

THE AMERICAN ARCHITECT

VOL. CXXVIII

WEDNESDAY, SEPTEMBER 9, 1925

NUMBER 2480

LITHOGRAPHIC PROCESSES IN ARCHITECTURAL ILLUSTRATION

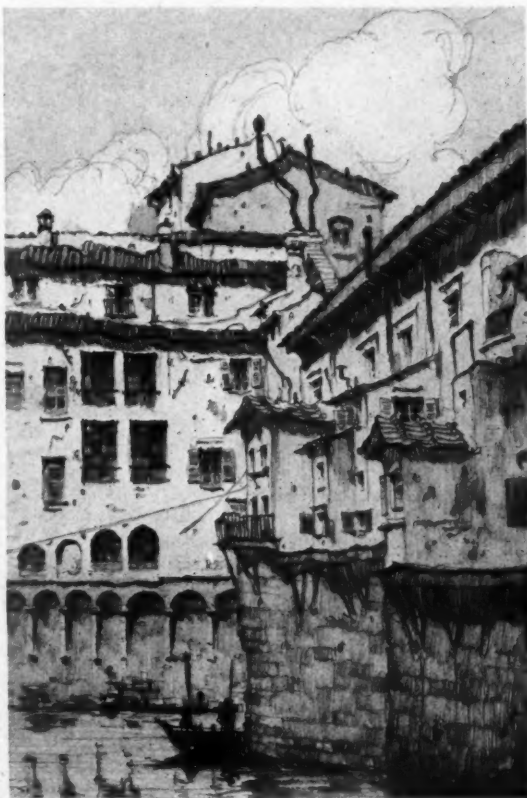
BY SAMUEL CHAMBERLAIN

Illustrated with Lithographs by the Author

SHEER draftsmanship probably has a better expression in lithography than in any other reproductive medium. To verify this, it is only necessary to regard the work of the English lithographers who flourished in the middle of the last century. What a magnificent clique of draftsmen they were! Everyone has his favorite among them. Boys is my particular hero; I could feast on his enchanted plates from now till doomsday. But they were almost equal in their genius for architectural expression. A glance at the work of Boys or of Prout is more eloquent of the splendid architectural possibilities of lithography than many pages of these pale paragraphs which follow.

It is a medium peculiarly fitted to the architect. Very little experience is required of him before he obtains most encouraging results. Some crayons, a stone or a sheet of transfer paper, a razor blade and there you are, ready to begin. The anguish of the mechanical side is left to the printer. A lithographic crayon can be subjected to practically all of the manipulations of a lead pencil. The harder crayons can be sharpened to give a fine, wiry line; the softer ones can produce a juicy blackness not even found in charcoal.

Perfectly good pen and inks can be put on the



THE PONTE VECCHIO, FLORENCE

stone, either as strong in blacks as a wood cut or as delicate as a competition sketch for a small house. Incidentally, those who are interested in the advance of draftsmanship in this country must derive a vast pleasure from the beautiful pen and ink renderings which pour into the competitions held by the building material organizations. Mastery of this medium is not confined to the English alone.

The finest quality of lithographic impression is undoubtedly obtained by drawing directly on the smooth, creamy surface of the stone. In no other way can the full richness, the wide possibilities of lithography be fully utilized. In this respect, few artists have obtained as much from

stone as Bolton Brown, long a member of the Woodstock art colony. Mr. Brown, so I am told, has solved the mysteries of lithography unaided, after years of experiment. He has perfected his own method of treating the stone, his own way of printing, and even makes his own crayons. Some of the grains that he obtains are so soft and delicate and beautifully modelled that they make most of the contemporaneous European lithographs look as coarse as circus posters in comparison. He gives an expressiveness to foliage such as few of the old masters of the medium have ex-

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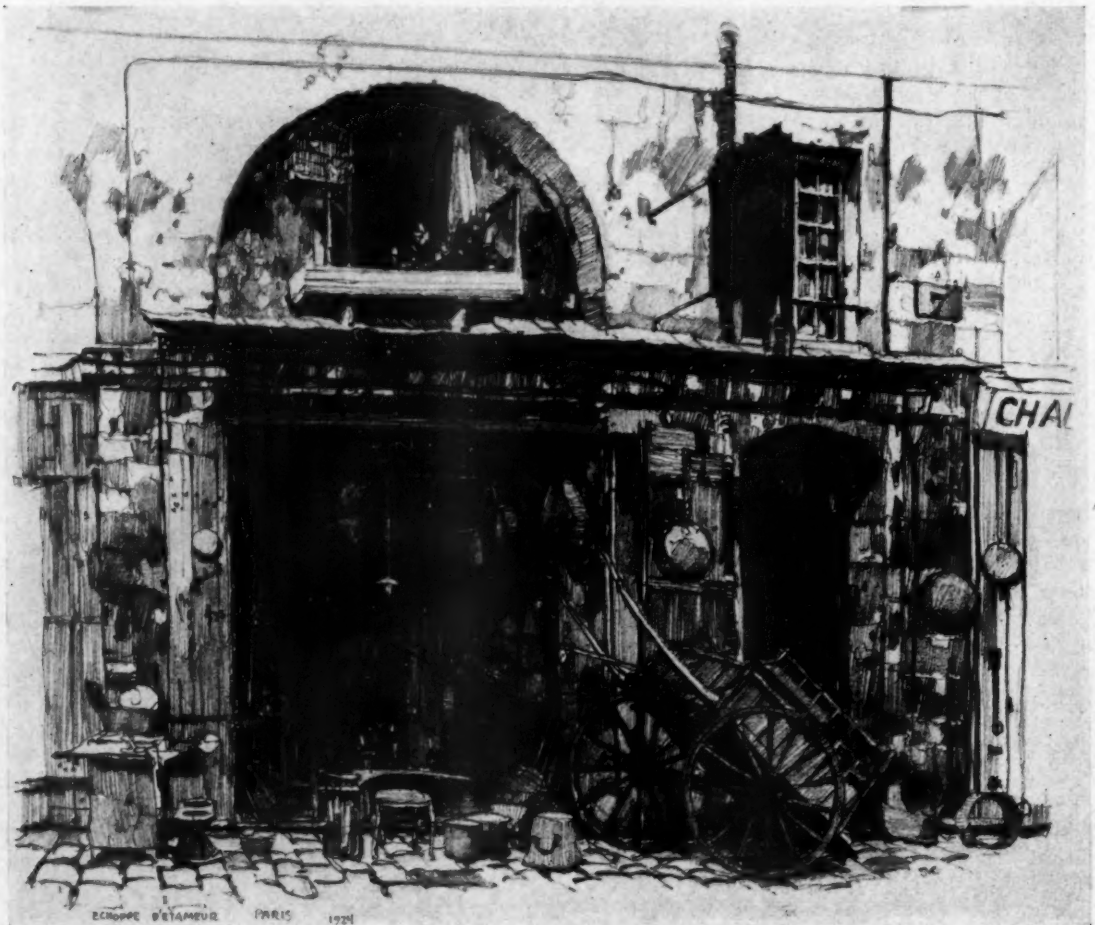
celled. Many are those who had come to consider such modelling as almost a lost art. I am informed that the late George Bellows, surely as fine a lithographer as we can boast, was completely won over to Mr. Brown's methods. As a consequence, the astonishing strength and daring and skill apparent in a Bellows lithograph are hardly secondary to the superb quality of the print. One feels that not a particle of the artist's forceful draftsmanship has been weakened. Lithography was surely the medium for the cavern-



THE PLAZA, BAZA, SPAIN

ous blacks and the brilliant contrasts of which Bellows was so fond.

Working on stone entails the necessity of drawing backwards of course, and makes it inconvenient to work outside of the studio. For those who prefer outdoor sketching it is obviously a far simpler affair to draw on transfer paper. In the first place, one is not required to draw in reverse, doing away with much mental calisthenics and confusion, as well as the mirror on the open air easel, into which some artists are prone to peer intently like crys-



TINSMITH'S SHOP, PARIS

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tal gazers. Also if working on location, as say the movie directors, one becomes impressed with the fact that a sheet of transfer paper is somewhat more transportable than a two-hundred pound stone. Courageous lithographers there are, including the above mentioned Mr. Brown, who strike forth for the morning's work with a well laden wheelbarrow, a grim look and a box of lunch, but to duplicate this zeal in a metropolitan district is really asking too much. A street-corner sketcher gets gaped at as much as a bearded lady as it is.

There are several types of transfer paper, each giving a slightly different quality of line when put on the stone. Many prefer the Japanese paper, but there is a new Hungarian stock which admirably takes the crayon in almost the identical manner of stone. It is difficult for anyone outside the lithographer's family circle to distinguish between a print which originates on this Hungarian stock and one which comes from a drawing made directly on the stone.



DIJON

Any number of fine papers are suitable for lithographic prints. They can be more fragile, more varied in texture than the papers used in printing etchings. A glueless Japan rice paper makes a splendid proof, as does a sheet of gossamer thinness. Old Italian and French papers, provided they are free from too much glue, make exquisite prints. Colored inks are sometimes used, a sepia being often more sympathetic to certain subjects than black.

The real physical energy in all this business is expended by the printer when he goes about the strenuous business of transferring the drawing to the stone and later laboriously pulling the proofs. The first process calls for no little skill and patience, as well as the application of acid, talcum powder, resin, gum arabic, buckets of water and endless elbow grease. At least, this is the way the Frenchmen do it. The Paris printers are, as far as I know them, quaint, lovable old characters, contentedly puttering about with antiquated sliding pressure presses of ex-



PORTE ST. MARTIN, PARIS

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actly the same type that once worked for Daumier and Gavarni. They are vastly in love with their "metier" and always hovering on the brink of bankruptcy due to the unstable financial habits of their artist clients. Photo-engraving has all but wiped out the considerable role that the lithographers used to play in Paris, and the few of the old school that still hold on do so mainly from love of their trade. There are commercial lithographers in all parts of the United States who would find the transferring and printing of a straight lithograph to be a relatively simple task, and in the largest cities there are printers capable of doing very fine work indeed.

I know of no way to gauge the ripple of enthusiasm for lithography which is said to be sweeping the country, but it assuredly seems to have more of a hold now than it did a few years ago. Several of our best known renderers have

taken it up seriously with excellent results. Albert Sterner, Joseph Pennell and several others demonstrated its possibilities in posters during the war, as Brangwyn and his associate did in England. Newspaper artists have discovered that a lithographic sketch reproduces well in newsprint; poster artists have made use of its effectiveness. Lithography offers even greater inducements to the architect. Where publicity for a building project is a desirable asset, the value of a forceful lithograph, printed in quantity and wisely displayed, is difficult to estimate. If our interest in drawing keeps pace with our architectural achievements, lithography should find a very definite niche in the affections of American architects. Perhaps a revival is on the way. Perhaps we will uncover work which rivals that of the fine old Englishmen of the eighteen fifties. You never know what may happen in this age.



DETAIL OF WINDOWS, UNIVERSITY OF SALAMANCA, SPAIN

AN ARCHITECT'S AUTO TOUR of FRANCE

BY OLOF Z. CERVIN, A. I. A.

IT is a short jump from England to France by the Dover-Calais route, not much more than one hour (but at that they charge \$40.00 for transporting the automobile for the simple and to them good reason they can get it—across the entire ocean it was hardly four times this).

But if the transition is quick the change is great—none of England's intimateness, none of its neat, populous villages, and none of its meandering roads and lanes along close cropped hedges and high walls. For France is an open country—one is shocked to see how sparsely it is settled. In certain places there is little to see of human habitation. And there is no legal or other speed limit on those straight old Roman roads, tree lined on both sides, where the flickering between the gaps is almost blinding. And not only the main roads but many minor and most private roads to the chateaux have one, sometimes two rows of trees on each side. The sight is a revelation of French patience and industry.

Of course, we must see St. Michel though it is a long way off by itself and the road over the uninteresting plains of Normandy and Brittany, where, however, lie interesting cities like Rouen and Caen, very much worth while to tourists.

Luckily it was near sunset when we reached the sea and later moonlight—a succession of impressions—the tide silently creeping up to our auto camp. The next morning we watched from the high ramparts the same ruthless tide sweeping in

and covering the immense sand wastes where autos had crossed a few hours earlier to the distant land. The shore is so nearly level the tide covers something like ten miles, and stories are told of hapless men caught in the water and quicksand, vainly praying to St. Michael on top of the Church spire where he is ever busy killing the dragon.

The deserted looking villages of France are a constant surprise. In many we saw no children, not even a chick or a dog and then, the villages looked so forlorn and run down, even dirty, it was clear that the war was hard on France. Involuntarily one wonders how she can ever pay her war debts which would be staggering for our own wealthy country. And the dwindling population—French statisticians look for twenty-five millions in another generation against the present forty. What a dispiriting national outlook!

However, it is not all war's work. Many of the houses and farm walls in northwestern France showed big cracks in what seemed like a crude concrete. But, unbelievable almost, it was a conglomerate of sand, gravel and clay reinforced with scantlings—really not much better as a structural material than adobe.

But these French knew how to build cathedrals. Few, if any, seemed in need of supports in their old age, standing quite erect and tall. Of course, we architects have been told how the English cathedrals are low and long and the French soar skyward, and I had tried to prepare our boys for this



A SQUARE IN A SMALL FRENCH CITY



A CHURCH SOUTH OF PARIS



A TOWER IN THE RIVIERA

THE AMERICAN ARCHITECT



PARIS, THE BUSY SEINE

by telling them they could not throw a ball and hit the ceiling of Beauvais. And yet what a sensation, the eye drawn ever up and up to the vaults that builders as skillful, as bold once reared to their own and God's glory. It is fascinating to imagine the effect if the whole cathedral had been completed, and not only the chancel and transepts, as it is at present.

(Why is St. Paul's in London so unlucky? Recently the papers were full of reports as to its possible collapse. It was pretty well propped up when we saw it and propping is not enough. Some say the dome must come down, piers and all to the very foundation, so new ones can be constructed and the entire structure rebuilt—twenty years of time and millions of money. Why not build a new and better cathedral perhaps as Wren had intended? But I am no Englishman, you see.)

You have heard it said that architecture expresses the personality of race. Perhaps it should, but does it? Now, the English are accused of being cold and formal and matter-of-fact, whereas the French—well, who does not think of them as warm, sympathetic, volatile? Then why is the English residence so homelike, inviting, cozy, mysterious and the French cold, often hard with a straight laced "allée" of soldier trees guarding its approach, as against the curving roadway to the English country house, only rarely to be seen, for it is so well clustered round by verdure. There is danger in generalizing—but perhaps someone will come along and prove that not only are my premises wrong, but the conclusions as well!!

How the French love sculpture! Our country could well afford to cancel a big part of the debt if they would only send

over a few shiploads to be distributed in place of trophy guns in our villages and cities. Here they have statuary in parks and squares, in side buildings and outside and on top, in niches and angles and corners, and nearly always good. On the front façade of Hotel de Ville in Paris there must be over a hundred figures. Since the armistice the sculptors have found exercise designing war monuments of great variety and these are strewn with great liberality over the entire country.

A curious reminder of war was found in an African encampment. These physically fine specimens were housed in concrete huts with barrel vault roofs covered with tile. To hear seemingly perfect French from dark lips (my family, which knows no French, can understand my lingo better than the French themselves) was disconcerting. Of course, the guard had to lead

me to the white commandant who readily gave his consent to my snapping a picture.

There is not much new building in France, but one is sometimes tempted to say, as the awkward boy of the dessert "there is enough of it such as it is." In the art of decoration they are masters. It would be captious to find fault with the Automobile Salon, the Aviation Exhibition and the Salon d'Automne, all different and all held in the Grand Palais in Paris. As decoration they may be considered at least near perfect.

And this brings us to Paris where we drove our own car just enough to find out it was too hard work in that old rapid moving city. It is difficult to realize that Paris is old, very old, for it has been so thoroughly rebuilt that it is in many aspects now quite new, though not modern in the American sense of bath tubs and other plumbing.



A HOUSING OPERATION IN FRANCE

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In these days of city planning interest Paris certainly stands out with its wonderful boulevards and many radiating centers. It is a peculiar combination of efficiency in the main thoroughfares, and the hit and miss streets of the old parts where these thoroughfares have been ruthlessly cut through. The old streets are never straight or of the same width for more than a block, if that much—in fact many are only a block long and as they run at all angles the plots of ground must be both a delight and a despair to the architect. There must be an enormous amount of total area given up to streets (not counting open places) with the result that buildings are forced up quite generally eight to nine stories, and some of these without elevators. The typical Paris elevator is of a type unknown to us; you ride up, but you walk down. These are automatic and quite "petite." By the way, there are supposed to be 3000 architects in Paris—the *Ecole des Beaux-Arts* turns them out pretty fast and others come in through the office gate.

Paris is now having an American invasion (official records give nearly 40,000 living here more or less permanently) and one result is the new American Hospital, possibly a forerunner of better hospitals in France, a type of building in which America surely excels. It is an ambitious and worthy structure quite complete in its appointments with a capacity of 125 beds designed by an American architect resident in Paris, in fact born there.

The new department stores are surely Parisian but they have their peculiarities. It seems a curious and double waste to spend money on big show windows and on elaborate displays and then arrange sidewalk sales counters daily in front of these windows under wide, continuous canopies,

and when night comes pull down steel shutters for protection against—well, who knows—for there is not much grand larceny in France. The very small stores, if they cannot afford steel, have wood shutters such as tradition has handed down from the days of Pompeii. Thus there is but little encouragement in Paris of our popular day and evening pastime of window shopping. Some of the newer stores are setting an example of night displays which will gain headway.

Again, the French love for curved lines is a hindrance to clear displays, owing to the many reflections. But they will have bent glass in spite of high insurance rates and high first cost. Even quite small fronts, less than 20 feet, are bent and bowed to break the monotony, for Paris architecture is undeniably monotonous, at least as a first impression.

Ambitious department stores feature grand staircases something after the Opera. And the French know how to design staircases both large and small. They are rarely straight, and American architects (who are just now keen about curved

stairs) can find many suggestions. A curious curved stairway in one hotel has the risers regularly diminishing from 7" at the bottom to 5 1/4" at the top—causing many a stumble.

One thing I have not seen before—exposed elevators in batteries passing each other in artistic art glass domed courts. These courts are liberally supplied with curved glass reflecting the thousands of electric lights. In another big store is a spiral package slide attached to each floor, like a big snake coiled ready to spring through the ceiling. It is highly decorated and colored.

Stepping into a vestibule of an art store the doors immediately slid apart. The invitation to enter seemed so spontaneous that it was impossible



A COLORED ENCAMPMENT IN FRANCE



LE PUY



A FARM YARD IN MIDDLE EASTERN FRANCE

THE AMERICAN ARCHITECT

to resist it and, once inside, the doors promptly closed. It was all done automatically; merely stepping on a balanced platform in the floor operated the doors. It was claimed to be the only one up to the present time installed in Paris.

But one should not linger too long in Paris. After Paris we drove Southeast to Grenoble and

form. Many villages cling affectionately to hill-sides or cover the hilltops entirely, but on nearer approach hardly a house looked as though an American would live in it, or could live in it. But appearances must be deceptive, for they say many Americans occupy these houses.

There are two roads to Italy and whichever you



across the French Alps to Italy. It would be unfair to France to let it be inferred that the poorly built villages such as those we saw in the northwest, are typical. In the mountainous re-

take you will not regret it. We went one way and came back the other so know whereof we speak. From Grenoble by way of the Lauteret pass in full view of the Meij glacier is something young or old will long cherish. If the Alps once deserved the Roman curses (those old warriors saw only horrors there) the modern winding, easy graded and perfect roads leave nothing but joy and contentment for him who has a good working motor.

Coming back we avoided the mountains by fol-



A PRIVATE ALLÉE IN FRANCE

gions, and indeed generally, the houses are substantial enough, perhaps too substantial, for now that feudalism has had its day more windows and wider streets would be a god-send, especially the latter in these days of the automobile. But what will the poor artists do? I know they would rather have the people retain their insanitary homes than lose those wonderful effects of light and shade and



ONE OF PARIS' BEAUTIFUL BRIDGES

THE AMERICAN ARCHITECT

lowing the coast, the Rivas, entirely different but no less wonderful.

The Riviera architecture is hardly up to its landscape opportunities. Some villas seem to vie with each other for bizarre effects. A curious example was a tower ornamented with immense wrought iron scrollwork climbing up to the top, much as though the original had been put under a strong magnifying glass.

After the Riviera came old Nimes, and Arles and then back to Paris—not along the Rhone valley as at first planned on account of heavy rains and washouts—but across the low and varied mountains of middle France.

No automobile tourist should miss the chateaux of the Loire, the one more interesting than the other, each with its charm of location, history or design and usually all three combined. Here they lie, treasure-trove, within easy reach, a dozen or so vying with each other for attention. Perhaps nowhere else can so much be found of this type. The entrance fees are ridiculous, five or ten cents and sometimes a mere gratuity to the guardian.

And there (or rather nearby as the automobile goes) lies Chartres. Be prepared for a surprise, as much as you will, the sublimity of the glass in its setting can never be imagined. One would come again and yet again, but for us it was at least one return, the next morning, as we had luckily made Chartres one of our stopovers.

Northwestern France, the war area, has recovered surprisingly. The villages look fresh and clean and the bright red roofs clustering on the hillside present charming spectacles. What energy to get all this done! Even Rheims has risen out of the debris—probably a better and healthier city than ever. Some people in France shall gain by the war for generations to come and live in sanitary new buildings that must be immeasurably healthier than the old.

The French love for curved lines is seen in a new department store, sketched (with my apologies to the architect) a month after our visit.

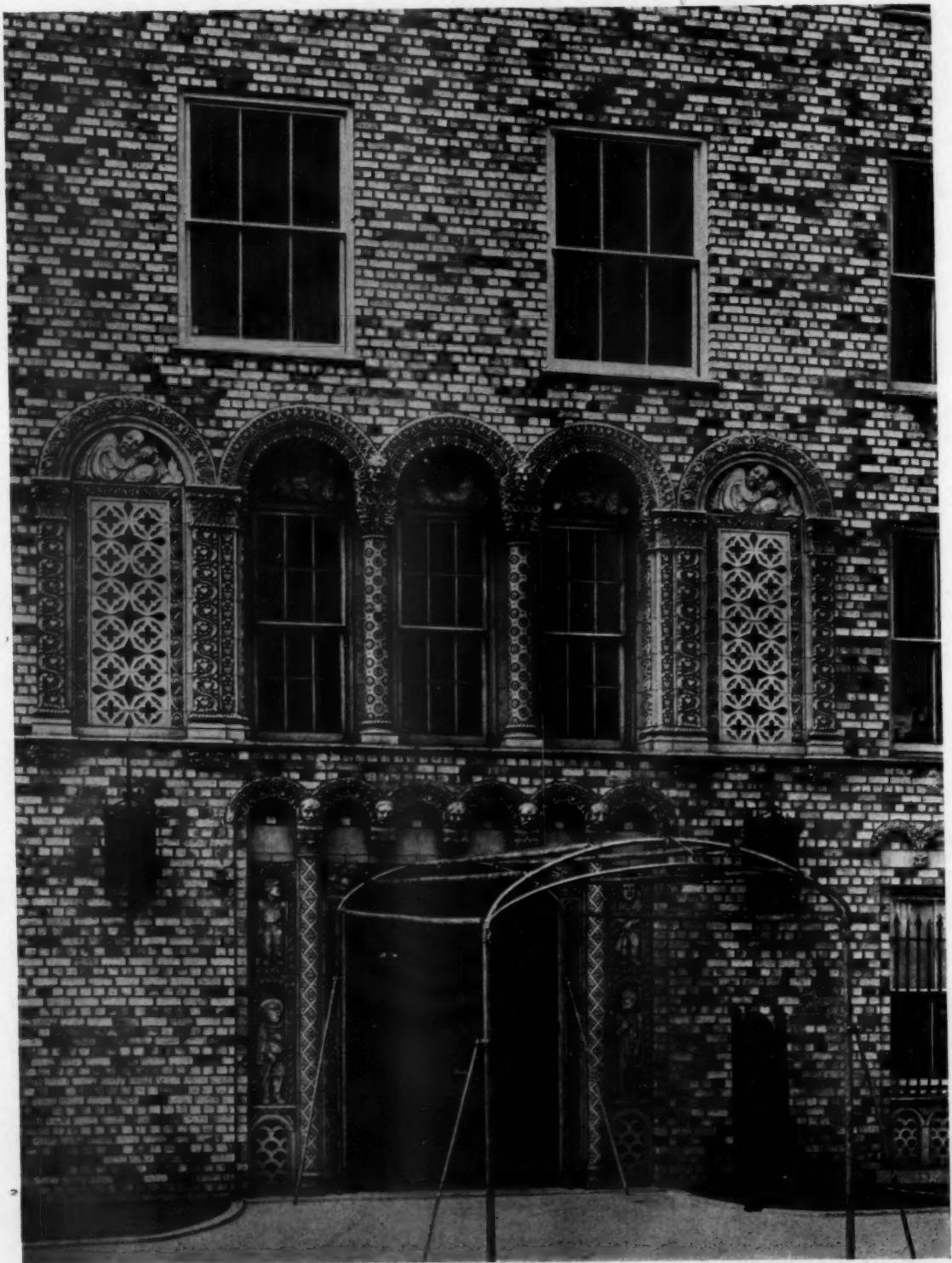
The cathedral has stood through it all, a memorial to French construction. It will look something like its old self when the glass now being installed is in place. Some have spoken of the poor and bizarre designs in the restored areas, but I did not find them so, in fact found them rather good and interesting and above the average.

But Verdun and neighborhood is different, still a picture of desolation after seven years of the healing balm of time. It is reported nothing can be done with much of the land but to turn it into forests. To drive for miles and miles and see no man's land of shell holes, barbed wire fences, trenches and forts is to live again faintly the days of the war.

But Verdun is near Belgium and soon we were across the border.



