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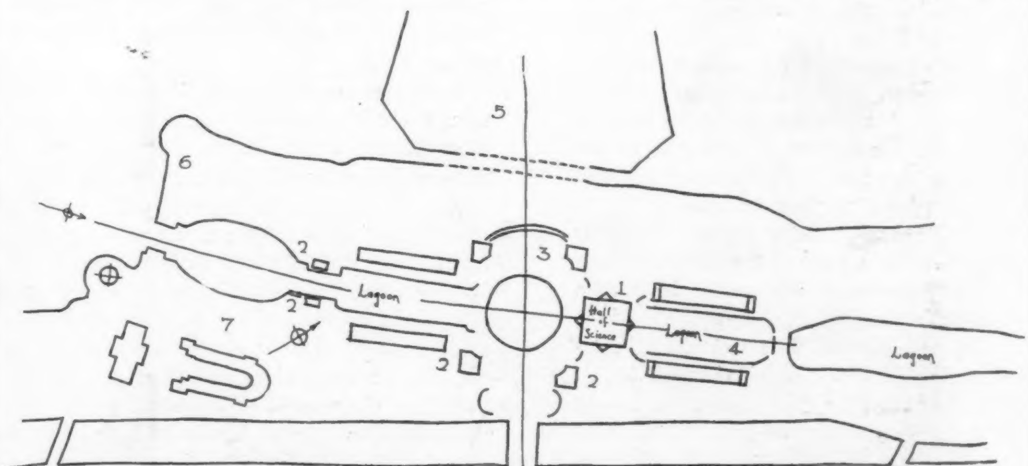
THE ARCHITECTURE OF THE CHICAGO WORLD'S FAIR OF 1933

By ALLEN D. ALBERT, *Sc.D.*

Honorary Secretary of the Architectural Commission

THE studies for the new Chicago World's Fair of 1933 have now progressed so far as to warrant the expectation of a distinctive and significant product. President Rufus C. Dawes and his associates of the Board of Trustees have been greatly influenced in the plan for this new exposition by the architectural success of the World's Columbian Exposition held in this same city a generation ago. Their objective has been this: That, as the World's Fair of 1893 opened the way to a great architectural advance, this similar architectural enterprise should be designed to favor a corresponding service in this later day.

The trustees met and selected, for the architec-



THE ACCEPTED PARTI

In this scheme are combined the more important elements of the several layouts developed by the architects: (1) the Hall of Science, which is to stand over the lagoon and in height and architectural character to be the dominant of the entire composition; (2) the Water Portal, which is to be the chief decorative feature of the entrances; (3) the axis at 23rd Street; (4) the south lagoon; and (5) the proposed airport. This parti provides three main features: Nos. 2, 3 and 4, each of which is comparable with the Grand Basin of the Columbian Exposition of 1893, and is considerably larger. (6) Site of the proposed Horticultural Building, and (7) site of the proposed Festival Hall. These two buildings, with the Stadium, the Field Museum, the Shedd Aquarium and the Planetarium north of the Water Portal (No. 2) will comprise a monumental group of permanent buildings almost in the heart of Chicago.

tural management of the exposition, men with a sufficient knowledge of the difficulties which have developed in other American World's Fairs. They provided for a wide range of ability and against any possible local partiality by choosing first five commissioners from outside the Chicago area. These were: Harvey Wiley Corbett, New York, who has served as Chairman of the Commission since its organization; Arthur Brown, Jr., San Francisco; Paul P. Cret, Philadelphia; Raymond M. Hood, New York; and Ralph T. Walker of New York. These five men, on their own motion, increased the number of commissioners to eight and invited Edward H. Bennett, Hubert Burnham and John A. Holabird to serve from Chicago.

The Commission has had four sessions, three in Chicago and one in New York. This statement of plans was adopted at the first of these sessions:

> "The architecture of the buildings and of the grounds of the Exposition of 1933 will illustrate in definite form the development of the art of architecture since the great Fair of 1893, not only in America, but in the world at large. New elements of construction, products of modern invention and science, will be factors in the architectural composition. Artificial light, the tremendous progress of which has astonished all designers in recent years, will become an inherent component of the architectural composition. The extraordinary opportunities of the site for the use of water as an intrinsic element of the composition will be developed to the maximum.
>
> "The architecture of the world is undergoing a great change. It has shown those signs that indicate the birth of a great fresh impulse. The architects of the Chicago World's Fair Centennial Celebration of 1933 intend that the buildings of the Fair shall express the beauty of form and detail of both the national and international aspects of this new creative movement."

The site for the new exposition consists of a long strip mainland shore line, beginning with the 287 acres of Grant Park and including some 312 acres down to 39th Street, together with a strip of islands of 711 acres area reaching from the south end of Grant Park along the shore line beyond 39th Street. The mainland ground is all "made" and about 70 acres of the island.

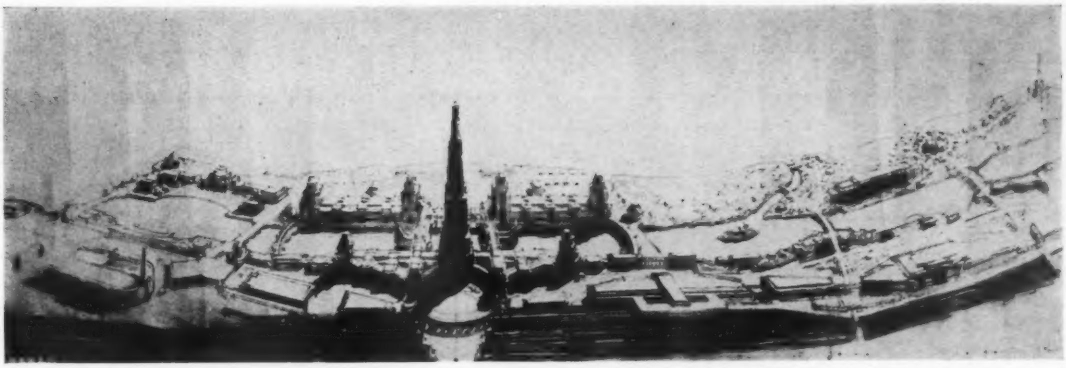
All of the land is under the jurisdiction of the South Park Board of Chicago, a fact which gives the architects freedom from the somewhat antiquated conditions of the Chicago building code. The South Park Board has provided the exposition with a plot plan showing the islands as one continuous stretch of land, leaving to the Commission the opportunity to provide for shallow canals and to shape the main lagoon between the island and the mainland. The waters of Lake Michigan are tideless and the only special provision which must be made as to bulkheads is that the wind sometimes moderately heaps up the waters. All of this has the effect of giving to the architects of the new enterprise an exceptional opportunity to make use of lagoons, canals, pools and other forms of water in planning the site and buildings of a great modern international exposition.

The Commission attacked the problem with regard to the service to be rendered first. The estimated average daily attendance is given as about 400,000 with an estimated peak daily attendance of 1,500,000. About half of the attendance is expected to enter at the north gates across from Grant Park, the remainder to be divided between an entrance at 23rd Street where there is a mound affording a commanding approach to the grounds, and at 31st, 35th and 39th Streets to the south. The total unloading capacity at the gates, including street cars, busses, taxi cabs and privately owned automobiles, is calculated as somewhat near 175,000 an hour.

It was assumed from the beginning that fountains must be extensively employed not only for their decorative value but to keep the water of the lagoons and pools sufficiently in motion.

An early decision was that the exhibits should be compressed into as small a land area as would prove feasible rather than allow them to spread. To accomplish this the Commission faced the question of exhibits on more than one floor. Although the trade fairs of Europe almost invariably provide displays on more than one floor of combustible buildings, the practice in World's Fairs has been to limit them to a ground floor and a gallery while planning the buildings in many cases with a height more than enough to provide two floors. The decision to employ more than two floors gave new weight to the argument in favor of buildings which should be technically and dependably fireproof. This decision has another consequence in requiring the architects to face the objection that exhibit space above the ground floor would be hard to fill.

As it proved, this objection was met by the planning of the Commission to reduce almost to the vanishing point the familiar detriment of World's Fairs in the form of foot weariness. The



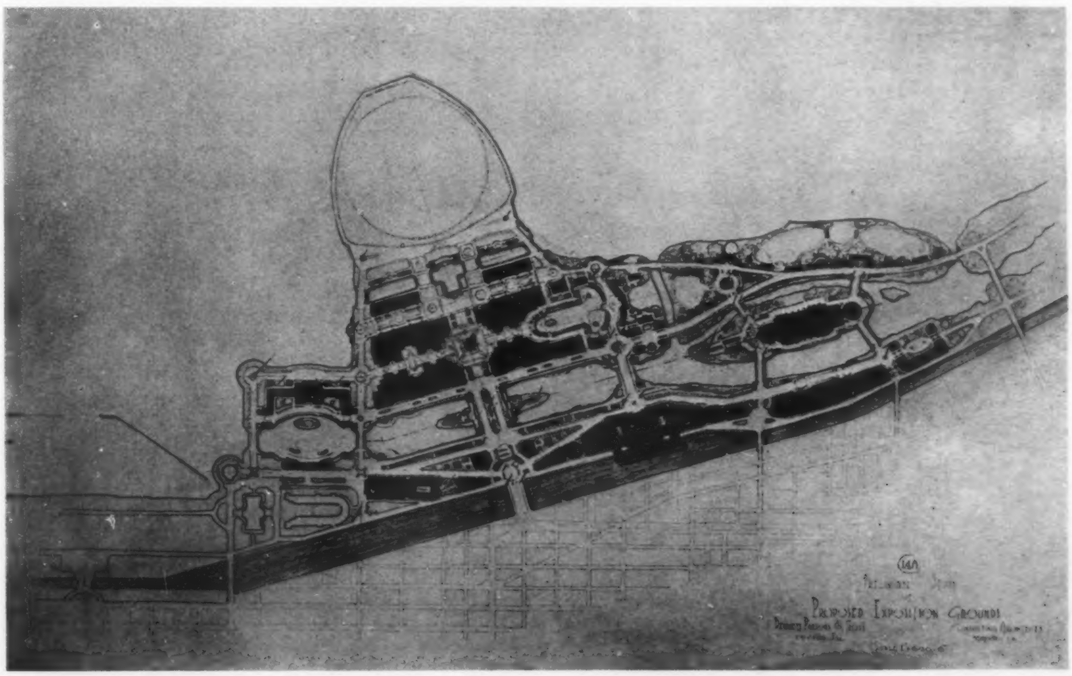
LATER PLAN WITH DOMINANT AT HEAD OF 23RD STREET AXIS

EDWARD BENNETT, ARCHITECT

Commission was of opinion from the beginning that visitors were to progress through the grounds on moving sidewalks, the fastest to be provided with seats, to be located either on the roofs of the buildings or within the buildings on one of the upper floors. This conveyance would start from the elevated street level at the 23rd Street entrance and access to it would be provided from the other lower entrances and at many places within the buildings in the form of escalators. The water should be used as a means of transportation on the lowest level with water taxis and barges like those on the Seine. The movement of craft on the water was to be developed for an effect of carnival color and liveliness.

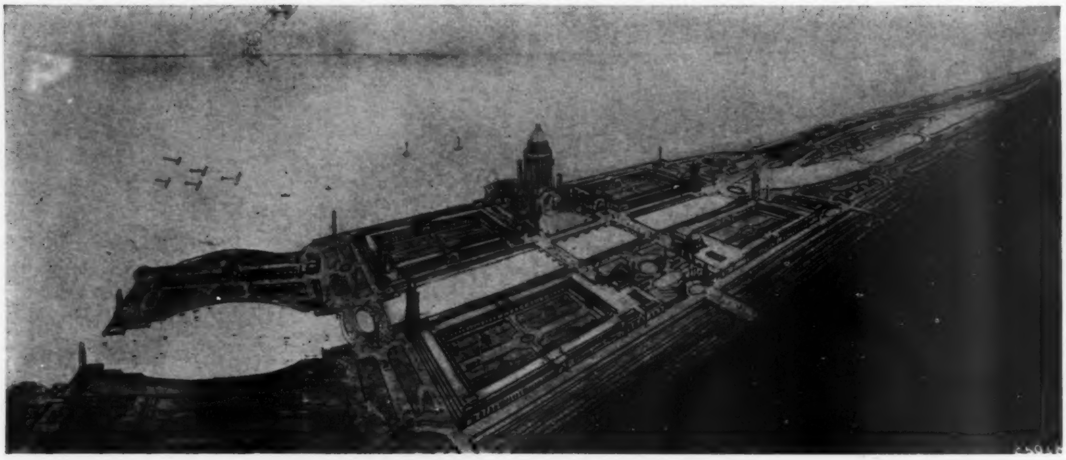
With these conditions operating to control the designers, the members of the Commission agreed furthermore that the new materials available and new methods of construction put upon them the responsibility of making the composition as dramatic an illustration of their new opportunity as possible.

