dnesday, April 29, 1925 Vol. LXI. No. 1582.

THE ARCHITECTS' JOURNAL & Architectural Engineer

With which is incorporated "The Builders' Journal."

FROM AN ARCHITECT'S NOTEBOOK.

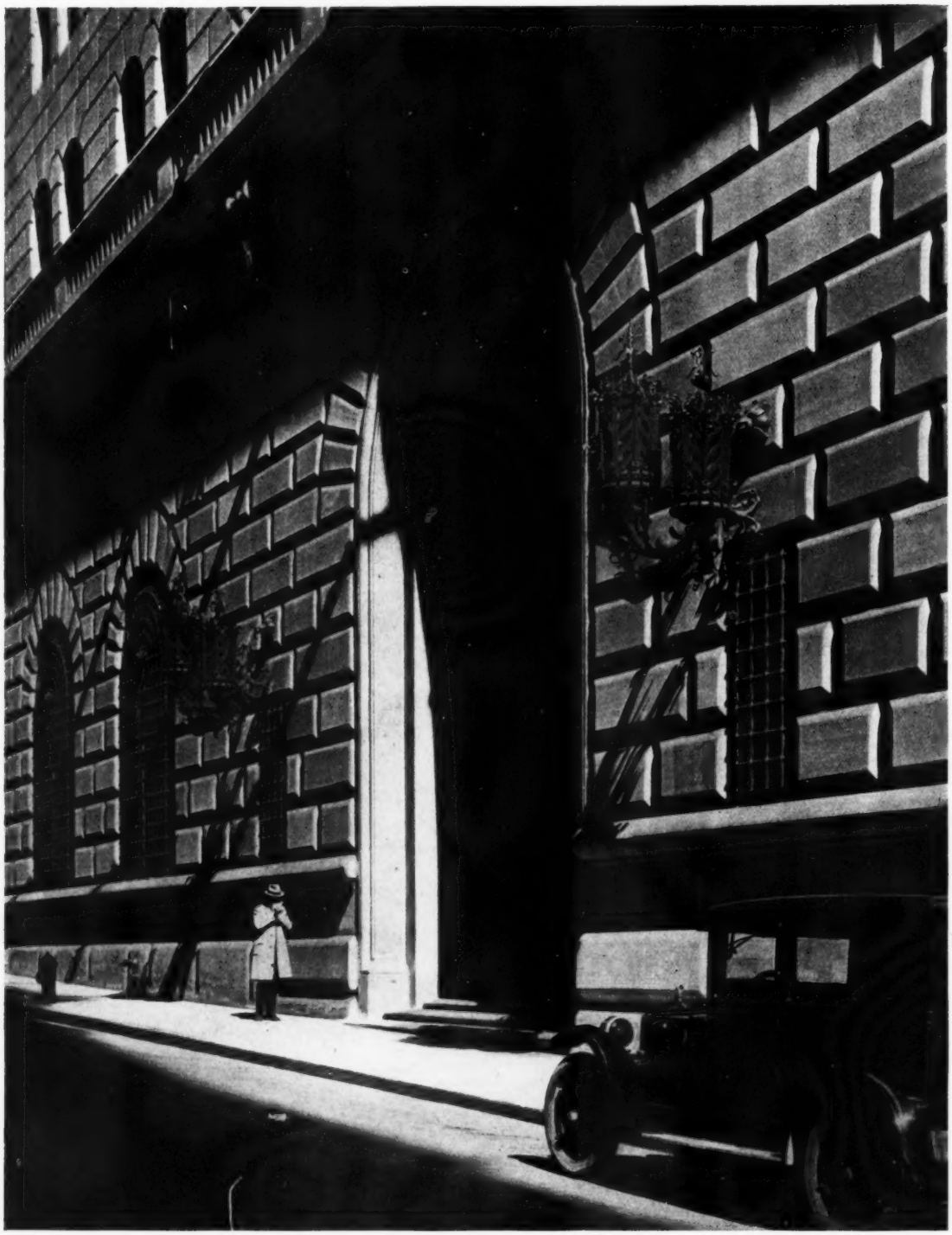
As in landscape gardening, a spire, cupola, monument, or tower of some sort, is deemed almost indispensable to the completion of the scene; so no face can be physiognomically in keeping without the elevated open-work belfry of the nose. Dash the nose from Phidias's marble Jove, and what a sorry remainder!

HERMAN MELVILLE in "Moby Dick."

9 Queen Anne's Gate. Westminster.

The Federal Reserve Bank, Wall Street, New York City

York and Sawyer, Architects



Another view of this Bank appears on page 651.

THE

ARCHITECTS' JOURNAL

9 Queen Anne's Gate, Westminster.

Wednesday, April 29, 1925. Volume LXI. No. 1582

Recent American Architecture

THE main fact about recent American architecture, as exhibited in the great new buildings in New York, Chicago, and other big cities, is the effect of the new zoning law. It is this which is enabling and encouraging a new architecture to grow, and a very interesting architecture it is proving. Whether it will remain as interesting in twenty years' time, when every big building along the main streets is a great Babylonian structure, setting back in stages round a tower of Babel, is another question. By then, however, our conception of the town itself may have altered through flying to our work. We may be glad to circle round the tower and land on the terraces, and the ravines of the streets below, left to the slower earth-bound vehicles, may mean much less to us than they do at present.

Until that time, however, arrives we must continue to view buildings from the pavement level, and from that level the first great buildings erected under the zoning law in New York make extraordinarily romantic structures. As it does not pay to erect such buildings, with the set-backs the law requires, on small sites, the first half-dozen buildings are all enormous structures to our English eyes. One sees them down side streets and across the town in various directions. Rising as organized unities above the ordinary buildings with their sham façade fronts and indifferent backs, they appear in comparison very living and vital things. Each set-back block is a definite part of a definite mass composition, which the layman, uninterested in architectural detail and refinements, can grasp and understand. The Shelton building, to take one of the most prominent examples, appears not only, in its isolation and in its contrast with its lower neighbours, as does a French Gothic cathedral above its town, but also like the cathedral contrasts with the town in its organic unity. It has the same effect of an independent and self-sustaining organism among smaller and less stable fry. Relying for interest on its clear-cut and balanced masses, architectural detail in the Shelton building, as we understand it, save at the eye level, has almost disappeared. It was, of course, fast disappearing already in the ordinary rectangular city block, except on the ground and at the topmost stories. Park Avenue, probably by now the most expensive street in New York, and certainly lined with most expensive blocks of flats, exhibits a series of these bare rectangular masses. The absence, however, of decorative detail in such buildings was not compensated for by any increased interest in the shape of the mass or in its silhouette. Now, in the new zoned buildings, it is much more than compensated for. Who would not rather have a striking mass composition, exciting the imagination with the suggestion of new realms to conquer, than the façade of a city palace, however beautiful?

That is the position at the moment in New York—a few stimulating structures in different parts of the town suggesting both a new era and a new style of architecture. When, however, the chief streets are filled up with equally zoned buildings all following the same law, and mostly on similarly sized and shaped plots, the romantic interest of the individual building will necessarily lessen. From the street level, owing to their close proximity to each other, one will not see their set-back portions as one does at present. One will, indeed, be back again at the old street façade problem up to the start of the first set-back. When that time comes, too, the façades will all be of one height—some simple multiple of the width of the street—and Americans will then be faced for the first time, on these lower levels at any rate, with the problem of ordinary street building to a fixed height, as in Regent Street or Piccadilly. It will be interesting to see whether they make a better job of it than we have done. In the past each city building has been more or less a law to itself. When all their street fronts have to be of one height a new neighbourliness must and should show itself in their street architecture. The unity of the street will for the first time have to be considered as well as the unity of the individual building. This is an age-old problem in Europe. How will America tackle it? So far, she has made no attempt at a solution, either before or since the passing of the zoning law. The era of pure individualism shows even less signs of its passing with them than it does with us.

Apart from this question of how once again to make a satisfactory street, which no nation has solved or even attempted to solve since the eighteenth century, the American high buildings which have sprung up under the zoning law seem to be the only really satisfactory examples of modernism the world has yet produced. They are both a frank exposition of the needs of the modern town, and a logical outcome of steel construction. Such decoration as they have about their base or their skyline is an obvious appliqué, a sort of frilling to emphasize their form. This frilling can consequently be gathered from any past style. Its detail makes very little difference to the total effect of the mass. Nevertheless, it is generally very well done. As in the older buildings of ten years or so ago, American architects in using the decorative motives of the old world, use them with great knowledge. They are in this respect much greater scholars in their work than we are. The detail of their buildings is better documented, perhaps because they have to go so far for their documents. If the detail is Italian, French, or Spanish, it is recognizably so, and

solecisms are infrequent. The patient study of old work that this implies has been a good foundation on which to build. Now that the foundations are laid building is going on at a great rate. New mass compositions, such as the world has never before seen, are springing up every day. The main surfaces of these compositions are severe and stark enough. Nothing is allowed to interfere with the new means of architectural expression which the new mass forms supply. Where, however, contact with the human body is inevitable, such as about the base and in the interiors, where, that is to say, the old human relationships still stand, we see refined and sympathetic interpretations of the best European work. This method of evolution is both safe and sane. At any rate the results are far better than those in Europe, where our modernists, for the same old needs and much the same old public, have consciously tried to create a new style out of thin air. C. H. REILLY.

Payment for "Wet Time": A Workable Scheme

We have often urged in these columns that there can be neither peace nor prosperity for the building industry so long as the "wet time" grievance exists, and we have as frequently pointed out that, though in no sense responsible for it, architects ought not to stand by and allow the disease to do its deadly work if any action of theirs could help to arrest its progress. We are especially glad to learn that a number of architects have for some time interested themselves in this matter, and that during the course of their investigations they have discovered a practical remedy for what has hitherto been regarded as the insuperable difficulty of payment for lost time during wet weather. In a letter to "The Times," bearing the signatures, Henry M. Fletcher, E. Stanley Hall, Edward Maufe, Giles Gilbert Scott, J. Alan Slater, Michael Waterhouse, and Maurice E. Webb, the scheme successfully adopted by a firm of Chelsea contractors, Messrs. R. Dixon and Sons, is described, and its working set forth in statistical detail. As the signatories to the letter point out, neither master builders nor trade union leaders have hitherto produced any acceptable solution. The London builder who has at last found a remedy, employs some 75–100 men, of whom those engaged mainly on outside work, such as bricklayers and slaters, are chiefly affected. He finds that to pay his men 1s. per hour when bad weather prevents work involves a cost of 3d. per week for every man employed, or 13s. per year—an almost negligible amount. The scheme was started on an experimental basis, by joint contributions of 6d. per week from every man employed and 3d. per week per man from the employer. After more than two years' working it has been found that the 6d. per week had been unspent, and it has been returned to the men to give them an annual holiday with pay, the 3d. covering all the time lost during bad weather, except the first two hours in each week. That one employer has been able to put such a beneficial scheme into effect at so small a cost and over a period of more than two years, including "a spell of unusually bad weather," confirms our oft-stated belief that the difficulties in the way of an effective insurance are not insuperable. Perhaps some of the big contracting firms could be prevailed on to test what seems to be a practicable scheme.

The Death-Watch Beetle

Much useful information concerning the death-watch beetle and the ways of recognizing and frustrating its destructive activities is given in a pamphlet just issued by the Society of Antiquaries. The pest is one of quite respectable antiquity, but within recent years it has commanded a great deal of attention by reason of the discovery of its ravages in many ancient buildings, such as Westminster Hall, Peterborough, Canterbury, and St. Paul's Cathedrals. Great numbers of buildings, especially the beautiful old parish churches throughout the country, whose oak roofs and timbers provide ideal material for the beetle's attacks, are now known to be infected. Nor is modern oak proof against it, for the beetle is a wild one living in oak trees, and may still lurk within unseasoned timber, which, when introduced for repair work in old buildings, is often the means of infecting healthy wood. Fortunately, economical means have been evolved of fighting and destroying the pest, and once it is discovered, it is as good as dead. The moral is that all buildings in which oak is used should be regularly examined for signs of the death-watch beetle.

The New Speculative House

The speculative house-builder is still living and, we are glad to note, in some instances learning. It is recorded in a newspaper that "many thousands of small houses of different types are being erected by speculative builders." We have seen some of these; and while many show little or no improvement on the pre-war standard, others reveal a distinct advance. Obviously the post-war housing schemes designed by architects are beginning to influence the taste of the speculative builder. As yet they have not completely captured his wayward imagination, but at least they have made him open his eyes. For instance, he is beginning to build in groups of four instead of those seemingly interminable rows—an altogether revolutionary proceeding. Here and there he has abandoned those horrid, meaningless, superfluous little gables with which not so long ago he invariably decorated the tops of his monotonous bay windows. His ridge tiles are often perfectly plain, in striking contrast to the curly and perforated vertebræ of nine out of every ten pre-war suburban roofs. He is beginning even to dispense with that ugly and unsocial excrescence the party wall projecting above the roof line. His sash windows often have glazing bars, though for some inexplicable reason only in the upper half; while some of his front doors are without those customary panels of stained glass, with their vari-coloured lozenges and realistic studies of bird life. All this is progress, and to be earnestly commended. We wish the speculative builder well in his efforts to atone for his horrid past.

How to get Brick Houses

A correspondent now in Holland writes to tell us that there does not appear to be any great desire to proceed with the building of concrete houses in that delectable land. None is being erected in Amsterdam, and only a few have been built at the Hague. Our Dutch friends apparently turned their attention to concrete only in order to show the brickmakers that they were not indispensable, and now that the price of bricks has come down, the building of concrete houses has automatically ceased. Truly the law of supply and demand works in a mysterious way. Presumably, if we are to get the brick houses which everybody wants to see in this country, the best thing to do is to begin to build in every other sort of material. Even steel houses may thus come to serve a useful purpose.

An Ill-advised Road Scheme

History repeats itself in curious ways. Privately owned highways having been long since abolished as being contrary to the public interest, it suddenly occurs to some ingenious person to revive them in a new form. Thus we find the "London and South Coast Motorways" promoting a Bill in Parliament to authorize the construction of a great motor track through secluded parts of Surrey and Sussex to afford a means of rapid and uninterrupted transit to such private motor-car owners as may be willing to pay for the privilege of using it. If the proposal were only anti-social it would be bad enough; that it promises to mar the beauty and vulgarize the amenities of two of the most delightful counties in all England is more than enough to condemn it in advance. The practical and æsthetic objections to it have been ably set forth by Professor Adshead in a letter to "The Times," which we print elsewhere in this issue. We hope that Parliament will give short shrift to a scheme so palpably opposed to the public interest.

Modern American Architecture

An Illustrated Review

To mark the Annual Convention of the American Institute of Architects, which has just been held in New York, we publish this week an illustrated survey of a number of important American buildings, which show the general trend of architectural design in the United States. We include also a number of articles relating to the subject—mainly contributed by Mr. F. E. Bennett, A.R.I.B.A., the first Alfred Bossom student, who is now in New York, and to whom we are indebted for much assistance in the preparation of this issue. Duplicates of most of the photographs which we reproduce are on view in the Architectural and Allied Arts Exposition, which is now being held in New York City.

NEW YORK gives the impression of being about two Londons, one on top of the other, but with wider streets. New York streets are not the narrow slits of one's early imagination, but have an effect of more proportional spaciousness than the London ones.

The architecture is in the throes of a battle between horizontality and verticality. The heavy Italian cornice which has been the fashion for so long is not being adopted so often on new work, and the principle of the designs of the tower buildings is having its effect. The Woolworth, once a thing on its own, and quite apart, is now joined by the Bush Terminal, the Radio Building, the Shelton Hotel, and others. The zoning, too, is tending to eliminate the heavy cornice. Many buildings, despite very excellent detail, quite fail to be pleasing, because they are too tall to hold their heavy cornices. It seems more fit that a building of greater vertical than horizontal dimensions should be stressed vertically.

The zoning laws are having a remarkably good effect on the architecture. Results are everywhere interesting, and the general regret everywhere is that the laws were not introduced earlier.

"It will be a fine city when it's finished." This is what the visitor from up-country is reported to have said when asked what he thought of New York.

New buildings spring up everywhere: you cannot keep touch with them. It seems the whole of Manhattan Island will be skyscrapers before long. The Woolworth tower is regarded no longer as unique, but as one among many. Big buildings scarcely past their early freshness are torn down to make way for taller ones. The process has been developing for some twenty years; the reaction and the end of it are often predicted, but still it goes on, stronger than ever.

Apartment houses form the main bulk of the new work—fourteen-story ones around Park Avenue, and six-stories farther out of town.

AN AMERICAN ARCHITECT.

Mr. X., of the well-known and prodigious firm of X—— and M——, is about forty-five years of age, large of build and delightfully naïve of speech. Everything he says is to the point, very frank, often an exaggeration, and always spoken with a strong American accent. You realize he has been a worker all his life. He has a twinkle in his eye, and you like him very quickly. I found him looking through some plates for a Georgian doorway. He took me down below to the city.

"Yes, we do enormous quantities of work here—it staggers me sometimes. We learn our mistakes in practice—that's why our work is so good. But it isn't the quantity that matters—it's quality. See! I did that job over there. That was the first commercial Gothic in the city. Pretty darn good it is."

"What's the material?" I asked.

"Terra-cotta. You wouldn't believe it, would you?"

We passed on and into a fashionable shop on Fifth Avenue. The high walls of the interior were clothed in Wren panelling of the boldest type, and relieved with patches of rich lime-wood carving.

"The atmosphere is splendid," I ventured.

VIEW OF SOUTH END OF MANHATTAN ISLAND, NEW YORK, WITH PROPOSED WATERFRONT BOULEVARD.

C

"Yes; we have some good books. I studied this job out of two smaller works. When I'd gotten the idea all right, I was ready for this. I knew this was coming along."

"The mouldings are vigorously carved."

"They're composition."

We took an auto along Park Avenue, and he pointed out here and there huge apartment house blocks of yellow brick and Indiana limestone that were his.

"You like the yellow brick?" I said.

"Not much." He puckered his nose. "Sort of dullish; red's better."

I expressed my liking for one block I had noticed before.

"No, it isn't very good; but look at that one [his again], that *is* very good. I'm always fond of it."

It was a fine academic study of the Italian Renaissance, and the composition was extremely satisfactory.

"The Beaux Arts influence seems to be less popular?"

"It's dead. I never did like it."

"The Adam Georgian style is favoured for apartment houses?"

"Yes, but I think we are too thin with it—it is better in your country—bigger projections—more robust."

He pointed out a whole bunch of his apartments close together, all 150 ft. high type.

"You must have done as much work on Park Avenue as anybody?"