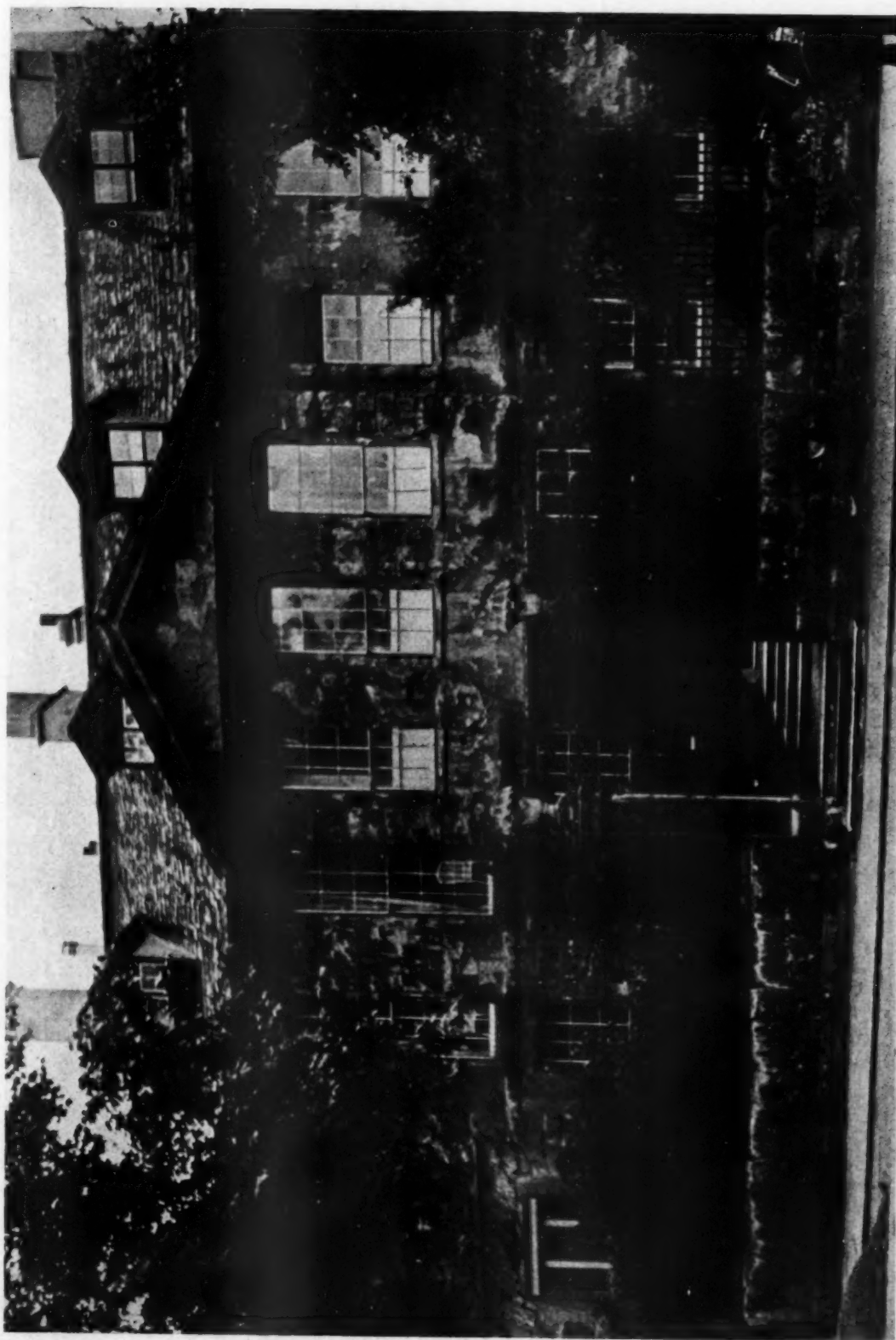
THE CATHEDRAL, LE PUY



AN APARTMENT HOUSE ON PARK AVENUE, NEW YORK

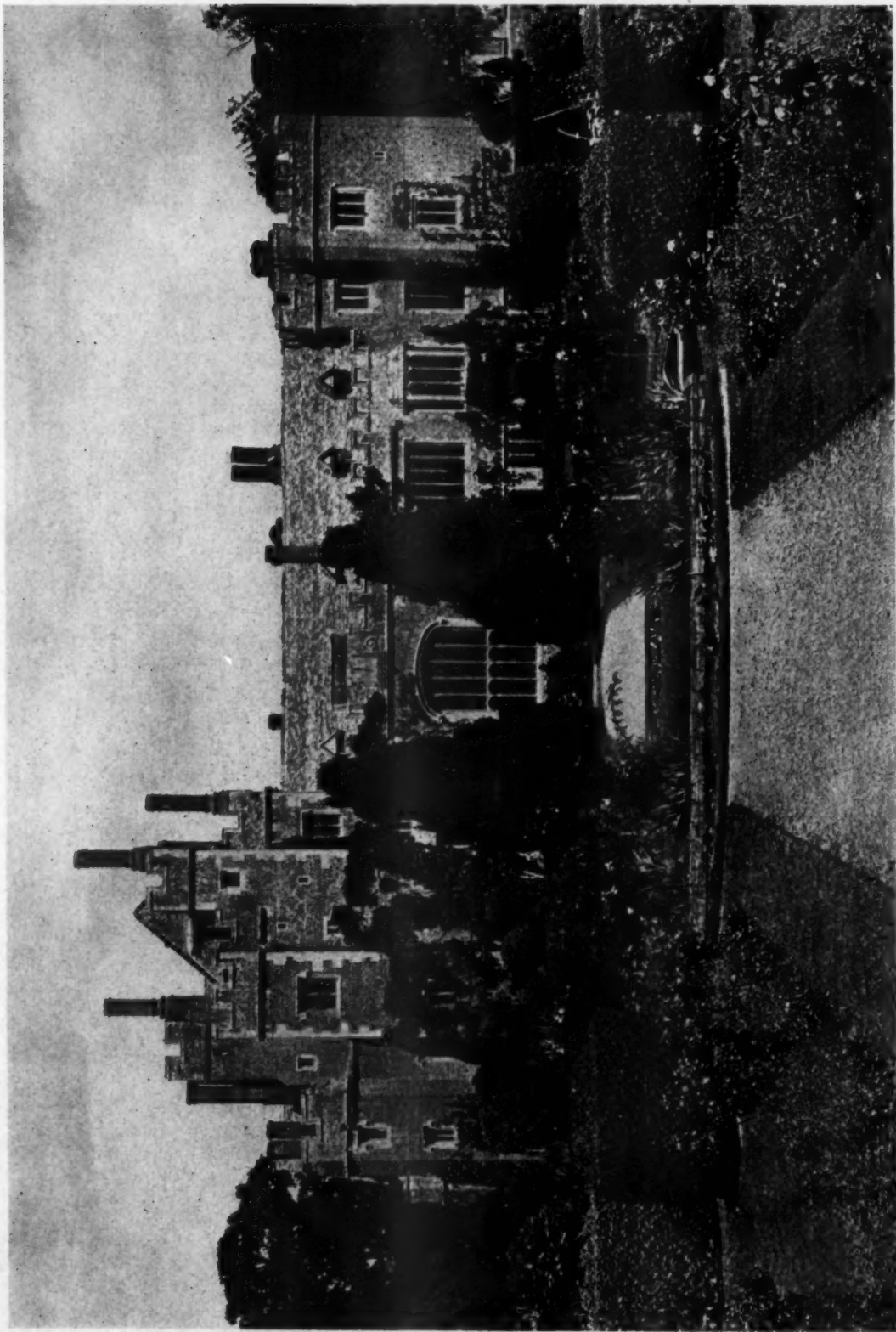
JOHN SLOAN, ARCHITECT

A good example of what may be attained when the artist architect uses materials in the same way the artist painter mixes his colors. The combination of rough buff and blue terra cotta with brick of different tones and textures has achieved a result that is in striking contrast to the monotonous effect common in the facades of buildings



"WORKING PHOTOGRAPHS"

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



COMPTON WYNNYATES MANOR HOUSE, WARWICKSHIRE, ENGLAND

"WORKING PHOTOGRAPHS"

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

EDITORIAL COMMENT

VIRTUALLY ALL BRANCHES of the lumber and wood-using industries, the building professions, trades and interests which participated in the National Lumber Standardization Conference, initiated by Secretary Hoover early in 1922, have endorsed and adopted the standardization program, known as the American Lumber Standards, which was evolved by the Conference, and of which grade marking is an important feature. In establishing standard and uniform sizes, widths, thicknesses and grades of lumber, many unnecessary sizes and patterns were eliminated, with the object of promoting convenience and economy in lumber manufacture, distribution and use, conserving the nation's forest resources and protecting producers, retailers and consumers against substitution and misrepresentation as to quality of material.

The Southern Pine Association recently put the standardization and grade marking program into effect, employing the standard sizes, revising their grading rules to conform to the American Lumber Standards and instituting the practice of branding the grades on their product. Under the Association's system, on the end of each piece of lumber and stick of timber, there is plainly marked at the mill, a number within a circle, to identify the producer, the insignia "SPA" of the Association, whose authoritative inspection service maintains the uniformity and integrity of the manufacturers' grades and a clear abbreviation of the correct grade of the piece. This form of branding, it is claimed, will enable anyone who buys lumber to know the grade of the material he pays for and receives.

This system of grade marking, we are advised, has been highly commended by architects, engineers, contractors, and others connected with the building industry throughout the country, as conferring benefits to the consuming public, the building professions and the lumber industry and trade, and as an aid to better and more economical construction.

In order to secure the co-operation of all interests in promoting a national movement for standardization and grade marking of lumber, it is proposed to hold in Chicago on 29th September a general meeting of the building interests of that city to carry forward as far as possible the recommendations as set forth by Secretary Hoover and the National Standardization Conference. The local committee that is at work completing the details of this meeting is representative of all the various interests concerned.

The enormous consumption of lumber in this country coupled with the enormous waste is a very serious economic question. We are facing a lum-

ber shortage eventually unless there is some concerted and well directed action. It is believed that much good will result from this meeting and it is satisfactory to learn that the architectural profession is so actively supporting the movement.

* * *

A LARGE AMOUNT of correspondence on the subject of cubic costs has recently been received. In discussing this matter with architects, we find that there is pressing need for a standardized method of figuring cubage, and further that there is also need for a more definitely established policy as to the figuring of cost of certain construction details where different materials are combined in a finished result. Of course, the group more seriously concerned with the latter phase will be the manufacturer, who will naturally object to a cost calculation as to his material at a figure that represents items of material and labor on other materials whose actual costs are largely in excess of his.

For example, a large manufacturer writes us a letter in which he strongly protests that in presenting cost on a stucco job, laid out in imitation of stone, the statement was made that the stone work cost \$6.00 *per foot* and the stucco about 90 cents a *square foot*. The misleading part of the above statement lies in the failure to specify what kind of foot of stone cost \$6.00. In figuring the cost of this wall, no account had been taken of the cost of bond stone, anchorage and other structural elements. Our correspondent claims that when properly computed, the cost of the stone facing is \$1.40 per square foot, or instead of about 650% more than the stucco used, but about 55% in excess.

Naturally a manufacturer would resent this method of figuring the final cost of his material, and we refer to his protest as illustrating the injustice that may occur in an incorrect method of calculating specific cost of materials in construction. Naturally such methods would lead to misunderstanding by architects as to the relative cost of certain finished work and influence selection in specification.

The matter of standardization of a method of figuring cubic contents was taken up with The American Institute of Architects, and as announced in an earlier issue, the appropriate committee now has this matter in hand and will shortly make known the results of its investigation and suggest a method that we believe will set this matter straight. This is a constructive and worth while effort.

IT IS UNDOUBTEDLY an economic loss in any country where there are large numbers of men engaged in pursuits for which they lack essential qualifications. It is, and perhaps always will be, difficult to lead young men into the profession or calling for which they are best qualified. We find today the farmer's son, who by education and experience is best fitted to follow the footsteps of his father, deserting the farm for the allurements of a "white collar" job in the city. Young men who have not the ability to "budget" their own resources are keen to take up banking, and others whose sketches are pronounced by admiring relatives as "very clever" seek the field of art and, as is well known, are to be found in the ranks of architectural students.

Just what may be done to counteract these mistaken impulses it is difficult to determine. The question of fitness to pursue a selected course of study has engaged the very careful consideration of educators for a long while. Every university in this country recognizes the importance of these conditions and by preliminary tests and carefully prepared entrance examinations, has tried to reach a solution.

And now we learn that in the various industries there is an effort to prevent the entrance of misfits and to weed out, as far as possible, those who are at present engaged in a vocation for which they have no aptitude.

It is claimed that this question of misfit does not consist alone of the poor judgment shown in selecting a course of study at college or university but as far as industry is concerned, it applies to the man just graduated with perhaps an A.B. degree who without regard to fitness picks an occupation and starts on the road if not to failure, at least to mediocrity and small earning power.

According to the almost unanimous opinion of industrial executives, as reported to the National Industrial Conference Board, the number of misfits among college trained men in industry

presents a problem of considerable proportions.

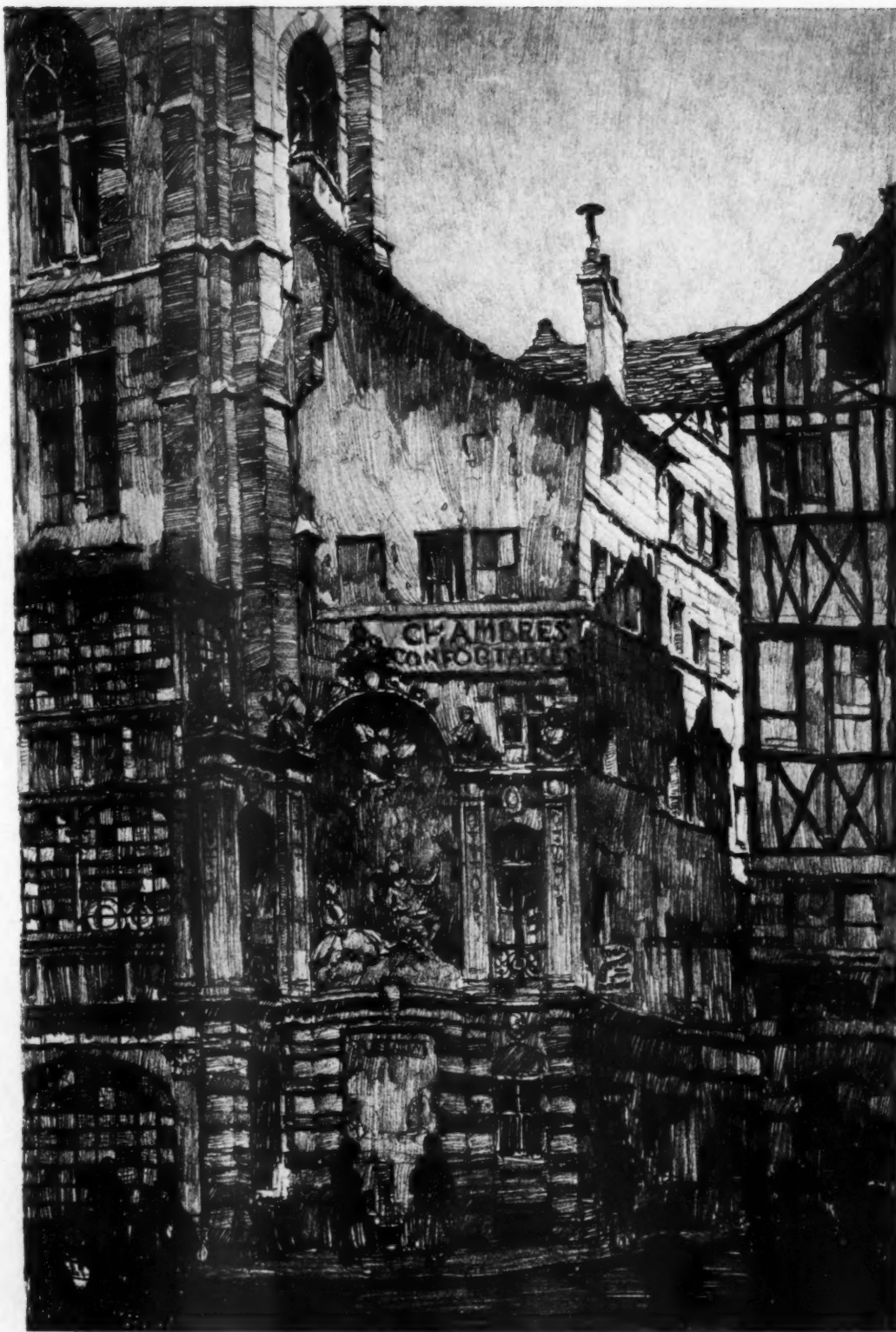
Undoubtedly the very beginning of this matter is in the home influence, the lack of proper parental direction. This combined with the supposed allurements of large incomes in certain classes of work leads the young man in the wrong direction and it is difficult to induce him to recede from a certain determination or to retrace his steps when he learns of his error. There's also the allurements of well paid positions, and when it is found that such places may only be held by competent men, there remains the disappointment of a thwarted ambition and the consequent economic loss of a man who, if he had made the proper choice, would have become a valuable citizen.

As stated in the beginning, the remedy is hard to find and the condition is not a new one. Certain influences are at work, notably those directed by the National Industrial Conference Board, to which reference has been made. The consensus of opinion as expressed by those approached by the Board in this matter, is that the real remedy is that every young man should familiarize himself as to the trade or industry he has selected, by working in it a prescribed period before spending time and money in preparing for it permanently. If after passing through this trial stage he still continues in the belief he wants to pursue the work as originally chosen, there are good reasons for the expectation that he will not become a misfit.

If the colleges would insist on such an experience, and industry follow a similar course, it would be obligatory to carry out the plan of a preliminary experience and secure from an employer an exact statement of the applicant's qualifications and aptitude.

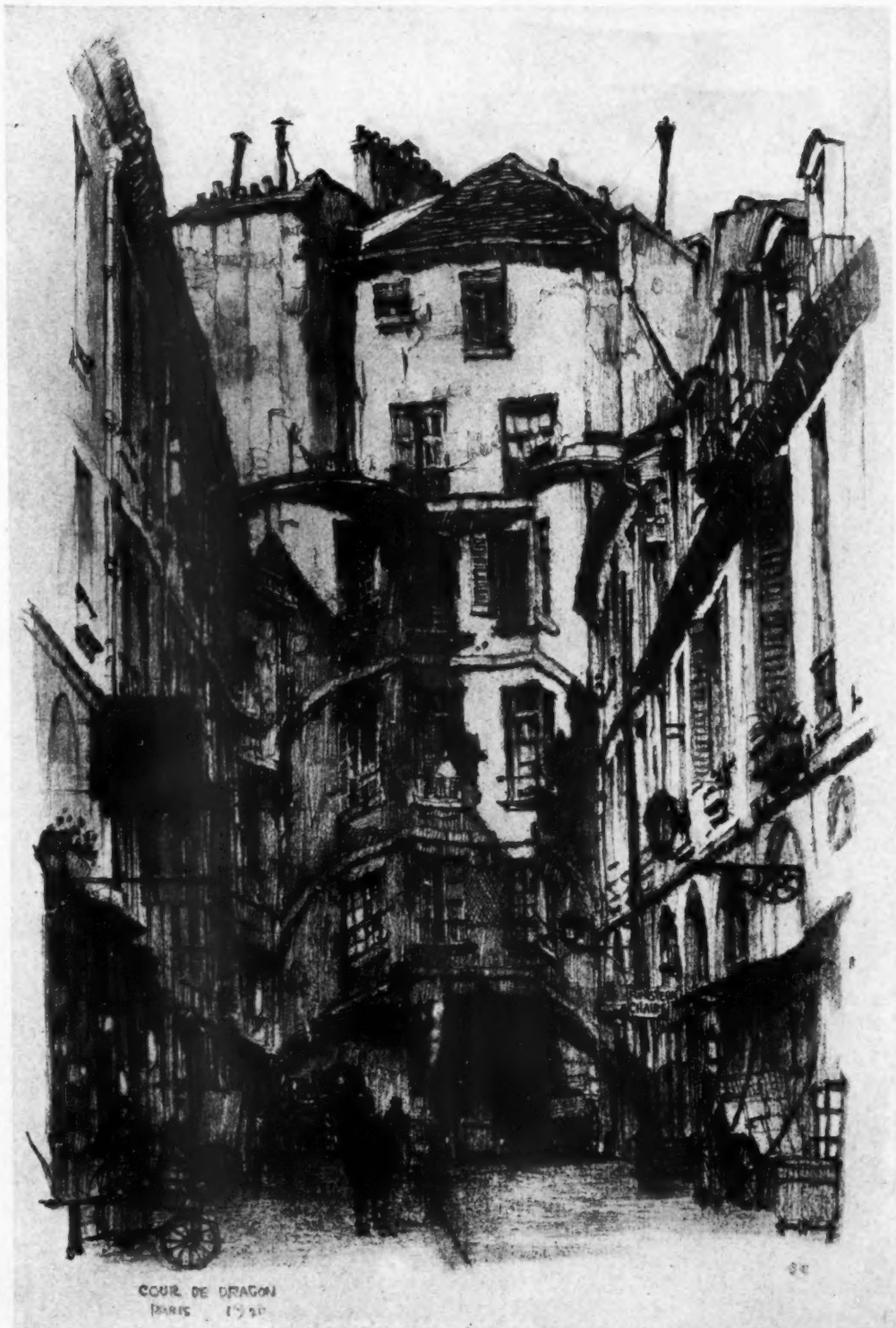
Best of all, we believe, would be the restoration of an apprenticeship system in the professions and trade industries. That would seem to be the logical and most efficient means of solving this difficult problem.





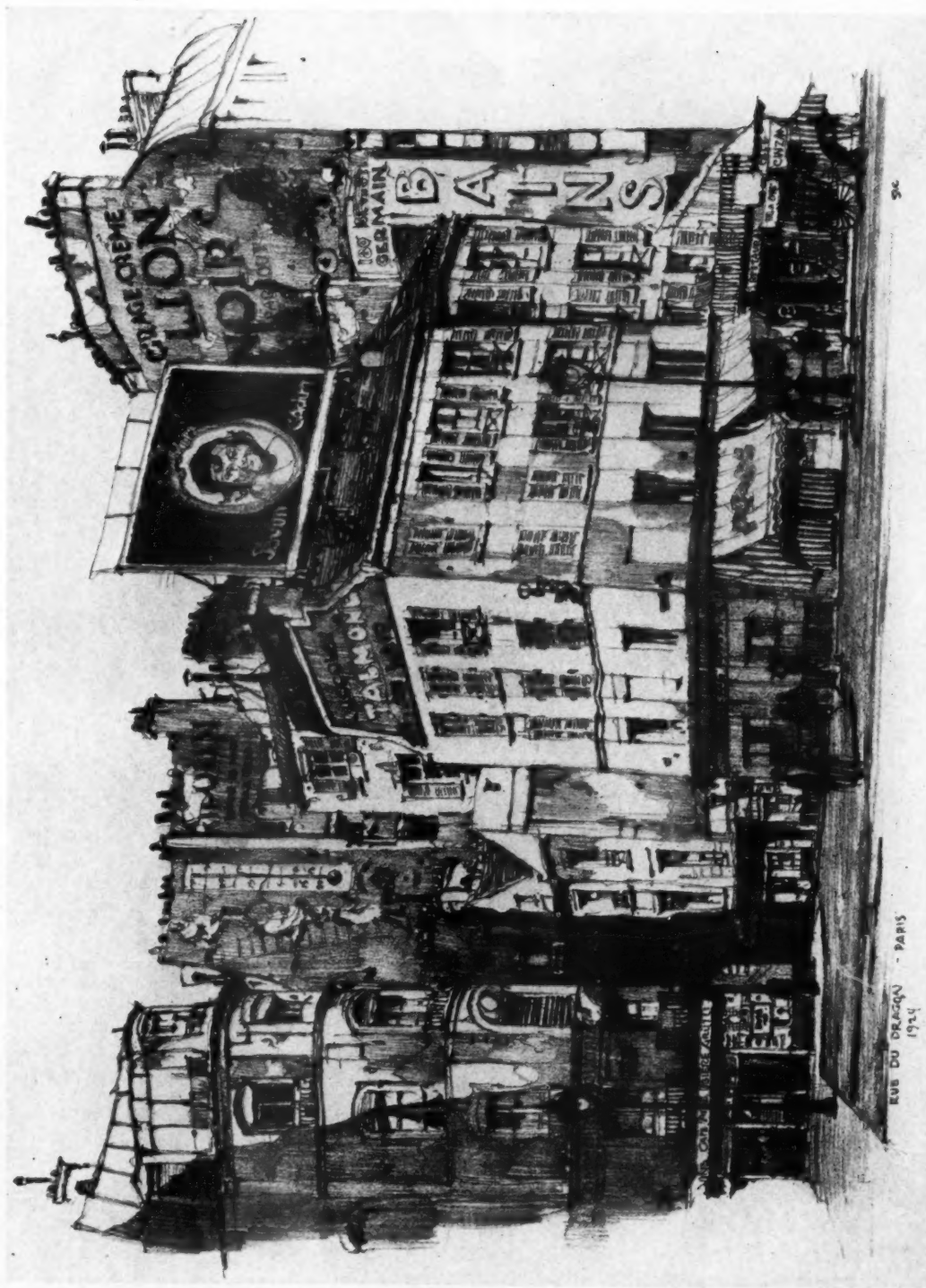
FONTAINE DE LA GROSSE HORLOGE, ROUEN
FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

THE AMERICAN ARCHITECT
September 9, 1925. Plate 236



COUR DE DRAGON, PARIS
FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

THE AMERICAN ARCHITECT
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RUE DU DRAGON, PARIS
FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

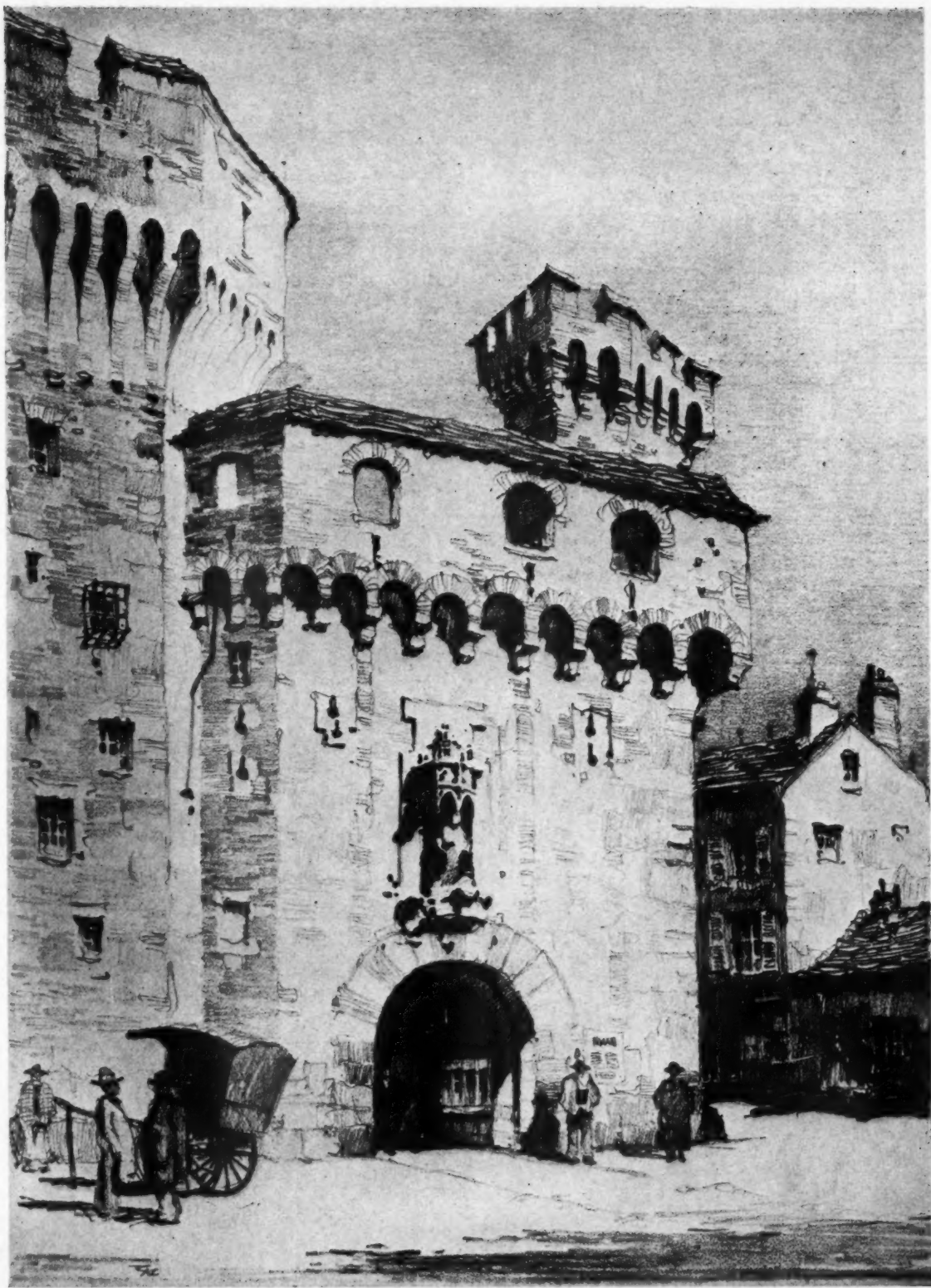
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RUE DE L'ABBAYE, PARIS