The discussions as to the general ground plan and the general character of the buildings have been



EARLY STUDY WITH MAJOR BUILDINGS EAST OF LAGOON AND TRANSVERSE AXIS AT 23RD STREET

EDWARD BENNETT, ARCHITECT

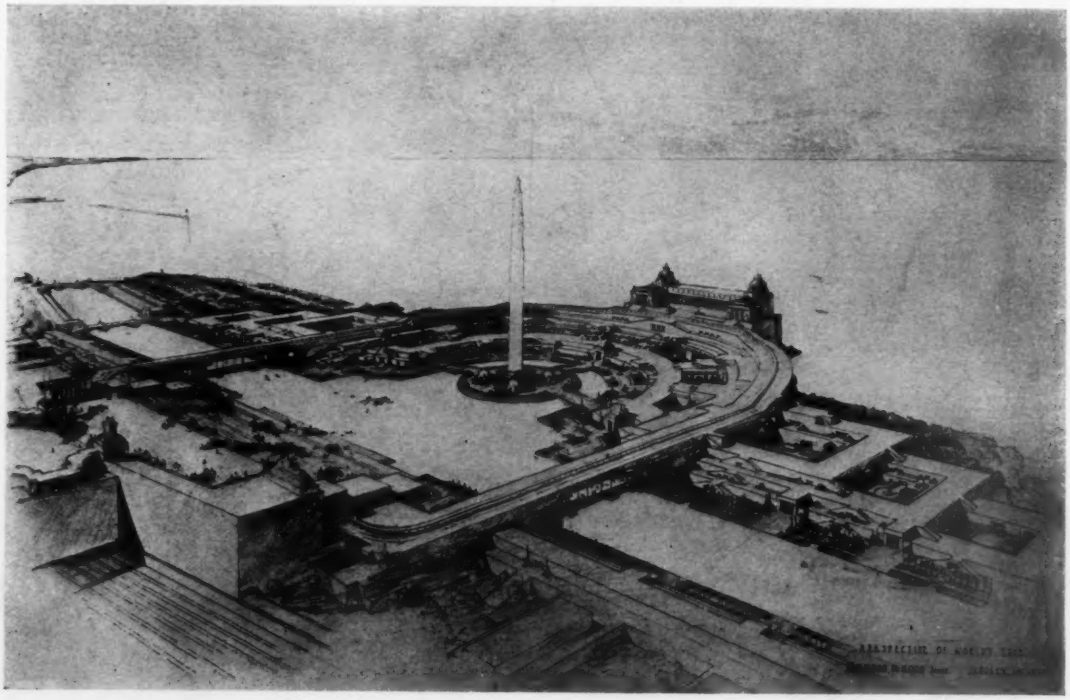


PLAN WITH DOMINANT AT FOOT OF 23RD STREET AXIS

ARTHUR BROWN, ARCHITECT

based upon a series of plans submitted by Mr. Bennett. Each member of the Commission has given freely to the discussion every idea that occurred to him; and the aggregate of such ideas has been regarded as a common fund against which each commissioner could draw at will; and in the long discussions of the four meetings, while each of the eight has contended for his own idea with vigor and persistence, it is yet true that they have in the manner of the finest sportsmanship given and yielded their best thought only for the merit of the ultimate solution.

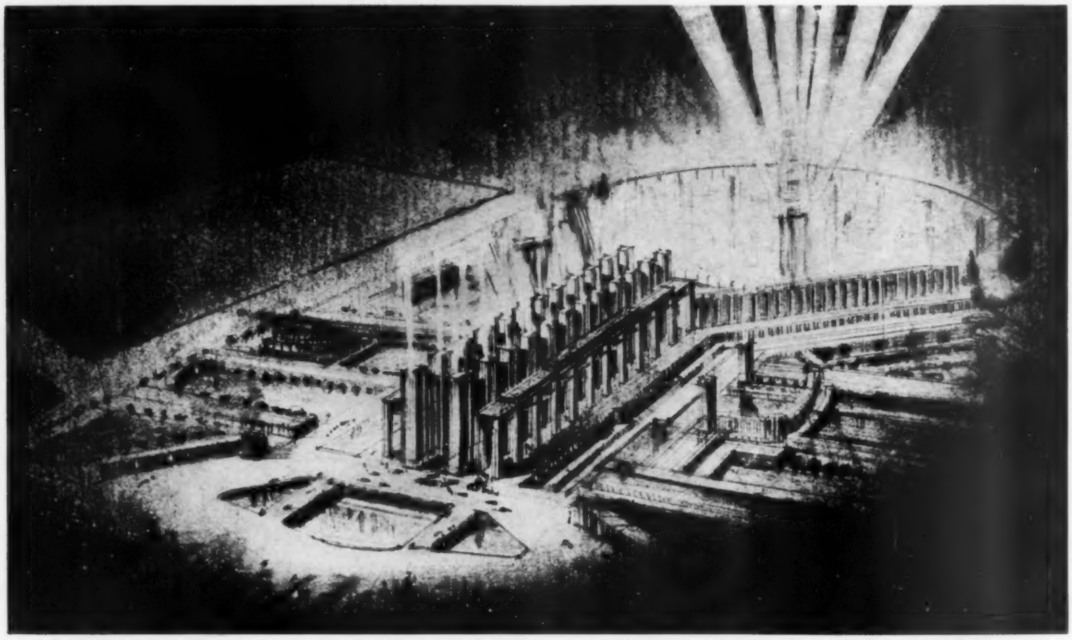
The studies submitted in the second meeting were regarded by the commissioners as developments, but rather traditional developments, of the best World's Fairs planning of earlier years. As



PERSPECTIVE OF AMPHITHEATRE WITH COLUMN AS DOMINANT AND ARRANGEMENT OF MOVING SIDEWALKS

RAYMOND M. HOOD, ARCHITECT

STUDY OF CENTRAL BUILDING AND TOWER
HUBERT BURNHAM, ARCHITECT



SUGGESTION OF A HALL OF SCIENCE AS A DOMINANT LOCATED AT THE NORTH END OF THE LAGOON

JOHN A. HOLABIRD, ARCHITECT

Mr. Holabird, in discussing the "parti," stated:

"People would expect something entirely different from their general life. Everyone looking at the 'parti' and the grouping of the buildings must know, on first view, that we are the greatest nation of builders that ever existed. People do not come to see the exhibits. The Commission must work from that point of view. The attraction is primarily in the lay-out and the buildings. It is necessary that the visitors get a most tremendous impression.

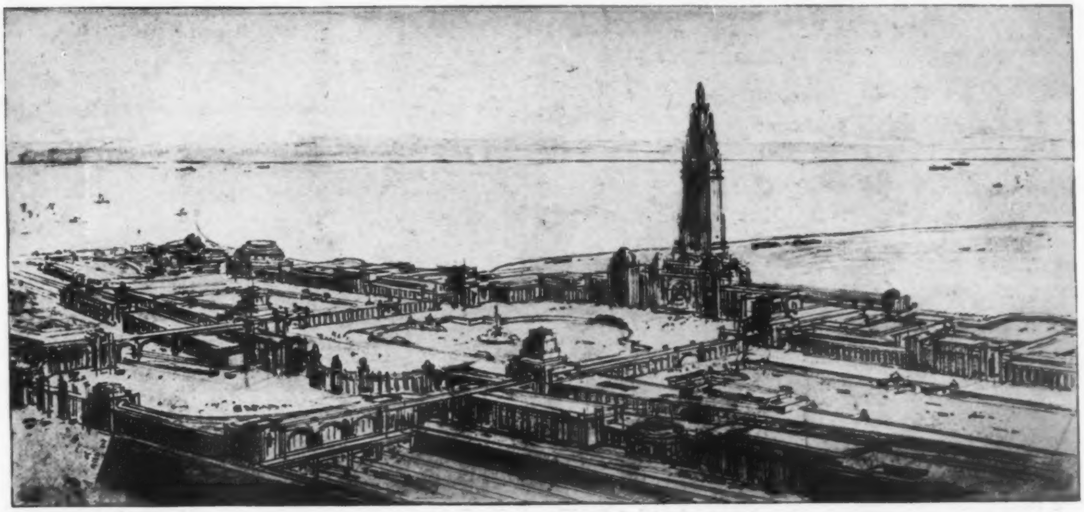
"What we must try to do is to create something different. I do not know how to do it. We have the materials and the ability to do something different and we must utilize them.

"For one thing we have an opportunity to go up in the air. I do not know that verticality will solve the problem of providing something different, but it might. Whatever we do we ought not to hesitate to reach out into the dramatic if it is at all possible to do it."

His associates agreed with him, arguing, however, that the "something different" must grow out of the new displays, the new materials available, the possibilities of the site, and the new methods of construction,—that it should be a product of the problem rather than of an ambition simply to achieve "something different." In this Mr. Holabird acquiesced heartily.

From this point in the discussion the commissioners tended to three or four rather different arrangements of their materials. One group would make dominant a magnificent water portal at the north, possibly bridging over the lagoon and providing a monumental stairway above the water. Another argued that the area was too great to be treated as one composition and that it should be divided into sections, using 23rd Street as one of the demarcations. A third group believed that the dominant should be a building or a tower located at the intersection of the lagoon as the main axis and an extension of 23rd Street as a minor axis. The fourth idea was that of an amphitheatre formed by the main buildings with a great plaza at the back.

These differing interpretations of the problem brought the men together for their fourth meeting which was held in New York February 1st with such clearly opposed conceptions that it was difficult to foresee any adjustment of them to each other. The advocates of the dominant at the north presented very dramatic renderings in support of their view. Other architects will understand how

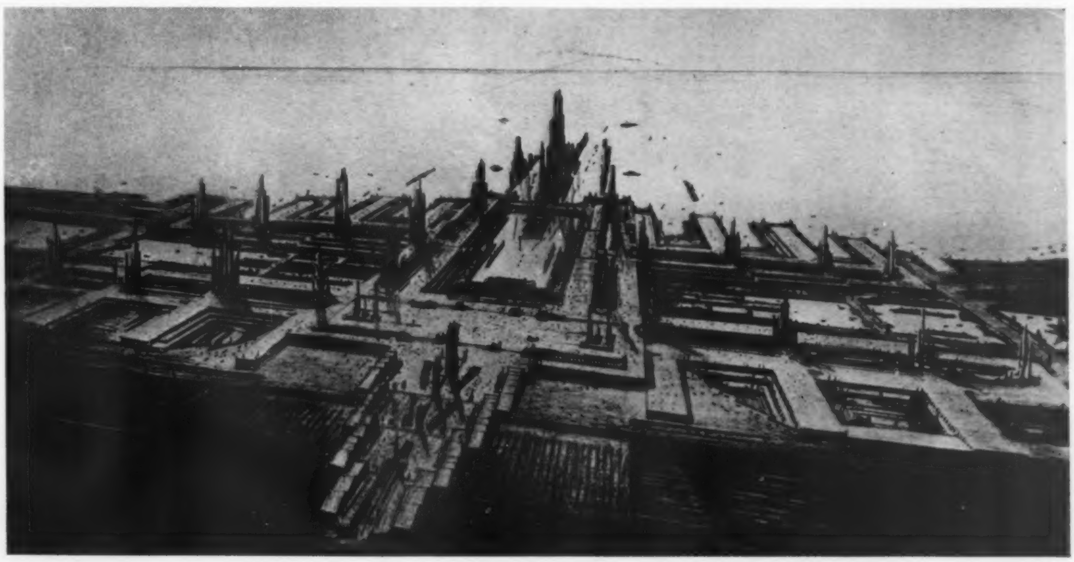


GROUP CENTERED ON 23RD STREET AXIS TOGETHER WITH SUGGESTED ARRANGEMENT OF MOVING SIDEWALKS
HUBERT BURNHAM, ARCHITECT

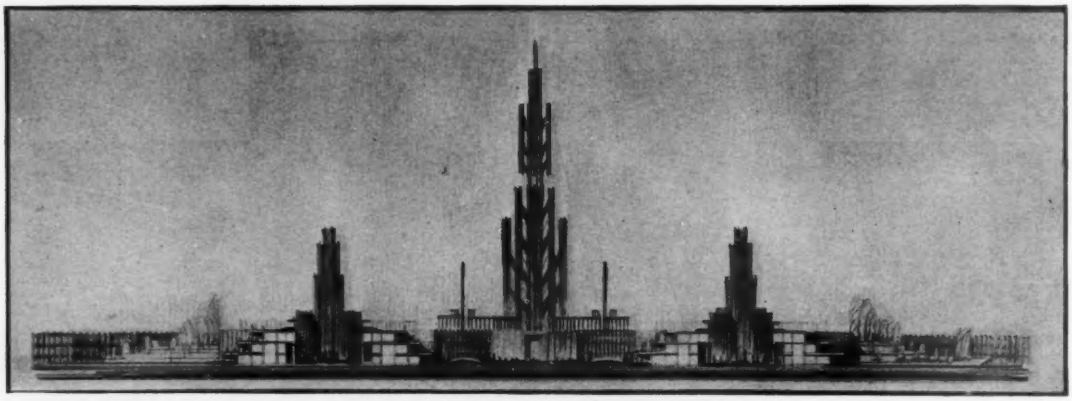
readily these differing conceptions were nicknamed. That of the great portal to the north became the "vestibule design"; that of the amphitheatre around a plaza was dubbed "the hole"; that of an amphitheatre with a great construction in the middle became "the cork." That of the three separate sections was "the chain."

