

THE AMERICAN ARCHITECT

FOUNDED 1876

THE VERTICALITY OF THE SKYSCRAPER

By JOHN MEAD HOWELLS

HOW often we have been asked by anyone and everyone, from a newspaper reporter to the lady we take out to dinner, "Are we developing an American style of architecture?" If we are not pre-

cisely developing a style, at least we seem to have found one specific and characteristic solution in the simplified design of some of our newer skyscrapers, ably assisted by the zoning resolution. When



DETAIL OF ORNAMENT OF CAST STONE



ORNAMENTAL PANEL OF PIERCED STONE

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

Copyright, 1928, The Architectural & Building Press, Inc.



PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
MODEL OF ORNAMENTAL MOTIF ABOVE ENTRANCE, REPRODUCED IN CAST STONE
RENE CHAMBELLAN, SCULPTOR

Hugh Ferris made those first four drawings of the "zoned envelope" on a city block, the matter was crystalized. Such buildings as the Bush Terminal, American Radiator, Shelton Hotel, New York Telephone Building, and the fine designs of Saarizen have not allowed it to retrogress.

The simple composition of verticals, which some like to call modernistic, seems to me "indicated," as the doctors say, for the design of steel cage buildings. It is the simplest and most straightforward clothing of the steel cage itself in masonry, for several reasons.

First, the verticals are accentuated just as in the steel cage itself. The vertical members persist. The emphasis is definitely on them, while the horizontal members are built in between them.

Second, the grouping of vertical lines holds the windows in place naturally in the composition, instead of resorting to the old fashion of piercing a

flat wall with windows, as a waffle-iron is pierced with squares.

Third, the verticals can terminate naturally against the sky, as they reach their various zoning levels, in the same way that a growth of pine trees or a palisade or cliff ends against the sky.

How unnatural was the old straining for horizontal bands and for heavy cornices far up in the air where they could serve no purpose other than that of obstructing the light! How fortunate to leave behind us the belief that a vertical skyscraper must somehow be made to look like a horizontal Farnese Palace! It is as impossible as the problem of that charming lady in Miss Hyatt's book, who wrote to the paper as follows: "I am a small brunette. What shall I eat, and what exercises shall I take to appear a large blonde?" Also, it is a pleasure in itself to design in this simple new manner, which is not yet a "style," nor yet out of a book.





PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

CAST IRON MOTIF OVER THE THREE ENTRANCE DOORS. THE BACKGROUND IS A POLISHED COBALT BLUE IMITATION MARBLE

The Panhellenic Tower, which is fully illustrated on following pages, got its long name because it is the New York hotel-home (a hyphenated irony) of the Greek letter societies, or sororities, from all the American co-educational or women's colleges.

The building could never have taken its present shape of a square tower, identical on all sides, if its devoted promoter, Mrs. A. Barton Hepburn, had not realized the value of this form of building, in taking the rooms up into the air and into the East River view; and to make this possible she took over the real estate on all sides.

As far as the design goes, the pictures show anything there may be of interest. It was studied for over a year before the working drawings were made.

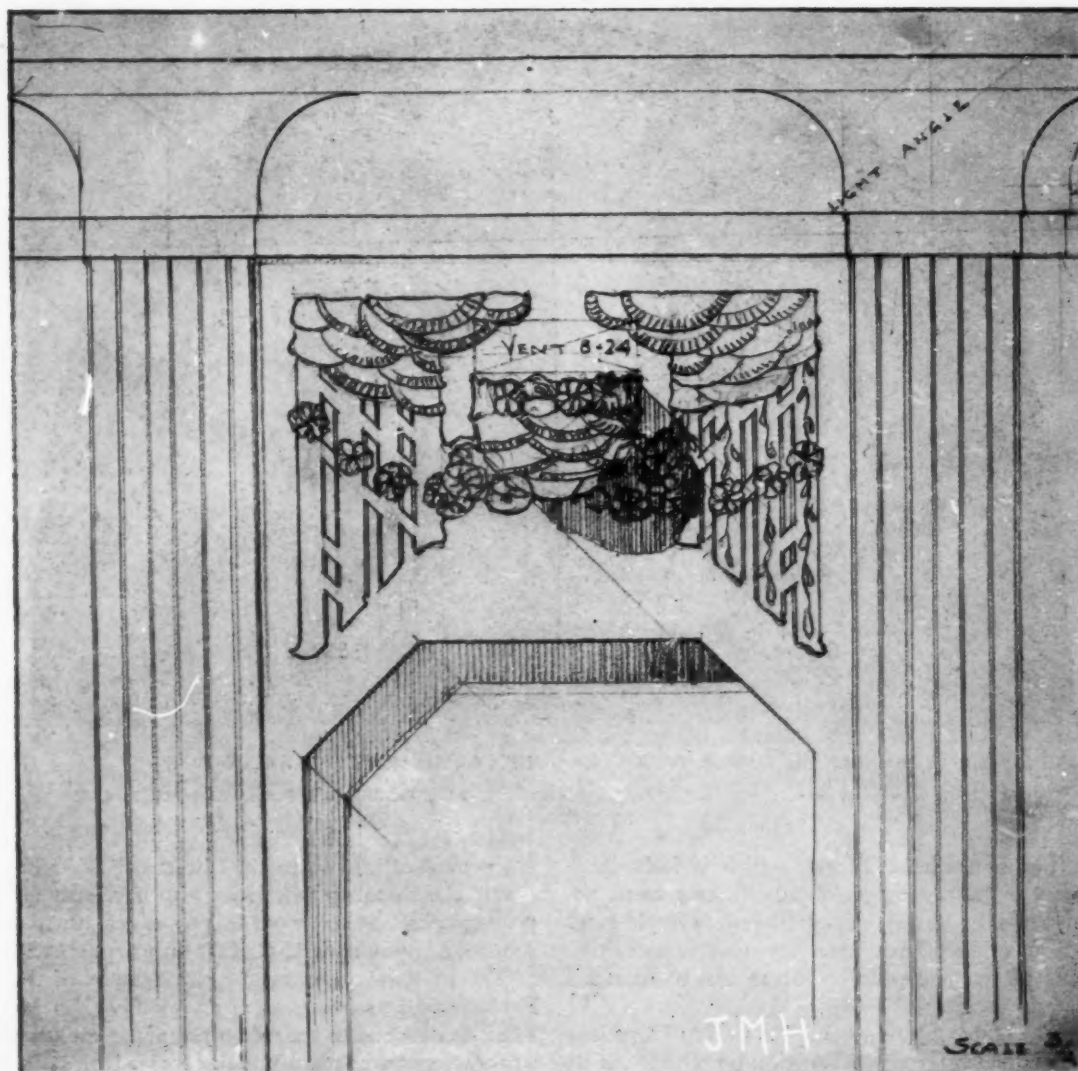
The construction was carried out in eleven months from wrecking to occupation, and this fact

has proved of interest to the editors of "L'Architecte," the French publication, who have sent for photographs, and to whom this short construction time seems more remarkable than to us Americans.

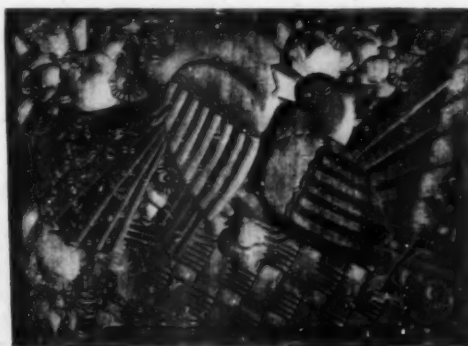
The Paris letter asking for photographs of the Panhellenic Tower was from none other than M. Roux-Spitz himself, the uncompromising modernist, to whom our modernism must look a little tame.

Great attention was paid to the outside surface of the Tower. This is a brick building, and by that "we don't mean" a brick and stone building. It is one material; and an effort has been made to combine a light colored flush joint with a light colored brick in order absolutely to unify the surface, and produce the impression that the building has been built out of, or carved out of, one material—thus reproducing as much as possible the simple and rather monumental effect of the wax model, a photograph of which is shown on another page.





PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
STUDY TO SCALE OF ORNAMENTAL MOTIF IN BALL ROOM, FEATURING A UNIT OF THE SYSTEM OF INDIRECT LIGHTING





PANHELLENIC TOWER

NEW YORK CITY

A College Women's Clubhouse

JOHN MEAD HOWELLS, *Architect*

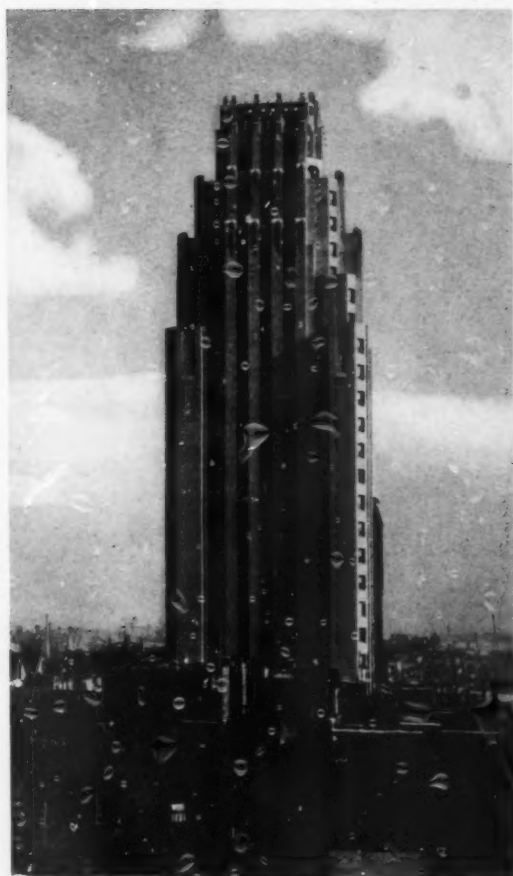
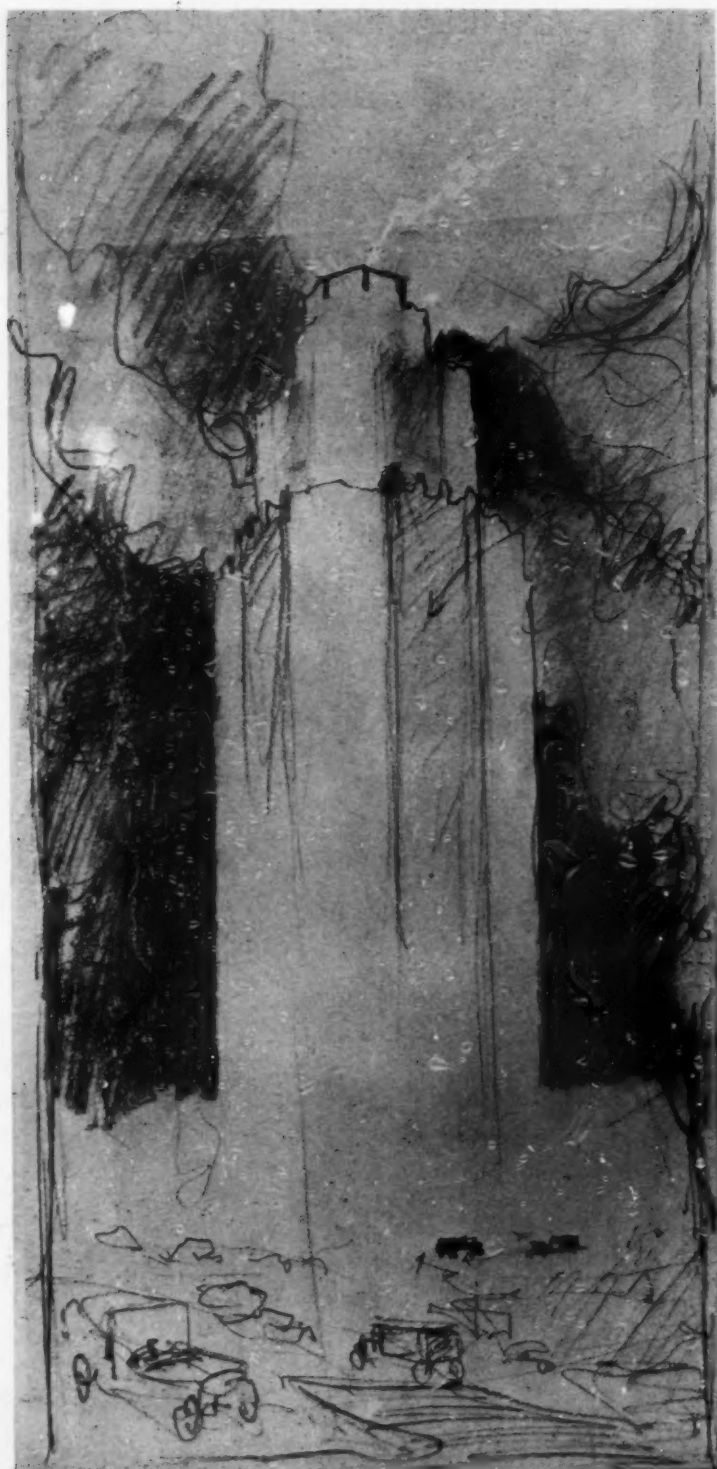
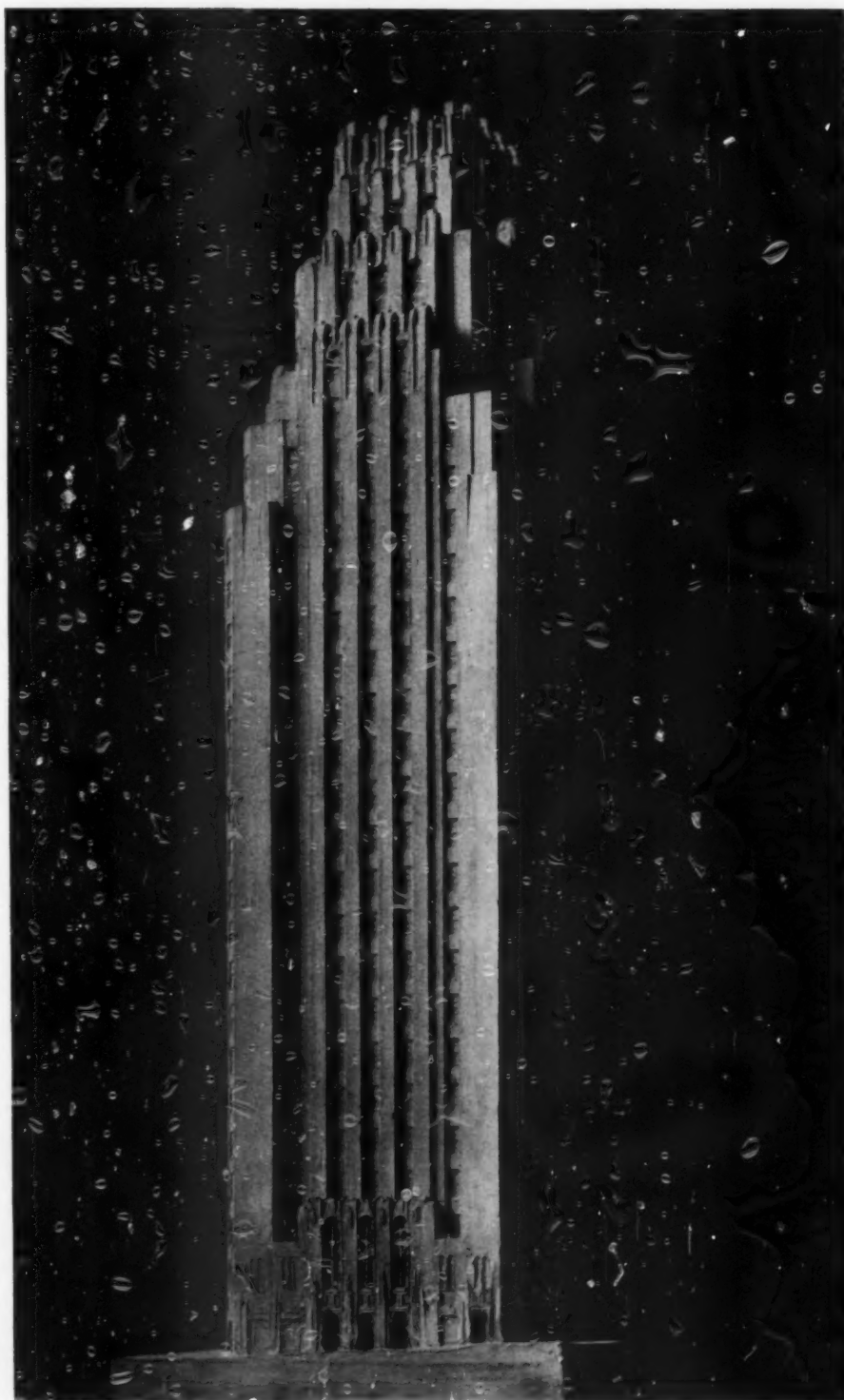


Photo by Freyer & Patsig

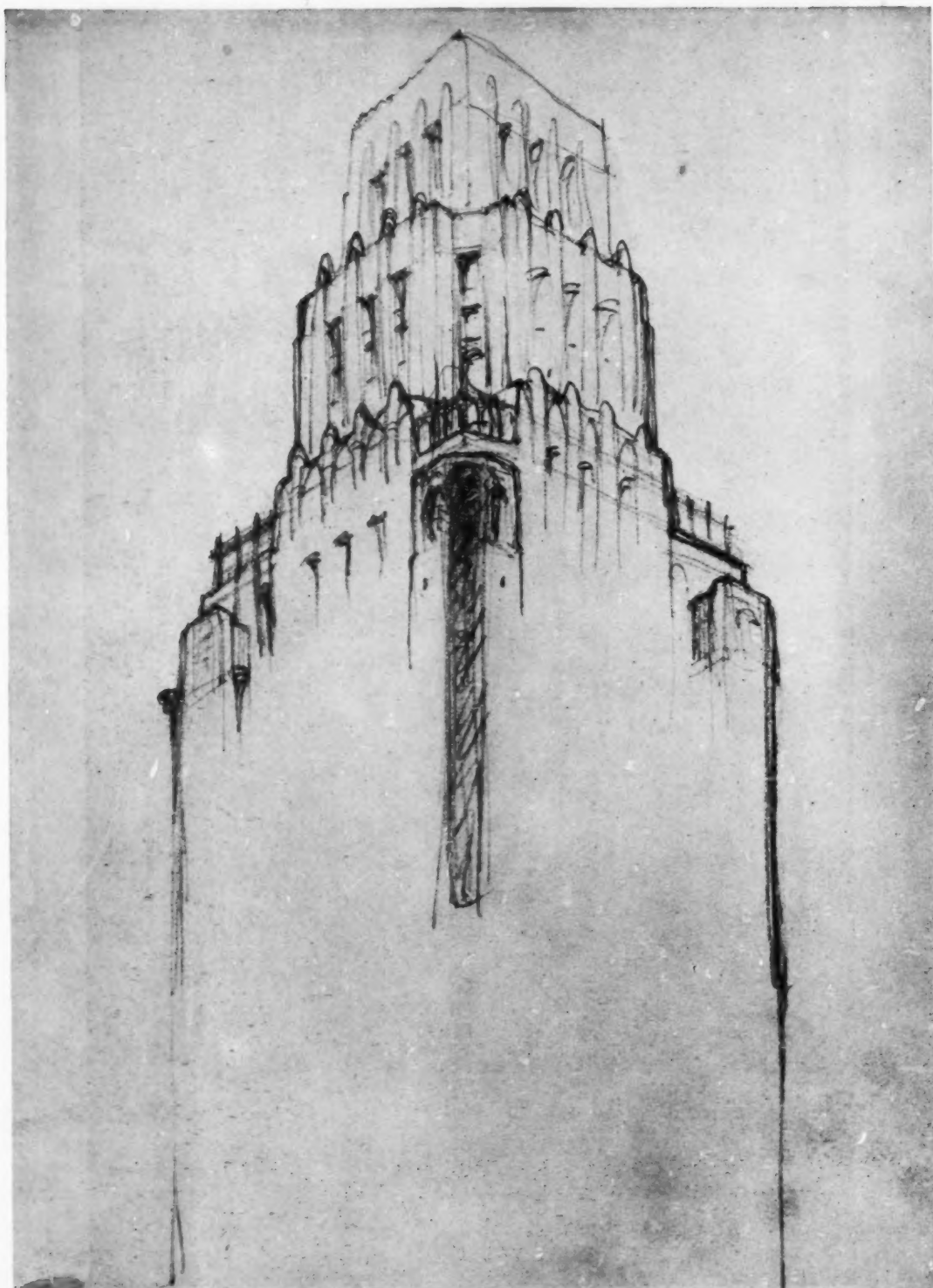




PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
FIRST STUDY OF MASS



PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
FINAL MODEL



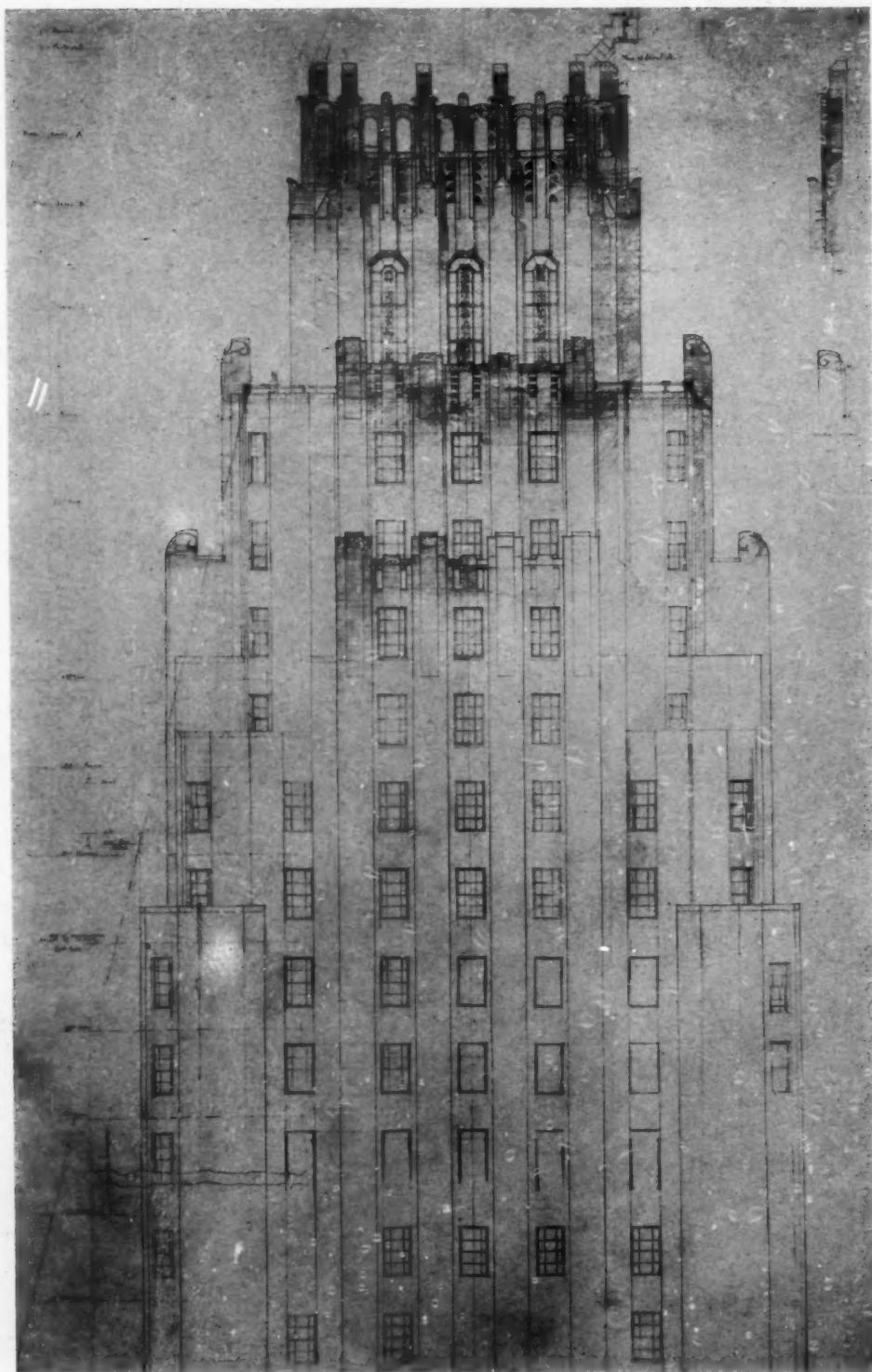
PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
EARLY STUDY OF SET-BACKS



Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

SOUTH ELEVATION



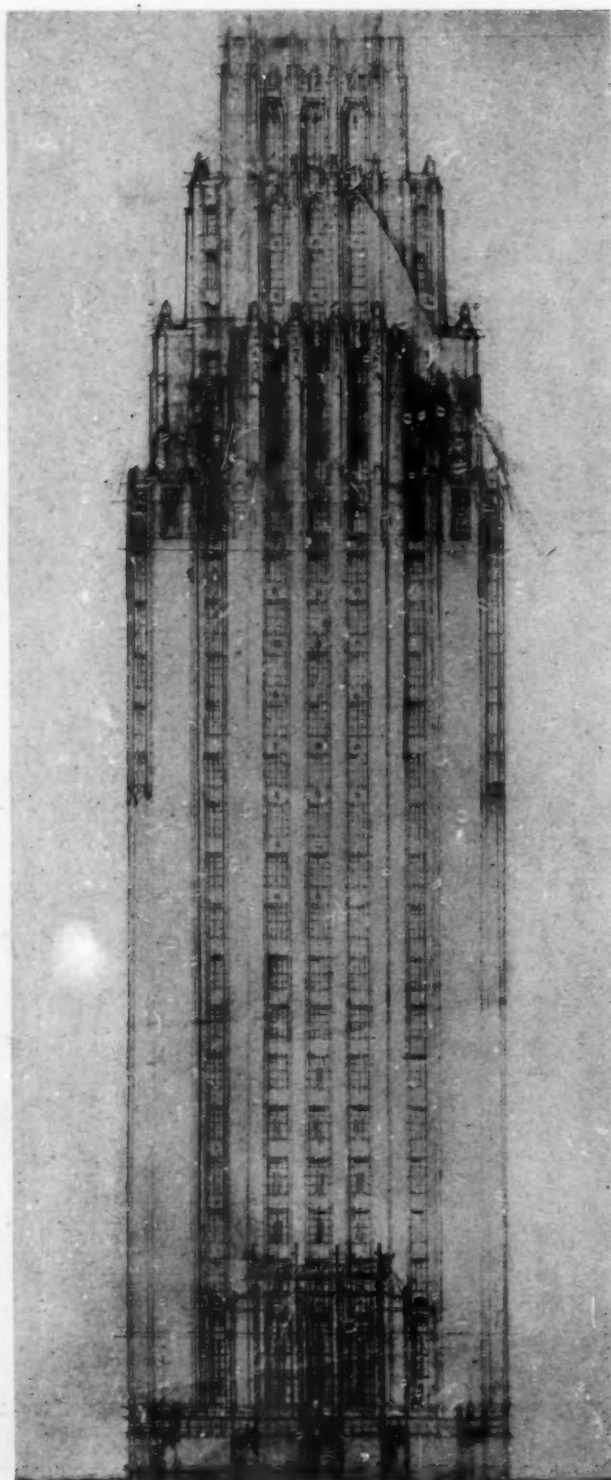
PANHELLENIC TOWER, NEW YORK.—JOHN MEAD HOWELLS, ARCHITECT
FINAL SCALE DRAWING OF UPPER FLOORS



Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

DETAIL OF SET-BACKS

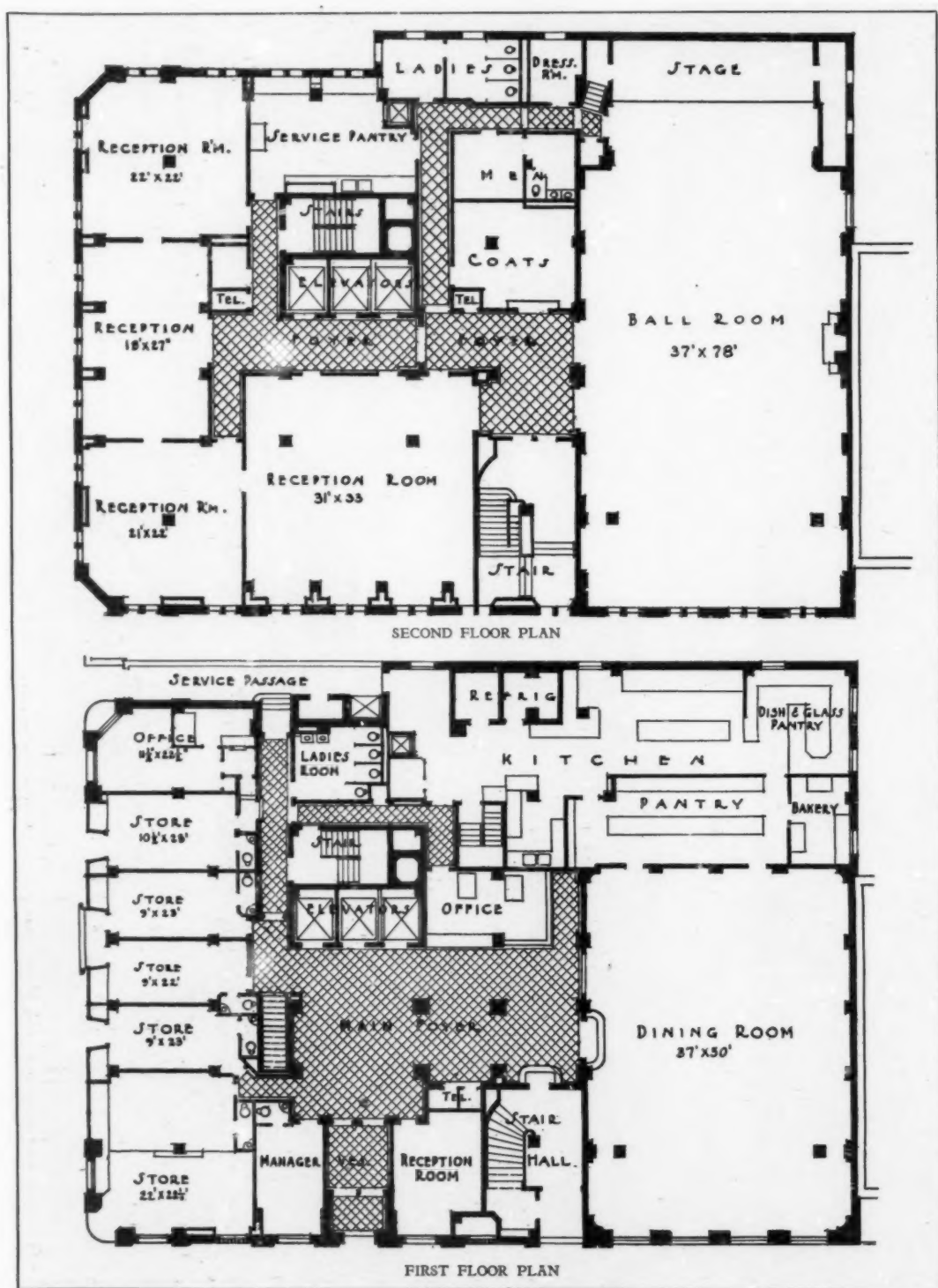


PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
EARLY SCALE ELEVATION



Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
TERRACE AT TWENTY-SIXTH FLOOR



PANHELLENIC TOWER, NEW YORK

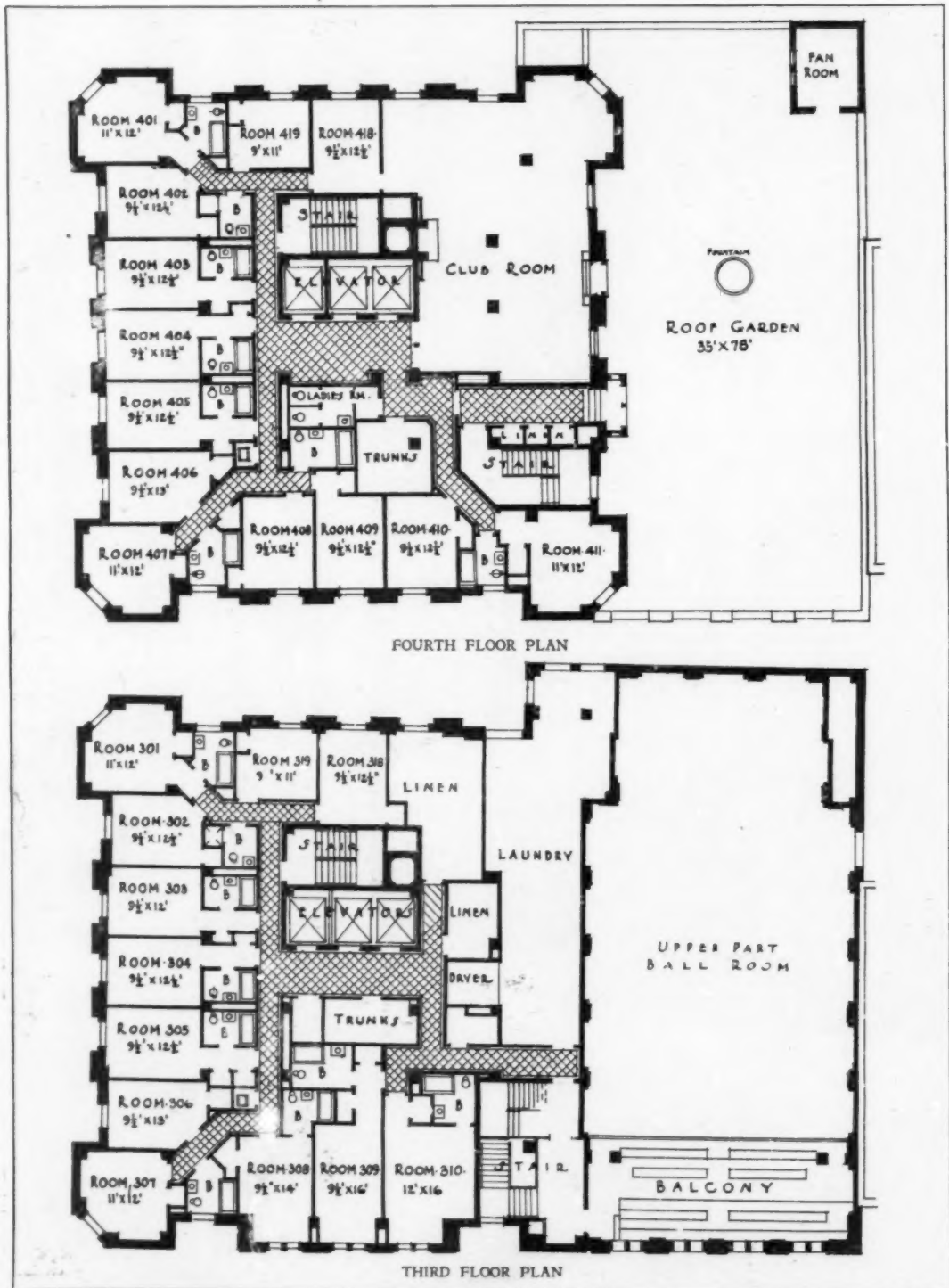
JOHN MEAD HOWELLS, ARCHITECT



Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

ENTRANCE MOTIF



PANHELLENIC TOWER, NEW YORK

JOHN MEAD HOWELLS, ARCHITECT

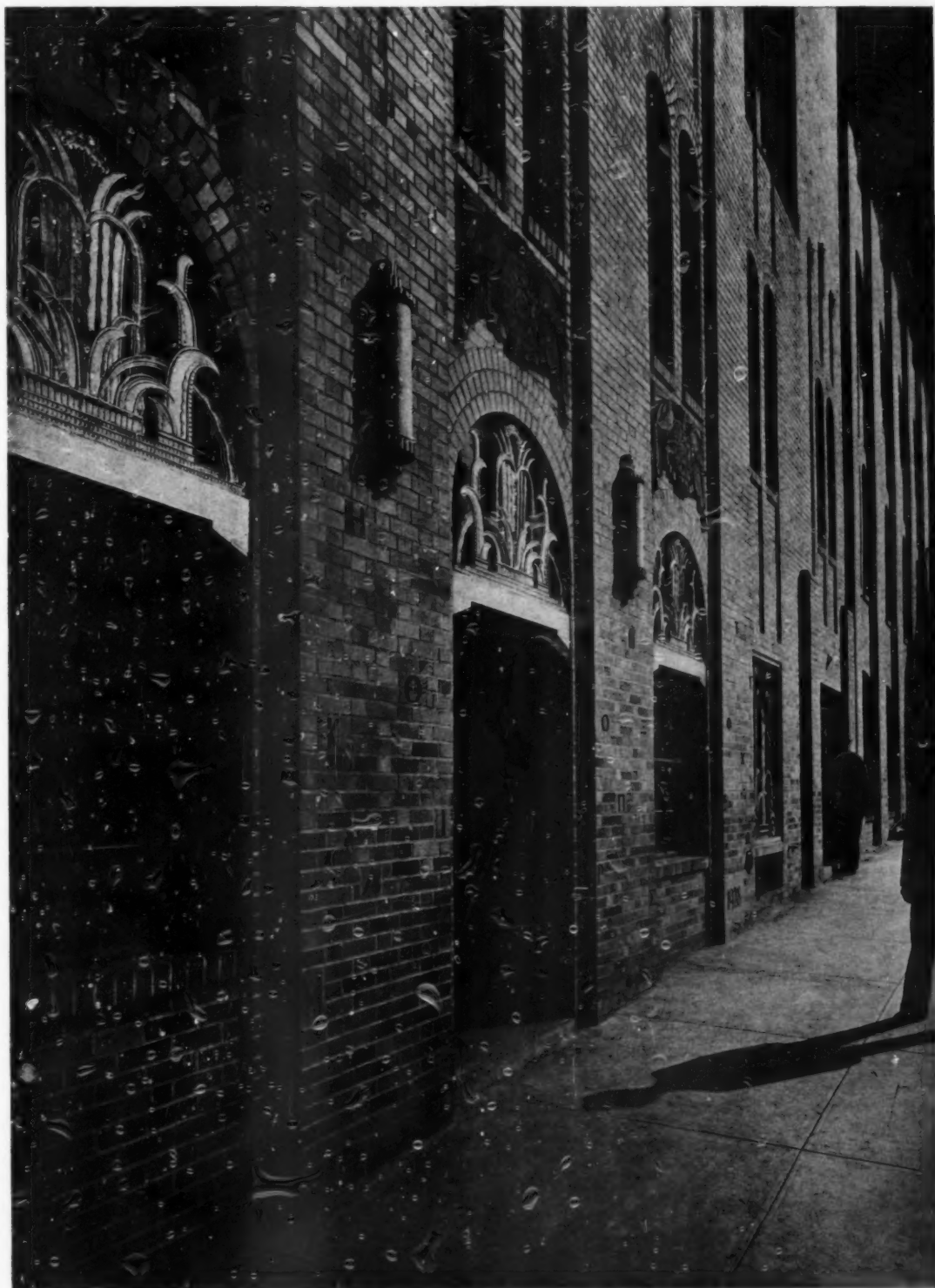
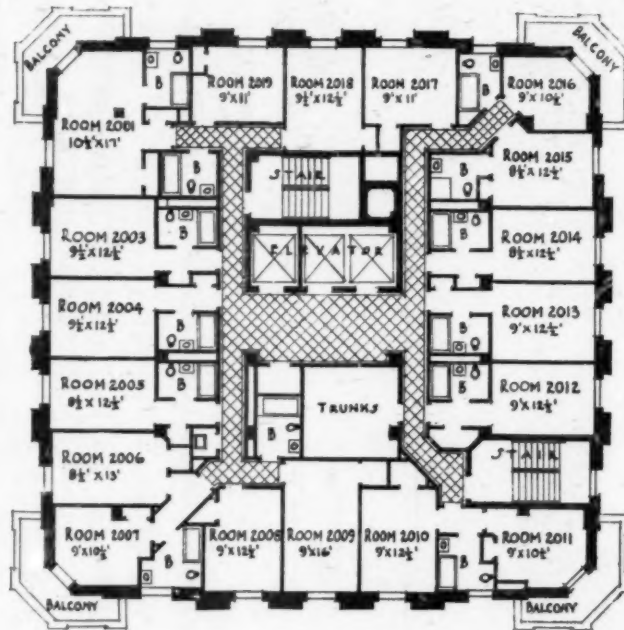


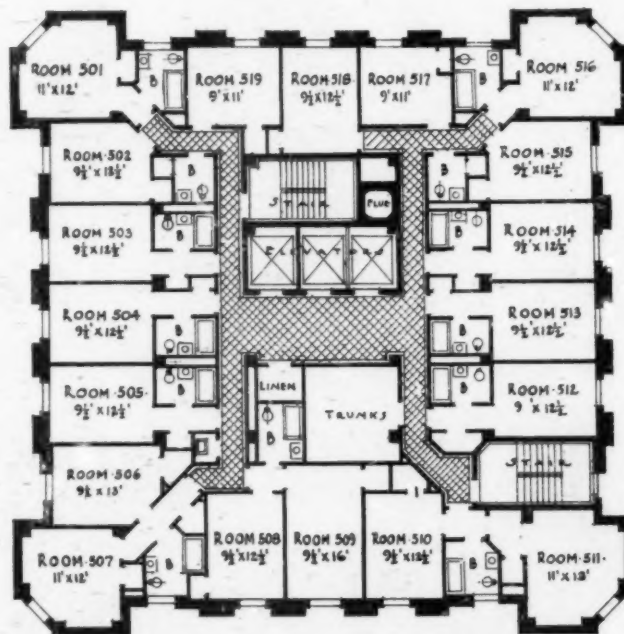
Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