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

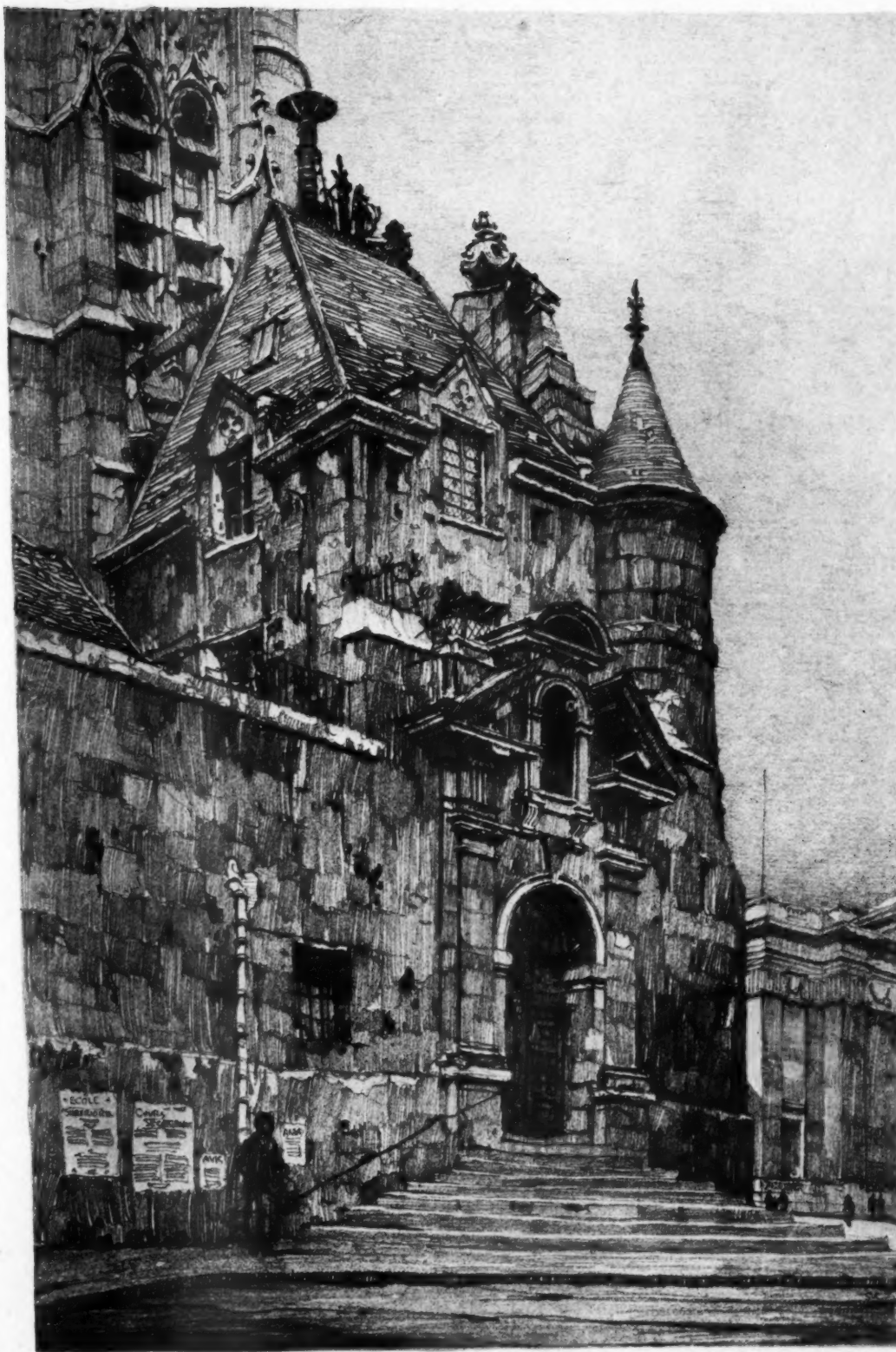
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A GATEWAY IN PERPIGNAN

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

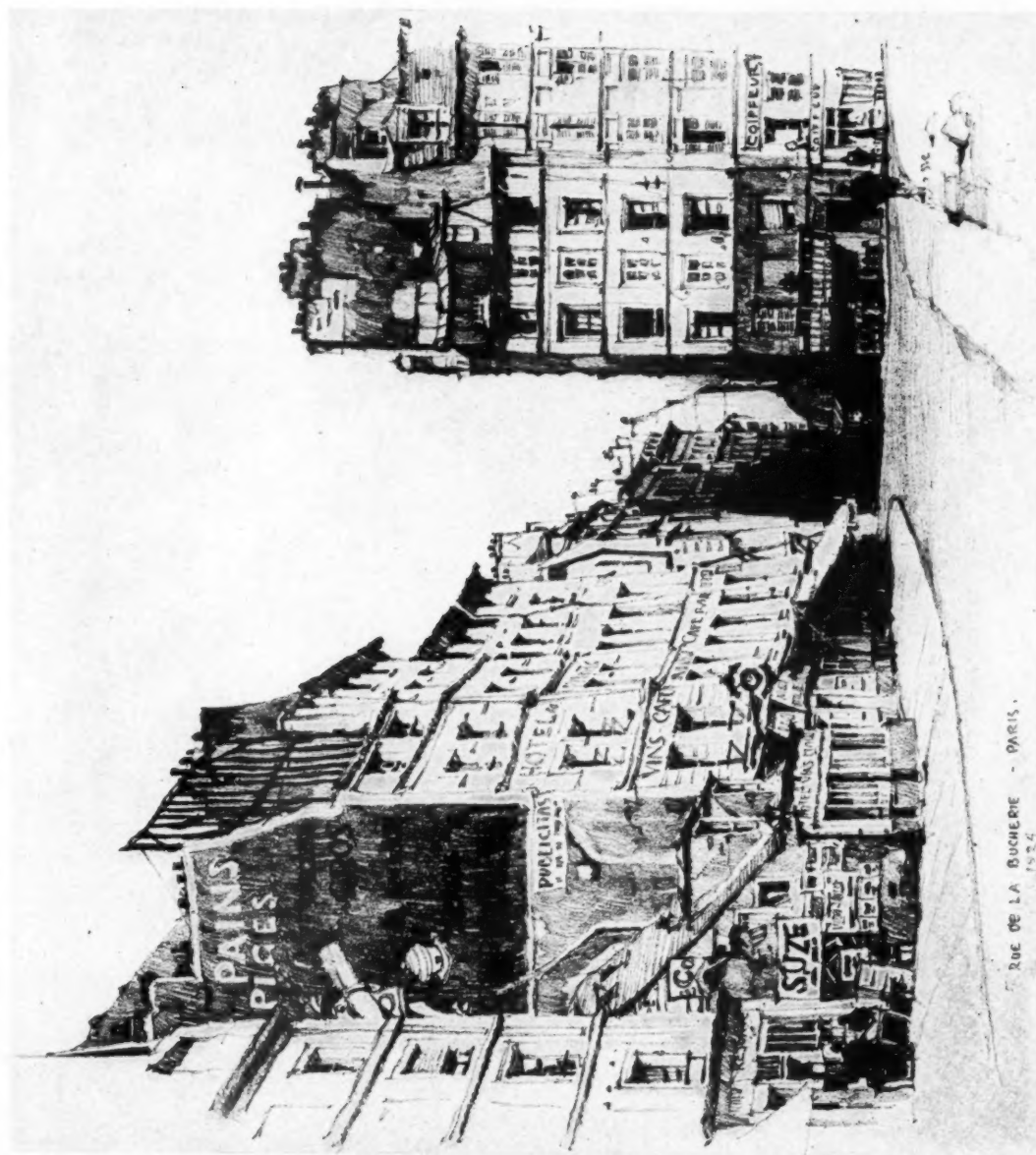
THE AMERICAN ARCHITECT
September 9, 1925. Plate 240



A DOORWAY OF THE CHURCH OF ST. ETIENNE-DU-MONT, PARIS

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

THE AMERICAN ARCHITECT
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RUE DE LA BOUCHERIE - PARIS.
1925

RUE DE LA BOUCHERIE, PARIS

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

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DETAIL OF ALDWYCH FRONT OF BUSH HOUSE, LONDON

HELMLE & CORBETT, ARCHITECTS

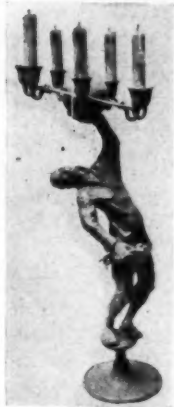
On the occasion of the unveiling of the sculptured group by Malvina Hoffman, symbolizing The English Speaking Nations. The completed Aldwych front is shown in the illustration at top.

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INTERIOR ARCHITECTURE

The Design of Lighting Fixtures

IN a recent issue of THE AMERICAN ARCHITECT (April 22, 1925) an article in this department attempted to prove that the artificial lighting of an interior is much more than just the illumination of the room. It pointed out that



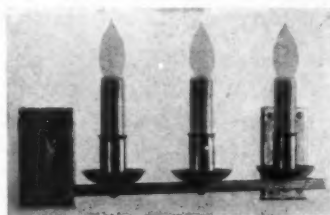
THE HUMAN FORM APPROPRIATELY ADAPTED TO A LIGHTING FIXTURE DESIGN

the shades and shadows which are created by artificial lighting can and should be made a part, and an interesting part, too, of the architectural design by their emphasizing of the various recesses and projections, and distinctly marking the contrasts between the lights and darks, thus creating a greater interest in the design generally. That article dealt more especially with the locating of the fixtures; that is, the general location of each fixture in the room as more advantageous on one wall than on another, or in one place rather than in another, in order properly to distribute the light and not blot out or obscure the shadows cast by

the light from another fixture. It was the light and its source that was then considered. This article is to treat of the design of the lighting fixture; the relation of the design of a lighting fixture to the particular place on the wall or ceiling on which it is located, or its setting, and its relation to the other elements which enter into the architectural and decorative schemes of the room, or considering the lighting fixture as a part of that scheme. It is to consider the lighting fixture as an

integral part of the harmonious whole, and not as a disconnected isolated unit in the decorative scheme, as lighting fixtures are so commonly conceived.

Whether the design of lighting fixtures or their selection falls more naturally to the lot of the architect than to that of the decorator it is not intended even to consider in this article. It will be pointed out, however, that their design must be determined upon by one who has a full understanding of



WALL SCONCE WHICH, BY REASON OF ITS DOUBLE BACK PLATE, MUST BE INSTALLED UNDER LIMITED CONDITIONS

standing of the purpose of both the architectural and the decorative treatments, which, in the average case, is only another way of saying that successfully designed lighting fixtures

can result only from the most cordial and complete co-operation between architect and decorator. For while the general location of an outlet requires accurate knowledge of the

placing of the more important pieces of furniture, the establishing of a definite place for the installation of the fixture is strictly a matter of architectural design. To illustrate the point: Suppose a decorator's plan for the placing of the furniture necessitates a bracket on one wall of the room about three feet from a corner. In order to locate this outlet in its proper place on the architectural design,



THE DESIGN OF THIS BRACKET EMPHASIZES THE PROPERTIES OF IRON, RATHER THAN FOLLOWING THE LINES OF ANY PARTICULAR STYLE OR PERIOD OF DECORATION



THE GENERIC DESCRIPTION OF THIS DESIGN WOULD BE ONE THAT WAS MORE SUITABLE TO VERTICAL SURFACES, OR SURFACES IN WHICH IT IS DESIRABLE TO EMPHASIZE THE VERTICAL LINES



THE LANTERN ADAPTED TO A WALL BRACKET. THE SIDE VIEW IS THE MOST PROMINENT AND MOST INTERESTING OF THIS FIXTURE

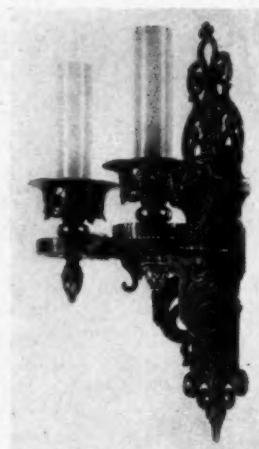
make all the difference in the world from an architectural point of view, as much as six feet.

It would be difficult to state whether the design of a lighting fixture is dependent on its setting more than its setting is dependent on the design of the lighting fixture. It certainly is a fact that a lighting fixture must bear a definite relationship to its place on the wall or ceiling (as the case may be) that will make it appear at once as a component of the architectural composition or design. Thus, and only thus, will the lighting fixture serve a purpose beyond the mere fact that it helps to illuminate the room, or even aids, by the shadows which its light may cast, to accentuate certain features of the architectural scheme. The necessity to make use of stock manufactured designs is often given as an excuse for an unsatisfactory relationship between the fixture and its setting, but the architect or decorator with that vision and foresight derived from practical experience should realize that all obstacles can be overcome when

which might happen to be, for example, in a narrow stile between two panels, its location must be changed from three feet to two feet six inches from the corner. This slight alteration has no effect whatever on the general lighting arrangement specified by the placing of the furniture, but the six inches

met at the proper time, even such as the selection of lighting fixtures from the varied stock of manufactured goods available today.

There are three distinct phases to be considered in the design of a successful lighting fixture. The first of these is its practical purpose. It must never be forgotten that the purpose of a lighting fixture is primarily a practical one. It is a unit in the artificial lighting plan of the room. That is the main reason for its existence. Its practical purpose concerns, then, its light more truly than the design of the fixture, but the light which the fixture distributes has a very important bearing on its design and should be carefully considered at the outset. It concerns, for example,



A BRACKET WHICH ON ACCOUNT OF ITS INTERESTING DESIGN SERVES A DECORATIVE PURPOSE AS WELL AS A PRACTICAL ONE

the number of lamps or arms which the fixture must include, the projection of the arms of a bracket from the wall, or the height of a bracket or ceiling fixture from the floor. It can readily be seen and appreciated that these facts must be considered in order to design a fixture that will function properly in the scheme of artificial lighting determined upon as well as being a factor in the architectural design. The second stage in the design of a lighting fixture is its architectural significance. The lighting fixture must now be considered as an element of the architectural scheme; its design must be studied in relation to its setting; the material or materials of which it is to be constructed must be



THE BACK PLATES OF THESE BRACKETS ARE OF WROUGHT IRON IN A CRUDE LEAF PATTERN TO HARMONIZE WITH THE STONE CHIMNEY BREAST. NOTE THE DARK STONES IN BACK OF THE LIGHTS IN THE HOUSE OF MELVIN PRATT SPALDING, ARCHITECT

THE AMERICAN ARCHITECT



THE EFFECT OF AN OLD ENGLISH CANOPY CANDLE HANGING LIGHT ACCENTUATES THE QUAIN SLOPING LINES OF THE CEILING WHICH FOLLOW THE LINES OF THE ROOF ABOVE. IN A BEDROOM IN THE HOUSE OF GEO. MATTHEWS, JR., CHAPPAQUA, N. Y.

MELVIN PRATT SPALDING
ARCHITECT

considered, for, as a structural design (and it is only as such that it has real architectural significance) these materials establish its main lines. There must be a definite connection between the design of the fixture and its setting in the architectural scheme, for when the fixture is installed it should serve to accentuate the architectural design and give the effect that it was designed for that particular place in the room and not alone to serve

reason." That applies most emphatically to the application of ornament to lighting fixtures. It means that everything must be fully thought out.

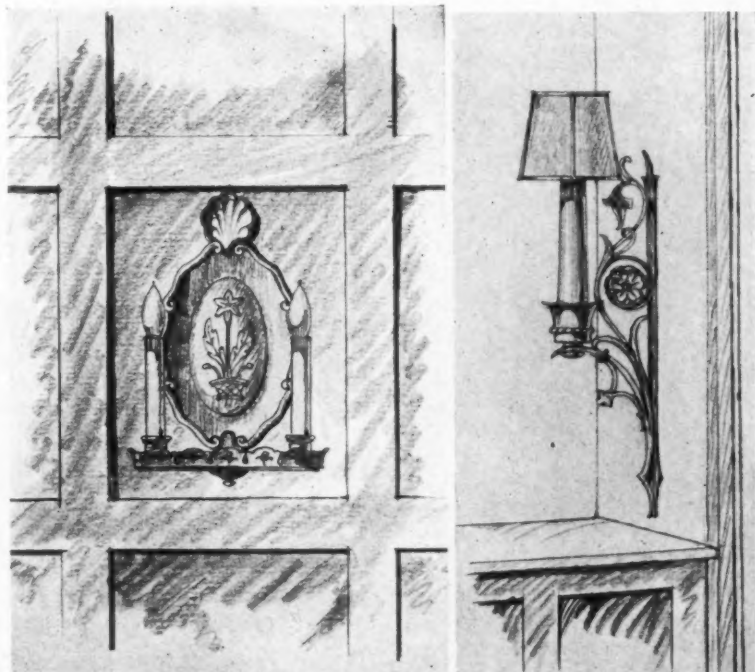
The average fixture on the market today is so lavishly ornamented as to obstruct a clear view of its structural lines. The present tendency to copy or, as we sometimes say to avoid seeming plagiarism, to adapt period ideas in both architectural and decorative designs, has caused the average designer to overlook entirely any connection between the material of which a thing is constructed, its stipulated method of construction, and its design, especially its ornamental design. It should be always borne in mind that structure is the basis of all decorative or ornamental, as well as architectural, design, and proof of that statement lies in the fact that a reason can be given for everything that is included in a design



THE DESIGN OF THIS BRACKET IS MORE APPROPRIATE TO HORIZONTAL SURFACES, OR FIELDS OF PANELS WHOSE PROPORTIONS EMPHASIZE THEIR WIDTH OVER THEIR HEIGHT, FOR EXAMPLE

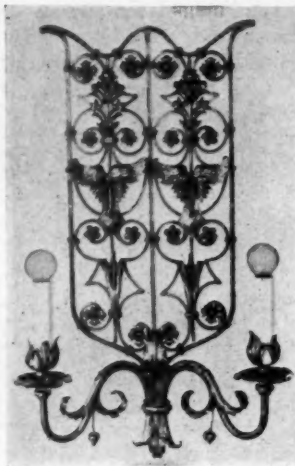
as an isolated feature, no matter how decorative.

The walls of a room should be laid out and designed with the placing of the outlets well in mind, but, further than that, the design of the lighting fixture should be considered at the time of designing the walls which serve as its setting. The third and last phase in the design of a lighting fixture is its ornamentation. This is actually the least important of all, although often made so much of that its other phases are overlooked and forgotten. As long as designers continue to consider ornament as quite apart from architecture, that is, bearing no direct relation to the structure, just so long will their designs lack those qualities which make them permanent and sincere. But that is the way that ornament is applied today. A noted designer of English furniture once said that "a rule for good construction is never to put anything into your design without more than one good



FOUR WALL SCONCES, ON THE LEFT, OF BRASS AND LEAD, DESIGNED TO HANG IN THE FIELD OF SMALL WOOD PANELS, AND TWO IRON BRACKETS, ON THE RIGHT, INSTALLED IN A RECESS OF THE WALL IN THE SAME ROOM. THE FRONT VIEW COUNTS IN ONE CASE AND THE SIDE VIEW IN THE OTHER

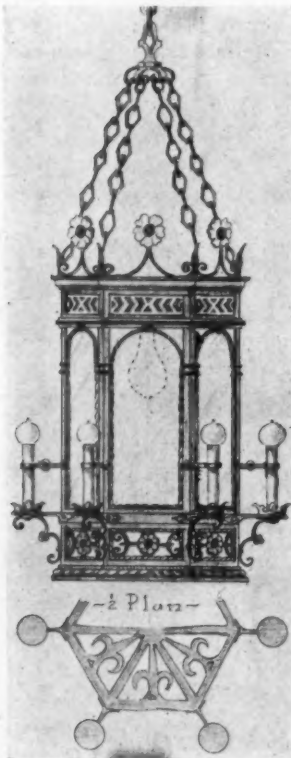
that is studied out according to that formula. Ornament is promiscuously used by most designers of this day to make a thing more elaborate, perhaps, more expensive looking, for in this country we do love to "show off." They think that by so doing they increase interest in the design, while, in reality they completely ruin it by smothering its structure and in such a state it detracts rather than attracts and thereby loses its main purpose. There is no reason for such ornament. But ornament applied to accentuate the structural lines of the fixture may be the means of adding interest to the design and of serving also to effect a closer relationship between the design of the lighting fixture and its setting. A clever illustration of the correct application of ornament to the design of a lighting fixture



WALL BRACKET USED IN MAIN DINING ROOM OF THE SHELTON HOTEL, DESIGNED BY ARTHUR LOOMIS HARMON, ARCHITECT. AS A DECORATIVE NOTE ON THE PLASTER WALLS

lighting fixture are one. In fact, architectural and decorative design are ever rightfully one. As soon as they are separated, the design is very apt to lack reason, without which it becomes only a disconnected isolated unit, in the scheme, and has no value as a component in the complete composition or design of the room no matter what intrinsic value it may possess.

There are, of course, occasions where the ornamental features of a lighting fixture must be more especially emphasized. An illustration of a wrought iron bracket used in the main dining room of the Shelton Hotel, New York City, shown on this page, is a specimen of this type. The walls are of rough textured plaster, and the brackets, besides serving as lighting fixtures, are considered



A CEILING FIXTURE DESIGNED SO THAT THE MAIN SOURCE OF LIGHT IS SHIELDED, THEREBY ALLOWING OF GREATER INTEREST IN THE DESIGN

can be seen in the photograph of the ceiling fixtures of the Board Room of the offices of the Standard Oil Company of New Jersey, reproduced in the article of this department in a recent issue (July 1, 1925) of THE AMERICAN ARCHITECT. The arms from which the fixtures hang take the form of ornamental scrolls, the general lines and details of which are similar to the motif used as the basis of the design of the ornamental plaster ceiling. Actually ornament is not applied (that is a misleading word to use) but is included as a part of the structural design of the fixture.

So in reality these three stages in the design of a

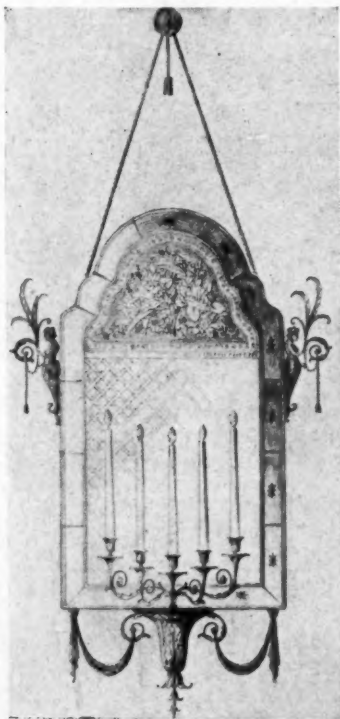
as decorative elements. For this reason, the ornamental feature of the design, has been made large enough to count as a decorative element in the composition of the wall, and while their purpose as lighting fixtures accounts for their use, their practical purpose might be considered subordinate to their decorative value. Other elements in the scheme are in wrought iron also, which makes the iron fixture further harmonious. In this room there are brackets of two different designs used, those on opposite walls being similar.



A HANGING LANTERN OF HAMMERED IRON IN A HALL MAKES THE TRANSITION FROM THE EXTERIOR, WHICH IT SUGGESTS TO THE INTERIOR INTO WHICH THE HALL LEADS, LESS ABRUPT

THE AMERICAN ARCHITECT

Custom generally concedes that all lighting fixtures used in one room shall be of similar design, no matter what their setting may be. How frequently are found rooms where on one wall a fixture is installed in the narrow rail or stile between two wall panels, and on another wall in the same room we see the very same fixture placed in the center of the field of a large panel. Either one or the other is out of place, for the setting of the two brackets is so divergent that a fixture could seldom bear correct relation to both. An illustration on another page shows two distinctly opposite designs of wall brackets used in the same room, each selected to maintain a correct relation to its setting in the architectural scheme. Four brackets were installed in the fields of small panels of the woodwork, and the interest in their design was confined to their direct front view. Two brackets were installed in the jamb of a



WALL BRACKETS IN NEW STEINWAY HALL, NEW YORK CITY
WARREN & WETMORE, ARCHITECTS
THESE FIXTURES ARE DESIGNED AS A MIRROR, A PANEL OF OPEN-WORK BRONZE BEING SUBSTITUTED FOR A MIRROR SO THAT THEY MIGHT BE USED AS VENTILATORS AS WELL



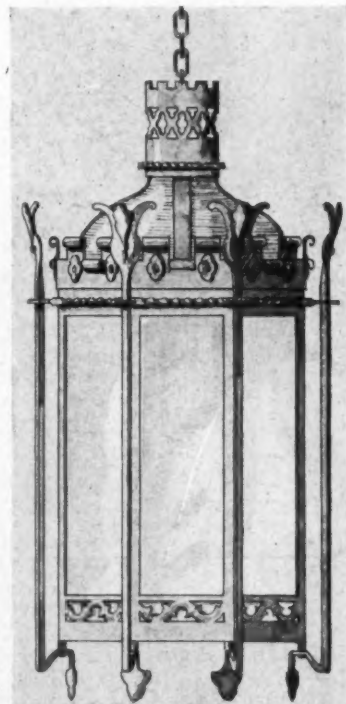
AN ORIENTAL QUALITY HAS BEEN INJECTED INTO THE DESIGN OF THIS BRACKET, CAST IN A COMPOSITION FIREPROOF MATERIAL

slightly recessed wall, so that their direct side view was by far the most prominent, and their design was made accordingly. The difference in the two designs is very striking. Different materials were used, the designers carefully considering the structural qualities of material in choosing iron where the greater projection of the arms required a stronger material than the lead and brass which were combined to create interest in the front view of the other brackets. In other cases,

goods always does, and is a poor interpretation of the principle of repetition in any case.

