

THE AMERICAN ARCHITECT

FOUNDED 1876

THE DESIGN OF AIRPORTS

By GEORGE B. FORD, City Planning Adviser to the War Department

THERE are certain practical and technical requirements to be considered in the plan and design of airports. Architects generally have had as yet little opportunity to lend their advice on the design of buildings used to house flying machines and the other structures an airport must include. Should the occasion arise, however, as it inevitably will, they need first to acquaint themselves with certain technicalities of aeronautics. They can readily ap-

preciate the importance of the aspect of the field from the air, understanding, too, that to the traveler of the future his view of the airport as he alights will be his first impression of the city. But it is not so easy to ascertain the effect of winds on "taking-off" and the size and shape of hangars. This article presents the more important of these details to aid the architect in the solution of a problem with which he may find himself confronted at any moment.

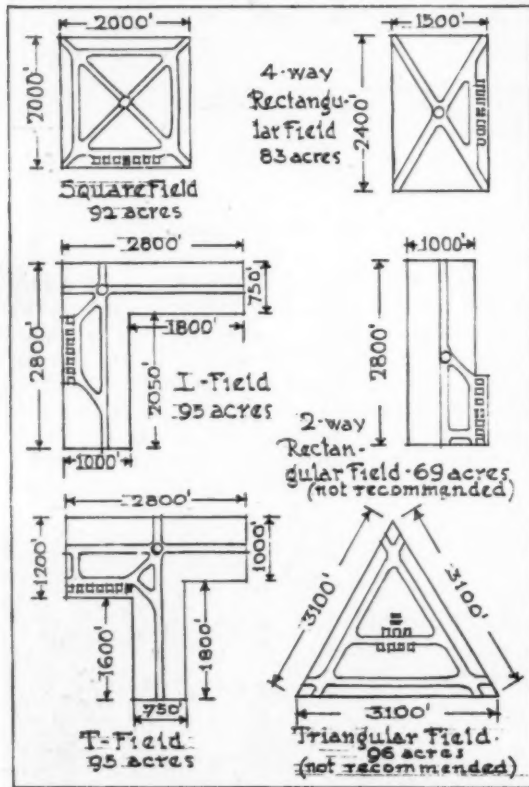


MITCHEL FIELD, LONG ISLAND, N. Y. IN THE REAR AT THE LEFT IS ROOSEVELT FIELD, AND AT THE RIGHT, CURTISS FIELD. THE WHITE SPOT, TO WHICH THE ARROWS POINT, IS THE RUNWAY FROM WHICH LINDBERGH, CHAMBERLIN AND BYRD TOOK-OFF ON THEIR EPOCH-MAKING FLIGHTS

(Official photograph, U. S. Army Air Corps)

(Copyright, 1927, The Architectural & Building Press, Inc.)

Of first importance is the selection of the airport site. Every city, as a part of its city plan, should early determine the most desirable sites and do everything possible to reserve them for eventual airfield use, by making sure that no costly construction is placed upon them or near them that would have to be removed when the field is wholly needed for aviation. Although buildings may be constructed only as needed, a general layout plan

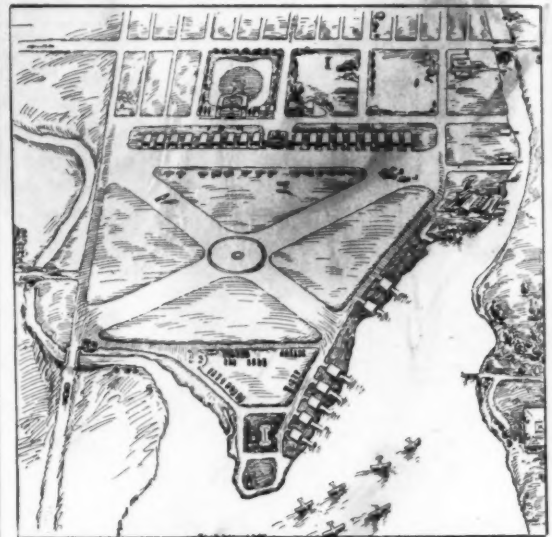


LAYOUTS OF FLYING FIELDS OF VARIOUS SHAPES AND SIZES

(Courtesy of The Annals of the American Academy of Political and Social Science)

should be made before any permanent buildings are erected, so that it will not be necessary to relocate them as the airport grows. In general, a quarter section, or 160 acres, is a good minimum size for an all-around airport. If, however, the field is made T-shaped or L-shaped, this acreage can be somewhat reduced. A field with an acreage of a square mile, with 3,000-5,000 foot runways in each direction, is most desirable.

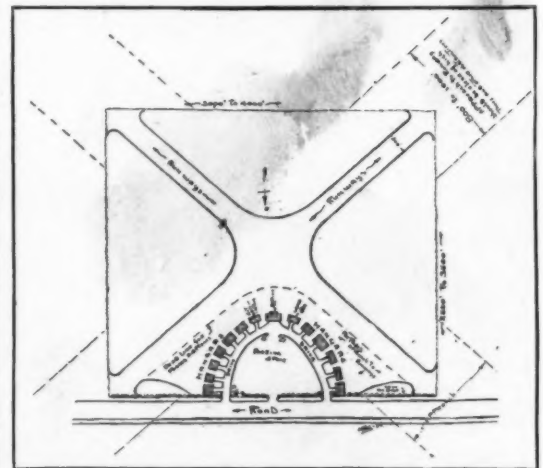
An airport of importance must be located on a large open tract of ground as nearly level as possible, consistent with proper drainage. It should be unobstructed by buildings, wires, trees, rocks, marshes and water courses. The immediate surroundings of the field must also be taken into account. There should not be, nor should there be



PROPOSED NEW YORK UNIVERSITY AIRPORT

(Courtesy of The Annals of the American Academy of Political and Social Science)

any prospect of ever being, any high structures or even high trees or wires that would hamper low access in landing or create freak or gusty air currents. The noise of many airplanes makes the location of an airport closely bordering a residential district undesirable. The ideal environment is farm land, country clubs, playfields, cemeteries or bodies

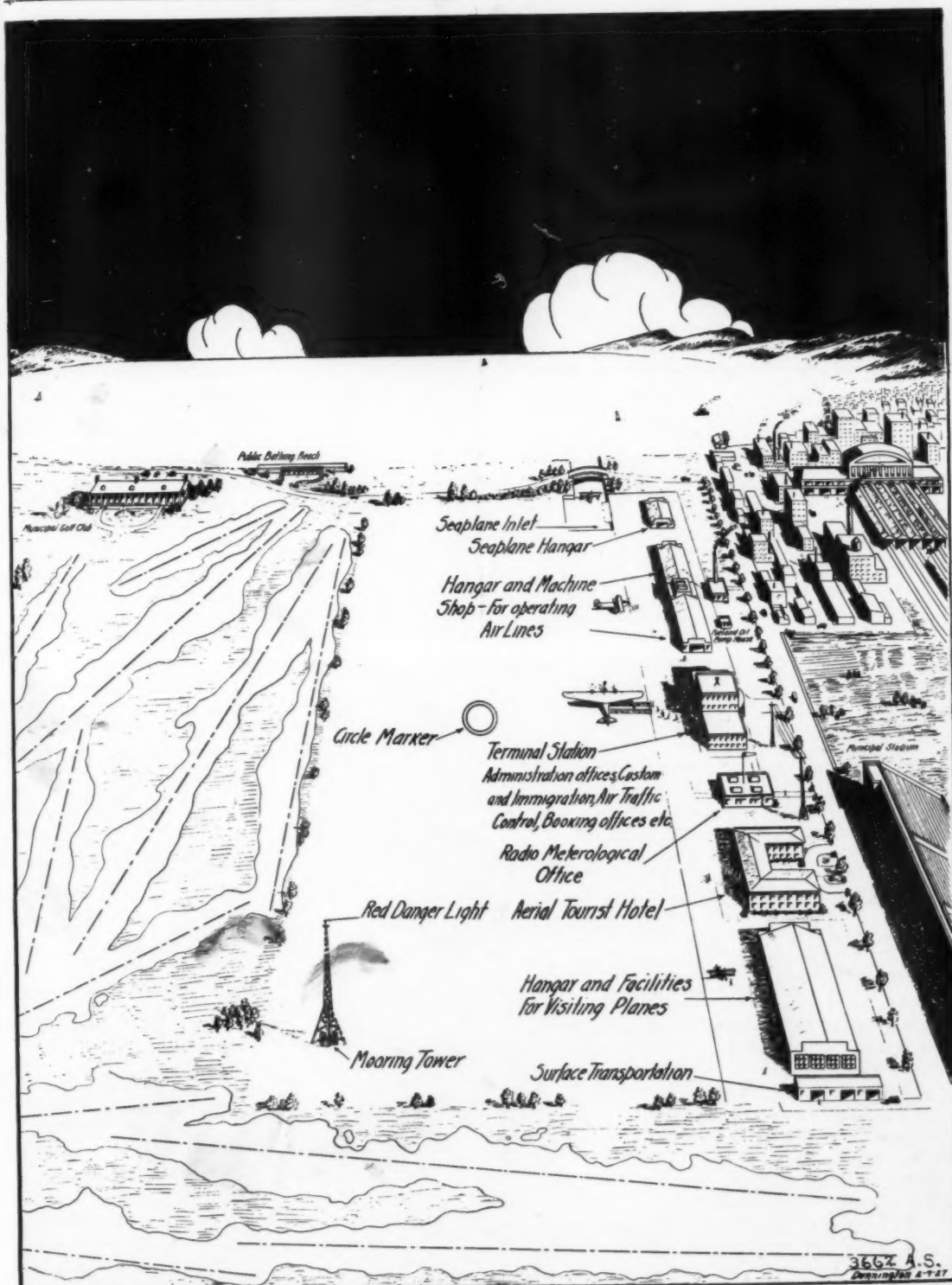


PLAN OF AN AIRPORT ON A RECTANGULAR FIELD DESIGNED BY WILLIAM E. ARTHUR

(Courtesy of The Annals of the American Academy of Political and Social Science)

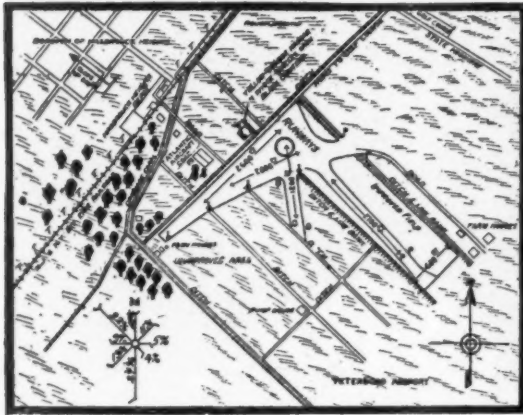
of water. The latter are desirable as they permit the access of amphibian planes.

Weather conditions, too, must be considered. Any site where fogs or mists or bad winds predominate, is undesirable. The field must provide

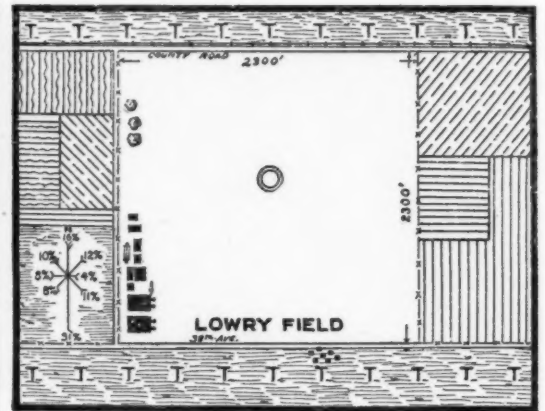


SKETCH OF PROPOSED AIRPORT FOR BOTH LAND AND SEAPLANES ON PROPERTY ADJOINING A CITY. A RAILROAD TERMINAL AND MUNICIPAL STADIUM ARE SHOWN AT THE EXTREME RIGHT

(Official drawing, U. S. Army Air Corps)



PLAN OF PETERBORO AIRPORT, HASBROUCK HEIGHTS, N. J.
(Courtesy Department of Commerce)



PLAN OF LOWRY FIELD, DENVER, COL.
(Courtesy Department of Commerce)

good foundations for buildings and runways. Its accessibility must be given attention. It should be possible to reach the field by motor, bus, or trolley from the center of the adjoining city or town, and it should have possible rail connection. Further than that, it should be possible to reach it from nearby airways without having to pass over the city or over a long stretch of water. Reasons are evident.

Assuming that certain types of planes will always take-off by running along the ground, every field that is going to be generally useful must be large enough in all directions to take care of even the heaviest planes or airliners. A special incline to give initial speed, as used at Roosevelt Field, Long Island, or a catapult as is used on ships of the Navy, is hardly practicable in an airport where



BOLLING FIELD, WASHINGTON, D. C. ATTENTION IS CALLED TO THE ABSENCE OF OBSTRUCTIONS WHICH MIGHT INTERFERE WITH TAKING-OFF, AND TO THE LINE OF THE MAIN HIGHWAY ON WHICH THE FIELD IS LOCATED. NOTE ALSO THE MARKERS ON THE ROOFS OF THE DIFFERENT BUILDINGS

(Official photograph, U. S. Army Air Corps)

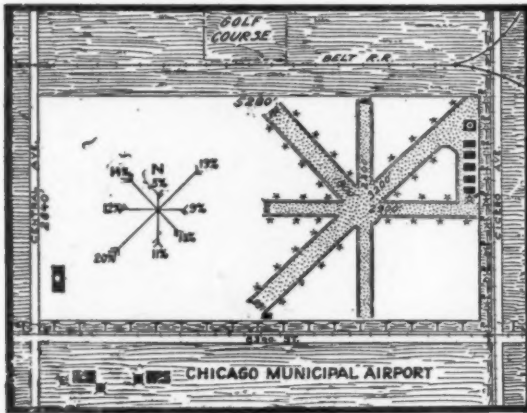


AIRPLANE VIEW OF ROGERS FIELD, PITTSBURGH, PA.

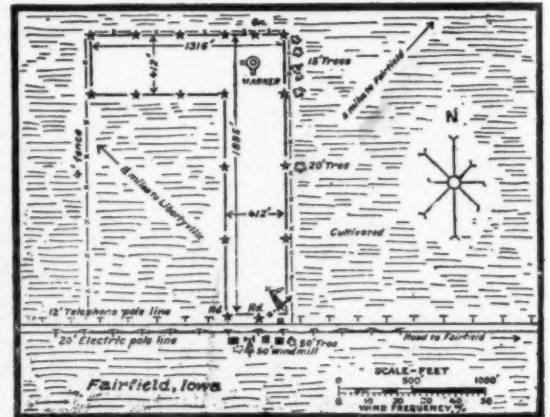


VIEW FROM THE AIR OF THE AIRPORT AT BUFFALO, N. Y.

(Official photographs, U. S. Army Air Corps)



PLAN OF MUNICIPAL AIRPORT, CHICAGO, ILL.
(Courtesy Department of Commerce)

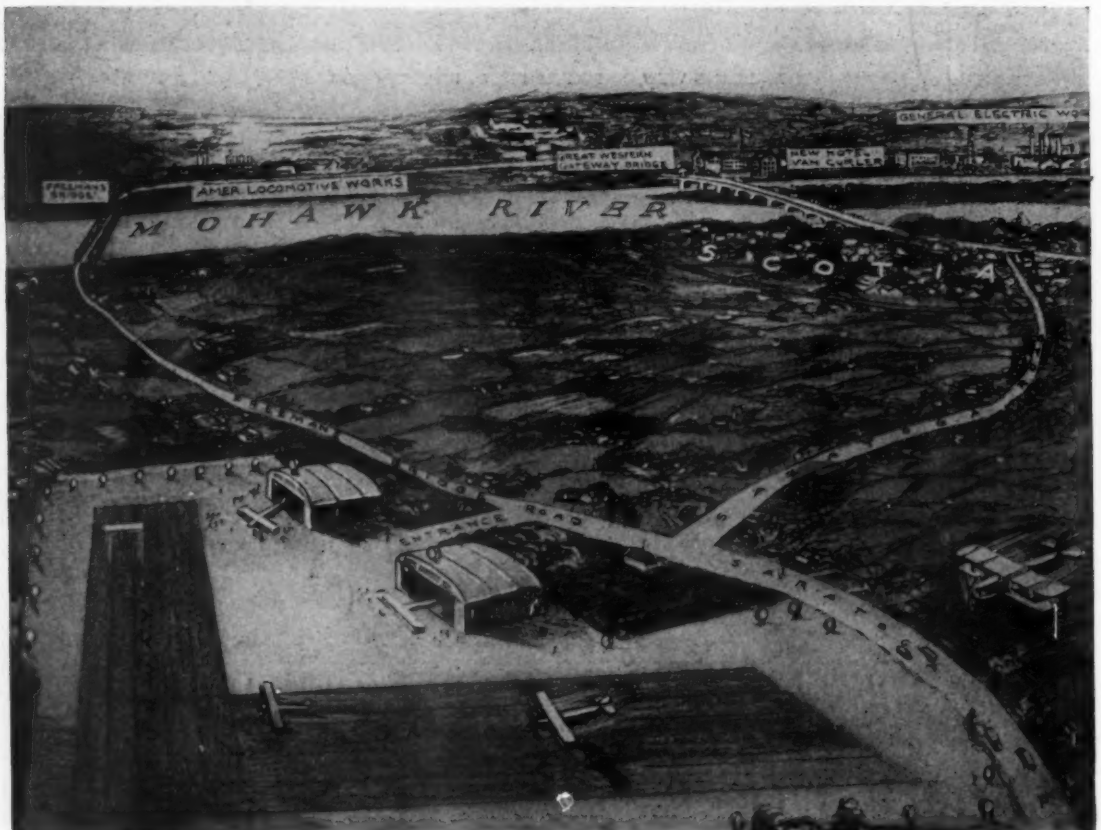


PLAN OF AIRPORT AT FAIRFIELD, IOWA
(Courtesy Department of Commerce)

ships are constantly coming and going and must always rise into the wind regardless of the direction from which it is blowing. While certain planes can rise in about 100-yard runs, the trans-Atlantic flyers require over 3,000 feet of ground. It would appear that no field should be less than 1,800 to

2,000 feet in each direction, and, at the end of the take-off, neighboring buildings and trees should be low enough not to interfere with a rise of one foot in seven.

The field does not have to be square. It may be L-shaped or T-shaped, provided there is a full-



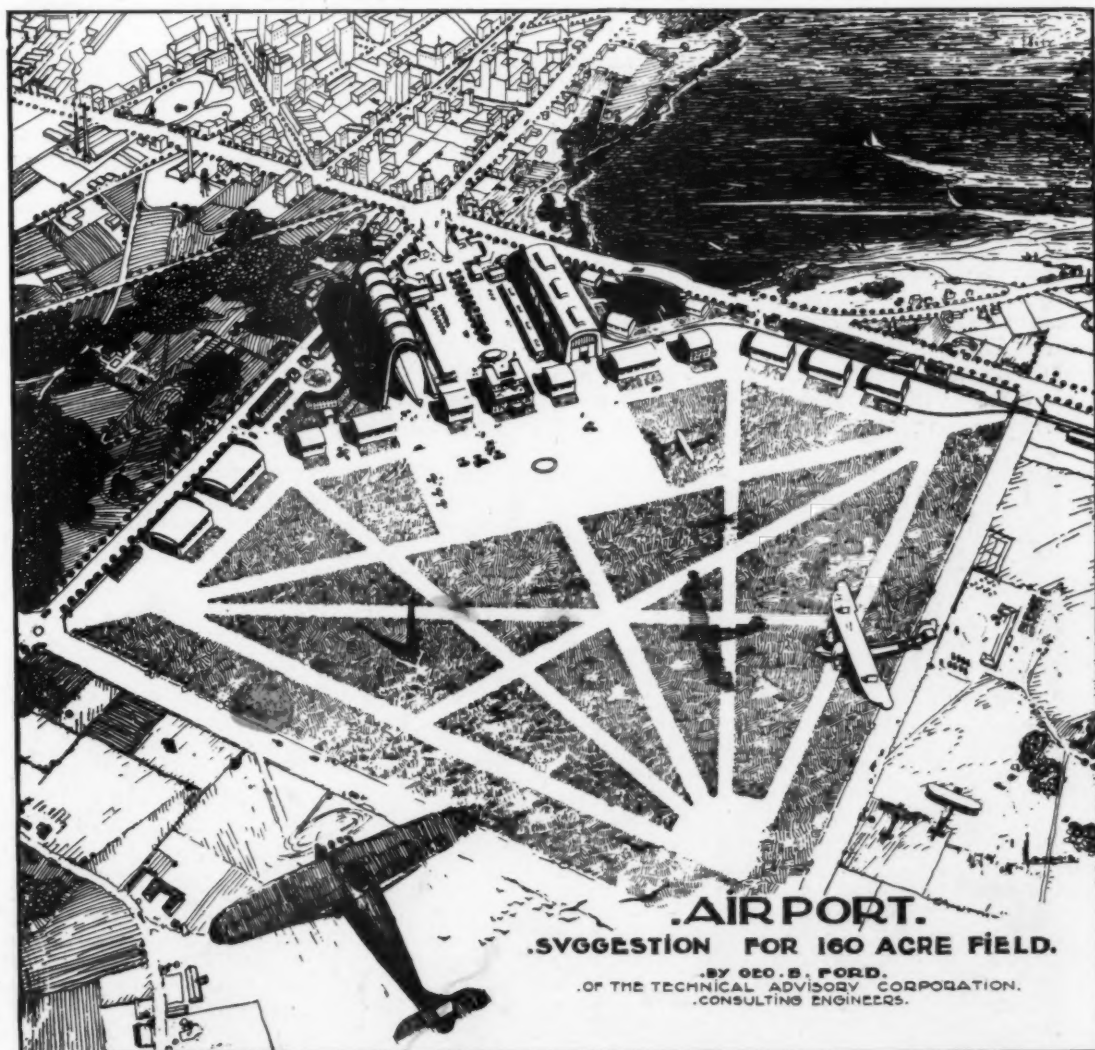
PROPOSED AIRPORT FOR SCHENECTADY, N. Y.
(Courtesy of The American City)

length runway available in each of two directions at approximately right angles with each other. This is due to the fact that the machine does not have to rise directly into the wind, for it is quite practicable for it to rise 45 degrees away from the wind. Runways should be hard-surfaced, at least 100 feet wide, clear of any obstructions. They should be built at right angles to each other if the surface of the field is too soft. A body of water, of 4,000 to 5,000 square feet, is desirable for hydroplanes and amphibian planes.

The location of buildings on the field is important. Since the strength of prevailing winds may make it very difficult to open and close the hangar doors and manoeuvre the planes in and out, it is desirable to lay out the field so that the hangar line is parallel with the predominating wind, so

that an airplane can come out of the hangar, taxi up the runway along the front of the "line," and rise into the air at one end of the line and alight into the other. It was found that by locating the hangar line facing the prevailing wind, the dust or sand in dry seasons would be blown by the wind, or by propellers from the field, into the hangars and get into the machinery of the planes, often with disastrous results.

While the hangar line should be used for hangars only, all gasoline supply tanks should be so located that airplane tanks can be filled from the runway. The administration and operations building, with ticket office, waiting room, post office and customs, should be located near the center of the hangar line, but slightly in advance of it, so that the controlling operator can keep an eye not only on the field



SUGGESTED AIRPORT, DESIGNED BY GEORGE B. FORD
(Reproduced from the original sketch by Marcel Gogois)

but also on all planes entering or leaving the hangars. It is preferable to have the hangars side on to the field and open at both ends into a common hard-surfaced space about 100 feet wide between each two hangars. This makes it possible to use each hangar to capacity and to have not more than one plane behind another at each end of the hangar. This also allows the airplanes to be taken out of the hangars in an area sheltered from the wind and dust. Hangars vary from 60 to 120 feet wide and from 100 to 250 feet long. A proposed type of hangar is about 180 feet wide by 300 feet long, with doors continuously all along each of the 300-foot sides, and with roof supports so spaced that any plane from the smallest to the largest can be easily warped into the hangar. Along the middle of the length there is a double row of columns about 20 feet apart, the space between the two rows being

used for service and supplies. An airship hangar should be from 600 to 1,100 feet long by 100 to 200 feet wide and high, with at least one end and preferably two, opening directly on the field.

Other buildings must house the meteorological station, the radio hut, the photographic laboratory, the fire house, the hospital, the assembly shop, the motor repair shops and the test blocks. They should all be located so that there can be direct access from them to the field between hangars. As the airplanes would have to have access to the assembly shop, a direct hard-surfaced runway to it is necessary. The motor repair shop and test blocks should be adjacent to the assembly shop. Adequate space should be provided for housing the personnel and for shops, club buildings, equipment, warehousing, restaurant service, hotel, etc. All should be well isolated to prevent conflagration.

OFFICIALS PLEAD FOR AIRPORTS

IT MUST be obvious," said F. Trubee Davison, Assistant Secretary of War, "that there can be no comprehensive commercial aviation in this country until airports are established."

Eight months after the Air Commerce Act went into effect, William P. MacCracken, Jr., Assistant Secretary for Aeronautics in the Department of Commerce, said there were approximately 4,000 sites designated as landing fields in the United States (there are only 14,000 cities and towns of more than 10,000 population); that 400

of these fields are designated airports in the meaning of the Act. ("Any locality either of water or land which is adapted for the landing and taking off of aircraft, and which provides facilities for shelter, supply, and repair of aircraft, or places used regularly for receiving or discharging passengers or cargo by air.")

"Already," Secretary Hoover insists, "it has become evident in many Eastern cities that the volume of air traffic is to a great degree affected by the safety in landing, the convenience and the service afforded by airports."—*World's Work*.



AIRPLANE VIEW OF THE CLEVELAND LANDING FIELD
(Courtesy of *World's Work*)

ENGLISH STAINED GLASS*

Reviewed by CLEMENT HEATON

SINCE Winston published his "Hints on Glass Painting" in the fifties, when no one had seriously examined English glass, knowledge of this art and what it formed part of has immensely progressed. This beautiful book will do much to add to its recognition and value, particularly on account of the fine representations, not only from the major works at Canterbury, York, London and Oxford, but of scattered remnants practically unknown. And whereas Winston's illustrations were wood engravings hand colored, these are perfect photo-

graphic reproductions colored by a process which leaves little to be desired. They are the more valuable, as generally the expense of production is so great compared to the demand that it seems almost hopeless to pass on to the public any observations one may make.

It is probably owing to this restriction that knowledge of this subject is still so imperfect, and that conclusions are still so often reached which have insufficient basis in fact. In the present case the deposition of valuable pieces at Canterbury, London and elsewhere during the war has led to their examination and repair, and made possible

* *English Stained Glass*. By Herbert Read, of the Victoria and Albert Museum. London and New York, G. P. Putnam's Sons. Price, \$26.00.



ONE OF THE PANELS OF THE TWO WINDOWS REMAINING IN THE CHOIR OF CANTERBURY CATHEDRAL, OF ABOUT 1200. THERE WERE ORIGINALLY TWELVE OF THESE WINDOWS

photographs that otherwise could not, or would not, have been made. "It is an ill wind that blows nobody any good."

When one remembers the vast surfaces and transcending importance of the glass windows in color in all the great cathedrals of Europe, not to

tion concerning the colored glass when he deals with Gothic sculpture. And that in France, the land par excellence, where it was cultivated! Happily, in the History of Art by André Michel there are chapters by Emile Male, but these are somewhat dependent on a work in England by Westlake, and he is frankly unable to clear up some of the gaps which exist in this subject.