Other commissions have many times reflected such differing opinions. Here the saving factor was that each of these eight men, practitioners of a great profession, was aiming not at the acceptance of his own designs but at the best possible employment of a superlative opportunity for the good of the profession. At dinner that evening someone proposed they should see how far they could agree; and by that process they moved forward into the discovery that the best elements of all four ideas could be put together to comprise a solution which every man of the eight accepted whole-heartedly as the best general plan which had been developed.

They put Mr. Brown, the next morning, at a drawing board with a piece of tracing paper over



SUGGESTION OF TERRACES AND ROOF PLAZA WITH VERTICAL ORNAMENTATION
HARVEY WILEY CORBETT, ARCHITECT



SUGGESTION OF VERTICAL ORNAMENTATION

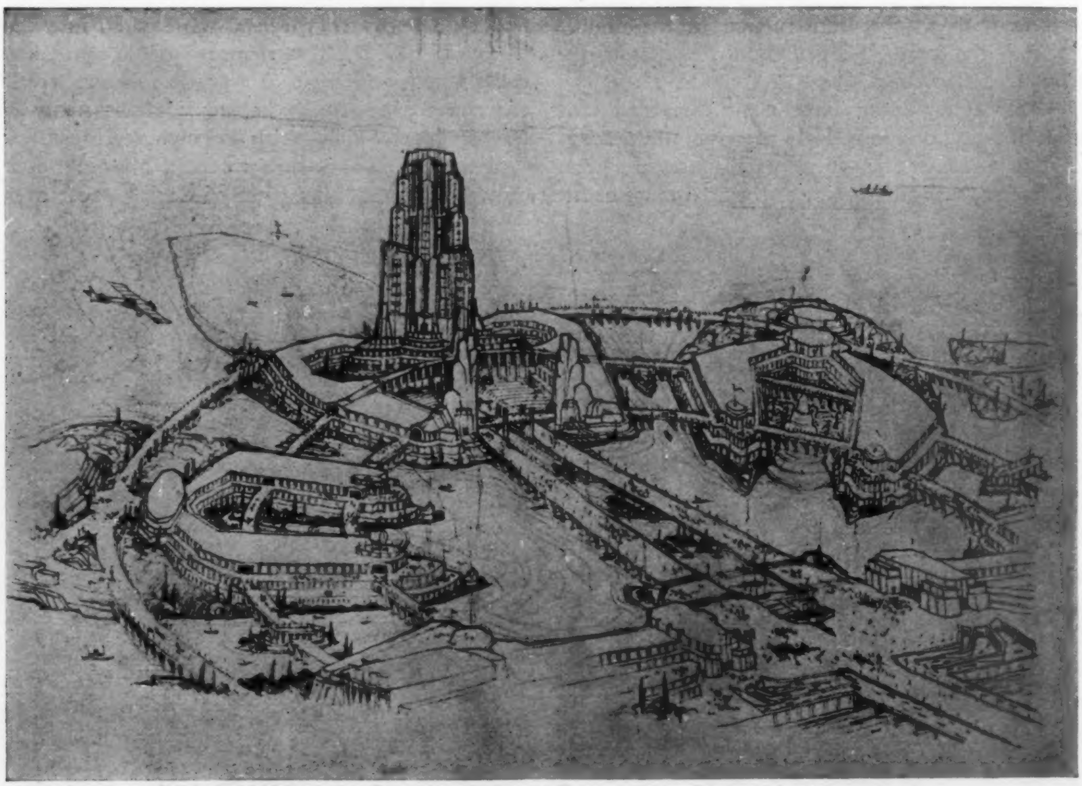
HARVEY WILEY CORBETT, ARCHITECT

the plot plan provided by the South Park Board. Step by step they voted what should be done.

First, they agreed that there should be a truly magnificent water portal to the north, but that the dominant should be a building near the intersection of the 23rd Street axis and the main lagoon.

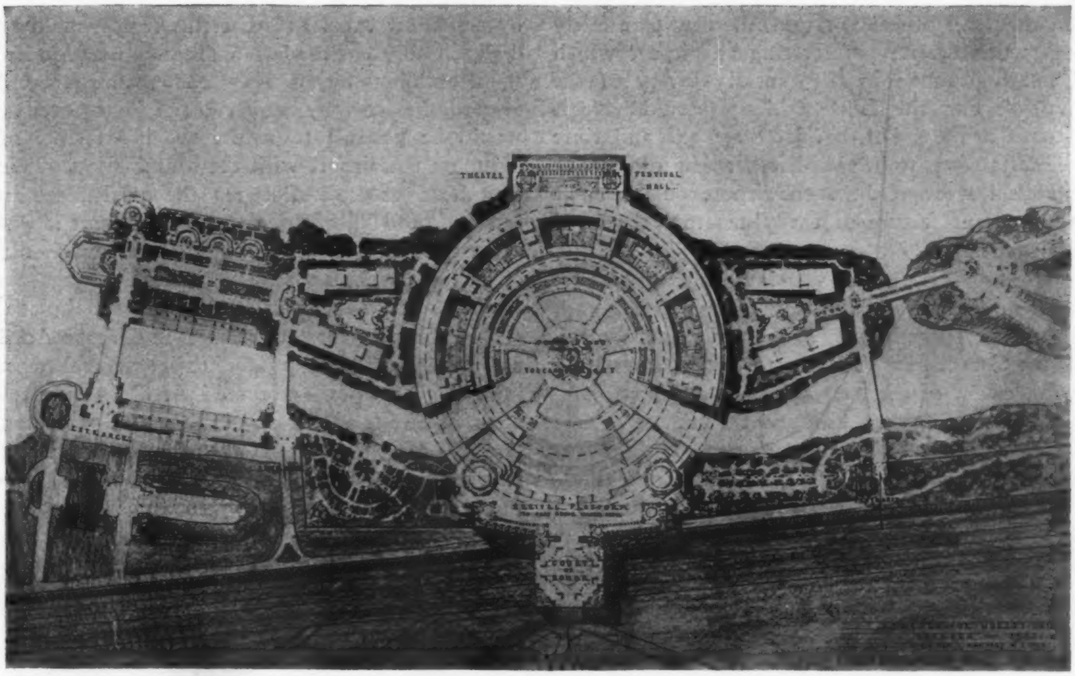
Second, they agreed that the 23rd Street axis should be treated so as to provide an adequate setting for the dominant construction; that in turn this dominant construction should be the Hall of Science, and that it should stand across the lagoon just south of the intersection of the two axes.

In its turn this made possible a treatment of the lagoon south of the dominant building so that it



A STUDY OF TERRACES AND MOVING SIDEWALKS IN AN AMPHITHEATRE PLAN

RALPH T. WALKER, ARCHITECT

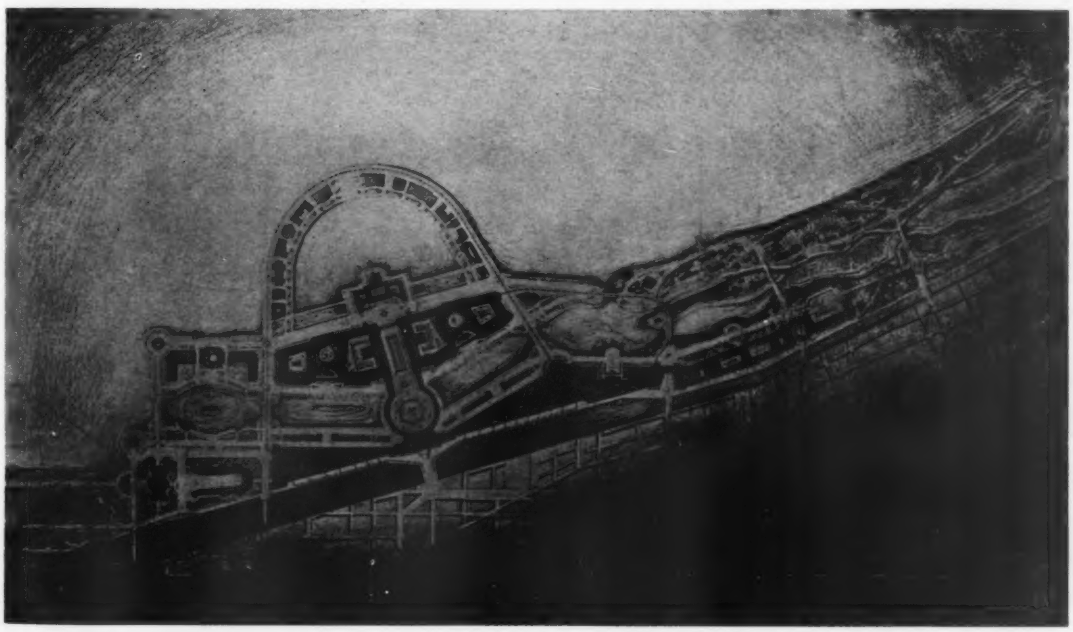


PROPOSED AMPHITHEATRE OF BUILDINGS AND PLAZA

RAYMOND M. HOOD, ARCHITECT

should correspond to the lagoon on the north and yet present a decidedly different effect.

The blueprints of Mr. Brown's drawing disclosed many advantages for the new plan. Thus, there are to be three vistas, each one of which has possibilities like those of the Grand Basin in the



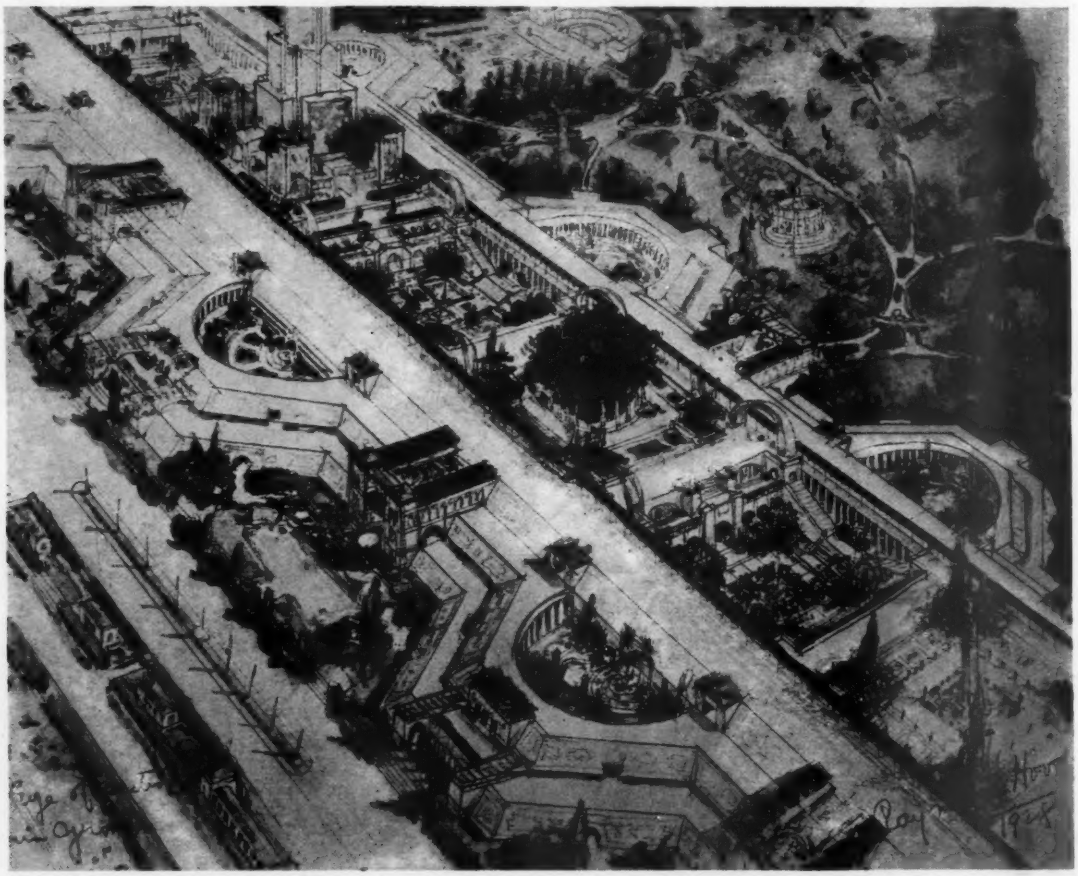
A COMBINATION OF A BLOCK-BUILDING PLAN AND AN AMPHITHEATRE PLAN

PAUL P. CRET, ARCHITECT

World's Fair of 1893. Again, the new plan fairly meets the difficulty of locating an airport which Chicago proposes in the general vicinity of the World's Fair site. The architects would have it situated at the end of the 23rd Street axis and, since the surface was to be sward rather than concrete or cinders, it was agreed that the airport could be made a significant feature of the vista from the 23rd Street entrance.

