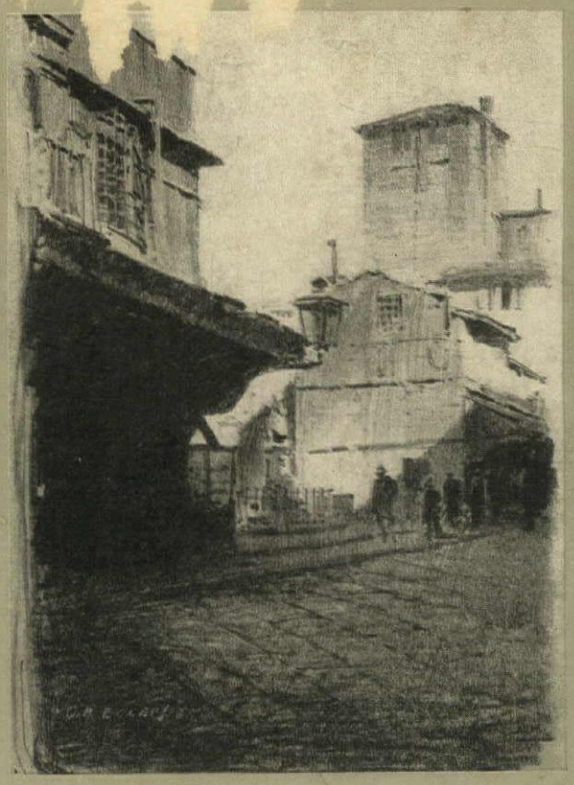
The AMERICAN ARCHITECT



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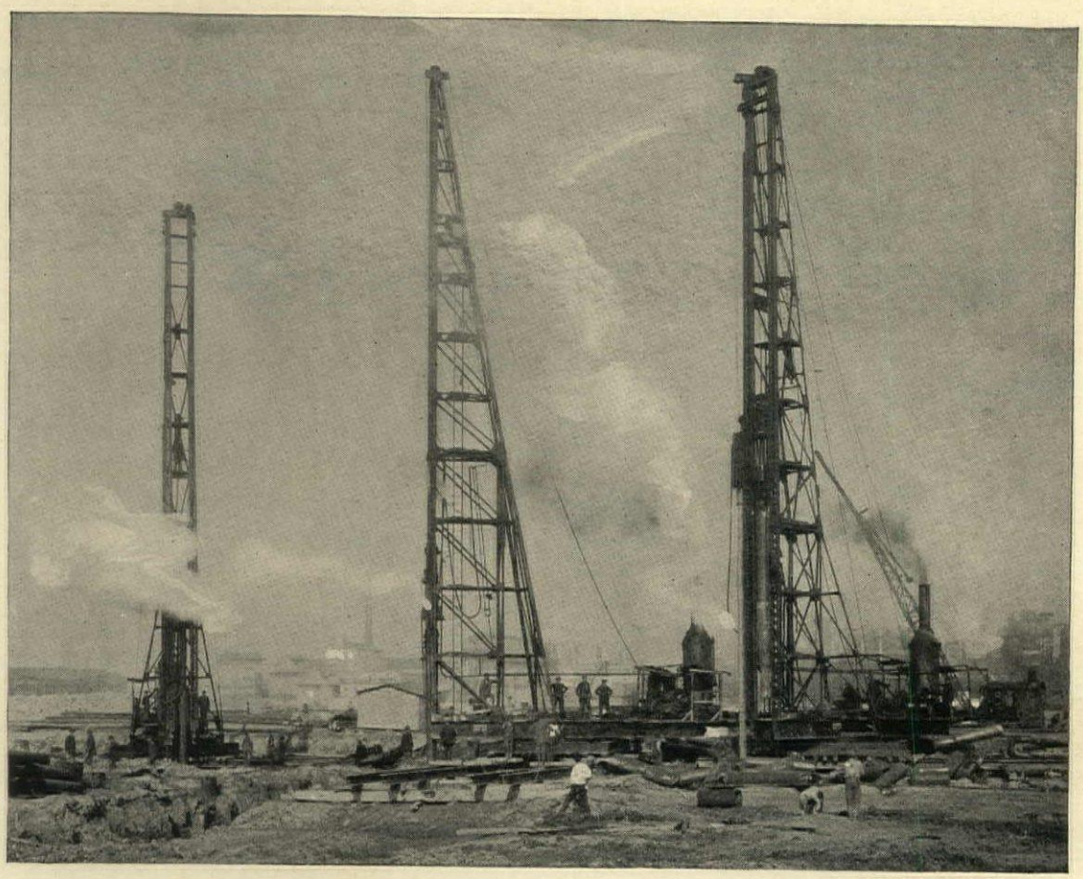

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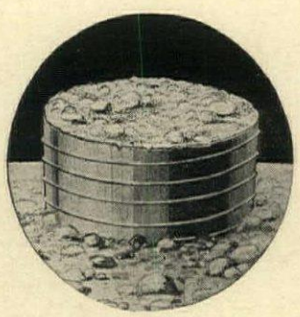

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Plates

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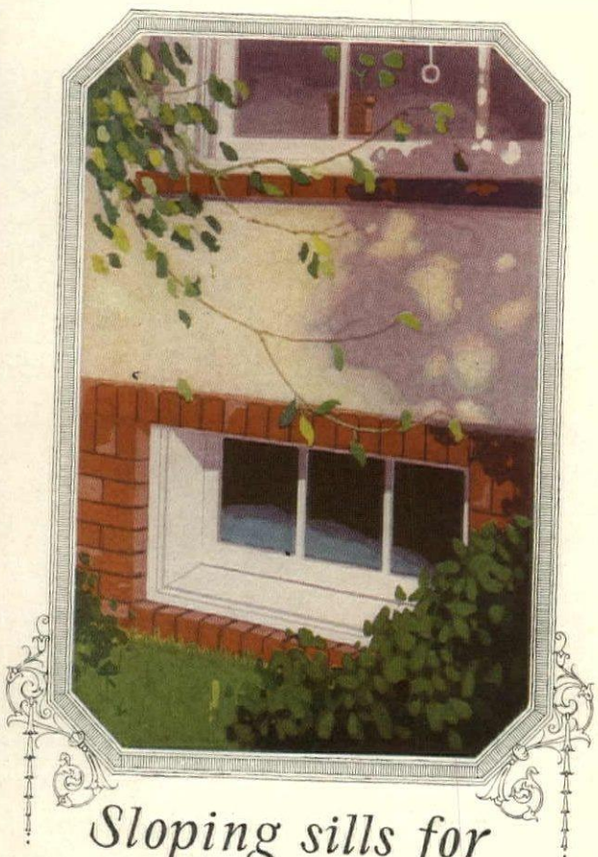

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Here They Come

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The PUBLISHERS' PAGE

SAMUEL CHAMBERLAIN whose contributions to this journal have been a very important feature in the past, is now in this country and we have arranged for a series of articles from him which, it is believed, will be of more than usual interest. The first of this series will treat on Etching as a Means of Architectural Illustration. The second will very thoroughly discuss Lithographic Processes in Architectural Illustration. Both articles will be very profusely illustrated by examples of Mr. Chamberlain's work both in the text and in our duotone form. The titles of the third and fourth articles will be announced in later issues.

* * *

Competition drawings are becoming so fine in their artistic presentation as to vie with the easel pictures. The various sets of drawings in the recently decided Roosevelt Memorial Competition, some of which are presented in this issue, are so far above the average as to be remarkable. Samuel Chamberlain has prepared an article that will be a critical analysis of competition drawing methods with particular reference to the work of Otto R. Eggers who prepared the prize winning drawings for John Russell Pope. Mr. Chamberlain's article will appear in the issue of July 15.

* * *

Olof Z. Cervin is continuing his tour abroad and has now sent us an article describing his impressions of a trip through central France. This article will soon appear.

Wm. Roger Greeley always has some worth while thing to say and says it in a scholarly and worth while manner. We have in preparation a further contribution by Mr. Greeley, in which he describes Architecture as a Social Complex, stressing sincerity, propriety, style and scale. "The essence of any art is its peculiar way of bodying forth beauty as an expression of human emotion." That is Mr. Greeley's premise. He argues to a conclusion that will set the reader to serious thinking

James M. MacQueen, architect, of Sewickley, Pa., recently sent us a renewal of his subscription and refers to the fact that it is his fortieth annual payment. We are, of course, proud of such a long-time friend. Mr. MacQueen's name will rank high amongst the list of our oldest subscribers in the Golden Anniversary issue.

* * *

A fine example of what zoning has done to improve the aspect of New York's skyline will be found in a series of pictures illustrating the Equitable Assurance Society's new building on Seventh Avenue, New York, Starrett & Van Vleck, architects, to be presented in an early issue.

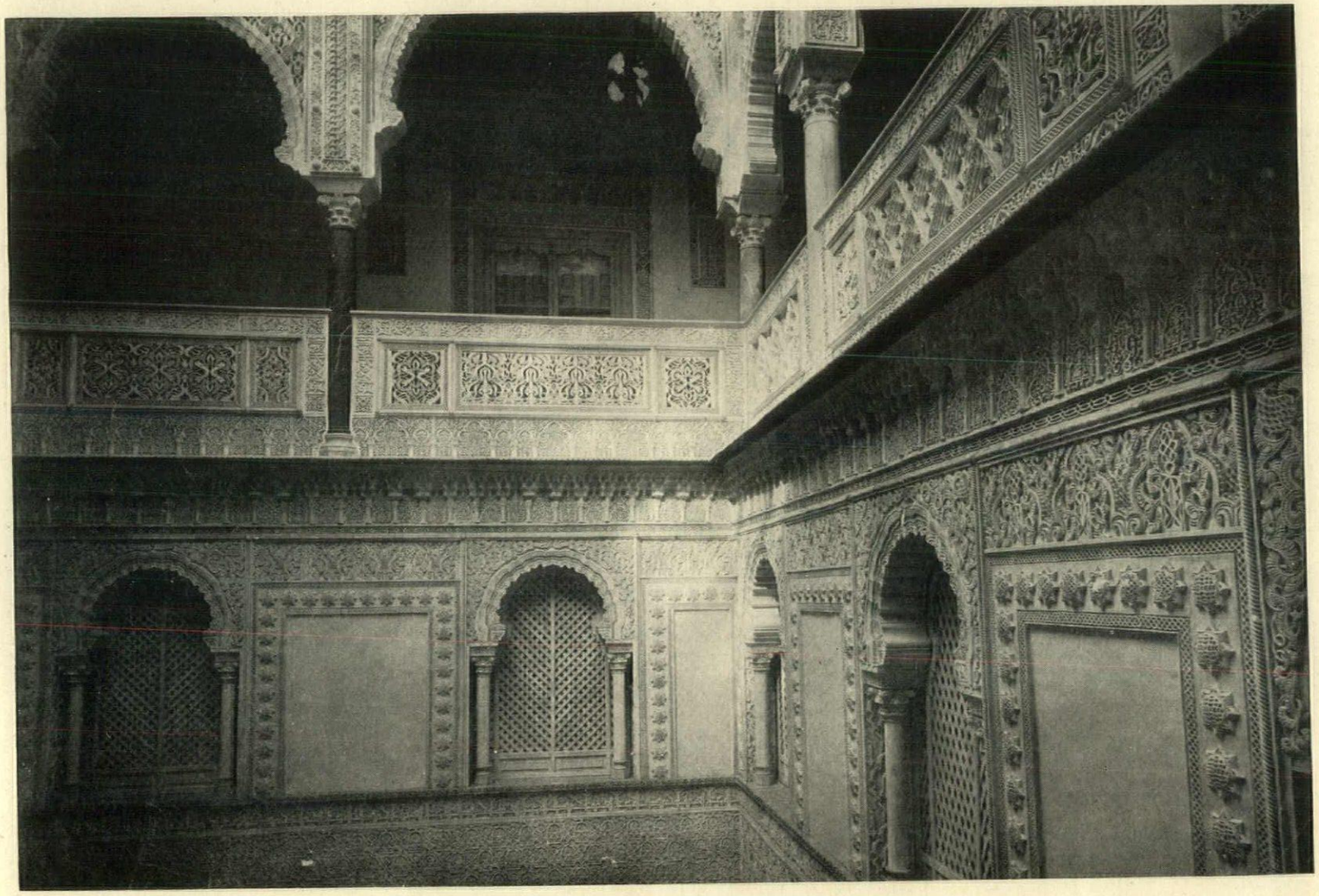
The district set apart for the "needle industries" in New York, lies directly North of the Pennsylvania Station group. During the past two years tall buildings have been erected at a total cost exceeding one hundred million dollars. Many of these present interesting examples of the zoned "set-backs." Many of them are to be illustrated soon.

* * *

Alfred C. Bossom, F. R. I. B. A., has for many years been actively interested in the archaeological remains of Mexico and Central America. Mr. Bossom is of the opinion that there is to be found in the decorative elements of the many buildings that during recent years have been uncovered, the germ of a truly American motive in the development of a purely American type of architecture. The result of his travel and personal investigation is set forth in an article that will appear in an early issue. The illustrations to accompany the article will be found of more than usual interest. We believe that the work begun by Mr. Bossom will be found of great moment by architects and designers, and that the suggestions embodied in the article will serve greatly to stimulate an interest in an archaeological subject that, strange as it may seem, has long been ignored.

* * *

The development of certain types of schoolhouses in New England as shown in recent work of Kilham, Hopkins & Greeley, architects, will be very thoroughly illustrated and described in our issue of July 15. The accompanying article deals specifically with certain special phases for which these Eastern schools are notable.



INTERIOR VIEW, THE ALCAZAR, SEVILLE, SPAIN

THE AMERICAN ARCHITECT

VOL. CXXVIII WEDNESDAY, JULY 1, 1925 NUMBER 2475

CONSTANTINOPLE THE COLORFUL

BY GERALD K. GEERLINGS

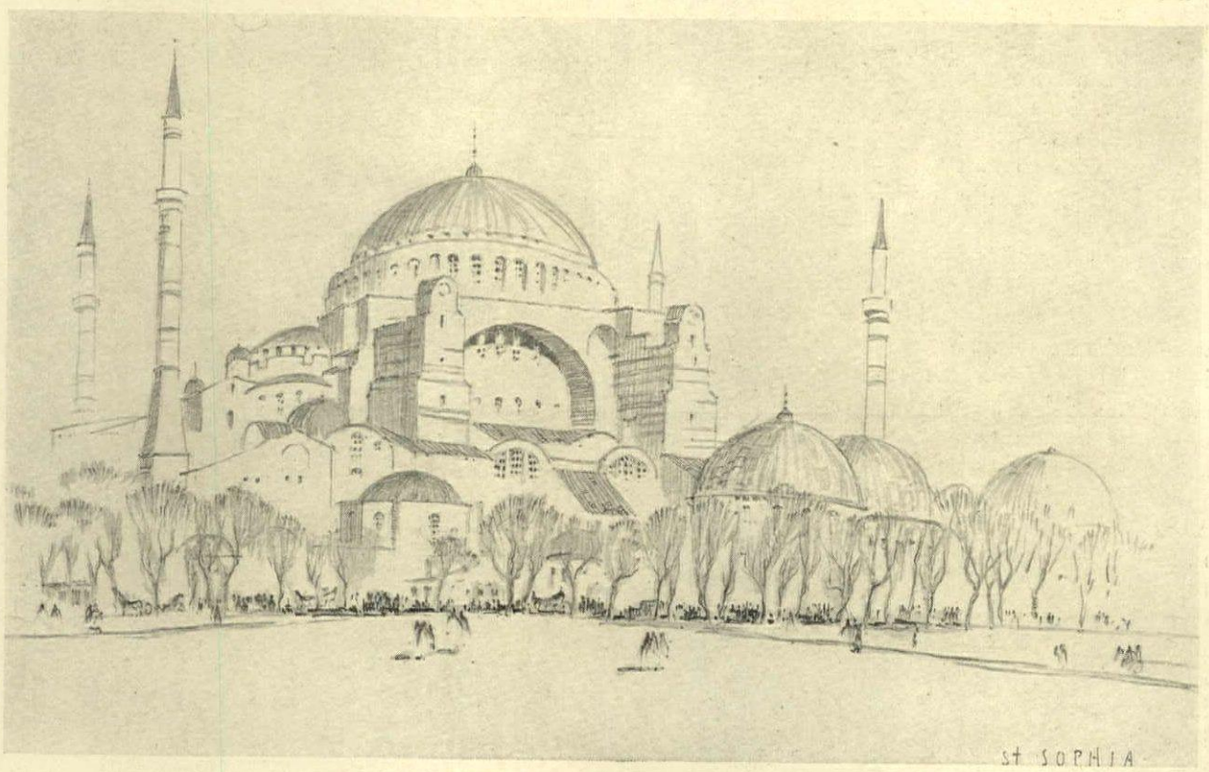
Abroad *on the* Woodman Travelling Fellowship, University *of* Pennsylvania, 1924-1925

Illustrated by Sketches by the Author

OF all stages for the architectural imagination to conjure up and put into play a rich pageant, probably none offers more riots of color, streets of gaiety, miles of "bazaars," thousands of varied costumes and curious customs, nor such a variety of architecture than Constantinople. Here as no other place has antiquity survived with the modern, where old winding streets made only ample enough for a camel train are now impassable with flying autos, where the Moslem in his fourth century desert dress sells twentieth century American hairpins, where the architecture of Justinian serves the worship of the new Turk; in a word, where the East has joined West and the Old lives on with the New.

The old Constantinople of the sultans has been robbed, we are told by the American colony, of much of its color and romance by Western clothes and the new Republic. But there is still much left to imbibe and enjoy of the very old and the less old. For the architect it has a number of interests, some archaeological, but some also in application to his modern architectural problems. Of course, it has that even in the books but in the actual Constantinople, the colorful, the noisy, the Oriental, the European, the Cosmopolitan Constantinople, it is the City of a Hundred Lessons and a Thousand Fascinations!

Someone has aptly said that the New York zoning law has done more for making our American architecture distinctive and interesting than any other single factor. Other cities have followed



ST. SOPHIA

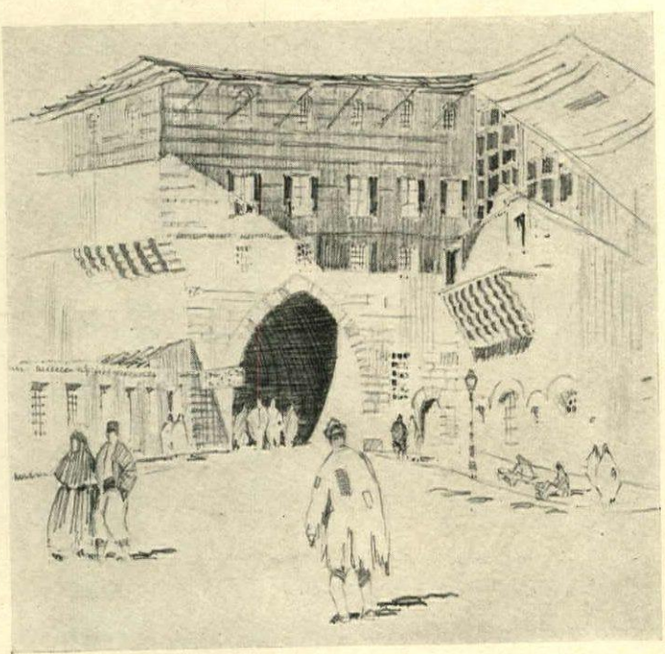
THE PIGEON MOSQUE

with zoning ordinances with the result that the skylines of our buildings have come to be one of the main exterior problems. Design now concerns itself chiefly with mass. The masterly unrivalled Bush Terminal was one of the pioneers. The award to Goodhue for his Nebraska State Capitol showed what a national jury thought. So it has gone. The Shelton Hotel of New York City is one of the last of the great numbers of buildings which are distinctive because of mass as well as the common sense utility behind them.

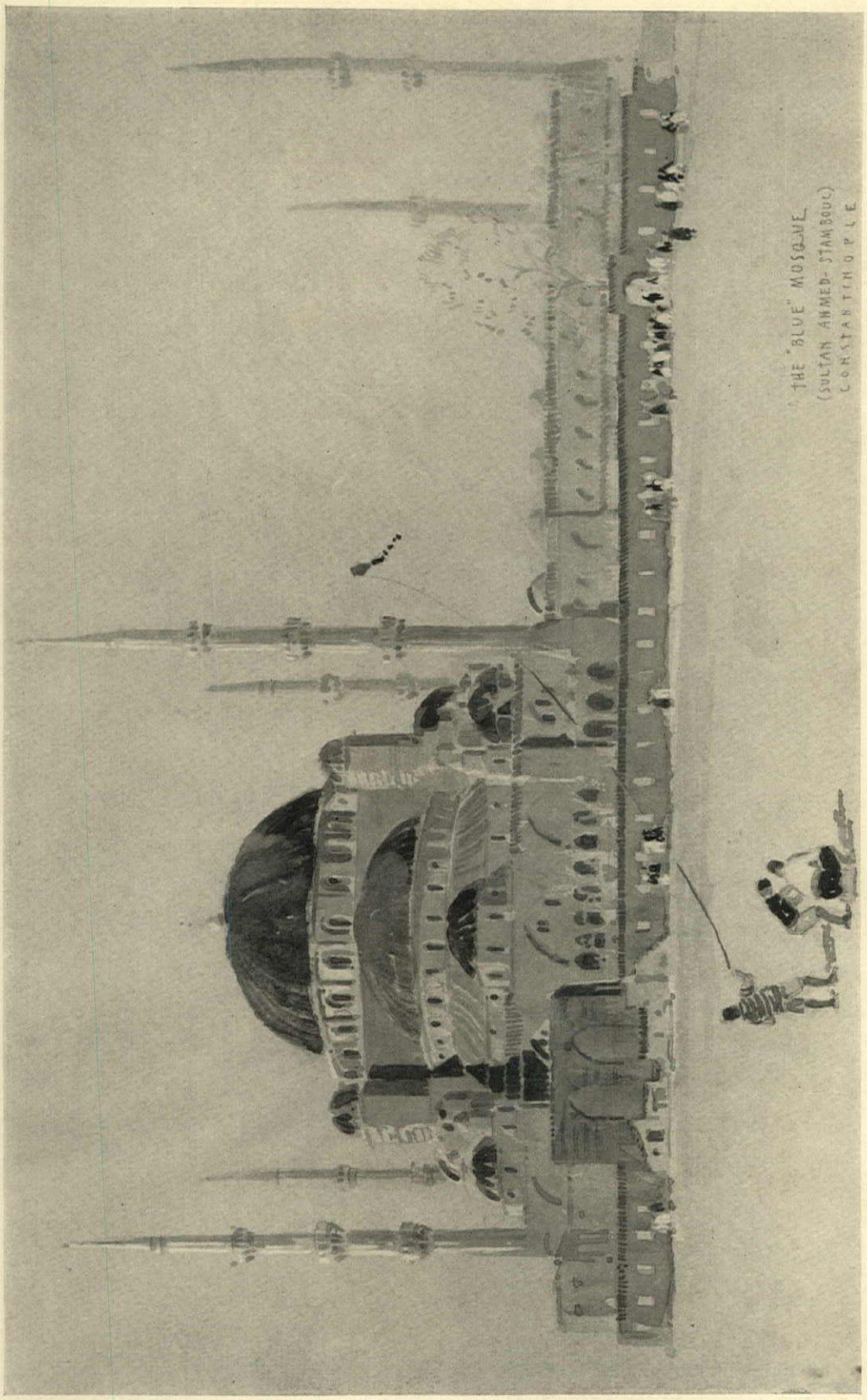
The various Constantinople mosques have such a variety of interesting masses, piled up with so many different elements, dependent upon site or size, that they should offer some suggestion to modern design. The sides of some of the mosques rise up sheer from the face of a high wall with a restrained, simple, flat wall treatment which might readily invite a solution to an industrial problem. Others pile up with one plane rising above the setback of another, as though they were libraries, museums, court houses conforming to a code for a "B, 2 times height district" in New York City. Other mosques are less rambling and more contained, with a dignity or verticality which might supply no end of ideas for no end of schemes. Applying the mass of a mosque to an American building would require careful handling and much serious thought. Perhaps it could not be done. But the basic principles of design when analyzed should have something for the twentieth century with its concrete both cheap and widely used. The search for an honest expression of structure which has directed considerable attention to recent Scandinavian and German buildings might also be well repaid by the study of compositions and masses of the Constantinople mosques.

Without question the mosques have succeeded in being distinctive. Along the skyline of Stamboul the outstanding features are the low domes guarded by gracefully tapering sentinel minarets. That in itself is something worth while thinking about—a mosque always looks like a mosque. You cannot mistake a shrine of Moslem worship for anything else but that, whereas in our American churches it is too often impossible, due to the persistence of hackneyed motives, to distinguish any difference between a church, a court house or a library. Something must be wrong with the design.

The interiors of the mosques are built on a number of excellent ideas. The walls, for example, are generally treated in one of two ways, the simple marble revetment of St. Sophia or panels of beautifully designed and colored tiles. We have become so accustomed to Renaissance pilasters and arches that they are almost taken for granted. We should be able to think differently occasionally and depart from the formula. It is good design, good sense and good economy to concentrate interest the way the simple revetment does to the arches in Sophia. In the other mosques where tile is employed it is worth



ARCH AT MOSQUE VALIDÉ SULTANE



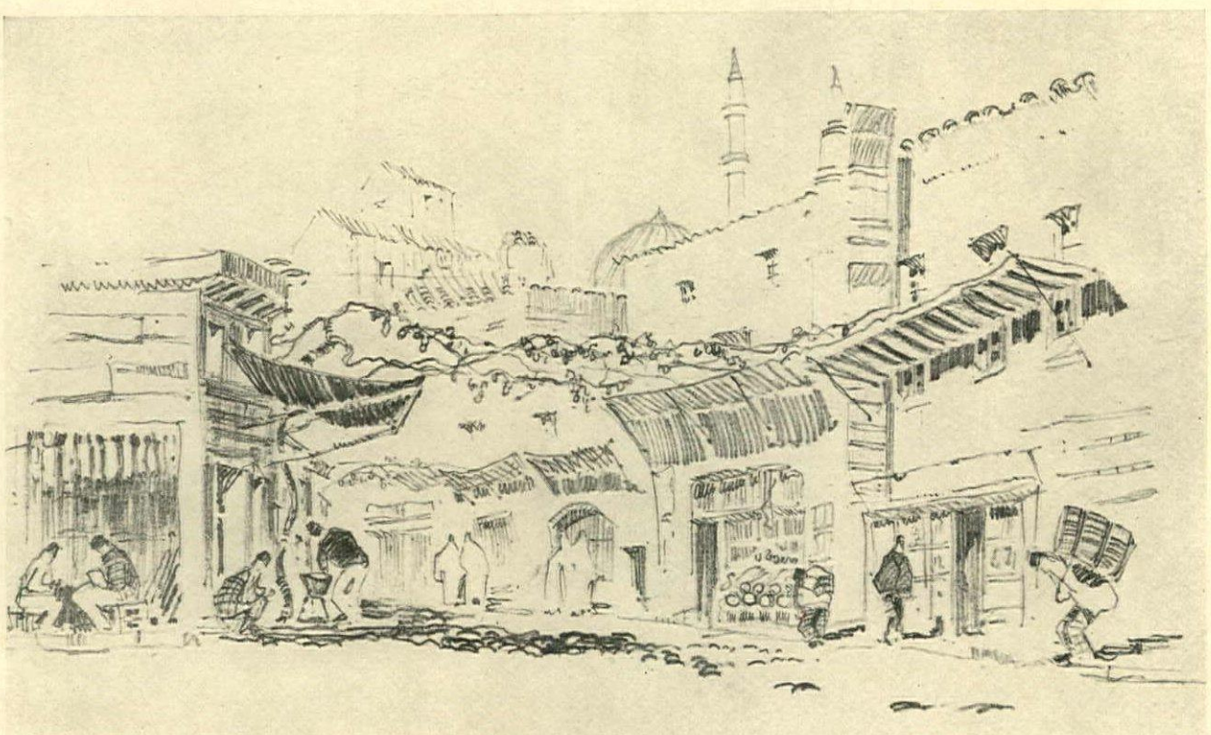
THE BLUE MOSQUE (SULTAN AHMED, STAMBOUL)

more than a passing thought to consider the possibilities. Instead of doing all our interior architecture in shades of gray, with but negligible color in our clothes to cheer up our surroundings, colored tile would be not only more imaginative but perhaps cheaper as well. The mosque tiles have been well designed, well colored and well fired. They can be washed. It is safe to guess that the tile have required less overhead in repairs and redecorating than our imitation stone and plaster used in the usual drab pilasters, capitals, arches and swags.

The lighting of the mosques has suffered with the popularity of electricity. Instead of thousands of little oil lamps flickering away, making the domes seem infinite in height and mystery, there are now glaring, unfrosted electric bulbs in some of the many unused oil lamps. Naturally it looks badly. But before the advent of the harsh electric light the effect must have been highly successful. From the dome hung countless chains, each spreading out into about twenty-five small lamps. These hung low, only eight feet or less from the floor, shedding their light on the warm colored, pastel-shaded prayer rugs. The detail in the dome obscured, with light catching only an occasional chain as it disappeared in a black mystery, thus confining the subdued, warm light near the floor, should offer something of a suggestion to us. The numberless verticals in chains give a sense of tremendous scale, so much so that the St. Sophia dome appears to the critical observer a great deal larger than does St. Peter's in Rome.

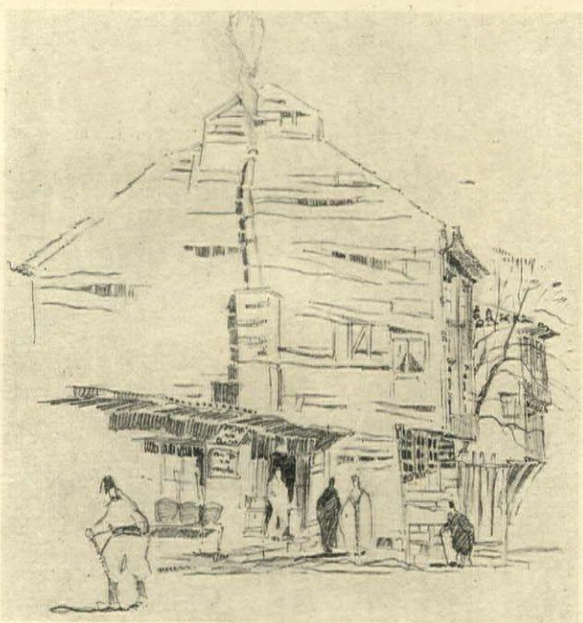
After seeing churches all over Europe the architectural eye cannot help but regret that interiors are so cluttered up with chairs and benches in disorder, that representations of figures are so often hideous, that baroque altar pieces and heavy, offending projections of all sorts should display bad taste to the fullest. Without hardly exception one must apologize for this, that or something else and try to appreciate the good by forgetting the bad and mentally eliminating what generations have done to disfigure that which originally was beautiful. In the mosques a first and lasting impression is that of simple dignity. No chairs scattered promiscuously about, no ugly intervening coro, only an unbroken sweep of beautiful oriental prayer rugs, mosaicing the floor with soft, warm pastel shades. No agonized looking figures or paintings depicting the horror of death, but harmonious color on the walls in tile or stone, suggesting rather the beauty in life. An admiration cannot be quelled for these followers of Allah in choosing to worship in an edifice where there is only a solemn dignity, a sanctified simplicity where dwells the spirit of their God. Presumably they do not feel the call to represent a spirit with a host of ugly representations as we do. And in that reverent atmosphere of the Moslem mosque your Christian mind cannot but wonder that if our God have an architectural preference, perhaps He is a bit jealous of Allah.

In our public buildings we seldom think much



STREET SCENE, CONSTANTINOPLE

about the floors. We specify them to be cement or terrazzo and let it go at that. In the case of marble we check shop drawings for jointing. But we can learn something of the psychological effect of the soft, inviting colors of a mosque floor.

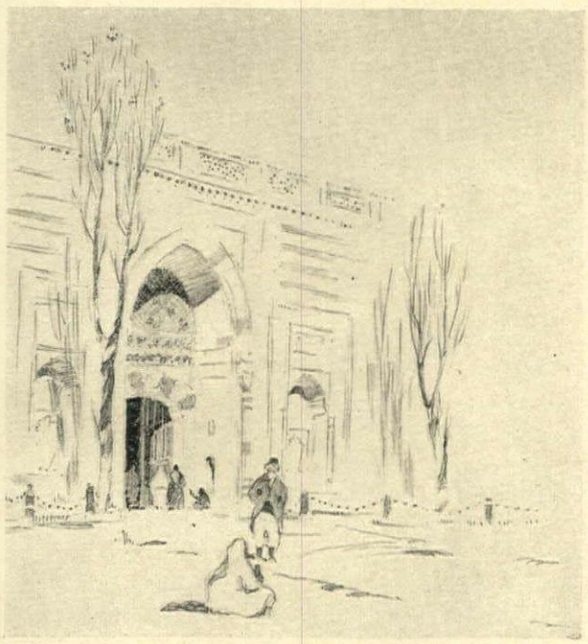


A HOUSE NEAR ST. SOPHIA

Not that we should consider importing rugs by the wholesale or attempt to imitate them, but when there are funds to do something with a floor, rather than cut up a uniform colored marble or select a dead looking linoleum or tile, it would be worth striving for a more cheerful, interesting and warm effect by following the lead of the Mohammedan prayer rug. We have as much right to enjoy color as the Turk, surely. The trouble is, we have acquired the black and white habit.

One more phase of the mosque, the forecourt. Usually there is an ample square or rectangular court surrounded on all sides by a vaulted arcade, one of these being the porch to the mosque. Sometimes there are cypresses, big ones. In the center of the court is the ablution fountain, circular or octagonal, covered by a small dome. Little jets of water run from simply but well designed flat wall reliefs. Before each little stream is a Turk, obeying one of Mohammet's five precepts, washing face, hands and feet before entering his mosque. His turban, beard, cloak, trousers, sash, socks, shoes all contribute to the color and sparkle. We cannot have all that but the running water idea is a good one. It means birds, plants, moss, the sparkle of the sun and wet coolness on a hot day. It makes an agreeable sound too. We don't get a chance at enough real estate very often in order to build a forecourt, but when we do and if we do, should the result be as happy as the manner in which the Turk has used his opportunity, we shall have achieved something.

The Turk has followed the general precedent of St. Sophia pretty closely in his mosques and in them has developed his best architecture, almost to the exclusion of everything else, it would seem. Unfortunately he missed the golden opportunity at the opening of the Golden Horn on the old Seraglio grounds, where twenty-one successive Sultans for over three hundred years built their new palaces or the whims of the favorite Sultana. As a result the splendid natural acropolis has now no great architecture or lasting monument to record its former magnificence. The buildings were light, extravagant creations, studded with gems, inlaid with tortoise shell, mother-of-pearl or sometimes ivory. Only a few remain as shabby shadows of the Oriental luxury and nameless crimes they once sheltered. One sun room sort of building still exists in good preservation, the Bagdad-Kiosk built in 1638. It overlooks the Golden



MAIN GATE, SERAGLIO POINT

Horn with Galata and Pera opposite, and on the other side of the Bosporous, Scutari with its lovely colored hills behind. For the architect with an eye alert for something he can use, the rich revel of upholstery and embroidery around the perimeter of the room concerns him for a moment in imagining the fairy tale past. But the walls rivet his attention because they are particularly resplendent with azuelos, colored tile, which could scarcely be more perfectly designed or more exquisitely colored. Turquoise and cerulean blues, verdigris and emerald greens disport themselves fantastically on a cream ground. The room is

square with the corners cut off to accommodate small secret chambers. The doors to these are of intricate Saracenic design, recalling similar patterns of the Alhambra, and fashioned of darkened cedar, inlaid with tortoise shell and mother-of-pearl. It is a room which has its modern possibilities. Perhaps a gay hotel grill or tea room with fountain and fish, flowers and flutes. Or perhaps a sun room on an expensive residence for the ever expected million dollar client.

It is unfortunate a master designer did not conceive and execute a big scheme for Seraglio Point. Perhaps the new Republic will employ the marvellous site in a fitting manner. If they should there is not much to demolish except the kitchens, which ironically enough, are now the most imposing looking structures with stunted cylindrical chimneys escaping from conical domes. The main gate (sketch) is also in good preservation. These, with various other buildings, have certain features of color, texture and materials applicable to modern work. Unfortunately of course, qualities in these we may admire and conscientiously strive to attain, yet find to our disappointment that time alone can produce an equally mellow effect.

THE HILL TO THE GRAND BAZAAR

To begin with, the Greek and Byzantine were not as afraid of color as we are. Neither was the Turk. Masonry was run up of red brick and light gray or buff limestone, an eight to ten inch course of the latter alternating with a series of three of these brick courses. The voussoirs in arches always alternate between a gray or buff with a red. At a later period stucco seems to have been the vogue, from ochre to cadmium in color. This was applied over the old masonry described or on new walls of rough masonry or rubble. Where the plaster has cracked off, an abundance of "texture" goes begging. The very quality about the stucco which is most admirable is precisely that which is lacking in most of our usage, making our stucco building exteriors look as uninspired as smooth bathroom walls. Trowel marks and a general variety on the surfacing of these Constantinople walls give them the appearance of having been done by interested craftsmen, who were not intent upon producing the bizarre effect of the modern dilettante interior decorator, but rather with only sufficient variation to give the wall character. High up on St. Sophia are bands of dull red, either painted on the stucco or produced by colored plaster. Over many of the doors are remnants of decorations, often of a favorite zigzag black motif. These colors may once have been harsh, but now are mellowed to soft shades and sometimes even disappeared. But always in some form there is color!

The amount of wood construction in houses is amazing. Whole streets are built of wood. Rather unexpected and certainly unfortunate under the absence of proper fire control, as entire charred areas testify. But the bigger surprise, which seems to be a monstrous assertion or a fault of the vision, is what appears to be Connecticut Colonial architecture. The sketch of the old house near St. Sophia is typical of wood structures over all Stamboul, with one floor projecting over the one below, and supported by long curved, graceful brackets. The siding is laid about four inches to the weather, unpainted. It is too weird to believe, to see leaning out of a small casement window nestling under a Nantucket overhang, an Arab's brilliant turban and "Mashlok." It must be a Colonial masquerade. Yet, it is the unbelievable Constantinople!

The "bazaars" are an institution of their own. The Grand Bazaar is said to have 4500 shops jammed along its endless labyrinth of vaulted halls. Stalls of every description having every thinkable article sold by every species of human being of every nationality crowd these corridor-like structures. In plan the "bazaars" are irregular but in general, long passages intersect at right angles, leaving small courts perhaps eighty feet square. The passages vary from forty to perhaps sixty feet in width and twenty to thirty feet to the spring of the groined vaults. The arches between the groining and the vaults themselves are usually in a buff and much dirtied stucco, with simple but interesting black ornament breaking up the monotony. Perhaps there are no documents of the "bazaars" but if ever one had to design a municipal fair or a market place, the Constantinople "bazaars" might have an idea or two to offer. Only Allah knows what happens in

the little courts. The sun comes in through small round windows above, and occasionally some fresh air. Old men crawl through small holes below which lead to the courts. But that is all one can find out.

The exterior of the "bazaars" is distinctive principally for its skyline. The groined vaults are not hidden by a superstructure and roof, but each is responsible for a low dome, with the result that above the cornice line appears to be a parade of gigantic, inverted "cup-cake" tins. The "bazaars" are enclosed by thick walls, with a great abundance of texture. The lower two-thirds of surface has flush arches marking the spring of the vaults on the inside, a small circular window or two, and then nothing but plain surface above to the simple coping course. Usually the masonry consists of an alternating stone course with a series of several brick courses.

Stamboul, the oldest part of Constantinople lying on the peninsula formed by the Golden Horn inlet and the Sea of Marmora, has streets of the greatest human interest. Rambling, half-tumbling houses of not more than two stories, of all kinds of building materials and color, some well built and some not, have shops in the first floor protected by ragged but colorful awnings or shelters. They look rather like chubby, tattered, jostling ragamuffins, good-natured even after a long lively night. Vines bridge the distance from one side of the street to the other, to cheat the sun of some of his toll in the summer and incidentally to cast a fanciful pattern of shade on the uneven paving. Here everything saleable is displayed and hawked, everything movable is carried on men's bent backs, every able and disabled person is buying, selling or begging. Every known color is there. Green vines; dark, tattered awnings; cadmium and vermillion fruit; dark and light green vegetables; red fezzes, lavendar and white turbans; women in black; men in red, orange, purple and white. Brilliant sun and purple shadows, luminous shade and colorful reflections all changing, reflecting and refracting light until the dazzle is too much, too indescribable.

It is Constantinople.

Not so much for the architect, these street scenes, unless he has a fair and bazaar to do, a temporary decoration to design or a stage set on which to collaborate. Then what a feast of ideas, what a marvellous feast! Nothing except actual experience can give an adequate conception of the street life, where one is good-humoredly jostled, and hounded to buy the whole city from the most engaging lot of brigands that ever held up a tourist. But it is a good show.

Constantinople is worth the price even though at present in dollars the cost is about what it is in Italy, perhaps ten per cent higher. Nowhere such tender lamb, roasted on small spits before a fire, with the bill reckoned by the number of sticks-worth you have eaten. Nowhere else will the architectural appetite after a day of wandering and sketching be so well appeased by fairyland cakes, candies, sweets of unknown acquaintance or unparalleled quality as here. If he be interested in music he can hardly find a more curious type than produced by the nasal café singers, who wail in an Allah-forsaken manner which can be fitly accompanied only by their weird instruments. But it is a rich pageant, where there are more actors and masqueradors than on our own Fifth Avenue, with more languages and costumes than Babel itself could have had.

It is life to see Constantinople in the sun, to explore about when the local color of each costume, each tile and brick sings its merriest. But it is the culmination of all to sail out in the harbor in a golden sunset, when the Golden Horn is gold and Stamboul a soft cerulean against the clear sunset sky. No detail, just color and the silhouettes of the mosques — St. Sophia with its four minarets, the Blue Mosque with its family of six, then the Pigeon and Sulemanieh the

STAMBOUL, ACROSS THE GOLDEN HORN

Magnificent and the rest, interrupting the flaming sky with their noble masses and giant yet graceful spikes.

It expresses and sums up what you have seen in detail — the outstanding mosques against the horizon, incentives for solutions with a fresh thought. Then all the suggestive blue of the hill, made up of a myriad of subtle shades—now only one vast memory.

But what a memory and what an adventure! The place where East has become West, where the Old and the New live together and you feel that God is good, and like Allah, must delight in color!

COMPETITION FOR THE RECONSTRUCTION OF THE MOSQUE OF AMROU, CAIRO

RAMSES CHAFFEY, Consul of Egypt, 103 Park Avenue, New York City, wishes to bring to the knowledge of those concerned the following:

By order of His Majesty the King of Egypt, a competition is instituted by the Egyptian Ministry of Wakfs (Ministry of Pious Donations) for a project of reconstruction of the Mosque of Amrou, in Cairo, as it used to be in its period of greatest splendour. This competition is open to architects of all nationalities.

Application must be addressed, with precise indication of competitor's address to H. E. The Under Secretary of State, Ministry of Wakfs, Cairo, Egypt. These applications can also be addressed by cable to that Ministry, thus:—WAKFS, CAIRO.

The Ministry of Wakfs will forward gratuitously a copy of the conditions of the competition. The prizes attributed to the project are:—

First Prize (Egyptian Pounds)	2500
Second Prize	1000
Third Prize	500

These prizes are subject to the conditions stipulated in Article II of the contract.

The Consul will be glad to put his services at the disposal of architects who might be interested in this project.

A PROPOSED VOLUME OF RAFFLES DAVISON'S WORK

The Editor,
THE AMERICAN ARCHITECT:

THE enclosed letter which I would ask you to be good enough to publish, bears, as you will observe, the signatures of many eminent architects in this country.

J. Alfred Gotch is the President of the Royal Institute of British Architects; E. Guy Dawber, the President Elect; Arthur Keen is Honorary Secretary; Sir Reginald Blomfield, Sir Aston Webb and Sir Edwin Lutyens represent the Royal Academy; John Keppie is President of the Incorporation of Architects in Scotland and an Associate of the Royal Scottish Academy. The names of Professors Adshead, Reilly and Richardson are generally familiar here.

Should you see your way to include a note in your journal drawing attention to this letter I should be grateful as we are most anxious to get the support of the American architects to insure the publication of a volume of Raffles Davison's sketches. American architects last year had an opportunity of seeing some of these at the exhibition which was held under the auspices of The Architectural League of New York.

Yours faithfully,
HERBERT WIGGLESWORTH.

London, England.

The letter referred to is as follows:

The Editor,
THE AMERICAN ARCHITECT:

THE recent exhibition in the R.I.B.A. Galleries of sketches by Raffles Davison brought a host of visitors who marked their appreciation of the practical value of his handiwork by purchasing all the drawings and many of the sketches.

We are not surprised at the interest thus displayed, for Mr. Davison possesses an instinctive sense of beauty, and has by his acute observation preserved for us an accurate record of British craftsmanship, ancient and modern.

Though most of his drawings and sketches may have been published they have never been brought together as one collection, and it seems to the subscribers of this letter that a permanent record of this kind would be of great value and interest. Such a publication would, in addition to its inherent merit and beauty, help to explain to posterity the outlook which inspired and governed the work of the architects of past generations.

In order to ascertain the support likely to be accorded to this project, we should be glad to have the names of proposed subscribers.

Yours faithfully,

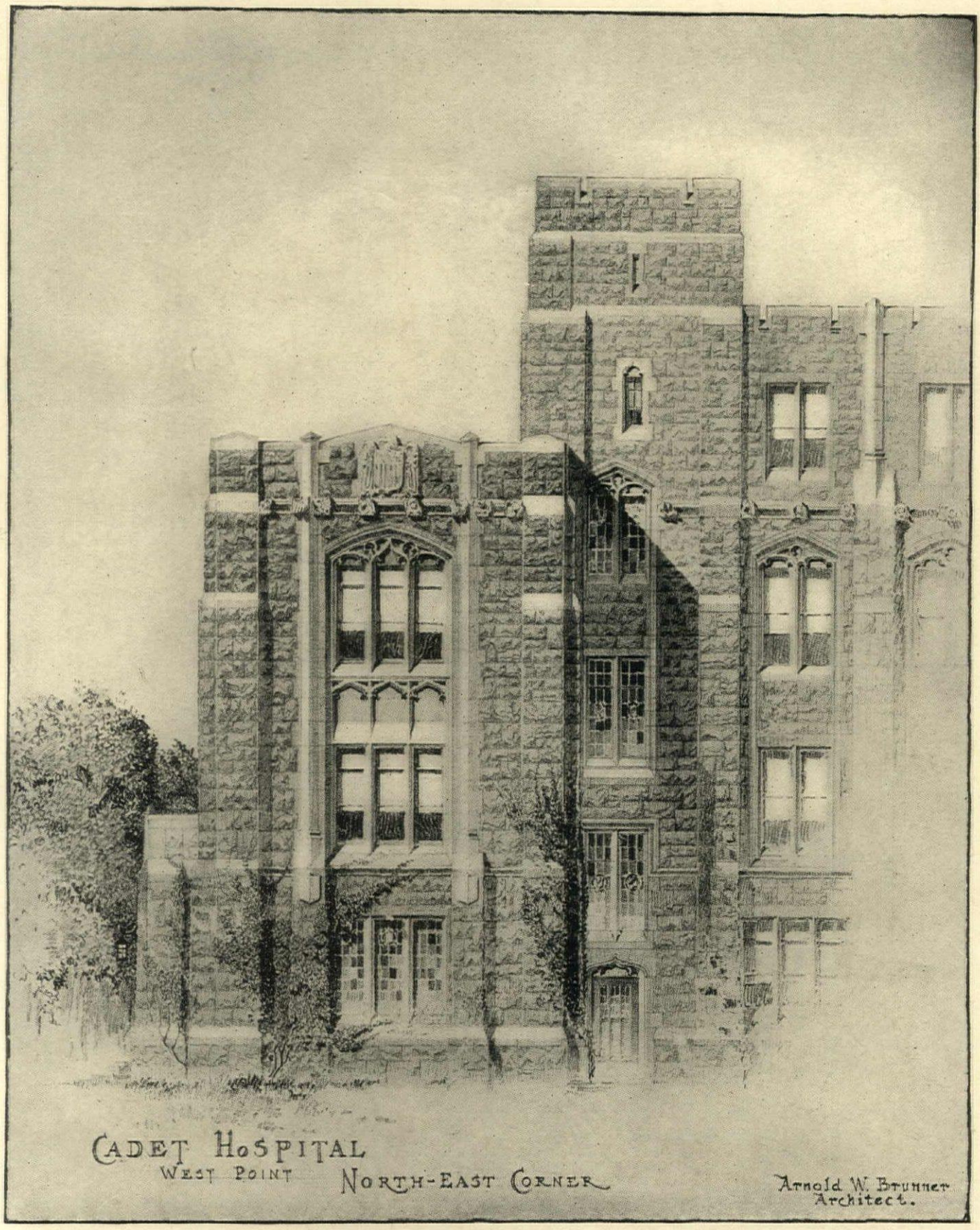
(Signed)

S. D. ADSHEAD, REGINALD BLOMFIELD, EDWIN COOPER, E. GUY DAWBER, HENRY M. FLETCHER, J. ALFRED GOTCH, ARTHUR KEEN, JOHN KEPPIE, EDWIN LUTYENS, C. H. REILLY, A. E. RICHARDSON, ASTON WEBB, MAURICE E. WEBB, HERBERT WIGGLESWORTH.

"WORKING PHOTOGRAPHS"
ONE OF A SERIES MADE IN ENGLAND BY
JOHN RUSSELL POPE, F. A. I. A.