We are, therefore, grateful to Mr. Herbert Read for this new work. The condensed list of actual



A PANEL OF THE EARLY XIVTH CENTURY FROM EATON DEERHURST, GLOUCESTERSHIRE. THIS IS A GOOD EXAMPLE OF "THE AGE OF SENTIMENT" OR "ARCHITECTURAL PERIOD"

mention thousands of minor churches, it seems almost incredible that so little attention has been given to the matter by architectural writers and historians. Salomon Reinach in his "Apollo," does not touch it, in spite of the fact that he does deal with Gothic architecture and sculpture. The recent general History of Art by Elie Faure, though it spreads over the earth, gives his readers no informa-



PANEL FROM A WINDOW IN KING'S COLLEGE CHAPEL, CAMBRIDGE, OF THE EARLY XVTH CENTURY, BY CONTINENTAL ARTISTS IN LONDON. THIS INVASION OF THE "RENAISSANCE" INTO ENGLAND ENDED THE ARCHITECTURAL PERIOD, AND ULTIMATELY LED TO THE ABANDON OF GLASS PAINTING IN FAVOR OF OIL PAINTING

works existing in England will be of value to many who can see in reality what is here presented in a necessarily condensed and imperfect form.

We have to use these words because no book ever can present the reality. If a large surface of glass is reproduced, it suffers in details. If a single panel is reproduced, it gives no idea of the whole. Nor, above all, can any idea whatever be given of the effect of a series of windows, each completing the others through the vast interiors of the largest mediaeval buildings. At Chartres, for instance, there are the choir, two transepts, the nave and the west end, each of them with the lower windows and the clerestory windows. And all the

cathedrals were at one time provided for on this scale!

Now to mention this, brings us at once to the weak spot of this book as far as the text is concerned. Everyone naturally looks at a subject as his experience leads him to do and makes possible.



PART OF AN EAST WINDOW AT LUDLOW, OF ABOUT 1470. SHOWING A REALISTIC TREATMENT OF CANOPIES WITH WHICH IS INCORPORATED A PICTORIAL SUBJECT. THIS MARKS THE END OF THE ARCHITECTURAL PERIOD OF GLASS PAINTING, WHICH WAS SUPPLANTED BY THE PICTORIAL TREATMENT

To Mr. Read, these panels are virtually "museum specimens." They are taken out of their architectural setting, or environment, and so their nature is somewhat misunderstood. Those made in the XIIIth century are seen as all of a piece with those made from the cartoons of Burne Jones, who habitually worked and thought as a painter of pictures. Seen in this way, discredit is unintentionally thrown on the mediaeval work. Some of the panels illustrated are from Canterbury. But though Canterbury could not compare with Chartres in extent, there were twelve windows in this series when complete, and many subjects in

each window on a level with the eye. There were also two roses, each 15 feet in diameter, and a large number of clerestory windows, the panels from which are now scattered about in the nave. The ornamental borders and other parts which complete the figure work are in general omitted. It is this inevitable "short cut" method which distorts analysis and makes the art of glass painting still an unknown art to most people.

Turning to the text, we find in the introductory



ONE OF THE FIGURES ORIGINALLY IN THE CLERESTORY WINDOWS IN THE EASTERN PART OF CANTERBURY CATHEDRAL, ABOUT 1200

chapter, that the author has had to choose between a *record* and an *appreciation*, and that he has chosen the latter. This enables him to escape from the dilemmas which present themselves as to what really did happen, and which dilemmas Mr. Emile

Male admitted do exist. But it makes it almost as hazardous as crossing the Atlantic in an airplane when the weather conditions are still so little known, to draw conclusions with such a limited record!

The old nomenclature of Romanesque, Norman, Gothic, etc., is still in use, and clogs the feet even as to architecture. In England the old divisions of Norman, Early English, Decorated and Perpendicular, are still current coinage—though Francis Bond, in his *History of English Architecture*, has shown how *continuous* English architecture was. The whole subject of "Byzantine" or "East Christian" art, and the manner it reacted on Italy, to say nothing of the countries north of the Alps, is still under examination, and the intricate matter of Syrian Influence on Lombardy and Italy is still in hand. Exactly how all this impinged on England, still seems to be understood but slightly. Remains of Celtic, Northumbrian and Danish arts reacted as much on the continent as the continent reacted on England. In view of which, it would appear to us to demand as close an attention to the record, as ancient mariners "hugged the coast," in the absence of the modern compass!

Mr. Read writes: "I have attempted to correlate the history of English stained glass with the history of art in general, and to trace its development as a mode of aesthetic expression. This has inevitably led me into divagations of a comparative nature, but into nothing undeliberate . . . but such a method involves an aesthetic belief, or at any rate an aesthetic theory."

He has to criticize and abandon the aesthetic theory launched by Rickman and Winston, and the modification proposed by Westlake thirty years later as cumbrous and impracticable. He proposes a new theory to replace these, to wit:

The Age of Reason . . . A.D. 1150-1350
The Age of Sentiment . . . 1350-1500
The Age of Fancy . . . 1500-1900

Whether this classification will be found satisfactory or not, time will show; meanwhile, we rather doubt it will endure. However, it is buttressed by wide reading and erudition and careful thought. The German theorists are largely drawn upon as basis, and knowing the extraordinary claims made in that direction, we cannot take their conclusions for granted. Are not some great Italian artists more or less claimed as German, and the early form or European architecture in Spain and Italy also as German?

Space precludes any systematic examination of the ideas proposed, but we may take one or two examples:

The "Age of Reason" includes the period in which St. Thomas Aquinas built up his great structure; that which follows, is called the "Age of Sentiment" mainly from the idea that St. Francis of Assisi led to the appreciation of nature, all over Europe, including England. Not to appear in peacock's feathers, we disclaim all direct knowledge of such erudite matters. But on turning to such authorities as Professor Osborn Taylor in his "Mediaeval Mind" and Professor S. Lanson of Paris, in his "Histoire de la Litterature Française," it appears at once that other potent causes were at work just at this time, which by no means seem to allow the claims made. We remember also a phrase by Walter Pater*, who says in effect, that any gen-

*"The various forms of intellectual activity which together make up the culture of an age, move for the most part from different starting points, and by unconnected roads. As products of the same generation they partake indeed, of a common character, and unconsciously illustrate each other; but of the producers themselves, each group is solitary, gaining what advantage or disadvantage there may be in intellectual isolation. Art and poetry, philosophy and the religious life, and that other life of refined pleasure and action in the open spaces of the world, are each of them confined to its own circle of ideas."
—Quotation from Walter Pater—*The Renaissance*, Preface p. xv.



PART OF A BORDER AROUND THE MANY SUBJECT PANELS OF ONE OF THE LOWER WINDOWS IN CHOIR OF CANTERBURY CATHEDRAL

eral result was caused by many causes contributing to it, not only one cause.

The event which had such a tremendous influence at Paris was the recognition by the University there of the value of Aristotle, whose works were in 1255 put upon the index to be studied. (Osborn Taylor's "The Mediæval Mind," II, p. 423.) Albertus had prepared the way for this recognition and one finds in his works "*a fund of natural knowledge* . . . totally unlike the beautiful dreaming which drew its prototypal origins from the 'skyey' mind of Plato." These are Taylor's words and we ask, why then talk of this as an age of reason? Moreover, Lanson distinctly says that the clear-cut, matter-of-fact mind of the Frenchman was averse to sentimental issues. Although it is at Paris that Gothic sculpture and miniatures first seem to have come into clear expression of naturalism, soon after or even before 1255, we cannot see an entrance just then into an "age of sentiment." And it is precisely to France that England owed the substitution of naturalism in art (called "Decorated" by English authors), so "the age of sentiment" no more applies to England than to France as a fitting designation. To show how necessary it is in such questions, to keep to the "record" let it be remembered that the glass of Merton College, Oxford, of about 1300 A. D., which has so much naturalism in detail, occurs at just the place where the influence of the university

of Paris would naturally first be found at the University of Oxford. And we see here, the slowness of English designers to grasp the whole thing, by the fact that the donor is represented over and over again, as if nothing else should exist in these windows! But further: here we find a complete break with the old and long persistent "medallion" system. We see the architectural "canopy"; and *that* we can now find growing up, decade by decade, across the channel, so that at last we find it jumping over and entering England. So much so, indeed, that if we ourselves were to venture to suggest a new form of classification we should call the XIVth century "The Architectural Style," and we think that no appeal to facts could overthrow it!

However, the conclusion we now reach is this: that until we know more about the weather it is unwise yet to attempt to fly across the Atlantic, and until we have more exact knowledge concerning the record, we should be very modest in our appreciation. Here we must perforce stop, hoping that Mr. Read will be forgiving if we have to bring up an ugly fact to upset a beautiful theory.

The illustrations accompanying this review are taken from "English Stained Glass" and reproduced through the courtesy of G. P. Putnam's Sons.

RESTORATION OF ST. SEVERIN, PARIS

BETWEEN Notre Dame and the Boulevard Saint-Germain there stands the little church of Saint-Séverin, one of the oldest in Paris. The church dates from the 13th century. Some of its window glass is 400 years old and it has one feature which is now unique in Paris—a churchyard encircled by a cloister, which, says the London *Times*, flanks it on its southern side.

The churchyard of Saint-Séverin measures only some 25 by 40 yards. For many years it was concealed by modern buildings which, on one side, even encroached upon and displaced the cloister itself. These buildings have now been removed and soon the little quadrangle will be open to the public. The cloister encloses two sides of the charnier; its third wing has disappeared. It consists of ten Norman arches supported by slender columns and buttresses, each of which is simply ornamented with leaf moulding and surmounted by a gargoyle. The roof of the cloister is built up on fluted vaultings and covered with little old red tiles. In some places, before the present restoration was begun, it had collapsed. When the work of restoration is complete the quadrangle of Saint-Séverin will be visible as a little haven of shade and foliage from the hot pavement of the Rue Saint-Jacques.

PILGRIMS' CHAPEL FOUND

IT is learned that the removal of growths of ivy has disclosed the ruins of the Chapel of St. Thomas a Becket at Brentwood, England, once famous as the resting place for Canterbury pilgrims. The chapel was specially erected for the pilgrims, afterwards becoming the parish church, but falling into disrepair.

Brentwood Council has decided to ask the Society for the Preservation of Ancient Buildings to take charge of the building for the future. The tower is in a dangerous state.

REPAIRS AT HAMPTON COURT PALACE

AFTER four years' work the repairs to the finely carved roof of Wolsey's Great Hall at Hampton Court Palace, England, have recently been completed following the extensive damage done to the timbers by the death watch beetle. Complete restoration and reinforcement of the roof with girders were necessary, many of the old wooden beams having been almost completely eaten away by the beetle. The undamaged beams have been specially treated with preservatives, and the new ones have been specially graded to harmonize.



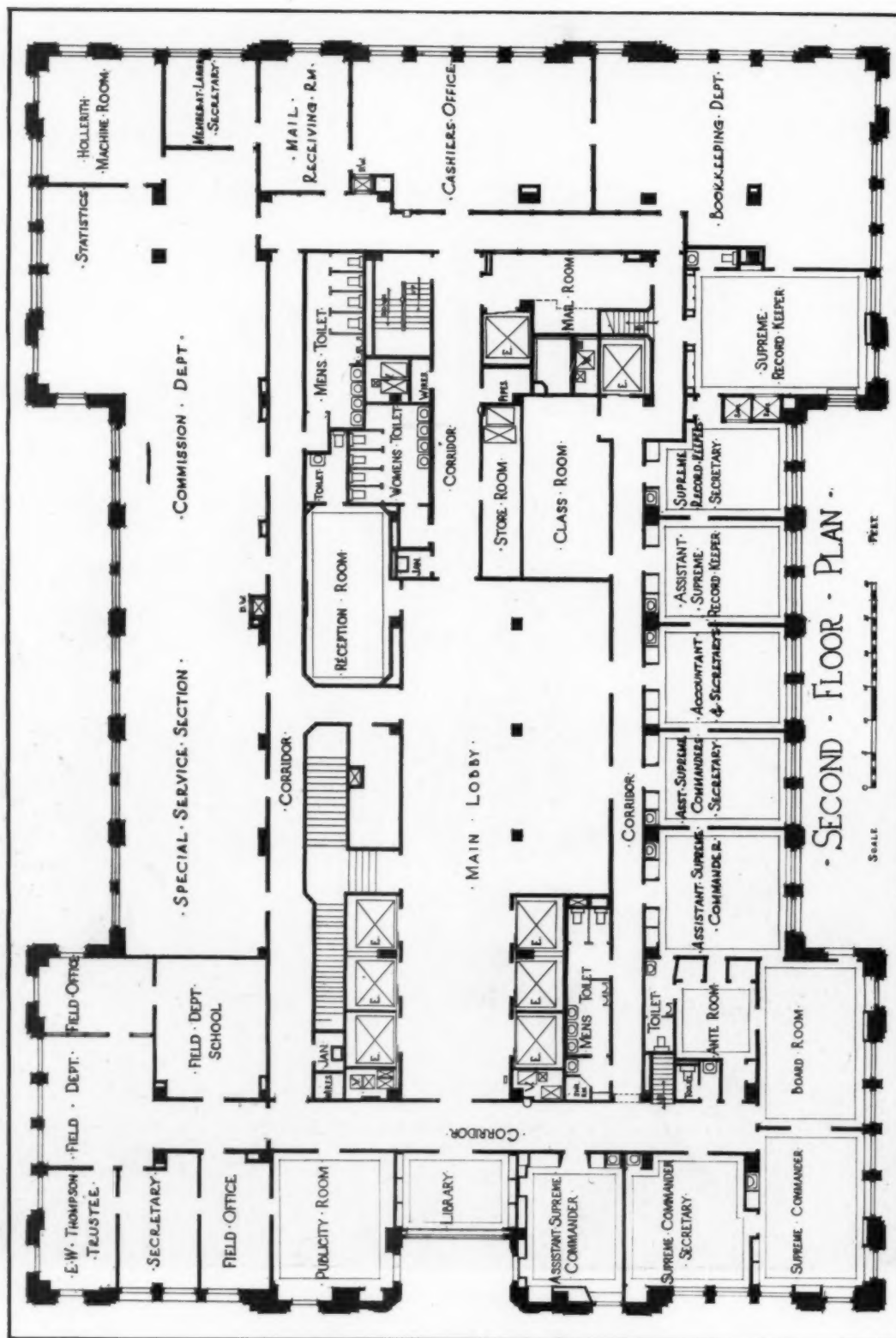
DETAIL, OLD HOUSE AT WISCASSET, ME.

WORKING PHOTOGRAPHS—SERIES II

FROM THE ORIGINAL NEGATIVE BY DWIGHT JAMES BAUM, ARCHITECT



MACCABEES BUILDING, DETROIT, MICH.
ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS
(See plan on back)



SECOND FLOOR PLAN

MACCABEES BUILDING, DETROIT, MICH.

ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS



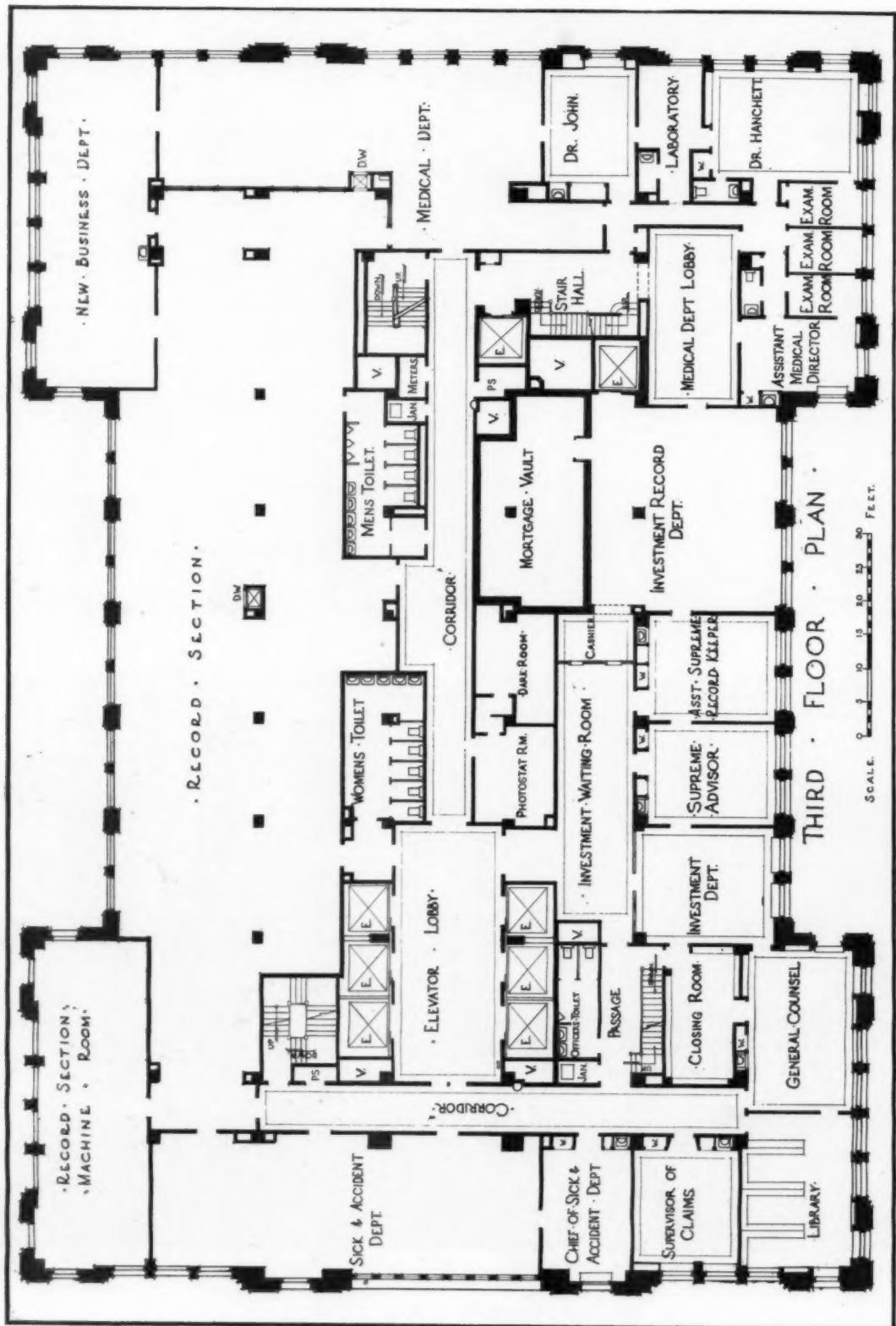
MAIN ENTRANCE

MACCABEES BUILDING, DETROIT, MICH.

ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS

(See plan on back)

ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS



MACCABEES BUILDING, DETROIT, MICH.
ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS



AUDITORIUM

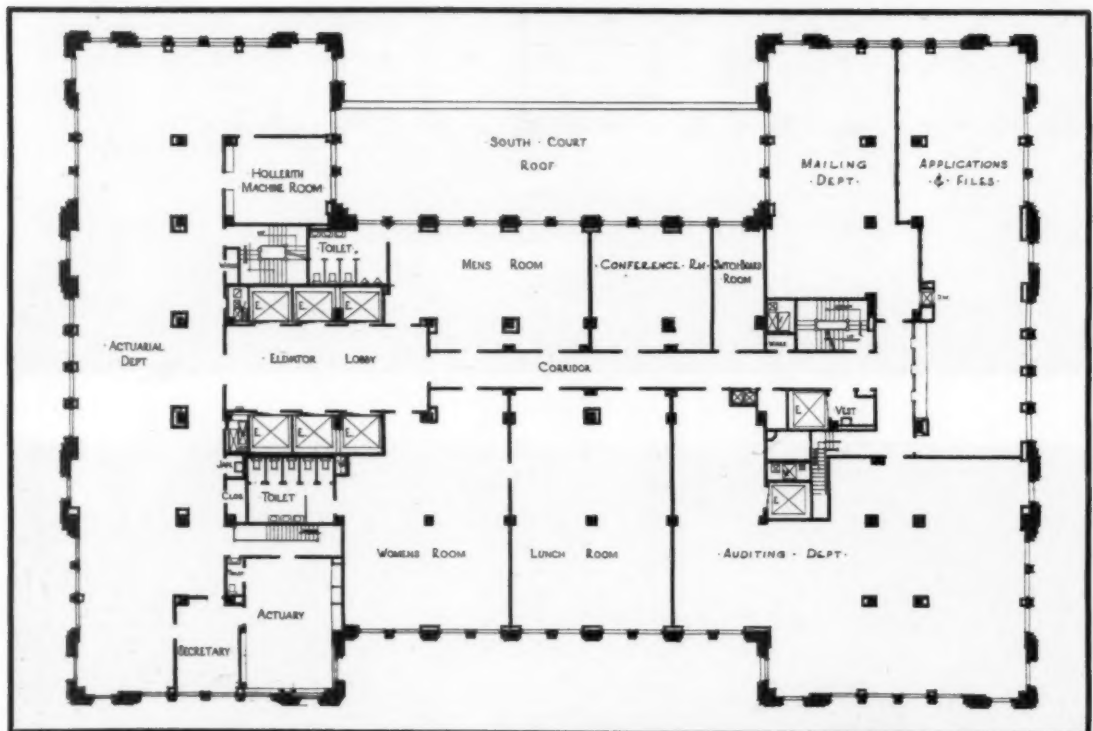


ELEVATOR LOBBY

MACCABEES BUILDING, DETROIT, MICH.

ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS

(See plan on back)



FOURTH FLOOR PLAN

MACCABEES BUILDING, DETROIT, MICH.

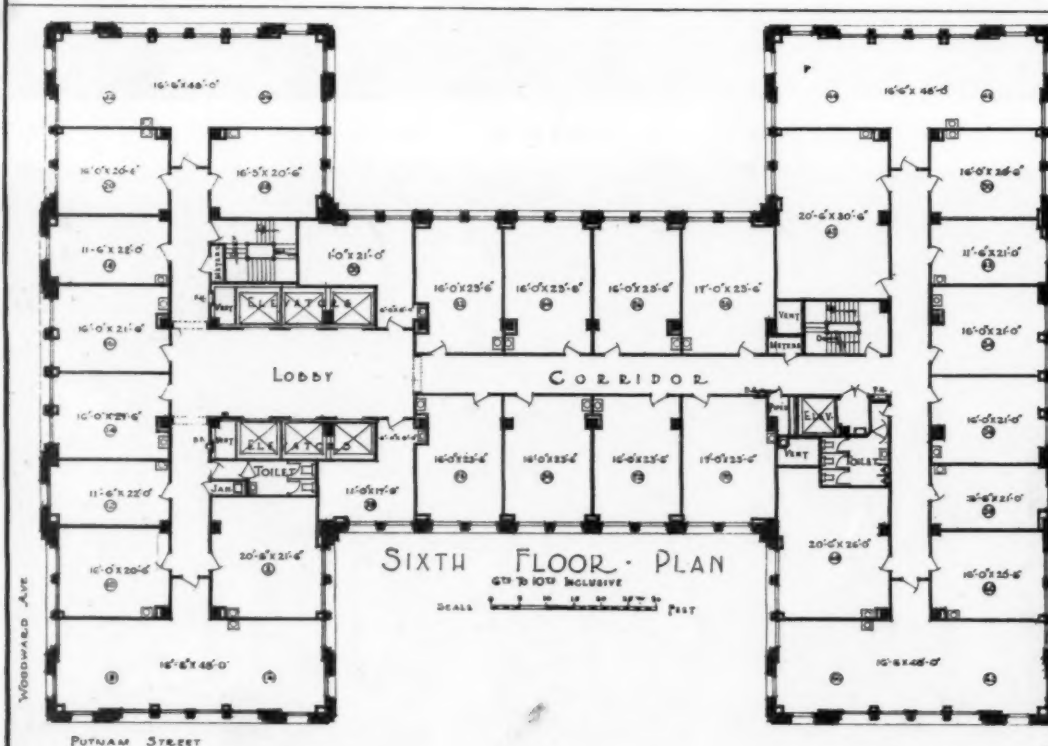
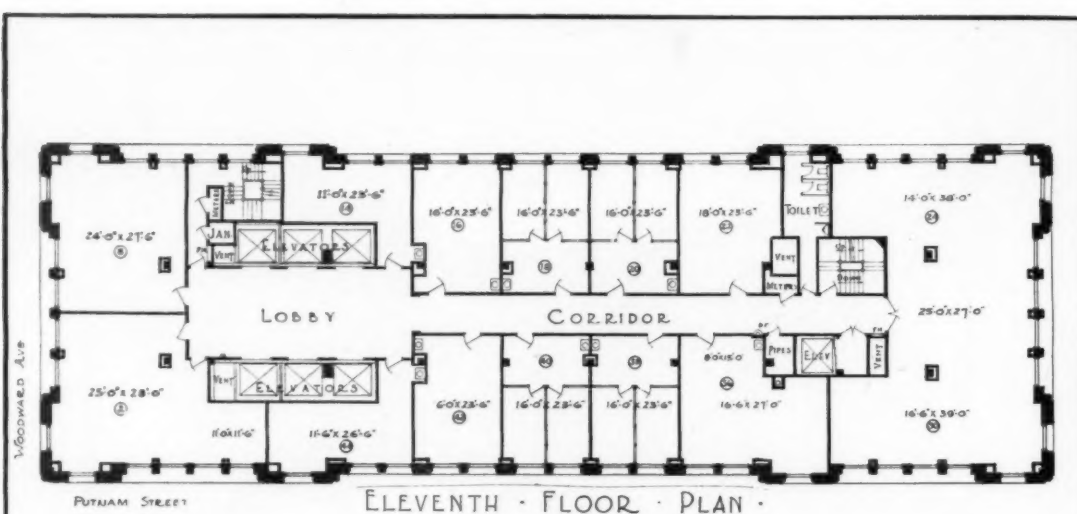
ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS



BOARD ROOM



SUPREME COMMANDER'S OFFICE
MACCABEES BUILDING, DETROIT, MICH.
ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS
(See plans on back)



MACCABEES BUILDING, DETROIT, MICH.