Norman Bel Geddes was invited to participate in the discussions at the New York meeting and, along with Hugh Ferriss, was elected a "consultant" of the Commission. The former suggested such an arrangement of the terraces of the buildings, particularly those grouped around the Hall of Science near 23rd Street, that the visitors in their movement from level to level and from building to building would be part of a dramatic, living composition. He proposed further that the airport and the site of the Fair should be separated from each other by a shallow canal and that this canal should be designed to accommodate a restaurant and other small buildings facing away from the airport and toward the Fair, by which device he believed it would be possible to reduce the interference of lights on the airport with the illumination of the exposition grounds. Between the great plaza in front of the Hall of Science and the airport it was suggested that a terrace and other provision should be made for the accommodation of throngs assembled to view the ceremonies in the central plaza.

The commissioners are to meet in Chicago April 29th. They will then produce their several sketches in development of the accepted "parti." In the manner of architects of this later day they feel, however, that the great difficulty has now been met. They have a plan which provides for the service and convenience of the patrons of the exposition with inherent possibilities of beauty challenging the abilities of the best designers they can find in all the world.



BIRD'S EYE VIEW OF SECTION OF MAIN GROUP

RAYMOND M. HOOD, ARCHITECT

CONTACT!

THE CHALLENGE OF A PILOT TO HIS MECHANIC HAS A MEANING FOR MODERN ARCHITECTURE

By WYATT BRUMMITT

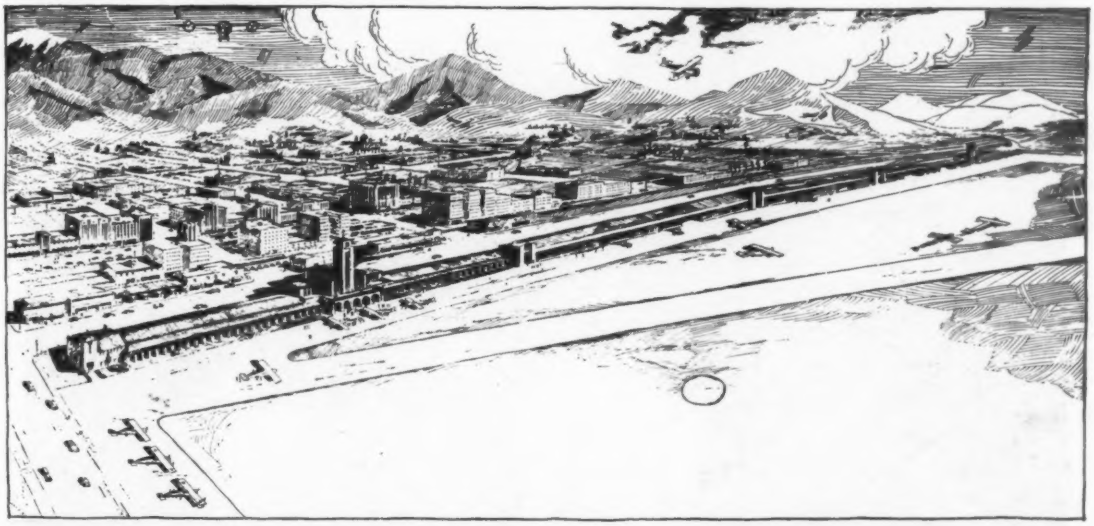
"CONTACT?" calls the mechanic, after he has turned the propeller over slowly, to build up compression in the cylinders of the engine.

"Contact!" replies the pilot and turns the ignition switch on his instrument board.

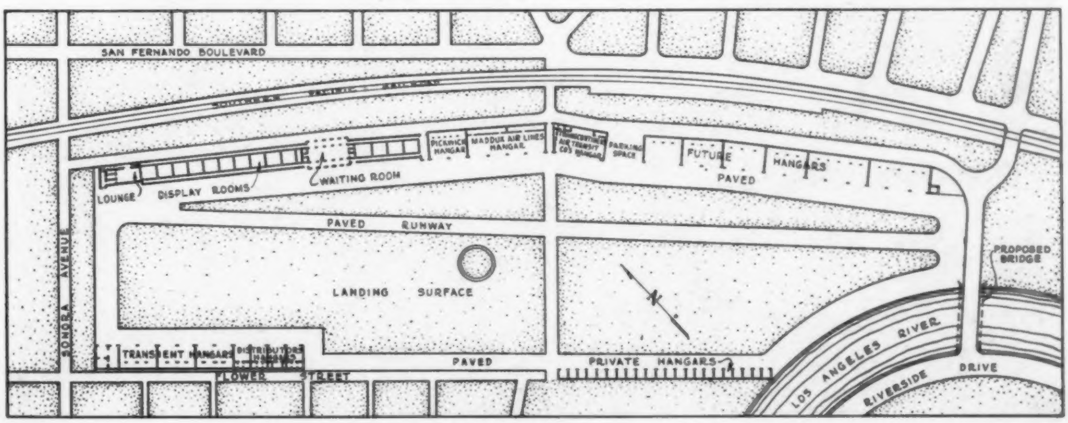
And then the mechanic swings the propeller, a spark spits into the pent-up gas in a cylinder head—and the motor starts.

It is the time-honored ceremony of starting an airplane, a rite filled with all the eager zest of flight.

But it has a meaning, too, for architects and architecture.



GENERAL VIEW OF THE AIR TERMINAL AS IT WILL BE EVENTUALLY DEVELOPED



PLAN OF THE GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIF.

H. L. GOGERTY, ARCHITECT; C. C. SPICER, ENTERPRENEUR

Here is aviation, the most completely modern of modern institutions. It is bound to no architectural traditions. It is free to express itself in absolutely new terms and forms. And its architectural possibilities are as colorful and abundant as the most swashbuckling architect could desire.

If architecture misses the appeal of aviation, if aviation's challenge of "Contact!" goes unanswered, aviation will go ahead, served on the ground only by glorifications of the squalid shacks and sheds in which it has grown up.

New materials, filled with strength, beauty and infinite usefulness, are at architecture's command. New designs, new forms and new meanings await architecture's interpretation.

Contact!

GENERAL ADMINISTRATION BUILDING, GRAND CENTRAL AIR TERMINAL, GLENDALE, CALIF.

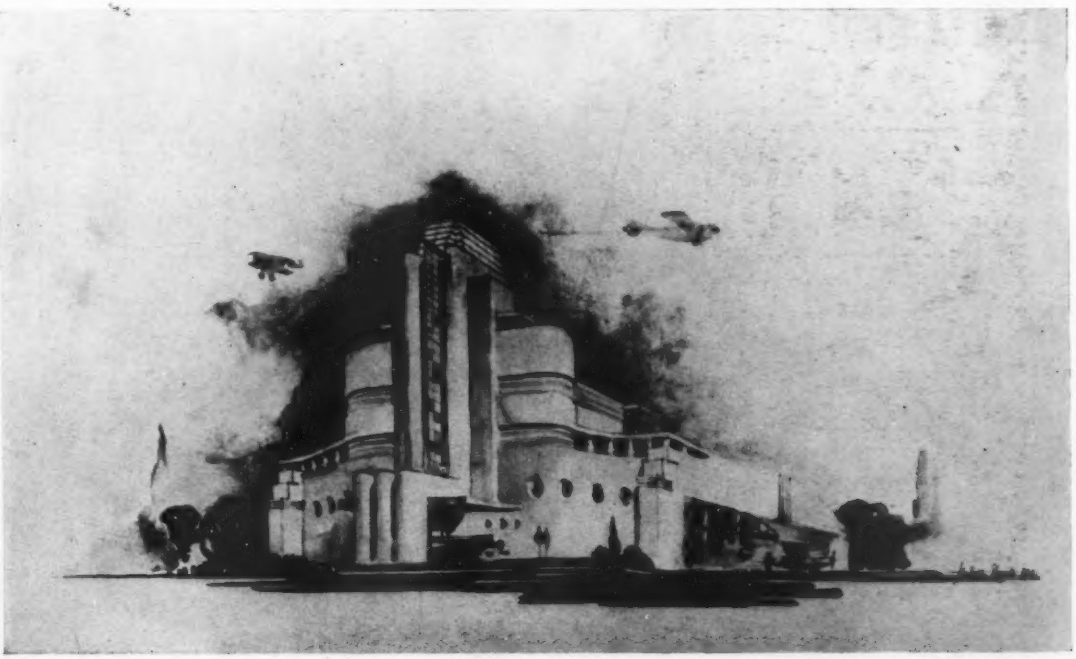
TO BE BUILT ON THE SITE MARKED "WAITING ROOM" ON THE PLAN—H. L. GOGERTY, ARCHITECT

AIRPORT AT TULSA, OKLA.

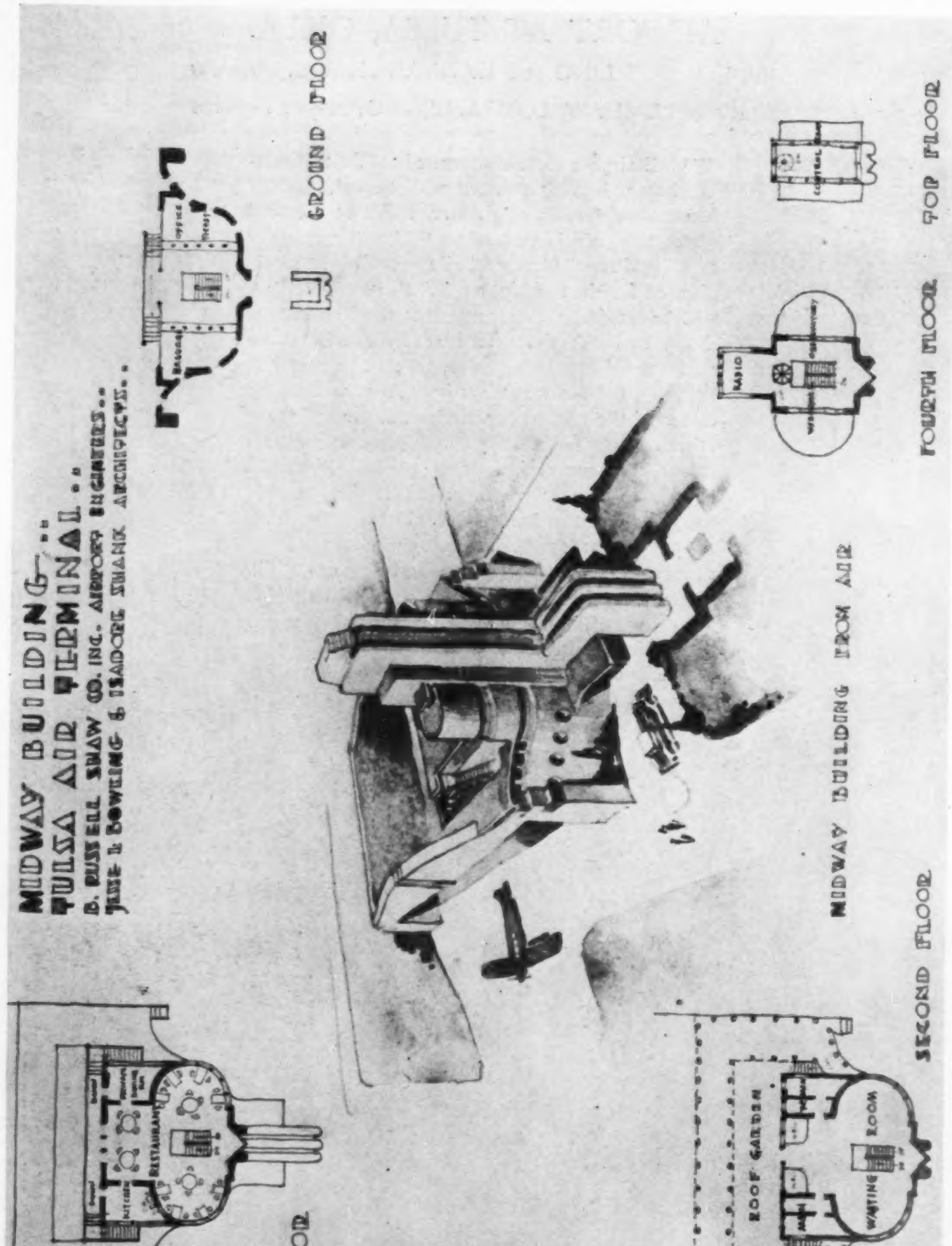
JESSE L. BOWLING and ISADORE SHANK, *Architects*