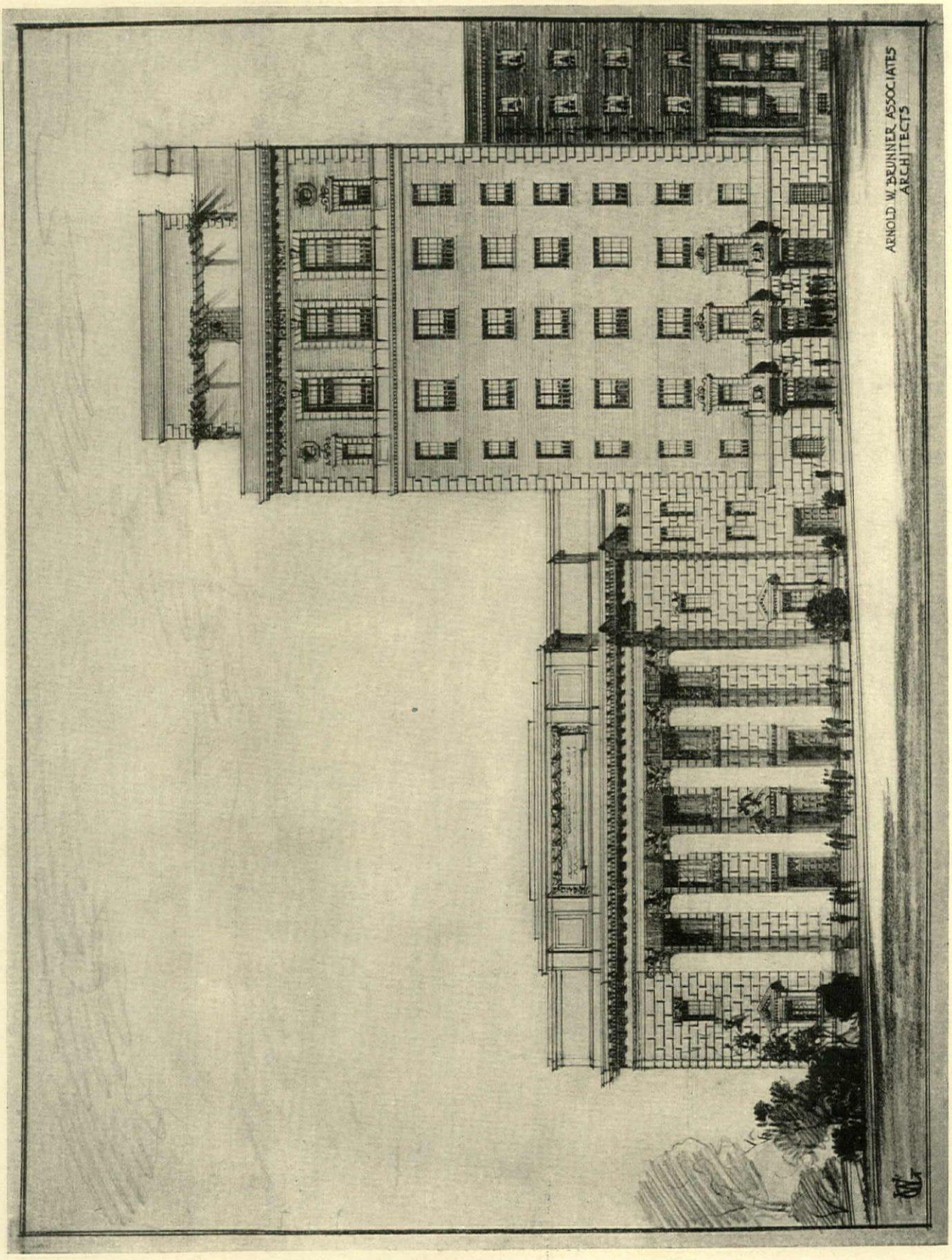
"WORKING PHOTOGRAPHS"

ONE OF A SERIES MADE IN ENGLAND BY
JOHN RUSSELL POPE, F. A. I. A.



OFFICE SKETCHES

FROM THE ORIGINAL DRAWING BY WILLIAM GEHRON OF ARNOLD W. BRUNNER ASSOCIATES, ARCHITECTS



OFFICE SKETCHES

DESIGN FOR COMMUNITY HOUSE, UNION TEMPLE, BROOKLYN, N. Y.

FROM THE ORIGINAL SKETCH BY WILLIAM GEHRON OF ARNOLD W. BRUNNER ASSOCIATES, ARCHITECTS

INTERIOR DECORATION *in* GREAT BRITAIN

A communication *from an* English reader

AFTER a considerable "all paint" period in which all the effects were obtained with paints, enamels and water paints there is a noticeable tendency to increase in the use of wall papers. The manufacturers seemingly have learnt the lesson during the "all paint" phase, for an almost endless variety of textures and low toned pattern effects is available for the decorator. Again with the large number of bungalows and similar dwellings going into use there has come the wall board in place of plaster, which with its panelled effect is capable of new methods of treatment.

The economic conditions of the country have brought us the small house in which the living room does duty for the drawing room, morning room and library of the spacious residence occupied by our parents. Thus a new problem in decoration has to be solved. It was for this purpose that we saw some few years back so much distemper, water paints and flat enamels in use. The walls, being in broad sheets of a single color, showed the marks of wear badly. They became chipped in many cases and what was, when new, a pleasure is today an eyesore which is turning people back on wall papers daily.

So wall papers can be said to have declared war upon the painted wall. The makers are well armed. They have found that fragmented light and shade, with mixed colors in the background, pleasantly withdrew it from the plane of the hanging pictures and at the same time gave the effect of space to the room. They had found what many consider the perfect picture background. They made their papers accordingly and the national and other picture galleries came over to their side, as the decoration of many of their walls now shows. Outstanding amongst these papers are the reproductions of Japanese grass cloth. Once again this beautiful material is coming from Japan, and may be seen in use in the wall paper showrooms of the West End of London. But there are imitations of good quality for those of more slender purse.

There are in addition scenic panels, wall papers with patterned backgrounds in many colors, dimly showing through a cloud of over-printed neutral shade. These papers are indeed something new and they serve two purposes. They provide a perfect background and satisfy in an artistic manner the natural desire to fill up blank spaces. Reproductions of patterned hangings are now correctly used with the style of furniture and decoration with which their originals were associated, such as flock papers in Genoese velvet designs for use with Queen Anne furniture. Clever reproductions of Chinese and French scenic panels fill us with desires to banish our pictures to the cellar and to harmonize our rooms with these well designed scenes. These decorations are made up to 25 feet in width without repetition and as many as 3,000 blocks were used in the making of the most elaborate. There are also many other reproductions that possess great qualities, such as the Cordova leathers in rich emboss, and chintzes, English, French and Italian, as well as Persian in so many colors and so well printed that by comparison they seem finer than their originals.

Then there are the historically important works of Walter Crane, William Morris, Voysey, and others of their schools. The Voysey patterns are essentially English: their spirit is akin to the Gothic. Moreover many wall papers are now printed in "fast-to-light" colors while some are even washable, though they look like finest silk. The new designs are doing much to forward the use of wall papers in the decoration of English homes today.

The new materials being used in the construction of houses are, of course, causing considerable modification both in the materials and methods of application so far as paint work is concerned. Concrete, asbestos, steel and the like all require different methods of treatment and in general use there are now a great number of compressed air paint spraying machines where large surfaces have to be treated.

There is a new vogue in furniture. The Jacobean style is going entirely out of fashion now and painted furniture is again appearing in the leading drawing rooms. The highly ornate pieces which we associate with the 18th century are not being adopted. The preference is for richly colored woods decorated with only small medallions or placques in color paints. Flowers and geometrical designs are the most common designs for these painted parts although in extremely high class work there is a certain amount of figure work. This is not, however, at all general owing to the enormous prices commanded by capable artists. Certain suites of furniture I have seen recently in drawing rooms have been painted in colors to match the decorative work of the room itself.

Such suites of furniture, being specially treated to match a decorative effect, as is common practice, may cost some hundreds of pounds so that when one declares that this is becoming a vogue, it must be understood that the vogue does not extend far beyond the most fashionable quarter of the metropolis.

A. Jacob, London, England

COMPETITION *for* THE NEW YORK STATE ROOSEVELT MEMORIAL

AFTER a State wide competition beginning December last, the Trustees of the New York State Roosevelt Memorial selected John Russell Pope of New York City to prepare the design and plans for the Memorial to be erected to the memory of Theodore Roosevelt on Central Park West and Manhattan Square, New York City.

The Trustees in their deliberations considered seventeen architects who were recommended to them by a Commission named by the Governor and Legislature according to an Act creating a Commission for this purpose in 1920, to compete in designing what will perhaps be the most important building which the State has erected.

Owing to various causes and declinations to compete the list finally invited by the Trustees to compete narrowed to the following eight firms:

J. H. Freedlander, New York City
Gordon & Kaelber, Rochester, N. Y.
Edw. B. Green & Son, Buffalo, N. Y.
Helmle & Corbett, New York City
H. V. B. Magonigle, New York City
John Russell Pope, New York City
Trowbridge & Livingston, New York City
York & Sawyer, New York City

Arnold W. Brunner was at the outset selected by the Trustees to act as Professional Adviser and prepare the program of competition according to the rules of The American Institute of Architects. On the death of Mr. Brunner, Charles Butler was selected to serve with the firm of Arnold Brunner in the capacity of Professional Adviser.

Approximately two months were allowed to the architects for the preparation of their plans.

The Trustees selected according to the program as a Professional Juror, William Richard Kendall of the firm of McKim, Mead & White and the competing architects selected Milton B. Medary, Jr. as their representative.

The Jury that passed upon the designs was:

Henry Fairfield Osborn, Chairman of the Board of Trustees,
Peter D. Kiernan, of Albany,
Mrs. Douglas R. Robinson, of New York,
Chauncey J. Hamlin of Buffalo,
Charles W. Flint, Chancellor of Syracuse University,
Mrs. William H. Good of Brooklyn,
William Richard Kendall, architect,
Milton B. Medary, Jr., architect.

Unfortunately Breck Trowbridge, one of the chosen competitors, died only two days before the competition began and consequently as the competition was conducted for the selection of the architect, the jurors could not consider Mr. Trowbridge as among the list of architects.

The award of the jury was to plan No. 6, submitted by John Russell Pope.

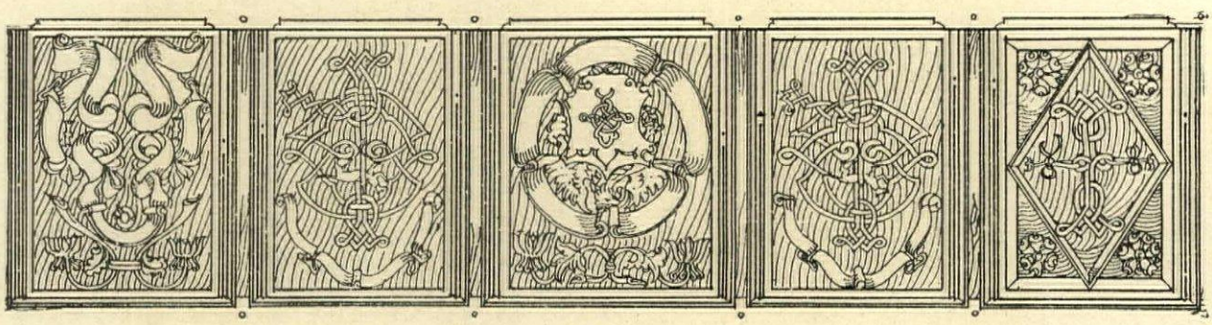
According to the program the solution of this problem must be solved by incorporating the following features:

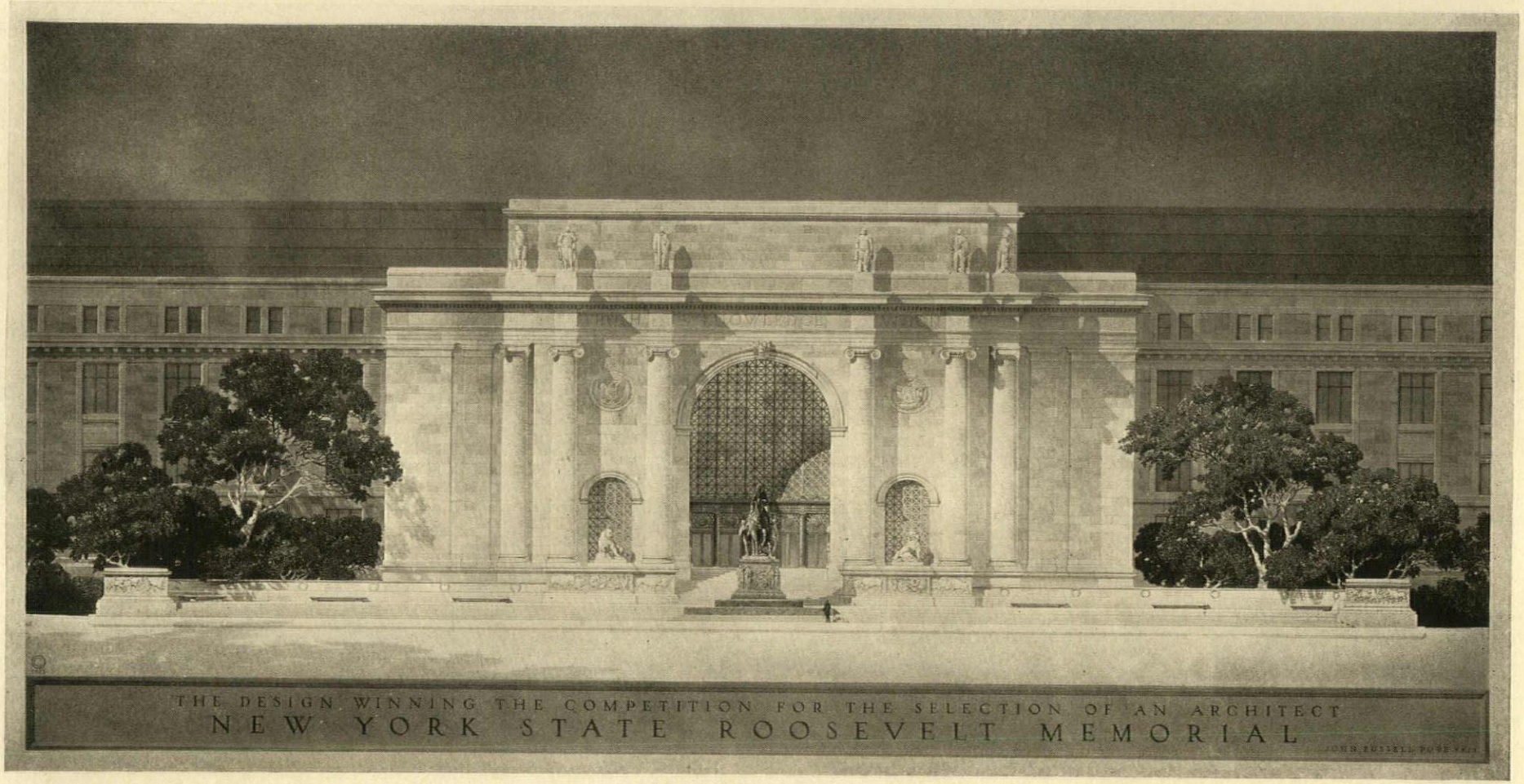
The design should symbolize the scientific, educational, outdoor and exploitation aspects of Theodore Roosevelt's life rather than the political and literary.

The design should be consistent with the dignity of the Empire State and reflect the National and international influence of Theodore Roosevelt.

The Memorial should be harmonious with and embody the ideals, purposes and plans of the American Museum of Natural History to which Theodore Roosevelt devoted the early and closing years of his life.

The Memorial should provide not only for visitors from the City and the State but should be so planned that it would also become an integral part of the school and public educational system of the State, and likewise form an extension to the educational work of the American Museum of Natural History in the City and in the State.





PRIZE WINNING DESIGN

JOHN RUSSELL POPE, ARCHITECT

PRIZE WINNING DESIGN

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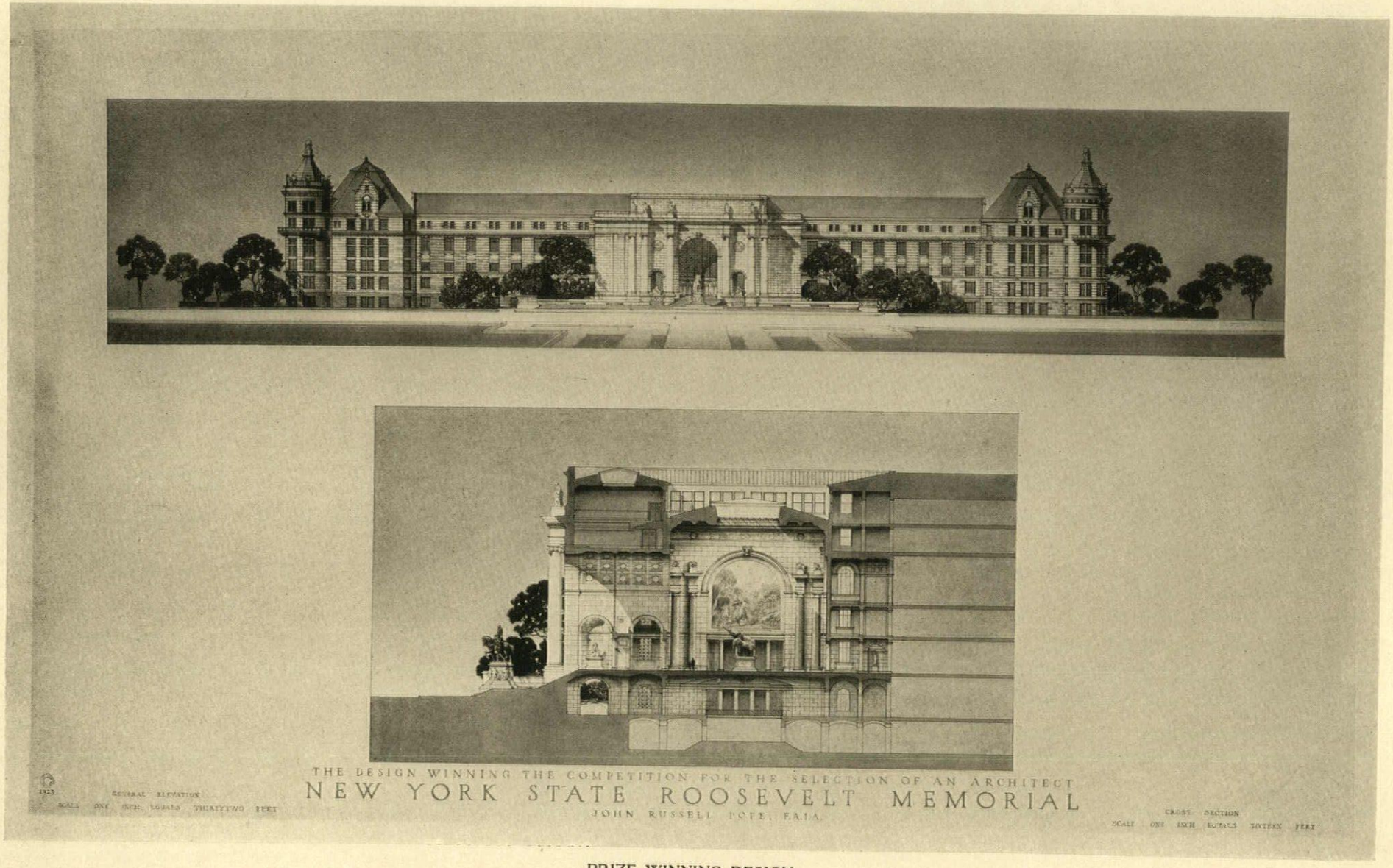

PRIZE WINNING DESIGN

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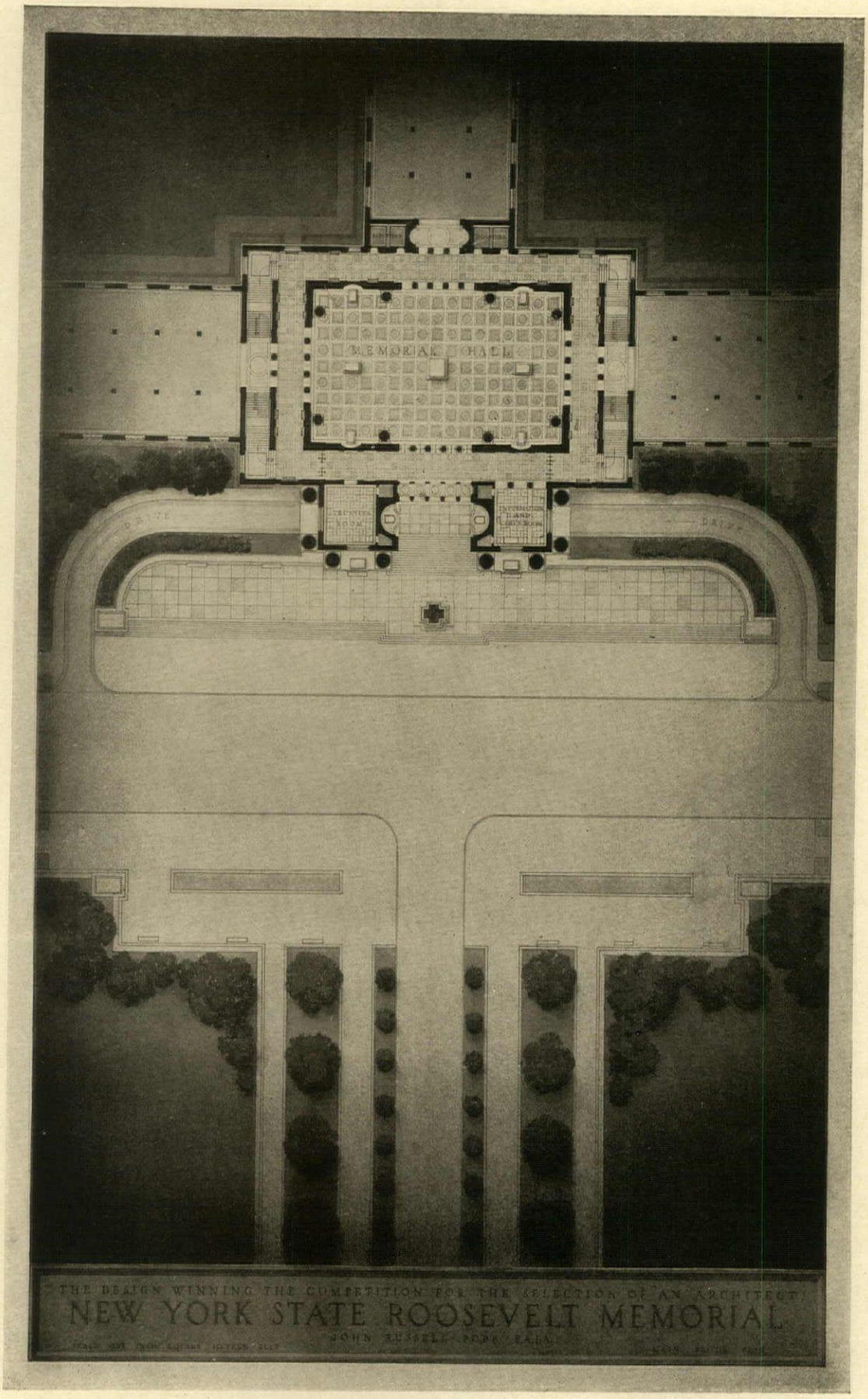

PRIZE WINNING DESIGN

JOHN RUSSELL POPE, ARCHITECT

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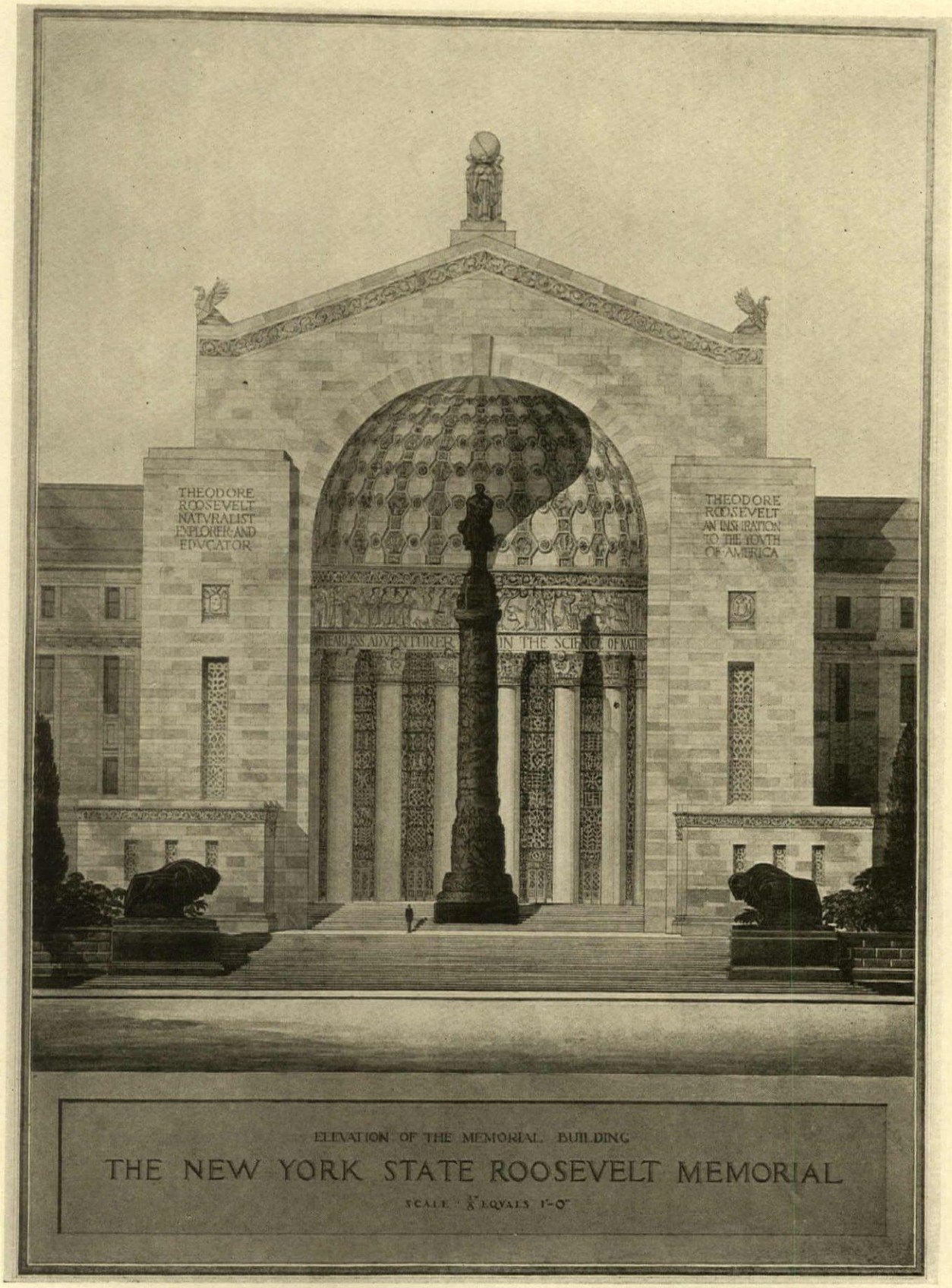

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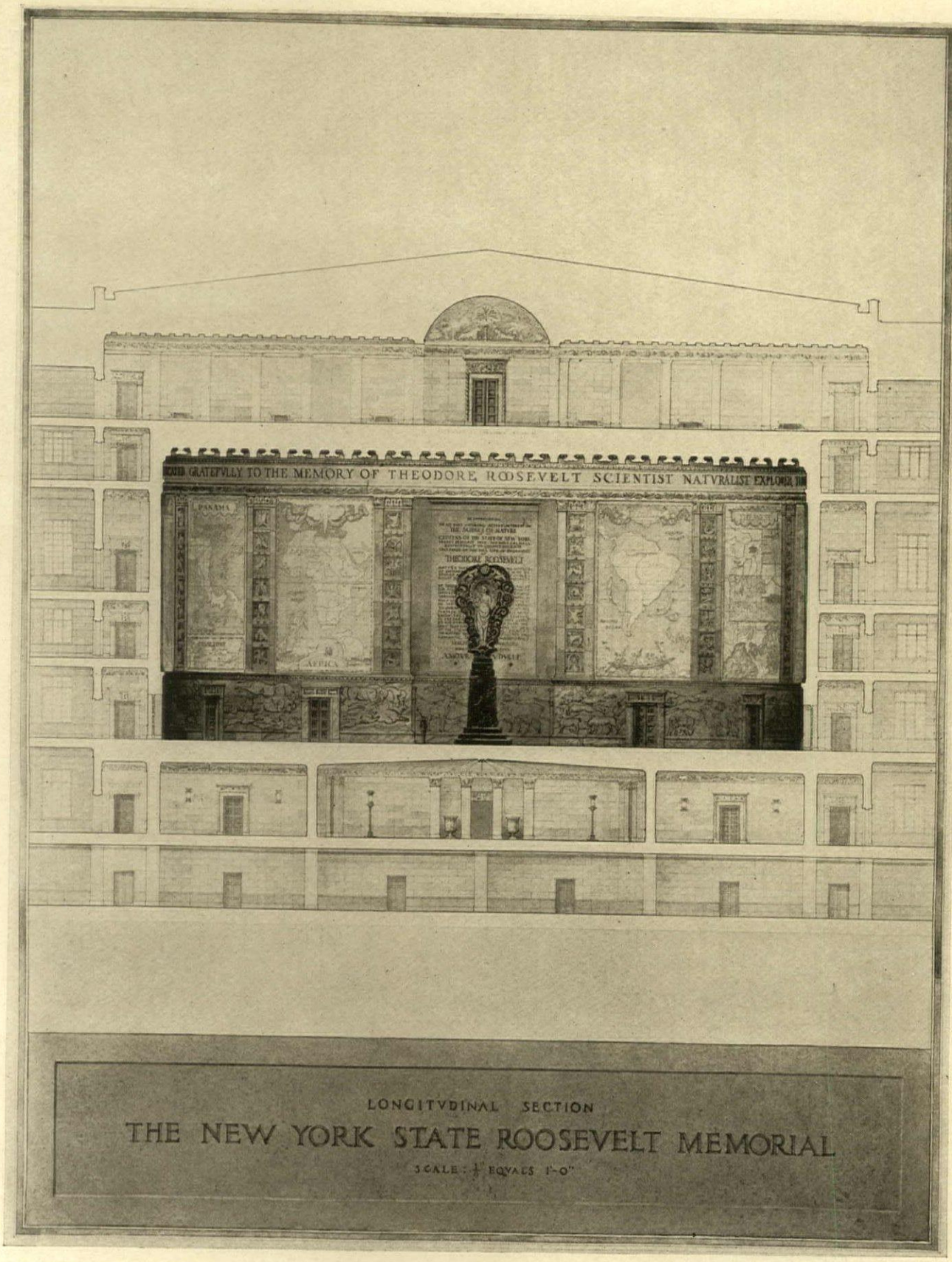

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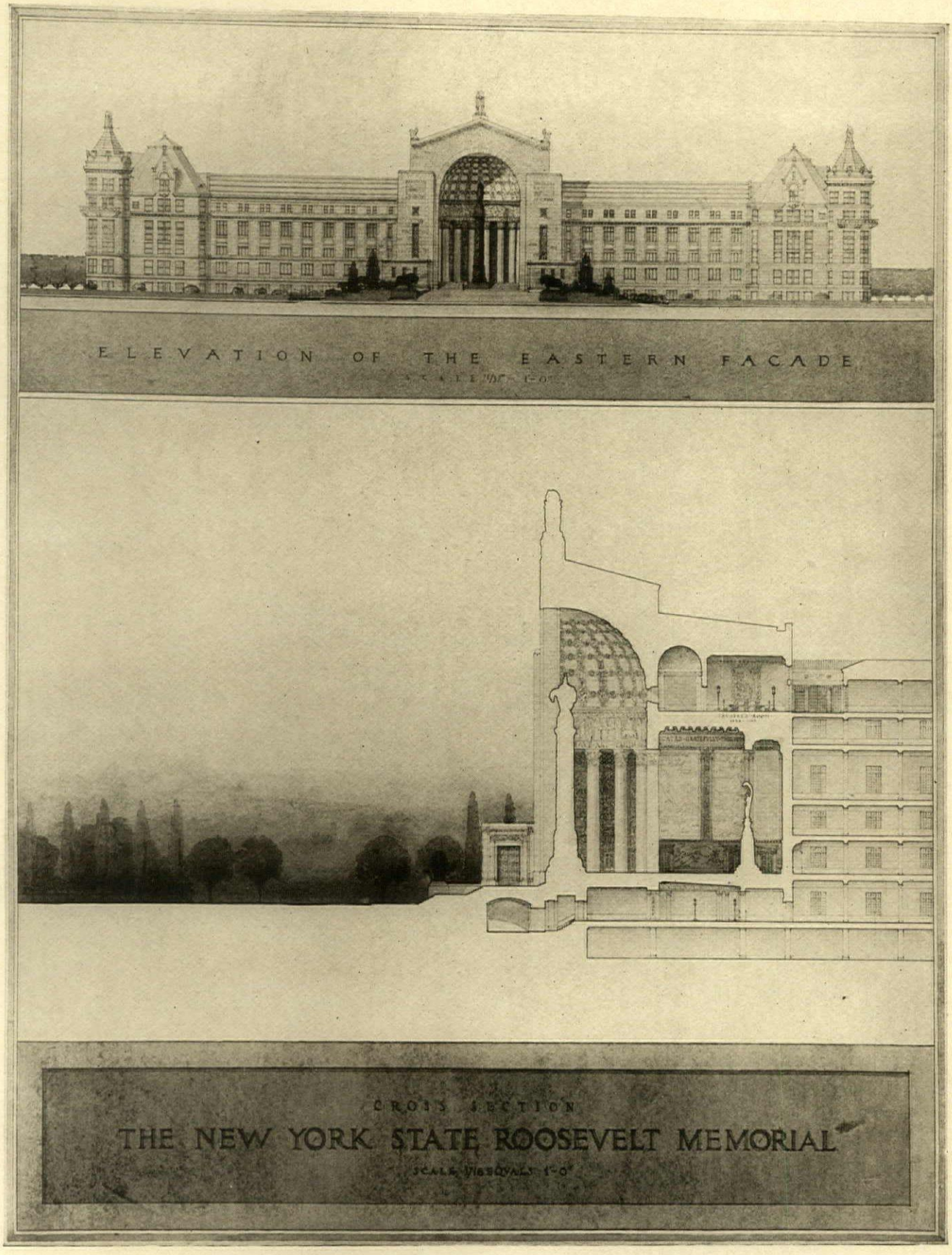

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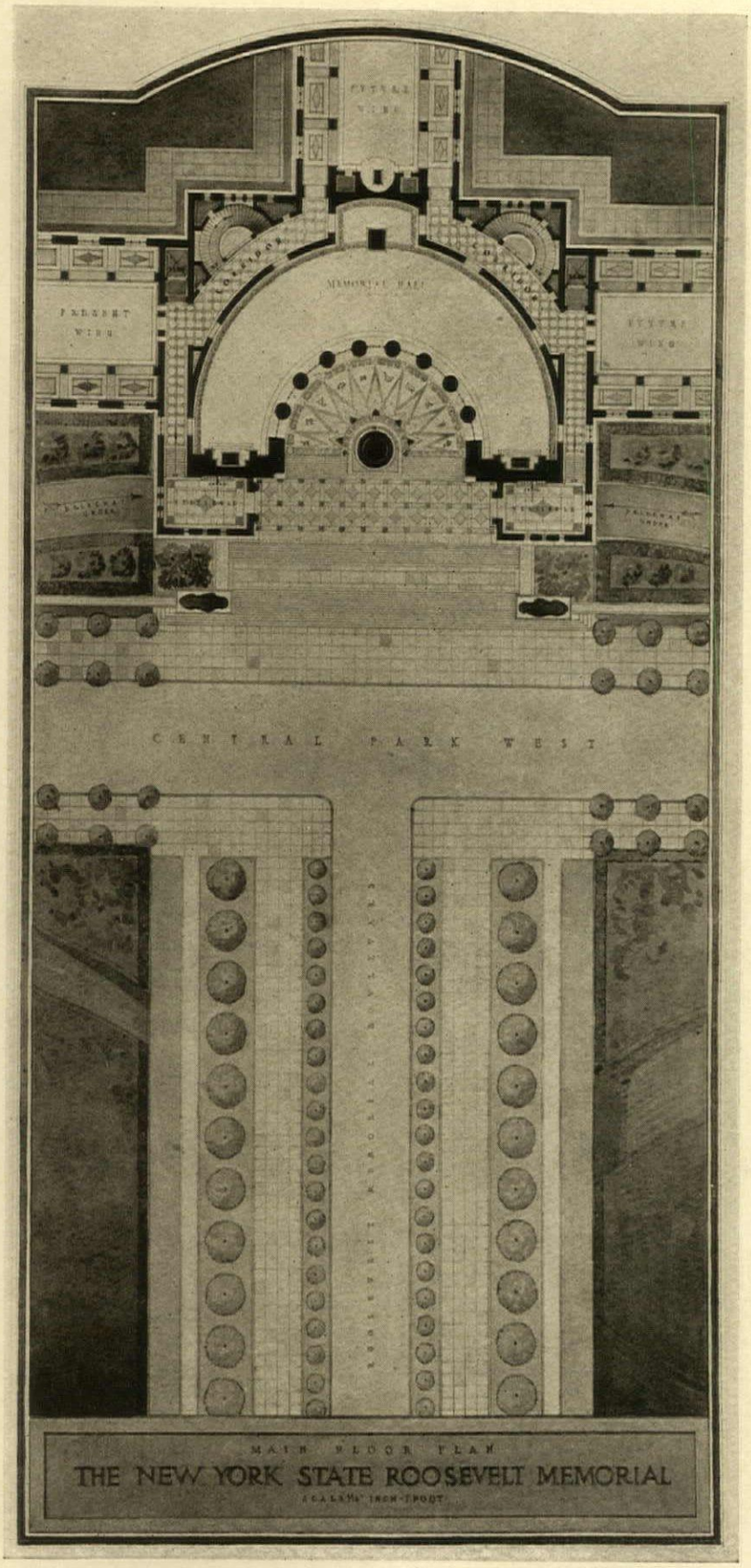
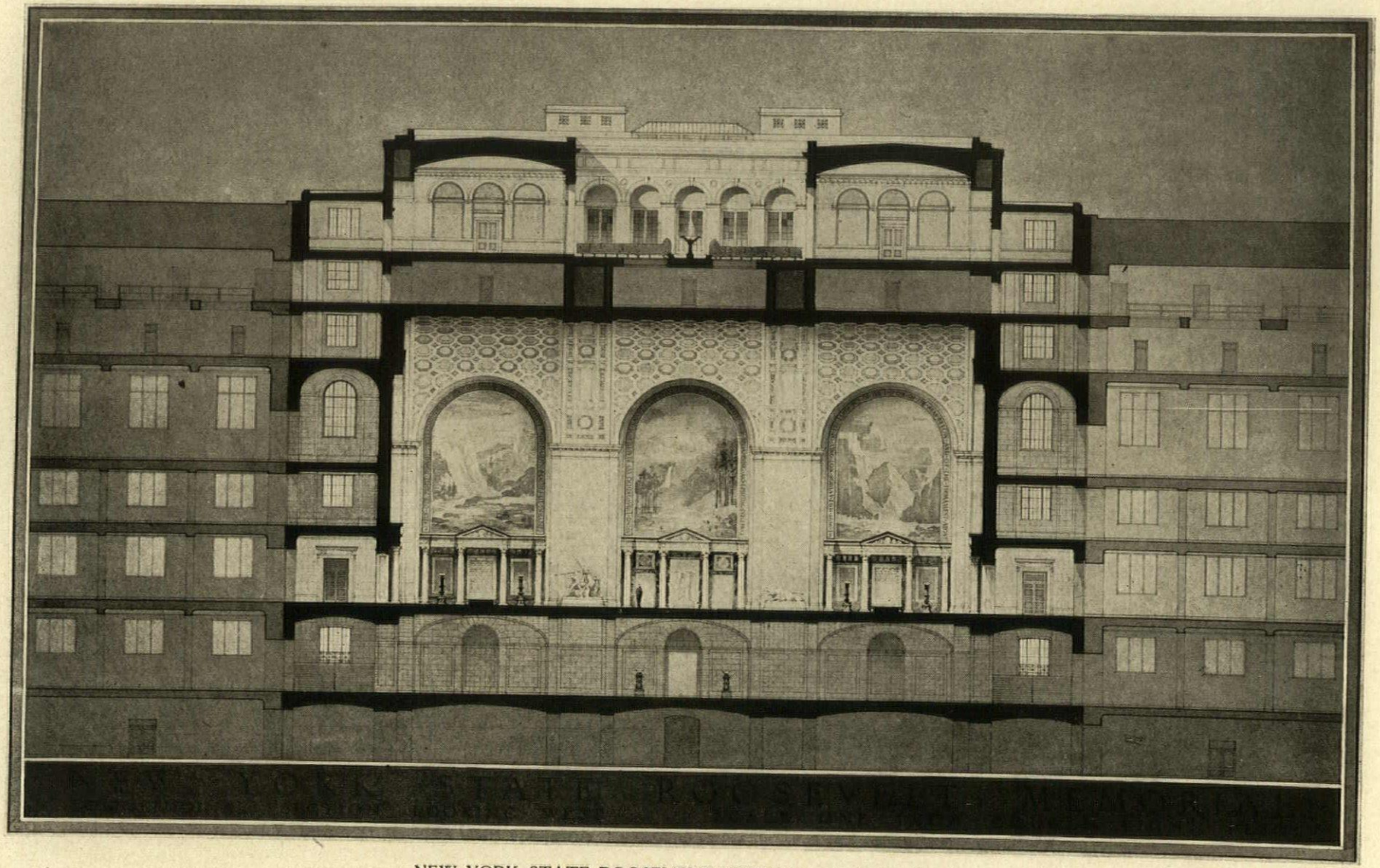


DESIGN SUBMITTED BY HELMLE & CORBETT, ARCHITECTS

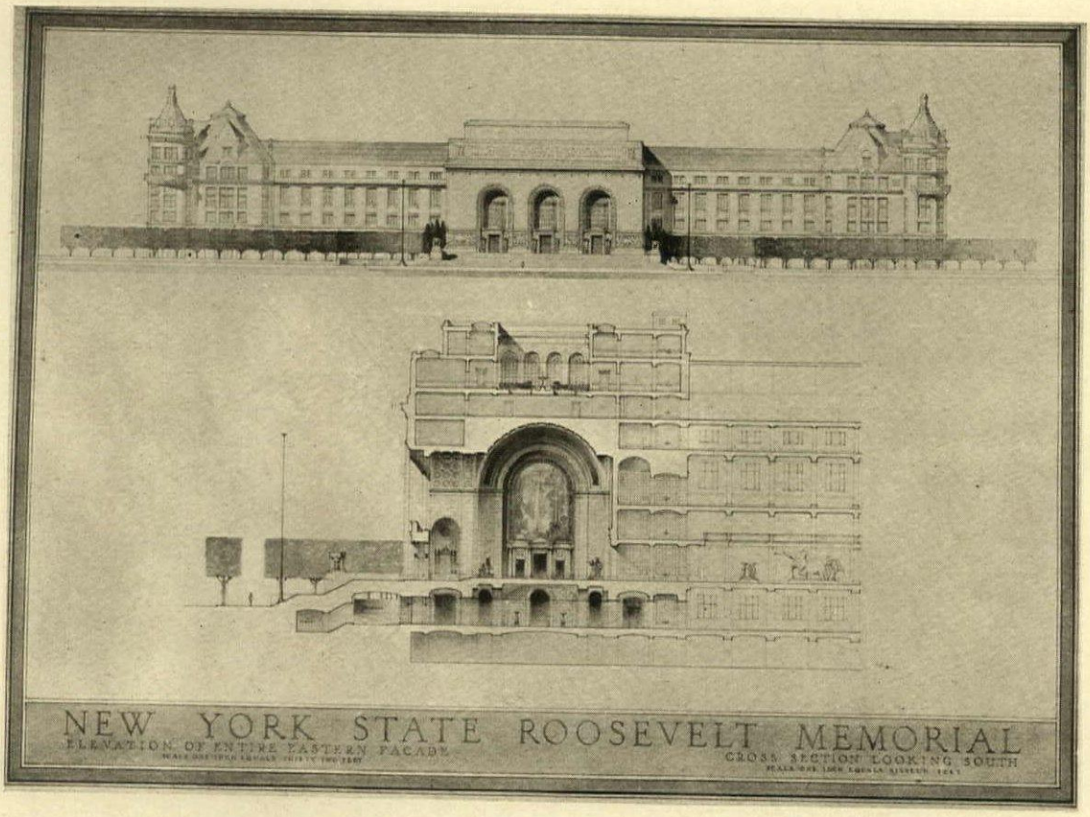
NEW YORK STATE ROOSEVELT MEMORIAL COMPETITION

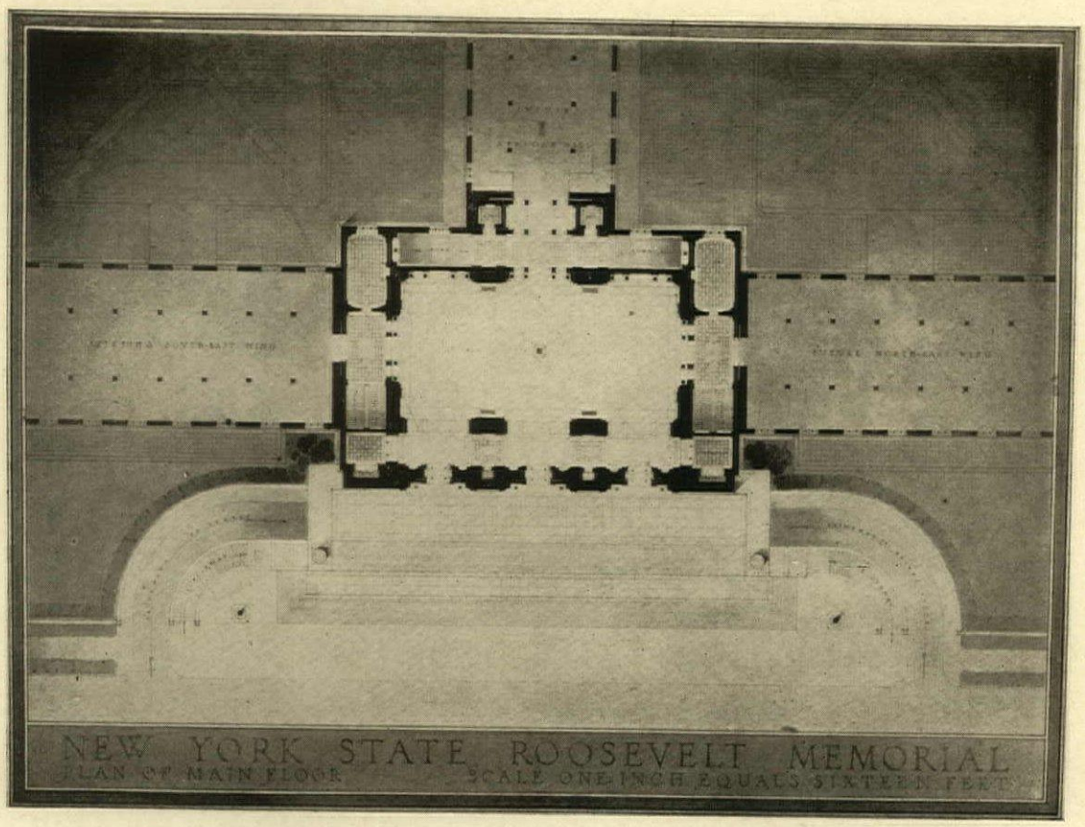
DESIGN SUBMITTED BY TROWBRIDGE & LIVINGSTON, ARCHITECTS



NEW YORK STATE ROOSEVELT MEMORIAL COMPETITION

DESIGN SUBMITTED BY TROWBRIDGE & LIVINGSTON, ARCHITECTS





NEW YORK STATE ROOSEVELT MEMORIAL COMPETITION

DESIGN SUBMITTED BY TROWBRIDGE & LIVINGSTON, ARCHITECTS

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INTERIOR ARCHITECTURE

ARCHITECTURE *and* DECORATION *in the* MODERN OFFICE

With especial reference *to the* offices *of the* Standard Oil Company *of* New Jersey, Standard Oil Building, New York

CLINTON & RUSSELL, WELLS, HOLTON & GEORGE, Architects

IT is undoubtedly true that the development of art in the United States has been sadly handicapped by a too close application of commercial principles. This is due to the fact that in everything we attempt in this country the commercial aspect usually is stressed to a much higher degree than in European countries, where the artistic development is more spontaneous and, therefore, much more pronounced. When we pause to consider these conditions and realize, as we so seldom do, that the average business man—or woman—spends one-third of his life in the office, or as much, and, perhaps, even a little more, than he spends in his home (exclusive, of course, of the eight hours allotted for sleep) it does not seem so strange that his business life—the commercial side,—becomes so insistent. The mistake in the past, and the one we are still making, is that we have not taken into consideration the necessity for congenial environment in the office

PRIVATE OFFICE OF THE PRESIDENT

OFFICES OF THE STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

Walnut walls, sienna marble fireplace facings and baseboard, furniture covered in brown leather, a rug of a soft neutral tone, and lighting fixtures of iron comprise the elements which go to make up the architectural and decorative schemes

as we have in the home. The increasing interest in house decorating and furnishing during the last decade has been attributed almost wholly to a realization of the fact that the home serves best its purpose when it expresses in definite form the ideals for which it stands and by which its character may be determined, and, in such an expression, architectural and decorative design are found to be the principal means of manifestation. But we seldom carry that principle into our commercial life. Office furniture, as we even call it, is designed by manufacturers to be, first, practical; and, second, not decorative. They seem to think that any decorative interest that might be introduced into its design would tend to disturb the office routine, and that, of course, would be directly contrary to the traditions of modern American business and enterprise. But gradually we are learning the lesson being taught us in our homes, that good, sound architectural design, aided by naturally developed decoration, is rather a stimulant to the mind than a hindrance, and commercialism in design, as we were wont to understand it, is giving way to a new and better interpretation.