Although it was mentioned that the question of materials used for constructing lighting fixtures should be considered early as affecting their structural design, the subject has not been further approached as the selection of materials depends so vitally on the various conditions of each particular problem and can hardly be considered in a general way. Wood, fireproof composition products and the various metals can each be used advantageously under certain conditions. With wood, or a composition product affecting wood, there is a greater opportunity for creating harmony between the fixture and its setting, perhaps, as wood is so often used as a prominent medium in the expression of the architectural treat-

where six brackets might be appropriate so far as their setting was concerned, two brackets of the six, which, for example, might be installed on either side of the chimney breast, could very appropriately be of a different design, avoiding the monotony of repeating one design so often in a scheme, and, further than that, helping to make the mantel breast the center of attraction in the room, as is so often desirable, by the interest which such an unusual arrangement would encourage. Besides, such a free use of one design in a room might cheapen it, as a wholesale use of

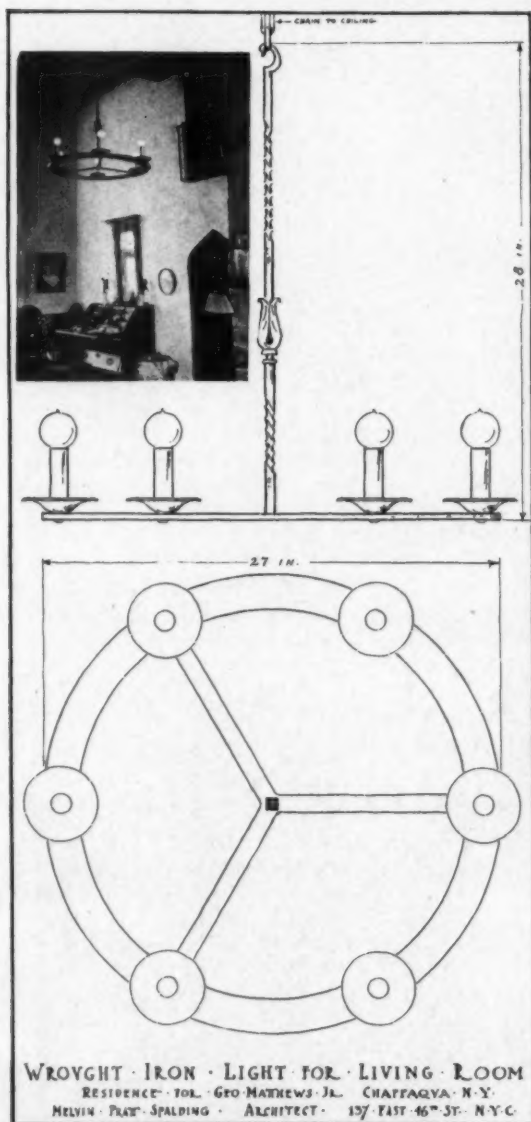


A LIGHTING FIXTURE DESIGNED TO GIVE THE MAXIMUM AMOUNT OF LIGHT. THE INSIDE OF THE DOME IS A REFLECTOR WHICH CONCEALS A HIGH POWERED LAMP AND THE LIGHT PASSES THROUGH A DIFFUSING GLASS IN SIDE AND BOTTOM PANELS AT A GREATER INTENSITY

THE AMERICAN ARCHITECT

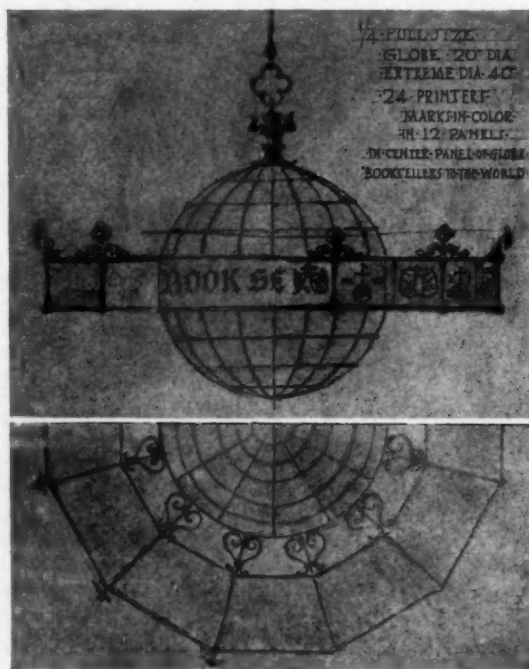
ment. Their common structural stipulations immediately tend toward harmony. On account of the fireproof qualities of the metals, combined with the opportunity which they present of lend-

design generally. The discussion brought out the point that it might be possible to arrange or group fixtures of stock designs under certain generic headings, as fixtures appropriate to narrow, vertical stiles of panels; those appropriate to horizontal stiles; some especially for fields of small panels, after the manner of the Jacobean; others suitable for fields of large wall panels; fixtures for use on rough plaster walls; those appropriate to be installed on pilasters, and so on. While the manufacturer admitted the value of such a proposition as this, as far as getting better results, he would



ing additional interest to a scheme by the introduction of one or more of them into it, they are commonly used for lighting fixture production.

In a recent conversation with a manufacturer concerning the problem of selling lighting fixtures appropriate to their settings, it was brought out that the average client was so much interested in the "style" of the design and whether it would be in harmony with the period decorations and furnishings of the room, that he or she gives little or no attention to the fact that it might not be appropriate to the setting, either in size, shape or



CEILING FIXTURE IN BRENTANO'S NEW STORE, NEW YORK

OSWALD C. HERING, ARCHITECT

AROUND THE CENTER OF THE GLOBE ARE INSCRIBED THE WORDS—"BOOKSELLERS TO THE WORLD," AND IN THE PANELS OF THE OUTER BAND ARE PAINTED THE MARKS OF FAMOUS OLD-TIME PRINTERS

be fearful to take the initiative, he said, as it seemed too radical a departure from the ordinary and customary method of selling, and feared his business might suffer. But something radical is needed to break down this barrier with which the periods have surrounded us. The sooner we realize it, the better for architectural and decorative design in these United States.

Acknowledgment is made to the following firms: Oscar B. Each; Bozart Lighting Co.; Ferro Studios; P. A. Fiebiger; Handel Co.; Kantack, Heath & Warman; Mitchell Vance Co.; Rambusch Decorating Co.; Scaman & Dickey Co.; Sterling Bronze Co.; Arthur Todhunter; G. E. Walter.

ENGINEERING and CONSTRUCTION

ADHESION of GYPSUM PLASTER to VARIOUS BACKINGS*

THE realm of conjecture in the building industry is a vast one. This is because it consists of judgments that are influenced by personal characteristics. It is through the work of the Bureau of Standards and similar organizations that conjecture is supplanted by fact. THE AMERICAN ARCHITECT presents to its readers the premier publication of the results of tests made by the Bureau of Standards pertaining to an important element of plastering. The increasing use of gypsum as a plaster justified this study. The characteristics of gypsum plaster per se are well established but heretofore the influence of its necessary adjunct, the foundation to which it is applied, has been largely a matter of conjecture. It is now in the realm of fact.—THE EDITORS.

PREFATORY ABSTRACT

This paper describes the nature of the various backings commonly employed with wall plasters, and physical tests on the adhesion of gypsum plaster to these backings to determine their effectiveness. The gypsum plaster was applied to specimens of the various backings and after the plaster was allowed to age for seven days it was pulled free of the backings and the force required to rupture the bond was determined and recorded.

The kinds of backings used can be divided into two general types: (1) Masonry and (2) Laths. Under masonry backings are included: (a) Brick, (b) Tile, and (c) Concrete. Laths may be divided into: (a) Wooden lath, (b) Metallic lath, (c) Plaster board, and (d) Wooden or metallic laths on a bituminous composition backing. These different backings were plastered with the recommended sanded mixes of gypsum plaster of about $\frac{3}{4}$ inch grounds. The plaster was retarded so as to set in about four hours.

The size of the specimens of the various backings was about 12" x 14", and the area of the plaster was about 9" x 9". Embedded in the plaster was a mechanical device through which a force could be applied to pull the plaster from the backings. At the completion of the aging period, the specimens were put in a testing machine and a continually increasing force was applied to the device until the bond between the plaster and backings ruptured.

The results show that the adhesion of gypsum plaster to masonry backings is very much greater than in the case of laths. The results also show a great difference in the adhesion of plaster to different types of laths.

INTRODUCTION

The value of a finished job of wall plastering depends not only upon the qualities of the materials used as the plaster and backing, but to a very large extent upon the mutual adhesion of these materials to each other. Although the art of plastering has been known and practiced for many centuries, a search through the literature discloses a complete lack of information on the

subject of adhesion of wall plasters. This can doubtless be explained by the fact that in almost all cases where wall plasters have failed the cause can be traced to faulty construction or application, or to inferior materials of construction. In very few cases can the failure be traced to lack of mutual adhesion when the construction was satisfactory and the materials suitable. However, when new materials appear on the market to be used as a backing there is no information available as to the adhesion required of these materials. In order that information on this subject might be available this investigation was undertaken and tests have been made of the adhesion of gypsum plaster to all of the backings commonly used in practice. By comparison of the results obtained with these backings to the results obtained with some new material the value of the new material as a backing could be ascertained insofar as adhesion is concerned.

TYPES OF BACKINGS

For determining the relative effectiveness of a material to be used as a backing for wall plasters, a comparison of the adhesion of this material with other materials which have been found suitable must be made. There are many kinds and types of satisfactory backings in common use today, and their mutual adhesion with plaster varies over a wide range of values. The backings included in this work can, for convenience, be divided into two general types; (1) Laths, and (2) Masonry backings. The following table includes those backings used under each type.

TYPES OF BACKINGS

I. Laths.

- A. Wooden Lath
- B. Metallic Lath
 - a. Sheet metal.
 - b. Expanded metal.
 - c. Woven wire.
- C. Plaster Board
 - a. Gypsum
 - 1. Single-ply chip binder board.
 - 2. Three-ply wool felt binder board.
 - b. Fiber.
- D. Wooden lath on bituminous composition.
- E. Sheet metal strips on bituminous composition.

*Published by permission of the Director of the Bureau of Standards.



FIG. 1. A SPECIMEN READY FOR TESTING

II. Masonry Backings.

- A. Brick.
 - 1. Sand-lime.
 - 2. Cement.
 - 3. Shale.
 - 4. Clay.
- B. Concrete (1:2:4 by volume).
- C. Tile.
 - a. Gypsum
 - b. Unglazed clay tile
 - 1. Surface clay.
 - 2. Shale
 - 3. Fire clay.

All of these backings have been tested as herein described and the results obtained with each are recorded.

DESCRIPTION AND PREPARATION OF SPECIMENS

The character of the surface of the backing influences to a great extent the adhesion of the plaster to it. Plasters will not readily adhere to smooth glossy surfaces, regardless of the material, unless irregularities are provided which will form the desired key for the plaster. Usually masonry backings provide irregularities on the surface which form a key or clinch for the plaster. In the case of laths, a key or clinch is formed when the plaster is forced through the openings between the laths. In this work it was attempted to have the character of the surface of the backings used as nearly as possible the same as that used in practice. In the case of brick backings, the mortar joints were struck back. With concrete the surface was not troweled smooth but was left in the same condition as it came out of the wooden form.

The expanded metal laths were of No. 24 gauge material, painted, and weighing approximately 3.4 lbs. per square yard. The sheet metal lath weighed about 4.5 lbs. per square yard. The wire lath was woven and welded of No. 19 gauge wire with $2\frac{1}{2}$ meshes per linear inch. The wooden laths were No. 1 spruce, $\frac{3}{8}$ " x $1\frac{1}{4}$ ". The tile, wooden laths, plaster boards, wooden lath on bituminous composition, and sheet metal strips on bituminous composition were all obtained from the open market and were representative of those used in practice. In the case of clay tile three different kinds of scoring were used. The soft surface clay tile used had a square scoring. A hard fire-clay tile with a combed scoring was tested. All the other clay tile used had dove-tailed scoring.

The preparation of the backings before plastering is an important factor in securing good adhesion of the plaster to the backings. Before plastering all of the masonry backings were cleaned and all dust and loose particles removed. The surfaces were free of grease, oil, or efflorescence. All the masonry backings were wetted to prevent excessive suction. In the case of wooden laths, the laths were nailed to wooden studs spaced 16 inch centers. The laths were spaced $\frac{3}{8}$ " at all edges. The wooden laths were wetted several hours before plastering so that ample time was allowed to permit all swelling of the laths to take place in advance of the application of the plaster. No water was allowed to remain on the surface of the laths when the plaster was applied. The metal laths were all nailed to a wooden frame 14" x 14". No sheathing was used behind the lath. The plaster board specimens were all nailed to wooden boards to increase their strength and prevent them from breaking while the plaster was pulled free. The wooden laths on bituminous composition and sheet metal strips on bituminous composition specimens were also nailed to wooden boards to keep them from bending and breaking while the plaster was pulled free.

In the application of the plaster to the backing, the general instructions and specifications for gypsum plasters, of The Gypsum Industries* were followed. The neat gypsum plaster was mixed with sand in the proportions specified for the kind of backing used, brought to consistency of a $\frac{1}{2}$ " slump in a 2" by 4" cylinder, and a thin coat (about $\frac{1}{4}$ " thick) was spread over the desired

*"Gypsum Plasters", The Gypsum Industries (1924).

area on the backing. (The proportions of gypsum plaster to sand, by weight, were one part to three parts with all masonry backings, and one part to two parts with all other backings.) The mechanical device was then placed on this thin coat of plaster and another coat of the same mix was applied, bringing it out to about $\frac{3}{4}$ " grounds. (See Fig. 1.) All of the backings were held vertical while plastering, representing as far as practical the conditions of a side wall.

METHODS OF TESTING

Two or more specimens of each kind of backing were used in the tests. The different specimens were plastered with the recommended sanded mixes of gypsum plaster of about $\frac{3}{4}$ " grounds. The size of the specimens of the various backings used was about 12" x 14" and the area of the plaster was about 9" x 9". A mechanical device was embedded in the plaster, through which a force could be applied to pull the plaster from the backings.

Two different kinds of mechanical devices were employed in detaching the plaster. The first consisted of four metal staples each of which was welded to a metal plate of about 3" x $1\frac{1}{4}$ " in area. (See Fig. No. 2.) One of these was embedded in each corner of the plaster. When the plaster had aged for seven days the specimen was

placed in a testing machine, the backing being clamped securely to the movable platform, and the staples connected to the stationary platform in such a way that the load was distributed approxi-

mately uniformly to the four staples. Then a load was gradually applied until rupture took place. This method was the same as that used by Marani* in determining the adhesion of gypsum plaster to gypsum plaster board. This procedure was found to be entirely satisfactory with backings giving low adhesion values but with those of relatively great adhesion it was found that the plaster would break around the staples and the complete plaster coat would not be pulled free from the backing. (This method was used only with wooden laths.) A new device was therefore made. This consisted of two skeleton metal plates about 8" x 3" in area, connected by a 2 inch metal strip. The metal strip was arched and drilled

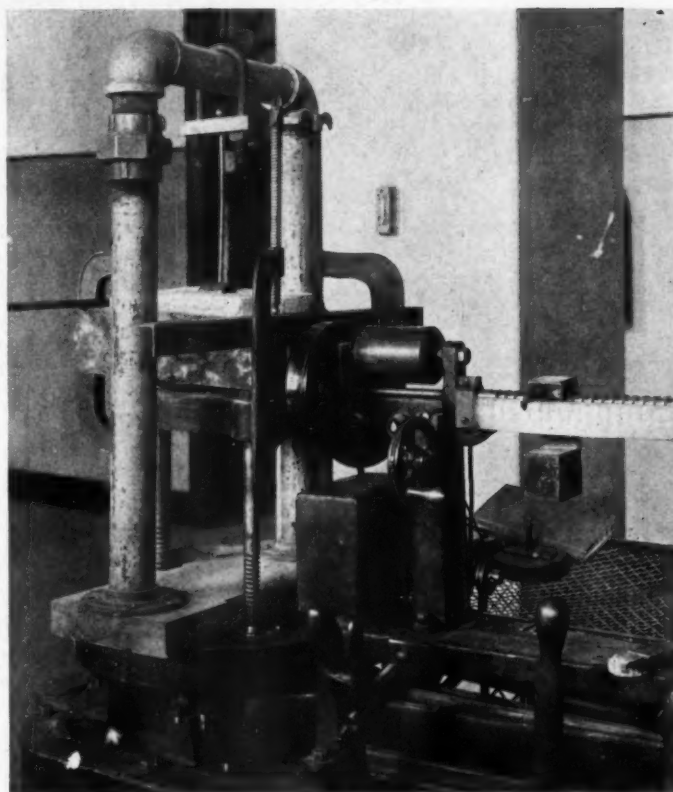


FIG. 4. OLSEN TESTING MACHINE USED, CAPACITY 5000 POUNDS

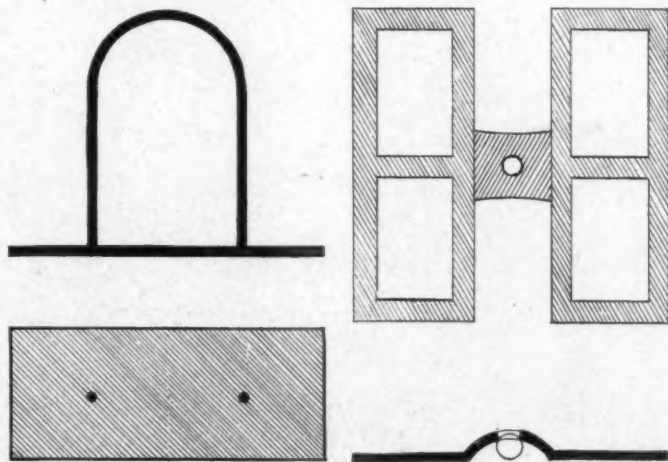


FIG. 2.

FIG. 3.

FIG. 2 MECHANICAL DEVICE NOT SATISFACTORY FOR MEASURING THE ADHESION OF GYPSUM PLASTER TO BACKINGS. PLATE 3" x $1\frac{1}{4}$ ". FIG. 3. MECHANICAL DEVICE USED IN TESTS FOR ADHESION OF GYPSUM PLASTER TO BACKINGS. PLATE 8" x 3"

*"Incombustible Lathing Material", by Virgil G. Marani, "Construction", September, 1916.

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at the center to form the socket of a ball and socket self aligning joint. (See figure No. 3.) This was likewise embedded in the plaster and the plaster pulled off in the manner previously described. A $\frac{3}{8}$ " steel rod with ball nuts was used to connect the plate to the stationary platform of the testing machine.

mix was first applied to the backing, then a thin coat of the richer plaster mix spread over it, the mechanical device placed on this coat, and another coat of the rich plaster mix applied, bringing it out to the desired grounds.

The specimens were allowed to age in the air in the laboratory for seven days before testing. At

RESULTS

(Only those results were considered in which the plaster pulled free of the backings.)

Kind of Backing	Per Cent Absorption by the Backing.	Adhesion lbs. / sq. in. (Mean of Two or More Specimens.)	Factor of Safety = $\left\{ \frac{\text{Adhesion}}{\text{wt. plas.}} \right\}$
LATH:			
1. Wooden Lath, No. 1		2.1	50
2. Metallic Laths (a) Sheet metal		1.6	38
(b) Expanded metal		4.3	103
(c) Woven wire		2.4	58
3. Plaster Board (a) Gypsum			
(1) Single-ply board		6.0	144
(2) Three-ply board			
(b) Fibre		2.3	55
4. Wooden lath on bituminous composition		4.8	115
5. Sheet metal strips on bituminous composition		2.3	55
MASONRY:			
1. Brick (a) Sand-lime brick	13.4	19.0	455
(b) Cement		21.5	515
(c) Red shale	5.6	12.7	305
(d) Common red clay	18.8	13.5	324
" " "	15.5	15.1	362
2. Concrete (1:2:4 by volume)		15.6	374
3. Tile (a) Gypsum		7.2	173
(b) Clay Tile			
(1) Surface			
(a ¹) Soft°	24.2	16.2	388
(b ¹) Medium	14.5	16.0	384
(c ¹) Hard	11.1	19.5	468
(2) Shale			
(a ¹) Soft	9.5	18.1	435
(b ¹) Medium	7.6	16.9	405
(c ¹) Hard	1.0	28.0	670
(3) Fire-Clay			
(a ¹) Soft	13.7	21.9	525
(b ¹) Medium	8.6	14.4	346
(c ¹) Hard	6.9	15.2	364
" " "	7.4	19.2	462

^a = Square scoring.

* = Combed scoring.

All the other clay tiles have dove-tailed scoring.

In some cases where the adhesion was relatively high and the plaster mix lean, the plaster would break around the device and it would pull out before the bond between the plaster and backing would fail. This was remedied by using a richer plaster mix around the device. The lean plaster

the end of the aging period the specimens were placed in an Olsen testing machine, of 5000 lbs. capacity, the backing being clamped securely to the movable platform, and the mechanical device connected to the stationary platform, as shown in photograph No. 4. A gradually increasing load

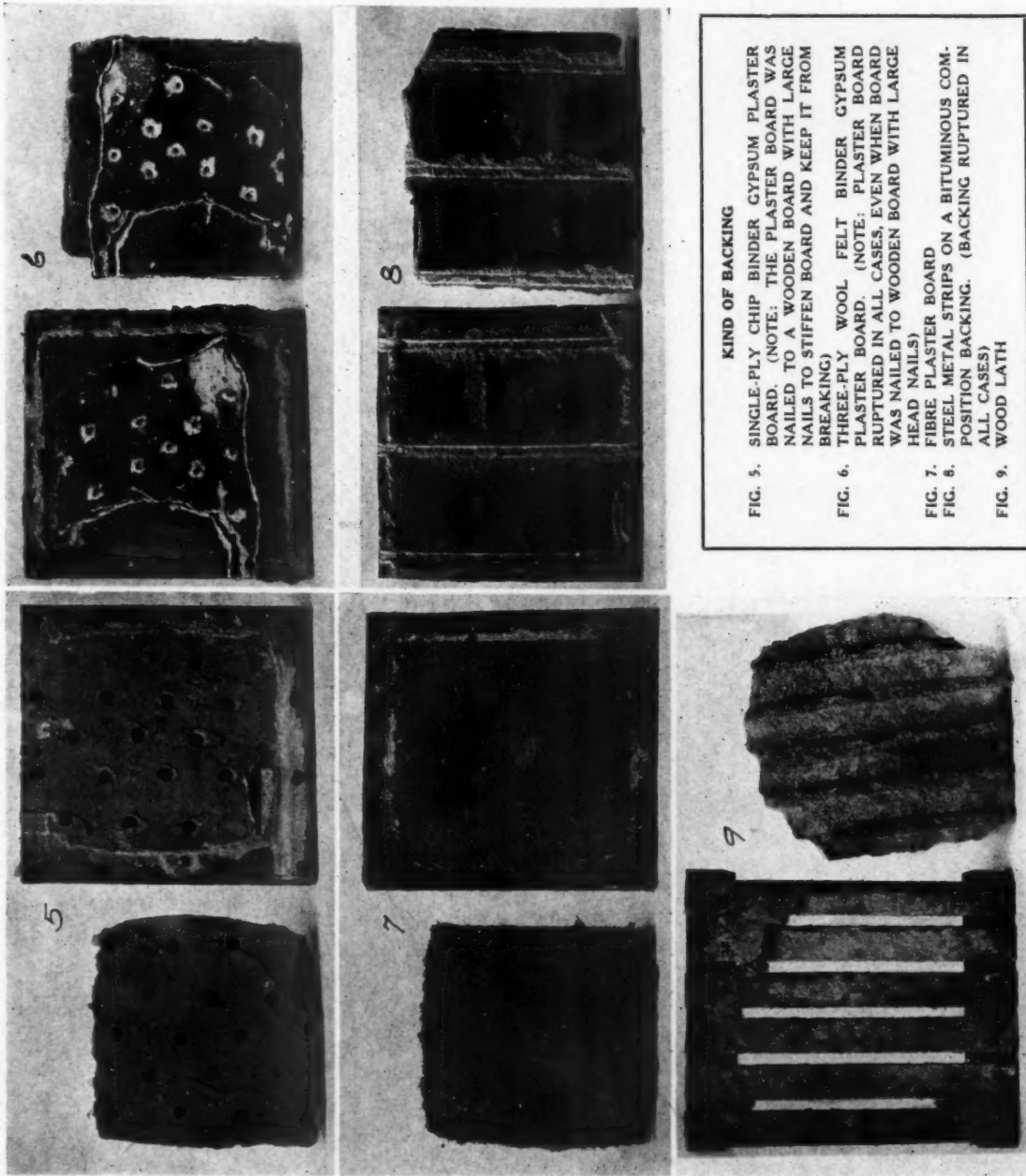
THE AMERICAN ARCHITECT

was then applied until the plaster pulled free of the backing. Typical ruptures are shown in Figures 5 to 19.