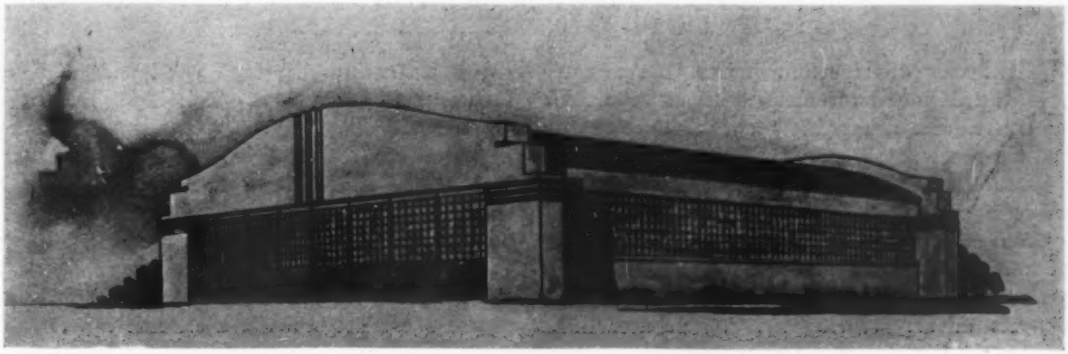
B. RUSSELL SHAW COMPANY, INC., *Airport Engineers*

THE airport to be constructed at Tulsa, Oklahoma, is being planned with thought for the future development of air service. All of the land surrounding the large landing field will eventually be utilized for the various buildings. Only three are planned for the near future, but those erected later will be similar in design; so that the illustrations shown herewith give a fair idea of the architectural character of the complete airport. The terminal building, decidedly modern in feeling, will be the center of the group. It will include among many other rooms a ticket office, waiting rooms, baggage rooms, a restaurant and a roof garden. Planes will be able to take on passengers under the wings of the building. The hangar here shown is simple in design, and large enough to accommodate easily the number of planes that are now being used. The scheme for the pilot house is also shown. The building is a two story structure and includes several bedrooms, library and reception hall. The plan of the field, the layout of the buildings and all of the details have been worked out with a view to convenience of passengers and crews.

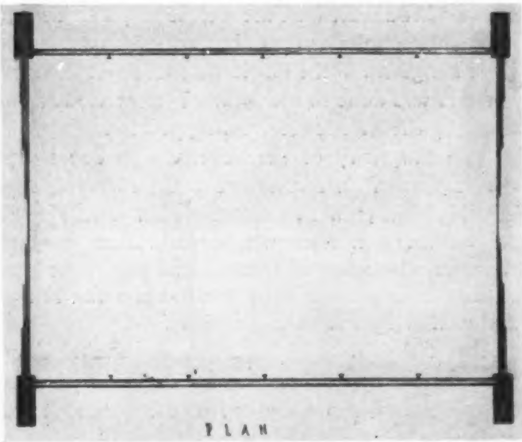


PERSPECTIVE OF MIDWAY BUILDING, TULSA AIR TERMINAL
JESSE L. BOWLING AND ISIDORE SHANK, ARCHITECTS


MIDWAY BUILDING
TULSA AIR TERMINAL
B. RUSSELL SHAW CO. INC. AIRPORT ENGINEERS
JESSE L. BOWLING & ISADORE SHANK ARCHITECTS
GROUND FLOOR
THIRD FLOOR
RESTAURANT
KITCHEN
MIDWAY BUILDING FROM AIR
SECOND FLOOR
ROOF GARDEN
WAITING ROOM
FOURTH FLOOR
RADIO
TOP FLOOR



TYPICAL HANGAR TO BE ERECTED AT THE TULSA AIR TERMINAL, TULSA, OKLA.
THE DESIGN FOLLOWS MODERN LINES IN KEEPING WITH ITS MODERN PURPOSE



THIS IS THE FIRST OF A SERIES OF HANGARS TO BE ERECTED FROM TIME TO TIME AS THE NEED JUSTIFIES. THE BUILDING WILL BE OF STONE AND STEEL FIRE-PROOF CONSTRUCTION

BUILDINGS TO BE ERECTED AT THE TULSA AIRPORT
TULSA, OKLAHOMA

❖

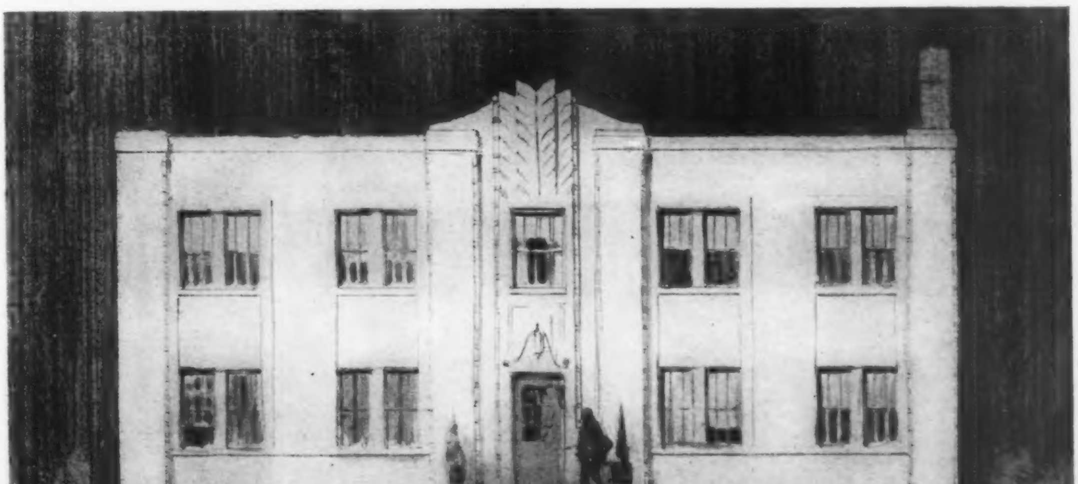
JESSE L. BOWLING AND ISADORE SHANK, ARCHITECTS

❖

B. RUSSELL SHAW COMPANY, INC., AIRPORT ENGINEERS

❖

BELOW IS SHOWN THE FINAL STUDY OF THE PILOTS' QUARTERS. THE BUILDINGS SHOWN HERE WILL BE ERECTED IN THE SOUTHWESTERN CORNER OF THE FIELD. PRESENT PLANS PROVIDE THAT ADDITIONAL BUILDINGS WILL BE LOCATED ALONG THE WESTERN SIDE OF THE FIELD AS NEEDED



HOUSTON AIRPORT HANGARS

THE city of Houston, Texas, has recently erected three large hangars at its airport for the convenience of its flying guests. The hangars are of the all-metal type, corrugated iron sheeting being used to cover the arc welded steel super-structure, rendering the hangars absolutely fireproof.

After estimates had been received on various types of construction, the Houston Airport Corporation awarded the contract for the erection of fireproof hangars of arc welded steel construction. The greater rigidity and strength of this type of construction, coupled with its low cost, were the deciding factors that caused the awarding of such a contract. The lowest bid submitted for wood constructed hangars was 25% higher than the figure for arc welded steel construction and the lowest estimate based on riveted steel construction was 40% higher.

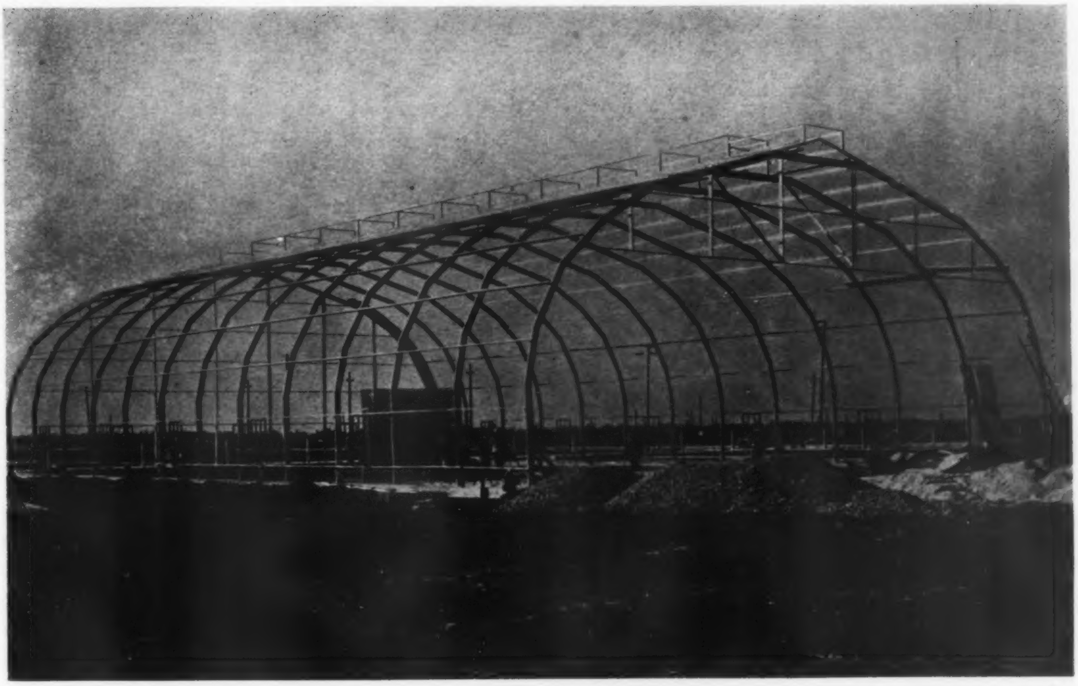
Though these hangars were the first to be built employing the new method of construction, ample proof of the greater rigidity and strength of arc welded steel fabrication was offered the owners, in the large commercial and industrial buildings which have been erected in various parts of the country and whose steel framework has been entirely arc welded. The success of the new process in the structural field is attested by its increasingly rapid growth.

The three hangars, two of which are shown in Figure 1, are typical, being 75 feet wide, 125 feet long and approximately 50 feet high. The arches are made up from channel shape sections cut to form the arch when butted end to end and welded together. The entire fabrication of the arches was completed on the ground, an arch being raised into position and held in place by the welding of the channel purlins to the arches. The framework of one hangar is shown in the process of erection in Figure 2. The columns at the closed end are also channel sections. The framework of the monitors is composed of angles and channels. The completed arc welded steel framework of one of the hangars is shown in Figure 3. The steel sash in the sides and end wall were arc welded in place; in fact, there are no bolts or rivets in the framework of the three hangars. All the fabricating work on the three hangars was done in the field, all connections being made by the electric arc welding process.

The simplicity of the novel design due to the elimination of all trusses and other forms of roof bracing is an economic factor which should favor arc welded steel construction for future hangars. Another advantage of this design, due to its clear ceiling, is its practicability for hangars for blimps and similar lighter-than-air crafts.

Credit should be given the C. J. Frankel Company for the unique design of the hangars and for the efficiency with which the structures were erected.