At the mere suggestion of an office of any kind, private or otherwise, there naturally comes to the minds of those of the older generation plaster walls, stock wood and glass partitions, conventional flat and roll top desks, swivel chairs and high stools, filing cabinets, and sectional bookcases, all devoid of any artistic expression. These pieces have their practical advantages and the average office cannot do well without them. But not one combines with its practical conveniences any decorative interest as an added attraction; rather, each one is frequently objectionable as a decorative element. The private office, as is natural, is beginning to feel the new order of things first. There is a better opportunity there for the note of personality to be introduced, which, if lacking, as it has been, makes a misuse of the word "private," for without personality, there can be no privacy, in the truer sense. In a thoroughly sympathetic environment the business man will go about his day's work in an entirely different spirit; he will accomplish much more than he will in stereotyped "commercial" surroundings, for the one thing that seemed to make his business life unreal and impersonal, and

PRIVATE OFFICE OF THE CHAIRMAN OF THE BOARD

OFFICES OF THE STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

Walls of walnut, fireplace facings and baseboard of sienna marble, a cork floor on which is laid a rug of yellows and browns, and walnut furniture, covered in rich brown leather, complete the scheme

THE BOARD ROOM

OFFICES OF THE STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

The walls are formed of an oak wainscot surmounted by Kato stone; ceiling beams are of carved oak, and the intervening panels are treated in ornamental plaster in low relief; a dull brown cork floor is partially concealed by rugs of soft olive green tones, and the specially designed walnut furniture is covered in brown leather. The lighting fixtures of dull brass, being also especially designed for the room, play a very prominent part in the decorative scheme

therefore tedious and laborious, has been removed. He brings his whole self to the office now, while before he left part of his life at home, for there was no place for it in his commercial existence. His office has become *his* office, while before he seemed a sort of prisoner there.

No better illustration of these new conditions could be found than the offices of the Standard Oil Company of New Jersey in the new Standard Oil Building at 26 Broadway, New York City. Carrere & Hastings, Shreve & Lamb were the architects of the building. This company occupies the entire twenty-first, twenty-second and twenty-third floors of the building and, these three floors, however, were laid out and completely designed by Clinton & Russell, Wells, Holton & George, and it is photographs of their work that are reproduced here. It would be well to state at the outset that the designs of all the rooms are characterized by simple lines in good proportion, stimulated by a careful application of pleasing color, and the interest in none depends on its rich ornamentation or elaborate detail.

The private office of the president, while practical in the sense that it is a business office, has nothing of the old-fashioned commercial aspect about it at all. The walls, in solid planks of American walnut, are given peculiar interest by the figure and grain of the wood, while, at the same time, their simple treatment does not allow of any distraction as panelled walls, so often used, would tend to create. The walls in the private office of the Chairman of the Board are similarly treated. A certain individual note has been introduced into the design of each room in the detail of the woodwork and in the decoration over the fireplace, as will be seen in the photographs. While the general color scheme of the two rooms is somewhat the same, the rooms are alike only in that they both represent the personality of the serious-minded; there is nothing in the make-up of either even to suggest idleness or ease, nor yet is its businesslike seriousness carried to the point of disinterest.

The reception hall leads from the elevator hall to the ante room, which, in its turn, opens into the Board Room. The design of this ante room prepares one, to a certain extent, for what is found beyond. Its walls are panelled in oak from floor to ceiling, carved pilasters serving to divide the panels into groups supporting a carved frieze and cap moulding. The plaster ceiling is spotted after the manner of the early Scotch with parge work ornamentation, each of the several designs being emblematic of the various industries sponsored by the company. This introduction of the personal

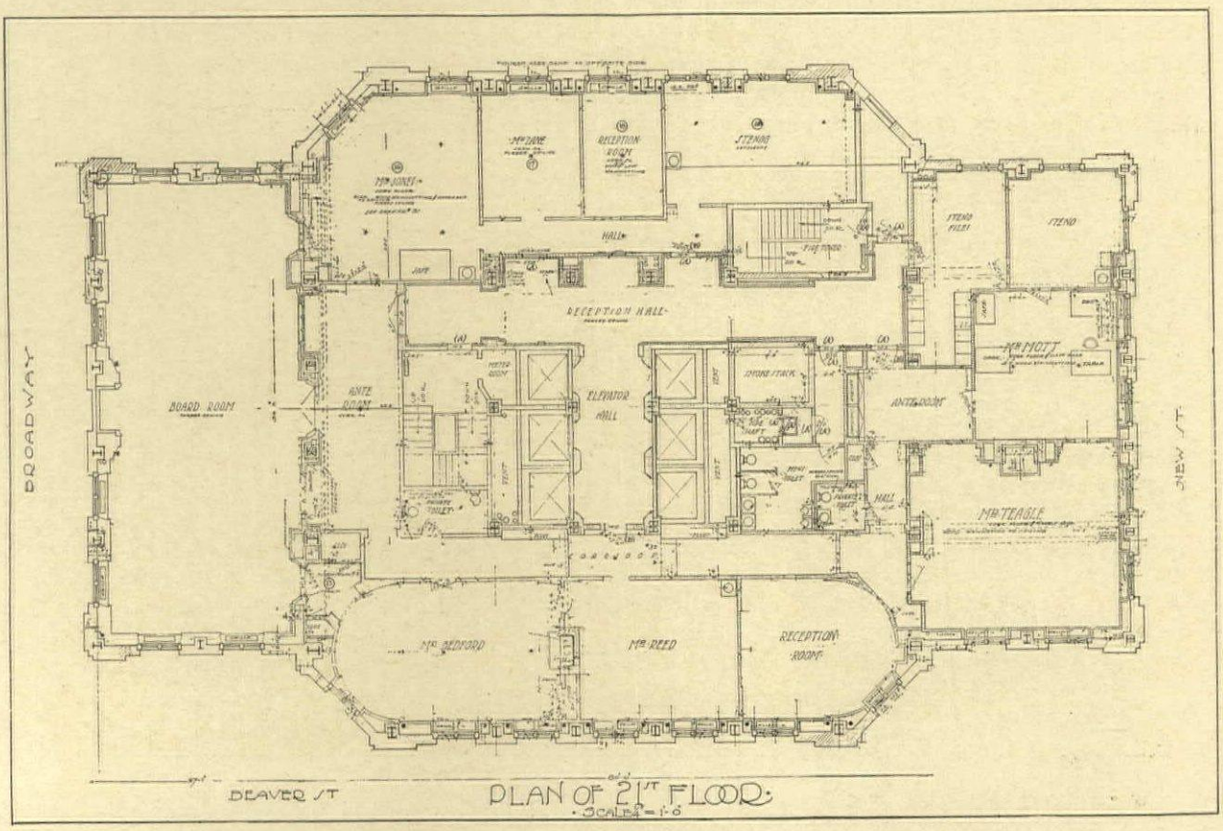
ANTE ROOM LEADING TO BOARD ROOM

OFFICES OF THE STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

An interesting feature of this room is the parge work ceiling. Designs which are symbolical of the several industries of the company are used as ornamentation

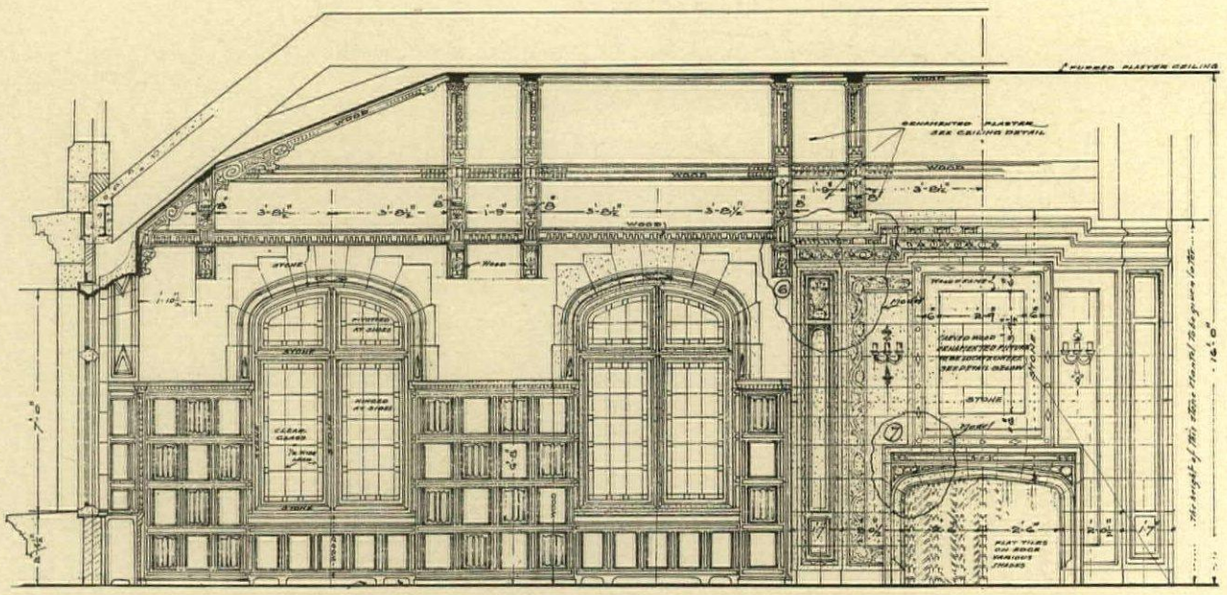
element into the design, so characteristic throughout the entire floor, is to be commended, and the architects, in taking advantage of the opportunity offered have shown themselves possessed of a creative genius which is, quite often, lacking in modern architectural and decorative design. The doors serve as the real connecting link between the ante room and the Board Room, as they should, by reason of the service which they perform. These doors, (there are three similar pair opening out from the Board Room) are carved entirely out of solid oak. Even the effect of applied mouldings, which make up practically its entire design, except for an occasional rosette in low relief, are all carved out of the solid.

All the woodwork in the Board Room is of English oak,—doors, wainscot which follows around the greater part of the room, ceiling beams handsomely carved, and the furniture,—and all is finished in a light amber tone rubbed down in wax to a dull finish, thus taking advantage of every line of the figure and grain of the wood. It counts in the decorative scheme as a color and not simply as black, as old English oak, for example, so often does. In fact, every detail has its value and nothing is lost. The walls above the wainscot and the entire chimney breast are of Kato stone, set in blocks of various sizes and shades of amber (that being probably as good a way to describe its color in words as any). The oak woodwork and stone combined with a delicately tinted ornamental plaster ceiling, a brown cork floor and dull brass lighting fixtures create an effect that would be difficult to improve. The cork floor is partially concealed by large rugs of an olive green hue, with a line border of deeper shades of the same color; the furniture, or such of it that calls for it, is covered in a rich brown leather, and the windows are draped with side curtains and valances of an olive green velour, similar in shade to the rugs. The windows themselves are divided by stone mullions, fitted with metal casements, set with leaded lights. Sash curtains of an ecru casement cloth are hung at each opening. The room seems actually to be alive with color, and yet, on scrutiny, the amber tones are found to predominate, being even carried into the olive green of the rugs and draperies. It is the clarity of color, then, that impresses. But over all is its sincerity of design. While the furniture was especially designed and constructed, and the design of the lighting fixtures was studied to accentuate the architecture and to serve a much nobler purpose than just to give light to the room, there is not a single detail in the entire room that needs excuse or explanation for its existence. Everything is there for some reason.



PLAN OF THE TWENTY-FIRST FLOOR OF THE STANDARD OIL BUILDING, 26 BROADWAY, NEW YORK, SHOWING THE OFFICES OF THE STANDARD OIL COMPANY OF NEW JERSEY

CLINTON & RUSSELL, WELLS, HOLTON & GEORGE, ARCHITECTS

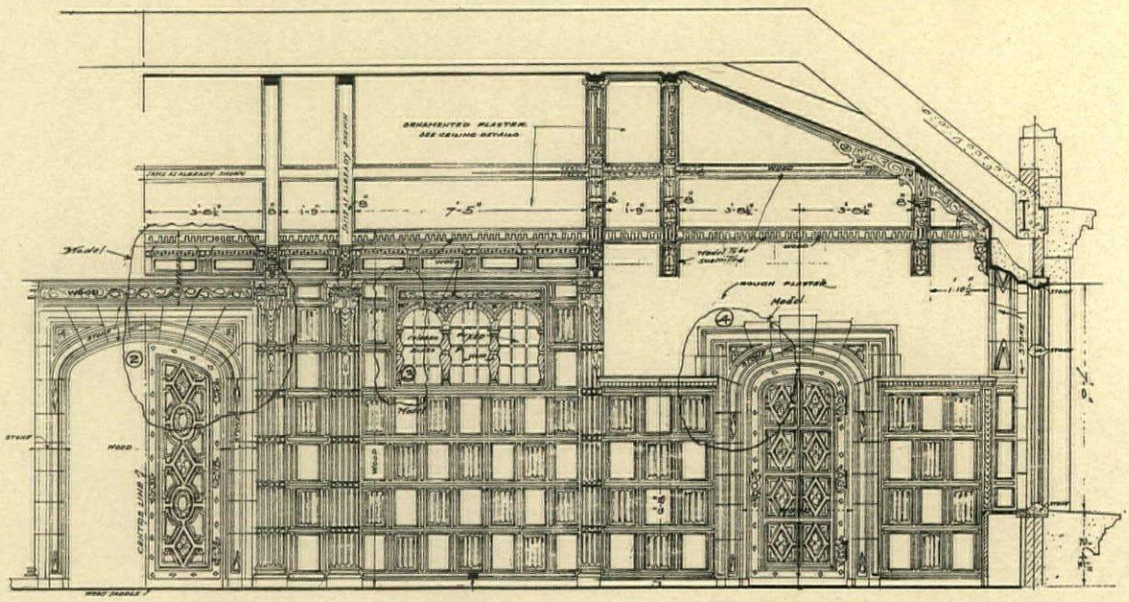


ONE-HALF OF THE WEST ELEVATION OF THE BOARD ROOM, STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

CLINTON & RUSSELL, WELLS, HOLTON & GEORGE, ARCHITECTS

The entire mantel breast, the walls above the wainscot and the mullions of the windows are of Kato stone; the wainscot and ceiling beams are of oak, and the ceiling of plaster

Good decorative design develops just as naturally from the architectural scheme as good architectural design arises only from the structural plan. Decoration is not simply a means of elaboration; it is the availing of the opportunity to accentuate certain features of the architectural scheme over others, to give them more importance by adding interest and creating contrast. There is always a good reason for good decoration. If this principle of *natural* development of both the architectural and the decorative schemes, which was so peculiarly characteristic of the early Grecian builders, is accepted as the basis of modern design, the future of art in this country will look brighter.



ONE-HALF ELEVATION OF THE WALL OPPOSITE THE MANTEL, BOARD ROOM, STANDARD OIL COMPANY OF NEW JERSEY, STANDARD OIL BUILDING, NEW YORK

CLINTON & RUSSELL, WELLS, HOLTON & GEORGE, ARCHITECTS

The large doorway opens from the ante room and the small door at the right leads into the private office of the Chairman of the Board

HOUSE OF PROFESSOR A. J. EAMES, ITHACA, N. Y.

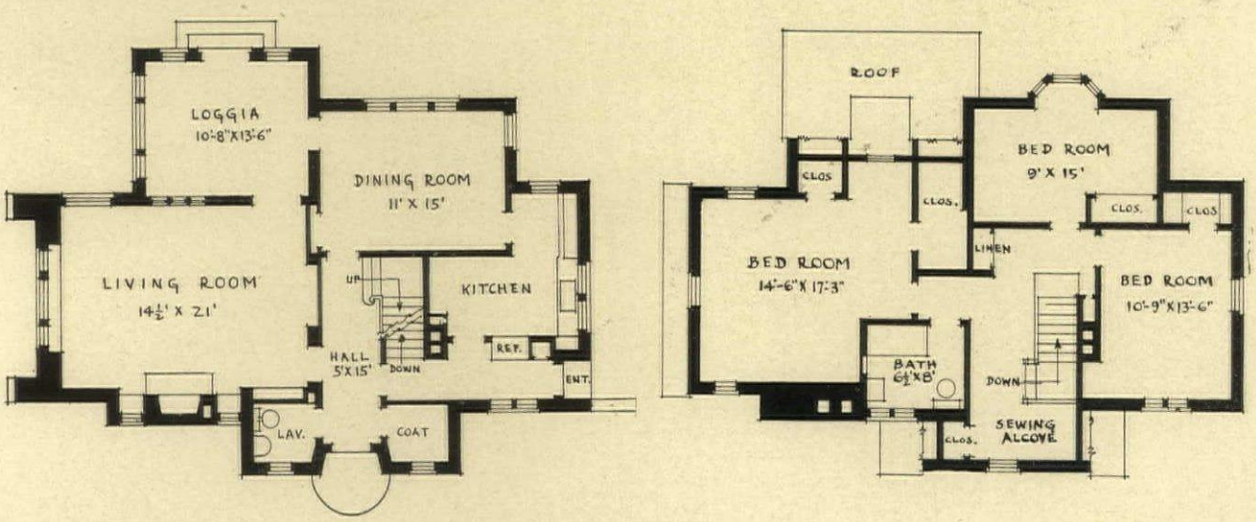
CARL C. TALLMAN, ARCHITECT

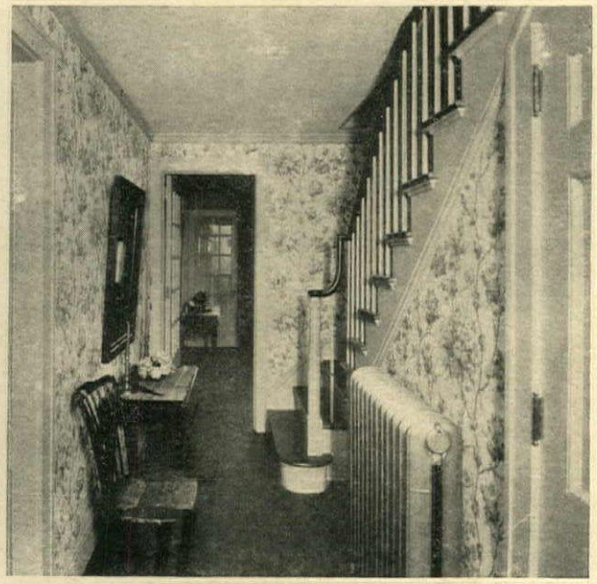
This house was built in 1922 and cost $16,000., including the garage. Cost per cubic foot 45 cents.

It is built of local stone backed with hollow tile. The roof is slate.

The problem presented by the cost limit and the topography of the lot called for a compact yet picturesque type, the locations of the main rooms being determined more by the vistas of valley and lake toward the South and West than by the usual considerations of the points of the compass. Consequently the angle of the house was chosen after careful study at the lot so as to afford the best views and to fit the natural contours to the best advantage.

The heating system is hot water.





HOUSE OF PROFESSOR A. J. EAMES, ITHACA, N. Y.

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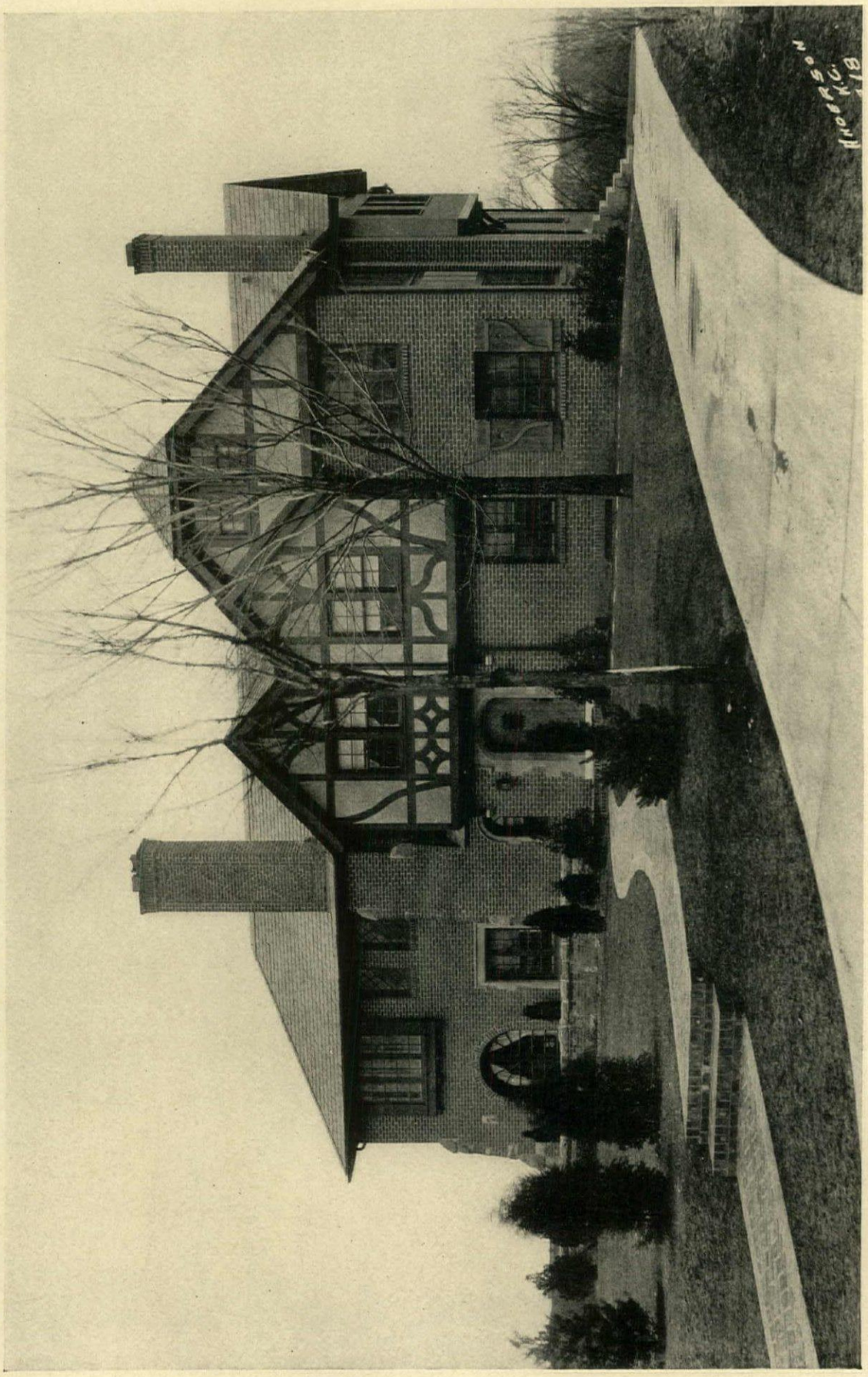
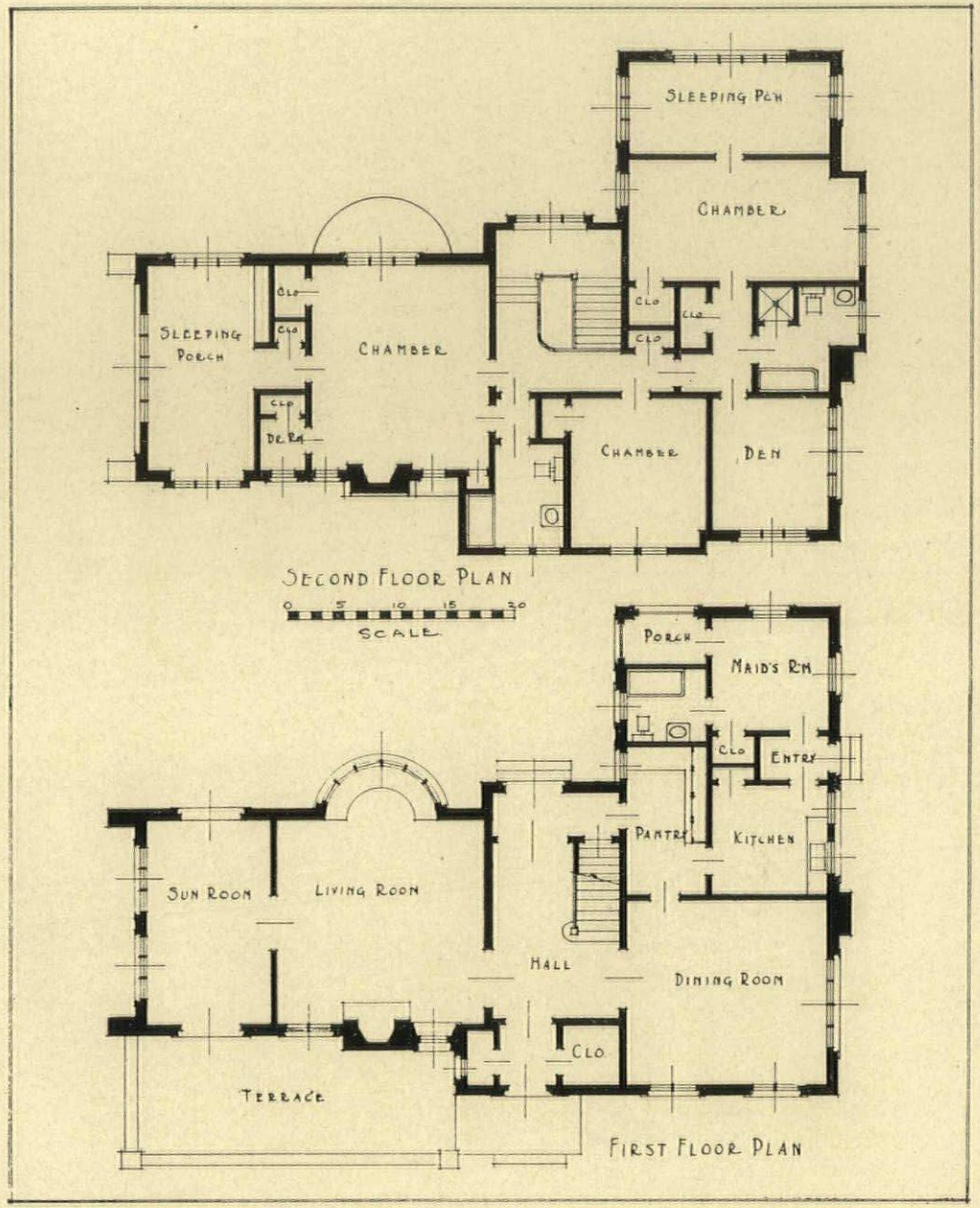


HOUSE OF B. C. MOORE, KANSAS CITY, MO.

CLARENCE E. SHEPARD, ARCHITECT



HOUSE OF B. C. MOORE, KANSAS CITY, MO.

CLARENCE E. SHEPARD, ARCHITECT

THIS house presents a good example of a well considered combination of different materials to effect an artistic result.

It was built in 1922, at a cost of 48c per cubic foot.

It is of frame and brick veneer construction, the exterior walls being of stucco, brick and half timber.

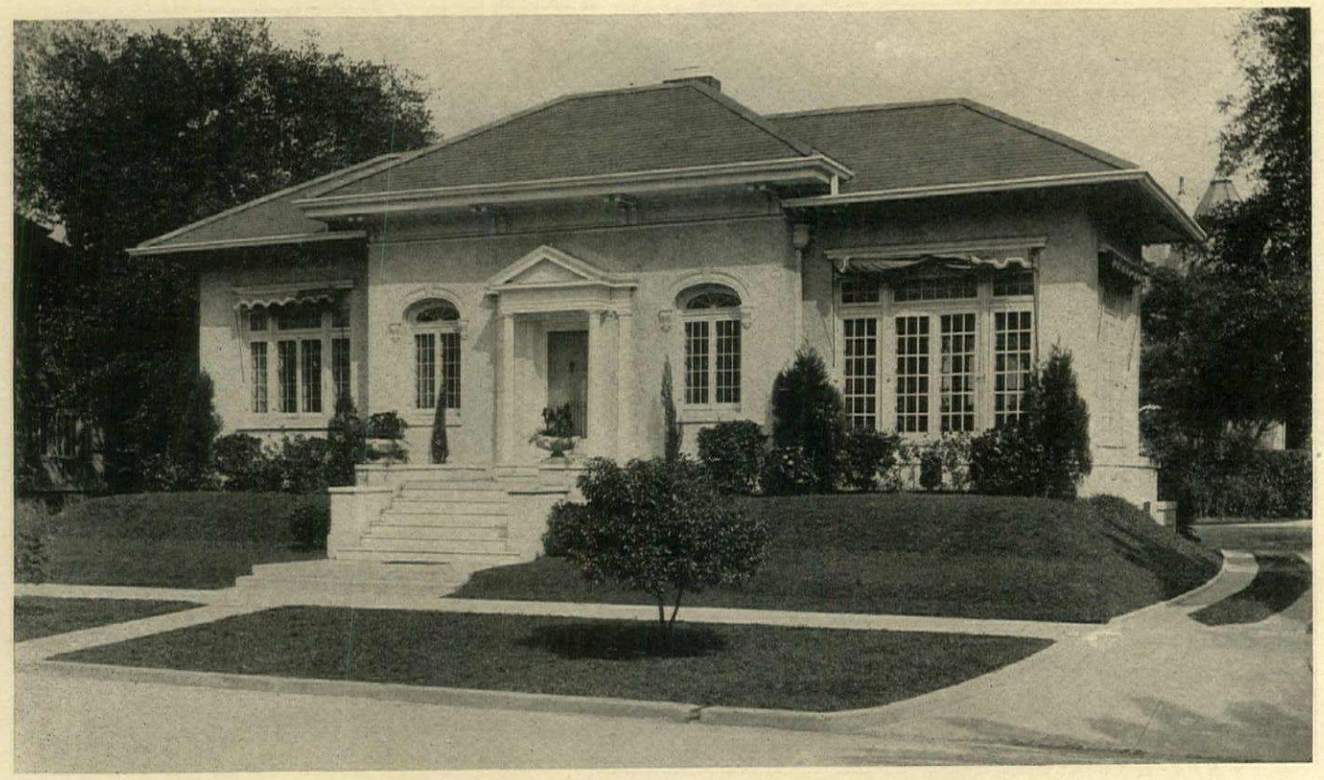
Roof is shingled.

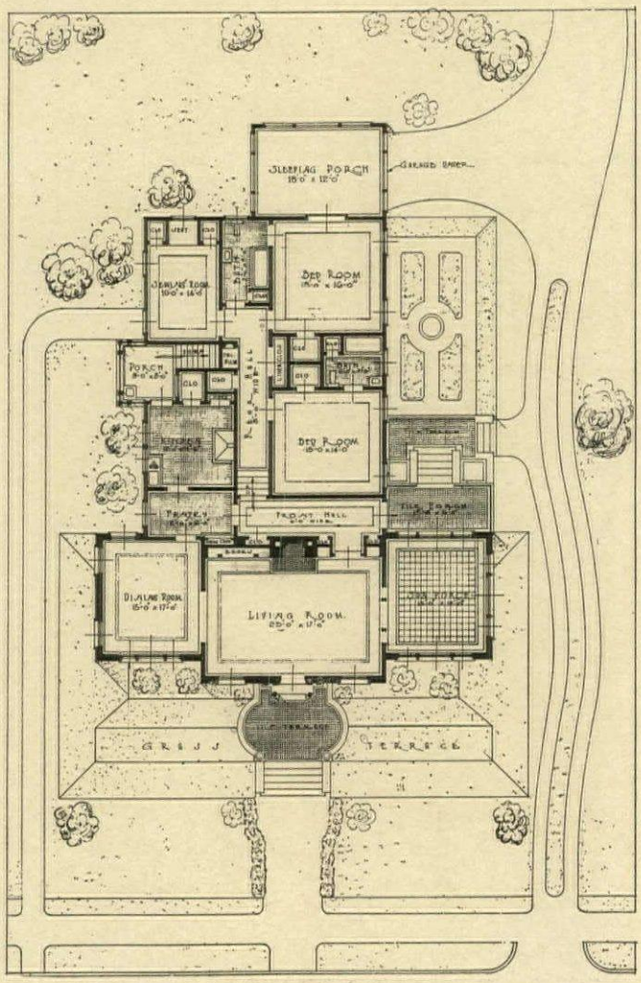
All interior trim is enameled with five coats on yellow pine.

Hot water heating system.

Built-in tubs and pedestal lavatories.

Art stone fireplace in living room, which also has an ornamental plaster ceiling.





HOUSE OF CHARLES SUGARMAN,
NEW ORLEANS, LA.

WEISS & DREYFOUS, ARCHITECTS

Built 1922.

Cost $25,000 or 20c per cubic foot.

Wood frame construction.

Exterior wall covering, stucco.

Roof, slate.

Flooring, oak. Tile in kitchen, pantry, porches and bathrooms.

Interior trim, pine.

Heating, warm air.

"SANSOM GARDENS," A UNIQUE LIVING QUARTER *in* PHILADELPHIA

BY ELIZABETH BOOTES CLARK, *Landscape Architect*

THE remodeling and modernizing of old houses which seems to be sweeping over Philadelphia like a fever is a most interesting phenomenon to observe. The urge seems to have sprung up overnight and is proving itself to be a permanent and durable growth.

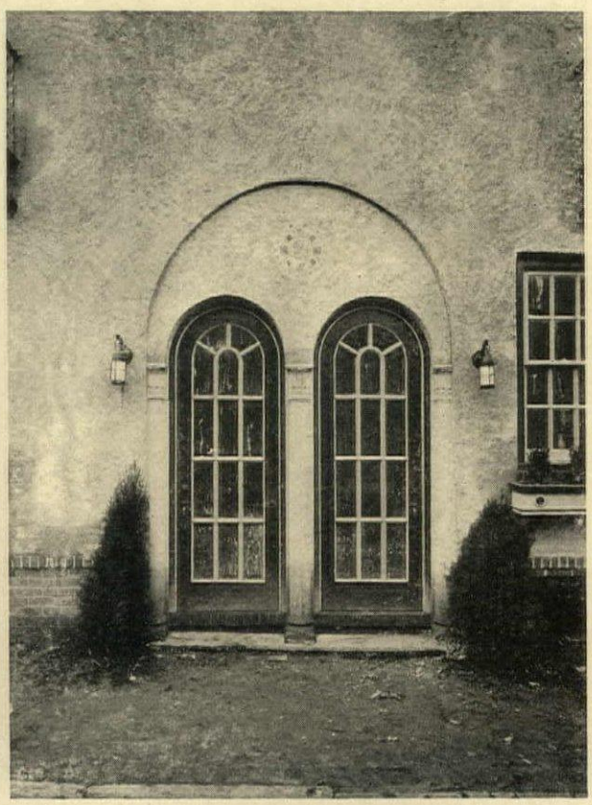
In freshness and originality of design "Sansom Gardens" is, possibly, the most satisfying of any of these building operations which had their initial impetus but three years ago. William F. B. Koelle, the architect, when asked what he considered the style of architecture to be, Spanish, or Moorish, said "Oh! Spanish—Italian—of the East"—a shrug—"all of them. We'll call it American architecture." Mr. Koelle had received his inspiration from a protracted trip abroad and has combined many of these impressions in the "Sansom Gardens" scheme. He also stated that no remodeling and building construction is developing in any other city, Canada included, along the lines that Philadelphia is harboring. And Mr. Koelle should know for it is he who is designing much of it.

Old brick houses familiar in the building operations of the Philadelphia of fifty and seventy-five years ago formed the nucleus on which "Sansom Gardens" was built. Finished, it is roughly plastered in a warm mustard tint with cream trim and black decorative touches. The wide archways including the smaller double archways of two entrances, with a medallion tile inset above, is a particularly interesting detail. The gates themselves which give entrance onto the garden walks are most unique in their scroll-like design and graceful flow of line, and quite Spanish in feeling. Built of wood as they are, painted black touched up in mustard-yellow, with iron scrolls overhead for the support of lanterns, they form a charming break in the wall frontage on the street.

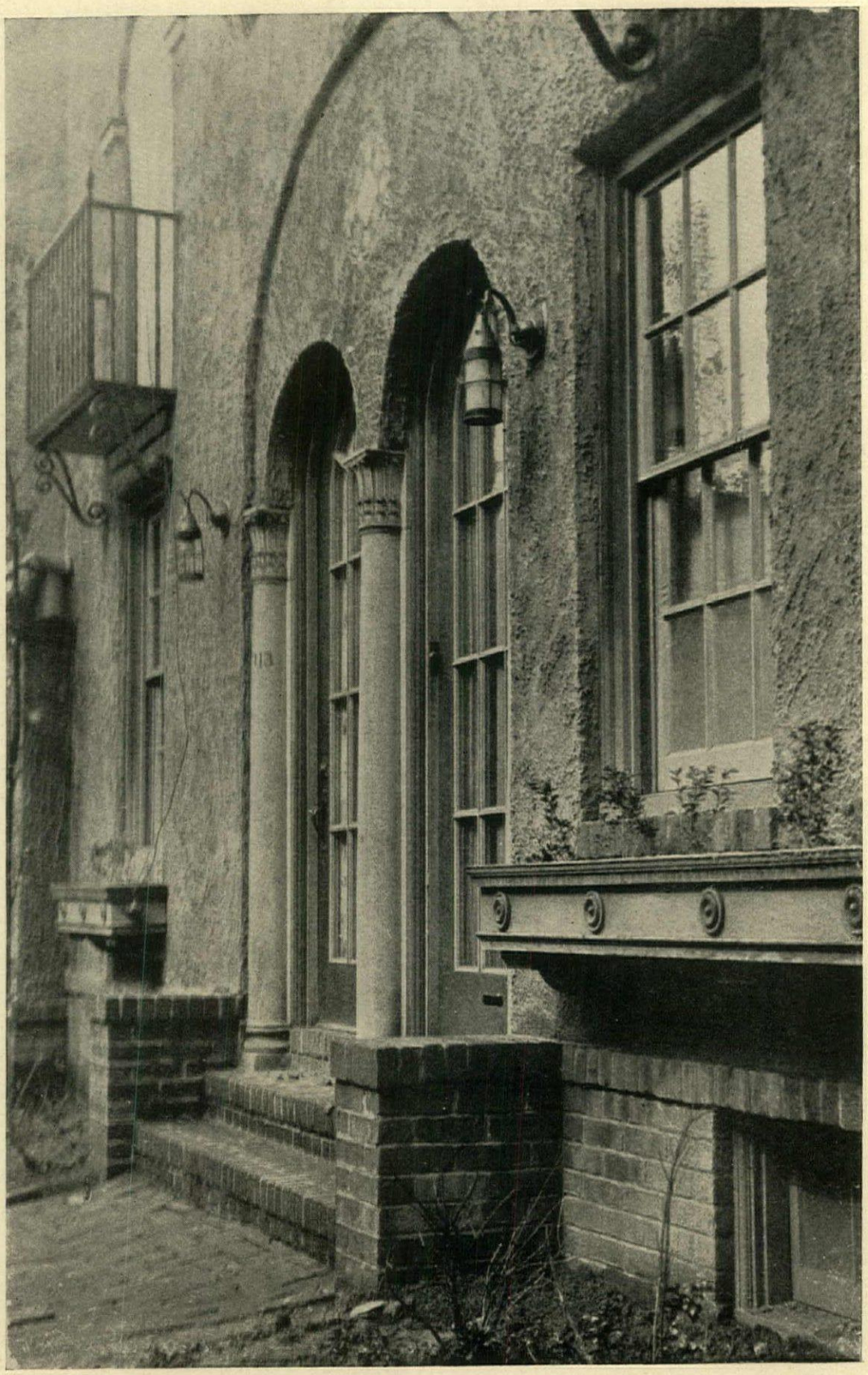
In all, excellent proportions and exceeding grace in detail characterize the entire architectural design.

"Sansom Gardens" is at 22nd and Sansom Streets, Philadelphia, a hitherto shabby and unattractive district, with brick buildings which were ugly and cross streets which were overgrown with grass. No trolley tracks are on any of the immediately adjoining streets, nor are there heavy

GARDEN GATE



DETAIL OF DOORWAYS



DETAIL SHOWING DECORATIVE VALUE OF WINDOW BOXES AND ORNAMENTAL IRONWORK

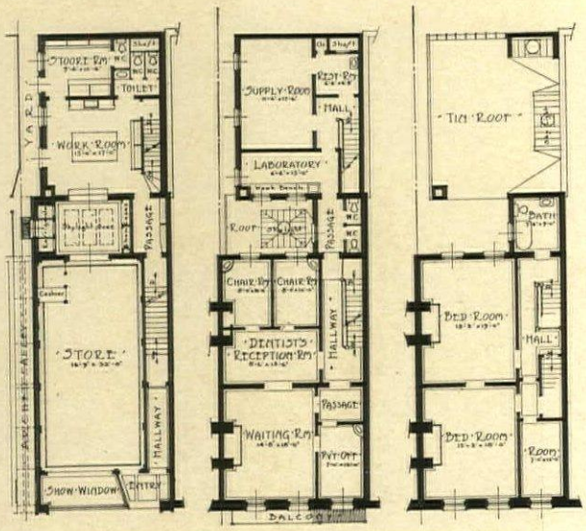
VIEW LOOKING UP VAN PELT STREET

trucks to lumber along at night. Our little-used side streets may solve the noise nuisance.

The garden area is not so very large, but it is enough to give that restful touch of green foliage and a little color from the flowers which is so sorely needed in our city drabness. Window-box planting, small red cedars, such things as Lombardy poplars, privet, etc., which have become acclimated to city life, and the inclusion of a garden scheme in the general layout, make this development a genuine one in the city's life. The effect of it as a massed whole as one comes upon it from a distance is of gracious lines and a fresh bit of color touched up with living green things which charms the eye as an oasis in a desert of neutral brick and asphalt.

Within herself, Philadelphia seems to be brooding a plan for a quieter, saner home life for her people. There are six or seven developments in the very heart of the city, with various owners and with various architects, and I am sure that there has been no concerted action by them on plans or ideas. Yet each of these developments contains the same group of fundamental ideas:—quietness, color, and the growing things of a garden. All are situated off traffic lanes, have much color in woodwork, plaster or insets, and surrounded by or include a garden scheme.

Psychologically, it is most interesting that these architects should all have answered to the same need and call. From the viewpoint of architecture and landscape architecture this matter of urban dwellings is approaching a wholesomeness which is encouraging.



A STORE BUILDING IN BALTIMORE, MD.

WALTER M. GIESKE, ARCHITECT

IN designing this store front on a thoroughfare formerly given over to private residences, the architect has retained the Colonial style of which the neighborhood was representative, and by artistic commingling of different materials secured an attractive result.

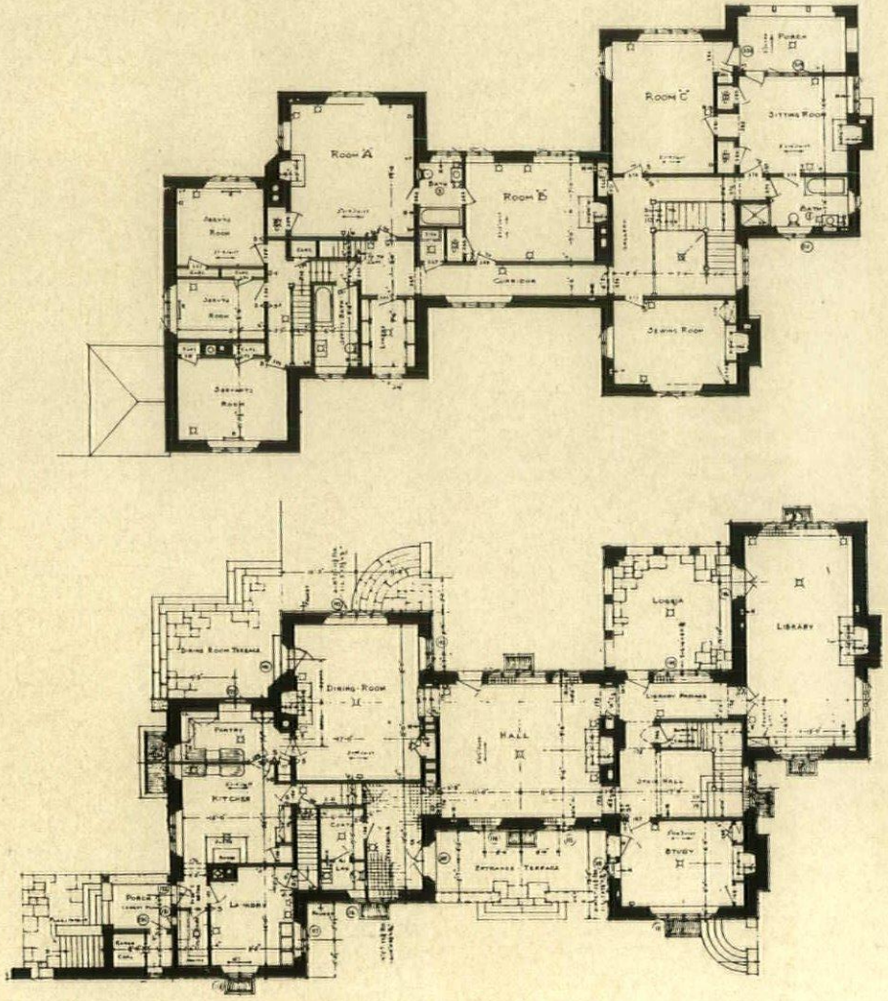
THE FIRST BATHTUB

THE first American bathtub, made of sheet lead and mahogany, was exhibited by its proud possessor at a Christmas party in Cincinnati in 1842, it is learned from the *Straus Investors Magazine*. In the following year the city of Philadelphia, by public ordinance, attempted to prohibit bathing between November 1 and March 15, and in Boston, only 80 years ago, bathing was unlawful except when prescribed by a physician. Certainly we have progressed since 1845!

HOUSE OF WM. M. C. KIMBER, GERMANTOWN, PHILADELPHIA, PA.

EDMUND B. GILCHRIST, ARCHITECT

(Plans and description on back)



HOUSE OF WM. M. C. KIMBER, GERMANTOWN, PHILADELPHIA, PA.

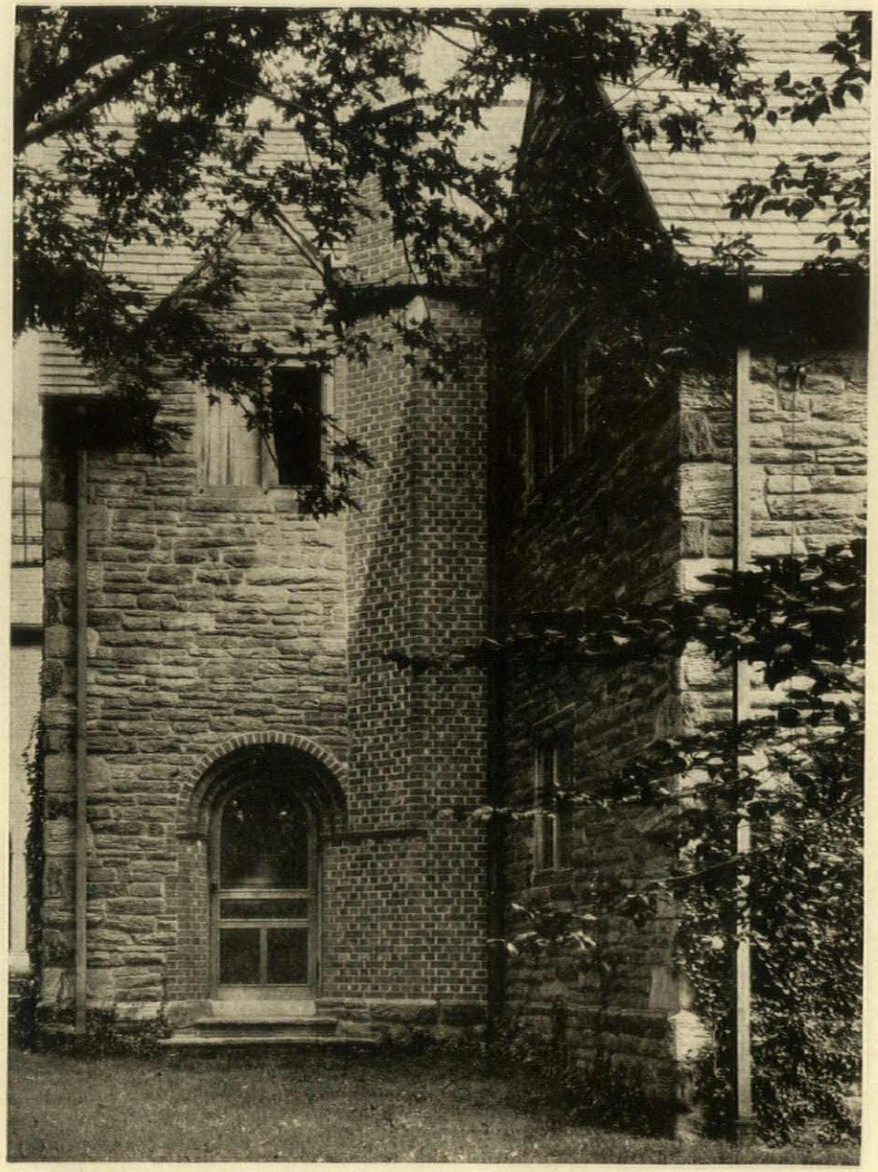
EDMUND B. GILCHRIST, ARCHITECT

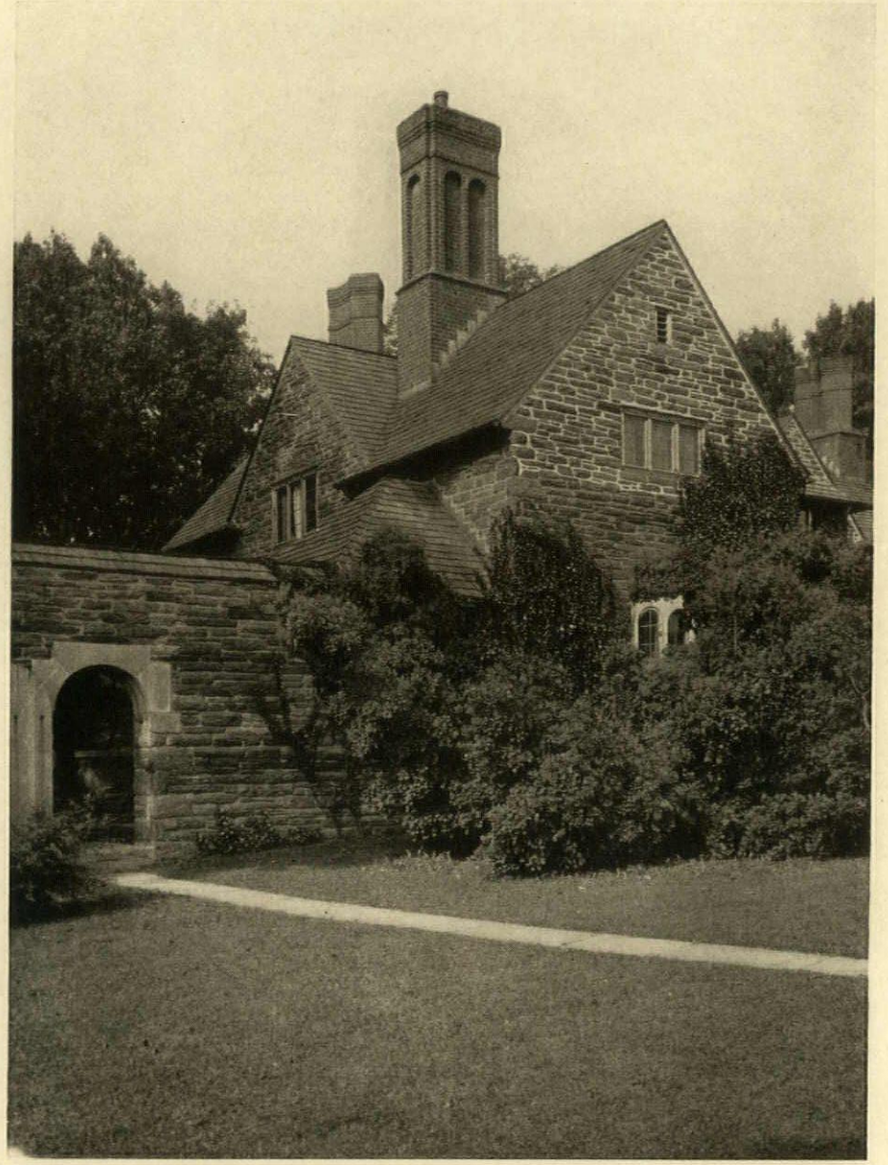
THIS house is a good and interesting example of the ledge stone work that is to be found in suburban Philadelphia. This stone, in most cases taken from the site, weathers beautifully. The masonry joints are in this instance raked.