"Yes, perhaps we have; we put up six blocks in one stretch on Riverside Drive."

"A man here," he continued, reminiscently, "put up a number of buildings of a sort of modern geometrical, and he lived to see them all pulled down. I've pulled down two of my own buildings."

"Tell me how you made a start with your work—possibly a friend gave you the first job? . . ."

"Ah! it was hard work in the early days. You did little alteration jobs and oddments just as, I suppose, a youngster has to do in England; and then suddenly you found yourself doing something big. Now it's hammer and drive continuously."

THE TRADITION OF THE SKYSCRAPER.

Skyscrapers are, in principle, as old as civilization. The Tower of Babel was probably the first example. It started from a very broad base, and was built up around a central core encircled by a spiral ramp. Around this ascending and encircling inclined plane the sun-dried bricks were hauled, and then cemented together with slime, as the Bible calls it, which was, of course, bitumen or asphalt, deposits of which are still to be found in Central Asia. There would be scarcely a limit to which this vast cone might not have reached, provided its base were big enough. Many reasons may have caused the abandoning of this great engineering feat, such as the defects in the foundations, cracks, fissures, or labour troubles. At any rate, work was stopped, and Babel became the symbol of inefficiency in the building world.

Then came Egyptian pyramids wanted in the valley of the Nile as observatories and enduring monuments.

The next step in the line of tradition was the Pharos Lighthouse, built by Alexander the Great, at the entrance to the port of Alexandria.

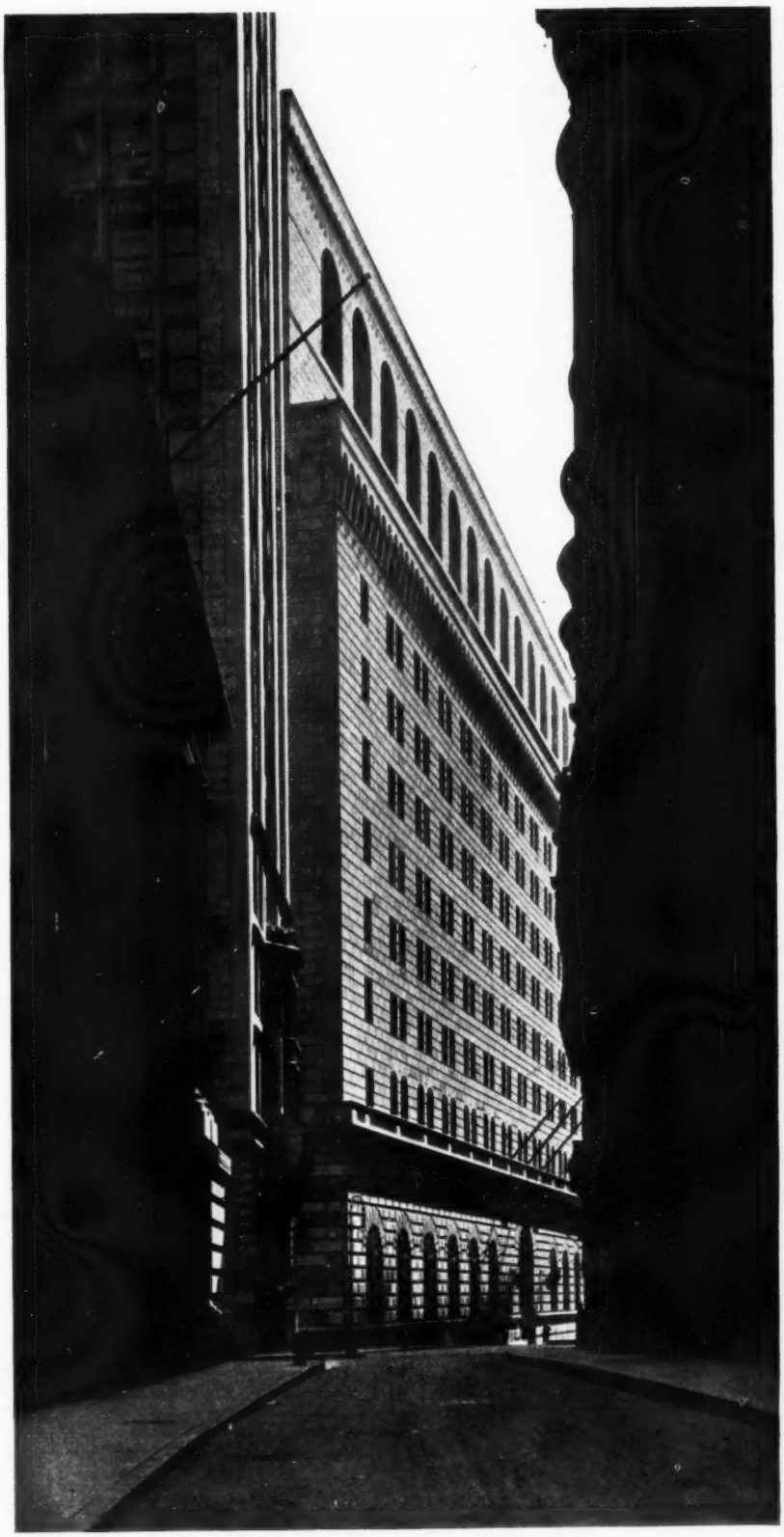
The campanile of St. Mark's, Venice, and the Tower of Pisa are examples of this class of structure in the Middle Ages in Europe.

The new world, meantime, was developing its own form of tall structure. Pyramids of a much more ornate character than the Egyptian were being reared in Rio Grande, Guatemala, and Yucatan. Mr. Alfred C. Bossom says that these pyramids were usually steeper than the

(*Continued on page 670.*)

PARK AVENUE, NEW YORK, LOOKING NORTH FROM 48TH STREET.

Shows some of the most recently erected high-class Apartment Houses, and the Park Lane Apartment Hotel (second building on the right up). The building on the right foreground is by McKim, Mead, and White.



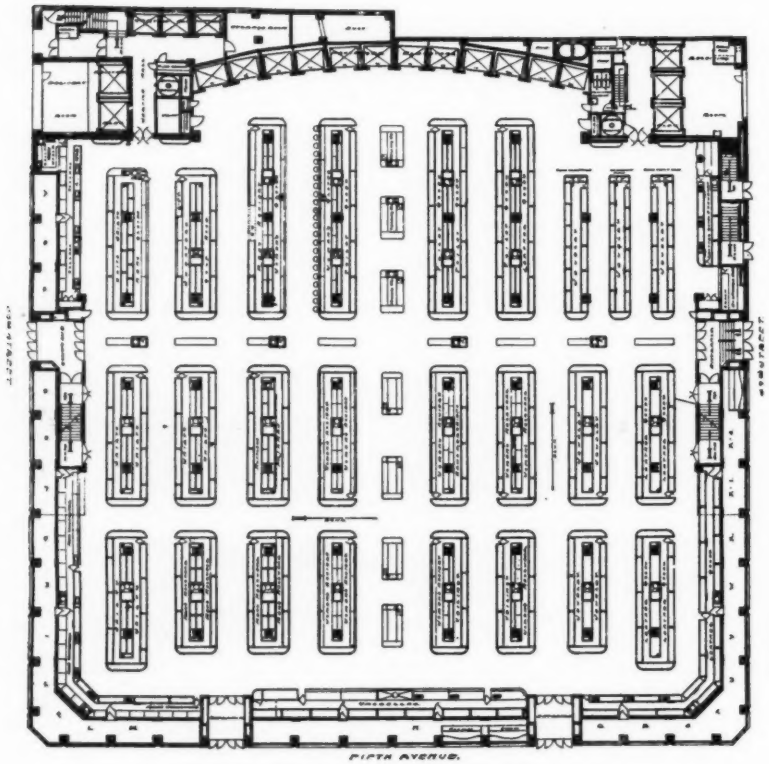
THE FEDERAL RESERVE BANK, NEW YORK CITY.
YORK AND SAWYER, ARCHITECTS.

THE BOWERY BANK, NEW YORK CITY: A DETAIL OF THE MAIN ENTRANCE.
YORK AND SAWYER ARCHITECTS

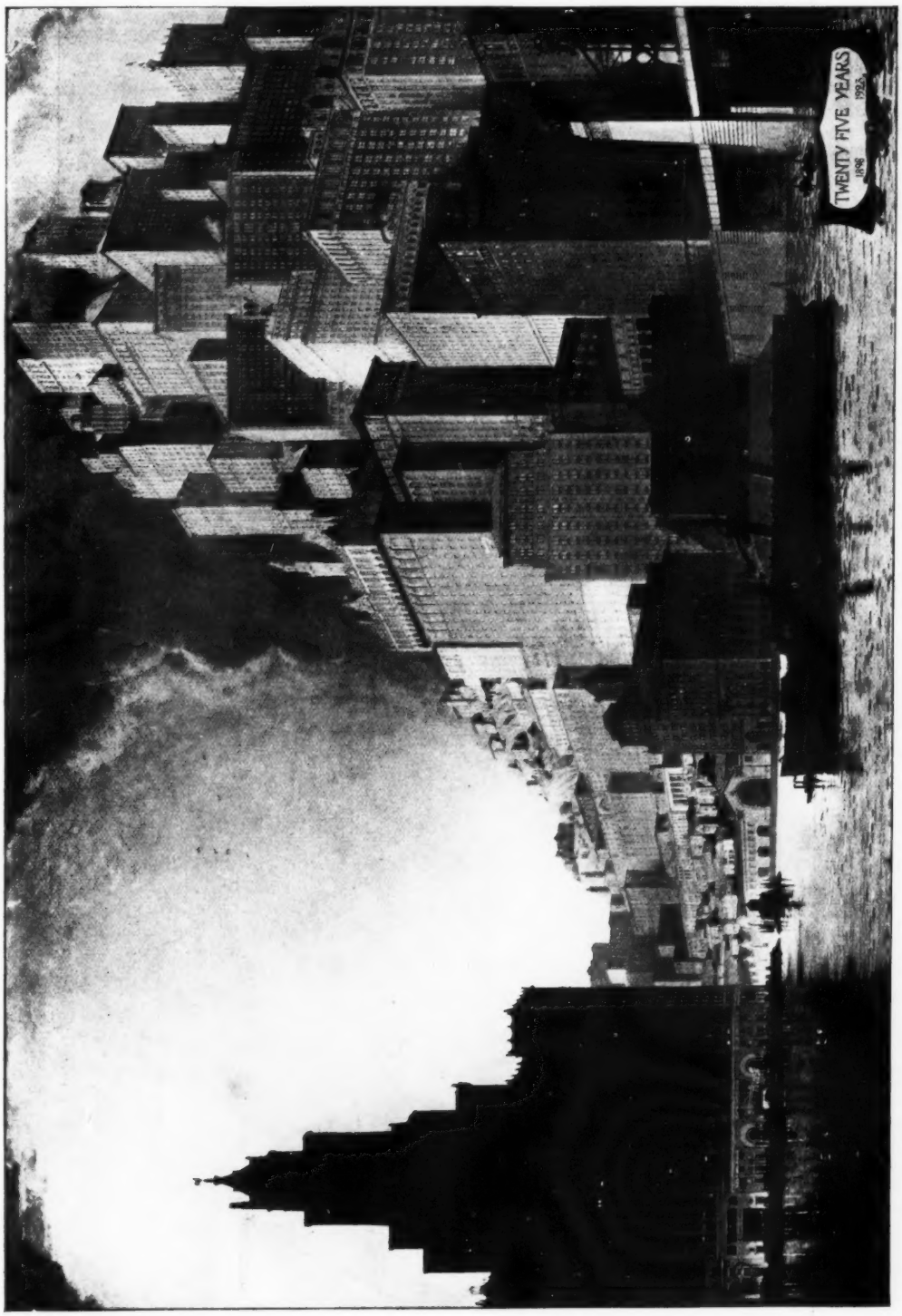
THE BOWERY BANK, NEW YORK CITY: THE BANKING HALL. YORK AND SAWYER, ARCHITECTS.

TWO VIEWS OF THE EQUITABLE LIFE ASSURANCE BUILDING, NEW YORK. STARRETT AND VAN VLECK. ARCHITECTS.

THE EQUITABLE LIFE ASSURANCE BUILDING, NEW YORK. STARRETT AND VAN VLECK, ARCHITECTS.



THE SAKS STORE, FIFTH AVENUE, NEW YORK.
STARRETT AND VAN VLECK, ARCHITECTS.



TWENTY-FIVE YEARS' WORK OF WARREN AND WETMORE: A PANORAMIC VIEW.

THE FOUNTAIN IS BY CARRÈRE AND HASTINGS.

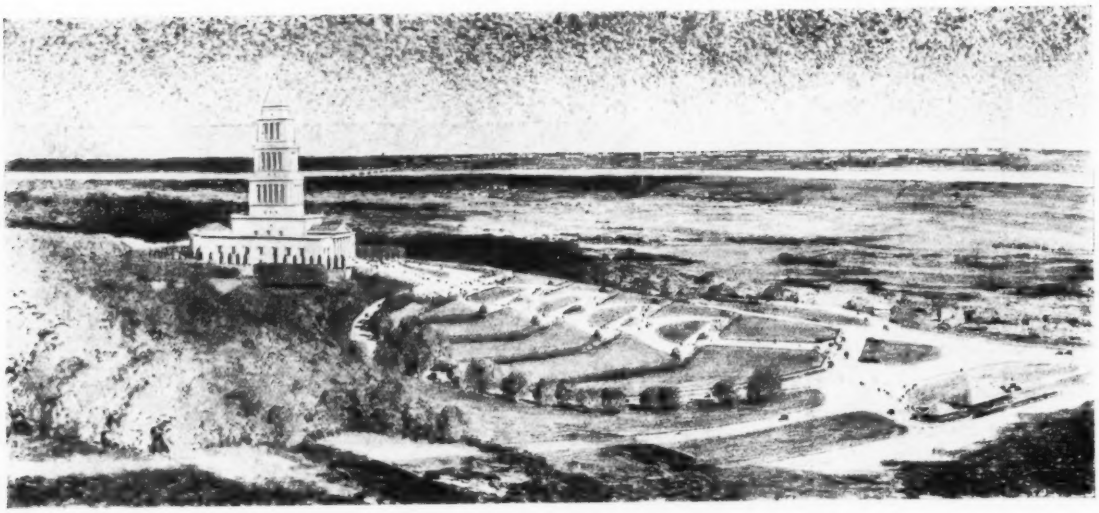
THE TOWER.

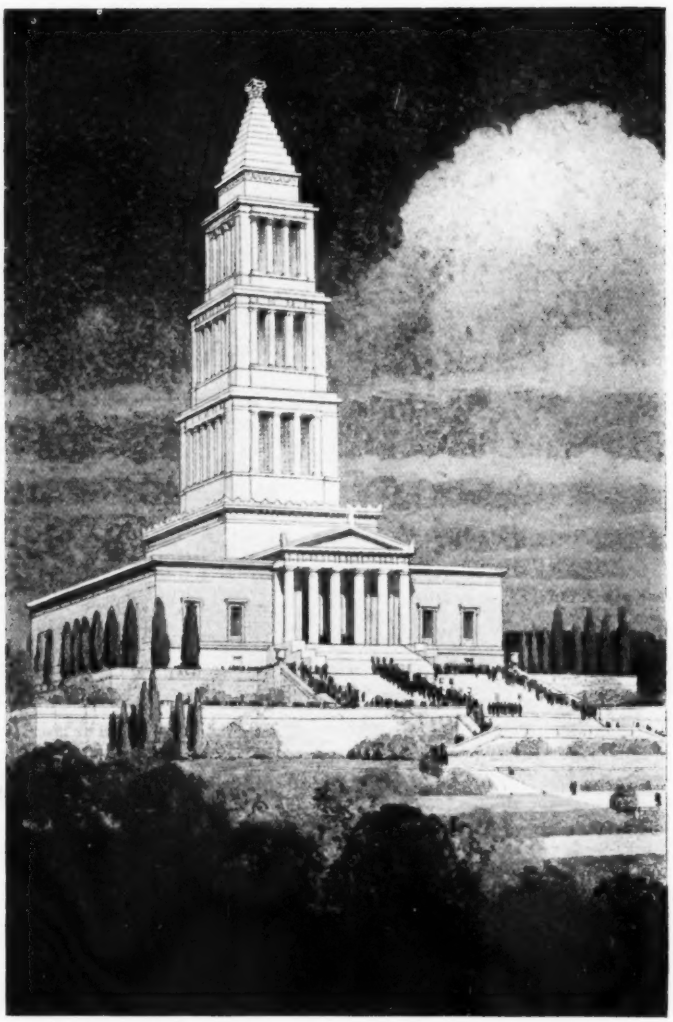
THE HECKSCHER BUILDING, NEW YORK WARREN AND WETMORE, ARCHITECTS.

THE MAIL SERVICE BUILDING, NEW YORK.

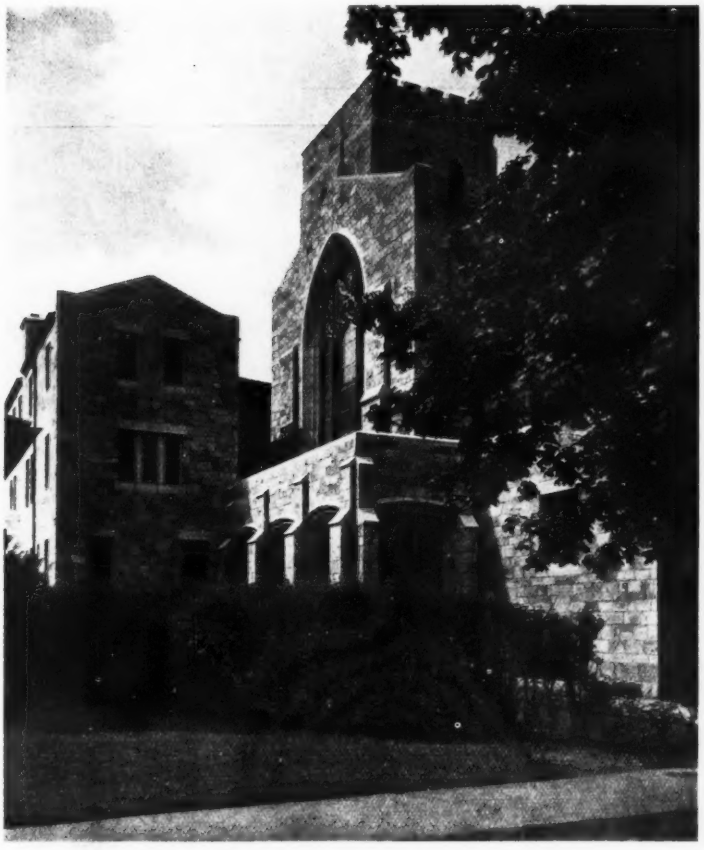
THE HECKSCHER BUILDING, NEW YORK.