STEEL HANGARS, HOUSTON AIRPORT, HOUSTON, TEXAS



THE STEEL SUPERSTRUCTURE

INSIDE OF HANGAR, HOUSTON AIRPORT, HOUSTON, TEXAS

THE ARCHITECTS' PERSPECTIVE

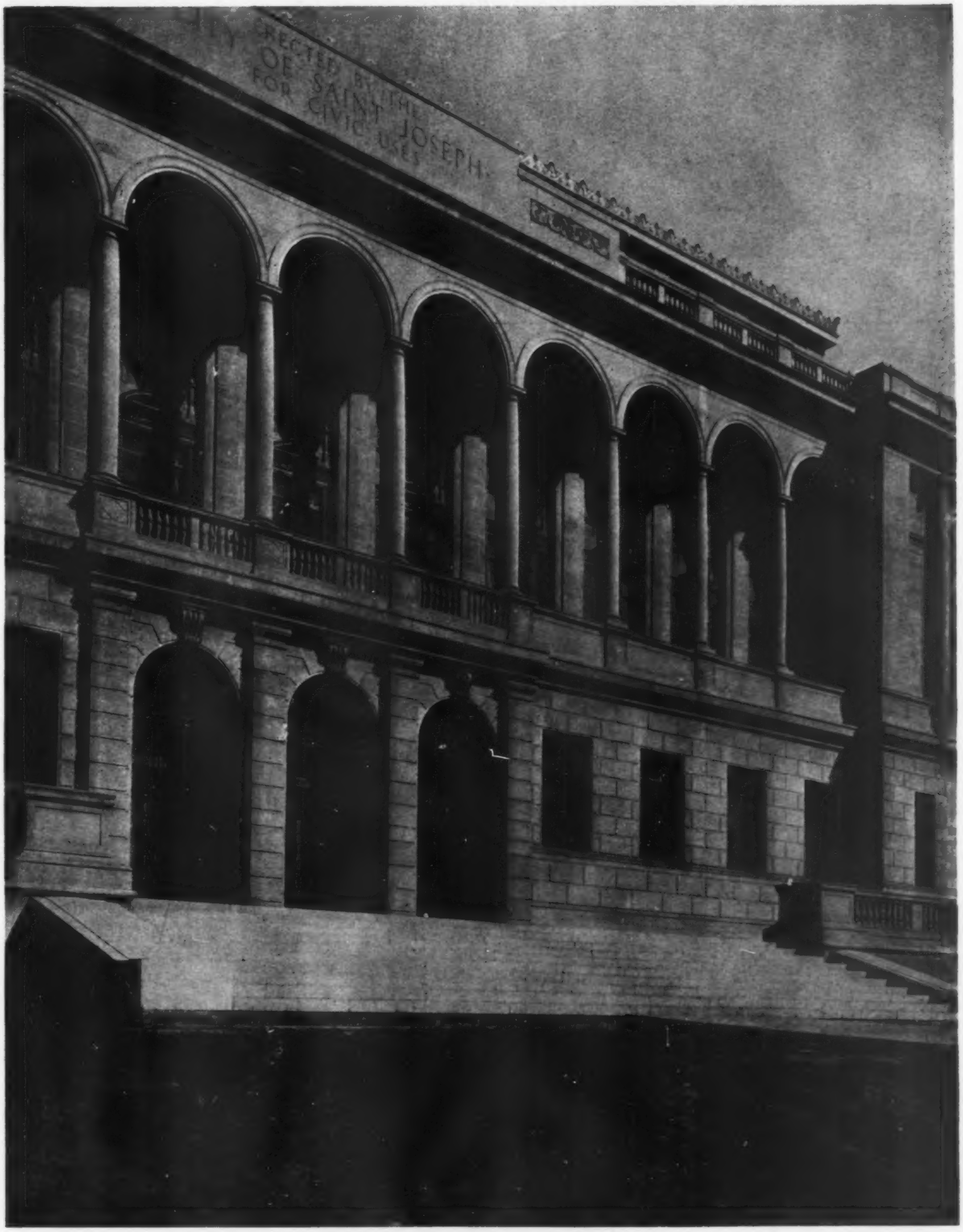
From the drawing by Chester B. Price

MODEL OF MIAMI PASSENGER TERMINAL OF THE PAN-AMERICAN AIRWAYS, INC., MIAMI, FLA.

DELANO & ALDRICH, ARCHITECTS

NEW CITY HALL, ST. JOSEPH, MISSOURI

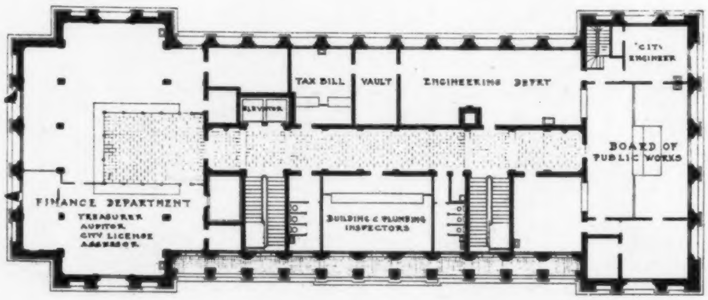
ECKELL & ALDRICH, *Architects*



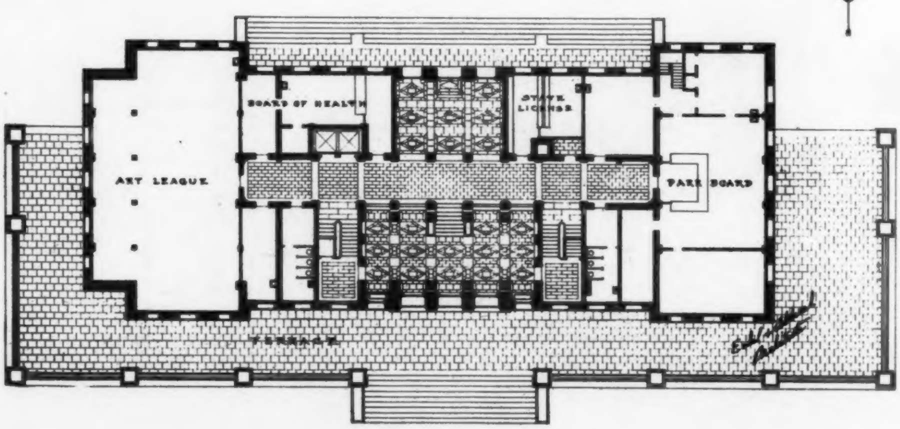
DETAIL OF ENTRANCE

SOUTH FACADE

THE BUILDING ILLUMINATED AT NIGHT



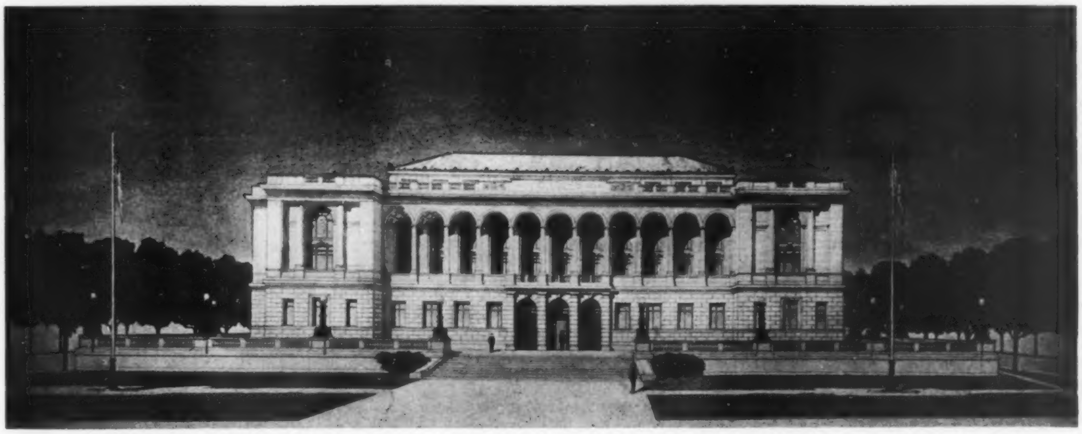
FIRST FLOOR PLAN



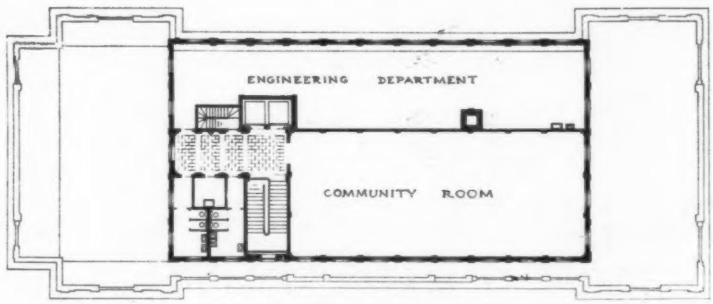
GROUND FLOOR PLAN

CITY HALL, ST. JOSEPH, MISSOURI

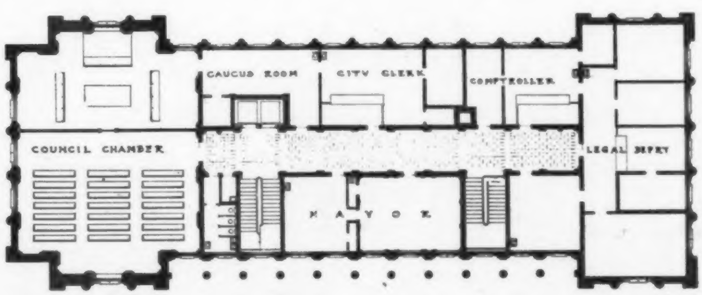
ECKEL & ALDRICH, ARCHITECTS



ELEVATION DRAWING TO SCALE



THIRD FLOOR PLAN



SECOND FLOOR PLAN

CITY HALL, ST. JOSEPH, MISSOURI

ECKEL & ALDRICH, ARCHITECTS

SOUTH FACADE, CITY HALL, ST. JOSEPH, MISSOURI—ECKEL & ALDRICH, ARCHITECTS

MAIN ENTRANCE LOBBY, CITY HALL, ST. JOSEPH, MISSOURI—ECKEL & ALDRICH, ARCHITECTS

MAYOR'S OFFICE

COUNCIL CHAMBER

CITY HALL, ST. JOSEPH, MISSOURI

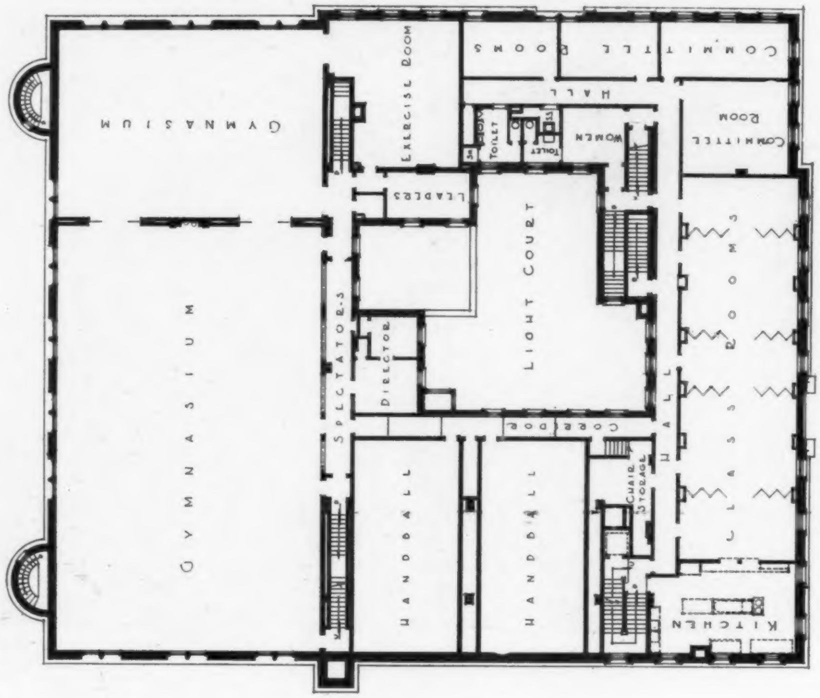
ECKEL & ALDRICH, ARCHITECTS

GENERAL VIEW OF EXTERIOR

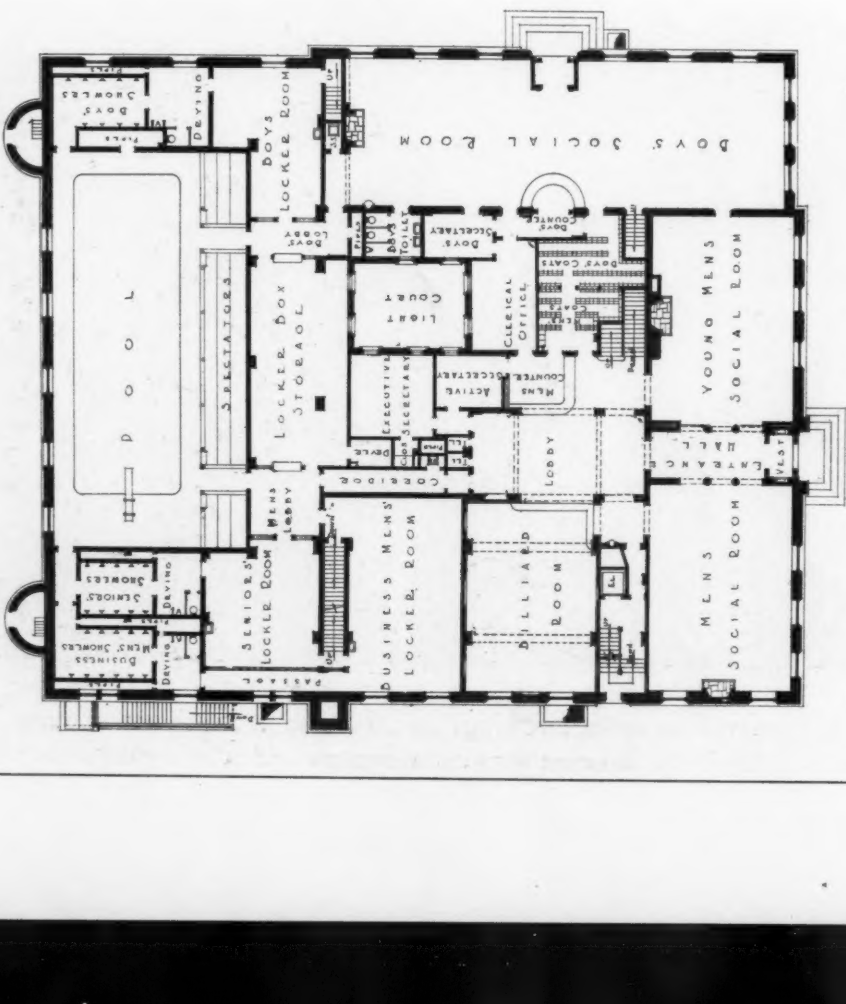
LOBBY

NORTH BRANCH YOUNG MEN'S CHRISTIAN ASSOCIATION, HIGHLAND PARK, MICH.

