hour per square foot per degree Fahrenheit per inch thickness.

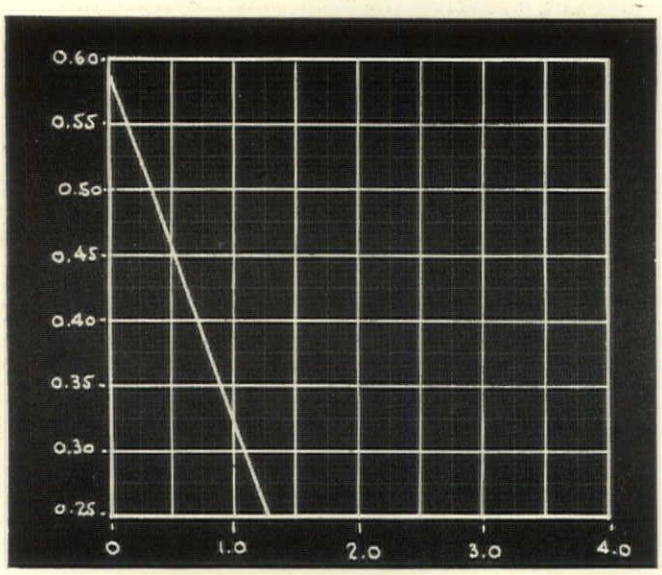


FIGURE 6: Relation between conductivity of insulation and thickness of insulation required.

Based on the following conditions: Location: Chicago. Walls: 8 in. brick, furring, metal lath and ¾ in. plaster. Coal: $12.00 per ton. Cost of insulation installed: 10c per square ft. per 1 in. thickness. Return: 20 per cent.

for the conditions involved because the thickness indicated by Fig. 1 is 0 in. On the other hand, according to Fig. 1, if coal should cost $20.00 per ton, the thickness of insulation required would be about 2½ in. if figured on the foregoing basis. This seems to be entirely logical because it is obvious that the more costly the fuel the greater the thickness of insulation required, whereas if coal is cheap enough, no insulation is required. It should be emphasized that Fig. 1 applies only to the specific conditions involved and although the curve would be of the same general character for other conditions, it

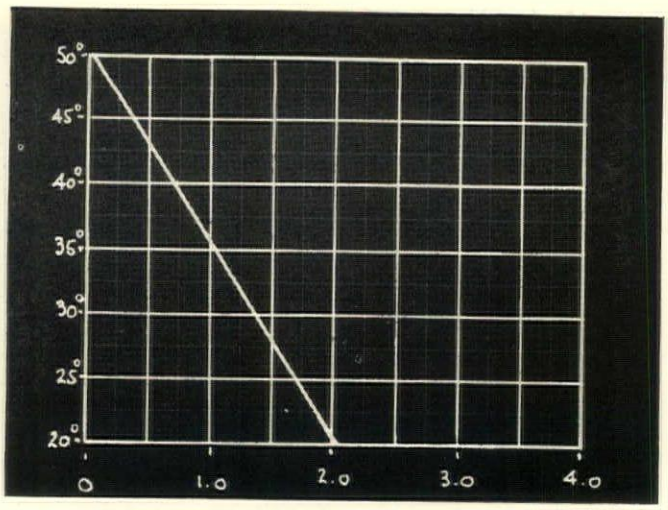


FIGURE 4: Relation between average outside temperature (Fah.) and thickness of insulation required.

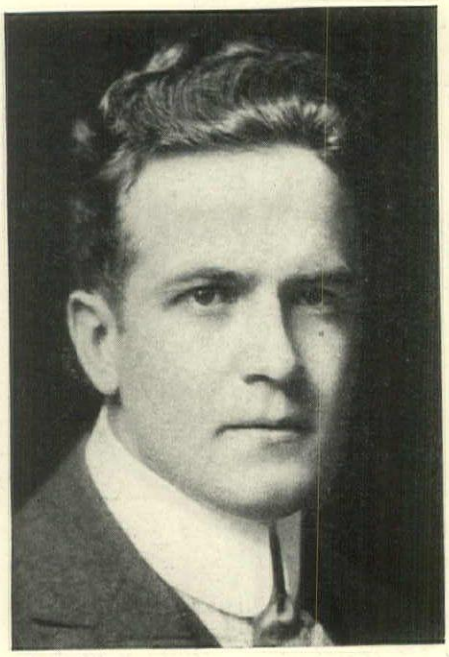
Based on the following conditions: Walls: 8 in. brick, furring, metal lath and ¾ in. plaster. Coal: $12.00 per ton. Cost of insulation installed: 10c per square foot per 1 in. thickness. Conductivity of insulation: 0.33 B.T.U. per hour per sq. ft. per degree Fahrenheit per inch thickness. Return on investment: 20 per cent.

would be higher or lower on the chart. Incidentally, coal at $20.00 per ton is approximately the same as manufactured gas at 65 cents per 1000 cu. ft., taking efficiencies of combustion into consideration.

The variation in the cost of the insulation also has a decided effect upon the thickness required. The variation in the thickness of insulation required according to the cost per inch per square foot is shown by Fig. 2. This chart is based on the same assumptions as previously used, excepting that the cost of the insulation is considered as a variable instead of 10c. If the insulation costs 10c per square foot per inch, the thickness should be approximately 1 in., but if the product contemplated costs only 4¼c per square foot per inch installed, then 4 in. should be used, as indicated by Fig. 2. If, however, the cost is 17.8c or more per square foot, then no insulation should be used, as a zero thickness is indicated by the chart.

IT should be remembered that in solving a case for the value of y by means of the formula, the value of z (the cost of the insulation) used in this formula should be based on a 1 in. thickness installed, regardless of the thickness actually installed. Of course, the installed cost of some insulations varies with the thickness involved, and hence it would be difficult to ascertain what thickness to use for the value of z in solving a problem by means of the formula. In this case, it is necessary to adopt a "cut and try" process by first using the cost per inch for some common thickness of the insulation, and then using the thickness obtained from the formula by this procedure as the basis for estimating the cost per inch to obtain the final value of y.

Fig. 3 indicates that the return on the investment increases as the thickness of insulation decreases. For the conditions upon which this chart is based, the return is 20 per cent for 1 in. of insulation. On the other hand, if a return of 10 per (*Continued on page* 98)



THE GENTLE ART OF

Handling a Building Committee

By

J. F. SURMANN, Architect
Birmingham, Ala.

A BUILDING program is not generally heard of until after the building committee has been selected, when they get together and usually formulate a somewhat rough idea of what they want; they then consider calling in an architect. Having had little if any experience with the profession, they generally begin by putting architects on the same plane of competition as material salesmen. It often takes a little time before the committee realizes that he is not in that class and that he will not submit sketches or plans in a haphazard fashion, thanks to the American Institute of Architects. Nearly always, the committee finds that competitors refuse to make sketches unless no one else is doing so. So the committee discusses the question of holding a competition at some length, but it usually works out that one architect comes in line for the work and all finally agree that he is the one who should be given the commission.

The architect selected finds his work cut out for a while, as the various members of the committee have set and differing ideas on the solution of the problem. It is here that the architect must assume leadership, for the harmony of future relations depends on the respect which he is able to command from the various members of the committee by use of words and well chosen examples to illustrate his points. This harmony is essential to secure a good working foundation for future pleasant relations and is a most important thing to consider in handling a committee of any sort.

During these important early meetings many members fire questions at the architect. Usually one will find that there are smart men on these committees. They soon come to understand the importance of the work and in time will aid the architect a great deal, as they can learn fast and will often surprise the designer with their knowledge of design, materials and construction. It must be remembered that a building is the result of the combined efforts of the owners and the architect and we find that owners take a very studious part in the work to be performed.

It is often necessary for the architect to answer one question asked by a member of the committee and at the same time listen to several other entirely different questions, answering them satisfactorily in due course of time.

Each problem is different and each committee or each member of the committee must be studied. I have known the time when I had so many committee members to list and study that I had a special book with their names, which required hours of thought, in order to be able to call them by name at the meetings. I remember that when on the train or in the hotel I would study this list to be able to greet at least half of them correctly.

It is necessary to gain the full confidence of every member of the committee, which is difficult until you have piled so much before them that they finally give up, realizing the magnitude of the work and are at last convinced that their architect knows his business and then leave it all to him.

ON one of my church jobs, a member of the committee owned stock in a concern that manufactured red brick. I wanted gray brick to be used, and finally had to write a letter to the committee in such a way as to make them accept my decision. This letter is printed below as written:

"In order to eliminate the use of red brick on your church, I am writing this letter which may be taken somewhat humorously, but is offered in good faith, as I am very sincere in this apparently small detail. Of course, the selection of brick or colors is entirely up to you, as the owners, but these recommendations are complying with duties for which I am engaged.

"The brick proposed is certainly suitable for a great many buildings, but in my opinion not a church building. Theatres or places of amusement can well use colors but it seems more appropriate to use a more sombre and plain facing in this instance.

"Also the Gothic style of building should require soft tones, and let me add at this time that plainness and simplicity does not mean severity.

"Red is particularly adaptable to some purposes, and

TO INFLUENCE A COMMITTEE . . . 1. . Study each individual and be able to call him by name . . . 2. . Establish confidence by proving scholastic training and business-like handling of previous commissions . . 3. . Then assume leadership on the proven basis of knowing more about the proper solution of the problem than any one else concerned with it

we know of its necessity or use by matadors to excite and anger the beast in bull fights. Cleopatra also wore red to excite the passions of her ardent lovers, and also one other individual always wears red. This individual is our arch enemy and the enemy of the church. It may be practicable to fight the devil with fire, but I do not suggest the use of any shade in a church building which may be worn by Mephistopheles.

"While the selection of brick for your building is not a gigantic problem I feel as if the points brought out above are very practicable."

The gray brick won out, but it should not have been necessary to spend this much time to secure it.

Let me relate another instance in the case of a large building for which a well-known architect was engaged. Since it involves the same material it is well to relate that the excellent salesman for a brick company here tried to find the architect on one of his visits but failed to do so because the architect was at a cheap hotel instead of one of the best.

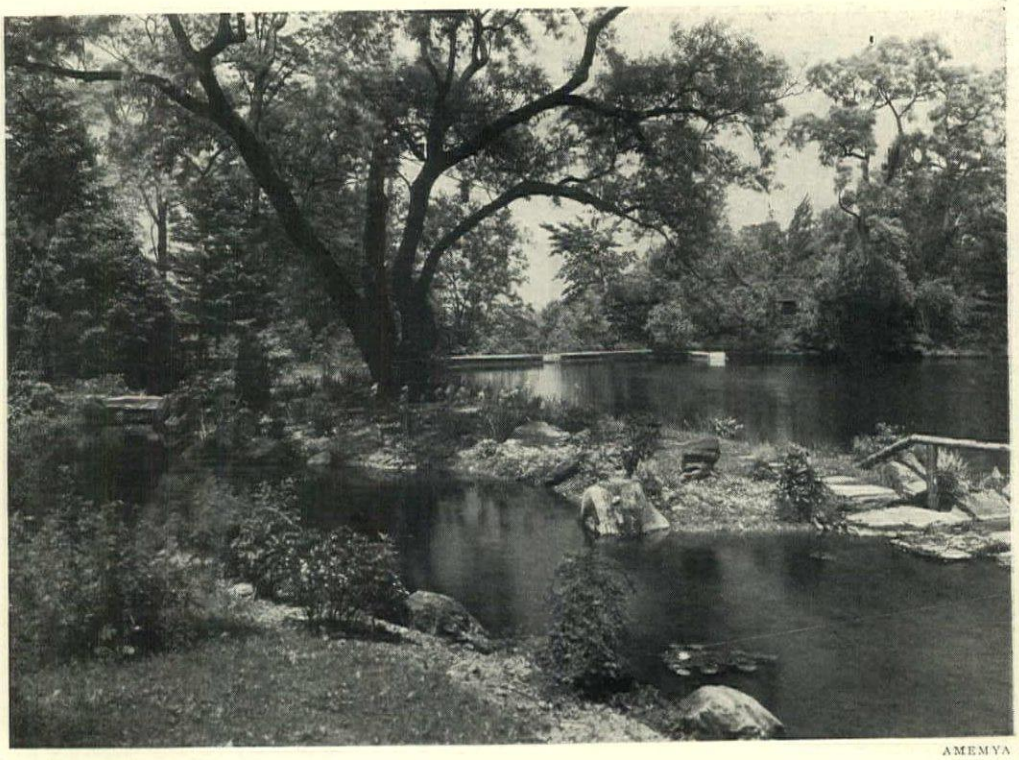
However, at the last minute the salesman found that the architect had just left for Chicago and, running to the station, purchased a ticket to a one hundred mile point and met the well-known architect on the train.

The architect, being a big man and the salesman likewise, the samples were approved enroute but the competitors worked politics in the home town of the owner and sent representatives of the Chamber of Commerce to persuade the owner to use their material. The owner wired that he had engaged his architect for this service and it was entirely up to him since he was paid for this work. The result was that the building was built of brick in keeping with the design of the building.

I am relating this story only to show that in the large work where big men are concerned they leave these problems to their agents and secure better results in the end.

EVERY architect knows, however, that this ideal condition does not always prevail and that he is cramped by his committee or owner. I hope that the incidents described above will encourage the average architect to influence his clients or committees to leave these problems to his selection. This is all part of the relationship between the architect and owner and is all part of the luck or art in securing commissions or jobs.

But to come back to (*Continued on page* 70)



AMEMYA

MARIAN COFFIN *was awarded the Gold Medal of Honor in Landscape Architecture for her design of the estates of Mr. and Mrs. Edgar Bassick and of Mr. and Mrs. T. Morgan Wing, together with other meritorious work. At the right is a view over the small lake and peninsula of the large lake and dam on the Wing estate at Millbrook, N. Y.*

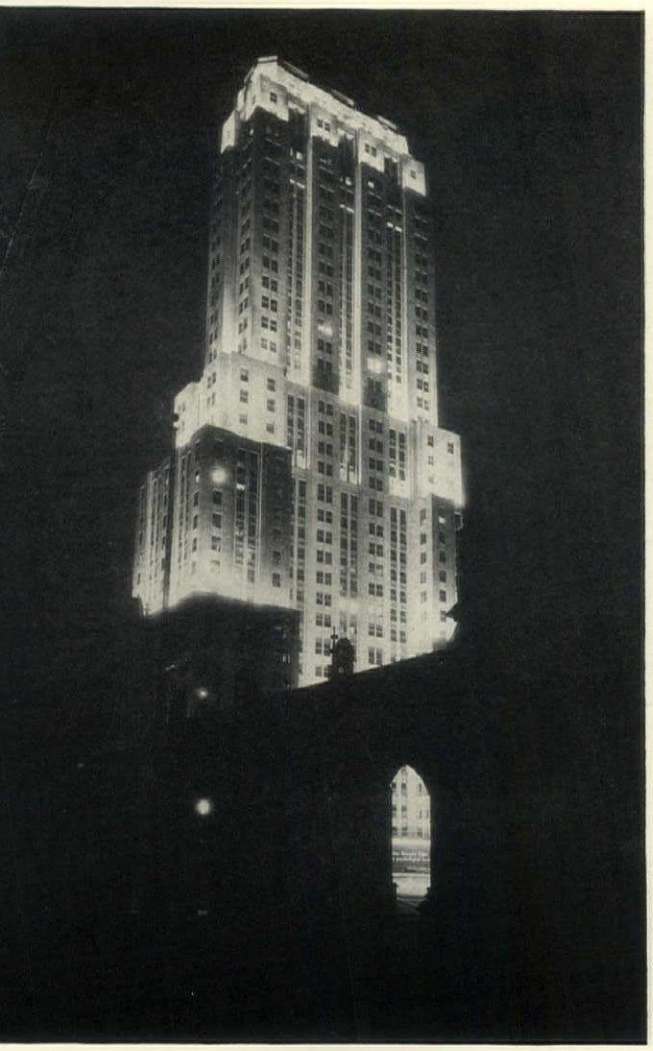
AWARDS

GIVEN AT THE 45th ANNUAL EXHIBITION OF THE ARCHITECTURAL LEAGUE of NEW YORK

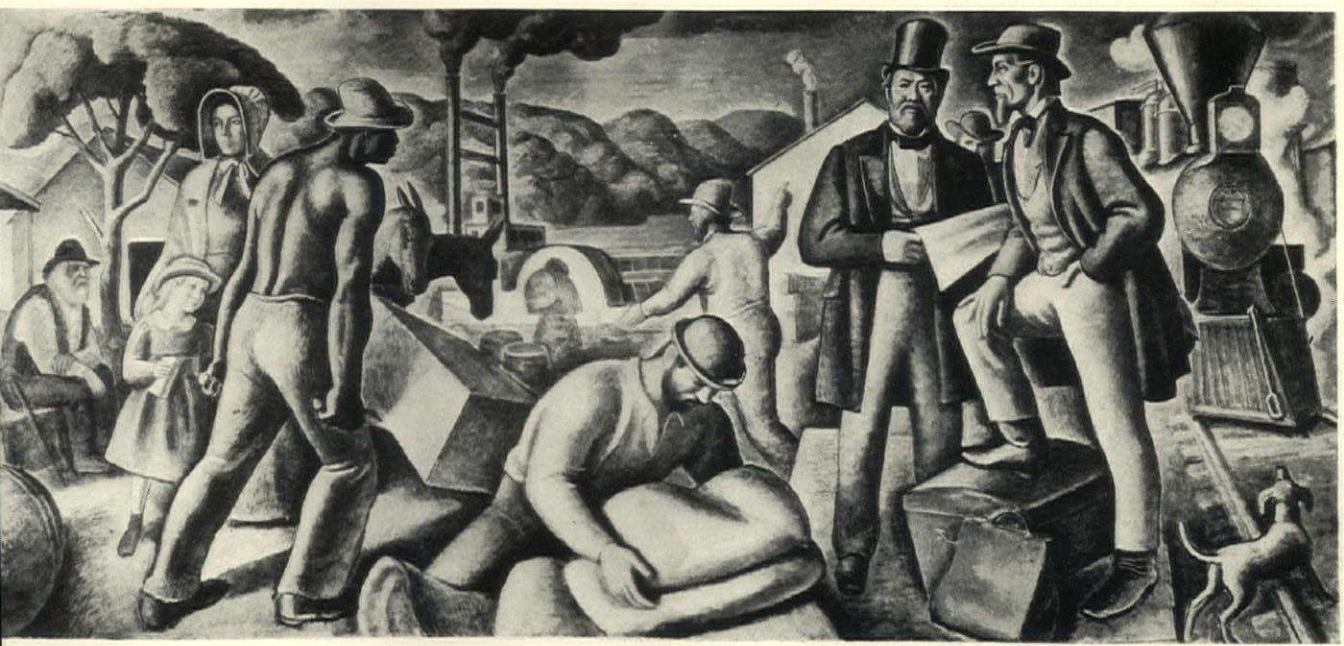
ALBERT T. STEWART *was awarded the Avery Prize for Small Sculpture for his Bronze, "Leda," shown above*

TWO HUNDRED AND FIFTY architects, artists, sculptors and craftsmen were represented by about fifteen hundred exhibits in the forty-fifth annual exhibition of the Architectural League of New York, on view at the galleries of the American Fine Arts Society, 215 West 57th Street, from February 1 to March 2. Awards included the Michael Friedsam medal given to Richard F. Bach for his creative service in establishing cooperation between industry and art.

Raymond Hood, president of the League, opened the private showing by declaring that such exhibits are preventives of inflated egos. "Nailing your work up on the wall beside the work of a fellow artist brings a constructive criticism that can be gotten in no other way. The danger that we all run, once we quit our studies, is of working alone and developing an inflated ego. . . . Even when our buildings are built . . . they often have neighbors or surroundings that are bad—so bad that we still keep the illusion that we are great masters. But in this show, where there is a careful selection, our chance of shining at the expense of our neighbors is very small. . . . The painful suspicion that creeps into our minds that we are not as good as we thought we were is the best thing in the world for our artistic souls and is the best incentive there is to make us work harder. The exposition takes us back to our school days; we become one another's teachers."

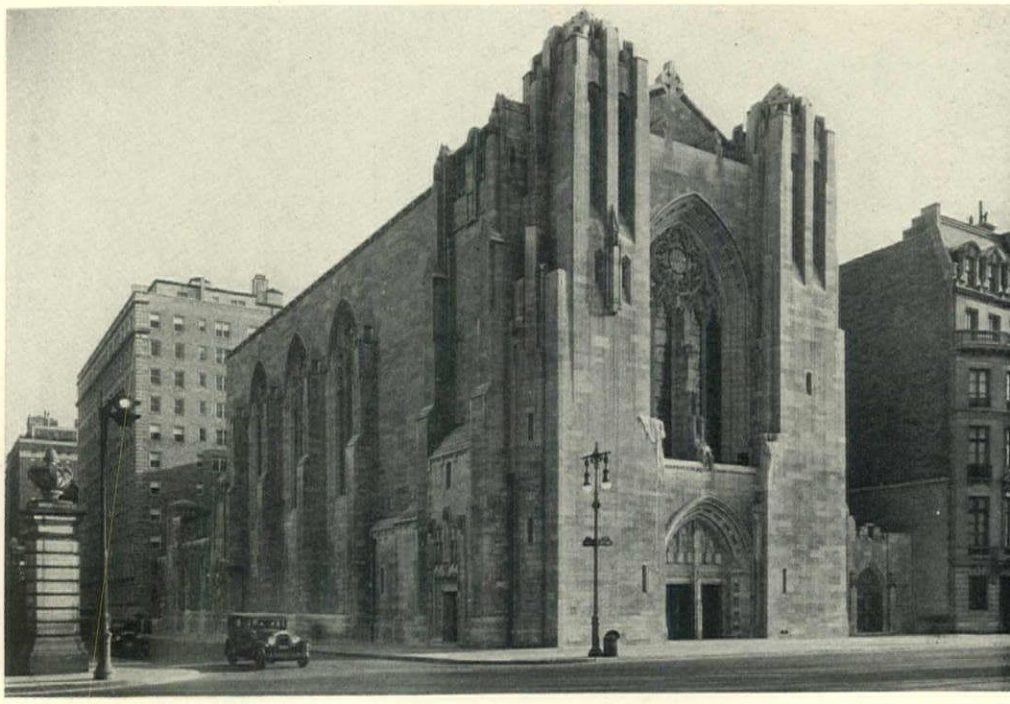


HOLABIRD AND ROOT *received the Gold Medal of Honor in Architecture for the great distinction and high architectural quality which they have achieved in the solution of the American office building. Their work shows that they are evolving a treatment of the skyscraper which makes the most of simple masses and avoids meaningless decoration that distracts from the possibilities of beauty resulting from sheer structural necessity. Illustrated above are the Palmolive Building, Chicago, and the Rand Tower, Minneapolis*



BOARDMAN ROBINSON *received the Gold Medal of Honor in Decorative Painting for his murals in the Kaufman Store, Pittsburgh, Pa., depicting the history of commerce. One of the series of ten is shown above. It illustrates the sincerity of conception and treatment of a living subject matter which influenced the award*

MAYERS, MURRAY AND PHILLIP *received honorable mention for the excellence of their work in the varied fields of ecclesiastical, monumental and domestic architecture. . . . At right, the Church of the Heavenly Rest, New York, an interior view of which is shown at the right below. Other selections from this firm's exhibit are also shown on this page*

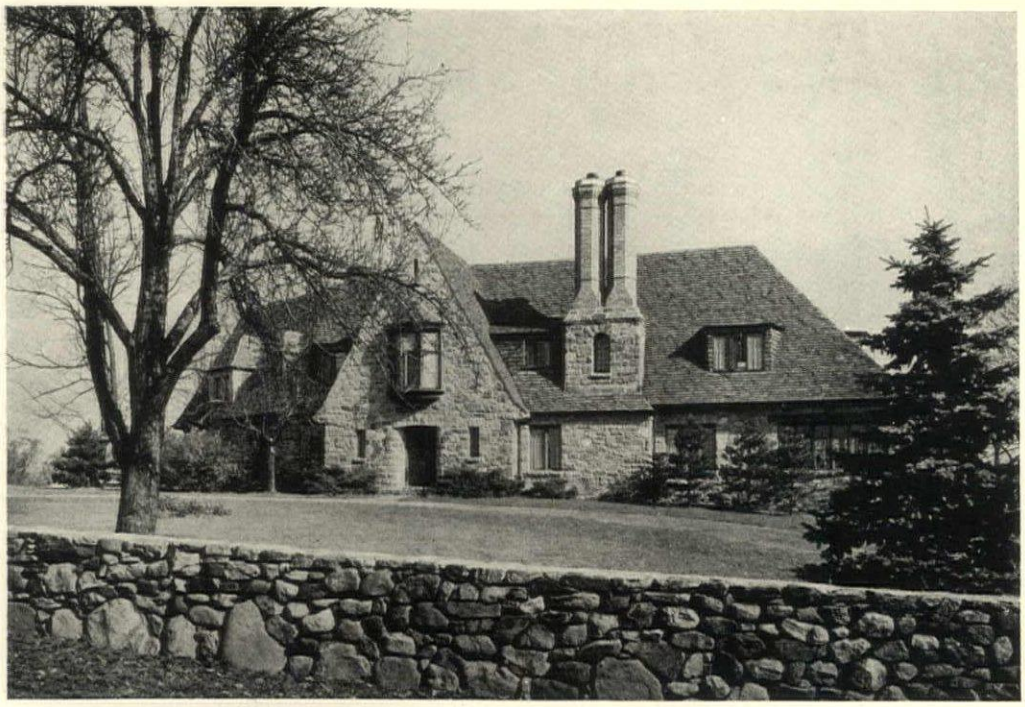


HOUSE FOR HAROLD CASTLE, *Esq., Honolulu, T. H., shown above. . . . Below, House for Charles Adams, Esq., Honolulu, T. H. Two selections from the exhibit of residences designed by Mayers, Murray and Phillip*

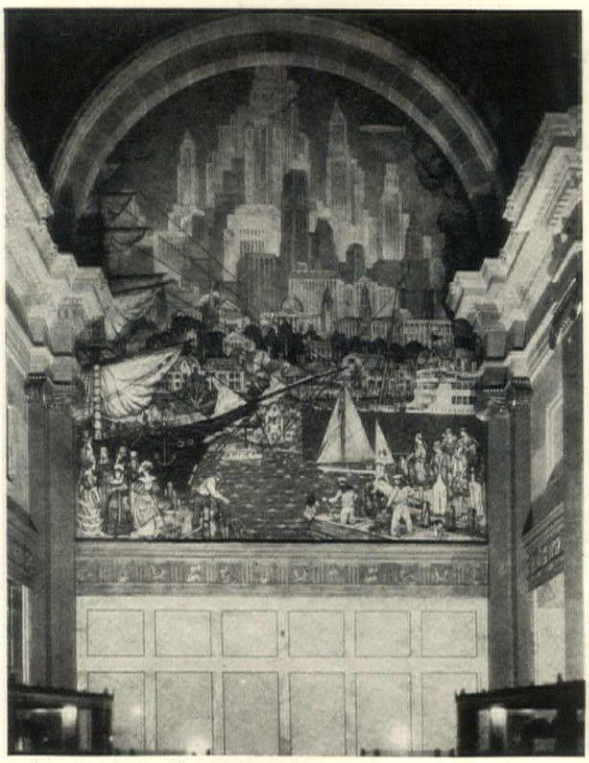
INTERIOR, *Church of the Heavenly Rest*

AWARDS

Architectural League of New York



JULIUS GREGORY *received Honorable Mention for the distinguished qualities in design shown in his residential work. At left is shown one of his exhibits, the House of Matthew S. Eyler, Scarsdale, N. Y. Another exhibit, the House of Louis Wilputte, New Rochelle, N. Y., was illustrated in full in the December,* 1929, *issue of* THE AMERICAN ARCHITECT

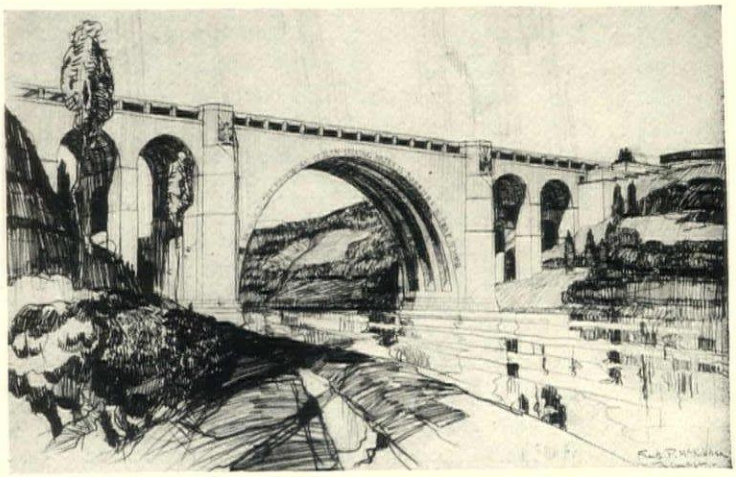


D. PUTNAM BRINLEY *received Honorable Mention for his mural decoration in the Brooklyn Savings Bank, New York, "Brooklyn—Past, Present and Future"*

SUZANNE MILLER *received Honorable Mention for her painting, "The Waterfall," shown above, exhibited with other examples of her work*

•

ERNEST BORN *was awarded the Birch Burdette Long Memorial Prize for Rendering in consideration of his fine drawings, sound knowledge of composition and skill in presentation. At the right is one of his exhibits, the Ridge Road Bridge, Rochester, N. Y., Gehron and Ross, architects. Another bridge by Mr. Born formed the subject for the cover of the October,* 1929, *issue of* THE AMERICAN ARCHITECT



. . As It Looks

Lives Lost From Poor Planning

LIVES lost in recent fires emphasize the need for exits placed as far as possible from each other. Many codes require this, but the codes are not always lived up to. Two exits adjacent to each other do not, in effect, mean two exits but rather one, as was proved in a recent Detroit dance hall and restaurant fire, where twenty-five lives were lost; two exits were provided, but they were adjacent. Widely separated exits constitute a primary requirement in the planning of public buildings and should be stringently enforced. Violations should be reported and acted upon if future loss of life from lack of proper exit facilities is to be prevented. No one can do more, in this respect, than the architectural profession.

Bricks Twenty Feet Long

BRICKS so big that one of them would make the wall of a small bungalow are forecast in the announcement of the discovery of a new building material at Pennsylvania State College. The bricks, manufactured by a new process, may be made twenty feet long, five feet wide and six to eight inches thick; color, red or buff. The material is apparently intended for road building, but there is obviously a larger field of usefulness if it proves at all practicable for building purposes.

Medicine Cabinet in Kitchen

PLACING a medicine cabinet in the kitchen as well as in each bathroom is the idea of a Philadelphia building developer, who feels that there are sound reasons for doing so. In the first place, the average woman likes to have a mirror in the kitchen so that she can make a quick "fix-up" before answering the doorbell. In the second place, first aid measures should be handy for burns or scalds incurred while cooking. In the third place, when children are hurt while playing, it is usually on the first floor or out-of-doors and the first-aid kit is particularly convenient in the kitchen.

Most women seem to like the idea; in the few cases where the cabinet is not used for medicines, it comes into service for spices and other frequently used small containers . . . besides providing the invaluable mirror. The idea is sound not only for small houses, but also for larger ones where servants are employed.

Information About Contractors

ARCHITECTURAL conception is so dependent upon proper execution that a recent circular letter of the Christian Herald is worthy of comment. The letter asks for the names of contractors with whom architects have had satisfactory relations in church building projects in order that those who request such names may be given reliable information. Such information is of positive value. It would help the profession of architecture in general if there were a greater exchange of such information, possibly through local A. I. A. chapter headquarters where the experience of individual architects might be recorded on various jobs and the ability and integrity of the contractor registered according to his deserts. The Associated General Contractors of America has some such system in regard to credit information and satisfactory dealings with contractors. But the average architect, dealing with a little known contractor just because he happens to be the low bidder, has no means of readily knowing whether or not extra inspection costs must be charged against the job and the owner advised accordingly. The better contractors are sincere and earnest in their desire to eliminate irresponsible bidders and there is every reason to believe that their local and national associations would be only too glad to cooperate with a committee of architects for the gathering of such information. It is to their interest as much as it is to that of the architects that ignorant and irresponsible bidding be eliminated.

Garages in Buildings

FIVE floors of garage space underground is to be a feature of a new building contemplated for the "roaring forties" in New York City, somewhere in the section recently considered for an opera site. Gossip says that a system of sub-surface driveways is planned, which will permit deliveries into the basement without blocking the street. Much of this was urged in "The Architect Can Help Solve the Parking Problem," published in the November issue of "THE AMERICAN ARCHITECT." Certainly the solution is logical. With parking forbidden, neighborhood garages inconveniently placed and antiquated in design, the only apparent solution to the parking problem of tenants seems to be garage space in the building itself. The trend is in this direction and makes an excellent sales point for the renting agent.

City Planning and Modernizing

OVER eight hundred cities have established planning commissions and about the same number have zoning regulations. This is in line with the general appreciation of beauty that is spreading through all walks of American life. Even the most commercial product can be more easily sold if it has beauty of line and harmony of color. Of how much greater necessity is the planning for beauty in our cities and houses, where it can make or mar the pleasure of our lives. An ugly building remains an eye-sore for years. On the contrary, intelligent remodeling of a single house may raise the standard of an entire neighborhood, for people are much inclined to follow a leader's footsteps. The sorry part of much remodeling, though, is that the new job often looks worse than the old. City planning and modernization certainly can not get very far without the architect.

to the Editors . .

Landing Field on Skyscraper Roof

LAST month an editorial in THE AMERICAN ARCHITECT stated, "Although Mr. Smith's building with its proposed mooring mast for Zeppelins so far holds publicity honors, there is no telling what the newly announced building (Hippodrome Towers) will play . . . perhaps a roof top with airplane hangars." Now comes the announcement that Los Angeles is in the limelight with this very thing, for a twelve story building is to be erected there with a landing field on the roof. Construction will be similar to that of the landing decks on aircraft carriers. The building will be 152 x 965 feet and is estimated to cost $11,500,000. Well, what next?

Supervision for Stock Plan Houses

A NOVEL way of working out the construction problem involved in stock plan houses has been evolved by the Mansionette Corporation, Chicago. This company has developed stock plans of some two hundred houses of various types, sells them to the consumer at a completed contract price, buys most of its materials from local material dealers, uses local labor, and engages a local registered architect to supervise the construction. The houses range in cost from $5,000 to $25,000. The interesting part about the idea is the engaging of a local architect to see that the job is done right and that it is completed according to plans and specifications. Much as the profession may dislike to see stock plan houses erected, the fact yet remains that the public is not educated as to the value of architectural service and is not inclined to patronize an architect for small work. Instead, it will patronize a speculative builder who makes it easy to buy and hides his profit in the price instead of as a separate item. Few people recognize that an architect can generally design a more salable house at a lower cost for the value delivered. Companies such as the Mansionette Corporation, by engaging local architectural service for supervision, may well do more good than harm to the profession in the long run. For if what the public considers to be a big, powerful organization finds it worth while to add local architectural service to the package it has for sale, is not the logical result, an increased local respect for the architect?

Apologize for Noise

NEW YORK may be considered cold and unfriendly, but two examples of construction courtesy indicate that, under its hard-boiled exterior, the city has much of the humanness of the small town. There is the inevitable noise of apartment building on Gramercy Park North. Alongside the excavation is a sign, "Our Sincere Apologies to Our Neighbors for the Unavoidable Annoyance This Hammering Must Occasion." Investigation showed that the considerate builder was Clement E. Merowit. Rivaling this courtesy was that of Harry Ward, president of the Irving Trust Company, who sent engraved apologies to neighbors asking their indulgence while the fifty-four stories of the company's new building were being riveted.

But Why Noise?

ELECTRIC welding of skeleton steel is an answer to the construction noise problem and building code framers are giving it serious consideration. An impetus to this construction aid may result, according to the recent announcement of the Austin Company, engineers and builders, that their clients will be offered a choice between welding or riveting. That a firm such as this should offer electric welding as a part of its regular service is good news to those who would see the construction din minimized. We have enough noise to contend with as it is.

Two Skyscrapers Electric Welded

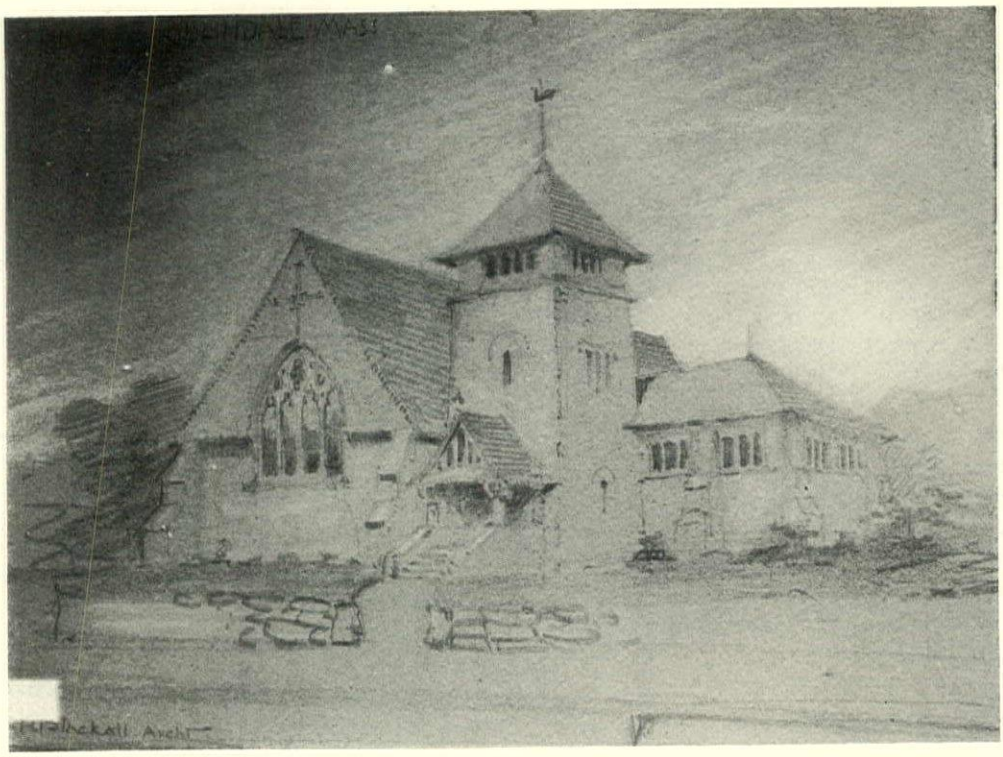
BOSTON will have its first electrically welded building, a fourteen story structure at 180 Tremont Street for the Boston Edison Company, Bigelow, Wadsworth, Hubbard & Smith, architects. Los Angeles will have a thirteen story electrically welded building, that of the Southern California Edison Company, Allison & Allison, architects. Appearances seem to indicate that the use of electric welding is on the up-grade; especially since General Electric engineers say that progress has now reached a point where it is sometimes cheaper to use welding than riveting.