The roof is covered with split wood shingles. The stone trim wherever used is Indiana limestone. In the interior the trim and floors are of oak.

The metal casement windows are set in unfinished oak frames pinned together with wooden pins.

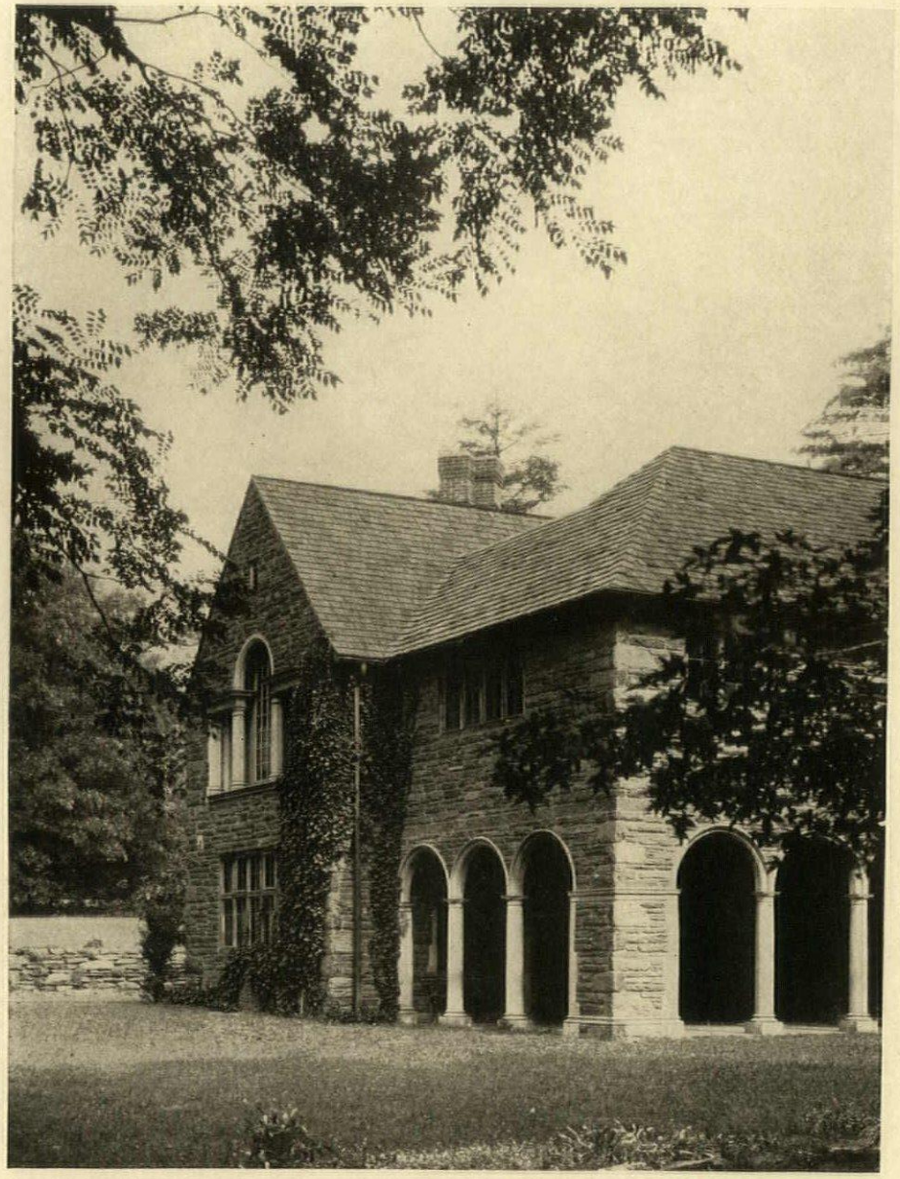
This house was built in 1913, before the war, at a cost per cubic foot of 20c.





HOUSE OF WM. M. C. KIMBER, GERMANTOWN, PHILADELPHIA, PA.

EDMUND B. GILCHRIST, ARCHITECT



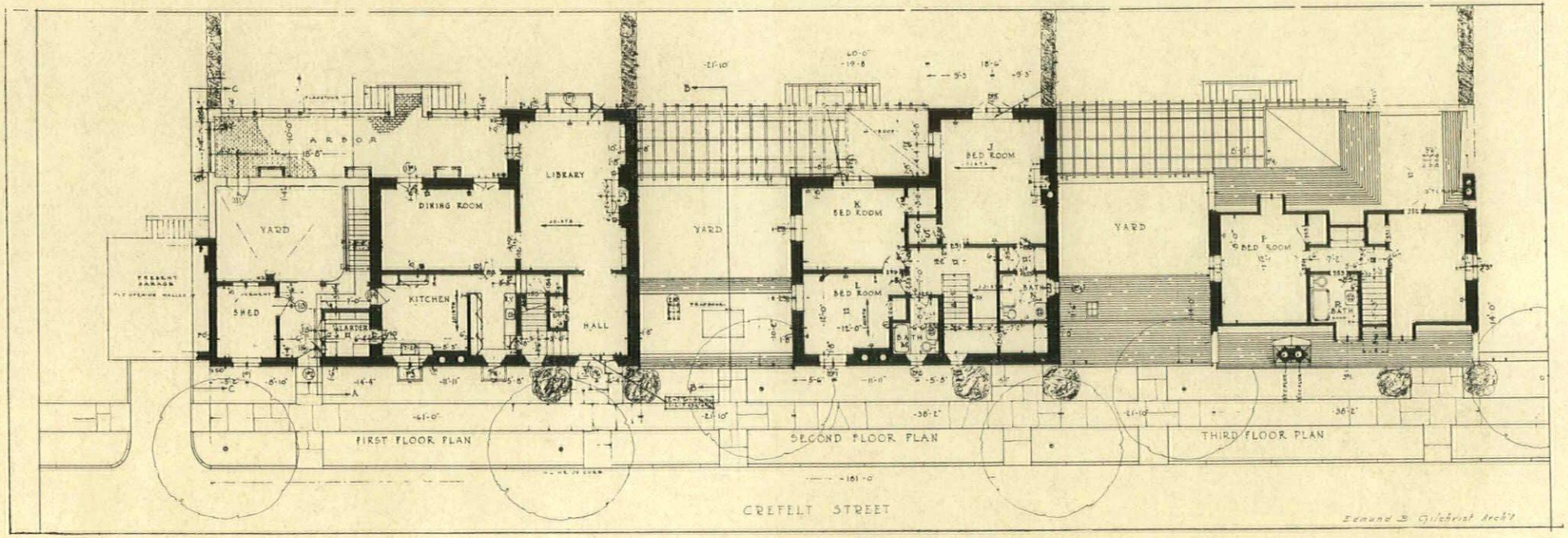
HOUSE OF WM. M. C. KIMBER, GERMANTOWN, PHILADELPHIA, PA.

EDMUND B. GILCHRIST, ARCHITECT

GROUP OF HOUSES ON CREFELT STREET, ST. MARTIN'S, PA.

EDMUND B. GILCHRIST, ARCHITECT

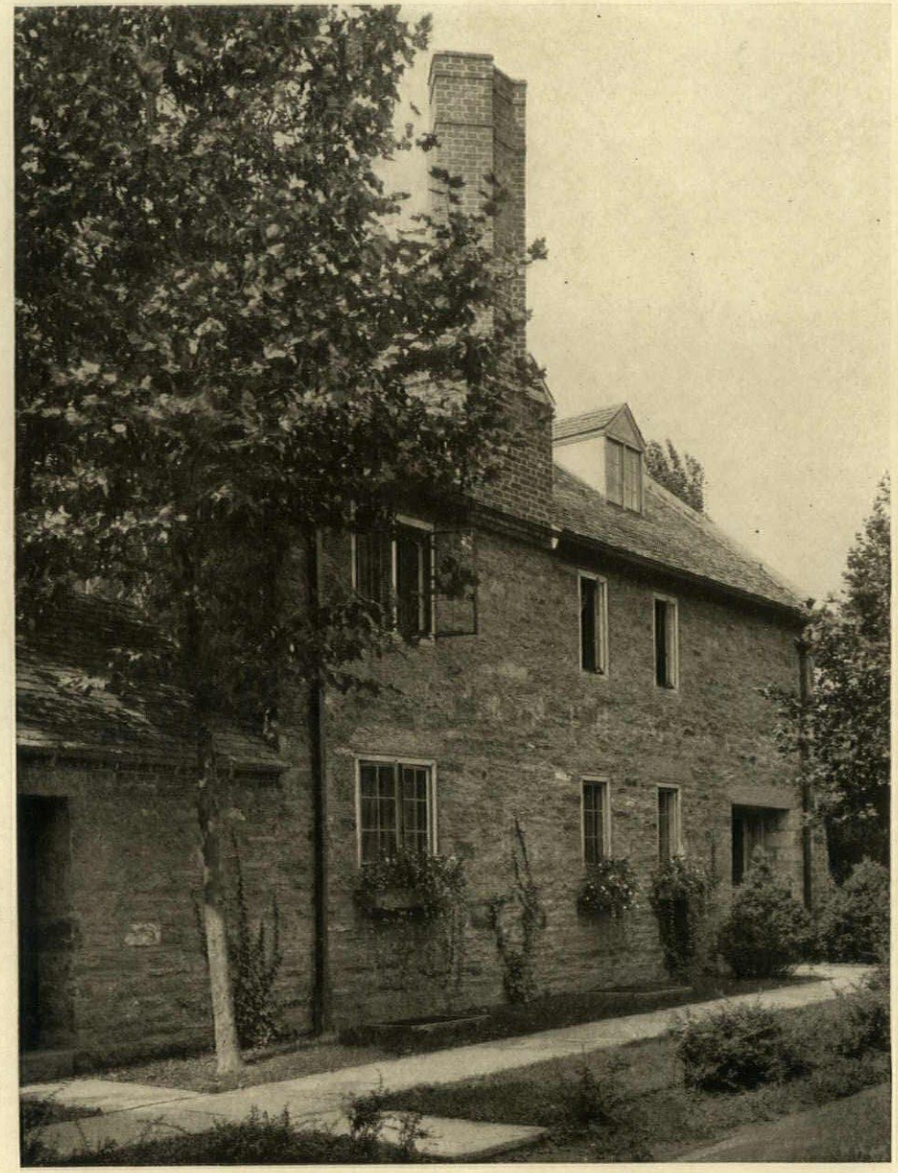
(Plan and description on back)



GROUP OF HOUSES ON CREFELT STREET, ST. MARTIN'S, PA.

EDMUND B. GILCHRIST, ARCHITECT

Exterior walls are of ledge stone, with raked joints. Casements are metal, set in oak frames, left to weather. Exterior trim is limestone. Cost per cubic foot, 55c.



DETAILS OF A GROUP OF HOUSES ON CREFELT STREET, ST. MARTIN'S, PA.

EDMUND B. GILCHRIST, ARCHITECT

ENGINEERING *and* CONSTRUCTION

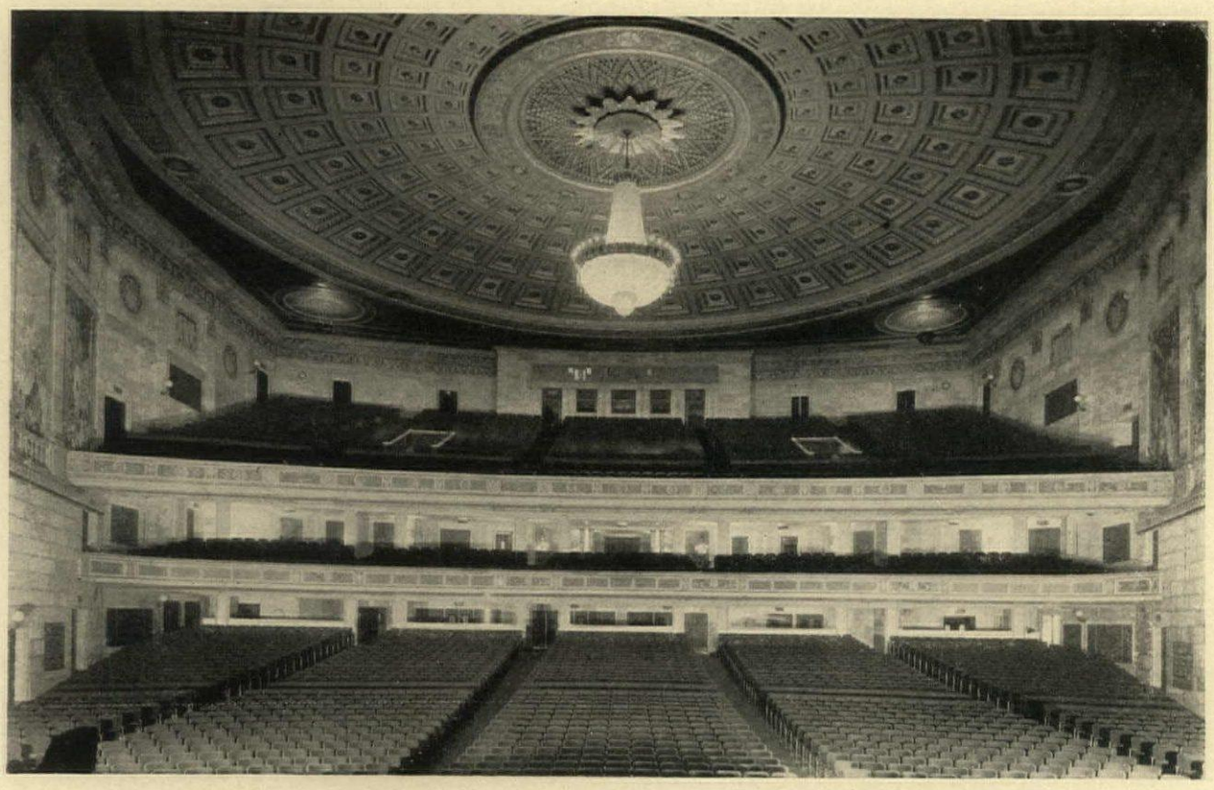


FIG. 1. INTERIOR OF EASTMAN THEATRE, ROCHESTER, N. Y.

GORDON AND KAELBER, ARCHITECTS—McKIM, MEAD AND WHITE, ASSOCIATE ARCHITECTS

ACOUSTICS *of the* EASTMAN THEATRE, ROCHESTER, N. Y.

BY F. R. WATSON, *University of Illinois*

THE ability to design a predetermined acoustical effect in an auditorium is the result of the advance made in the science of acoustics within the past thirty years. Heretofore satisfactory results have been secured principally by luck in conjunction with guess. Professor Watson's recital of the steps taken correctly to design the Eastman Theatre, Rochester, N. Y., makes clear the value of a scientific consideration of this essential feature of such structures. It is apparent that a co-operation between the architect and the acoustician results in an assured success. The articles in THE AMERICAN ARCHITECT *of February 28, June 6, and June 20, 1923, describe the architectural, heating, ventilating, soundproofing, electrical, and illuminating features of the Eastman Theatre and with the following article complete a description of the essential features of this fine structure.—The Editors.*

THE acoustics of auditoriums, up to within the past few years, has been largely a matter of chance. This was because the knowledge of the subject was extremely vague, and architects had no reliable information for guidance. About 1895, Professor Wallace Sabine of Harvard University inaugurated a general investigation of the subject and succeeded in establishing fundamental laws. Because of his work and later investigations, it is now possible to design an auditorium so as to insure good acoustics, or to correct a faulty one with confidence about the outcome.

The Eastman Theatre presents a notable example of acoustic design. Mr. George Eastman was desirous of securing an auditorium that would be as perfect as possible and spared no expense to accomplish his object. His conception of a successful auditorium was one which combined

beauty and comfort, good sight lines and perfection in lighting, heating, ventilating and acoustics. An excellent opportunity was thus afforded to apply the principles of acoustics of auditoriums as far as they were developed at that time and, by means of the results obtained, to extend the knowledge of the subject. The purpose of this article is to describe the conditions under which the acoustic design of the theatre was formulated and set forth the results obtained, together with some of the attendant later developments. In solving the problems presented, the writer was very fortunate in having associated with him, Professor James M. White, Supervising Architect of the University of Illinois.

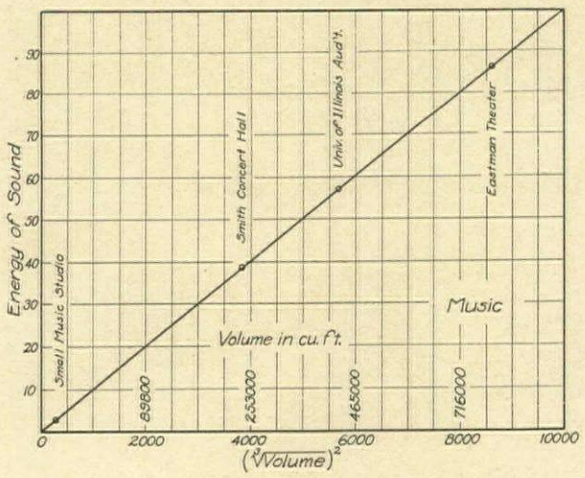


FIG. 2. SIZE OF AUDITORIUM FOR DIFFERENT SOURCES OF SOUND

When designing a new auditorium, it is usually customary to study existing halls in order that advantage may be taken of the information and experience thus afforded. This procedure was followed in designing the acoustics of the Eastman Theatre. There were a number of notable concert halls, particularly the Boston Music Hall and the Leipsic Gewandhaus which had been studied and described by Sabine, and these presented a number of features for guidance in the proposed auditorium. While such examples are suggestive, it is not always possible or desirable to attempt to duplicate them. Each new auditorium usually has restricting features because of the physical conditions to be met, and also because the architect and builder have creative ideas that they desire to see fulfilled. Thus, in the case of the Eastman Theatre, a perfect concert hall was desired, but which also should be perfect for the production of motion pictures. Obviously, to secure these results it was necessary to compromise among the various requirements; an accomplishment that was admirably handled by the architects, Messrs. Gordon and Kaelber.

The shape of the lot selected for the building was irregular, so that the plan of the auditorium best suited to conform to this condition was not rectangular but somewhat like a short megaphone with the stage at the smaller end. Also for architectural design and decorative effect, the ceiling was to be made dome shaped with coffers. Finally, to add to the physical comfort of patrons of the theatre, it was decided to use upholstered seats. With these moderate restrictions, the acoustic design was formulated.

One of the first features to be considered was the size of the room that would give the best acoustic effect for music, because Mr. Eastman desired the hall to be adapted primarily for concerts. The chief source of sound to be considered were choruses, pipe organ and orchestra music. To decide this question of size, a study was made of existing concert halls and the data thus obtained was put in the form of a curve (Fig. 2).* This curve, which is based on the theory of the acoustics of auditoriums, indicates that the Eastman Theatre should have a volume of about 800,000 cu. ft. properly to accommodate an orchestra of about 80 instruments. It was assumed that only a small number of brass instruments would be included in the orchestra, otherwise the sound would be too intense. A larger or smaller number of instruments than 80 could be used;—for instance, a soloist, or an orchestra with considerable intensity, should render music with pleasing results. This wide variation in the intensity of sound is explained by the insensitiveness of the ear to changes in intensity; that is, the ear can perceive comfortably the faint tones of a violin and also the music of a brass band, which is very much more intense than the violin. To get the recommended size, the volume of the Eastman Theatre was increased over the original plans by raising the ceiling nine feet.

Another primary feature that came up for consideration was the shape of the room. Echoes are formed in many auditoriums unless precautions are taken to arrange the interior surfaces so as to avoid this defect. The domed ceiling of the Eastman Theatre was therefore designed to be very shallow so that it would produce only a moderate concentration of sound. Furthermore, the coffers were specially arranged; each one with a rosette of considerable size at the center. To guard further against possible echoes, a number of the coffers, purposely selected at random, were padded with thick hair felt so as to modify the regular reflection of sound from the ceiling and increase the interference. The flaring side walls of the auditorium were not objectionable, but appeared beneficial in reflecting sound to rear seats. The depth of coffers, to be effective acoustically, should

*Fig. 14, *"Acoustics of Buildings," page* 33.

be comparable with the wave length of the sound being reflected. For instance, for an average sound, the depth should be about nine inches. Small irregularities on the surface, such as rough plastering, have practically no effect and the wall reflects sound waves almost as perfectly as a polished mirror does light waves.

The arrangement of the balcony was studied to obtain, as far as possible, an equable distribution of sound, particularly for the rear seats where

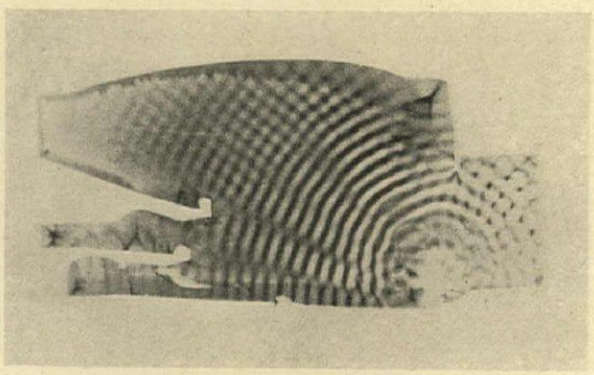


FIG. 3. PHOTOGRAPH INDICATING HOW SOUND WAVES ACT IN AN AUDITORIUM

auditors would be a considerable distance from the stage. In securing this result, efficient aids were found in the sounds reflected from the ceiling and side walls. The effect of the ceiling was studied by means of a laboratory experiment. A thin metal strip was bent so as to duplicate in miniature the vertical cross section of the theatre (Fig. 3).* This was laid horizontally in a tank of shallow water and waves were generated by puffs of air directed against the water surface. Periodic flashes of light passed upward through the glass bottom of the tank and cast shadows of the wave on a screen. Photographs and moving pictures were taken of the waves so as to predict the action of sound in the Eastman Theatre.

The contemplated use of a mezzanine floor was much more uncertain in its probable acoustic outcome than the balcony because the opening into this compartment by which the sound could enter was necessarily limited in cross section and there was practically no opportunity for reflection from the ceiling to reinforce the intensity at the rear seats. In spite of this unfavorable condition, music can be heard comfortably, even in seats in the lobby at the rear of this section. It is thought that the sound reflected from the slightly curved side walls helped in producing this acceptable result.

In addition to the decisions affecting the size and shape of the room, a third, and perhaps more important, feature was investigated,—namely, the amount and placement of sound-absorbing materials. This latter feature came up for consideration in a variety of ways as the construction of the hall progressed. The writer had no reliable guidance at the time for the amount of absorbent needed to give the best effect in an auditorium as large as the Eastman Theatre. Accordingly, a study was made of a number of auditoriums to develop a relation that could be applied for halls of any volume. Measurements taken with a special organ pipe in a number of halls in Boston, New York, Detroit and Chicago, gave data that was incorporated in a formula, and this was applied to the Eastman Theatre.

The formula in question is shown in the curves of Fig. 4,* where the time taken for a standard sound to die out is plotted against the cube root of the volume of auditoriums of different size. Three curves are given to show the effect of the audience.

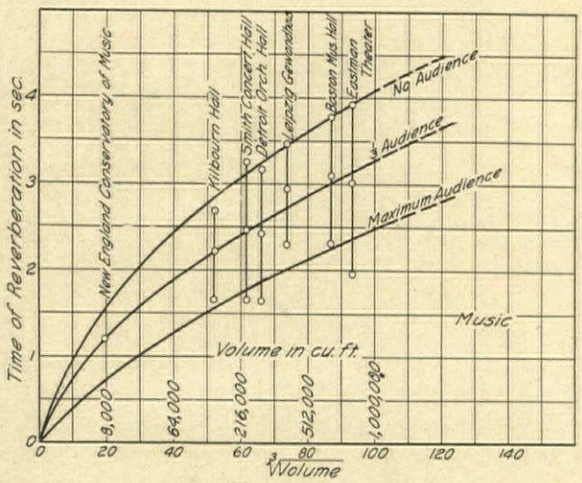


FIG. 4. TIME OF REVERBERATION FOR HALLS OF DIFFERENT SIZE

According to this curve, the Eastman Theatre should have a time of reverberation of about 3 seconds when one-third audience is present. With this value, calculations made from Sabine's formula indicated that about 10,000 "units" of sound absorption would be needed in the room to bring about the result sought. A study of the absorbing articles in the room showed that the upholstered seats and heavy carpets furnished a considerable part of the needed absorption. These, with the addition of about 1,500 sq. ft. of hair felt were deemed sufficient for the purpose

The outcome obtained on the completion of the theatre appears to justify the procedure in designing the acoustics. A variety of programs, varying from singers and instrumental soloists to quartets, orchestras and pipe organ music, has been given with approved results. It has also been used suc-

*Fig. 5. "Acoustics of Buildings," Page 12.

*Fig. 12, "Acoustics of Buildings, page 30.

cessfully for speaking events for which the sound intensities are usually less than for music.

Since the completion of the theatre, the writer has modified the curves for the determination of the reverberation in rooms. For instance, the curves in Fig. 4 have been straightened to give a more reasonable time for very small rooms (Fig. 5).* Later, this information was transformed into a more useful set of curves that give directly the amount of material needed in a room of any

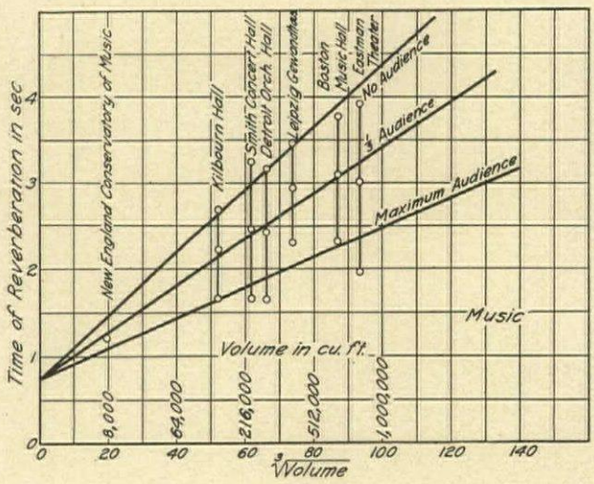


FIG. 5. TIME OF REVERBERATION FOR HALLS OF VARYING SIZE

given size to assure good acoustics (Fig. 6).** This important question of the optimum amount of material needed in a room for best acoustic effect is not yet definitely settled. Several theories have been set forth and it is hoped that a satisfactory agreement can be reached so as to set up standard recommendations for guidance.

A few concluding remarks may be made concerning the Eastman Theatre. This auditorium appears to be satisfactory from the acoustic standpoint. This, however, does not mean that there is nothing more to be learned. For instance, a study of the acoustics of this room from the standpoint of the psychology of speech and hearing should yield some valuable information. A study of the absorption of sound over the range of pitches usually met with in music and speech should give additional information. The intensity of sound given by various instruments and voices for a variety of sounds would be a third fruitful source of investigation.

The acoustics of rooms is a subject receiving more and more attention, because it is being realized more clearly that the effectiveness of auditoriums is dependent on the perfection of a number of features, of which the acoustics is one. Some church auditoriums, for instance, impress visitors at once as being conducive to worship, because of having a relatively short time of reverberation, but for concert organ music a longer period of reverberation is required and may be obtained by increasing the volume of the room or using less sound absorbent.

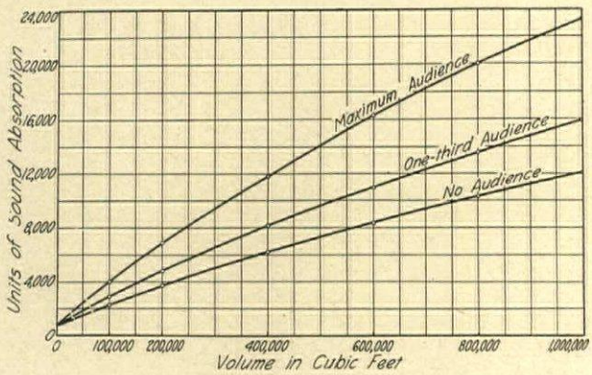


FIG. 6. AMOUNT OF SOUND ABSORBENT NEEDED FOR DIFFERENT SIZED ROOMS

Many auditoriums have been successful acoustically by chance, though only a few have been designed with a knowledge that they would be satisfactory. The Eastman Theatre is in the latter group and it will exert a wide influence in establishing confidence in the results that can be attained by the comparatively recent developments of the science of acoustics.

*Journ. Franklin Institute, July, 1924, pp. 73-83.

**The Architectural Forum, April, 1924.

SUBWAYS TO STORES

IN New York there are subways communicating with its great stores, which are found to be of great utility, comments *The Architect,* London. This system may, if the County Council sanction it, be introduced into London in connection with the rebuilding scheme of Messrs. Swan & Edgar's new premises at Piccadilly Circus. The Westminster City Council has approved plans by which one of the seven subways at the rebuilt Piccadilly Circus will communicate with the basement of Messrs. Swan & Edgar's premises, and this now only requires the authorization of the London County Council. If the proposals for underground shops beneath the Circus are carried out there may be as much shopping done under as over ground, and we shall look forward with much interest to details of the new proposals, which have to meet the compound difficulties of traffic and of commerce. But more important even than these is the larger question of the arrangement of shops in two or even more stages, to which we have previously referred.

The INSULATION *of* DWELLINGS *and the* CONSERVATION *of* HEAT

PEOPLE are becoming aware of the fact that many things are available which make life more agreeable. When conscious of these better conditions it is but natural and right that they should demand them. The building is the most intimate material thing with which we come in contact and at the same time one of the most essential and it affects in some degree every element of our physiological make-up as well as our mental condition. For this reason, it should be the constant study of architects to understand these things and to provide means in buildings for the betterment of life.

In this, architects should lead rather than wait for a demand from their clients or one stimulated by commercial interests. It is true that these interests are animated primarily by a hope for profits, knowing that profits accrue from producing those things which bring comfort and enjoyment to people. When an element of building construction makes more pleasant and healthful living conditions and at the same time makes possible decided economies in the cost of operation, such a thing has a double and powerful appeal to the building owner. This places the thing in the class of necessities.

Among the things which are conducive to physical comfort, health and economy in building costs and subsequent operation, is insulation. With the development of the science of insulation to its present state of perfection, there is a growing demand for its use, to which architects must give attention.

The climate of the United States is such that extremes of temperature must be endured or people must move with the seasons from one place to another to find relief. Perhaps it was a fatalistic acquiescence to these conditions of climate that caused us to build houses without the intention of making them suitable and agreeable habitations in all seasons of the year. We have learned to produce conditions contrary to the state of the elements. By installing systems for heating, ventilating and air conditioning a specified condition of temperature, air and humidity can be produced and maintained regardless of the conditions outside of the building.

It is by mechanical means that the natural law of equalization of temperature is made ineffective. This is accomplished by providing a suitable barrier between the enclosed and exterior spaces. The rate of the equalization of temperature, resulting from the transmission of heat through the walls surrounding the enclosed space, depends on the physical properties of the wall materials and the difference between the interior and exterior temperatures.

The temperature of a room is modified by two things: the transmission of heat through the walls and by the infiltration of air through the joints about windows and doors and cracks or crevices in the walls and ceilings. Infiltration is prevented by the use of any dense material which covers the cracks and crevices. Sheet metal, glass, compact building papers, metal weatherstrips and caulking are excellent barriers to infiltration but they are worthless as insulation.

Insulating material possesses two qualities which are of almost equal importance. The density of the material has a direct influence on its effectiveness. It is characteristic that a light, cellulated substance offers greater resistance to heat transmission than a heavy, dense substance as shown by comparing wood and sheet iron. Water is one of the best known heat transmitting media and it follows that the insulating value of a material that is saturated or even carrying a high percentage of moisture, will have its insulating resistance greatly reduced. The less hygroscopic the material, the greater its insulating value. These two qualities should be the controlling factors in the selection of insulation. Durability and the ability to maintain its shape and structural integrity and resistance to fire are highly desirable properties of good insulating material.

In exterior walls, it is desirable to place the insulation on the inner face so that it is removed as far as possible from rain and snow. Some kinds of insulation are so constituted that plastering can be satisfactorily and permanently applied directly to it. The exterior of the wall should be as impervious as possible, which is secured by the use of brick, stone, terra cotta or wood, that is kept well covered with good paint.

In dwelling houses, the attic presents an important problem. The attic is warmed in the winter by the heat transmitted or leaking through the ceiling. This heat ultimately passes out through the roof. In the summer time the attic becomes heated by the sun and causes the upper story of the house to be much warmer than the lower stories. This causes both a wasteful and uncomfortable condition. The better mode of protection would be to insulate the roof and prevent heat transmission through it and also to provide the attic floor space with a tight wooden flooring laid over at least two plies of building paper. It will require more material to insulate the roof than the ceiling below the attic but the benefits obtained are well worth the cost. If the insulation of the

attic is confined to the ceiling below it, then the attic space is lost as an intermediate buffer between the rooms below it and the exterior air.

Definite information is obtainable as to the relative merits of the various insulating materials. The methods of testing are well standardized and tests made by disinterested investigators, such as the Bureau of Standards, are reliable. Probably the most comprehensive assembling of insulation data is found in the "Report of the Insulation Committee."* The committee sponsoring this report is made up of representatives of the Bureau of Standards, the various insulating companies and refrigerating engineers.

The insulation of ice making plants and cold storage warehouses is quite well understood. This is because of the tremendous money values involved in the preservation of perishable products. It is a commercial necessity and naturally receives preferred consideration.

The house owner is now demanding the insulation of houses because he recognizes that its use results in the following advantages.

(1) Comfortable conditions in both cold and hot weather

(2) Better hygienic conditions

(3) A more valuable structure

(4) Saving in the initial cost of heating plant

(5) Saving in furring and lathing when the insulation is of such character that the plastering can be applied directly

(6) Saving the cost of the scratch coat of plaster under conditions noted in (5)

(7) Better fire protection when the material has fire-resistive properties.

(8) Saving in fuel consumption, which under the present high cost of coal and low cost of insulating material, pays for the cost of the insulation in a very short time and also pays large dividends during the occupancy of the house.

There is no great mystery about insulation. By means of a simple formula for determining heat transmission through walls of different constructions and transmission coefficient data of the various construction and insulating materials, the transmission value of the wall is easily determined. This formula was published in THE AMERICAN ARCHITECT of May 29, 1918, and reprinted from Bulletin 102, Engineering Experiment Station, University of Illinois. This formula breaks down any wall into its component parts and builds up the transmission coefficient part by part. It is generally recognized as a logical and orderly method of measuring the heat transmitting value of the walls.

Due consideration must be given to the proper weatherstripping and caulking of doors and windows.

The next great advance in dwelling construction is the universal application of insulation. It is justified from every viewpoint.

*Published by the American Society of Refrigerating Engineers, 35 Warren St., New York City.

CAUSE OF DECAY OF BUILDINGS

IN a paper recently read to the Royal Society of Edinburgh, A. P. Laurie, D.Sc., Principal of Heriot-Watt College, Edinburgh, dealt with the preservation of buildings from decay, states a recent issue of *The Builder*, London. He described the results of a large number of analyses of decaying stone in various ancient buildings, and also of experiments on the saturation of stone with salt solutions. The general conclusion, he said, was that the principal cause of the rapid decay of stone in modern buildings was the crystallization of calcium sulphate within the stone. Probably the length of life of buildings, built of limestone or containing calcite in the stone, would be considerably increased if they were periodically washed in hot weather with a view to the solution and crystallization of the sulphate of lime on the outside of the stone, and there was reason to believe that in selecting a limestone two conditions should be observed—its resistance to acid attack, and the rapidity with which it absorbed water and hot water again on evaporation, stone which absorbed and lost water quickly apparently resisting the action due to calcium sulphate better owing to its removal from the stone. Sandstones should be tested for their susceptibility to acid attack before being used on public buildings in modern cities.

ARCHITECTURE AND HOUSING

IT would be interesting to know to what extent any of the different types of steel houses have been planned under really competent architectural advice and supervision, states *The Builder*, London, in a recent number. Would it not be possible before any final decision to build a great number of these houses is concluded to refer their design to an authoritative body like the R.I.B.A., who could advise as to possible improvements? From the utilitarian character of the appearance of most of them this would not appear to have been the case hitherto. If we must have steel houses, such amelioration of the design as will contribute some quality of architectural fitness may well be considered, lest the country suffer further disfigurement.

EFFECT *of* END CONDITION *of* CYLINDER *on* COMPRESSIVE STRENGTH *of* CONCRETE*

BY HARRISON F. GONNERMAN

Summary and Conclusions

COMPRESSION tests were made at 7 and 28 days, 3 months and 1 year on about 3000 6″ x 12″ concrete cylinders in a study of the influence of the following factors on the reliability of the test results:

(*a*) Position of spherical bearing block
(*b*) Deflection of table of testing machine
(*c*) Material used for capping
(*d*) Condition of capping
(*e*) Molding with uneven base and cover plates
(*f*) Inclination of axis, and top surface

The cylinders were made from 1:7, 1:5, 1:3½ and 1:2 concrete mixed to a relative consistency of 1.10; for a few conditions, tests were made on the 1:3½ mix using relative consistencies 0.90 to 2.00.

The data of the tests were compared and the relative value of the different methods of testing or capping was judged principally by the ratio of the strength obtained for a given method of test to that obtained for the standard method. The mean variation of the tests was used as a measure of the uniformity of the different methods.

The principal conclusions from the tests are:

1. The standard method of molding and capping concrete cylinders with machined base and cover plates gave uniformly high strength equal to or greater than that from any of the other methods.

2. Deflection of the table of the testing machine used was small and had practically no effect on the test results.

3. For reliable results the use of the adjustable block with spherical bearing surfaces was found to be essential. A spherical bearing block with hardened steel balls between the spherical surfaces gave essentially the same results as the plain spherical block.

4. No difference in results was found when spherical bearing blocks were used in the following positions:

(*a*) On top of cylinder
(*b*) Inverted on top of cylinder
(*c*) Beneath the cylinder
(*d*) Both on top and beneath the cylinder

5. Small errors (¼″ or less) in centering the bearing block on the cylinder had little or no effect on the test results. An error of ½″ in setting, gave strength-ratios of about 90 per cent for 1:5 and 1:3½ concrete.

6. Cylinders molded on a plane cast iron base and with top trowelled smooth, showed the following results when tested as indicated:

(*a*) With thin caps of gypsum or mixtures of cement and gypsum, the results were essentially the same as those obtained for the standard method of capping.

(*b*) Without bedding, the strength-ratios obtained were about 95 per cent for 1:7 concrete, 94 per cent for 1:5 concrete and 80 per cent for 1:3½ concrete.

(*c*) With sheet materials between top of cylinder and the spherical block, the strength-ratios obtained were less than 100 per cent for all of the materials used.

(*d*) For the sheet materials, the best results were obtained with Beaver Board, which gave strength-ratios of about 100 per cent for 1:7 and 1:5 concrete and about 90 per cent for 1:3½ concrete.

(*e*) For white pine board, mill board and leather, the strength-ratios ranged between those found for Beaver Board and those found for no bedding (see (*b*) above).

(*f*) For the other sheet materials, blotting paper, sheet lead and rubber, the strength-ratios were less than those found for no bedding.

(*g*) The lowest strength-ratios were found for the 1-16″ sheet rubber; they were about 80 per cent for 1:7, 70 per cent for 1:5 and 50 per cent for 1:3½ concrete.

7. Cylinders made and capped by the standard method, tested with a ½″ segment (circular segment of ½″ mid-ordinate) of the cap removed, gave strength-ratios slightly less than 100 per cent. When a 1″ segment was removed the strength-ratios obtained were 100 per cent for 1:7 concrete, about 95 per cent for 1:5 concrete and 90 per cent for 1:3½ concrete. The removal of a 2″ segment gave strength ratios of 90, 80, and 65 for the three concretes.

When the segments removed were replaced with 1:1 gypsum and cement mortar 3 hours before test, the strength-ratios were about 100 per cent except for the 2″ segment, which showed strength-ratios of from 95 to 90 per cent.

8. Cylinders with plane parallel ends but with axes inclined, gave the same strength as standard cylinders for an inclination of ¼″ in 12″ and

*From Bulletin 14, Structural Materials Research Laboratory, Lewis Institute, Chicago, authorized Reprint from the Copyrighted Proceedings of the American Society for Testing Materials, Vol. 24, Part II, 1924.

strength-ratios of about 92 per cent for an inclination of ½″ in 12″.

9. Cylinders with the top surface inclined showed strength-ratios of about 100 per cent for an inclination of ¼″ in 6″ and of about 95 per cent for an inclination of ½″ in 6″.

10. Cylinders molded with machined cast-iron plates so as to give convex ends and tested without bedding, gave pronounced reductions in strength even for a small amount of convexity. The reduction in strength increased with increase in convexity and with increase in the richness of the mix.

For a convexity of 0.01″ the 1:3½ and 1:2 mixes showed strength-ratios of about 65 per cent and for a convexity of 0.05″, about 40 per cent. For the 1:7 and 1:5 mixes the corresponding strength-ratios were about 80 and 55 per cent.

When tested with Beaver Board sheets at both top and bottom, the reductions in strength were about half as great as when tested without bedding.

The use of gypsum bedding for one group of cylinders with bases convex 0.05″ gave strength-ratios of about 90 per cent.

11. The effect of concave ends was small compared to that of convex ends.

12. Sheared steel plates 8″ square by ¼″ thick, from warehouse stock, showed deviations from a true plane of as much as 0.012″. Cylinders molded with these plates as bases and covers so as to give convex ends, gave results comparable with those from cylinders having the same convexity similarly made with machined cast iron plates (see 10 above).

13. Tests with concrete of different consistencies using cylinders with ends convex about 0.01″ showed similar results for all consistencies. The typical relation of strength to water-cement ratio was found.

14. The different conditions of test did not show a marked difference in the uniformity of the individual results. The average mean variation of the 28-day tests ranged from 4.1 per cent for one group of the standards to a maximum of 10.9 per cent for the cylinders tested without an adjustable bearing block.

15. Finally, the most important conclusion from these tests is that great care must be exercised when preparing cylinders for test in order to secure ends which are true planes. When the standard method of capping with plane cover plates cannot be followed, the cylinder should be trowelled smooth and bedded with a thin layer of gypsum or a mixture of gypsum and cement 3 to 6 hours before test. The cylinders should always be molded on a plane surface.

RECOMMENDED LIVE FLOOR LOADS

THE report of the Building Code Committee, U. S. Department of Commerce*, entitled "Minimum Live Loads Allowable for Use in Design of Buildings" has been printed. There is a wide difference in the code requirements of 109 representative American cities. This would be an amusing condition but for the fact that it discloses a lack of co-ordination and resultant waste which well illustrates the want of interest in one of our most important industries — the building industry.

A variation of 100 per cent is quite common in existing codes and disparities of 200 and 300 per cent are found. This is discreditable to the architectural and engineering professions. Differences of opinion are but natural, even in an exact science like building designing but there is no valid reason seriously to question the recommendations of the Committee.

The requirements are brief and simpler of application than those of many building codes. The live load on floor space used for residential purposes in general is placed at 40 pounds per square foot. For office space and assembly places not subject to standing crowds 50 pounds are specified, and for other floor space in buildings for human occupancy the minimum limit is 100 pounds. Industrial or commercial buildings are to be designed primarily for the proposed occupancy and data are given in the appendix by which loads characteristic of different occupancies may be approximated. Roof and wind load requirements are somewhat less than present code practice, with emphasis on the influence of local conditions. Allowance is required in certain buildings for movable partition loads and floor-to-floor reduction is permitted in transmitting the assumed live loads in high buildings to the footings.

The foolish restrictions of many codes should receive the prompt and united attention of architects, engineers and contractors to the end that a uniform practice be established. Under the chairmanship of Ira H. Woolson, the Committee has done a good piece of constructive work and an appreciation of it can best be evidenced by a speedy adoption of its recommendations. This can only be accomplished by the united action of those most interested including architects, engineers, constructors, realtors and investment bankers; unfortunately the vast majority of interested persons, the owners, are not organized for effective action.

*Superintendent of Documents, Government Printing Office, Washington, D. C. Price 10 cents.

The LAW *as to* ARCHITECTURE

BY CLINTON H. BLAKE, *Jr., of the New York Bar*

AN ARCHITECT has written as follows:

"May I be permitted to submit the following regarding contracts between architect and owner which will, I believe, be of interest to architects who are well known to be lax in respect to same.

"The architect having received verbal instructions from a building committee to prepare sketches for a building did so and upon the acceptance of same and the receipt of instructions to proceed with working drawings sent the building committee copies of the standard contract of The American Institute of Architects for their signature. The signing of same was delayed while various members of the committee perused it—in the meantime payment was made to the architect for preliminary studies and work commenced upon working drawings.

"One or two members of the building committee objected to clauses No. 4 and No. 5 of the contract relative respectively to (No. 4) higher commission fee to architect should work be undertaken under separate contracts and (No. 5) additional payment of architect in case of extra services and expense caused to him by changes, delays, insolvency of contractor, etc. They were sustained to some extent by the committee's attorney who said, however, that the contract was a standard form used largely by architects throughout the country.

"Several members of the committee were former clients of the architect and work with them had been performed to their complete satisfaction under the standard contract. Rather than have any unnecessary friction, the architect agreed to eliminate clauses No. 4 and No. 5 from the contract, no other changes or additions being made. The work was carried out and completed to the entire satisfaction of all concerned.

"If part of the work, however, should have been undertaken under separate contracts or should there have been changes, delays, insolvency, etc., causing the architect undue expense, would he have been entitled to collect for same in the absence of these clauses from the contract?

"The architect could have shown that he invariably used the standard contract without change and had never before omitted the clauses in question. No addition was made to the contract explaining these omissions nor was the architect asked to agree that he would not make any additional charge for expense so incurred. The dissenting members of the committee apparently were content that the clauses be omitted."

THE problem which the foregoing letter presents is one with which the practicing architect is often confronted. An architect, like any professional man, dislikes to have a client dissatisfied, and in many cases is willing to make liberal concessions in order that the client may be entirely happy. Where this is done, however, the architect should use sufficient forethought to be sure of the concessions made and of his final status under the agreement finally arrived at. The case presented by this letter is an excellent illustration of how an architect may, in an endeavor to satisfy a client, pursue a course which is calculated to waive the rights of the architect to a much greater extent than he has intended that they shall be waived.

The letter does not state whether the objecting members of the building committee took the position that there should be no extra charge where the work was let under separate contracts and no additional charge for extra services caused by changes, delays, the insolvency of the contractor and the like. For the purpose of this discussion, we may safely assume, however, I think, that this was the case; that in objecting to clauses No. 4 and No. 5 of the standard contract, they objected not merely to the wording of these clauses, but to the substance of their provisions.

The situation presented, therefore, amounts to this:

The architect submits a contract which provides specifically that he shall be paid additional compensation where the work is let under separate contracts and where additional compensation for extra services, etc., is required. The client (in this case acting through the building committee) objects to these provisions for additional compensation. The architect thereupon strikes out these provisions from the contract, and the contract as signed omits them. The inevitable inference under these conditions is that the architect has at least impliedly agreed to eliminate from his compensation any items for extra services based on the letting of the work under separate contracts or extra services of the character here involved. If the contract, in the first instance, had not included this provision, the architect might conceivably have been in a position to claim extra compensation on these items upon showing that this was the custom of the profession and that the client had knowledge of the existence of such a custom. Where, however, as in this instance, the client specifically objects to the provisions for extra compensation and the architect acquiesces in the objection by eliminating them, a court or jury may well conclude that the parties have thoroughly considered these points and have agreed that there shall be no extra compensation with respect to them, irrespective of the existence of any professional custom to the contrary and irrespective of any knowledge which the client may have of such a custom.