DISCUSSION OF RESULTS

The results obtained in these tests show that

far greater adhesion than do the laths. There is also a wide range of values within each type. Among the laths the results seem to indicate that wooden lath and sheet metal lath give much lower results than the expanded metal lath and wooden lath on a bituminous composition backing. The



KIND OF BACKING

FIG. 5. SINGLE-PLY CHIP BINDER GYPSUM PLASTER BOARD. (NOTE: THE PLASTER BOARD WAS NAILED TO A WOODEN BOARD WITH LARGE NAILS TO STIFFEN BOARD AND KEEP IT FROM BREAKING)

FIG. 6. THREE-PLY WOOL FELT BINDER GYPSUM PLASTER BOARD. (NOTE: PLASTER BOARD RUPTURED IN ALL CASES, EVEN WHEN BOARD WAS NAILED TO WOODEN BOARD WITH LARGE HEAD NAILS)

FIG. 7. FIBRE PLASTER BOARD

FIG. 8. STEEL METAL STRIPS ON A BITUMINOUS COMPOSITION BACKING. (BACKING RUPTURED IN ALL CASES)

FIG. 9. WOOD LATH

there is a great difference in the values for the adhesion of gypsum plaster to different kinds of backings. The masonry backings, as a type, show

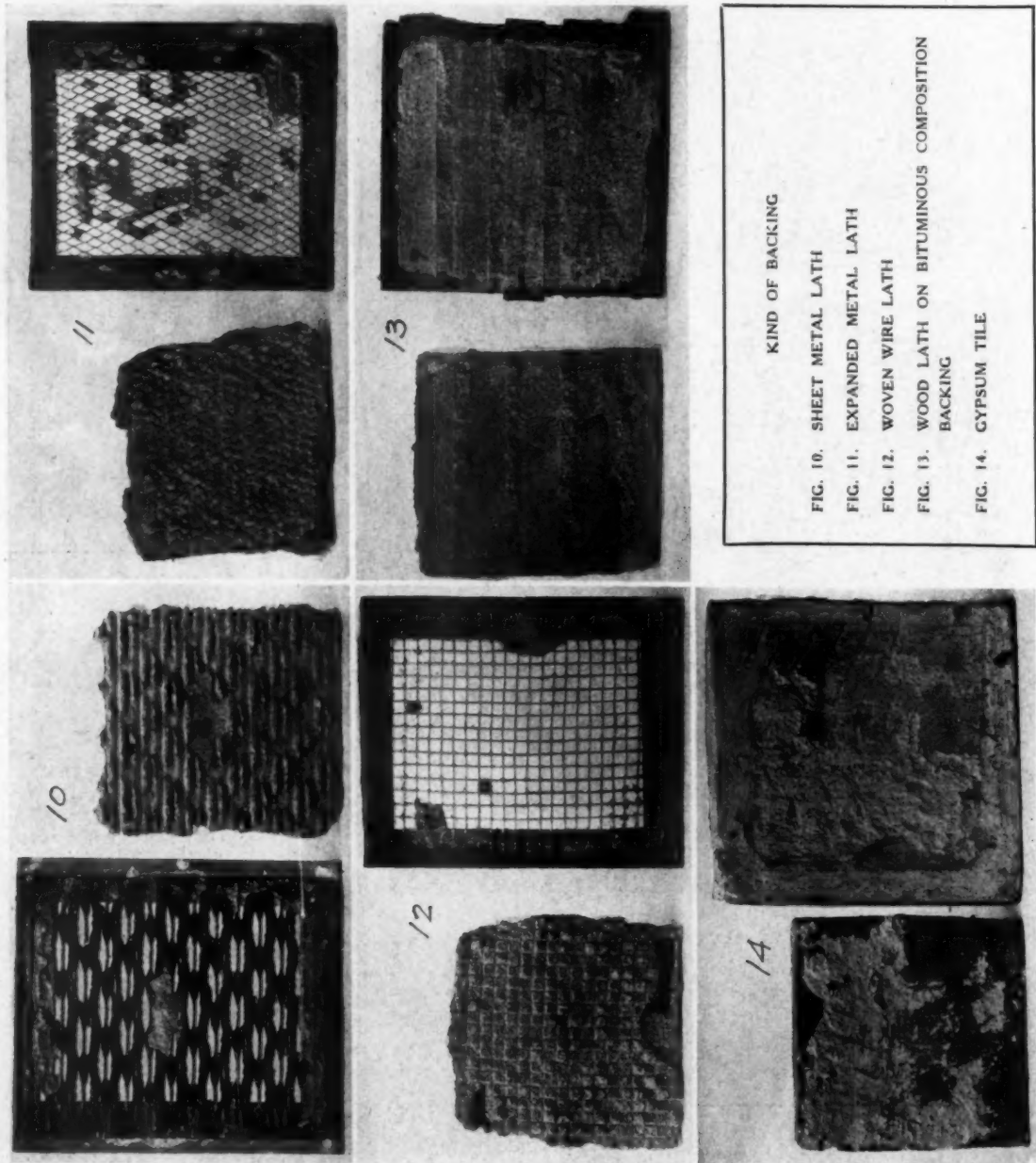
results of these tests indicate that gypsum tile gives a much lower adhesion value than any other masonry backing but yet are better than the best

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lath. With some of the masonry backings it was found that the adhesion of the plaster to the backing was almost equal to the cohesion of the plaster mix. In these cases a clean break of bond between the plaster and backing would not take place, but some of the plaster remained adhered

hesion of the backing materials. This was found to be true in the case of plaster boards and sheet metal strips on a bituminous composition backing.

The adhesion of gypsum plaster to single ply gypsum plaster board was such that when an attempt was made to pull the plaster free of the



to the backing (see figures Nos. 15, 17, 18).

Many difficulties were encountered in making these tests. In some cases the adhesion of the plaster to the backing was greater than the co-

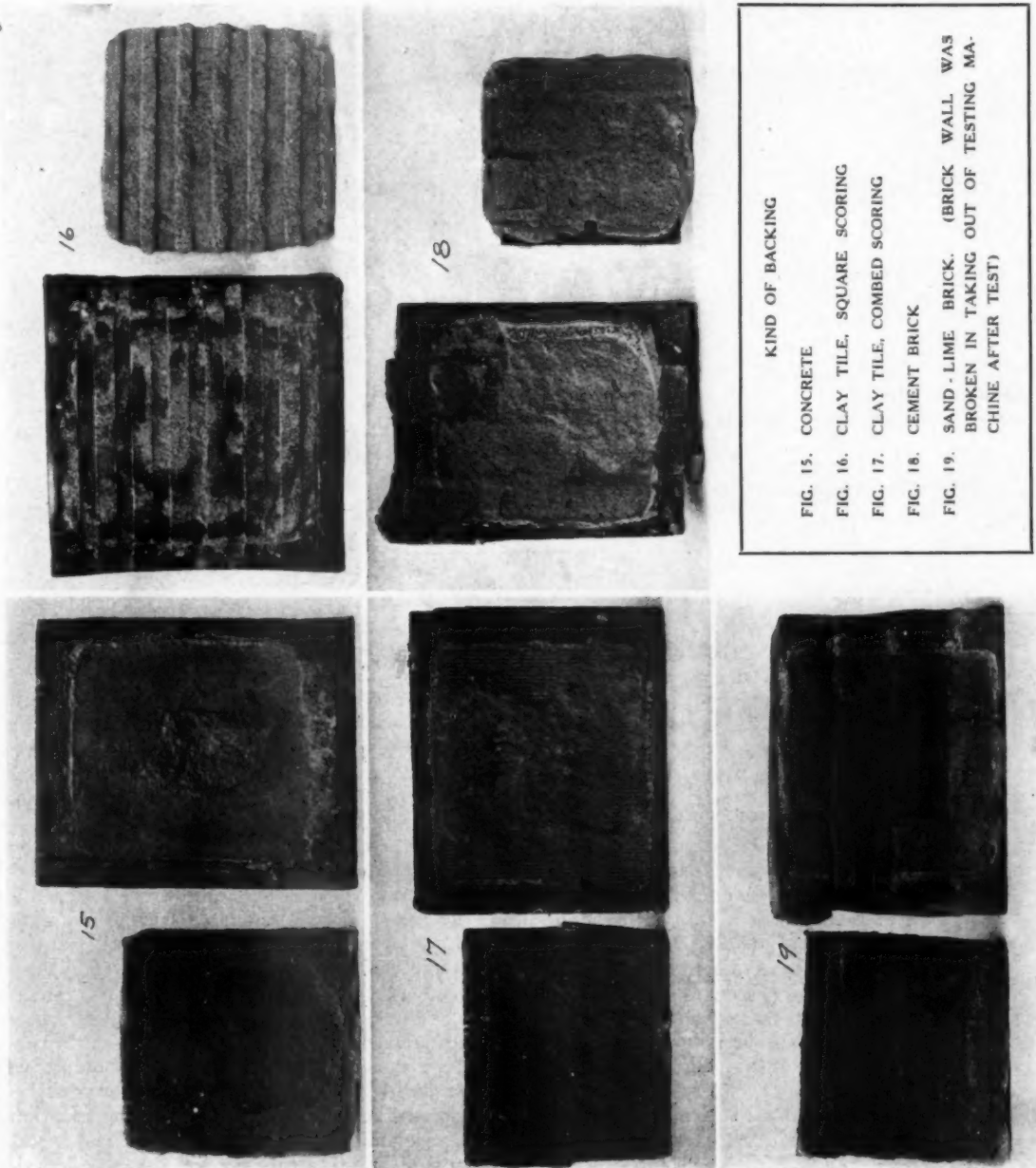
hesion of the plaster mix. In these cases a clean break of bond between the plaster and backing would not take place, but some of the plaster remained adhered to the backing (see figures Nos. 15, 17, 18). Many difficulties were encountered in making these tests. In some cases the adhesion of the plaster to the backing was greater than the co-

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the adhesion was invariably sufficient to break the board. (See Figure No. 6.) It was noted that the more porous wool felt binder has the greater adhesion to the plaster coat, while in the case of the less porous and smooth chip binder the adhesion is somewhat reduced.

When gypsum plaster was pulled from the sheet metal strips on a bituminous composition backing it was found that the bituminous composition failed, part of it being pulled off with the plaster. (See Figure No. 8.)

It has always been believed that the degree of



The adhesion of gypsum plaster to fibre plaster board was greater than the cohesion of the board itself, resulting in part of the fibres being always pulled off with the plaster. (See Figure No. 7.)

adhesion depends to a large extent upon the character of the surface to be plastered. This is very strikingly shown to be true in the tests of adhesion of gypsum plaster to brick and clay tile.

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In all cases it was found that the side of the brick wall or tile that was rough, or offered the better mechanical key, gave the greater adhesion. On the other hand the porosity or total absorption of the brick or tile does not seem to govern the adhesion. For example, a hard, almost vitrified, shale tile, gave a greater adhesion than a soft, shale tile, both having the same scoring. It is also interesting to note that a hard fire-clay tile with a combed surface gave greater adhesion values than a fire-clay tile with dove-tail scoring, both having about the same total absorption.

The values obtained for the adhesion of gypsum plaster to concrete are high and would tend to lead one to believe that concrete is an ideal backing for gypsum wall plaster. However, experience has shown that in some cases the bond between concrete and gypsum plaster becomes greatly reduced after several years and instances are known where the bond has completely failed. This may be attributed to a difference in the expansions of the two materials with thermal and humidity changes.*

In view of the fact that in some instances the adhesion of gypsum plaster to concrete seems to decrease with age, specimen slabs of concrete have been made and plastered as above. After they

have aged for one, two and three years the plaster will be pulled from the concrete to see if a loss of adhesion can be noted and to determine whether or not the method of application is not a contributing factor.

SUMMARY

It is evident from a study of the results obtained that the adhesion of gypsum plaster to the different backings commonly used in practice varies over a wide range of values. All of the materials tested have proven by long usage to be satisfactory backings. Even those which show the lowest values for adhesion have a very high factor of safety. For instance, assuming the weight of a $\frac{3}{4}$ " plaster coat to be 6 lbs. per square foot, sheet metal lath with an adhesive value of 1.6 lbs. / sq. in. has a safety factor of 38 and has been found to be a satisfactory backing. Other properties, such as strength, stiffness, fire-resistance, resistance to the transmission of heat and sound (before and after the application of the plaster coats) and economy as regards erection costs and the required quantity of plaster to cover a given surface, should be considered. Then if the backings which may be used in any specific case rate about the same in regard to the aforementioned properties, the adhesion should be considered and the one having the greatest adhesive value used.

*"Volumetric Changes of Gypsum", by J. M. Porter, Proc. A.S.T.M., 1923.

MASONRY WALL REQUIREMENTS

THE Building Code Committee of the Department of Commerce has issued its Recommended Minimum Requirements for Masonry Wall Construction.* In this report is collected a vast amount of data pertaining to the subject which makes it of real value. Every phase is considered and a survey of the present building code requirements in this country is included.

A noticeable feature of the recommended minimum loads on brick work is that they are considerably less than many now in use under existing codes. The committee's recommendations for allowed live floor loads provide a substantial reduction from those in general use and were discussed on page 38, *THE AMERICAN ARCHITECT*, July 1, 1925. The live loads proposed are in every way logical and proper, but the advantages derived from the reduction in live loads will be largely offset by the reduction in the allowed loads on brick masonry.

It is recommended that a live load of only 170

lb. per sq. in. be applied to clay brick of medium grade laid in Portland cement, 130 lb. in natural cement or cement lime mortar, and 90 lb. in lime mortar. In New York City the code of 1898 allowed a load of 250 lb. per sq. in. on good brick laid in Portland cement mortar. Other cities permit the same loads. Experience with these requirements has been satisfactory and the reasons for changing them by a radical reduction is not made clear.

It leads to the belief, that when confronted by a mass of data somewhat diversified, we may become somewhat confused and over conservative and neglect to give reasonable consideration to actual performance in widely scattered localities with their varying conditions.

THE AMERICAN ARCHITECT is of the opinion that an error of judgment has been made in penalizing common brick work by this reduction in permissible loads and that code builders should give greater credit to a safe and satisfactory experience with greater loads. In this way, with the adoption of the recommended live loads referred to, a real economy in building construction can be effected.

*Superintendent of Public Documents, Government Printing Office, Washington, D. C. Price 15 cents.



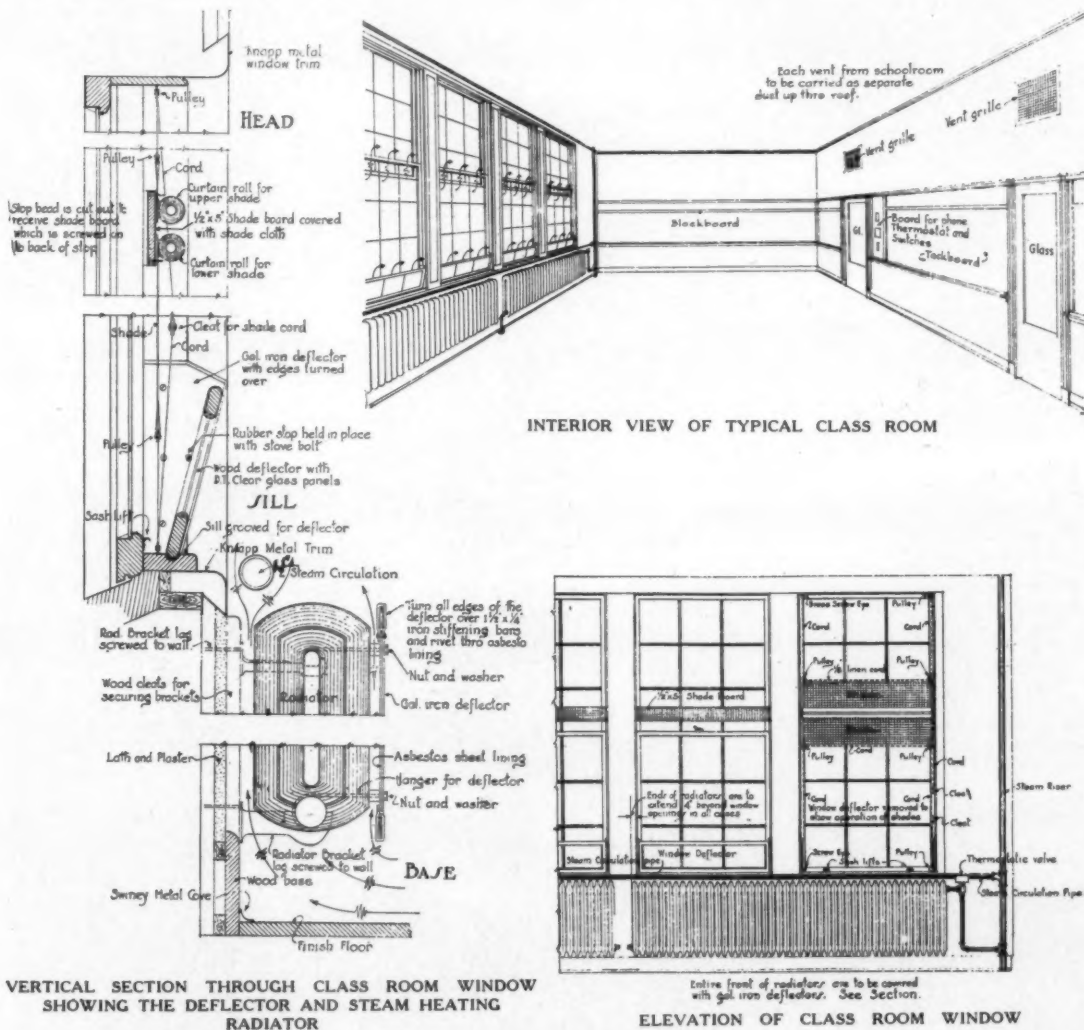
The WEAVER HIGH SCHOOL, HARTFORD, CONN.

FRANK IRVING COOPER CORPORATION, Architects

(Continued from page 206, issue of August 26)

PUPILS' lockers are not provided in the academic or center section of the building. There are a large number of lockers used in connection with the gymnasium and shops. In the academic section the open wardrobe system is preferred by the Hartford school authorities. These coat rooms have three lines of hook rails, each line projecting beyond the one below it.

An outstanding feature of this building is that there are no fixed limitations of space caused by immovable vertical heating and ventilating ducts. The heating is accomplished by direct radiation placed under the windows. Fresh air is admitted through the windows and ventilation caused by fans which exhaust the air from the rooms through registers located near the ceiling and along the corridors. The main exhaust ducts are



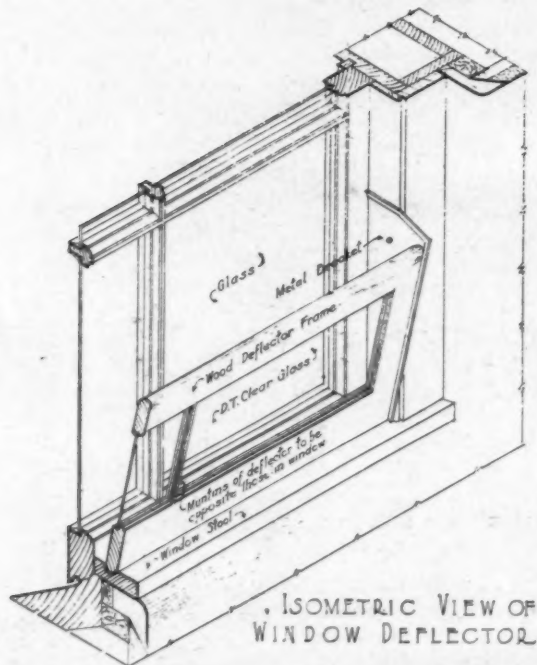
Below the rails are spaces for umbrellas and overshoes. Under the overshoe rack is a steam pipe extending the length of the hanging space for drying clothing in wet weather by causing a current of warm air up through the clothing.

suspended on the corridor ceilings and connect with a large vertical vent shaft in the top of which is placed an exhaust fan. The toilet rooms have an entirely separate exhaust system which is operated with a greater pull than is applied to

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the class rooms. The auditorium and gymnasium have standard equipment for ventilation on the re-circulating system.

The Thomas Snell Weaver High School at Hartford is a splendid illustration of the modern conception of the scientific planning of a public school building. In order that the educational needs might be satisfied in accordance with the best practices in secondary education, the architects employed the services of Clarence D. Kings-



THE GLAZED WOODEN DEFLECTOR IS REMOVABLE BY LIFTING IT UP FROM BETWEEN THE METAL BRACKETS ATTACHED TO THE STOPS AT EACH END. THE METAL TRIM ON THE JAMBS AND SILL PROTECT THESE PARTS FROM DAMAGE.

ley, educational engineer and consultant, now serving the City of Chicago as expert in planning school buildings. Also the building commission availed itself of the expert knowledge of Dr. Jesse B. Davis, Supervisor of Secondary Education for the State of Connecticut, now Professor of Education of Boston University. His knowledge served to bring the necessary and desirable educational procedures into contact with the possibilities of providing for them in the plans. The two commissions in charge of this enterprise were far-seeing in their procedure and in definitely building for the benefits of the boys and girls of future years as well as for the needs of the present. This building is a challenge to the school administrators to realize a vision of its completeness, and to employ in the coming years all of its splendid possibilities to the end that every need of the pupil may be realized.

IMPORTANT TRADE REGULATION

TRADe relations between architects, engineers and owners and the fabricators of structural steel have not been entirely satisfactory. This has caused the Structural Steel Board of Trade, Inc., of New York City to adopt certain regulations pertaining to contractual relations. This organization includes those fabricators of structural steel who are located within the metropolitan district of New York City.

It has been decided that all contracts made after November 1, 1925, will be based on complete plans and specifications for structural steel and for a stipulated amount. At the present time contracts are made for a price per ton based on very meagre preliminary sketches. The folly of this method of conducting business has been realized and this action results.

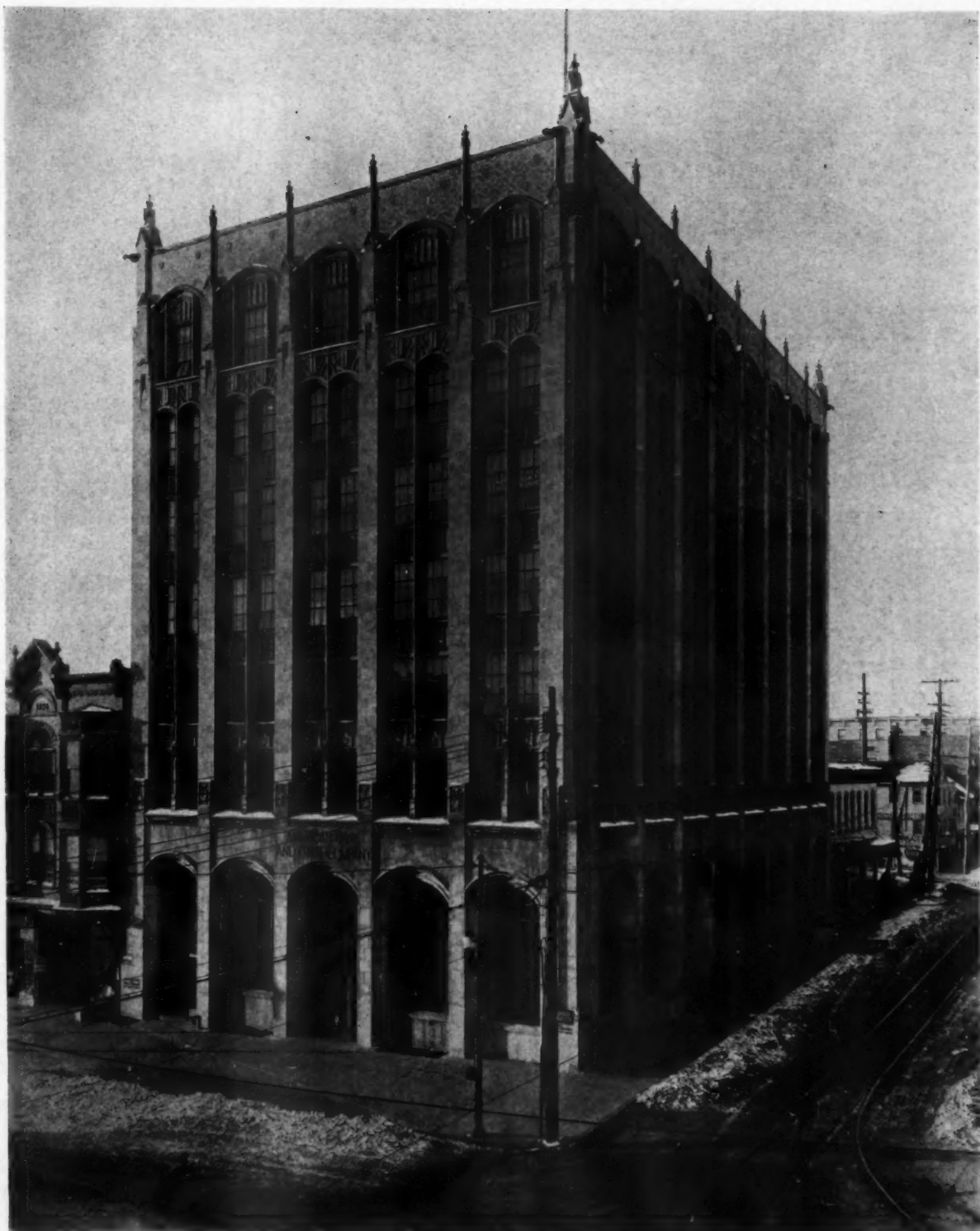
It is readily apparent that the present method is merely a gambler's guess because of the wide variation of detail which necessarily is an element of structural steel designing. It is as foolish and unscientific as the practice of some contractors who make contracts based on a cost per cubic foot of contents or square foot of floor and roof area. Observation has shown that such practices always lead to disaster.

This new regulation will lead to some short delays possibly until the readjustment of trade relations is fully established. Under the present conditions it is thought that time can be gained by the "price per ton" contract. It does permit the fabricator to purchase an approximate tonnage from the mills subject to future specifications. With the stabilized mill cost and production common to these times this practice does not result in any real advantage. Fabrication can only begin after the plans and specifications are made and shop details prepared. The time consumed in making the definite lump sum bid is not great and no loss of time accrues to the project. This action of the Structural Steel Board of Trade, Inc., is but one important step toward placing building contracts on a scientific and profitable basis.

\$1,250,000 FOR ST. PAUL'S

THE fund started by the London *Times* for the preservation of St. Paul's Cathedral has just passed the \$1,250,000 mark. This is nearly double what the dean and the chapter asked for last January.

Within a fortnight that was subscribed, but ever since a slow but steady stream of subscriptions has been received, literally from the ends of the earth. The London *Times* points out that some of the latest checks received from Yukon, Ballaral and Geelong were from people who have never seen and probably never will see the cathedral itself, but who recognize that its name and fame and condition are a common possession.



AMERICAN BANK & TRUST CO. BUILDING, HAZLETON, PA.

MOWBRAY & UFFINGER, ARCHITECTS

(See plans and description on back.)