Slate Now Guaranteed

SLATE that carries a guarantee covering the modulus of rupture, porosity, thickness and freedom from longitudinal curvature is being marketed by the Pennsylvania Slate Institute. Each carload is accompanied by a definite "certificate guarantee" covering the above points. The move is one thoroughly in line with modern marketing conditions, which demand that the buyer shall be given proof of quality delivered. Manufacturers of other products which have not yet adopted specifications and guarantees of quality would do well to follow suit.

Public Education on Architecture

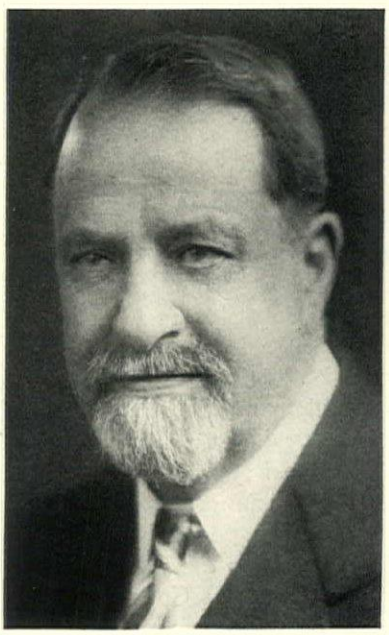
EDUCATION of private citizens and the general public as regards architecture is declared necessary by Thomas Adams, director of the Regional Plan of New York City. He states that responsive architectural desires on the part of the people would achieve more than "any attempt to exercise control from above." Public opinion, properly directed, can work wonders in improving the standard of architecture throughout the country. Once let the public know what an architect really is and what he can accomplish . . . and the public will do the rest.



In 1889 C. H. Blackall began the practice of architecture in Boston, Mass. The Church of Our Saviour at Roslindale, Mass., was his first job. His original drawing for this church is shown at the right. A similar drawing of this church by D. A. Gregg was published in The American Architect, Aug. 3, 1889

LOOKING BACK ON

50 Years of Architecture



by

C. H. BLACKALL, F. A. I. A.

Blackall, Clapp & Whittemore, Architects

FIFTY years seems like an eternity looking forward to it. Fifty years is but a short span of years when we measure the work and the accomplishment which it represents looking backward towards youth. It is a commonplace of today that the last fifty years have been the most wonderful the world has ever seen. In no department of human activity does this apply any more vividly than in architecture.

Fifty years ago when the writer was just beginning his practical experience in architecture, we had, as measured by the standards of today, no schools, no immediate precedents, very little money to work with, no trained body of draughtsmen, no structural engineers, and above all, no clients with money, and perhaps the greatest change which has come about in the development of the possibilities of architecture is not equal to the change which has taken place in the standing and the attitude of our clients. Fifty years ago the architect would look to individuals for his opportunities. There were trustees, to be sure, but on a very small scale, and the promoter was absolutely unknown, very largely because buildings were not erected in any particular magnitude, and a promoter fifty years ago would have starved on the job, and as for an architect, he was supposed to do nothing but sit in his office and wait for a job to come to him.

I remember so well the feeling of bated awe with which we youngsters listened to the astounding fact that an architect had actually become not only a member but a director of the Chamber of Commerce. It seemed so highly unprofessional that we regarded him almost as a pirate. Since then that architect has become

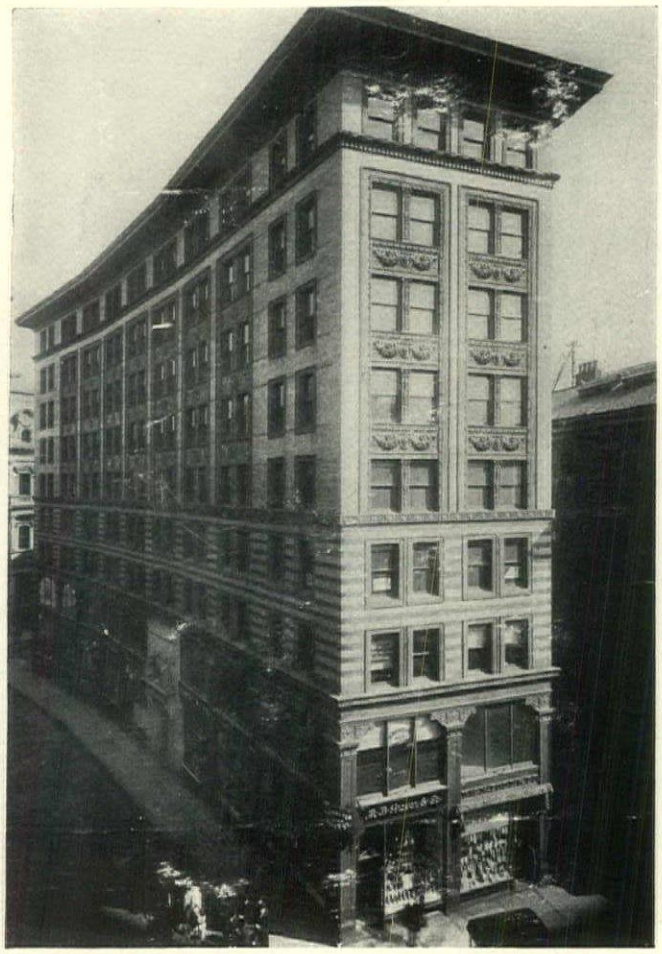
Temple Ohabei Shalom at Brookline, Mass. is a recent church designed by Blackall, Clapp and Whittemore of Boston. This church was illustrated in The American Architect, Nov. 20, 1928

In 1877 Mr. Blackall was captain of the Sixth Regiment of the Illinois State Guard

one of the leading men in the profession in New York, has designed buildings with such remarkable success that he is cited all over the world as a great architect, has received European honors as well as recognition here, and yet we then thought he was unprofessional. A little later we heard with lifted eyebrows that a Boston architect had actually dared to lease an old building, remodel it, fill it with tenants and sell it at a big profit all by himself. This again we thought was very unprofessional, but it is not many years since the Architect's Building was built and financed in New York by a group of architects under exactly similar conditions and everyone praised it and recognized it as a move in the right direction.

And we remember how bravely a very prominent architect in New York actually built one of the largest skyscrapers, assuming the double function of architect and contractor, with his professional office on one side of the corridor and the building department on the other, charging a double commission to his client and giving that client a degree of satisfaction which amply justified the innovation, even though this architect was looked at askance by the old guard. And there was an architect in Chicago not so many years ago, a man who had inherited wealth as well as the endowment of a very artistic nature, who looked at the problem of architecture from a surprisingly practical standpoint. We heard that he had built a building three stories high for his sole use. A client would be received in the professional office on the second floor, the drawings for the building would be prepared on the third floor, the client would return to the second floor to consult with the contracting department and would descend to the first floor to borrow his money at a bank, all maintained by this architect.

THE inevitable next step has been for the architect to ally himself with builder and financier, all working together to make possible the erection and financing of anything the architect could conceive while still holding down the architectural ideals and being better able to develop them. Could any change be more pronounced in the practice of architecture? There are still many who adhere to the old, strictly professional attitude and who refuse to have anything to do with anything except the artistic side, but with a few notable exceptions our more prominent recent office buildings, commercial work, hotels, factories and theatres, which together constitute probably over 60% of the new work, have been more and more each year in the hands of men who are

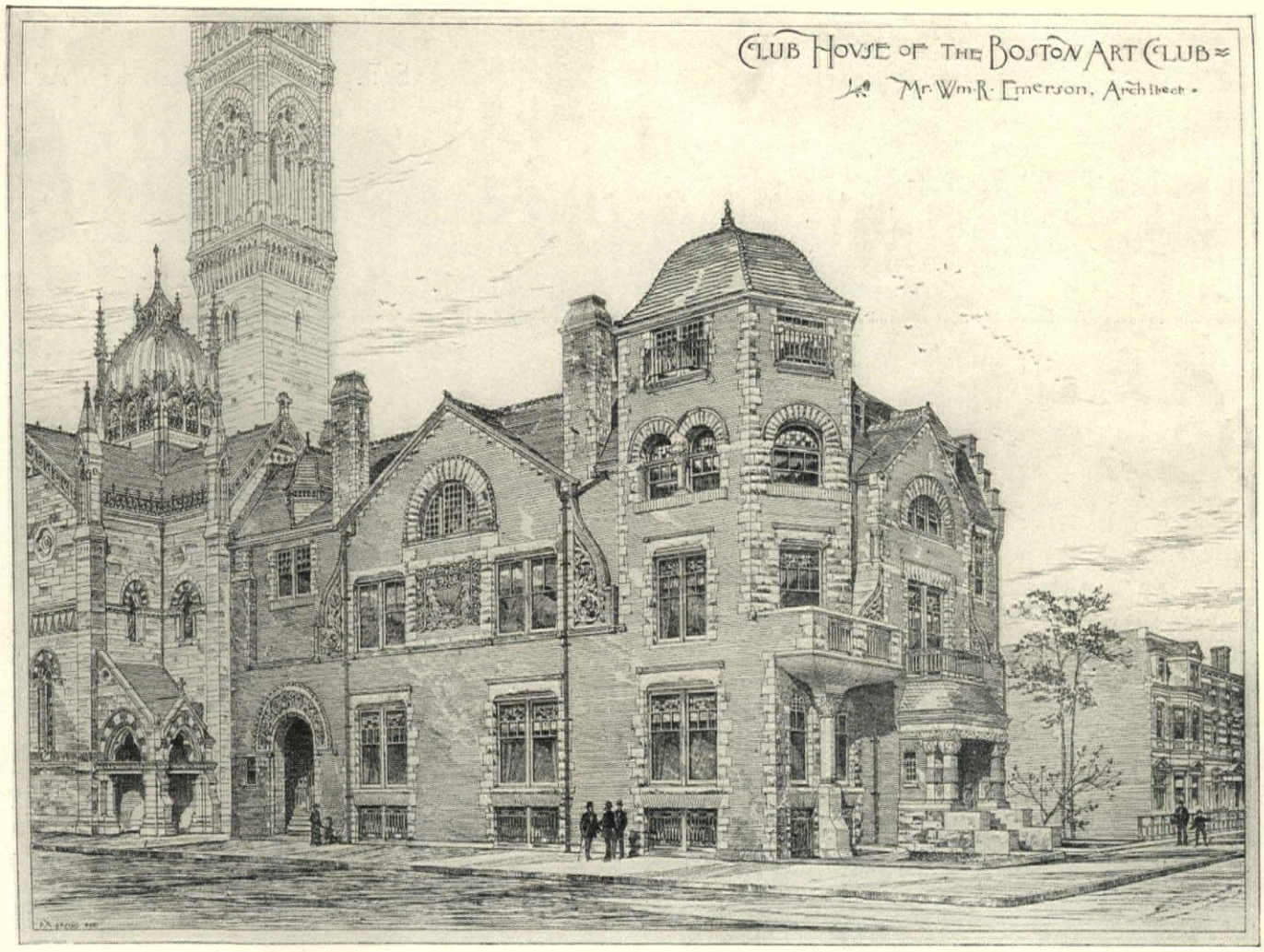


Skeleton construction was used for the first time in Boston in the Carter Building, designed by Mr. Blackall and completed in 1894. *All connections were bolted. This building, now known as the Winthrop Building, is shown above at the left. . . . Above right: the Bowdoin Square Theatre, the first theatre built by Mr. Blackall in* 1890, *is of wood beam, girder and post construction without fireproofing. . . . Below right: Drawing of the United Union Bank Building, New York, by D. A. Gregg, Peabody & Stearns, architects. Reprinted from an* 1861 *issue of The American Architect. Mr. Blackall obtained much of his early experience in the office of Peabody & Stearns, one of the foremost offices of its time*

organized and can plan, direct, finance and operate large building operations.

During this period also there has come a marked change in the status of the general contractor. Fifty years ago Norcross was building Trinity Church for H. H. Richardson and that great architect left absolutely everything to that extraordinarily gifted builder, but this was a rare exception. Generally the owner contracted separately for the different parts of the work and the architect trusted a good deal to luck to have things pull together. Buildings were slow in construction, well built to be sure, perhaps better than is often now the case, but managed inefficiently and built expensively even according to the standards of those days.

The masterbuilder of today is primarily the head of an organization, and in most cases may never visit the



Drawing by D. A. Gregg of the proposed Boston Art Club, William R. Emerson, architect. William R. Ware, founder of The American Architect, trained Gregg until he became the leading architectural renderer of his time and the first of a series of brilliant draughtsmen

In 1889, when Mr. Blackall started in business, an advertising page in the American Architect presented a marked contrast to these pages today. Sewer pipe, cement, iron beams, paint and other products were all displayed on the same page

work carried on under his name but conducts the operations as a business economically, expeditiously and with a degree of meshing together of the different elements with one another into the building which would have been impossible under the old regime. Often his personality is hidden under a corporate name and the owner and the architect act with a subordinate. All of these things have brought about some significant changes also in the cost of building operations. Fifty years ago, for instance, an office building which cost 40 cents a cubic foot was an exception. Since then prices of labor in many instances have quadrupled, materials have more than doubled and demands have increased greatly, and yet an office building today, with all its complication of mechanical adjuncts—electricity, refrigeration, ventilation, fireproof construction—can be built for a cost hardly 60% above what it cost fifty years ago and it would be today a better building, much more elaborately finished and built in far less time.

In the old days building construction proceeded on the European time scale. Now we have changed all that and there are plenty of cases where buildings have been put up structurally at the rate of two or three stories per week and anyone watching the rise of the Chrysler Building in New York City, for instance, would appreciate how immeasurably more efficient are our building methods today than ever before. If St. Peter's of Rome were to be built today it is probable that a modern building corporation would be quite ready to accept a contract on a cost plus basis and finish it complete for less than the building cost originally and in a time not exceeding two or three years, although St. Peter's was nearly a century in building.

So much for the building side of it, but incidentally I think it can be fairly claimed that the increased efficiency both in speed and (*Continued on page* 86)

ST. PETER and PAUL
CATHEDRAL
Philadelphia
Crayon Drawing
by B. PROCTOR
Fort Wayne, Indiana

CASTLE RISING
Norfolk, England
Carbon Pencil Drawing
by W. WARD
Visscher & Burley, architects
New York City

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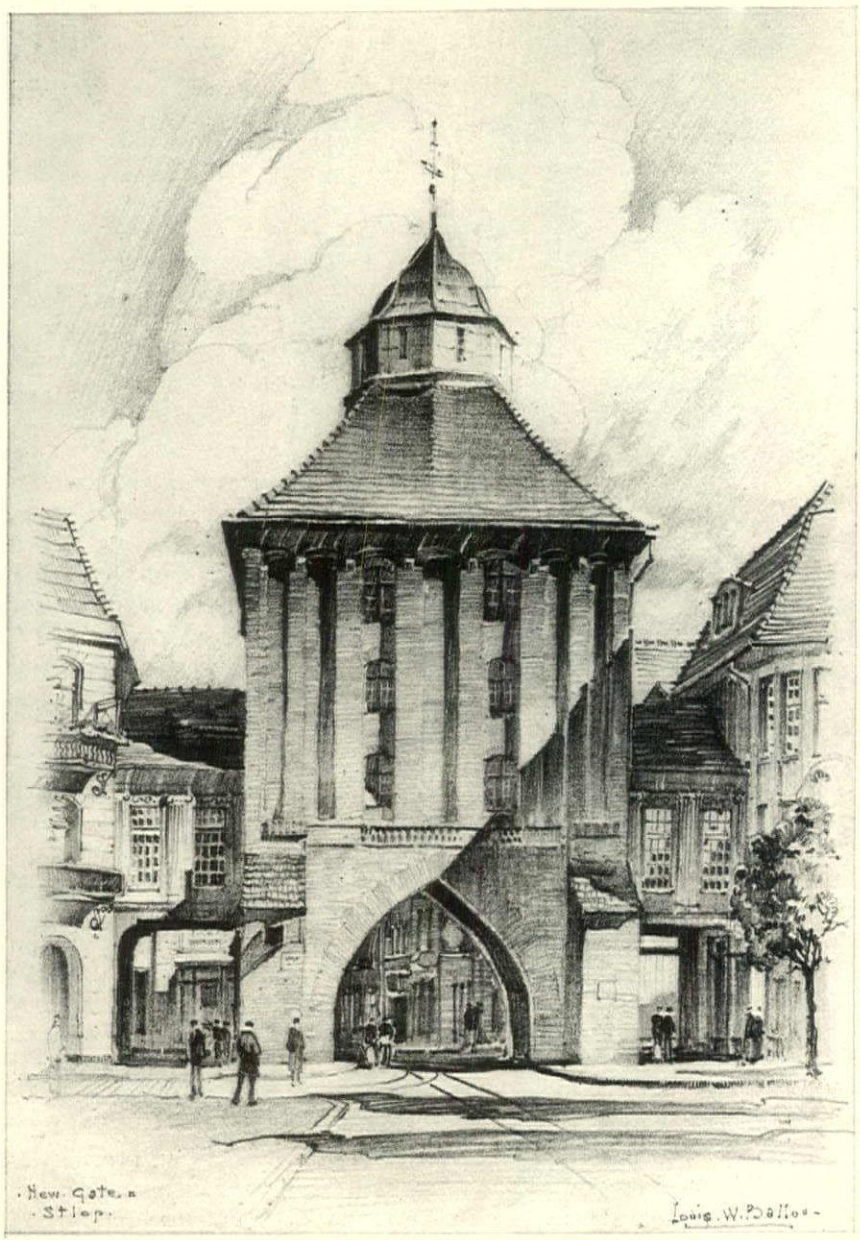

NEW GATE-STLOP
Lithograph
by LOUIS W. BALLOU
Richmond, Virginia

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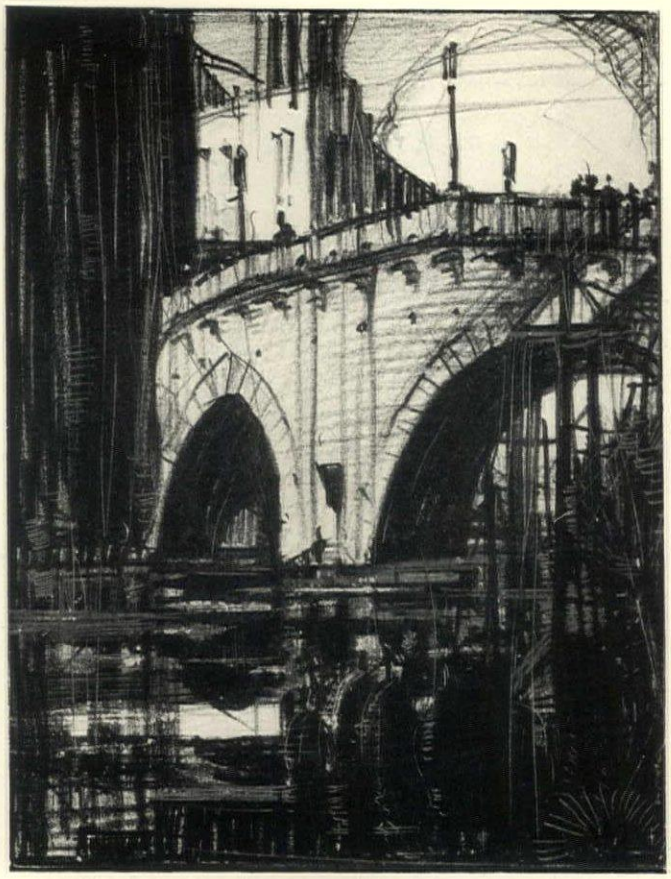
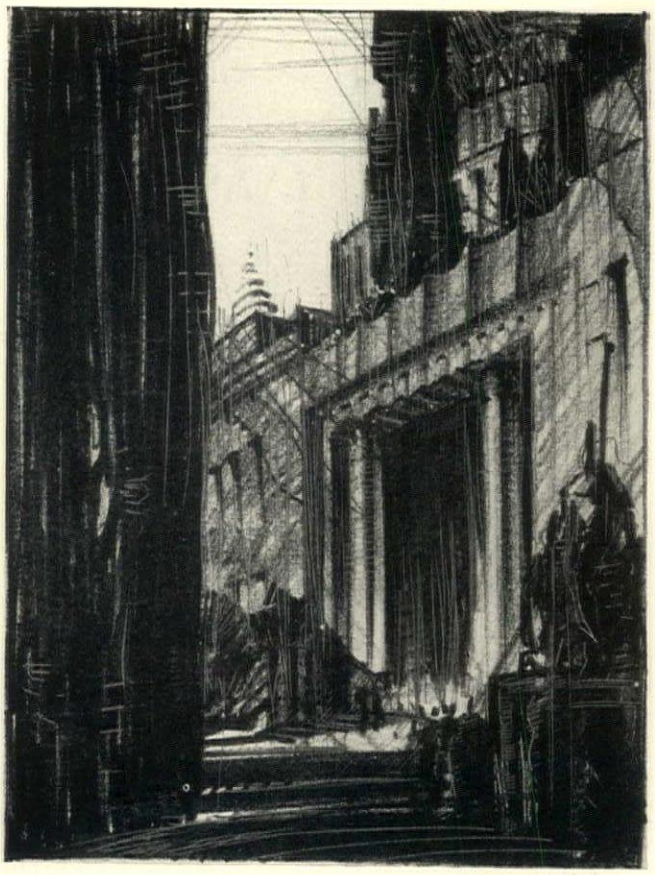
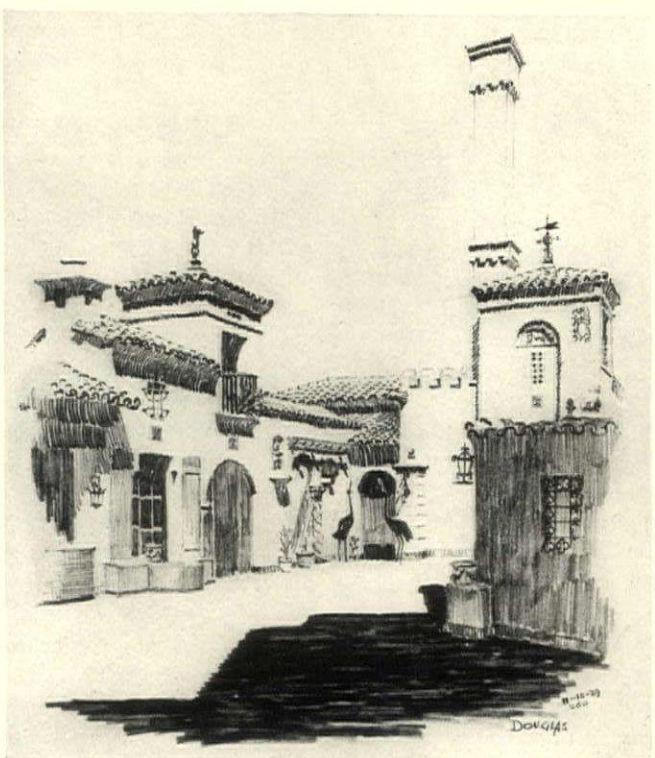
SKETCHES





TWO CRAYON SKETCHES by W. H. ADAMS
Hood, Godley & Fouilhoux, architects, New York City



ROOF GARDEN
Shell Arcade Building, St. Petersburg, Florida
Carbon Pencil Drawing
by W. C. DOUGLAS
Visscher & Burley, architects, New York City

CRAYON SKETCH
by CHARLES E. PETERSON
U. S. Department of Interior, San Francisco, Cal.

WE NEED New Materials

and the architect should tell what they are

by

HAROLD R. SLEEPER

THE rapidly expanding building industry shows signs of departing from the present accepted modus operandi and the builder may soon assume the leading role and hire the architect to do his bidding. If such a change occurs I feel that the responsibility for this may be directly placed at the door of the architect and the architect's specification writer. Their failure to realize the great opportunity will force the industry to depend on the builder and subcontractor for technical inspiration and leadership.

The architect must lead the procession in regard to new methods and new materials if he expects to continue as its leader, otherwise the next in line will take over his neglected work and act for him. Architects are not challenged in regard to design nor as to methods of producing drawings or specifications. Their great weakness lies generally in their failure to offer inspiration in the development of new elements with which structures of this machine age may be constructed. In other words, they are modern minded in regard to design but not as to methods or materials.

New ideas, new gagets and new materials are daily being announced, but are any of these the results of the specification writer's direct influence or thought? Seldom if ever. Large corporations, practical manufacturers or superintendents on the job usually are responsible and the results are either equipment designed by engineers or finishes developed by trial and error methods. Do you know of any new material with which the exterior of buildings may be clothed with better result than that achieved by the old standbys? Few are on the market and still less have achieved success.

Who should be more aware of this great need than the architect? Should we expect the manager of a celluloid factory to produce a new building facing without close contact with the architect? Is the electrician in an electrical laboratory to answer the needs of modern construction without advice and direction of the architect?

The majority of modern developments are being made in factories far from the architect's influence. The busy architect whose fee may scarcely cover the cost of his work at best can only know of the existence of some of the latest devices. We can't blame him, but we can awaken him to the condition and start remedial action.

To look open mindedly at the situation we must glance at the man responsible for this phase of the architect's work, the specification writer. If a failure or lack of leadership is admitted it must be laid to this man. During the modern era building specifications have been ground out at a great pressure by a humble personnel without credit or thanks. This continual uninspired and unsung work has endowed those performing it with an inferiority complex which is very real and one that must be shaken off if progress is to be made.

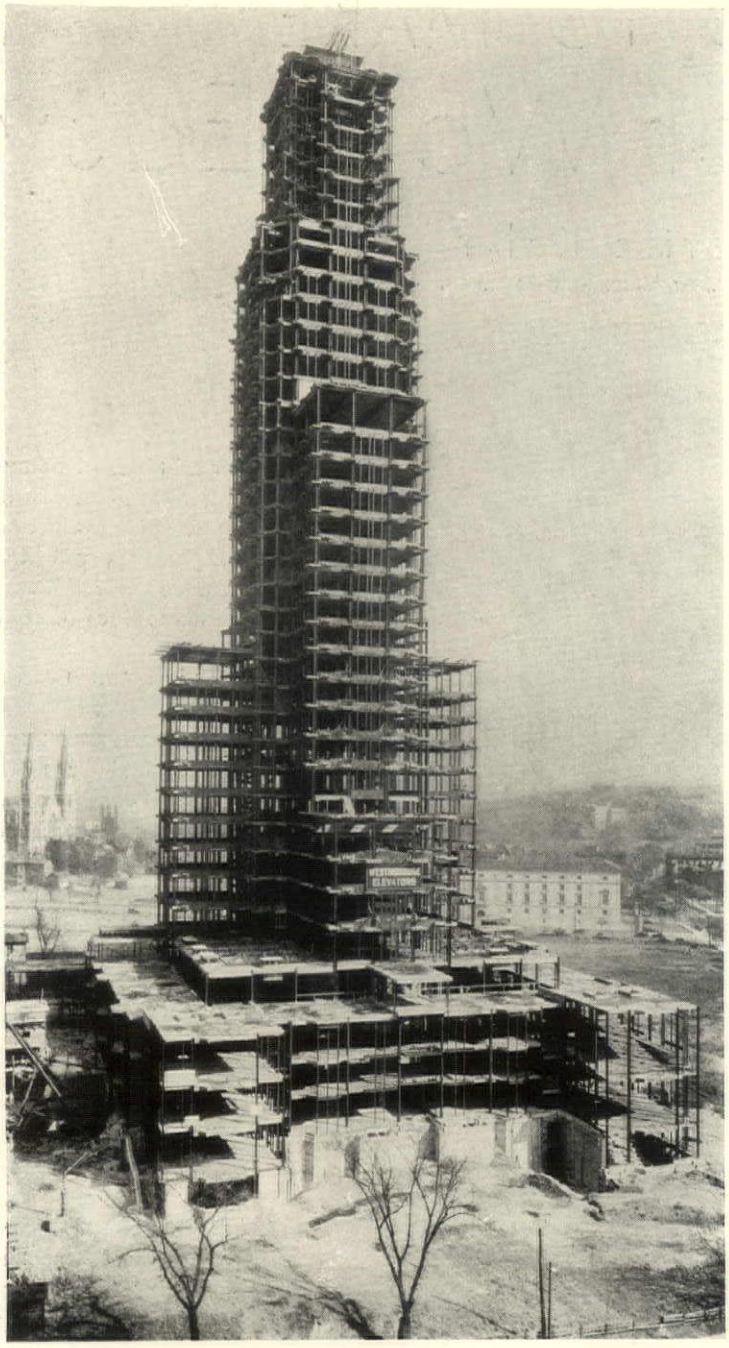
The designer, business-getter and construction superintendent have all felt and expressed their importance with an implied superiority over the specification writer. He has been cowed and even brow-beaten in many organizations.

The position of the specification writer is partly due to his lack of initiative and imagination and partly to existing conditions. Conditions have changed and the structure of building procedure now rests largely on his assuming and pursuing the difficult task assigned to him.

CONTRACTORS will more and more enlarge their organizations to include architects in their personnel so as to solve these new needs if the architects refuse to do so on their own.

We now stand at a serious impasse from the architect's standpoint. This condition is realized forcefully by several large associations of manufacturers who have taken definite, active stands to support the architect. They do so on the assumption that superior products will stand a better chance of success if the financial aspect is not the predominant motive in the choice of materials that shall be used.

Their confidence in the architect's role should give us courage to attack the problem with open eyes and courage. To know that the life and strength of many of the national organizations which produce the best materials and equipment for the building industries are



WHAT DO WE NEED?

• *Seventy-five dollars will be paid by the American Architect for an article on new materials or the development of old materials that will better meet modern building design and construction.*

The article may treat on present developments, following the present trend to its logical conclusion ten or twenty-five years from now. Or it may be highly imaginative and in the style of Jules Verne, whose prophetic vision forecast many things which have since come to pass. It may cover structural or finishing materials or both. If possible, it should contain personal experiences that either show an inadequacy in modern materials or indicate a better way to solve building problems.

The article may contain from two thousand to twenty-five hundred words and should be in the hands of the Editors by March 29, 1930.

•

A bitumastic enamel was used in building construction for the first time as protection for the steel work of the Tower of Learning of the University of Pittsburgh, according to its builders, the Stone & Webster Engineering Corporation. What else that's new might its architect, Charles Z. Klauder, find worth specifying?

critically dependent on the specification writers should lift their cloak of humility and stir their long sleeping imaginations to a genuine creative effort.

The entire building industry is crying for new methods of building and new materials with which to execute architects' designs. We still use brick and stone in the manner long ago discovered and used by the ancients. Good new designs will not be achieved until these designs are clothed with materials better adapted to new requirements.

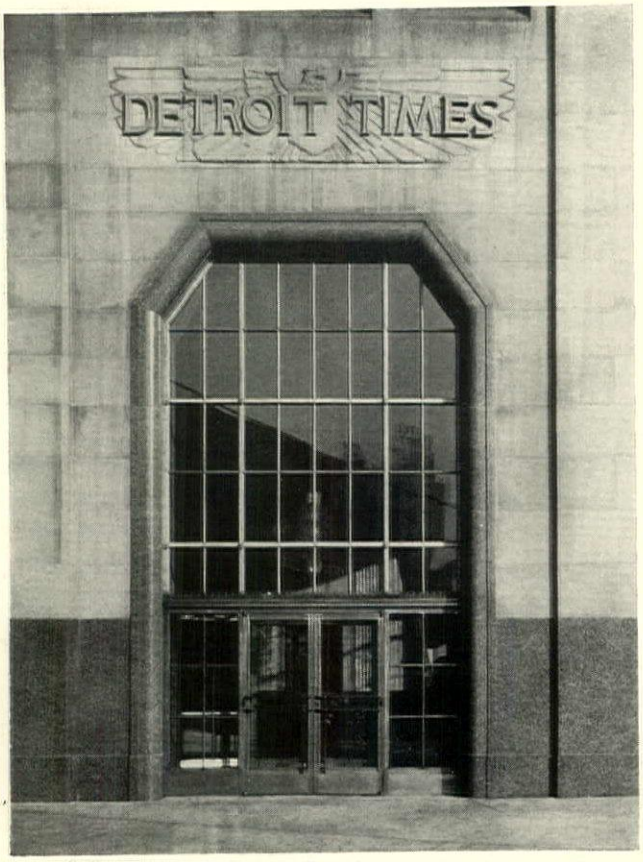
Inside of our buildings we seem to find a multitude of surfaces, machines and finishes to accomplish our desires but we stop at the window and door jambs and proceed outside with all the limitations of a tradition that has been handed down by the ages.

Our structural engineers have accomplished wonders to satisfy the height requirements as imposed by land values. They have made gigantic strides toward providing comfort for our civilization with light, heat and power. Architects, within the last ten years, have made remarkable progress toward the adoption and utilization of this equipment. No one seems to shoulder the leadership and direct science toward the development of equally important products with which the architect may mould the exterior of his work. Why should he think in terms of stone as used by the builders of the Italian palaces? The creation of a modern elevator machine is admitted to be a great achievement and required years of study and experimenation in the development. The problem of new substitutes for our present walls on the face of it seems very simple. But the fact remains that no new stuffs are forthcoming.

We can blame only ourselves. We don't demand and again demand what we need. The skill and brains of industry are being applied in other directions and until we force industry to supply the needs it will continue to do research along lines common to its training and experience. The architect (*Continued on page* 80

PLANNED TO MAKE Newspaper Work Easy

by Moritz Kahn
Albert Kahn, Inc., Architects and Engineers



Minnesota pink granite in a color range of black, grey, green and pink tones forms the base and frames the main entrance of the Detroit Times Building. The exterior facing above the base is of buff Indiana limestone

A NEWSPAPER building is primarily a plant for the production of papers and, like any other industrial structure, its most important function is economy of production. The newspaper publisher, however, is under a certain obligation to the public so far as the appearance of his plant is concerned. There is, to a certain degree, a bond between architecture and newspaper publication in that both are chroniclers of current events. Both are of importance in moulding the character and developing the culture of the public. Consequently, while the planning of the interior of a newspaper building must be done with a keen eye for efficiency, the exterior of the building should possess architectural merit.

Located on Times Square, Detroit, the new building for the Detroit Times, when finally completed, will be a distinct addition to the skyline of the city. The main portion of the building in its present stage is six stories high, but the structural frame work has been designed to support four additional stories at some future time. In making provision for this future extension a distinct effort was made to give the present portion a finished appearance so the absence of the floors to be erected in the future might not be apparent. This problem was somewhat simplified by the character of the design, an Americanization of the more modern architecture of northern Europe. As in the case in much of this style of architecture, the vertical structural lines are accentuated. The tower at the corner emphasizes the entrance and makes a virtue of the flat iron shaped plot on which the building is situated.

In approaching the design of an industrial building, it must be borne in mind that its principal object is to yield a fair return on the capital outlay. The fundamental principles of planning for economical production are the same for all types of manufacture, namely: material in the course of production must be transported the least distance and as directly as possible; lines of flow of the material should not conflict; departments for successive operations should be properly correlated; and provision should be made in all departments for future expansion without interference or disorganization of current operations. These principles apply even more forcefully to a newspaper plant than to the ordinary industrial building. In the latter there is generally a steady and uniform degree of production, whereas in the former there is a constantly varying degree of production arising from the intermittent and hurried publication of various editions. The production graph of newspaper publication has peaks and valleys, hence the necessity for planning each department to carry its peak load without extravagance or wastage of floor space.

It is sometimes assumed that in a newspaper building production centers around the press department. As a matter of fact, newspaper production centers around the editorial department, where the main preparation takes place. The presses are employed only in the final stages of newspaper publication. Under such conditions it is but logical that the production layout should start in the editorial department at the top of the building, continue down through the various floors for the make-up stages, pass through the presses on the lower floors, and then out to the dispatching department. The plans herein illustrated show the logical layout adopted in The Detroit Times Building.

On the top floor of the building are gathered together all the news departments of the paper. In the tower is the office of the editor-in-chief. Flanking this is the office of the secretary, and the waiting room. The various

DETROIT TIMES BUILDING

Albert Kahn, Inc.
Architects and Engineers

Albert Kahn's Principles of Industrial Planning

1 Material in course of production must be transported the least distance and as directly as possible.

2 Lines of flow of the material should not conflict.

3 Departments for successive operations should be correlated.

4 Provision for future expansion of all departments should be possible without interference with current operations.

news departments, Society, Stage, Sunday, Radio and Real Estate, Motor, Finance, Art, etc., lead up to the city editor's department. In the city room at a group of desks, sit the city, assistant city, make-up and managing editors, who supervise the gathering of the news and the assembling of the paper. Around this group of editors are desks for the reporters and rewrite reporters, who take down the stories telephoned in by outside reporters. The copy is sent down a simple chute connecting the city editor's department with the composing department on the floor directly below.

The offices of the publisher and business managers are in the front portion of the fifth floor. The rear portion of this floor is devoted to the composing departments. In the middle of the composing room, directly under the city editor, is the copy cutter, who receives the copy as it comes down the chute from the editorial department. The type setting machines are set around the out-

Limestone details of the upper stories and parapet of the Detroit Times Building, Detroit, Mich. Albert Kahn, Inc., architects and engineers

side of the composing room near the windows. Nearby are the specially constructed desks of the proof readers. While the trays of type are waiting for the proof readers' corrections, they are left on the correction banks, which are metal tables. A short distance away are the make-up banks, where the pages of type are assembled under the eye of the make-up editor. Close at hand are the roller presses which prepare the mats from the pages of type. The finished mats are sent down to the stereotyping department on the second floor of the building by means of conveyors.

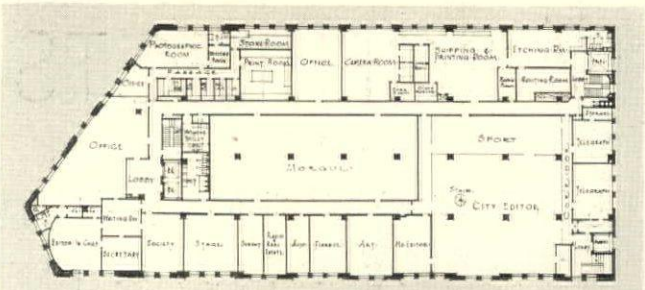
ON the fourth floor are the general business offices of the paper, the advertising director, display advertising manager, classified advertising manager, the chief accountant, etc. On one side of this floor is the sound-proof room wherein sit the telephone solicitors for classified advertisements. The center of the floor is devoted to the accounting and purchasing departments. The assembling of all the business offices on the one floor does much to promote efficiency in this branch of the organization.

The circulation department is on the third floor. The greater portion of this floor is used as the mailing room, where the papers are received from the conveyors running from the presses on the floor below. As the long rows of newspapers come up from the presses, they are automatically counted, piled in bundles, wrapped with paper and placed in automatic wire bundling machines. From these machines the bundles are sent down spiral chutes feeding the loading platform on the third floor. The distance travelled by the papers from the end of the conveyor through the counting, piling, bundling, wiring stages and to the dispatching chute is very short, resulting in very little lost motion.