DETAIL AT ENTRANCE SHOWING INTRODUCTION OF GREEK ALPHABET



PLAN OF TWENTIETH AND TWENTY-FIRST FLOORS



PLAN OF FIFTH TO NINETEENTH FLOORS INCLUSIVE

PANHELLENIC TOWER, NEW YORK

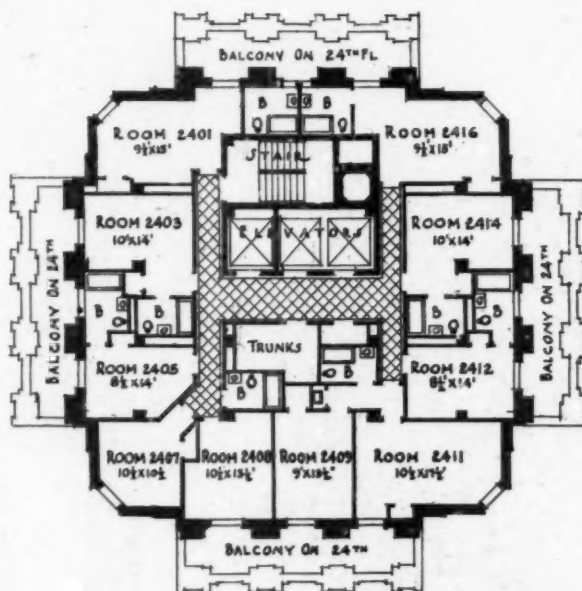
JOHN MEAD HOWELLS, ARCHITECT



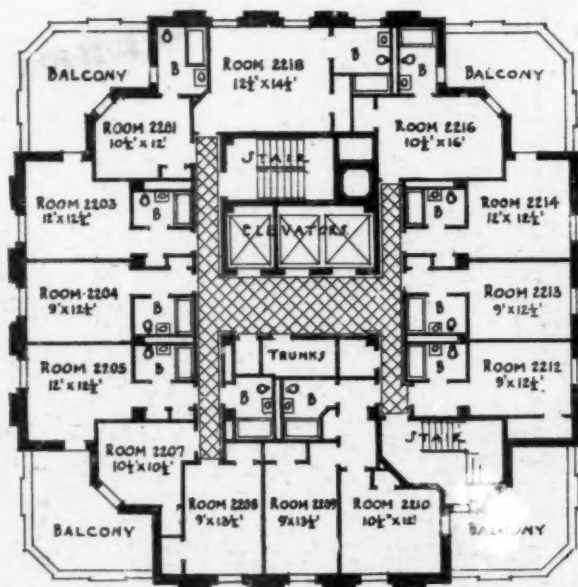
Photo by Peyser & Patsig

PANHellenic TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

OASIS ROOM, FEATURING WALL HANGING BY RODIER, PARIS, FRANCE



PLAN OF TWENTY-FOUR AND TWENTY-FIFTH FLOORS



PLAN OF TWENTY-SECOND FLOOR

PANHELLENIC TOWER, NEW YORK

JOHN MEAD HOWELLS, ARCHITECT

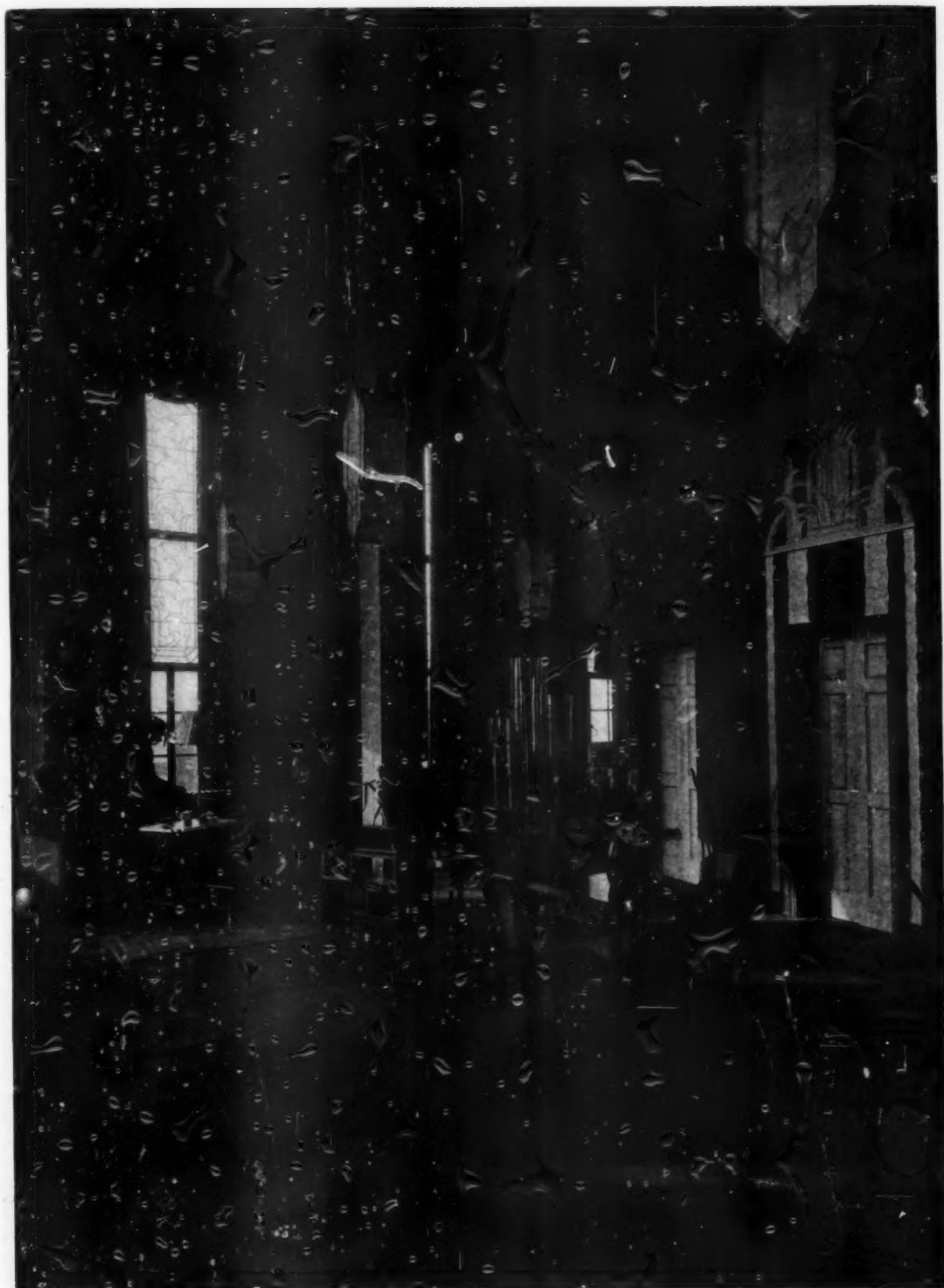


Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

SOLARIUM ON TWENTY-SIXTH FLOOR



Photo by Peyser & Patzig

PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT
DETAIL OF BALL ROOM

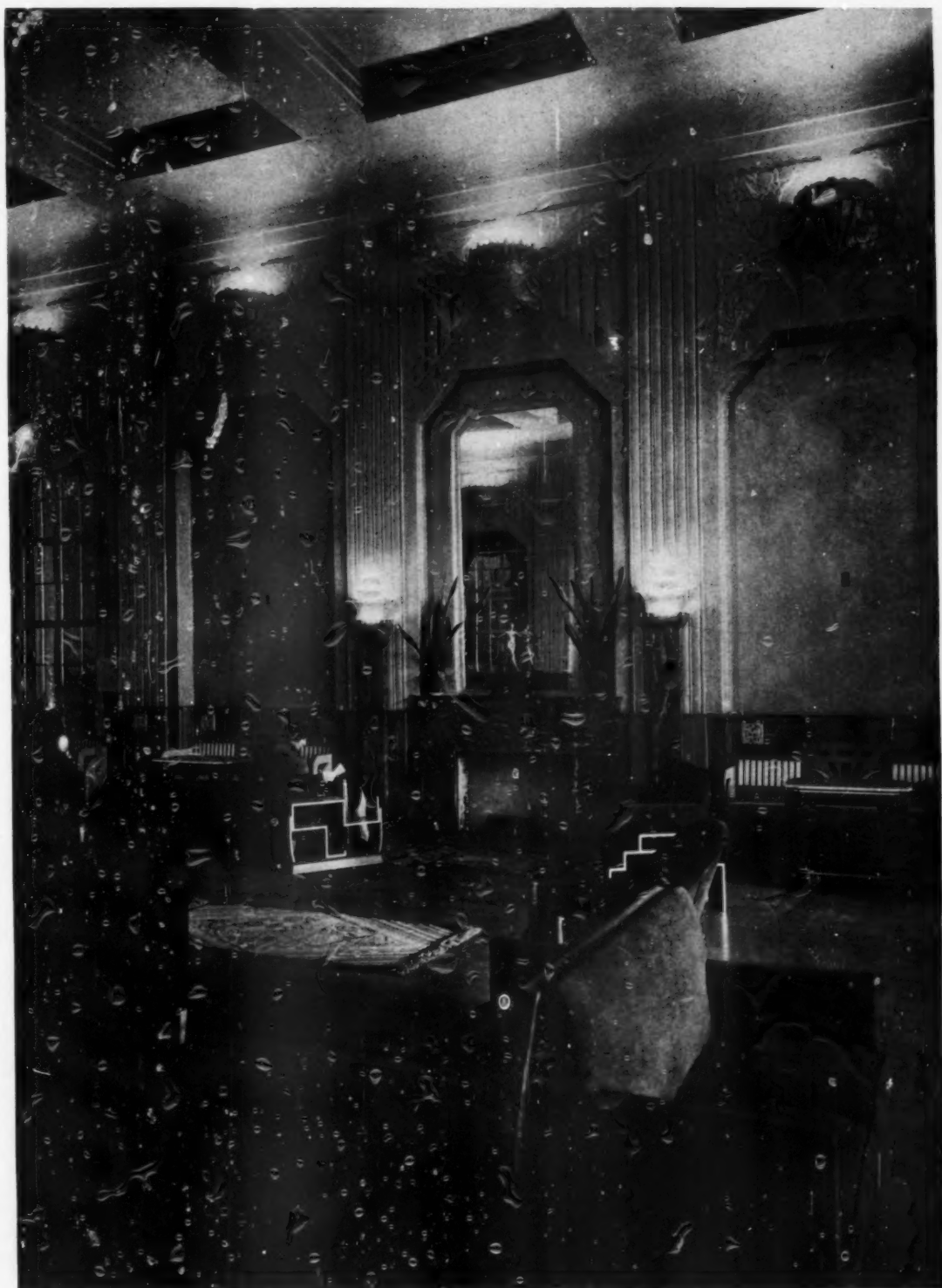
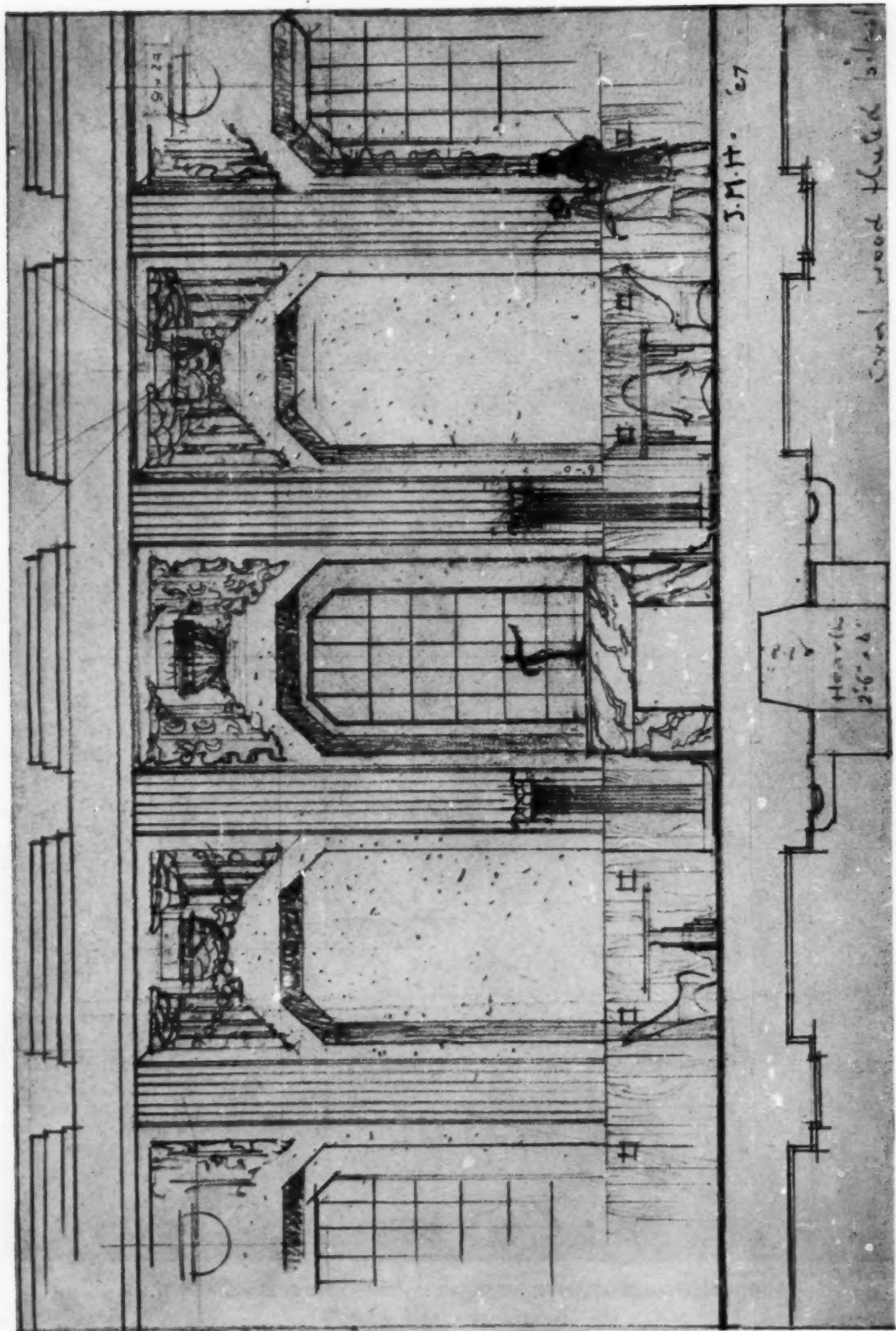


Photo by Peyser & Patzig

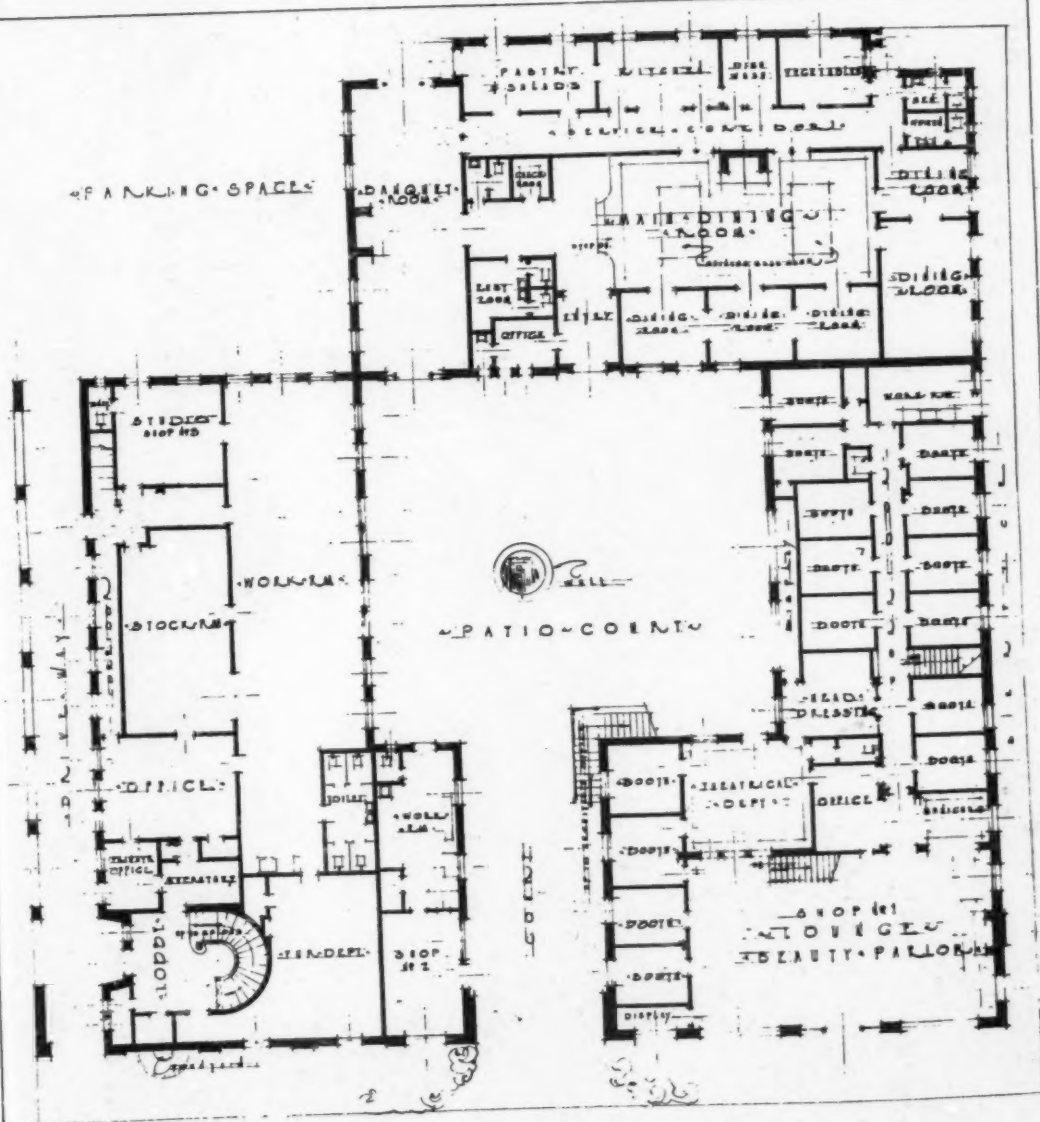
PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

MANTEL WALL, BALL ROOM



ELEVATION, MANTEL WALL, BALLROOM, PANHELLENIC TOWER, NEW YORK—JOHN MEAD HOWELLS, ARCHITECT

THE INFLUENCE OF OLD SPAIN
AS REFLECTED IN
MODERN CALIFORNIA ARCHITECTURE



GROUND FLOOR PLAN

FRED THOMPSON COURT AND MARY HELEN TEA ROOM, HOLLYWOOD, CAL.

C. J. WEYL, ARCHITECT

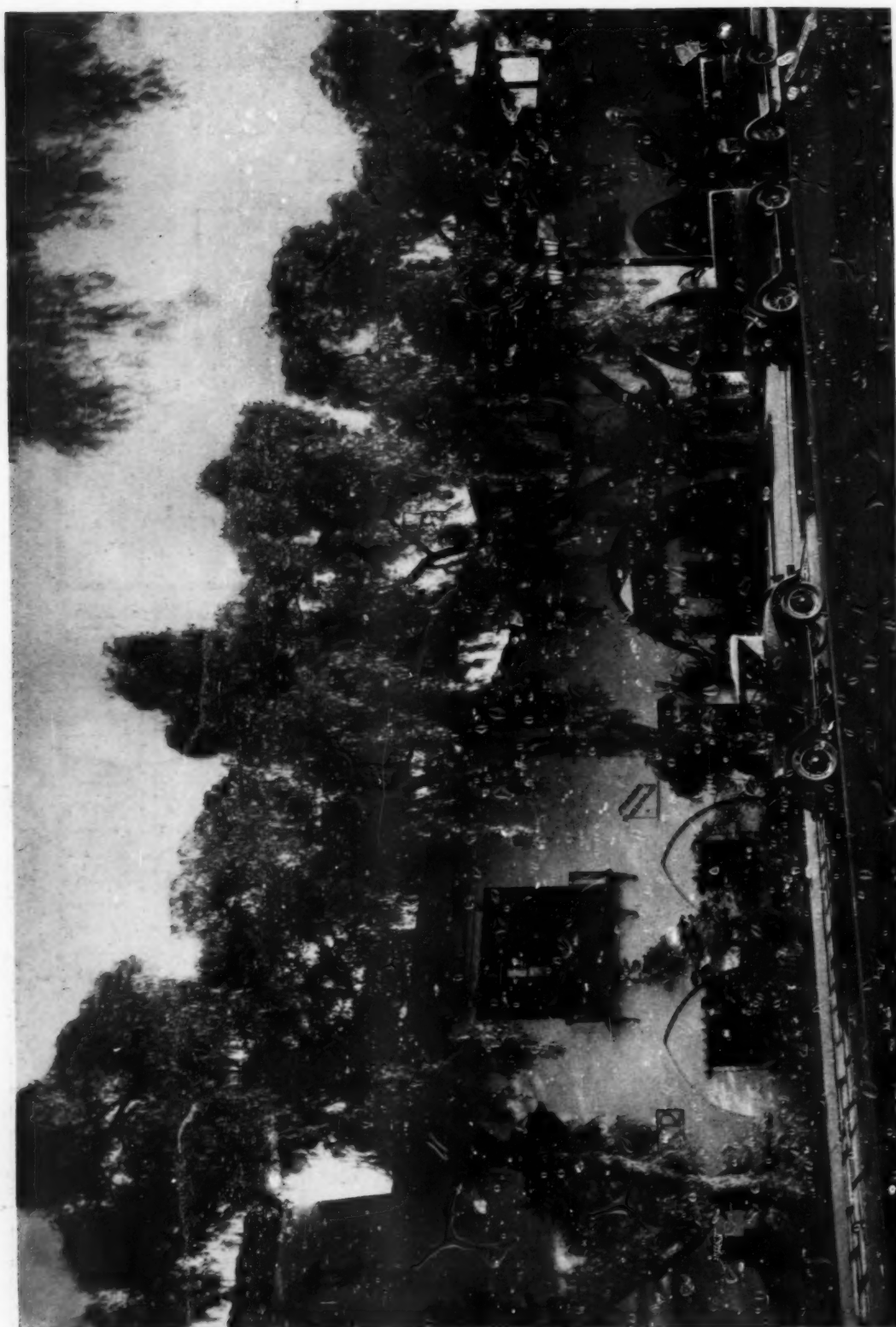


Photo by Matt Studios

FRED THOMPSON COURT AND MARY HELEN TEA ROOM. HOLLYWOOD, CAL.—C. J. WEYL, ARCHITECT



Photo by Mott Studios

FRED THOMPSON COURT AND MARY HELEN TEA ROOM, HOLLYWOOD, CAL.—C. J. WEYL, ARCHITECT



FRED THOMPSON COURT AND MARY HELEN TEA ROOM, HOLLYWOOD, CAL.—C. J. WEYL, ARCHITECT

Photo by Mott Studios

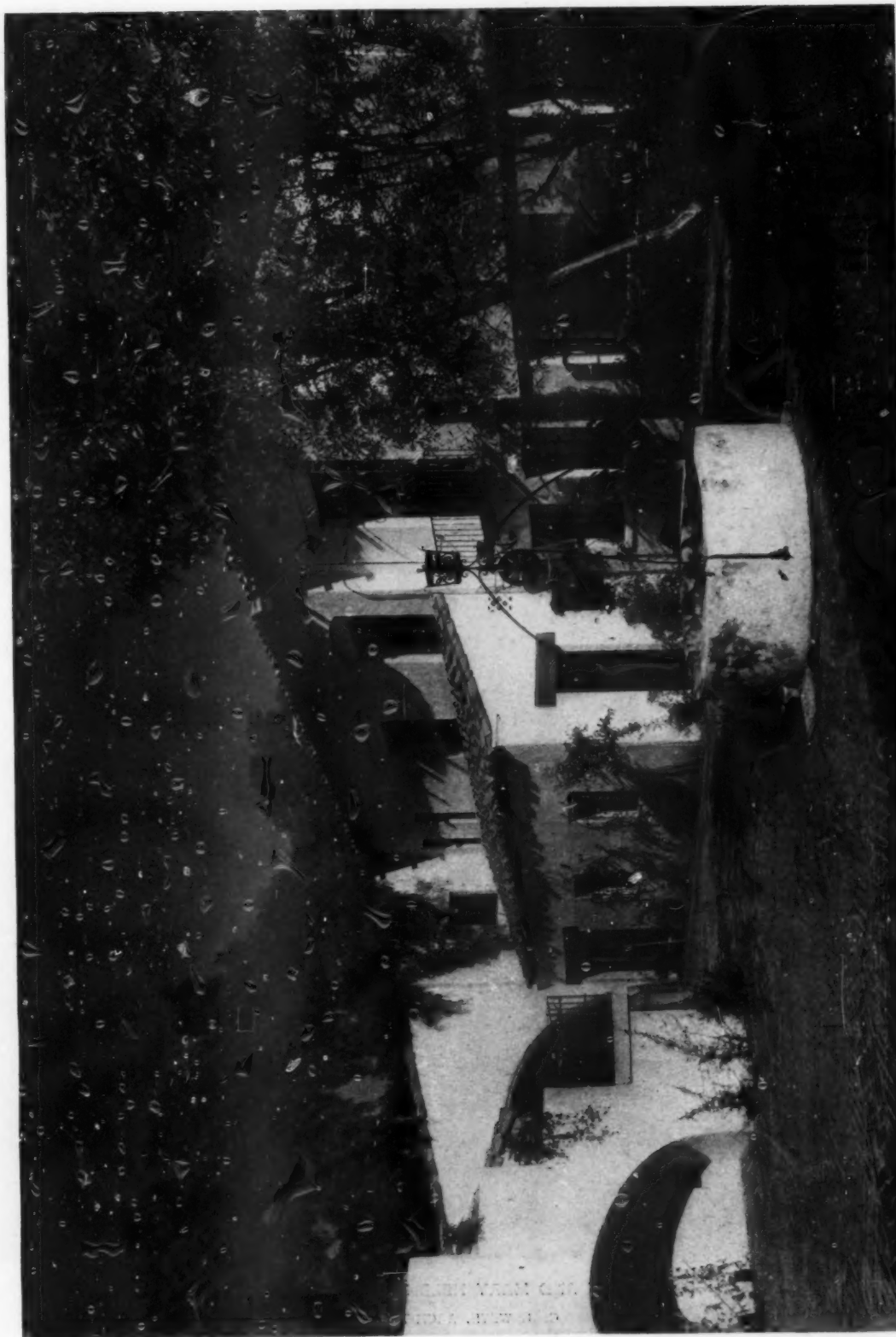


Photo by Mott Studios

FRED THOMPSON COURT AND MARY HELEN TEA ROOM, HOLLYWOOD, CAL —C. J. WEYL, ARCHITECT

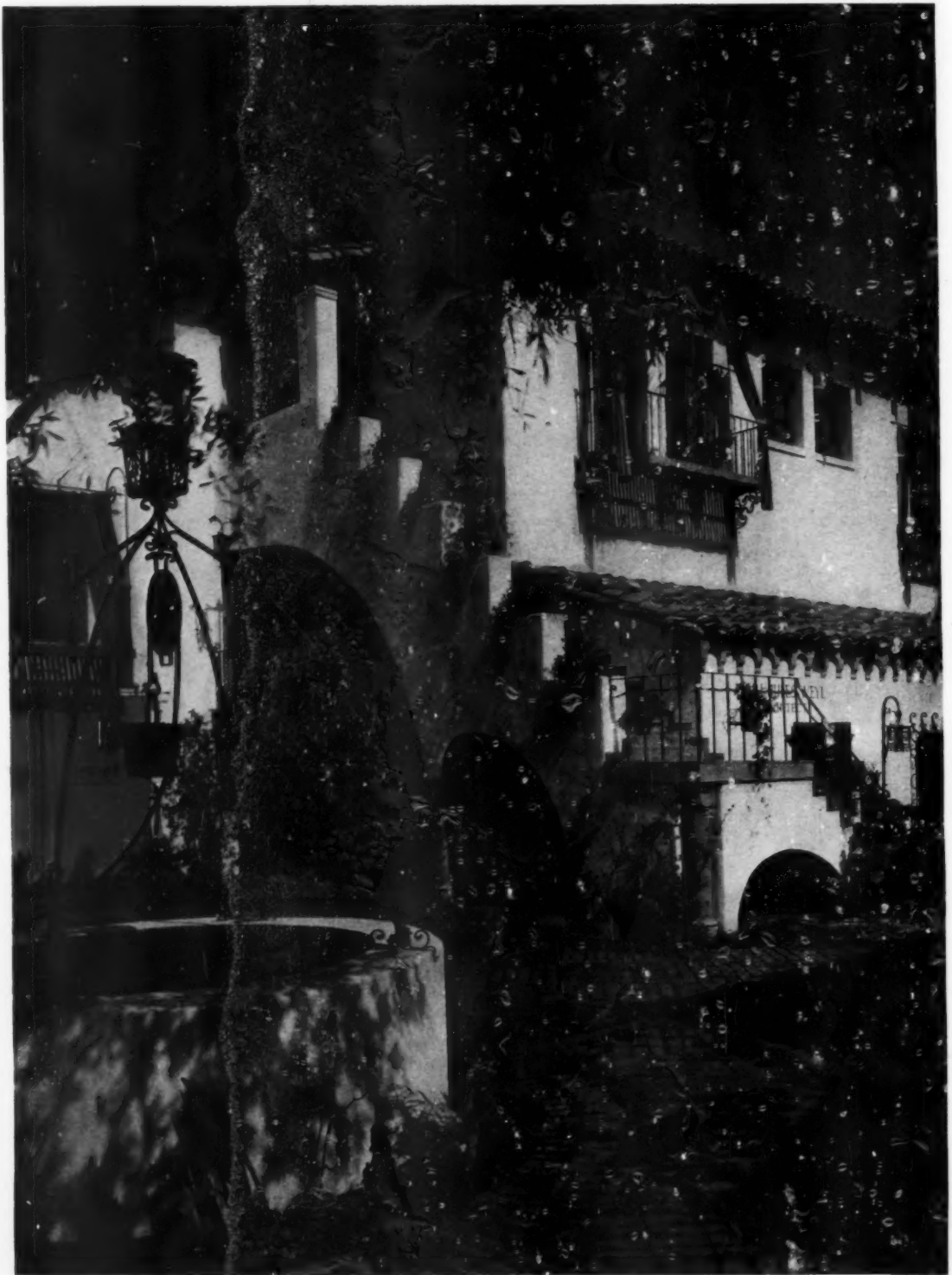


Photo by Mott Studios

FRED THOMPSON COURT AND MARY HELEN TEA ROOM, HOLLYWOOD, CAL.