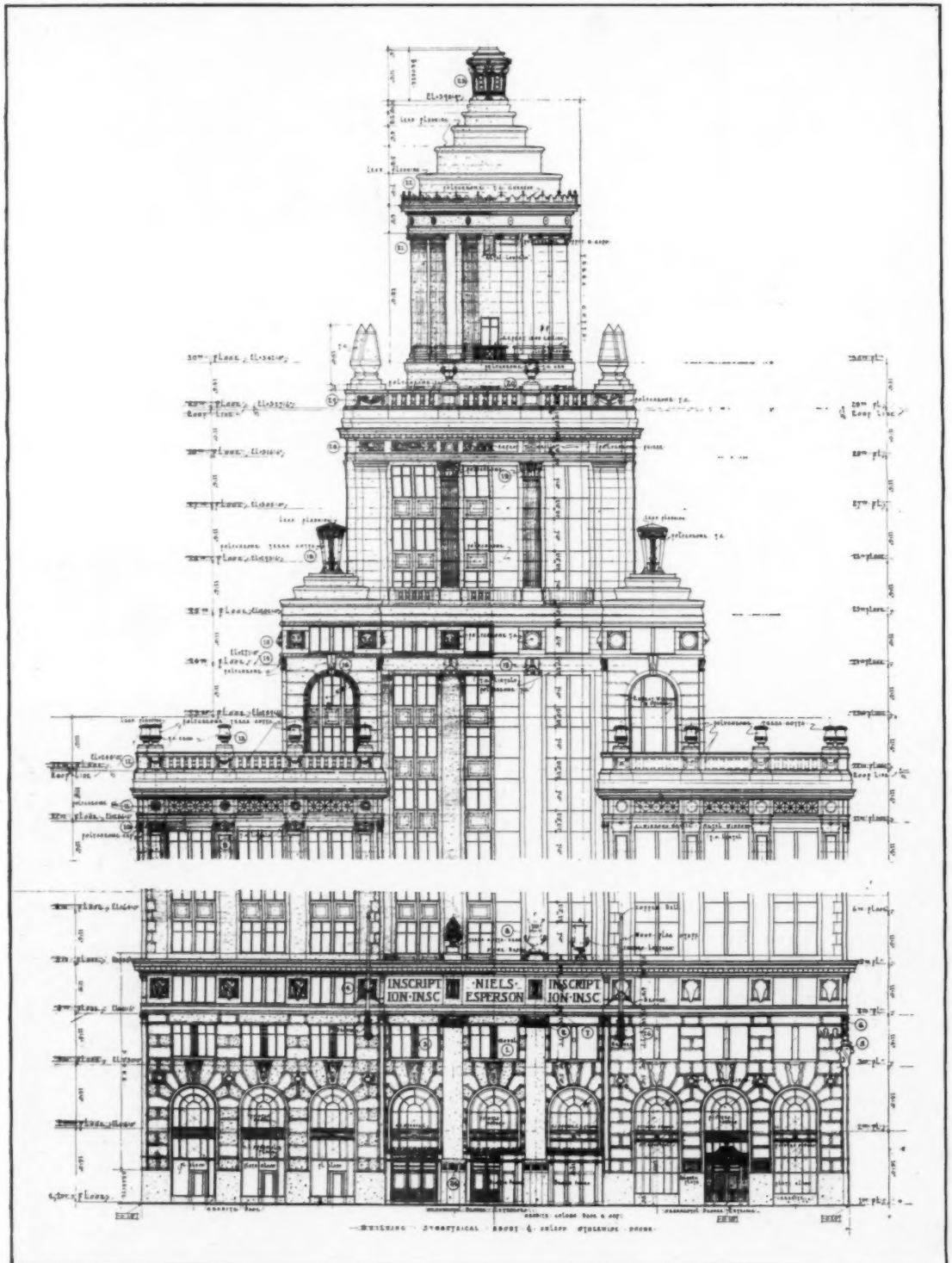
ALBERT KAHN, INC., ARCHITECTS AND ENGINEERS



NIELS ESPERSON BUILDING. HOUSTON. TEXAS

JOHN EBERSON, ARCHITECT

(See elevation of exterior on back)



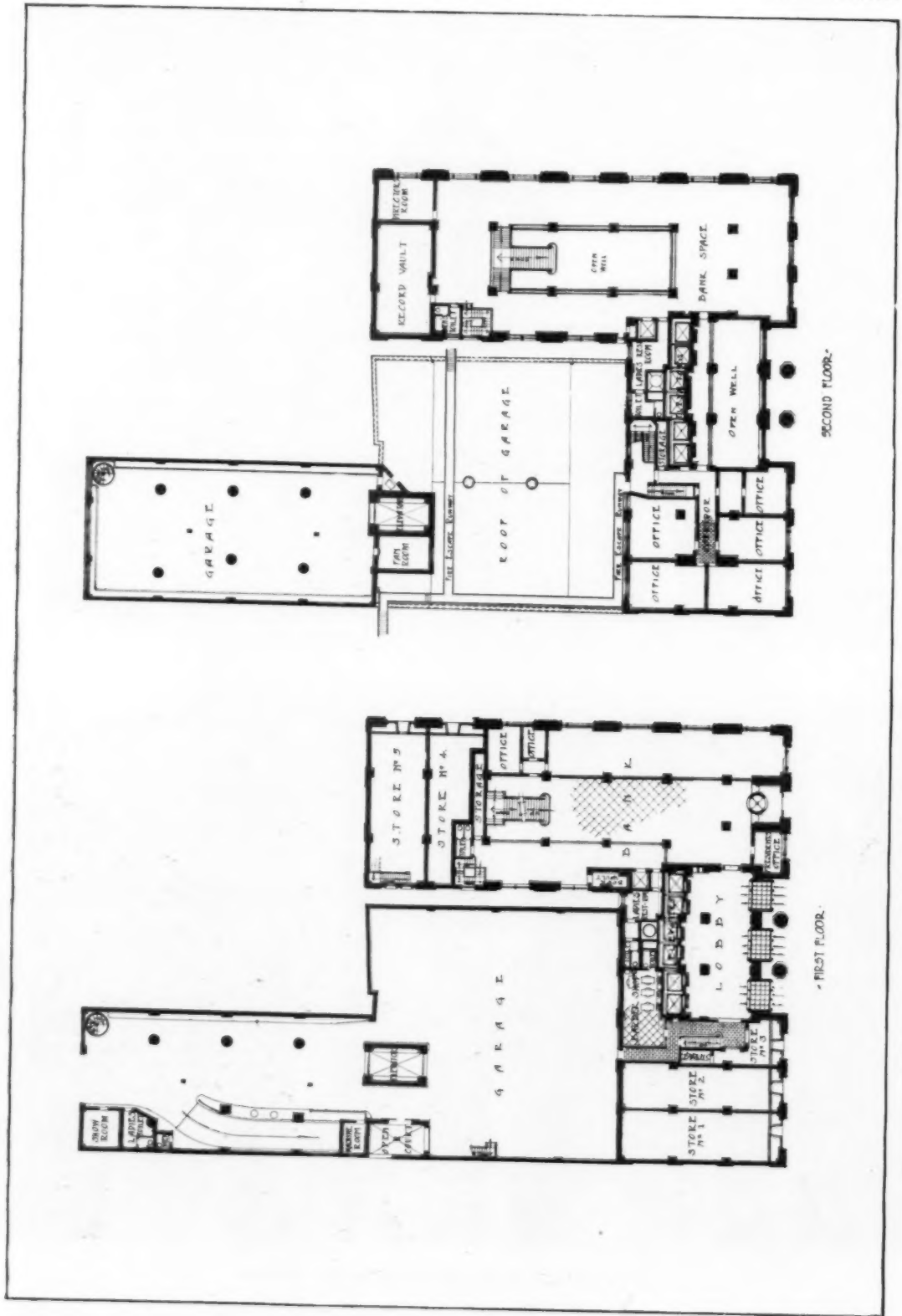
ELEVATION TO SCALE
 NIELS ESPERSON BUILDING, HOUSTON, TEXAS
 JOHN EBERSON, ARCHITECT



NIELS ESPERSON BUILDING, HOUSTON, TEXAS

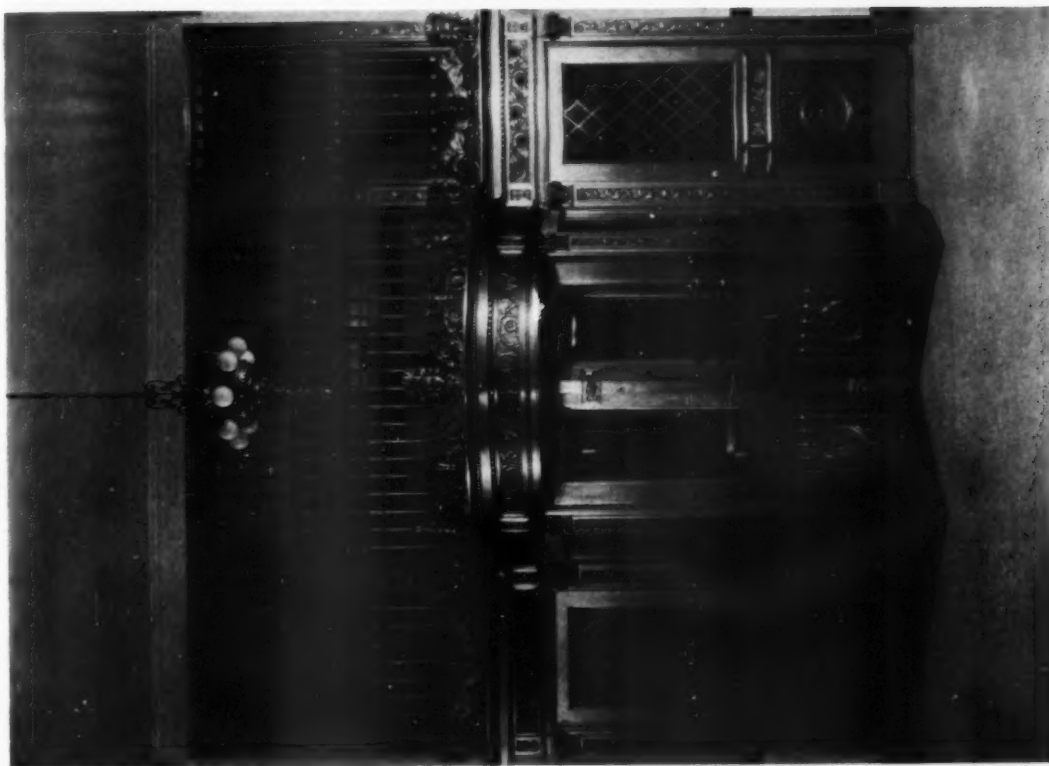
JOHN EBERSON, ARCHITECT

(See plans on back)



NIELS ESPERSON BUILDING, HOUSTON, TEXAS

JOHN EBERSON, ARCHITECT



ENTRANCE DETAIL

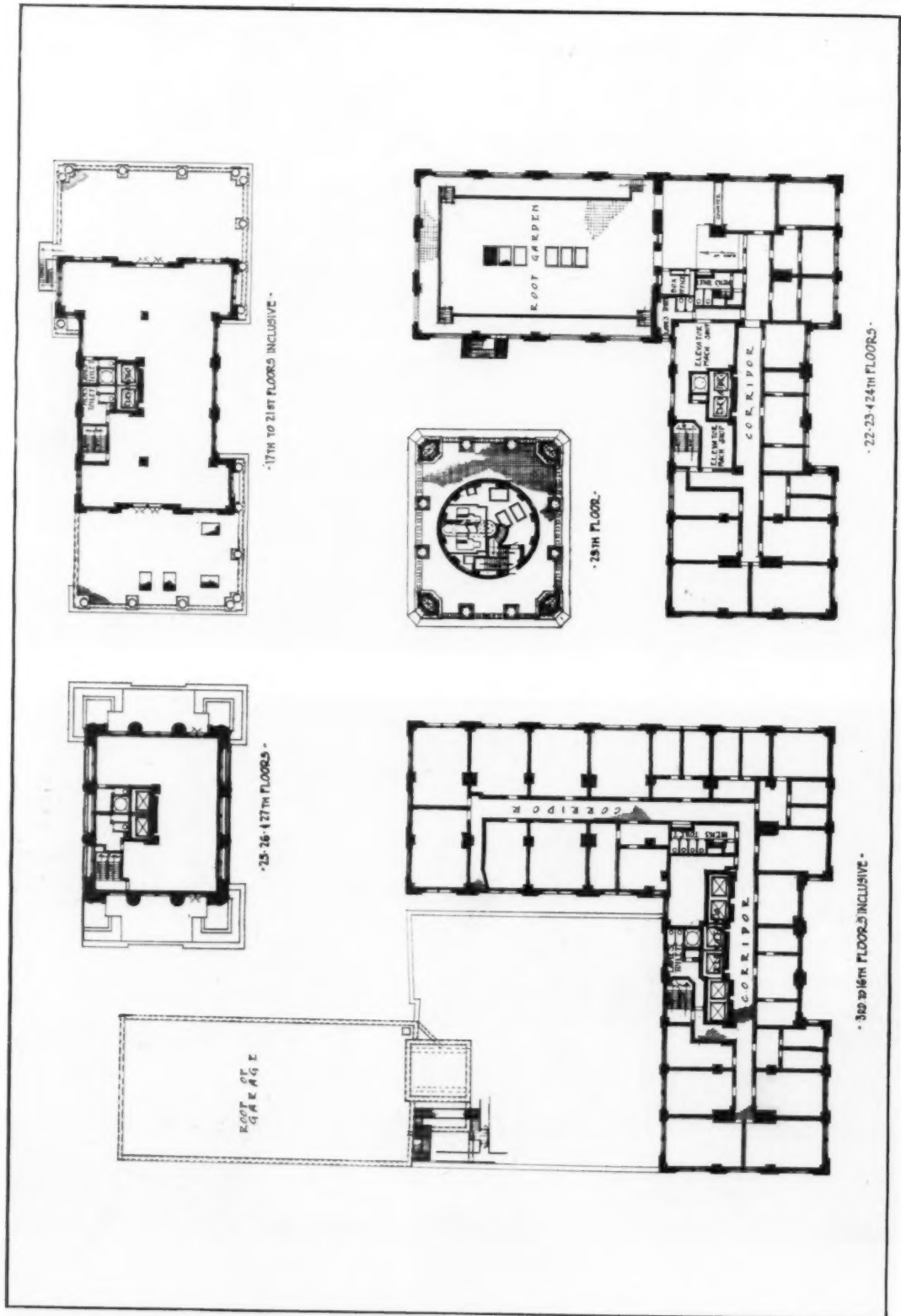


DETAIL OF CORRIDOR

NIELS ESPERSON BUILDING, HOUSTON, TEXAS

JOHN EBERSON, ARCHITECT

(See plans on back)



NIELS ESPERSON BUILDING, HOUSTON, TEXAS

JOHN EBERSON, ARCHITECT

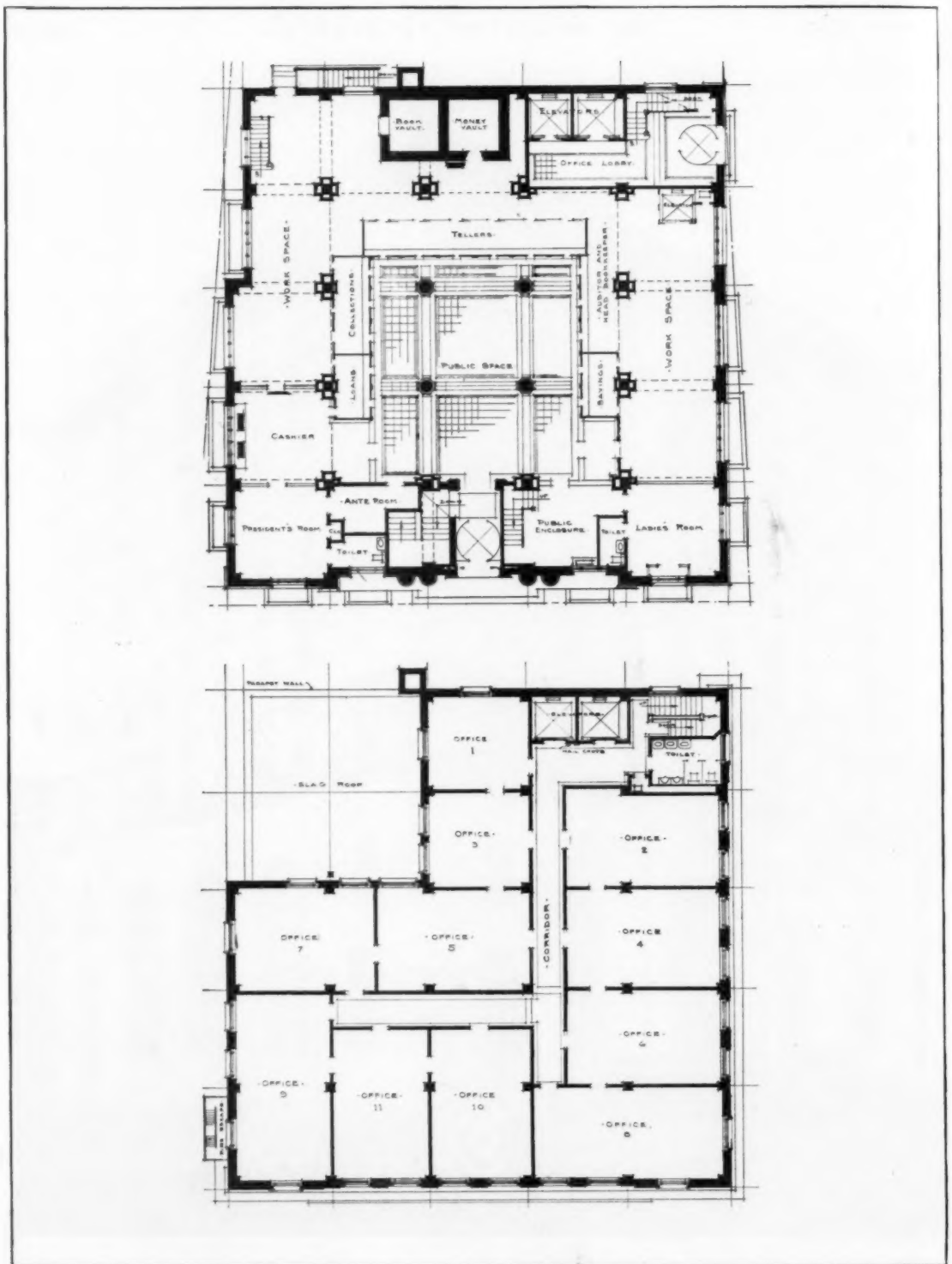


THE OLD TOWN NATIONAL BANK, BALTIMORE. MD.

FREDERIC A. FLETCHER, ARCHITECT

(See plans on back)

JOHN EBERSON, ARCHITECT
MILLS EBERSON BUILDING, HOUSTON, TEXAS



THE OLD TOWN NATIONAL BANK, BALTIMORE, MD.

FREDERIC A. FLETCHER, ARCHITECT



EDITORIAL COMMENT



WE naturally associate architecture with the design of houses, theatres, schools, churches, and so forth, buildings with which our social life is so closely identified. In more recent years, we have come to see the value of good architecture in commerce and industry, so that in our economic life as well architecture has come to play an important part. A building has been described as the provision of shelter for habitation or other purposes, so actually the design of a building which provides shelter for an airplane is just as truly an architectural problem as is the design of houses in which we live. There are today in this country probably three hundred landing fields. This number will undoubtedly be tremendously increased during the next decade. Airports will be established throughout the country, and the suitably equipped landing field will make of its city an airport in the same manner as satisfactory docking facilities make of the coastal city a seaport. The resulting competitive spirit will tend to stimulate efforts to make the airport of one city more beautiful as well as more practicable than another. So far it appears that architects have not even been consulted in the plan or design of airports and the various buildings which they embody. The department of Commerce, under whose guidance aeronautics has been fostered, states that "while hangar design will undoubtedly change with the years, it is believed that the following type, which may be easily increased or decreased in size or dismantled for removal to a new location if necessary, will be found suitable for the present. The framework should be of structural steel, covered with sheet steel protected by an asbestos composition, or with painted rust-resisting alloy. There should be sufficient glass to insure adequate working light. Concrete floors, while not absolutely essential, have many advantages and should be included. Laid with a slight slope toward the doors, the removal of planes in an emergency is expedited and the flushing of floors in cleaning is likewise facilitated." As aviation is developed and put on a more solid basis, many of the uncertainties allowed for in the bulletins issued by the Department of Commerce, as increasing or decreasing the size of hangars, or the removal of hangars to a new location, will be eliminated. With permanent buildings, the design of airports will become largely a problem for architects. To our knowledge, already an architect is collaborating in the design of an airport for a city on the Pacific coast, and a similar opportunity may present itself to any architect in the country at any moment. There is a vast amount

of knowledge to be accumulated before most architects could take up the design of an airport with any degree of assurance of success. It is for this purpose that we are presenting in this issue a brief article on the subject of the design of airports, in which are put forth many of the fundamentals on which the design is based and certain technical information which is necessary adequately to develop a design. Airports are not merely groups of hangars. They are actually stations for air routes, whether for mail, passenger or express, and shelters, supplies and conveniences must be provided for travelers at each station. Further than that, at each of the stops there is necessarily an operating personnel who must be housed, fed and their other wants supplied by the adjacent community. The opportunities for architects seem tremendous. The problem is unusual and interesting in that consideration must be given to the aspect of the airport from the air and that as the traveler alights it is the airport that gives him his first impression of the city.

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AS architects, we are often too prone to criticize each other's work without being fully acquainted with the conditions under which the design was evolved. It is undoubtedly true, as was mentioned in a recent issue of this magazine, that some of the best designs for buildings of various types never get any further than the tracing paper stage. It very often happens that a design is rejected by a client because it is too radically different from anything he has ever seen, and, therefore, he is afraid that it is not good architecture. Nothing can so seriously retard the development of architecture in this country as such an attitude.

Individuality is the basis of good architectural design. It is attained by designing a building so that it satisfactorily serves its individual purpose. When a building is completed and occupied, we may easily criticize its design, claiming that it lacks the individuality that its purpose suggests, but we seldom take into account how the architect fought to have his original scheme accepted, and how he was obliged by his client to make changes here and there until it appeared as only a composite of various details reproduced from completed buildings of various types and in various localities.

Suppose, for example, you heard over the radio, seated in your living room, a rendering on the piano of one of the masterpieces of Chopin or Mozart that seemed to you to be rather poorly

executed. Undoubtedly, you would severely criticize the performer. And yet if you had heard the announcer state that the selection was to be given by one with only three fingers on each hand, and, perhaps, blind besides, you would make allowances for these conditions and loudly applaud the efforts of the performer. It is just as important that you consider the conditions imposed upon an architect in developing the design of a building, before attempting to criticize his efforts.

The overcoming of this unfortunate state of affairs, on which the future development of architecture in this country depends, lies solely in the education of the layman to a higher appreciation of architecture. A client should place implicit faith in his architect. He should choose him in the same way in which he hires a lawyer or a sewage disposal expert. He must engage him on his known record of performance, on the things which he has already done for others. The qualifications of an architect should be sympathy with the needs of the building he is to design and fitness through temperament and experience to provide for those needs in an appropriate structure. An appropriate structure will not only express the purpose to which the building is to be put, but will conform with certain architectural principles. We plead, then, for more confidence in their architects on the part of clients, in order that a higher standard of architectural design may result.

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PLANS for the future development of Washington as the Nation's capital are again menaced by a proposed Potomac River hydro-electric power project that would result in the inevitable destruction of a great national park area. Application has been made by a private power company to the Federal Power Commission for the issuing of a preliminary permit to erect a power dam 115 feet in height at Little Falls in the District of Columbia and a similar dam at Great Falls in the State of Maryland. The erection of these dams would submerge the Potomac valley between Washington and Great Falls and would obliterate the falls by a diversion of the water above them. Not only would the natural beauty of Great Falls be ruined, but a large tract of land planned for a national park would be destroyed.

Letters of formal protest have been addressed to Major Brehon Somervill, representative of the

Federal Power Commission, by Horace W. Peaslee, Chairman of The American Institute of Architects' Committee on the Plan of Washington, and to the Executive Secretary of the Commission by Col. U. S. Grant, Executive Officer of the National Capital Park and Planning Commission. The Executive Committee of The American Institute of Architects at a recent meeting in New York City adopted resolutions condemning any power development, public or private, of the gorge of the Potomac River or of the Great Falls district. In adopting this resolution the Executive Committee endorsed the position of the National Capital Park and Planning Commission and the Institute's Committee on the Plan of Washington. The committee has been instructed "to use every resource at its command to defeat the accomplishment of the proposal."

War-time emergencies, commercial enterprises, speculative builders and short-sighted politics have already worked irreparable inroads that militate against the realization of a plan for the city of Washington that befits the Nation's capital. Present plans for the development of Washington are based upon making the best of existing conditions and seek to avoid mistakes of the past, so that future generations may enjoy the results of present foresight. For some years a constant fight has had to be maintained to retain the few remaining vestiges of the original Washington plan. Eternal vigilance has been required to forestall selfish private and public proposals that would soon reduce our national capital to the sorry plight of the majority of American cities. Patriotic pride and national idealism should be sufficient to deter individuals and corporations from even suggesting projects that could not meet with public approval if the facts were generally made known. The correct attitude in national matters of this kind is often sadly lacking.

It is hoped that the proposal to utilize the Potomac River for power development purposes will be emphatically defeated and made to serve as an advance notice of warning that will forestall future projects of similar character. If necessary, the fight "to spare the Potomac" should be, and no doubt will be, carried to Congress. This is a matter that deserves the attention of every citizen of the United States and no action should be neglected by the architectural profession to defeat decisively the latest proposal materially to alter the present plan of Washington and its vicinity.