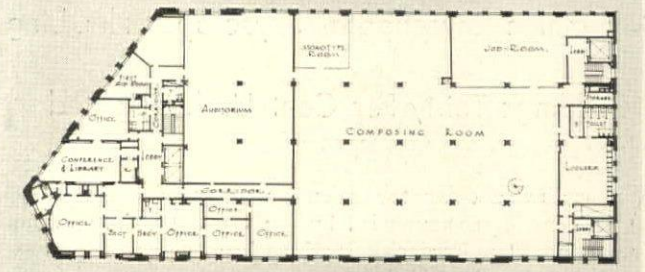
The colored insertions and special sections of The Detroit Times, as in the case of many of the Hearst papers, are printed at a central plant in Chicago and are sent to Detroit for insertion in the Sunday and special editions. As the inserting of the sections must be accomplished in a short length of time, the colored and special sections are dispatched to Detroit in bulk and are placed in storage ready for insertion. This necessitates a considerable space for storage, which was most conveniently found on the third floor. Hence the mailing room was placed on this floor. Another reason for having the mailing room on the third floor lay in the fact that in this location it was directly over the presses and resulted in the shortest line of transport of the papers from the presses.

THE second floor, which forms a sort of mezzanine to the press room, contains the locker and shower rooms, also the autoplate machines. The locker and shower rooms are separated into three units—one for the mailing room employees, another for the press room employees, and a third for the stereotypers. This was deemed more advisable than having all accommodations for these various types of employees concentrated in one large locker and shower room.

The stereotyping room is located on the mezzanine floor at that level where the plates are required. The mats come down conveyors from the fourth floor, pass through the stereotype machines, and the lead castings are then sent directly to the presses along horizontal roller conveyors.



· SIXTH · FLOOR · PLAN ·



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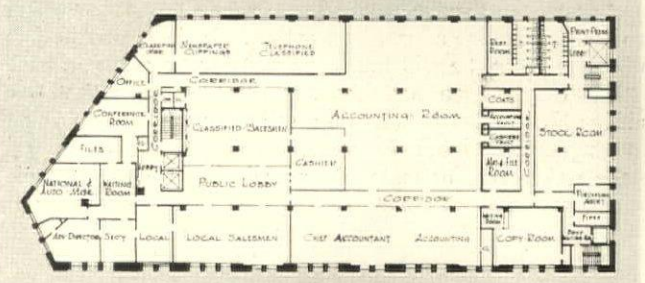

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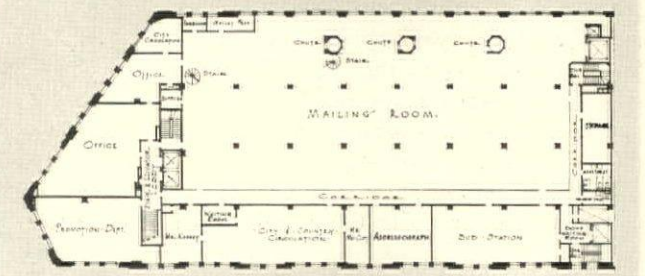

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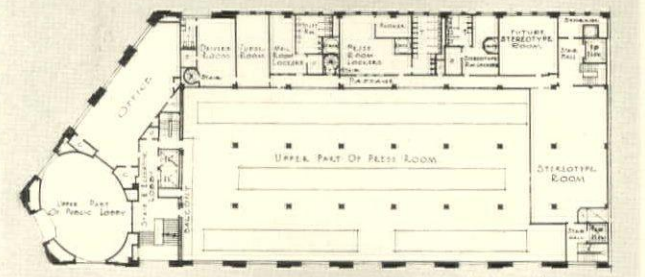
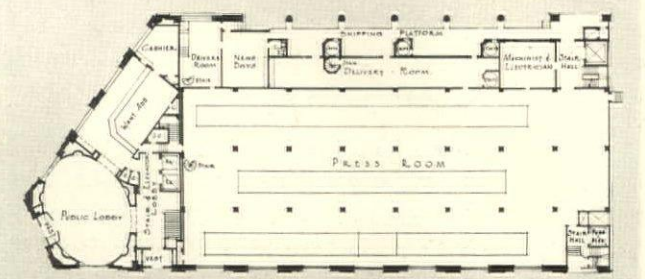


· SECOND · FLOOR · PLAN ·



· FIRST · FLOOR · PLAN

Golden veined Saint Genevieve marble with pilasters of light golden veined Famosa marble and base of black Belgian marble has been used for the walls of the main lobby. The entablature is of plaster painted dull gold. The floor is of terrazzo in black and yellow. At left: Floor plans of the Detroit Times Building show correlation of the various departments in accordance with the principles of industrial planning

The mechanical departments and the press room occupy the greater portion of the first floor, the press room being two stories high. Alongside the press room, on the first floor, is the delivery room, where sport and special editions come directly from the presses without going through the mailing room in the third floor. Adjoining the delivery room is the shipping platform, which is connected to the mailing room above by means of the spiral chutes previously mentioned.

THE basement of the building is devoted to the storage of paper, electric equipment, ink tanks, etc. High pressure pumps force the sluggish ink from the tanks to the presses above. The rolls of paper are received at the street curb level and are let down to the basement by means of hydraulic elevators, being later raised to the press floor level by other elevators.

The efficiency of a newspaper publication building is greatly increased by adequate natural lighting and good ventilation in all the departments. Every attempt was made to obtain these results in the case of The Detroit Times Building. The vibration of the presses in many printing plants is deadened by isolating from the main portion of the building the columns supporting the presses together with the foundations for these columns. In order to save the cost involved in isolating the press foundations in the case of (*Continued on page 72*)

WHAT ARCHITECTS

FASHION BUILDING *to be erected in New York City for Amos Parrish & Co. It will be constructed of polished, colored terra cotta blocks and is said to be the first skyscraper with color devised as the only substantial ornament. Height, about sixty stories. William B. Chalfant, architect*

•

FISHING AND FOWLING *an Egyptian mural from the tomb of Menena, built about* 1415 *B. C., copied by Nina de G. Davies and shown at an exhibition of copies of Egyptian wall paintings at the Metropolitan Museum of Art. Menena is shown twice in a papyrus canoe, once hurling a boomerang at water fowl and secondly spearing fish. His family affectionate, though not helpful, accompany him*

Kahn Directs Construction for Russia

Endowment for Housing Study Urged

Government Investigates Skyscraper Plumbing

Buildings Thirty Per Cent Under Lighted

AN endowment for the scientific study of the housing problem is recommended by the Carnegie Corporation, New York. Dr. Frederick P. Keppel, president of the corporation and author of the report making the recommendation, states that: "A man buying an automobile today pays about half the price he would have had to pay a few years ago and gets twice as good an article. If, however, he has to build a home, he will find conditions just about reversed.

"The only reason for this absurd situation is that one industry profited by first rate scientific and engineering thought, and the other did not. It certainly cannot be laid to the rising cost of material and labor, since this has affected both industries alike. Here, again, a foundation devoted to the study of housing problems and equipped to experiment in different types of design and construction would have the chance to make a contribution of inestimable significance toward the improvement of present conditions."

SKYSCRAPER plumbing is being investigated by the Bureau of Standards in cooperation with the Department of Commerce Building Code Committee, this being a resumption of experiments conducted some years ago. Briefly, it is proposed to investigate actual conditions in plumbing stacks, drains, and venting systems in large buildings with the object of determining the actual facts that exist there.

ARE TALKING ABOUT

Laboratory to Study Indian Cliff Dwellers

Tests on Built-Up Wooden Beams

A.I.A. Makes Report to Secretary Lamont

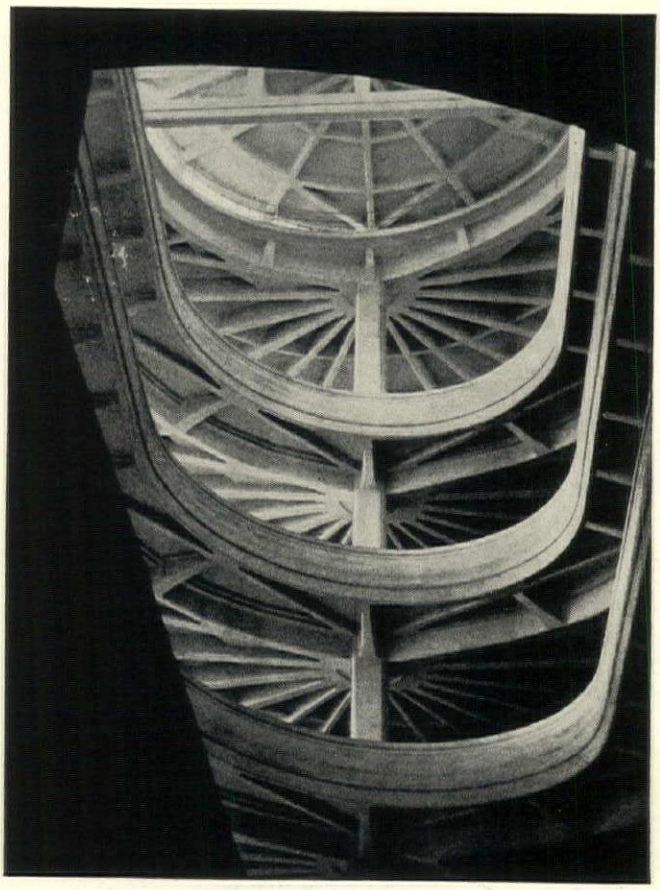
Architectural Features of Chicago's World Fair

This will be done partly by inserting measuring instruments in the plumbing lines and measuring the loads that occur in different occupancies over a sufficient period of time to get a true picture of the situation. After enough data have been collected to form a basis for judgment, it will then be possible to prepare tables and other practical means for designing systems so that they will function efficiently in thorough keeping with the most advanced engineering standards.

OUR present lighting is far too dim to suit the known characteristics of the human eye, according to a report submitted to a recent meeting of the New York Section of the American Institute of Electrical Engineers by Frank W. Smith, Arthur E. Allen and E. E. Free. "If the general illumination level is brought up to that recommended by the data which have been compiled, there will be gains in comfort, in lessened eye-strain, in economic efficiency, and in the attractiveness of our homes, offices, etc. A noticeable step in the right direction will be a very considerable decrease in glare and all of its undesirable features, because glare is due in most cases to an effort to overcome underlighting by a high local illumination of one's surroundings. By correcting the general level of illumination, glare will tend to disappear, just as draughts disappear in a properly heated and ventilated building."

P & A PHOTO

CHICAGO WAR MEMORIAL *competition resulted in the design of Eric Gugler and Roger Bailey, associated architects of New York City, being placed first*



LOOKING UP *through the well of the concrete ramps in the factory of the Fiat Automobile Company, Italy. This factory is said to be the most beautiful automobile factory in all Europe*

ALBERT KAHN, INC., has been commissioned by the Soviet government to act as consulting architect in a five year industrialization program calling for an expenditure of nearly two billion dollars. The necessary organization under Mr. Kahn's direction will include about 4,500 architectural and engineering designers and covers the design and construction of four large motor-car, motor-truck, and motor-cycle factories; nine plants to produce tractors and farm implements; six asbestos, corundum, and graphite factories; two locomotive works; fifteen factories for the manufacture of machine tools, typewriters and cash registers; twenty-four cement factories; 126 saw mills; 106 woodworking plants; 27 glass factories; 35 spinning mills; 15 woolen mills; thirteen clothing factories; 112 shoe factories; 15 paper mills; and 56 plants to manufacture food products.

THE position of the architect and the exercise of his function with respect to building operations under modern conditions are of fundamental importance in the development of any program which is concerned with the construction industry," states a report made to Secretary Lamont of the Department of Commerce by C. Herrick Hammond, president of the American Institute of Architects. "In twenty-seven States of the Union no building can be erected unless a registered or licensed architect is engaged. Seventy per cent of the buildings in this country costing $75,000 and upwards are designed in offices of members of the American Institute of Architects. (*Continued on page* 108)

AMEMYA

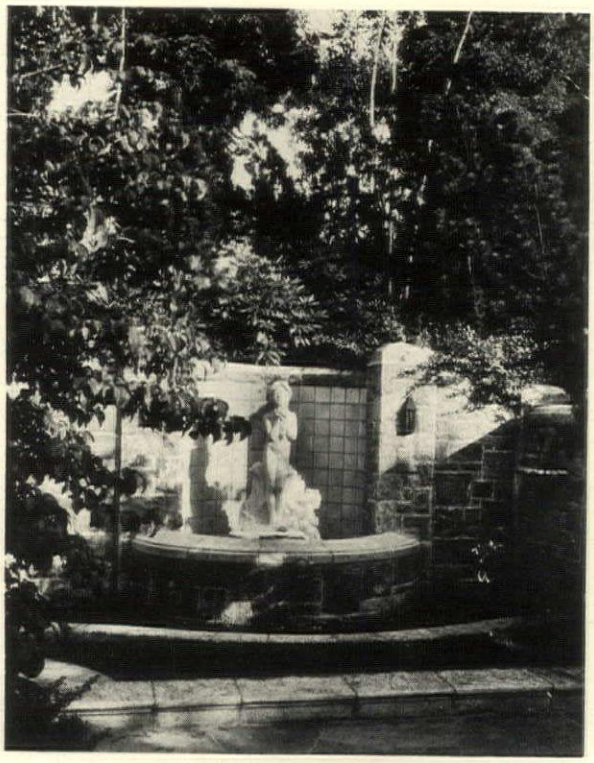
R. A. SMITH

R. A. SMITH

A view on the estate of Mr. & Mrs. J. Morgan Wing, Millbrook, New York. Marion Coffin, landscape architect

R. A. SMI

At right and above, three pictures of the work of Ruth Dean, landscape architect. Top picture is a fountain in the garden of Mrs. Wm. V. Griffin, Peapock, N. J. The other two pictures are of the roof garden of Mrs. Dodge Sloane at 525 Park Avenue, New York



R. A. SMITH

FOUNTAIN GROUP *from the grounds of Mr. Wilfrid T. Pratt, Scarsdale, New York. Jacob John Spoon, landscape architect; Henri Crenier, sculptor . . . Below, from the estate of Richard C. Bondy at Golden's Bridge, New York. Lewis Bowman, architect; Robert L. Fowler, Jr., landscape architect*

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Selected from the EXHIBITION of the American Society of Landscape Architects

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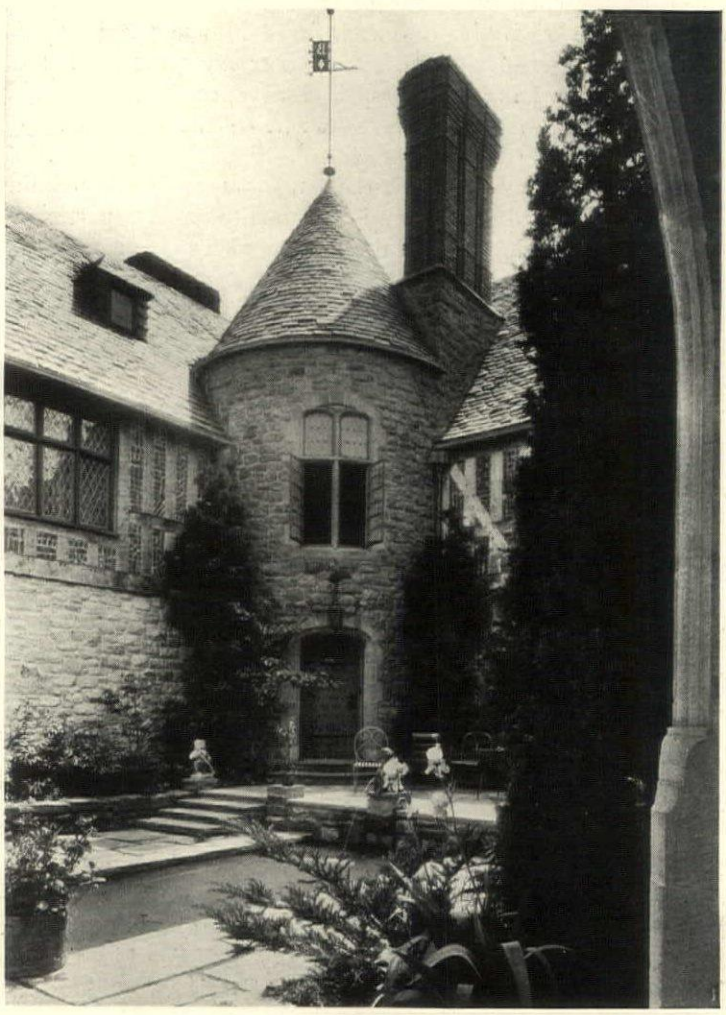


R. V. SMUTNY

Opening March 17
at the
Arden Gallery
New York

WILL THE PROSPECT RENT?

If he won't, then the owner is not going to be satisfied with the design of the buiding . . . .

by Arne Arntzen
of the office of Holabird and Root, architects, Chicago, Ill.

IN the planning and designing of the present day office building, first consideration is given to interior subdivision or what is commonly known in the vernacular as gross rentable area and net rentable area. The chief thought is that the rentable area shall have the greatest flexibility in subdivision because it is the building that produces the greatest amount of class A rentable space that results in the greatest income; primarily, this is the chief objective to be attained in the erection of a building. Of course there is no neglect of the physical and structural strength of the building or of the beauty of the exterior design.

In the erection of the modern building, while the architects are the chief authority and retain full responsibility, yet there are two new assets which they now find necessary for the development of the successful modern building—they are the advice and counsel of a capable renting manager and the services of an expert lay-out man.

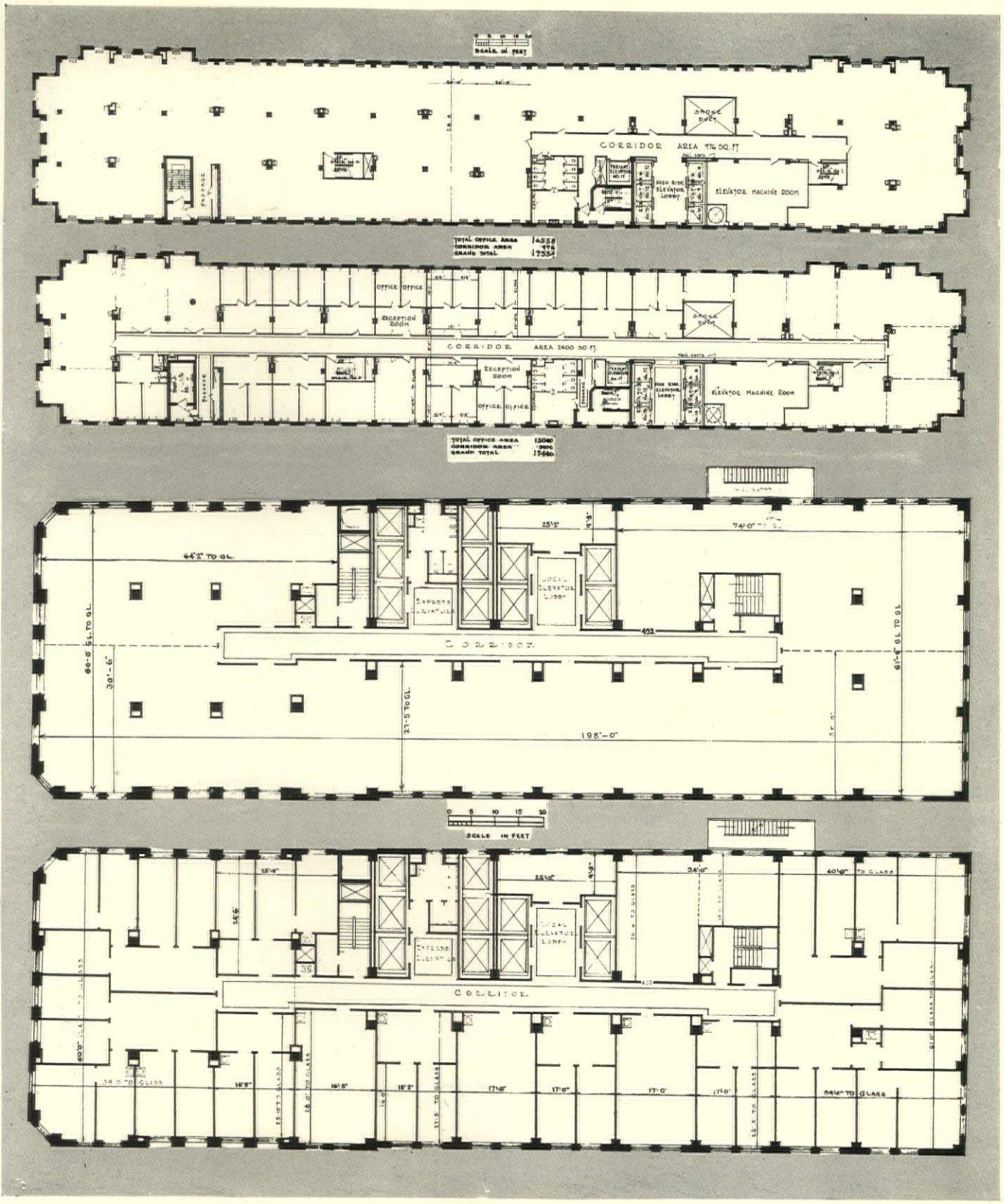
The procedure of the origin and the development of today's modern office building is approximately as follows:

An individual or group of men decide to erect a new building; a site for the structure is procured and a competent architectural firm is engaged to prepare the design, plans and specifications. Immediately upon the employment of the architects and almost simultaneously therewith, the services of a capable renting manager is secured. From this time on it is largely a matter of the latter's ingenuity and resourcefulness that assures the rental success of the undertaking. His responsibilities are legion, for in the last analysis the ultimate success of the venture lies in the ability of the renting manager to fill the building with desirable tenants.

The architects and the renting manager begin a series of conferences, a study is made of the particular site and land area, and the renting manager's advice is largely taken in deciding the character of the building to be erected; whether it is to be an office building, a shop or loft type of building. The information of the renting manager is exceedingly valuable because of his knowledge as to the proper development to make upon the site chosen. Complete sets of plans are made and in many instances these plans are placed before a committee of building managers chosen from many parts of the country by the secretary of the National Association of Building Owners and Managers. Particular thought is given in selecting these members so that the committee may be comprised of specialists thoroughly informed as to the development of the particular type of building to be erected.

Simultaneously with the employment of the building manager, a lay-out man is retained to actively participate in the development of the renting plans. He is a capable draftsman who is specially trained in subdividing the interior areas of the building into the greatest number of units. In the highest practical development of these units, the tenant receives the highest efficiency at the lowest economical cost. The functions of the lay-out man are becoming increasingly important. His particular phase of work is becoming a highly specialized field of endeavor. It is his duty to prepare scale drawings, usually ¼″ or ⅛″, of the space desired. The illustrations accompanying this article show two different types of rental plans of two office buildings. One type shows a typical floor not subdivided, the other illustrates subdivisions that could be built within the space.

THESE layouts are usually made on enlarged reproductions or blue line prints of the undivided rental plans. The preparation of these presentation drawings demands considerable time, ingenuity and thought. It is well known that the average tenant, a business executive, is unfamiliar with blue prints or drawings. It is, therefore, the duty of the layout man to make his drawings so complete that the tenant, entirely unfamiliar with blue prints, can intelligently visualize his office in the new area offered him by (*Continued on page* 95)



A prospect would like these plans, because . . . .

1 There is plenty of light and air.

2 Sufficient elevator service prevents vexing waits.

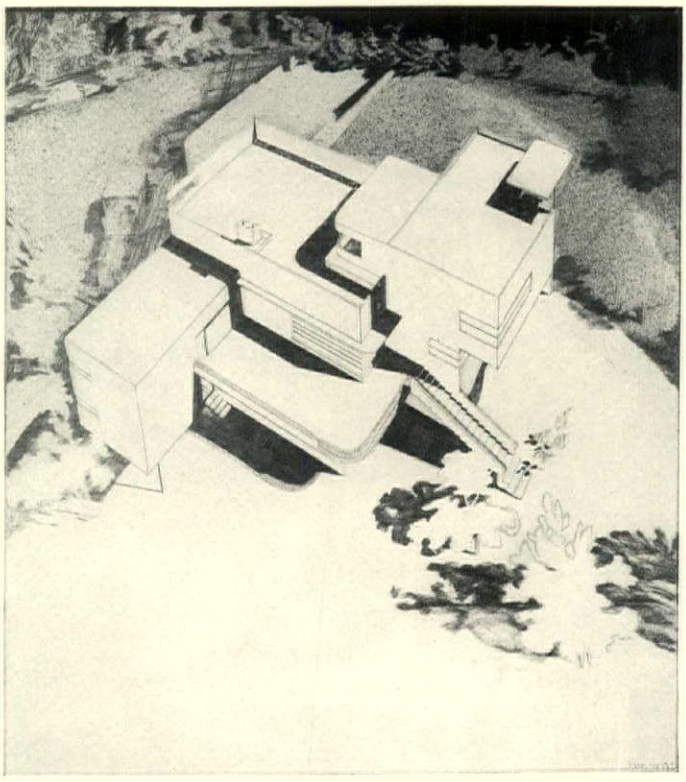
3 Sanitary facilities are adequate.

4 Columns are located to flexibly permit of small, large or open offices.

Top two plans, before and after subdividing eighteenth floor, Chicago Daily News Building. Lower two plans, before and after subdividing eleventh floor, 333 North Michigan Avenue, Chicago. Holabird & Root, architects

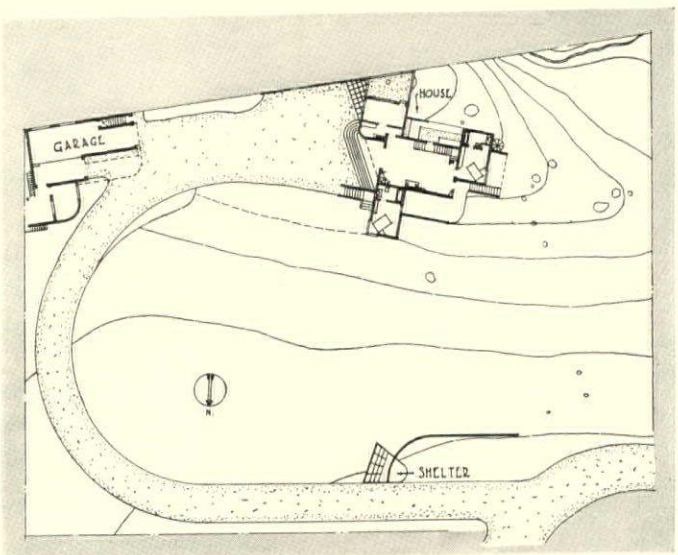
Roofs for OUTDOOR LIVING

House for
Mrs. George French Porter
Ojai, California
Howe and Lescaze, Architects

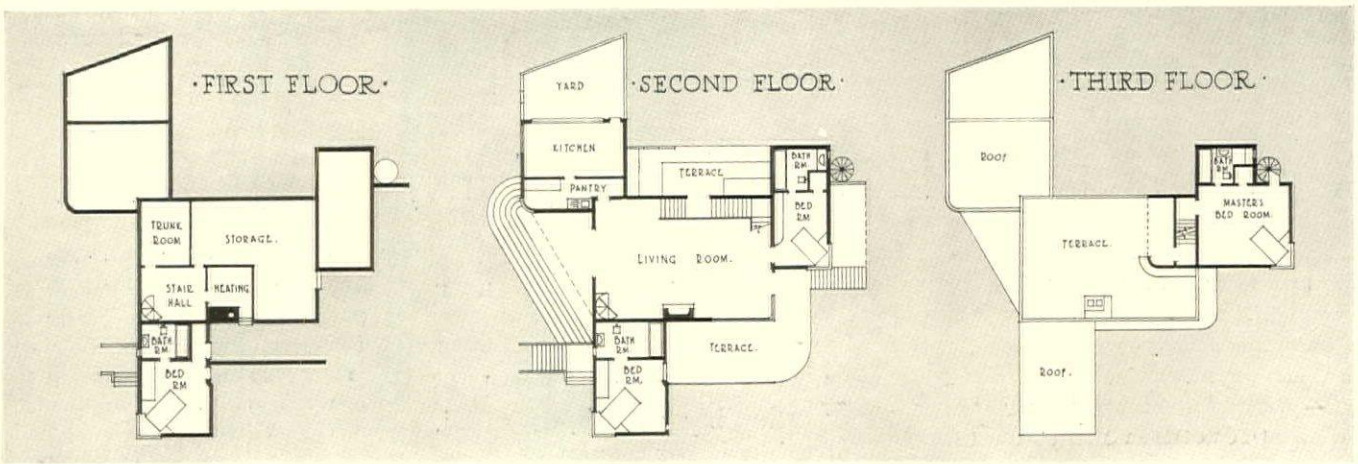


THE PROBLEM

- *House to be used for a season each year as a retreat from the complications of city life.*
- *Primary requirements: simplicity, compactness, minimum amount of service, and maximum individual privacy for each occupant.*
- *Preservation of mountain views to north, east and west by suitably placed large windows.*
- *A plan that would utilize the natural slope of the site and take full advantage of it.*
- *Bed rooms to have private access from both the inside and outside of the house.*
- *Protected terraces for use on cool windy days.*
- *Servants' rooms above separate garage.*
- *Construction throughout to be both fire-resisting and earthquake proof.*



Topographical map of the two-acre plot on which the Porter house is located. The house is planned to conform to existing grades to avoid terracing



5% More or We Don't Finish the Job

by George F. Kaiser

WHAT HE DID. Wilson had contracted to prepare plans and specifications and to superintend the construction of a large building for O'Connell. Upon learning that a certain project, which he had hoped to secure, had been given by O'Connell to another, he became angry, took his plans, called off his superintendent, and refused to have anything more to do with the building. O'Connell, wishing to finish the job, sought out Wilson, and finally promised to pay him an additional five per cent commission as an inducement to resume work upon the job for which he had already agreed to furnish the plans and specifications, and which he had agreed to superintend.

WHY HE DID IT. The facts of the case were that the architect took advantage of the owner's necessities and extorted a promise to pay him an additional percentage as a balm for his feelings, and as a condition for complying with his contract already entered into.

WHY HE SHOULDN'T HAVE DONE IT. When the case finally came before a court, the court promptly held the agreement for the additional five percent void, stating that to permit the architect to recover under such circumstances would be to offer a premium upon bad faith and invite men to violate their most sacred contracts that they might profit from their wrongful acts.

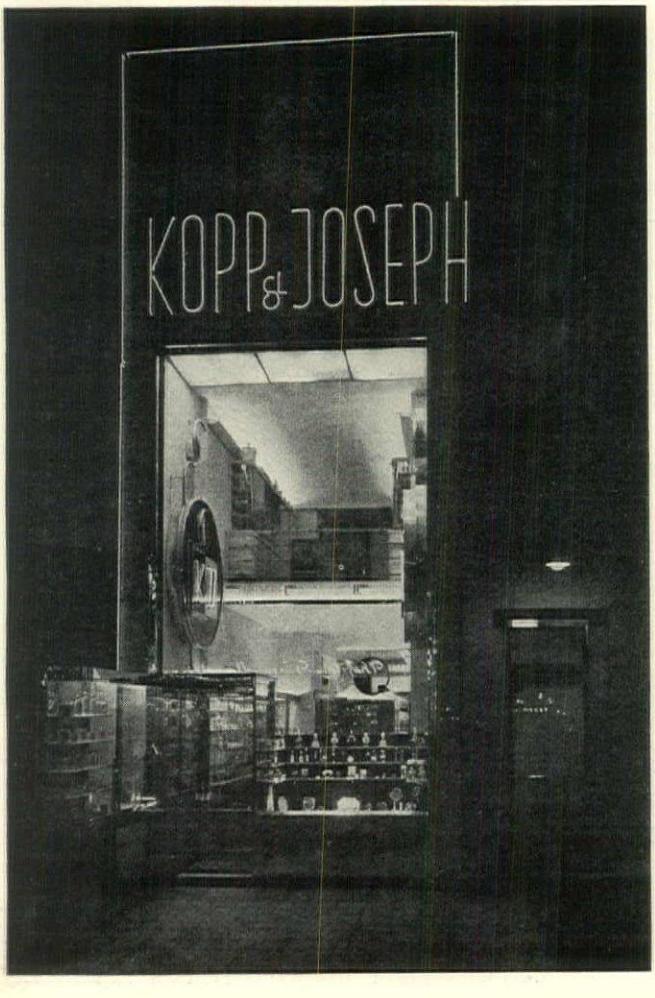
PAYMENT FOR PLANS

WHAT HE DID. When Pender ordered Presbrey to draw up plans and specifications for a building, he received quick action. Soon after the signing of a written agreement, Pender received and accepted the plans and even started excavation. It was only a short time later, though, when Pender again came to see Presbrey and explained that instead of going ahead with the building he had decided on an entirely different kind of structure. Pender ordered plans, etc., to be drawn up for the new building; when they were delivered, he accepted them and started work. When Presbrey sent out his bill for the new set of plans and specifications, however, Pender flatly refused to pay. "I paid you once," he told Presbrey, "and that's all I'll pay."

WHY HE DID IT. Pender, the owner, thought that because there was no specific agreement to pay for the second set of plans and specifications, he could not be compelled to pay for them.

WHY HE SHOULDN'T HAVE DONE IT. According to the decisions, an architect who has made complete plans and specifications for a building to be erected, which are accepted, may recover compensation not only for these plans and specifications, but also for another set of plans and specifications subsequently ordered for use on the same property, even though nothing is said about compensation. The new order constitutes a new contract which has no relation to the work done under the first contract. In one case the court said, "Nothing having been said about compensation for the second set of plans and specifications, it is fair to assume that both parties contemplated that the architect would be paid for the second set at the same rate as the original work of the same nature."