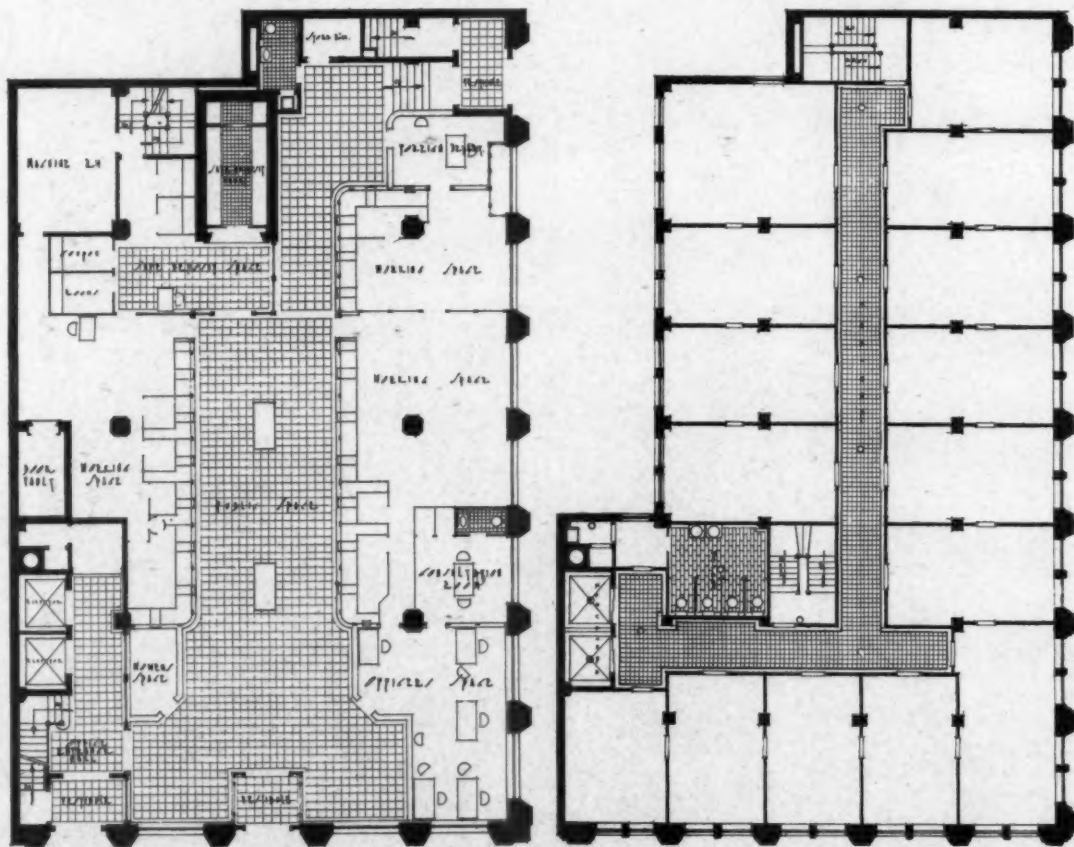
THE AMERICAN ARCHITECT
September 9, 1925. Plate 244

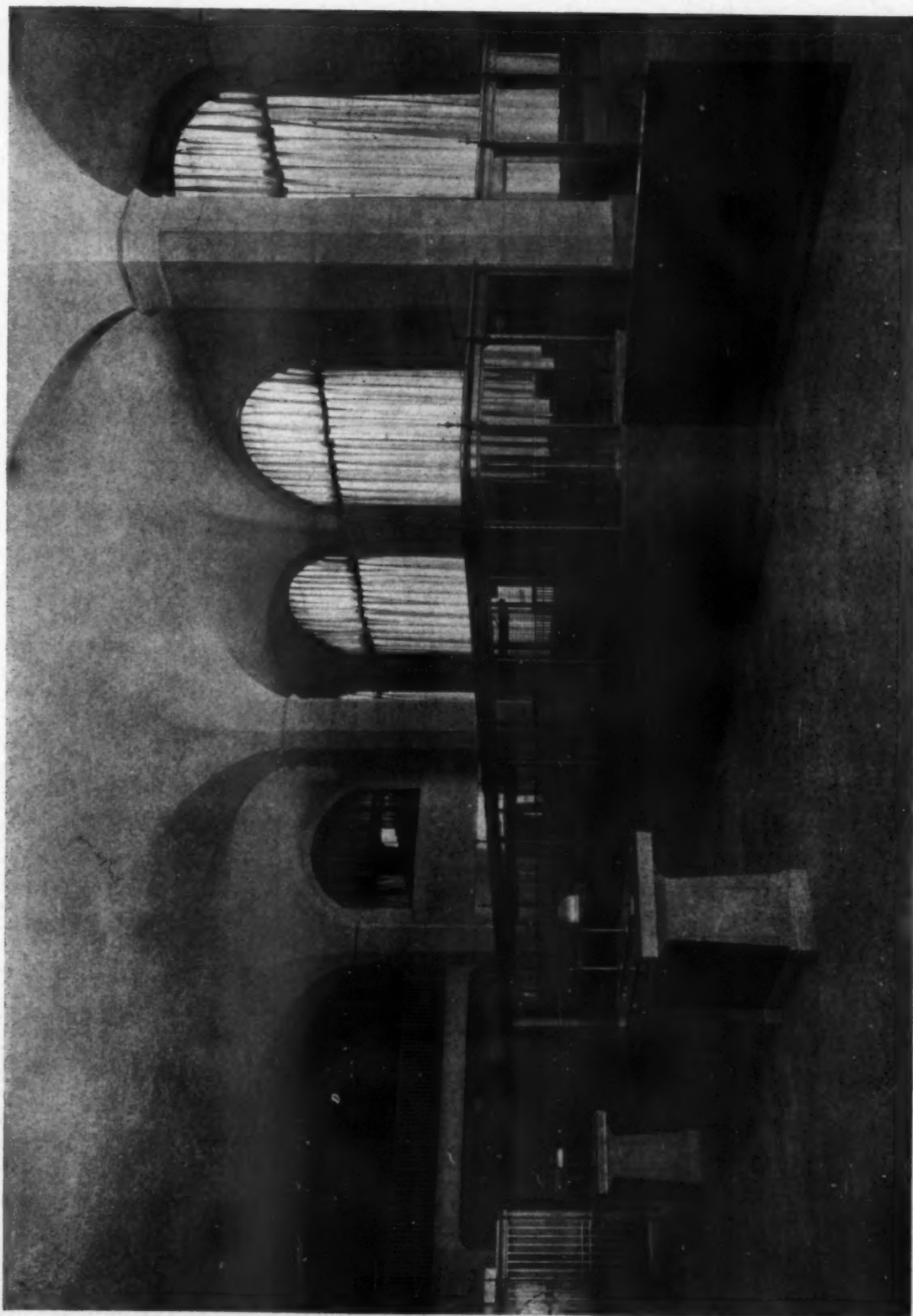
AMERICAN BANK & TRUST CO. BUILDING, HAZLETON, PA.

MOWBRAY & UFFINGER, ARCHITECTS

THIS building is 106'6 $\frac{1}{2}$ " x 66'0" and is eight stories high. It was completed in 1924, at a cost of 70c per cubic foot.

The base is of granite, the lower three floors of limestone, and the remainder of exterior walls of terra cotta. Floors are of reinforced concrete, partitions of hollow tile. The interior trim on first floor is of wood and marble, all other floors wood. Indirect lighting in bank, direct in office. There is a vapor heating system. Two passenger elevators 6'0" x 5'0". Vault door is round 15" thick with a 1" lining.

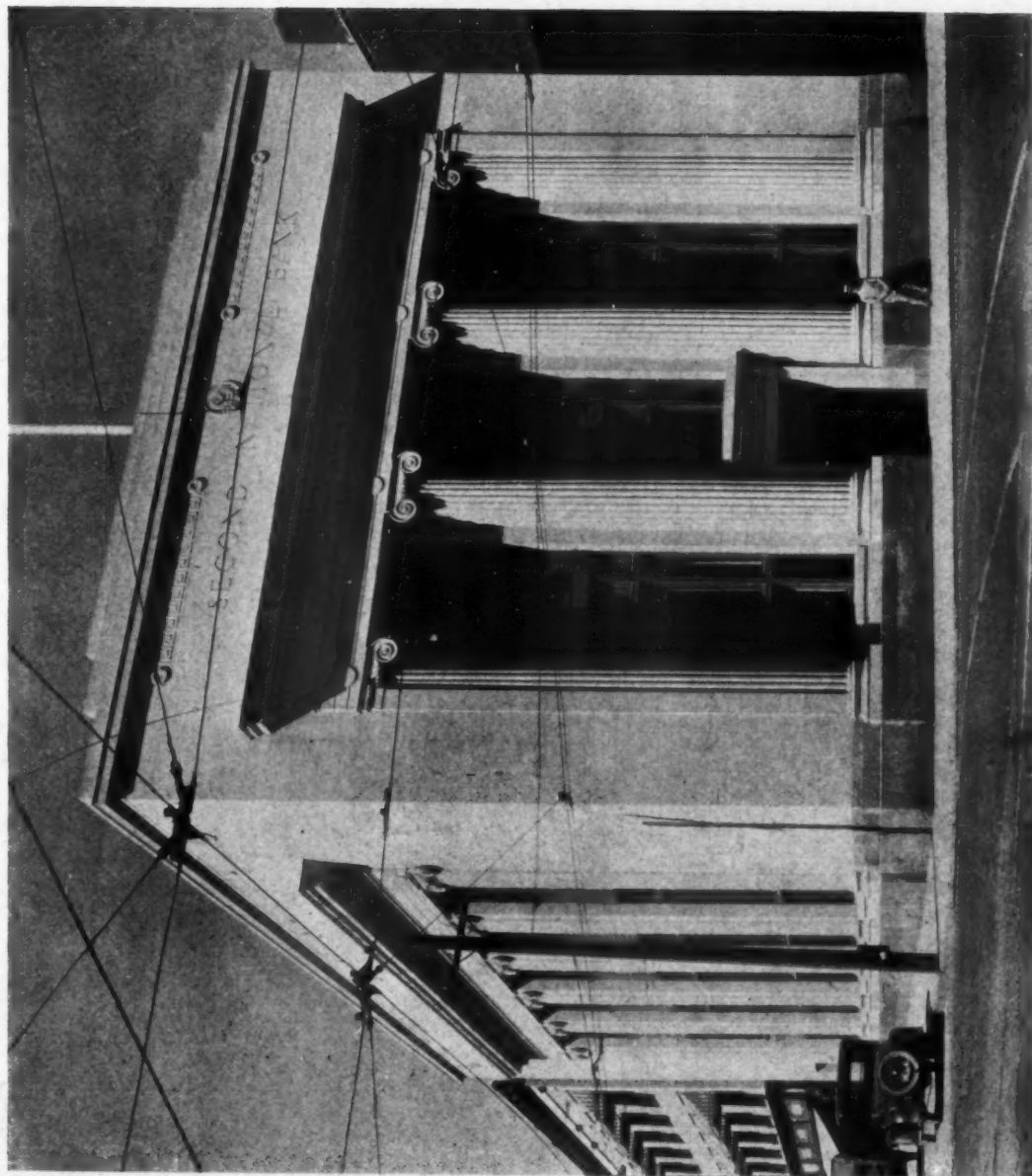




BANKING ROOM, AMERICAN BANK & TRUST CO., HAZLETON, PA.

MOWBRAY & UFFINGER, ARCHITECTS

THE AMERICAN ARCHITECT
September 9, 1925, Plate 245

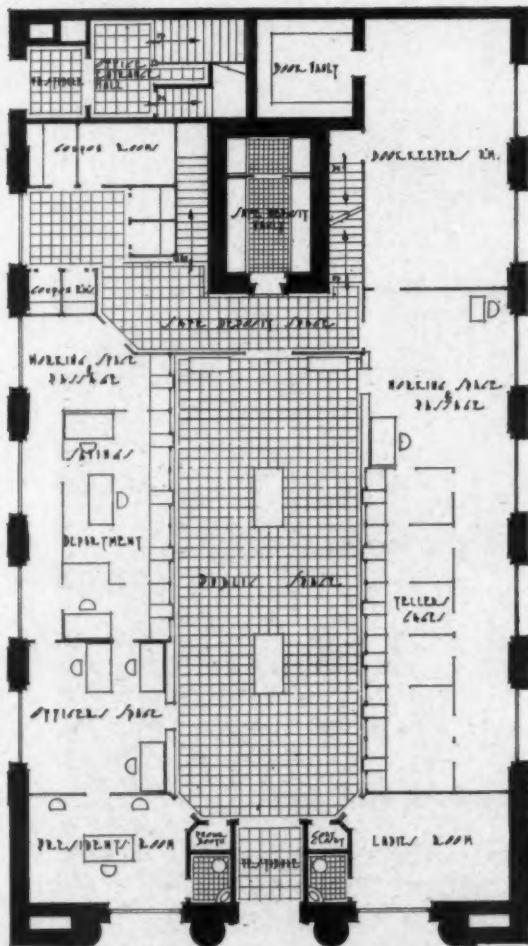


SECOND NATIONAL BANK BUILDING, NASHUA, N. H.

MOWBRAY & UFFINGER, ARCHITECTS

(See plan and description on back.)

THE AMERICAN ARCHITECT
September 9, 1925. Plate 246



SECOND NATIONAL BANK BUILDING,
NASHUA, N. H.

THIS bank building was completed in 1924, at a cost of 61c per cubic foot. Exterior base is of granite, with cut cast stone on front and side. Rear and one side brick. Masonry bearing walls. Roof framing of steel trusses from which is hung office floor framing. Floor and roof slab steel and reinforced concrete, short span system. Partitions are of hollow tile. Wood trim in offices, marble in banking space. There is a vapor heating system. The lighting is by an underset system in bank, with direct lighting in offices. Building has a street lift elevator.

The walls of banking room are of cut cast stone.

MOWBRAY & UFFINGER,
ARCHITECTS



BANKING ROOM, SECOND NATIONAL BANK, NASHUA, N. H.

MOVBRAY & UFFINGER, ARCHITECTS

THE AMERICAN ARCHITECT
September 9, 1905. *Plate 24*

The LAW as to ARCHITECTURE

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

IT is curious in how many cases controversy still arises with respect to the measure of the architect's compensation and the basis upon which it is to be computed. It would seem sufficiently established by this time that the usual practice is to have the architect's fee computed upon the actual cost of the work.

An instance of the failure to follow this practice and to attempt to set up a different standard of remuneration is well illustrated by the following letter:

"I am a member of an organization which is building a clubhouse. The architect for same is also a member of this organization, and for this reason offered his services for '4% of the total cost of the work complete' according to the Institute form of contract, which was signed by himself and officers of our organization. The working plans were approved by our building committee, and with the specifications were sent out for figures almost a year ago, to contractors A, B, C and D. The bids ran so much more than we expected, that the committee decided to reject all four bids, make changes and substitutions in specifications and refigure the job. I might mention here that our specifications include the 'owner has a right to reject any and all bids' clause. The two low men C and D were asked to refigure. D was the original low man, but in the refiguring C came out the lowest, and the committee awarded the general contract to C.

"The work has progressed well, and will be completed in about a month. Recently, we received a letter from the architect in which he states on what his fee is based, and includes the first bid of D's, which is about \$12,000 more than the second bid of C's, and ignores the accepted contract under which the work is being done.

"Can he justly base his fee on any other than the accepted bid? He insists on being paid up to date, and that we give him a note by Jan. 1st for the rest according to his figures; also, we are not to dispute his claim, otherwise he will start legal proceedings as soon after Jan. 1st as possible. But as we are borrowing 60% of the value of the house from a building and loan association, and as the loan will not be operating until Jan. 15th, you can realize the situation a mechanic's lien will put us in.

"We feel that in order to save the building, we will have to pay him his price. Is there anything that we can do to prevent his collecting any more than his contract calls for, and at the same time prevent his putting a lien on the building?"

The foregoing letter does not give the terms of the contract in any detail, but the inference clearly is that the contract was the ordinary standard form of the Institute. The case does not involve, apparently, the situation where a complete change of plan has been put into effect and where the architect might be entitled to charge a fee on the lowest bid received on the first plan and a fee also on the bid finally accepted for the new plans after the scheme had been changed. Here there were changes evidently and modifications between the taking of the two sets of bids, but there is nothing to indicate that they were such as to entitle the architect to a separate charge on the basis of an entirely new scheme, as distinguished from a charge for the extra services performed by him in connection with the changes made in the original plans.

It is clear that the architect's charge, not only under the Institute contract, but under the well established practice of the profession, should have been based upon the actual cost to the owner of the work, and that this actual cost is the amount which the owner pays out in order to have the work done. Inasmuch as the original bids were rejected, it is obvious that the work was not carried on under them and that the contractor should not base his final charge upon the bids rejected. The cost to the owner was the amount which he paid under the second bid submitted by (C), which was the bid accepted, and not the amount of the original bid submitted by (D), which was not accepted. In addition to this fee, he would be entitled to any authorized extras and to a reasonable compensation for any changes in the plans and specifications, pursuant especially to Article 5 of the standard form of contract.

The correspondent whose letter I quote is unnecessarily disturbed with respect to the effect of the lien. If the architect insists on filing a lien in such a case, he cannot well be prevented from doing so. The filing of the lien, however, while it protects the architect and secures to him the payment of any valid claim which he may have, need not necessarily tie up the financing of the proposition or cause any great uneasiness to the owner in connection therewith. It is a simple matter to bond a mechanic's lien. When the bond is filed, the court will make an order releasing the property from the lien. The bond will then take the place of the lien. The property will be free and clear, on the one hand, and on the other hand, the lienor will be able to look to the bond for protection, where before he looked to the security of the land itself.

In order to avoid misunderstandings, such as that evidenced by the foregoing case, it is well to make quite clear in every case the fact that the fee is based on the *actual* cost of the work and not the theoretical cost or the cost which would have attached, had other bids been accepted. The standard form of the Institute should surely be sufficient to make this fact clear, as it defines, in Article 11 of the Conditions, the phrase "the cost of the work" and states specifically that it is "ordinarily to be interpreted as meaning the total of the contract sums incurred for the execution of the work not including architects' and engineers' fees or the salary of the clerk of the works." This definition is direct and unambiguous. It might even be thought to be quite unnecessary, were it not for cases such as the one to which I have just referred, and for the fact that it is always well, of course, to make it clear that the cost of the work

does not include the fee of the architect or engineer or the salary of the resident superintendent or clerk of the works.

LEGAL DECISIONS

MATERIALMEN furnished materials which were used by a contractor in the construction of a building. The materials were proper, but the contractor did his work so poorly, that it was not accepted and was, on the contrary, removed and the job reconstructed. The court held that the materialmen were entitled to a mechanic's lien for the materials furnished and that the fact that the contractor did the work so poorly that it was rejected, as not in compliance with the terms of the principal contract, was insufficient to bar the lien rights of the materialmen.

Pipkorn Co. v. Tratnik, 161 Wis. 91.

AN action was brought on a contractor's bond for damages claimed to have resulted from the failure of the contractor to complete a dam. The contract provided that the contractor should be compensated for extra work, and made provision for agreement on the cost thereof, except where unit prices applied. A bulkhead was washed out by floods. It appeared that the contractor had refused to complete the dam as far as the bulkhead. The court held that the contract should be construed to require the dam to be constructed across the entire river and not a part thereof; that the contractor could not recover for extra work caused by his negligence resulting in the destruction of the bulkhead; that he was not justified in failing to complete because the owner failed to enter into an agreement with respect to payment of the extra work, as the contract fixed a unit price therefor; that the failure of the owner to agree on compensation for the extra work was not a breach on his part; that the contractor could not recover the amount of the work done on *quantum meruit*, since he had refused to complete the dam as far as the bulkhead; and that the owner was entitled to damages which should be measured by the cost to the owner of completing the dam, as provided for by the terms of the contract.

American Surety Co. v. Gonzales Water Power Co., 211 Southwestern 251.

THE following legal decisions all have to do with the question recently under discussion in this Department, namely, the matter of the title to the plans as between the architect and others.

In reading them, it must be understood that, where it is held the plans are public property, the decision is in the absence of any copyright or patent protection secured by the architect, and that the matter of his ownership will depend on the terms of such contracts or understandings as exist between him and the client or others.

ACITY offered a premium for the best plan for a building to be erected. An architect submitted plans which were accepted and he was paid the specified premium. He demanded, however, that the city return to him the plans, on the ground that they were his property and that the premium was not paid for the plan, but for the idea which produced it. The court held that:

"The city, in offering a premium for the best plan, did not do so for the purpose of encouraging or promoting the interests of architecture. It was purely a matter of business. The object was to procure a suitable plan for the House of Correction. The plaintiff, having furnished a plan, which was delivered to and accepted by the city and the premium therefor paid to the plaintiff, I know of no decided case or rule of law which authorizes him to demand said plans back from the city. It is true, there seems to be a custom of the architects to retain the plans in such cases, unless the architect whose plan is adopted is employed in the erection of the building. This may be a very good custom among architects as between each other, but it binds no one else."

Windrim v. Philadelphia, 9 Philadelphia 550.

AN association invited architects to submit competitive designs. It was agreed that the seven most meritorious designs should be accepted and \$500 paid to each of the architects who were responsible for them; that each of the designs so paid for should become the property of the association. The question arose as to the rights of the association to the designs upon tendering the \$500 due. It was held that, upon the tender of the amounts to those entitled to them, the association became the owner of the designs and could use the same in such way as it chose.

Walsh v. St. Louis Exposition, 101 Missouri 434.

E

Moffatt v. Scott, 8 L. C. Jur. 310.



HOUSE AT LARCHMONT HILLS, NEW YORK

PATTERSON-KING CORPORATION, ARCHITECTS



LARCHMONT is a part of the Village of Mamaroneck, and has an historical record dating from about 1661.

The tendency is to preserve in the general aspect of the town the Colonial tradition in which the Village takes pride and the houses for this reason suggest in their design these historical associations.

This house is of wood frame construction, the exterior walls covered with stucco, and the roof with wood shingles.

The floors throughout are of oak; the partitions, stud and plaster.

This house has the usual lighting and plumbing equipment, and is heated by a low pressure steam heating system.

Cubic cost not available.

A REMODELLED HOUSE AT TERRE HAUTE, IND.

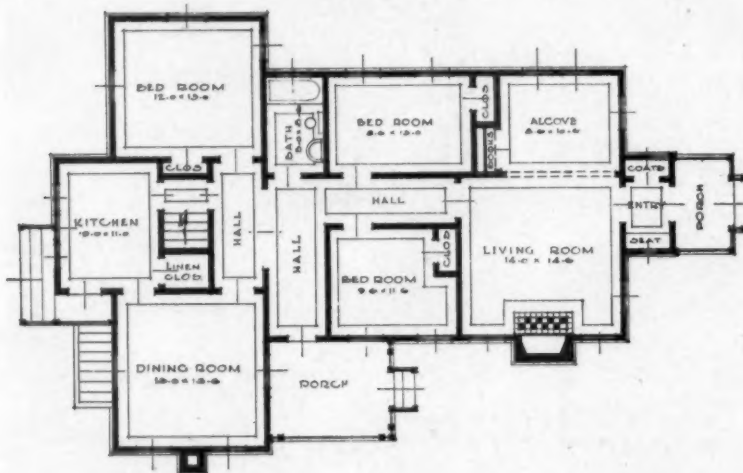
JOHNSON, MILLER, MILLER & YEAGER, ARCHITECTS

AN interesting remodelling of a small house, such as is to be found in the small communities. Cypress siding was used for the interior

walls, while asphalt shingles form the roof covering. The interior trim is pine and oak. This house has a hot air furnace and the usual electric light installation. Figures as to the cost of remodelling are not obtainable.

The plan provides three entrances—the principal or main front entrance leading directly to the living room; another entrance is to kitchen, while a third provides direct ingress and egress to the bedrooms.

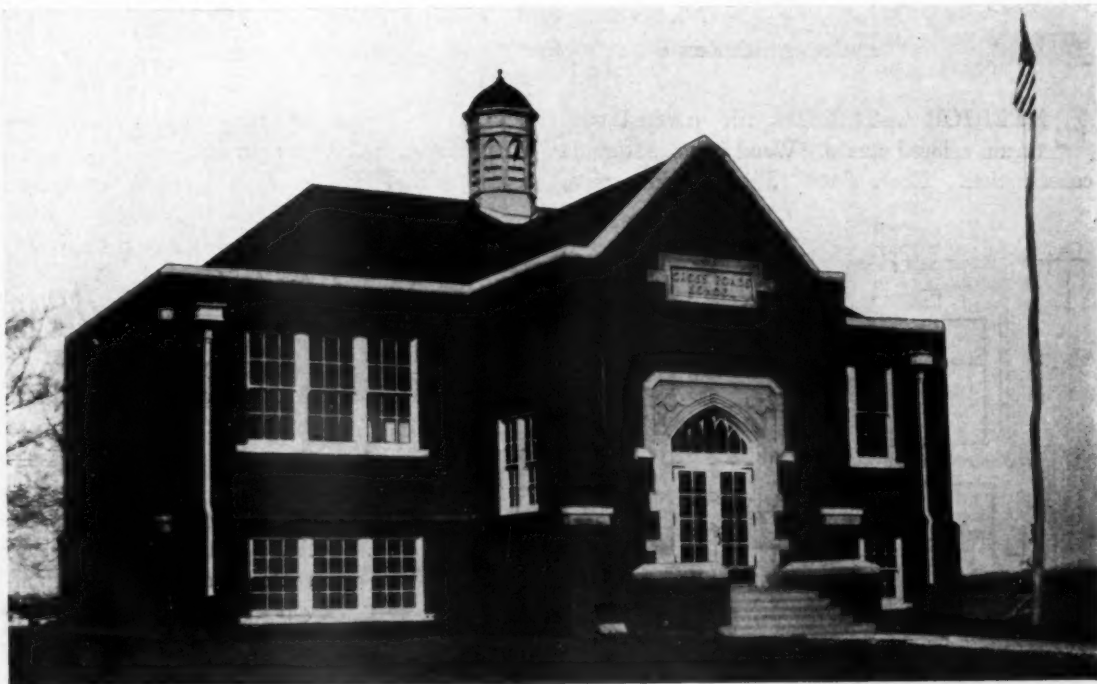
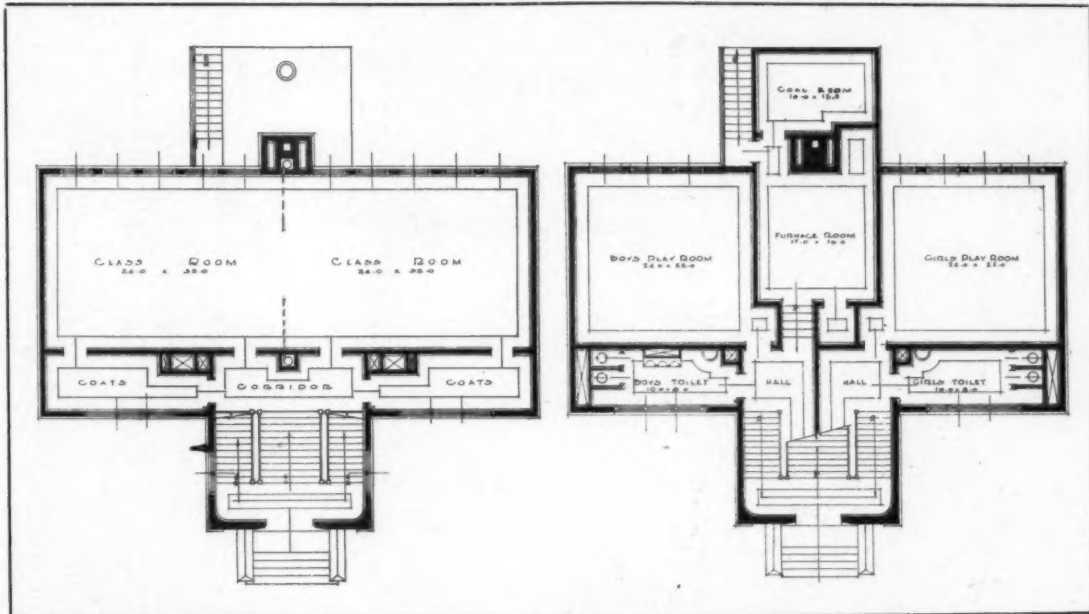
Small houses of this type are to be found in great numbers throughout the middle West. When carefully designed and planned, as in this instance, they offer a pleasing variation to the usual bungalow type.