WARREN AND WETMORE, ARCHITECTS.

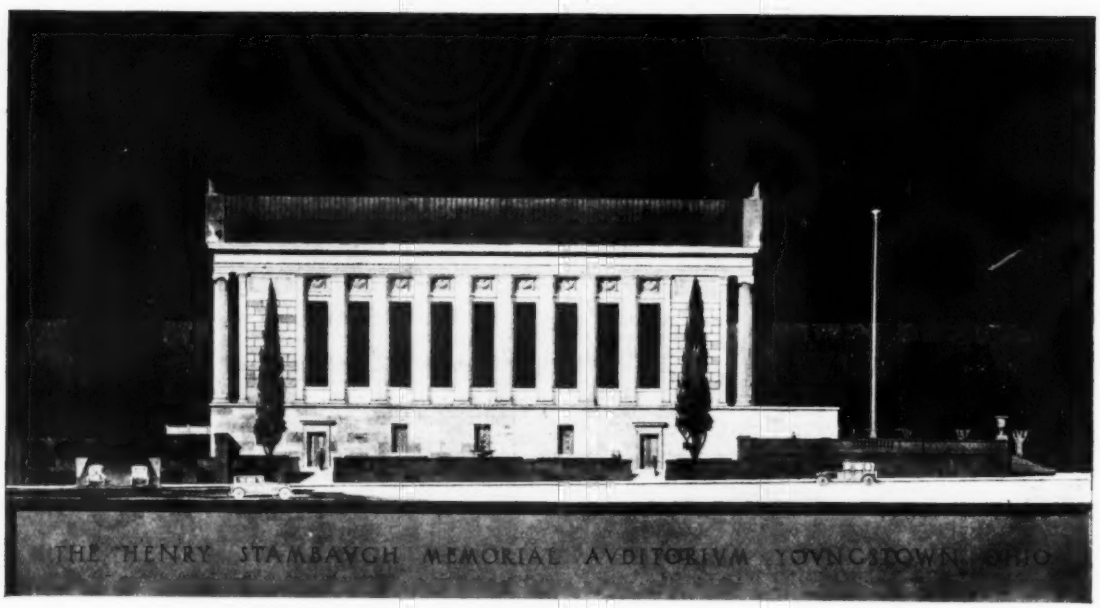




THE GEORGE WASHINGTON MASONIC NATIONAL MEMORIAL, ALEXANDRIA, VIRGINIA.
HELMLE AND CORBETT, ARCHITECTS; OSGOOD AND OSGOOD, CONSULTING ARCHITECTS;
OLMSTED BROS., LANDSCAPE ARCHITECTS.



HOLY INNOCENTS CHURCH, BROOKLYN. HELMLE AND CORBETT, ARCHITECTS.

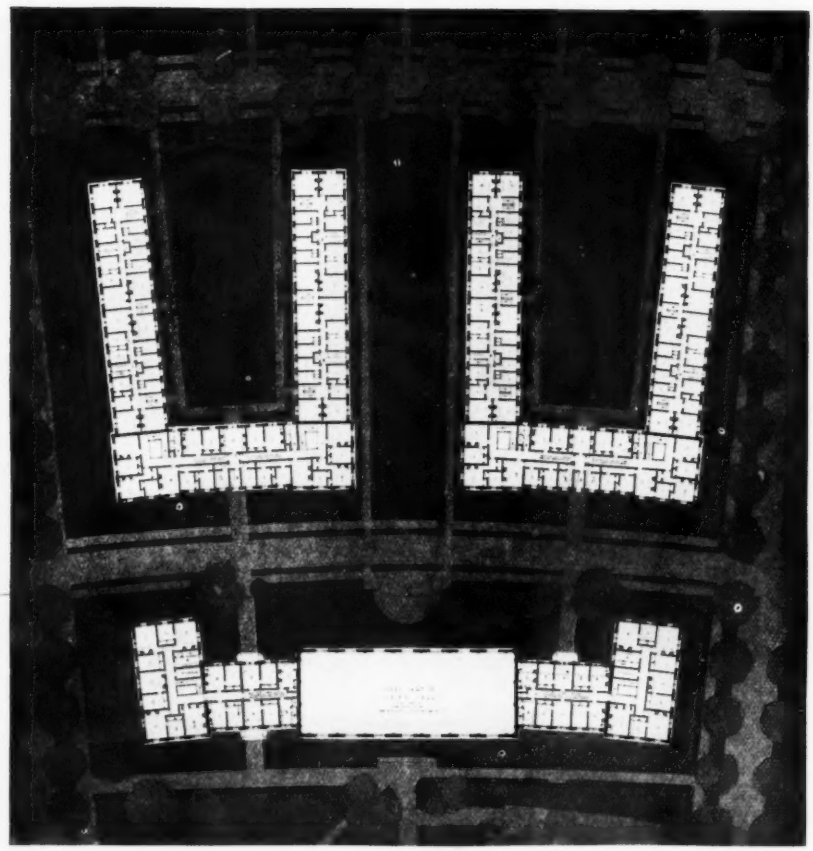


THE HENRY STAMBAUGH MEMORIAL AUDITORIUM, YOUNGSTOWN, OHIO.
HELMLE AND CORBETT, ARCHITECTS.

THE AMERICAN PIANO CO. BUILDING, WEST 51ST STREET, NEW YORK
CROSS AND CROSS, ARCHITECTS.

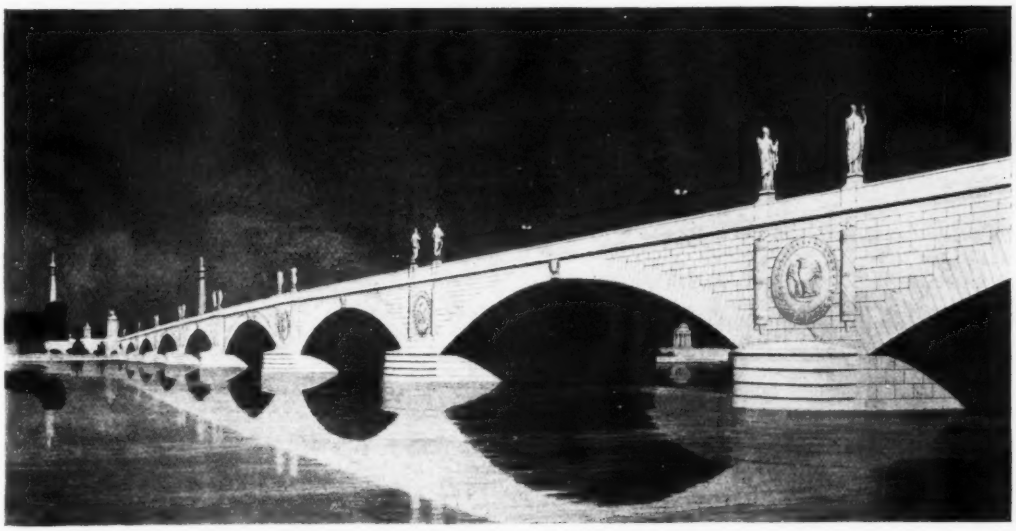
THE BUSH BUILDING, NEW YORK.
HELMLE AND CORBETT, ARCHITECTS.

PERSPECTIVE VIEW.

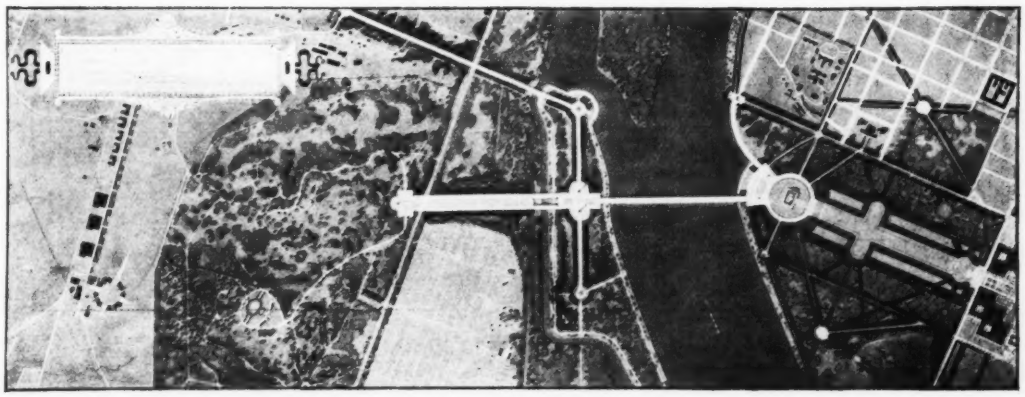


PLANS OF DORMITORY GROUP.

HARVARD BUSINESS SCHOOL COMPETITION. McKIM, MEAD, AND WHITE, ARCHITECTS



A PERSPECTIVE VIEW.



THE ARLINGTON MEMORIAL BRIDGE McKIM, MEAD, AND WHITE, ARCHITECTS.

HARVARD BUSINESS SCHOOL COMPETITION: ELEVATION OF LIBRARY. McKIM, MEAD, AND WHITE, ARCHITECTS.

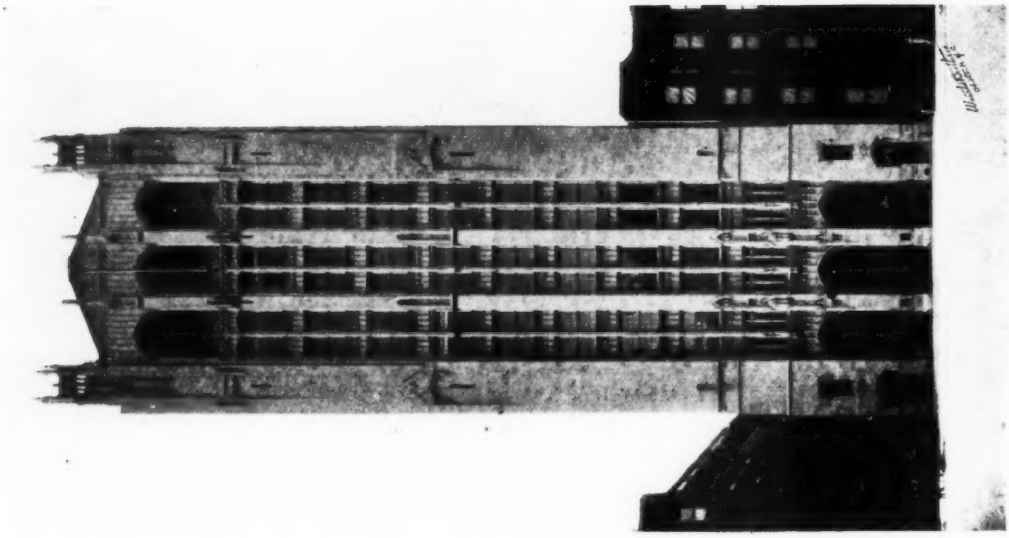
A LARGE WIRELESS STATION SURMOUNTS THE BANK.

THE BANK SHOWN UNDER CONSTRUCTION.

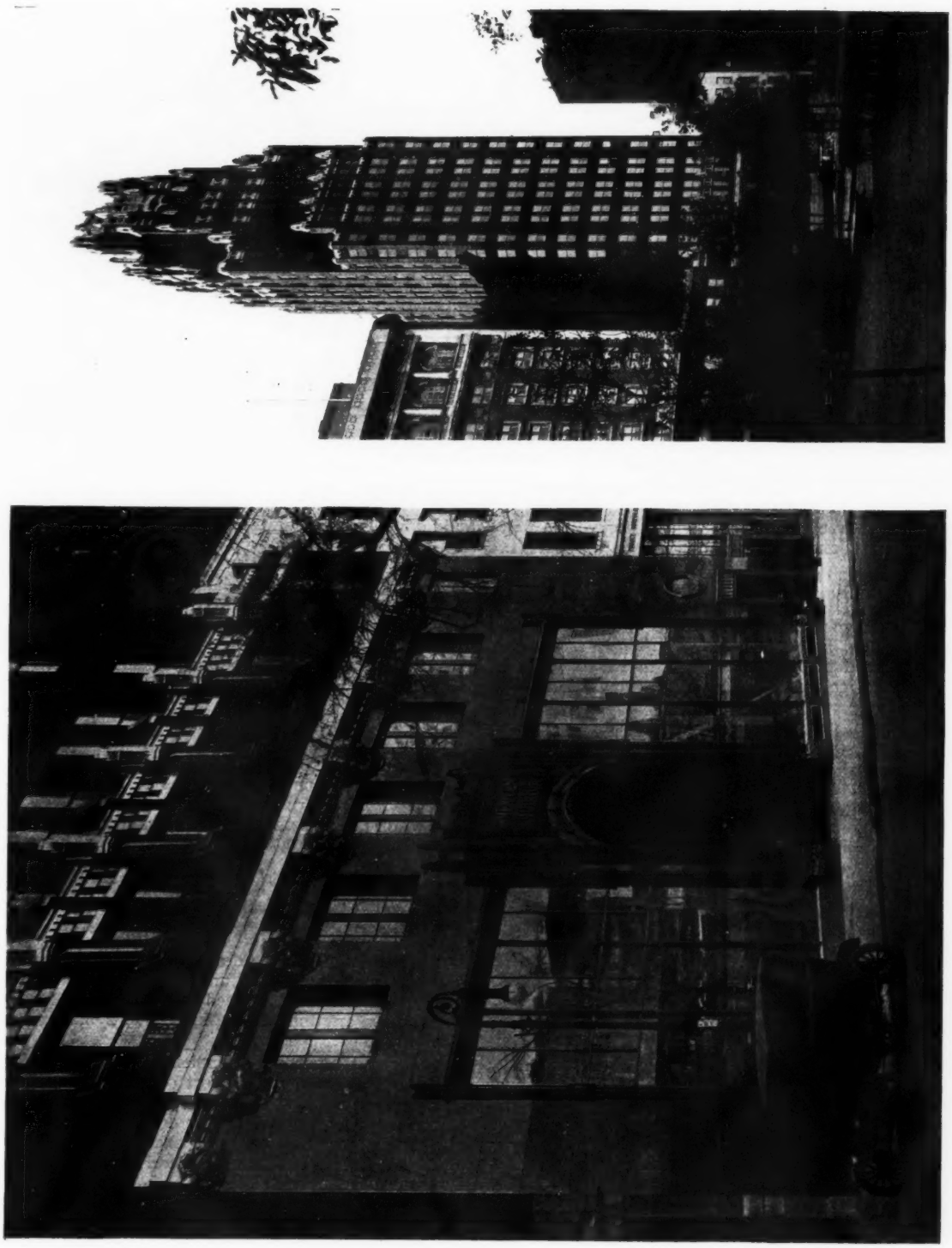
THE LIBERTY BANK OF BUFFALO. ALFRED C. BOSSOM, ARCHITECT.

THE SHELTON HOTEL, NEW YORK CITY.
F. P HAMMOND, ARCHITECT

THE KANAWHA VALLEY BANK, CHARLESTON, W. VIRGINIA.
ALFRED C. BOSSOM, ARCHITECT.



HAMPTON SHOPS, NEW YORK. ROUSE AND GOLDSTONE, ARCHITECTS.



THE AMERICAN RADIATOR BUILDING, NEW YORK CITY. RAYMOND M. HOOD, ARCHITECT.

Egyptian, and their summits were reached by flights of conveniently sized steps. They were absolutely solid in the interior, so far as he is able to judge, and there were no vaults or tombs inside them. On top were temples of considerable beauty.

"The pyramids of the Aztecs and the Mayans were beautifully sculptured also. They were carried to perfection, and not like the great tower, built far to the west in a strange land, of which the Mayan mythology tells us. . . . The aborigines of the South-west were also building vast, and sometimes lofty, apartment houses or communities capable of accommodating a thousand or so tenants."

There is, perhaps, little new in principle in the modern skyscraper, except the introduction of stronger materials and the development of better foundations, which makes it possible to erect higher structures on a relatively small base.

MR. HARVEY CORBETT ON THE TWO BUSH BUILDINGS.

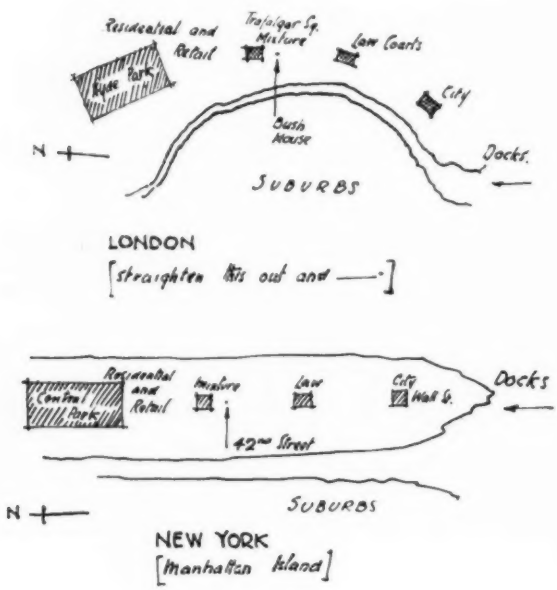
In the September issue of the "Architectural Forum," an article was published by Mr. Corbett in which he gave the following formula to show how the estimated income on a projected building enterprise could be worked out:—

$$\frac{\text{Rent of 1 sq. ft.}}{\text{Cost of 16 cubic ft.}} = \text{Gross return on building investment.}$$

In a conversation interest was expressed in this formula. He then explained that business men were frequently coming to him and wanting to know what return they would get if they built on a certain site. To tell them, you need some rapid system of calculation. Suppose the rent was 12s. per sq. ft., and the cost of building 3s. per cubic ft.,

then $\frac{12s.}{16 \times 3s.} = \frac{12}{48} = \frac{1}{4} = 25\%$ gross interest.

When originally considering the scheme for the Bush House in London, he estimated the rental values which could be obtained by a comparison with values in New York, he being more familiar with that city. London and New York are fairly similar in the distribution of their various parts, he said, as can be seen from these diagrams:—



It was found that Bush House in London was about the same as Forty-second Street on Manhattan Island as regards situation. The "carpet" value of Forty-second Street is about $4 per ft. per annum., and of Bush House, London, about 16s.

[The Bush Terminal of New York is actually situated on Forty-second Street.]

"The great difference between London and New York is the land value. In New York we can build twice as high as you, and the land costs twice as much. If your laws were changed so that you could build higher, your land values would immediately go up."