. . . and ABROAD



THE GLASS OF FASHION *at left above, an all-glass shop-front, for a perfumery store in Berlin. Designed by A. Korn and S. Weitzmann. From "The Architects' Journal" of London for October* 30, 1929

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LIGHTING VASE *at right above, at head of staircase of the Savoy Court Theatre, London. Modelled by Gilbert Seale. Easton & Robertson, architects. From "The Architectural Review" of January,* 1930

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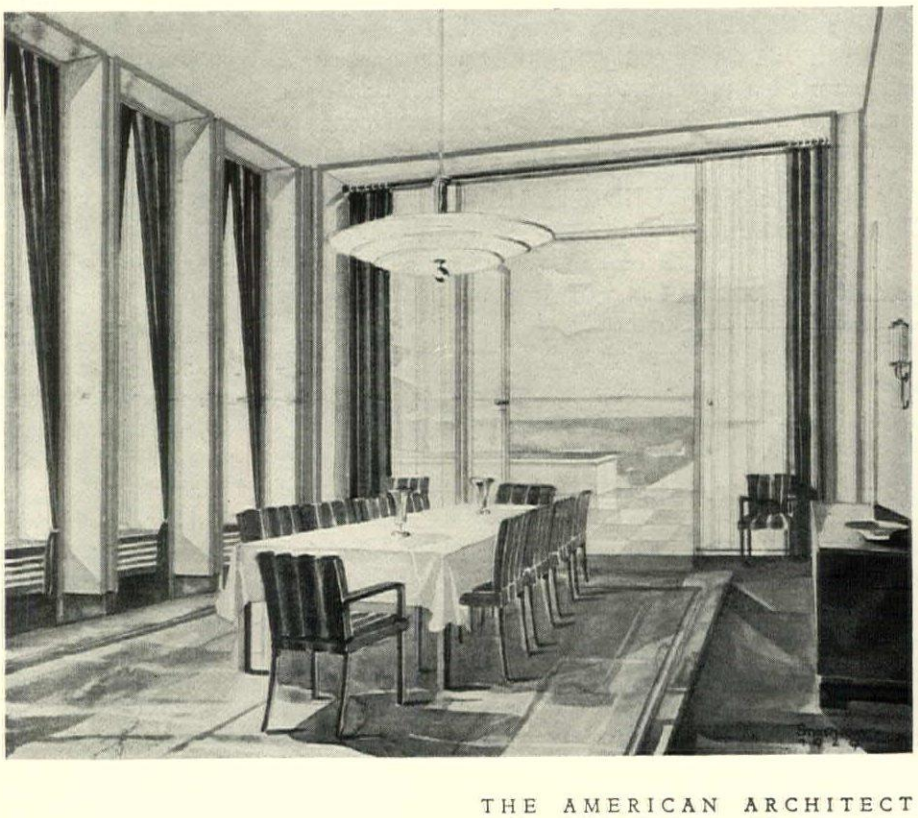
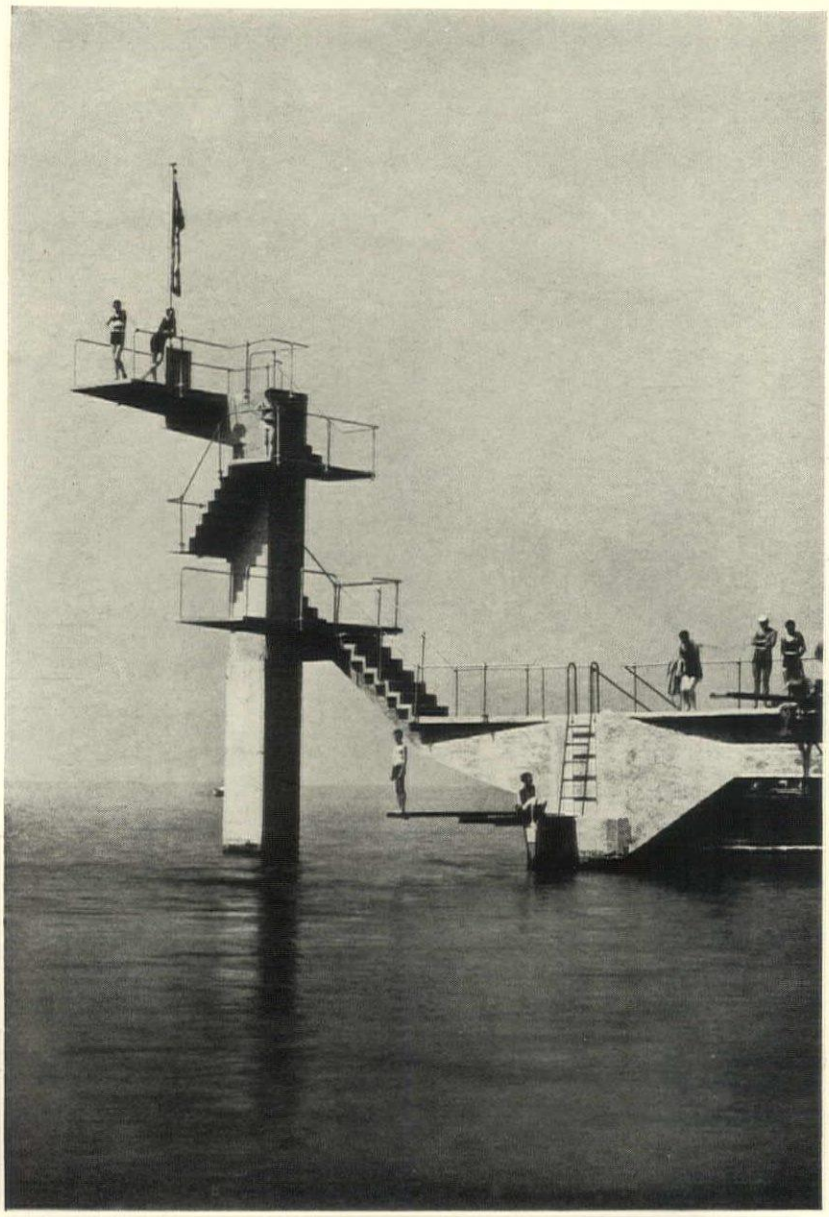
SMALL DINING ROOM, *illustrated at lower right, in an inn. Designed by Hans Stierhof, Nurnberg, in silver, gray and red. From "Moderne Bauformen" for January,* 1930





CLUB ROOM *above, of the "Rose and Crown," Cambridge, England, Basil Oliver, architect. The fireplace is built of red roofing tiles which harmonize with the dado of mottled red linoleum. From "The Architects' Journal," Nov.* 27, 1929

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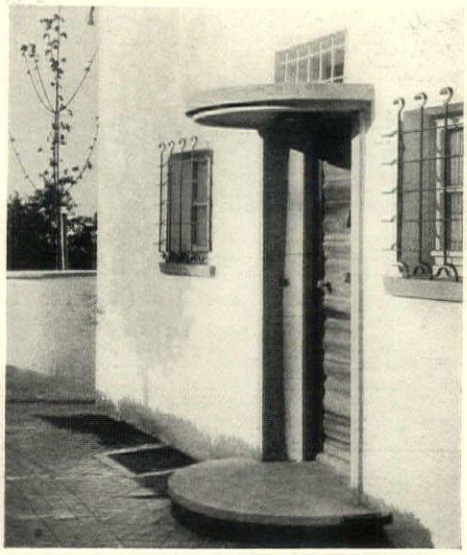
DIVING POOL *at left, at the Vevey-Corseaux, Plage, Switzerland. Otto Zollinger, architect. The Plage is built entirely of concrete and shows how attractive the results of the use of this material can be. From "The Architectural Review" for January,* 1930



STREET ENTRANCE, *above, to the house of Dr. G., at Stuttgart. From "Baukunst" of December,* 1929

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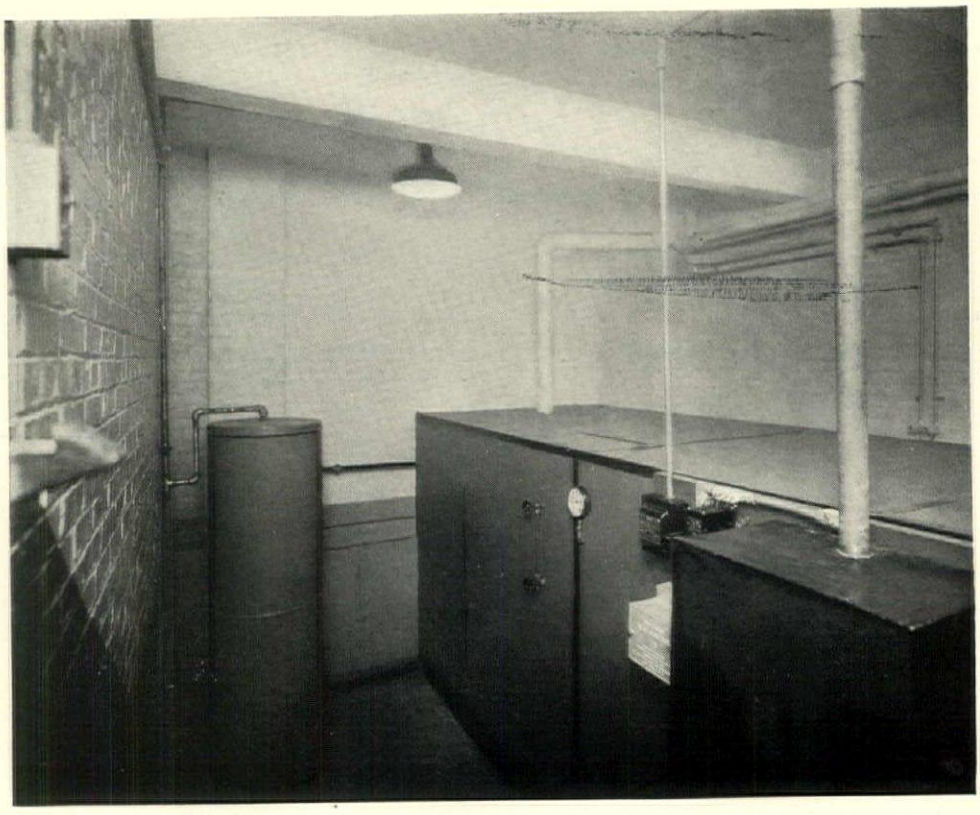
STRINGS OF THE VOLT *at left, a temporary electric transformer station designed by Henri Sauvage to distribute current to the* 1925 *Exposition des Arts Decoratifs, Paris. The silvered head of the bracket was modelled by Mme. Therese Schueler. From "The Architects' Journal" for January* 1, 1930



Space Required

A typical domestic installation requiring 6 ft. x 10 ft. floor space. Units for small houses can be placed in 24 square feet of floor space

Heating by Electricity

NOW COSTS LESS WITH NEW TYPE OF INSTALLATION

by George Bailhe

Assistant to the President, Hall Electric Heating Co., Inc.

A SIGNIFICANT indication that electricity may be generally used in the near future as house-heating fuel may be found in the fact that power companies in several states, including New Jersey, Ohio, Indiana and Virginia, are now operating electrical heating equipment in their own office buildings and substations. Other power companies are making installations at the present time. Cost and efficiency records will be kept to determine rates and conditions which will make domestic operation economical.

Various electric power companies have already set up "off peak" rates of one, and one and a half cents for water heating and one cent for house heating. Practical installations are already in successful operation in several parts of the United States.

The system of electrical heating with which we are concerned here is unique, and is not to be confused with the portable reflector type of heaters, nor with the electrical "space heaters" which are very common in several European countries and which are extensively used on the Pacific coast. It is in brief a central heating plant, placed in the cellar or in a room above ground, which uses "off peak" electricity for fuel, and was developed by Chester I. Hall of Philadelphia, Pa.

Water in an insulated tank is raised to 250 degrees during the night and automatically circulated to the radiators by a thermostatically controlled pump during the rest of the day, in the case of a hot water system. For a warm air system the hot water is circulated through a coil bank over which the air for heating is blown and circulated throughout the house. The application to a steam or vapor system is similar to that of the hot water type. As circulation is necessary, it cannot be used on a single pipe system.

The storage tanks are cylindrical and are made of boiler plate, ranging in capacity from 400 to 1600 gallons for domestic heating and in larger sizes for commercial use. The heating of the water is accomplished by means of standard immersion heating units inserted into the tank through spuds. Other accessories to the tank include the flow and return connections, gauge glass, safety valve, filling connections from the city water supply and a drain. The tank is placed in a rectangular inclosure which is constructed of insulation board with mineral wool packed inside the inclosure around the tank in order that the heat loss by radiation from this source shall be practically negligible.

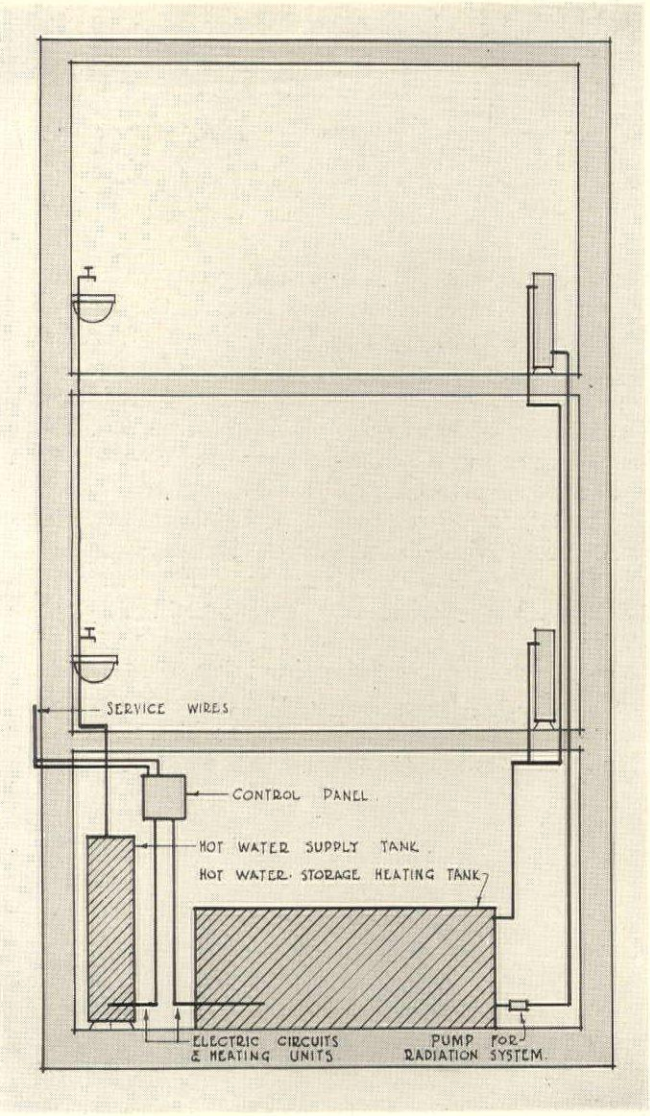


Diagram showing the essential features and typical arrangement of units of an "off peak" electrical heating system

ESSENTIAL FEATURES OF THE "OFF PEAK" HEATING SYSTEM

1... Tank for the storage of hot water

2... Electric immersion units or electrodes for heating the water in the tank

3... Control panel containing main switch, and time and temperature control switches

4... Circulation pump

5... System takes advantage of "off peak" low current rate

6... Water heated by electric current is stored in tank as heat source in conjunction with usual heating system

•

In Fort Wayne, Indiana, the operating cost for a house with 28,255 cubic feet was $50 a month

•

The electric immersion units, or electrodes, are of a standard design which has been used for many years for heating water and various other liquids. A threaded collar screwed into the spud in the side of the tank has fitted to it two copper tubes bent into a hairpin shape extending into the tank. Each hairpin tube contains a resistance coil made of high temperature resistance wire, well insulated from the copper tubes by an insulation compound. These heating elements are connected to electrical terminals projecting from the front of the heating unit collar. This construction permits of an efficient transfer of heat to the water and effectively insulates the electrodes from the latter. Construction is simple and rugged so that very long life is obtained.

The capacity of the heating elements used for house heating installations is 10 kilowatts, the number necessary depending upon the size, hours of charging allowed, and location. The number usually ranges from three to eight for houses between 9000 cu. ft. and 40,000 cu. ft. of heated content, and they may be connected to either 440 volt or 220 volt service.

Mounted on the outside of the tank inclosure is the control panel in a metal box approximately 18 in. x 24 in. in size. This contains the main switch for making and breaking the heating circuit, a contactor for controlling the domestic hot water tank and the timing element which controls the hours of charging as well as the night and day temperatures in the house in accordance with the settings made by the householder. The assembly is very compact and the space occupied is considerably less than that needed for the conventional coal bin. A floor space of 6 x 10 feet is required for the average installation. Small house units can be placed in 24 square feet of floor space.

THE time switch apparatus is set in such a manner that the tank is charged only during "off peak" periods. The public utility designates its "off peak" hours, which may be at intervals throughout the day, and the clock is set accordingly. The time switch may then be sealed. No further setting or adjusting is necessary, as the entire control system is under automatic electrical operation. The whole heating system is automatic to such a degree that only two operations in the heating system are required of the householders—closing a switch in the fall and opening it in the spring.

The important question of operating cost is, of course, paramount both in the mind of the householder and the architect. Before proceeding (*Continued on page* 81)

THE READERS

Have a Word to Say

ADDITIONAL CREDIT ON MEMPHIS AWARD

From Atlee B. Ayres, of Atlee B. Ayres and Rob't M. Ayres, Architects, San Antonio, Texas

Editor, The American Architect: . . . . I noticed in your January issue (page 25) a picture of the Municipal Auditorium which was awarded the gold medal at the Memphis Exposition. I also noted that you gave us full credit for the building while it should have read: Atlee B. and Robert M. Ayres, George Willis and Emmett T. Jackson, Architects, San Antonio, Texas. I will appreciate it very much if you will correct this.

THE BRANCH CHAPTER IDEA

From Harvey P. Smith, Secy-Treas., West Texas Chapter A.I.A.

Editor, The American Architect: . . . . In reading the January issue of the "American Architect" I note that on Page 39 the item of Branch Chapters is mentioned, but the Texas Chapter which put this idea into practice was erroneously named. It is the *West* Texas Chapter and not the *North* Texas Chapter that has done this.

Mr. Cameron, the President, and myself, as Secretary, attended the Southern Architectural and Industrial Arts Exposition at Memphis and placed our ideas in the form of a resolution before the National Board of Directors and received their hearty approval of our plan. We have put this Branch Chapter on an actual working basis in Austin, eighty miles north of here, where there were six members of our Chapter. They have already added two more since they have actively engaged in the work as a Branch Chapter and three more new members are pending. We feel that it is a great idea and would be of a vast benefit to the Institute as a whole if all the different states would take this up and place Branch Chapters in smaller cities and large towns where five or more practising members reside.

DATA ON SAFE STAIRS

From J. Bart Walther of the architectural firm Bart Walther, John P. Walther and J. Bart Walther, New York City

Editor, The American Architect: . . . . In the January issue 1930, of your magazine I noticed an article by Mr. George E. Eichenlaub of Erie, Pa. concerning the proposed legislation for stairs in public buildings in the State of Pennsylvania. This article aroused my curiosity. I determined to test a few stairs myself. Over fifty stairs were tested, rated as to ease and comfort, and then measured. Surprising as it may seem there were few stairs of similar dimensions which were rated differently and then other factors such as width, material, and length of flights were different.

These stairs, although principally in New York City, seemed to disregard the local building regulations whenever circumstances warranted. Many conformed to no rule that I could formulate, and some of the best stairs did not conform to any rule I have heard of. Another very surprising thing was the inequality of risers in the same flight, some stairs having to go untabulated because of the impossibility of determining the true rise. Some risers were as much as one-half inch more or less than the riser above or below; and these stairs were in prominent buildings such as the Pennsylvania Railroad Terminal, the Graybar Building, etc. Naturally none of these irregular stairs were rated as even fair, although I did not know what was wrong until they were measured.

My rating differs somewhat from that of Mr. Eichenlaub in that no stairs of over six and three-quarter inches rise were rated as good; and no stairs with a rise of over seven inches were rated even fair. For example, six Subway stairs were rated and measured. None of these had over a seven inch rise and the runs were from ten and seven-eights to eleven and three-eights inches, and the treads were from eleven and one-half to eleven and seven-eights inches, and were at an angle of not over thirty-three degrees. The next time you walk up and down regular Subway stairs (one not inside a building) judge them yourself. They can hardly be rated as good or comfortable. Fair and safe—yes—but hardly good; and yet the combination of seven and eleven is closely maintained.

The nearest rules or restrictions which I could devise for good comfortable stairs are as follows, all figures being inclusive:

Riser, between 6"-6¾"
Run, between 11"-13"
Nose, not over 1½"
Tread, between 12"-14"
Sum of Run and Rise, between 17½"-19¾"
Product of Run and Rise, between 69-87.6
Angle, between 23°-31½°

For fair safe stairs I devised the following restrictions:

Rise, between 5¾"-7"
Run, between 10½"-14¼"
Nose, not over 1½"
Tread, between 11½"-15¼"
Sum of Rise and Run, between 17¼"-20½"
Product of Rise and Run, between 68.8-94.5
Angle, between 23°-33°

These are rather free restrictions I know, but there were stairs rated as fair which went to the extremes of these limitations. There were only three stairs rated as worse than fair which fall inside these dimensions and in each case these stairs were either well worn (the treads pitched from back to front) or else they were very long flights uninterrupted by a respectable platform.

The idea of this investigation was to find something about comfortable stairs; (*Continued on page* 106)

ASSOCIATED GENERAL CONTRACTORS

REPUDIATE FLAGLER'S VIEWS

•do ALL contractors
Condemn all Architects?

By Benjamin F. Betts

THOMAS THORNE FLAGLER, president of the Associated General Contractors of America, under the guise of, "Give the Contractor a Chance," in the Nation's Business, takes occasion to attack the architectural profession. It, as the author states, he does not desire to reflect upon the skill and integrity of the average architect, it would seem as though he had taken more space than is necessary merely to criticize the minority.

It is admitted that architects' specifications are not always perfect; that superintendents are not always experienced; that irresponsible contractors submit bids; that the present system of estimating is an economic waste; and that evils and abuses exist in our lien laws and surety bonds. But, it must also be conceded, that conditions in the building industry are better today, and that plans and specifications are more complete today than ever before in history. "Sleeper clauses" inserted by "tricky specification writers" are a matter of grave note out of date years ago. To the charge that "... not one set of plans in a hundred is made entirely by the architect and his men," one might ask what business completely makes any of its products. We even have sub-contractors.

WHEN the perfect specification is written it will be done by an architect. Rigid specifications that admit of no freedom in choice of materials or methods by contractors is a complaint that is worn threadbare. If responsible contractors must bid against irresponsible firms, there must be something wrong with a business that contains so many irresponsible men that a few should be obliged to worry about it. In any big industry a percentage of lost motion, unfortunately, is to be expected.

In arguing that the structural frame should be designed as soon as the room arrangement has been determined upon and that the architecture should be made to fit the frame, Mr. Flagler speaks as an engineer and ordinary person, a limited knowledge of how buildings are designed. The structural frame is not and never has been the last consideration. The frame exists for the building—not the building for the frame.

NO ONE is blind to the shortcomings of the building industry. This is the reason for the existence of Building Congresses in various sections of the country, and for other organizations that are working to the end that many of the conditions of which complaint is made may be corrected.

Does Mr. Flagler's opinion of architects reflect that of the majority of contractors? If it does then there may be something in what he says and it would be a good idea to get at the root of the matter. If it does not the article should not have been printed, for it was then a thoughtless, unwarranted attack upon a profession that does enjoy the confidence of the buying public and merits as a whole a reputation for honesty, skill, fairness, and honor to a degree equaled in few other professional groups.

The editorial in the February issue of THE AMERICAN ARCHITECT *which prompted Mr. Hammond's letter*

Editor, THE AMERICAN ARCHITECT:

I wish to advise that I attended the Annual Convention of the Associated General Contractors of America and enclose copy of Resolution that was passed by that body at this convention, which answers, I believe, your article "Do All Contractors Condemn All Architects?"

The writer, before attending the convention, called meetings in thirteen of the larger cities of the country and found that in almost every instance a fine feeling existed between contractors and architects and that Mr. Flagler did not express the ideas of contractors as a whole.

The way is now open for the closest cooperation between contractors and architects in the interests of the building industry and I hope this controversy brought about by Mr. Flagler's article may be forgotten.

C. HERRICK HAMMOND,
President,
The American Institute of Architects

•

RESOLUTION No. 9 . . . as passed by The Associated General Contractors in Convention assembled, New Orleans, January 23, 1930

Whereas . . . The attention of the Associated General Contractors of America in convention assembled in New Orleans this 23d day of January 1930, has been called to the disapproval expressed by many members of the American Institute of Architects concerning an article written by our President, T. T. Flagler, which article was published in the September issue of the Nation's Business, a magazine of the Chamber of Commerce of the United States, and which was republished by a number of the publications sponsored by our Association, and

Whereas . . . This article entitled, "Give the Contractor a Chance" was as stated therein an expression of the personal views and opinions of its author and in no way purported to be an official act of the Associated General Contractors of America, or any of its divisions, and

Whereas . . . It is the opinion of the Associated General Contractors of America that the disapproved sections of the article in question aimed to point out certain practices which were deemed detrimental to both the architectural profession and the business of general contracting, and

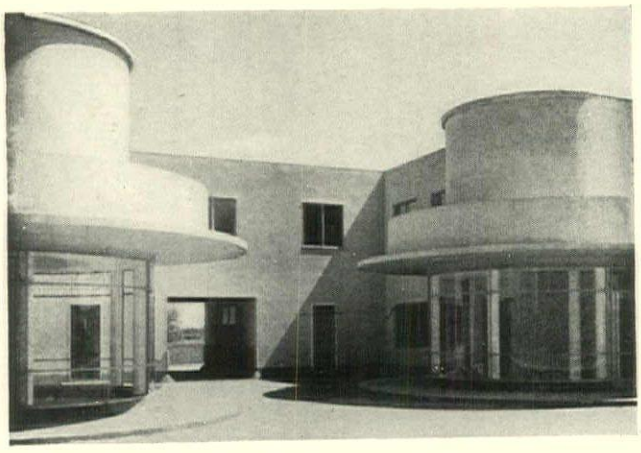
Whereas . . . There appears to exist a widespread opinion among architects that sections of the article in question directly attack the integrity and methods of the architectural profession as a whole.

Therefore, Be It Resolved . . . That the Associated General Contractors of America reaffirm its frequently expressed opinion that the architectural profession in general carries on its professional duties with a high degree of artistic, technical and business ability in conformity to high ethical standards, and

Be It Further Resolved . . . That it is the opinion of the Associated General Contractors of America that such lapses from the high standards of practice set up by both the architectural and contracting professions as do occur during the carrying forward of the highly complex activities involved in building construction are highly detrimental to the advancement of the construction industry, and

Be It Further Resolved . . . That, since we firmly believe that the elimination of unsound practices that occasionally develop in the relationships existing between architects and contractors, can best be advanced by close contact between organized architects and organized contractors and that joint action between the two groups can be further promoted with beneficial results, we take this opportunity to correct any impression that may erroneously exist that the Associated General Contractors of America holds the architectural profession in any but the highest regards for its achievements, service, high standards of practice and constant desire to promote the best interest of the industry and the public, and we hereby pledge the cooperation of the Associated General Contractors of America in all movements aimed to promote the ethical, business and technical standards of the industry, and

Be It Further Resolved . . . That we hereby express our deepest appreciation for the opportunity to hear the President of the American Institute of Architects, Charles Herrick Hammond, whose thoughtful address to us today on the "Industrial Relationship Between the Architect and Contractor" has brought much new light on the subject and encourages us in our own light to eliminate those conditions in our industry which make for irresponsibility.



Shops at the Hoek van Holland, by J. J. P. Oud. From "Modern Architecture"

Modern Architecture

By Henry Russell Hitchcock, Jr. Published by Payson & Clarke, Ltd., New York. Illustrated; 241 text pages, 32 plate pages; size 8¼x 11¼; price $5

Henry Russell Hitchcock, Jr., author of "Modern Architecture"

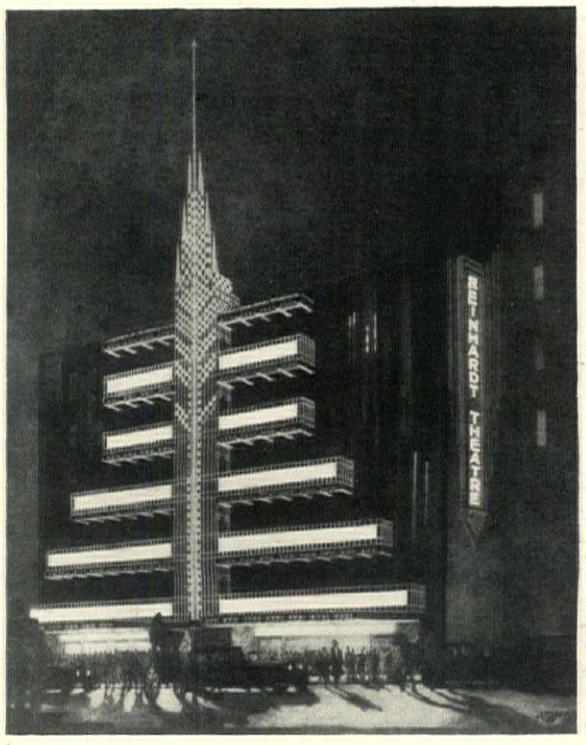
THE rise and fall of various architectural styles, beginning with 1750, is traced in "Modern Architecture." Thus the book becomes an historical record of important buildings and architects from that date up to the present.

The text part of the book is divided into three sections. The first covers the age of romanticism, with chapter headings such as "The First Half Century: 1750-1800," "The First Generation of the Nineteenth Century," "The Second Generation of the Nineteenth Century," "Engineering and Building," "The Mediaeval Revival" and "The Architecture of the Future: 1857."

The second part covers the new tradition, with chapter headings: "The Transition," "The Essence of the New Tradition," "The New Tradition in America," "The New Tradition in Holland," "The New Tradition in Austria and Germany," "The New Tradition in France, Scandinavia and Elsewhere."

The third part is entitled "The New Pioneers," and covers architects of today in France, Holland, Germany, and elsewhere. The last chapter in the book is devoted to "The Architecture of the Future: 1929."

The book is an interesting record of architecture and the achievements of architects since 1750, the text being supplemented by a plate section containing illustrations of buildings erected in each of the various periods discussed by the author.



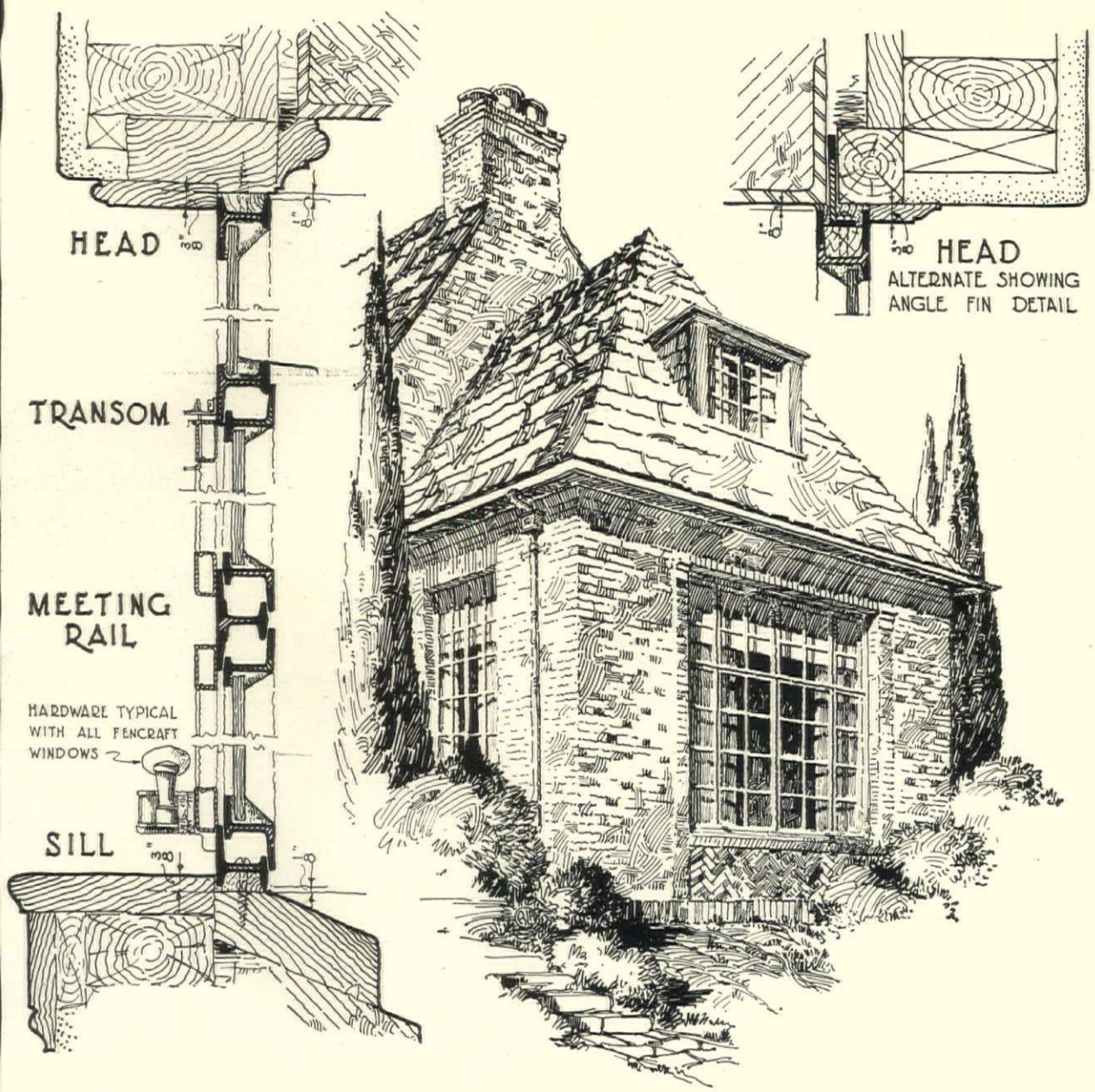
Reinhardt Theatre. From "A Book of Theatres"

A Book of Theatres

By Joseph Urban. Published by Theatre Arts Monthly, New York. Illustrated; 126 pages; size 9¾x12; price $7.50

JOSEPH URBAN, in this book, gives his ideas on the theatre, its history and its position in the life of the community. He defines the theatre as "a place in which to experience a heightened sense of life," and goes on to say, "There are diverse kinds of drama and types of production today. Each theatre must be designed for a specific purpose. Every type of dramatic entertainment, opera, drama, revue, and the motion picture, demands its own kind of stage and auditorium. Climate, site, and social usage also play a large part in the development of the current theatre. In the six theatres which follow, the effort has been to differentiate between the principal elements of dramatic entertainment and to find an expression for each appropriate to site, climate and use."

There then follows a description of the Ziegfeld Theatre, New York; the Paramount Theatre, Palm Beach; a Metropolitan Opera House, proposed for Fifty-seventh Street, New York; the Reinhardt Theatre; the Jewish Art Theatre; and the Music Center. The text is followed by pictures and plans of each of these theatres, printed on one side of the page only. The whole makes an interesting record of the work and ideas of a man internationally known for the originality of his creations.



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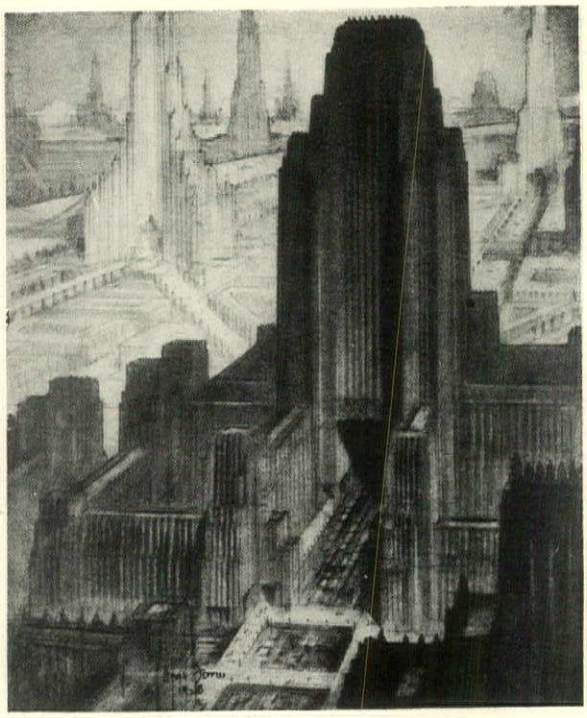


Looking west from the business center. From "The Metropolis of To-morrow" by Hugh Ferriss

The Metropolis of To-morrow

By Hugh Ferriss. Published by Ives Washburn, New York. Illustrated; 144 pages; size 9¼x12¼; price $7.50

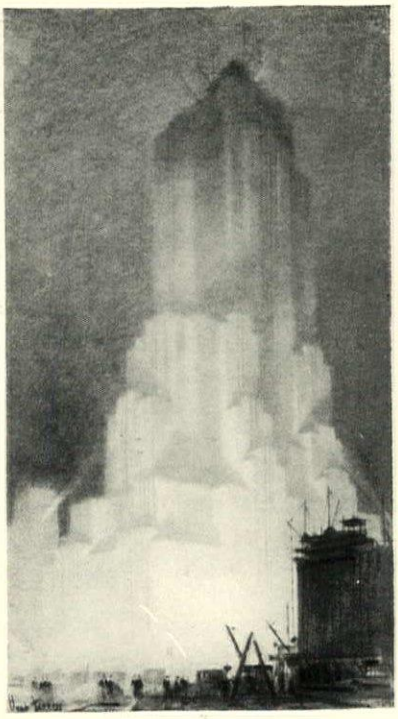
THOSE who know the work of Hugh Ferriss—and what architect does not—will find "The Metropolis of To-morrow" something more than an interesting collection of sketches accompanied by rather fragmentary text. Rather will it appeal as a glimpse into the mental processes of one who has rendered many of the outstanding buildings of to-day and who, through his intimate contact with their architects, has naturally brought much of their thinking to a focus in his own thoughts. It is quite an obvious corollary that Hugh Ferriss has much to give out because he has taken much in.

His book is divided into three sections. The first deals with cities of to-day. It reproduces Mr. Ferriss' renderings of some of the outstanding buildings recently erected or under course of construction: the Waldorf-Astoria Building, the Chanin Building, the Chrysler Building, the Bank of The Manhattan Company Building, the Tribune Tower, and a number of others. Each reproduction is accompanied by text of a somewhat philosophic nature concerning the building illustrated.

The second section deals with projected trends; that is, the tracing of present day trends in design to their natural and sometimes obvious conclusion. The drawings and accompanying text of Mr. Ferriss may seem radical or not, according to the point of view of the reader. At any rate, he has seized hold of modern building in an honest construction sense and contributed something that is real food for thought.

The third section is frankly visionary. It attempts to solve the problem of congestion wrought by the skyscraper and leaves the question of design of individual buildings for that of city planning. He locates and visualizes the city from the business center, the art center, the science center, and many others in this city of the future. Many of the thoughts are those already being actively advocated by leaders in the profession. But Mr. Ferriss has caught the ideas with his charcoal and brought them down to a concrete substance which makes his text seem more the record of an actual happening than a visionary forecasting.

All drawings in the book, and these are about half of it, are full page size. It is an inspiring sort of work, particularly for those who like to think of linking up the actual present with a logically developed future.



The Waldorf-Astoria Office Building, Shreve, Lamb and Harmon, architects. From "The Metropolis of To-morrow," by Hugh Ferriss

Airport at Berlin, Germany, From "International Airports"

International Airports

By Stedman S. Hanks. Published by the Ronald Press Company, New York. Illustrated; 195 pages; size 6x8¾; price $5

AN analysis of the airports of Europe and the United States made by the author, who is a lieutenant colonel in the Air Corps Reserve, is the feature of "International Airports" of most interest to architects. Colonel Hanks enjoyed exceptional facilities for making his investigation, as he received the active assistance of many leaders in European aeronautics. Consequently he is enabled to present much information on the details of foreign airport operation that heretofore has not been available in published form, including the latest developments in layout, principles of planning, operating, details of handling traffic and so on.

The first chapter in the book describes the most famous airports in Europe. (*Continued on page* 110)

● That roofs of IMPERIAL Tiles impart marked distinction to tall buildings is well exemplified by the Smith-Young Tower, San Antonio, Texas. The lower stories are of cream white terra cotta; the upper of cream gray brick. The roof is of light green glazed interlocking shingle tiles and gives a sparkling finishing color. IMPERIAL Tiles were chosen by the architects, Atlee B. and Robert M. Ayres, because of their uniform coloring and perfect glazing.

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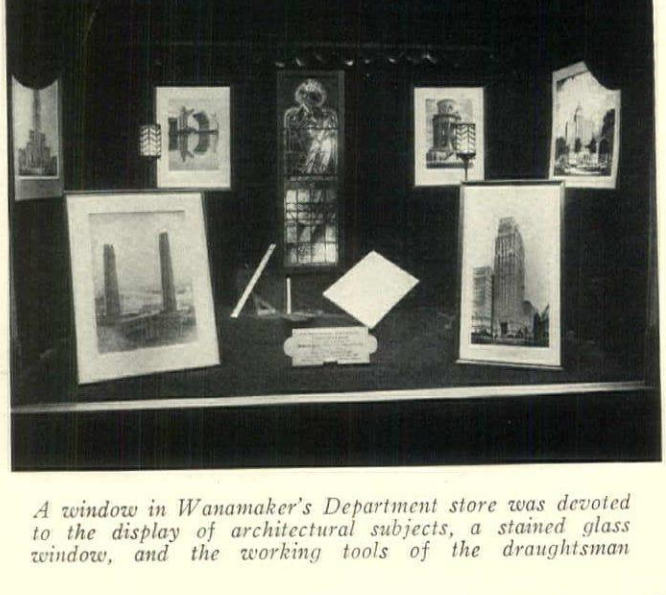
Philadelphia Exhibited Architecture to 15,000 People

(*Continued from page* 21)

"staged" to appeal to the public. It is an idea that can apparently be made general in its application to secure public attention in practically any locality. It can be made the means of bringing about a better understanding of the functions of the architect and a better appreciation of architecture on the part of the public. For this reason it is of interest to learn how the Philadelphia Chapter and the T-Square Club arranged for and consummated an exhibition of this nature.

These organizations elect yearly a Joint Exhibition Board. The board in charge of the Thirty-Second Exhibition determined that, instead of asking people whom architects should be anxious to cultivate and inform to come to see their wares, if possible their architectural achievements should be taken, so to speak, to these people. Why not put drawings, photographs and examples of executed workmanship where people were accustomed to assemble and would contact them willy nilly or perhaps see them out of curiosity?



A window in Wanamaker's Department store was devoted to the display of architectural subjects, a stained glass window, and the working tools of the draughtsman

The board selected the Wanamaker store because of its central location and because it maintained galleries for the display of art. The managing director of the Exhibition was authorized to open negotiations with the store officials. It was at once apparent that these officials would have to be "sold" on so radical an idea as giving up valuable display space as well as furnishing the service that an undertaking of this character, of necessity, requires. "Merchandising" the idea did not prove insurmountable and negotiations were finally closed. The board was immediately given the wholehearted interest and support of the entire organization.

A PLAN was next prepared of the space available in the galleries, and a scheme devised for the systematic display of architectural subjects and allied crafts. Following this the gallery was taken over by the chief carpenter, the chief electrician and their staffs.

Much advance notice of the exhibition had been given by the local newspapers through the medium of news releases, and the advertising department of the Wanamaker Store. This, combined with the enthusiasm of the architectural and allied professions, resulted not only in the ultimate interest of the public, but also in the filling out and submission of nearly five times as many exhibition entry blanks as had been submitted at any previous architectural exhibition held in Philadelphia. The number of excellent exhibits received greatly exceeded the hanging space made available in the gallery. Frantic appeals to the store officials brought forth again their splendid spirit of cooperation and resulted in the erection of a complete set of winged partitions in an adjoining gallery, which even then could not accommodate all of the accepted exhibits. These galleries, with their side wall collection of paintings permanently assembled, made an excellent setting for the display.