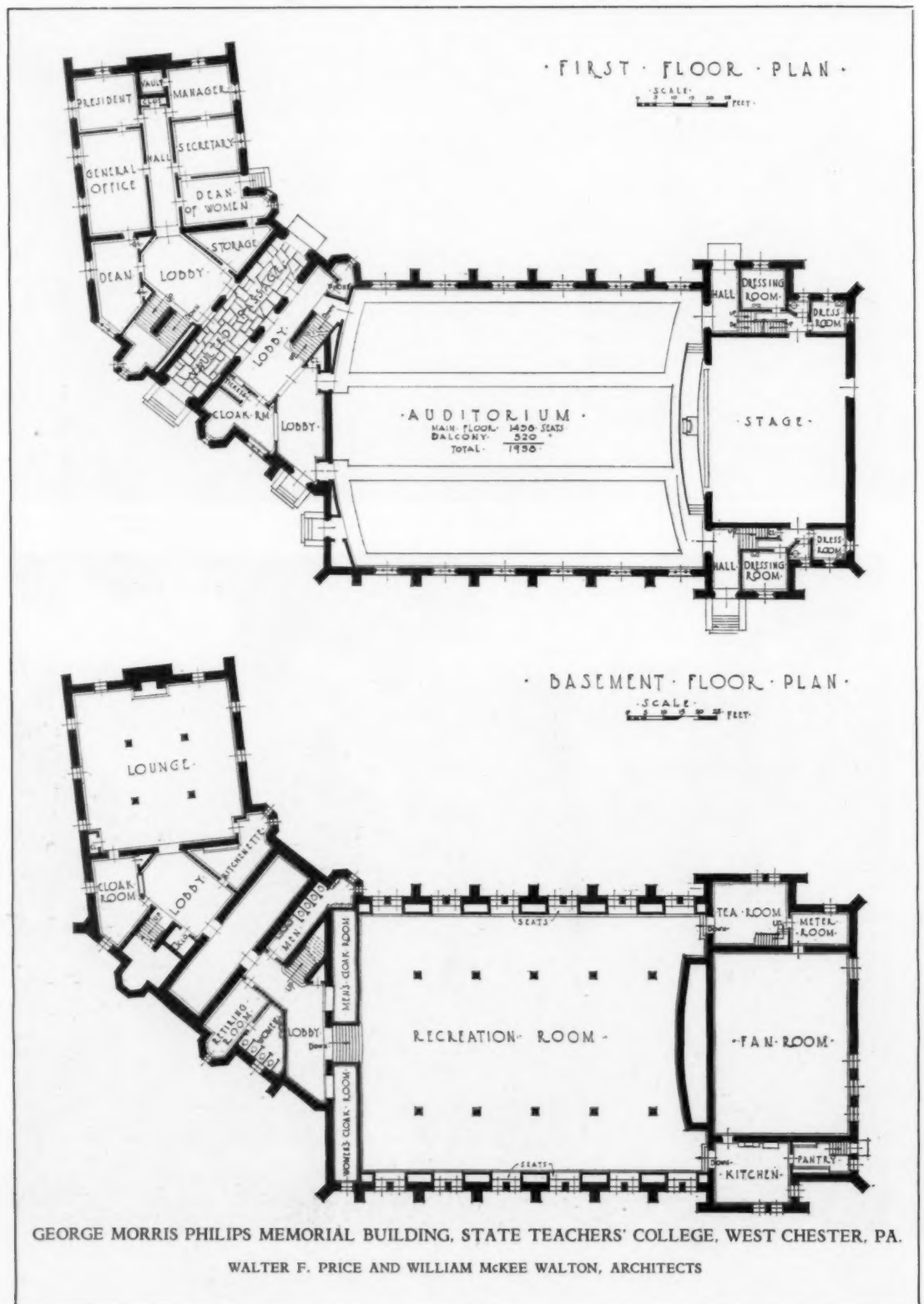


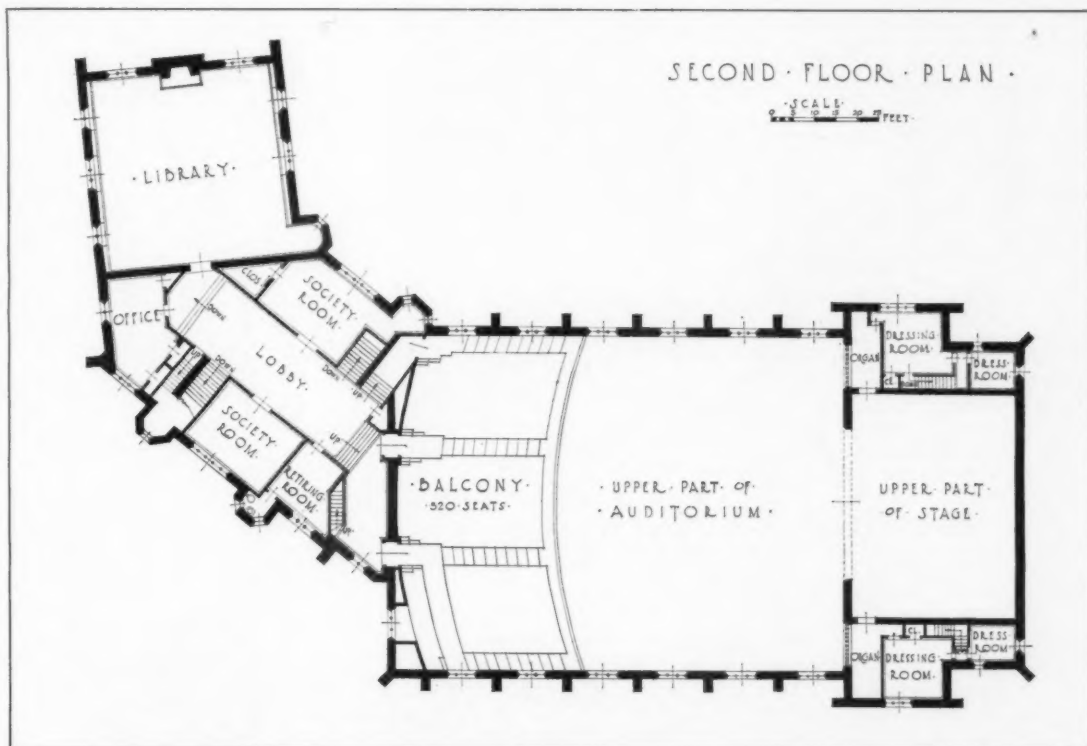
VIEW FROM QUADRANGLE



VIEW FROM STREET

GEORGE MORRIS PHILIPS MEMORIAL BUILDING, STATE TEACHERS' COLLEGE, WEST CHESTER, PA.
WALTER F. PRICE AND WILLIAM MCKEE WALTON, ARCHITECTS

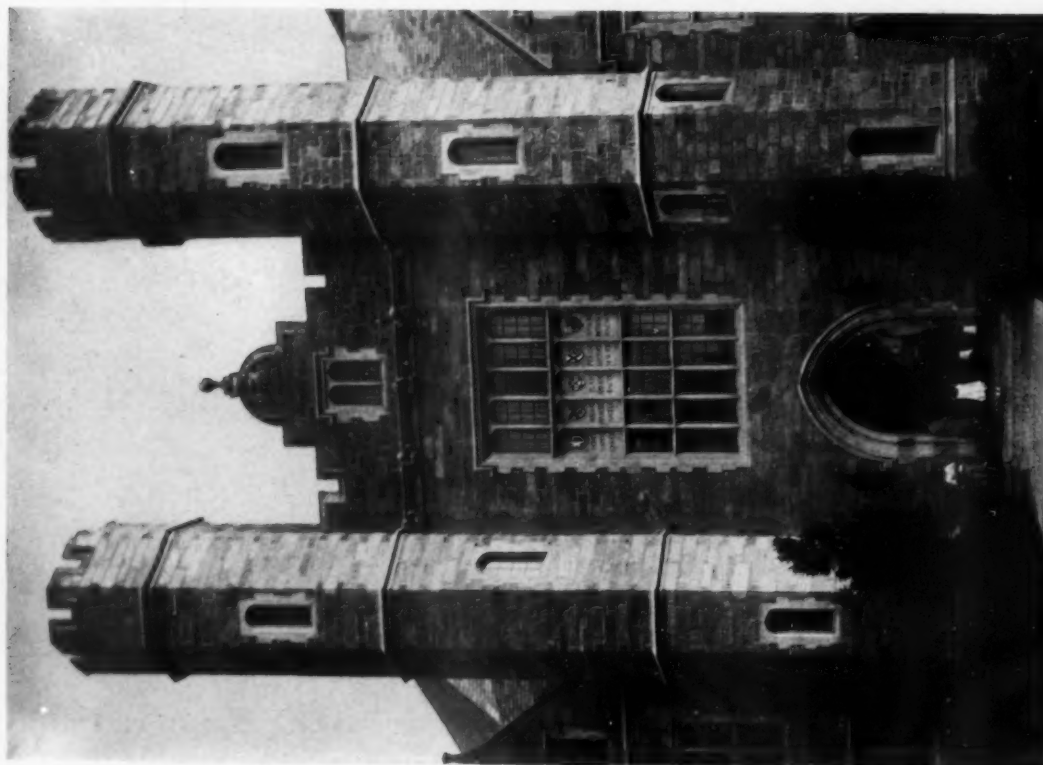
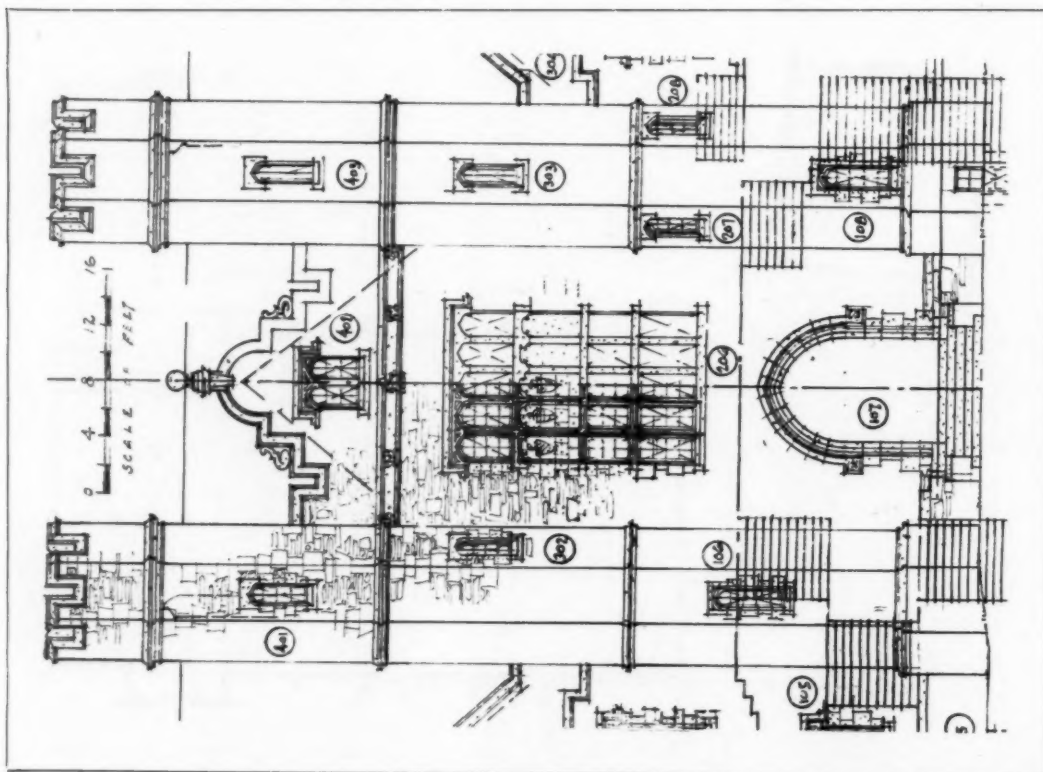




ENTRANCE PASSAGE

GEORGE MORRIS PHILIPS MEMORIAL BUILDING, STATE TEACHERS' COLLEGE, WEST CHESTER, PA.

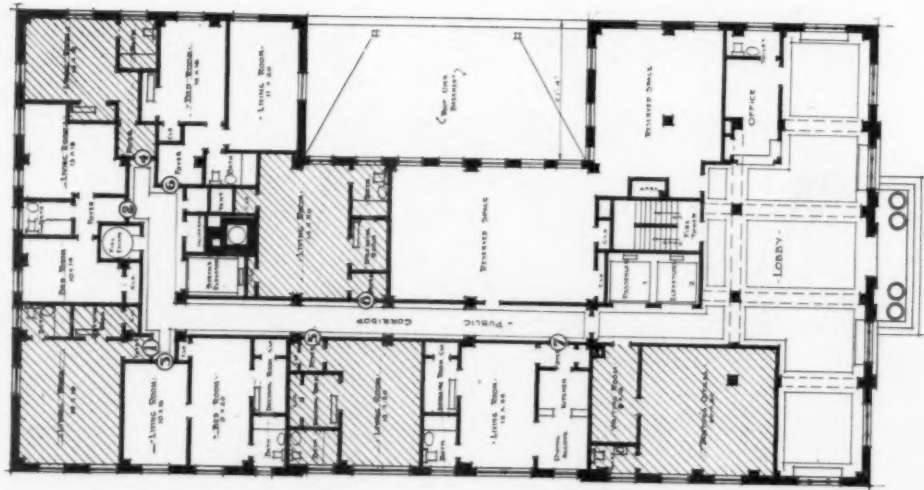
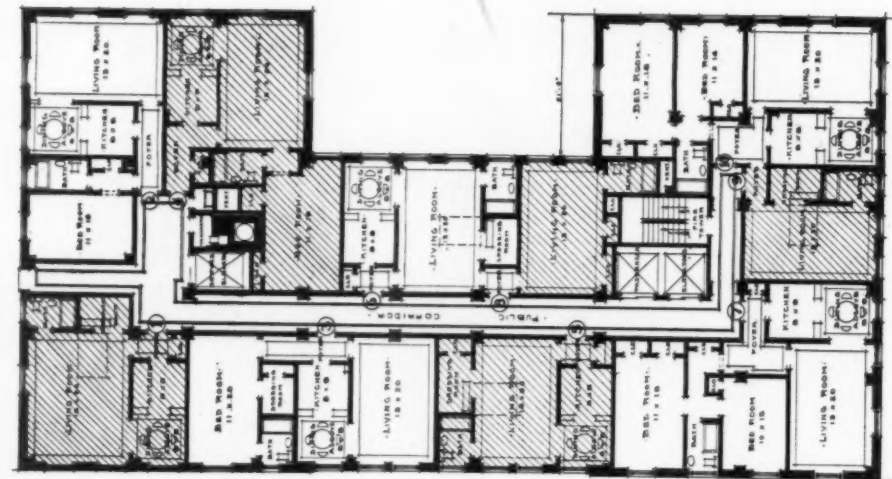
WALTER F. PRICE AND WILLIAM MCKEE WALTON, ARCHITECTS



MAIN ENTRANCE DETAIL
 GEORGE MORRIS PHILIPS MEMORIAL BUILDING, STATE TEACHERS' COLLEGE, WEST CHESTER, PA.
 WALTER F. PRICE AND WILLIAM MCKEE WALTON, ARCHITECTS

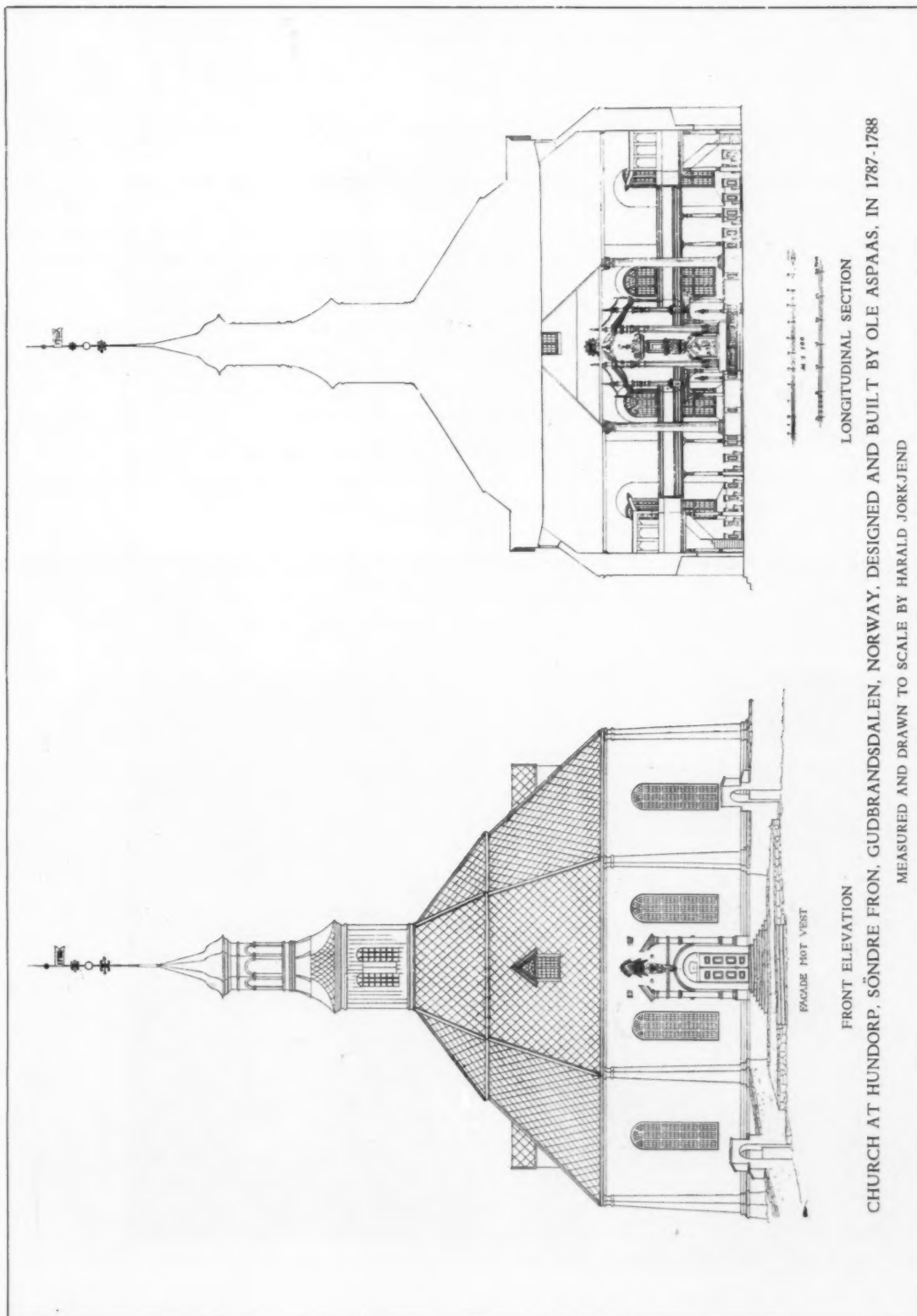


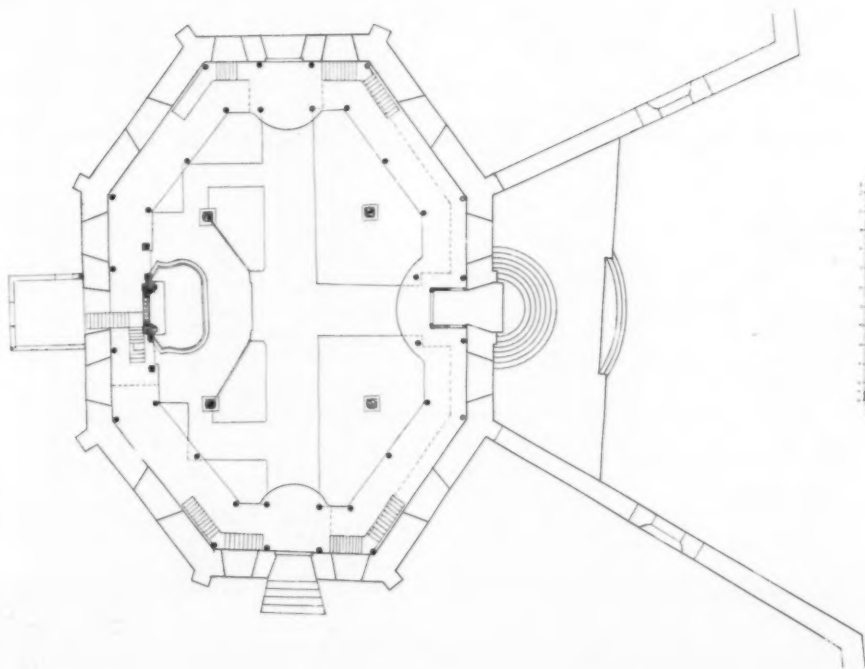
THE CHARLES APARTMENT HOTEL, BALTIMORE, MD.
FREDERIC A. FLETCHER, ARCHITECT



THE CHARLES APARTMENT HOTEL, BALTIMORE, MD.

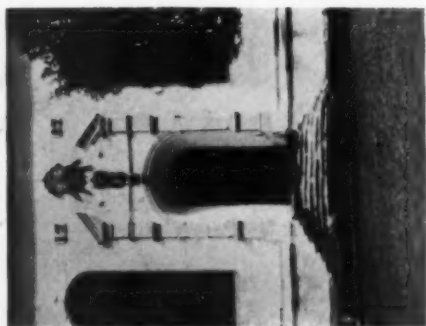
FREDERIC A. FLETCHER, ARCHITECT



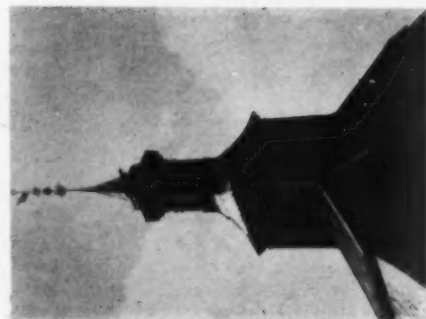


PLAN

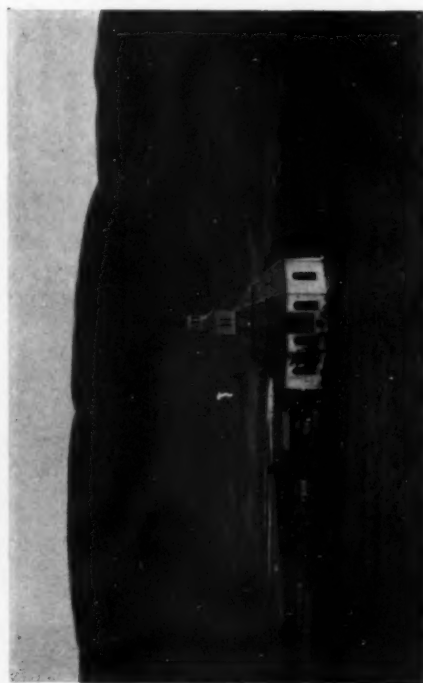
CHURCH AT HUNDORP, SÖNDRE FRON, GUDBRANDSDALEN, NORWAY, DESIGNED AND BUILT BY OLE ASPAAS, IN 1787-1788
MEASURED AND DRAWN TO SCALE BY HARALD JORKJEND



THE ENTRANCE



THE CUPOLA



THE CHURCH SEEN IN RELATION TO ITS SETTING



INTERIOR ARCHITECTURE



THE ROMANCE OF ARCHITECTURE

IT has ever been our custom to record the history of architecture in terms of chronology. Perhaps for want of a better way in which to mark the beginning and ending of a period in architectural design, characterized by certain details peculiar to it, we have become accustomed to associate it with the reigning sovereign of the country in which it originated by name as well as by years. As a matter of fact, the transition from one style to another has always been very gradual, so that it would be impossible to designate definitely just when one period ended and another began. Actually, certain of the old periods were in existence many years before the sovereign whose name that period now

bears was enthroned, so that the dates we now consider as fixing the limitations of a style are often far from being accurate. Due to this chronological method of writing architectural history, we are apt to overlook the important fact that a style in architecture is actually an expression of the tastes of the people of the times, the conditions under which they live, the influences paramount in their lives and their peculiar modes and manners. The success of the periods of the sixteenth, seventeenth and eighteenth centuries of Europe is really due to the fact that, while conforming throughout to the principles on which architectural and decorative design is based, they also satisfactorily reflect the



TYPICAL DRAWING ROOM OF THE EARLY YEARS OF THE TWENTIETH CENTURY IN WHICH THE INFLUENCE OF THE LOUIS XVI IS DISCERNIBLE IN BOTH ARCHITECTURAL TREATMENT AND FURNISHINGS, APPEALING TO THE WOMAN OF THOSE TIMES



LIVING ROOM, HOUSE OF G. H. WARING, TIVERTON, R. I.
PARKER M. HOOPER AND WILLIAM E. MORAN, ARCHITECTS

spirit of the times. In those days it was not uncommon for an architect when designing a room to venture so far as to suggest the style and colors of the costumes which her ladyship should wear when receiving in that room. In that light, the history of architecture becomes a romance rather than a monotonous order of dates.

Unfortunately, in this country where architectural style is more apt to be determined by fashion than by individuality, we overlook completely the romance in architecture. We are now, fortunately, emerging from an era which history may well record as totally lacking in originality. Yet even during this quarter century of "period" influence, characterized by plagiarism and so-called "adaptations," we may recognize a certain touch of the romantic. Some Adam drawing room or Louis XVI boudoir, as we were wont to designate them, of the early years of this century, may readily be recalled. These rooms, so familiar twenty and twenty-five years ago, reflected in a certain manner the femininism of the woman of those times. It was natural then that the tastes of the woman of the household be given first consideration in the design of interiors, for in those days the woman's place was in her home. And even today it is just



LIVING ROOM IN THE HOUSE OF LAUDON K. THORNE, BAYSHORE, LONG ISLAND, N. Y.
WILLIAM F. DOMINICK, ARCHITECT

STRUCTURAL IN ITS CHARACTER, THIS ROOM REFLECTS THE SPIRIT OF THE MODERN AMERICAN HOUSEHOLD. ITS PURPOSE GAVE INSPIRATION FOR ITS DESIGN

as logical that her wishes be given consideration.

But man was not left entirely out of the picture. In contrast to the effeminate drawing room and boudoir was the man's den, a room that appealed to his masculine tastes, affording him opportunity to enjoy life to the utmost in his peculiarly characteristic manner, to smoke to his heart's content, in his favorite posture, amidst surroundings that expressed the general characteristics of his sex. We see immediately a touch of romance in the opposite directions in which the tastes of the man and the woman seemed to run.

How times have changed! The modern woman aspires toward masculinity in her manners, her dress and in many of her characteristics. The tastes of the man and woman of the modern household have practically converged. And with the resultant changing social conditions, thus brought about by changing customs, we find it no longer necessary to separate the man's from the woman's room. Modern American architecture reflects satisfactorily the tastes of both. The romance of architecture is being written in the new style that is even now being evolved.

A New York clergyman recently stated that the



LIVING ROOM, HOUSE OF E. B. McLAURY, PELHAM, N. Y.
BLOODGOOD TUTTLE, ARCHITECT



DINING ROOM IN THE HOUSE OF WILLIAM H. WHITCOMB, PLAINFIELD, N. J.
PATTERSON & WILLCOX, INC., ARCHITECTS

CERTAIN IDEAS ASSOCIATED WITH THE COLONIAL HAVE HERE BEEN ADAPTED IN THE DESIGN OF A ROOM THAT SATISFACTORILY SERVES ITS MODERN PURPOSE

twentieth century is a century of men and women who do not want to be fooled. One may observe that characteristic of the present generation reflected in our architecture. We are eliminating shams and effects, as well as the fussy details and elaborate decorations that featured our efforts of twenty-five years ago. We are coming more into the realization that architecture is actually a part of our lives. The natural and logical evolution of social life, as influenced by the letting down of many of the bars of convention, has resulted, too, in a life more than ever before spent in the out-of-doors. The belief has grown that a sound mind in a sound body is the great desideratum. But this out-of-door life is, too, a natural result of certain economic conditions. The majority of dwellers in the large cities and their suburbs live in apartments and apartment hotels. In these districts home-life—as we once knew it—has become practically extinct. Not only are our lives spent more out-of-doors—on the golf links, at the baseball parks, and on the beaches—but certain functions which used to be considered strictly home affairs are now held in public places. So, we spend the greater part of

our lives away from home (if it can be said that we live in homes at all), even if not out-of-doors. These conditions were bound to have an effect on our architecture, and it is in recognizing these conditions and giving expression to them in our designs that the story of architecture becomes a romance.

In the illustrations of modern rooms accompanying this article, one may readily trace the influence of one or the other of the old styles and periods; seldom now is there ever any attempt made to reproduce a "period" room. The periods are studied today for inspiration and ideas, rather than with any intention of adapting the design intact to new conditions and sizes. In keeping with the tastes of the people, architecture today is bold, sincere and lacking in fussy and effeminate details. We still, unfortunately, cling to the use of the word "period." Every room and even every building we design is classified as belonging to some one period or style. Our clients are really responsible for this state of affairs. Awaken them, then, to the romance of architecture, and originality and creative ability will have greater chance for development.



TWENTY-FIVE YEARS AGO, PRACTICALLY EVERY PRIVATE HOUSE COULD BOAST OF A DEN, ONE ROOM IN THE HOUSE WHICH WAS MANNISH IN ITS DESIGN AND IN WHICH THE MAN OF THE HOUSEHOLD COULD FEEL COMFORTABLE AND AT EASE

MAKING THE OFFICE A LIVABLE PLACE

IN noting the tendency toward the betterment of business surroundings, we have on several occasions called the attention of architects to business premises as a field of operation. As an example, we might cite the offices of an insurance man in Philadelphia, which are furnished very much like his home in a comfortable and informal manner. The offices of a trust company in Boston are treated as an old-time eighteenth century shipping firm might have designed its business premises. A brochure issued by a furniture firm has recently come to our attention in which are presented illustrations of offices and board rooms of genial and comfortable appearance. It makes an appeal to business people to surround themselves with those things that convey to their business following an atmosphere of cordiality rather than the severity and stiffness which are suggested by conventional office furniture and equipment. Amidst the text we find the following: "Gone are the drab ugly offices of yesterday! The business executive of today pre-

fers a pleasant, livable place where dignity and friendly personality prevail. He realizes that his office can create an impression of genial success; 60 per cent of the day is spent in your office. Make it a livable place!"

The problem, which the design of an office presents, stipulates certain conditions which must be rigidly adhered to. For example, the premises are often located in a commercial building where ceiling beams are poorly placed and out of scale, so far as good design is concerned. Then there is the regular routine of the business organization to be considered. And yet it is in complying with these conditions and allowing the office to function properly that individuality in the design, on which its success depends, is finally attained.

There is illustrated below the reception room in a brokerage office. On the following page are shown the reception rooms in a sales office and in the office of an advertising agency. In every case an atmosphere of home rather than of business pervades.