C. J. WEYL, ARCHITECT

INTERIOR ARCHITECTURE

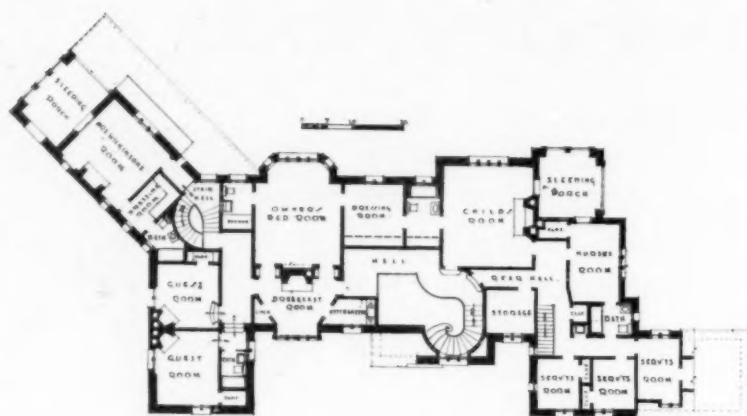
FEATURING THE HOUSE OF

FRANK MAYFIELD AT ST. LOUIS, MO.

MARITZ & YOUNG, INC., *Architects*

IN a nutshell, we might say that the difference between interior architecture and interior decoration lies in the fact that, in the former case, the design of the interior, considered as a problem in architecture, bears a definite relation to the structure, while, in the latter, the treatment of the interior is supposedly given additional interest through the application of certain decorative features. Decoration, in its true meaning, is an architectural term. A well-designed room or interior possesses decorative value even before any of the elements which are commonly considered as "decorations" have been introduced. Decorative interest in an architectural design is attained, first, by the selection of the various structural materials, and, second, by treating those materials in such a way that they serve as ornamental members, without in any way concealing their structural significance. The photographs of a house in St. Louis, Mo., reproduced on the following pages serve as excellent examples of the application of the principles on which interior architecture is established.





Second Floor Plan.



First Floor Plan.

HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.
MARITZ & YOUNG, INC., ARCHITECTS



Photo by Robbins & Baker

HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.—MARITZ & YOUNG, INC., ARCHITECTS



Photos by Robbins & Baker

HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.

MARITZ & YOUNG, INC., ARCHITECTS



Photo by Robbins & Baker

HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.
MARITZ & YOUNG, INC., ARCHITECTS

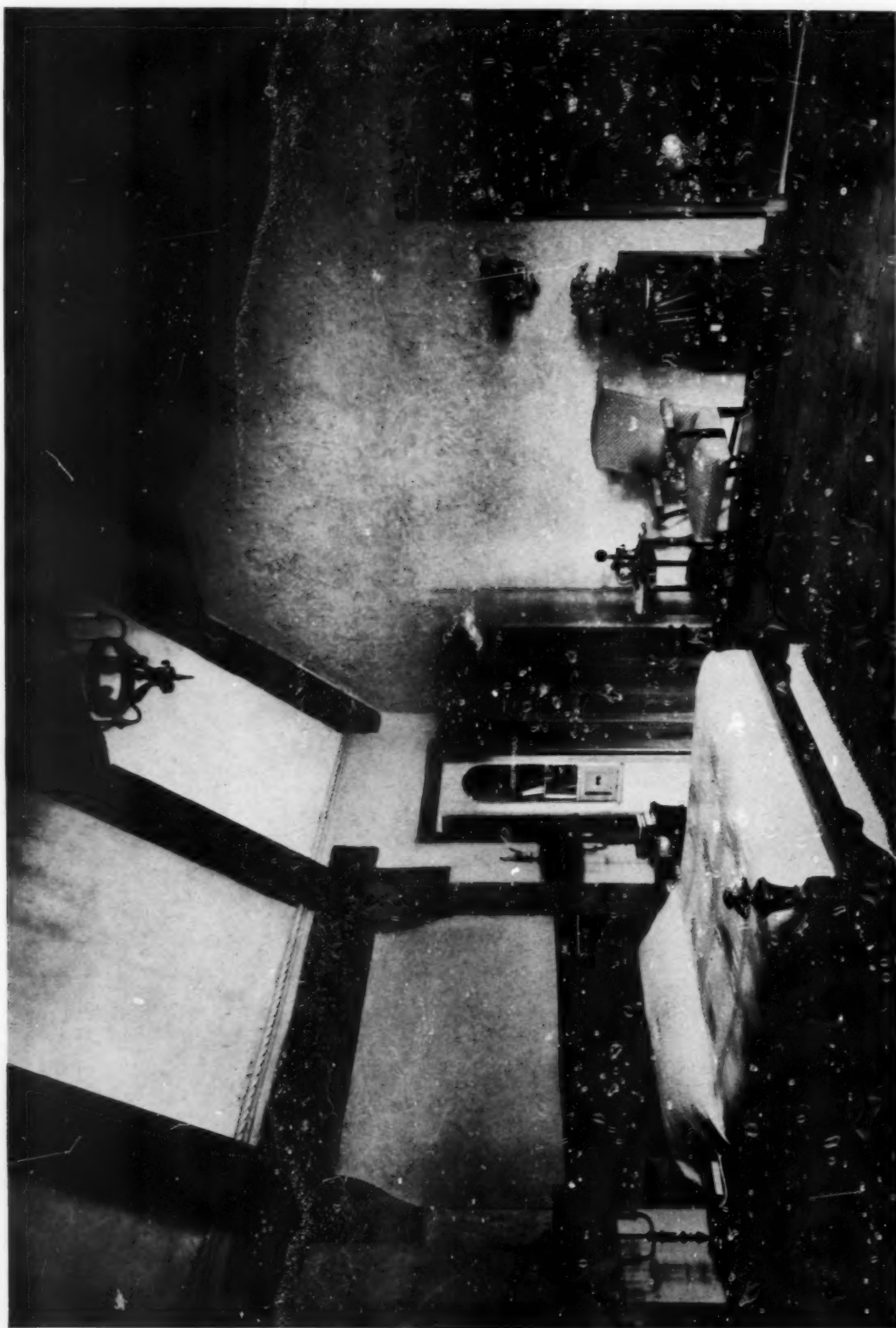


Photo by Robbins & Baker

HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.—MARITZ & YOUNG, INC., ARCHITECTS

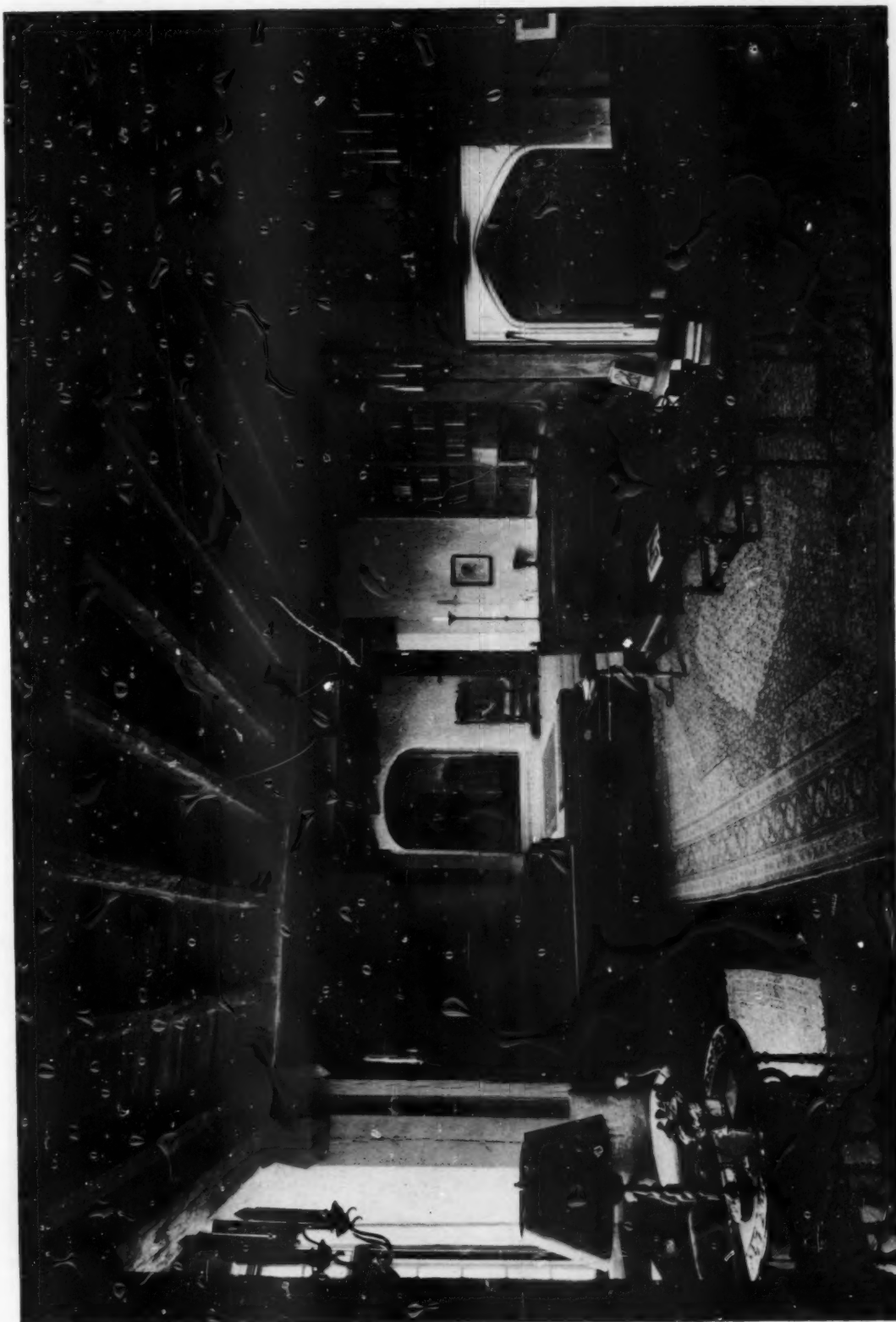


Photo by Robbins & Baker
HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.—MARITZ & YOUNG, INC., ARCHITECTS



Photos by Robbins & Baker

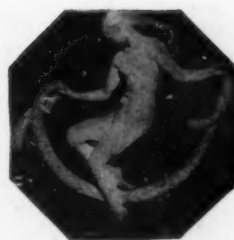
HOUSE OF FRANK MAYFIELD, ST. LOUIS, MO.
MARITZ & YOUNG, INC., ARCHITECTS



"FLEDERMAUS"

A GERMAN DANCE HALL IN THE MODERN MODE

CARL WINAND, *Architect*

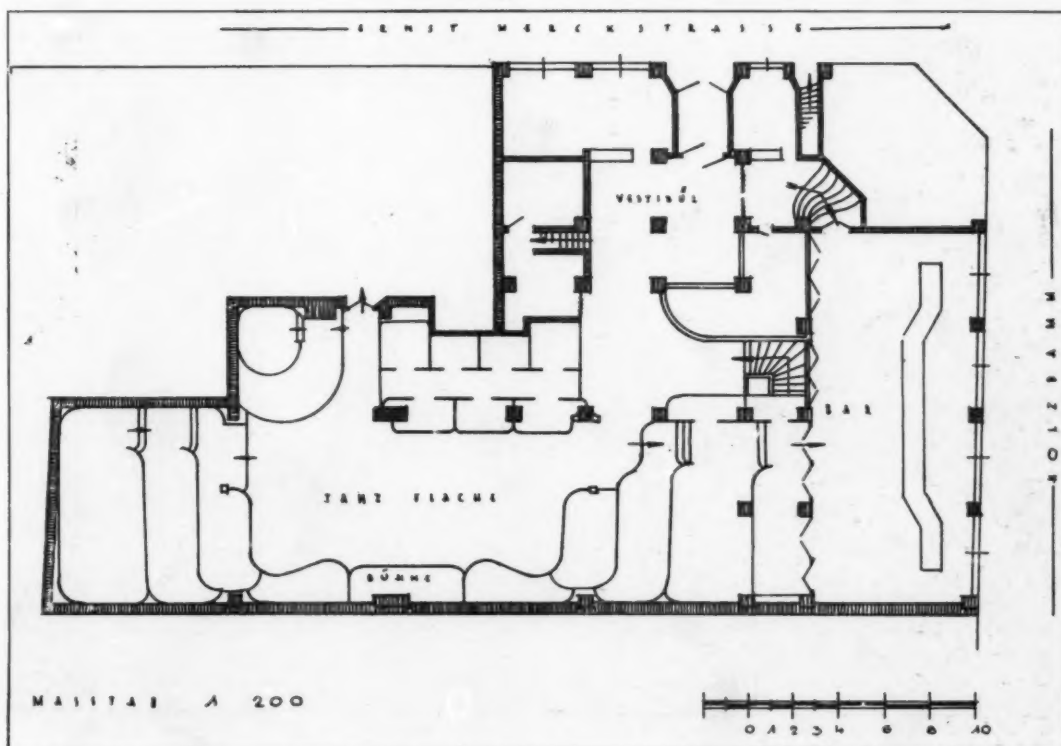


ONE of the basic principles on which good architecture depends is that which requires that the design of a building, both inside and out, reflect the purpose for which that particular building or room is to be used. It is due to the application of this principle that architectural designs achieve individuality. A dance hall, then, to reflect its purpose in its architectural treatment should carry a certain suggestion of the theatrical or even the bizarre. Modern tendencies in architecture lend themselves especially well to the interpretation of these qualities.

The "Fledermaus," a modern dance hall in Hamburg, Germany, of which Carl Winand is the architect, is even extreme in its interpretation of

modern lines and forms, and yet it is a clever solution of the problem with which the architect was confronted. With relatively plain forms, the effect is animated and stimulating, in keeping with the purpose of the room. The decorative scheme is carried out in gray, purple-red and silver. The walls are hung with a decorative fabric, and certain of the more prominent features of the architectural scheme are rightly emphasized by the introduction of appropriate decorative details.

Artificial illumination is supplied by means of both direct and indirect lighting. The design of the fixtures is in perfect keeping with the architectural treatment, so that they harmonize throughout with the general scheme.



"FLEDERMAUS," A DANCE HALL IN HAMBURG, GERMANY

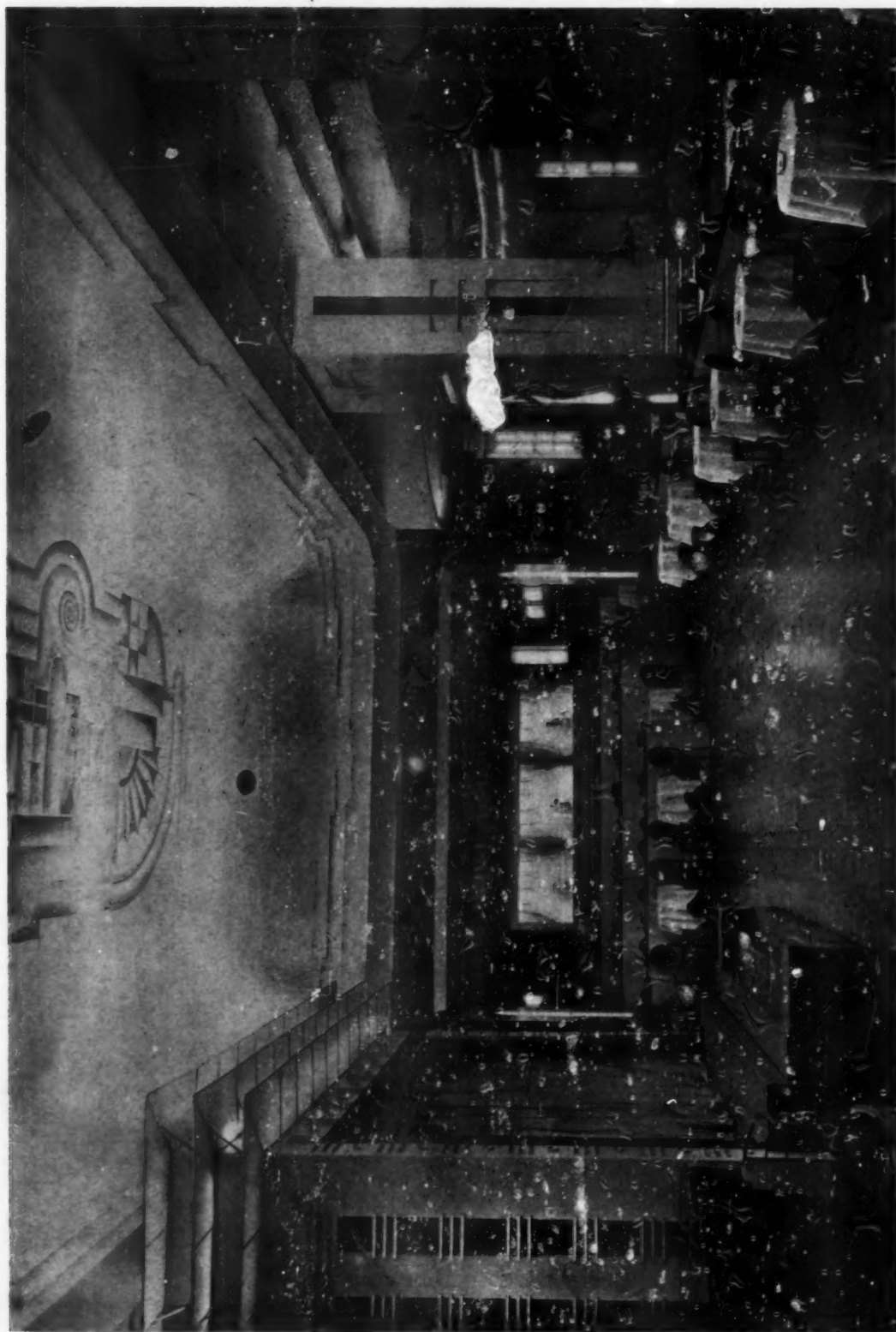
CARL WINAND, ARCHITECT



"FLEDERMAUS" DANCE HALL, HAMBURG, GERMANY
CARL WINAND, ARCHITECT



"FLEDERMAUS" DANCE HALL, HAMBURG, GERMANY
CARL WINAND, ARCHITECT



"FLEDERMAUS" DANCE HALL, HAMBURG, GERMANY
CARL WINAND, ARCHITECT



"FLEDERMAUS" DANCE HALL, HAMBURG, GERMANY
CARL WINAND, ARCHITECT

THE OPPORTUNITY OF THE ARCHITECTURAL PROFESSION

By G. G. WHEAT

THE architects of America have in their own hands the power to increase their total business and income and at the same time render a vastly greater and better service to their country as valued and valuable citizens. They can elevate and improve the standing of their own profession by more fully assuming their responsibilities and coming more into the limelight of public notice, and can still preserve the highest traditions and actualities of ethics and the modesty that goes with true ability. It is highly probable that compared with all other professions or all other economic groups, architects have a better opportunity for emergence into an entirely new position and to advance recognition than any one of them all.

These indicated results can come about largely by right participation in the creation of building law. Action in public affairs must be positive and direct, and architects are the best qualified body of men to lead in this particular field. Before going into specific proposals more fully it will be well to glance briefly at recent events, historical in the building field and of true historical significance to this nation.

The construction industry has but recently come into anything like its true recognition as a major factor of our national life and activity. It has, of course, always been a prime factor, but it has gained major attention and recognition only of late. Just a few high points of chronology are necessary here to bring events of the past twenty years quickly to the present situation.

Not until 1909, following the first National Conference of Governors called by Theodore Roosevelt, was there any government activity, state or national, in collecting even the statistics of construction work. Private reporting agencies, limited and commercial in their purpose, were our main dependence until 1917, and our largest conceptions of construction work never exceeded about two billions of dollars. Only a few business economists gave the construction industry a place in the major indices of business conditions. The practical stoppage of construction work from 1917 to 1920 compelled major attention and study to be given to our need of construction. The Chamber of Commerce of the U. S. A. presented in 1921 the first such study. Their report, for the first time, gave "The Construction Industry" something like its true place as a "Keynote of Prosperity or Depres-

sion" and, next to food production, the principal industry of the nation. Every reader now knows, as daily current fact, the surpassing volume of construction since active work was resumed in 1920 and 1921. History has been made so rapidly that we have not had time even to stop and look at the making. This brief retrospect serves as a background against which the function of the members of the architectural profession as a group stands out in bold relief.

Ten or more billions of capital are flowing annually into new construction. The prime factors that capital investment demands are safety to the invested capital, safety of earning power and the natural corollary, the safety and stability of the construction industry as a whole. Surely no specific detailing of the dominant functions of the architectural group in these is needed. Architects have become business men of the first rank, economists by first hand studies, historians of the past and prophets of future America. Artists they will remain, but now, for the first time, they march shoulder to shoulder with the other leaders of national activities and progress.

The words of our true leaders become the laws for us all. Sociological studies of the steps by which this takes place would be tiresome. The fact is the vital thing. All construction work is controlled by some sort of law. Use any other word that suits more accurately than the word law: "rule," or code, or practice, or specification, but it all means the same. Standards for construction soon become fixed into law once they are well established.

The actual formulation of construction specifications and standards into codes is always taking place. All too frequently this final stage of progress is left entirely to legalists or reformers or social workers, working with and through the political members of society. In the final stages of passing the legislation, political leadership is often forced to yield more or less to the protest of the distinctly reactionary forces of those actively engaged in producing the lowest trades and poorest character of buildings. Often a hodge-podge of law is the result. And so it logically develops that "the architect gets a rotten deal when the law that he must work under is thus produced." The quotation is from an able architect who has been officially observing law-making for many years.

Architects should join actively and give their

best efforts and services to produce a workable and distinctly flexible law that permits within its own self the room for progressive growth in architectural practices. Failing to do this they have no one to blame but themselves. Failing to do this, they finally get the blame for all the ills and evils of construction which they may even be compelled by law to perpetuate. A situation is created, and by no fault of their own except their failure to participate actively as leaders and as the best qualified members of society to establish the standards and codes governing construction industry activities. Another architect expresses his judgment upon this condition of affairs as follows: "But the better class of architects have been so regular and so ethical that they have leaned over backward rather than to be active in the interest of the right sort of law because such law would seem to be in their own interest." Another widely known architect stated to the writer: "Building law should be permissive rather than restrictive, should be a result getter and not essentially an abuse remover, should require a right result and thus eliminate the abuses and present the fullest range for continuous growth and development in construction practices." This sounds and reads like, and actually is, the plainest common sense and sound wisdom.

Architects have in their own hands the power to increase their total business income and at the same time to render a vastly greater and better service to their country as valued and valuable citizens. Does any reader doubt this? Reserve judgment until you personally know the facts. Two-thirds of building work in the United States is housing construction. From a profitable business angle this field is frankly admitted by most architects to be the most unattractive of all. While a large share of this two-thirds is produced under the direction of competent architects paid a regular, legitimate and reasonable fee, part of it at least is carried on where the architect is so in name only. A hundred dollars for supplying a set of blue prints and getting a building permit for the operator is not unknown practice by any means. It is more than probable and it can safely be established that, were all the principal housing operations under the direction of competent architects and paying a regular fee for their valuable services, the total fees of architects handling these projects would be greatly in excess of what they now are. It follows as the night the day that those who dwell in these houses or apartments would get far more for their money than they now get. It also follows just as surely that those who masquerade under the title of architect would rapidly be squeezed out of the professional

ranks and out of competition. This is predicated upon the existence of sensible, workable standards of construction being written into the form of law under the leadership of the members of the architectural profession. An immediate occasion for widest interest in this matter of code writing is found in the fact that New York State is revising its housing law for the first time in nearly thirty years, and that this interest has spread already to a complete rewriting of the building code for the city of New York. A similar procedure will, no doubt, become nation wide, and from past experience one could predict that other cities will soon begin revising their building codes.

The newspapers and the reports of committees of the past two or three years carry a history of what has been happening. Architects should know the local situation and evince deep and active interest. The subject of adequate and decent housing has won first page and editorial discussion countless times. The subject is being made a problem of first magnitude at all times and places. The solution rests more with the architectural profession than with any other single group. Full warrant for the claim that architects can elevate their standing socially and improve their business standing by assuming their responsibilities can safely be drawn from a brief study of what the medical profession has done for itself by serving well the best interests of their clients, the public, in the past few decades. It would insult average intelligence to give a detailed history of how the medical profession has now risen from its one time low estate to having become the most respected member of all the professions. We now willingly pay more yearly to be guided in health than we ever paid decades ago for emergency aid rendered in times of danger and suffering. We know as current fact that the quack and charlatan are nearly removed from the field, and the public is grateful for this and credits the professional standards and practices and the health safeguards to the leadership of "our doctors."