WITHOUT the thorough cooperation of the authorities of the Wanamaker Store, the exhibition could not have been so successful. In further evidence of the interest shown by this organization may be cited the program arranged for the private and opening view of the exhibition. The store, always closed at night, was opened and illuminated for the opening view, which was made the occasion of a testimonial to the late Milton Bennett Medary. An organ recital was provided and arrangements made for assembling in the Grand Court on that evening. A bank of elevators was in operation to quickly transport nearly two hundred and fifty people to the seventh floor of the store. The use of the Monumental Room was provided for the banquet. Numerous attendants and every facility and service was provided for those invited for the opening view in addition to those attending the Medary Memorial meeting. All of this, in addition to suitable decorations, was offered as part of the store's participation in an educational and informative enterprise, which was probably without parallel.

As previously stated, the store also provided advantageously located display window space. Operators on sixty-four elevators announced to throngs of passengers that the architectural exhibition was to be seen on the seventh floor.

An architect was in constant attendance at the exhibition gallery and acted as "host." The exhibition was visited by past, present and future "clients," relatives of clients, contractors and craftsmen, and by practically all architects in the city. Clubs and societies posted notices and notified their members, many of whom attended. Members of civic organizations and classes of school children with their teachers were there. A group of Japanese merchants accompanied by Japanese architects attended. Store heads from other cities, including one from Canada, were there and went away with the statement that they would do likewise in their stores if the cooperation of local architects could be obtained. It is understood upon good authority that several people who attended did so as a means of comparing the work of various architects before making a final selection of one to handle the individual problem their contemplated work presents.

The Sixth Street Bridge over the Allegheny River at Pittsburgh was selected by a national jury for the 1929 award in the competition established by the American Institute of Steel Construction, Inc. These awards are made annually for the most beautiful steel bridge completed during the preceding year. They are in response to the growing interest of architects and engineers in the aesthetic design of bridges.

Among other things, the judges said: "A very difficult situation has been met with restful and attractive design and by a frank use of the structural adaptability of steel." . . . "In a singularly clear way it expresses the construction of the bridge without unnecessary ornament." . . . "It demonstrates that bridges of steel fully satisfy the requirements of beauty without undue cost in fabricating and building."

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The Institute publishes twelve booklets,

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one on practically every type of steel structure, and provides also in one volume, "The Standard Specification for Structural Steel for Buildings," "The Standard Specification for Fireproofing Structural Steel Buildings," and "The Code of Standard Practice." Any or all of these may be had without charge, simply by addressing the Institute at any of its offices.

Actual count was maintained of the number of persons visiting the exhibition. Attendance on the opening night was 431. A number of days selected at random from the records show an attendance of 947, 919, 706, 1159, 1160, 1301, 470. The maximum for any one day was 1301. The minimum was 470. Saturdays and Mondays showed the largest volumes.

AS a result of this exhibition, James T. Grady, publicist of the Institute, on January 10, issued a "Memorandum for Chairmen of Chapter Committees on Public Information," which reads as follows:

"The Philadelphia Chapter has taken the initiative in carrying out a plan for an Architectural Exhibition in the public schools. This constructive step is so closely associated with the publicity principle that the publicist of the Institute transmits this memorandum to the Chapters urging the adoption by each, of the Philadelphia program with such modifications as may be appropriate. The Executive Committee on Education of the A. I. A. heartily approves of this activity, its approval having been formally communicated by Chairman William Emerson.

"Accompanying this memorandum is a copy of the official circular of the Philadelphia Exhibition together with an explanatory statement by Mr. D. Knickerbacker Boyd, chairman of the Committee on Public Information of the Philadelphia Chapter. These two documents adequately interpret the idea, which is going to be promoted through nation-wide publicity by the Institute Publicist.

"Effective local publicity can undoubtedly be obtained by every Chapter which enters the educational field in this way. The sympathetic response of the Philadelphia press to the Exhibition indicates beyond question that the newspapers are ready and willing to recognize meritorious public service by the architectural profession."

The Gentle Art of Handling a Building Committee

(*Continued from page* 31)

committees. After their formation, competition enters, which of course is generally considered strengthening in most endeavors, but it is to be remembered that the selection of an architect is not the same as choosing a favorite football player or popular movie star, but is the task of choosing men trained in their particular vocation and not for scholastic or athletic prowess.

The average owner does not understand, unless he has been taught by established members of the profession, that it requires days of study and work on the particular problem at hand, in addition to the years spent in preparation for the privilege of properly planning or building for others.

In many instances the owner does not understand in the slightest degree the service of an architect and has only a faint conception of his own building, so naturally we should not lose patience with our committees as they are only seeking information.

AFTER considering the location of the future buildings, the approaches and many different conditions are studied with many details and, as the work develops, emphasis is placed on materials incorporated into the building, with construction and mechanical features. The working drawings must be complete, co-ordinating all branches of the work and making the whole a document conforming to law and becoming the basis of a legal contract enabling the building to be completed in an entirety.

It is not contended that architectural training should not include study of the English language or several languages perhaps, but some feel as if the work or thought required of the architect in the life-long task of visualization does not develop the use of words or speech as readily as that of the lawyer, author, or minister or even the average citizen, who has been taught in the use of words chiefly in place of figures, proportions, and form. So it is necessary for the architect to use some medium of expression, perhaps sketches, in order to win the committee's confidence and esteem.

It is impossible to avoid competition in some form in any stage of success or failure. To cover ways and means of securing commissions for architectural services would be far reaching, covering string pulling, friendship, and many intricacies. Whatever the rules might be in helping the owner choose an architect, we try to be considerate in making it easy but with perhaps the injunction that the then present applicant might be the most appropriate selection.

UNLESS politics, financial restrictions or other influences are brought to bear on the group of gentlemen selected for a building program, they will usually choose the man or men who, in their judgment, have the best background or creditable work to display. Friendship often has its place but owners are conscientious and considerate in this task, usually employing those who seem best suited for the work and those in whom they have faith and confidence.

Let us hope that the agent selected serves his client well and may add to the spirit and purpose of his problem, contributing to the development of his community and progress in the art of building.

It is to be remembered that the earnestness and ambition on the part of both owner and architect is to be applauded, their work being a struggle for service and beauty. Creation of confidence in the architect selected for the work will prove advantageous in the end for he can originate and do better work in keeping with the spirit and requirements of the problem presented by the building committee.

NEW houses and apartments will account for thirty-four cents out of each construction dollar spent during 1930, according to the research department of Greenebaum Sons Securities Corp. Public works and heavy engineering projects will absorb twenty-three cents, new office and commercial buildings sixteen cents, factory and shops twelve cents, educational buildings six cents, and miscellaneous types nine cents.

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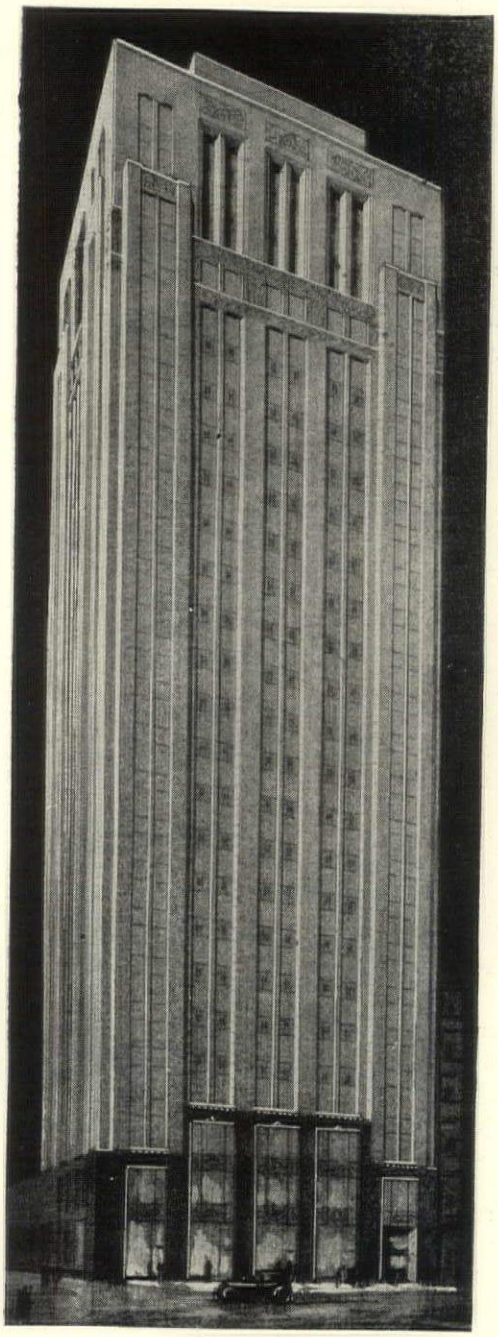

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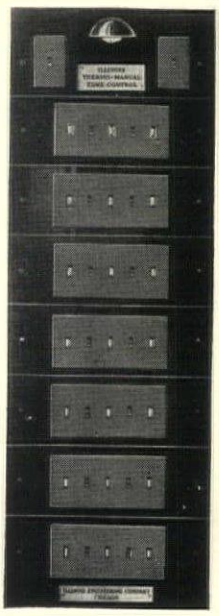

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Write for Bulletin No. 61

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ILLINOIS ENGINEERING COMPANY

ROBT. L. GIFFORD President **INCORPORATED 1900**

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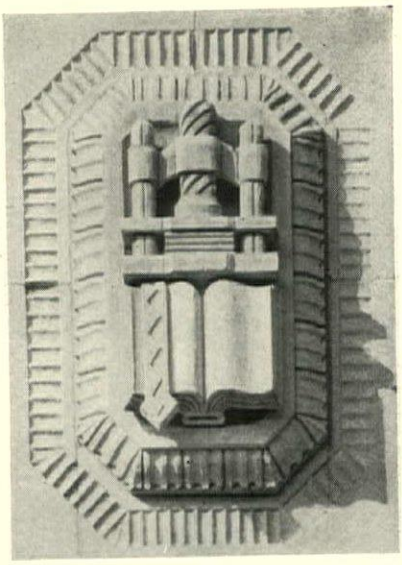
The Detroit Times Building

(*Continued from page* 49)



Allegorical medallions, placed over the windows of the Detroit Times Building, depict the services that contribute to the making of a great newspaper. Those of photography and the printing press are shown at the right and left

the Detroit Times Building, provision for overcoming vibration was more economically made by constructing that section of the first floor slab immediately surrounding the presses somewhat heavier than the remaining portion of the first floor slab. Various iron spiral staircases are scattered around the building connecting some one department with a correlated department immediately above. This is done to facilitate communication between the various departments.

THE base of the exterior of the building is a Minnesota Pink Granite ranging in color from black through greys and greens to delicate tones of pink. Above the base the exterior is faced with Indiana Limestone specially treated to produce a warm buff tone and finished with a sand rubbed surface. The two story windows on the main floors are framed in granite, the same as the base. Above each of the windows are allegorical medallions carved in stone, representing radio, photography, telephony, aviation, transportation, and printing, all of which are pressed into the service of a great newspaper.

The entrance to the main lobby is through a pair of large bronze and glass doors. The floor of the lobby is finished in terrazzo of yellow and black, laid in an interesting pattern. The base of the walls is of Belgian black marble. Above the wainscoting the finish is of golden veined Saint Genevieve marble, while the pilasters are of light golden veined Famosa marble. The entablature and cornice are of plaster in dull gold. The ceiling of the lobby is decorated in buffs and gold. The window openings between the lobby and mezzanine have polished steel grilles. The connecting opening directly off the lobby is wainscoted in highly polished walnut with plain veneered surface. The wall surface above, as well as the coffered ceiling, are treated in dull gold. The splendid lighting fixtures by E. F. Caldwell Company help the effect. Both the lobby and counting room are of a restrained modernization, in keeping with the exterior.

The floor finish throughout the office sections consists of heavy Battleship linoleum laid on the concrete slabs. The press room is paved with creosoted wood blocks. The composing room, mailing room and engraving departments have maple floors treated with penetrating oil.

An interesting problem in the construction of this building arose from the necessity of erecting it on the site of an existing building wherein the printing presses could not be disturbed until after the completion of the new building. The old building was about thirty feet wide. To solve this problem the new building was erected around the old building, the center two bays of the new building being designed to span over the old structure by means of temporary trusses. The line of columns between these two bays was temporarily omitted, the space being bridged over by the temporary trusses, the center posts of which were placed on the centers of the omitted columns and designed with such carrying capacity as to enable them to act as sections of the columns for the completed building. The bottom chords of the temporary trusses were placed at the level of the third floor and later became the permanent supporting beams for the third floor. The top chords of the temporary trusses were placed at the level of the fourth floor and later became supporting beams. The diagonal members of the trusses were built-up sections so arranged as to permit of easy removal after the operation was completed.

IN this manner the new building was constructed to the roof level, while the presses in the old building were kept in operation. When the new building was under roof and the newly installed presses put into operation, the old presses and the old building were dismantled, the excavation completed, the foundations for the omitted columns constructed, and the columns erected. It was then necessary to transfer the loads from the columns above the trusses to the new columns inserted underneath and this had to be accomplished without shock. For this purpose special brackets were built on the inserted columns to receive hydraulic jacks. Two one-hundred ton jacks were used under each column. The estimated dead load of the columns was forced into the jacks to produce three results: first, the new foundations were made to settle uniformly with the adjacent footings; second, the stresses were removed from the temporary diagonal members of the temporary trusses; third, the proper load deformation was effected on the permanent columns. Pressure was maintained on the hydraulic jacks for a period of twenty-four hours, during which time the bottoms of the inserted steel columns were shimmed tight to the foundations with thin steel shims. After twenty-four hours the pressure was taken off the jacks, the columns allowed to take their full load, and the temporary diagonals of the trusses burned away.

Broad Street Station Building

of the Pennsylvania Railroad *in* Philadelphia

This magnificent structure is one unit of the Pennsylvania Railroad improvement program in Philadelphia. It faces the new Pennsylvania Boulevard, which will be one of the City's great thoroughfares.

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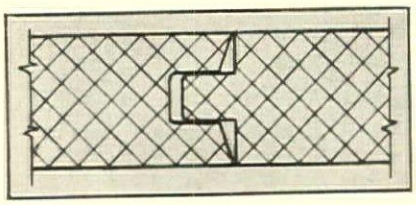
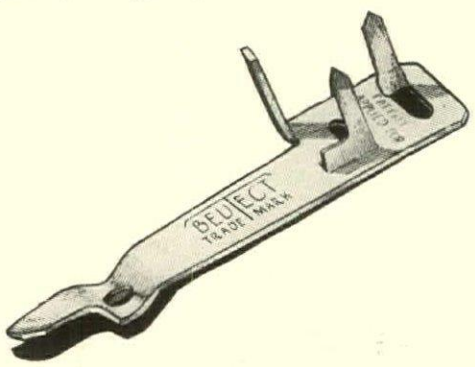


New Features of Weatherwood Insulating Board

Weatherwood insulating board, made by the Chicago Mill & Lumber Corp., Chicago, Ill., is now manufactured with a tongue and groove joint for lath work. This joint gives what is said to be an almost seamless surface which may be covered with plaster or other interior finishes. It is made in half inch thickness.

Smoke Detector for Fire Prevention

Experimental work has been done by the General Electric Company, Schnectady, N. Y., in the Holland tube, under the Hudson River whereby when the exhaust smoke becomes too dense a photoelectric tube gives warning and the attendants put additional fans to work. The device consists of a long glass tube with a light source at one end and a photoelectric or light source at the other. It has been developed for other uses to the point where the presence of smoke causes a buzzer or bell to operate, thus giving notice of the presence of fire.



New Siding and Siding Anchors

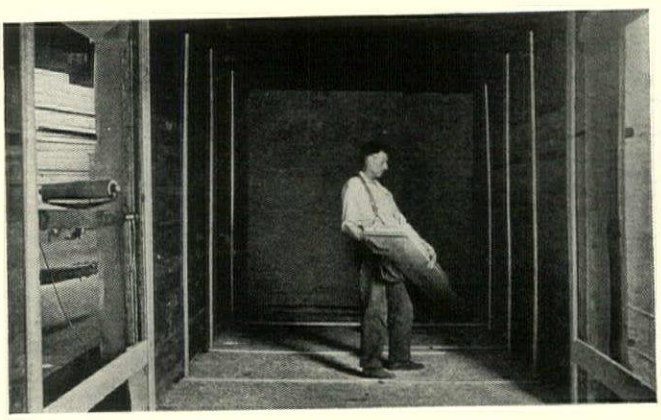
A new siding called "Beutect" is being manufactured by the Beutect Company, North Tonawanda, New York. The siding is of red cedar stained on all sides so as to resist the weather. Instead of being nailed, anchors are used. These anchors are nailed to the sheathing, their top being lapped over the upper edge of the siding. The lower part of the anchor consists of prongs which are forced into the back of the siding through hammering on its face against a board.

Thrush Electric Circulator

A new heating appliance known as the Thrush Electric Circulator has been announced by H. A. Thrush & Co., Peru, Indiana. It is an addition to the Thrush system of hot water heating which gives the user a closed and completely automatic heating system with forced circulation. The new circulator is stated to be particularly suitable where the circulation is slow and the heat irregular.

Stainless Steel Alloy for Building Use

A stainless steel made with a dull finish, which it is stated will not corrode and will last as long as the building, is announced by the Central Alloy Steel Corp., Massillon, Ohio. It is known as Nirosta Steel and is a German process being produced in the United States under license.



Lumber Loaded a New Way

A new method of loading lumber for rail shipment has been adapted by Weyerhaeuser Forest Products, St. Paul, Minn., and is called "cargo-loading." Cars are thoroughly cleaned, obstructions removed that might damage the shipment, protective furring strips placed on car sides and floor, strips and paper coverings placed on end walls to protect lumber ends, and paper covering put over the load to protect it against cinders and grime. The idea is to keep the lumber clean and undamaged while in transit.

Safety Tread

The Wooster Safe-Groove Tread, made by Wooster Products, Wooster, Ohio, is constructed with a base of either rolled steel or extruded brass designed with a corrugated surface of open U shaped grooves and dovetailed grooves which are filled with abrasive grits to form an anti-slip filler. The anti-slip feature is designed to wear at the same rate as the steel walls which hold it and is said to be easily replaced.

Steel Basement Window

A steel basement window glazed without putty is being manufactured by the Donley Brothers Company, Cleveland, Ohio. It is made of hot rolled tees and angles, welded at the joints. Glazing is done from the inside, the glass being clipped in by special devices. Special provision is made to keep out moisture.

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Beaux-Arts Studio Apartments Designed and Financed by Architects

(*Continued from page 26*)

The floors are covered with cork tiles which are 5-16 inch thick; laid random. This cork is subjected to an enormous pressure in the factory and it is believed will stand up as well as a wood floor. In addition to that, it has the advantage of being more attractive and novel, and of contributing greatly to the noise-reducing rental value of the building. The contractor worked a sanding machine over the floors and then used a preparation of stain and wax so that the finished floors have very beautiful color and finish. The cork flooring is cemented directly to the concrete floor slab, thus saving two inches in the height of each story. The corridors are also floored in cork.

ON account of a varied demand for different wall finishes, every even floor is plastered with a white finish coat and every odd floor in a rough brown finish. All the baths and pantries, however, are in "hard white," and the corridors in rough texture finish.

The corner rooms are unique as to windows. They are equipped with end windows which wrap themselves around the side as well. The main walls of the buildings are set back from the street line eight feet so that the end rooms, which are out to the building line, are real corner rooms. These rooms have a dimension of thirty-one feet in length and, of course, contain all the tricks that characterize the typical "one-roomers."

The baths are all of one size, five feet by six feet nine inches. A new lavatory was designed for these bath-rooms which aimed to conserve space and to be a little more attractive than the usual wash basins. The tile base and the tile floor are in black, as are all the accessories and the painting of the bath-room side of the doors. The tile is also carried over the top of the recessed tub.

The pantries are likewise all of one size, one foot seven inches deep by five feet six inches long. The sink is small, giving a drainboard length of about four feet. Under the drainboard is a metal closet and an electric refrigerator made on a new pattern to accommodate this type of pantry. In the upper section of the pantry there is a built-in kitchen cabinet.

THE idea of the design of these pantries is that when one opens the double doors and leaves them at 90 degrees to the wall, these doors form the side walls of the kitchen and the floor of the foyer is automatically the floor of the kitchen as well! The open doors shield the food and drink-dispensers from the sight of the occupants of the living room and only the sound of the rapidly agitated shaker proclaims any signs of life from the kitchen end of the apartment.

It is one thing to prepare the good things of life; it is another to get rid of them. So the Beaux-Arts apartments have garbage chutes opening off the corridors, down which glazed paper bags (thoughtfully provided by the management) are hurled by the hardy housekeepers to their proper destination.

So then, for the lower floors. What of the uppers? Well then, they are verily of a truly and wonderful pattern. The studios are a story and a half high, two of them equalling three floors of bedrooms. What then becomes of the middle space between the top and bottom bedrooms? That space, readers, is occupied by a one-room studio apartment, but with an attractive little balcony in front and with a wood burning fireplace, just the kind as has its high-shouldered brother next to it.

These high studios are as large as thirty-six feet by fifteen feet with a clear height of thirteen feet and the corner ones have the trick right-angle window used below the fourteenth floor.

The construction of these upper floors was a bit complicated by the fact that setbacks prevail here, these setbacks often coming halfway up the walls of the high-shouldered studios. It resulted in many oddments of wall surfaces and gives a very amusing and interesting appearance in many cases.

These two-to-three arrangements work thusly: On the fourteenth floor, the studio and the bedroom are on the same level, but on the sixteenth floor one descends seven steps into the studio while the bedroom is still up on the sixteenth floor level. There is naturally no space on the fifteenth floor but between the bedrooms there is the before-mentioned studio tucked away on the fifteenth floor. Incidentally, this is something the tenant actually has to see before he rents it.

ONE neat little hide-away arrangement of plan which occurs only once in one of the houses is: one enters on the sixteenth floor . . . there is the bedroom right there; the studio is seven steps down, then one ducks down another seven steps and there is another bedroom, with of course a direct entrance to the corridor of the fifteenth floor! There couldn't be a more complete runaway than that! Think of it . . . going in on one floor and going out on another! Every corporation should have its president's office arranged on some such basis and it wouldn't be bad for us architects either.

The seventeenth floor is composed of studios and bedrooms of a single height only, while the pent house consists of one, two and three room suites with vast expanses of private roof gardens for the happy and sun-loving tenant. One gets a rare view of the far-famed East River which, of course, is much more satisfying at night, when pinholes of light, moving and still, take the place of prison and hospital buildings on Welfare Island and those drab factories and warehouses which still take up the best light and air of our metropolis.

On the ground floor there is an entrance lobby of a reasonable non-loafing dimension neatly done in imported brown glass held together with aluminum bands and stabbed here and there by a most startling door in vari-colored metals. These color combinations are repeated in the elevator cabs, the latter being equipped with the swankiest of lighting fixtures and with a polished steel panel instead of a mirror just to hide from yourself your own appearance when you come in at 4 A.M.

The offices are small and the telephone switchboards enormous. It is expected that a large proportion of the apartments will be rented by the fair sex who, according to statistics, spend most of their waking hours talking

A SIDEWALL INSTALLATION OF AKOUSTOLITH SOUND-ABSORBING STONE IN TEMPLE EMANU-EL, NEW YORK CITY, IN A GRADATION OF COLOR FROM LIGHT AT THE BASE TO DARK AT THE CEILING AND WITH GOLD CERAMIC INSERTS.

* * *

ROBERT D. KOHN, CHARLES BUTLER AND CLARENCE S. STEIN WERE THE ARCHITECTS OF THIS BEAUTIFUL INSTALLATION IN ASSOCIATION WITH MAYERS, MURRAY AND PHILLIP.

R. GUASTAVINO COMPANY

40 COURT STREET, BOSTON, MASS. 225 WEST 34th STREET, NEW YORK, N. Y.

R. GUASTAVINO CO., OF CANADA, Ltd., New Birks Building, Montreal, P. Q.

over the telephone to any friends who will listen to their conversation.

The restaurant, known as the Cafe Bonaparte, is split up into three rooms, niftily colored; one in blue, one in lemon, and one in green. The walls are covered with fabricoid puffed up, as it were, by felt underneath. This, with the fluted wainscot and the zig-zag grilles in the ceiling, is guaranteed to take the mind off the food, and in certain cases to entirely take away the appetite!

The idea of carving up the restaurant into three small rooms, as they so often do in Paris, appeals to most people as being more *intime* . . . and the Cafe Bonaparte, opened on New Year's, bids fair to be the meeting place of the intelligentzia of the neighborhood.

THE most difficult bit of research work in connection with the restaurant was to find a maître-d'hôtel by the name of Napoléon, but Douglas Elliman's chief of house detectives located a direct descendant of the Little Corporal (we are credibly informed by the press agent).

Weinold Reiss, that most modern of the moderns, outhooded Hood in the design of this restaurant, but outside of this frank admission we will positively divulge no further secrets of the architectural co-alliance between the accredited (or dis- if you like) architects of the building, Raymond Hood, Godly and Fouilhoux and the firm of Kenneth M. Murchison.

The restaurant space in the north building is left vacant until we finally determine the ultimate capacity of the rent-roll's appetite, but a complete room service kitchen has been installed so no one has to get up out of his spring-roller bed for his morning coffee.

Beside the lobby and restaurant and kitchen, the ground floor of each structure is taken up with one-room Maisonettes, each having its own front door opening on to the garden which occupies the eight foot setback. These are probably the only one-room private houses in the United States.

The outside is the one thing worth writing about. Why the horizontal stripes? Why the bright railings? Why the aluminum bands fastened on the stonework? Why the curious awnings? Why the Christmas trees? Why are the doormen uniformed like Paris gendarmes?

We don't know, except that they *are*, and that's all there is about it. Raymond Hood went on the theory that windows are black in reality, so he made the spaces in between the windows, horizontally speaking, of dark brick with the result that the general effect of the buildings is like unto a beautiful Brobdingnagian bedticking. But a lot of the cognoscenti like it and the buildings have received this year's prize given by *Building Investment*, a New York magazine, for the best apartment house erected (and not demolished) during the current year.

The buildings are really unique, unique in plan, in conception and in everything else. You would undoubtedly like to know, being interested in personalities of your profession, the identity of those venturesome adventurers or buccaneers who launched this craft on the troubled seas of investment building. Well, there is first and foremost, Mr. Whitney Warren, who stands for everything noble and pure in the profession. The rest of the syndicate had best be lumped together, for safety's sake. John W. Cross, of Cross & Cross; Benjamin W. Morris of opera fame; Delano and Aldrich, architects of the American Embassy in Paris and also of most of Long Island; James W. O'Connor, the leading specialist on indoor tennis courts and country estates; William H. Gompert, late architect of the Board of Education of New York, who always has forty-two telephone buildings in the office; and Charles Z. Klauder of Philadelphia, now engaged in the innocent pastime of designing no less than twenty-two Universities or parts thereof. That list, with the addition of the two humble designers of the zebra-like structures, constitute the honor roll of the architectural participants.

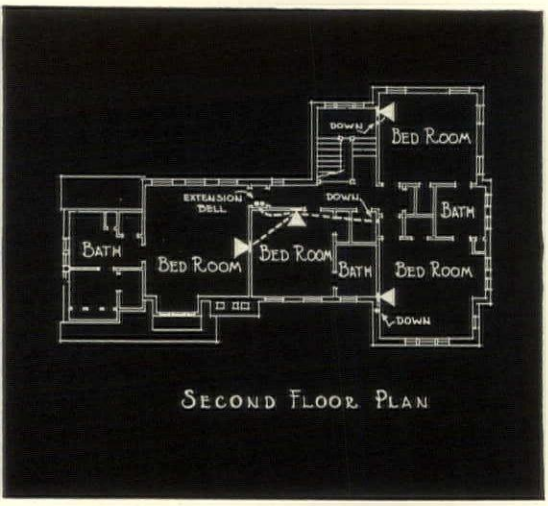
But the perpetrators went further. They got in two swell decorator-architects, El F. Tyler and H. F. Bultitude; a real painter, Arthur Hawkins of the Art Students League; and a big hefty sculptor, Charley Keck.

Then they kicked out into other fields. They added to their roster Messrs. Davis, Symmes & Schreiber, real estate attorneys; a couple of unknown realtors by the name of Douglas Elliman and Roland Elliman; and John Kilpatrick, All-American end of the George A. Fuller team. So it is difficult to fix the blame on any one person. Nobody knows just why, or how, it happened, but they are all standing by, ready to sign on for anything else that may come along and all of them intrigued beyond words with their terrific plunge into real estate ownership and financing.

Conventions and Expositions

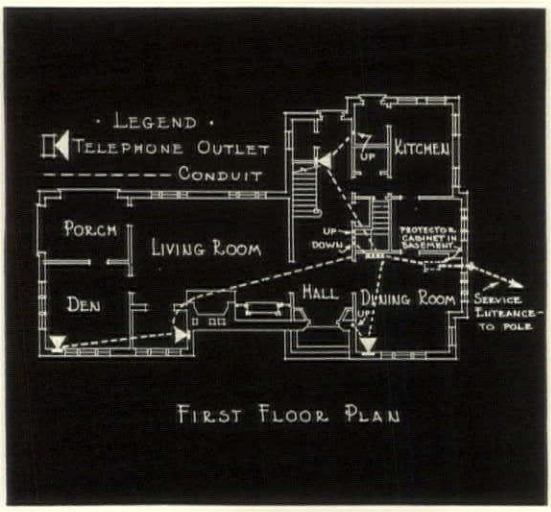
March — April	*International Exhibition of Housing and Modern Industrial Applied Arts, Nice, France.*
March 3—7	*National Industrial Equipment Exposition of the Midwestern Engineering Exposition, Inc., Hotel Stevens, Chicago.*
March 15 — 22	*National Better Home and Apartment Exposition, Madison Square Garden, New York; April 14—21, New Haven, Conn.; April 22—29, Waterbury, Conn.; April 30—May 7, Hartford, Conn.*
March 24—28	*Building Officials' Conference of America, Annual Meeting, Cleveland.*
March 31—April 2	*Annual Meeting, Concrete Reinforcing Steel Institute, Bon-Air Vanderbilt Hotel, Augusta, Ga.*
March 31 — April 5	*Twelfth Annual Home Show, Grand Central Palace, New York.*
April 7—12	*Seventh Annual Convention and Oil Burner Show of the American Oil Burner As., Hotel Stevens, Chicago.*
May 20 — October 1	*Exhibition of Modern Industrial and Decorative Arts, Stockholm, Sweden.*
May 21 — 23	*American Institute of Architects. sixty-third convention, Mayflower Hotel, Washington, D. C.*
May 26 — 30	*International Congress of Building and Public Works, London.*
June 19 — 30	*Pan-American Congress of Architects, Rio de Janeiro, Brazil.*
September	*International Architects' Congress, Budapest, Hungary.*

Throughout the Country Architects are including Telephone Convenience in their Plans for new Houses



SECOND FLOOR PLAN

In the home of Mr. Joseph H. Skaggs of Atlanta, Georgia, provision for complete telephone convenience is made by nine telephone outlets, including one in the servants' quarters over the garage. FRAZIER & BODIN, Architects, *Atlanta, Georgia.*



FIRST FLOOR PLAN

THE APPEAL of *telephone convenience* is country-wide. In the South . . . as in the Middle West, the Pacific Coast, or along the Atlantic Seaboard . . . architects are planning for it by providing sufficient outlets and conduit for telephone service in the design of new and remodeled residences. Their clients may then have the added ease and comfort that enough telephones give, plus the improved appearance of having the telephone wiring concealed within the walls of the house.

Locations for the telephone outlets are usually determined in conferences between the architect, the client and a representative of the local Bell Company. The home owner can use just those telephone outlets which he needs, and can expand or rearrange the service in the future as he desires.

Architects may consult freely with the telephone company in planning for telephone arrangements. No charge is made for this service. Just call the Business Office.

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — BELL SYSTEM

We Need New Materials

(*Continued from page* 45)

is the only one aware of the woeful lack of new materials and he must be the vital force in the effort to hasten new discoveries.

To show the great necessity for something with which to carry out the feeling of the modern trend in design, we find that glass, mirrors, aluminum and interior marbles have been recently employed for exterior walls to a rather startling extent. They are used not because they really solve the design or structural problem, but because they allow the designer latitude heretofore impossible. These designers have been forced to use old materials in new ways, ways often forced and uneconomical but free from tradition.

Shall we sit back and continue to specify what we know and have no fear of, or shall we dream and produce images of better materials and methods to hand over to our colleagues who actually make such materials.

If the architectural specification writer ever had an opportunity to throw off his self-assumed yoke of dependence, now is the time. The construction field is crying for methods which are better, cheaper and consistent with progress made in other industries.

OUR structures are filled with materials handed down from the Egyptians, Greeks and Romans. We lather over the finished surface with a multitude of new-fangled coveralls. They are of immense value and I'm not deploring them, but why can we not find just as satisfactory structural materials?

Steel is the one big exception to the above and because of this exception it makes all the others ridiculous in their hopeful assumption of duties never intended for them by nature or even man.

I can say this feelingly for I belong to the class responsible for the flat failure to give what construction so urgently needs. My point is that although the architect cannot hire a laboratory and manufacturing plant to achieve these much needed reforms, he can by insistence cause their birth. If he has the idea or dream clearly enough shaped in his mind he can insist that the technologists bring to life new products. And his contacts with material manufacturers and technologists must be so close as to reflect on them and inspire them to produce what he wants.

Such work on the part of the architect's specification writer will not add to the year's profits, but unless he does assume this leadership now his profits for later years may definitely show his lack of foresight. It is a matter of self-preservation for him as well as for many others dependent on him. We can take this opportunity now, but shortly it will be beyond our power to do so.

Further real progress in architectural design will not be made until architects' specification writers force industry to supply new materials or new uses of existing materials. It must be granted that a few advanced minds are themselves using their imagination to apply old materials in new ways.

To state the problem shows why we now use ancient materials, although our lives and habits have been transformed by this new era of industry, business and machines. Exterior building products must meet nature's demands in our temperate zone during twelve months and not show fatigue or failure. That is to say, they must be:

1. Wind proof.
2. Waterproof (to a certain extent).
3. Non-conductive of cold and heat (to a certain extent).
4. Resistive to water, air and certain gasses in the atmosphere.
5. Material must be workable at site and in shop.
6. Material must have pleasing finish and texture.
7. Low cost.

A substance to meet the new requirements and to show superiority over old ones should in addition have the following qualities:

(a) Shop manufacture in large sections.
(b) Easy to erect in large sections.
(c) Lightness of weight.
(d) Thinness of total wall section.
(e) Easy to connect to other materials.
(f) Finish subject to variation as required by the individual job.

So we have difficult, complicated problems to meet before products will be found that can cope with all these requirements. When we have successfully developed such materials a perfect unity may be possible between modern design and modern construction. The specifications are lagging in the game now and they drag the designer back and handicap his best efforts. He must think in scale with a 2¾ inch brick course although designing a 500 ft. tower. We have no flexible medium which allows us to omit stone joints or depart in other ways from the fine traditions of generations. Of course all media will have their courses but they ought to follow the structure more closely and not be so definitely determined in advance.

RECENTLY a New York building was built with a stone facing of slabs which were in places the height of the windows. I'm sure that this radical departure from usage and precedent has caused many headaches and fears, first in the architect's office, later in the builder's office and then at the shop where the stone was cut. At the job probably a good deal of effort was wasted in order to set these stones. I have myself heard skepticism expressed by some of the stone cutters as to how long such stones would stay put. The limitations of this material were stretched far beyond any use heretofore desired by the designers. Had the windows been three or four feet higher what would the specification man have done to meet the problem?

There can certainly be no doubt as to the desirability or usefulness of stone and brick but we must also have other more flexible substances with which to cover our steel frames more speedily or economically and more convincingly where the design calls for such materials. We limit our designs now by our inability to supply proper materials; given such materials we can only guess as to the new possibilities in design.

Several industries have—some with little effort and others after considerable struggle—discarded old methods and materials and found new ones suitable to their needs. The automobile industry, handicapped by the precedent set by the horse-drawn vehicles, took some ten years to break away from their initial limitations of materials. The radio business, having scarcely any background, by dint of much experimentation immediately set up a brand-new technology which has developed steadily along lines set up by the pioneers. Our industry is endowed with a very heavy handicap of precedent and will break away only through a mighty effort. Neither architects nor contractors can be expected in their present status to set up experimental laboratories. Many of them now find it difficult to finance their stenographers and office boys. The associations of architects and of builders, though doing fine work, have not found it possible to do research. The Federal Government does a great amount of such work but it is nearly always along lines that have been fairly well developed beforehand. We have left only the manufacturers to do this much needed work. They, however, are not going to spend great amounts for tests, trials and experiments unless the industry vehemently lets them know how great its need is.

THE architect, through the medium of the specification writer, must clearly define his aim and goal and set it before the building industry. Such a recommendation will fall on deaf ears unless the manufacturers' associations determine to adopt a very broad function for the good of the entire trade. They must set themselves up on a non-competitive basis to work on these problems, each giving to the other and to the trade his findings and failures. In time such research may yield new methods and materials with which the architect may more successfully solve the many problems today presented in design and construction.

Heating by Electricity

(*Continued from page* 61)

with an analysis of operating costs in the seventeen original installations which were made in houses at Fort Wayne, Indiana, it will be desirable to discuss "off peak" current which is essential to the economic operation of electric heating plants in general.

In virtually every power plant there are "off peak" hours, that is, hours when minimum or negligible use is being made of the plant's facilities, which, however, have to be maintained and operated twenty-four hours a day. The number of hours varies, of course, according to the nature of the community to which a plant is supplying current. In a purely residential community there are likely to be many "off peak" hours, maximum use of current being made mainly at meal times when electrical cooking appliances are being used and at night when homes are illuminated. A plant supplying current for industrial purposes during the daytime hours and mainly for residential illumination at night would have fewer "off peak" hours. In such a case the main "off peak" period would most likely be from nine or ten at night to eight or nine in the morning, with several additional hours throughout the day. Many power plants in the United States have as much as 17 hours of "off peak" periods; in fact many plants have more "off peak" than "on peak" hours.

IT is not possible to store electricity generated by a power plant; but it is possible and practical now to convert low-cost electricity into hot water heat which can be stored in insulated tanks for many hours and used as needed under automatic control for heating systems and domestic purposes. This is the secret of economy of "off peak" heating.

Buying "off peak" current at reduced rates is very much like buying the winter supply of coal in the summer when producers and dealers are enabled to make price concessions.

There is no loss of heat from this thermos bottle type of tank, nor is there any consumption of the electrical energy until the system requires it. Consequently there is delivered to the householders full value in British thermal units for every cent he pays for electrical energy.

In New Zealand and certain European countries, particularly Switzerland and Norway, much attention has been given to the matter of making the load factor of power plants more uniform by creating markets for low-cost current during the "off peak" hours. Basle, Switzerland, for example, now has a system load factor of over 80 per cent as a result of public utility efforts to build up "off peak" current consumption. Electricity for house heating and cooking fuel is a commodity common in Swiss homes.