BURROWES & EURICH, ARCHITECTS

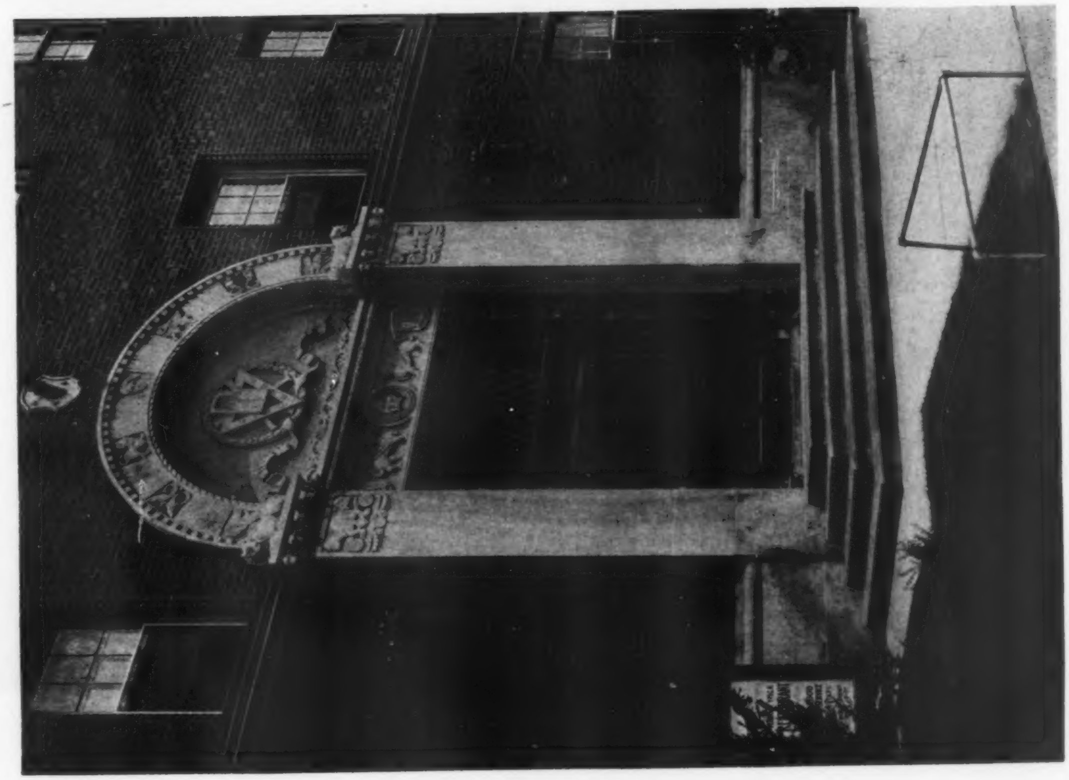


SECOND FLOOR PLAN

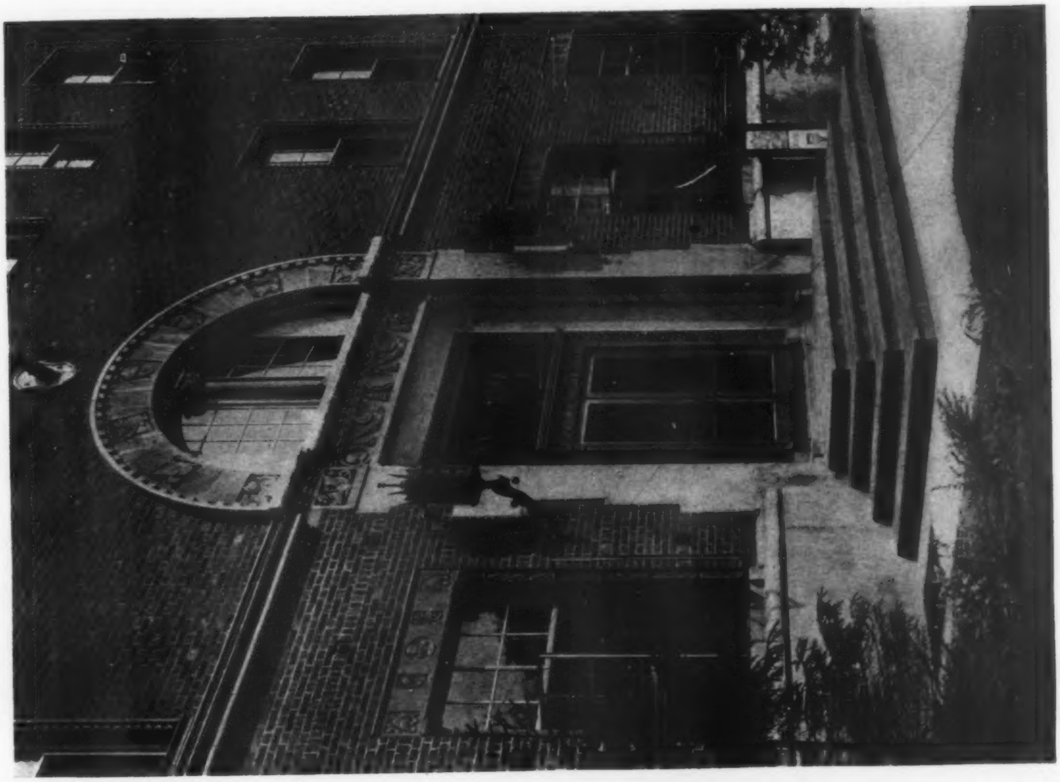


FIRST FLOOR PLAN

NORTH BRANCH Y. M. C. A., HIGHLAND PARK, MICHIGAN—BURROWES & EURICH, ARCHITECTS

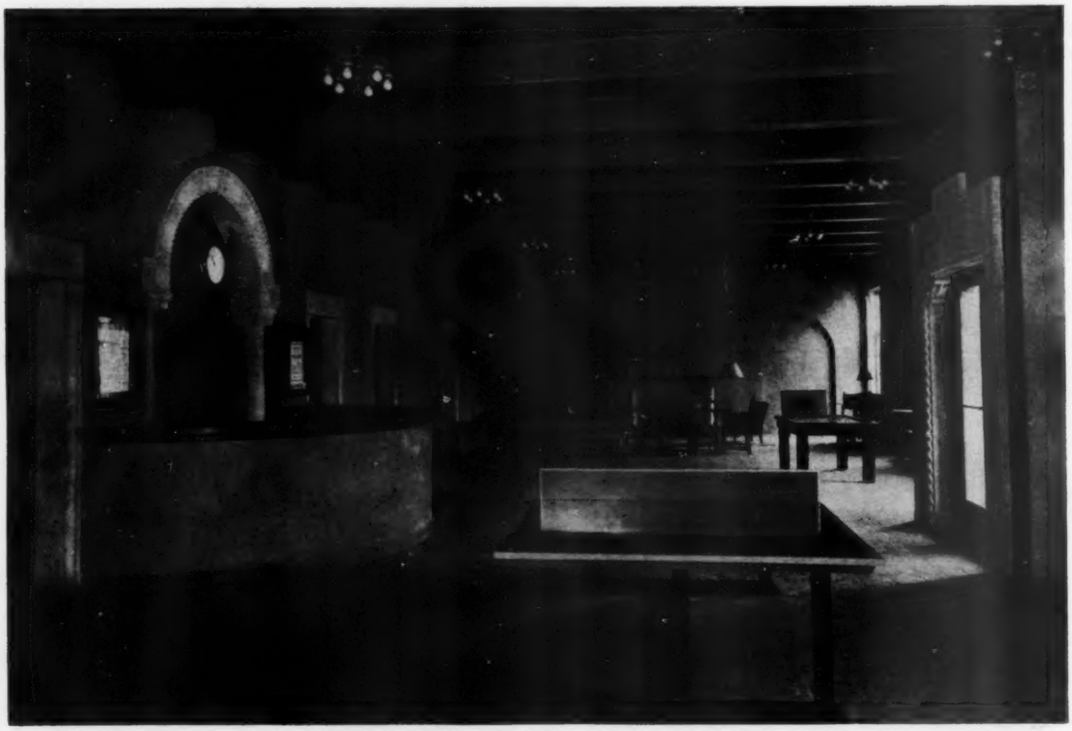


MEN'S ENTRANCE



BOYS' ENTRANCE

NORTH BRANCH Y. M. C. A., HIGHLAND PARK, MICHIGAN—BURROWES & EURICH, ARCHITECTS

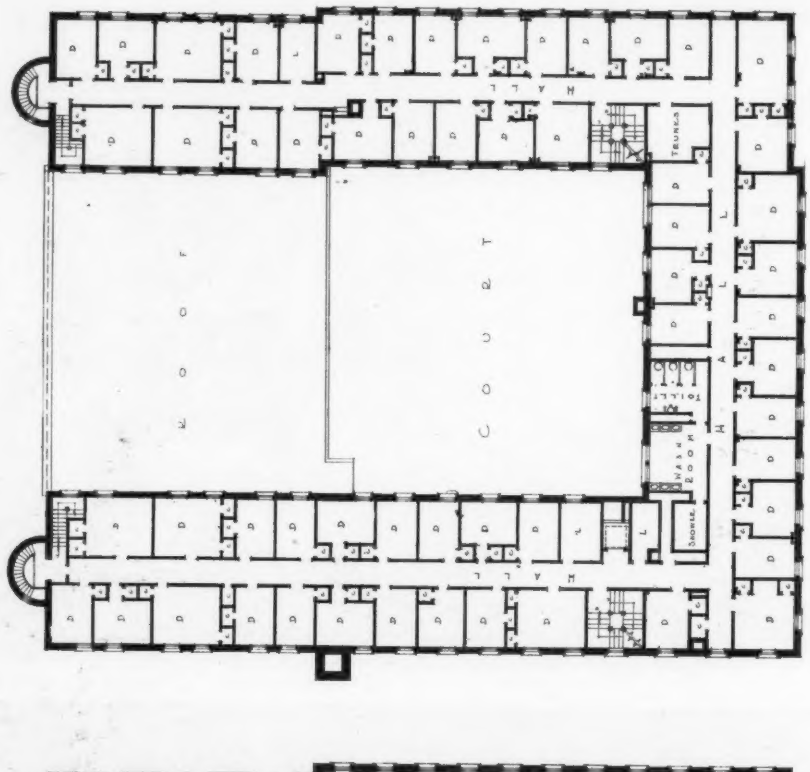


NORTH BRANCH Y. M. C. A., HIGHLAND PARK, MICHIGAN—BURROWES & EURICH, ARCHITECTS

ABOVE, BOYS' GAME ROOM; AND BELOW, BILLIARD ROOM

NORTH BRANCH Y. M. C. A., HIGHLAND PARK, MICHIGAN—BURROWES & EURICH, ARCHITECTS

ABOVE, BOYS' SOCIAL ROOM; AND BELOW, MEN'S SOCIAL ROOM



THIRD FLOOR PLAN

FOURTH FLOOR PLAN
FIFTH FLOOR SIMILAR

NORTH BRANCH Y. M. C. A., HIGHLAND PARK, MICHIGAN—BURROWES & EURICH, ARCHITECTS

ST. STEPHEN'S CHURCH, BOSTON, MASS.