The fact that the client had had previous dealings with the architect under the standard form of contract, without change and including clauses No. 4 and No. 5, would not aid the architect under these conditions. On the contrary, the fact that the client, having theretofore dealt with the architect on the basis of the unchanged contract, has in the present case raised these issues, would emphasize more clearly the unwillingness of the client to proceed under the contract as heretofore, without change, and the implied agreement on the part of the architect to acquiesce in the client's desires in this connection.

It is true that, in this case, as the letter states, the contract does not undertake to explain the omission of the clauses, and the architect was not asked to agree affirmatively that he would make no additional charge for extra work or for the lettering of the work under separate contracts. This leaves him, of course, in a stronger position

than if he stated that he would not make any such additional charges. Such an agreement would naturally have been conclusive against him. I do not think that the mere failure of the client, however, to require from the architect an affirmative agreement not to make the extra charges, is sufficient to nullify the effect of the agreement by the architect to eliminate the clauses in question.

Of course, if, when the clauses were omitted, the architect had stated in substance that, while he was willing to take them out of the contract, he wished it understood that his doing so was without prejudice to any rights which he might have for extra compensation under the law or the practice of the profession, he might be able to counteract the effect of the omission of the provisions. This would be, as a legal proposition, however, an extremely difficult thing for him to do. Where parties meet and discuss the terms of a proposed agreement and, after the discussion has been had, the agreement is reduced to writing, all the conversation which they may have had with respect to the contract is, as I have had occasion to point out heretofore, considered at law as merged in the written contract. This means that the court will consider that, having discussed the situation fully and then having reduced the agreement to writing, the writing must be taken to be the final and full understanding of the parties.

In the present instance, the architect, I judge, never agreed or intended to agree that he would not be entitled to extra compensation under the conditions specified in clauses No. 4 and No. 5 of the standard contract. If this was the case, however, and he desired to preserve his rights and not to waive them in any respect, the contract should have contained some provision eliminating the inference to be drawn from the omission of the clauses as first submitted, or at the least should have been accompanied by a letter stating that, while he had redrafted the agreement to meet the wishes of two of the members of the committee, it was understood that the fact that the contract did not include articles No. 4 and No. 5 was not to be taken as an agreement on his part to waive additional compensation.

As I have so often said, a written contract, as distinguished from the absence of any agreement or a verbal agreement, is of prime importance. In some cases, however, it were better to have no contract or agreement of any kind, than to have a contract so drafted or executed under such conditions, that it raises an implication which is not in accordance with the architect's intention. If the architect here, when the contract was objected to, stated, for example, that he could not enter into the contract, unless these provisions were inserted and that he would prefer to continue with the work without a contract, but with the understanding that he should be paid in accordance with the usual custom and charges of the profession and of The American Institute of Architects, he would be in a position to claim on *quantum meruit* the reasonable value of the services which he has rendered, and to show, in proof of such reasonable value, the prevailing custom and the rules and schedule of charges of the Institute.

The architect in question might be able to convince a court or jury that the omission of clauses No. 4 and No. 5 was negative in its effect and did not carry any positive inference with respect to waiving the substance of these clauses. I believe that he would have great difficulty, however, in sustaining this position under the circumstances which he submits, and that the chances of a decision favorable to him would be largely decreased, as a result of the course which he has followed and the inferences to be drawn from it.

It is the desire of all of us that our clients be satisfied and that we retain their good will in any work which we may perform for them. No professional man, however, can afford, in an endeavor to satisfy his client, to pursue a course which will estop him from asserting rights which he desires to reserve. If he is willing to waive his usual custom and charges in a given case, he should do so with a clear understanding of the effect of the action which he may take and not place himself in such a position that he will be precluded by his own act from asserting rights to which he is entitled and which he has at no time intended to abandon.

He must remember, in a word, that contracts may be implied as well as express, and that in the case of an implied contract, the intention of the parties may be deduced from all the circumstances involved and from the course which each of them has pursued. He will do well, also, to bear in mind the fact that a contract under the law is usually construed most stringently against the party who has prepared it, and that in the case of ambiguity or an equal balance of the probabilities as to the intentions of the parties, the contract prepared by the architect will be construed in favor of the client, rather than in favor of its author.

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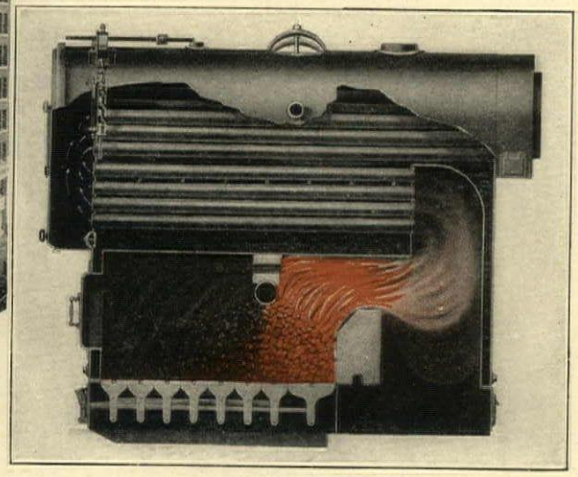

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COMPETITION FOR A MODEL KITCHEN

THE attention of architects, draftsmen and designers is directed to the announcement of the Delco-Light Company, Dayton, Ohio, of a competition for the design of a model kitchen. Substantial prizes are offered, ranging from $500 to $25. Mr. H. J. Williams of the architectural firm of Schenck & Williams will act as professional advisor. The competition will close on October 27, 1925.

For particulars address the Delco-Light Company, Department Z-13, Dayton, Ohio.

THE INTERNATIONAL EXPOSITION OF MODERN DECORATIVE AND INDUSTRIAL ART, PARIS, 1925

THE increasing interest of American industries in the art movement which is finding expression in the great International Exposition of Modern Decorative and Industrial Art, in Paris, has attracted many delegates who will join in a survey and study of the specialized exhibits to which the exposition is restricted.

As the Exposition comprises those arts which make for beauty in the domestic and personal lives of the people, only those interested in the trades and crafts and the graphic arts, will visit the displays shown in the specially constructed buildings.

The Exposition occupies the Esplanade des Invalides, the Alexandre III Bridge and the Gardens of the Cours la Reine, the entire Grand Palais and the quays of the Seine, from the Concorde to the Alma Bridge. Practically every foreign country is exhibiting artistic products.

That there will be many unique developments presented is assured by the statement in the official program, "Works admitted to the Exposition must show new inspiration and real originality. They must be executed and presented by artisans, artists, manufacturers, who have created the models, and by editors, whose work belongs to modern decorative and industrial art. Reproductions, imitations and counterfeits of ancient styles will be strictly prohibited." This insures the dominance of the modern spirit. This modern movement began some thirty years ago, and the new spirit has extended during the last twenty years so that new characteristics have crept into the designs of many continental countries.

From such resources to which this country is not contributing, fruitful and inspiring ideas and ideals will be brought to our artists and craftsmen which will soon be felt in the elimination of many useless and unbeautiful things which have carried the artistic approval of crude minds which are devoid of taste. It is probable that the reports of this commission will have a far-reaching effect in improving the grace and charm of American life and surroundings.

BETTER HOUSING FOR INTELLECTUAL WORKERS

FOLLOWING his recent inauguration of a movement for better housing for intellectual workers in the United States, Willard Reed Messenger, of New York, announces that the Federation Internationale Du Batiment et Des Travaux Publics, with headquarters in Paris, has accepted his offer of $1000 for three prizes to the winners of an international essay contest on the subject.

The first prize will be $500.00, the second $300.00 and the third $200.00. Citizens of all countries will be allowed to compete. The details of the competition and the judges will be announced later. Hon. Myron T. Herrick, United States Ambassador to France and Willis Booth, President of the International Chamber of Commerce, both of whom are deeply interested in the subject, have been suggested as the American representatives on the committee of judges.

In the letter which contained his offer, Mr. Messenger suggested that the articles, which should be limited to about 5,000 words in length, might deal with architectural or structural features, materials, interior arrangement, equipment, gardens, interior and exterior color schemes, environment and social amenities, economies of production, accessibility, aesthetic features and creation of atmosphere, financing or other pertinent aspects of the subject, together with practical methods of procedure to attain the desired completed results within the means of an average brain worker. Covering such a broad ground, he thought the competition would attract not only engineers, interior decorators and architects, but economists, industrial leaders, authors, journalists, psychologists, college professors, students and intellectual workers generally.

FIND OLD GLORIES AT KISH

NEW excavations at Kish in the recently discovered palace of a "mighty line of Sumerian Kings," who ruled in pre-Babylonian times prior to 3,000 B. C., have revealed additional magnificence possessed by the Sumerian Empire, according to a report received recently from Professor S. Langdon, leader of the Field Museum-Oxford University Mesopotamian expedition, by E. C. Davies, director of the Field Museum, Chicago.

The discoveries range from jewels and ornaments of gold to massive architecture, buttressed fortifications, ruins of drawbridges and clay rattle boxes of children's nurseries, Professor Langdon said. He added that "certainly nothing like the palace in grandeur, age and extent has been excavated in Mesopotamia."

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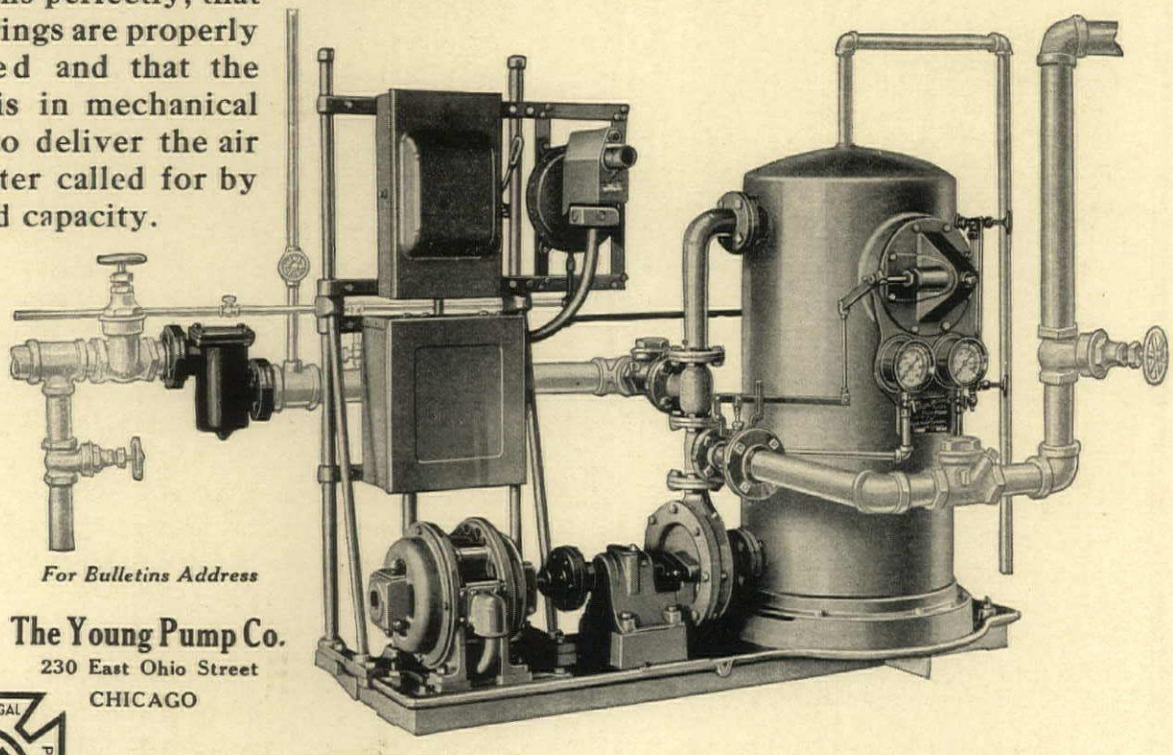

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REFERENCE LIST OF BUSINESS LITERATURE

A service arranged for the use of the Architect, Specification Writer and Architectural Engineer

This list of the more important business literature of Manufacturers of building material and equipment is published each issue. Any of these publications may be had without charge, unless otherwise noted, by applying to The American Architect, 243 West 39th Street, New York, or obtained directly from the manufacturers. Either the titles or the numbers may be used in ordering.

Arranged according to the Standard Construction Classification adopted by the American Institute of Architects.

1. Preparation of Site.
2. Excavation.
3. Masonry Materials.
4. Concrete and Monolithic Construction.
5. Brick Work.
6. Foundations.
7. Waterproofing and Dampproofing.
8. Stone Work.
9. Architectural Terra Cotta.
10. Block Construction.
11. Paving.
12. Roofing, Sheet Metal and Skylights.
13. Structural Steel and Iron.
14. Miscellaneous Steel and Iron.
15. Ornamental Metal Work and Physical Properties of Metals.
16. Fire Resisting Doors, Windows, and Trim.
17. Special Doors and Windows.
18. Vaults and Safes.
19. Carpentry.
20. Furring and Lathing.
21. Plastering.
22. Marble and Slate.
23. Floor and Wall Tile and Accessories.
24. Plastic Floors.
25. Paint, Painting and Finishing.
26. Glass and Glazing.
27. Hardware.
28. Furnishings.
29. Plumbing.
30. Heating and Ventilating.
31. Electrical Work.
32. Refrigeration.
33. Elevators.
34. Power Plant.
35. Equipment, Stationary.
36. Construction Plant.
37. Insulation.
38. Landscape.
39. Acoustics.
40. Regulations.

I Plans and Designs
II General Catalogs.
III Financing of Enterprises.

1. PREPARATION OF SITE.

2. EXCAVATION.

3. MASONRY MATERIALS.

American Face Brick Association, 1754 People's Life Bldg., Chicago, Ill.

103. *The Story of Brick.* Contains the history of, and basic requirements of building brick, artistic, sanitary and economic reasons, comparative costs, and fire safety with photographs and drawings, and illustrates ancient and modern architectural works of note in brick. Size 7 x 9¼ in. 56 pp.

Kosmos Portland Cement Co., Louisville, Ky.

877. *Kosmortar. A Mason's Cement.* A circular describing the properties of this material, tests of strength and directions for its use. 8 pp. Ill. 3¼ x 8¼ in.

Louisville Cement Co., Inc., Louisville, Ky.

694. *Brixment for Perfect Mortar.* A description of the chemical and physical properties of Brixment, advantages of its use in mortars for brick and stone masonry, tests of strength and directions for use. In cover for filing. 16 pp. Ill. 8½ x 11 in.

311. *Brixment, the Perfect Mortar.* The reading of this little book gives one a feeling that definite valuable information has been acquired about one of the oldest building materials. Modern science has given the mason a strong water-resisting mortar with the desirable "feel" of the best rich lime mortar. 16 pp. Ill. in colors. 5½ x 7¾ in.

The Ohio Hydrate & Supply Co., Woodville, Ohio.

494. *A Job That Took a Million Years.* A description of how limestone is formed and how it is later converted into lime. All the processes are shown in detail and the uses of lime are illustrated. 16 pp. Ill. 8½ x 11 in.

The Truscon Laboratories, Detroit, Mich.

920. *Sweep Hardness Into Your Concrete Floors.* Pamphlet of information on Agatex chemical cement floor hardener, with specifications for use. Ill. 8 pages. 4 x 9 in.

4. CONCRETE AND MONOLITHIC CONSTRUCTION.

Concrete Engineering Co., Omaha, Neb.

347. *Handbook of Fireproof Construction.* An illustrated treatise on the design and construction of reinforced concrete floors with and without suspended ceilings. The Meyer Steel-form Construction is emphasized and tables are given of safe loads for ribbed concrete floors. 40 pp. Ill. 8½ x 11 in.

Mitchell-Tappen Company, 16 John St., New York, N. Y.

257. *Booklet 14 on Standardized Metal Caging.* Description of various ways of reinforcing the concrete fireproofing on structural steel work, with particular reference to Standardized Metal Caging.

Portland Cement Association, 347 Madison Ave., New York City.

595. *Concrete Floors.—Proposed Standard Specifications of the American Concrete Institute.* Specifications with explanatory notes covering materials, proportions, mixing and curing. Plain and reinforced slabs are covered as well as one and two course floors and wearing courses. 18 pp. 6 x 9 in.

636. *Concrete Data for Engineers and Architects.* A valuable booklet containing the reports of the Structural Materials Research Laboratories at Lewis Institute, Chicago, in abbreviated form. It is of great value to writers of specifications. 18 pp. Ill. 8½ x 11 in.

Truscon Steel Company, Youngstown, Ohio.

317. *Truscon Floortyle Construction. Form D-352.* Contains complete data and illustrations of Floortyle installations. 16 pp. Ill. 8½ x 11 in.

United States Gypsum Company, 204 West Monroe St., Chicago, Ill.

819. *Sheetrock Pyrofill Construction.* A catalog describing a built-up construction for roofs and floors, consisting of sheetrock; a metal fabric and pyrofill. Details, designing data and specifications. 16 pp. Ill. 8½ x 11 in.

5. BRICK WORK

American Face Brick Association, 1754 People's Life Bldg., Chicago, Ill.

855. *English Precedent for Modern Brickwork.* A book of plates and measured drawings of Tudor and Georgian brickwork with a few recent variations of modern architects in the spirit of the old work. Price $2.00. 100 pp. Ill. 8½ x 11 in.

371. *Architectural Details in Brickwork. Series One, Two and Three.* Each series consists of an indexed folder case to fit standard vertical letter file, containing between 30 and 40 half-tones in brown ink on fine quality paper. These collections are inspiring aids to all designers. Sent free to architects who apply on their office stationery; to others, 50 cents for each series.

6. FOUNDATIONS.

Raymond Concrete Pile Co., 140 Cedar St., New York.

156. *Raymond Concrete Piles—Special Concrete Work.* A booklet with data concerning the scope of the Raymond Concrete Pile Co., for special concrete work. It classifies piles, showing by illustration, text and drawings, the relative value of special shape and manufacture of piles. It gives formulæ for working loads, and relative economy. Size 8½ x 11⅛ in. 60 pp.

7. WATERPROOFING AND DAMPPROOFING

Samuel Cabot, Inc., 141 Milk St., Boston, Mass.

340. *Cabot's Waterproofing Specialties.* Describes Dampproofing, Clear Brick Waterproofing and Clear Cement Waterproofing with specifications and covering data. 12 pp. Ill. 4 x 9 in.

Security Cement and Lime Co., Hagerstown, Md.

743. *Waterproofing with CAL.* A portfolio of miscellaneous information treating of the integral method of waterproofing concrete, specifications and tests. 24 pp. Ill. 8½ x 11 in.

L. Sonneborn Sons, Inc., 114 Fifth Ave., New York City.

891. *Dampproofing and Waterproofing. Floor Treatments.* Bulletins of specification data for dampproofing structures and for floor hardening and coloring. Sent on request on business stationery. In folders 8½ x 11 in.

The Truscon Laboratories, Detroit, Mich.

922. *Science and Practice of Integral Waterproofing.* A complete analysis of why concrete requires waterproofing and the properties and integral waterproofing should possess to fit it for this purpose. Contains complete specifications on (1) waterproofing mass concrete; (2) waterproofing masonry construction and old concrete by the waterproof cement plaster coat method; (3) waterproof cement stucco. A special chapter is devoted to the proper bonding of a cement plaster coat to an old surface. Illustrated. 33 pp. 4 x 9 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

8. STONE WORK

Indiana Limestone Quarrymen's Assn., P. O. Box 503, Bedford, Ind.

366. *Standard Specifications for Cut Stone Work.* This is Vol. III, Series "A-3." Service publications on Indiana Limestone. containing Specifications and Supplementary Data, relating to best methods of specifying and using this stone for all building purposes. This valuable work is not for general distribution. It can be obtained only from a Field Representative of the Association or through direct request from architect written on his letterhead. 56 pp. Ill. 8½ x 11 in.

845. *School and College Buildings, Vol. 6, Series B.* A profusely illustrated booklet showing the use of Indiana Limestone in a large number of educational buildings of all kinds and types and in all parts of the United States. 80 pp. Ill. 8½ x 11 in.

846. *Distinctive Houses of Indiana Limestone; Volume 12.* A portfolio containing illustrations of houses selected for their distinctive character and of various types. Free to architects and draftsmen requesting same on business stationery. 88 pp. Ill. 8½ x 11 in.

National Building Granite Quarries Assn., Inc., 31 State Street, Boston, Mass.

416. *Architectural Granite No. 1 of the Granite Series.* This booklet contains descriptions of the various granites used for building purposes; surface finishes and how obtained; profiles of moldings and how to estimate cost, typical details; complete specifications and 19 plates in colors of granite from various quarries. 16 pp. Ill. 8½ x 11 in.

914. *Studies in Granite No. 2 of Series.* A collection of 18 plates of granite details selected from important American buildings. In folder. 18 pp. Ill. 8½ x 11 in.

9. ARCHITECTURAL TERRA COTTA

Atlantic Terra Cotta Co., 350 Madison Ave., N. Y. C.

903. *Chimney Pots.* A booklet containing details of chimney pots adapted to Colonial, English, Gothic, Tudor and Georgian houses, colored plates, dimensions and specifications. 12 pp. Ill. 8½ x 11 in.

948. *Atlantic Terra Cotta.* Printed monthly for architects. The May number is devoted to studies in Polycromy's; the Renaissance. Sent to architects on request. 16 pp. Ill. 8½ x 11 in.

National Terra Cotta Society, 19 West 44th St., New York City.

664. *Standard Specifications.* Contains complete detailed specifications for the manufacture, furnishing and setting of terra cotta, a glossary of terms relating to terra cotta and a short form specification for incorporating in architect's specification. 12 pp. 8½ x 11 in.

668. *Better Banks.* Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, architect. 32 pp. Ill. 8½ x 11 in.

The Northwestern Terra Cotta Co., 2525 Clybourn Ave., Chicago, Ill.

96. *Architectural Terra Cotta.* A collected set of advertisements in a book, giving examples of architectural terra cotta, ornamental designs and illustrations of examples of facades of moving-picture houses, office buildings, shops, vestibules and corridors in which Northwestern Terra Cotta was used. Size 8½ x 11 in. 78 pp.

10. BLOCK CONSTRUCTION.

11. PAVING

American Three Way-Luxfer Prism Co., 13th Street and 55th Court, Chicago, Ill.

424. *Daylighting. Catalog* 21. A complete catalog on glass prisms for use in transoms, sidewalk and floor lights, skylights, etc., for lighting places inaccessible to direct daylight. Contains also measurements, specifications and other data required by designers. 42 pp. Ill. 8½ x 11 in.

The Rodd Co., Century Bldg., Pittsburgh, Pa.

688. *Redwood Block Floor Booklet.* A treatise on the advantages of Redwood Block Floors in factories, warehouses, hotels, office buildings, department stores, hospitals, etc. Details, dimensions and specifications for installing. 14 pp. Ill. 4 x 9 in.

12. ROOFING, SHEET METAL AND SKYLIGHTS

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

452. *Reference Book. Pocket Edition.* Covers the complete line of Sheet and Tin Mill Products. 168 pp. Ill. 2½ x 4½ in.

463. *Copper—its Effect Upon Steel for Roofing Tin.* Describes the merits of high grade roofing tin plates and the advantages of the copper-steel alloy. 28 pp. Ill. 8½ x 11 in.

The Barber Asphalt Company, Land Title Bldg., Philadelphia, Pa.

702. *Specifications.* A pamphlet containing standard specifications for Genasco Standard Trinidad Lake Asphalt Built-up Roofing, Genasco Economy Trinidad Lake Asphalt Built-up Roofing, Genasco Membrane Waterproofing and Genasco Asphalt Flooring. Illustrated with sketches showing construction. 16 pp. Ill. 8 x 11¼ in.

Wm. L. Barrell Co., 50 Leonard St., N. Y. C.

778. *Con-Ser-Tex Canvas Roofing.* A booklet giving facts and figures concerning the use of canvas roofing on roofs of all kinds and floors of porches, sleeping balconies, garage, kitchen and laundry floors, gutters, valleys and hips. 12 pp. Ill. 3¾ x 7 in.

John Boyle & Co., Inc., 112-114 Duane St., New York, N. Y.

212. *Boyle's Bayonne Roof and Deck Cloth.* List B 93. A prepared roofing canvas guaranteed waterproof for decks and the roofs and floors of piazzas, sun-parlors, sleeping porches, etc.

The Philip Carey Co., Lockland, Cincinnati, Ohio.

378. *Architects' Specification Book on Built-up Roofing.* A manual for detailers and specification writers. Contains complete details and specifications for each type of Carey Asphalt Built-up Roof. 20 pp. Ill. 8½ x 11 in.

380. *Asbestos versus Fire.* Booklet in colors. Contains information about asbestos; data on Carey Prepared and Built-up Asbestos roofing; picture of buildings on which they have been used. 15 pp. Ill. 6 x 9 in.

381. *Carey Asfaltslate Shingles.* Folder containing illustrations of attractive buildings and residences on which Carey Asfaltslate Shingles have been used. Describes this type of shingle showing its special claims and advantages.

The Edwards Manufacturing Company, Cincinnati, Ohio.

535. *Shingles and Spanish Tile of Copper.* This book, illustrated in colors, describes the forms, sizes, weights and methods of application of roof coverings, gutters, downspouts, etc., of copper. 16 pp. Ill. in special indexed folder for letter size vertical files.

John D. Emack Co., 112 South 16th St., Philadelphia, Pa.

870. *Olde Stonesfield Roofs and Old Stonesfield Flagging.* Two illustrated catalogs describing this slate and its application to roofs of the better class and as flagging for walks and terraces. 8 pp. and 16 plates, 5½ x 6½; 8 pp. Ill. 8½ x 11 in.

Ludowici-Celadon Co., Chicago, Ill.

120. *Roofing Tile.* A detailed reference for architects' use. Sheets of detailed construction drawings to scale of tile sections of various types and dimensions, giving notes of their uses and positions for various conditions of architectural necessity. Size 9½ x 13½ in. 106 plates.

154. *The Roof Beautiful.* Booklet. Well illustrated with photographs and drawings, giving history and origin of roofing tile, and advantages over other forms of roofing. Types shown by detailed illustrations. Size 8 x 10¼ in. 32 pp.

Milwaukee Corrugating Co., Milwaukee, Wis.

815. *Milcor Architectural Sheet Metal Guide. Catalog No. 24.* A complete catalog of sheet metal ceilings and side walls, zinc and copper ornaments, cornices, skylights, ventilators, gutters, downspouts and roofing tiles. 64 pp. Ill. 8½ x 11 in.

Mohawk Asbestos Slate Co., Inc., Utica, N. Y.

873. *The Roof Everlasting.* A booklet describing the advantages of the Mohawk tapered asbestos shingle with specifications for installation. 20 pp. Ill. 3¾ x 6½ in.

New Jersey Zinc Co., 160 Front St., New York City.

896. *"Horse Head" Zinc.* Catalog for architects and builders with valuable and complete details of eaves troughs, gutters and conductor pipes, specifications and special zinc data. Sent to architects, builders and sheet metal workers when requested on business letter head. 16 pp. and 12 plates. Ill. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

496. *Tudor Stone Roofs.* This leaflet discusses colors and sizes of Tudor hand-wrought slates; deals with the service given to architects and tells how the material is quarried for each product after careful drawing and specifications are prepared in co-operation with architects. Special grades are described in detail and illustrations are given of buildings with Tudor slate roofs. Contains also specifications of laying slate. 4 pp. Ill. 8½ x 11 in.

571. *Tudor Stone Roofs.* A brochure describing the 7 special grades of Tudor Stone and the 7 grades of commercial slate produced by this company with illustrations of many structures on which it has been used. 28 pp. Ill. 6 x 9½ in.

Vendor Slate Co., Easton, Pa.

332. *The Vendor Book of Roofing Slate for Architects.* Contains original information on slate in various architectural uses; history, geology, sundry practical matters; complete descriptive classification; extended treatise on architectural roof design and specifications. 24 pp. Ill. 8½ x 11 in.

333. Occasional brochures on architecturally pertinent phases of roofing slate sent on request.

13. STRUCTURAL STEEL AND IRON

Lally Column Co., Inc., 211-249 Lombardy St., Brooklyn, N. Y.

122. *Lally Columns. Handbook.* Detailed construction diagrams for various types of steel construction. The text describes advantages of endurance and economy of the column. Various tests, tables of sizes, dimensions, weight, carrying capacities, and data on other structural materials are given. Size 4⅝ x 6⅜ in. 81 pages.

14. MISCELLANEOUS STEEL AND IRON

American Abrasive Metals Co., 50 Church St., New York.

893. *Feralun Anti-Slip Treads.* A circular showing the advantages of antislip treads for school stairs, details and methods of reconstructing old, worn stairs. 2 pp. Ill. 8½ x 11 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

14. MISCELLANEOUS STEEL AND IRON—CONTINUED

Colonial Fireplace Co., 4619 Roosevelt Road, Chicago, Ill.

676. *Blue Print Details.* A valuable set of scale details of correct fireplace construction and examples of details to avoid. Instructions for setting the Colonial head throat and damper. Explanations of necessity for summer use of damper. Folder equivalent to 8 pp. Ill. 8¼ x 10½ in.

H. W. Covert & Co., 137 East 46th St., New York City.

774. *Fireplace and Flue Construction.* A treatise explaining the elements of fireplace construction with details and dimensions and description of dampers and other accessories. 12 pp. Ill. 8½ x 11 in.

The Donley Brothers Co., 13900 Miles Ave., Cleveland, Ohio.

912. *Donley Book of Fireplaces, 3rd Edition.* This book contains designs of fireplaces, valuable construction plans and data and catalog of dampers, grates and accessories. 24 pp. Ill. 7½ x 10½ in.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York also Lexington Ave., at 65th St., New York.

171. Booklet showing general construction and size of chutes to receive coal. Two types are built into the foundation wall with glass panel in place of cellar window; another type is placed flush with the ground, and is placed adjacent to wall, or can be placed near the street curb. Size 3½ x 6¼ in. 16 pp.

823. *Fireplace metal work* including dampers, ashdumps, ashpit doors, andirons, firetools and spark screens giving dimensions and prices. 16 pp. Ill. 8 x 11.

The Safety Stair Tread Co., Wooster, Ohio.

828. *The Wear on Stairs.* A catalog describing the properties of white brass, brass and black safety treads for stairs. 12 pp. Ill. 3½ x 9¼ in.

829. *Wooster Safe Groove Tread.* Catalog describing safe groove treads and thresholds and security nosings, made of white brass, brass and black steel. 4 pp. Ill. 8½ x 11 in.

Truscon Steel Co., Youngstown, Ohio.

641. *Truscon Steel Joist Data Book.* Complete data of steel joists giving properties, dimensions, safe loads, coefficients of deflection, details of connections, specifications, directions for installations. 32 pp. Ill. 8½ x 11 in.

15. ORNAMENTAL METAL WORK AND PHYSICAL PROPERTIES OF METALS

American Brass Co., Main Office, Waterbury, Conn.

138. *Price List and Data Book.* Illustrated. Looseleaf Catalog. Covers entire line of Sheets, Wire Rods, Tubes, etc., in various metals. Useful tables. Size 3⅞ x 7 in. 168 pp.

139. *Illustrated Pamphlets.* Describes the use and adaptability of Extruded Architectural Shapes, Benedict Nickel, Brass and Copper Pipe in Iron Pipe sizes for plumbing installations. 8½ x 11 in.

16. FIRE RESISTING DOORS, WINDOWS AND TRIM

Crittall Casement Window Co., Detroit, Mich.

672. *Crittall Universal Casement, Catalog No.* 22. Contains complete description, photographs, specifications and details of steel casement windows for banks, schools, residences, churches, hospitals, set directly into masonry and with auxiliary frames. 76 pp. Ill. 9 x 12 in.

695. *Crittall Solid Steel Reversible Windows, Catalog No.* 1-24. A catalog explaining the advantages of reversible metal windows for office buildings, schools, hospitals and other substantial buildings. Details of construction and specifications. 20 pp. Ill. 8½ x 11¼ in.

Dahlstrom Metallic Door Co., Jamestown, N. Y.

674. *Architectural Catalog.* Illustrated catalog showing styles and types of Dahlstrom Standard Construction Hollow Metal Doors and Trim, Conduo-Base, etc. Also various types of frames, jamb construction and architectural shapes. 178 pp. Ill. 8½ x 11 in., in loose leaf.

International Casement Co., Jamestown, N. Y.

833. *International Casements for Homes of Distinction and Charm Catalog No.* 9. A reference book for those interested in high grade window construction. 24 pp. Ill. 10¾ x 7¾ in.

834. *International Casements. Catalog No.* 7. A complete catalog including working details, hardware, screen, specifications and fine illustrations of modern American installations as well as 16th Century Tudor and Jacobean residences in England. 224 pp. Ill. 8½ x 11 in. Sent to practicing architects on receipt of request on business letter-head.

The Kawneer Company, Niles, Michigan.

933. *Kawneer Windows.* Catalog describing double hung and casement windows made of solid nickel-silver heavy cold rolled mouldings with welded joints. Construction details and specifications 18 pp. Ill. 8½ x 11 in.

David Lupton's Sons Company, Philadelphia, Pa.

864. *Consider the Windows. Publication C-103.* A booklet which comprehensively treats of windows for dwellings and apartment houses, explaining the particular type of window best adapted for different rooms with details and dimension data. 48 pp. Ill. 5½ x 8 in.

953. *Lupton Pivoted Sash, Catalog No.* 12-A. Describing all types of pivoted steel sash operating devices, details, engineering data, specifications and installation directions. 48 pp. Ill. 8½ x 11 in.

Richards-Wilcox Mfg. Co., Aurora, Ill.

796. *Fire Doors and Hardware. Catalog No. A-25.* A catalog of standard, approved tin-clad fire doors, steel frames, automatic door hangers, tracks and fixtures; also hinges, locks and accessories. Details, dimensions and installation diagrams. 96 pp. Ill. 8½ x 11 in.

Truscon Steel Co., Youngstown, Ohio.

348. *Truscon Steel Sash.* This handbook has been prepared for detailers and specification writers. The descriptions are clear and the details are complete. 80 pp. Ill. 8½ x 11 in.

898. *The Donovan Awning Type Steel Window.* A catalog containing details, specifications and complete description of the working and advantages of the Truscon-built Donovan Awning Type Window especially adapted for schools, hospitals and other buildings. 12 pp. Ill. 8½ x 11 in.

The United Hollow Metal Products Co., Canton, Ohio.

776. Catalogs describing a complete line of hollow metal doors and trim, conduo base, and drawn steel and bronze shapes. Details, dimensions and specifications. 4 and 16 pp. Ill. 8½ x 11 in.

17. SPECIAL DOORS AND WINDOWS

Austral Window Co., 101 Park Ave., New York City.

872. *Austral Window Hardware. Catalog No.* 24. This catalog contains specifications and details of Austral window hardware for wood, rolled steel, metal covered and hollow metal windows and illustrations of installations. 32 pp. Ill. 8½ x 11 in.

Irving Hamlin, 1822 Sherman Avenue, Evanston, Ill.

735. *The Evanston Sound-Proof Door also The Hamlinized Folding Partitions.* A circular explaining the construction of a sound-proof door and folding partitions hermetically sealed against odors, dust, light, weather and air, especially adapted to music schools, hospitals, etc. 8 pp. 8½ x 11 in.

907. *The Evanston Sound-Proof Door.* A catalog giving details and hardware equipment of sound, odor, dust and air proof doors for hospitals and music schools. Also Hamlinized folding partitions for churches, Sunday Schools and Public Schools. 10 pp. Ill. 8½ x 11 in.

18. VAULTS AND SAFES

The Rivet-Grip Steel Co., 2735 Prospect Ave., Cleveland, Ohio.

768. *The Rivet-Grip System of Bank Vault Reinforcement.* This handbook explains the fundamentals of bank vault design and the advantages of the Rivet-Grip System of Reinforcement. Details of vertical and horizontal types, specifications and installations. 34 pp. Ill. 8½ x 11 in.

19. CARPENTRY

American Wire Fabrics Corporation, 208 So. La Salle St., Chicago, Ill.

305. *Catalog of Screen Wire Cloth.* A catalog and price list of screen wire cloth, black enamelled, galvanized, galvanoid, copper, bronze. 30 pp. Ill. 3½ x 6¼ in.

Andersen Lumber Company, Bayport, Minn. (formerly South Stillwater).

559. *Complete Catalog for Architects and Builders.* Describes Andersen Standard Window Frames and Cellar Sash Frames, which are in 7 units instead of 57 and may be assembled and nailed in 10 minutes. Shows uses in special construction for it comes in 121 sizes and styles. 24 pp. Ill. 7¾ x 10¾ in.

California White and Sugar Pine Manufacturers Association, 690 Call Building, San Francisco, Calif.

875. *Information Sheets.* These sheets, with folder, contain information, illustrations and data pertaining to the use of California White and Sugar Pine in building construction. 8½ x 11 in. in folder.

Chamberlin Metal Weather Strip Co., 1644 Lafayette Boulevard, Detroit, Mich.

918. *Excluding Cold and Dust.* A booklet describing the dust and weather proofing of doors and windows. 16 pp. Ill. 5 x 7½ in.

919. *Chamberlain Metal Weather Strip Details.* A catalog containing valuable details of the installations of Chamberlain Metal Weather Strips to all kinds of windows and doors. A draughting table book. 48 pp. Ill. In folder. 8¼ x 10¾ in.

Curtis Companies Service Bureau, Clinton, Iowa.

663. *Keeping Down the Cost of Your Woodwork.* A book illustrating Curtis interior woodwork and built-in cabinets and fixtures designed by Trowbridge and Ackerman, Architects, New York. Colored illustrations and details. 16 pp. Ill. 7 x 9¼ in.

926. *Curtis Woodwork.* A valuable booklet presenting the entire line of woodwork such as entrances, doors, windows, exterior mouldings, stairs and permanent furniture. Sent on request. 40 pp. Ill. 9 x 12 in.

The Diamond Metal Weatherstrip Co., Columbus, Ohio.

616. *The Diamond Way.* A catalog of full size details showing the application of Diamond metal weather strips to double hung and casement windows and doors with complete specifications. 34 pp. Ill. 8½ x 11 in.

Hartmann-Sanders Company, 6 East 39th St., New York, N. Y.

334. *Catalog No.* 47. Illustrating Kell's Patent Lock Joint wood stave columns for exterior and interior use. 48 pp. Ill. 7½ x 10 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

19. CARPENTRY—CONTINUED

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

353. *Screen your Home in the Higgin Way.* A description of Higgin door and window screens with practical data. 16 pp. Ill. 8½ x 11½ in.

Improved Office Partition Co., 34 Grand St., Elmhurst, New York.

817. *Telesco Partition.* (1) A catalog describing the construction and advantages of using the Telesco removable wood partitions for office partitions, coat rooms, stock rooms, telephone booths, etc. (2) A hand-book giving detailed instructions for erecting Telesco partitions. (1) 16 pp. Ill. 8½ x 11 in. (2) 24 pp. Ill. 8½ x 11 in.

818. *Telesco Telephone Booths.* A circular describing the construction of wooden telephone booths assembled complete and finished, ready for use. 2 pp. Ill. 8½ x 11 in.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York also Lexington Ave. at 65th St., New York.

90. *Wood Mantels. Portfolio.* Wood mantel designs of various types and openings, giving dimensions, projections and showing fireplace grate designs. Size 9 x 6¼ in. 32 pp.

The Long-Bell Lumber Co., R. A. Long Building, Kansas City, Mo.

204. *The Perfect Floor.* Tells how to lay finish and care for Oak Flooring. 16 pp. 14 illus. 5⅛ x 7⅝ in.

McKeown Bros. Co., 21 East 40th St., New York, N. Y.

434. *Clear Floor Space.* A folder showing uses and advantages of McKeown "Lattis" and "Bowstring" long span wood roof trusses. 4 pp. Ill. 8½ x 11 in.

Monarch Metal Products Co., 5020 Penrose Street, St. Louis, Mo.

820. *Monarch Metal Weather Strip Manual.* This new manual contains the latest data on the subject of air infiltration through doors and windows with details and specifications for the installation of Monarch Metal Weather Strips. 44 pp. Ill. 8½ x 11 in.

The Pacific Lumber Company of Illinois, 2060 McCormick Bldg., Chicago, Ill.

363. *Construction Digest*—The use of California Redwood in residential and industrial construction. Contains illustrations, grading rules, specifications and other technical data for architects and builders. 16 pp. Ill. 8½ x 11 in.

Watson Manufacturing Co., Jamestown, N. Y.

737. *Watson Insect Screens.* Reprint of space in Sweet's Catalog giving illustrations and detailed data for the use of architects. 21 pp. Ill. 8½ x 11 in.

The Wheeler Osgood Co., Tacoma, Wash.

713. *Laminex Doors, Catalog No.* 31. Doors made of Douglas Fir employing a special laminated and doweled construction. Twenty designs in vertical and flat grain veneers. Sizes and details. 4 pp. Ill. 3⅞ x 9¼ in.

714. *Laminex Doors, A Book for Architects and the Building Trade.* This book fully describes the special features of Douglas Fir Laminex and Woco Doors; strength, water and heat tests; properties of Fir; Woco garage doors and window sash. 24 pp. Ill. 8 x 11 in.

J. G. Wilson Corp., 11 East 36th St., New York City.

760. *Sectionfold and Rolling Partitions, Hygienic School Wardrobes, Catalog* 37. This catalog illustrates the construction and details of the partitions and wardrobes with plans for and photographs of installations. 40 pp. Ill. 8½ x 11 in.

20. FURRING AND LATHING

American Steel & Wire Co., Chicago, Ill.

228. *Stucco Houses Reinforced With Triangle Mesh Fabric.* A pamphlet containing valuable data on stucco work with tables of qualities of material and many illustrations of houses covered with stucco applied on Triangle Mesh Fabric. 24 pp. Ill. 6 x 9 in.

The Bostwick Steel Lath Co., Niles, Ohio.

916. *Bostwick Metal Lath.* Leaflets describing the various types of metal lath, metal grounds, invisible picture moulding, expanded metal, corner heads, wall plugs and wall ties. 8 leaflets, 2 & 4 pp. Ill. 3¼ x 6¼ in.

Concrete Engineering Co., Omaha, Neb.

346. *How to Use Ceco Lathing Materials.* An illustrated treatise on the use of expanded metal lath. Contains construction details and complete specifications, with sample piece of lath in pocket on cover of book. 16 pp. Ill. 8½ x 11 in.

The General Fireproofing Company, Youngstown, Ohio

944. *The Herringbone Book.* A complete treatise on the use of metal lath in all types of construction. Size 8½ x 11.

Milwaukee Corrugating Co., Milwaukee, Wis.

838. *The Milcor Manual. Catalog No.* 20. A data book for designing the use of expanded metal lath, expansion cornerheads and casings, steel floor domes and other fireproof building products. Specifications and details. 64 pp. Ill. 8½ x 11 in.

Truscon Steel Company, Youngstown, Ohio.

316. *Hy-Rib and Metal Lath.* Tables, general data and illustrations of Hy-Rib and metal lath construction. 6 pp. Ill. 8½ x 11 in.

21. PLASTERING

The Bishopric Mfg. Co., Cincinnati, Ohio.

839. *Bishopric Sunfast Finish.* A folder illustrating and describing a color and damp-proof coating applicable to new and old stucco surfaces. Illustrated with color plates. 16 pp. Ill. 3½ x 6¼ in.

Palmer Lime & Cement Co., 103 Park Ave., N. Y. C.

938. *French Imported Caen Stone Cement.* A catalog describing the material and its properties, illustrations of its application in important buildings, specifications and instructions. 20 pp. Ill. 8½ x 11 in.

Portland Cement Association, 347 Madison Ave., N. Y. C.

594. *Portland Cement Stucco.* Illustrated leaflet of recommended practice for Portland Cement Stucco. Contains data on materials, proportions, application and curing. Table of colors for various tints, photographs of surface textures and drawings of construction details also given. 15 pp. Ill. 8½ x 11 in.

United States Gypsum Co., 205 West Monroe St., Chicago, Ill.

911. *Oriental Stucco.* A booklet describing the use of Oriental Stucco with specifications and especially embossed pages showing different surface textures in colors. 10 pp. and 10 plates. Ill. 8½ x 11 in.

22. MARBLE AND SLATE

The Georgia Marble Co., Tate, Pickens Co., Ga., New York Office, 1328 Broadway.

634. *Why Georgia Marble is Better.* Booklet 3⅜ x 6 in. Gives analysis, physical qualities, comparison of absorption with granites, opinions of authorities, etc.

23. FLOOR AND WALL TILE AND ACCESSORIES

Armstrong Cork and Insulation Co., Pittsburgh, Pa.

901. *Linolite Floors and Cork Tile Floors.* Catalogs 07 describing Linolite floors for residences and catalog 08 describing Linolite floors for public and semi-public buildings, both with colored charts; catalog Q4 describing Armstrong's Cork Tile floors for all purposes. 26, 36 and 30 pp. Ill. 8½ x 11 in.

The Associated Tile Manufacturers, Beaver Falls, Pa.

374. *Basic Specifications for Tilework and Related Documents. No. K-300.* This specification is prepared in a very systematic manner for the use of architects and builders. It is printed on one side of a sheet with facing page blank to receive memoranda. Various colored sheets make reference easy and simplify greatly the work of a specification writer in specifying tilework. 38 pp. 7½ x 10⅝ in.

375. *"Work Sheets" for Specification Writers.* To be used in connection with "Basic Specification for Tilework and Related Documents." 16 sheets 7½ x 10⅝ in.

Bonded Floors Co., Inc., Division of Congoleum-Nairn, Inc., 1421 Chestnut St., Philadelphia, Pa.

935. *The "Distinctive Floors" Series.* Four pamphlets, illustrated in color, describing (1) Battleship Linoleum, (2) Treadlite Tile, (3) Rubber Tile and (4) Natural Cork Tile. Each 8 pp. 7¾ x 10¾ in.

937. *Practical Working Specifications.* Specifications and installation details for battleship linoleum, treadlite tile, rubbertile and cork tile. Each 1 pp. Ill. 8½ x 11 in.

E. L. Bruce Co., Memphis, Tenn.

949. *Just inside your Threshold.* A booklet describing the physical characteristics of the different varieties of oak flooring, methods of sawing, manufacturing, laying and finishing. Complete information about oak flooring. 24 pp. Ill. 6 x 9 in.

Norton Company, Worcester, Mass.

767. *Norton Floors.* A loose-leaf catalog in filing cover, illustrating Alundum Stair, Floor and Ceramic Mosaic Tiles. Specifications, installation details, sizes and details of Alundum Aggregate treads, platforms, etc. 27 pp. Ill. 8½ x 11 in.

24. PLASTIC FLOORS

The Barber Asphalt Co., Philadelphia, Pa.

659. *Genasco Trinidad Lake Asphalt Mastic.* A book describing its manufacture, uses and methods of application, including application over old floors. Separate specifications for flooring, waterproofing and roofing uses. 34 pp. Ill. 6 x 9 in.

The Marbleloid Co., 461 Eighth Ave., New York City.

779. *Marbleloid, The Unwersal Flooring.* This book treats of the use of plastic magnesia flooring, its physical properties, low comparative cost, modern floor requirements and the satisfactory use of Marbleloid floors. 24 pp. Ill. 8½ x 11 in.

Franklyn R. Muller, Inc., Waukegan, Ill.

242. *Asbestone Flooring Composition.* A book describing uses of and giving specifications and directions for Composition Flooring. Base. Wainscoting, etc. 8½ x 11 in. Ill.

25. PAINT, PAINTING AND FINISHING

Joseph Dixon Crucible Co., Jersey City, N. J.

324. *Dixon's Silica-Graphite Paint.* A pamphlet describing the physical properties of silica-graphite paint and especially the wide difference between it and other protective paints. Contains also sample color card with specifications. 20 pp. and 6 pp. in color card. Ill. 3¼ x 6¼ in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

25. PAINT, PAINTING AND FINISHING—CONTINUED

The Glidden Co., Cleveland, Ohio.

419. *Ripolin Specification Book.* 8 x 10¼ in., 12 pp. Complete architectural specifications and general instructions for the application of Glidden Paints and Varnishes including Ripolin. Directions for the proper finishing of wood, metal, plaster, concrete, brick and other surfaces, both interior and exterior, are included in this Specification Book.

National Lead Company, 111 Broadway, New York, N. Y.

389. *"White-Lead Paint."* Color folder for glass finish and flat finish together with useful notes on painting and a collection of approximate formulas for obtaining the colors shown on the color folder. 8 pp. Ill. 3¾ x 8½ in.

894. *Handy Book on Painting.* A handbook containing complete directions for the mixing and application of paints for all purposes. A most useful book. 124 pp. 3¼ x 5¼ in.

The New Jersey Zinc Sales Company, New York.

808. "40-40-20"—A booklet describing a superior exterior paint made from Zinc Oxide and "Albalith" in accordance with recommended so-called "40-40-20" formula.

Peaslee-Gaulbert Company, Louisville, Ky.

909. *Architects Specification Chart.* A series of 100 specifications for exterior and interior painting and finishing on all kinds of materials. 87 pp. 8½ x 11½.

910. *Interior Decoration. Wood Finishing. House Painting.* Three catalogs containing colored combination charts for paints, stains and wall finishes. 20, 20 and 24 pp. Ill. 9 x 12, 6½ x 8½ and 7 x 9 in.

Pratt & Lambert, Inc., Buffalo, N. Y.

759. *Specification Manual for Painting, Varnishing and Enameling.* Complete specifications for painting, varnishing and enameling interior and exterior wood, plaster and metal work. 38 pp. 8½ x 11 in.