Quoting lowered rates for "off peak" electricity is precisely in line with what our telephone and telegraph companies have done. These utilities found in some cases that their facilities were over-taxed at certain hours and that for a major portion of the night their equipment was idle. However, the nature of their business was such that they could not close up at night. Their patrons demanded twenty-four hour service. So telephone companies and telegraph companies accomplished a more uniform use of their facilities by establishing greatly lowered rates for night service. In short, they quoted "off peak" rates. This resulted in economies for the users of telephone and telegraph and increased profits for the utilities. What could be more desirable? Just as the communication companies have done, the electric power companies can bring the public to an understanding of how one set of rates is fair and equitable for "on peak" periods and much lower rates for "off peak" periods.

In the seventeen Fort Wayne, Ind. homes, equipped with electric heating systems, operating costs from October 15 to May 15 (1928-1929) ranged from $200 to $1200. The heated cubage of these houses ranged from 9,130 to 44,840 cubic feet. They were of various types of construction—brick, clapboard, stucco on frame, stone and frame shingle. Some were well insulated; others were not insulated at all.

The $200 operating charge was involved in a new

shingle frame dwelling of 13,690 cubic feet with insulated walls and ceiling and double glazed windows.

The $1200 operating cost was involved in a brick veneer house with insulated walls and ceiling. With a heated cubage of 44,840 cubic feet, it was the largest house of the seventeen.

A house typical of what may be expected under good conditions was an old, well-insulated brick house, of 28,255 cubic feet. In the seven months' season 35,695 kilowatt hours were used at an approximate cost of $375, or slightly more than $50 a month.

The "off peak" energy rate for this type of heating in Fort Wayne is two cents for the first 400 kilowatt hours (to cover water heating) used within a month and one cent a kilowatt hour for the balance.

IN analyzing operating costs of this form of electric heating the general subject of thermal insulation for houses must be considered. The best and most complete application of insulation will reduce heat losses by fifty per cent or more. While it is not intended to discuss thermal insulation in detail here, it is referred to in order to point out the direct bearing which it has on operating costs. Thermal insulation acts to reduce the heat requirements for a building and this saving can be used to the maximum extent only in buildings where combustion is eliminated, as in those which are heated by electricity.

New residences can be constructed with insulation so as to give a minimum heat loss and the electric heating system installed at a total cost not exceeding ordinary construction with heating equipment using other fuels. To bring this about there can be eliminated chimneys, cellars, and anything else not specifically needed for the ordinary combustion heating plant and storage of fuel.

The savings incidental to this form of heating should be carefully evaluated in considering operating costs. Some of these are: Elimination of janitor charges for coal and ash handling; elimination of costs of cleaning draperies, curtains and even some of the cleaning of the rooms themselves; elimination of stacks or flues; reduction of air changes in the house due to the removal of combustion, and realization of the long-anticipated electrified push-button, or automatic control.

In Florida, where a number of house and water heating installations have been made in recent months, a rate of one cent a kilowatt hour prevails.

HEATING equipment installed in Florida homes was especially designed to meet the peculiar climatic conditions existing there. The temperature in Florida rarely gets to the freezing point, and then only for an hour or two. In the vicinity of St. Petersburg, for example, where the daily average of sunshine is unusually high, the air may be quite chilly in the morning during the winter months until about nine o'clock. Up until then a small amount of heat is desirable to make homes and other buildings comfortable. However, once the sun is well up, windows are thrown open wide; heat is then not only unnecessary but highly undesirable. After sunset there is again a need for heat until bed-time.

Electrical heating equipment for Florida, therefore, had to be of a highly flexible type, capable of being turned completely on and off at a moment's notice.

This is exactly what was presented in the Hallmark storage type heating equipment. Energy is stored for long periods during the twenty-four hours at a comparatively slow rate of charging. It can be released at a moment's notice by the operation of either a thermostat switch or by a hand control switch in such manner as to heat all the radiators in the house in a space of a few minutes. Upon shutting off the switch which controls the pump the cessation of flow is instant and all the remaining capacity of the storage system is retained for future use.

The equipment used in Florida consists of single or multiple storage tanks which can easily be carried in through a doorway and set up in a kitchen or garage. A number of small cast iron radiators of the usual type are placed as needed about the house, and these radiators connected to the tank through a small circulating pump by means of small tubing which, in some instances, has been laid about the baseboards without damaging the walls in any way.

The installation thus made is easily accomplished at a figure much less than would be necessary if large hot water radiators and the usual type of hot water piping were installed.

THE results of the experience in heating houses with "off peak" electric energy should be of real significance to the public utility companies as it opens a field for the sale of electrical energy of desirable characteristics. The load is ideal for it is strictly "off peak." It is of unity power factor and can, if necessary, be balanced on a two or three-phase distribution system. With power plant equipment provided to carry the peak load safely, a peak load lasting only a few hours and a minimum load usually only about one-third of the peak, it is apparent that the utilities can generate a considerable quantity of additional energy without added plant investment. This type of load, therefore, means a more complete utilization of the equipment and a greater net income.

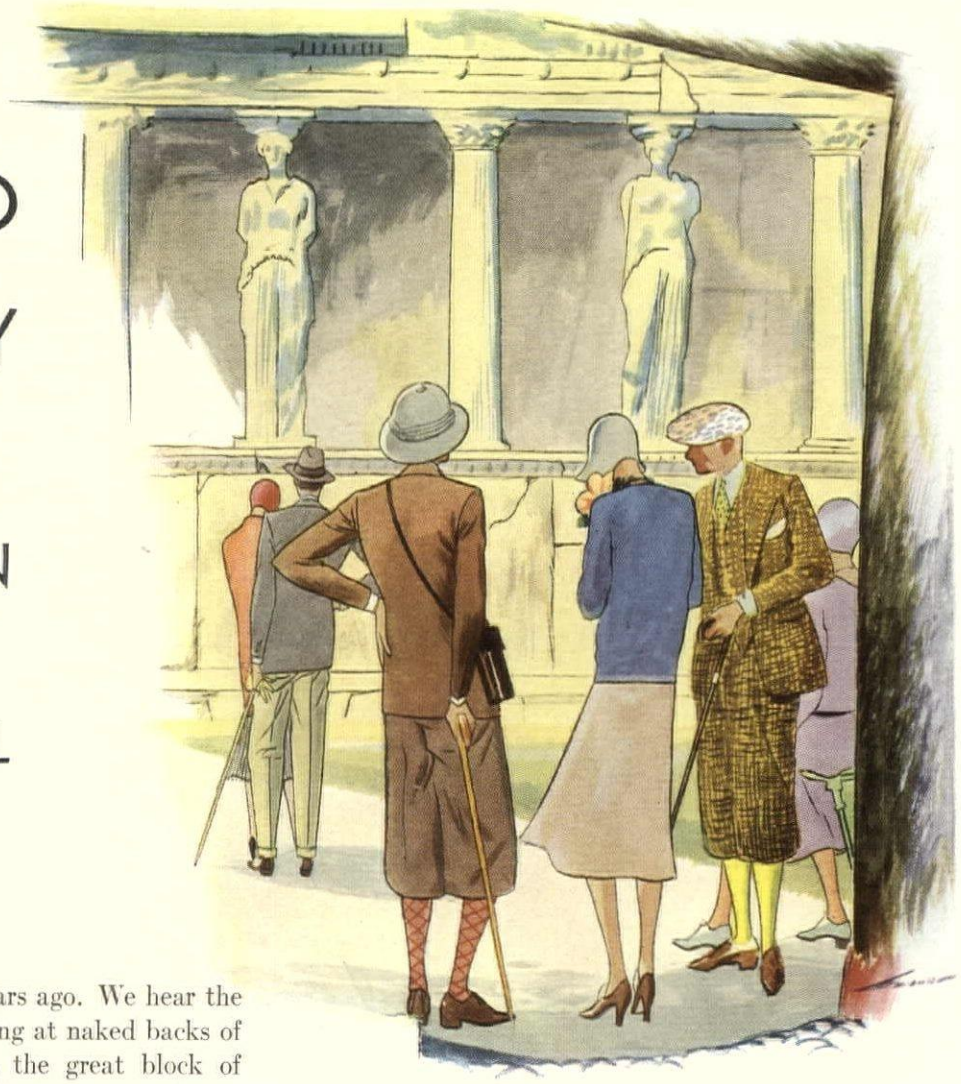
In any territory, residential customers are the most numerous and return the smallest average annual revenue per customer. The development of electric house heating equipment provides a form of load which will develop a large number of $25 and $30 a year consumers into consumers who will pay from $200 to $1000 a year for electricity. This large amount of energy consumption is automatically controlled "off peak," and the "off peak" hours throughout the twenty-four may be selected by the utility to fit its own particular load curve.

It is believed that experience will before long justify rates of less than a cent a kilowatt hour for electrical heating on an "off peak" basis. This will bring the operating cost well within, or below, the cost of operating heating plants using other fuels.

When asked for his opinion as to the future of electricity as a house heating fuel, a nationally known gas executive said: "I believe the day is not far off when gas will be used as fuel to generate electricity for house heating and other domestic uses." This statement is fraught with deep significance and prophecy.

THE Plaster-Model Method of Determining Stresses Applied to Curved Beams," is the title of Bulletin 195, issued by the University of Illinois, Urbana, Ill., and written by Fred B. Seely and Richard V. James. It sells for twenty cents.

AGE-OLD BEAUTY *in a* MODERN FLOOR MATERIAL



Greece . . . two thousand years ago. We hear the snap of the overseer's lash darting at naked backs of panting slaves. Inch by inch, the great block of polished stone rises . . . then sinks into place. A new temple to the Gods on Mount Olympus is in the making—to be marvelled at down through the centuries.

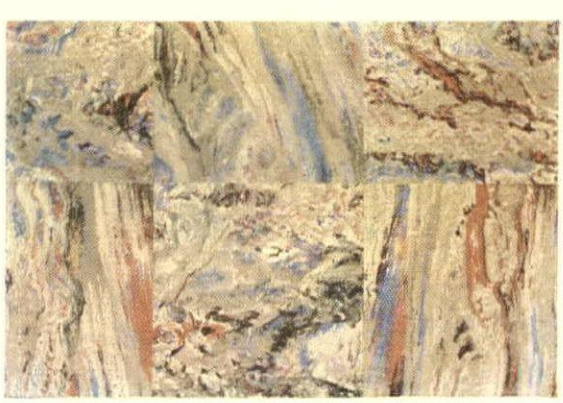
America . . . today. In an enormous factory room, a giant wheel so tall that it turns men into dwarfs, revolves slowly. Beauty issues in an endless stream.

Beauty (here lies the miracle) which shows no trace of its machine origin. With no hint of that tiresome sameness, that uninspired regularity which often betrays the touch of the iron workman.

In the new Karnean Marbled patterns in *Sealex* Inlaid Linoleum, colors run riot—defy discipline—disappear and reappear—writhe and twist themselves into unexpected shapes and courses. They parallel the astonishingly gorgeous, accidental beauty of Nature!

Below is illustrated one of the new *Sealex* designs in which these rare marble markings appear. This pattern represents a departure from the popular "checker-board," such as that illustrated at the left. You will notice that although the veinings of adjoining tiles run at right angles, only one kind of marble effect is used, resulting in a more restful pattern than those floor designs in which more pronounced color contrasts are evident.

On the next page are reproduced a few more interesting innovations in linoleum design, typical of the *Sealex* floors offered for 1930.



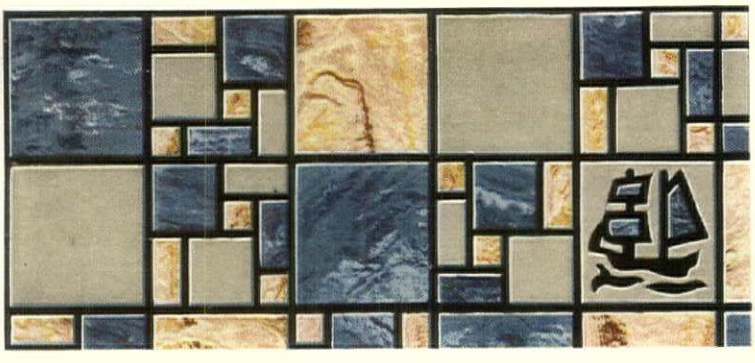
The "*Foyer*" pattern (Sealex Linoleum No. 3104) combines Blue Belge and Italian white marbled block effects, a dignified floor adapted to a great variety of uses. At the right is "*Leonardo*" (Sealex Linoleum No. 3225), quite remarkable for its reproduction of Coralline Breccia marble, quarried on the island of Scio.

See next page . . .

BELOW are shown four of the new *Sealex* Linoleums. Hundreds of other patterns are reproduced in our new catalog, which we will be glad to send upon request.

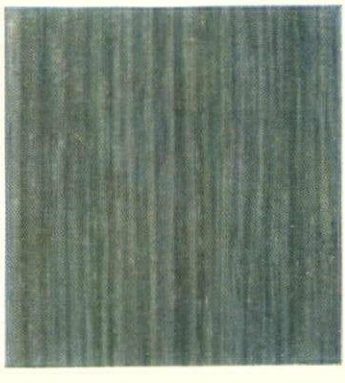
"Sea Rock," No. 3037

One of many patterns available in the realistic Karnean Marbled effects. In the small illustration it is impossible, of course, to do justice to the wonderful coloring and veinings.



"Zuyder Zee," No. 2600

In this and other patterns of *Sealex* Embossed Inlaid Linoleum, each tile is slightly *raised* above the "mortar line"—giving an interesting effect of texture and surface.



New Jaspé Effects

The new pastel shades in *Sealex* Jaspé Linoleum will be welcomed by architects who realize the possibilities of this subdued, yet decorative, type of floor. Illustrated here are "Roseglow" and "Lake-blue."

BONDED FLOORS are floors of *Sealex* Linoleum and *Sealex* Treadlite Tile, backed by a Guaranty Bond issued by the U. S. Fidelity and Guaranty Company. They are installed by Authorized Bonded Floors Contractors, located in the principal cities of the country. Only firms of exceptional standing in their communities are given this authorization. Authorized Bonded Floors Contractors are the pick of the country's flooring contractors—that is why we can afford to back their installations with our Guaranty Bond.

CONGOLEUM-NAIRN INC., *General Office:* Kearny, N. J.

BONDED FLOORS

SEALEX LINOLEUM AND TILE BACKED BY A GUARANTY BOND

See preceding page

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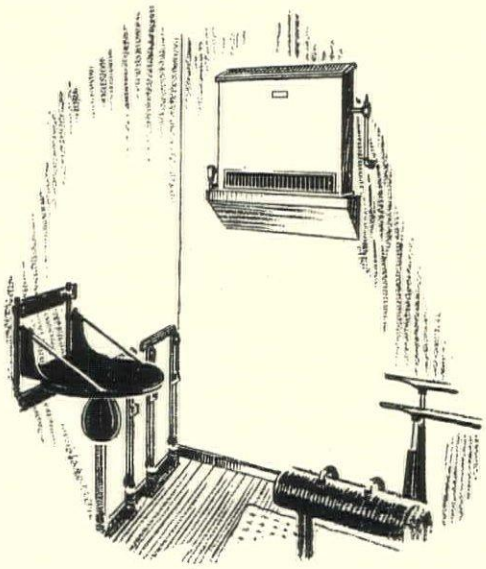
"The PeerVent Unit System has always given the maximum amount of fresh air demanded. *I specify the PeerVent Unit System in all my school work.*"

Most architects know that they can safely specify PeerVent Systems.



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Looking Back on Fifty Years of Architecture

(*Continued from page* 41)

quality which we can now appreciate in our building operations has been due very largely to the efforts, to the foresight and the energy of the few great leaders of our profession. While a great deal of it is, of course, due to the business methods of our great builders, the architecture of America today is truly an architectural development.

FIFTY years ago we had no steel for construction, no reinforced concrete, no real illumination even at any price, no electricity, no science of steam heating, no telephones, no elevators. Cut these factors out of a building today and see where we would be. I remember in 1882 seeing a 15″ beam fall off a truck on Broadway and split longitudinally the whole length. That was the kind of rolling we had to depend upon in those days. When Tremont Temple was built in '93 we could not feel sure of deliveries of steel beams and consequently the structure was built wholly of iron furnished by the Cooper Hewitt Co., and was, I believe, the last job put out in iron. At that time we were also confronted with the problem of electric distribution. Remember that the electric light was invented only fifty years ago and it was several years later before the science of electric wiring was applicable for building.

One of the first houses with which I had to do in Boston was to be wired with that innovation, electric light. That was in 1882 and instead of any system of conduits, the distribution of wires was most simple. After the scratch coat of plaster was on the walls the architect would locate the outlets, and would determine where the wiring was going. Then a workman would score a channel in the somewhat soft plaster, run ordinary Underwriters' wire in those channels, cement the wires in place with a few dabs of plaster of Paris and then skim over the whole wall and that was all the insulation we had. That house is still in existence and tests out apparently perfectly well, but of course a construction of that kind would be absolutely forbidden today. Next a system of conduits was devised consisting of paper tubes which were built into the walls, or run through the timbers most any way, and an improvement was made by casing these tubes with thin brass.

When we built Tremont Temple in '93 it seemed as if this was not sufficient, and by the way, we could not then prevail on any electric contractors to figure on that work, simply because there were hardly any then in existence, and the contract for the wiring work had to be placed with the Edison Company. I interviewed Pettingell-Andrews at that time as to the possibilities of furnishing iron pipe in which to run the wiring, and after due consideration they told me that they could not furnish such material, the market was not right for it and they had none of the fittings, so we had to content ourselves with the brass-armored paper conduit, which is still in the building, though how much of it is waterlogged by this time nobody knows.

And the plumbing! We simply did not have any. I remembered so well my college days. For all of those four years I never had a bath in a tub. There were no water closets in existence and such a thing as hot water service for a building was a luxury not dreamed of. The first precursor of today was the old Jennings closet, a hopper with a big body of water and a 4″ valve which was raised by hand like a plunger and allowed the contents of the bowl to escape—sometimes, and sometimes things got pretty well gummed up and then the plumber had another job.

Henry C. Meyer perhaps more than any other individual developed modern sanitary plumbing, both through his manufacturing interests, to which the Meyer Sniffen Co. succeeded, and through his able paper, "The Sanitary Engineer," which later became "The Engineering Record." He found the market all shot to pieces with dealers trying to see how light they could make the lead work, how inexpensive the pottery and how fragile the fittings. He deliberately turned the other way and made them just as heavy as the market would stand and as durable as he knew how to make them and everybody had to follow his example.

There were some good mechanics in those days and much of the plumbing of fifty years ago is still giving good service but the system has been almost entirely remodelled and so many different factors have been introduced that the old plumbers, like William Lamb would hardly recognize the work of today. I remember as late as 1885 the awe with which we contemplated a solid porcelain tub which was to be installed in a Beacon Street house. It had to be lifted in place with a derrick and was a pretty clumsy affair measured by today's standards, but it was a good beginning. The water closet tank still exists as a hold-over from the past. It is an intermittent nuisance at the best and generally out of order and the flush valve slowly but surely is driving it out of existence.

THE AMERICAN ARCHITECT was founded in 1876 That is a little more than fifty years ago. The debt which the profession owes to William R. Ware for his patient, untiring struggle on behalf of the profession cannot be told, but certainly there is no one factor which has contributed so much to the development of our profession as the labor of those early days of "The American Architect" when everything was so new and so raw and at times so hopeless. He made a brave but a losing fight and departed leaving to his successors the task of picking up the lines which he had laid down so well. We had no draughtsmen in those days. Few architects remember that Ware on his own initiative got hold of a clever Scotchman, D. A. Gregg, and trained him until he became the leading architectural renderer in this country. His technique set a style which is still followed by the young men in our schools, and the drawings which he left are still almost without peer in the use of the pencil and pen. The earlier drawings of Mr Gregg were dry, harsh and uninteresting and it was to Mr. Ware and also to Mr. Gregg's co-worker, Mr Eldon Dean, that we own the brilliant succession of draughtsmen who followed. W. W. Bosworth received a very considerable proportion of his early training under Mr. Ware and his associates. Mr. Ware at one time offered a small prize carrying with it travel and study abroad and the first winner of this prize was Mr. Alber

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Kahn of Detroit, who has achived such a brilliant success in his profession.

The list might be extended indefinitely. My own obligation to Mr. Ware is a very great one. With his advice he started me right in my professional studies and during the years that I was in Europe he allowed me to be a continuous contributor to his columns, a privilege which I found was not measured by the amount of money which it paid me, but rather by the enlarging of my horizon and the opportunity to broaden out.

FIFTY years ago we knew practically nothing about steel construction, or even iron. I remember designing a very heavy girder in 1882 for an addition to R. H. White's store. There was an ancient formula in Trautwine which was supposed to give the required cross section of the girder, but in my ignorance I worked out the section of each flange and then I carried this whole section not only clear across the whole length top and bottom, but up and down on each end, probably doubling the weight of the girder itself without adding to the strength. As I remember it, the girder was about 40 feet long and we thought it was something phenomenal, for it had to be brought to the place by sixteen of Mr. Norcross' horses,—we did not have electric trucks in those days. And then it was only in the early '90's that steel skeleton construction began to be really accepted by the profession.

I remember in 1891 walking across the Common one day when I was overtaken by Walter Winslow, who at that time was one of the leading architects in the city. He caught up with me, and placing his hand on my shoulder, he said, "Blackall, you are a young man and I want to offer you some advice. You are just beginning your career as an architect and you want to avoid mistakes. I understand that you are about to erect a building at the corner of Washington and Water Streets and in that you are about to use that abominable steel skeleton construction which has come to us from the wild and woolly west. Don't do it; you are sure to have trouble." "Well," I said, "what would be the trouble?" "Why," he said, "we know that steel expands with heat and contracts with cold, that a column 125 feet high will expand during the middle of the day at least 1" over its length at night, consequently there will be a movement up and down, and it is only a question of time when the inside plaster will be cracked at every ceiling line and the outside brickwork will be shaken loose and fall to the ground." I said, "Well, I am sorry, but the frame is all ordered and I am afraid it is too late." Within two years he was using the same construction and none of the evils that he anticipated occurred.

I remember also the statements which were made about the 18-story building which Bruce Price built opposite Trinity Church on lower Broadway, New York, to the effect that this building, which was a tower and somewhat isolated, girated in an arc of a circle following the sun and that the vibrations were very perceptible inside the building. For curiosity some of the parties at interest were persuaded to suspend a piano wire from the top of the building down through the open stair well, a drop of some 16 stories, with a heavy plumb-bob at the base. Not the slightest movement of any sort was recorded. We still hear even today statements to the effect that the Flatiron Building will vibrate so that the fixtures will rattle inside and the sway of the building can be detected from the ground, which, of course, is absolutely absurd. Never in the world were buildings built so well, so scientifically designed as today, and that is all within the last fifty years.

But one factor which has made these tall buildings possible is the elevator. Mr. Nathaniel J. Bradley in his day was probably the most influential architect in New England. I heard him make a statement in 1882 that he did not believe in elevators at all, that he thought no office building should be built more than 4 stories high, and that if a man was not willing to walk up three flights of stairs to his office, he had better keep out of business. Then I remember a little later that the wise ones maintained that the limit in height to which a building could be economically designed was, at the most, 18 stories, because in proportion as the building increased in height, more elevators would be needed until ultimately the elevators alone would occupy the entire ground floor. The absurdity of his reasoning did not appeal to anyone in those days. The elevator people kept right on just the same, increasing the speed, increasing the safety, and now there seems to be no limit, as far as the elevators are concerned, and a building could be 1,000 stories high and yet be well served.

The suggestion was made many years ago and a patent obtained on a system of elevators which would run tandem in the elevator wells at intervals of perhaps 200 feet, going always in the same direction, up on one side and down on the other, to operate independently just as cable or electric cars are operated now on the street. This patent, I believe, is still held by the Otis Co., and when we go above 1000 feet for our buildings, possibly we may then find that the situation will be met quite as the buildings above 18 stories were met years ago.

IN the early '80's Mr. Richardson was at the height of his power and was dazzling the young men with his creations in the style of the French Romanesque. It seemed so easy to copy his motifs, to throw in facings of pink granite and brown sandstone with dabs of spiky carvings at intervals and a few knowing, round arches, and for awhile it seemed as if everyone wanted to do Romanesque, but before the decade was over the influence of McKim had swept design into the noble lines of the Roman Renaissance. That was about the time we began to build skyscrapers and I remember reading a paper at one of the conventions of the American Institute of Architects which I thought was very knowing, demonstrating that the proper way to design a tall building was to give it a strong base, a plain shaft and a crowning cornice.

Mr. Richardson used to say that an architect was one who built "cornishes and colyumns" and certainly the "cornishes and colyumns" endured for many years. Indeed it was only just within the last five or six years that the cornice has disappeared from our tall buildings and columns ceased to be an architectural necessity. Even in the lower and more humble buildings the cornice has given way to the plain, embattled top. The change has been for the good. The earlier successes, such as the Hotel Shelton, The American Radiator Building and the Barclay-Vesey Telephone Building, were vigorous and notable in every way, but have called out many innovations not always showing equally careful design,

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leaning to the queer and fantastic in detail rather than to any reminiscence of the Italian Renaissance.

Fifty years ago I said we had no schools. That is not quite correct, for the Massachusetts Institute of Technology was founded more than fifty years ago and the name of another Ware is inscribed on the tablets of architectural memory. Prof. William R. Ware was the father of architectural education in this country and was for many years the last, final arbitor on all competitions, on matters of taste and design. From Boston he went to Columbia and put that on its feet, but the architectural schools were not the only development in architectural education. The Architectural League of New York was founded in 1880 by a few earnest students banded together for mutual improvement. It has come to be a great factor for good in architectural education and from it has grown the Beaux Arts Society and the Boston Architectural Club, both of which have continued for years to exercise a great influence.

WE had no travelling scholarships fifty years ago. The Rotch Travelling Scholarship was endowed in 1883. The 45th holder of the Scholarship will go abroad next spring and the list of men who have held this prize with distinction would include some of the most notable architects in the country. It was the first travelling scholarship in architecture. Since then the number of scholarships has greatly increased until nearly very large university has its scholarship and there are numerous organizations which offer opportunities to young men.

We have gradually evolved from the tutelage of the Ecole des Beaux Arts, and while our students still go to Paris and still study the methods there used, there is a growing feeling that the time has passed by when an American can get from Paris the kind of help which would be available for current practice. Fifty years ago the United States ranked last among the great nations in art and architecture. Today some of our European critics admit that our architecture leads the whole world.

Our advancement in architectural practice has not been without some drawbacks. In the old days the relation between the architect and the draughtsmen was a very intimate one. Architectural firms were rather the exception and one man was the recognized head of the office, doing some of the drawing with his own hands, supervising nearly everything and superintending as well. Now that condition obtains only to a limited extent and only in the smaller offices. Larger organizations are business units and include a structural department, which is often quite independent of the design; a drafting department, which again has little to do with the inception of a building—and a complicated business department which has to do with nothing but the functions of costs and values. The architect in a large organization today is isolated from his men. Offices employing as high as 200 or 300 draughtsmen are manifestly unable to bring about any feeling of pulling together or co-operation, but that very feeling was the binding force of the older days. We knew our bosses and they knew us. We went to their houses, even sometimes we picnicked with them and we were given an opportunity not merely to copy the drawings which a head-draughtsman or head-designer would turn out, but actually to try our hands ourselves at portions of design and then to talk with the contractors and see that the work was carried out in the building. All of that gave to the architecture of the early '90's a character which is not found in the work of the last ten years. We have undoubtedly gained a great deal in monumental treatment and in business co-operation, but we have lost a good deal of the finer touch and the spirit of all pulling together which men like McKim, Peabody & Stearns or Richardson were able to inculcate into the young men who went out from their folds.

No group of draughtsmen can do a skyscraper today and have the real fun out of it that McKim's office had out of, we will say, the Madison Square Garden. The draughtsman has become simply a cog of the wheel, except in the case of the few at the very top. Whether this is going to work out for good or for evil, only time can tell, but one cannot help a regret for the old system where the architect-in-chief was father to all and started the draughtsmen as office boys, expecting them to grow up with him and not be lured away by higher wages or glittering prospects until their education was complete. We would not go back to the old ways, but we can regret that some of that spirit is so hard to find today.

And speaking of draughtsmen, there is the ever-present question of women in architecture. Our leading schools have quietly discouraged women in architecture, but they have not taken the snub and their number is increasing every year. Some of them do admirably, but as one architect put it, you can neither damn them nor kick them out, and there is a feeling all the time that they are tolerated rather than welcomed, but they are surely in the profession to stay, and there seems to be no good reason why there should not be plenty of opportunity for women with the right talent and the right point of view to fill successfully important positions in organizations which go to make up a modern architectural shop. A woman architect was unthinkable fifty years ago, but we have changed that.

And finally, alluring as the past may seem in retrospect to some of us old-timers, we know that there has been no time like today, that the opportunities were never so large or so alluring. It is not simply that we build 50 or 100 stories today where we built 8 or 10 with fear and trembling only such a short while ago. It is not that we talk in millions where before we talked in thousands. It is not that the final problems are so much easier solved, but deeper than that, there is the growing expression of our civilization through architectural forms which has surpassed anything we could have hoped for.

The real architecture which is finding expression today is fitted to its purpose, may be eccentric at times, is uncertain in details, as all new work is, but is alive and throbbing with intense artistic possibilities. We thought we were living fifty years ago and we did, but ours was a small horizon compared with what lies before the well equipped young architect of today. We like to think that the past has made the present possible.

As we look at the future, we ask ourselves, "What next!" It requires a vivid imagination to conceive of how American architecture can develop as much in the next half century as it did in the one which is just closing. Surely it will be something wonderful. Surely, as Mr. Burnham so well put it, our efforts of today will seem puny beside what is coming, and our grandchildren will not need to look back to us today to measure their own progress.

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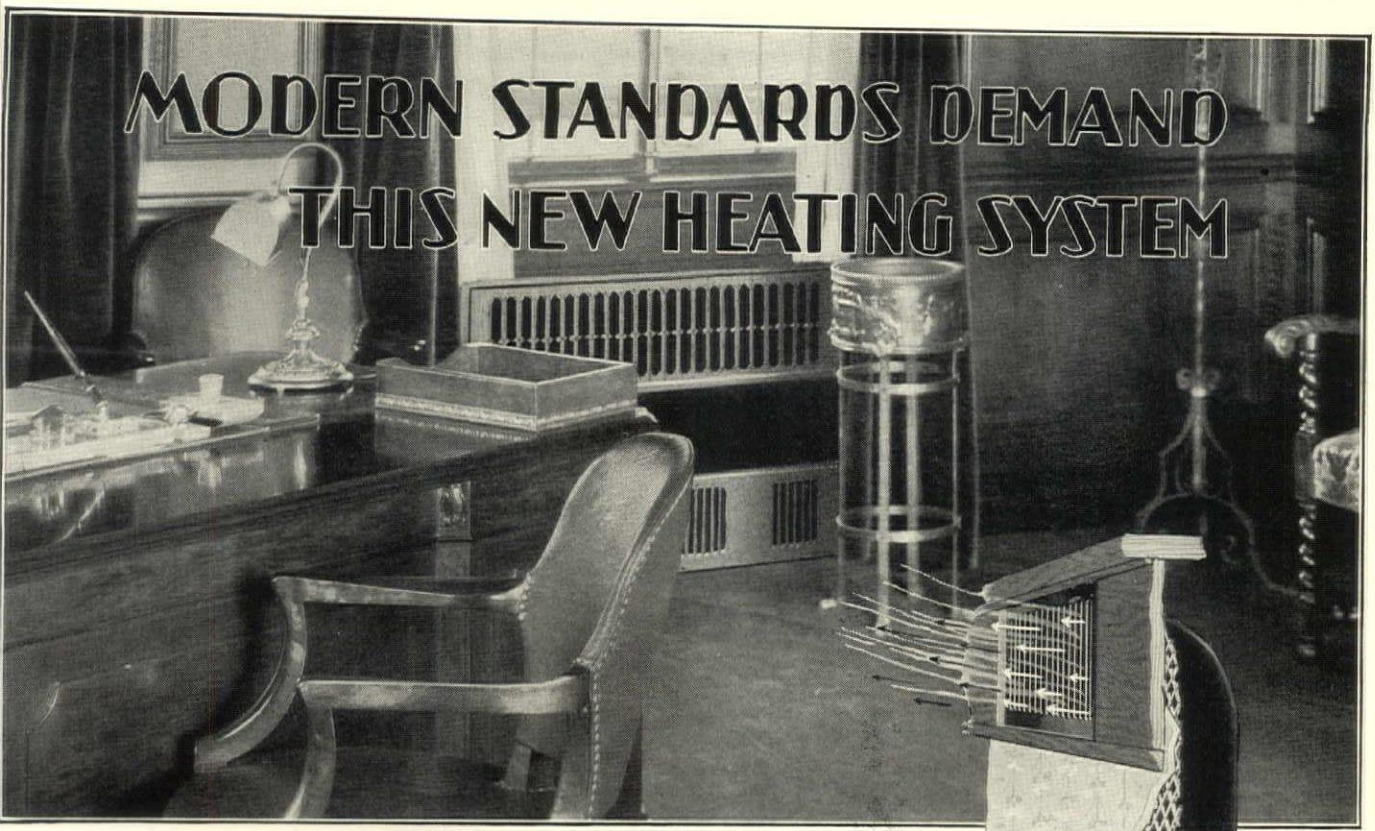

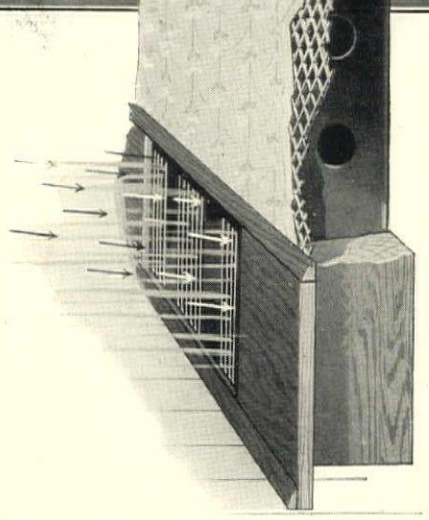

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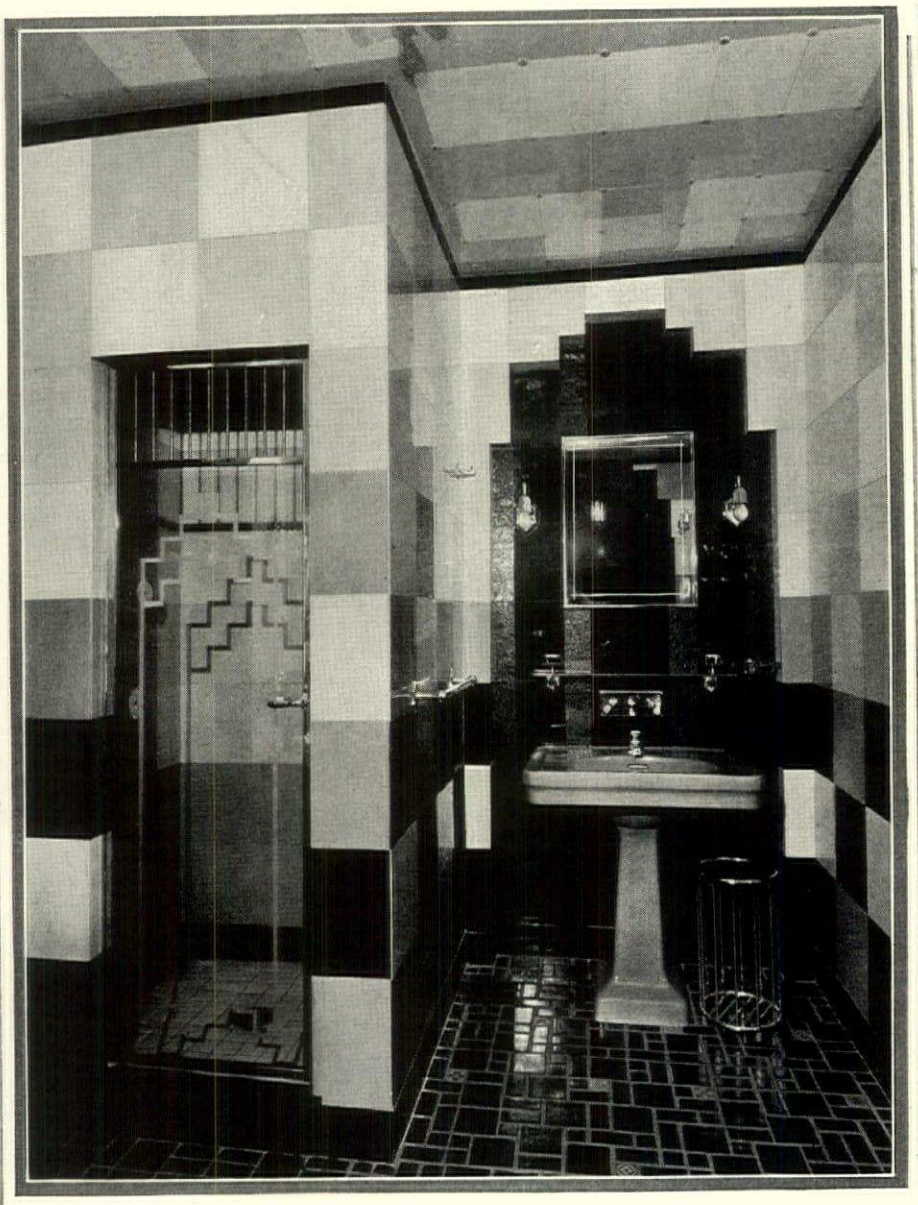

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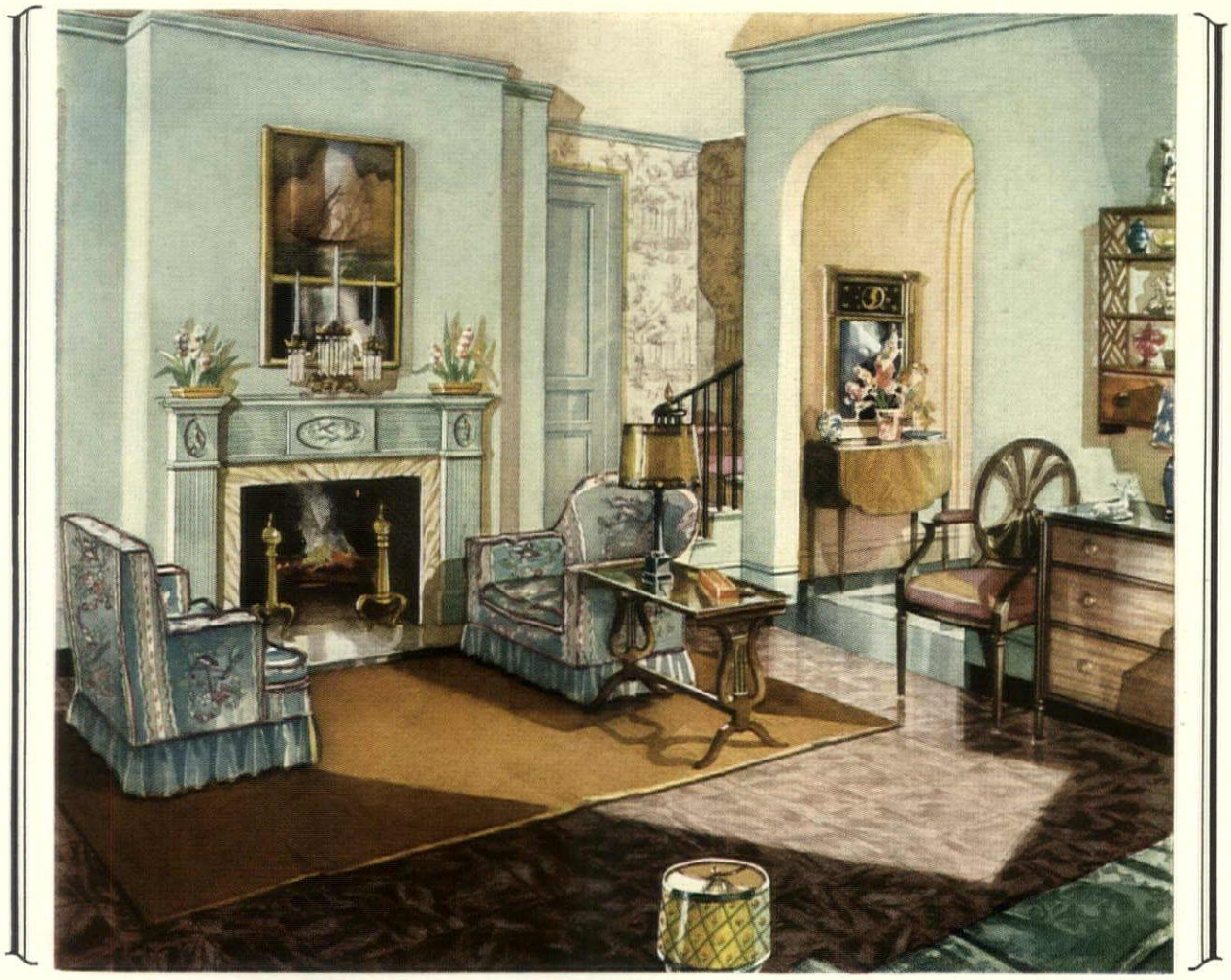

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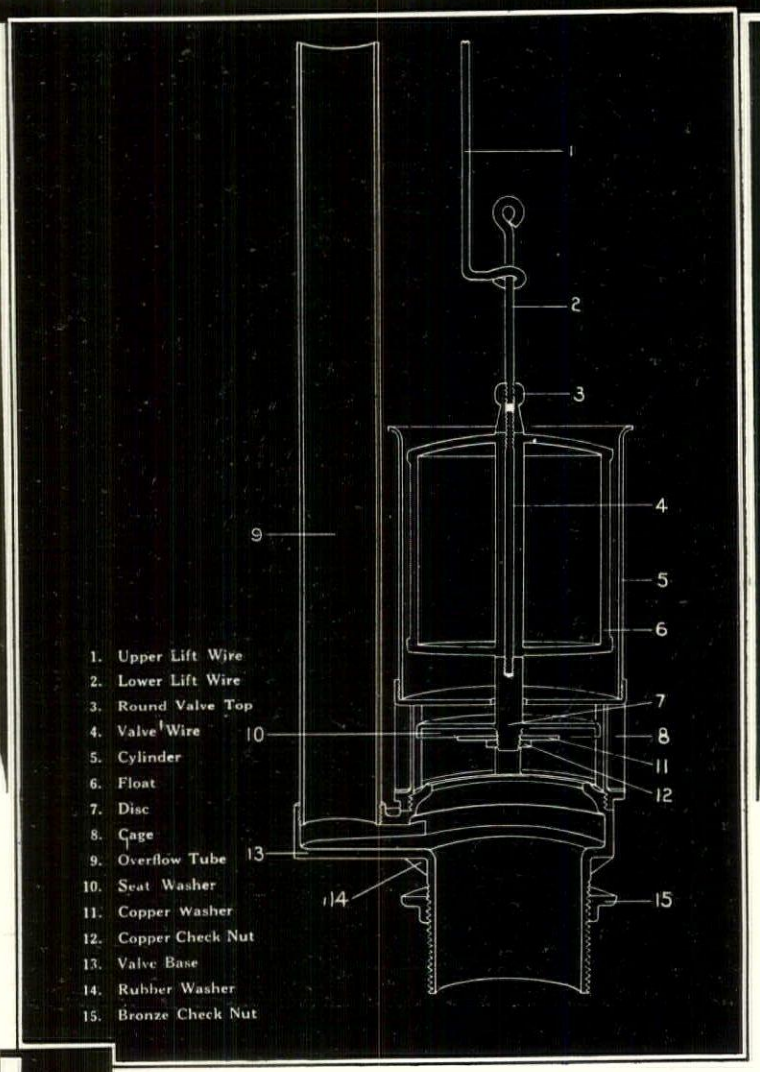

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Will the Prospect Rent?