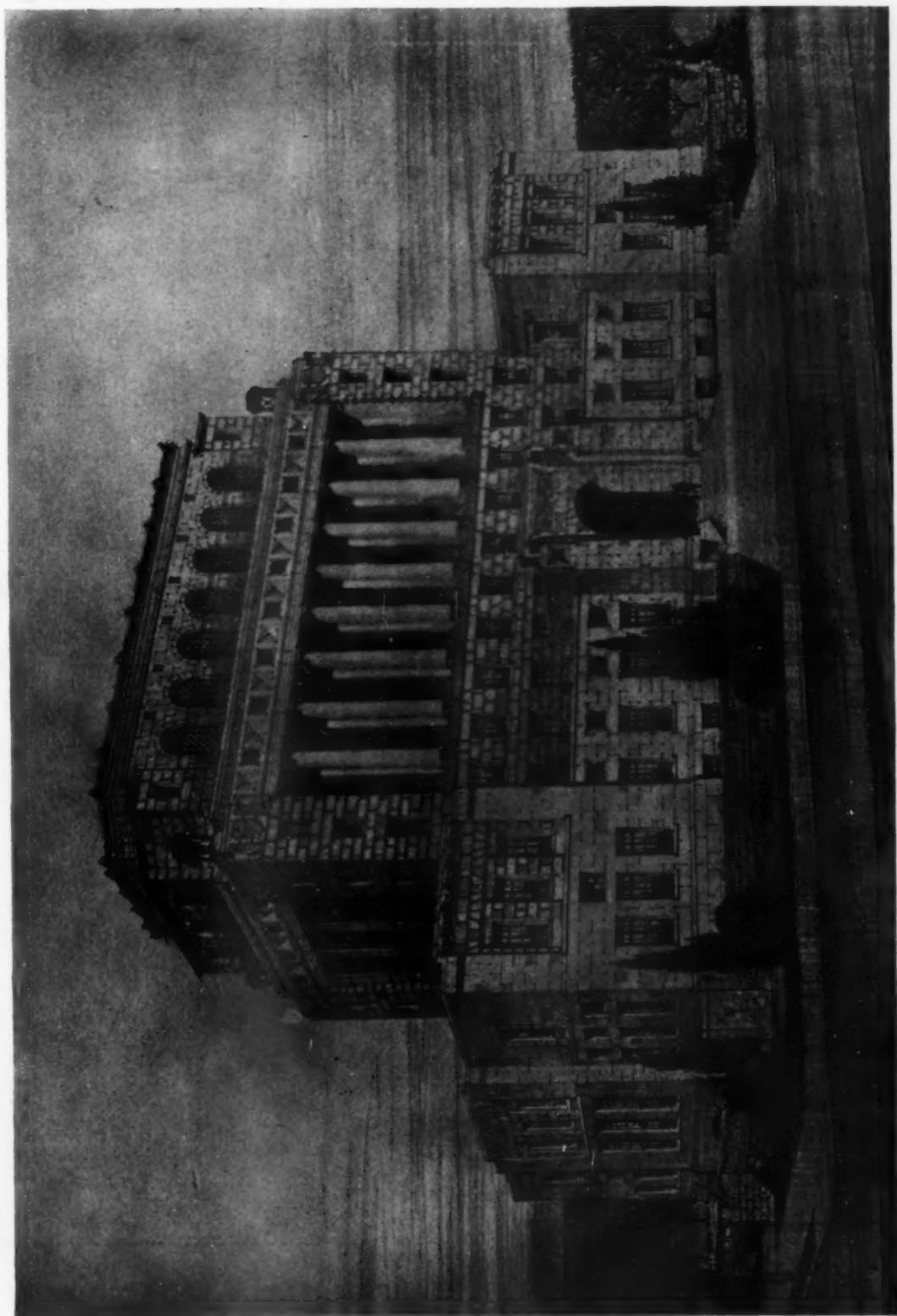
RECEPTION ROOM IN THE OFFICE OF CAMPBELL, STENZEL & PETERSON, INC., NEW YORK
W. LEATHERS, DECORATOR



RECEPTION ROOM, ROME BRASS RADIATOR COMPANY, NEW YORK

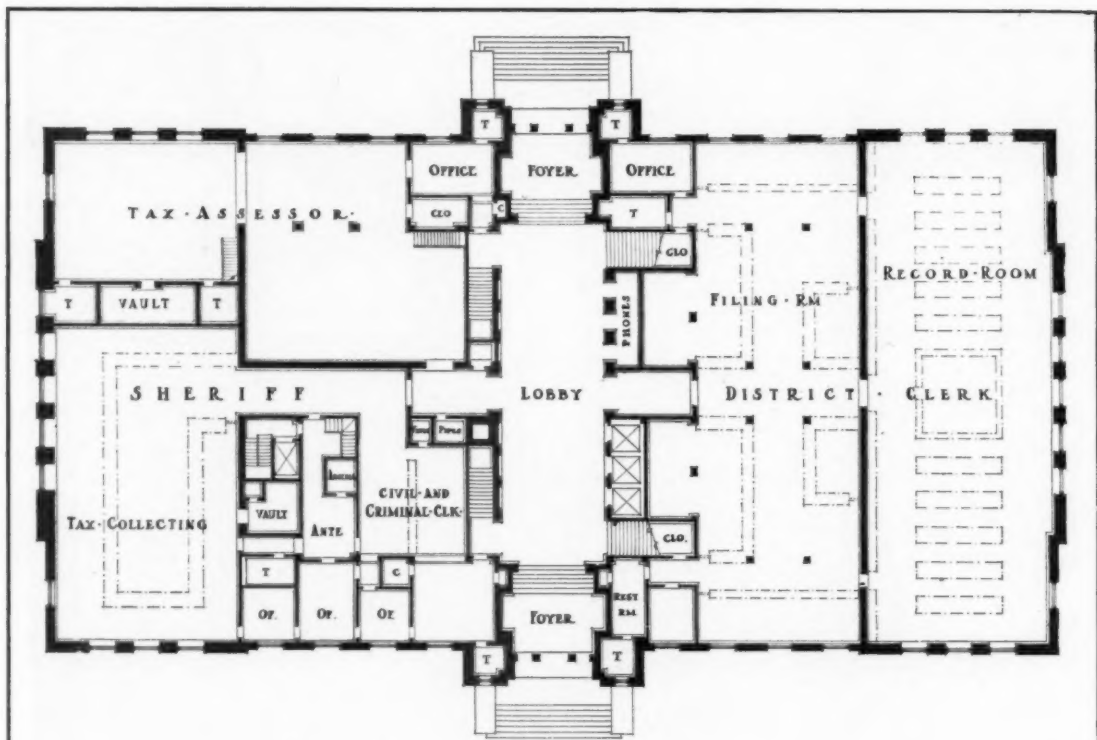


RECEPTION ROOM, CHARLES W. HOYT COMPANY, INC., NEW YORK—H. G. BRYANT, DESIGNER

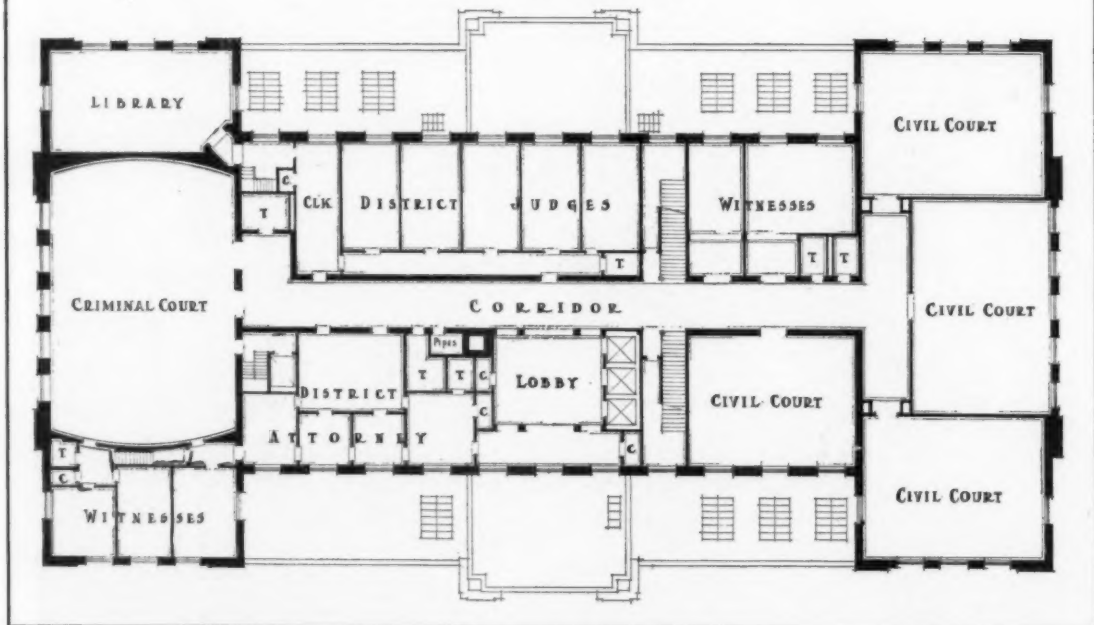


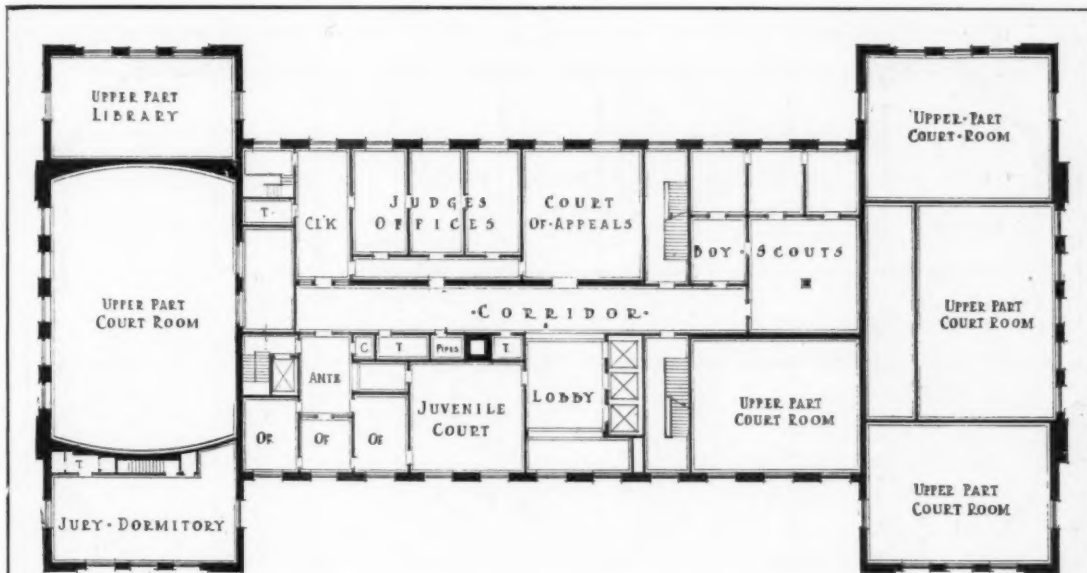
CADDO PARISH COURT HOUSE, SHREVEPORT, L.A.

EDWARD F. NEILD, ARCHITECT

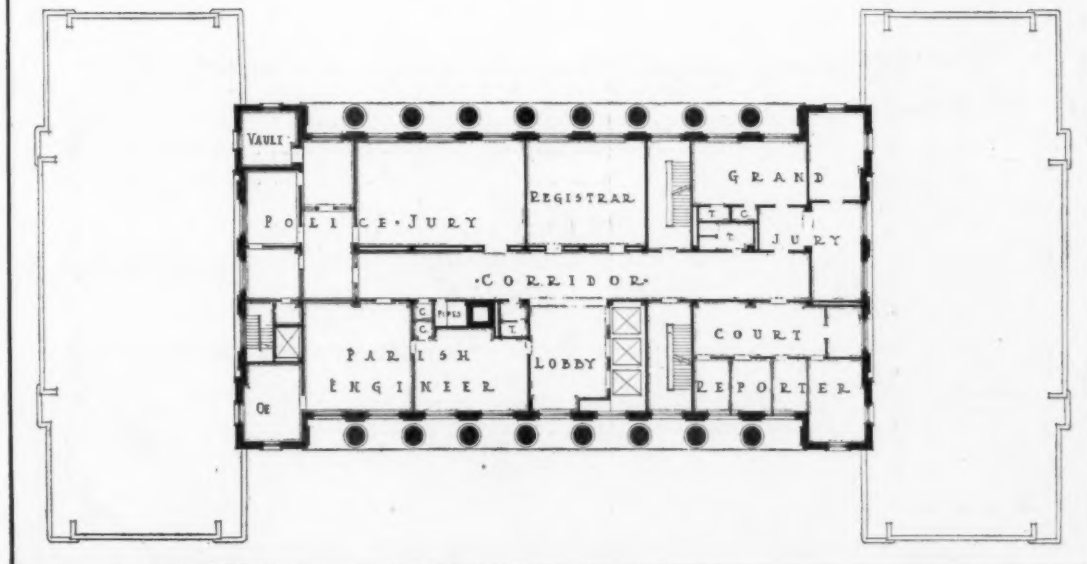


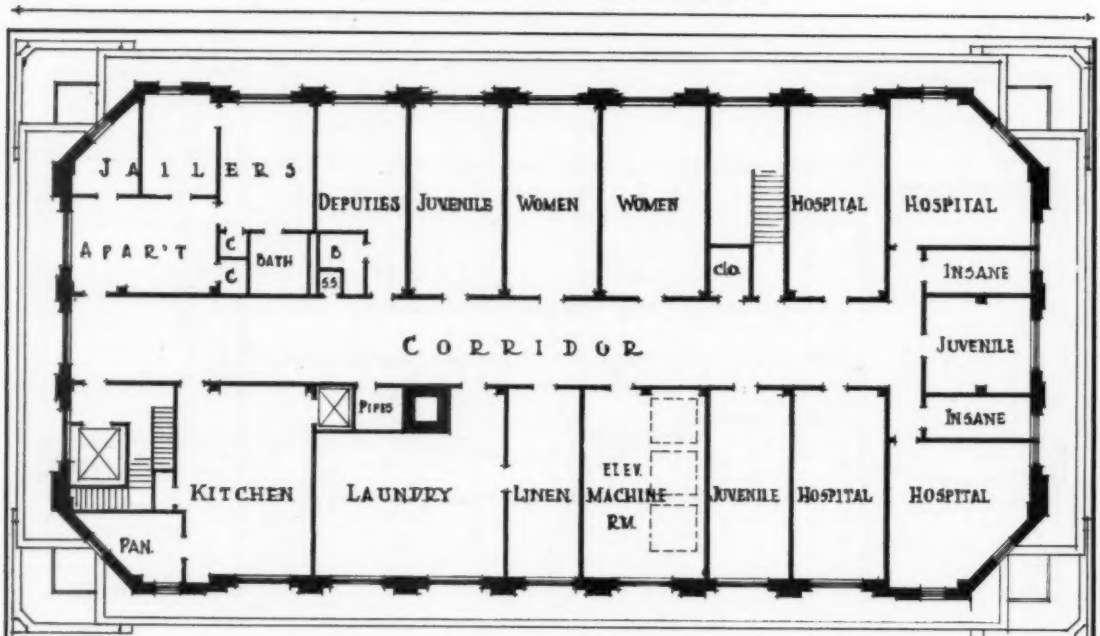
ABOVE: FIRST FLOOR PLAN. BELOW: SECOND FLOOR PLAN
CADDO PARISH COURT HOUSE, SHREVEPORT, LA.
EDWARD F. NEILD, ARCHITECT



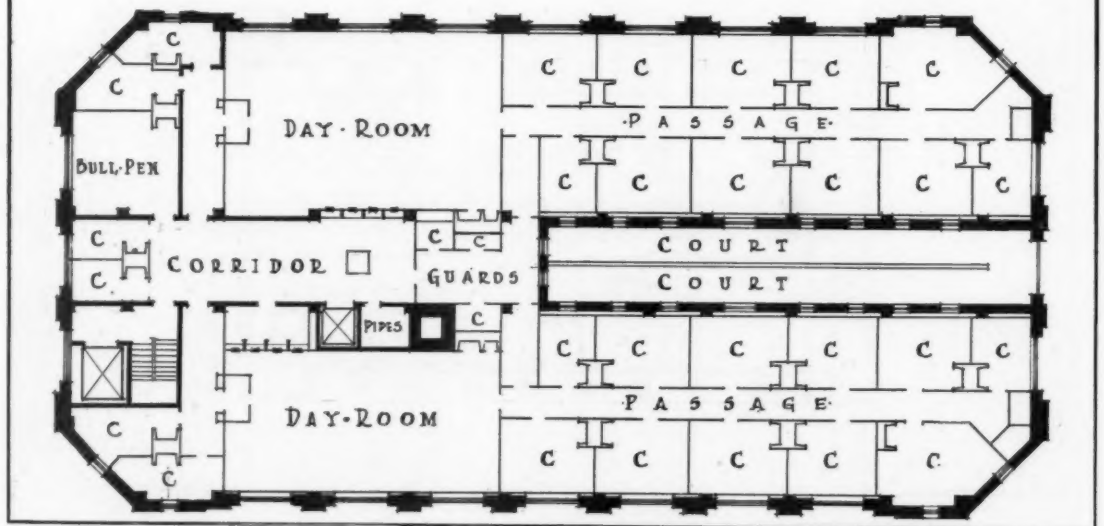


ABOVE: THIRD FLOOR PLAN. BELOW: FOURTH FLOOR PLAN
CADDO PARISH COURT HOUSE, SHREVEPORT, LA.
EDWARD F. NEILD, ARCHITECT





ABOVE: SEVENTH FLOOR PLAN. BELOW: EIGHTH FLOOR PLAN
CADDO PARISH COURT HOUSE, SHREVEPORT, LA.
EDWARD F. NEILD, ARCHITECT





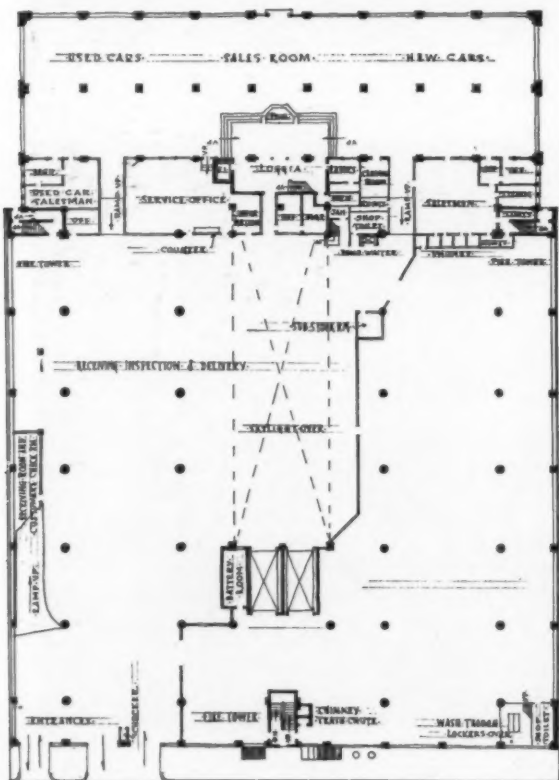
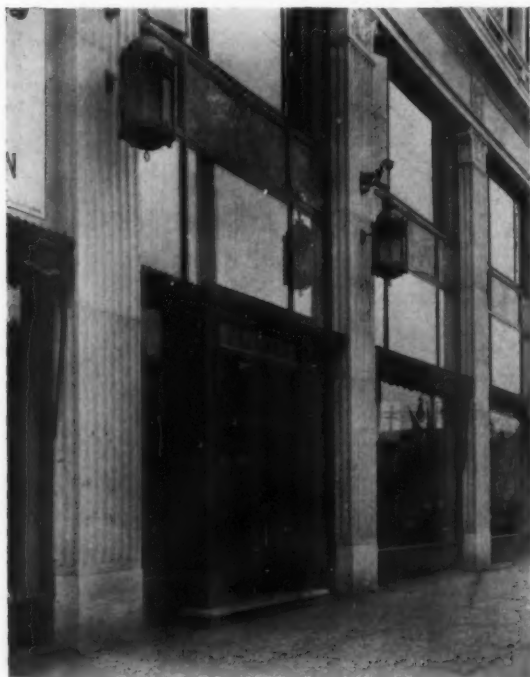
EXTERIOR VIEW



INTERIOR VIEW

PACKARD SALES AND SERVICE BUILDING, PHILADELPHIA, PA.

PHILIP S. TYRE, ARCHITECT



PACKARD SALES AND SERVICE BUILDING,
PHILADELPHIA, PA.

PHILIP S. TYRE, ARCHITECT

THE OUTSTANDING FEATURES OF THE BUILDING, AS A RETAIL, WHOLESALE AND SERVICE BUILDING, ARE AS FOLLOWS: A GREAT SALESROOM, 50' X 190', WITH BEAMED CEILING, ANTIQUE WALLS AND SPANISH FAIENCE TILE FLOOR; A LARGE, COMMODIOUS, QUICK SERVICE AND SERVICE SALES DEPARTMENT ON THE GROUND FLOOR, ACCESSIBLE FROM A FINE STREET IN THE REAR; A CLEAR VISION PARTITION BETWEEN THE SALES AND SERVICE ROOMS, GIVING A VIEW FROM THE SALES ROOM OF THE BUSY SERVICE ROOM IN THE REAR; ACCESSIBILITY OF SALES ROOM TO SERVICE ROOM, SERVICE SALES, QUICK SERVICE, SERVICE ACCOUNTING AND SALESMEN'S QUARTERS; A LOGGIA AND TILED POOL, FORMING A PLEASANT REST ROOM, AND LOBBY, CONNECTING SERVICE AND SALES, AND SALES AND UPPER FLOORS. THE PLATFORM AT LOGGIA FORMS A SPECIAL EXHIBITION SPACE FOR CARS; WIDE COLUMN-FREE SPACES ON SERVICE FLOORS; BULK WINDOWS OF SALES ROOM 17' WIDE, IN NINE BAYS; RICHNESS OF DETAIL IN TREATMENT OF SALES ROOM AND ADJOINING ROOMS, OBTAINED BY THE USE AND TREATMENT OF MATERIALS IN SIMPLE, EFFECTIVE DESIGNS

EFFECT OF WORKMANSHIP ON STRENGTH
OF BRICK MASONRY

By J. W. McBURNEY

(Published by permission of Director, United States Bureau of Standards)

THE United States Bureau of Standards, co-operating with the Common Brick Manufacturers' Association of America, has during the past year, built and tested 159 brick walls. This investigation has been notable both from the standpoints of size and number of test specimens. The following article is confined to the effect of variations in workmanship as affecting the compressive strength of the walls tested. A forthcoming Technologic Paper of the United States Bureau of Standards will contain the complete data secured in the investigation.

—The Editors.

DURING the past year 159 brick walls have been tested at the United States Bureau of Standards. Sixty-six of these were 8-inch and 12-inch solid walls, laid common American bond with headers every seventh course. Ninety-three test specimens consisted of several types of hollow walls and also included twelve 4-inch walls with pilasters.

All test specimens were nine feet high by six feet long and with nominal thicknesses of four, eight and twelve inches according to standard masonry practices. In the complete series, three types of mortar, viz. 1:3 lime sand, 1:1:6 cement-lime-sand, and 1:3 cement sand plus ten per cent by volume of hydrated lime based on the cement content, were used. The 159 walls represented four different makes of brick. These individual brick have been the subject of careful study but for the purposes of this article they are sufficiently characterized by the figures given in Table 1 in which each figure represents an average of 50 tests.

TABLE 1

Region	Method of Manufacture	Compressive Strength (half flat) lb./sq. in.	Modulus of rupture lb./sq. in.	Water Absorption 5 hour boil per cent
Chicago	Stiff Mud End Cut	3280	1225	16.5
Detroit	Soft Mud	3540	670	22.3
Mississippi	Dry Press	3410	820	21.7
New Hampshire	Soft Mud—Sand Struck	8595	1550	9.2

Two different masons were employed in the course of the construction. They will be hereafter referred to as Mason A and Mason B.



BROKEN PORTION OF WALL NO. 18 LAID WITH "SHOVED" WORK BY MASON B. NOTE COMPLETE FILLING OF ALL JOINTS AND THE CONCHOIDAL FRACTURE PASSING THROUGH THE BRICK AND MORTAR

A contract was let to the lowest competitive bidder on a basis of a lump sum for a definite number of walls of the dimensions previously referred to. Mason A was the successful bidder and did the work himself. While the mortar was mixed under careful supervision, care was taken to issue no instructions or make any criticism of workmanship to Mason A. It was the hope and expectation that the resulting grade of workmanship would correspond to ordinary uninspected small construction. On one wall only, hereinafter referred to, were instructions given and supervision exercised.

The work of Mason A was characterized by practically complete absence of vertical joint filling, deep grooving of horizontal joints and comparatively high speed laying. The partial bearing re-

sulting from the grooving of the horizontal joints will be noted in the illustration of this wall, as well as the absence of filling in the vertical joints. In this connection it should be pointed out that the average mason thinks that he eliminates the groove by pressing down the brick. Frequently the bearing is reduced to fifty per cent of the face area of the brick by the groove.

Mason B was employed by the day without reference to output. His work was characterized by complete filling of all vertical joints and leveling of horizontal joints. The filling of vertical joints was accomplished not by the use of "shoved" work but by heavy "buttering" and "slushing," or dashing after completion of the course. His original instructions were to use his best workmanship without "shoving" the brick. At the end of the program Mason B was permitted to use shoved work on two walls, reference to which will be made later. It may be of interest to note that he did not require instruction in filling vertical joints but he had to be cautioned to eliminate grooving. However, he later reported that working without a groove was as easy as working with it.

Mason B worked at all times very carefully and slowly; in fact, his work could be characterized as "fussy" compared with that of Mason A. No choice exists between the general plumbness of the two men's work. Mason B produced in general a neater construction. The illustrations of the end views give the greatest distinction between the work of both men. The production per hour of

Mason A was 2.7 times that secured by Mason B.

The following tables are arranged to make comparisons between workmanship where all factors except workmanship are constant. The description of the typical work of Masons A and B applies to these walls unless otherwise noted. With reference to Wall No. 18 of Table 2 it might be remarked that there is no distinction in appearance between the "shoved" work and "slushed" work of Mason B.

TABLE 2

Three Walls of Chicago Brick. Cement Mortar 1:3			Average	
Wall No.	Mason	Description	Thickness of Mortar Joints	Max. stress
			in.	lb./sq. in.
16	A	12" Solid Typical	0.57	656
17	A	12" " "	.56	656
18	B	12" Solid (Shoved)	.31	Avg. 656 1165
Increase of strength due to workmanship				77 per cent

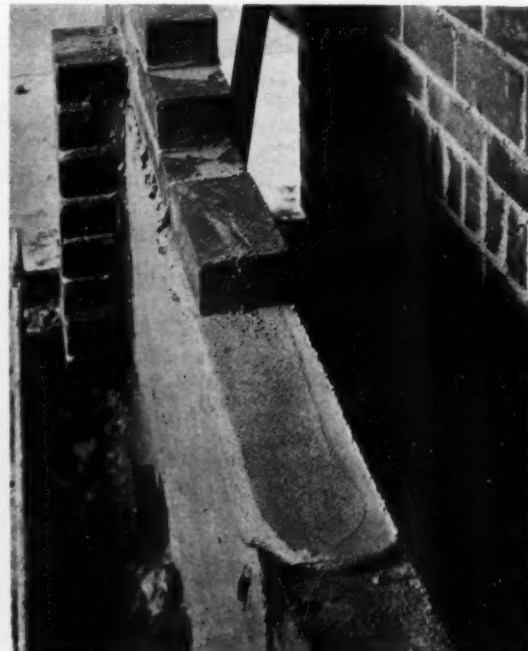
Wall No. 159 (see Table 3) was laid by Mason A under instruction and supervision. The changes in operative technique to be noted are:

(1) Elimination of grooving from horizontal joints.

(2) Better filling of vertical joints between ends of bricks. This was secured by having the mason butter the four-inch edge of the end of the brick, instead of the two-inch edge or side as customary. It was noted that the side buttering produced a much neater appearance on the faces of the wall.