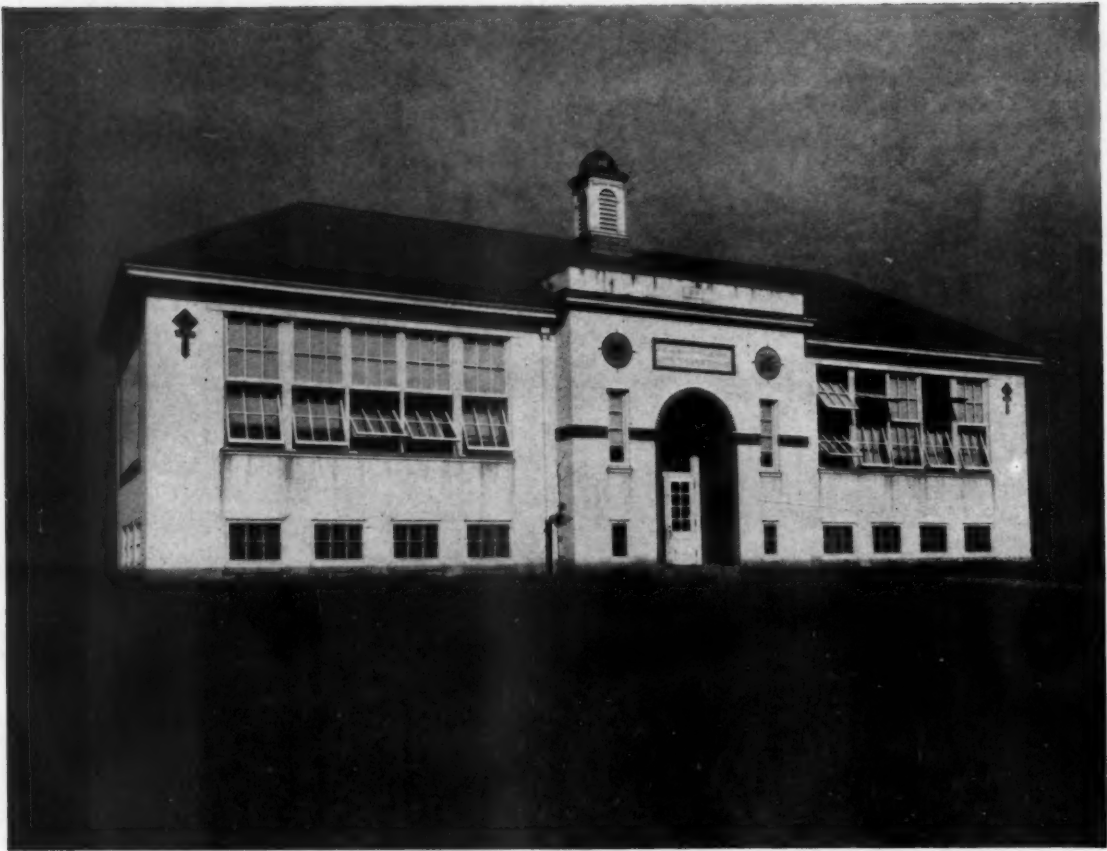


CROSS ROADS SCHOOL, MORTON CORNERS, IND.

JOHNSON, MILLER, MILLER & YEAGER, ARCHITECTS

BUILT 1922. Tile walls with wood joists. Roofing, asphalt shingles. Floors, cement and wood; partitions, wood. Trim, pine. Heated by hot air. Septic tank provided for plumbing. Cost per cubic foot 20.8¢. This is a type of four room schoolhouse as found in the middle west.

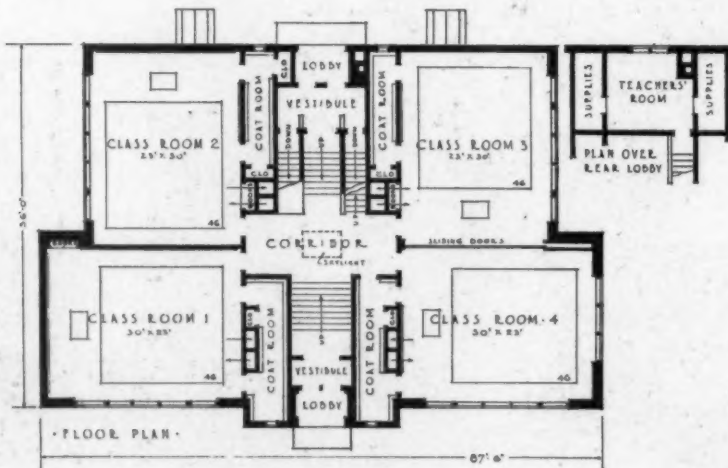




BOYER SCHOOL, PHILADELPHIA, PA.

C. E. SCHERMERHORN & WATSON K. PHILLIPS, ASSOCIATE ARCHITECTS

EXTERIOR walls, hollow tile, covered with cream colored stucco. Wood joists and studs construction. Roof, slate. Interior side walls, sand finished plaster; ceiling, low white plaster. Wood floors and trim; steam heat. Drainage, septic tank. Water supply, private. Vitreous and enameled plumbing fixtures. Cast and wrought iron piping. Electric wiring, knob and tube. Cost, 13c per cubic foot. Built 1917.



A more pretentious type of small schoolhouse, built to meet the needs of a fast growing section. The planning and equipment are typical of a state where schoolhouses receive a correct amount of care in their architectural treatment and in planning that insures the best standards.



HOUSE AT NEW ROCHELLE, N. Y.

D. A. SUMMO, ARCHITECT

See following page for description and floor plans

CUBIC COST, HOW FIGURED

PENDING action by The American Institute of Architects special committee on the standardization of a method of figuring cubic costs, we reprint below, from our issue of November 19, 1924, the method that was used in figuring cubical contents of the various houses submitted in our small house competition held at that time.

In order to devise a rule that will be arbitrary in this matter and reduce all similar types of buildings to the same method of computation, it was stated that the cubical contents should be figured as follows:

The extreme dimension to outside walls shall be used to obtain the ground area. The height shall be measured from one foot below finished basement floor to a point halfway between level of wall plates and ridge of sloping roof. To this amount shall be added the cubical contents of enclosed porches and one half the cubical contents of open porches and one half the cubical contents of open porches on areaways.

It will greatly assist the editors of this journal, if those submitting work for publication accompanied by a statement of cubical cost, will base their calculations on the above method.

TUBERCULOSIS AND HOUSING IN PARIS

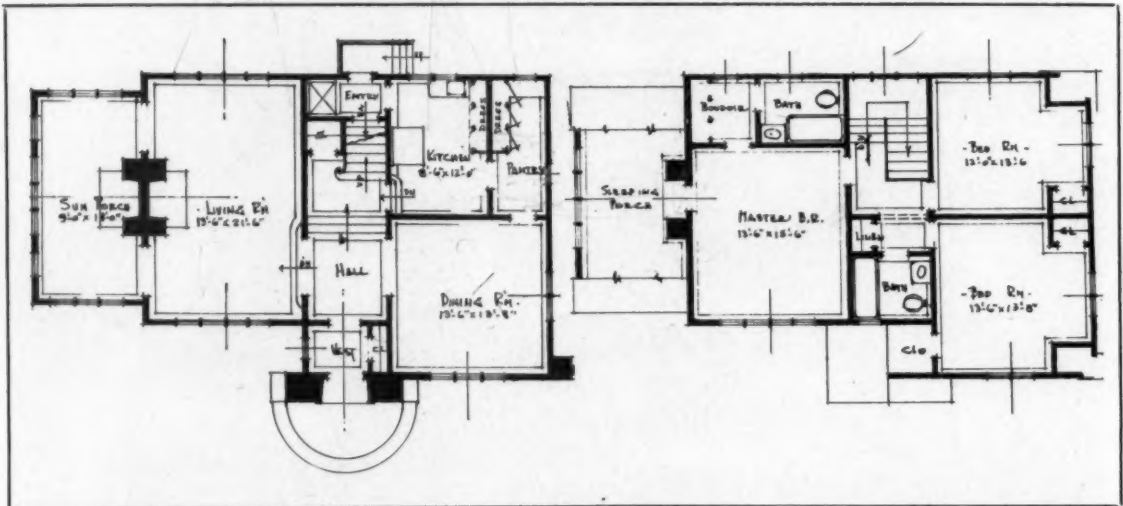
A RECENT thorough investigation of the causes of the undue prevalence of tuberculosis in the Third and Fourth *Arrondissements* of Paris has led, states *Housing Betterment*, to the conclusion that the damp unhealthy conditions and the overcrowding, and especially the lack of sunlight in the home, are the principal secondary causes for the great extent of tuberculosis in these districts. The 1921 census showed 99,629 inhabitants living in 2,119 houses or 46 people to the house. Out of a total of 1,250 deaths a year in this district, tuberculosis claimed from 350 to 400. The Third *Arrondissement* has an area of about 300 acres and 61% of its area is built upon, there being something over 300 inhabitants to the acre, while to the remainder of Paris the average population is 150 to the acre.

As a result of the disclosures made by this investigation the Paris Municipal Council recently voted a credit of 21,154,000 francs for the purpose of improving the condition of certain unsanitary blocks of houses. Seventeen such blocks in the Third and Fourth *Arrondissements* are to be improved by the city. These include 347 houses with 12,650 inhabitants.

HOUSE AT NEW ROCHELLE, N. Y.

D. A. SUMMO, ARCHITECT

THIS house, built in 1923, is of wood frame construction with exterior walls of stone and stucco. Floors are of oak and North Carolina pine. The roof is covered with slate shingles. The interior trim is whitewood. There is a hot water system, and the standard electric light and plumbing equipment. Cost per cubic foot, 50¢. See preceding page for general view.



THIS school was erected in 1922 at a cost of $28\frac{1}{2}$ ¢ per cubic foot. The exterior walls are of face brick backed with load bearing hollow tile. The roof construction is of the tar and gravel type built up over wood sheathing supported by wooden rafters.

The window sills and base trimming are of cast stone and the outside steps of granite. The cornice and portico columns are of wood.

The reinforced concrete floor slabs are carried on metal lumber supported by steel girders. The corridor partitions are of brick. Three inch gypsum blocks were used for non-bearing partitions. Finished floors in the gymnasium and first and second stories are of maple.

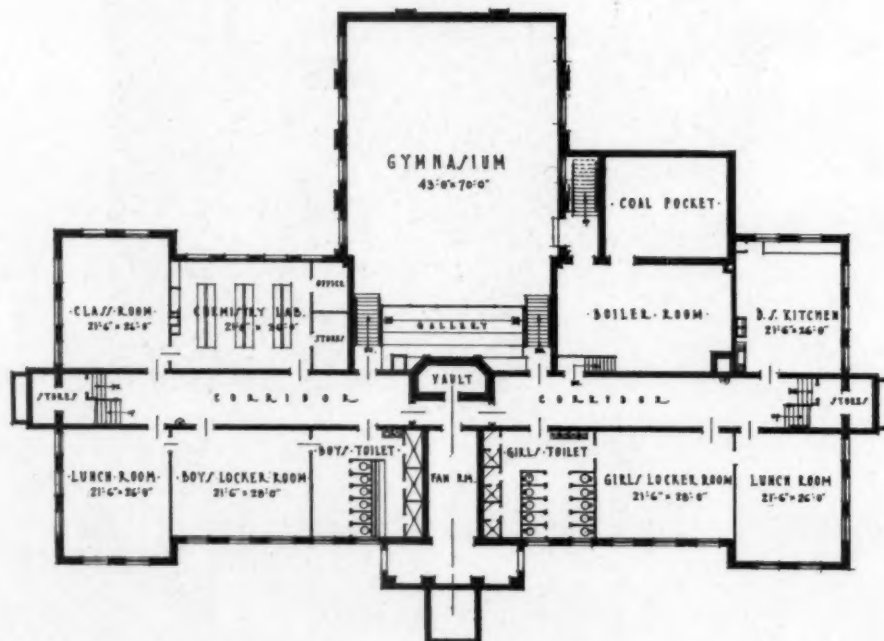
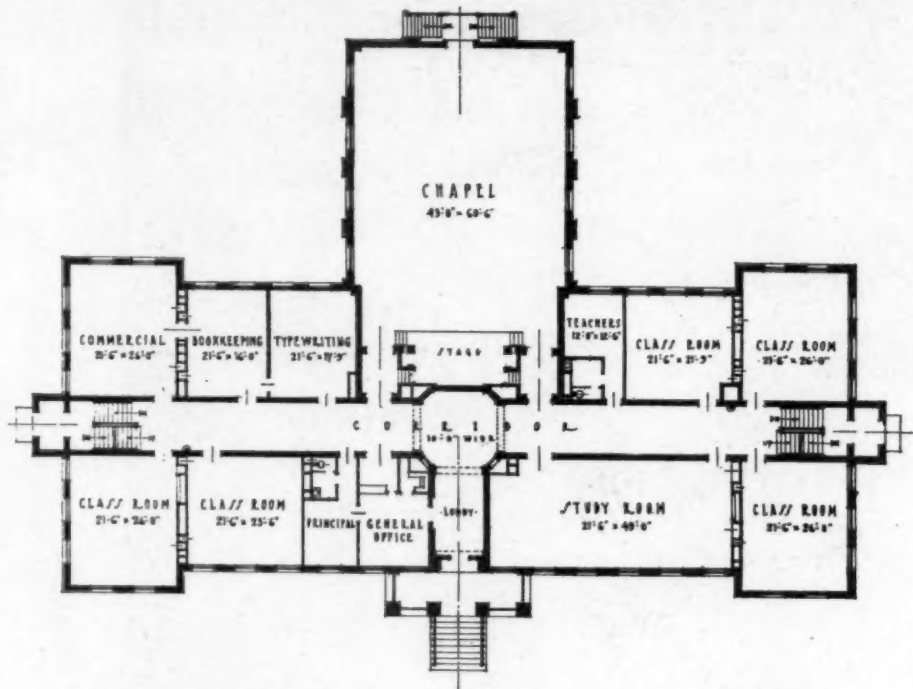
The building is heated and ventilated by means of direct radiation and a fan system. The electric wiring is run in conduit. Plumbing fixtures are of both vitreous and enameled iron.

The "institute" or "academy" land and holds for its alumni traditions regarded with veneration as people, these buildings carry out in their architectural design the historical significance that is to be found in a type of building is typical of New England towns and in most instances, as in the present example, these buildings carry out in their architectural design the historical significance that is to be found in structures erected during our Colonial period.

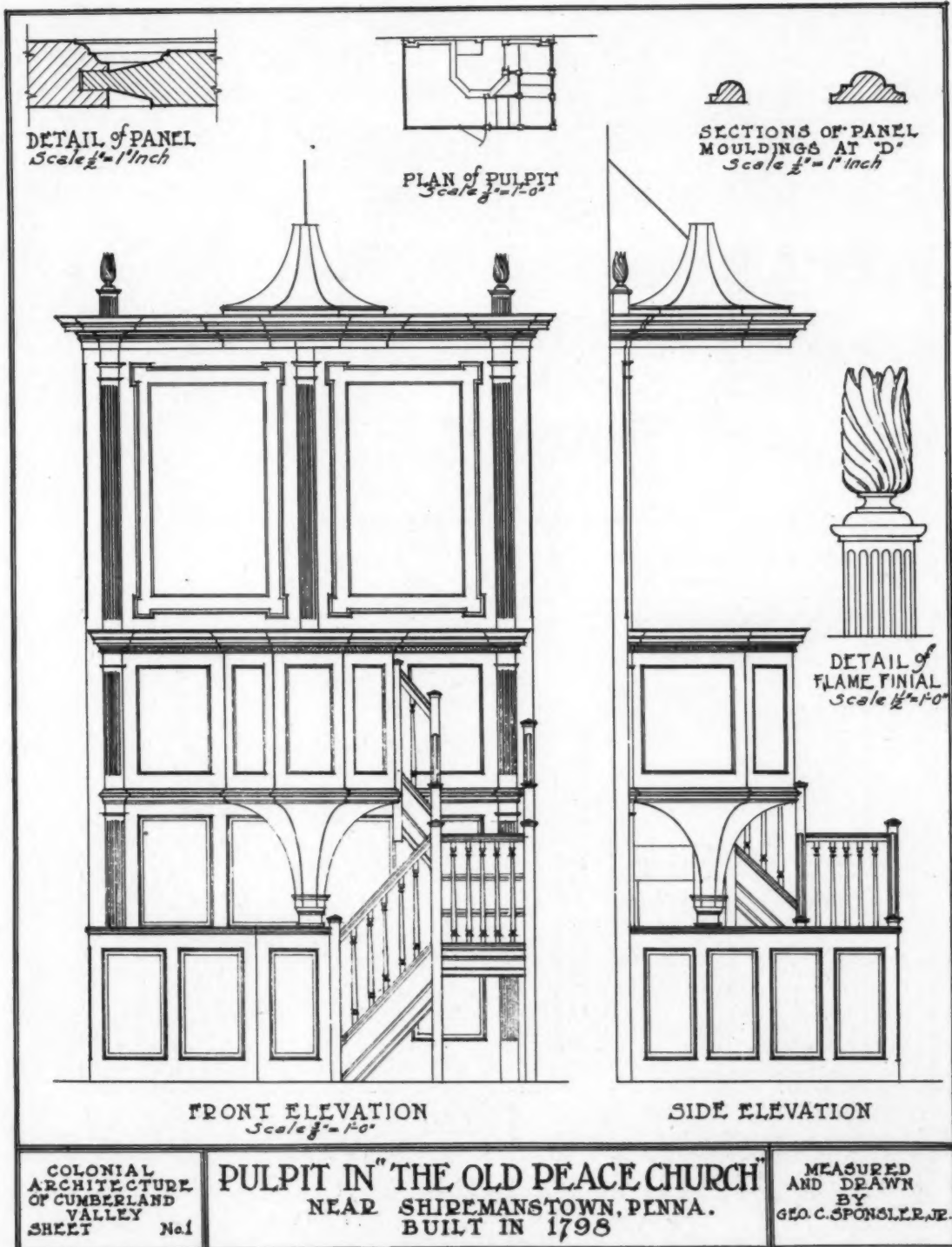
LYNDON INSTITUTE, LYNDON CENTER, VT., LARSON & WELLS, ARCHITECTS



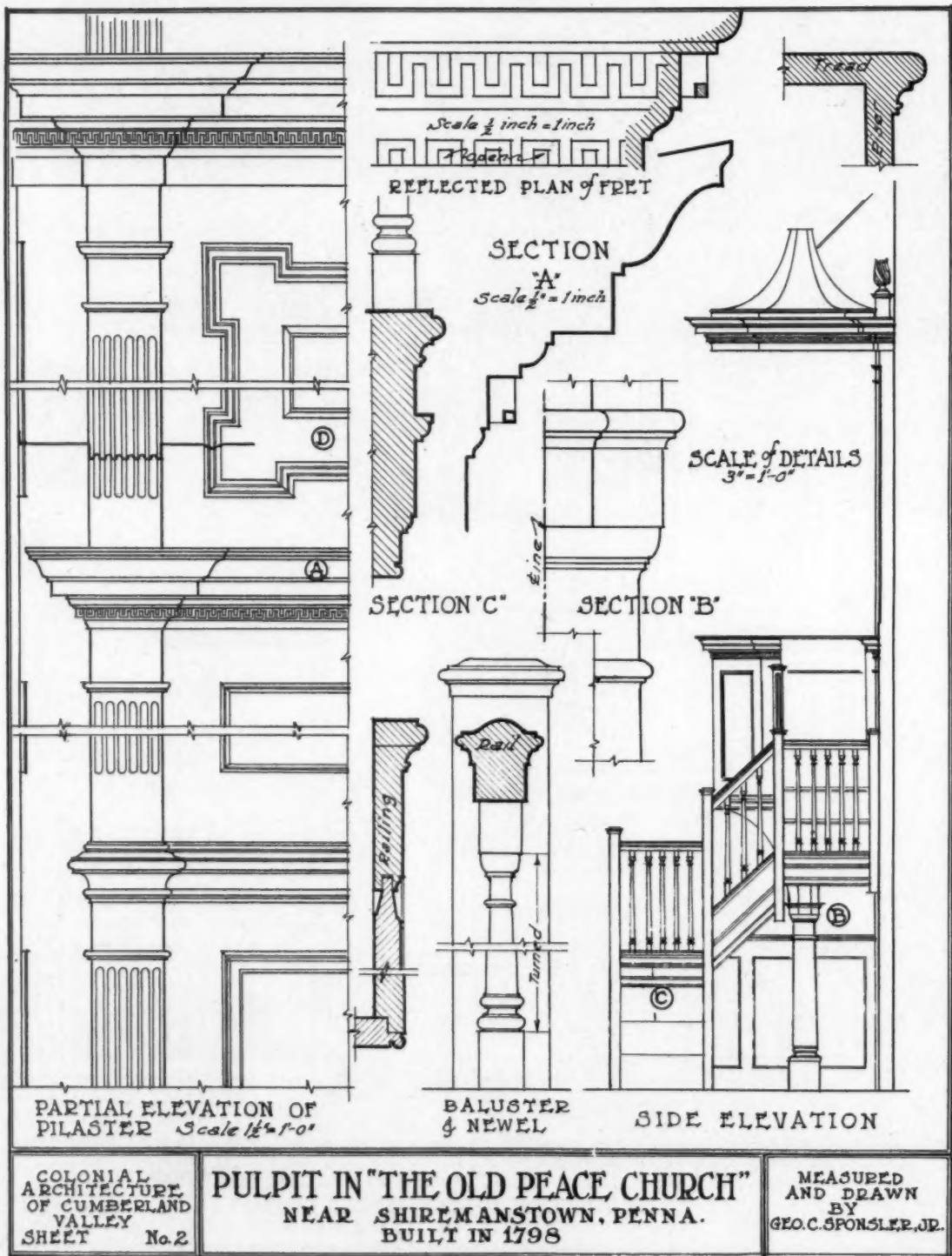
THE AMERICAN ARCHITECT



LYNDON INSTITUTE, LYNDON CENTER, VT.
LARSON & WELLS, ARCHITECTS

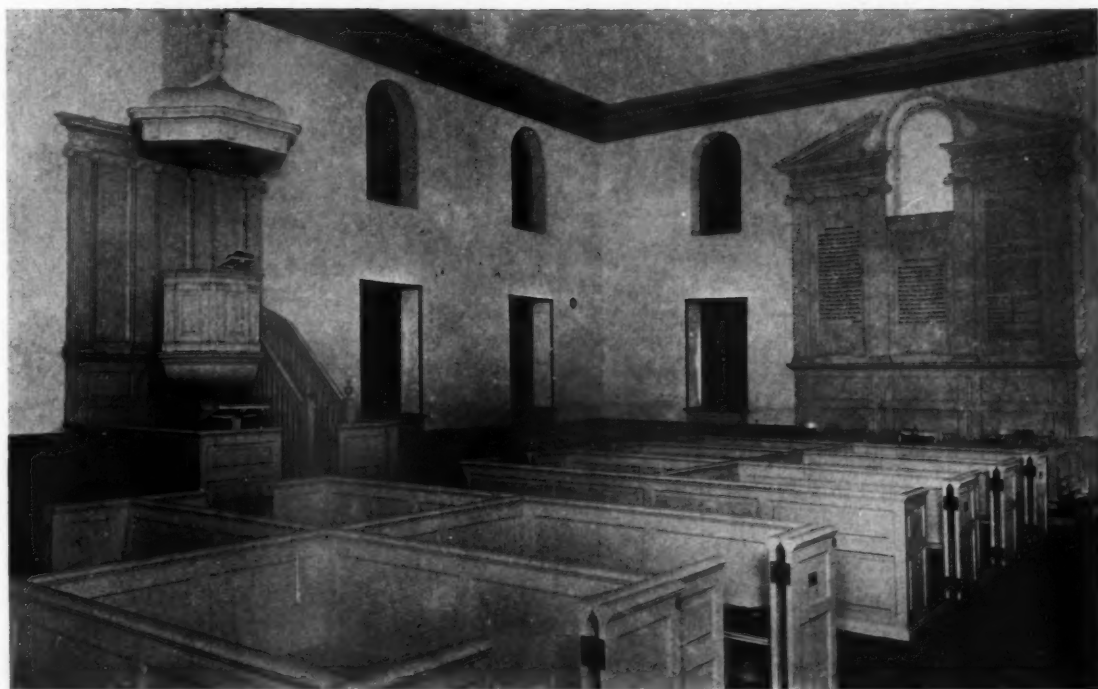


MEASURED DRAWINGS, SERIES II



MEASURED DRAWINGS, SERIES II

THE AMERICAN ARCHITECT



EARLY AMERICAN ARCHITECTURE, SERIES II

OLD POHICK CHURCH, FAIRFAX COUNTY, VIRGINIA

THE PARISH CHURCH OF MOUNT VERNON

AN interesting example of a denominational Protestant church. The two entrances at front each lead to a side aisle, while the entrance at the side opens onto a lateral aisle directly facing the pulpit. Note the arrangement of the pews, planned to meet the requirements of families of varying sizes, and the general impression of austerity conveyed by this interior.

THE AMERICAN ARCHITECT



GLEBE CHURCH, NANSEMOND COUNTY



ST. LUKE'S CHURCH, SMITHFIELD

THE small churches, erected in great numbers during early Colonial days, were as a rule, designed with great care and are striking examples of simple but good architecture. These buildings provided something more than a place of worship. They were used for important gatherings, and in many of them there were delivered the patriotic addresses that aroused in the breasts of the Colonists a spirit of resistance to the conditions under

which they lived as a people and for which they were, with religious fervor, endeavoring to find a means of improvement. Perhaps no state in the Union is taking more pains to restore and preserve these buildings. A fine attitude is shown toward them by the people of Virginia and their solicitude for their preservation is to be much commended. The Virginia State Chamber of Commerce functions efficiently in these matters.