(*Continued from page* 54)

the renting agent. Many of the sketches prepared by the lay-out man provide for the placing of each desk, chair, table or file cabinet in position on the sketch.

At times, even the lay-out man is unsuccessful in having the tenant visualize his offices in certain areas and so, through the medium of chalk-line or narrow wooden strips, he marks out on the floor of the area to be rented the outline of the various offices in actual scale showing door openings, location of furniture, relation of one department to another and in a very few minutes actually gives the prospective tenant much more information as to the merits of the space in question than can any amount of sales talk.

WHEN the tenant has decided to take space in the building, leases are drawn by the renting agent and signed and the sketches previously made by the lay-out man are then placed in the hands of the regular building architects and actual working drawings are prepared by them. In many cases the working drawings are made by the lay-out man. In that case the architect's contract does not call for the preparation of working drawings for the tenant subdivisions. All sketches, notations and specifications that have a direct bearing on the tenant change are turned over to the architect. These he must endeavor to incorporate in the finished drawings of the project.

It often happens that minor changes will be noted on the finished drawings when comparison is made with the sketches. This is inevitable, and the renting agent or building manager should, previous to this time, forewarn the tenant of just such a contingency. The impression must be conveyed to the tenant that the sketches are rather elastic and subject to minor alterations. Various reasons are responsible for this: to illustrate, it might involve an excessive outlay of money to locate a lavatory at a certain place. The solution of course is to move the lavatory in close proximity to a wet column.

It might be well to differentiate between the different kinds of columns. Roughly, they might be classified as follows: the dry column, the wet column designed to take care of lavatory requirements only, and the wet column laid out to take care of both lavatory and toilet requirements.

A dry column, of course, requires no piping of any kind to run up alongside of it, therefore the necessity of any furring is eliminated. It is necessarily a good deal smaller than the ordinary wet column.

The necessity for proper lavatory facilities makes it imperative that almost all columns be supplied with hot and cold water, soil and vent. In many instances a gas line is provided. When for lavatory use only, the soil line should not be less than 3" and the vent should be of the same size. Most wet columns are of this type.

The other wet columns requiring provisions for both toilet and lavatory facilities usually differ only in the size of the soil line and the vent line. This type of wet column is usually located in close proximity to a window for proper ventilation.

Then, too, there is the question of complying with the city ordinances. In some cases the limitations of room sizes are governed by the code; ventilation, mechanical or otherwise, must adhere to certain requirements, etc. In sketch form these items receive only passing attention, but in the preparation of working drawings these items become more important and often necessitate frequent changes from the original sketches.

The city ordinance for Chicago, Illinois, insists on these specific requirements so far as ventilation is concerned. The following paragraphs from the municipal code cover it thoroughly:

"In every building hereafter erected for or converted to the purposes of this class, every room not otherwise specifically provided for in this section when practicable, shall have a window or windows opening directly upon a street, alley, yard or court. The total area of such window or windows shall not be less than 10% of the floor area, and at least one-half of each window shall be made to open.

"If the total area of the windows is less than 1/10 of the floor area, or if less than 50% of the window is arranged to open, an approved mechanical ventilation supply system shall be installed for the excess floor area, fresh air being supplied at the rate of not less than one and two-tenths cubic feet per minute per square foot of floor area. The supply shall be taken from the outside air at an uncontaminated source through a screened opening at a point not less than ten feet above street level, except that if an air washer or other cleansing medium, approved by the Commissioner of Health, is installed in connection with the system, the supply need not be taken from this height."

So much for items of this nature. Further rules governing the regulations of ante-rooms and reception rooms are likewise specified in the code, but sufficient space has been devoted to that subject to give one a general idea as to what is required in the way of providing for ventilation.

LET us now assume that the working drawings have been completed and approved by the tenant. His signature is obtained on the tracing; the building manager likewise affixes his signature, attesting that the working drawings are entirely satisfactory to the building corporation, and that they likewise agree to construct the space according to the plans prepared by the lay-out man or the architects, whichever the case may be.

By this time the general contractor presumably has his work far enough advanced to turn his attention to tenant layouts. He proceeds to move men and materials to the space which is to be constructed. While, so far as he is concerned, these revisions are important and he constructs them according to the working drawings proposed by the architect, still his main objective is to complete the building as soon as possible.

At this point the probable condition of the building has advanced to this stage: the general contractor has now substantially completed his work, leaving the major

portion of the space not subdivided. An inspection tour of the building would reveal whole floors entirely vacant, clean and glistening with only what is known as "wet columns". Hot and cold water risers, waste and vent piping run up alongside the concrete columns. These risers are furred in, giving the columns added length or width, whichever the case might be.

In most instances it will be noted that the public corridors are already placed, although on some floors they have been omitted. The reason for this is that an occasion might arise where a tenant might assume two or three or even more entire floors. These corridors would then be of no material value to him, rather, they might act as a handicap as far as his lay-out would be concerned. Inasmuch as corridor construction, and especially the marble work, represents quite an outlay of money, these items are carefully considered by the building manager.

IT is imperative that the building manager should have a knowledge of building construction. He should likewise possess the ability to read blueprints. This particular knowledge will be of value to him now, for to a large extent he must take upon himself the completion of the remainder of the tenant revisions. His first objective is that of building up an organization and of carrying on to completion the construction work that is to follow. He must exercise good judgment in the hiring of his men, employing capable foremen who in turn must employ competent mechanics skilled in their respective crafts.

Materials necessarily play an important role in the subdividing of tenant revisions. The modern office building finds it poor economy to attempt to use inferior grades of material. Public taste, as far as the newer office buildings are concerned, has been educated to a high standard with reference to the interior treatment of its office buildings and no owner or corporation can afford to run the risk of jeopardizing his position with the public by the substitution of cheap materials in the treatment of its tenant revisions.

To gain a comprehensive idea of the kind of materials essential to a typical subdivision, it might be interesting to follow the method of procedure in the construction of a typical office subdivision.

After the building manager has received the blueprints known as the working drawings, he keeps a number of these in file, one is attached to the tenant's lease and the remainder are transferred to the building foreman. He in turn distributes them to various foremen in charge of construction of their particular trades, such as the plumber, electrician, painter, mason, marble setter, etc.

The carpenters are the fore-runners. They examine the plans carefully and begin to mark out with a chalk line the location of the various partitions. After that they begin the setting of the door bucks. These bucks, usually made of Norway Pine, are the "plowed out" type which serve to give a strong bond between the door and masonry construction.

The first bucks have barely been set in place and properly anchored before the masons arrive. The building laborers have anticipated them and have already moved to converted places sufficient gypsum blocks or hollow clay tile necessary for the erection of the interior partitions.

MEANWHILE the plumbers have been busily employed at their trade, running the roughing-in to the location of the lavatories. These lavatories are usually the pedestal type enclosed in a cabinet. These cabinets are commonly known as "typical units" and are differentiated by letters, such as "Typical Unit A", "Typical Unit B", etc. These units are divided into two types, the free-standing type or the built-in type. These types may include a single unit or a double unit. The double unit is a combination wardrobe and lavatory cabinet. It measures approximately 2′0″ in width, 5′0″ in length and 6′0″ in height. As indicated, it is divided into two parts, one part devoted to wardrobe facilities, contains a pole and shelf conveniently placed to allow for the hanging of wraps, etc. The other part, the unit containing the lavatory, is supplied with a mirror above the lavatory and a pull chain electric light outlet for proper illumination.

The electricians have been in the meantime channeling wherever necessary to run their oval duct to the locations indicated on the plans. Ceiling outlets in the various offices are centered and base receptacles, fan outlets, switches and switch plates installed. The handling of light fixtures is usually done after the decorating is completed. This fixture in most instances is a fully enclosed, semi-indirect, translucent one.

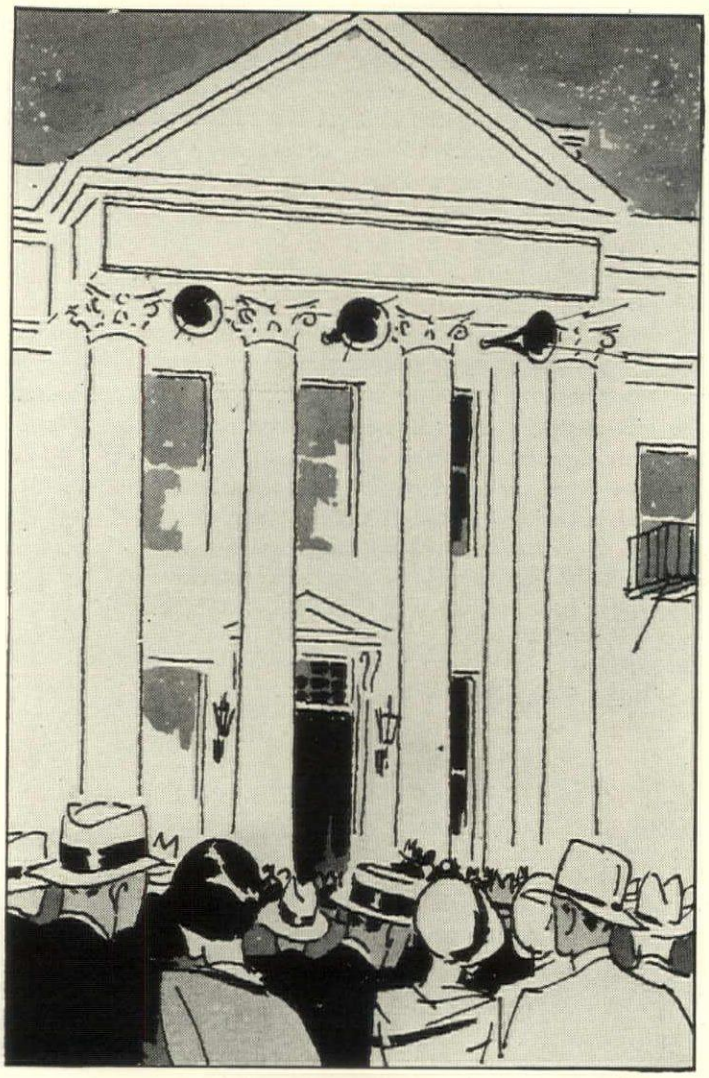
The plasterers have been following closely upon the heels of the masons. Either a two or a three coat job is used. The three coat job consists of a scratch coat, a brown coat and a finish coat. After the plastering is completed, sufficient time must be allowed for it to dry before the carpenters commence trimming.

The type of trim used varies in different buildings. Modern structures are inclined to use either a gum, birch, walnut or mahogany trim. Of the four, the last two mentioned are preferable. Both take an excellent finish and are readily worked. The trim is usually limited to the base, picture mold and casing around doors and borrowed lights. Cornice mold and chair rails are being largely eliminated in modern offices, the tendency being to cut out any items that possess little or no decorative value. In many cities the code specifies that metal trim be used in preference to wood.

AFTER the carpenters have finished trimming, the only remaining work left is the decorating. This is usually a calcimine job. A size coat is first applied to the ceiling and wall surfaces. Care must be taken to see that the plaster is thoroughly dry. This coat may be either a hard oil or shellac size, the latter being the most desirable where the element of quick drying is to be considered.

With the completion of the decorations the space is ready for occupancy by the tenant.

While the foregoing may, to the average reader, seem to be almost a diary of details, yet it is this very exacting detail that both architects and owners recognize as a great contribution towards the financial success of the office building. When the interiors of buildings are constructed in the order mentioned, it is rare that changes are made until such time as the tenant's lease has expired, in which case the premises may have to be



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readapted for the occupancy of a new tenant. Even then great savings have been established, as in many instances it has been proved that the original office will be accepted by a new tenant as it was originally constructed.

HOWEVER, there are still problems to be met and considered in the construction of space. A wide discrepancy of opinion still exists as to the many conditions that present themselves in tenant subdivisions. For instance, in the preliminary stages of design, the question of column spacing determining the width of offices is important. Columns spaced 17 feet on center will readily subdivide a space containing two small private offices and a reception room. These are what are usually known as the minimum sized offices and measure, inside dimensions, approximately 8'6" x 14'0" or thereabouts. Each private office has a window giving sufficient light and ventilation. Inasmuch as fully twenty-eight percent of the offices rented take approximately 500 square feet, due consideration should be shown the tenant who desires this amount of floor space.

Then the item of attic stock is significant. By this is meant the surplus material turned over to the building manager by the general contractor upon completion of his contract. These items usually consist of trim, plumbing fixtures, electrical fixtures, etc. An inventory of these items must be carefully made and the list of attic stock kept up to date. In this way the building manager can keep himself fully informed as to what items he has immediate need of, and it enables him to place his orders accordingly. In this manner he can avoid a loss of time as far as construction is concerned.

There seems to be a growing tendency to use metal instead of the usual tile and plaster partitions. Whether these partitions will eventually take the place of the tile partitions is problematical. At least it will be interesting to know developments in this line.

Much more could be written in regard to this subject, but this in general gives an idea as to some of the problems encountered in tenant layout subdivisions.

How Much Insulation to Use

(*Continued from page 29*)

cent is considered sufficient, a thickness of 3.2 in. of insulation should be used, whereas at a desired 35 per cent return, the thickness of insulation becomes zero.

Although under ordinary circumstances a high return on the expenditure involved is desirable, the same fundamentals do not apply in the case of investments in insulation as in the case of investments in collateral securities. A certain amount of insulation is requisite in most cases to reduce the heat losses of the building to a point where the fuel consumption will not be excessive. A lesser thickness might not be sufficient to adequately retard the passage of heat through the walls or roof of the building, under which circumstances the owner would merely be buying more heat from year to year in the form of fuel, instead of making the original expenditure for insulation. In other words, it is a matter of balancing "the original cost" of the insulation against the "upkeep" in fuel.

Considerable difference of opinion exists as to what constitutes the proper return on the investment for problems of this nature. Obviously, too much as well as too little insulation can be used. If too much insulation is used, the return on the investment will not be sufficient for the expenditure involved. If too little insulation is used, there will be an extravagant loss of heat. Money is usually worth about 6 per cent, and some believe that the estimated return for the investment in insulation should be not less than 10 per cent, whereas others are of the opinion that 20 per cent is the minimum to be expected. Still others feel that even more than 20 per cent should be expected for an investment of this type, even when bearing in mind the foregoing statement regarding the extravagant loss of heat with too little insulation and the corresponding high return. The author generally has used 20 per cent as the economic basis.

If, in certain cases, the thickness of insulation required is found to be say ⅞ in. based on a return of 20 per cent, and the nearest commercial thickness of the insulation contemplated is ¼ in., the problem can be reversed and the return determined for this thickness by substituting the proper values in the formula and solving for r. As previously stated, however, the value of z (the cost of insulation) used in Formula (1) should be based on a 1 in. thickness of insulation, even though the material under consideration is not manufactured or installed in that thickness. A simpler method of determining the return on the investment r is to substitute the proper values in Formula (2). It should be noted that z^1 is the additional cost per square foot of the insulated wall as compared with the uninsulated wall, and takes into consideration the cost of the thickness of insulation installed and not the cost per inch thickness per square foot.

$$r = \frac{4.2 \times (U - U_i) \times (t - t_a) \times c}{z^1}$$

where

U_i = coefficient of transmission of insulated wall in B. T.U. per hour per square foot per degree Fahrenheit difference in temperature.

z^1 = additional cost of insulated wall U_i over uninsulated wall U, in cents per square foot, for the thickness of insulation installed.

IT is generally understood that cold climates require more insulation than warm climates. This fact is very clearly shown by Fig. 4. The average temperature during the heating season in Chicago, according to Weather Bureau records, is 36 degrees, and for the conditions assumed in the original problem a 1 in. thickness of insulation would be required. If the same building were located in Memphis, Tenn., where the average temperature during the heating season is 50.9 degrees, no insulation would he required according to Fig. 4. This does not mean that insulation should not be used in Memphis, Tenn., but it does mean that for the condi-

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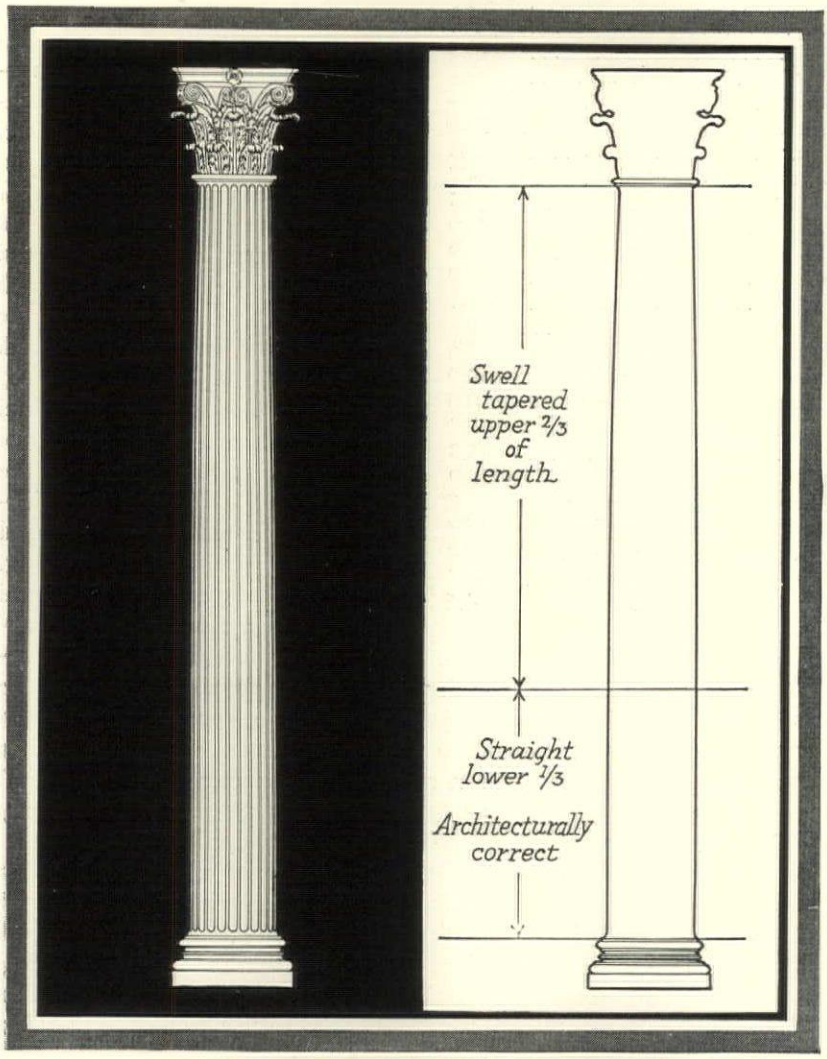

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tions assumed for this problem no insulation is required, if a return of 20 per cent is expected. It should be remembered that insulation is valuable in a warm climate in keeping the building cool during the hot weather, and that the value of the insulation for this purpose cannot readily be measured in dollars and cents, or in any other tangible way.

The average temperature in Duluth, Minn., is 25 degrees, and hence approximately 1.7 in. of insulation would be required for the same conditions that require 1 in. in Chicago. Devils Lake, N. D., with an average temperature of about 20 degrees would require more than 2 in. of insulation.

It is obvious that a building having thin walls of low heat resistance—that is, high heat transmission—would require more insulation than one having thick walls of high heat resistance. This fact is also borne out by Fig. 5, which shows the relation between the co-efficient of transmission of a wall (which is governed by the type of construction and materials used) and the thickness of insulation. An 8 in. concrete wall without interior or exterior finish, for which the value of U is 0.512, would require nearly 4 in. of insulation, as compared with about 2½ in. for an 8 in. solid brick wall without interior or exterior finish ($U = 0.385$), and about 1 in. for the same wall with an air space and metal lath and plaster as interior finish ($U = 0.261$). This thickness would also be required for the standard frame wall consisting of wood siding, building paper, sheathing, wood lath and plaster, for which the value of U is 0.262 according to the 1930 edition of the American Society of Heating and Ventilating Engineers Guide.

Average Outside Temperature

During Heating Season for Various Cities in the United States and Canada

STATE OR PROVINCE	CITY	AVERAGE TEMP. OCT. 3-MAY 1
Alabama	Birmingham	53.9
California	San Francisco	54.3
Colorado	Denver	39.3
Connecticut	New Haven	38.0
District Columbia	Washington	43.2
Georgia	Atlanta	51.4
Illinois	Chicago	36.4
Indiana	Indianapolis	40.2
Kentucky	Louisville	45.2
Maryland	Baltimore	43.6
Massachusetts	Boston	37.6
Michigan	Detroit	35.4
Minnesota	Minneapolis	29.6
Missouri	St. Louis	43.3
New York	Buffalo	34.7
New York	New York	40.3
Ohio	Cleveland	36.9
Ohio	Columbus	39.9
Oregon	Portland	45.9
Pennsylvania	Philadelphia	41.9
Pennsylvania	Pittsburgh	40.8
Rhode Island	Providence	37.6
Tennessee	Memphis	50.9
Utah	Salt Lake City	40.0
Virginia	Richmond	47.4
Washington	Seattle	45.3
Wisconsin	Milwaukee	33.0
British Columbia	Vancouver	41.7
Manitoba	Winnipeg	17.2
Ontario	Toronto	32.0
Quebec	Montreal	27.4
Yukon	Dawson	1.6

In the same way, the thickness required for any wall can be determined for the conditions involved by reference to Fig. 5, or for any other set of conditions, by substituting the proper values in Formula (1). The A. S. H. V. E. Guide for 1930 contains coefficients of transmission of over 1200 types of construction.

An interesting deduction relative to the limiting value of the conductivity of an insulation can be made from Fig. 6. According to this figure, if the cost of an insulation is 10c per square foot per inch of thickness installed, its use is not warranted if the conductivity is higher than 0.58. Any variation in the cost of the insulation would result in a corresponding variation in the limiting value of the conductivity, a lower cost permitting of a higher conductivity and vice versa. Hence, unless a material of high conductivity is sufficiently low in cost, it cannot be used economically as an insulation, while if the cost is high, the conductivity must be low. This would preclude the use of structural materials such as brick, stone and concrete as insulations since the cost of these materials for the degree of heat resistance obtained does not warrant their use for this purpose, where insulation is the sole requirement.

It will be noted from Fig. 6 that if an insulation has a conductivity of 0.45 and costs 10c per square foot per inch, only a ½ in. thickness is warranted from the economic standpoint, whereas if the conductivity is 0.33 and the cost the same, a 1 in. thickness is justified. If the conductivity is 0.25, the thickness is about 1¼ in. for a return of 20 per cent. It should be pointed out, however, that a greater thickness of a material of *high* conductivity is required to provide the same degree of heat resistance as a material of *low* conductivity.

In the foregoing discussion, no consideration has been given to the effect of the saving in radiation upon the thickness of insulation required, nor to the combined effect of the saving in fuel and the saving in radiation upon the thickness required. Both of these savings usually have a definite tangible value which can be directly evaluated and which therefore have a bearing on the thickness of insulation required.

The saving in radiation, of course, applies only to the initial installation and does not continue to pay a yearly return as does the fuel saving. Hence, if the thickness of insulation were based *solely* on the radiation saving, only a thickness which would exactly be paid for by the saving in radiation would be warranted, since under these circumstances there would be nothing gained by paying more for insulation than would be saved in radiation. Hence, in solving such a problem, it is necessary to determine the theoretical thickness of insulation for which the cost would exactly be balanced by the saving in radiation.

The coefficient of transmission of a wall having this thickness of insulation should then be determined, and the additional thickness of insulation required based on the fuel saving should be determined by substituting in Formula (1) the value of U thus obtained. The correct thickness of insulation to use would be the sum of the two thicknesses.

If, however, both the radiation and fuel savings are taken into consideration in determining the correct thickness of insulation to use, the problem becomes somewhat complicated and there is doubt as to whether this degree of accuracy is warranted in most cases, particularly in view of the many variables of questionable

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magnitude involved. Since more radiation is required for hot water heating systems than for steam heating systems, the item of radiation would have a greater bearing on the thickness of insulation required with the former than with the latter. On the other hand, the saving in radiation is of little importance with most of the indirect types of heating systems and, with warm air systems does not at all enter into the problem.

THE foregoing statement should not be construed as meaning that the saving in radiation usually should be ignored when a building is insulated, for in many cases this is an item of considerable importance. It does mean, however, that the fuel saving usually is a sufficient index of the proper thickness of insulation to use when this thickness is based on Formula (1).

There are certain special cases where the results obtained by the use of Formula (1) would not be wholly consistent because of variations in construction resulting from the installation of the insulation. Case I, Insulation used in place of other materials:—The rigid or board forms of insulation are frequently used in place of wood sheathing or wood lath in building construction. The proper procedure under the circumstances is to determine the return on the investment r from Formula (2) for the minimum commercial thickness of the material when used either as sheathing or plaster base. If the value of r is more than 20 per cent or whatever the minimum acceptable return may be, a greater thickness is warranted.

The same procedure should then be followed using the next commercial thickness of the insulation under consideration. For rigid type insulation, this thickness would in most cases consist of two layers of the minimum commercial thickness, one used in place of the wood sheathing and the other used in place of the wood lath. If the return on the investment is still too high, the process should be continued, adding successive thicknesses of the product under consideration until the value of r is approximately 20 per cent, or whatever the minimum acceptable value may be.

It should be understood that the rigid or board forms may be installed in such a manner that they are not used in place of other materials, and the problem would therefore not be a special case. For example, the rigid insulation is sometimes installed against the sheathing under the exterior finish, in which case, the value of y would be determined directly from Formula (1). Rigid insulations are sometimes used in old buildings for renovation purposes and applied to the interior surface over the existing plaster finish. Formula (1) would also be used in this case.

Case II, when the insulation is installed in such a manner as to increase the number of air spaces in the construction:—Flexible insulations, such as the so-called felts, quilts and blankets, are sometimes installed between the studding, joists or rafters in frame constructions in such a manner as to add an air space to the wall or roof. Rigid insulations are also installed in this manner in some cases. The procedure to be followed for determining the correct thickness of insulation to use is similar to Case I, which consists of a "cut and try" process involving the use of Formula (2). The minimum commercial thickness of the product under consideration is used first, and the process continued until the return on the investment obtained from Formula (2) is of approximately the proper value, e.g. 20 per cent.

Case III, When the insulation is installed in such a manner as to fill or occupy an air space:—The problem is somewhat different with "fills," which come under Case III, for they frequently can be installed in only one thickness. In frame construction, this thickness usually is 3⅝ in., the width of the studding. Since it is not possible in most cases to vary the thickness to obtain the proper return on the investment, there are only two conditions possible, that is, it either pays to use fills or it does not, depending upon the cost of the insulation, the efficiency, and the return on the investment. If masonry construction is used, it is possible to vary the thickness by changing the width of the furring strips, but if frame construction is used, the only means of varying the thickness is to baffle the space between the studding and to fill with the insulation one of the spaces thus created, but the expense involved usually would not warrant doing so in most cases. Furthermore, the problem would not be a special case under these circumstances, for the number of air spaces would not be changed.

CONCLUSION:—The proper thickness of insulation to use for the walls or roof of a building has been a subject of speculation among architects and engineers for some time. Up to the present time the thickness used has been governed largely by the recommendations of insulation manufacturers. These recommendations naturally have been influenced largely by the type and thickness of material promoted and sold by each individual manufacturer. The correct thickness to use depends on many factors which include geographical location, cost and efficiency of the insulation, cost of fuel, type of construction, and return on the investment. All of these factors, excepting the return on the investment, can be determined with reasonable accuracy. The amount returned on the investment is arbitrary, and although dictated largely by judgment, is fixed within comparatively narrow limits by common sense. In most cases about 20 per cent is a satisfactory figure, but a lesser thickness will give a greater return and a greater thickness a lesser return, other things being equal.

Strictly speaking, the saving in radiation should also be taken into consideration in determining the thickness of insulation to use, but it is usually sufficient to base the thickness on the fuel saving alone. The radiation *saving* should, however, be taken advantage of. Frequently it is an item of considerable importance.

There are certain special cases where it is necessary to deviate from the procedure set forth, but the solution of the problem is equally simple for these cases.

The elevator signal light for the Abraham & Straus department store, shown on page 43 of the February issue of THE AMERICAN ARCHITECT, was modeled by Maxfield Keck under the supervision of the architects, Starrett and Van Vleck.

The model of a house illustrated on page 27 of the December, 1929, issue of THE AMERICAN ARCHITECT was made under the supervision of William La Zinsk, architect, from sketches drawn by him.

Refectory in the Memorial Union Building, University of Wisconsin. Architect: Arthur Peabody. General Contractor: Pfeffer Construction Co. Plastering Contractor: George Thill.

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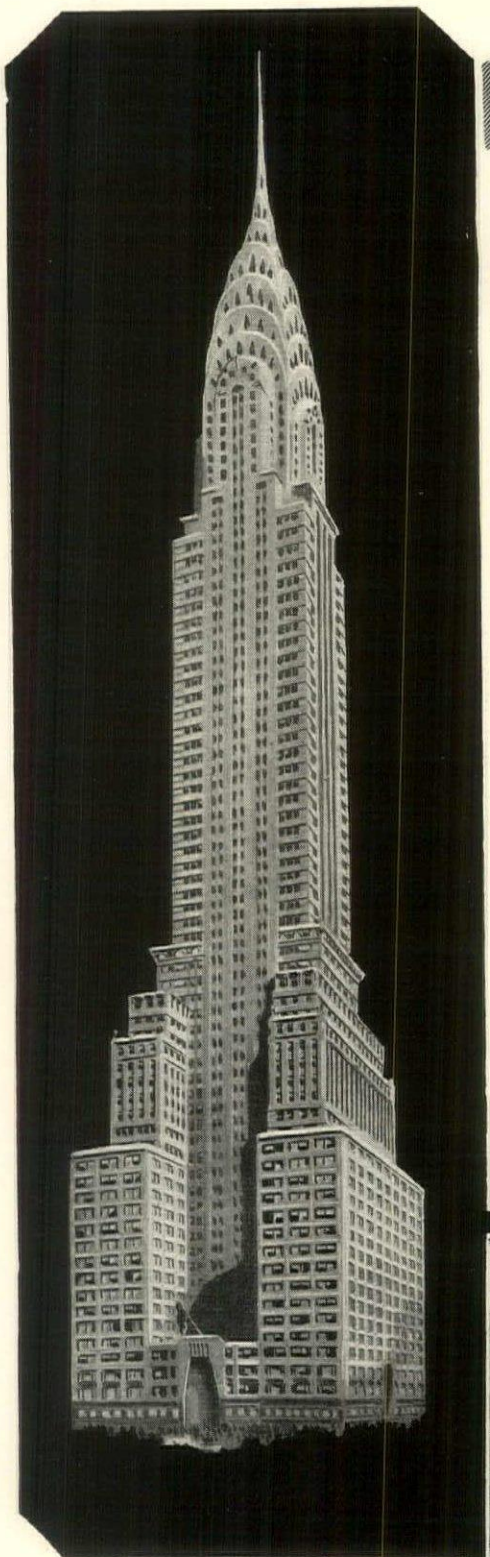

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ACHIEVEMENT

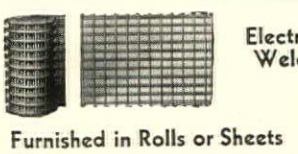
TYPIFYING the spirit of achievement in modern architecture, the new Chrysler Building also exemplifies the important part being played by wire fabric in every type of structural development.

Here — where cinder concrete floor arch reinforcement is called for, American Steel & Wire Company Wire Fabric is recognized as standard. Its definite factors of safety, its great strength and permanency, win for it the enthusiastic approval of architects and contractors.

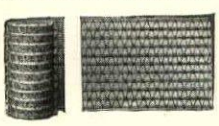
Information, including engineering data on Wire Fabric for concrete reinforcement, will be furnished on request.

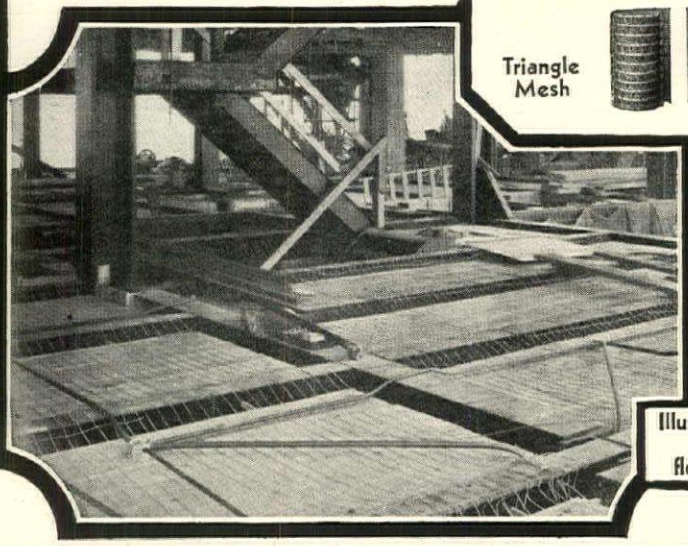
Wire Fabric

The Steel Backbone of Concrete



Furnished in Rolls or Sheets





Illustrating Wire Fabric used as floor reinforcement.