L. Sonneborn Sons Inc., 114 Fifth Ave., New York.

892. *Interior and Exterior Painting and Structural Painting.* Bulletins of specifications for interior and exterior paints, and paints for structural work, technical paints and roof protection. Sent on request on business stationery. In folders, 8½ x 11 in.

The Truscon Laboratories, Detroit, Mich.

921. *Assortment of Color Cards.* Information and specifications on the following materials: Bar-Ox Inhibitive Steel Paint—3½ x 6¼ in. 4 pp. Asepticote Interior Flat Wall Paint 8 pp. 3¾ x 8¾ in. Stone-Tex Exterior Masonry Paint. 8 pp. 3½ x 6¼ in. Waterproof Enamels, 4 pp. 3½ x 6¼ in. Waterproof House Paint, 8 pp. 3¾ x 8¾ in. Waterproof Varnish. 8 pp. 3½ x 6¼ in. Illustrated.

26. GLASS AND GLAZING

Brasco Mfg. Co., Chicago, Ill.

56. *Brasco System of Hollow Metal Store Front Design.* Folio of Detail Sheets. Full size detail sheets 1, 2, 3 and 4. Corner bar, division bar, reverse bar and three-way bar, head transom sill and jamb sections. Sheets 18 x 22½ in.

57. *Hester System Store Front Construction and Design.* Folio of Detail Sheets. Full size detail sheets, a, b, c and d, of hollow metal store front construction giving full size sections of head transoms, sill and jamb with molding profiles and bar cover to house awning construction. Sheets 18 x 22½ in.

Detroit Show Case Co., Detroit, Mich.

774. *Designs.* A booklet. Store fronts and display window designs, giving plans and elevations, and descriptions. Size 9¼ x 12 in. 16 pp.

778. *Details.* Sheets of full size details of "Desco" awning transom bar covers, sill covers, side, head and jamb covers, ventilated hollow metal sash and profile of members. Size 16 x 21½ in. 3 sheets.

The Kawneer Company, Niles, Mich.

467. *A Collection of Successful Store Front Designs.* Illustrations of recently erected modern store fronts with all framing covered with solid copper. Maximum show window surface secured by these designs. Many classes of occupancy shown. 64 pp. Ill. 6¾ x 9¼ in.

530. *Catalog L,* 1922-1923 Edition. Details of solid copper store fronts construction. This is treatise on the installation of copper store fronts and contains sectional and detail views of Kawneer sash corner and division bars, jambs, sill and transom bar coverings and other members. Intended for the detailer. 32 pp. Ill. 8½ x 11 in.

Plate Glass Manufacturers of America, First National Bank Bldg., Pittsburgh, Pa.

484. *The Part that Plate Glass Plays in the Life of Every Man.* An illustrated folder describing the many uses of plate glass. Ask also for special circular for work in hand. 6 pp. Ill. in color. 3½ x 6¼ in.

816. *The Age of Plate Glass.* An interesting booklet describing and illustrating the process of manufacturing plate glass and explaining its various uses in modern life. 20 pp. Ill. 5½ x 7 in.

27. HARDWARE

The T. J. Callahan Co., 205 Apple St., Dayton, Ohio.

842 *Callahan Sash Control.* Bulletin (1) Sash Control in Power Plants, (2) Sash Control in Industrial Plants, (3) Simplifying Sash Control and (4) Sash Control for Gymnasia and Halls. Each 8 pp. Ill. 8½ x 11 in.

THE T. J. Callahan Co., 205 Apple St., Dayton, Ohio.

861. *Callahan Catalog Bulletins.* Bulletins of sash operators for side walls, etc., 8½ x 11.

P & F Corbin, New Britain, Conn.

540. *Automatic Exit Fixtures.* A catalog of fixtures that provide a ready exit at all times, as a child can operate them with ease. Doors to which they are applied can always be opened from the inside, even when locked against entrance. 4 pp. Ill. 8¾ x 11¾ in.

Richards-Wilcox Mfg. Co., Aurora, Ill.

939. *Big Door Hardware Catalog No.* 41. This catalog describes a complete line of hardware and hangers for accordian, parallel sliding, vertical bi-folding and other types for large openings in round houses, freight houses, shipping rooms, mills and ware houses. Also overhead trolley equipment. 24 pp. Ill. 8½ x 11 in.

940. *Sliding and Folding Partitions Door Hardware.* Catalog No. 40. A complete line of hardware for partition doors of all kinds and for all places. Description, details and directions for ordering. 32 pp. Ill. 8½ x 11 in.

Russell & Erwin Mfg. Co., New Britain, Conn.

609. *Russwin Period Hardware.* A brochure illustrating hardware trim in twelve architectural styles or periods. 71 pp. Ill. 5 x 8 in.

610. *Catalog of Hardware, Volume Fourteen.* A complete catalog of buildng hardware, trim, locks, butts and accessories. 359 pp. Ill. 8 x 11 in.

Sargent & Company, New Haven, Conn.

560. *Sargent Locks and Hardware for Architects.* The latest complete catalog of locks and hardware. 762 pp. Ill. 9 x 12 in.

The Stanley Works, New Britain, Conn.

11. *Wrought Hardware.* This catalog describes additions to the Stanley line of Wrought Hardware, as well as the older well known specialties and various styles of butts, hinges, bolts, etc. 376 pp. Ill. 6½ x 9½ in.

12. *Garage Hardware, Booklet, illustrated.* Garages and their equipment, such as hinges, hasps, door holders, latch sets, chain and hand bolts, showing illustrations and text with dimensions of garages, describing the Stanley works product. Size 6 x 9 in. 24 pp.

495. *Stanley Detail Manual.* A catalog in loose leaf binder, consisting of five sections on Butts, Bolts, Blinds and Shutter Hardware, Stanley Garage Hardware, Screen and Sash Hardware. Detail drawings are given, showing clearances and other data needed by detailers. 116 pp. Ill. 7½ x 10½ in.

Steffens Amberg Co., 262 Morris Ave., Newark, N. J. successors to Frank F. Smith Hardware Co.

851. *Panic Exit Locks, Catalog No.* 20. A catalog describing panic exit locks of the gravity, mortise and horizontal rim types. Details, dimensions, specifications and installation data. 32 pp. Ill. 8½ x 11 in.

Vonnegut Hardware Co., Indianapolis, Ind.

310. *Prince Self-Releasing Fire Exit Devices. Supplement to Von Duprin Catalog No.* 12. Contains valuable information for architects on the selection, detailing, etc., of Prince devices for doors and windows to insure safety against fire panic. 32 pp. Ill. 8 x 11 in.

747. *Von Duprin Self-Releasing Fire Exit Latches, Reference Book—No.* 240. A complete catalog with details of the working parts of these latches, handle bars, butts, door holders and accessories. Dimensions and installation direction. 96 pp. Ill. 8½ x 11 in.

28. FURNISHINGS

American Seating Co., 14 East Jackson Blvd., Chicago, Ill.

868. *School Furniture, Catalogs* 255 *and* 56. Catalogs illustrating school house seating (No. 255) and a complete line of schoolhouse furniture and supplies (No. 56). 32 and 104 pp. Ill. 8½ x 11 and 6 x 9.

869. *Assembly Chairs.* Three catalogs illustrating all types of portable and fixed assembly chairs and seats, including tablet arm chairs, for all kinds of places and uses. 32, 16 and 33 pp. Ill. 6 x 9 in.

Armstrong Cork Co., Lancaster, Pa.

880. *Business Floors, Third Edition.* This valuable booklet is devoted to the use of linoleum for floors in business places and shows many designs by colored plates. Installation and cover of these floors is fully described. 48 pp. Ill. 6¼ x 9½ in.

881. *Armstrong's Linoleum Floors, Fourth Edition.* Complete specifications and details for the installation of linoleum floors in all kinds of buildings and for all uses, also plates showing designs in color. 36 pp. Ill. 8½ x 11 in.

Bonded Floors Co., 1421 Chestnut St., Philadelphia, Pa.

716. *Gold Seal Battleship Linoleum.* An illustrated booklet showing Gold-Seal Battleship Linoleum installations, reproductions of the products in color, general information, specifications etc., 8 pp. Ill. 7¾ x 10¾ in.

719. *Linoleum.* A standard specification of the material, workmanship and guarantee, with valuable comments and suggestions. Also additional clauses for insertion in specifications for Masonry, Heating, etc., Federal Department specifications for battleship linoleum and details of installation. 8 pp. Ill 8½ x 11 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

28. FURNISHINGS—CONTINUED

Bonded Floors Co., 1421 Chestnut St., Philadelphia, Pa.

936. *Linoleum Specifications.* Standard specifications for the installation of battleship linoleum with detailed description and explanation. Also includes Federal Government Specification No. 209. 8 pp. Ill. 8¼ x 11 in.

The General Fireproofing Company, Youngstown, Ohio.

943. *Catalog of GF Allsteel Office Furniture,* Desks, Filing Cabinets, Safes, Vault Equipment and Steel Shelving.

Hardwick & Magee Company, 1220 Market St., Philadelphia, Pa.

826. *Fine Carpets in Famous Places.* A beautifully illustrated catalog describing the varieties of the Hardwick and Magee Co.'s. Wilton carpets and rugs for hotels, theatres, lodge halls, clubs, churches, hospitals and railroad cars. 24 pp. Ill. 8 x 10½ in.

Kent-Costikyan, 585 Fifth Ave., New York City.

954. *The House of Kent-Costikyan.* A booklet describing the various types and grades of carpets and rugs, including antique rugs of the Ispahan and Kuba types, in the extensive stocks of this company. 16 pp. Ill. in color 5½ x 8 in.

The Lincrusta-Walton Company, Hackensack, N. J.

519. *Lincrusta-Walton.* This book gives directions for buying, caring for and applying Lincrusta-Walton; together with color chart and many pages showing patterns. 67 pp. 8½ x 11 in. Ill. Bound in boards.

The Mahogany Assn., Inc., 1133 Broadway, New York City.

729. *Historic Mahogany.* A monograph devoted to furniture designed by Chippendale, Hepplewhite, Sheraton and Early American styles. 16 pp. Ill. 5½ x 8 in.

The B. L. Marble Chair Co., Bedford, Ohio.

587. *Office Chairs, Catalog No.* 31. Describes a complete line of seating fixtures, for offices, directors' rooms and other places consisting of stationary and swivel chairs, settees and couches, both plain and leather upholstered. Also stenographer's chairs, stools, waste baskets, coat trees and accessories. 75 pp. Ill. 9 x 12 in.

Standard Textile Products Co., 320 Broadway, New York, N. Y.

111. *Sanitas, Modern Wall Covering.* Folio. Plates of color renderings of various interiors, with suggestions for the library, living room, dining room, boudoir, kitchen and church wall covering, using Sanitas. Size 11½ x 6 in. 15 plates.

112. *Sanitas and Its Uses.* Booklet. Text and color illustration of Sanitas as a wall covering, with tables for wall and ceiling measurements. Notes on sanitary character, cleanliness and durability of Sanitas. Size 5 x 7 in. 28 pp. 6 color plates and 2 sample sheets.

Henry Weis Manufacturing Co., Atchison, Kansas.

790. *WeiSteel Compartments.* Catalog No. 11. Plans, specifications and details of metal partitions and doors for toilet rooms, shower and dressing rooms, hospital cubicals and enclosures of all kinds. 32 pp. Ill. 8½ x 11 in.

Wallpaper Manufacturers Association of the United States, 461 Eighth Avenue, New York.

913. *Wallpaper Magazine.* A monthly publication for architects, building contractors and wallpaper dealers to acquaint them with the many interesting and artistic uses for wallpaper. 32 pp. Ill. 8 x 11 in.

Watson Manufacturing Co., Jamestown, N. Y.

788. *Watson Metal Office Furniture.* Catalog describing steel furniture for offices, banks and public buildings. Installations illustrated. 55 pp. Ill. 8½ x 11 in.

29. PLUMBING

W. D. Allen Mfg. Co., 566 West Lake St., Chicago, Ill. 69 Warren St., New York City.

809. *Standpipe Detail and Specification.* A series of plates illustrating fire hose cabinets, and specifications and illustrations of stand pipes, hose racks, siamese and other valves, hose and accessories. 13 pp. Ill. 8½ x 11 in.

American Brass Co., Waterbury, Conn.

862. *Brass Pipe for Water Service, Publication B-1.* A compilation of data on corrosion of various kinds of pipe and the value of Anaconda Brass Pipe for permanent service, also comparative cost estimates. 31 pp. Ill. 8¼ x 11 in.

A. P. W. Paper Co., Albany, N. Y.

740. *The Onliwon Hygiene.* A file card for reference in specifying cabinets of different kinds to contain toilet papers and paper towels. 2 pp. Ill. 8¾ x 11 in.

The Benton & Caldwell Mfg. Co., New Britain, Conn.

813. *"Genuine" Perfection Line. Catalog No.* 7. A catalog describing a complete line of Simplex Flush Valves, automatic air valves, floor and ceiling plates, towel bars, pipe hangers and accessories. 90 pp. Ill. 4 x 6 in.

A. M. Byers Company, Pittsburgh, Pa.

679. *What is Wrought Iron?* Bulletin 26-A. Contains the definition of wrought iron, methods of manufacture, chemical and physical characteristics; advantages of wrought iron as a pipe material; service records from old buildings equipped with Byers Genuine Wrought Iron Pipe. How to tell the difference between iron and steel pipe. 40 pp. Ill. 8 x 10¾ in.

680. *The Installation Cost of Pipe,* Bulletin 38. Contains cost analysis of a variety of plumbing, heating, power and industrial systems, with notes on corrosive effects in different kinds of service. 32 pp. Ill. 8 x 10¾ in.

Crampton Farley Brass Co., 221 Main St., Kansas City, Mo.

194. Several pamphlets describing various types of floor and area-way drains. 3½ x 6¼ in.

Crane Co., 836 So. Michigan Ave., Chicago, Ill.

836. *Homes of Comfort.* A catalog describing a complete line of bathroom equipment with typical plans, also kitchen and laundry fixtures and heating goods. 121 pp. Ill. 5½ x 8½ in.

The Duriron Co., Dayton, Ohio.

731. *Duriron Acid-Proof Building Equipment, Bulletin No.* 134. This bulletin contains details and specifications for the installation of equipment for handling acid fumes, acid-proof fans, pumps, pipe and ducts. 20 pp. Ill. 8 x 10½ in.

758. *Duriron Acid-Proof Building Equipment, Bulletin No.* 134. An architect's handbook describing the advantages of Duriron material in contact with corrosive liquids and fumes. Details and dimensions of drainage pipes and fittings and acid-proof exhaust fans and ducts. 24 pp. Ill. 8½ x 11 in.

Excelso Specialty Works, 119 Clinton St., Buffalo, N. Y.

843. *Excelso Quality Water Heaters.* Catalog describing a complete line of water heaters to be attached to furnaces, steam and hot water heating boilers. 8 pp. Ill. 3¼ x 6¼ in.

Philip Haas Co., Dayton, Ohio.

750. *Haas Universal Flush Valve.* Insert for Catalog "B." A catalog explaining the operation of this flush valve, details, roughing-in dimensions and application to various types of closets. 20 pp. Ill. 6 x 9 in.

Hess Warming & Ventilating Co., 1204 Tacoma Bldg., Chicago, Ill.

860. *Hess Snow-White Steel Cabinets and Mirrors.* A catalog with details of construction, dimensions, weights and prices of Snow-White steel cabinets of various styles and mirror access doors and frames to pipe shaft. 16 pp. Ill. 4 x 6 in.

Humphrey Company, Kalamazoo, Mich.

789. *Humphrey Gas Water Heater.* A catalog and sales manual giving details, dimensions, capacities and specifications of a complete line of standard automatic gas water heaters and automatic multi-coil storage systems. 32 pp. Ill. 7½ x 10¾ in.

Jenkins Brothers, 80 White Street, New York City.

856. *Jenkins Valves for Hotels, Apartment Houses, Clubs, Auditoriums and Theatres.* A special catalog showing the fitness of certain Jenkins Valves for all of the power, heating, plumbing and fire protection requirements of this kind of buildings. 48 pp. Ill. 4½ x 7½ in.

857. *Jenkins Valves for Office Buildings, Lofts, Banks, Stores and Jenkins Valves for Industrial Plants and Factories.* Two catalogs showing the special fitness of certain Jenkins Valves for all the power, heating, plumbing and fire protection requirements of these kinds of buildings. 48 pp. Ill. 4½ x 7½ in.

858. *Jenkins Valves for Public Buildings, Schools, Universities, Churches, Community Houses and Jenkins Valves for Hospitals, Sanitariums, Allied Institutions.* Two special catalogs showing the fitness of certain Jenkins Valves for the power, heating, plumbing and fire protection requirements of these kinds of buildings. 48 pp. Ill. 4½ x 7½ in.

The Kennedy Valve Mfg. Co., Elmira, N. Y.

801. *Kennedy Valves.* Catalog No. 45. A catalog illustrating a complete line of gate, globe and angle, check, back-water and sewer-gas valves for every purpose. Dimensions, details and specifications. 142 pp. Ill. 5 x 8 in.

802. *Kennedy Pipe Fittings. Catalog* No. 45. A catalog describing a complete line of malleable iron and cast iron flanged pipe fittings, reducers and cast iron flanges for every purpose. Details, dimensions and drilling templates. 142 pp. Ill. 5 x 8 in.

803. *Kennedy Fire Hydrants. Catalog No.* 45. A catalog describing a complete line of fire hydrants and accessories. Details, dimensions and installation directions. 142 pp. Ill. 5 x 8 in.

Kohler Company, Kohler, Wisconsin.

209. *"Kohler of Kohler."* A booklet on enameled plumbing ware describing processes of manufacture and cataloging staple baths, lavatories, kitchen sinks, slop sinks, laundry trays, closet combinations. 48 pp. Ill. 5⅛ x 8 in. Roughing-in Measurement Sheets 5 x 8 in.

531. *Catalog F.* This is a complete catalog of Kohler enamelled ware for plumbing installations, together with high grade fittings. There is also a brief and interesting description of the manufacture of high grade enamelled ware and a statement of the facts about Kohler village, one of the discussed experiments in modern industrial town building. 215 pp. Cloth bound. Ill. 7½ x 10⅜ in.

756. *Kohler Automatic Power and Light.* A catalog illustrating a complete line of isolated automatic electric plants of 800 to 2500 watts capacity operated by gas or gasolene. Specifications. 48 pp. Ill. 6 x 8½ in.

Thomas Maddock's Sons Company, Trenton, N. J.

696. *Vitreous China Plumbing Fixtures.* A valuable and complete catalog of vitreous china lavatories, drinking fountains, bidets, water closets, urinals, slop sinks, bathtubs, kitchen sinks accessories. Completely illustrated with roughing in diagrams. 242 pp. Ill. 8 x 11 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

29. PLUMBING—CONTINUED

The Permutit Company, 440 Fourth Ave., New York.

105. *Permutit. (Water Rectification Systems.)* Illustrated booklet. Describes all methods of softening water, including the original Zeolite process. For homes, hotels, apartment houses, swimming pools, laundries and industrial plants. Size 8½ x 11 in. 32 pp.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

725. *The Powers Shower Mixer, Bulletin No.* 154. Description and details of a shower bath mixer that insures uniform water temperature regardless of disturbance of initial water pressure. 4 pp. Ill. 6⅜ x 9¼ in.

Rome Brass & Copper Company, Rome, N. Y.

473. *Price List No.* 71. A loose-leaf binder containing full price list of Rome Quality products, together with useful tables. 5¼ x 7¼ in.

509. *Bulletin No.* 1. *Seamless Brass Pipe.* This bulletin illustrates in colors nine installations of hot water heaters between range boiler, basement furnace, tank and instantaneous heaters for one and two-family houses and larger buildings. Contains also number of estimating and designing tables, rules and formulas. 22 pp. Ill. 7½ x 11¾ in.

Ruud Manufacturing Co., Pittsburgh, Pa.

782. *Ruud Gas Water Heaters.* Five bulletins in filing folder illustrating all types of gas water heaters for all purposes. Capacities, details, dimensions and pipe connection diagrams. 26 pp. Ill. 8½ x 11 in.

917. *Ruud Automatic Gas Water Heaters.* A complete catalog of automatic gas water heaters, storage tanks and accessories. Details, specifications and capacities. 40 pp. Ill. 7¾ x 10¾ in.

Speakman Company, Wilmington, Del.

691. *Speakman Showers and Fixtures, Catalog H.* A complete catalog treating of everything pertaining to the mixing and control of water used in all kinds of shower and tub baths, lavatories and sinks, also strainers, drains and traps. Complete roughing-in measurements are included. A valuable catalog. 200 pp. Ill. 4½ x 7½ in.

30. HEATING AND VENTILATING

American Blower Co., Detroit, Mich.

362. *General Catalog "ABC" Products.* A book full of useful data for all men who have to deal with heating and ventilating problems. 132 pp. Ill. 8½ x 11 in.

902. *American "Sirocco" Fans and Blowers. Bulletin No.* 1801. Description of the construction and engineering data of a complete line of "Sirocco" type blowers and fans, also "ABC" air washing and cooling fan and the American Direct Fired Unit Heater. 72 pp. Ill. 8½ x 11 in.

American Radiator Company, 104-108 W. 42nd St., New York, N. Y.

427. *Ideal-Arcola Heating Outfit.* A book describing a system of hot water heating for small and medium size houses. The boiler is placed in a room and resembles a stove. No cellar required. The ash carrying reduced to a minimum. 24 pp. Ill. 6 x 8½ in.

The Bayley Manufacturing Company, 732-760 Greenbush St., Milwaukee, Wis.

486. *Bulletin No.* 23. This bulletin is descriptive of the Bayley Turbo-Atomizer, the Bayley Turbo Air-Washer and Air Conditioner, for cleaning, cooling, tempering, humidifying and dehumidifying air. It contains an interesting treatise on air conditioning methods together with useful tables and a set of specifications. 32 pp. Ill. 7¾ x 10½ in.

Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.

215. *Buffalo Fan System of Heating, Ventilating and Humidifying.* Catalog 700. This contains a general discussion of heating and ventilating under four heads. Part 1, Public Buildings. Part 2, Industrial Plants. Part 3, Buffalo Apparatus. Part 4, Fan Engineering.

Burnham Boiler Corporation. Irvington. N. Y.

800. *Letters To and Fro.* A booklet which explains the difference between steam, hot water and vapor systems of heating and the relative cost of each. Questions, answers and boiler data. 34 pp. Ill. 7 x 10 in.

Crane Company, 836 So. Michigan Ave., Chicago, Ill.

241. *Steam Catalogue.* A book containing full descriptions of the complete line of Crane valves, fittings, etc. 800 pp. Ill. 6 x 9 in.

C. A. Dunham Co., 230 E. Ohio St., Chicago, Ill.

831. *The Dunham Heating Service Bulletins.* Bulletin 101, Radiator Traps; 102, The Dunham Blast Trap; 103, Medium Pressure Traps; 104, Packless Radiator Traps; 105, Oil Separators and Suction Strainers; 106, Reducing Pressure Valves and Vacuum Pump Governors; 107, Air Line Valves; 108, Home Heating System; 109, The Dunham Return Heating System; 110, Vacuum Heating System; 111. Installing House Heating System. Illustrated, 8½ x 11 in.

The Duriron Co., Inc., Dayton, Ohio.

720. *Acid Fume Exhaust Fans.* A specification for exhaust fans where corrosive fumes or vapors are to be removed from chemical hoods, laboratories, etc. 4 pp. Ill. 8½ x 11 in.

General Boilers Co., Waukegan, Ill.

799. "Bulletin SC-24 describes and illustrates, with specifications, all types of Pacific Steel Heating Boilers for operation on coal. Bulletin OF-24 covers Pacific Oil Fired Steel Boilers."

Gillis & Geoghegan, 545 West Broadway, New York, N. Y.

329. *General Catalog.* Contains specifications in two forms, (1) using manufacturer's name, and (2) without using manufacturer's name. Detail in ¼ in. scale for each telescopic model and special material handling section. Fully illustrated with photographs of actual installations and descriptive matter of same. 20 pp. 2 colors. 8½ x 11 in.

The Hart & Cooley Co., New Britain, Conn.

712. *Wrought Steel Registers and Grilles, Catalog No.* 24. A catalog of wrought steel floor, baseboard and wall registers, cold air intakes, lock registers, ventilators, furnace regulators and accessories. Dimensions, details and price lists. 80 pp. Ill. 7¾ x 10 in.

Hess Warming and ventilating Co., 1209 Tacoma Bldg., Chicago, Ill.

178. *Modern Furnace Heating.* An illustrated book on the Hess Welded Steel Furnaces. Pipe and Pipeless, notes for installation, sectional views, showing parts and operation, dimensions, register designs, pipes and fittings. Size 6 x 9½ in. 48 pp.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.

501. *Illinois Heating Systems. Vapor Details Bulletin* 20. This bulletin contains typical plans and elevations of heating systems, with description of details and "Standards for Computing Radiation and Boiler Sizes" of the Chicago Master Steam Fitters' Association. 18 pp. Ill. 8 x 10¾ in.

502. *Illinois Bulletins.* No. 102 contains detailed description with capacities and dimensions of Eclipse Pressure Reducing Valves. 20 pp. Ill. Nos. 202, 302, 452, 502 and 703 describe, with illustrations, Steam Specialties, Back Pressure Valves, Stop and Check Valves, Exhaust Heads, Balanced Valves, Separators, Steam Traps.

Johnson Service Company, 149 Michigan St., Milwaukee, Wis.

391. *The Regulation of Temperature and Humidity.* A description of the Johnson System of temperature regulation and humidity control for buildings; showing many kinds of thermostatic appliances for automatically maintaining uniform temperatures. 63 pp. Ill. 8½ x 11 in.

392. *Johnson Electric Thermostat, Valves and Controllers.* A catalog of devices mentioned in the title. 24 pp. Ill. 3½ x 6 in.

Kewanee Boiler Co., Kewanee, Ill.

840. *Kewanee Boilers.* Catalog 78, Firebox Boilers; Catalog 79, Power Boilers; Kewanee Boilers in Omaha Schools. Complete details, dimensions, setting diagrams, designing data, specifications and accessories. 52, 34 and 16 pp. Ill. 6 x 9 in.

841. *Kewanee Radiators and Equipment.* Catalog No. 77, Radiators; Catalog 75. Water Heating Garbage Burners, Tabasco Water Heaters and Tanks of all kinds; Selecting the Heating Boiler. Complete details, dimensions, setting diagrams, designing data and specifications. 24, 30 and 16 pp. Ill. 6 x 9 and 5 x 8 in.

Knowles Mushroom Ventilator Co., 204 Franklin St., New York City.

906. *Ventilation for Auditoriums.* A catalog describing fresh air diffusers used in connection with mechanical systems of ventilation in auditoriums, schools, churches, and public buildings. Complete details and design data. 8 pp. Ill. 8½ x 11 in.

Midwest Air Filters, Inc., New York City.

924. *Midwest Air Filters*—Baffle Impingement Type. Bulletins, Specifications, folders and catalogs covering the applications of these filters in the ventilation of schools, hotels, office buildings, theatres, museums, and other buildings, as well as the various uses in industrial plants, central stations, etc. Illustrated. 8½ x 11 in.

National Tube Co., Frick Bldg., Pittsburgh, Pa.

670. *National Bulletin No.* 25B. *Third Edition.* Devoted to the installation of steel pipe in large buildings, architectural anti-corrosion engineering, gas piping, specifications, and tables of strength and properties. 74 pp. Ill. 8½ x 10¾ in.

The Herman Nelson Corporation (formerly Moline Heat), Moline, Ill.

411. *Univent Ventilation. Architects' and Engineers' Edition.* A scientific treatise on ventilation for schools, offices and similar buildings; with 40 pages of engineering data on ventilation for architects and engineers. 72 pp.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

765. *The Elimination of Heat Waste.* A catalog explaining the principles of thermostatic control of temperature and humidity and their application to heating plants. Details of apparatus and applications, installations in important buildings and engineering data. 40 pp. Ill. 8 x 11 in.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

30. HEATING AND VENTILATING—CONTINUED

Reed Air Filter Company, Louisville, Ky.

879. *Reed Air Filters. All Metal.* A series of bulletins 106-111, standard specifications, tests and description of an all metal air filter for all purposes without the use of water. In folder. Ill. 8½ x 11 in.

Richardson & Boynton Co., New York, N. Y., Chicago, Ill., Philadelphia, Pa., Providence, R. I., Boston, Mass.

290. *The Richardson Vapor Vacuum-Pressure Heating System.* An interesting book which presents in clear non-technical language the principles of Vapor-Vacuum-Pressure heating; the economy over ordinary steam heating, steam and hot-water systems may be altered to use the principle with views of buildings where the V-V-P system is installed. 14 pp. Ill. 8 x 11 in.

291. *Perfect Warm Air Furnaces.* No. 203. Contains a full description of various types of warm air furnaces and parts, with dimensions and necessary data. 24 pp. Ill. 8 x 10½ in.

Skinner Bros. Manufacturing Co., 1474 So. Vandeventer Ave., St. Louis, Mo.

761. *Skinner Bros., (Baetz Patent) Heating System.* A catalog illustrating the construction and installation of encased heating units for circulating and re-heating in industrial plants of all kinds. 24 pp. Ill. 7¾ x 10½ in.

762. *Direct Fired Heating Systems.* A catalog describing a direct fired heating unit with fan attached used in theatres, armories and industrial plants. 16 pp. Ill. 7¾ x 10½ in.

Thatcher Co., 131-135 West 35th St., New York City.

748. *Thatcher Boilers and Thatcher Furnaces.* Catalog describing a series of cast iron steam and hot water heating boilers and also one describing a series of cast iron warm air heaters. Accessories, details and dimensions. 80 pp. and 24 pp. Ill. 4½ x 7½ and 8½ x 11 in.

Tuttle and Bailey Mfg. Co., 2 West 45th St., New York City.

844. *Registers and Grilles,* 78 *Annual Catalog.* A catalog illustrating a complete line of cast Ferrocraft Grills, describing their advantages; details, dimensions and installation data. 76 pp. Ill. 7½ x 10½ in.

31. ELECTRICAL WORK

Frank Adam Electric Co., St. Louis, Mo.

629. *The Control of Lighting in Theatres.* A book describing means for complete control of lighting the stage, auditorium, and other parts of the theatres with distribution schedules and specifications. Also applications of control to Masonic buildings, schools and colleges. 32 pp. Ill. 8 x 11 in.

741. *Panel Board Catalog No. 32.* A complete catalog of standard panel boards, steel cabinets, switches and accessories. 48 pp. Ill. 7¾ x 10¾ in.

934. *F. A. Panelboards and Steel Cabinets, Catalog No. 35, 1925.* A catalog illustrating a complete line of panelboards for all uses and steel cabinets also floor boxes, fan hanger outlets and all-master control systems. 64 pp. Ill. 7¾ x 10¼ in.

American Steel & Wire Co., 208 So. La Salle St., Chicago, Ill.

848. *Electrical Wires and Cables.* A catalog describing a complete line of electrical wire products and also containing a valuable hand book of electrical wiring tables, systems and other installations and designing data. 134 pp. Ill. 6 x 9 in.

Curtis Lighting Inc., 1121 W. Jackson Blvd., Chicago.

932. *Architectural Detail Plates.* These plates furnish the architect with suggestions and data that help him in making lighting equipment specifications. Plates 65, 66 and 67 just issued, deal with church, restaurant and home lighting, respectively, and are sent, free, to any registered architect who requests them on his own letterhead.

Duplex Electric Co., 75 and 77 Grand St., New York City.

865. *Duplex Electric Vault Protection.* A catalog describing the Duplex "Grade A" electric alarm for vault protection, the highest grade approved and listed by the Underwriters' Laboratories, Inc., reducing burglary rates 65% and *Duplex Daylight Hold-up Alarm* (Patented), reducing robbery rates 10%. 12 pp. Ill. 4 x 9 in.

Enameled Metals Co., Pittsburgh, Pa.

584. *Pittsburgh Standard Rigid Conduit.* A catalog describing patented thread protected enameled conduit and galvanized conduit with specifications and useful wiring data. 31 pp. Ill. 6¼ x 9½ in.

L. Erikson Electric Co., 6 Portland St., Boston, Mass.

613. *Erikson Reflectors, Catalog No. 90.* Description of and details of installing reflectors in show windows, display cases, art galleries, rug racks, banks, churches, and other buildings. 32 pp. Ill. 6¼ x 9½ in.

I. P. Frink, Inc., 24th St. and 10th Ave., New York.

150. *Light Service for Hospitals. Catalog* 426. A booklet illustrated with photographs and drawings, showing the types of light for use in hospitals, as operating table reflectors, linolite and multilite concentrators, ward reflectors, bed lights and microscopic reflectors, giving sizes and dimensions, explaining their particular fitness for special uses. Size 7 x 10 in. 12 pp.

218. *Picture Lighting. Booklet* 422. A pamphlet describing Frink Reflectors for lighting pictures, art galleries, decorated ceilings, cove lighting, the lighting of stained glass, etc., and containing a list of private and public galleries using Frink Reflectors. 24 pp. Ill. 5¼ x 7 in.

219. *Frink Reflectors and Lighting Specialties for Stores. Catalog No.* 424. A catalog containing a description of the Frink Lighting System for Stores; the Synthetic System of Window Illumination; and a number of appliances to produce the most effective lighting of displayed objects 20 pp. Ill. 8 x 11 in.

220. *Frink Lighting Service for Banks and Insurance Companies. Reflectors. Catalog No.* 425. A very interesting treatise on the lighting of offices; with details of illustrations and description of lamps and reflectors. Contains a list, covering several pages of banks using Frink Desk and Screen Fixtures. 36 pp. Ill. 8¼ x 11 in.

The Hart & Hegeman Mfg. Co., 342 Capitol Avenue, Hartford, Conn.

699. *H. & H. Electrical Wiring Devices, Catalog "R."* Catalog of a complete line of switches, sockets, plugs, receptacles, plates, rosettes, cut-outs, elexits and accessories. Two indentical catalogs in two sizes. 152 pp. Ill. 5 x 6¼ and 8 x 10½ in.

871. *Architect's Handbook of H & H Wiring Devices.* This catalog was compiled by an architect. Contains description and prices of a complete line of switches, receptacles and outlets. 16 pp. Ill. 8½ x 11 in.

Harvey Hubbell, Inc., Bridgeport, Conn.

297. *Electrical Specialties.* Catalog No. 17, 1921. This catalog contains descriptions with prices of the thousand and one items connected with electric light, electric alarm and small electric appliance installations in modern buildings. 104 pp. Ill. 8 x 10½ in.

401. *Hubbell Flush Door Receptacles.* Description of a safe, convenient and practical wall outlet de luxe for fine residences, clubs, hotels, public buildings and offices. 4 pp. Ill. 8 x 10 in.

Macbeth-Evans Glass Co., Charleroi, Pa.

827. *Commercial, Industrial and School Lighting.* A folder containing specifications which will insure the installation of proper illumination in office, store, factory, school or church. Loose leaf in folder, 8½ x 11 in.

Mutual Electric & Machine Co., Minneapolis, Minn.

824. *Bull Dog "Luminized Safety Switch."* A bulletin describing an aluminum coated switch, luminous in the dark, rust resisting and other advantages. 4 pp. Ill. 8½ x 11 in.

830. *"Bull Dog" Super-Safety Switchboards.* A catalog illustrating the Model D. F. 5, industrial type of dead front switchboard. 18 pp. Ill. 8 x 10¾ in.

Stromberg-Carlson Telephone Mfg. Co., Rochester, New York.

304. *Inter-Communicating Telephone Systems. Bulletin No.* 1017. A pamphlet giving just the information required for the installation of intercommunicating systems from 2 to 32 stations capacity. 15 pp. Ill. 7¾ x 10 in.

32. REFRIGERATION

Baker Ice Machine Co., Inc., Omaha, Nebraska.

661. *Baker System Refrigeration.* A catalog explaining the application of refrigeration for hotels, hospitals, institutions and restaurants requiring up to 50 tons daily capacity including mechanical details and specifications. 20 pp. Ill. 9 x 12 in.

Frick Company, Waynesboro, Pa.

951. *Ice and Frost. Series G, No.* 4. Bulletin describing mechanical refrigeration for dairies and creameries, ice cream plants, meat and fish and public markets, clubs, hospitals and hotels; also how the plants work. 44 pp. Ill. 6 x 9 in.

Jamison Cold Storage Door Co., Hagerstown, Md.

569. *Heavy Duty Cold Storage Doors. Catalog No.* 10. Complete description of both hinged and sliding cold storage doors for every equipment. Also description of cold storage windows and ice chutes. 79 pp. Ill. 5¾ x 9 in.

The Jewett Refrigerator Company, 27 Chandler Street, Buffalo, N. Y.

655. *Manual of Refrigerators.* This manual completely describes the construction of refrigerators for use in hotels, clubs, hospitals, institutions and residences, with specifications. Numerous plans showing size and arrangement of refrigerators in kitchens, service and lunch rooms are included. 30 pp. Ill. 8½ x 11 in.

Residence at 611 Cliveden Avenue, Germantown, Philadelphia. Architect and Builder, Mr. Don Peters, Philadelphia. Owner, Mr. F. H. Williams, Philadelphia. Kitchen equipped with Direct Action Lorain-equipped Gas Range.

Plan HAPPY Homes!

CONVENIENCE, health and happiness can be planned right into your houses by specifying the very best time-saving, labor-lightening equipment—especially for the kitchen. So much depends upon properly cooked food and smooth-running kitchen affairs that you should always specify Gas Ranges equipped with the famous Lorain (Red Wheel) Oven Heat Regulator.

The Lorain is a thermostat built into the stove. It measures and controls automatically the heat of the oven. It is the *original* oven heat regulator, invented, manufactured, sold and *guaranteed* by American Stove Co. You can always tell a Lorain-equipped Gas Range by the Red Wheel.

Each year, in over thirteen hundred schools and colleges, thousands of young women are taught to cook by the aid of the Red Wheel, and these young women will soon be buying or renting homes of their own.

In thousands upon thousands of buildings—churches, lodges, schools, apartments and houses, Lorain-equipped Gas Ranges are giving efficient, economical service, reflecting credit upon the architects and builders responsible for the installation.

Type of Direct Action Lorain-equipped Gas Range in the residence pictured above.

These famous gas stoves are equipped with the Lorain Oven Heat Regulator: Clark Jewel, Dangler, Direct Action, New Process, Quick Meal and Reliable. They are made in every approved size, style and finish.

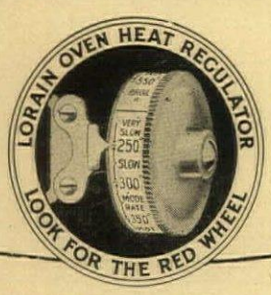
For specific data see 19th edition, Sweet's Catalog, pages 2497-2506 inclusive. Additional information sent on request.

AMERICAN STOVE COMPANY, 333 Chouteau Ave., St. Louis, Mo.

Largest Makers of Gas Ranges in the World

LORAIN OVEN HEAT REGULATOR

One easy turn of the Lorain Red Wheel gives the housewife a choice of any measured and controlled oven heat for any kind of oven cooking or baking.



Unless the Regulator has a Red Wheel it is NOT a LORAIN

REFERENCE LIST OF BUSINESS LITERATURE—Continued

32. REFRIGERATION—CONTINUED

McCray Refrigerator Co., Kendallville, Ind.

472. *Refrigerators and Cooling Rooms. Cat.* 53. A catalog of cooling equipment for hotels, restaurants, hospitals, institutions, colleges and clubs. Catalog No. 96 deals with refrigerators for residences. 52 pp. each. Ill. in colors. 7½ x 10 in.

33. ELEVATORS

American Elevator & Machine Co., Louisville, Ky.

196. *Illustrated Catalogue* showing elevator equipment for various uses. 32 pp. 2½ x 9½ in.

Elevator Supplies Co., Inc., Willow Ave., Hoboken, N. J.

923. *E S Bulletin No.* 10. A monthly devoted to the elevator industry featuring electric one point control dumbwaiters. Sent on request. 8 pp. Ill. 8½ x 11 in.

927. *E S Bulletin, Exhibition Number.* Describes elevator signals, positive electro-mechanical door interlocks, door closers, door checks, pneumatic door operators, door hangers and dumbwaiters. 16 pp. Ill. 8½ x 11 in.

Kaestner & Hecht Co., 1500 No. Branch St., Chicago, Ill.

597. *Electric Traction Elevators, Bulletin No.* 500. Illustrated catalog describing gearless traction elevators and worm-geared traction elevators. 31 pp. 8¼ x 11 in.

598. *Electric Dumb-waiters. Bulletin No.* 520. Illustrated catalog, 8 pp. 8½ x 11 in.

Kimball Bros., Co., Council Bluffs, Iowa.

472. *Kimball Straight Line Drive Elevators.* A complete catalog of passenger, freight and garage traction elevators, push button elevators, dumbwaiters, sidewalk and ash hoist elevators. 36 pp. Ill. 8½ x 11 in.

Otis Elevator Co., 260 Eleventh Ave., New York City.

651. *Otis Geared and Gearless Traction Elevators.* Leaflets describing all types of geared and gearless traction elevators with details of machines, motors and controllers for these types. Illustrated. 8½ x 11 in.

652. *Elevators and Inclined Elevators.* A comprehensive catalog illustrating the use of escalators for transporting people in stores, subways, railroad stations, theatres and mills; also inclined freight elevators for stores, factories, warehouses and docks adjustable to tide levels. 22 pp. Ill. 8½ in.

Richards-Wilcox Mfg. Co., Aurora, Ill.

795. *"Ideal" Elevator Door Hardware.* Catalog No. 37. A catalog showing hangers for every type of elevator doors hand operated, interlocking door controllers, bar locks and accessories. 56 pp. Ill. 8½ x 11 in.

Sedgwick Machine Works, 144 West 15th Street, New York.

60. *Hand Power Elevator and Dumb-waiters in Modern Architectural Construction.* Illustrated catalog. 4¼ x 8¼ in. 80 pp.

A. B. See Electric Elevator Co., 52 Vesey St., New York.

169. Photographs and description in detail of elevator equipment manufactured by the A. B. See Electric Elevator Co. Size 6 x 8 in.

34. POWER PLANT

The Dayton Pump and Manufacturing Company, Dayton, Ohio.

475. *Electric House Pumps and Water Supply Systems.* A heavy paper binder containing illustrated bulletins 8½ x 11 in. These bulletins describe pumps as well as complete automatic electric and gasoline water supply systems and all accessories, together with specifications, detail drawings and tables of dimensions. 48 pp.

35. EQUIPMENT, STATIONARY

Chicago Dryer Co., 2210 No. Crawford Ave., Chicago, Ill.

66. *Laundry Appliances.* Illustrated catalog. Descriptions of Laundry Dryers, Electric Washing Machines and Ironing Machines, especially adapted for use in residences, apartment buildings and small institutions. Size 8½ x 11 in. 48 pp.

R. W. Clark Mfg. Co., 1774 Wilson Ave., Chicago, Ill.

588. *Clark Directories and Clark Changeable Bulletin Boards.* Two pamphlets describing the Clark Changeable Bulletin Board and Directories for Office Buildings, Hotels, Business Buildings, etc. 8 pp. and 4 pp. Ill. 6¼ x 9 in.

J. C. Deagan, Inc., 189 Deagan Bldg., Chicago.

786. *Deagan Tower Chimes.* Describing the important features of Deagan Tower Chimes and including information concerning the space requirements and construction required for installing chimes in towers and belfries. 8 pp. 8½ x 11 in.

W. F. Dougherty & Sons, Inc., 1009 Arch St., Philadelphia, Pa.

764. *Kitchen Equipment for Hotels and Institutions.* Several catalogs covering a complete line of cooking apparatus.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

170. Booklet showing general construction and sizes of garbage receivers to be placed underground for suburban use; also types to be built into the wall of city homes and apartments; also types for the suburban wall with opening on inside for the maid and outside for the garbage man. Size 3¼ x 6¼ in. 16 pp.

Kerner Incinerator Company, 1029 Chestnut St., Milwaukee, Wis.

384. *The Sanitary Elimination of Household Waste, M-3 Folder.* Description of construction, installation and operation of the Kernerator for residences. Illustrated by views of residences in which the Kernerator is installed, with cuts showing all details. 15 pp. Ill. 4 x 9 in.

New Process Stove Co., Division of American Stove Co., 4301 Perkins Ave., Cleveland, Ohio.

457. *Catalog No.* 148. A complete catalog of gas ranges from a single cover hot plate to the most elaborate hotel range. Also lists gas heaters for rooms. 110 pp. Ill. 7 x 10 in.

The Pfaudler Company, Rochester, N. Y.

581. *Glass Lined Steel Laundry Chute.* Catalog describing a glass lined steel laundry chute with flushing ring at top and drain connection at bottom, specifications, dimensions and details adapted to hospitals and hotels. 14 pp. Ill. 5½ x 7⅜ in.

Reliable Stove Company, Division of American Stove Co., Cleveland, Ohio.

460. *Reliable Angleiron Gas Ranges.* A pamphlet illustrating hot plates, laundry stoves and a complete line of gas cooking stoves and ranges equipped with the Lorain Oven Heat Regulator. 8 pp. Ill. 8 x 11 in.

Richardson & Boynton Co., New York, N. Y., Chicago, Ill., Philadelphia, Pa., Providence, R. I., Boston, Mass.

292. *Perfect Cooking Ranges.* Description and dimensions of the complete line of the new high enamel finish Richardson Perfect ranges, with charts and information regarding combination coal and gas cooking ranges. 40 pp. Ill. 8½ x 11 in.

Ruud Manufacturing Co., Pittsburgh, Pa.

732. *Ruud Delineator and Specification Card.* A diagram of vanishing lines over which perspective sketches can be readily and correctly made. 8½ x 11 in.

36. CONSTRUCTION PLANT

37. INSULATION

Armstrong Cork and Insulation Co., Pittsburgh, Pa.

900. *Insulation of Dwellings.* A booklet explaining the methods of insulation, their relative values and the advantages of using Armstrong's Nonpareil Corkboard. A valuable publication. 40 pp. Ill. 8½ x 11 in.

918. *Nonpariel Cork Covering.* A treatise describing the production and manufacturing of cork pipe covering for steam and refrigerating systems. Designing data, specifications and installation directions. 48 pp. Ill. 8½ x 11 in.

The Philip Carey Co., Lockland, Cincinnati, Ohio.

379. *Pipe and Boiler Coverings. Catalog* 1362. A catalog and manual pipe and boiler coverings, cements, etc. Contains a number of valuable diagrams and tables. 71 pp. Ill. 6 x 9 in.

Flax-li-num Insulating Co., St. Paul, Minn.

930. *Heat Insulation for Houses.* A scientific bulletin summarizing and condensing the data or research laboratories, explaining the theory of heat insulation and correct methods of bringing all wall or roof types within a standard heat transmission at lowest cost by the use of Flax-li-num. Gives properties, uses and history of Flax-li-num. 24 pp. Ill. 8½ x 11 in.

931. *For Comfort and Economy.* The non-technical story of heat and sound insulation, its theory, practice and history. Contains one-half inch sample of Flax-li-num and shows advantages of its use in all types of house and apartment construction. 32 pp. Ill. 5 x 7 in.

Hydrex Asphalt Products Corp., 120 Liberty St., New York City.

757. *Sound Deadening and Insulation.* Illustrated pamphlet. Describes Hydrex "Saniflor" and gives specifications for use under floors, in partitions and under roofs.

38. LANDSCAPE

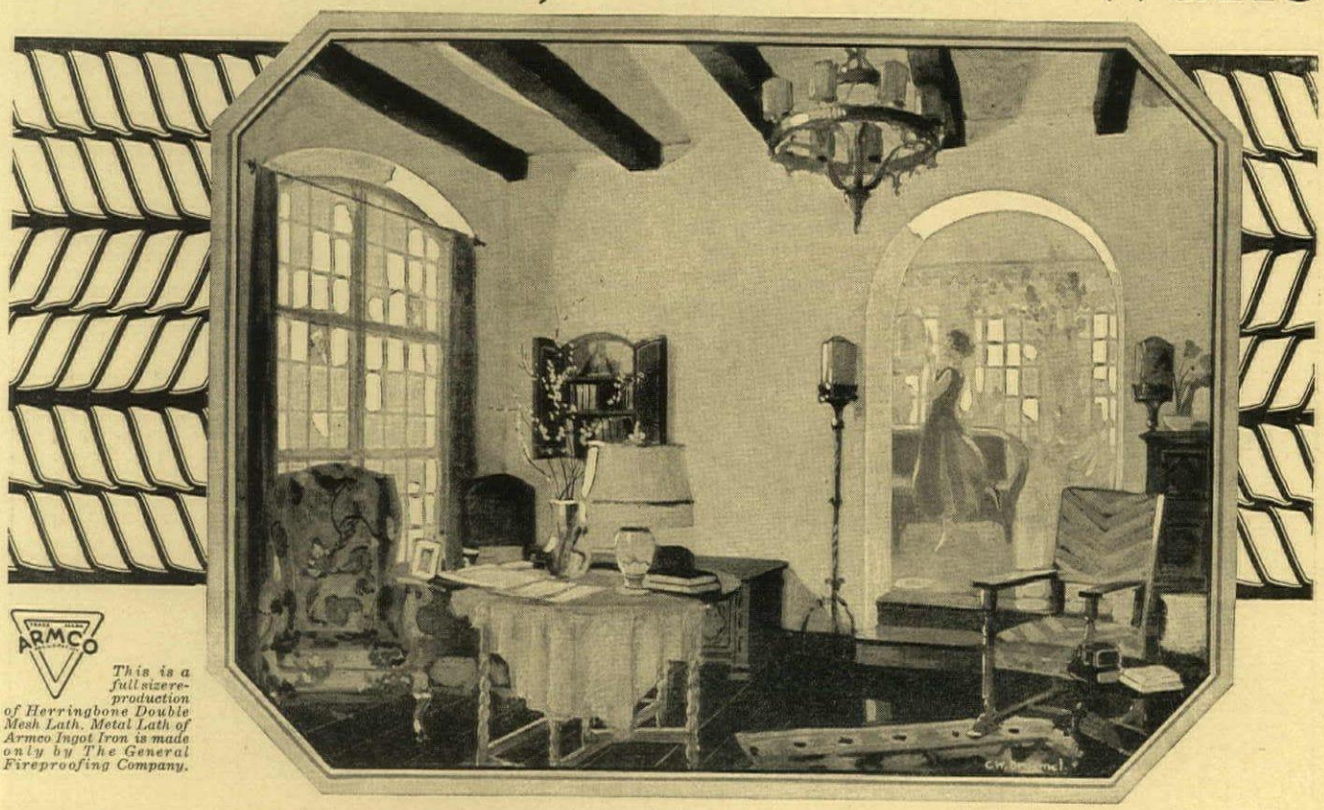
39. ACOUSTICS

Johns-Manville, Inc., 294 Madison Ave., New York, N. Y.