One remarked on the strange fact that, although land and labour cost twice as much in New York, cost of building and rental values were the same as London. That, he said, was because men on the job worked much harder, and construction was much more rapid. During the time it took to build Bush House he had put up three buildings of the same size in America. The New York Bush Terminal was built in minimum time. The contractor was paid bonus or fined for completing work before or after the contract time. The tenants of the old building were in occupation until the last minute. Test borings for the foundation had been made, and prepared steelwork piled in the backyard in proper sequence ready for use. The tenants were out, the old building torn down and the foundations for the new almost in within one week. The traffic in Forty-second Street was never held up during the progress of the work. Lorries came alongside with materials, which were picked off by cranes and then the lorries immediately moved away. All material was scheduled by the contractor, and everything arranged to arrive by a certain time—not before and not after.

"I am not advocating the American hustle method against the slower British method. In actual fact, we are forced to build quickly, because we have no such thing as a peppercorn rent. Here we buy the land outright, and every day taken up for building is a big loss to the revenue.

"We have very little feeling about tearing down old buildings. We have no sentimental ties and very few grandfathers. We don't value "settling down." The spirit of the thing is seen in a comparison of an English car with an American one. The English firm advertise that every car of theirs ever sold in the country is still running. The American cars, when they reach a certain age, are sent over the edge of a cliff and left to rot on the pile already there.

"American office buildings are calculated to last effectively twenty years; apartment houses less. By that time the owners reckon to turn over their capital.

"We don't mind waste so long as we have progress."

THE AMERICAN BEAUX-ARTS ATELIER: A TYPICAL NIGHT.

April 7, 1925.

The Jury of the Beaux-Arts Institute of Design, New York, sat to-night on the designs of the Atelier students, which had been prepared during the previous six weeks. I ought rather to say "stamped" on the designs, for I have never known anything of the kind so extremely vigorous. It did one's heart good to see it.

The Institute, it should be explained, came into existence some thirty years ago, as a sort of spontaneous growth. Architects at that time, back from a training in Paris, found their assistants were backward in design, so they prepared little design programmes and coaxed these assistants to work them out. This became popular, and programmes were exchanged among offices instead of each office writing its own every time. The preparation of programmes later got into the hands of a special committee outside the offices, and so the first development towards the present form of atelier was established. At this stage, Mr. Warren, brother of the present Mr. Whitney Warren, of Warren and Wetmore, devoted his life to the subject, and caused the present premises to be constructed.

At the present time young men in offices form themselves into groups, rent premises, invite a patron to help them

HOUSE AT MARONECK. HOPPIN AND KOEN, ARCHITECTS.

and prepare designs for the problems set by the Beaux-Arts Institute. The designs come in from groups all over the U.S.A. All the universities and colleges send in designs too. Any students may enter the competitions, but the main idea is really to provide training for those who cannot afford to go to a college. The colleges, one by one, found they had to come in as the competition was so hot. Harvard and another, the last of the college garrison, came in with designs for the first time this very night. The membership now numbers 1,400, and there are three grades of programmes for students of different advancement.

Twenty-three of us gathered together on this jury night at 126 East Seventy-fifth Street. We were refreshed with quick supper, etc., and all pressed into the jury. There were 160 sets of drawings to examine, and the job in front of us was rather formidable, so we split up into two parties to take half each. We were composed as follows :—

Mr. Raymond Hood, chief.	Mr. Hewitt, chief.
Messrs. Hirons.	Messrs. Corbett.
Carlu.	Grapin.
Sedgwick.	Van Allen.
Harrison.	Harris.
Willan Vack.	Levi.
Herring.	Van Pelt.
Kocker.	Crandall.
Cret.	Sternfield
Wilson.	Fallton.
King.	(Bennett).
Ferroy.	

Mr. Whitney Warren left early, after conducting the supper.

The programme was then read out and a discussion took place as to the solution. Voices were soon raised high, and Mr. Hewitt had to remind us that the main idea was to mark the drawings. The process of doing this last was a most lively proceeding. Five people were generally talking at once with loud voices and strong native accents. No man hesitated to express his thoughts in a most free manner, whether he was taken notice of or not. There was no affectation about it at all, and the designs seemed to get just the marks they deserved in the end. The marks were : O, second mention, first mention, or "H" (held over). When we had finished our half we changed over with the other jury and checked their decisions. We had power to raise the marks, but not to lower them. When that was done the "H's" were considered for first prize of $50, second prize of $25, first medals and second medals.

Interest rose to white heat, and voices were raised more than even before. The decision was, however, finally reached, and we hustled off home, having completed the job in two and a half hours.

Americans don't waste much time.

THE ARCHITECTURE AND ALLIED ARTS EXPOSITION.

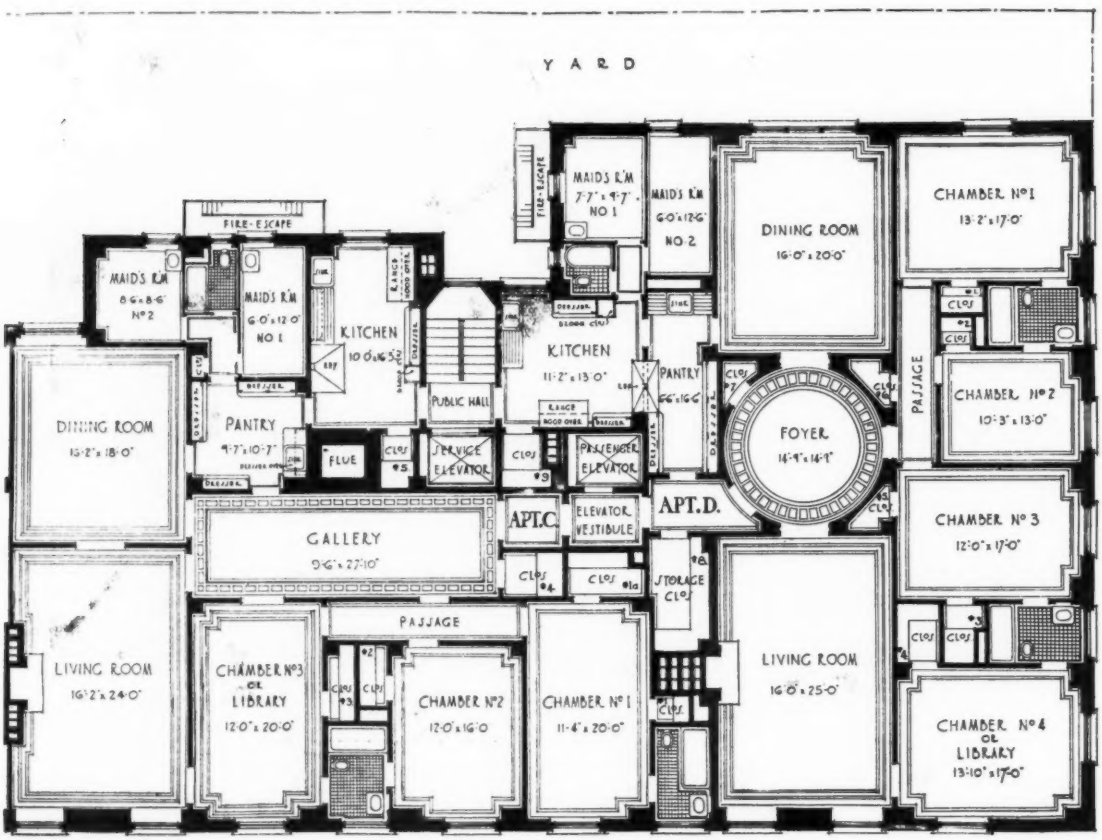
The Architecture and Allied Arts Exposition was a big show. The officers of the Architectural League and the Institute were extremely busy receiving and sorting exhibits, and works came in from all over the world—including Germany. The largest building of its kind in New York was acquired for the purpose, and the public were allowed in for $1. Sir Edwin Lutyens, as the chief guest and receiver of the Gold Medal, was much talked of, and his arrival was anticipated with great pleasure, not least so by Englishmen.

It is interesting to note that the memorial to the American Unknown Warrior, by Carrère and Hastings, is carried out on the lines of the one by Sir Edwin. Mr. Hastings himself pointed this out to me.

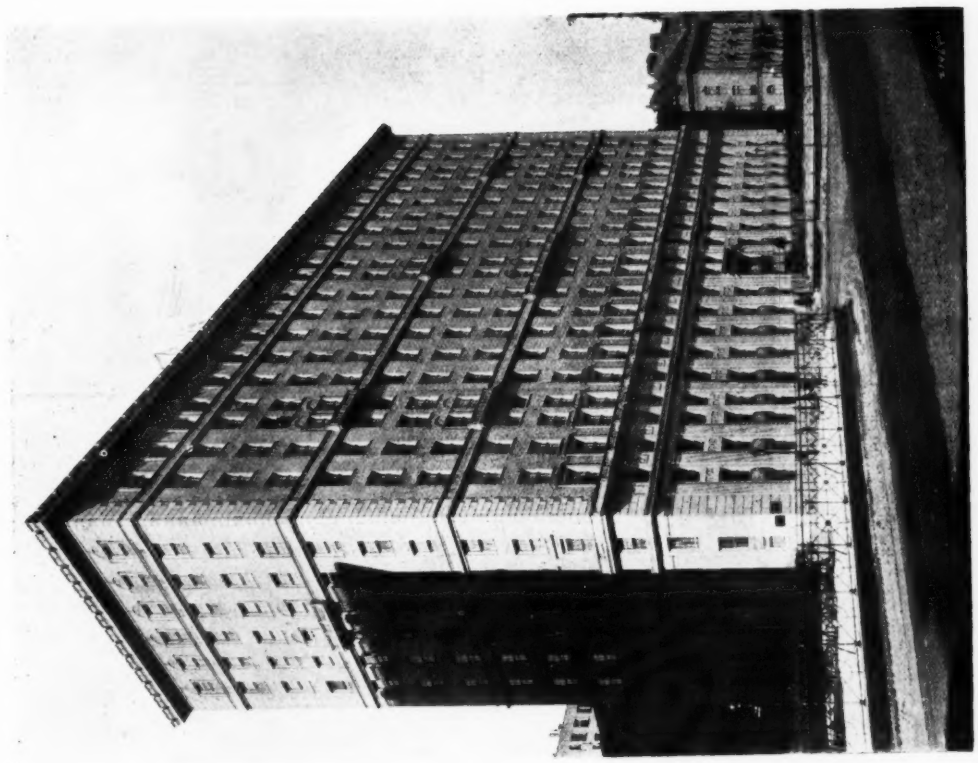
THE BOWERY SAVINGS BANK, NEW YORK CITY.

York and Sawyer, Architects.

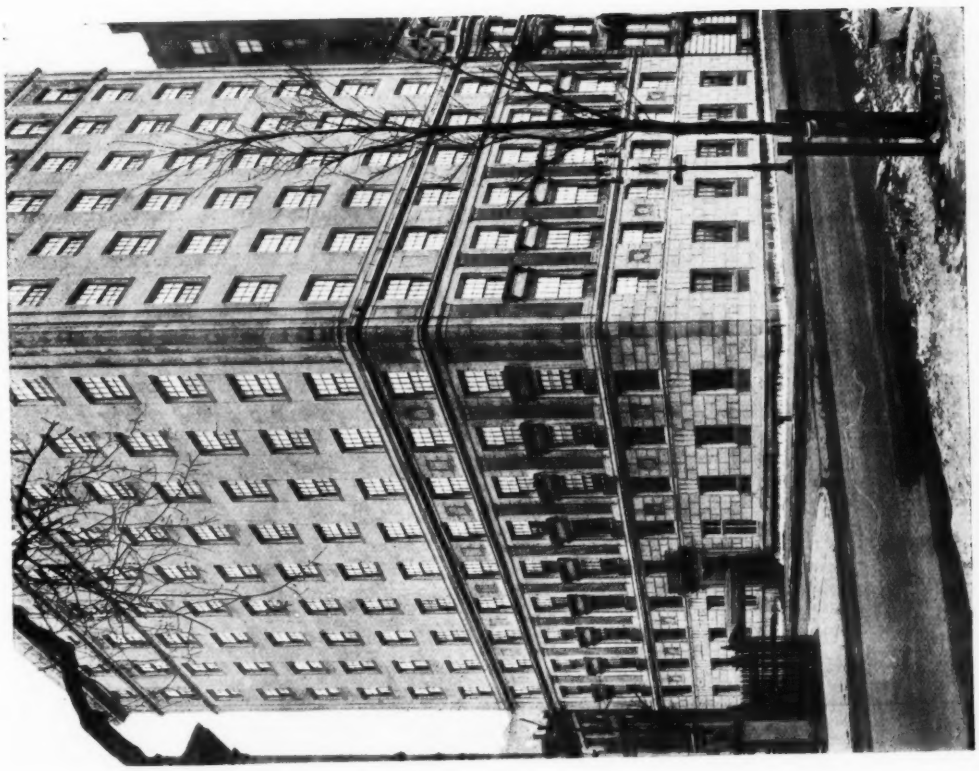
The Uptown branch of the Bowery Savings Bank was completed in 1923 from the designs of York and Sawyer, and is one of the finest commercial buildings of New



APARTMENT BUILDING, NO. 580 PARK AVENUE, NEW YORK. J. E. R. CARPENTER, ARCHITECT.



APARTMENT BUILDING, No. 580 PARK AVENUE, NEW YORK.



APARTMENT BUILDING, No. 920 FIFTH AVENUE, NEW YORK.

J. E. R. CARPENTER, ARCHITECT

York. In this city, so famous for good buildings, the large-minded enterprise of American building owners shows itself. They know the commercial value of a "good thing," and do not consider it a waste to expend large amounts of money in housing their businesses in worthy surroundings.

In this case a striking and beautiful building was especially desirable, as the Bowery Bank is a popular concern, with 190,000 small depositors, all of whom have a personal interest in the bank, and take pride in its magnificent home.

Many hundreds of new subscribers must have been gained from those who, out of curiosity, penetrated the lofty entrance arch and were overcome by the interior of the banking hall, with its churchlike and slightly romantic flavour, so attractive to the American mind. The American is thrilled by anything suggestive of Europe, and especially mediævalism.

It is said that a young English architect working in New York, having seen the building, immediately deposited his savings there. In the U.S.A. a young architect can have savings!

For this purpose the Bowery Bank is perfect. Treated in a frankly Romanesque manner, with a rich display of marbles from France, Belgium, Italy, and Greece; cute carvings in stone, and rich bronzework stylistically treated, but introducing portraits of the designers and perpetrators of the building, clad in monastic and other garbs of the period.

Though the extreme modernist may dismiss such a building as being nowhere in the line of artistic progress, yet those less dogmatic will have sympathy with the architects of to-day who, especially in America, so cleverly adapt the work of past ages and, as in this case, often achieve something approaching a living art, and, at any rate, something which expresses, if not exactly the civilization of twentieth-century America, the mind of the average twentieth-century American craving, amidst its hard and materialistic environment, for something with colour and Romance. They do not yet realize that these can be got without falling back so entirely on the past, so they get what they deserve.

The accompanying photographs will give a better idea of the building than any written word, but a short description as to colour, material, etc., may be useful, especially as the building depends so greatly on the fine use of materials and on good craftsmanship.

The main elevation is of a warm honey-coloured sandstone from Ohio, relieved by panels of a grey purple marble introduced between the windows of the upper floors. This marble is also used for the colonnettes of the arcade above the ground floor and around the elaborately carved entrance doorways.

One fault that may be found with the façade is the discrepancy in scale and lack of connection between the lofty ground floor and the upper office floors, with their numerous windows and strong vertical treatment, which seems to call for some echo below; though this is somewhat helped by the vertical strip on the right-hand side, which runs from top to bottom and contains the entrance to the office elevators. This elevator vestibule has a very attractive groined vault encrusted with blue mosaic and grey marble walls; the elevator doors being bronze, with richly moulded panels containing figures.

There are thirteen rentable office floors, the bank occupying, besides the ground floor, the basement, where the vaults are located, and four mezzanine floors in the height of the banking hall.

The banking hall, which covers the whole of the ground floor, with the exception of the office entrance and vestibule, is approached directly from the street. It is basilican in form, 100 ft. long, 80 ft. wide, and 60 ft. high, lit by a vast circular-leaded window at each end, glazed with amber-coloured glass, and by lights in the centre of the ceiling, which represents wood beams, and is attractively coloured and patterned in red, blue, green, and yellow, the whole warm and rich in tone, and darker than the walls. These are of variegated yellow sandstone, relieved on either side by an arcade supported on three-quarter marble columns of various soft hues, between which are panels of unpolished marble mosaic laid in a deeper pattern, the same colour as the limestone. In the centre of each panel is a pierced marble grille, through which warm and purified air enters. A high dado of greyish purple marble runs round the whole hall, forming a dark base to the lofty walls. The central island counter is of the same material, and is topped with a bronze grille of exquisite workmanship and design, which is characteristic of all the fittings. The marble floor, though beautiful in itself, is too light in tone to link up the walls and counter. This can readily be seen in the photograph, and is the only defect of a most impressive chamber.

THE SAKS DEPARTMENTAL STORE, FIFTH AVENUE.

STARRETT AND VAN VLECK, Architects.

Completed 1924, in accordance with zoning laws, this building is ten stories high (two in basement) on Fifth Avenue front, and thirteen stories on rear front.

This building marks the latest development in department stores, and is particularly interesting for the designs of its lower stories, including the show windows and entrances, which strike a new note of reserve and quality in this class of building. It is difficult to believe that the same architects built the famous Lord and Taylor's store opposite. The architectural language is used in a new way—with new phraseology. The show windows are made to become the focal point of the design without disturbing the stability of the whole design.

Daylight is entirely eliminated from the main floor. Eleven elevators at the rear end are of the most up-to-date type, with gates which open automatically when the elevators are stopped. A button pressure closes them again.

The steelwork is disposed with a central bay of 35 ft. span.

Loading and unloading is done on the outside of the building, there being no internal loading docks. The floors are of travertine—and the ladies' floor is again completely overlaid with dark plush.

SHELTON HOTEL.

F. P. HAMMOND, Architect.

This is a fine product of the zoning law restrictions, and is carried out in dark yellow stock brickwork, with stone ornaments and balconies.

The detail is Romanesque, very academic, fresh, and really well done. A cornice value is obtained in silhouette by interesting corbel projections on the angles.

In the interior treatment the designer misses no chance to make use of some material demand to produce an amusing æsthetic device. Doorways, counters, etc., are all carefully brought into the decorative scheme. The dining-room has rough plastered walls and wood-beam ceiling, from which hang chandeliers of polished wood. Metal Spanish grilles cover the windows.

The building is considered to be a great advance on previous ones of this type in U.S.A. It has classic grandeur and, as a building, has no precedent—it is a creation.