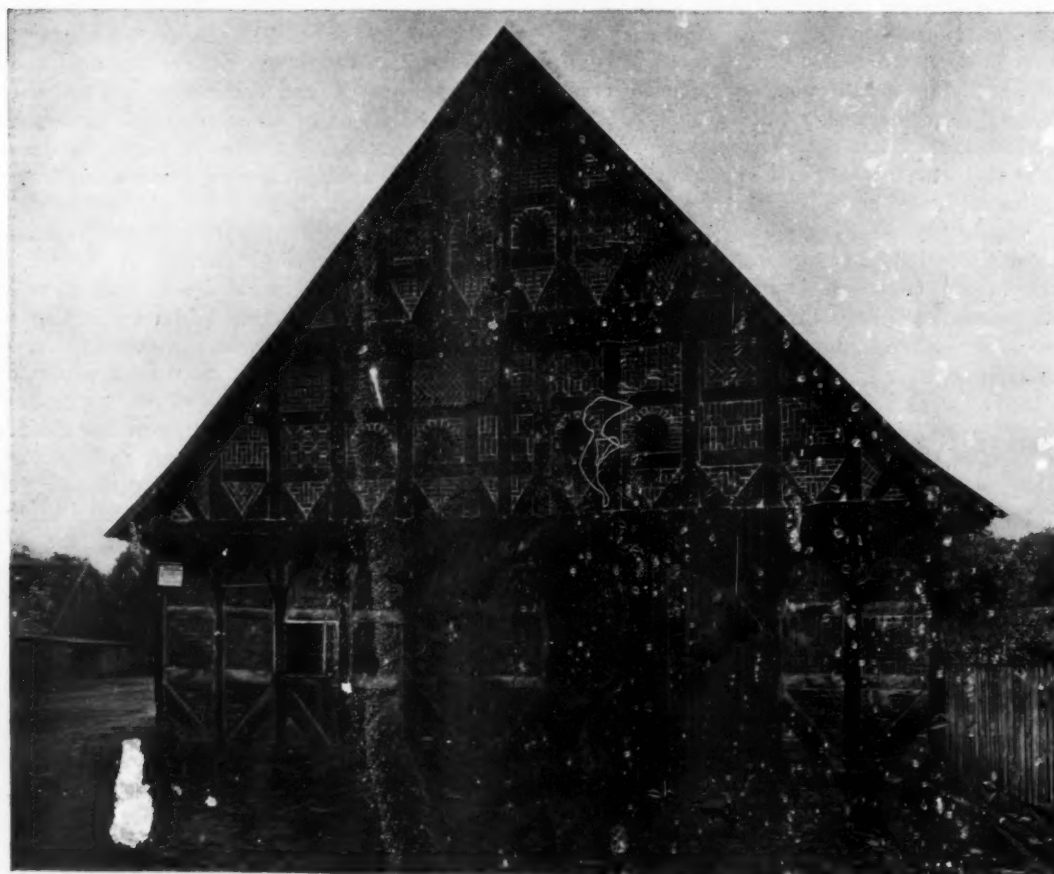
This entire subject of recognition for architects and betterment of conditions in the building industry goes deeply into the life and welfare of our national economic and social life. This discussion cannot be seriously entered into here. But the "buck" can be passed entirely to the architectural profession: let it enter thoroughly and actively into those civic activities in which it alone is the best qualified to lead.

The question of building codes has been touched upon specifically because it so happens that this is a subject that is now or soon will be engaging the attention of countless municipalities and many

States. The architectural profession should not be content to influence legislation of this kind in the interests of better building, if it is to assume its rightful position among other professions. Architects must take a real interest in the plans of their communities. They must stand shoulder to shoulder and "sell" their services to the public. Architectural service, aside from aesthetic considerations, has a dollars-and-cents value that must be stressed. We talk of architectural service in an abstract way, and as a result the meaning of this service is not fully understood or appreciated by the layman. This should be made clear to the public mind. Practitioners who permit their clients to fix the value of

their commissions should be shown the error of their ways and the injury they are doing themselves, their clients and the profession. In some instances individual members may need to be taught the service their clients have a right to expect, in order that the integrity of the profession and confidence in it may be maintained.

Every economic group, or block, or what you were, is now growing more closely united and more actively and openly concerned over the performance of its functions in a manner to win the attention and recognition of all other groups—its customers. Will the architects do likewise for themselves and for their clients, the public?



Courtesy Staatliche-Bildstelle

BARN AT MEDINGEN, GERMANY



THE ACOUSTICS OF THE LARGE ASSEMBLY HALL OF THE LEAGUE OF NATIONS, AT GENEVA, SWITZERLAND

By F. M. OSSWALD, *Consulting Engineer*, WINTERTHUR, SWITZERLAND

IN July 1926, the League of Nations issued the regulations for the competition for the design of new buildings, in which the secretariate and the large Assembly Hall will be housed.

Three hundred seventy-seven projects were sent in and exhibited in July 1927. Since the dimensions of the buildings with over 500 rooms, in addition to the large Assembly Hall, were bound to be enormous, this competition offered a unique opportunity to compare how architects conceived so difficult a task. The result of the competition was so unsatisfactory that the Jury, which was composed of nine leading European architects, could not agree upon any one single project and allotted nine "Ex-aequo" prizes, nine first and nine second mentions.

From the acoustic point of view, interest centered in the large Assembly Hall, and a study of the drawings exhibited showed that the majority of competitors had an insufficient knowledge of the principles which govern hearing conditions in large enclosed spaces. And yet, good acoustics are needed here more than in any other meeting place, and it would be frivolous to construct a merely sumptuous, magnificent, lavish and gorgeous Hall. Viewing the multitude of projects submitted, one could not help being reminded—in more than one respect—of the tragic issue of the Tower of Babel.

The programme had specified an Assembly Hall for about 2,700 seats. This required about 32,000 sq. ft. of seating area at least, including aisles; and of this area, more than one half had to be arranged on one floor for the President and his Staff, and for the Delegates and their Secretaries. Thus the minimum ground floor of the Hall would have about

WE believe that the accompanying article is a valuable contribution to data on acoustics by an engineer who has specialized in applied acoustics. This analysis should be found both interesting and helpful to those who have occasion to design assembly halls where good acoustics are of great importance. Grateful acknowledgment is made to Dr. Paul E. Sabine for his assistance in editing and preparing this article for publication.—THE EDITORS.

18,000 sq. ft. The "spectators," i.e., invited Diplomats and Guests, Press Representatives and the Public, could be placed in galleries, but their seats must afford good sight and hearing.

Thus, starting from a minimum of 18,000 sq. ft. ground area, the architects had to find a way to build up the walls, ceiling and galleries to obtain a Hall both practical and beautiful.

To architects of the traditional school, the required ground floor area gives some measure for the height of the Hall, resulting in a total inside volume of 1,000,000 to 1,500,000 cubic feet. The followers of modern architecture were more free in this respect, but it is a surprise to find that "modern" architecture can lead to even greater volumes and this apparently with the idea in some cases of obtaining good acoustics.

Considering the various designs from the acoustic point of view, one notes that many of the competitors obviously thought of the sound problem simply in terms of a small number of reflections of sound to which the principles of geometrical optics might be applied. Some few appear to have considered it in the light of the findings of modern research on this age old problem of the architect. Even these, however, apparently failed to recognize the quantitative relations of the various factors that determine the acoustic properties of the audience rooms.

The well known work of the late Professor Wallace Clement Sabine treats the problem of sound within a closed space, as largely a matter of the dissipation of sound energy through the process of absorption. This work has come to be recognized by the most architects in America as both theoretic-

cally sound and practically useful in the design of acoustically good rooms. But if one is to judge from the evidence of the Assembly Hall competition, such recognition has not been accorded this work by European architects.

In order to secure good hearing conditions in an audience room, of a size sufficiently great to meet the requirements imposed upon the Assembly Hall, both of providing ample floor space and of giving dignity and spaciousness to the room as a whole, one has to reconcile two conflicting demands. The first of these is to insure that the sound of a speaker's voice may be reinforced by suitable reflection in order to be loud enough to be heard by distant auditors. The second is that the reverberation or continuance of each individual sound shall not be great enough to reduce the intelligibility of speech. The first of these calls for surfaces of walls and ceilings that shall be good sound reflectors. The second calls for surfaces that shall be highly sound absorbent. The secret of successful acoustic design for a room of so great a size as the Assembly Hall lies in a nice quantitative compromise between these two requisites.

Consider first the phenomenon of reverberation, that is, the persistence after the source has ceased of sound produced within a closed space. In such a

space, a sustained source of sound sets the whole volume of air into a state of vibration. When the source stops, the energy of this vibration remains as sound for an appreciable length of time, until it is dissipated, i.e., transformed into some other form of energy. The dissipation can take place only at the bounding surfaces. The process by which the vibrational motion of sound is converted into the random molecular motion of heat is known as absorption, and the property of absorbing sound belongs to surfaces that are soft, compressible, and porous. Now it is apparent that the total quantity of sound energy existing in a room containing a sustained source will be proportional to the volume of the room, i.e., to the cube of the linear dimensions of the room, while the absorbing area will be proportional to the square of these dimensions. Thus, all other conditions being identical, the times of the persistence of sound of a given initial intensity in two rooms will be in the same ratio as are their linear dimensions. Now the effect of reverberation on speech is to prolong each separate syllable resulting in an overlapping of successive syllables that decreases intelligibility. Professor Sabine's experiments showed that the reverberation time was the same throughout a room, regardless of the distance of the observer from the source of

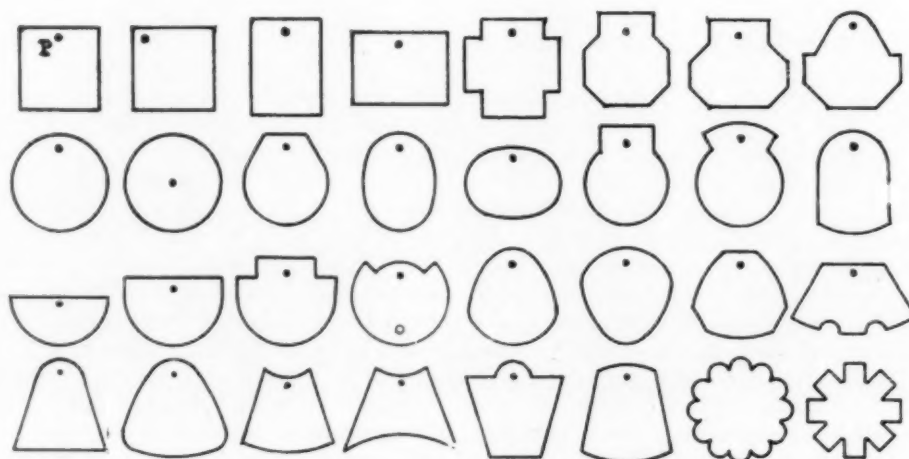


Fig. 1. EXAMPLES OF ARRANGEMENTS OF FLOOR PLANS. THIS COLLECTION SEEMS TO INDICATE THAT THE RULE SOMETIMES MET WITH IN OLD BOOKS ON ACOUSTICS, ACCORDING TO WHICH A HALL SHOULD BE RECTANGULAR WITH THE SIDES IN THE "HARMONIC" PROPORTIONS 1:2:3, OR 2:3:4, ETC., HAS NOW BEEN SUPERSEDED

sound. This means that for a distant auditor the confusion resulting from reverberation is as great as for one close to the speaker, while the intensity of the direct unreflected sound is much less. In other words, the competition of each syllable coming directly from the speaker, with preceding syllables prolonged by reverberation, is keener the greater the distance between speaker and auditor. Thus for a two-fold reason reverberation is a much greater source of difficulty in large than in small rooms. It is apparent that the requirement of a large volume, necessitated by the ample floor space and the monumental character of the Hall itself, makes the problem of controlling reverberation peculiarly difficult.

The cure for excessive reverberation first suggested by Professor Sabine and today employed by many American architects lies in the application over predetermined areas of walls and ceiling surfacing which is much more sound absorbent than are the materials normally employed. Not only did he suggest the qualitative remedy, but by a long series of careful researches he developed numerical formulas connecting the factors which control reverberation, and secured numerical values of the sound-absorbing efficiencies of a large number of materials ordinarily found in room interiors as well as similar coefficients for various sound-absorbent materials that might be used for the control of reverberation. The basis of calculating the degree of reverberation in a proposed room is the well-known Sabine formula,

$$T = .05 V/a$$

T is the time required for sound to decrease to $1/1,000,000$ of its initial intensity, V is the cubical contents of the room in cubic feet, and a is the so-called "absorbing power" of the room, namely, the sum of the products of the separate areas that are exposed to sound, each multiplied by the absorption coefficient of that area.

Reverberation alone considered, the problem of acoustical design thus reduces itself simply to a matter of adjusting the total absorbing power of the room as ordinarily used to the point at which the reverberation time as computed above is not excessive. The determination of a maximum allowable time of reverberation is a matter of computing T for good rooms and for rooms which are known to be poor. For a room that will meet the size requirements of the Assembly Hall, the maximum allowable time is in the neighborhood of 2.2 seconds. To reach a figure as low as this requires that the total volume shall be as small as is consistent with the other requirements imposed.

In case these requirements necessitate a volume so great that the expression for the time exceeds this figure of 2.2 seconds, it is obvious that one

must have recourse to the introduction of sound-absorbent materials. The excessive use of the latter, however, brings one in conflict with the first requirement mentioned above, namely, a measurable reinforcement of the speaker's voice by suitable and useful reflection.

Acoustically then the design presents three distinct problems:

1. To make the total cubical contents of the room as small as is consistent with the architectural treatment of a room of monumental proportions.
2. To provide that the reverberation shall not be excessive, by specifying the kind and the area of the sound-absorbent treatment that will be required.
3. To provide a shape that will yield a measurable degree of reinforcement to the speaker's voice by the proper reflection of sound.

We turn now to the competition. In Figure 1 are shown schematically a number of proposed floor plans. One notes almost all the traditional forms of Parliament Halls, and in addition certain shapes which experience shows must inevitably prove acoustically disastrous. In section (Figures 2-19) even a greater diversity of design is found—multiple stepped ceilings, stalactites, spherical domes, paraboloids of rotation, pure and flattened ellipsoids, ovoids, depressed ceilings, and tremendous ceiling vaults, all in manifold combinations with floor plans. Most of the designs have at least one gallery, some two, three, or even four. When seats for the audience and delegates are arranged on one sloping floor, architecturally splendid results are obtained, but in every case the volumes and dimensions are enormously large.

Viewed in the light of the acoustical requirements as outlined above, one fails to find in any case evidence that the designer has considered the acoustical problem from the modern point of view. In the greater number of cases the volumes are of the order of 1,800,000 cubic feet, with a minimum of about 1,000,000 and a maximum of more than 6,000,000 cubic feet. For comparison we may recall that in existing Parliament Halls the average volume for 300 to 400 members varies from 200,000 to 400,000 cubic feet. The largest halls in which the writer has made acoustic observations are the Trocadero in Paris (about 2,000,000) and the Royal Albert Hall in London (about 2,800,000 cubic feet), neither of which is considered acoustically good for speech.* Most of the competitors have assumed that the normal audience will be 2,700 persons, and in certain instances this number

*Dr. Paul E. Sabine states that there are several examples of large auditoriums in America with volumes up to 3,500,000 cubic feet that are acoustically good. These, however, are designed for audiences of from 10,000 to 12,000 persons.

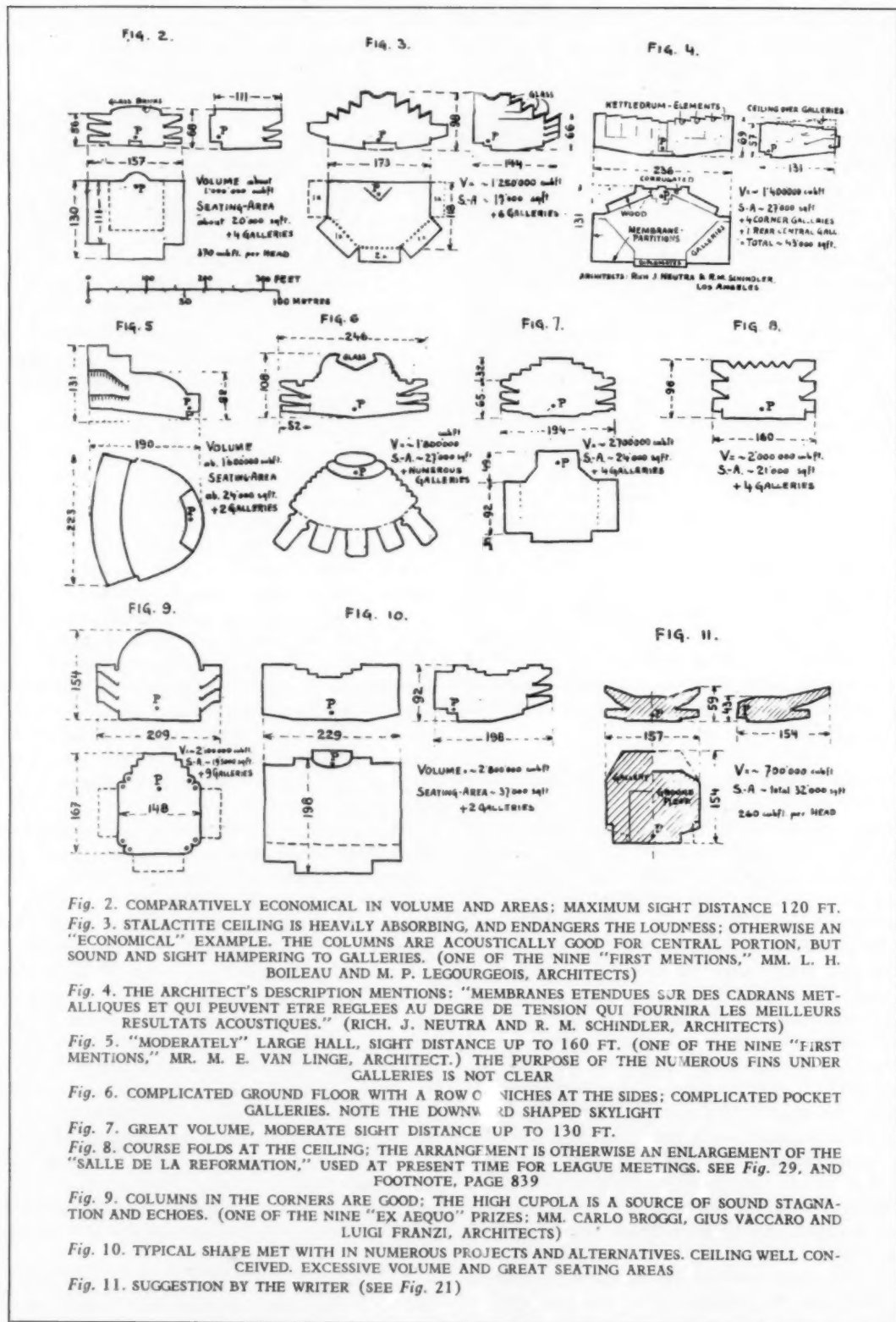


FIG. 12.

VOLUME - about 3'200'000 cu.ft.
SEATING-AREA about 31'000 sq.ft.
+ 2 GALLERIES

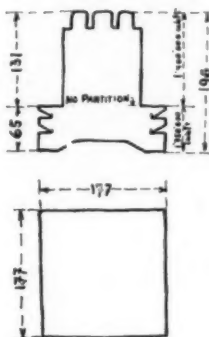


FIG. 13.

$V \sim 3'200'000$ cu.ft.
 $S.A. \sim 27'000$ sq.ft.
+ 2 LARGE GALLERIES

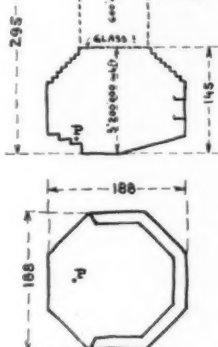


FIG. 14.

$V \sim 3'200'000$ cu.ft.
 $S.A. \sim 25'000$ sq.ft.
+ 2 GALLERIES

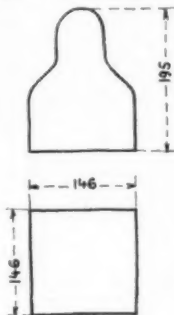


FIG. 15.

$V \sim 3'500'000$ cu.ft.
 $S.A. \sim 59'000$ sq.ft.
+ 2 GALLERIES

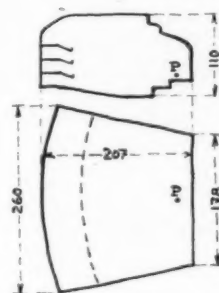


FIG. 16.

$V \sim 2'300'000$ cu.ft.
 $S.A. \sim 24'000$ sq.ft.
+ 1 GALLERY

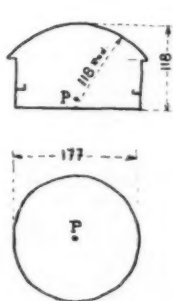


FIG. 17.

$V \sim 6'000'000$ cu.ft.
 $S.A. \sim 47'000$ sq.ft.
NO GALLERY

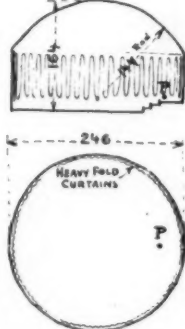


FIG. 18.

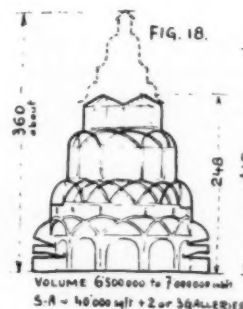


FIG. 19.