THE MERCHANTS HOPE CHURCH



OLD EPISCOPAL CHURCH, YORKTOWN

EARLY AMERICAN ARCHITECTURE, SERIES II

FOUR COLONIAL CHURCHES IN VIRGINIA

THE AMERICAN ARCHITECT

COMMUNICATION

The Profession of Interior Decoration

The Editor,

THE AMERICAN ARCHITECT:—

JUST what is an interior decorator? An interior decorator is, of course, he, or she, who follows the art of interior decoration. What then, is the art of interior decoration? The answer is difficult. It is so many things. It is a bright portal through which pass the fine fruits of the productive arts as they make their way into every day use. It is the lexicon which defines in no uncompromising terms the abysmal difference between good and bad taste and good and bad selection. There can, of course, be no truly satisfying decoration without good taste appearing as an essential factor, but there is a great deal of what is acclaimed as good taste being flung about that could by no wild flight of fancy be characterized as good decoration. The touch of imagination makes the difference between good decoration and the flat offering of mere good taste. This quality of imagination is that which makes stylists of the great decorators. They leave upon their work the unmistakable mark of their own kind of imagination. They are as recognizable through their finished efforts as the master who creates a fine canvas. The great names in this art of interior decoration are few. A handful here, a handful in Europe—yet every year thousands of tyros rush into the marketplace and proclaim themselves interior decorators. These are of the type, as a rule, which wish to arrive without difficulty. They fancy that because they can combine pink and blue effectively with a *soupcou* of lettuce green as a pronouncement, know the difference between frieze and velour, and have good taste, that they are thoroughly qualified to be interior decorators. They are the class which has inspired architects with a distrust of the average interior decorator, and thus made the way harder for the very sincere few who bring genuine knowledge to the practice of their profession.

The road is just as hard, the long hours of intensive study just as necessary, the absolute accuracy of information is just as deep a requirement of this as of any other profession. The pitfalls are open by the hundred—what stays the feet of the few who do arise from stumbling into them? Study—application—hard work—eternal comparison of the work going on in this field, an open mind, and an absolutely certain knowledge of the sources of supply.

Interior decoration is the proper application of a knowledge of fundamental architecture, furniture, fabrics, dyes, rugs and carpets, pottery, objects d'art, paintings, lights and their fixtures, paints of all kinds and their actions, stains and varnishes, metals, plasters and bricks and cement,

tiles and mortar, and humanity. It is almost a sum of knowledge of all of the arts, rather than an individual art. Its practice requires a special sort of mental equipment, and discrimination might be called its most important approach.

Its selection as a profession should be attended with the same careful consideration that would attend the selection of any other life work. It is no royal highway into the delectable land of easy money, as many have found to their sorrow, and its honest rewards, greater than those of the average profession, it is true, come only after the same long, plodding path of preparation has been trod that characterizes the attainment of success in any other field.

There is no especial reason to suppose that just because woman's place may be "on the mats," as the Japanese have it, she should know how to make those mats lovely as well as useful. What, as a rule does she know of scale and proportion, or the harmony and application of design? Yet every woman alive considers herself a born interior decorator. Why? Nobody knows the answer. But since the average woman rides this hobby delicately, and somewhat desultorily, no great harm is done, save to herself and her own home. It is when she betakes herself to the marts of trade and cashes in on her ignorance that the trained decorator and the architect rise in righteous wrath. The example of woman is stressed because as a rule a man who enters upon the practice of this profession, realizes the value of training, and does not attempt to offer himself as an expert without the necessary foundation.

The more advanced architectural firms are attempting to a certain extent to control their clients' ideas of decoration, and in order to do this more completely, they work with decorators whose knowledge they know to be unimpeachable, who work with the client in complete harmony with the ideas of the architect. This is the ideal condition for the full application of the fine art of interior decoration.

PAULA GOSREAU.

GARDEN CITIES FOR LONDON

THE first step looking toward the possibility of distributing London's population into satellite towns to be taken by the officials of London, states *Housing Betterment*, is found in the adoption recently by the London County Council of a resolution asking the Housing Committee and the Town Planning Committee to consider and report whether or not the Council should exercise its power under the Housing Act of 1919 with a view to the establishment by the Council of Garden Cities or villages known as "satellite towns," or new industrial centers, on the general lines of Letchworth and Welwyn Garden Cities.

THE AMERICAN ARCHITECT

A COMPETITION FOR MODEL WORKERS' HOMES IN RUSSIA

FOLLOWING, is in part a copy of a letter received from D. S. Pauker, secretary of Russian Information Bureau, 2819 Connecticut Avenue, Washington, D. C. The letter states:—

"We enclose some literature on an architectural contest for workers' homes being conducted in Moscow under the auspices of the Soviet of the city of Moscow. Designs from foreign architects are invited. Plans may be submitted up to October 15, to O. D. Kameneva, President of the U. S. S. R. Society for Cultural Relations with Foreign Countries, Sverdlov Place, 2-oy Dom Sovietov, Moscow, Union of Soviet Socialist Republics.

The contest obviously marks an important stage of the vigorous effort being made to solve permanently, with a view to practicality and architectural comeliness, the acute housing problem caused by the rapid growth of the Soviet Capital and the lack of building during the World War and civil wars."

A more detailed outline as to what it is desired to achieve in this competition is set forth in a foreword which states:—

Judging by the special literature appearing on the subject of architecture, by the proposals coming from inventors of building processes and materials, and by the number of experiments and projects submitted, it may be assumed that the minds of technical builders have become alert. The Soviet architects appreciate the full gravity of the housing problem, feeling it to be their main task to cheapen the cost of building by the use of rational methods of construction, of cheaper materials and efficient planning.

The contest announced by the Moscow Soviet is to constitute a review of the achievements of Soviet builders in the domain of housing for the working class. The contest will enable the technical builder to submit all his ideas and attainments in the domain of housing for the workers to the public opinion of the country.

Of course, the aim of the contest is not merely to bring out individual ideas and building methods. The contest demands the embodiment of the idea in a project, in the complete application of the idea or invention under the actual circumstances. The contest is not interested in methods and proposals which, however brilliant in themselves, cannot be easily and profitably carried out just now for the purpose of erecting workers' homes in the city and province of Moscow.

We expect from this contest quite real solutions in regard to planning and construction, and above all, the utilization of cheap and easily obtainable materials.

The stiff condition of the market in regard to building materials should prompt our architects to turn particular attention to this aspect of house

building. There should be no losing sight of any materials that might be rationally applied in the building of dwellings for the workers. The economy of materials and labor, arising from the proper and rigid calculation of construction plans, is the second basic task for the modern rational builder.

It is upon these two questions that our technical builders should have their say through this contest. They should feel quite free to submit revolutionary and daring ideas, free from musty tradition and prejudice. Pure reasoning, building mechanics and physics, these are the only laws obligatory to the architect in the selection of materials and constructive methods.

The scientific selection of cheap constructive methods and materials should be embodied in a plan guaranteeing sanitary and comfortable dwellings.

The plan must be co-ordinated with the real requirements and living habits of our workers. The plan should prompt our workers to quit any unhealthy habits inculcated by living in uncomfortable dwellings. On the other hand, the plan of the dwellings should not prompt the workers to excessive luxury and increased household expenditure.

The project must suit the healthy proletarian taste from the aesthetic standpoint.

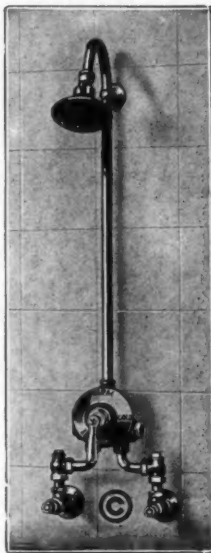
Apart from cheapening the cost of building, the project should also provide for the utmost economy of management, and for the durability and sufficient longevity of the house.

Finally, we expect this contest to yield the project of the cheapest and most healthy and comfortable dwelling for a working class family.

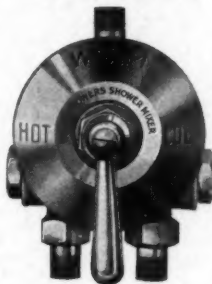
Copies of the program may be obtained by addressing the Russian Information Bureau.

INDUSTRIAL SIMPLIFICATION IN SWEDEN

SIMPLIFICATION of practice is progressing well in Sweden, according to a note in a recent bulletin to sustaining members from the American Engineering Standards Committee. The Swedish Committee on Industrial Standardization has adopted 71 mechanical standards. The number of railroad coach screws has been reduced from 200 to 19. Army lamps have been reduced from 200 to about 75 types, resulting in an annual economy of some \$2,400 for the army. Standardization of pipe and fittings is now under study. The committee has asked a government credit of \$19,000 for the coming year's operations. Standards for tolerances of cylindrical parts have been drafted, and a draft standard for rivets with countersunk flat and spherical heads has been issued. These heads have countersunk angles of 70 deg. for diameters from 6 to 13 mm., and 60 deg. for diameters of 13 to 38 mm.

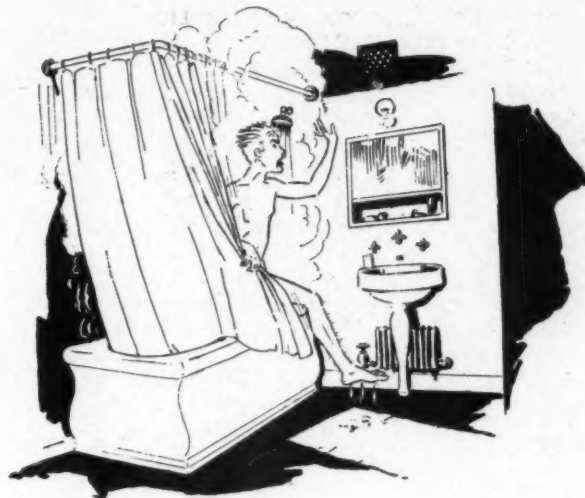


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Serious injuries, and lawsuits, sometimes result from this common trouble. Last October Leopold Godowski, the famous pianist, was severely scalded while taking a shower in a New York hotel. Now he is suing the hotel for \$50,000.

Another hotel is now being sued for \$100,000 by the widow of a prominent Philadelphian who died from the scalding received in a shower bath.

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THE AMERICAN ARCHITECT

DEPARTMENT OF ARCHITECTURE, CATHOLIC UNIVERSITY OF AMERICA

THE medal, which is awarded every year by the American Group of the Société des Architectes Diplômés par le Gouvernement Français to the college or university obtaining the highest proportion of values in the work of the Beaux-Arts Institute of Design, has been awarded to the Department of Architecture of the Catholic University of America, Washington, D. C. The Dean of the Department, Professor Frederick V. Murphy, was also the recipient of a personal letter of appreciation from the President of the Société, Chester Aldrich, following the announcement of the award through its Secretary, Edwin H. Denby.

PAYMENT FOR RECONSTRUCTION WORK IN NORTH FRANCE

A PROJECT of Monsieur Dalbiez, the minister of the liberated regions of France, is expected to alleviate the situation which has become acute with respect to the payment for work done by contractors in rebuilding North France, states *Engineering News-Record*. Of the six billion francs which will be expended the coming year cash will form only 2,400,000,000 francs, the remainder being represented by ten-year government obligations, thirty-year annuities and payments in kind. The minister is asking the national treasury for an advance of the first billion and expects to issue bonds which will be sold abroad for another billion four hundred millions.

THE COST OF STREET CONGESTION

THE Port of New York Authority, after a study of delivery costs as applied to market produce in New York City, finds that it costs as much to carry a sack of potatoes ten miles in the City as it does to haul it 1,100 miles from Michigan.

The investigation also discloses that out of each 100 hours, a fleet of trucks in the City is able to devote only twenty-six hours to actual productive service; so that only twenty-six cents in each dollar is charged to productive trucking work.

This waste, which is due mainly to street and terminal congestion, increases the cost of food and is part of the price paid by the City for overcrowding.

INDUSTRIAL DEATHS

IN an address before the Omaha Chamber of Commerce, the head of the Field Service Committee of the Fire Waste Council of the Chamber of Commerce of the United States pointed out that destructive factory fires in New England had often proved to be industrial death.

The factories destroyed by fire in many cases had never been rebuilt, and their industries had been moved away from New England.

This is an aspect of reckless fire waste in the United States which is well worthy of consideration.

TELEPHONE BOOKS

THERE are so many telephone subscribers in Greater New York that the New York telephone directory has had to be divided into two volumes, each covering half of the City. There are so few telephone subscribers in France that only two telephone directories are published for the entire country, one covering Paris and the other covering all the rest of France.

TO RESTORE DANTE'S TOMB

THE municipal authorities here have decided to restore and beautify the tomb of Dante, Italian poet, and to transform a nearby museum containing Dante mementoes, into a temple to Italian literature, according to press despatches.

Funds also have been appropriated to be used with the 150,000 lire granted annually by the Government for reforestation of the pine groves where Giuseppe Garibaldi took refuge with his wife while being pursued by the Austrians in 1849.

"WIDESPREAD SCEPTICISM" ABOUT BRIDGES

IN a provincial newspaper we read that "there is a widespread scepticism nowadays as to whether anybody could build a bridge which would be an architectural masterpiece," states *The Architects' Journal*. It is a familiar plaint. All the fine things have been accomplished; it is impossible to equal the design and craftsmanship of past centuries; we are infinitely lesser men than our forefathers—and so on. One had thought that the war would put an end to all such unworthy self-depreciation. The habit of looking backwards and sighing is an extremely unhealthy one; it blunts the edge of initiative and saps confidence. The fact is, of course, that we are infinitely better equipped to do good work than any generation that has gone before us. And we are doing it, though not to an extent commensurate with our capacity, because proper opportunities are not frequently enough provided. There are, however, signs of a change of policy in this respect, especially in official quarters, one of the most encouraging being the Minister of Transport's recent circular urging local authorities to take architectural advice on the design of road bridges. A few more reforms of this kind, and the fine works that will spring up will be sufficient answer to the plaints of the Jeremiahs.

SCHOOL FOR PLASTERERS

EVENING classes for plasterers are held four evenings a week in the Buckman School of Portland, Ore. The first part of each evening is devoted to technical planning and designing. After this the men go to the basement of the school, which has been divided into small rooms, and there they spend about two hours in the practical work of plastering.



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FIND ANCIENT WORKSHOP

GEOLOGISTS, among whose number is one American, have made an important discovery at Frindsbury, Rochester, England, in the Valley of Medway, says *The Morning Post*. They have found relics dating from mid-pleistocene times—the age supposed immediately to precede that of man—consisting of a complete workshop containing seventeen heaps of flint tools and weapons numbering altogether 4,000 pieces. These include hand axes of large flint flakes, hammer stones of quartz, massive corepieces and large flint nodules. The discovery was made in a queer saucer-shaped depression in a chalk cliff.

THE FIRE LOSS IN 1924

FIRE destruction amounted to \$543,810,639 in this country in 1924—the largest total ever known—according to estimates announced at the annual meeting of the National Board of Fire Underwriters.

The 1924 fire loss amounted to \$1,500,000 a day. The average loss for a month was equivalent to the total loss caused by the Baltimore conflagration of 1904.

A report of the board's Committee on Incendiarism and Arson showed 1,167 suspicious fires had been investigated during the last fiscal year, making 4,717 since 1916. In connection with these cases, 2,032 arrests had been made and 995 convictions obtained.

It was declared that a majority of persons arrested in arson cases have been shown to be of foreign birth, most of them coming from Russia.

KEATS' HOME IS DEDICATED

THE historic house in which the poet John Keats lived at Hampstead, and which was saved from destruction partly by subscriptions of American admirers, was formally opened as a permanent memorial. Both the house and the garden, where Keats composed his immortal "Ode to a Nightingale," remain unaltered.

THE PRESS AND ARCHITECTURE

ARCHITECTS at their meetings frequently congratulate themselves about the greater interest taken in architectural matters by the general Press, but a careful perusal of many of its glowing and enthusiastic periods reveal the dim outlines of a skeleton in the cupboard, states *The Architect* of London. There is usually a coy and casual reference to manufacturing firms whose materials and appliances have been used, the same firms generally being found in the advertisement columns of the same paper. We wonder whether this sudden interest in architectural matters and the beauty of structure arises altogether from an awakened sense of beauty, or whether the genesis of the movement is not to be traced back to a

desire to attract more custom to the advertisement columns. What makes us doubt the real meaning of the sudden interest is the extremely bad illustrations of architectural works usually given in the Press. These may, of course, appeal to the public and bring numberless commissions to the architect. They may on the other hand sometimes induce the average man to avoid the architect pilloried in illustration despite the honeyed words of the writer. To some, the pleasure of seeing a short letter published in "The Times" is extreme, but the pleasure might be mitigated by consideration of the impartiality frequently shown by the "Thunderer," who has not assessed the relative worth of two architectural correspondents. We may be wholly wrong, but we are a little inclined to think that the interest of the public Press in architectural matters should be taken *cum grano salis*, and that our friends might do better to remember that there are advantages in good illustrations of their work which is hardly met by the public Press.

BOSTON SETS UP COLONIAL ROOMS

PRESS despatches state that restoration of the homes of our ancestors through furnishing genuine rooms from their old houses with the household goods which they actually used is one of the most interesting developments of the exhibition of antiques, and the Boston Museum of Fine Arts is the latest organization to attempt this on a large scale.

Work is in progress on a three-story wing to be used for this purpose. It will be completed in about a year from the present time, according to present plans, and the installment of these old rooms will take six months more. It will be a worthy rival of the famous new American wing of the Metropolitan Museum of Art of New York, but with distinct differences.

Boston will not confine itself to America in showing the art and homes of earlier days in this wing. Other countries will be represented. The ten rooms in which the home life of America will be shown will all be from New England. Another departure in the Boston Museum will be that the exhibits will not be confined entirely to the rooms, but adjoining each room will be a gallery containing many other things of the period.

EARTHQUAKE LANDS

MORE than 100,000 earthquakes have been recorded the world over in the last fifty years. Most of them were slight tremors. Italy suffered the largest number of shocks, 25,000. Japan had about the same number. Greece had frequent earth shocks, with the Pacific Coast of South America and Java, Sicily and Asia Minor ranking in the order named. The Atlantic Coast has had 1,000 shocks in half a century.

The Doors Swing on Stanley Butts



Architect:
Arthur Loomis Harmon
New York City

Arthur Loomis Harmon has been awarded gold medals by the Architectural League of New York and the American Institute of Architects for his design of the Shelton, New York City, the newest and loftiest of the residential hotels. Stanley Ball Bearing Butts are used in this beautiful building.

THE STANLEY WORKS

New Britain, Conn.

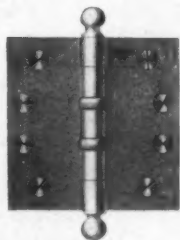
New York

Chicago

San Francisco

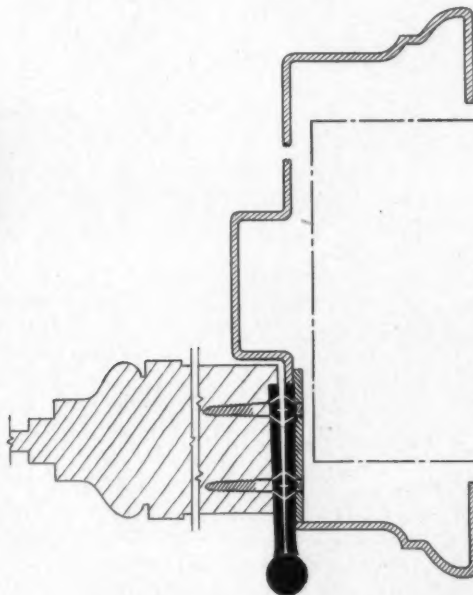
Los Angeles

Seattle



Stanley No. B.B. 179
4½" x 4½"

Wrought Steel Template
Ball Bearing Butt as used
in the Shelton.



Scale, one-half
full size

STANLEY

BALL BEARING BUTTS



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Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

THE AMERICAN ARCHITECT

DUTCH METHODS

IN Amsterdam, states a recent issue of *The Builder*, London, four different methods of concrete construction are being used for the erection of a garden village of a thousand houses, many of which are built of large slabs. In some of the systems, whole sides of houses are poured on a horizontal platform and erected after maturing by a travelling crane; whilst in others slabs 1 ft. 8 in. wide and of a height corresponding to the height of a story are made in a factory and transported to the site for erection. In other cases, the walls are poured *in situ* between different designs of shuttering. No bricklayers are thus required for the walling, and in the systems where the walls or slabs are poured on a platform, plaster is applied to the inner face and screeded whilst they are in a horizontal position; plasterers are thus also dispensed with, and so far as one could see from the film the surfaces were quite good. Labor-saving methods have been reduced to a fine art, so that the cost of two-story houses has been reduced to about £350, inclusive of the pile foundations which are necessary owing to the nature of the ground. A cordial invitation is extended to English architects and others interested in housing to visit Amsterdam to see what is being done, and we hope this will be taken up as there is undoubtedly much to be learned in Holland so far as the rapid and economical erection of houses is concerned.

A REAL ESTATE MANUAL

PROBABLY an architect's working library presents in its books a wider and more varied list of titles than that of any other man who practices a profession. Art, more particularly as related to the builder, must be there. Not alone the art of architecture, but all the various complications of the arts allied to architecture. There must be something on engineering. There must be something on law as affecting in its many aspects the relations between the architect and the client and the building contractor. And, he must also know something of real estate, its complex problems in buying and selling, the financing of buildings, and how that co-operative building is so much to the fore, just how to safeguard a group of clients from the pitfalls that beset them.

A book with title, *Real Estate Manual*, and ably edited by experts in various branches of real estate operations, has been published by Doubleday, Page & Company, Garden City. It is, in fact, a group of lectures by various men in the real estate field, each a specialist and authority on his particular topic. The lectures are divided into two parts, *Real Estate Law* and *Real Estate Practice*. Every question that an architect may reasonably ask is found answered in this book. The facts set forth are readily accessible and the text divested of much of the often confusing legal phraseology offers a fund of reliable information that has large value.

The price of this book is \$2.50 net, and may be had by addressing the publishers of *THE AMERICAN ARCHITECT*.

PERSONALS

Munroe Walker Copper, Jr., architect, has moved his office from the Cuyahoga Building to 4500 Euclid Avenue, Cleveland, Ohio.

E. D. Parmelee, architect, announces the removal of his office from 236 to 232 Huguenot Street, New Rochelle, N. Y.

P. C. Samwell, architect, has moved his office to larger quarters in the Henkle Building, Winter Park, Fla.

Morris Rothstein, architect, has moved his offices from 26 Court Street to 186 Joralemon Street, Brooklyn, N. Y.

W. Ray Oberlin and J. Frank Newlon announce the organization of the firm of Oberlin & Newlon, architects, with offices at 66½-68½ North Diamond Street, Mansfield, Ohio.

William H. Odell, architect, formerly of Suite 3-241 General Motors Building, Detroit, Mich., announces the opening of his Florida office at 16 Knight and Wall Building, Tampa, Fla.

Samuel Biderman, formerly with Lang & Witchell, announces the opening of his office for the general practice of architecture at 927 Athletic Club Building, Dallas, Tex.

Phineas E. Paist, A. I. A., has opened up a new office in Coral Gables, Florida, and would be pleased to receive literature and catalogs from manufacturers and dealers in building materials and the allied trades.

Valerio & Ullrich, architects, have opened an office for the general practice of architecture at Room 1006, 5 North La Salle Street, Chicago, Ill., where they would be pleased to receive manufacturers' catalogs and samples.

Announcement is made of the dissolution of the partnership of McLanahan & Bencker, architects. M. Hawley McLanahan and Ralph B. Bencker will continue the practice of architecture individually at their present offices in the Bellevue Court Building, 1418 Walnut Street, Philadelphia, Pa.

Charles L. Ritts, who has been with Temple & Burrows for a number of years, announces that he has taken over the offices of the late George H. Washburn at 313 Parsons Building, Burlington, Iowa, and will engage in a general practice of architecture. Manufacturers' catalogs and other publications would be appreciated.

The PUBLISHERS' PAGE

NOT long ago we published an article entitled "Or Equal" in which were pointed out certain evils attendant upon the use of this ancient and useless clause in specifications. Since this article appeared, a considerable mass of correspondence has been received, all of which endorsed the arguments that were advanced, and expressed the hope that architects would assume their rightful prerogative and responsibility and definitely specify the product or products they were willing to consider for the particular purpose in question.

Included in the correspondence received by the publishers are a number of letters from manufacturers and some of these definitely point out economic wastes encountered as well as the bane of the system of using the "Or Equal" clause, in a way worthy of consideration, as is shown by some of the following quotations:—

"The term 'or equal,'" writes a large producer, "is a bugbear to every manufacturer of a standardized quality article. For instance, in our own business we are repeatedly compelled to compete with fly-by-night manufacturers, firms who are not in any way entitled to be in business, firms who manufacture their materials on the rule-of-thumb—who have no technical means of checking up on their manufactured product and are here today and gone tomorrow. The result of their work is a thorn in the side of the architect and tends to discredit the whole group of reputable manufacturers making this product."

* * *

Another correspondent puts this matter squarely up to the architect. He writes:—"When architects act on the suggestion and eliminate the words 'or equal' which are fraught with so much potential trouble it might not be amiss to advocate having specifications followed literally and not allowing substitutions of articles for materials specified.

"We know of one instance where a certain material was specified and the contractor stated to the manufacturer that he did not figure on the materials specified as he never contemplated using products of that quality and would only use prod-

ucts which cost about one-third less. The architect did not insist upon the contractor using the materials specified, and in consequence inferior products were used. Where materials of known quality are specified and used, the architect will save himself considerable annoyance and the owner will profit by having a better built building."

* * *

"I would suggest," writes a manufacturer, "that the simplest plan to remedy the 'or equal' would be for the architect to specify two or more standard brands by name. That would effectually dispose of the question of monopoly and also give the distributor or dealers of several well established manufacturers an equal chance to estimate without requiring them to establish new connections in order to secure the material named.

"As a rule the contractors have only one, or at most two, established sources of supply in any particular line. They usually find it to their advantage to place all of their business with one firm, and prefer to estimate on specifications that definitely permit the use of material they carry in stock.

"The architect who follows this plan need only assure himself of the quality and reputation of the product named. He can then dismiss the matter from his mind feeling sure that no inferior material will be substituted. As a matter of fact practically all lines produced by our industry in standard quality are sold at the same price and where an advantage in price is sought it is usually obtained only at the expense of quality."

* * *

We have been reading a manuscript submitted by Glenn Brown, F. A. I. A. It is a history of architecture in the United States since the inception of the original body of the Institute in 1857, with particular reference to the influence of the Institute in directing architecture along the path that has led to its present development. Written by a man who has been closely identified with every constructive effort of the Institute for almost half a century, it is authentic. This is one of the important articles to appear in our Golden Anniversary Issue.

TIMELINESS

TWO articles to appear in our issue of October 5, are marked by timeliness. One by Winsor Soule, architect, is an exhaustive review of the effect on materials of the earthquake that visited the Pacific Coast. Another article, by Walter W. Kantack who was selected by Secretary Hoover to report on certain features of the Paris Exposition, will discuss the unusual artificial lighting effects. Both articles will be very fully illustrated.



CHURCH OF SS. JOHN AND PAUL, ROME

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