From the practical point of view it is remarkable for the height to which it carries living-apartments, some of which are on the twentieth floor.

HAMPTON SHOPS, 18 EAST 50TH STREET, NEW YORK.

W. L. ROUSE and L. A. GOLDSTONE, Architects.

Hampton Shops is a building 50 ft. wide and 150 ft. high, and designed in the Perpendicular Gothic to harmonize with St. Patrick's Cathedral opposite. It is a strictly commercial building with large windows demanded by the commercial nature of the building. The building is tenanted by a single tenant, a decorating firm.

THE TRIBUNE TOWER, CHICAGO.
JOHN M. HOWELLS AND RAYMOND M. HOOD, ASSOCIATE ARCHITECTS.

THE AMERICAN RADIATOR CO. BUILDING,
RAYMOND HOOD, Architect,

Stands on the Bryan Park close by the New York Public Library, and has the unusual advantage that its whole length can be seen comfortably across the width of the square.

The building might reasonably have been a preliminary study for the famous Chicago Tribune building, which is now nearly completed. It is a much smaller building than the latter, but has a similar type of plan, and embodies many features which have been adopted in the bigger building, notably the treatment of the angles. In an article recently published in the "Forum," Mr. Hood mentions in a delightful way some of the considerations which led to the development of his design.

The walling is of black brick and black marble at the main and first floors, which causes the solid and voids to have a closer tone value, and to give a monolithic appearance to the building. The details and ornaments of the exterior, while Gothic in general idea, are quite free and interesting in form. Pinnacles, projections, and points of interest are made of stone, which has since been covered with gold leaf. This black and gold treatment, while serving the purpose of the owners as a means of advertisement, causes the building to be much observed and analysed by people who are not usually concerned with architecture, and it is pointed out with pride to visitors.

The Construction of Old Furniture: Materials and Methods*

By JOHN C. ROGERS, A.R.I.B.A.

I WANT to regard old English furniture from the point of view of the craftsman rather than the collector, to gain an appreciation of design by inquiring into the ways and means which produced the results that captivate and charm us so much to-day; to be practical, and try to learn from the old materials and methods of construction some of the secrets of the old-time furniture makers.

It is most important to the success of the crafts to-day that whatever designing we attempt—and we should make an effort at design rather than turn out reproductions—should be on the sure foundation of traditional knowledge. The old traditions were founded on ages of practical experience, the final preference of skilled craftsmen for certain materials, certain methods, and certain forms. By the preservation of some of their work we are able to study their progress, and we can learn much by analysing it under three essential heads, viz., construction, form, and enrichment. The first two are, of course, inseparable and vitally important; the third factor, though desirable, is not vital—in fact, many a very pleasing piece is entirely devoid of enrichment—by which I mean carving, painted decoration, or marquetry.

In all true craftsmanship the qualities and limitations of the materials employed very largely govern the design, so that, in furniture, we must, among other things, study the growth and nature of the woods employed before we can get very far with the traditions and factors already mentioned.

Among the large number of woods used in English furniture oak must take pride of place. The age of oak (to use Mr. Macquoid's phrase) dates back to remote antiquity, the oldest surviving examples being chests of the twelfth century.

Oak was the chief wood for furniture right through to the seventeenth century, when that very remarkable event—the restoration of King Charles II in 1660, turned fashionable tastes decidedly to walnut wood; but oak was still in demand for carcass work, drawer linings, etc., and in country districts simple pieces of oak furniture were made in all the succeeding styles for which walnut and mahogany were used in fashionable work.

In early mediæval times vast oak forests covered Britain, and the wood was in general demand for houses, ships, implements, and for furniture, such as there was, it also provided the fuel for the ironfounders in Sussex, Surrey, and elsewhere.

For constructional purposes large trees were generally preferred, and so long as they were sound, the older the better, especially those trees of very slow growth.

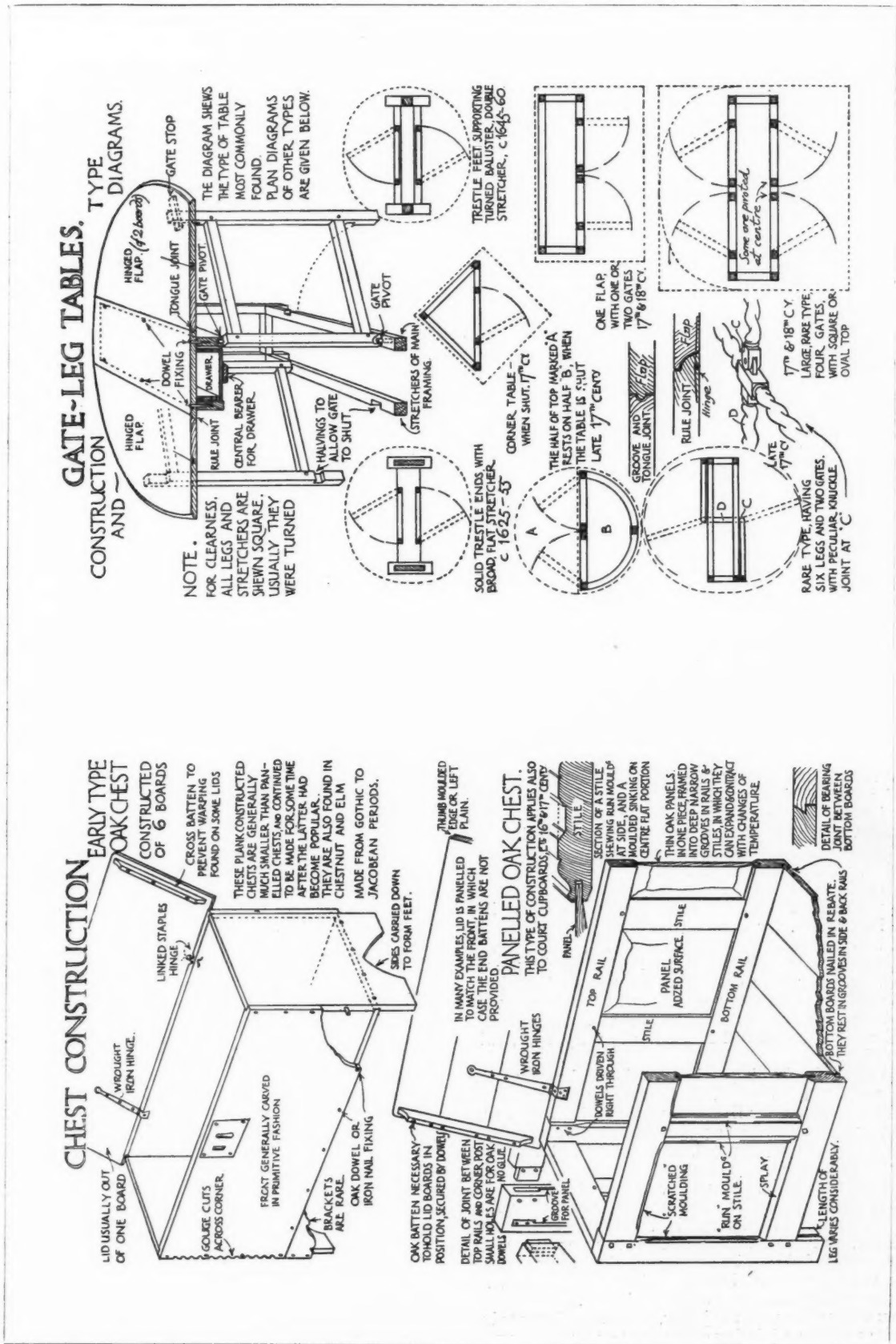
Riving was the early method of conversion, in which, by means of tools known as the beetle and wedge, the tree was quartered and scantlings were split from the log. This operation took place very soon after felling, and the riven timber was stacked to dry out and season.

The riving iron was inserted at the end of a log on a medullary ray and driven in, so that taper-shaped boards were produced. The plane of the ray was thus exposed, and showed the silver grain on both faces; the surfaces were afterwards dressed with the adze. Riven oak proved to be extremely durable and practically devoid of all tendency to warp. The practice of riving continued in

* Extracts from a lecture delivered at the Geffrye Museum on Furniture: The Materials Used and the Old Methods of Construction in relation to Design.

Photo: Elliott and Fry.

MR. JOHN C. ROGERS.



CONSTRUCTIONAL DETAILS OF A CHEST AND A GATE-LEG TABLE.

considerable use up to the opening of the eighteenth century, but in the sixteenth century the two-handled pit saw came into general use. It was better suited to all kinds and conditions of trees, and gave more freedom in producing scantlings; and the trunk must be dry and free from sap, which, if a little wasteful, necessitated felling in the autumn or early winter, then long water seasoning in a running stream, and a period for drying out.

The lessons learnt from the older method were not ignored, the tree being sawn into quarters first, then each quarter was placed in turn on the pit beams, and boards and planks were sawn with their faces conforming to the lines of the medullary rays; but to get the boards parallel-sided, one face would be cut on one of the rays, while the other would be at a slight angle with them. If you set this out you will see that thin wedge-shaped strips were produced alternatively, as waste, and that the widest possible board would barely represent the radius of the trunk. This fact is important as it affected the panelling.

Quarter-cut boards were also produced without figure, that is, they were cut across the medullary rays instead of parallel with them—mild oak is the term for them, and they had a definite use in certain work, which will appear later.

Early forms of construction are best studied from the chests or coffers. The most primitive is that in which a portion of a trunk is hollowed out, banded with iron, and a stout plank hinged for a lid.

Many specimens of the thirteenth and fourteenth centuries remain in which metal is kept out of the construction entirely: front and back have a long, wide board, the ends of which are housed into vertical and stouter boards that continue lower to form feet, the joints being secured with oak pins; the side boards usually lean inwards, and have stout cross-pieces, the extremities of which are mortised through the vertical members of back and front, and so hold the structure together: the lid has cross-bearers at each end which pass through slots at the top of the back verticals, and an oak pin is here driven through to form the hinge.

In the fifteenth century the construction was lightened by the use of rather thinner boards, the two ends, or sides, carried down to form feet, and front, back, sides, and bottom were butted along the edges and secured with oak pins or wrought-iron nails. Many of these chests were carved with Gothic ornament, generally geometrical in character. A few cupboards of the fifteenth and sixteenth centuries exist. They are of broad boards nailed or pinned together, with shallow mouldings, and some have pierced panels of late Gothic tracery which are very effective.

To the student of furniture the sixteenth century is of vital importance, for it was then that panelled framing came into use for articles of box formation, chairs, etc.

This was a tremendous advance in construction; it was the change over from crude carpentry to skilled joinery, and established complete mastery over the refractory oak. All along the struggle had been to gain lightness and to guard against the natural tendencies to warp, split, twist, and shrink.

The methods of felling and conversion had partly solved these problems, but panelled framing was miles ahead of all other methods, for lightness was combined with great strength; large superficial areas could be built up by simply multiplying the unit panel, and that panel itself was determined by the width of a good quarter-cut board, i.e., about 10 in. to 12 in. Moreover, the panel being held on all four sides in the rails and stiles of the framing, permitted it being quite thin ($\frac{3}{8}$ in. to $\frac{3}{4}$ in.), and even less for wall panelling, and what was of still greater importance this panel, though held against warp, was free to expand and contract in the grooves into which it was tongued, so that splitting and buckling were also eliminated.

You will realize that the joiner, once he had grasped the mortise and tenon jointing of the frame, saw endless possibilities before him, and it all came just at the very moment when England was to take a big step forward in domestic architecture, with a corresponding big demand for comely looking furniture that could take its place in hall or long gallery with hangings of fine arras or wainscoted walls; great fireplaces, bays and orcels of stone, and carpets of Turkey work.

Let us now examine the joiners' methods in panelled framing: no metal was to enter into it, and very often no glue, yet so perfect was the result that it was able to withstand much rough handling, such as the stripping of whole walls of it in the reigns of Elizabeth and James I in the hunt for priests for whose security hiding-holes had been constructed in the thick walls and chimneys of many of the houses of Catholic families. Moreover, wainscot was often bequeathed in wills, and mentioned in inventories, and consequently was sometimes removed from one house to another, but once properly framed together it was practically indestructible.

In furniture the angle posts or stiles, which were rather thicker than the rest of the framing, were continued to the floor as supports. The rails separating the rows of panels were continuous and tenoned into mortises cut in the stiles—all members being run throughout with a groove for the panels, and the width of this groove gave the thickness for the tenon, the vertical divisions between panels, called muntins, ran from rail to rail, and had tenons cut top and bottom to suit a corresponding series of mortises in the rails. The panels were cut to size, and inserted in the framing while being assembled, the whole being lightly tapped together and left to stand for some weeks. Doors of cupboards, etc., were similarly built up, and also left to take up a final set. Then, when the period of waiting in the warm workshop had had its effect, and any adjustments found to be necessary had been made, all joints were tightened up, holes bored through the tenons and mortise walls, and roughly squared oak pins driven in flush. Where it was considered advisable to pull a rail up very tight at the shoulders, as on a door, draw boring was adopted.

You will realize there was a deal of skilled labour in all this, but was it not justified? Many of those sixteenth- and seventeenth-century pieces are as sound and free from rack to-day as when they first had the tenons tightened up, and that is a great test of craftsmanship.

I will show you that other methods superseded this panelled framing when, to conform to a new fashion from abroad, wide, flat surfaces were required for laying veneers; but from a constructional point of view it was a retrograde step, as the test of time has amply proved. To revert to the panelling, considerable character was given to this work by the way in which various mouldings were worked on the edges of the framing. In the early sixteenth-century examples we still find the characteristics of masons' work copied by the joiner, such as the mason's mitre and hand-finishing of mouldings with the gouge and chisel.

The top edge of the rails was usually splayed or chamfered which at first stopped short each side of a muntin point to slide, but a little later this chamfer was continuous, and the muntins with their run mouldings were cut back on the splay to fit over it. An arrangement that became pretty general in Elizabeth's reign was to work a scratched bead on the panel edge of the side or angle stiles, and also on the *lower* edge of rails, while muntins had a mould of better profile run with a plane.

In some instances, such as the panelled chair at the Victoria and Albert Museum, c. 1540, the moulded muntin is truly mitred, with the mould on the lower edge of the rail, while the stiles are simply beaded. The moulds were worked on the solid generally, but on some very rich sixteenth-century pieces important mouldings were applied to the framing.

In the first half of the ensuing century, the seventeenth, we find panels enriched with both moulds on the solid, and applied; the latter became extensively used in building up composite panels of various types, and as the carving became flatter and plainer in treatment, light and shade was provided by split and applied turnery, often stained black.

Before we leave the sixteenth century I want to refer to the great draw-top tables, which, in Elizabeth's reign, were made with huge bulbous legs—for the most part built up.

The next constructional novelty to appear was the sliding drawer, in Elizabeth's reign. It was first placed under one or more of the shelves of the open buffet or cupboard, or one was formed beneath the ordinary box-chest—the proverbial bottom drawer. Possibly slightly earlier, but certainly in the reign of James I, the complete chest of drawers developed. The carcase was formed of panelled framing at sides and back, the top of thin boards pinned down. The front divided horizontally for—usually—four drawers. At first the drawers were just nailed together—the front being rebated for the sides. Then one huge dovetail held the sides to the front—the lap dovetail; and then the number of tails increased to three or four, rather crudely cut. The drawer sides were stout and grooved.

The oak chest of drawers remained popular in country districts right throughout the seventeenth century, the fronts being decorated with many rich panel shapes, with thick veneers in strips of fruit and foreign woods and inlaid patterns.

This brings us into the walnut period, but before we consider the new styles and methods of that work I want to revert to tables.

You are all familiar with the gate-leg table—it is again very popular to-day; the construction is very ingenious and is an excellent example of design being governed by the structural forms and practical necessities. There is a very pleasing table at South Kensington about mid-seventeenth century with nicely-turned legs. They first appeared about the beginning of the seventeenth century, and very early specimens generally had the solid trestle ends. The ordinary type became a tradition right through the eighteenth century.

The walnut period, which commenced with the restoration of King Charles II in 1660, introduced much that was quite new to the English joiner and cabinet-maker.

Hitherto England had always lagged behind Continental countries in furniture comfort, but after a few years of tuition from the Dutch craftsmen, who came over with or followed Charles, they were producing fine furniture as soundly made and as beautiful as any then being turned out in Italy, Spain, France, or Holland. It was quite a revolution in construction, but as I said before, it was not a step in the right direction. The imported chests of drawers, cabinets, etc., had flat surfaces faced with walnut veneers of most beautiful figure, with banded borders, and in the finest—which probably predominated—there were panels of floral marquetry. Lacquer was a favourite decoration also. Some of these chests and cabinets were upon stands of which the legs were twist turned. Others were on chests of drawers and, later on, bureaux. Many small tables with quartered or marquetry tops also had twist legs.

The chairs also were an entire departure from the English oak patterns; they had cane seats and back panels with legs, stretchers, and back uprights, all twist turned. That was the vogue for the first ten years of the reign of Charles II—all framing members twist turned. The twist was not entirely new to the English turner; it was first used in furniture after the Civil Wars during the Cromwellian Protectorship; but it was not really fashionable until employed on walnut chair and table legs.

Those who are familiar with the early wooden lathes, fully appreciate the beautiful turnery produced on them; ordinary circular turning required skill enough, yet the twist was a much more awkward operation. To do this a special lathe was generally used which was fitted with a rather obscure contrivance that seems to have given an oblique motion to the work: it was then known as "swash turning," and is described in Moxon's "Mechanick Exercises or the Doctrine of Handy Works" of 1680.

The twist turning did not remain fashionable for chairs more than about ten years, but on small tables it remained in vogue right through to Queen Anne's reign, which commenced in 1702. It then rapidly declined and we see very little more of it in historical styles.

The facing of drawer fronts with vertical grain veneer is of greater value to our aspect of the subject than might at first appear. There is an old and popular notion that veneering denotes a cheap article—resorted to to deceive the simple into the belief that they are buying solid wood. Nothing could be farther from the motives which prompted the use of walnut veneers during the reigns of Charles II, James II, William and Mary, Anne, and George I. To begin with, it was difficult to obtain walnut in large boards; it was none too plentiful, and the straight cut grain was not really interesting; but cuts at various angles, especially at the bottom of the bole by the roots, produced veneers with very beautiful markings as also did sections through burrs. Owing to the position and direction of these cuts there could be no structural strength, consequently veneers were naturally suggested.

The decorative value of this strongly marked wood was very great and fully realized, and if we carefully observe the manner of laying we shall find the old cabinet-makers composing panel effects in a way that clearly shows they regarded it as surface decoration.