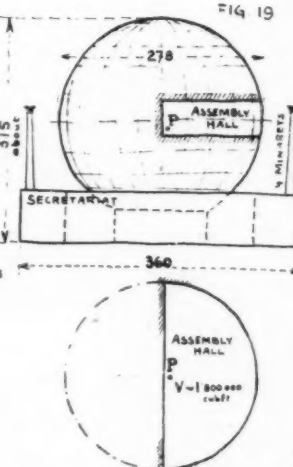


Fig. 12. SOUND VORTEX AND ECHO DOME. WHY NOT CLOSE OFF THE LOWER PART BY A STAGGERED GLASS CEILING WHEREBY THE VOLUME WOULD BE REDUCED TO NEARLY ONE HALF

Fig. 13. EXCESSIVE VOLUME: 1200 CUBIC FEET PER PERSON

Fig. 14. LAVISH ECHO DOME; DETAILS AND DISCUSSION ARE SUPERFLUOUS: NEARLY 200 FEET CLEAR HEIGHT

Fig. 15. ENORMOUS VOLUME; SIGHT DISTANCES UP TO 200 FEET. THE SHAPE OF THE CEILING OVER THE ROSTRUM IS WELL ARRANGED

Fig. 16. PANORAMA BUILDING; WITH THE SPEAKER IN THE FOCUS OF BOTH CYLINDRICAL WALLS AND CEILING CUPOLA; ACOUSTICALLY HOPELESS; INDEFINITE SPEAKING DIRECTION. (ONE OF THE NINE "FIRST MENTIONS," C. M. T. WILLIAMS-OLSSON, ARCHITECT)

Fig. 17. VOLUME, ACCORDING TO THE ARCHITECT'S DESCRIPTION: 6,000,000 CUBIC FEET; HE CALCULATES THE AVERAGE ABSORPTION COEFFICIENT AFTER SABINE'S FORMULA AS .488, WHICH IS EXTREMELY HIGH. HEAVY FOLDING CURTAINS ALL ROUND THE WALL, EVEN BEHIND THE ROSTRUM: SOUND INTENSITY VERY LOW; TOTAL MISCONCEPTION OF ACOUSTIC PRINCIPLES, IN BOTH QUANTITY AND QUALITY; ECHO DOME

Fig. 18. TREMENDOUS VOLUME BUILT OF ORNAMENTED CONCRETE RIBBED WORK. VOLUME APPROACHING 7,000,000 CUBIC FEET=2500 CUBIC FEET PER PERSON; CLEAR HEIGHT 250 FEET; MEAN FREE SOUND PATH OVER 110 FEET (1/10 SECOND): MARVELOUS ECHOES MUST BE EXPECTED

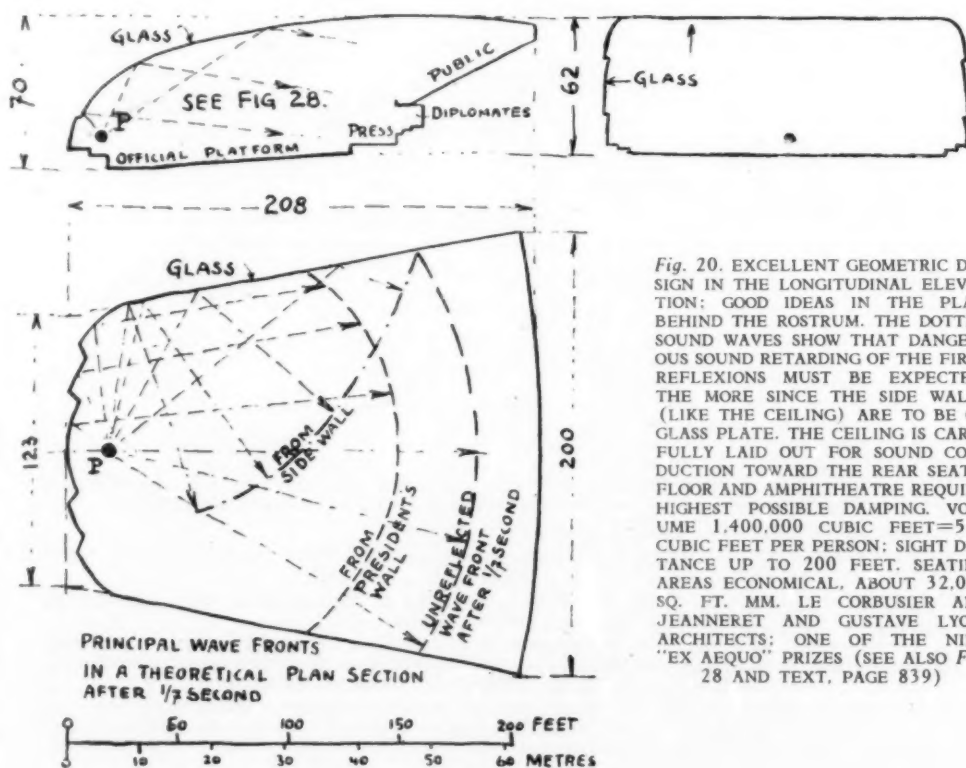
Fig. 19. SPHERICAL BUILDING. THIS EXAMPLE IS REPRODUCED AS AN ARCHITECTURAL CURIOSITY, REMINDING ONE OF AN AMUSEMENT PARK STRUCTURE

has been liberally increased, notably in the gallery seating space.

Figure 17 is the only example here shown that provided for sound absorption. Here the designer has taken care to prevent the concentrated reflection of sound from the cylindrical walls by the use of heavy drapery hangings, but has neglected to obviate the beautifully concentrated echo that will come from the spherical ceiling dome, with its center of curvature located very near the floor level. Figure 25 presents a second instance in which the ceiling contour, together with the extremely great height,

would produce serious acoustical defects. Here the dome is a paraboloid of revolution about a vertical axis. The effect would be to concentrate the sound reflected from the dome in the neighborhood of the focus of the paraboloid from which it would be returned to the audience as a delayed echo much as if a mocking loud speaker were placed at this point to plague the audience with a repetition of the speaker's words. In passing, one may note that a few of the competitors provided loud-speaking amplifiers, but experience has shown that in too reverberant rooms such devices, while amplifying

FIG 20.



the direct sound, amplify at the same time the disturbing reverberation, thus failing to alleviate the difficulty. In Figure 27 we have an interesting example of the use of curved forms to direct the sound. Here the ceiling is a paraboloid of revolution, with the axis slightly inclined below the horizontal and the speaker located at the principal focus. If carefully executed so that the geometrical form is intact without any architectural breaks, this form will serve to reflect the sound from the ceiling to the audience in a useful way, but unfortunately the ceiling will also tend to focus any sound (rustling

of papers, private conversations and the like) originating in the audience onto the speaker's platform. The location of the speaker at the center of the semi-circular plan in this design would prove particularly unfortunate.

An interesting and on the whole a better use of the idea of a parabolic reflecting ceiling is shown in the project submitted by Messrs. Le Corbusier and Jeanneret, in collaboration with M. Gustav Lyon. Here, instead of having a single paraboloid surface with a single focus, the ceiling consists of four distinct parabolic sections with different foci and

FIG. 21.

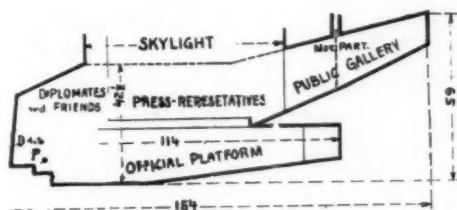
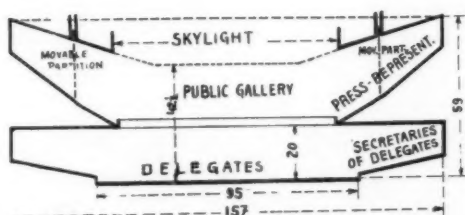


FIG. 22.

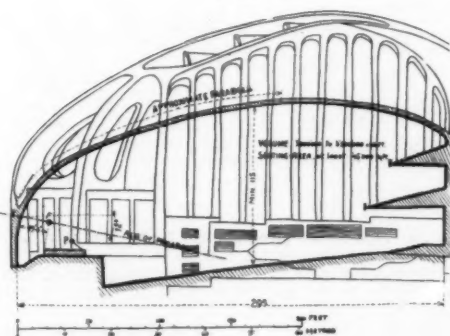


Fig. 21. SUGGESTION (HORS CONCOURS) BY THE AUTHOR FOR "MINIMUM" VOLUME HALL; SEE ALSO Fig. 11 AND DESCRIPTION IN TEXT

FIG. 23.

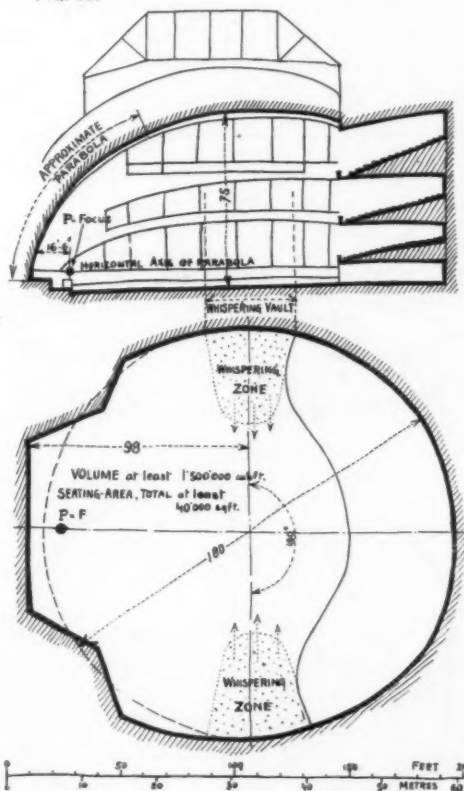


Fig. 22. OVER ROUNDED, MODERATELY OPENED WEDGE FLOOR. APPARENTLY WELL CONCEIVED GEOMETRIC ARRANGEMENT, BUT MUCH TOO GREAT VOLUME: 1300 CUBIC FEET PER PERSON. THE PLANS ALLOWED TOO LITTLE INSIGHT INTO THE BODILY SHAPING SO THAT THIS VERY INTERESTING STRUCTURE COULD NOT BE EXAMINED IN DETAIL

Fig. 23. PARABOLOIDAL SHAPE; LONGITUDINAL ELEVATION NOT BAD IN PRINCIPLE, BUT THE AXIS OF THE PARABOLA SHOULD BE MORE INCLINED, WHEREBY BOTH VOLUME AND SOUND CONDUCTION WOULD BENEFIT. SEATING AREAS MODERATELY AMPLE. WHISPERING GALLERY EFFECT IS TO BE EXPECTED IN THE MAIN CROSS SECTION. GENERAL LOUDNESS AND HOMOGENEITY OF SOUND DISTRIBUTION ARE INSUFFICIENT. 550 CUBIC FEET PER PERSON

axes, as shown in the drawing. The fan-shaped plan shows similarly staggered curves back of the rostrum and side walls giving useful sound reflections (Figure 20). It is proposed to make the entire ceiling and sides of double glass plate. The low sound absorption of such a material, together with the rather large volume (1,400,000 cubic feet), presents a combination that is practically sure to yield a room that is too reverberant for speech.

Diagrams of the other projects are for the most part self explanatory. Without exception, they show either a complete ignoring of the acoustic problem in the designs or indicate attempted solutions by means which both modern research and practical experience have shown to be futile. In almost every case one encounters volumes which without abundant absorbent treatment are sure to be excessively reverberant, and distances over which

speech from any but the most powerful voices must be unintelligible. In behalf of the competitors, however, it should be said that these conditions are almost inevitable concomitants of the large number of sittings and the large area allotted to individual seats.

A reduction in both of these factors would seem to be demanded if the Assembly Hall is to serve its prime purpose of a room in which intelligible discussion can be conducted.¹

The object of the writer in preparing the present article was to demonstrate that the difficulties arising from the acoustic problem of the League of

¹There are indications that the League is now giving careful attention to the acoustics of the design which is to be a combination of the ideas of three of the winning competitors. The hall used at present, the "Salle de la Reformation," with but 1260 seats and 200,000 cubic feet, is acoustically poor.

FIG. 24.

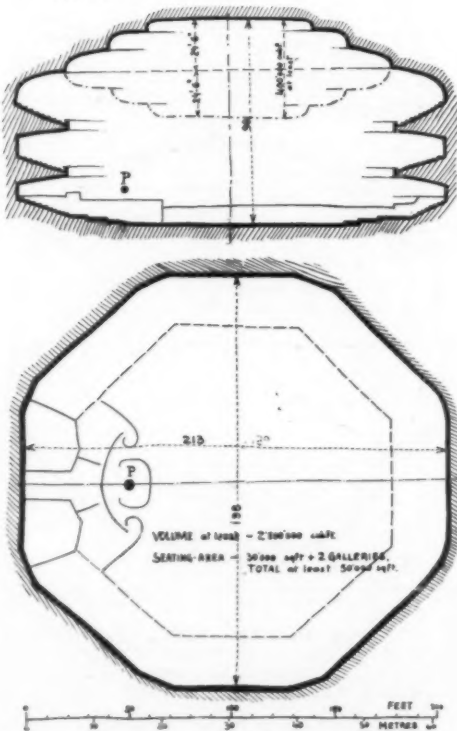


Fig. 24. GENERAL ARRANGEMENT CLEAR, BUT MUCH TOO GREAT VOLUME: OVER 900 CUBIC FEET PER PERSON, OVER LARGE SEATING AREAS; SIGHT DISTANCES UP TO 180 FEET. THIS TYPE OF HALL MET WITH IN NUMEROUS PROJECTS. THE MIDDLE PART OF THE CEILING COULD AS WELL BE TURNED DOWNWARDS WITHOUT HARM TO THE "GRANDEUR" OF THE HALL, THEREBY SAVING AT LEAST $\frac{1}{3}$ TO $\frac{1}{2}$ OF THE VOLUME (THE DOTTED LINES ARE OUR ADDITION)

FIG. 25.

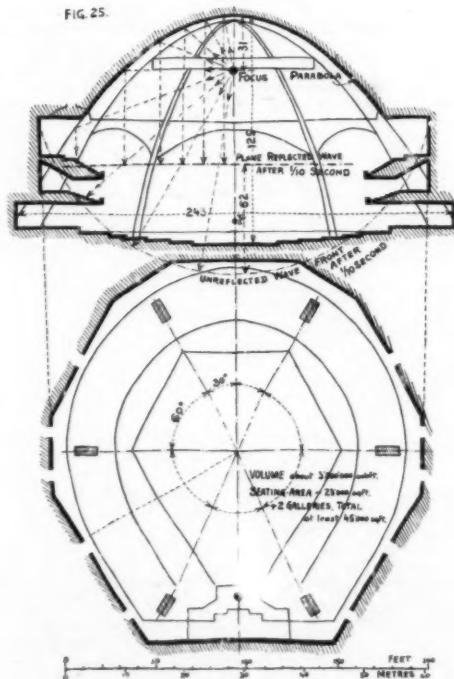


Fig. 25. PARABOLA DOME (SEE TEXT PAGE 838). THE MARKING OF THE LOUD SPEAKER IN THE FOCUS OF THE DOME IS OUR ADDITION, LIKEWISE THE SOUND WAVE FRONTS AFTER $\frac{1}{10}$ SECOND; THESE SHOW THAT THE FIRST REFLEX IS PLANE, BUT THE GREAT ANGLE OF APERTURE OF THE PARABOLA LEADS TO ALREADY DANGEROUS PATH-LENGTH-DIFFERENCES BETWEEN THE UNREFLECTED AND FIRST REFLECTED WAVE FRONTS. THIS SHAPE OF HALL MIGHT BE USEFUL FOR A VOLUME, SAY, $\frac{1}{3}$ L¹ EAR SCALE, OR 150,000 TO 200,000 CUBIC FEET, BUT NOT FOR 3,500,000 CUBIC FEET OR 1300 FEET PER PERSON

Nations Hall are best overcome by reducing the volume to a minimum.

The diagrammatic project outlined in the following was the result of a private study made immediately after the publication of the League's programme; this study could not be submitted in the competition.

Starting with the idea that good hearing and speaking will be the principal requirement of this Hall, the structure must offer no difficulty in obtaining a good view from all places; be easy to light, ventilate, and maintain; and conform to organization requirements. The question of aesthetics was left out of consideration, it being assumed that an able architect would make any shape of hall acceptable in appearance.

The first rough outline led to a gross inside volume of over 800,000 cubic feet, an alarmingly

high figure, but modest when compared with those submitted in the competition. Various alternatives were worked out with volumes between 550,000 and 700,000 cubic feet. The accompanying figures show the outline dimensions of the latter alternative, following the official programme, which demanded:

President, Staff and Rostrum—

Gross seating area about	1,600 sq. ft.	Official platform, 17,300 sq. ft.
400 Delegates, each 25 sq. ft.	10,000 sq. ft.	
400 Secretaries	5,700 sq. ft.	

250 Diplomats and Invited Guests	2,300 sq. ft.	Galleries, 14,200 sq. ft.
600 Press Representatives	5,000 sq. ft.	
1000 Public Visitors	6,900 sq. ft.	

Total number of seats, 2,675 31,500 sq. ft. 31,500

The inclination of the galleries should not be too steep, and the total height of the Hall not too

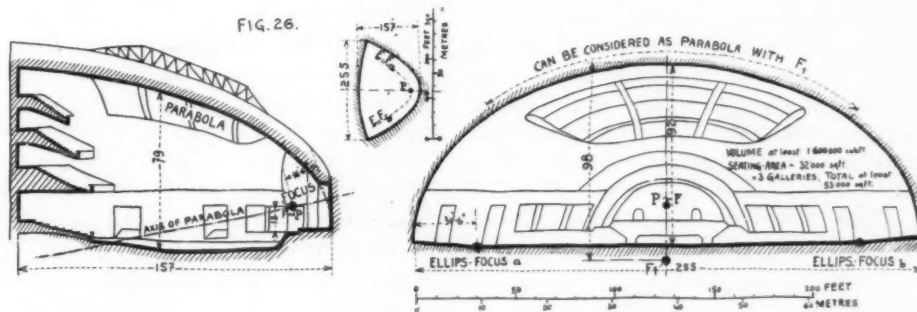


Fig. 26. FLATTENED GEOMETRIC SHAPE. 600 CUBIC FEET PER PERSON, MODERATE. SEATING AREAS POSSIBLY 53,000 SQ. FT., LAVISH. CROSS SECTIONS ARE ALL ELLIPTICAL. WHISPERING EFFECT AND GENERAL NOISINESS IS TO BE EXPECTED IN ZONES "E. F." MIDDLE PORTION OF CEILING CAN BE TAKEN AS BEING PARABOLAS OR CIRCLES WITH VERTICAL FOCI IN FAVORABLE POSITION. REAR WALL IS EFFECTIVELY DAMPED BY THE THREE GALLERIES

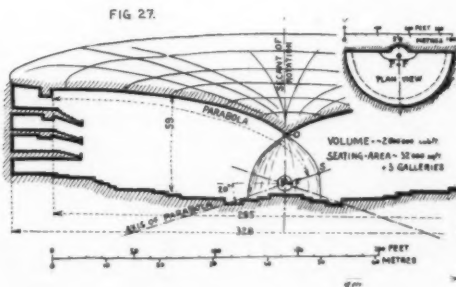


Fig. 27. ORIGINAL IN CONCEPTION. ROTATION OF PARABOLA ABOUT OBLIQUE PARABOLA SECANT AS AXIS OF ROTATION. NICHE BEHIND ROSTRUM IS THE COMPLEMENT OF THE PARABOLA O-S. AT P ALL NOISES OF THE HALL ARE PERFECTLY CONCENTRATED, AND ANY TWO POINTS OF THE HALL HAVE WHISPERING COMMUNICATION BETWEEN THEMSELVES. IN SPITE OF GREAT GROUND AREA, THE VOLUME IS COMPARATIVELY MODERATE, 750 CUBIC FEET PER PERSON, BECAUSE OF HEAVY INCLINATION OF THE RADIAL-PARABOLA-AXIS. SEATING AREA LARGE

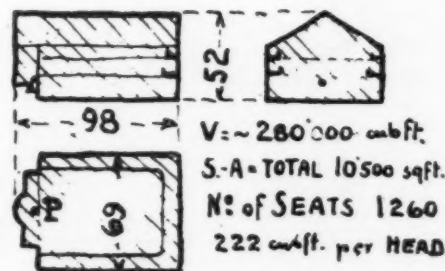


Fig. 29. "SALLE DE LA REFORMATION," THE PRESENT ASSEMBLY HALL OF THE LEAGUE OF NATIONS AT GENEVA, SWITZERLAND

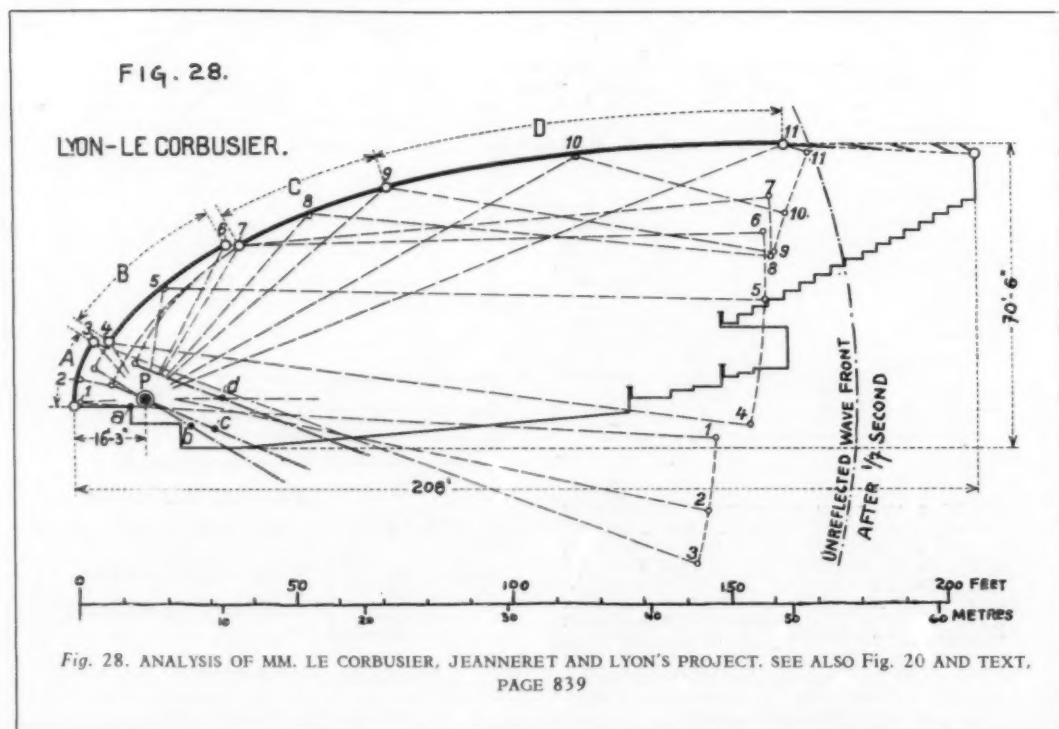
great, thus a two-story construction was adopted. The central part of the Hall measures about 95 x 114 ft. by 43 ft. in height. The extreme dimensions, including galleries and other overhangs, are 154 x 157 ft. by 59 ft. high, having a total volume of about 700,000 cubic feet. No columns or curved surfaces have been made use of, since they would limit the service of the Hall. Personal experience with much smaller Halls has shown that curved rooms are acoustically more or less inelastic. Simple and plane surfaces can be clearly calculated from the standpoints of geometry and of absorption.

The galleries, it is true, are very deep, and since they possibly will not always be used to their full capacity, they could be reduced, by movable partitions, to about one-half of their seating capacity, giving a reduced gross volume of the Hall of about 600,000 cubic feet with 1,560 seats. This volume is difficult to master acoustically, but not hopeless.

Since even this reduction in volume still leaves a reverberation that is greater than the optimum, a certain amount of localized absorbent treatment should be specified. To insure that the consequent reduction in loudness will not prove a defect, provision is made to locate a number of loud-speakers of only moderate power, so as to raise the level of intensity locally. These would not "trumpet" into the central portion of the Hall. Several microphones

could be placed high up on the ceiling instead of near the rostrum, as experience has proved that they receive the sound which is not deteriorated by the close vicinity of the audience. If the microphones were located at the rostrum, we would get artificial echoes, i.e., repetition of the sound impulses, because the electrically transmitted pulses would arrive nearly $\frac{1}{8}$ second before the wave travelling through the air. In this arrangement of semi-loud-speakers and microphones, the time difference of the two impulses is less than $\frac{1}{50}$ second, an interval which is hardly perceptible.

By reason of the very deep gallery and overhung portions, the *active* acoustic volume of the Hall is below 500,000 cubic feet, a volume which is still practicable for a single speaker and affords perfect reverberation conditions and natural hearing for the majority of the audience, at least in the important portions of the official platform and in the first 6 to 8 rows in the galleries, while the loudness in the rear rows of the galleries and overhung parts would be enhanced by semi-loud speakers. The inclination of the ceilings and the details of the construction of the large sky-light have been studied with particular care for positive sound conduction with practically no return of sound or obnoxious echoes towards the Hall, nor concentration of noises on the rostrum.



EDITORIAL COMMENT

THE AMERICAN ARCHITECT wishes its readers a Merry Christmas and a Happy New Year. In these modern times, when new ideas are being so generally sought in every field, this may sound like an old-fashioned expression. But modernism has not yet found a way in which we can better express our sentiments at this season of the year. Nineteen twenty-eight has been a good year for the profession. No records have been broken in costs of building construction, perhaps, but peaks in statistics are always followed by slumps, anyhow, so it is better after all that we keep somewhat below the top mark in order that our prosperity may continue. Nineteen twenty-eight will undoubtedly go down in history as a red letter year in architecture. As we look back over the past year we can see the progress that has been made in the development of a distinctive American style. We no longer stand on the verge of a new era: we are actually living in a new era. Architectural history, such as the world has not seen in the last three centuries, is being made every day. The conditions under which we are today developing a new style are somewhat unusual. Rather than admit that we were lacking in creative ability, we were forced, in having our attention called to the progress that was being made in creative art in European countries, to step on the gas, so to speak. We readily decided that we were averse to continue to follow in others' footsteps. We were recognized by the world

as leaders in other fields. Why not be leaders in the field of architectural and decorative design? Thus we plunged somewhat hurriedly into the problem, while otherwise we might have allowed the development of a modern style to evolve more naturally and logically. As a result, we must expect mistakes to be made and not be too critical. We must still follow the leaders, but the leaders from now on will be our own countrymen—men recognized as leaders in the field of American architecture. What the next year will produce, none can say, but it would be safe to predict that before another Christmas

season rolls around the new style which we are now developing, sometimes rather hurriedly, will have become stabilized. The errors and mistakes we are now making, in our efforts to accomplish too much in too short a time, will have been obliterated; our tastes, too, will have been matured, so that what seems now to us radical and extreme will then appear safe and sane. But there are other reasons, too, why the Christmas season this year should be a happy one. Prosperity has made for more healthy conditions in our methods of living. Many of us now own our own houses. Our systems of architectural education have been greatly improved, so that we may feel more safe in leaving our heritage in the hands of the future generation. So let us not be too engrossed with our work to stop for even a minute and wish the other fellow "Merry Christmas and Happy New Year."