710. *Architectural Acoustics.* A treatise on the correction of architectural acoustics in churches, schools, hospitals, office buildings and other places. 24 pp. Ill. 6 x 9 in.

40. REGULATIONS

Crack-Proof, Mar-Proof Walls



This is a full sizereproduction of Herringbone Double Mesh Lath. Metal Lath of Armco Ingot Iron is made only by The General Fireproofing Company.

When Plastered over Herringbone

How discouraging to a home owner to lavish care and thought on the decoration of interior walls, only to find that passing time brings unsightly plaster cracks, checks and disfiguring lath marks.

How much better to specify Herringbone Metal Lath at the very outset, insuring long years of service and beauty for walls and ceilings—satisfaction for the owner—good will for the architect and builder.

The fine cross-web mesh of Herringbone Metal Lath gives each square inch of surface a rigid unyielding reinforcement. It literally becomes embedded in the plaster and holds with an unyielding grip. Sudden jars—ordinary settling—won't crack the plaster. And the fire-resisting qualities of Metal Lath construction are well known.

Herringbone is not expensive either. It costs slightly more than ordinary wood lath but saves plaster, and it brings down labor costs, since it comes in large stiff sheets of steel or Armco Ingot Iron which are easily and quickly handled.

Every architect and builder will find much of interest and value in "Building for Permanence and Beauty" and the GF "Fireproofing Handbook." Both booklets will gladly be sent, on request.

Other GF Materials:

Self-Sentering—A combined form, lath and reinforcement for concrete floors and roofs.

Trussit—A reinforcement for solid partitions.

GF Expanded Metal—A concrete reinforcement.

GF Steel Tile—For concrete floors.

GF Steel Lumber—Used in place of wood joists and studs.

GF Steel Channel—For fireproof partitions and ceilings.

GF Peds—Spot grounds for attaching trim to concrete and plaster.

GF Duplex Bridging—For wood joist floors.

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BETTER PLASTERING — METAL LATH TO REINFORCE AND PRESERVE

GF Herringbone Doublemesh Lath

REFERENCE LIST OF BUSINESS LITERATURE—Continued

I PLANS AND DESIGNS

American Face Brick Association, 1754 People's Life Bldg., Chicago, Ill.

155. *The Home of Beauty.* A booklet containing fifty prize designs for small brick houses submitted in national competition by architects. Texts by Aymar Embury II, Architect. Size 8 x 10 in. 72 pp. Price 50 cents.

California White and Sugar Pine Manufacturers Association, 690 Call Building, San Francisco, Calif.

874. *Pine Homes.* A valuable booklet containing details of frame building construction and the manufactured products of the association and illustrations of constructed buildings. 48 pp. Ill. 7 x 10 in.

Garage Experts Association, Louisville, Ky.

850. *United Storage Floors.* A catalog illustrating a system of garage construction utilizing ramps for traffic and storage space, and descriptive text. 16 pp. Ill. 8½ x 11 in.

Truscon Steel Company, Youngstown, Ohio.

318. *Truscon Standard Buildings. Form D-398.* Describes Truscon Standard Steel Buildings, with diagrams, illustrations of installations, descriptive matter and list of users. 48 pp. Ill. 8½ x 11 in.

638. *Daylighting Schools.* A treatise on the daylighting and window ventilation of school buildings quoting eminent authorities, illustrated with diagrams of lighting data and details of suitable windows. 28 pp. Ill. 8½ x 11 in.

II GENERAL CATALOGS

American Lead Pencil Co., 220 Fifth Ave., New York, N. Y.

268. *Booklet C-20. Venus Pencil in Mechanical Drafting.* An interesting illustrated booklet showing the possibilities of the Venus Drawing Pencil for drafting. 6 x 9 in.

H. W. Covert & Co., 137 East 46th St., New York City.

775. *Fireplace Fittings in Iron and Brass.* A catalog of andirons, fire sets, fire screens, fenders, woodholders, willow wood baskets, hearth brooms, grates, candlesticks, lanterns and other accessories made in iron and brass. 36 pp. Ill. 5½ x 8½ in.

Joseph Dixon Crucible Company, Pencil Department, Jersey City, N. J.

325. *Finding Your Pencil.* A book explaining the various degrees of hardness of the Eldorado pencil and the grade most suitable for every man who uses a pencil be he business or professional man, clerk or draftsman. Accompanied by a color chart of Dixon colored crayons. 16 pp. and 4 pp. in color chart. Ill. in colors. 3¼ x 6 in.

Charles M. Higgins & Co., 271 Ninth St., Brooklyn, N. Y.

928. *Higgin's Inks and Adhesives.* A complete catalog of inks, pastes, mucilages, photo mounters and such drafting room accessories. 30 pp. Ill. 3½ x 6¼ in.

Johns-Manville, Inc., New York City.

752. *Johns-Manville Service to Industry.* A complete catalog of Asbestos Roofings, Heat and Electric Insulations, Waterproofing, Industrial Flooring, etc. Complete details and specifications. Valuable reference book for architects. 260 pp. Ill. 8½ x 11 in.

Truscon Steel Company, Youngstown, Ohio.

319. *Truscon Building Products. Form D-376.* Contains a brief description of each of the Truscon Products. 112 pp. Ill. 8½ x 11 in.

A. Wyckoff & Sons Co., Elmira, N. Y.

397. *Wyckoff Wood Pipe. Catalog No. 42.* A description of machine-made woodstave pipe and Wyckoff's express steam pipe casing. Contains also a number of pages of useful formulas and tables for hydraulic computation. 92 pp. Ill. 6 x 9 in.

III FINANCING OF ENTERPRISES

G. L. Miller & Company, Hurt Building, Atlanta, Ga.

929. *The Miller Plan.* A booklet explaining the Miller Plan of financing building projects, disbursements to contractors and liquidation of bonds. 18 pp. Ill. 9 x 12 in.

S. W. Straus & Co., 565 Fifth Ave., New York, N. Y.

183R. *The Straus Plan of Finance.* A book describing the methods of S. W. Straus & Co., in helping to finance the erection of the larger class of properties such as office and apartment buildings, hotels, loft buildings and similar structures. A book valuable to the architect who desires to study the business side of the profession. 24 pp. Ill. 7¼ x 10½ in.

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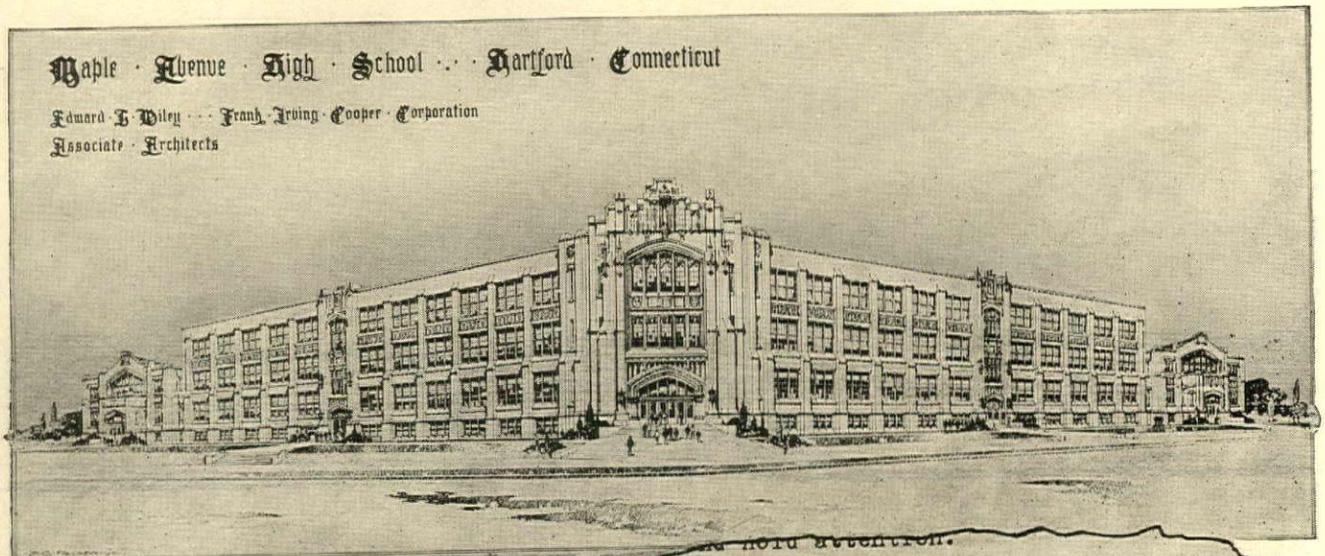

Your anti slip material has proved so acceptable that we are again using your Alundum Aggregates in the new Bulkeley School which we have under way in Hartford, our second school building in that City.

Selected for another $1,800,000 school

When the Frank Irving Cooper Corporation, architects, designed the Weaver High School, Hartford, Conn., they assured maximum protection against slipping and tripping accidents by specifying Alundum Aggregates for the finish cement of treads and platforms of all inside stairways and for the terrazzo of the main entrance vestibule. The paragraph reproduced above, from an unsolicited letter received from these architects, indicates clearly the satisfactory service these Norton Floor products have given and why they are being used in the new Bulkeley (Maple Avenue) School—another $1,800,000 structure.

All types of Norton Floors are made permanently slip-proof, durable and quiet by the bonded electric furnace abrasive trademarked "Alundum"—long used in the well-known Norton Grinding Wheels.

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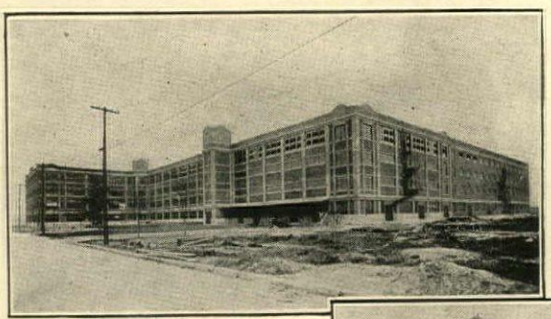
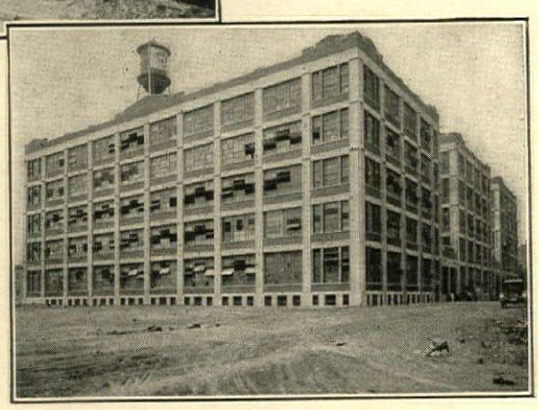
600,000 square feet of concrete floor that neither dusts nor wears



Below is the Jersey City plant of the Continental Can Company spoken of on this page.



Above is the Clearing Plant of the Continental Can Company, Chicago, Ill., which is mentioned on this page.

SIX hundred thousand feet of concrete floor seems like a lot of surface for one company to keep in repair. Yet the problem does not worry the Continental Can Company at all.

The floors of this company receive hard wear. Heavy trucks move up and down the aisles. There is friction, pounding and scuffing of feet enough to play havoc with an ordinary concrete floor.

But the floors of the Continental Can Company are not ordinary floors. Six years ago this company treated 125,000 square feet of floor in its Chicago plant with Lapidolith, the liquid chemical floor hardener.

How effective the hardening process was is best evidenced by the subsequent action of the Continental Can Company.

Within three years of the original application of Lapidolith in the Chicago factory, 200,000 square feet of floor in the company's Jersey City plant was Lapidolized. Early in 1924 a new addition was made to this plant, and 104,000 square feet more of concrete floor was hardened with Lapidolith. In October, 1924, the Continental Can Company erected an additional plant in Chicago, and 180,000 square feet of concrete surface was added to the Lapidolized total that will need no repairs.

Thus, within six years, this concern has hardened over 600,000 square feet of concrete floor with Lapidolith. Such an installation furnishes striking evidence of what Lapidolith is and the work it does. You can specify this floor hardener with full confidence that it will turn out floors you can be proud of—always.

Lapidolith is a colorless liquid chemical that is flushed on a floor. It penetrates the concrete, filling and binding the loose pores together. The free lime becomes completely hydrated. The coarse texture changes to a fine, even, dense wearing surface of crystalline formation. This surface is flint-like in its hardness. It is dustproof, wearproof, waterproof. It resists the hardest kind of wear for years. Send for literature.

LAPIDOLITH
TRADE MARK

Other Sonneborn products

Cemcoat — A paint that stays white longer than any similar paint; can be washed again and again; sticks to brick or concrete as easily as to wood; and usually requires one less coat. Made for both interiors and exteriors in white and colors, and in gloss, eggshell or flat enamel finishes.

Fermo — Added to the mix, Fermo hastens the setting of concrete to a remarkable degree. Minimizes danger of freezing in cold weather and saves valuable time in labor and quick re-use of forms.

Lignophol — A preservative dressing for wood floors that penetrates the wood, restoring its natural gum and oil. Prevents rotting, splintering and drying out. A Lignophol-treated floor is not sticky; it can easily be washed; and it does not require the application of floor oils.

Hydrocide — A complete line of water- and damp-proofing products for walls, copings, foundations, etc. There is a special Hydrocide for each class of use. For instance, on exterior walls Hydrocide Colorless retains the natural beauty of the wall.

114 Fifth Avenue **L. SONNEBORN SONS, INC.** **New York City**

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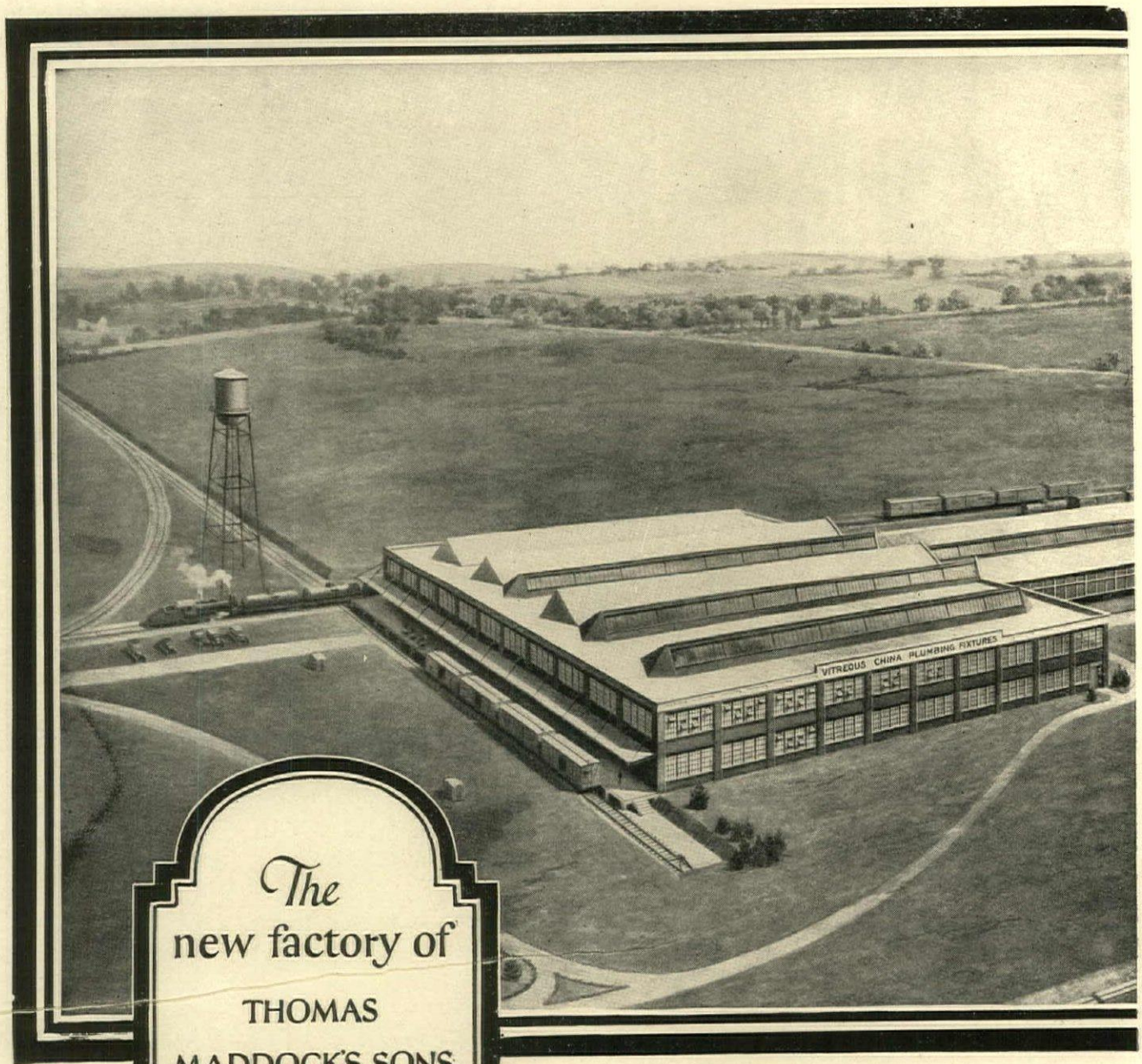

The new factory of
THOMAS MADDOCK'S SONS COMPANY

The largest plant of its kind in the world

THIS new plant, covering 335,000 square feet, is the largest in the world devoted exclusively to high-grade vitreous china bathroom equipment.

It is designed upon the most modern and efficient practice, with every facility for combined quality and quantity production.

This factory began operation on April 1st, 1925, superseding a succession of now outgrown buildings, the first of which was erected by Thomas Maddock in 1873, who then founded the sanitary pottery industry in America.

The new plant is located on the Main line of the Pennsylvania Railroad at Trenton, which city has always been the home of Thomas Maddock's Sons Company.

THOMAS MADDOCK'S SONS

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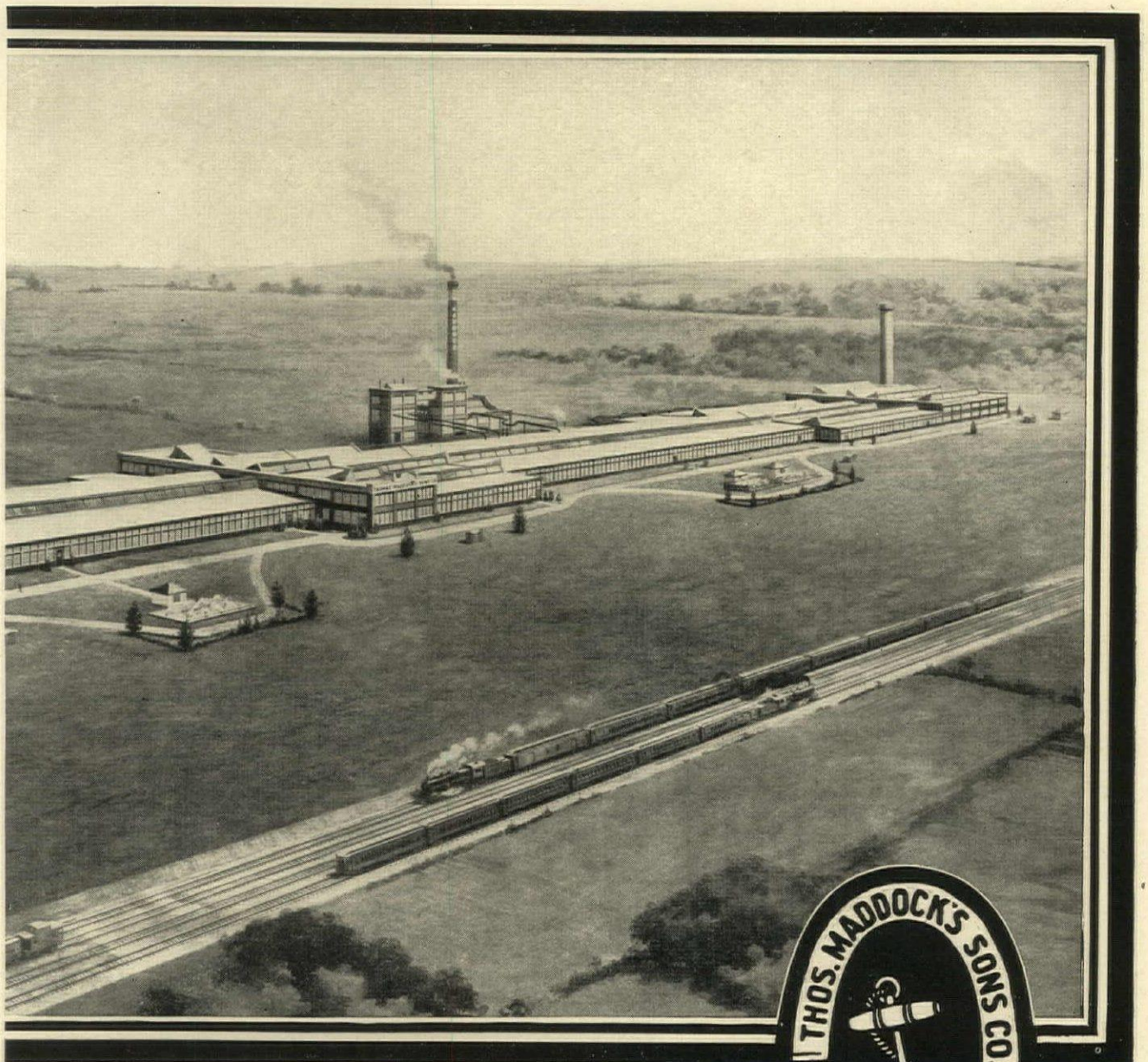

And what it means to the architect and builder

This new factory, with its greatly augmented capacity, and its highly developed equipment for the manufacture of the finest vitreous china sanitary ware, means something definite to the architect and his clients.

It assures the expeditious handling of orders of any size and the further perfection of the Maddock Quality, which has always represented the highest attainable standards.

Architects are extended a cordial invitation to visit this new plant and inspect the methods used in making Maddock Vitreous China Bathroom Equipment. A motor car will meet you at the Trenton Station of the Pennsylvania R.R. upon written or telegraphed request.

COMPANY, . . . *Trenton, N.J.*

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Piedmont, Calif., High School. Walls, exterior and trim stone, all of concrete. Architect, W. H. Weeks, San Francisco

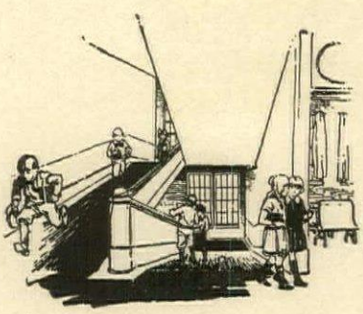
Our Schools and the Architect

Progressive communities appreciate the value of cultural ideals in molding the character of youth.

Books, music, and the personality and teachings of the instructor, all help to develop such ideals.

No less important than any of these is the influence of the architect. His judgment and his skill are two of the most vital factors in determining the environment of young and growing minds.

Firesafe, and built for permanence, the modern school must also be *artistic in design*. Concrete construction meets all of these requirements. Write to the nearest office listed below for detailed information about Concrete Schools.



Concrete ramps greatly facilitate safety of movement within the building. That is one of the important reasons why the architect specifies them instead of stairs

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A National Organization to Improve and Extend the Uses of Concrete

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HERE is a new means of securing the unusual and beautiful in interior treatments.

This panel is one piece of jet black Vitrolite decorated in the manner of Chinese lacquer screens, with richly colored birds and flowers. It is one of the ways in which architects are creating something different to meet the demands for artistic decoration.

Any design you may have in mind can be similarly accomplished in Vitrolite, for here is a material which offers limitless possibilities for charming decorative treatments.

Vitrolite does not stain, dull, discolor, crack or craze. It is non-porous and will remain spotless and new as long as the building stands.

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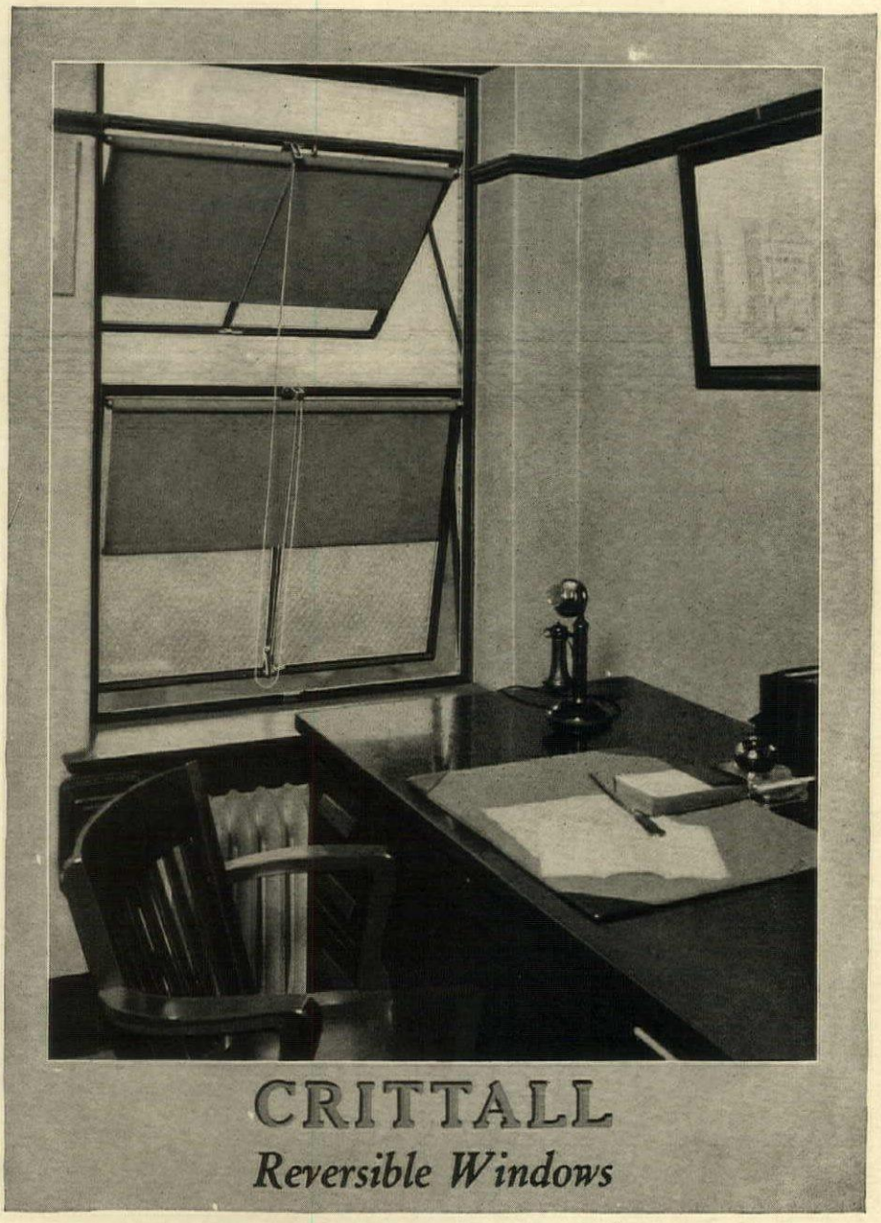

Old National Bank Building, Evansville, Ind.
Alfred E. Neucks, Architect

To the advantages of weather-tightness, maximum light and wide ventilating range, Crittall Reversible Windows add the greatest possible protection against fire risk.

Built of solid rolled steel sections, these windows are both fireproof and permanent—factors indispensable to modern banks, schools and office structures.

The window illustrated above, containing wire plate glass, divided by steel muntins, conforms generally to Fire Underwriters' specifications, but bears no label.

Where desired, however, reversible windows can be supplied bearing the Underwriters' Label, so that from the standpoint of window appearance, both exterior and interior may be alike on all elevations.

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All Crittall Casements and Windows are made of Crittalloy—the Copper Bearing Steel

Our engineers will gladly assist architects in the solution of unusual window problems

CRITTALL CASEMENT WINDOW COMPANY, DETROIT, *Manufacturers*
10975 Hearn Avenue, Detroit, Michigan

The new Pacific Telephone & Telegraph Building, San Francisco. Crane plumbing materials are installed throughout. J. R. Miller, T. L. Pfueger, and A. A. Cantin, Associated Architects. Atkins & Parker, Mechanical Engineers. Lindgren & Swinerton, Builders. Alexander Coleman, Plumbing Contractor.

SAN FRANCISCO'S TALLEST BUILDING IS CRANE-EQUIPPED

The Pacific Telephone and Telegraph Building now joins the notable group of recent architectural achievements which includes The Tribune Tower, Chicago, and The American Radiator Building, New York City. In all three, Crane plumbing materials are used throughout.

Better than words, the specification of Crane products for these fine buildings testifies to the outer beauty and inner quality of Crane plumbing and heating fixtures, as well as to the ruggedness of Crane valves, fittings and piping. Crane materials are sold by responsible contractors everywhere.

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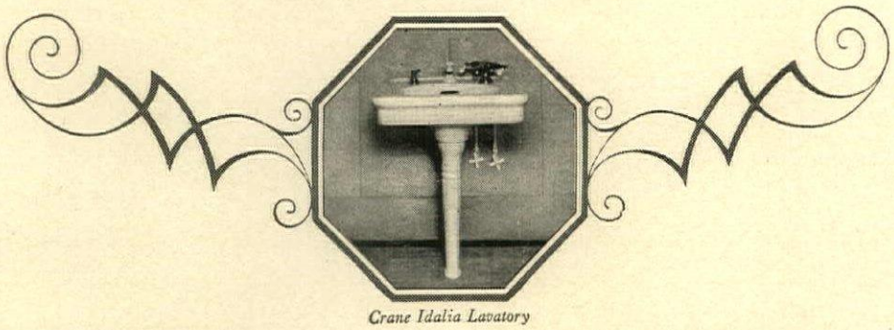
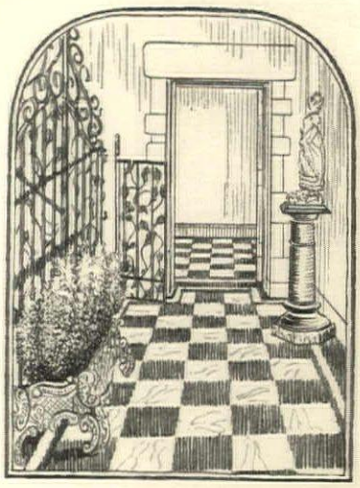
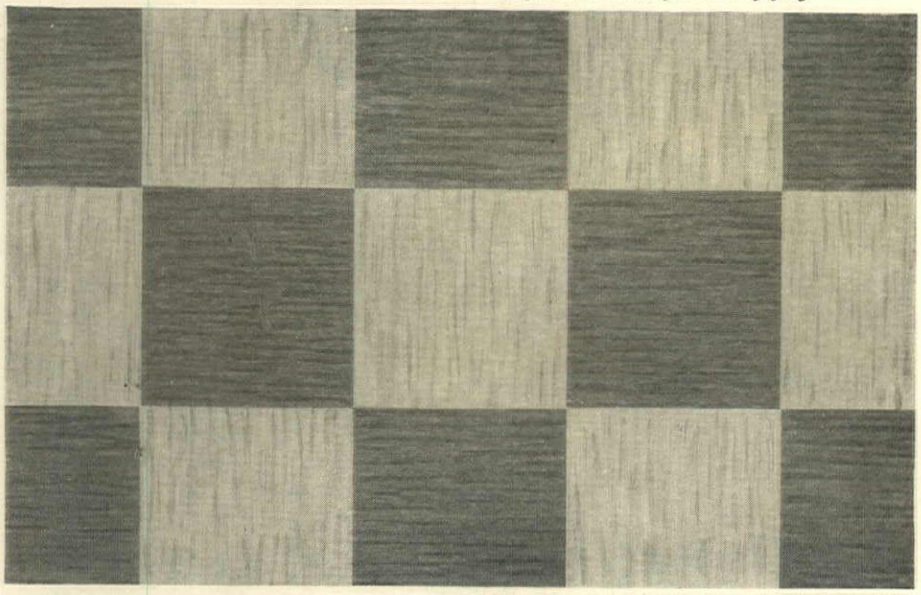


Crane Idalia Lavatory



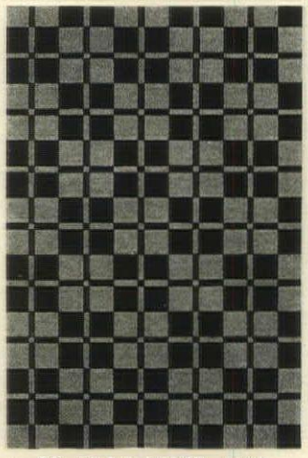
Nobel and Newson, San Francisco architects, chose this marble inlaid floor of Armstrong's Linoleum for the Henshaw apartment in the fine Francesca Apartment Building

Marble Inlaid No. 78, a twelve-inch block design in two beautiful tones of gray



Room beauty begins with floor beauty

Some interiors are mere accidents, but not the one which is based on a floor of color and design



Moulded Inlaid No. 5431

THE architect or decorator who realizes what style and charm a patterned floor of Armstrong's Linoleum contributes to a room, happily turns a difficult problem into a source of inspiration.

What makes these new floors really beautiful? First, it is their colors—rich, lustrous colors, yet softly subdued colors—colors harmoniously combined to suit any decorative need.

Second, it is their design, their smartly modern patterns conceived by expert designers and approved by decorators and architects as the last word in floor beauty.

There are scores of attractive designs to choose from. Let your imagination have full sway. You will find an Armstrong's Linoleum floor to add just the right touch of color to any decorative scheme you have in mind.

Armstrong's Linoleum floors have always been ideally suited for business use. Their long life is one reason. The fact that they cut cleaning costs is another reason.

Once permanently cemented in place over a lining of heavy deadening felt, all an Armstrong's Linoleum floor needs, in office, shop, or home, is a daily cleaning with a dry mop and an occasional waxing and polishing.

Light Gray Jaspé No. 13

Inset Marble Tile Inlaid No. 61

Let us send you a section of this new Armstrong's Linoleum flooring for your own examination. You will see that the deep rich colors go all the way through to the heavy burlap back. "All the way through" means a tough yet resilient thickness composed of materials noted for their wear-resisting qualities—cork, oxidized linseed oil, and burlap.

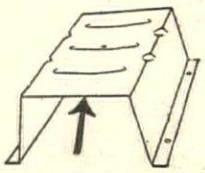
You will also see a smooth, polished surface that offers not a single lodging place for dirt. This surface is stain-proof. It is moisture-proof. Heels can't bruise it. Walking feet won't scratch and track it.

We will also gladly send you colorplates of the new floor patterns, together with information as to the laying and care of linoleum.

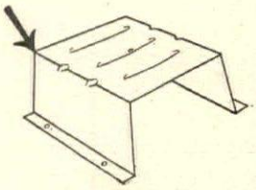
Look for the CIRCLE A *trade-mark on the burlap back*

Armstrong Cork Company
Linoleum Division **Lancaster, Penna.**

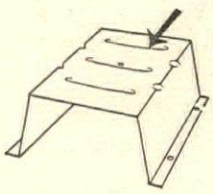
Armstrong's Linoleum *for every floor in the house*



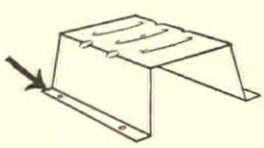
Meyer Steel Forms are made exclusively of 16 gauge sheet steel and formed into exact shape by heavy presses. Their asbolute rigidity is winning recognition everywhere as the most easily and successfully handled form.



The square corners on Meyer Steel Forms save concrete and insure a clean cut job without jeopardizing the strength of the beams.

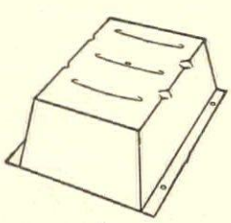


The ingeniously designed stiffening ribs in the top surface of Meyer Steel Forms secure the necessary rigidity to withstand heavy trucking loads. They also prevent sagging of the form under weight of concrete and insure a neat job.

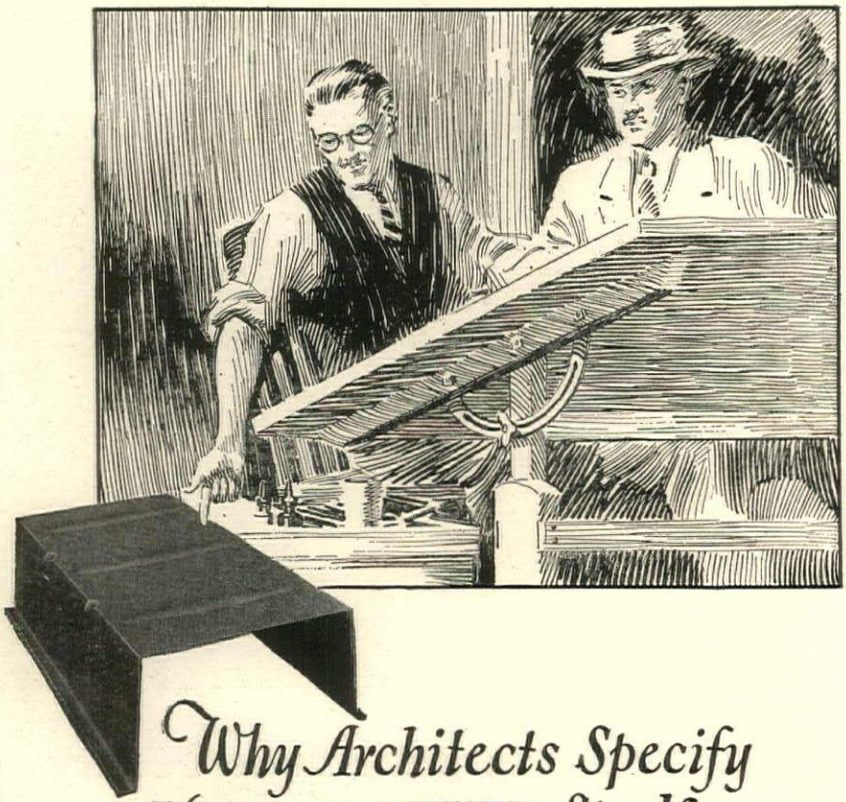


The lower flanges are provided with nail holes. The forms are accurately and firmly held in place on the centering.

3/16" round openings in center of top surface of each intermediate steelform to permit placing ceiling hangers in the slab above each steelform.



Meyer Tapered Endforms increase the width of the joist and provide a compression flange or tee for the supporting beam or girder, and DO NOT increase the area of concrete below the neutral axis.



Why Architects Specify 16 gauge MEYER *Steelforms*

THE savings of concrete, steel, form work, time and labor effected by the use of Meyer RemovableSteel Forms is proving to architects and contractors everywhere the true qualities of these forms that are exclusive under this name.

Meyer Steel Forms are made in standard units. The most economical size of concrete joist for all conditions of loading may always be obtained. Full benefit of the tee section of every joist is secured, eliminating all non-carrying concrete and effecting savings in dead load throughout beams, columns and footings.

Only a bare skeleton of formwork is required. The wide flat flanges for nailing and centering eliminate stripping the 2"x6" joist bottom where the joist widens out at the support.

Tees on the beams are formed by the steel forms and not with wood.

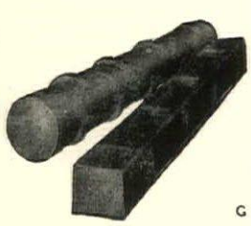
The simplicity of the centering, 2"x6" joist soffits, ledgers about 4' on centers and upright supports with bracing reduces labor costs and speeds erection.

The removal and reuse of Meyer Steelforms from one floor to the next is a great saving in investment. Two floors a week have often been poured on large jobs.

Another winning feature is the rental basis. This includes installation and removal. The savings made possible by constant reuse and wide distribution is passed on to you through our low prices.

For more detailed information send for our "HANDBOOK ON FIREPROOF CONSTRUCTION"

MEYER STEELFORMS



OTHER CECO PRODUCTS—*Meyer Steel Forms are only one of the many Ceco quality products such as Column Spirals, Barchairs and Spacers, Woven and Welded Wire Mesh, Road Strips, Lathing Materials and Ceco Reinforcing Bars.*

G

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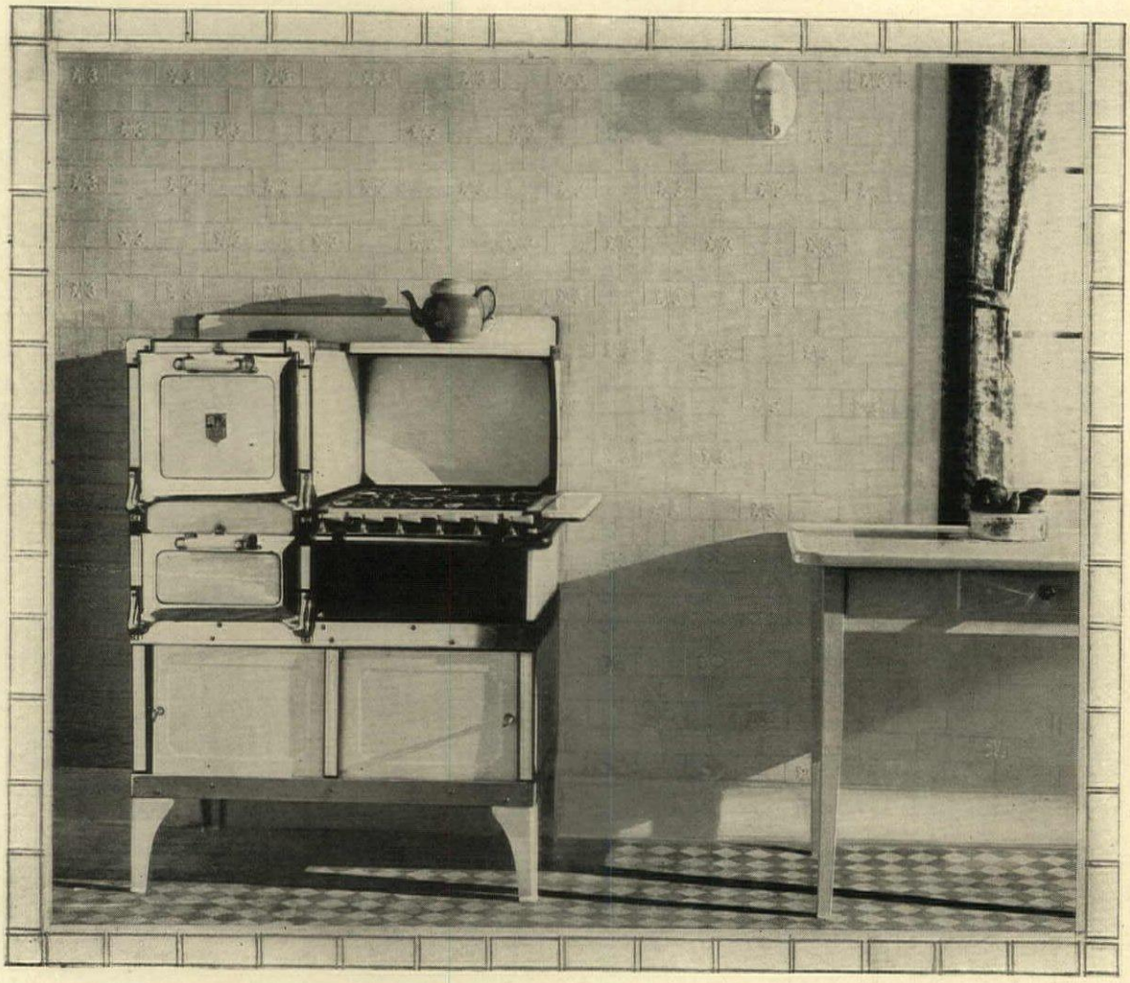

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TRADE MARK REGISTERED

LINCRUSTA-WALTON Kitchen tile provides a wall surface superior to other sanitary wall treatment at much less cost.

Hung like wall paper, the material soon assumes the hardness of a ceramic tile with all the desirable sanitary qualities. In addition its heat and sound insulation characteristics provide a service found in no other material.

Ordinarily this Lincrusta-Walton pattern 295 W is furnished in either a blue white or cream white but it can be supplied in any tint desired or may be painted at any time.

This and a large variety of patterns suitable to other rooms are shown in our portfolio which we shall be glad to send on request.

LINCRUSTA-WALTON COMPANY

Division of The Tait Paper and Color Industries, Inc.

Plant and Head Office: HACKENSACK, NEW JERSEY

Branch Offices: 3801 South Ashland Avenue, Chicago, Ill. 350 Madison Avenue, New York City

Associated Companies:
IMPERIAL WALL PAPER CO. Glens Falls, N. Y.
IMPERIAL CAMPBELL BRANCH Chicago, Ill.
WM. CAMPBELL WALL PAPER CO. Hackensack, N. J.
HOBBS WALL PAPER CO. Hackensack, N. J.
PLATTSBURGH WALL PAPER CO Plattsburgh, N. Y.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

Vitralite
The Long-Life Enamel

St. Luke's Hospital, Chicago
Drawn by Chas. L. Morgan

Chas. S. Frost, Architect, Chicago
J. B. Mullen, Painting Contractor

In St. Luke's Hospital, Chicago, the tallest hospital in the World, three thousand gallons of Vitralite, *the Long-Life Enamel*, and other Pratt & Lambert Varnish Products were used. Vitralite produces a surface that is unusually durable, yet beautiful. It stands continual washing and lasts infinitely longer than paint.

"Save the surface and you save all" — Pratt & Lambert

The Pratt & Lambert Architectural Service Department is at your service. Let us help you with your wood-finishing problems.

"Save the surface and you save all" — Pratt & Lambert

PRATT & LAMBERT-INC., 98 Tonawanda St., Buffalo, N. Y., In Canada: 8 Courtwright St., Bridgeburg, Ontario.

PRATT & LAMBERT VARNISH PRODUCTS

The Buffalo Athletic Club was completely furnished by us, in co-operation with the architects, Edward B. Green & Sons.

With the idea of creating a gentleman's home, we have been successful in eliminating the cold formality usually found in clubs, hotels, etc.

IN all decorations there are two kinds of furniture —the kind you look at, and the kind you use.

Like all decorators, for the look-at-kind—the objects of art—we have the whole world of art to draw from.

But for the kind that is used, often misused, the chairs, tables, sofas, etc., we know of only one source of supply that invariably produces the kind that we want to bear our label.

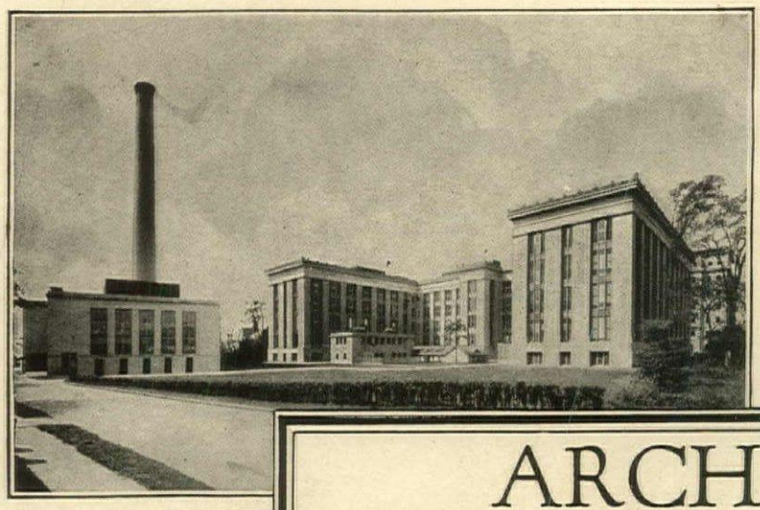
That place is our own factory.

It is at your disposal for a single piece, a one-room decoration or for the furnishing of a great public building.

FRANCIS H. BACON CO.