The date of introduction of screws in furniture for such purposes as fixing hinges and locks is very important, as it provides valuable evidence when forming an opinion as to the genuineness or otherwise of antique pieces.

I have not been able to find an original use of screws in furniture of earlier date than the latter part of the seventeenth century, probably not before 1675, on the hinges and locks of walnut cabinets, etc.

If, therefore, you find the oak top of a Jacobean table or stool possesses no signs of oak pins, and upon looking underneath the screw-heads can be seen, you can be perfectly sure the top is not original.

[The diagrams on page 677 are reproduced from "English Furniture" in the "Country Life" Library.]

The Death-Watch Beetle

The death-watch beetle is the subject of an interesting and instructive pamphlet which has just been issued by the Society of Antiquaries. Lord Crawford and Balcarres, the President of the Society, in the introduction, states that widespread alarm has been aroused in recent years by the discovery that the ravages of the death-watch beetle are far more extensive than was suspected. Not only in the grandiose roof of Westminster Hall, but at Hampton Court, Gray's Inn, Bath Abbey, St. Paul's, and elsewhere, generations of this mischievous animal have been devouring the roof-trees of ancient structures. The object of the Society is to draw attention to the prevalent danger, and they have been fortunate in securing the help of Professor Maxwell Lefroy, who has made a close study of this enemy of Church and State.

The pamphlet, after stating that there is good reason to fear that the grub is at work in the great majority of buildings in which oak has been used, states that: unless actual structural repair is required, a building can be treated chemically and at moderate cost, with little disturbance except the uncovering of wall plates and the ends of principals. The basis of the treatment is the application, by means of a spraying-machine, of a liquid that thoroughly wets the timbers, penetrates any decayed parts, enters any beetle holes, gives off a vapour that destroys the grubs inside, and leaves behind an invisible, unalterable film of poison which kills emerging beetles or kills grubs seeking to enter. Such a fluid, applied with a proper sprayer, will cover 20 to 30 square yards per gallon. An ordinary church roof may be treated in a day unless structural alteration is required, and the total cost may not exceed fifty pounds.

The Society desires to emphasize two points: first, that it is possible to ascertain if a building is attacked; fresh emergence holes, fresh pellets are danger signals; secondly, that treatment is not usually expensive or difficult, unless matters have gone so far as to necessitate structural repairs.

Copies of the pamphlet may be obtained gratis on application to the Assistant Secretary, Society of Antiquaries, Burlington House, Piccadilly, London, W.1.

The Natural and Artificial Lighting of Buildings*

By PERCY J. WALDRAM, F.S.I., Licentiate L.R.I.B.A.

Determination of Practical Problems in Natural Illumination.

THE first consideration in determining all practical questions in daylight illumination is the amount of light which reasonable people require for various purposes.

Nature, it is hardly necessary to recall to mind, provides for long periods quantities of light very considerably in excess of that which is available at times when most people would consider the ligh out of doors to be quite good.

Obviously, therefore, the proportion of the light outside which must be admitted by windows or skylights must be determined with regard to dull days in winter rather than bright clear days, and with regard to the times near sunset rather than middle day.

It is, therefore, necessary to fix upon a value of sky brightness which shall fairly represent moderately dull but not abnormally dull weather, when reasonable people would reasonably expect enough light indoors for ordinary purposes.

From the meagre official information available the writer has for some years adopted, *faute de mieux*, the reading of 600 ft. candles to represent this sky brightness, equivalent to a reading of 500 ft. candles on an unobstructed horizontal white card having a reflection co-efficient of 83 per cent., or a reading of 250 ft. candles on the same card standing vertically or observed on an unobstructed window sill.

This represents approximately the sky brightness on an ordinary wet day in spring and autumn in the country, and in the summer in towns, and in the country at about an hour, and in towns about 1½ hours, after sunrise and before sunset on fine days. It is rarely exceeded throughout the day in winter in towns except on quite fine days. The more exact data which we hope for may, of course, alter this very important standard.

The amount of illumination in foot candles recommended by various authorities for artificial light varies considerably. Making due allowance for the fact that some self-constituted authorities are financially benefited by high degrees of illumination, and that absolute perfection is not always economically possible, the values recommended by the last report of the Home Office Committee on Factory Lighting may be taken.

They are 3 ft. candles for fine work and 5 ft. for very fine work.

The author's experience is that most people require rather more artificial light for any given purpose than the amount of natural light which will satisfy them, at least in the failing light of dusk.

Taking 1 ft. candle of daylight as the average minimum requirement of adults for clerical work and for ordinary purposes and 2½ ft. candles for fine work or the eyes of very young children in schools, it follows that adequate light requires a minimum daylight sill ratio of 0·4 per cent. and good light a minimum daylight sill ratio of 1 per cent.

This assumption, which the author has invariably applied in ancient light disputes for many years, received a valuable and welcome confirmation when the actual conditions existing in new public elementary school rooms built to the structural rules of the Board of Education were reduced to terms of sill ratio in 1913, by a committee of medical officers, scientists, and illuminating engineers appointed by the Illuminating Engineering Society.

The sill ratio of the worst lit desk in new classrooms in this country was found by measurement to be 1 per cent., whilst precisely the same value was found to be involved by the recommendations or regulations of school authorities on the Continent and in America, all of which, like the British structural rules, had been arrived at by the evolution of gradual trial and error.

The value of 0·4 per cent. sill ratio is also in accordance with the rough rule often adopted in ancient light cases to the effect that any point in an interior from which all sky is cut off at table height is necessarily inadequately lit.

All such positions must depend wholly upon light diffusely reflected from walls, ceilings, or building fronts, and numerous tests show that this seldom exceeds 0·2 per cent., even with moderate degrees of obstruction.

Use of Calculating Diagrams.

The application of all these considerations to the problem of proper fenestration involves a certain amount of trial and error, but it is not necessary for the designer to set up innumerable diagrams, or to contour the plans of all rooms.

Given any desired system of fenestration and window head height, a typical position of worst lighting can generally be located readily by inspection.

If there be no obstruction, then one diagram set up from table height on tracing paper over a 20 in. × 10 in. diagram will show at once by the fact of the visible sky measuring more or less than 1 sq. in. on the diagram whether the worst lit position has a sill ratio of more or less than 0·5 per cent., by no means a terrible operation. If the window is obstructed, then a line on section joining the top of the *lowest* obstruction to visible sky to the top of the glass and continued down to table height shows how far forward in the room the "no sky" position will extend.

"The grumble point" of 0·4 per cent. will be in front of this by a short distance which depends upon the width of the glass and the nature of the obstruction.

In the country people expect adequate light right to the back of a room. In towns they are satisfied with adequate light to all reasonable working positions. For this reason in towns a small office room adequately lit for only half its depth will satisfy many people. Large rooms or rooms with working positions farther back require deeper lighting.

It must always be borne in mind that any hard contrast between dark and light portions of the same room not only gives an impression of bad lighting, but is actually bad; because the eye unconsciously adapts itself to the brightest object in its field of view, and according to the extent to which it is thus "light adapted" to a patch of visible sky or a well-lit table under a window, it is less able to see properly in darker parts.

For this reason top lighting by small skylights, which are apt to give very hard contrasts, is seldom satisfactory; and severe cases of obstruction to side windows which leave only a small well-lit patch under the window cannot be considered as merely cases of restricted working space. Sometimes it will be found that a small modification of the fenestration will effect a vast improvement. The kitchen of many a semi-detached suburban villa could be saved by a small window across the angle of the wall.

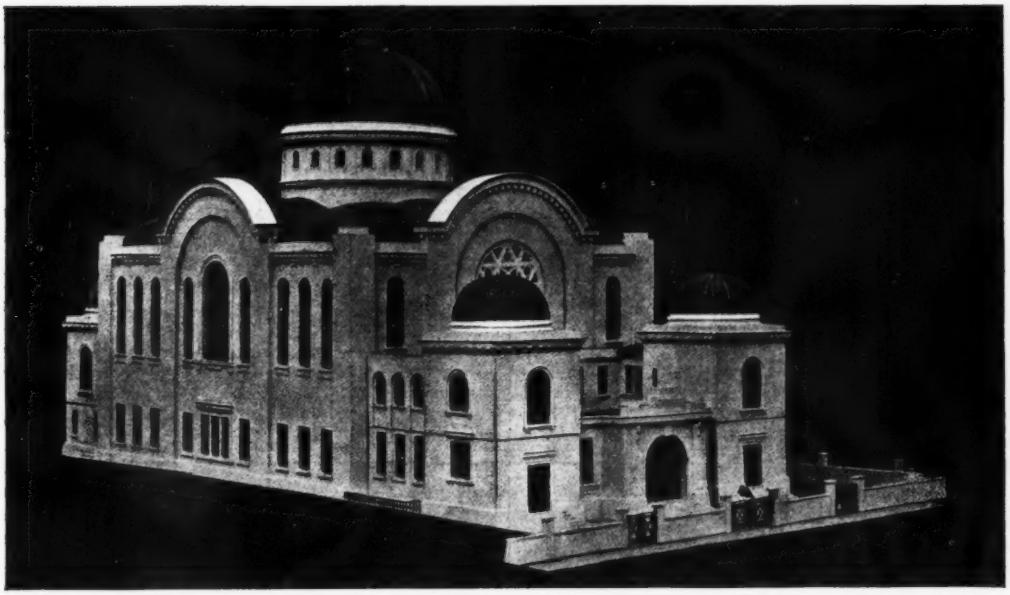
Unnecessarily low window heads are the most frequent cause of bad lighting, but sometimes even a window bulkheaded up into the floor above will be insufficient to give visible sky to important positions.

Faced with this difficulty, the only thing is to make the best of a situation in which adequate lighting is impossible.

Reflecting mirrors, or preferably prism glass, catching beams of light from directions too vertical to get into the room are useful *so long as they are kept clean;* but the direction of such deflected light is unnatural and the inevitable glitter of specular reflection is bad.

Beyond this all that the architect can do is to provide light-reflecting surfaces inside and outside and to impress

* Extracts from a Paper read before the R.I.B.A.



PHOTOGRAPH OF THE MODEL OF THE EXTERIOR OF WITHRINGTON SYNAGOGUE, MANCHESTER, AS DESIGNED BY DELISSA JOSEPH, F.R.I.B.A.

on his client the importance of frequent cleaning or renewal, and, above all, the very frequent cleaning of window glass. In towns a loss of light of 10 per cent. to 15 per cent. per month due to uncleaned glass alone is quite a moderate estimate. In winter it may amount to 10 per cent. in a week in towns, and in foggy weather even more. Where light is scanty and precious this is no small item.

The Use of Models in Predetermining Natural Lighting.

The investigation of positions in an interior and the drawing of contour lines on a plan, although more or less essential to prove evidence in ancient light cases, is a tedious and not very satisfactory method of visualizing the general effect of any system of fenestration for a large interior.

The use of scale models, first suggested by Prof. Rudzicka in 1910, was long advocated by the author, and in 1912, with the invaluable aid of Prof. Clinton, he was able, by means of an exhaustive series of experiments at University College, to establish the truth of the proposition that the natural light inside accurate scale models was identical with the light in the full-size rooms which they represented.

The large daylight building at Teddington was designed primarily to receive large scale models of rooms, picture galleries, etc., for investigation.

The interior of scale models can, with due precautions, readily be photographed. By the courtesy of Mr. Delissa Joseph the author is permitted to illustrate the photograph of the exterior and interior of a scale model by Mr. Thorpe of a large synagogue. (Reproduced.)

The interior photograph was actually taken with a portion of the dome removed to compensate for the fact of the photograph being taken indoors, so that it is not necessarily an accurate test of the lighting provided by the design.

It serves, however, to illustrate the strikingly lifelike results which can be obtained merely by projecting a camera through a window or preferably a prepared aperture in the wall of a model.

Reflection from Building Fronts and Light Wells.

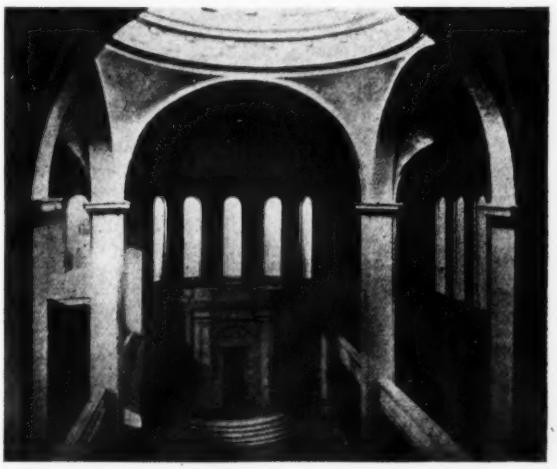
As regards reflection from building fronts, it will be obvious that any white unobstructed vertical surface can never be more than half as bright as a white unobstructed horizontal surface, because the latter receives light from a full hemisphere of sky, whilst the former can only see a quarter sphere. They may appear to be almost equally bright, but the loss is there.

But a vertical wall could only be half as bright as any sky it displaces if it reflected all incident light and absorbed none, i.e. if its co-efficient of reflection were 100 per cent.

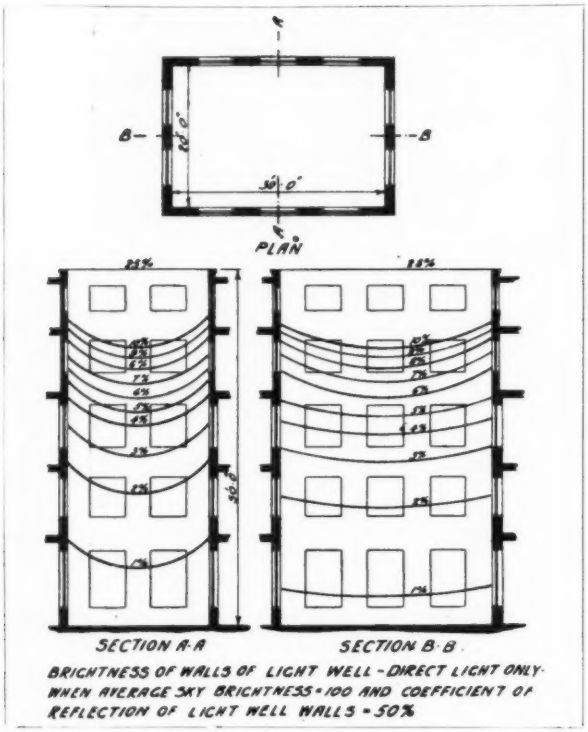
But even new clean white glazed bricks or new whitewash can reflect only some 60 per cent. to 70 per cent., so that they would only be about one-third as bright as displaced sky if unobstructed.

They never are unobstructed, however, especially in the most valuable direction at right angles to the surface, near the horizon; and when we consider the amount of sky cut off from any reflecting wall surface by, say, the opposite side of a street, or the walls of a light well, it will be obvious that the 30 per cent. or thereabouts of an unobstructed vertical new white glazed brick or whitewashed wall can seldom average much more than about 10 per cent., and this rapidly deteriorates unless the bricks are periodically cleaned or the whitewash periodically renewed.

In addition, there is, of course, light received by the wall from other building fronts, as in a glazed light well, but our knowledge of the relative values of direct and



PHOTOGRAPH OF THE INTERIOR OF THE MODEL OF THE WITHRINGTON SYNAGOGUE, MANCHESTER.



APPARENT BRIGHTNESS OF WALLS OF LIGHT WELL.

diffused light in rooms shows that this factor must be extremely small.

For all practical purposes a window looking out on to the walls of a light well or across a road on to a building front is looking out on to an artificial sky which will always be much less bright than the actual sky at any given time.

Its brightness relative to the actual sky can be ascertained by setting up sky projections from a sufficient number of points—treating the light well or the roadway as a room stood up on end—with one side, in the case of a light well, completely open (see above).

Values corresponding precisely to the daylight roof ratio of a horizontal room could thus be attributed to every course of bricks if necessary round the light well.

These, multiplied by the reflection co-efficient of the wall surface, will obviously give the varying brightness of the light well walls at different heights as a proportion of the sky brightness. As the reflection co-efficient can only be an average between cleaning periods, during which it may easily vary by 30 per cent. or 40 per cent. or more according to the weather, it is obviously rather a work of supererogation to trouble about the small addition afforded by diffuse reflection from side to side of the light well. But if desired an addition of, say, 5 per cent. may be made for this.

The amount of light obtained at any interior position condemned to see nothing but the inspiring prospect of a blank wall instead of sky can by this means be ascertained if necessary with very fair accuracy.

Picture Gallery Lighting.

The subject of lighting picture galleries has been treated somewhat exhaustively in the Transactions of the R.I.B.A.

The simultaneous tasks of avoiding glare and reflections from ceiling or side lights at high angles, and from spectators at low angles, involve problems which can readily be solved by the methods described in this paper. High angle reflections can be avoided by keeping the picture glass outside the optical limits of specular reflection from high lights. Low angle reflections can be minimized by insuring that the lighting value of sky subtended at spectators (i.e. its area when projected on to one of the diagrams described herein) shall be as small as possible as compared with that of sky subtended at the picture glass.

Artificial Lighting.

We can now turn with some relief from the perplexing variations and contradictions and the unexpected prejudices which make the subject of daylight so difficult to the more sober subject of artificial lighting, which in its modern forms is practically free from changes and fluctuations, and is amenable to far simpler rules.

First it is necessary to draw a sharp distinction between the measurement of light sources in standard candles and the measurement in foot candles or lumens per square foot of the illumination afforded by such light sources.

The first is a fixed quantity; the second varies with direction and distance.

A foot candle being the illumination received by a surface, every part of which is distant 1 ft. from a point light source which in all material directions is equal to that of one standard candle, the surface in question must be part of the interior of a sphere of 1 ft. radius. The light of one candle at the centre of a sphere of twice that radius would, therefore, be spread over four times the area. Its illuminating capacity would, in consequence, be reduced to one-fourth, i.e. illumination varies inversely as the square of the distance.

This well-known law of inverse squares is only approximately correct for luminous surfaces such as gas mantles, translucent globes, etc.

In addition to this difficulty all known light sources emit light unevenly.

The term candle-power applied to any lamp has obviously no meaning unless the direction of that candle-power is specified. From the polar curve of any lamp it is possible to calculate the mean candle-power of the upper or lower half of a sphere surrounding the lamp known as the mean upper or lower hemispherical candle-power (M.h.c.p.), or the average candle-power all round known as the mean spherical candle-power (M.s.c.p.).

But illumination is most conveniently expressed in lumens per square foot, one lumen being the light source which is sufficient to illuminate 1 sq. ft. to an intensity of 1 ft. candle.