HORIZONTAL MORTAR BED PREPARED BY MASON A. NOTE VERTICAL GROOVING OF MORTAR AND COMPARE WITH WORK OF MASON B



HORIZONTAL MORTAR BED PREPARED BY MASON B. MASON B COMPLETELY FILLED VERTICAL JOINTS AND LEVELED HORIZONTAL JOINTS OR BEDS

TABLE 3

Five Walls of Mississippi Brick. Cement mortar 1:3 plus 10 per cent of hydrated lime by volume of cement

Wall No.	Mason	Description of Walls	Average Thickness of Mortar Joints in.	Max. stress lb./sq. in.
155	A	8" Solid Typical	0.73	870
159	A	8" (see description)	.62	1482
37	B	8" Solid Typical	.52	1333
38	B	8" " "	.44	1407
39	B	8" " "	.40	1406

Average of three walls laid by Mason B. 1382
Increase of strength due to change in workmanship of Mason A. 70 per cent
Increase of strength comparing work of Mason B with typical work of Mason A. 59 " "

(3) The attempt to fill the vertical joints between wythes by "slushing" or "dashing." This, with Mason A, gave about three-quarters of the filling introduced by Mason B. No attempt was made to limit thickness of horizontal mortar joints as is seen in the table. This particular wall was built at an extraordinarily high rate of speed, 264 brick per hour.

TABLE 4

Four walls of New Hampshire Brick. Cement mortar 1:3 plus 10 per cent hydrated lime by volume of cement

Wall No.	Mason	Description	Thickness of mortar joints in.	Max. stress lb./sq. in.
154	A	8" Solid Typical	0.46	2032
97	B	8" " "	.36	2040
98	B	8" " "	.22	2952
99	B	8" " "	.27	2914

Average of three walls laid by Mason B. 2635
Increase of strength due to workmanship. 29 per cent

It should be noted, however, that Wall No. 97 (see Table 4) is distinctly out of line as regards strength. With one exception it is the weakest of the twelve walls of solid construction (4, 8, and 12-inch) built of New Hampshire brick and using cement mortar. Hence it is probable that the percentage increase should be more than the 29 per cent given.

In addition to the solid wall strengths tabulated in Tables 2, 3, and 4, some tests on the effect of variation in workmanship on the strength of three types of 8-inch hollow wall construction, were made. The results given in the table below are on walls built of Mississippi brick using the customary 1:3 cement mortar with 10 per cent addition of lime. The workmanship of Mason A corresponds to his typical work on solid walls. Mason B's work is also typical.

From Table 5, the workmanship of Mason B gave an increase in strength of 112 per cent for Type X, 50 per cent for Type Y and 24 per cent for Type Z, as compared with the results of Mason A.

The results on these hollow walls were somewhat unexpected. In 1922 a series of tests (unpublished) were made at the then Pittsburgh station of the U. S. Bureau of Standards, including solid walls and a few hollow walls. Workmanship corresponding to that of Mason A was used, which on solid walls with a 3300 lbs. per sq. in. compressive strength brick and the same mortars gave wall strengths in agreement with the results



WALL NO. 14 AFTER TEST. BRICKS HAVE BEEN REMOVED TO SHOW TYPICAL BEDDING AS LAID BY MASON A



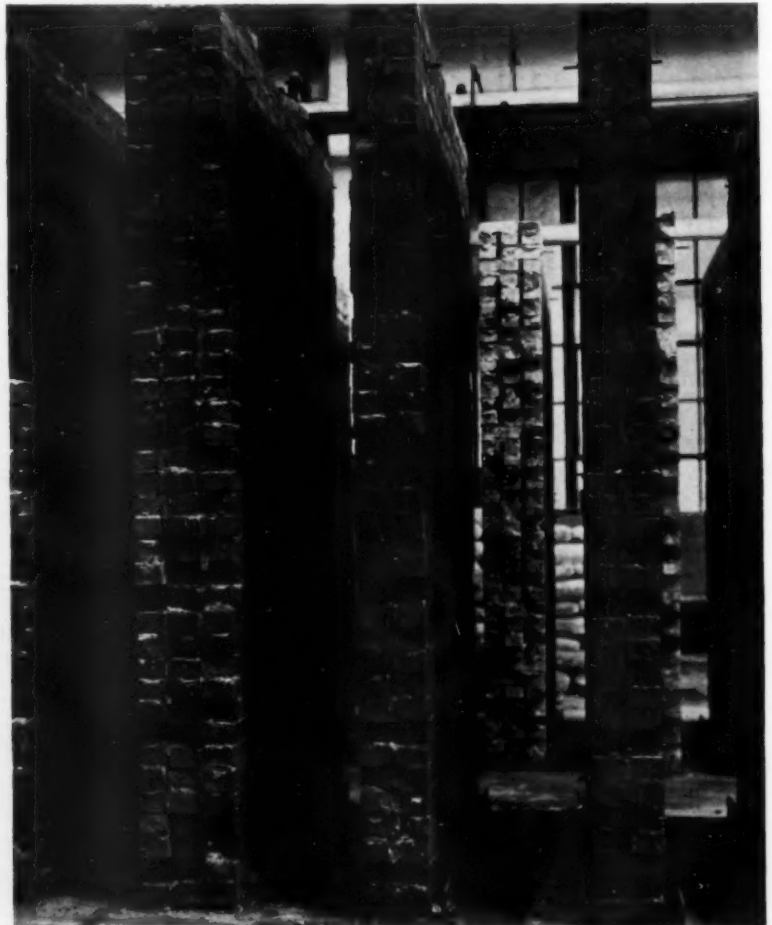
WALL NO. 101 AFTER TEST. BRICKS HAVE BEEN REMOVED TO SHOW TYPICAL BEDDING AS LAID BY MASON B

of the present series. The tests on hollow walls corresponded to the values obtained on the test pieces built by Mason B. This resulted, in the 1922 series, of giving strengths of both solid and hollow walls which were practically equal based on gross area. The tentative theory was advanced prior to the test of Walls No. 156, 157 and 158, that the brick on edge construction of the hollow walls did not permit grooving. However, demolition of these walls after testing, showed that Mason A had been as successful in introducing grooving there as on the regular solid construction.

Using Mason B, a comparison was made between the strength secured from panels built with "shoved" work and with the "slushed" work as regularly employed. In Table 5 the first group is Mississippi brick and the second group New Hampshire brick, 1:3 cement mortar with 10 per cent hydrated lime by volume of the cement.

		TABLE 5		Thickness of	Max.
Wall	Mason	Description		mortar joints	stress
No.		of Wall		in.	lb./sq. in.
52	B	8" Type X		0.46	849
53	B	"		.40	756
54	B	"		.41	1175
				Avg.	927
156	A	"		.66	438
64	B	8" Type Y		.47	823
65	B	"		.43	718
66	B	"		.43	857
				Avg.	799
157	A	"		.65	535
76	B	8" Type Z		.48	924
77	B	"		.42	890
78	B	"		.47	957
				Avg.	924
158	A	"		.62	747

From Table 6 it can be seen that the use of shoved work introduces no improvement in



END VIEWS OF WALLS BUILT BY MASONS A AND B

WALL NO. 8 AT LEFT WAS BUILT BY MASON A. NOTE PRACTICALLY COMPLETE ABSENCE OF VERTICAL JOINT FILLING AND DEEP GROOVING OF HORIZONTAL JOINTS, CHARACTERISTIC OF HIGH SPEED LAYING, AND RESULTING IN ONLY PARTIAL BEARING OF BRICKS. WALLS AT RIGHT WERE LAID BY MASON B. NOTE COMPLETE FILLING OF HORIZONTAL AND VERTICAL JOINTS

strength over the full bedded slushed joint workmanship regularly used by Mason B.

It is obvious from the data of Tables 2, 3, and 4 that a marked increase of strength results from the building of masonry with all vertical joints filled and with full ungrooved horizontal joints. The writer believes that vertical joint filling is of minor importance and that the full bearing of the ungrooved horizontal joints is the main factor in increasing strength. The reasons advanced for this are:

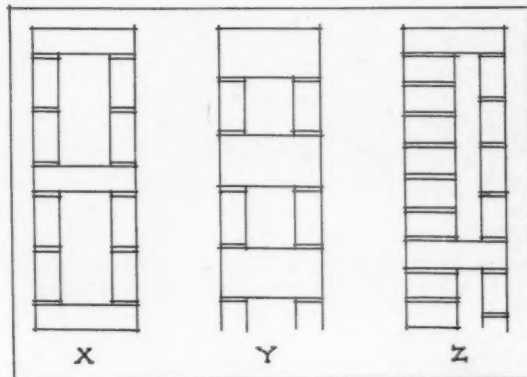
(1) The increase of strength was secured on hollow wall construction where obviously the vertical joints (spaces) are not filled.

(2) High strength was secured with Wall No. 159, Table 3. The vertical joint filling was inferior compared with Walls No. 37, 38, and 39 which No. 159 exceeded in strength.

TABLE 6

Wall No.	Mason	Brick	Description	Thickness of mortar joints in.	Max. stress lb./sq. in.
43	B	Mississippi	12" Solid Typical	0.51	1711
44	B	"	"	.37	1855
45	B	"	"	.42	1349
					Avg. 1638
48	B	"	12" Solid (Shoved)	.42	1463
103	B	New Hampshire	12" Solid Typical	.28	2440
104	B	"	"	.23	3228
105	B	"	"	.23	2696
					Avg. 2788
108	B	"	12" Solid (Shoved)	.22	2718

(3) The only explanation offered of why vertical joint filling should increase the strength is that of restraining the wall by the adhesion of the mortar to the wythes. In contradiction to this is offered the fact that walls made from Chicago brick with workmanship, mortar, etc. identical with other walls of Detroit and Mississippi brick, gave no higher results. The Chicago brick is characterized by a relatively high transverse strength. Hence the extra positive bond introduced by the brick headers, showing no effect, it would seem doubtful if the mortar bonding would produce any result.



METHOD OF LAYING HOLLOW WALLS REFERRED TO IN TABLE 5

The effect of thickness of mortar joints on strength of masonry should be noted. Based upon the data given in Tables 3, 4, and 6, there would seem justification for the statement that *all other things being equal, the thinner the joint, the stronger the masonry*. With one exception, Wall No. 38 of Table 3 in each set of three walls, built by one mason using the same grade of workmanship, the strength of the wall is in reverse order to the thickness of the mortar joint. No such relation is observable on the strength of hollow walls given in Table 5.

A comparison of the percentage increase in strength secured by the use of what may now be referred to as superior workmanship with the compressive strength of brick, leads to the conclusion that *with the use of stronger brick, the advantages gained by superior workmanship diminishes*. This is strikingly shown by plotting the gain in strength due to superior workmanship against the compressive strength of the bricks used. This graph uses, in addition to the data here given, results reported by the Royal Institute of British Architects' "Report on Brickwork Tests," 1905, and by Talbot and Abrams "Tests of Brick Column and Terra Cotta Columns," University of Illinois Bulletin No. 27, 1908.

In summary, the following can be stated about the effects of workmanship on strength of brick masonry:

(1) Workmanship characterized by filled vertical joints and ungrooved horizontal joints will give an increase of strength over the results of workmanship characterized by unfilled vertical joints and grooved horizontal joints of from 24 per cent to 112 per cent.

(2) Where horizontal joints are ungrooved and vertical joints are filled, no effect is produced on compressive strength by shoving as compared with slushing or dashing.

(3) Other things being equal, the thinner the mortar joint the stronger the masonry.

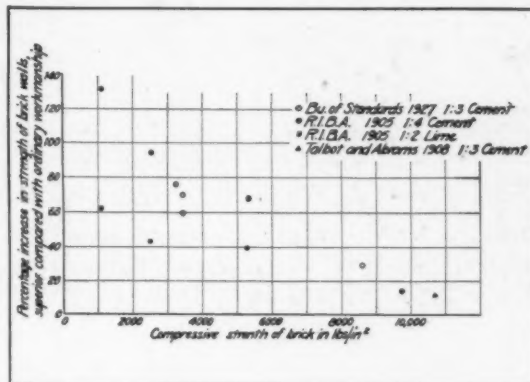


CHART SHOWING GAIN IN STRENGTH BY "SUPERIOR" WORKMANSHIP AS AFFECTED BY STRENGTH OF BRICK

(4) The percentage increase in strength secured by using filled and ungrooved joint workmanship over the other type diminishes with increase in strength of the brick.

BUREAU OF STANDARDS SIMPLIFIED PRACTICE
RECOMMENDATIONS

THE following simplified practice recommendations of the United States Department of Commerce, Bureau of Standards, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for the price noted.

Lumber, Second revision July 1, 1926, Recommendation No. 16, 95 pages, price 15 cents. This recommendation for simplified practice in the manufacture of lumber includes lumber classifications; yard lumber, grade standards, sizes, and marking; shingle, grades, sizes and specifications; structural material; softwood factory and shop lumber; and other data of interest. Details giving the profile and sizes of standard mouldings, trim and frame material are shown.

Sheet Steel, first revision January 1, 1926, Recommendation No. 28, 15 pages, price 5 cents. Simplification of sizes for various gauges of steel sheets; table of U. S. standard gauges and brief history of the movement to simplify sheet steel practice are included in this publication.

The following Elimination of Waste, Simplified Practice Documents, have recently been issued:

A Primer of Simplified Practice, by Ernest L. Priest. No. RXIII. A statement of the purpose, advantages and application of simplified practice in industry. 58 pp. Ill. Size, 6x9 ins. Price, 15 cents.

Builders' Hardware, Simplified Practice Recommendation No. 18. 72 pp. Size, 6x9 ins. Price, 10 cents.

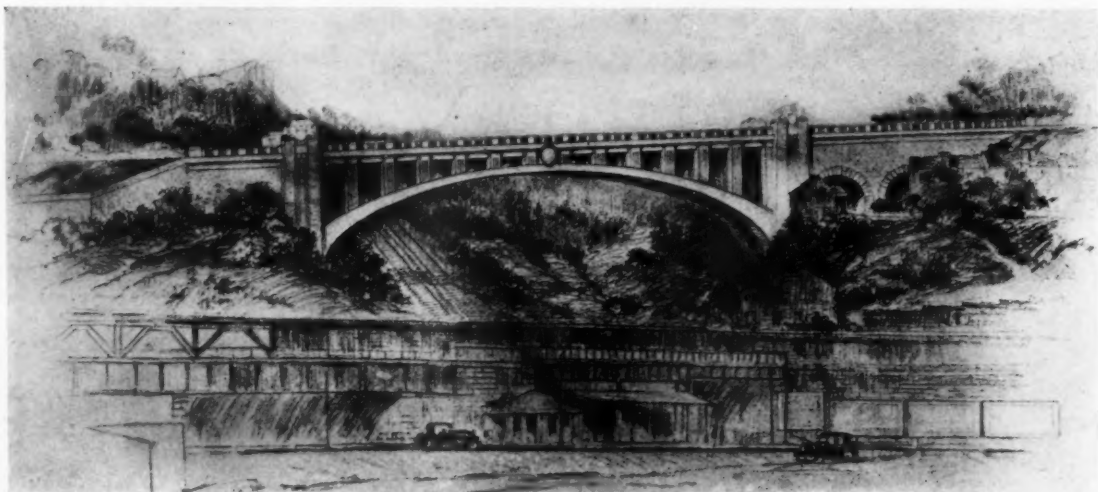
Staple Vitreous China Plumbing Fixtures, Simplified Practice Recommendation No. 52. Contains list of standard shapes, sizes and dimensions. 26 pp. Ill. Size, 6x9 ins. Price, 5 cents.

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U. S. GOVERNMENT MASTER SPECIFICATION
FOR PORTLAND CEMENT

CIRCULAR of the Bureau of Standards No. 33 contains U. S. Government Master Specification No. 1a, officially promulgated by the Federal Specifications Board for the use of departments and independent establishments of the Government in the purchase of Portland cement. This specification covers chemical properties, physical properties, packing and marking, inspection, and tests. Bureau of Standards Circular No. 33, 18 pages, illustrated, may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents per copy.



MT. WASHINGTON ROADWAY BRIDGE, PITTSBURGH, PA.

STANLEY L. ROUSH AND J. VERNON WILSON, ARCHITECTS

A HOUSE BUILT LIKE A SKYSCRAPER

ROBERT TAPPAN, *Architect*

THIS is the age of the mass production of ready-made articles. It is the logical result of our industrial and commercial civilization and brings within the purchasing power of the general public things which formerly were possessed only by the wealthy. The quality of ready-made articles is naturally variable, but there is a constant effort for improvement as the buying power of the public increases.

Probably the greatest number of individual capital investments is in dwellings which are ready-made. These investments are, in the aggregate, one of our most important economical factors and worthy of consideration. The outstanding quality of dwellings should be durability. The majority of these investments are encumbered by some form of mortgage which are amortized in from nine to eleven years. It is but reasonable for the purchaser to expect to have a valuable asset in his dwelling when his equity is complete. Unless the dwelling possesses the quality of durability, this does not result. It is with the idea of improving the quality of ready-made and all dwellings that the use of structural steel is being developed.

Basically, a dwelling consists of certain essential units in the form of rooms designed for a particular purpose. The size and arrangement of these room units may be varied to suit individual tastes and requirements. This variation in size can be segregated into groups, resulting in dwellings of different costs and capacities. The arrangement is primarily a matter of convenient use and permits of less variation than size. Convenience is a natural, scientific proposition and when once secured it can very properly be repeated. The dwelling can be faced in different directions as most suitable for the local conditions and the plan remain unchanged.

Standardization of plan is an important economical factor in production as it influences probably seventy-five per cent of the total cost. The variable factors which affect the appearance of the

structure represent the balance of the cost. These variants are the character of the enclosing walls, roof covering, color, location and shape of the entrances and porches, location and design of the chimneys, and other factors which might be termed as accessories and equipment of a dwelling. They have to do with appearance which gives the structure the essential quality of individuality, and add to the convenience and comfort of the occupants. The structure of clothing is basically uniform in their parts; the variation is in color, texture and the individual variants.

The structural steel frame recently erected in Forest Hills, Long Island, and now being incorporated in a complete dwelling, is of the most simple character. The steel frame of the skyscraper was taken as a model and the design was developed without reference to the practices employed in constructing wooden frames for dwellings. It is an application of structural steel as such.

All of the steel parts in this particular design consist of what are technically termed "standard shapes." The framing of the exterior

walls, interior partitions and what might be termed roof trusses was assembled on the ground and placed in position by hand power only. The construction was bolted together.

The side walls of the house were in two-story high sections, the end walls in one-story high sections, between which the ends of the second and attic floor beams were placed. The partitions were made in one-story heights. Each wall and partition section was made of 4" I-beams spaced 4'-0" on centers and had a sill and top plate. This sill and top plate were made of two 2" x 1 1/4" x 1/4" angles, between the upright legs of which the ends of the 4" I-beams were placed and fastened thereto with four bolts.

The sills and top plates are rigidly connected with an I-shaped piece of sheet steel, the ends of which engage with the horizontal legs of the two angles and are bolted together through the web of



HOUSE AT FOREST HILLS, LONG ISLAND, N. Y.

ROBERT TAPPAN, ARCHITECT



the floor beam. This is a very simple and effective connection that requires but one bolt.

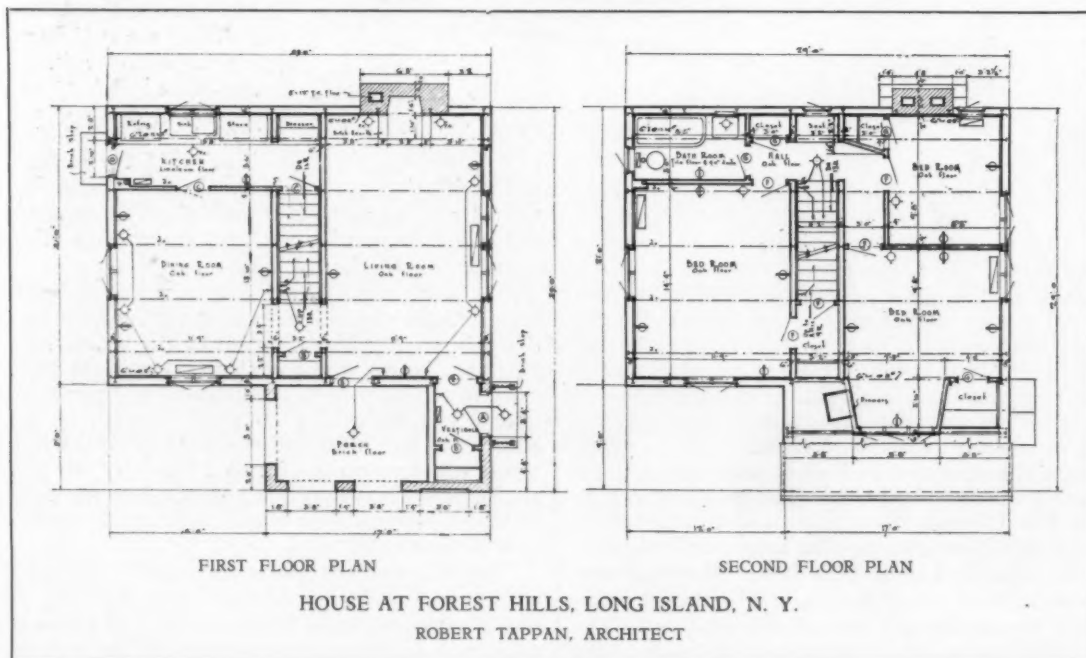
Each flight of stairs was delivered at the building assembled, placed and fastened in position as a unit. The metal lath and plaster soffit, tread finish and paint complete them. The erection of such a frame is a simple matter and the time consumed will depend on the number of men employed. Under ordinary conditions, the frame of a house, such as here described, can be easily assembled, erected, plumbed and completely bolted in less than a day's time. Six tons of structural steel were used in this project.

There are various types of incombustible floor construction which can safely support the floor loads of the 4'-0" spans of this design. The same

applies to the metal lath and plaster ceilings. The floors can be finished in tile, linoleum or even hardwood without increasing the fire hazard.

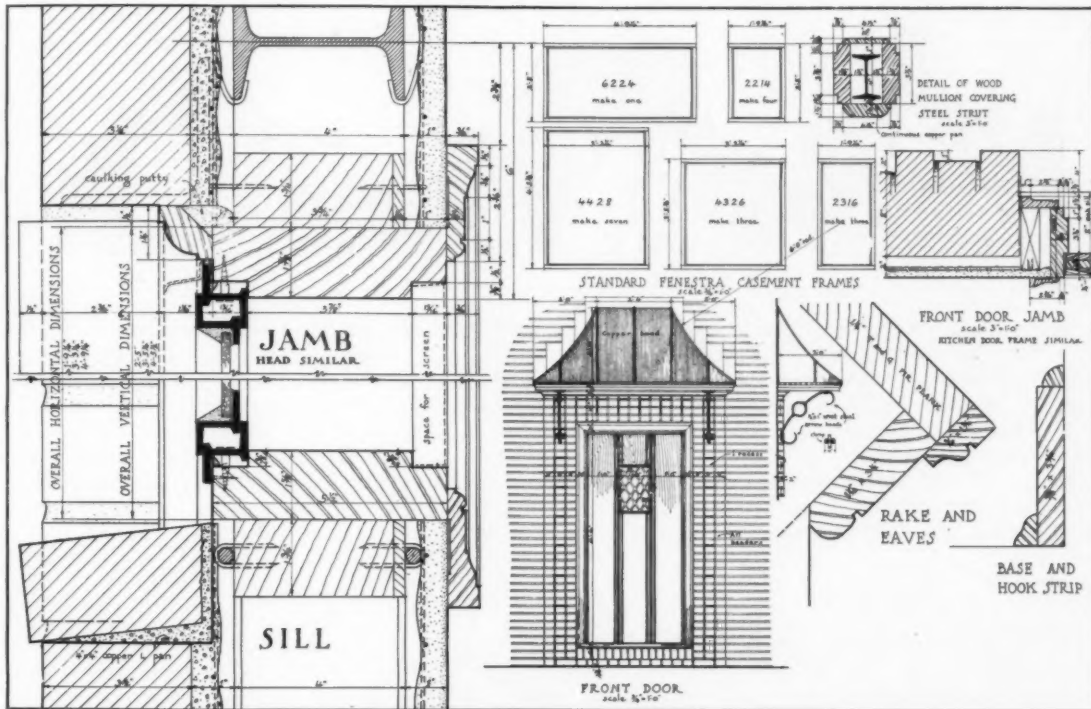
There are numerous ways of constructing the exterior walls so that they will be fire-resistive, waterproof and insulated against heat transmission. It is a matter of choice which will be governed largely by the architectural style and appearance desired as well as local conditions.

Such steel frames can be designed for special resistance to cyclones and earthquakes without marked increase in cost. The requirements for such resistance are well understood by structural engineers who have studied the effects of such disturbances of nature. The steelwork must be thoroughly protected against contact with water and air which

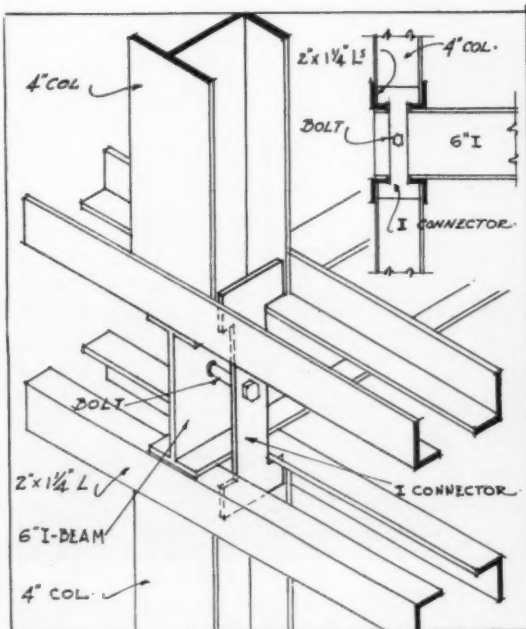


HOUSE AT FOREST HILLS, LONG ISLAND, N. Y.