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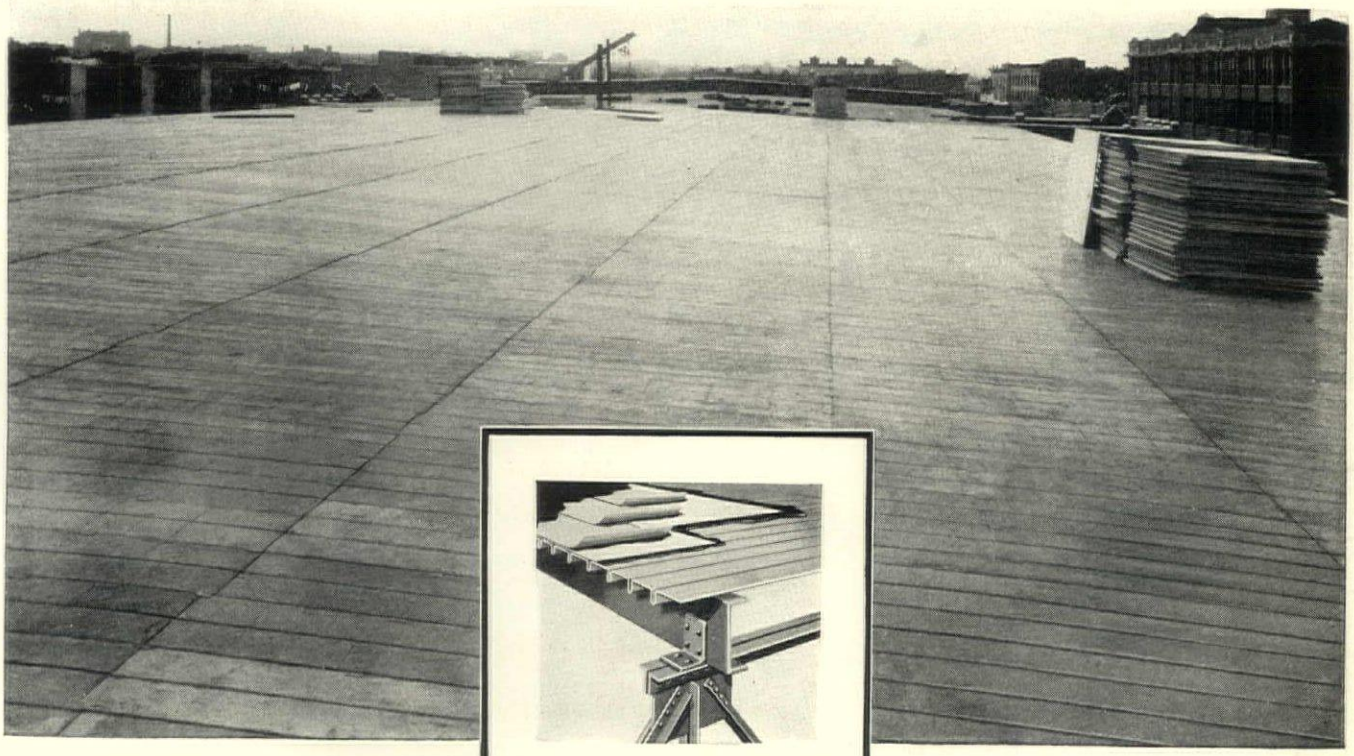
. . . . "the Most Economical Permanent Roof Obtainable"



Cross section of Mahon Steel Roof Deck showing interlocking principle and the application of insulation and roofing material.

MATERIAL

Mahon Steel Roof Deck Plates are rolled from special, tight-coated galvanized copper-bearing steel, and require no painting or maintenance whatsoever. The bright galvanized ceiling surface, presented by Mahon Deck installed, is a desirable asset from a standpoint of light reflection.

IN PERMANENT roof construction, weight is the cost determining factor. When light weight is combined with fire-safety and permanence in a material requiring absolutely no maintenance, you have unquestionably the most economical permanent roof obtainable. ¶ Mahon Steel Roof Deck meets these specifications perfectly . . . it weighs only five pounds per square foot, including insulation and roofing material. In buildings designed to carry this extremely light roof load, remarkable savings can be effected through the use of lighter members in the supporting structure. ¶ The millions of square feet of Mahon Steel Roof Deck already installed on industrial and commercial buildings throughout the country, bear evidence to the fact that many architects and builders are taking advantage of the outstanding economy of this type of permanent roof construction. Write for our complete data book and our folder, "Facts and Figures."

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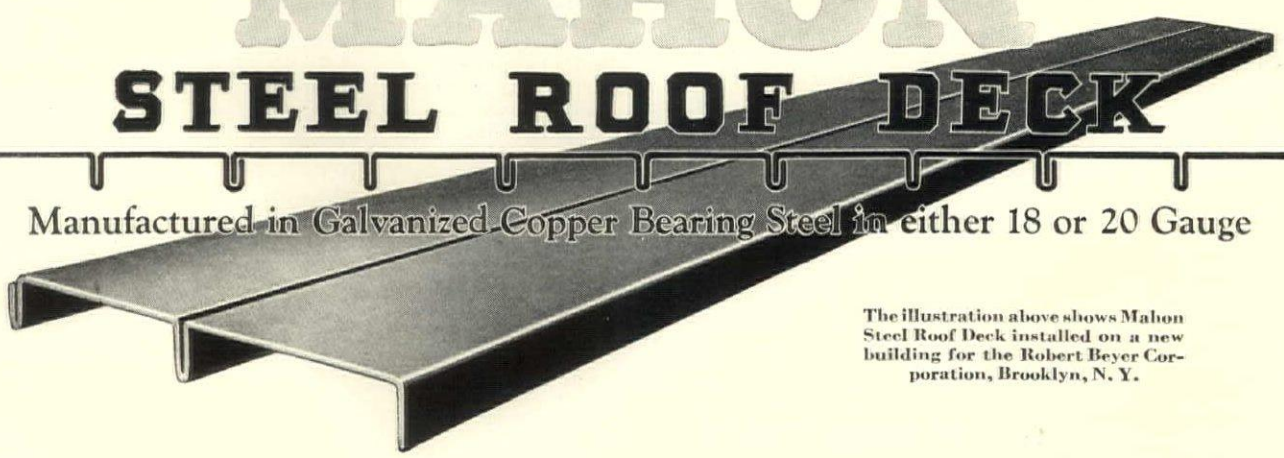

The illustration above shows Mahon Steel Roof Deck installed on a new building for the Robert Beyer Corporation, Brooklyn, N. Y.

Data on Safe Stairs

(*Continued from page 62*)

not about safe stairs or possible stairs, but stairs which took the least physical effort to go up or down. That will probably explain the comparatively small rise.

BUILDING	UP	DOWN	RISE	RUN	NOSE	TREAD	SUM RUN RISE	PROD. RUN RISE	ANGLE
N. Y. County Court House, *Exterior*	F.	B.	4 7/8	18	0	18	22 7/8	88	14 1/2
N. Y. Post Office *Exterior*	G.	F.B.	5 1/4	18	0	18	23 1/4	94.5	16 1/2
N. Y. County Court House, *Interior*	F.	F.B.	5 5/8	16	1/2	16 1/2	21 5/8	90	19 1/2
N. Y. Library, *Exterior*	G.	G.	5 3/4	13 1/2	0	13 1/2	19 1/4	71	23
Woolworth's, Fifth Ave.	V.G.	G.	6	11 1/2	1	12 1/2	17 1/2	69	27 1/2
Mt. Vernon Pub. Lib'y.	G.	G.F.	6	12	0	12	18	72	26 1/2
Cunard Bldg., *Exterior*	G.	G.F.	6	12	0	12	18	72	26 1/2
Grand Central, Main (3)	V.G.	V.G.	6	12	3/4	12 3/4	18	72	26 1/2
Grand Central, *to ramp*	V.G.	V.G.	6	12 1/4	1/2	12 3/4	18 1/4	73.5	26
Penn. R. R. Station *Train to 34th Street*	F.	F.B.	6	14 1/8	1 1/2	15 5/8	20 1/8	84.5	23
Penn. R. R. Station, L. I. R. R. *to Taxis*	F.	F.	6	14 1/4	1	15 1/4	20 1/4	85.5	23
Terminal Bldg., Vanderbilt Ave.	F.	F.G.	6 1/4	11	1	12	17 1/4	68.8	29 1/2
N. Y. Library, *Interior*	G.	F.B.	6 3/8	11 1/2	0	11 1/2	17 7/8	73.3	29
Holtel Shelton	V.G.	G.	6 3/8	12	1 1/8	13 1/8	18 3/8	75	28
Subway, Municipal Bldg.	F.	G.F.	6 1/2	11	3/4	11 3/4	17 1/2	71.5	30 1/2
Macy's Store	G.	G.	6 1/2	11	1	12	17 1/2	71.5	30 1/2
Macy's Store	G.	F.G.	6 1/2	11 1/4	1/4	11 1/2	17 3/4	73	30
Macy's Store	G.	G.	6 1/2	11 1/2	1/2	12	18	74.5	29 1/2
Woolworth's, 42nd St.	V.G.	G.	6 1/2	11 1/2	1 1/8	12 5/8	18	74.5	29 1/2
Woolworth Bldg. *to bank parallel to Broadway*	G.	G.	6 1/2	12	3/4	12 3/4	18 1/2	78	28 1/2
Terminal Building, Vanderbilt Ave.	F.	F.G.	6 5/8	11	1	12	17 5/8	73	31
Customs House, *Interior*	G.	G.F.	6 5/8	11	1 1/8	12 1/2	18	75.5	30 1/2
Hotel Shelton	V.G.	G.	6 5/8	12 3/8	1 1/8	13 1/8	18 5/8	79.5	29
Building Loan Bldg., Lexington Ave.	F.	F.B.	6 3/4	10 3/8	1 1/4	11 5/8	17 1/4	70	33
Grand Central, *Minor*	G.	F.	6 3/4	10 7/8	1 1/8	12	17 5/8	73.5	32
Hotel Commodore	G.	F.	6 3/4	10 7/8	1 1/8	12	17 5/8	73.5	32
Mt. Vernon Station, N. Y. Central	G.	F.	6 3/4	10 1/2	1 1/2	12	17 1/4	71	33
Subway, B. M. T., N. Y. County Court	F.B.	B.F.	6 3/4	11 1/8	5/8	11 3/4	17 7/8	75	31 1/2
City Hall, Inside	G.	G.F.	6 3/4	12	1 1/2	13 1/2	18 3/4	81	29 1/2
Hotel Commodore	G.	G.	6 3/4	12 3/8	1 1/8	13 1/2	19 1/8	83.5	28 1/2
U. S. Shipping Lines, Broadway	V.G.	G.	6 3/4	13	1	14	19 3/4	87.6	27 1/2
City Hall, *Interior, West*	G.	F.B.	6 7/8	11	1 1/2	12 1/2	17 7/8	75.5	32
103 East 125th St.	V.B.	F.B.	7	9	1	10	16	63	38
Subway, Stern's	F.	F.	7	10 7/8	5/8	11 1/2	17 7/8	76	33
Subway, 125th St.	F.	F.	7	11	1/2	11 1/2	18	77	32 1/2
Penn Station to L.I.R.R.	G.	G.F.	7	11	1	12	18	77	32 1/2
Hotel Commodore	G.	G.F.	7	11	1 1/4	12 1/4	18	77	32 1/2
Subway, Grand Central	F.	F.	7	11 3/8	1/2	11 7/8	18 3/8	79.5	33
Graybar Building	F.	F.	7	12	3/4	12 3/4	19	84	30 1/2
Penn. Station *34th St. to L. I. R. R.*	G.	F.	7	13 1/2	1	14 1/2	20 1/2	94.5	27 1/2
Columbia Univ. Club	F.	F.B.	7 1/4	10 1/4	1	11 1/2	17 3/4	76	35
N. Y. Library, *Interior*	F.	F.B.	7 1/4	11	0	11	18 1/4	79.7	33 1/2
City Hall, *Exterior Front*	F.	F.B.	7 1/4	12 5/8	1 5/8	14 1/4	19 7/8	91.5	30
Graybar Bldg., *to Grand Central Lower Level*	F.B.	B.	7 3/8	10 7/8	1	11 7/8	18 1/4	80.3	34
N. Y. Central Bldg., *tube to Grand Central Sta.*	F.B.	B.	7 3/8	10 7/8	1 1/8	12	18 1/4	80.3	34
St. Paul's Church	F.B.	B.F.	7 3/8	12 1/8	7/8	13	19 1/2	89.5	31 1/2
Subway, Chanin Bldg.	B.	B.	7 3/8	10	1 1/4	11 1/4	17 3/8	73.8	36 1/2
N. Y. County Court House, *Interior*	F.B.	B.	7 1/2	9 3/4	3/4	10 1/2	17 1/4	73	38
Stern's Store	F.	B.F.	7 5/8	9 7/8	1 1/8	11	17 1/2	75.5	38
Grand Central *to base. toilets*	B.F.	B.	7 3/4	10	1	11	17 3/4	77.5	38
Home, *rear*	B.	B.	7 7/8	8 3/8	1 1/4	9 5/8	16 1/4	66	43 1/2
Home, *front*	B.	V.B.	8 1/4	8 1/4	1 1/4	9 1/2	16 1/2	68	45
Home, *attic*	V.B.	V.B.	9 1/2	7 7/8	1 1/4	9	17 3/8	74.7	50

Abbreviations used are as follows: V.G., very good; G., good; G.F., not quite good; F.G., better than fair; F., fair; F.B., not quite fair; B.F., better than bad; B., bad; V.B., very bad.

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ADDS Strength and Insulates~

TESTS SHOW IT IS

14% STRONGER

as well as~

FULL ½ INCH THICK MEANS

12½% MORE EFFICIENT INSULATION

THAN ORDINARY 7/16" INSULATING BOARDS

YOU UNDOUBTEDLY intend to insulate the next building you design and, of course, you will use a plaster base. If you specify Insulite you not only secure efficient insulation but also a base that grips plaster with twice the strength of wood lath. (The exact comparative figures per square foot are—wood lath, 514 pounds; Insulite, 1,152 pounds.)

By using Insulite, your insulation and your plaster base is applied in one operation—a saving on labor and material. Insulite Plaster Base is made in two thicknesses, full ½" and full 1", in a proved practical size, 18"x48". Insulite is an all wood-fiber product made from the tough fibers of spruce and other northern woods, chemically treated to resist moisture, and not subject to deterioration. The 1" Plaster Base is built of two layers of ½" Insulite off-set 1" on all four sides, firmly stapled together with non-corrosive wire. The ½" Insulite has the ship lap edge only on the 48" sides.

Because of the ship lap edge and the staggered application, Insulite Plaster Base makes possible a plaster job remarkably free from cracks,—and no case has ever been recorded where plaster has fallen off an Insulite surface. Furthermore, Insulite adds strength and durability to the building. In a recent laboratory test the four best known insulating boards were tested for strength . . . . and Insulite proved to be ***14% stronger than any.***

Our Engineering Department is at your service—we invite you to use it. Please write for our A. I. A. File of Specifications and Details, with samples.

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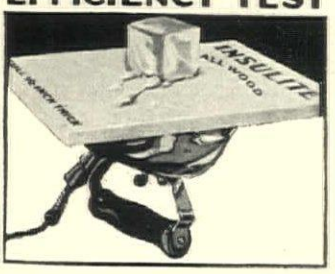
INSULITE

the Wood-Fiber Insulating Board

THE INSULITE EFFICIENCY TEST



HAVE YOUR CLIENT MAKE THESE TESTS

Prove the greater strength of Insulite . . . Drive a nail a half inch in from the edge and through a board of Insulite. Loop a strong cord around the nail and with hand scales see how much greater pull is required to tear the nail through Insulite than through any other insulating board similarly tested.

Prove the greater efficiency of Insulite . . . Place a cube of ice on a piece of Insulite over an automatic electric iron set at hot. See how long it takes the heat to penetrate the Insulite and melt the ice. Make the same test with any other insulation boards. Then we know you will specify Insulite.

FILL IN, CLIP and MAIL COUPON

THE INSULITE COMPANY
1200 Builders Exchange, Dept. 23C
Minneapolis, Minnesota

Gentlemen:

Please send me additional information on Insulite Plaster Base. Also your A. I. A. File of Specifications and Details, with samples.

Name .....

Address .....

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

What Architects Are Talking About

(*Continued from page* 51)

"The architect is the co-ordinator in the building operation, be it large or small, and his advice on when to build, and when not to build, is of great weight with the investor, the home builder, and the banker.

"The architect is in a key position and should be encouraged, at this time, to say to private individuals or interests who may have projects in mind that the immediate future is a good time in which to build, because it can be demonstrated that building is now cheaper than it has been in past years.

"The American Institute of Architects, in cooperation with the Producers' Council, is in a position to make the most authoritative and complete survey of the building situation that can be made of present and prospective building by any group or groups in the construction industry.

"If such a survey is desirable the architectural profession, and the producers of building materials, must be consulted, and, therefore, more reliable results can be obtained more quickly and more directly if such survey is undertaken by the architects and the producers acting under a direct request.

"The American Institute of Architects, through its sponsorship of The Architects' Small House Service Bureau, which Bureau was fully endorsed by President Hoover when he was Secretary of Commerce, is in a position to enlist the active and vigorous support of the Small House Service Bureau in any program which may be determined upon in the future.

"The Structural Service Department of the Institute provides a contact between the architect and manufacturers and technicians. It is actively cooperating with many divisions and activities of the Department of Commerce, and especially with the Division of Simplified Practice, and the National Committee on Wood Utilization.

"The Institute, through its Structural Service Department and other committees, is actively cooperating with building and loan associations, banks and investment companies in matters relating to the financing of buildings and especially to the financing of small homes to the end that losses running into millions of dollars annually may be prevented by assuring design and construction of such a character that the resale value of the properly will be at least sufficient to meet the mortgages.

"The American Institute of Architects and the Producers' Council constitute two of the major, controlling groups in the building industry. Their cooperation and active support can be and should be enlisted to its maximum capacity."

THE competition for the best definition of the word "home," conducted by the National Association of Real Estate Boards, has been won by Miss F. Luena Williams, a fifty-year old home economics teacher living in her own home at Brookline, Mass. Her definition was, "Home is a domestic sanctuary . . . wrought out of desire . . . built into memory . . . where kindred bonds unite the family in sharing labors, leisure, joy and sorrows."

Over ten thousand definitions were submitted, the following four being given honorable mention:

1—"Home—man's abode made sacred by love, loyalty and understanding and surrounded by hallowed memories of happy days in shared experiences." R. S. Duke, Port Arthur, Texas.

2—"Home—any place where dwelling is permanent and love paramount." William J. Crocker, Negaunee, Mich.

3—"Home is the spot where the interests and affections of the family converge and fuse and from which is radiated its composite influence." Mrs. Garnet B. Thacher, Brooklyn, Mich.

4—"Home—a shelter wherein one collects possessions for enjoyment and comfort; a permanent abode of love and contentment to which one returns for refuge and refreshment."—Mrs. B. Rowell, Pawtucket, R. I.

THE architectural and engineering features of the Chicago World's Fair features were recently explained by Major L. R. Lohr, its manager, as follows: "Our architecture is taking an entirely new theme. It is going to be non-formal and unsymetrical. There will not be a perfect balancing—a building here plus another opposite exactly the same in size and shape, and a tower in the middle. It is going to be broken up. That is a new theme in architecture and that is part of our pioneering.

"We are going to pioneer in engineering construction; we are going to pioneer in the use of materials; we are going to pioneer in the methods of construction and use new methods of construction.

"We have some specifications. First, these buildings must be cheaply constructed because we have to make a return on our capital investment in 150 days of operation. They must be absolutely safe. We can not risk injury to life or limb. They must be safe against fire. There are priceless art treasures we cannot risk having damaged.

"The buildings must be easily salvaged. Imagine five million square feet of concrete monolithic floor. It will cost over a million dollars to tear that concrete up, and of course it is worthless when it is torn up. Therefore, we must be able to salvage economically, and again we must try to get a high salvage value for the materials or else we cannot afford to put up the buildings that we would like to put up.

"The Transportation Building is made up of two great domes connected by a low building which is about 700 feet long. The two domes are about 150 feet in diameter and set on a base which is 300 feet in diameter. The domed structures are 125 feet in height. These domes are unique in their construction.

"The space under the domes is absolutely clear; that is, there will be no supports underneath them. Every other dome I have ever heard about has always had all its members in compression. In these domes, every member will be in tension.

"I put that problem up to a group of engineers not long ago and asked them how we were going to do it. I asked any man to speak out in the assemblage, if he could tell how it could be done, and somebody finally said, "sky hooks," and, strangely enough, that is about as close as anything else. From towers built on the side, there will be steel cables, not unlike a suspension bridge with a spider-web-like structure coming down from them, holding or elevating them from above, instead of having steel members from beneath.

"First, that is rather economical to put up, but particularly all those steel cables have a high salvage value. Moreover, those cables will be plated with chromium or other material with brilliant surfaces, and instead of having round wires, all wires will have flat surfaces, giving large facets to reflect light. Colored lights will be turned on these cables, coming down in streamers on the side.

"The second place where we are pioneering is that always before the architect has covered up the steel columns with marble and brick. Now, for the first time, the engineering structure is the architectural conception."

and in the South...

AT Birmingham, Alabama, is the magnificent Jefferson County Court House, pictured below. Holabird and Root were the Architects—Harry B. Wheelock, Associate Architect. Ingalls Iron Works Company fabricated the steel and Southern Ferro Concrete Company were the General Contractors. Here again Carnegie Beams were chosen to form the steel framework.

The popularity of Carnegie Beams is nation wide. Every important city in the United States—North, East, South and West—is represented in the imposing list of structures in which these modern sections have been used. Architects and steel designers have been quick to recognize the remarkable adaptability of Carnegie Beams to their needs—to see the unlimited possibilities in design and construction these wide, parallel-flanged sections present.

In any type of construction involving structural steel, Carnegie Beams offer economy, utility and flexibility of design never before possible.

CARNEGIE STEEL COMPANY

Subsidiary of United States Steel Corporation

PITTSBURGH, PA.

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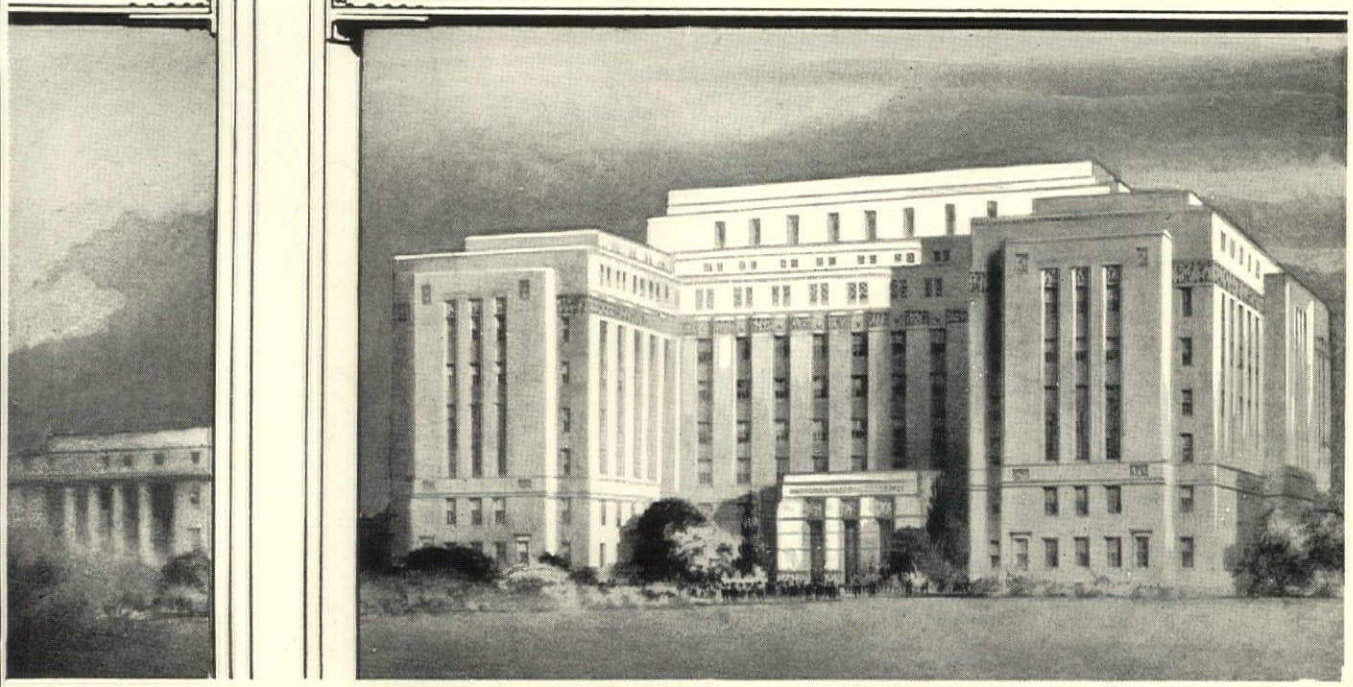


· BOOKS ·

(*Continued from page* 66)

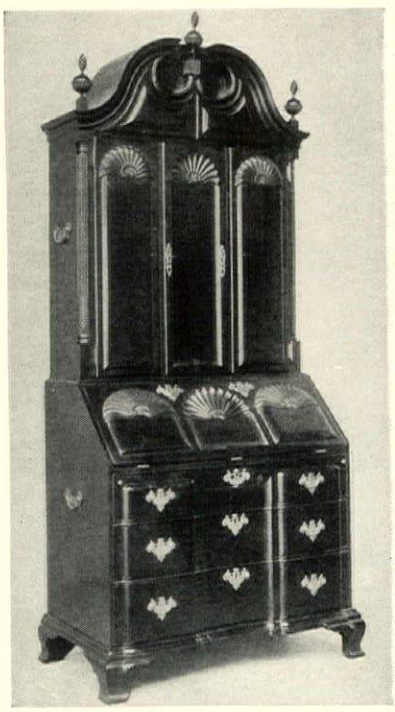
The second chapter covers representative American airports. Other chapters cover the handling of passengers and freight; construction of hangars, offices and shops; lighting of airports; airport management; suggestions for making airports profitable; and similar data.

Illustrations include airplane pictures of airports, plans of airports and some of their principal buildings, office forms used in air travel, and other data.

Genuine Antique Furniture

By Arthur de Bles. Published by Thomas Y. Crowell Company, New York. Illustrated; 376 pages; size 6x9½; price $6.00

WHILE MAJOR DE BLES may not require an introduction, it will not be amiss to remind our readers of an earlier book by the same author entitled "How to Distinguish the Saints in Art." The author is also well known as a museum lecturer. In the present volume he describes the distinctive characteristics of furniture styles from Gothic, through the French Louis eras and the Jacobean and William-and-Mary styles in England, to the late eighteenth century work in both countries. Five chapters are devoted to American furniture. The pitfalls and snares of the furniture-fakir, and how they may be avoided are pointed out in the book. Typical pieces of furniture from various periods have been selected to illustrate this volume. The text is readable, full of the romance of furniture and its development, and very educational as well.



Secretary-cupboard by John Goddard, of Newport, R. I. From "Genuine Antique Furniture"

The Honeywood File

By H. B. Creswell, F. R. I. S. A. Published by the Architectural Press, London, England. 310 pages; size 5¼x7½; price 7/6d.

AT last an architect has dared to put down on paper all the bedevilment under which a long-suffering profession labors. "The Honeywood File" is, briefly, an architect's imaginary correspondence concerning a house job with the client, builder, quantity surveyor, subcontractors, client's wife, and so on. Hence the name, "The Honeywood File." (*Continued on page* 112)

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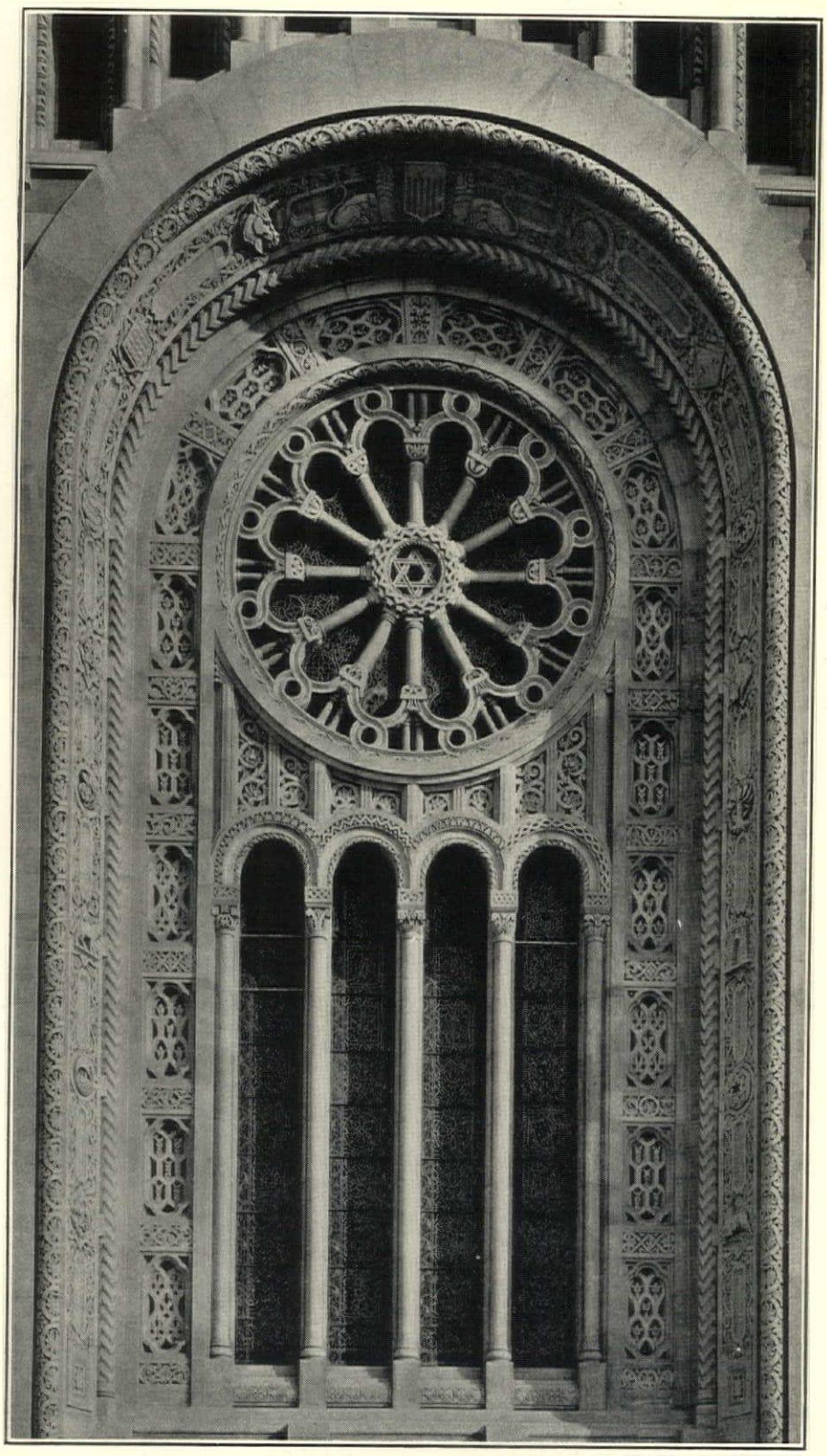

At right, Detail, Temple Emanu-El, New York City. Kohn, Butler & Stein, Architects. Mayers, Murray & Phillip, Associates. Cauldwell-Wingate Company, Builders. Variegated Indiana Limestone from University and Dark Hollow Quarries.

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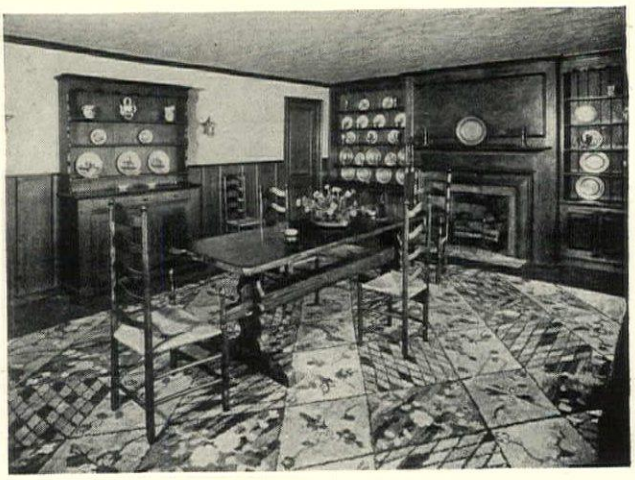
· BOOKS ·

(*Continued from page* 110)

Most of the letters written are commented on by the author, who certainly shows an excellent knowledge of what the pitfalls are in an architect's business. Though the book is fiction, it displays a sound common sense that will do much to show an architect how to keep difficult situations from arising. Many of the incidents revealed by the file will strike an echo in the reader's own experience, for no one but an architect of long practice could have written a book so wisely humorous as this.

The material first appeared in "The Architects' Journal" of London and proved to be of so much interest that it is reprinted in book form.



Dining Room, House of Grantland Rice, East Hampton, L. I. From "House & Garden's Book of Color Schemes"

House and Garden's Book of Color Schemes

Edited by Richardson Wright and Margaret McElroy. Published by the Conde Nast Publications, Inc., New York. Illustrated; 228 pages; size 10x13; price $5.20

MORE than two hundred color schemes and over three hundred illustrations of halls, living rooms, dining rooms, bed rooms, and sun rooms, roofs, garden rooms, kitchens and bathrooms are contained in this book. The characteristic colors of each decorative period are given together with information on how to select a color scheme.

Much of the contents is text covering such subjects as color impressions of periods, rich color for renaissance rooms, schemes for early English rooms, color suggestions for Georgian rooms, and other similar and interesting suggestions.

An interesting thing about the presentation of the various illustrations is that the captions tell the decorative scheme so that some approximate visualization of the colors used may be had. Eight of the interiors are printed in full colors.

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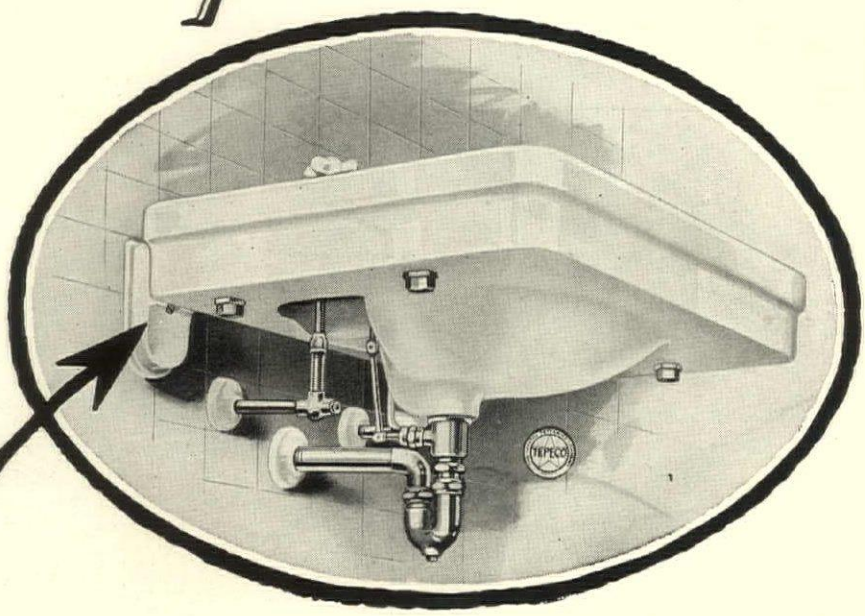

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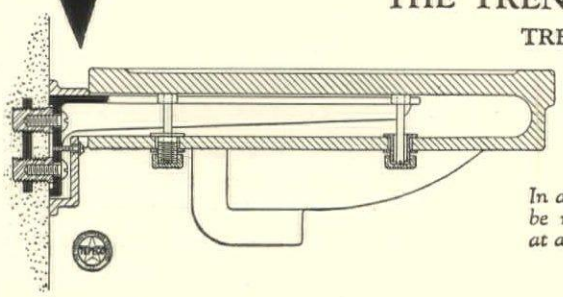

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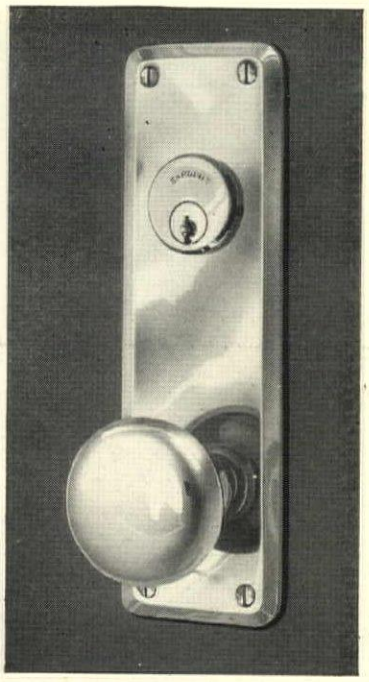

The Passavant Hospital, Chicago; Holabird & Root, architects; equipped throughout with Sargent Hardware. The appropriateness and simplicity of the design in chromium plate may be judged from the one item shown above.

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· Technical Bulletins ·

"Designs for Kansas Farm Homes," by H. E. Wichers, is the title of bulletin No. 23 issued by the Engineering Experimental Station of Kansas State Agricultural College, Manhattan, Kansas. Contains plans and perspective sketches of farm houses of various sizes.

"Compressive Strength of Clay Brick Walls," by A. H. Stang, D. E. Parsons, and J. W. McBurney, is the title of research paper No. 108 issued by the Bureau of Standards, Washington, D. C. Price 30 cents.

"Results of Tests on Sewage Treatment" by Harold T. Babbitt and Harry E. Schlenz is the title of Bulletin No. 198, issued by the Engineering Experiment Station of the University of Illinois. Price 45 cents.

"Properties of Western Hemlock and Their Relation to Uses of the Wood" is the title of a technical bulletin issued by the United States Department of Agriculture, Washington, D. C., by F. P. A. Johnson and W. H. Gibbons. Illustrated. Price 20 cents.

"Lumber, Simplified Practice Recommendation R16-29." is the title of a bulletin of the U. S. Department of Commerce, Bureau of Standards, which now enters its fourth edition. It covers structural material, and illustrations of American Standard Patterns for worked lumber and American standard mouldings. Price 30 cents.

Three bulletins issued by the University of Toronto, Faculty of Applied Science and Engineering, School of Engineering Research, are "Shear Stress in Certain Thin Fillets," "Permissible Stresses on Rivets in Tension," and "Report on Pilot Tests Conducted for the Structural Steel Welding Committee of the American Bureau of Welding at the University of Toronto, 1927-28."

· PERSONALS ·

The architectural firm of Henry J. McGill and Talbot F. Hamlin has been dissolved. Mr. McGill will continue individual practice at 415 Lexington Avenue, and Mr. Hamlin has opened a new office at 11 West 42d Street, New York

Schwab, Palmgreen & Merrick, associated architects, have moved to the Koppers Building, Pittsburgh, Pa.

G. E. Pearson, architect, has moved his office to 4437 Wrightwood Avenue, Chicago, Ill.

W. Oscar Mullgardt, who has been associated with Mauran, Russell & Crowell, architects, St. Louis, has been admitted to partnership in that firm.

Albert E. Sleight, Architect, Paterson, N. J., has opened a branch office in Closter, N. J., with Harry E. Bell as manager.

Noble Hoggson has resigned from the firm of Spoon and Hoggson, Inc., landscape architects, White Plains, New York, and the firm will be continued under the name of Jacob John Spoon, Inc.

John Knox Ballantine, architect, has moved his offices to 137 Harlan Place, San Francisco.