A light source averaging one candle-power in all directions would be capable of so illuminating the area of a sphere of 1 ft. radius or 4π sq. ft. area. It therefore emits to 12·57 lumens.

Direction is not only important with regard to the variations of candle-power in various directions shown by the polar curves of light sources.

Suppose the illumination to be provided be 3 ft. candles on a horizontal plane at table height, and that a light source were available 6 ft. above and 6 ft. away from the centre of the table.

Light would therefore fall on the table at an angle of 45°. If the polar curve of the source indicated a candle-power of, say, 216 candles at 45°, the gross illumination would be 216 candles divided by the square of the slant distance, or $\frac{216}{(6 \times \sqrt{2})^2} = 3$ ft. candles approximately. But the net or useful illumination must be reduced by the operation of Lambert's Law that illumination varies with the cosine of the angle of incidence. In this case the cosine of 45° is 1·414, so that the 3 ft. candles becomes only $3 \div 1{\cdot}414$, or, say, 2·1 ft. candles.

As against this a certain amount of light would be obtained from directions of emission other than 45° by reflection from the walls and ceiling of the room and depending upon the proportions of the room and the coefficients of reflection of those walls and ceiling.

Then, again, allowance must be made for depreciation in the lamp and accumulation of dust on shades and fitting.

It will be seen that even when considering one point

only in the middle of only one table things have by this time become, to say the least, a little intricate, and the prospect of specifying the lighting units of even one room, even if we have the polar curves of all available lamp-shades and fittings, is somewhat terrifying. But lighting engineers have reduced their work, at least for ordinary interiors, to reasonable limits; not by careless or approximate short cuts, but by standardizing and tabulating the effect of all essential factors to obtain what is known as the "utilization factor" of any given fitting, i.e. the ratio between the number of lumens which a lamp is capable of emitting and the number of lumens which, when placed in that fitting, and under given conditions, it will afford to a given position.

For electric lighting units the tabulation of utilization factors has been brought to a high pitch of perfection.

Tables are in existence giving the utilization factors for all ordinary forms of lamps, reflectors, and shades in connection with what are known as "room factors," which vary with the proportions of any interior and the mounting height of lamps above the plane of work, and the reflection co-efficients of walls and ceilings.

In addition, the mounting heights and spacings which will give satisfactory results as regards diversity of lighting for any given form of shade and reflector have been ascertained and exist in tabular form together with tabulated data as to the relative advantages of each form of fitting as regards efficiency for horizontal or vertical illumination, general appearance of a lighted interior, direct glare, reflected glare, shadows, and maintenance.

The task of the illuminating engineer is with this assistance, and as regards ordinary installations, quite simple.

The first task is to decide whether the situation demands that the light from the bare lamp shall be wholly reflected on to the work as with the ordinary enamelled iron reflector (direct lighting), whether some of it shall be allowed to escape upwards as with the ordinary opal glass shade (semi-direct lighting), whether it shall be wholly reflected upwards and be received by diffuse reflection from a white ceiling as with some forms of opaque reflector (totally indirect lighting), or whether it shall be mainly directed upwards for the same purpose by a reflector of opal glass or of some similar translucent material which allows part to escape downwards (semi-indirect lighting).

This being determined, the price and relative advantages of various types of fitting are studied with regard to the particular circumstances of the case.

In some instances economy in first cost must be sacrificed to secure low running costs or vice versa. In others, appearance is all important, and in situations where cleaning is difficult, a low maintenance cost, i.e. easy cleaning, may be the first consideration.

Characteristics which are in some cases essential become in others merely desirable.

The type of fitting being selected, a suitable mounting height is determined, and from this a trial spacing is set out. If the resulting lay-out is unsatisfactory the mounting height, or even the type of fitting, is varied until a suitable spacing can be properly combined with its appropriate mounting height.

The total floor area divided by the number of lighting points multiplied by the required illumination in foot candles gives at once the net number of lumens required from each lighting point.

The room factor for an interior of given dimensions and mounting height is obtained direct from a table, and reference to a further table gives the utilization factor appropriate to this particular type of fitting, room factor, and co-efficient of reflection of walls and ceilings.

The lumens required divided by this utilization factor gives the number of lumens required from the bare lamp. An appropriate percentage having been added for lamp depreciation and dirt accumulation, a size of lamp is selected which emits as nearly as possible the requisite number of lumens.

Lighting units in gas or other illuminants do not lend themselves quite so readily to standardization, but the pressure of competition is enforcing the use of similar data.

Simple though this method is in principle, it leaves scope for considerable exercise of trained judgment and experience, and where the size or importance of an installation justifies such a course, the employment of an expert should constitute a profitable investment.

New York Town Planning Conference

The International Conference on town and city planning was attended by about 300 experts from many countries, including Mr. Ebenezer Howard, President of the International Town Planning Federation, and Mr. Raymond Unwin, from the British Ministry of Health.

Mr. George B. Ford, President of the United States City Planning Conference, in his presidential address, said that Chicago was the only large American city which was paying attention to its silhouette. He stated that city planning had been adopted in twenty-two States of the United States, that it was being contemplated in twenty others, and 350 cities had city planning schemes in operation.

During a discussion on traffic problems all the speakers emphasized the fact that traffic control could not, under existing street conditions, provide a solution. The police regulations, speed limits, signal towers, and one-way streets were the only palliatives. Street widening alone was insufficient, especially when it was done haphazard. The chief requirement to-day, according to Mr. Morris Knowles, chairman of the Pittsburg City Planning Commission, was a better general street system, a careful distinction of local streets from main arterial highways, and far-sighted regional planning in surrounding areas which were now undeveloped.

The Period Rooms at Wembley

An interesting new feature of the Palace of Arts at Wembley this year is the two Period Rooms. One of these is designed to give an idea of the Adam style of interior architecture and decoration of the eighteenth century; the other is a 1925 room, designed by Mr. Maxwell Ayrton, F.R.I.B.A., every part of which has some direct connexion with last year's British Empire Exhibition. According to "The Times" the Adam room is not a copy of any particular interior, but is designed to give a general idea of Adam's principles of treatment. The room itself, which is 36 ft. long, 24 ft. wide, and 15 ft. high, has been entirely constructed by Mr. Laurence Turner from the architect's detail drawings. The three medallions on the ceiling are reproductions from examples in the Soane Museum in Lincoln's Inn Fields, those on the walls and the cornice from an Adam house in Portland Place, and the bas-relief on the mantelpiece tablet is also a reproduction. Everything else has been specially modelled from the full-sized drawings. Five panels on the walls, giving an idea of the tapestries used in Adam houses, represent five of the architect's masterpieces —the Adelphi Terrace, the Bridge for Syon, the portico at Osterley, the Record Office, Edinburgh, and the fête pavilion of 1774 at the Oaks, Epsom. They are the work of Mr. Alfred C. Conrade.

A realistic touch to the room is given by the introduction of five life-size figures. Every member of the tea party portrayed was known by, or had special connections with, Robert Adam. They are Fanny Burney, the authoress, Mrs. Thrale, Dr. Johnson and Boswell, and David Garrick. The dresses are historical, being relics of some of Sir Henry Irving's Lyceum productions. The costumes of Garrick and of Miss Burney are actual originals of the eighteenth century. The honorary architect is Mr. Arthur T. Bolton, F.S.A., F.R.I.B.A., the curator of the Soane Museum and author of the standard book on the architecture of Robert and James Adam.

The 1925 room, designed by Mr. Ayrton, is slightly smaller than the Adam room, measuring 31 ft. long by 14 ft. wide. The panelling is done in stained hemlock. The whole of the material for this has been provided by the British Columbian authorities, a feature of the Canadian Pavilion last year being a room panelled in this style. All the furniture of the room has been lent by Sir Owen Williams. Concrete entered so largely into the 1924 exhibition that it has been introduced into the decoration of the room.

Contemporary Art

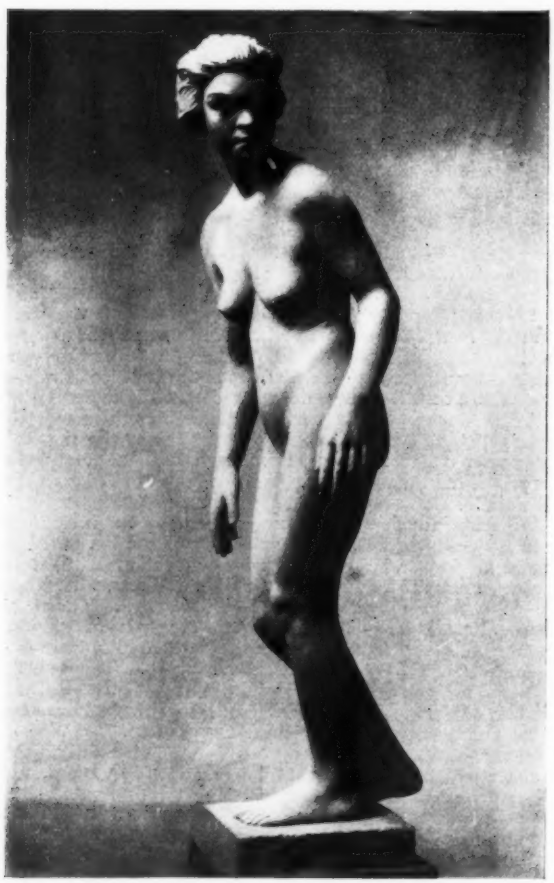
Water-colour Drawing.

With three of the most important societies functioning in water-colour draughtsmanship holding their exhibitions simultaneously it is possible to arrive at a judgment as to the meaning the art has for its living practitioners. It must be confessed that by far the greater number seem to think the medium is one for fluent picture painting. It is not: it is a far more important business; it is a medium for the recording of personal impressions of nature and architecture. Occasionally, good decorative work emerges, as in the pair of compositions by Noel L. Nisbet at the Royal Institute, and "The Challenge," by E. Fortescue Brickdale, at the Royal Society, and more frequently good illustrations like those of Cecil King's at the Institute. Indeed, water-colour lends itself very well in a secondary fashion to the making of illustrations, and, generally speaking, when used for the avowed purpose of picture-making, results in a picture which, at the best, is a good illustration.

Water-colour drawing, however, has a higher function than this, and exercises itself as the most delicate tool for the rendering of the emotions evoked by natural scenes, such as those of William T. Wood and Walter W. Russell at the Royal Society, and W. Egginton and Alfonso Toft at the Institute. No matter how small the subject, the feeling bulks large when so called forth. It is seldom that architectural values are so well interpreted in oil as in water-colour. The oil medium is only successful when used by a master in this direction, and often, even then, the nuances are missed because of the heaviness of the techinque, however well the heaviness of mass may be expressed. The pure draughtsmanship of the water-colourist is needed for buildings, as is very well seen at the Royal Society in "The Minstrel's Pillar, St. Mary, Beverley," by J. H. Lorimer; "The Giudecca, Venice," by Robert W. Allan; "The Great Bridge at Cahors," by Joseph Southall; "The Ventimiglia," by Robert Little; "On Windmill Hill," by David Muirhead; and, best of all, in the "Entrance to the Bullion Court of the Bank of England," by Henry Rushbury.

At the Institute in the drawings of H. Davis-Richter of "Ponte de Ferro, Venice," and "A Dutch Watergate," there is to be observed the difference which the use of water-colour drawing makes in the work of an accomplished master of the oil medium. These two drawings in the artist's earlier and simpler manner have a verve and directness of statement that his pictures in oil of similar subjects do not possess, good as these latter always are. A similar phenomenon may be studied in "The Ducal Palace, Venice," and other drawings by Terrick Williams. But by far the most striking proof of the essential applicability of water-colour drawing to architecture is to be found in the fine and large "Malines" of Fred Taylor, a striking work. Fresh blood is introduced into the art by the Modern English Water-Colour Society at its exhibition at the St. George's Gallery, and some developments of an unobjectionable character are made by Paul Nash and Robert Bevan, and Richard Wyndham applies his curved plane system in four interesting building subjects. Detailed drawings by Wyndham Tryon are interesting, as are the building-landscapes of W. Ratcliffe, and the hard pencil exactitudes of Edward Wadsworth. At this exhibition, however, the most striking works were those of Charles Ginner, the rich "St. Helen's in the City" being the best of the three. The illustrations called "Facts and Fancies," by W. H. Walker, at Walker's Galleries, are largely helped by the dainty use made of the medium, and at these galleries Richard Sydney Hellaby showed several drawings to which some half-hundred works in oil, mainly of the South Sea Islands and New Zealand, were added, revealing a very sincere and distinctly interesting talent. Oil paintings, including portraits and many studies of children, were shown by Will C. Penn, an artist from the North of England. The still-lifes in this collection were certainly most accomplished, and denoted great promise in the direction of a technique of quality.

At Colnaghi's Gallery the opportunity of studying the etchings of Albert Besnard was welcome. This considerable French painter, portraitist, and mural decorator is not well known as an etcher here, but his talents in this direction are considerable, although the prints shown went to prove him more of a student of woman and childhood than an accomplished technician.



LEAD GARDEN FIGURE BY MAURICE LAMBERT.

The Known and the To-be-Known.

The Goupil Gallery has introduced a most desirable and valuable innovation in having an exhibition of nearly 300 paintings, drawings, and sculpture by young and almost unknown men and women. It has to be said at once that it is a failure so far as the painting is concerned, a modified success with regard to the drawings, and a surprising revelation in the matter of the sculpture. There is a little painting—"Sunlight Glade"—by R. A. Quinn, which stands out from the stuff around it, and the drawings seem to be the pick from an admirable collection of graduate and post-graduate work. There are nearly thirty pieces of sculpture, and none is really bad. There are two pieces of carving by A. Horace Gerard, three little wood crucifixes by Dom Theodore Baily, a coloured wood piece called "Mater Creatoris," and three small bronzes by Donald Gilbert.

High up, in a top back room, to which they must have been toilsomely hoisted, are fourteen sculptures, and herein are the surprise and the revelation. The artist—Maurice Lambert—is hardly more than a boy, but he is the son of that fine painter George W. Lambert, A.R.A., now in Australia. He seems to have sprung into an artist spontaneously. His pieces have the air of an old practitioner. There are busts of women which have something of the technique of Epstein, others—of men—that of Frank Dobson, but green on gold on brass or bronze, they have all an individuality which has nothing to do with any previous sculpture. There are other things, such as wood-carvings, a life-size lead garden figure, portraits in terra-cotta, which have not only individuality, but originality; and there is a small sketch called "In-Fighting," for a large boxing group, which indicates a complete insight not only into the art of self-defence, but into that, no less important, of self-expression. Both are mobile, plastic arts, and in this little piece their essential unison is forcibly indicated.

KINETON PARKES.

Correspondence

Metal Façades

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—In the article, in your issue for April 15, on Mr. Thrale Gell's building in Oxford Street for Messrs. Selfridge & Co., you say: "With the Selfridge Wholesale Building, now illustrated, we have reached the point where metal is used for almost entire façades."

The accompanying photograph (reproduced) may interest you. It is a portion of the Liverpool Cotton Exchange, which was completed in 1906, three years before Selfridge's Store appeared in Oxford Street.

This whole-metal treatment for an entire façade was designed by Mr. Matear and myself in order to give the utmost amount of light to the seven floors of cotton showrooms. There are long counters behind the windows for the display of cotton samples, and the heavy piers required in a building of this height to comply with the Liverpool Building Act would have rendered the rooms useless for the purpose in view. Incidentally, we thus circumvented the Building Act, which in those days did not permit the use of the modern system of steel-frame construction. The cornice is also of cast-iron, and the whole metal façade is framed in at each end by solid stone and brick pylons. The castings were extremely well executed by Messrs. Macfarlane & Co., of Glasgow, and fitted perfectly.

Farnham. FRANK W. SIMON.

Architectural Publicity

To the Editor of THE ARCHITECTS' JOURNAL.

SIR,—With reference to the article on "Architectural Publicity" in your issue for April 15, I would like to suggest a way in which architects could at once advertise the profession and secure for their confrères or themselves work that is at present in the hands of others.

The architectural work of public authorities is largely in the hands of surveyors and engineers. In some cases a county surveyor is also county architect, and deals with county buildings, schools, police stations, and police housing; in others an education architect is engaged, leaving the rest of the work to the surveyor. In boroughs it is quite usual for the whole of the building work to be done by the surveyor. Where qualified assistants are employed they are often in the unhappy position of working under men with no taste in design, and if a good building is erected the surveyor gets the credit, whilst if the result is criticized, the assistant gets "the sack."

Local societies and individual architects could do much good by addressing letters to local authorities suggesting that qualified architects should be in charge of architectural work; putting questions on the subject to prospective candidates for election to public bodies, and writing letters to the local—not technical—Press on the subject.

In the early days of "housing" a great deal of this work was done by architects, but now, alas! the surveyor is getting a strangle hold once more, and at present a proposal is before a certain borough council that the surveyor shall "finish off" the local housing scheme and thus "save the architect's fees." Designs for single "subsidy" houses seem to be prepared largely by builders, except for an architect—presumably not a member of the Institute—who advertises "qualified work at reasonable fees" in a contemporary, and who has designed some thousands of small houses since the war and has recently opened a branch office.

As a ratepayer it might appear economical for an architect to condone "cheap labour" in the way of official architects, and their assistants, but as an architect it is bad policy. If public work is done "on the cheap," clients expect their own houses designed at "cut rates," failing which, they get the designs "for nothing" from the local builder or estate agent.

Aylesbury. C. F. OVERY, M.S.A.

Waterloo Bridge: Treatment of the Piers

Mr. J. H. Elder-Duncan, Secretary of the Architecture Club, writing in "The Times" on April 22 says: Some ten days have elapsed since a letter from Lord Crawford appeared in your columns drawing attention to the demolition of parts of the structure of Waterloo Bridge, and asking for a reassurance that the undertaking given by the chairman of the London County Council Special Bridges Committee on February 24 would be respected, and that the present maltreatment of the bridge should cease. To that request no response has been forthcoming.

As one of the societies to whose representatives this assurance was given, we feel strongly that the demolition of considerable portions of the fabric at a time when the societies are engaged on the "burden of proof" of their contentions is a distinct breach of the undertaking given by the authority, and that Lord Crawford's inquiry demands a reply and an explanation.

Lord Crawford's letter was republished in our last issue.

Mr. R. C. Norman, Chairman of the Special Bridges Committee of the London County Council, in the course of a letter published in "The Times" on April 27, states: "The columns standing on two of the cutwaters, as well as a length of parapet, will, I believe, have to be taken down in order that the main girders of the temporary bridge may be moved on to the temporary piers without risk to the old structure. If this precaution is not taken, there is a danger that these fine columns may be injured. Their stones will be marked and numbered in order that such of them as are in good enough condition can, if so decided, be replaced each in its original position. I do not think, therefore, that the Council can justly be accused of any breach of the undertaking I gave."