ROBERT TAPPAN, ARCHITECT



MILLWORK DETAILS SHOWING WALL CONSTRUCTION



AT LEFT: DETAIL OF CONNECTION OF FIRST AND SECOND STORY END WALL COLUMNS AND SECOND STORY FLOOR BEAMS. NOTE THAT THE I-CONNECTOR WHICH HAS A SLIGHT BEND TIES THE THREE MEMBERS AND REQUIRES BUT ONE BOLT. TIGHTENING THE BOLT AUTOMATICALLY CAUSES THE I-CONNECTOR TO SECURELY GRIP ALL MEMBERS. A SIMPLE CONNECTION THAT MAKES FOR SPEED IN ERECTION. AT RIGHT: DETAIL OF SIDE WALL FRAMING SHOWING COLUMNS EXTENDING THROUGH TWO STORIES

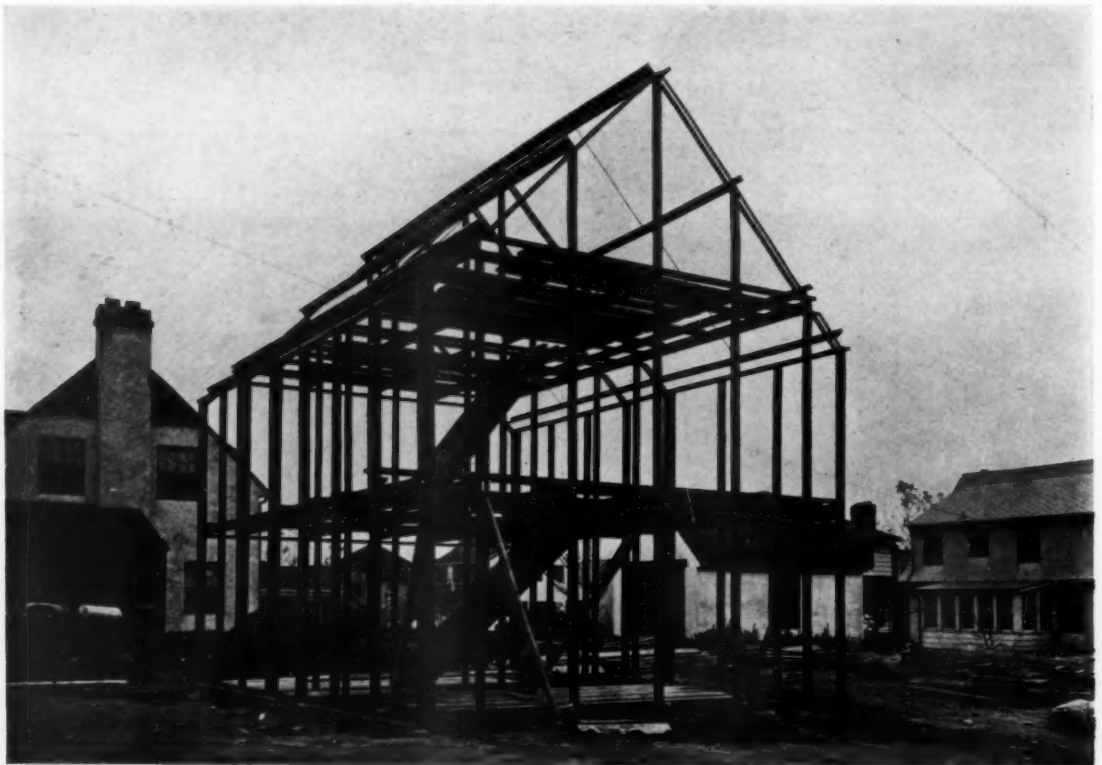
HOUSE AT FOREST HILLS, LONG ISLAND, N. Y.—ROBERT TAPPAN, ARCHITECT



would result in its corrosion. In general, the steel-work must be thoroughly and adequately painted with a suitable protective coating and encased in masonry or other material which will effectively exclude the weather. It must also be protected from the effects of the burning of the contents of the rooms or adjacent exterior fires. A protection which would keep the temperature of the steel to 1000° F. or less would be entirely adequate. The combustible

contents of a dwelling are not sufficient to make fire resistance a difficult thing to attain.

All of these requirements are well understood by architects and they can be secured in many different ways. It is the universal adaptability of the steel frame to the numerous schemes of fire-resistive wall and floor construction that makes its increasing future use most promising, and, withal, conserve the capital investment of the home owner.



GENERAL VIEW OF STEEL FRAME COMPLETED
HOUSE AT FOREST HILLS, LONG ISLAND, N. Y.
ROBERT TAPPAN, ARCHITECT

A GROUP OF BUILDINGS OF MODERATE COST

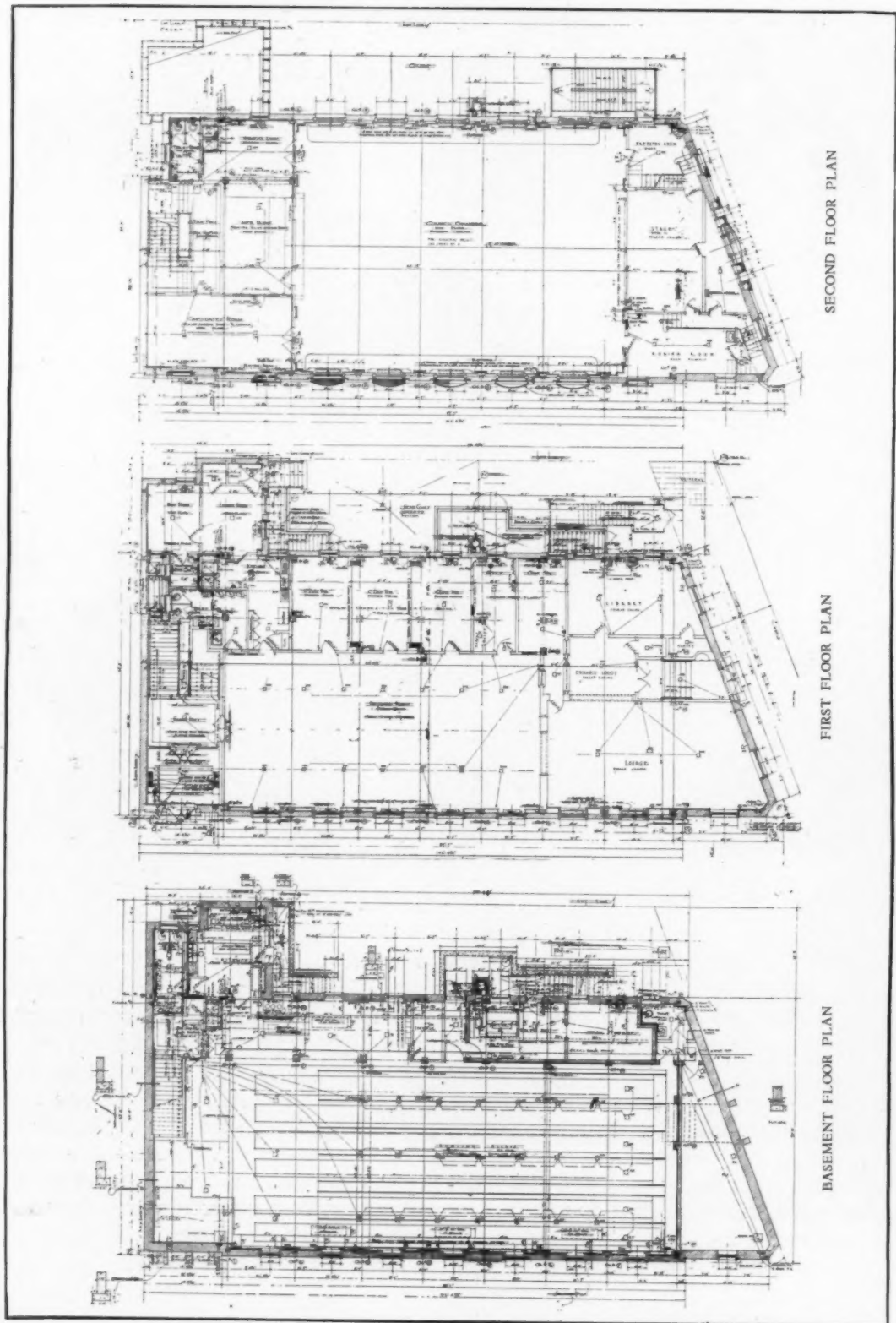
WITH DETAILS OF CONSTRUCTION, MATERIALS AND CUBIC COST



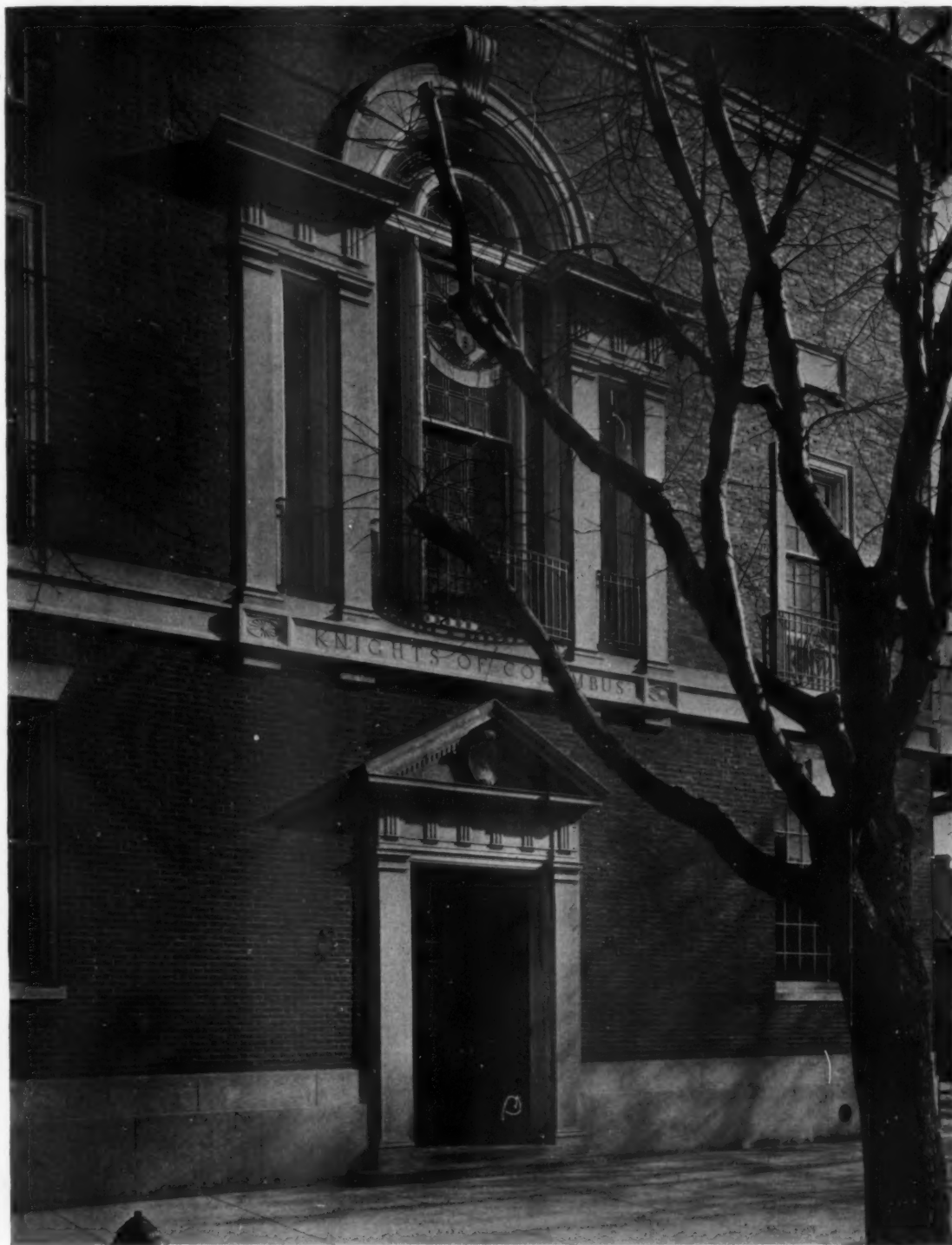
KNIGHTS OF COLUMBUS BUILDING, BROOKLYN, N. Y.

ROBERT J. REILEY, ARCHITECT

THE EXTERIOR WALLS ARE OF HARVARD BRICK WITH ASHLAR STONE TRIMMINGS. THE BUILDING IS CONSTRUCTED OF A STEEL FRAME AND HOLLOW TILE. THE ROOF IS OF GRAVEL. INTERIOR PARTITIONS ARE ALSO OF HOLLOW TILE COMBINED WITH GYPSUM BLOCK, AND FINISHED IN VARIOUS CASES IN MARBLE, TILE AND PLASTER. THE FLOORS ARE OF WOOD, CORK, TILE AND TERRAZZO. INTERIOR TRIM IS OF WOOD AND HOLLOW METAL. THE BUILDING WAS ERECTED IN 1925 AT A COST OF 63 CENTS PER CUBIC FOOT. THE LOT OVERALL MEASURES APPROXIMATELY SEVENTY FEET BY ONE HUNDRED AND TWENTY FEET. THERE ARE SIX BOWLING ALLEYS IN THE BASEMENT, A LARGE BILLIARD ROOM ON THE FIRST FLOOR AND A COUNCIL CHAMBER OVER SIXTY FEET LONG ON THE SECOND FLOOR. THE INFLUENCE OF THE GEORGIAN IS EVIDENT IN THE DESIGN OF THE EXTERIOR. THE MAIN ENTRANCE DOORWAY IS DIGNIFIED AND INTERESTING, AND DIRECTLY ABOVE IT IS A PALLADIAN WINDOW WHICH IS THE FEATURE OF THE ENTIRE FACADE



KNIGHTS OF COLUMBUS BUILDING, BROOKLYN, N. Y.
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ENTRANCE DETAIL

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COUNCIL CHAMBER



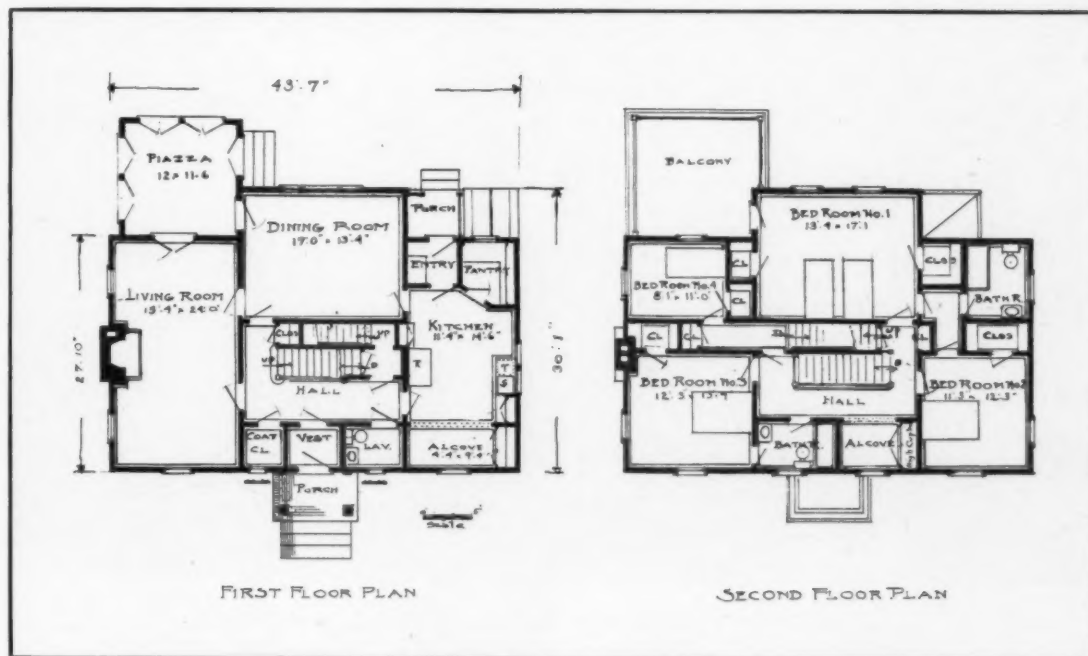
BILLIARD ROOM

KNIGHTS OF COLUMBUS BUILDING, BROOKLYN, N. Y.

ROBERT J. REILEY, ARCHITECT



HOUSE OF G. M. ROSENTHAL, PITTSFIELD, MASS.
HARDING AND SEAVER, ARCHITECTS





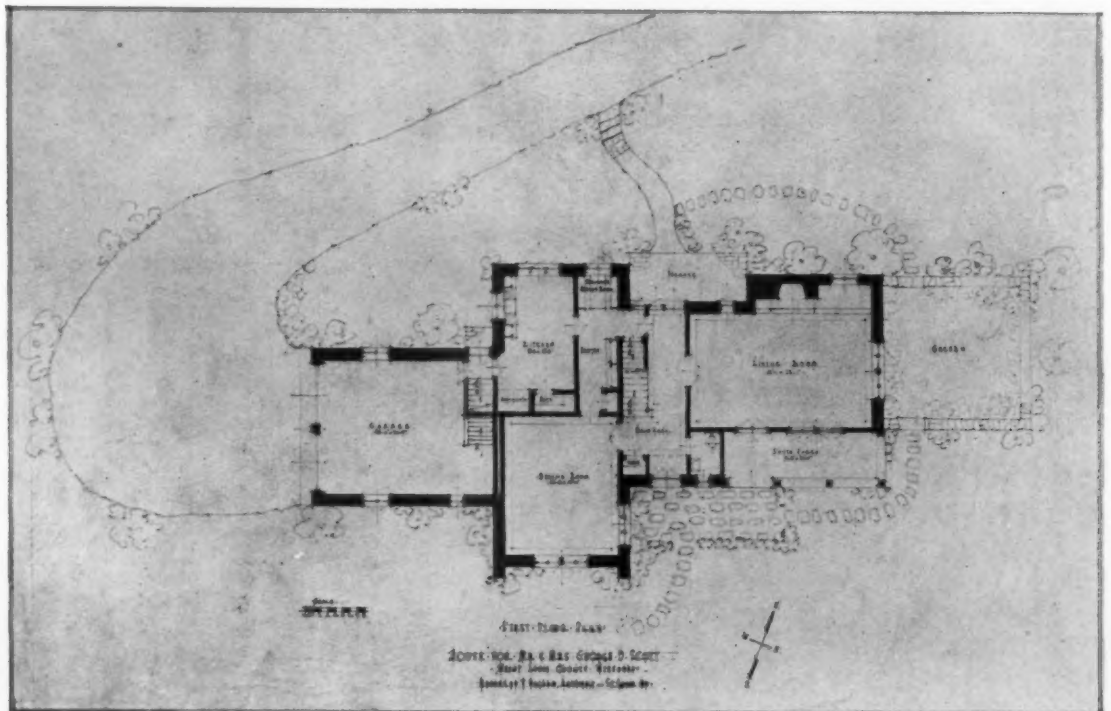
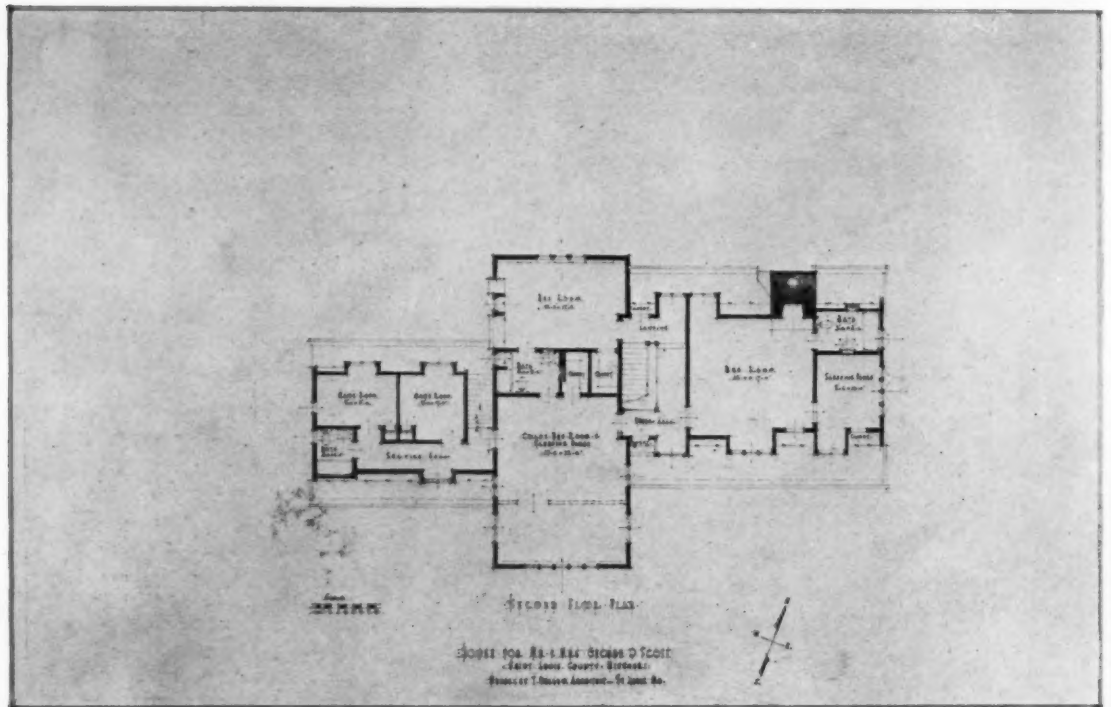
ENTRANCE DETAIL, HOUSE OF G. M. ROSENTHAL, PITTSFIELD, MASS.

HARDING AND SEAVER, ARCHITECTS



HOUSE OF GEORGE D. SCOTT, ST. LOUIS COUNTY, MO.

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BUILDING UNION STANDS AGAINST WAGE CUTS

BUILDING trades wages are well stabilized at present high levels and there is little likelihood of any material reduction in rates this year, according to the National Monthly Building Labor Survey of the *Building Economic Research Bureau* of the American Bond and Mortgage Company.

The Bureau based its conclusion largely upon information and data gathered at the twenty-first annual convention of the Building Trades Department of the American Federation of Labor held recently at Los Angeles. Representatives of more than 1,000,000 organized building workers attended this meeting and were unanimous in the opinion that wage reductions were out of the question as they anticipate no serious decline in building operations for many months.

Hope of relief from present high rates, said the survey, was dispelled when the convention unanimously acclaimed the address of President William Green of the American Federation of Labor, in which he declared that it should be the purpose of building unions "to raise wages, shorten hours of labor and improve the conditions of employment." He also gave encouragement to the five-day week movement which has been largely advocated by the building trades.

Reports to the convention showed that the unions are numerically and financially stronger today than at any previous time in history, and a greater degree of harmony and co-operation exists among the various trades than ever before. The membership of the Building Trades Department has increased 26,000 in the last ten months, not including the reaffiliation of the United Brotherhood of Carpenters and Joiners with its 350,000 members.

The action of the convention in unanimously voting to withdraw from the National Board of Jurisdictional Awards has caused considerable uneasiness in building circles, as it is expected to result in another epidemic of jurisdictional strikes, which previous to the establishment of the Board interfered seriously with construction progress. Unless the building unions immediately take some action toward establishing a new medium of settling jurisdictional disputes, employers in a number of sections have announced their intention of moving for state and federal legislation to meet the situation.

The reason given by the building trades for withdrawing from the Board of Awards was that The American Institute of Architects, the American Engineering Council, the National Association of Building Trades Employers and the Associated General Contractors had made no sincere attempt to carry out the Board's decisions. The convention action was followed by the reaffiliation of the Car-

penters' Union which withdrew from the department six years ago because of an unfavorable decision awarding the installation of metal trim work to the sheet metal workers.

Reports from various cities indicated that the building trades were well employed, although a surplus of labor exists in a number of cities, especially in the larger eastern centers. There was some indication that a greater unemployment due to seasonal slackness, might be expected in the industry, but union leaders were of the opinion that no prolonged decline was in prospect.

One of the outstanding actions of the convention was the endorsement of vocational training for apprentices in the building trades. Opposition, however, was expressed to the so-called trade schools which are operated for profit.

Reports to the American Bond and Mortgage Company show that building wages during the last month have been virtually unchanged and that general construction costs are $2\frac{1}{2}$ per cent below October, 1926. The decline is largely due to reductions in building material prices.

Except for a few local disturbances, the labor situation is tranquil throughout the country. The organized crafts are showing a disposition to peacefully adjudicate controversies with employers, as has been demonstrated in New York City where the Building Trades Council and the Building Employers' Association have ratified an agreement continuing the present wage scales until December 31, 1929. Thirty different unionized crafts with over 100,000 members are affected by this contract.

Building material prices continue their downward trend, particularly in lumber and bricks.

Survey of building trades rates in the leading cities of the country shows that New York craftsmen are the highest paid, bricklayers receiving \$1.75 per hour; carpenters, \$1.50; hoisting engineers, \$1.75, and common laborers 90 $\frac{3}{4}$ c. St. Louis is a close second with a rate of \$1.75 per hour for bricklayers, \$1.50 for carpenters, \$1.50 to \$1.65 for hoisting engineers, and from 40c. to 75c. for common laborers; Pittsburgh, third, with \$1.70 per hour for bricklayers, \$1.50 for carpenters, \$1.50 for hoisting engineers, and 40c. to 80c. for common laborers; Chicago, fourth, with \$1.62 $\frac{1}{2}$ per hour for bricklayers, \$1.10 to \$1.50 for carpenters, \$1.00 to \$1.50 for hoisting engineers, and 82 $\frac{1}{2}$ c. to 90c. for common laborers.

The lowest wage scale was reported from Tallahassee, Fla., which is unorganized with the exception of bricklayers' and carpenters' unions. Bricklayers receive \$1.50 per hour; carpenters, 75c.; hoisting engineers, 50c., and common laborers, 25c. Raleigh, N. C.; Knoxville, Tenn., and other southern cities reported correspondingly low rates.



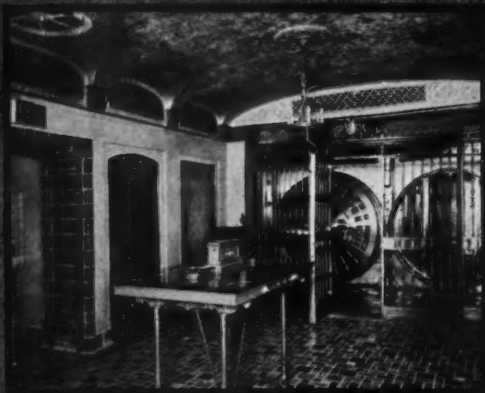
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THE ARCHITECTURAL FIVE-FOOT SHELF
Editor, THE AMERICAN ARCHITECT:

IN answer to your request in the issue of THE AMERICAN ARCHITECT for September 5, I have made a list of a five-foot shelf of architectural books which I hope may prove of use to you.

I have tried to cover the subject of architecture with titles that would prove most interesting for use in an architect's office, listing books which for the most part are still in print either in the original or reprint editions. Of course, it does not pretend to be complete, but just a suggestion of some of the most useful publications in the field.

The measurement of five feet holds only if the publications which came originally in portfolio are kept in the unbound form. If such volumes as the two d'Espouys, Ware's, "Georgian Period," and Reagan's "American Architecture of the Twentieth Century" are measured in the bound form, the collection will occupy more than five feet.