SKETCH OF CHURCH AT NANTES, FRANCE

*Reproduced from a sketch by S. W. Mead in
The American Architect, Oct. 23, 1886*

AN ECONOMIC REVIEW

ACCORDING to the annual report of the Secretary of Commerce for 1928, a major factor in maintaining the general activity in the industry has been the continuance of the heavy volume of building and other construction work which has characterized recent years. From the report we learn that the total value of construction in the United States was between seven and eight billions of dollars. Statistical figures based upon the value of contracts in thirty-six states indicates that the volume of construction exceeded the large totals of 1922 and 1925 and exceeded 1926 and 1927 by between 2 and 3 per cent.

Increased activity in the construction of residential buildings as well as public works and utilities has been largely responsible for maintaining the volume established in previous years. It is understood that the value of new dwellings alone exceeded three billions of dollars. In as much as previous years have witnessed the erection of an unusually large number of commercial and industrial buildings, it is not surprising to find that in these classes a reduction of volume is noted.

The building industry has passed through an economic readjustment in which a gradual decline in the cost of building material has been accompanied by a general advance in the wages of workmen. These factors have tended to balance each other, but have been partly offset to the advantage of owners through increased efficiency and the increased use of devices for economizing labor.

The Secretary of Commerce calls attention to the fact that while there is a tendency toward lower interest rates on mortgages, "there is still need for improvement in the methods of financing." This is especially true in the case of the financing of houses of moderate price.

While this report deals with what has transpired and makes no forecasts of the future, there is every reason to look forward to the coming year with satisfaction. The building industry is now in a

more stable condition than it has been at any time during the past decade. The campaign that has been waged to eliminate "seasonal" activities has brought results. Year-around building is established on a practical basis. Business conditions in general have been and are good. There is good reason to assume that these conditions will continue. Business slackened in the early months of the past year due to special and temporary causes, but later recovered to a level never before attained. Business never has and never will proceed over long periods of time on an absolutely even keel. It is dependent on too many uncontrollable factors to expect the realization of this Utopia. It is remarkable that the prosperity of the United States should continue over so long a period of time and find the year 1928 ending with a strong prevailing upward trend.

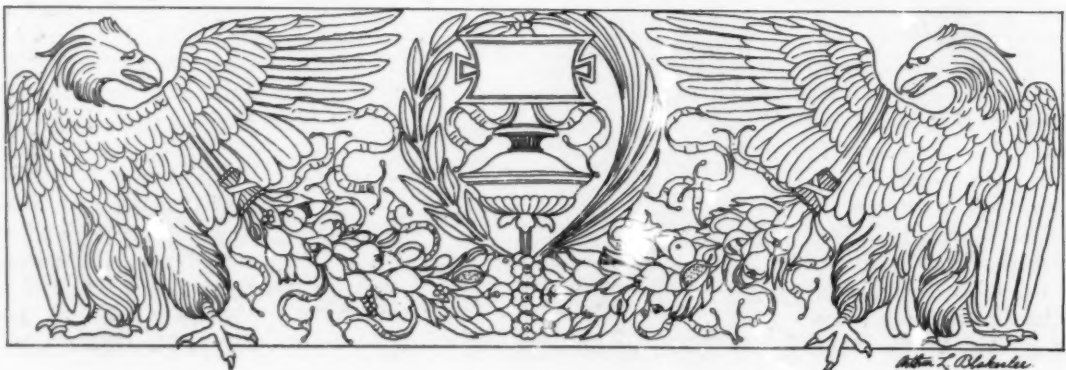
AN INSCRIPTION AND LEGAL RECOURSE

THE November 7, 1928, issue of "The Architects' Journal" of London contained the following news item:

"DESTROYED BY GERMAN FURY"

Mr. Whitney Warren, the American architect of the new library of the Louvain University, which has been built with American money, notwithstanding representations from numerous influential Belgians in Washington, has cabled his formal decision to take proceedings against the university regarding the inscription which was objected to by the rector. Mr. Warren desired that the balustrade of the library should bear the inscription: "Furore Teutonico deruta; dono Americano restituta" (destroyed by German fury; restored by American generosity.) Many Americans who subscribed to the cost of building the university have forbidden Mr. Warren to agree to the modification of the inscription. The legal representative of Mr. Warren in Brussels has received instructions to commence proceedings before the Belgian Courts.

The final outcome in this controversy will be learned with no little interest. While the circumstances under which the new library of the Louvain University was erected were out of the ordinary, what bearing, if any, will these legal proceedings have on inscriptions placed on other buildings in the future?



WESTMINSTER PRESBYTERIAN CHURCH

SACRAMENTO, CAL.

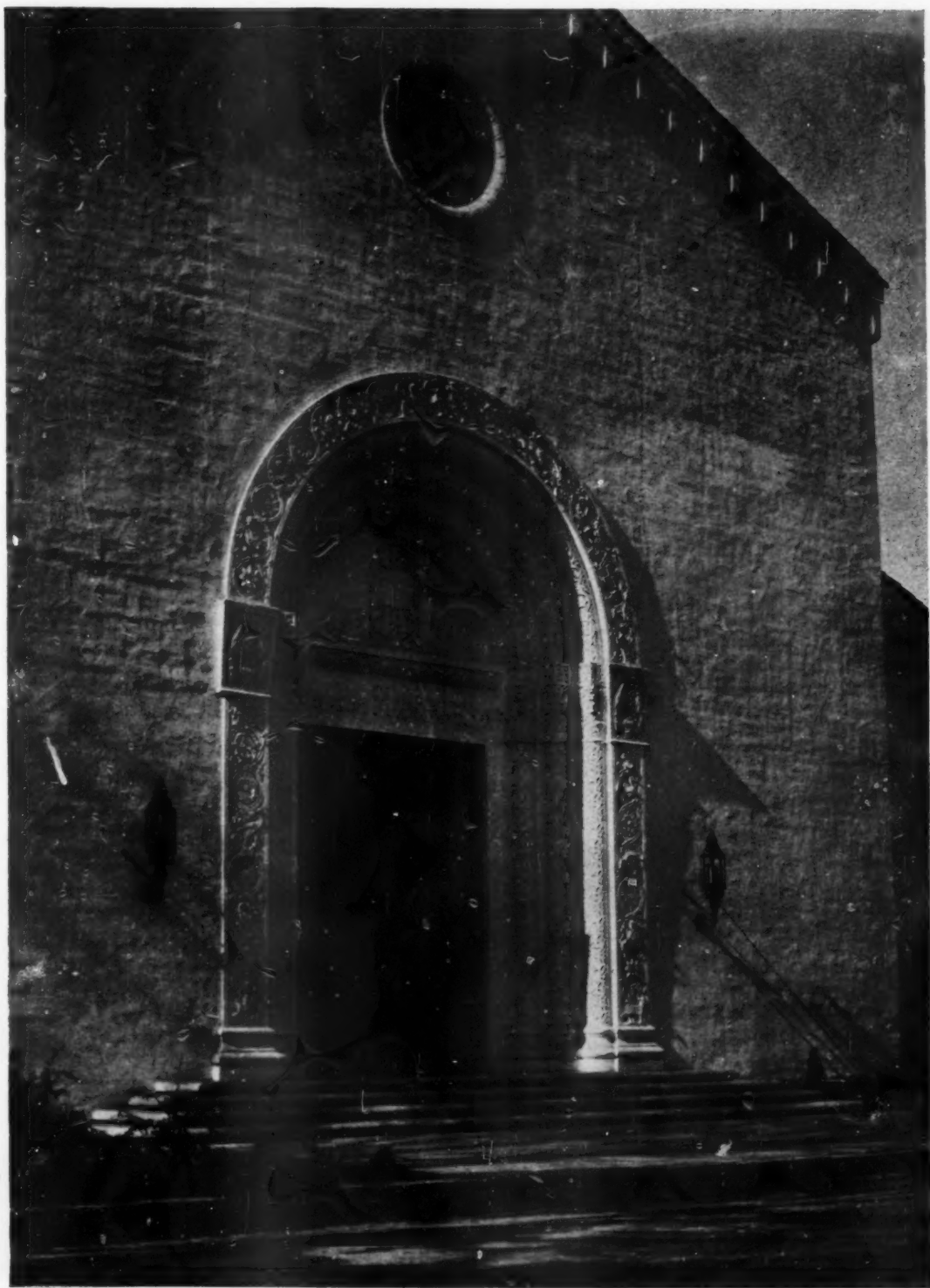
DEAN & DEAN, *Architects*





WESTMINSTER PRESBYTERIAN CHURCH, SACRAMENTO, CAL.

DEAN & DEAN, ARCHITECTS



WESTMINSTER PRESBYTERIAN CHURCH, SACRAMENTO, CAL.

DEAN & DEAN, ARCHITECTS



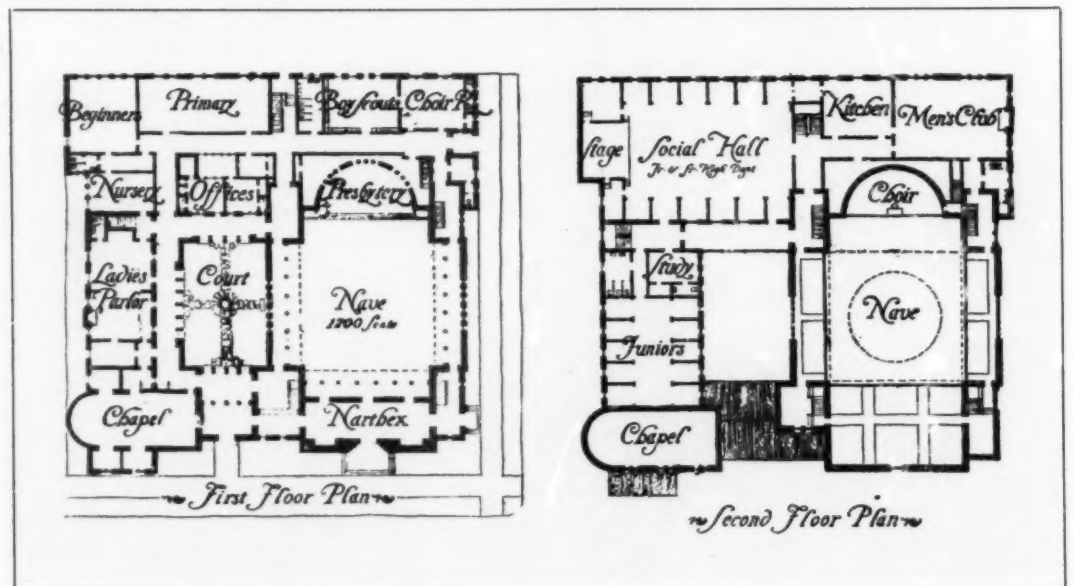
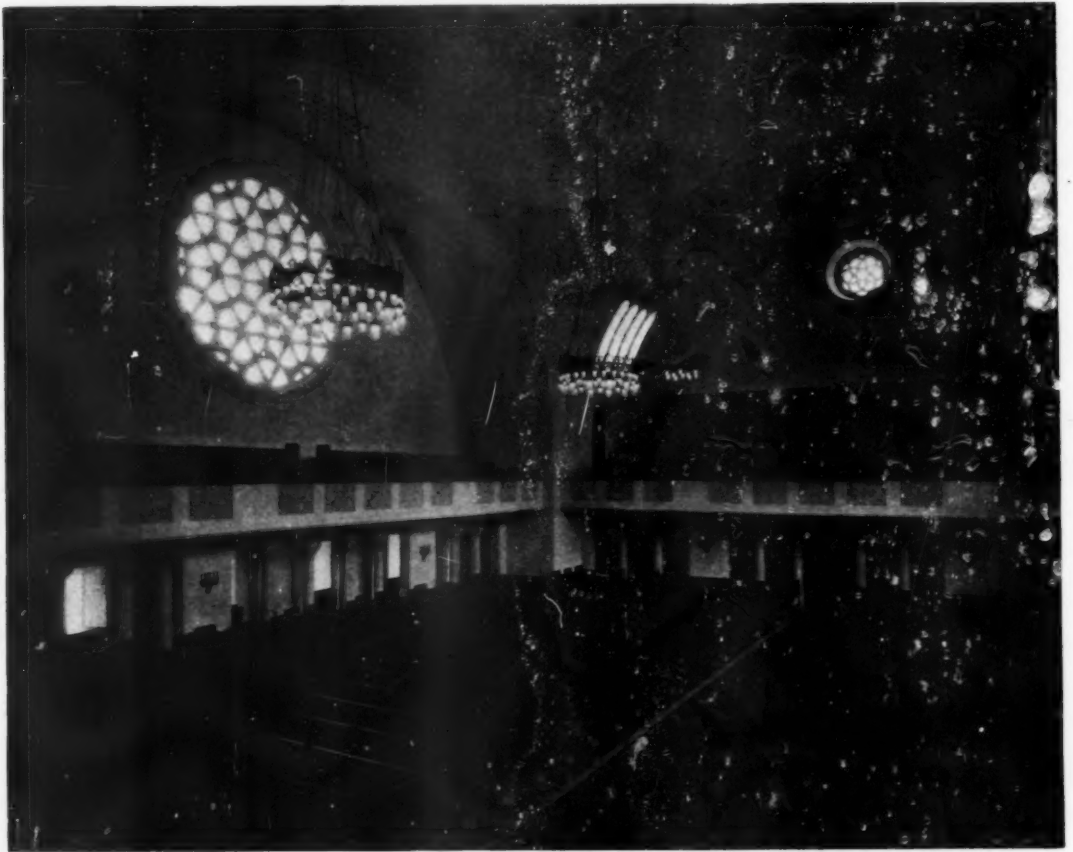
WESTMINSTER PRESBYTERIAN CHURCH, SACRAMENTO, CAL.

DEAN & DEAN, ARCHITECTS



WESTMINSTER PRESBYTERIAN CHURCH, SACRAMENTO, CAL.

DEAN & DEAN, ARCHITECTS



WESTMINSTER PRESBYTERIAN CHURCH, SACRAMENTO, CAL.

DEAN & DEAN, ARCHITECTS

NEW YORK BUILDING CONGRESS STANDARD SPECIFICATIONS

STUDENTS of production costs have for many years recognized that appreciable economies would ensue if manufacturers could be persuaded to confine their products within the limits of acceptable standards. The United States Department of Commerce, through the Bureau of Standards and special committees studying elimination of waste by means of simplified practice, have done a great deal toward establishing such standards for many products entering into Building Construction.

The New York Building Congress conceived the idea that if in a like manner acceptable standards could be established for materials and workmanship entering into general building construction similar economies would result and much of the uncertainty in estimating be eliminated. It was generally agreed that such standards could best be established through specifications.

A Standards Committee was accordingly set up under the chairmanship of Joshua Barney of Barney-Ahlers Construction Corporation, to study the possibilities of developing specifications to describe acceptable standards covering materials and workmanship in each trade division. It at once became evident that specifications as heretofore written did not lend themselves to standardization due to the practice of combining the "Scope of the Work" for each building, with the descriptive clauses covering qualities of materials and workmanship, qualities which are more or less common to all buildings. The obvious solution, therefore, was to separate "Scope of Work" from the purely descriptive, and then develop clauses specifying acceptable and established methods for execution of work and setting up quality standards for materials.

Such methods and standards to be of value must be acceptable to the architect, contractor, sub-contractor, manufacturer, and Labor. Representatives from these groups were invited to assist in the work and from them sub-committees were selected, each under the chairmanship of an architect.

A great deal of consideration was given to the form of the specification, it being finally decided to recommend dividing specifications into parts, "A" and "B." Part "B" is to consist of the New York Building Congress Standard Clauses establishing standards for all materials and workmanship which could enter into the work of any trade division on any type of building. Part "A," a specification written by each Architect for each job, is to consist of items of work in each trade division for the particular building with references by number to

the paragraphs or clauses in Part "B" which defined the quality of both materials and workmanship.

The preparation of specifications for the various trade divisions was assigned to the different sub-committees who started to collect the data upon which to base standards. After two years of effort it was decided, owing to the difficulty of coordinating the work of the sub-committees, that better progress could be made and more uniformity obtained if the actual editing of the specifications was centralized.

W. A. Payne, Vice-President of C. T. Wills, Incorporated, General Contractors, was then appointed chairman of the Standards Committee and H. R. Dowsell of the office of Shreve and Lamb, Architects, selected as editor.

Under their direction for the past three years, specifications for trade divisions, as they have been written, have been sent to trade organizations, contractors, sub-contractors and manufacturers for their consideration and criticism. All suggestions received have been carefully considered, and conferences arranged at which all points raised have been fully discussed. The specifications were then re-written and again submitted. This process continued until it was agreed that acceptable standards had been established and clearly described. Wherever trade associations existed, such as the Employing Plasterers' Association, Marble Employers' Association, Allied Metal Industries, Standard Steel Board of Trade, National Terra Cotta Society and Master League of Cement Workers, the several specifications were submitted to such Associations and, after final editing, received their approval.

Where a trade association did not exist the specifications were submitted to two or more men recognized as authorities in that trade group, and, through conferences, revised until agreement was reached.

As these standards were developed, Shreve and Lamb put them into actual practice in order to test their workability and practical value, and for the last three years have written two-part specifications for their work both within and beyond the Metropolitan district. A very complete test of this system was made early in 1928 on a large building in one of the Southern states, now nearing completion. On this building a complete specification in two parts was issued for all of the trades except mechanicals. In order to carry out certain predetermined policies the bidding, especially for sub-trades and materials, extended from New York to

Florida. After the reception of the bids, which were remarkably close, letters were written to all of the General Contractors from whom bids had been received, explaining that the specifications were based on the New York Building Congress Standards and asking for comments from their own organizations as well as from sub-contractors bidding through them. Their replies from which excerpts are quoted were in practically all cases unqualified endorsements.

George A. Fuller Company,
Flatiron Building, New York City.

"We are very much impressed by the flexibility of the specifications being divided into two parts: one, a standard specification for all materials and work under the various trade items, leaving the designation of the location and scope of the work to a separate part. This not only tends to shorten the time required in preparing estimates, but also should materially reduce the cost of manufacturing for work on which the architects adopt this form, and it is our belief that as these specifications become more generally used the time saved and the economies effected will materially augment the saving in cost.

"This specification, without a doubt, is the best we have come into contact with, and our impression is confirmed by the comments sub-contractors have offered while preparing estimates on this job. We believe that a continuance in the use of the two part specification will be reflected in the bidding on work where they are furnished."

James Baird Company, Incorporated,
1800 E Street, N. W., Washington, D. C.

"We have your letter . . . relative to the type of specification, and we beg to advise you that we have heard a great amount of favorable comment from sub-contractors, material men, and we ourselves found this method decidedly helpful in figuring the job. Several of our sub-bidders have stated to us that these specifications explained the intent of the architect better than any other specification they had seen."

North-Eastern Construction Company,
Winston-Salem, North Carolina.

"The listing of items required in Part I with direct reference by paragraph number to the pertinent portions of Part II is a great time saver in estimating. The sub-contractors using these specifications had remarkably few questions and the uniformity of their proposals was the best indication of a definite specification. We hope and believe many other contractors feel as we do, that this type of specification will be more generally used by architects in the future. Our own Estimate Department liked this arrangement and were highly complimentary."

Angle-Blackford Company,
Greensboro, North Carolina.

"The consensus of opinion of our own organization is that this was the most complete and nearly perfect set of documents which has ever been in this office."

John T. Wilson Company,
Richmond, Virginia.

"There are many points in its favor, as in taking off quantities considerable time is saved by not having to read long descriptive sections which may later be read as needed in pricing the work.

Hunkin-Conkey Construction Company, General Contractors,
Cleveland, Ohio.

"We believe after considerable thought and after our first experience, that the specifications as rendered by you are very complete, and believe that in the end they very much simplify making up a bid.

"We believe that if followed universally and if the specifications pertaining to the quality of the workmanship and material were maintained as a standard, it would simplify, to a great extent, making up a proposal for an operation."

The Thompson Starrett Company stated that they were very much in favor of a two-part specification especially if the part containing the clauses describing materials and workmanship were printed as a standard document. Their Estimating Department labelled Part I, "Where," and Part II, "How."

In establishing standards acceptable to the trade, Mr. Dowswell, as an architect, has constantly kept in mind that the specifications, if they are to be of value, must also be acceptable to the architect. The specifications have accordingly been written so as to leave the architect absolute freedom in the choice of materials, while at the same time standards of quality have been set up which are understood by the trade, and can therefore be more accurately estimated, and so eliminate allowances for uncertainties and ambiguous requirements.

To assure the Architectural profession further that their interests had been fully guarded, the New York Chapter of the American Institute of Architects were invited to appoint a committee from their members to consider and report on the work Congress has done. Such a committee is now studying the specification and, although their work has not been completed, they have intimated that their report to the Chapter Executive will be favorable and will advise recommending to Institute members the use of the specifications.

The work is not complete, but all of the general construction trade divisions have been approved and are ready for printing. The Congress announces that early in 1929, Part "B" specifications for the trades in the following list will be ready for distribution and can be obtained upon application to the New York Building Congress, 101 Park Avenue, New York. There will be a nominal charge to cover cost of printing and handling.

Demolition
Excavating
Piling
Structural Steel
Waterproofing by Bituminous Membrane
Waterproofing by Plastic Coat
Masonry and Concrete Materials
Masonry
Mass and Reinforced Concrete (including Waterproofing by Integral Method)
Concrete Arches and Fireproofing
Furnishing Granite and Cut Stone
Setting Granite and Cut Stone
Furnishing Manufactured Stone
Setting Manufactured Stone
Furnishing Architectural Terra Cotta
Setting Architectural Terra Cotta
Roofing and Sheet Metal Work
Vault Lights
Architectural Iron
Architectural Bronze
Cement Finish

Special Floors—Cork
 Rubber
 Mastic
 Magnesite
 Linoleum
 Metal Furring and Lathing
 Plastering
 Interior Marble, Slate and Structural Glass
 Terrazzo
 Carpentry
 Window and Door Screens
 Weatherstrips
 Metal Windows
 Hollow Metal Work
 Metal Covered Wood
 Revolving Doors
 Glazing
 Painting
 Mail Chutes
 Elevators and Elevator Accessories

Similar standards are now being developed for the mechanical divisions and for divisions dealing with special equipment. As soon as these have been completed notice will be given by the Congress.

In addition to printing the specifications for

general distribution arrangements have been made with THE AMERICAN ARCHITECT to publish the specifications serially. Accompanying the specifications there will be a series of articles by Mr. Dowsell explaining how these specifications are used in actual practice. Mr. Dowsell will also be available, through this journal, to answer questions regarding the use of the Congress Specifications and to explain how they may be used either in whole or in part for any type of building.

The Architects Samples Corporation have also agreed that samples exhibited in their space showing physical standards, agreeing with the Congress specifications, may be so tagged by the New York Building Congress.

It is believed that these specifications, as they become known, will assist greatly in reducing disputes, will aid in establishing a higher and more uniform standard of construction and will be found as valuable as the standard documents of the American Institute of Architects.