Waterloo Bridge will be closed to all vehicular traffic after midnight on Thursday, April 30. It is hoped that it may be reopened on about July 1, and that in the meantime a passageway for pedestrians may be maintained. In order to minimize interference with navigation of the river, one of the openings under the temporary bridge now being constructed on the down-stream side is designed so as to span two of the arches of Waterloo Bridge. This calls for main girders 280 ft. in length, which must be erected on Waterloo Bridge itself, and moved therefrom on to piers of the temporary bridge now being built to receive them. It will be necessary to close Waterloo Bridge to vehicular traffic while these operations are being carried out, and in order to move the girders certain portions of the masonry of the bridge have been and will require to be taken away.

THE LIVERPOOL COTTON EXCHANGE.
(See letter by Mr. Frank W. Simon.)

Motor Tracks to South Coast

Professor S. D. Adshead, in a letter in "The Times," says: It is something of an irony that, following the excellent letter by Professor Abercrombie bewailing the encroachment of town on country, we should immediately get the "London and South Coast Motorways" promoting a Bill in Parliament to penetrate the most secluded parts of Surrey and Sussex. It seems unnecessary to call public attention to the very serious consequences that will result should such a scheme as that proposed for connecting London with Brighton, Portsmouth, and Southampton materialize.

A motor track, necessarily wide and direct, cannot be constructed through a county like Surrey without considerable cutting and filling; moreover, it will be complicated with specially arranged and frequent crossings, and altogether will strike a harsher note on the rural character of the scenery than did the railways in 1830.

Again, it may be asked, are such roads necessary, and is it wise to encourage such a proposal, having regard to the well considered system of national roads that is being rapidly developed? One advantage of such a scheme, so the promoters suggest, would be, "Relief to the ratepayers by lifting from the rates some of the burden of maintaining the present roads, which are so seriously damaged by heavy motor traffic." This statement, if not wholly incorrect, is at least misleading. It is well known that 50 per cent., and in some cases 75 per cent., of the cost of the improvement and maintenance of these arterial roads is borne by the motorist, who, by direct taxation, provides the 15 millions which the Ministry of Transport is contributing annually towards roads throughout the country. On the whole, very excellent work is being done by local authorities financially assisted in this way. Rates are being relieved, the unemployed are given work, and a national system of roads is developing, based on a wise utilization of roads that exist already.

But quite apart from these questions of economics and the general disfigurement of the scenery, the actual amount of depreciation to thousands of very beautiful estates will be beyond calculation. Surrey and Sussex are to-day the most important residential counties of the well-to-do. Driven from the suburbs, they have invested large sums of money to secure a rural retreat. But this is not all. As regards the interests of the private motorist and the user of the charabanc, whose run into the country is really an escape from town—to these the spoliation would be as depressing as it was unforeseen. Commercial vehicles will not use it, because the present roads conveniently tap established places of call *en route*. And what are the advantages? A few swift cars will be enabled to rush to Brighton perhaps half an hour quicker than they could by the public way: special lines of fast-running public vehicles, which will in the end be nothing more than slow railways, will assist in converting agricultural land into building land; and the spread of the urban population which follows the making of a railway will be emphasized, only in a much more destructive way.

Law Report

Right of Way Question

Stringer v. *Northfield and Beer.*

Chancery Division. Before Mr. Justice P. O. Lawrence.

This was an action by Mr. G. R. H. Stringer, of Colne, Essex, against Mr. Charles Northfield and Miss Alice Beer, both of Countess Cross Farm, White Colne, Essex, for an injunction to restrain defendants from interfering with a right of way to which plaintiff claimed that he was entitled in respect of his premises at Countess Cross.

Mr. Jenkins, K.C., and Mr. Dighton Pollock appeared for the plaintiff; and Mr. Owen Thompson, K.C., and Mr. Church for the defendants.

Plaintiff objected to the placing of an obstruction which prevented the passage along the road of large vehicles, such as coal carts, to his premises. Defendant, Charles Northfield, was sued as the trustee of a deed of settlement made between himself and Miss Beer.

Evidence in support of plaintiff's case was given by Mr. J. P. C. Done, surveyor, and for the defence by Mr. R. Banks Martin, architect and surveyor.

His lordship found in favour of the plaintiff, and granted a declaration that he was entitled to a right of way over the road in question, and an injunction calling on defendants to remove the obstruction. He allowed a stay of the injunction, as defendants thought they might appeal.

List of Competitions Open

Date of Delivery.	Competition.
•May 1	**The United Grand Lodge of England invite designs for rebuilding the Freemasons' Hall in Great Queen Street, Kingsway, London.**
•May 15	**Technical College for the Middlesbrough Education Committee. Assessor, Mr. Percy Thomas, F.R.I.B.A. Premiums £200, £100, and £50.**
May 15	Conversion of Ashford Assembly Rooms. Premium £50. Apply Clerk to the Ashford Urban District Council.
May 30	New Secondary School in Perth Road, Dundee. For the Education Authority. The Competition is limited to architects in practice in Scotland and carrying on business on their own account. Application for the conditions of the competition and instructions had to be made to Mr. John E. Williams, Executive Officer, Education Offices, Dundee, not later than February 18. Mr. J. A. Carfrae, Licentiate R.I.B.A., is the Assessor.
May 31	The best and most economical system of shuttering or equivalent suitable for use in connection with poured or *in situ* cottages. First prize £250; £250 may be awarded in additional prizes. Methods which are already in use or for which patent rights had been applied for before January 1 will not be considered. Apply Mr. H. H. George, Ministry of Health, Whitehall, S.W.1, not later than May 24.
June 4	Branch Library to be erected for the Belfast Corporation. The Competition is limited to architects in practice in Northern Ireland or their assistants. Assessor, Mr. James Cumming Wynnes, M.B.E., F.R.I.B.A. Apply, with deposit of £1 1s., to the Secretary.
June 11	National Commemorative War Monument, to cost one hundred thousand dollars, for the Government of Canada. Apply Office of the Secretary, Department of Public Works, Hunter Buildings, Ottawa. A few copies of the conditions, together with declaration forms, can be obtained from the R.I.B.A.
•June 30	**Lay-out of open spaces and fortifications between Valletta and Floriana and those encircling Floriana. Premiums £1,000 and £500. An indemnity of £100 will be awarded to three other designs showing conspicuous merit. Assessors, Mr. E. P. Warren, F.S.A., and Professor Patrick Abercrombie, A.R.I.B.A.**
July 1	An extension building adjacent to the Shirehouse, Norwich, for the Norfolk County Council. Premiums £150, £100, and £50. Assessor, Mr. Godfrey Pinkerton, F.R.I.B.A., on the whole of the designs submitted, and to make the award. Apply Mr. H. C. Davies, Clerk of the Council, The Shirehouse, Norwich.
Sept. 1	High bridge over Copenhagen Harbour. Three prizes to the value of Kroner 35,000. Apply City Engineer's Office, Town Hall, Copenhagen. Deposit of Kroner 100 (returnable).
Dec. 31	**The Argentine Government offer prizes of 10,000, 5,000, 4,000, 3,000, and 2,000 Argentine gold pesos for the best architectural designs for a National Institute for the Blind. Apply Enquiry Room, Department of Overseas Trade, 35 Old Queen Street, Westminster, S.W.1.**
No date	Proposed Presbyterian Church at Cheam, Surrey. In the first instance rough sketches only will be required and therefrom the committee will select the architects to be paid for the preparation of more finished drawings. Apply Mr. George Tweddle, Jr., Secretary to the Building Committee, "Southdown," Burdon Road, Cheam, Surrey.
No date	Rebuilding of Bethel Baptist Church, Pontlottyn. Premium £5. Apply Mr. J. R. Mathias, Rose Villa, Pontlottyn.

• Date of application passed.

Competition News

The War Memorials at Cambrai and Soissons.

The Imperial War Graves Commission announce that the assessor, Sir Aston Webb, K.C.V.O., C.B., R.A., has made the following awards in the competitive design for memorials to the missing dead at Cambrai and Soissons:

Cambrai.—1. Mr. H. Chalton Bradshaw, A.R.I.B.A.; 2. Mr. William G. Newton, M.A., F.R.I.B.A.; 3. Mr. J. O. Cheadle, A.R.I.B.A., A.R.C.A.

Soissons.—1. Messrs. Gordon Holt and Verner O. Rees.

Caerphilly War Memorial Competition and Ramsgate Lay-out Competition.

The following notice has been issued by the R.I.B.A.: "The Competitions Committee desire to call the attention of members to the fact that the conditions of the above competitions are not in accordance with the regulations of the R.I.B.A. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime members are advised to take no part in the above competitions."

Coming Events

Wednesday, April 29.

Royal Society of Arts, John Street, Adelphi.—"The Trend of Modern Hygiene." By Lt.-Col. Andrew Balfour. 8 p.m.

Friday, May 1.

Chelsea Polytechnic.—Lecture XX. "The Evolution of Typical Roman Construction, etc." By Miss Claire Gaudet. 8 p.m.

The Week's News

Folkestone's New Bandstand.

Work has been started on the new band pavilion which is to be built on the face of the Leas Cliff at a cost of £40,000.

Harrogate Street Improvements.

The Harrogate Corporation are applying for sanction to borrow over £10,000 for private street improvements.

A New Mental Hospital for Bradford.

The Bradford Corporation propose to build a new mental hospital at Westwood, Clayton, at a cost of £179,000.

Romford Workhouse Improvements.

The Romford Board of Guardians propose to borrow £15,350 for a new heating scheme for their workhouse.

Atcham Bridge an Ancient Monument.

Atcham Bridge, which spans the Severn near Shrewsbury, has been scheduled as an ancient monument.

New Secondary School Proposed for Surrey.

The Surrey County Council are negotiating for the purchase of a site at Oxted for a new secondary school.

More Flats for Kensington.

The Kensington Borough Council are to convert old houses in Virginia Place into flats at a cost of £20,000.

New Municipal Offices for Bromley.

The Bromley (Kent) Urban District Council are to borrow £12,500 for new offices.

Bridgwater and Housing.

The Bridgwater Town Council have decided to increase their housing scheme to fifty-one houses of three types.

Another Stretford Housing Scheme.

A scheme is in progress for the erection of 380 houses in the Old Trafford and Stretford areas.

Another Housing Site for Molesey.

The Molesey Urban District Council have bought another housing site for £1,280.

Frome's Housing Programme.

The Frome Rural District Council have resolved to erect 154 houses during the next two years.

Housing at Edmonton.

The Edmonton Urban District Council have decided to borrow £30,000 to defray the cost of erecting houses.

Building at Welwyn.

Welwyn Garden City are building 1,000 houses a year. In three years' time the city will have grown from 3,000 to 20,000 inhabitants.

New Royal Academy Associates.

At the general assembly of Royal Academicians and Associates Mr. William Macmillan, sculptor, and Mr. Arthur George Walker, sculptor, were elected Associates of the Royal Academy.

£41,000 Housing Scheme for Hawarden.

The Hawarden Rural District Council have adopted a £41,000 scheme for the building of eight houses at Abermorddu and ninety-four at Saltney; also a £35,000 electricity scheme.

Deal and Walmer Improvements.

Schemes for the provision of a recreation ground and the development of these a front are being considered by the Walmer Urban District Council.

Proposed Town Council Chamber for Harrogate.

Plans have been prepared to provide a more commodious Town Council Chamber at Harrogate as well as committee rooms in the Victoria Baths property.

Scarborough Water Scheme.

The Scarborough Water Committee have instructed Dr. Herbert Lepworth to prepare plans in connection with a water scheme which it is estimated will cost about £82,000.

Housing at Melton Mowbray.

The Melton Mowbray Urban District Council have resolved to apply to the Ministry of Health for sanction to a loan of £13,900 in connection with the new housing scheme.

Housing at Colwyn Bay.

The Colwyn Bay Urban District Council have decided to erect a group of forty-four houses on the Tan-y-lan estate at Old Colwyn. This will be the first instalment of the 199 small houses proposed to be built there at a cost of nearly £100,000.

A New Pavilion for Harrogate.

The Harrogate Town Council have given provisional approval to plans for a new covered pavilion in the Valley Gardens, on the west side of the existing tea house. The cost will be between £15,000 and £20,000.

Yarmouth Housing Scheme.

The Housing Committee have adopted a lay-out scheme for the erection of 382 houses upon the barracks site. The Corporation have decided to erect 100 houses upon the western portion of the site.

A New Arterial Road for Burnley.

The Burnley Corporation has received sanction to proceed with the construction of the arterial road from Todmorden Road to Glen View Road. The scheme is estimated to cost just over £43,600.

Portsmouth Barracks as Flats.

With the object of clearing some of their slums, the Portsmouth Town Council have decided to make an offer of £4,500 to the Commissioner of Woods for the obsolete White Hart Barracks, Old Portsmouth. It is proposed to spend a further £1,750 upon their conversion into flats for the working classes.

Additions to a Birkenhead Square.

The Liverpool Architectural Society (Incorporated) passed the following resolution at their annual general meeting: The Liverpool Architectural Society observes with the greatest regret that in making additions to No. 1 Hamilton Square, the Birkenhead Corporation have shown a complete disregard of the architectural amenities of the Square, which is universally acknowledged to be one of the finest squares in the country.

Platt Hall.

The Manchester Corporation Parks Committee have agreed to recommend the City Council not to deal with the question of the demolition of Platt Hall until the Council meeting in June. The three months' grace accorded by the Council in February last in order that interested bodies might have an opportunity of submitting schemes for the use of Platt Hall expires on May 4. As no scheme has yet been submitted to the committee it has been thought advisable to recommend the extension of the period of grace by another month.

Changes of Address.

Mr. R. Stephen Ayling, F.R.I.B.A., F.R.S.I., architect, has moved his offices to 53 Victoria Street, Westminster, S.W.1. Telephone: Victoria 5886.

Messrs. Knapp-Fisher, Powell and Russell, architects, have moved to 4a Lower Belgrave Street, S.W.1, close to Victoria Station. Telephone: Victoria 5982.

The address of Mr. Gilbert Fraser, M.C., F.R.I.B.A., is now "Wellington Buildings," The Strand, Liverpool. Telephone: 3966 Bank.

Mr. Percy W. Upton, architect, has moved to 39 Bennetts Hill, Birmingham. Telephone: Central 3579.

The St. Pancras Flats.

The St. Pancras Estates Committee recommend the Borough Council to agree to an alternative lay-out for the proposed housing scheme for the Walcot Street area. The scheme originally proposed provided for ninety-eight flats, but the Ministry of Health pointed out that any housing scheme for the neighbourhood must be governed by the proposal to widen Seymour Street at some future time. The alternative scheme now submitted provides for seventy flats, thirty of three rooms, and forty of two rooms each.

Trade and Craft

A "Pyropruf" Demonstration in London.

To prove the stability and the fire-resisting properties of a new flexible asphalt roofing material ("Pyropruf") to the various Government and municipal authorities, and to others concerned with housing and building administration, a special demonstration was given in London on April 23. On a suitable site easy of access, a building roofed with the new roofing and filled with highly combustible material was set on fire and subjected to a heat of some 3,000° Fah. The fire was then extinguished and the roof made available for personal examination. The demonstration was given before a large number of guests and explained by Mr. L. C. Lutyens, managing director to Messrs. D. Anderson & Son, Ltd.

A luncheon was held later in the Hotel Cecil, under the chairmanship of Mr. Lutyens, among the guests invited being Messrs. J. Holden (Mayor of Southwark); B. H. Pritchard (Mayor of Fulham); Alderman F. G. Howard (Mayor of Hampstead); J. V. Wills (Mayor of Bermondsey); J. T. Wallis (Mayor of Finsbury); S. J. B. Buckhill (Mayor of the City of Westminster); F. J. Bryer (Mayor of Deptford); Lt.-Col. Fox (Fire Brigade); Major Petrie (President of the Institute of Structural Engineers); L. H. Paish (Admiralty); and Monsieur A. Couven.

Mr. Lutyens stated that his chairman, Mr. James Henderson, desired him to express his deep regret at not being there to-day, but he was prevented by doctor's orders. The chairman wished him to let it be known that the firm were desirous of giving 1,000 rolls of "Pyropruf," and laying same free of charge on the roofs of any dwelling houses spread widely over towns in England to stand as observation tests, subject to the discretion of the Minister of Health, so confident were they of the claims put forward on behalf of "Pyropruf." He would not say much about the fire tests they had seen that morning, for they spoke for themselves. He would only say that he thought the tests had shown that "Pyropruf" could not cause or spread a fire. They claimed that "Pyropruf" was the best roof for any building, anywhere, at any time. He did not include those buildings erected by architects throughout the by-ways and highways of England; dwellings that would for centuries to come be known as "the dear old homes of England." Of course, there were exceptions, and architects were well aware of their defects. But for the workmen's dwellings and for the roofs of houses in streets and squares of their large towns, which could not be seen, "Pyropruf" was efficient, lasting, and economical. He was fully aware that if they could not get "Pyropruf" accepted within the by-laws as a first-class roof, if they could not get the fire insurance offices also to accept it as a first-class roof, then their aim and object to obtain a far wider field for "Pyropruf" than at present exists, fell to the ground. He could not help feeling that the present by-laws as they stood did not spell "economy" in first cost of production, and it was absolutely essential that building construction should be made as economical as possible, with cheap materials, as long as they were efficient, and in "Pyropruf," they certainly had the economic factor. He asked them all to look at this matter without prejudice and with an unbiased mind.

The Mayor of Hampstead urged the necessity of all the ceilings in large buildings tenanted as flats being treated with fire-resisting material, to prevent a fire spreading from floor to floor and creating a death-trap.

The Wembley Gas Exhibit.

The large and popular pavilion of the British Empire Gas Exhibit in the centre of the Palace of Industry at Wembley last year will again be occupied by the gas industry at Wembley this summer. An entirely new show has been devised, and it is significant of the enterprise and progress of the industry that additional adjoining space has also been taken. A special feature of the exhibit will be a display, with an Imperial keynote, showing that gas is already freely used, and is fast making headway, for industrial, no less than for domestic purposes, not only in Great Britain, but throughout the Dominions and Colonies. Important industrial uses of gas and of gas coke will be demonstrated on a comprehensive scale, while in the large and artistic rest lounge, which visitors to the exhibition have made a habit of using as a convenient and comfortable rendezvous, the solution of the housewife's troubles by the use of gas on modern labour-saving lines will be the main attraction. In addition, part of the new space taken will be turned into a hall where demonstrations on the cookery of Empire foods, preceded by short lectures, will be given several times a day.

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