BOSTON 284 Dartmouth Street — NEW YORK 4 East 53rd Street

Furniture - Woodwork - Interior Decorations



WESTERN *Reserve University Medical School, Cleveland, Ohio. The J. J. Reilly Co., Painting Contractors. Coolidge & Shattuck, Boston, Mass., Architects.*

ARCHITECTS' PAINTING GUIDE

FOR PAINTING · VARNISHING · STAINING AND ENAMELING

IMPORTANT: Each of the products specified below bears our name and trade mark

SURFACE	TO PAINT *Use product named below*	TO ENAMEL *Use product named below*	TO STAIN *Use product named below*	TO VARNISH *Use product named below*
BRICK WALLS (ext)	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CONCRETE WALLS	S-W Concrete Wall Finish	Old Dutch Enamel, Gloss		
CEMENT FLOORS	S-W Concrete Floor Paint	S-W Concrete Floor Paint		
EXTERIOR WOOD SURFACES	SWP (Sherwin-Williams Prepared Paint)	Old Dutch Enamel, Gloss	S-W Preservative Shingle Stain S-W Acid or Oil Stain	Rexpar Varnish
EXTERIOR METAL SURFACES	Kromik Structural Steel Primer Metalastic (for finishing coats)	Old Dutch Enamel, Gloss		
FACTORY WALLS (Interior)	S-W Eg-Shel Mill White S-W Fume Resisting White	Old Dutch Enamel or Enameloid		
FLOORS (Interior Wood)	S-W Inside Floor Paint (the enamel-like finish)	S-W Inside Floor Paint (the enamel-like finish)	Oil Stain or Floorlac Varnish Stain	Mar-Not Floor Varnish
GALVANIZED IRON SURFACES	S-W Galvanized Iron Primer (Finish with any Paint)	S-W Galvanized Iron Primer and Old Dutch Enamel		
INTERIOR WALLS AND CEILINGS	Flat-Tone Wall Finish S-W Eg-Shel Mill White	Old Dutch Enamel or Enameloid		
INTERIOR WOOD TRIM	SWP (Sherwin-Williams Prepared Paint)	Old Dutch Enamel or Enameloid	S-W Acid Stain S-W Handcraft Stain S-W Oil Stain	Scar-Not Varnish Velvet Finish Varnish (for imitation rubbed effect)
PORCH FLOORS AND DECKS	S-W Porch and Deck Paint			
RADIATORS AND PIPES	Flat-Tone Wall Finish or S-W Gold Paint S-W Aluminum Paint	For White—S-W Snow White Enamel For colors—Enameloid		
ROOFS—Metal	SWP or Metalastic (if Galvanized, prime with S-W Galvanized Iron Primer)			
ROOFS—Wood Shingle	SWP		S-W Preservative Shingle Stain	
STACKS AND HOT SURFACES	Salamander Smoke-Stack Black			
STRUCTURAL STEEL	Kromik Structural Steel Primer Metalastic (for finishing coats)			
TO DAMP-PROOF FOUNDATIONS	S-W Antydamp			
TO DAMP-PROOF INTERIOR WALLS ABOVE GRADE	S-W Plaster Bond			
WOOD PRESERVATIVE			S-W Carbolic-ol	

Every architect will appreciate the point

In the same spirit in which an architect shows significant work which he has done, Sherwin-Williams present the Architects' Painting Guide.

On this seen-at-a-glance "Guide," Sherwin-Williams show the significant results of many years of study and practice. Each recommendation represents the maker's authoritative judgment. Each product was developed carefully for the purpose specified and will work best on the surface indicated.

Architects tell us that the Architects' Painting Guide is a form of practical cooperation that assists them in their work in no small degree.

For details of specifications see: The Sherwin-Williams Book of Painting and Varnishing Specifications (sent on request) or Sweet's Architectural Catalog.

We invite correspondence—write to the Department of Architectural Service,

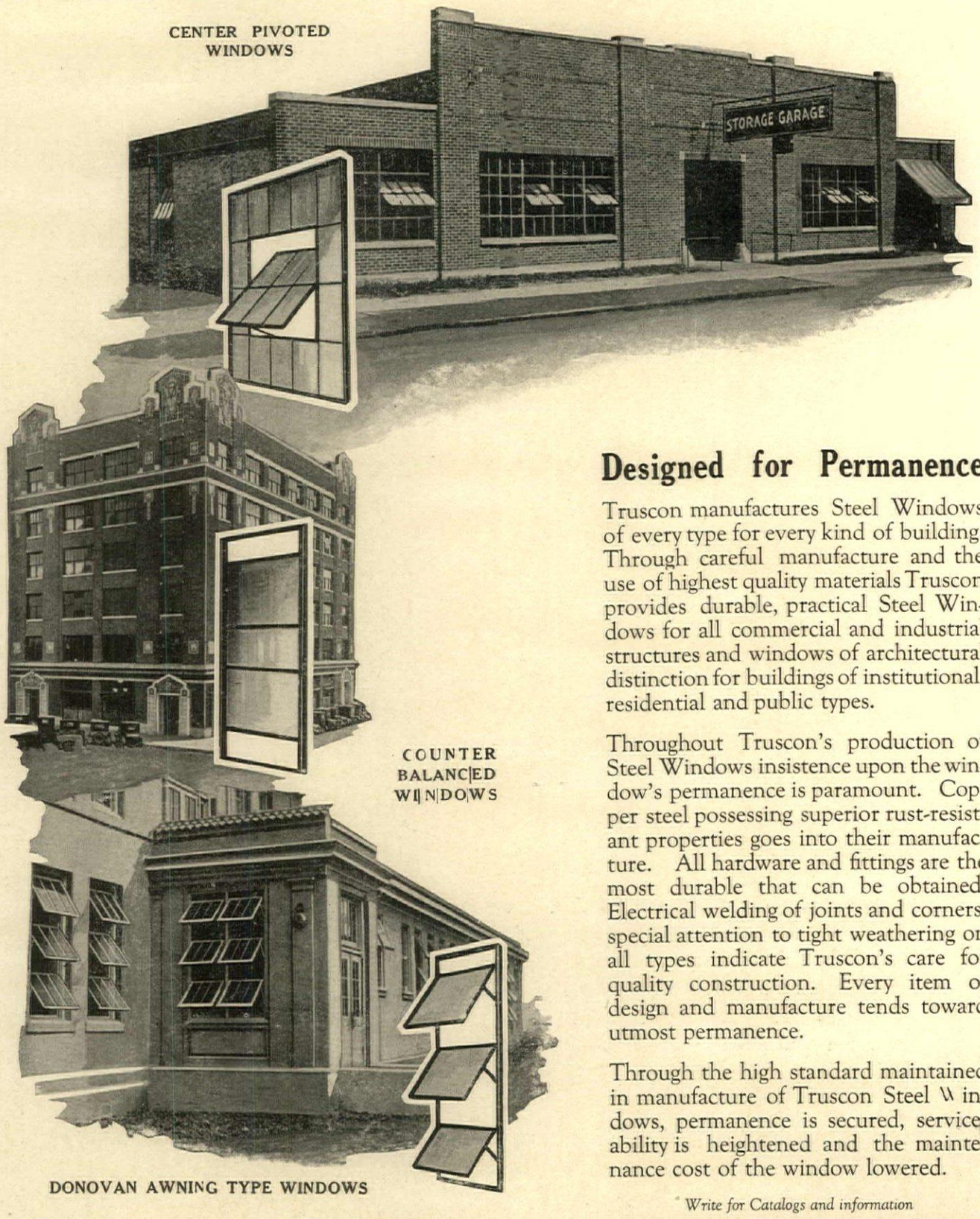
The Sherwin-Williams Co.
880 Canal Road, *Cleveland*

SHERWIN-WILLIAMS
PAINTS AND VARNISHES
COVER THE EARTH

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

Steel Windows for All Institutional



Designed for Permanence

Truscon manufactures Steel Windows of every type for every kind of building. Through careful manufacture and the use of highest quality materials Truscon provides durable, practical Steel Windows for all commercial and industrial structures and windows of architectural distinction for buildings of institutional, residential and public types.

Throughout Truscon's production of Steel Windows insistence upon the window's permanence is paramount. Copper steel possessing superior rust-resistant properties goes into their manufacture. All hardware and fittings are the most durable that can be obtained. Electrical welding of joints and corners, special attention to tight weathering on all types indicate Truscon's care for quality construction. Every item of design and manufacture tends toward utmost permanence.

Through the high standard maintained in manufacture of Truscon Steel Windows, permanence is secured, serviceability is heightened and the maintenance cost of the window lowered.

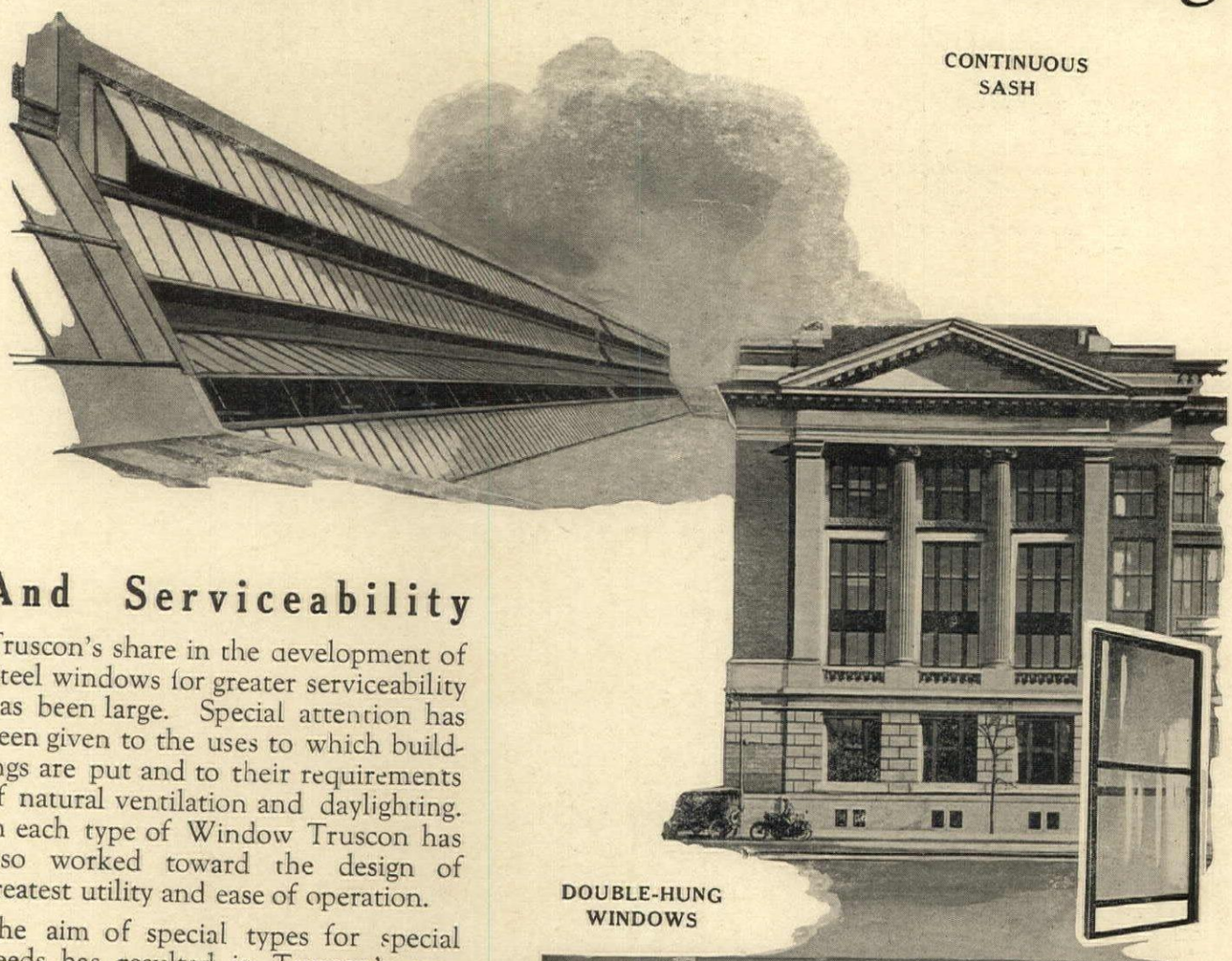
Write for Catalogs and information

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO
Canada: Walkerville, Ontario

TRUSCON STEEL WINDOWS

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

Industrial and Commercial Buildings



And Serviceability

Truscon's share in the development of Steel windows for greater serviceability has been large. Special attention has been given to the uses to which buildings are put and to their requirements of natural ventilation and daylighting. In each type of Window Truscon has also worked toward the design of greatest utility and ease of operation.

The aim of special types for special needs has resulted in Truscon's production of Pivoted Side Wall Sash Continuous Sash and Mechanical Operators for industrial buildings; Truscon Donovan Awning Type and Projected Windows for school and hospital installations; Counter-Balanced and Double-Hung Windows of solid steel for commercial and public structures; Standard Casements and Basement Windows of copper steel for residences and apartments.

Truscon, with its great fifty-acre plant, sixty branch offices in principal cities and twenty warehouses in distributing centers offers a service to architects quite unequalled. Experience in over 100,000 buildings enables Truscon to understand and meet your needs satisfactorily.

Write for details of Truscon Service to Architects

WAREHOUSES AND OFFICES

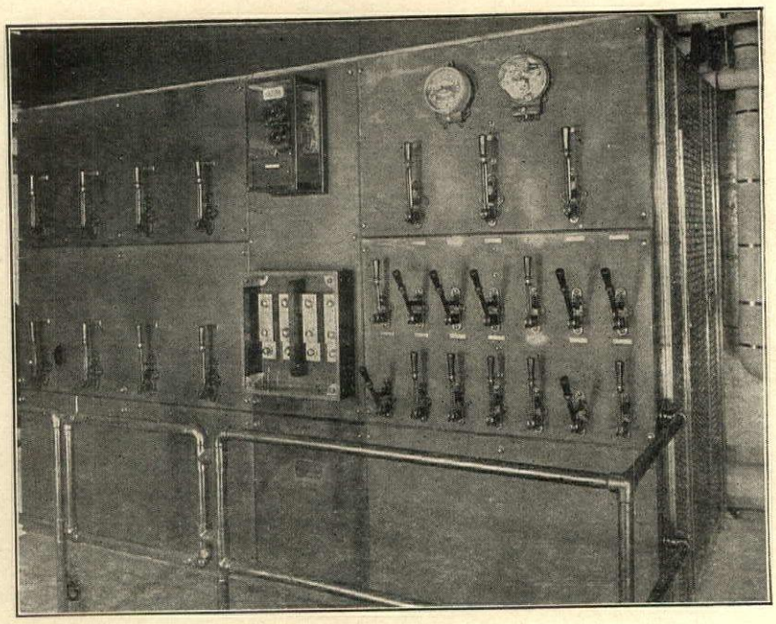
In All Principal Cities.
Foreign Dept.: New York.

PROJECTED WINDOWS

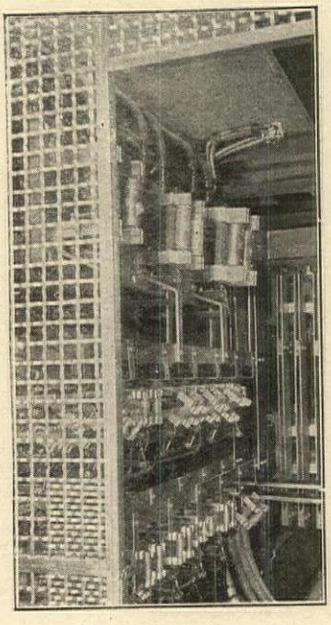
TRUSCON STEEL WINDOWS

TRUSCON STEEL CO.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual



"Bull Dog" Super-Safety Type Dead Face Switchboard installed in the Standard Accident Insurance Company Building, Detroit, Michigan. Architect, Albert Kahn. Electrical Contractor, J. Livingston Co.



Main switchboards, metering panels, stage switchboards, power controlling panels, motor control systems and "Luminized" Safety Switches are some of the "Bull Dog" electrical control elements that make for safety and convenience in structures of every kind.

Specify Switchboards that are Adequate and Safe

Electricity now serves men in so many capacities that considerable care and attention must be given to the selection of control facilities. Convenience, safety and economy dictate the use of "Bull Dog" Super-Safety Type Dead Face Switchboards.

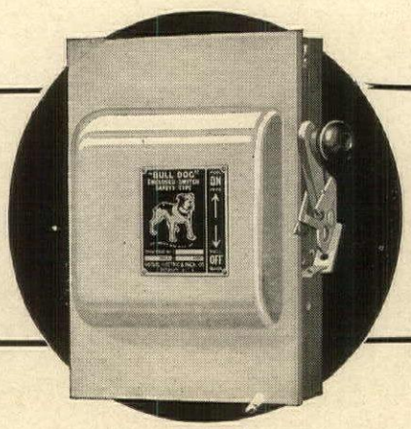
"Bull Dog" installations give maximum safety. All current-carrying parts are in the rear, inaccessible to unauthorized persons. Operating levers may be locked to prevent tampering. All parts are readily visible and accessible to authorized repair and inspection men. Fuse-holding parts are disconnected and dead when switch is open. In practically every instance the material for current-carrying parts is in excess of the code minimum.

All these factors for safety and convenience mean switchboards of highest quality and real economy. "Bull Dog" equipment is the logical choice.

Write for complete information

MUTUAL ELECTRIC AND MACHINE COMPANY

Detroit Michigan U. S. A.



BULL DOG
SAFETY SWITCHES
SWITCHBOARDS-PANELBOARDS-CABINETS

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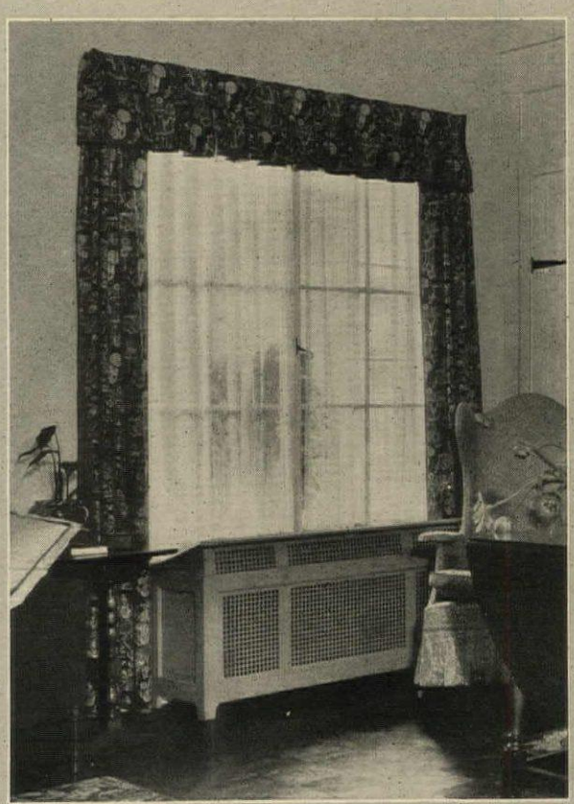
A room furnished by Lord & Taylor, New York, showing Tuttle & Bailey Radiator Screen, Type RE2.



The same screen, top raised for cold days.

To screen the radiator without confining the heat is the function of the Tuttle & Bailey Radiator Screens. But they offer other advantages—as important—a useful seat or shelf, protection to walls and draperies from the usual soil above radiators and better health from increased humidity of the air. ¶ Made in standard sizes and finishes or estimates will be furnished on specifications submitted. ¶ The Lexington Type is particularly suitable for hotels and apartments. ¶ Our new Booklet, "Radiator Screens and Registers" on request. ¶ Patents are pending for many features of these Screens.

TUTTLE & BAILEY MFG. CO.

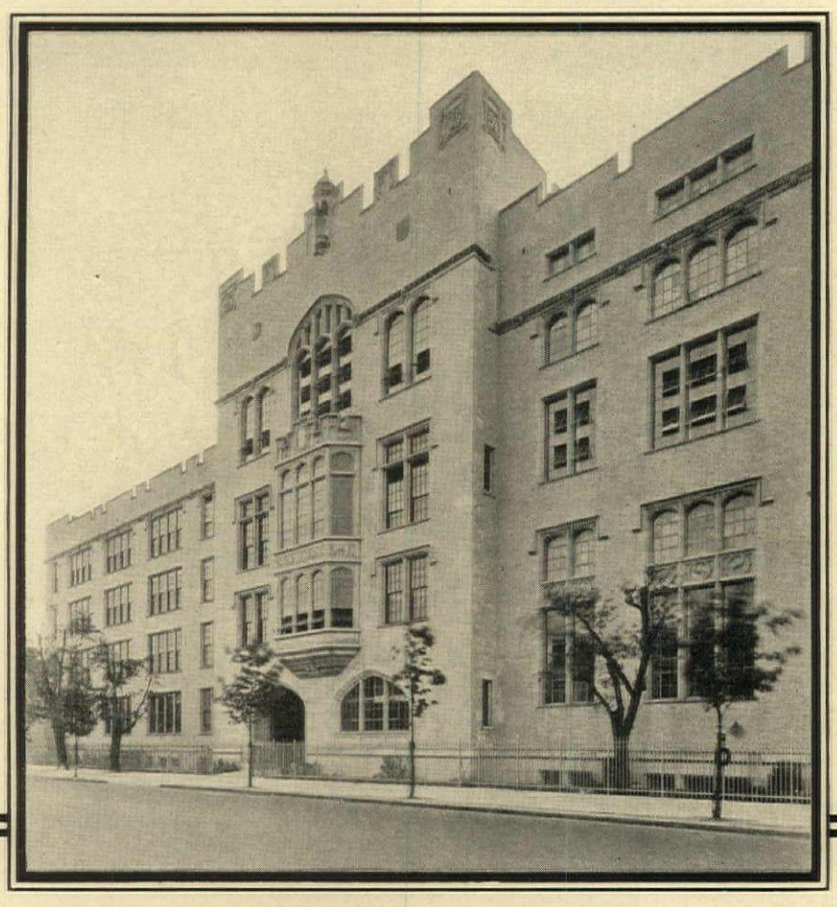
LEXINGTON AVE. & 44TH ST. NEW YORK

IT wouldn't take the average Detroiter long to point out a bad flaw in the Jamison Door advertisement shown above, which ran last month. In fact, it would be about as easy to make him believe that Detroit *isn't* the *fourth* city as it would be to convince him that the Detroit Refrigerating Company is in the *second*. The mistake is so obvious that we completely overlooked it.

But although frankly regretting the geography of the advertisement in question, we need not pass Chicago lightly. The list of Jamison customers there is both long and impressive. In addition to Armour and Company, Swift and Company, Hoffman Cheese Company, Montgomery Ward and Company, Hotel Del Prado, Grennan Cake Corporation, Wilson and Company, and Mary Gates Dawes Hospital, we might list many others.

Whether in the *fourth* city, the *second*, the *first* or the *fiftieth*, where you find a need for cooler doors, you are quite apt to find Jamisons on the job and in favor.

Do your files contain the Jamison Catalog? It has detail specifications which you will find helpful when planning a cold storage installation. We'd like to send you a copy.



ERASMUS HALL
High School (New addition)
Brooklyn, N. Y.

protected by Genasco Built-up Roofing Materials.

Genasco Asphalt Mastic Flooring used on stairs, stair-landings and fire tower exits.

Genasco Protected!

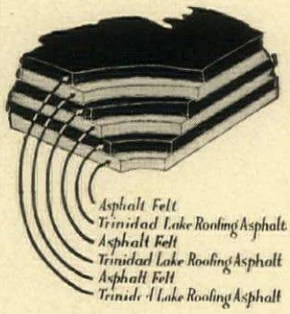
The splendid new addition to the Erasmus Hall High School, Brooklyn, N. Y., is only one of the many buildings—public and private—in Greater New York that are now protected by Genasco Built-up roofing materials.

Leading architects and builders all over the United States now specify Genasco Standard Trinidad Lake Roofing Asphalt and Genasco Standard Felt for buildings where long life, low maintenance cost and maximum resistance against corrosion by industrial fumes are demanded in a roof.

Genasco Standard Trinidad Lake Roofing Asphalt is a nature-made waterproofing material. It is reinforced with Genasco Standard all-rag felt—selected not only for its great tensile strength but for its power to absorb and hold the waterproofing saturant.

Complete specifications for applying Genasco Standard Trinidad Built-up Roofing furnished free to architects and builders.

Cross-sectional view of a Genasco Standard Trinidad Built-up Roof, showing method of construction.

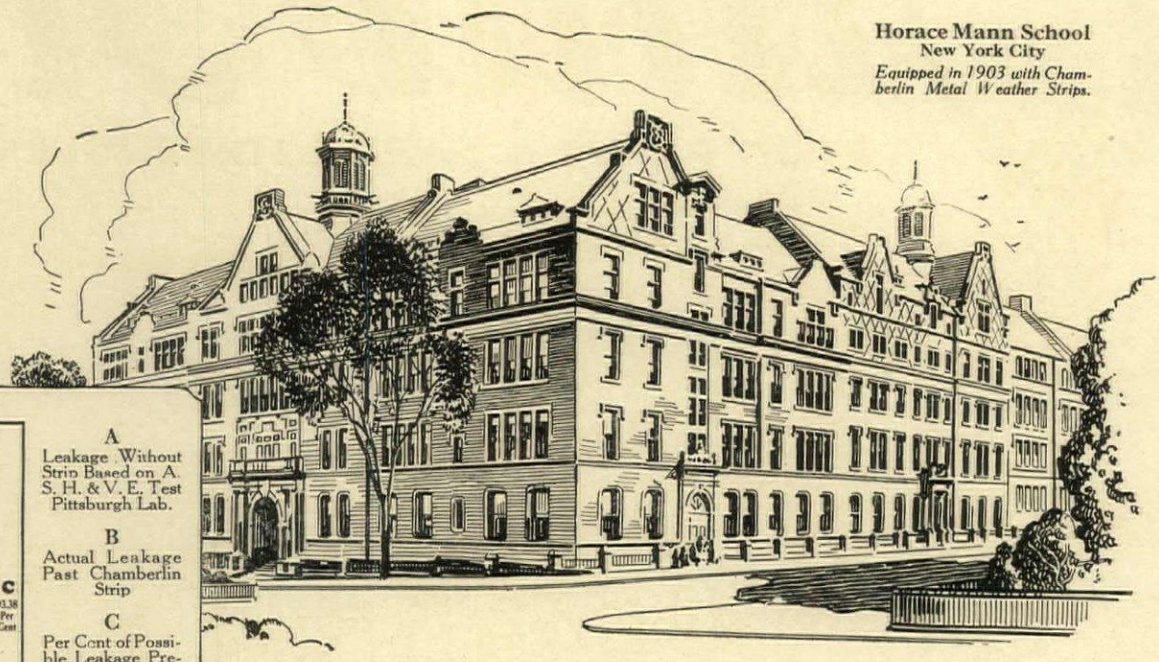


The Barber Asphalt Company
PHILADELPHIA

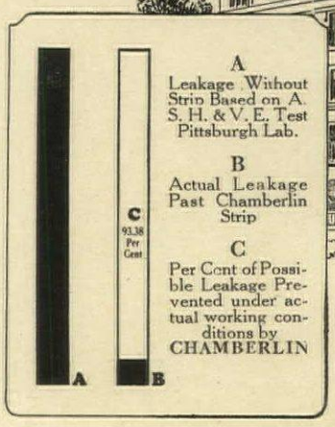
New York Chicago Pittsburgh St. Louis Kansas City San Francisco

Genasco
STANDARD TRINIDAD Built-up Roofing

Chamberlin Strip in Use 22 Years Prevents 93.38% In-leakage of Air



Horace Mann School
New York City
Equipped in 1903 with Chamberlin Metal Weather Strips.



Time Test Gives True Measure of Weather Strip Value

How Chamberlin Tests are Made

Chamberlin installation tests are made by placing an air collection chamber over the entire inside of a window. Opposite doors and windows are opened to aggravate circulation. The in-leakage past the strip is measured with an anemometer. Windows are not specially prepared for test and are always on the windward side of a building. In-leakage always includes leakages through the frame and pulley holes.

Tests made April 11, 1925, of Chamberlin Weather Strips installed twenty-two years ago on the Horace Mann School, New York City again reveal the lifetime efficiency of Chamberlin design and installation.

Actual leakage through windows with 20.67 lineal feet of crack, was only 1.87 cu. feet per minute. 93.38% of possible in-leakage of air was effectually prevented by the Chamberlin strip.

Although a pioneer in the development of the tongue and groove design and of the corrugated strip, Chamberlin has always regarded *installation* as a factor equally important as design.

Because only Chamberlin experts perfectly trained to their work, are allowed to fit and install Chamberlin Weather Strip, we are able to guarantee every installation for the life of the building.

CHAMBERLIN METAL WEATHER STRIPS
SINCE 1893-THE STANDARD

We invite architects and builders to make use of our nation-wide sales and service organization

New Catalog Just Out — Send For It

This book of details and specifications has been pronounced the most complete of its kind ever issued. Mail coupon for copy.

CHAMBERLIN
METAL WEATHER STRIP CO., INC.
Detroit, Michigan

80 Sales and Service Branches Throughout the United States

Chamberlin Metal Weather Strip Co.
Detroit, Michigan

Please send free copy of your new Detail Book. Also copy of illustrated booklet to show my clients.

Name _____

Address _____

City _____ *State* _____

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Onliwon

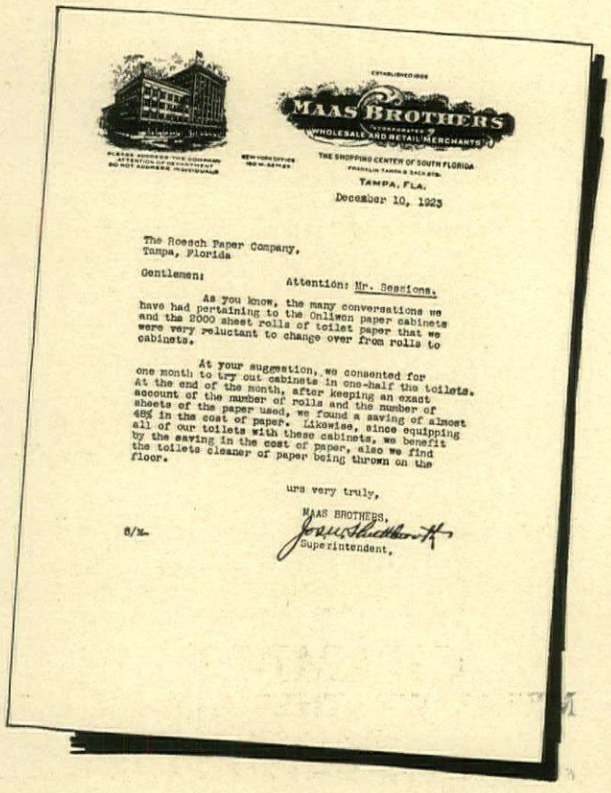
TOILET PAPER & PAPER TOWEL SERVICE

Maas Brothers
Largest Department Store in Tampa, Fla.

A Testimonial From Tampa

Read what the superintendent of Maas Brothers, Tampa's largest department store, wrote to our local distributor in regard to a test of the Onliwon toilet paper system in comparison with 2000 sheet rolls.

The fact that Onliwon not only showed "a saving of almost 48% in the cost of paper" but was responsible for cleaner, neater toilets should interest buyers for schools, hospitals, hotels, manufacturing plants, office buildings or other types of buildings in which large numbers of people use the public toilets.



MAAS BROTHERS
WHOLESALE AND RETAIL MERCHANTS
THE SHOPPING CENTER OF SOUTH FLORIDA
TAMPA, FLA.

December 10, 1923

The Roesch Paper Company,
Tampa, Florida

Gentlemen: Attention: Mr. Sessions.

As you know, the many conversations we have had pertaining to the Onliwon paper cabinets and the 2000 sheet rolls of toilet paper that we were very reluctant to change over from rolls to cabinets.

At your suggestion, we consented for one month to try out cabinets in one-half the toilets. At the end of the month, after keeping an exact account of the number of rolls and the number of sheets of the paper used, we found a saving of almost 48% in the cost of paper. Likewise, since equipping all of our toilets with these cabinets, we benefit by the saving in the cost of paper, also we find the toilets cleaner of paper being thrown on the floor.

urs very truly,

MAAS BROTHERS,

B/M. Superintendent.

A.P.W. PAPER CO.
ALBANY N.Y.

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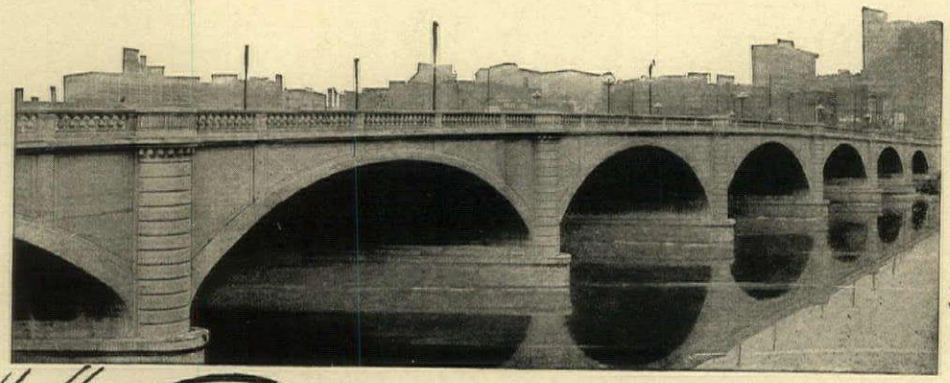


Broad Street Bridge
Columbus, Ohio.

from Bridges to Theatre Walls

HERE is a story worthy of study by Architects, Contractors and Builders.

Both on outside surfaces, where hardy, weather resisting qualities are needed, or on interiors where delicate and artistic results are desired, results are demonstrating the surprising adaptability of

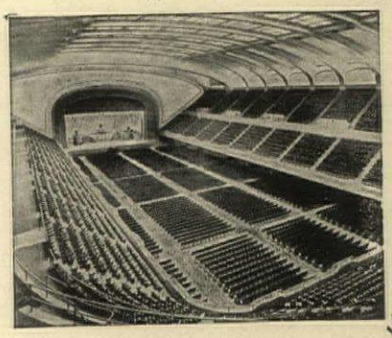
OHIO WHITE FINISHING LIME "it spreads so easy"

Interior Work

Because of its peculiar chemical content, OHIO WHITE FINISHING LIME is unusually hard-setting, giving a permanent, smooth, white wall surprisingly free from checking and blistering. And the porosity of the wall enhances its acoustical properties, while the peculiar natural composition of the Lime is responsible for its metal-preserving and fire-resisting qualities.

Exterior Work

The unusual "fatness" and plasticity of OHIO WHITE FINISH lubricates the concrete mixture, and makes mixing and pouring much easier. Also, the increased density of the mixture renders it water tight, practically eliminating any possibility of cracking or chipping. It gives to any job thus treated a clean, hard, smooth finish, especially around reinforcing where it is needed most.



Arena, Cleveland
City Auditorium.

An Ever-Ready, Every Purpose Lime

No matter for what purpose,—from the most luxurious theatre, hotel or office building to inexpensive cottage or majestic bridge—OHIO WHITE FINISHING LIME is ready to fulfill the unexpected,—to do the seemingly "impossible."

***An interesting booklet entitled "The Tale of the Clam" will absorb you with its remarkable story of hitherto unknown facts about Lime. Write for your copy*—IT'S FREE.**

SEE OUR CATALOGUE IN SWEET'S

The Ohio Hydrate & Supply Co.

WOODVILLE, OHIO

"The Lime Center of the World"

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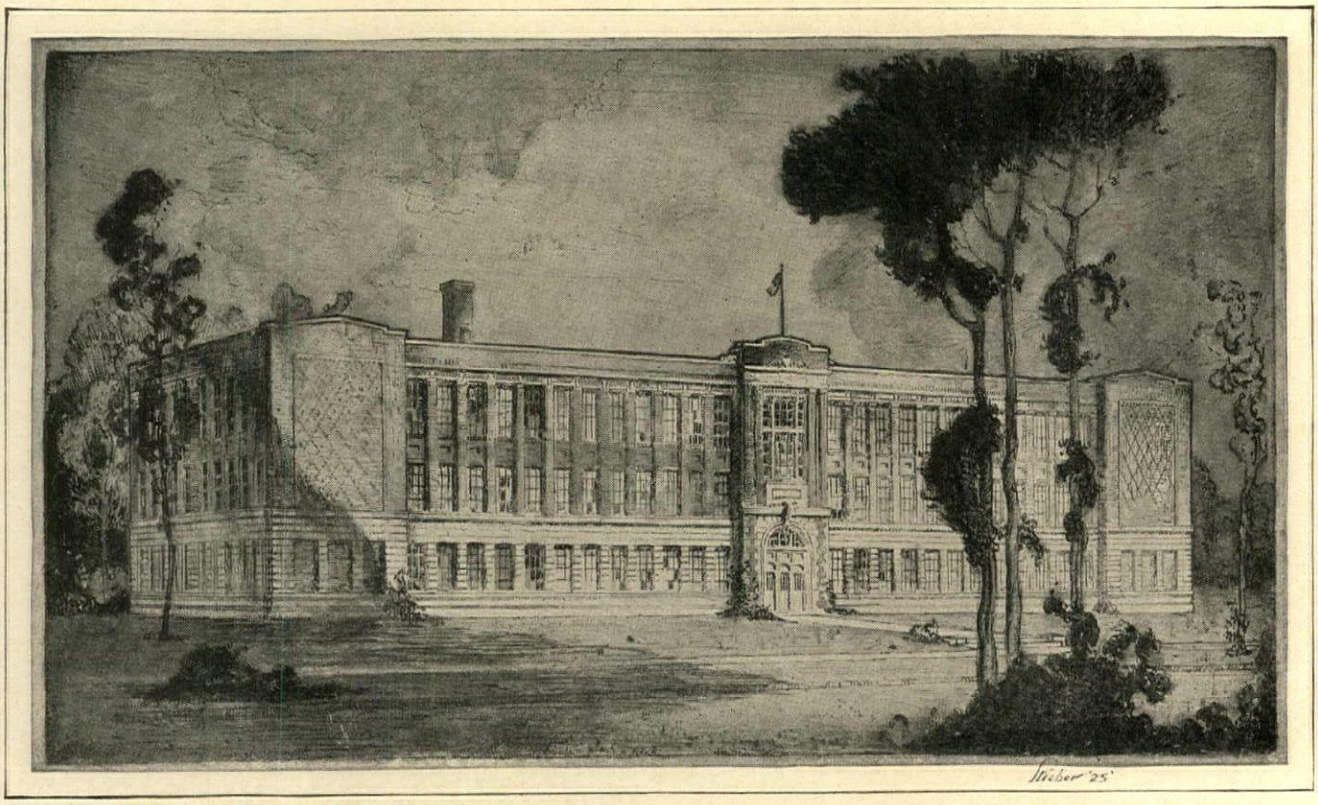
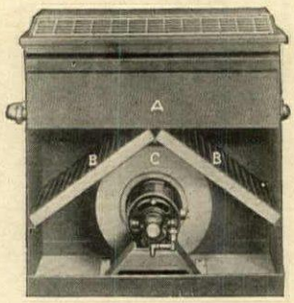


CONSOLIDATED SCHOOL, TIPTON, IOWA, UNIVENT EQUIPPED. THOMAS, McLENNON & THOMAS, DES MOINES, IOWA, *Architects*
H. W. TREASE, DES MOINES, IOWA, *Engineer*

Raising the Standard



Open view of UNIVENT *illustrating*

A.—Copper radiator without a single joint, absolutely leak-proof.

B.—Air filter easily removable for cleaning.

C.—Cone type fan specially insulated for quiet operation.

UNIVENT (TRADE MARK)
Ventilation

Example is more potent than precept.

Treatises on Beauty will not inspire appreciation of beauty as will a noble building. Academic discussion of light, sanitation and ventilation does not convert as does its actual realization.

It is therefore the American Architect whom we have to thank for our higher standards of living.

He is responsible for school buildings whose beauty is a constant inspiration to a formative generation. It is his idea on light, sanitation and ventilation realized, that are building this generation into men and women stronger mentally, physically and morally.

Univent ventilation owes its perfection to the Architect's insistence. Easily adaptable to any architectural plan—flexible in operation—it brings fresh air from outdoors to each room, independently of other rooms. It warms this air, cleans it when necessary and gently diffuses it with an agreeable air motion, yet without draft.

Our architect's edition of Univent Ventilation is free for the asking. It shows why better schools, both new and old, are installing the Univent.

THE HERMAN NELSON CORPORATION *Moline, Ill.*

1952 Third Avenue

Branch Sales and Service Stations

BELFAST, ME.	SCRANTON	TOLEDO	MILWAUKEE	EMPORIA	SPOKANE
BOSTON	PITTSBURG	INDIANAPOLIS	MINNEAPOLIS	OMAHA	PORTLAND
NEW YORK CITY	GRAND RAPIDS	DES MOINES	ST. LOUIS	KANSAS CITY	SEATTLE
SYRACUSE	CLEVELAND	CHICAGO		DENVER	TORONTO
PHILADELPHIA	COLUMBUS			SALT LAKE CITY	VANCOUVER

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H. L. Stevens & Co., *Architect*

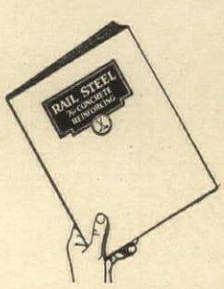
Rail Steel in Buffalo

THE PARKE APARTMENTS
Buffalo, N. Y.

This exclusive apartment, located opposite Gates Circle, reinforced throughout with 400 Tons Rail Steel Bars, was constructed by the Thirty-Three Gates Circle Corp. with the intention of offering the different suites of rooms for sale outright and not for lease.

Further expansion and consideration of the quality and strength of Rail Steel Reinforcing Bars are recorded in the adoption of The American Society for Testing Materials Specification A-16-14 in the new Building Code of the city of Buffalo, N. Y.

Specify your reinforcing steel to meet A. S. T. M. Specifications A-16-14 or equal.



Send for this Valuable Book—FREE

RAIL STEEL PRODUCTS ASSOCIATION

(Reinforcing Bar Division)

BUFFALO STEEL CO. Tonawanda, N. Y.
CALUMET STEEL CO. Chicago, Ill.
LACLEDE STEEL CO. St. Louis, Mo.
BURLINGTON STEEL CO. Hamilton, Can.
FRANKLIN STEEL WORKS Franklin, Pa.
THE POLLAK STEEL CO. Cincinnati, O.

RAIL STEEL *for* REINFORCING

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1925 Specification Manual

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Specifications of Manufacturers

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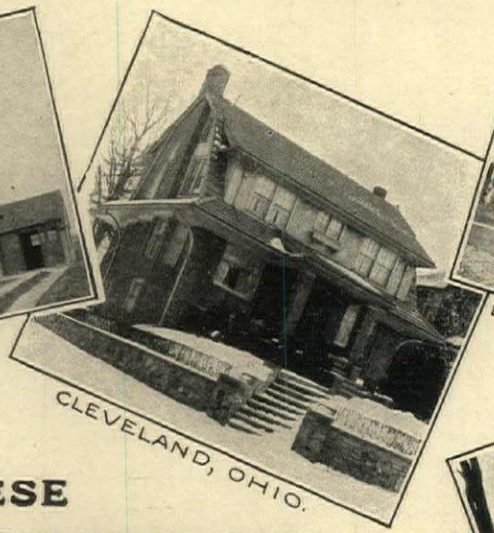
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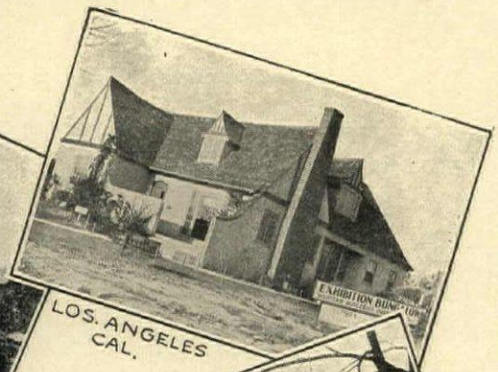
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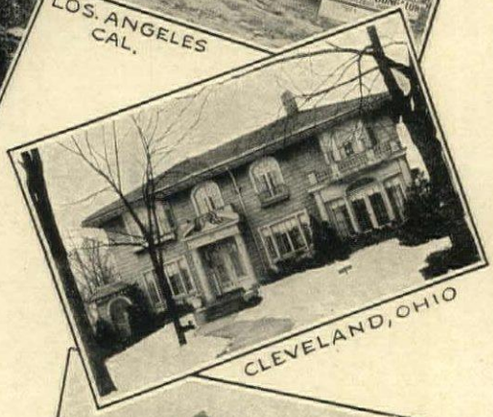
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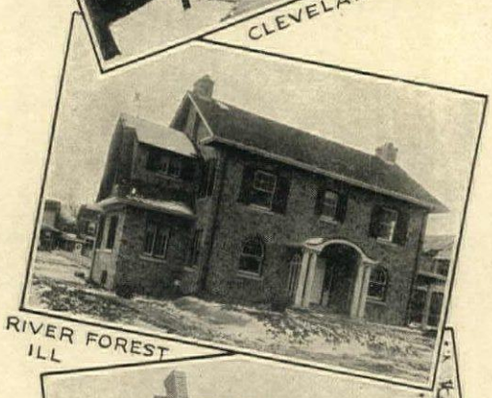
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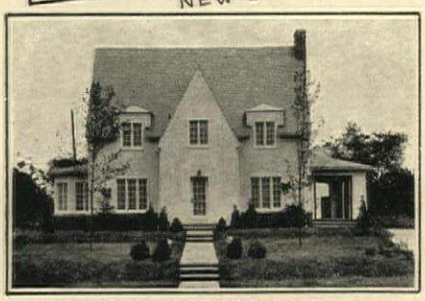
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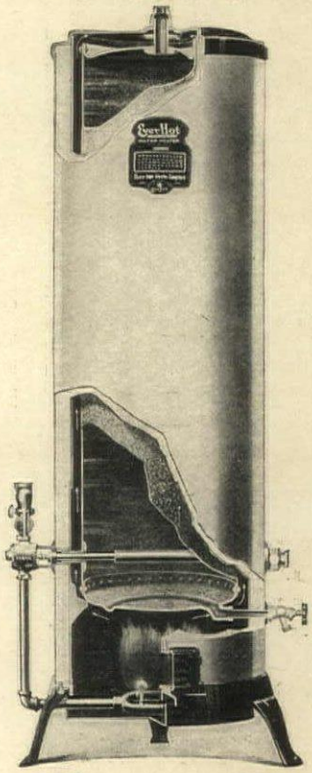

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Advertisers listed in this index but without page designation will usually be found represented in the preceding or succeeding issue

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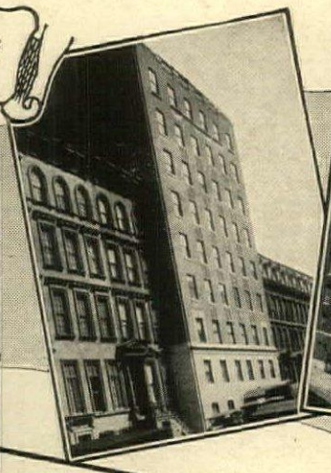

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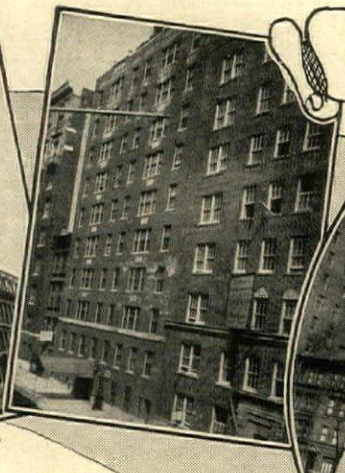

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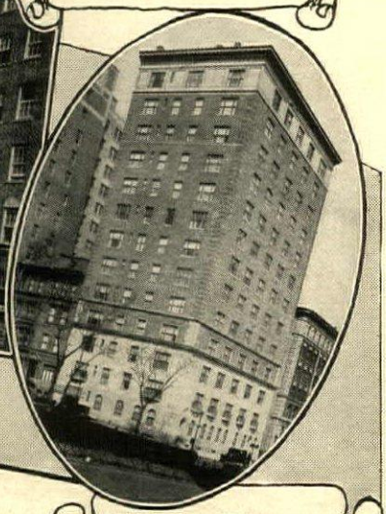

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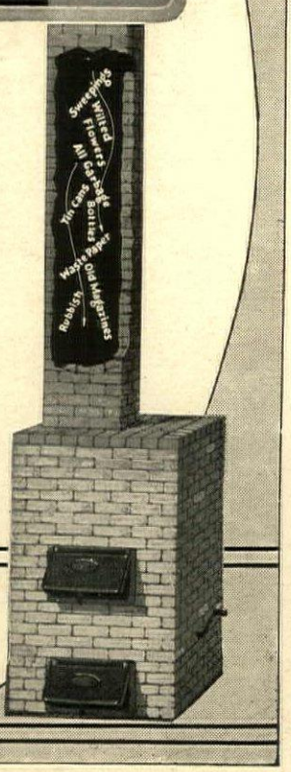

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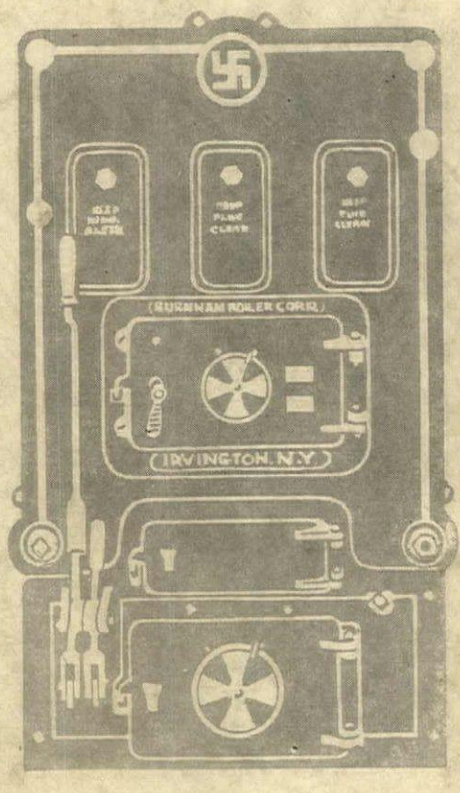

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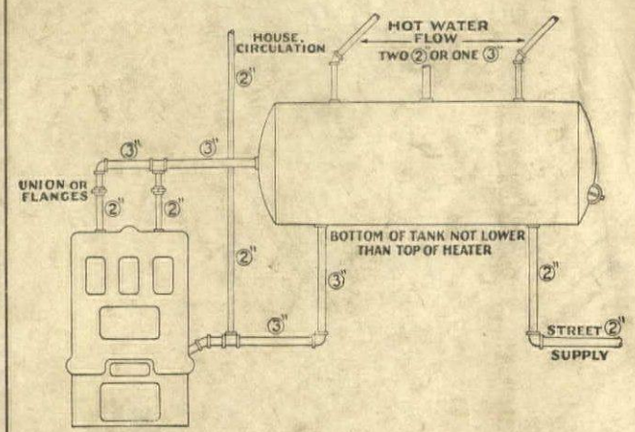

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