HOUSE IN SCARSDALE, N. Y.—HAROLD BROWN, ARCHITECT

(From the sketch by Norman R. Moore)

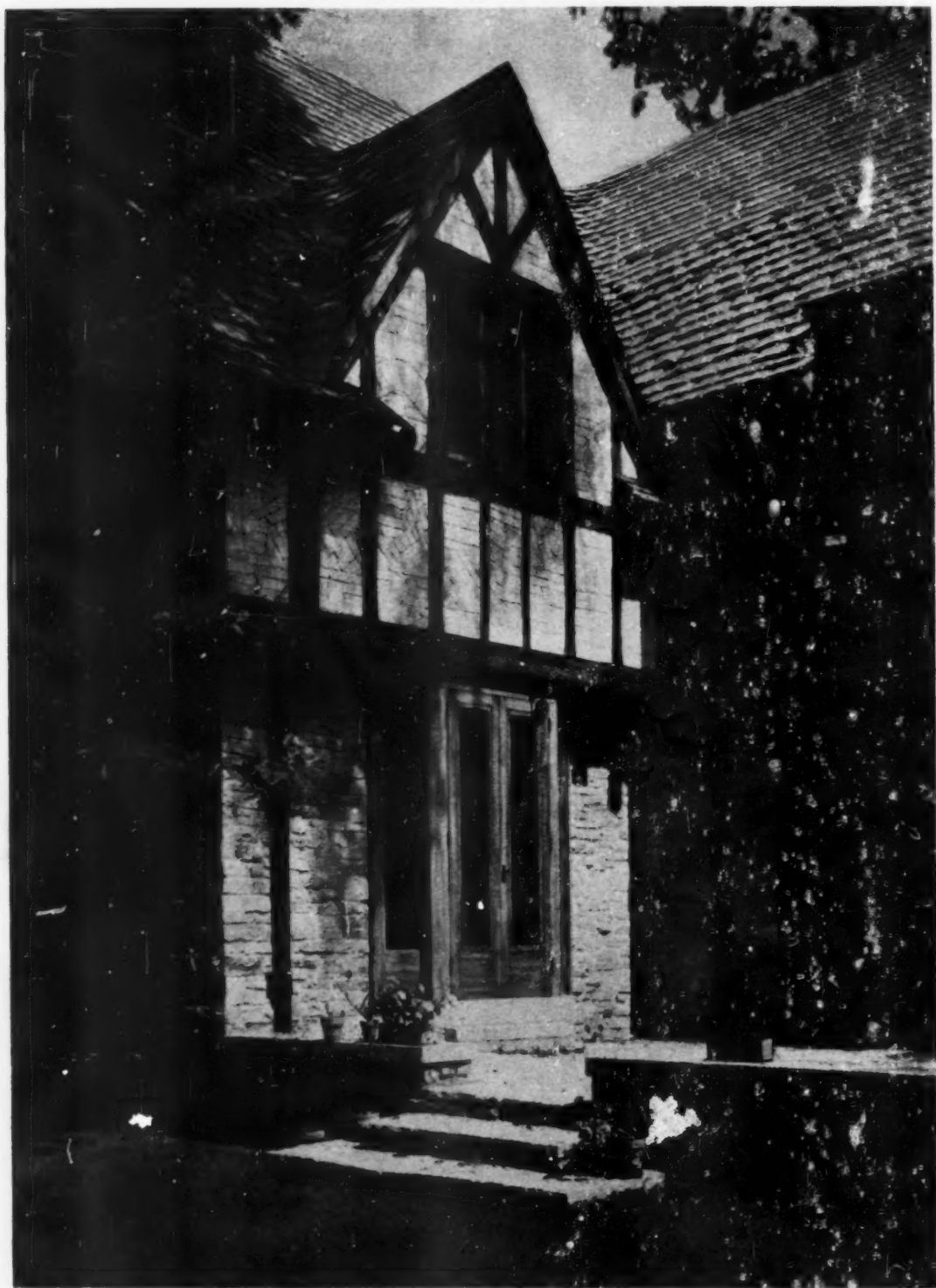
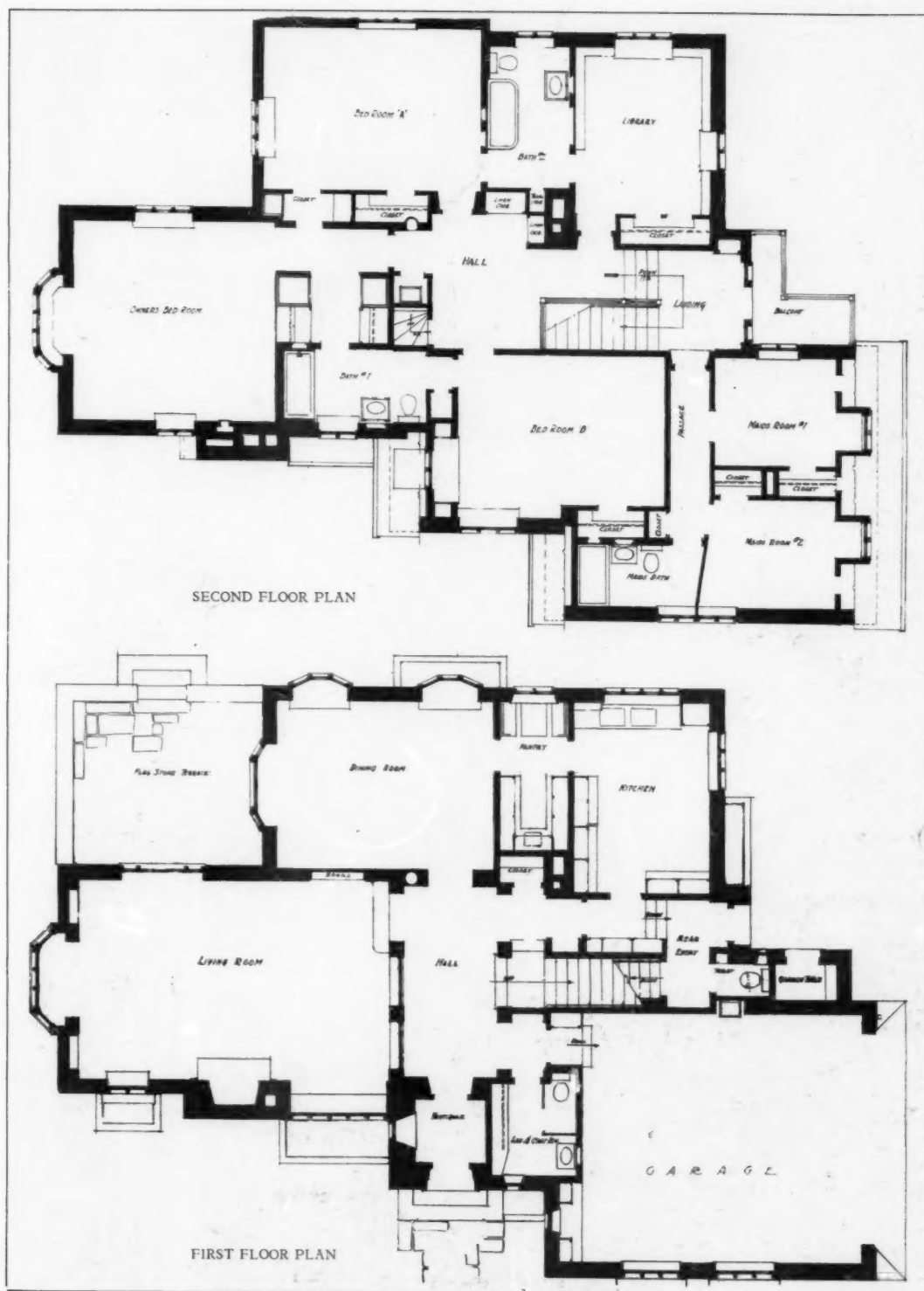


Photo by Verburgt

ENTRANCE DETAIL, HOUSE OF EDWARD PRITZLAFF, WHITEFISH BAY, WIS.

JUDELL & BOGNER, ARCHITECTS



HOUSE OF EDWARD PRITZLAFF, WHITEFISH BAY, WIS.

JUDELL & BOGNER, ARCHITECTS



HOUSE OF EDWARD PRITZLAFF, WHITEFISH BAY, WIS.—JUDELL & BOGNER, ARCHITECTS

Photo by Yereburg.



AGAINST lacquered walls in red and gold, against the black of the bath niche tiling gleam fixtures in citrus yellow; in this Mandarin bath the decorative art of the east happily meets the plumbing convenience of the west. Into their setting, as though designed for just this room, fit the *Corwith* lavatory, the *Tarnia* bath, the *Corsyn* closet. The simplest cottage bathroom too is lifted out of

the ordinary by Crane fixtures; wherever installed they are always interesting. And they cost no more than substitutes. *New Ideas for Bathrooms* is an illustrated book containing blue prints and full decorating and arrangement information for a series of delightful rooms, with beautiful Crane materials, remarkably reasonable in price. There is a special 48-page architect's edition. Write for it.

150
Pounds Pressure



CRANE

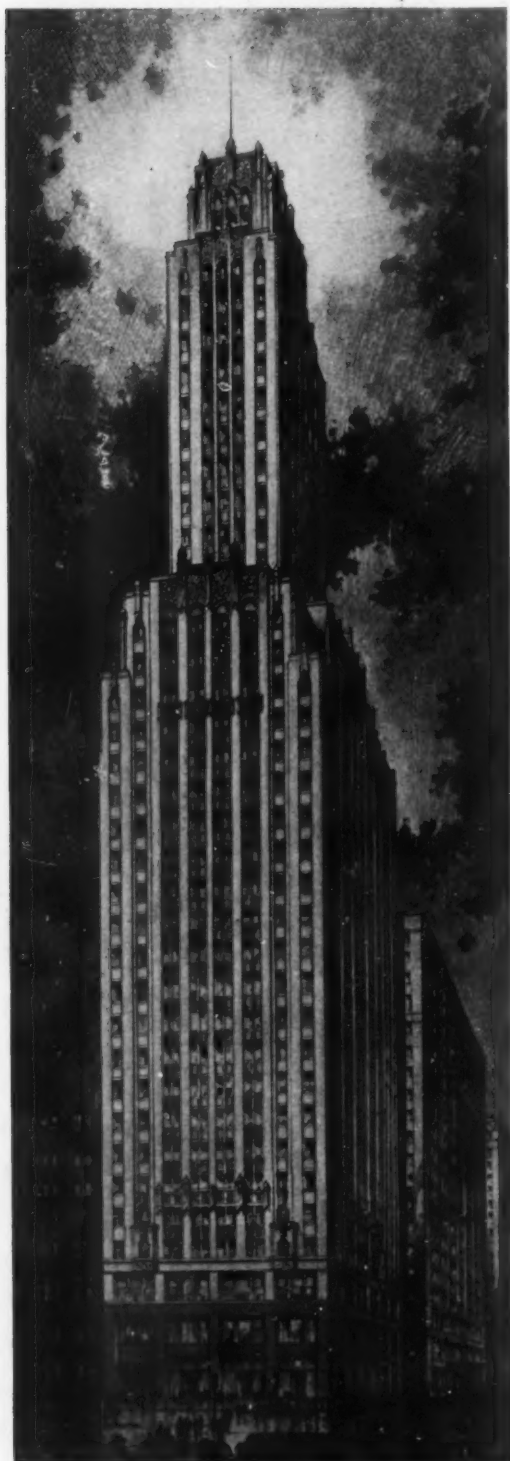


2500
Pounds Pressure

FIXTURES, VALVES, FITTINGS, AND PIPING, FOR DOMESTIC AND INDUSTRIAL USE

Crane Co., General Offices, 836 S. Michigan Ave., Chicago ♦ New York Offices, 23 W. 44th St. ♦ Branches and sales offices in one hundred and seventy cities

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



FINAL DRAWING OF WILLOUGHBY TOWER, CHICAGO, ILL.
S. N. GROWEN AND ASSOCIATE ARCHITECTS
AND ENGINEERS

BOOK NOTE

HOUSING—LONDON COUNTY COUNCIL

REVIEWED BY C. H. BLACKALL

THIS volume contains the account of the Council's activities up to the end of 1927 with a summary of previous operations, which makes it a complete history of the housing question in London. Since the end of the war the Council has erected 22,600 houses and flats containing 86,000 rooms, giving accommodation for over 100,000 persons. In addition, schemes are in progress or projected which will permit of the addition of 30,000 houses or flats accommodating an additional 135,000 persons. In the same period schemes for the clearance of unhealthy areas have been proceeded with and others approved which, when completed, will result in the disappearance of the worst of the large unhealthy areas in London. The record of this Council is an admirable one, and the desired results have been achieved not in the way we would do it in this country, but with proven success from the English standpoint. In the houses it is noted that there are practically no kitchenettes or Pullman kitchens; there is a scarcity of closets; and access from the dining room to the kitchen is always through the hall instead of directly, but these are minor things. The problem has been very well met, and it would be a fine thing if a similar comprehensive report could be made and published of the way the United States met a similar problem here during and immediately after the war.

The treatment of the exterior of these buildings is very successful. Most of this development has been in suburban areas distant from three to nine or ten miles from the center, and generally speaking, the houses are arranged in blocks facing the street with large courts or playgrounds in the rear. These houses would not suit our American mechanics, and such arrangements as include placing the bath tub in the kitchen and the water closet immediately beside the front door, do not commend themselves to those who would be tenants of this class of houses, but there are quite as many lapses in our own arrangements as we find in those in London, and the Council is certainly deserving of a great deal of praise for the courageous and far-sighted way in which it has solved the problems. The elimination of the sore spots in the congested portions of the city was a fine move, but that, of course, necessitated provision for housing elsewhere, and apparently the Council has succeeded in doing away with slums without thereby increasing the congestion in other districts.

Housing: With Particular Reference to Post-War Housing Schemes. London County Council. Published by the Council.

R. A. LONG, *Nationally Known Lumberman* *Says of* **BEST BROS. Keene's Cement**



R. A. Long Residence, Kansas City, Mo.
Architect—H. F. Holt
Plasterer—A. Flood

THE R. A. Long home in Kansas City, widely known for its stately beauty, is another example of lasting satisfaction gained through the use of BEST BROS. Keene's Cement in walls and ceilings.

Through 40 years' use, BEST BROS. Keene's Cement has proved its uniform quality and wide utility in structures of every type.

If you have a plastering problem, this fine gypsum cement will solve it. Write us for more detailed information.

BEST BROS. KEENE'S CEMENT CO.
1666 W. Second Ave., MEDICINE LODGE, KANS.
Sales Offices in: New York, Chicago, San Francisco,
St. Louis, Detroit, Atlanta

(21)



Kansas City, Mo. Sept-27th,
1928

Mr. John C. Best
President
Best Bros. Keene's Cement Co.
Medicine Lodge, Kansas

Dear Mr. Best:

This to acknowledge receipt of your favor of the 24th and to say I find that Mr. Flood who took the contract of plastering the walls and doing the fine cornice work in connection with my city home in the year 1910 used your cement.

Only a few days ago Mrs. Long and myself were talking about the very few cracks of any size throughout our building and of how fortunate we had been in having our plastering stand up so fine and satisfactorily in every particular.

I am pleased to give you this information and to advise that you have my permission to use it in any manner you may think best.

Yours very truly,

R. A. Long
R. A. Long Chairman

HAL RWE



BEST BROS. **KEENE'S** **CEMENT**

Always 'BEST' for Plastering



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

BOOK ON AMERICAN ARCHITECTURE

PARTS IV and V, issued jointly, of "American Architecture of the Twentieth Century" by Oliver Reagan, A.I.A., is devoted entirely to the work of Bertram Grosvenor Goodhue. As in previous volumes, the plates are in the form of loose leaves and are of such a size that the details are everywhere visible and legible. The illustrations are divided between photographs and scale and detail drawings. Among the buildings illustrated are the Nebraska State Capitol at Lincoln, the Church of Saint Vincent Ferrer, New York, and the National Academy of Sciences and National Research Council, Washington, D. C. This group of the outstanding works of leading American architects of the Twentieth Century, which is divided into parts and published every four months, will make a collection which every architect will cherish in years to come, and which, by its method of publication, is in reach of all.

"American Architecture of the Twentieth Century," parts 4 and 5, edited by Oliver Reagan, A.I.A. Published by Architectural Book Publishing Company, Inc., New York. Size of plates, 14 x 20. Thirty loose plates. Board covers. Price \$12.75.



THE NEW IMAGE

TO those who have read "The Beautiful Necessity," "Projective Ornament" or "Architecture and Democracy," Claude Bragdon requires no introduction. Mr. Bragdon, who is an architect by profession, writes with sincerity and conviction on mysticism, geometry and modern problems. He has been characterized by James Huneker as "that boldest of all adventurers in the region of the fourth dimension."

A previous book, "Old Lamps for New," contained a series of essays dealing, from the mystical point of view, with modern youth, modern love and the modern woman. His most recent literary contribution, "The New Image," is in part a continuation of these essays, together with others dealing with the theater, architecture, the fourth dimension and similar modern problems on which the author's ideas are always worth reading and reflecting upon. In explanation of the title, Mr. Bragdon states, "Diverse as are the subjects treated, they are all parts of the same pattern,—here are projected, as I believe, shapes which will increasingly take form in the mind of the future—nebulous and pale precursors of a more clear and rose dawn."

A true review of "The New Image" would require a discussion of each of the seventeen essays.

Impelled by what has been said during the past few years of a new American style, we return to the chapter, "Towards a New Architecture." The author, referring to the skyscraper, says in part, "The bones of those buildings are oft times their greatest beauty, and their stark geometry needs no veneer of constructed architectural ornament. Impelled by engineering skill and economic necessity skyscraper architecture in America now appears to be on its way toward something true and something new. And why is it . . . greater than anything else architectural that America has produced? Because it is the outgrowth of a new necessity which had to be met in a new way. The real triumphs of American architecture are the triumphs of engineering. What is needed is a new attitude toward life, a new consciousness, and a new architecture will follow 'as the night the day'."

While all of these essays are stimulating to the imagination, architects will find "Towards a New Architecture," "Experiments in a Language of Form," and "Man: The Magic Square" of particular interest. The book contains illustrations by the author in his characteristic manner, as well as specially designed inside cover papers.

The New Image. By Claude Bragdon. Published by Alfred A. Knopf, New York City. 190 pages, illustrated, size 5 1/2 x 8 1/4 inches, bound in cloth. Price \$3.00.



HOSPITAL ARCHITECTURE

THE great problem in hospital architecture is not merely the housing of the sick," states Edward F. Stevens in the foreword to the third edition of his work, "The American Hospital of the Twentieth Century," just published, "but housing them in such a way that every scientific method may be used for their betterment and recovery. The theory of hospital construction is a living thing, changing from year to year as medicine and surgery change. The designing of a hospital building should be considered a sacred trust, since the life or death of a patient may depend upon the facilities for caring for him." This is unquestionably true, and there is probably no more reliable authority on this subject than Edward F. Stevens. This edition of the book, revised and enlarged, is now up-to-date with illustrations, plans and diagrams, and with recent information on the ever increasing demands of hospital procedure. No architect who is confronted with a problem in hospital design can afford to neglect Mr. Stevens's book.

The American Hospital of the Twentieth Century. By Edward F. Stevens. Third Edition. Published by F. W. Dodge Corporation, New York City. Size 7 x 10 inches, 549 pages, board covers. Price \$15.00.

Wichita, too, has a skyline of CARNEY CEMENT



THE consistency with which architects specify and approve Carney Cement mortar after one experience with it, is again forcibly brought out in Wichita's skyline. Her thirteen important new projects were all laid up in Carney Cement.

There is a definite significance in the fact that Carney Cement has been the leader in the mortar field for nearly a half century—we have always promised builders superlative mortar joints, and architects have come to know that that promise means something.



HILLCREST APARTMENTS
Wichita, Kan.
Architects—Schmidt,
Boucher & Overend
Contractors—Ellis &
Singleton

—
ALL LAID UP IN
CARNEY CEMENT
Nurses' Home, St. Francis Hospital
Brokers Office & Warehouse Co.
Salvation Army Rescue Home
Coleman Lamp Company
Uptown Theatre Building
Fourth National Bank
First Baptist Church
St. John's Academy
Wichita Elks Club
Bitting Building
Brown Building

THE CARNEY COMPANY
DISTRICT SALES OFFICES
CINCINNATI CHICAGO DETROIT ST. LOUIS MINNEAPOLIS

Cement Makers Since 1883

CARNEY CEMENT
for Brick and Tile Mortar

Specifications
1 part Carney Cement to 3 parts sand

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

AN ARGUMENT FOR EMPLOYING ARCHITECTURAL SERVICE

THE monthly bulletin of the Illinois Society of Architects printed in its issue of October, 1928, the following, which appears to be another good argument for employing an architect:

Mr. Arthur Holden in a late issue of the Atlantic Monthly gives the following figures as showing the proportionate cost of the different factors entering into the total cost of buildings. For each dollar spent in the United States for the finished home produced, the division is approximately as follows:

To labor at the job	\$0.26 1/2
For material delivered at the job	.25
To promoters and financiers	.27
To land and its improvements	.21 1/2

\$1.00

His division of the average costs of labor's share in the building dollar is as follows:

Carpenters	\$0.08 1/2
Bricklayers	.05 3/4
Plasterers and Hod-carriers	.04 1/2
Plumbers	.02
Electricians	.00 3/4

The Editors are advised that in connection with the construction of the Garden apartments financed by the Marshall Field Estate that the item for promoters and financiers was eliminated entirely, but the Field Estate has deemed it good business to not only provide for complete architectural supervision, but has retained as additional to the ordinary architectural supervision the services of a consulting architect.

When the most wealthy and shrewdest business men find it profitable always to employ the best architectural skill available, would it not prove profitable to everyone constructing any type of building to do likewise and have his buildings not only designed but the construction supervised by architects?

ARCHITECTS AND ENGINEERS

THE following item of interest is reprinted from the October, 1928, issue of the monthly bulletin of the Illinois Society of Architects. It was originally printed under the heading:

"IMPROPER ADVERTISING

"The attention of the Public Action Committee has been called to a number of flagrant cases of architects and engineers improperly advertising themselves.

"A partnership composed of an architect and a structural engineer has been advertising itself on its stationery as 'Architects and Engineers.' Such a procedure is absolutely contrary to the law and the engineering member of the firm is liable to prosecution.

"Anyone may call himself an engineer, but no one not registered as a structural engineer can style himself as such. The proper wording should be 'Architect and Engineers' and the letterhead and business cards should designate which members of the firm are registered architects and which members of the firm style themselves as engineers.

"The Committee is also investigating the legal standing of the firm name of a number of well-known offices, such as John Doe Associates, Architects, or John Doe & Associates, Architects and Engineers. In both cases every member of the association must, under the law, be registered architects, but as above noted, they may style themselves engineers, but they have no right of styling themselves structural engineers unless so registered.

"The courts of the state years ago in ruling upon the Architects Registration Act upheld the wording of the law which

provides that corporations as such could not practice architecture.

"It is well known that quite a number of the larger architectural firms in Chicago have been incorporated under the laws of the state. If every stockholder of the corporation is a registered architect, in the absence of a specific court ruling to the contrary, it would appear obvious that such corporation was within the law, but the corporation as such cannot contract to furnish professional services. The law of the State of Illinois still recognizes professional service as personal service and thus far, no method has been found for a professional man to escape his professional obligation to society.

"It is, of course, well known that an illegal partnership or an unlawful corporation has no standing in a court of record and such a firm cannot legally collect a fee for services performed."

PERSONALS

Melvin Pratt Spalding, architect, has moved his offices from 137 East 46th Street to 101 Park Avenue, New York City.

Donaldson & Meier, architects, announce their removal from Penobscot Building to 1188 First National Bank Building, Detroit, Michigan.

Joseph E. Fronczak, architect, announces the removal of his office to 1067 Broadway, Marine 48th Street, New York City.

Schultze and Weaver, architects, have moved their offices from 17 East 49th Street to 18 East 48th Street, New York.

Grant M. Simon, architect, formerly of 249 South Juniper Street, announces the opening of his office at 1500 Walnut Street, Philadelphia, Pa.

Olson & Clarkson, general contractors and builders, announce the removal of their office to Suite 201-205, 7905 Cottage Grove Avenue, Chicago, Ill.

Robert Fan, B.S., B.Arch., architect and engineer, has moved his office from 50 Peking Road to 29 Szechuen Road, Shanghai, China. He requests that manufacturers send catalogs and samples to the new address.

Richard C. Taylor & Geves G. Kenny, architects and engineers, announce the removal of their main office from the First National Bank Building, Portsmouth, Ohio, to Town Center, Mariemont, Cincinnati, Ohio.

Samuel E. Hillger, A.I.A., registered architect, and Wallace P. Beardsley, registered architect and licensed professional engineer, announce the formation of a partnership for the general practice of architecture. Their office is in the Seward Block, Auburn, N. Y.