R. V. COOK, Librarian,
Harvard University School of Architecture.
Cambridge, Mass.

The list referred to in the above communication is as follows:

A FIVE-FOOT SHELF OF ARCHITECTURAL BOOKS
FOR AN ARCHITECT'S OFFICE

History, Theory, Law

- Blake, C. H. The Architect's Law Manual. New York, Pencil Points Press, 1924. \$5.00
Curtis, N. C. Architectural Composition. Cleveland, Jansen, 1923. 6.00
Fletcher, Banister. History of Architecture. Latest edition. London, Batsford (about 1925) 12.00
Harbeson, J. F. The Study of Architectural Design. New York, Pencil Points Press, 1926. 7.50
Kimball, Fiske and George H. Edgell. A History of Architecture. New York and London, Harper and Brothers, 2nd edition, 1926. 3.75
Ware, W. R. The American Vignola. Scranton, International Textbook Co., 1920. 2 vols. . . Each vol., 2.50

Ancient Greece and Italy

- D'Espouy, H. Fragments d'Architecture Antique d'après les relevés et restaurations des anciens pensionnaires de l'Académie de France à Rome. Paris, Ch. Massin et Cie. 2 vols. Each vol., 250 francs in portfolio in France, or each volume \$30.00

Medieval

- Baum, Julius. Romanesque Architecture in France. London, W. Heinemann, 1912. About 10.00
Pugin, A. C. Gothic Ornaments selected from various ancient buildings, both in England and France. Exhibiting every description of decorative detail from the eleventh to the beginning of the eighteenth century. London, 1854. 91 plates. About 25.00
Ricci, Corrado. Romanesque Architecture in Italy. New York, Brentano's Inc. (1925?) 10.00
Van Pelt, J. V. Selected Monuments of French Gothic Architecture. A reprint. (100 plates of Gothic architecture selected from "Monuments Historiques" and "Cathedrals de France".) New York, Pencil Points, about 1925. 6.00

- Van Pelt, J. V. Masterpieces of Spanish Architecture. A reprint. New York, Pencil Points, about 1926 (100 plates of details, sections and elevations of Spanish architecture in the Romanesque and closely allied styles) 6.00

Renaissance—France

- Cook, Theodore Andrea. Twenty-five great houses of France. London, Offices of "Country Life." New York, C. Scribner's Sons, 1916. 25.00
Planat, Paul. Le Style Louis XIV—palais, châteaux, monuments publics, hôtels particuliers, maisons, chapelles, églises, places monumentales, etc. Vues extérieures et vues intérieures, détails d'architecture et de sculpture décorative à grande échelle. 140 planches. Paris, Librairie de Construction Moderne, about 1912. frs. 165
Planat, Paul. Le Style Louis XVI. Paris, Librairie de Construction Moderne, about 1907 (similar to volume on Louis XIV) frs. 165
Rümler, E. Le Style Louis XV. Paris, Librairie de Construction Moderne, about 1914. frs. 165

Renaissance—Great Britain

- Belcher, J. E., and M. E. Macartney. Later Renaissance Architecture in England. A series of examples of the domestic buildings erected subsequent to the Elizabethan period. London, Batsford, 1901. 2 vols. Original edition, \$135; reprint about. . . 12.00
Garner, Thomas, and Arthur Stratton. The Domestic Architecture of England during the Tudor period, illustrated in a series of photographs and measured drawings of country mansions, manor houses and smaller buildings, with historical and descriptive text. London, B. T. Batsford, 1911. Original edition about \$75; reprint about. 12.00

Renaissance—Italy

- Letarouilly, Paul. Edifices de Roma Moderne, ou Recueil des palais, maisons, églises, convents, et monuments publics de la ville de Rome. Paris, F. Didot frères, 1904. Washington, D. C., Reprint Co., Inc. 3 vols. (a reprint of plates only). Reprint 3 vols., bound. 67.50
Stegmann, Carl von, and Heinrich von Geymüller. The Architecture of the Renaissance in Tuscany, illustrating most of the important churches, palaces, villas and monuments. New York, Architectural Book Publishing Co., 1924. 2 vols. Each vol., 30.00

Renaissance—Mexico

- Bossom, Alfred C. An Architectural Pilgrimage in Old Mexico. New York, C. Scribner's Sons, 1924. 110 plates. About 20.00

Renaissance—Spain

- Prentice, Andrew Noble. Renaissance Architecture and Ornament in Spain. A series of examples selected from the purest works executed between the years 1500-1560, measured and drawn. London, B. T. Batsford, about 1893. Reprint edition. 20.00

Modern Architecture in Europe

- Ahlberg, Hakon. Modern Schwedische Architektur mit einer vorrede von Werner Hegemann. Berlin, E. Wasmuth, 1925. 156 plates, including plans. . . 20.00
Bennett, T. P. Architectural Design in Concrete. Photographs compiled by F. R. Yerbury. 100 plates. New York, Oxford University Press, American Branch, 1927. (Includes modern American as well as European buildings) 10.00
Roux-Spitz, Michel. Exposition des Arts Décoratifs, Paris, 1925. Batiments et jardins. Cent planches en héliogravure. Paris, Albert Lévy, Librairie Centrale des Beaux-Arts, 1925. Bound frs. 275

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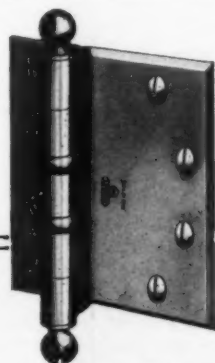
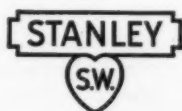
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American Architecture

Hopkins, Alfred. American Country Houses of Today, 1927. New York, Architectural Book Publishing Co., 1926.	About 8.00
Hubbell, Lucy Embury. The Book of Little Houses. Garden City, New York, Doubleday, Page and Co., 1927.	About 5.00
Kimball, Fiske. Domestic Architecture of the American Colonies and of the Early Republic. New York, C. Scribner's Sons, 1922.	15.00
McKim, Mead and White. A Monograph of the Work of McKim, Mead & White, 1879-1915. New York, The Architectural Book Publishing Co., about 1915. 4 vols. of plates.	About 30.00
Newcomb, Rexford. The Old Mission Churches and Historic Houses of California. Their History, Architecture, Art and Lore. Philadelphia and London, J. B. Lippincott Co., 1925.	15.00
Reagan, Oliver, editor. American Architecture of the Twentieth Century; a series of photographs and measured drawings of modern civic, commercial and industrial buildings. Part I, II, already published. New York, Architectural Book Publishing Co., 1927.	Each part, 8.50
Simons, Albert, and Samuel Lapham, Jr. The Octagon Library of Early American Architecture. Vol. I on Charleston, South Carolina. New York, Press of The American Institute of Architects, Inc., 1927 (other volumes to be published later)	20.00
Totten, George Oakley. Maya Architecture. Washington, D. C., The Maya Press, about 1926 (fine plates)	About 30.00
Ware, W. R., editor. The Georgian Period. 3 vols. Boston, 1898-1902.	
Original edition (6 portfolios) now	60.00
Student's edition, 1 vol.	25.00
Whitaker, Charles Harris. Bertram Grosvenor Goodhue, Architect and Master of Many Arts, New York, Press of the American Institute of Architects, 1925. 273 plates.	30.00
<i>Drawing, Perspective, Lettering</i>	
Brown, Frank C. Letters and Lettering. Boston, Bates and Guild, 1921.	3.00
Guptill, Arthur L. Sketching and Rendering in Pencil. New York, Pencil Points Press, about 1925.	5.00
Lubschetz, B. J. Perspective; and elementary text book. 4th edition. New York, D. Van Nostrand Co., 1926.	2.00
McGoodwin, Henry. Architectural Shades and Shadows. New York, Wm. Helburn, 1922.	4.00

REPORT ON PROGRESS OF STATE PUBLIC IMPROVEMENTS

A REPORT of about 140 pages carrying many illustrations outlining the work being done by New York State at the present time in the construction of buildings intended to relieve the congestion at state hospitals for the insane, institutions for mental defectives and other wards of the state, and likewise the state's program of highway construction, grade crossing elimination, and park development, was recently issued by Governor Alfred E. Smith. This report appears to be the most comprehensive one of its kind ever issued in New York State, and was prepared at the direction of the

Governor by the committee on public improvements of the cabinet.

The New York State building program at the present time ranks second only to that of the federal government. There are 89 separate building projects now under way, involving 180 separate contracts, and representing a total contract value of over \$34,000,000. Last year the value of buildings completed by the state was about \$7,500,000. By the end of 1927 there will be double that amount.

FIFTY-SEVEN CASH PRIZES FOR A SLOGAN

THE National Lumber Manufacturers' Association has announced a competition to secure a suitable slogan about wood. Fifty-seven cash prizes aggregating \$15,000.00 are offered for slogans descriptive of the virtues and utility of wood. Complete information relative to this competition can be obtained by addressing the National Lumber Manufacturers' Association, Transportation Building, Washington, D. C.

A CORRECTION

OUR attention has been called to an error in the designation of the architects of the Emmanuel Episcopal Church of La Grange, Illinois appearing in the advertisement of The American Seating Company in our issue of September 5th. The correct attribution is Marshall & Fox and John N. Tilton, associate architects, the Bertram Grosvenor Goodhue Associates, consulting architects.

PATRIOTIC POSTER COMPETITION ANNOUNCED

THE National Society of the Colonial Dames of America, in order to co-operate with the Bureau of Education, Department of the Interior, in its endeavor to reduce illiteracy in the United States, has announced a poster contest. A poster is desired that will instantly arrest the eye and convey to illiterate as well as literate citizens the advantage and desirability of being able to read, write and speak the English language. Prizes aggregating five hundred dollars are offered for the best posters submitted. The contest will close on January 15, 1928. Entry blanks and complete information may be obtained by addressing Poster Committee Secretary, The National Society of The Colonial Dames of America, 120 Bellevue Place, Chicago, Illinois.

TOPICAL ARCHITECTURE

ACKNOWLEDGMENT is herewith accorded to the Metropolitan Museum of Art, New York, for the courtesy in permitting us to reproduce the four photographs of interesting examples of old European towers, illustrated in the Topical Architecture section of this issue. These photographs were selected from the library of the Museum.

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Chicago's night skyline with the all
Terra Cotta Wrigley Building illuminated.

Which building
focuses attention,
commands interest
and beckons for
closer inspection?

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PRIZE FOR CARVED LIMESTONE

THE Hoosier Salon will hold its fourth annual exhibition the first two weeks of February, 1928. Any Indiana born artist, any artist who has received his art training in Indiana, or who has resided in the State for a period of five years or more, or who is definitely identified with an Indiana group of artists and returns to the State for periodical sketching trips, is eligible to compete. Over \$5,000 will be awarded in prizes, among which is a prize of \$200 given by the Indiana Limestone Company for the best piece of carved limestone (weight not to exceed 150 lbs.) which shows creative design and which can be embodied in an architectural design, either exterior or interior. The design may be submitted in any shape. Entries must be in not later than January 13, 1928. For further information regarding the Salon, communicate with the Executive Chairman, Mrs. C. B. King, Graemere Hotel, 113 N. Homan Boulevard, Chicago, Ill.

REPORT OF PHILADELPHIA ART JURY

THE sixteenth annual report of the Art Jury of Philadelphia, Pa., states that during the year 1926 exactly one hundred new submissions were made, only one of which was withdrawn. Among the proposals approved by the jury is the Rodin Museum, to be erected through the public spirit of the late Jules E. Mastbaum, by whose generosity Philadelphia will be second to Paris alone in possession of works from the hand of this great modern sculptor. There are also a Shakespeare Memorial, the Cincinnati monument to Washington, and the Victory Arch, a satisfactory location for which has finally been found. Judging from its report, the Philadelphia Art Jury is a splendid working body, and the success of its efforts suggests that other cities might profit by similarly controlling the erection of works of art.

ZONING REGULATIONS FOR VILLAGES

THE Niagara Frontier Planning Board, a commission created by special act of the New York Legislature to study the needs and conditions of regional and community planning within Erie and Niagara Counties, has published a pamphlet presenting a review of the legislation empowering towns and villages to adopt plans for the regulation of their future growth and development along lines which will best serve and promote their general welfare. The development of municipal zoning is substantially limited to the last ten years, but at the present time more than half of the urban population of our country lives under zoning regulations. Naturally, cities have given more immediate attention to the subject, and the first legislative empowering acts related only to cities. By

means of zoning regulations a community—city, village or town—may divide itself into definite districts restricting the development within one district to residence purposes, in another district to combined residential and specified business uses, and in other districts to less limited, or totally unrestricted, uses. A comprehensive plan, covering the entire area of the community, must be adopted whereunder industrial activities may be confined within specified areas and residential sections preserved in their character. The pamphlet includes a suggested model zoning ordinance for a New York incorporated village or town.

UNIVERSITY OF WESTERN AUSTRALIA
COMPETITION AWARDS

RESULTS of a competition for the design of several buildings for the University of Western Australia, at Perth, have recently been announced. The first prize is awarded to Rodney H. Alsop and Conrad H. Sayce, of Melbourne, Victoria; second prize to Donald H. McMorran, Harrow-on-the-Hill, England; and third prize to Gummer & Ford, Auckland, New Zealand. In their report, the judges record their admiration of the skill, taste, and feeling displayed by the design placed first. They commend particularly the ideas as to the general layout, the tower, the loggia, the Great Hall, the admirable adaptation to site conditions and the general atmosphere it is proposed to create. An invitation was extended to American architects to participate in this competition, and amongst the American entries, the design of S. Woods Hill, of New York, was placed sixth, and that of Oran A. Jenkins, of San Francisco, received honorable mention.

CONFERENCE ON CHURCH ARCHITECTURE

A CONFERENCE on church architecture was recently held in Chicago, Ill., under the direction of the Conference of Church Bureaus and Departments of Architecture and the Home Missions Council of the Protestant Churches. The matter of securing well trained architects who are intelligent as to the whole architectural history of the Christian church and who are sympathetic with the ideals and objectives of the church was discussed at length. The churchmen claimed that the architectural colleges are giving little recognition to the needs of the modern Protestant church. The situation was rather sharply criticized, considering the fact that one Protestant denomination alone spent \$40,000,000 on new church construction in 1926. Among the architects who took part in the discussion were P. H. Frohman, of Frohman, Robb and Little; J. W. C. Corbusier, William J. Smith, H. W. Foltz and Elmo C. Lowe.



Lounge room
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| 321 Jackson Bldg., Buffalo, N. Y. | 400 Penobscot Bldg., Detroit, Mich. | 307 Union Bldg., Syracuse, N. Y. |
| 301 Rose Building, Cleveland, Ohio. | 1400 Broadway, New York, N. Y. | 416 Essex Bldg., Minneapolis, Minn. |
| 401 Transportation Bldg., Chicago, Ill. | 709 Columbia Bank Building, Pittsburgh, Pa. | 403 Military Park Bldg., Newark, N. J. |
| 1226 California St., Denver, Colo. | | 1101 Realty Building, Youngstown, Ohio. |

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COLLAPSING BUILDINGS

THE collapse of buildings in three or four localities in London during recent weeks gives cause for some anxiety and serious thought, states *The Builder*, of London. We are glad to see Sir John W. Simpson has made a useful contribution to the subject in a letter to the *Times*, and he emphasizes the fact that a number of old buildings are doubtless in a state of uncertain equilibrium, partly because of their poor construction and partly because of the vibration caused by the greatly increasing heavy traffic in our streets. It is open to question whether we can safely or economically construct extremely lofty buildings in London, and our recent experience certainly suggests a need for the greatest vigilance on the part of district surveyors, builders, foremen, and not least of our architects. The increasing height of our commercial structures is accompanied by further depths of basement work, and the manifold works below ground must of necessity affect the solidity of walls and foundations below the ground level. Whilst there is no need for panic, our recent troubles have made it clear enough that there is need for the greatest vigilance and care all round.

ENGLISH CASTLE THREATENED WITH DESTRUCTION

CAMBER CASTLE, near to Rye, England, one of the most interesting surviving examples of the transitional period of castle architecture, is threatened with complete destruction, states *Astragal in The Architects' Journal*, London. It is one of the largest of Henry VIII's coast fortresses, but apparently nothing is being done to protect it from the ravages of too luxuriant life and the force of the Channel gales. It stands, a gray imposing mass in the marshes, a mile from Rye in the direction of Winchelsea. Its central keep, the spacious kitchens, the decorated gargoyles, and the bricks so reminiscent of some work at Hampton Court, are the prey of the casual tourist, who takes away scraps of the masonry as souvenirs, and defaces the old walls with his signature. Possibly Sir Reginald Blomfield, who has a house not far away, will interest himself in this historic landmark that was dismantled at the time of the Civil War.

WE HAVE MOVED TO FIFTH AVENUE

THE publication, editorial and business offices of THE AMERICAN ARCHITECT are now located in the Bankers Trust Company Building, No. 501 Fifth Avenue, Southeast corner of Forty-second Street, New York City.

PERSONALS

Henry Bailey Alden, architect, is now occupying new offices in the Cunard Building, 126 State Street, Boston, Mass.

Carl E. Segerberg, architect, has moved his office from 22 Hunting Hill Avenue to 438 Main Street, Middletown, Conn.

Alfred A. Drescher, architect, has moved his office from 2036 East 105th Street to 10006 Carnegie Avenue, Cleveland, Ohio.

George H. Dieringer, architect, 880-882 McCulloch Street, Wheeling, W. Va., would be pleased to have manufacturers send new catalogs and samples.

Frank Hartley Anderson, architect, 314 Braley Building, Birmingham, Ala., would appreciate receiving manufacturers' catalogs of building materials and equipment.

Walter Mahnken, architect, is now located at New York Avenue and Thirty-second Street, Union City, N. J., having moved his office from 988 Bergenline Avenue, that city.

Henry A. Twitchell, architect, has established a studio for the practice of architecture at his residence in Ossining, N. Y., and would appreciate having manufacturers send him catalogs and samples, addressing them to P. O. Box 174, that city.

C. L. Hutchisson, architect, has formed a partnership with N. H. Holmes and C. L. Hutchisson, Jr. The new firm will practice architecture and engineering under the name of Hutchisson, Holmes & Hutchisson, architects, 400-403 State Office Building, Mobile, Ala.

For years the practice of Mowbray & Uffinger, architects, has been conducted primarily by Justin M. Uffinger, C. Manning Foster and Joseph S. Bookwalter. The firm name has now been changed to Uffinger, Foster & Bookwalter, Inc., with offices remaining at 221 West 57th Street, New York.

Walter G. Jameson has purchased the architectural offices and business of Warren W. Day, and has formed a partnership with Elbert I. Harrison to continue the practice of architecture under the firm name of Jameson & Harrison, architects, successors to Warren W. Day, 1014-16-18 Peoria Life Building, Peoria, Ill.

Victor A. Rigauumont, architect, announces the opening of an office in the Loew State Building, 1540 Broadway, New York, and also the removal of his Pittsburgh office to the Loew Penn Building, Penn Avenue and Federal Street, Pittsburgh, Pa. A complete line of manufacturers' catalogs is desired for the New York office.

THE AMERICAN ARCHITECT

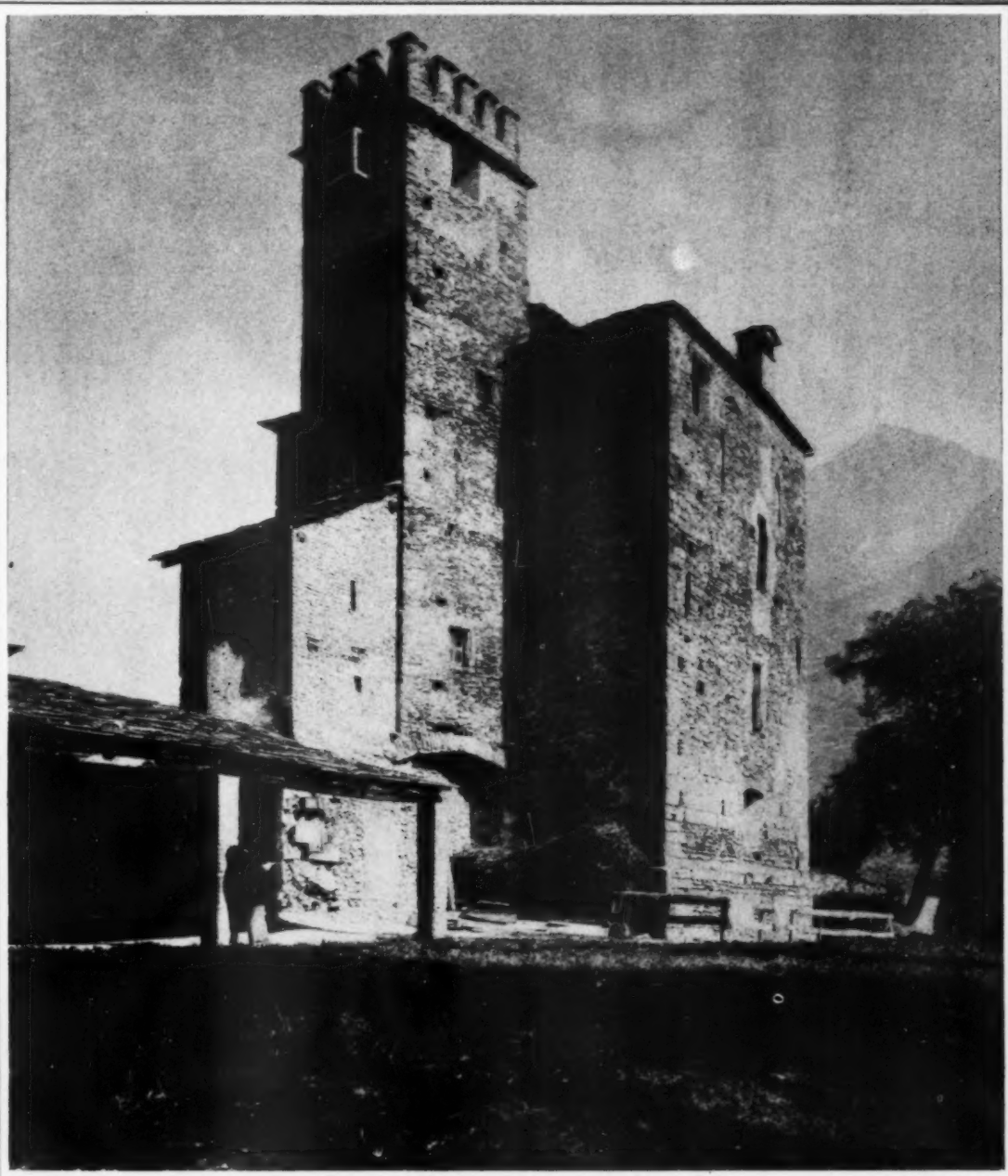
IN TWO PARTS

PART II

NOVEMBER 5, 1927

TOPICAL ARCHITECTURE SECTION

←————→
TOWERS

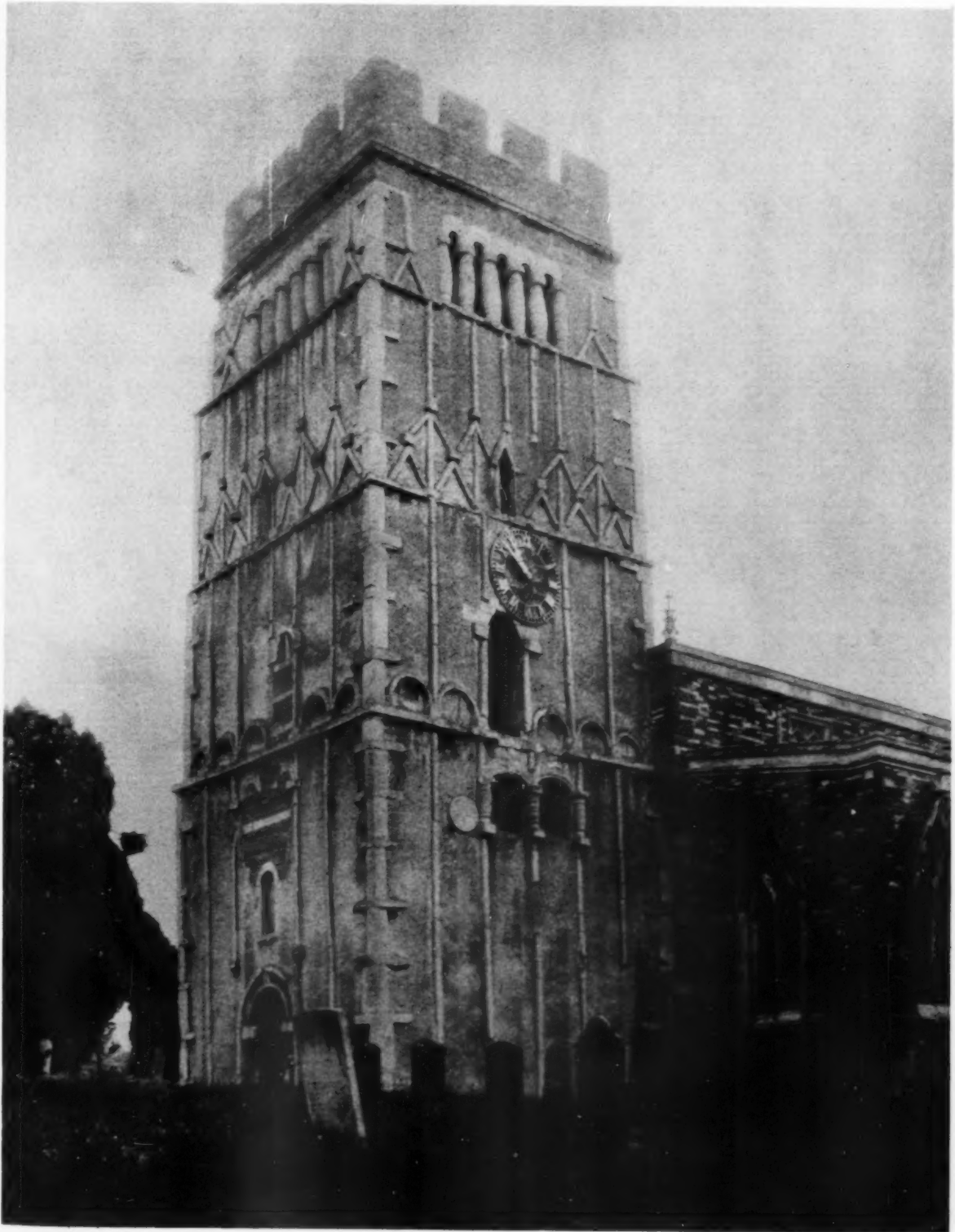


TOWER, AOSTA, ITALY

(Copyright, 1927, The Architectural & Building Press, Inc.)



THE CATHEDRAL, LUCERA, ITALY



SAXON TOWER. HAMPSHIRE, ENGLAND



TOWER, PALLADIAN BASILICA, VICENZA, ITALY

THE PUBLISHERS' PAGE

WE have received many expressions of appreciation of our Topical Architecture series. It has been our endeavor to illustrate in this section of THE AMERICAN ARCHITECT details of various topics of architectural design which might be of benefit to architects in the development of their designs. In this section of the December 5th issue there will be reproduced photographs of four early American doorways of unusual interest. A group of original doorways of the early nineteenth century are now on exhibition at the Metropolitan Museum of Art, New York, and the four that we are to illustrate have been selected from this group. We would be interested to learn from our subscribers what subjects would be especially desirable to illustrate. There is always a certain inspirational value in photographs of old European architecture, and for that reason we occasionally devote the four pages of the Topical Architecture section to examples of work of the historic styles. If any of our readers have a group of four clear, sharp photographs which show in detail some one topic of architectural design of sufficient importance, we should be very glad to consider them for publication in some future issue of our Topical Architecture section.

We know from experience that a large number of our subscribers regularly follow the valuable material always found in the advertising pages of this journal. To those readers who have done so over a period of years, a marked improvement in the character of advertising copy and layout must be at once apparent. Various agencies have been active in effecting this improvement. The publishers of THE AMERICAN ARCHITECT can perhaps be pardoned for feeling gratified by the results being obtained, and proud that members of their organization have participated through personal council in this direction. Advertisers and advertising agencies are always welcome to the benefit of our experience in the preparation of advertising pages and booklets intended to reach the architectural profession. Numerous instances might be cited in which constructive criticism of proposed copy has been offered by members of THE AMERICAN ARCHITECT staff, which has resulted in advertising of improved appearance and more than usual interest. Many of our readers will recall that several years ago we conducted an advertising competition in an endeavor to improve advertising copy. There can be no doubt but that this competition had an important influence on present day

copy. We are proud to feel that we have contributed with others to this improvement and with some degree of success.

In this issue the Department of Engineering and Construction presents a subject that is somewhat of a departure from the material usually found in this section of THE AMERICAN ARCHITECT. The article, however, is a thoroughly practical discussion and illustration of the application of architectural principles to merchandising through the correct planning of a store. The store illustrated has been designed and planned around a specific article of merchandise. The idea of expressing in the architectural design the purpose of the structure is not new, but its successful application to a commercial problem is found only at rare intervals. The example shown is worth careful study for the practical requirements of all departments of the business to be carried on in this store have been developed with more than usual care. The fundamentals upon which the design of this project is based can be readily applied to other projects of similar nature. We believe that this article will be found of more than passing interest.

Following the example of the great metropolitan banks and encouraged by their experience, smaller banks throughout the country have entered upon an era of expansion involving programs differing only in degree from banks in the larger cities. This activity has required many architects in these sections to face problems in bank building design which are new and strange to them. The equipment and planning of the security vaults and safe-deposit vaults perhaps present the most uncommon problems to architects lacking experience in bank building design. It is believed that a general article on bank vault construction to be presented in an early issue of this journal will be found of interest and practical value to many of our readers.

The design awarded the first prize in the Milwaukee County Court House competition will be illustrated in our issue of December 5th. The successful competitor was Albert R. Ross of New York City. The second, third, fourth and fifth prize winners were respectively: W. W. Ahl-schlager, Chicago, Ill.; Robert Messmer & Brother, Milwaukee, Wis.; La Farge, Warren & Clark, New York City; and Bakewell & Brown, San Francisco, Calif.

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