PERRY, SHAW & HEPBURN, *Architects*

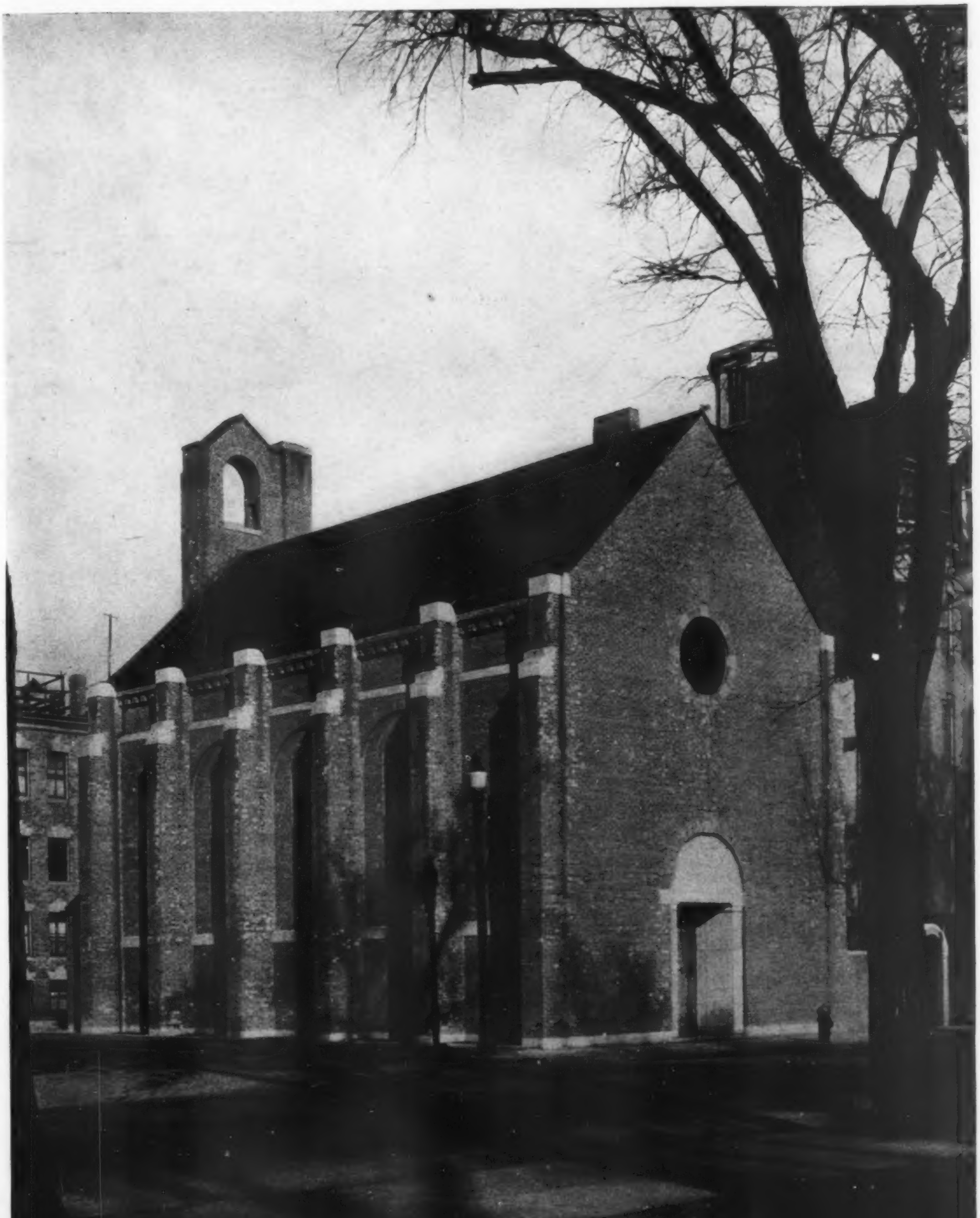


Photo by Weber

Photo by Weber

ST. STEPHEN'S CHURCH, BOSTON, MASS.

PERRY, SHAW & HEPBURN, ARCHITECTS

Photo by Weber

ST. STEPHEN'S CHURCH, BOSTON, MASS.

PERRY, SHAW & HEPBURN, ARCHITECTS

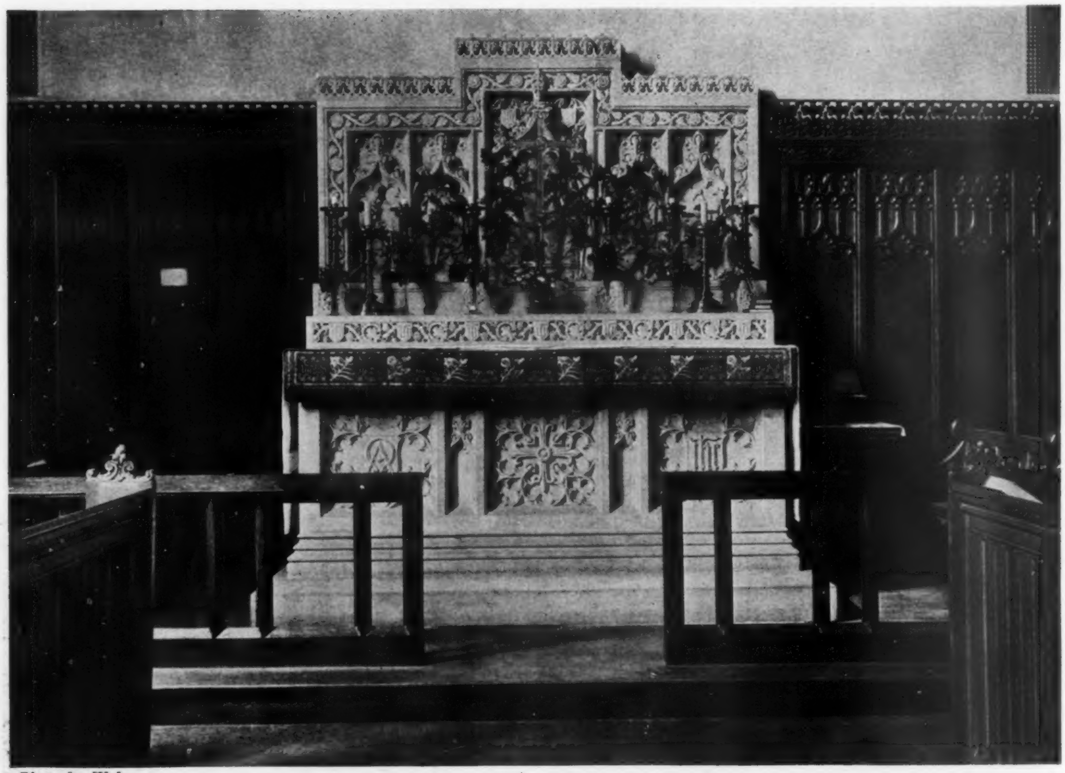
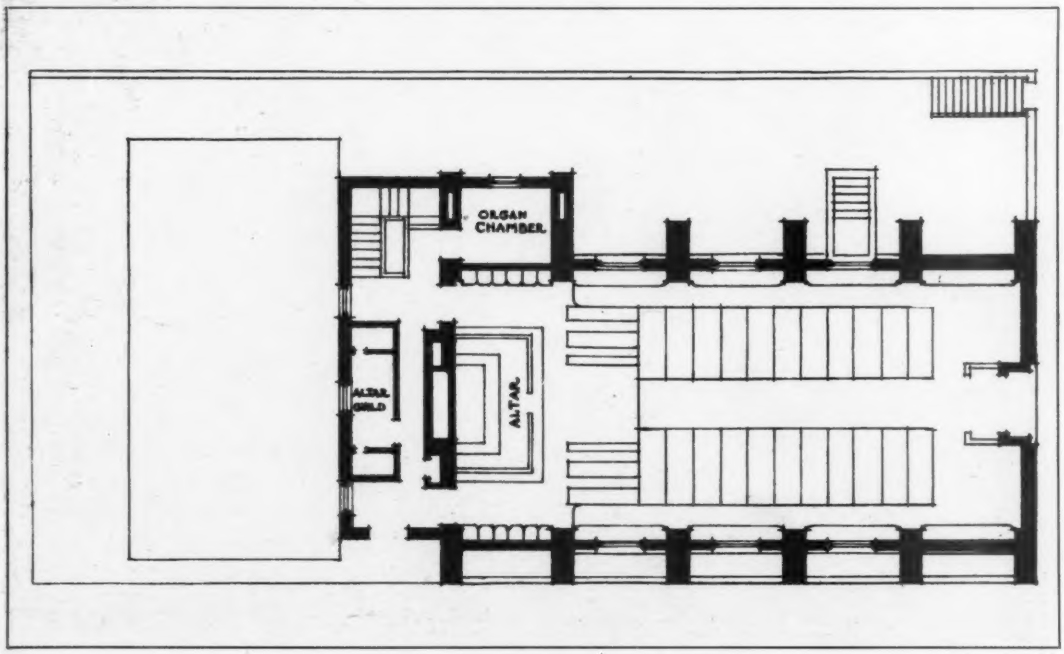


Photo by Weber

THE ALTAR, TAKEN FROM THE OLD CHURCH, WAS DESIGNED BY R. CLIPSTON STURGIS, ARCHITECT



ST. STEPHEN'S CHURCH, BOSTON, MASS.

PERRY, SHAW & HEPBURN, ARCHITECTS

A SUCCESSFUL ALTERATION JOB

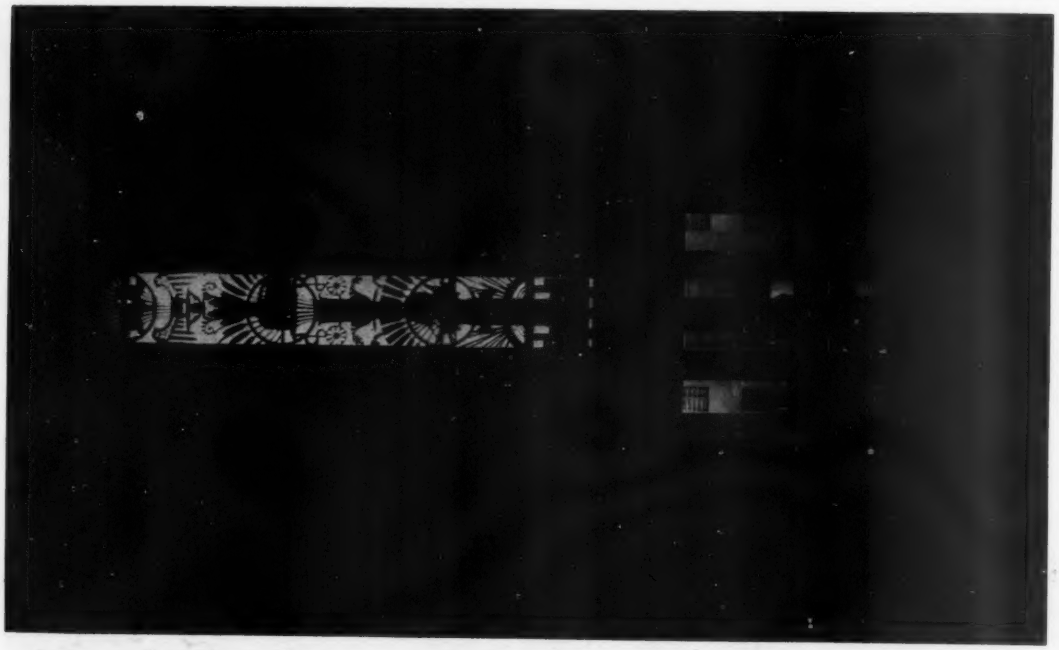
ALTERATION work has many perplexing angles. One of these is the matter of cost, for it is often found more expensive to alter an old building than it would be to build a new one. Another difficulty is to create a satisfactory and interesting design for that part of the building which is to be altered and yet retain unity and harmony in the complete composition.

In designing a facade for the Plaza Trust Company, New York, the architects, Helmle, Corbett & Harrison, were confronted with a problem which offered many complications. The bank had taken the first two floors of an old corner building, eight stories high, which in its design was lacking in any peculiar marks of individuality. The architectural treatment of this portion of the building terminated in a classic cornice supported by pilasters. The entrance to the building proper, with its surrounding treatment, was left intact, while the entire front beyond this point to the base of the cornice was removed with the exception of the corner pilaster. The entrance to the bank was made the center of interest and the circular headed opening was flanked on either side by pilasters of lines similar to those already existing. The bronze doors, and grille above set in deep reveal, were given a distinctive decorative quality. Ornament was introduced on the facade in keeping with the spirit of the bronze work and yet of such a character as to harmonize with the lines of the existing work

Photo by Gillies

PLAZA TRUST COMPANY, NEW YORK

HELMLE, CORBETT & HARRISON, ARCHITECTS



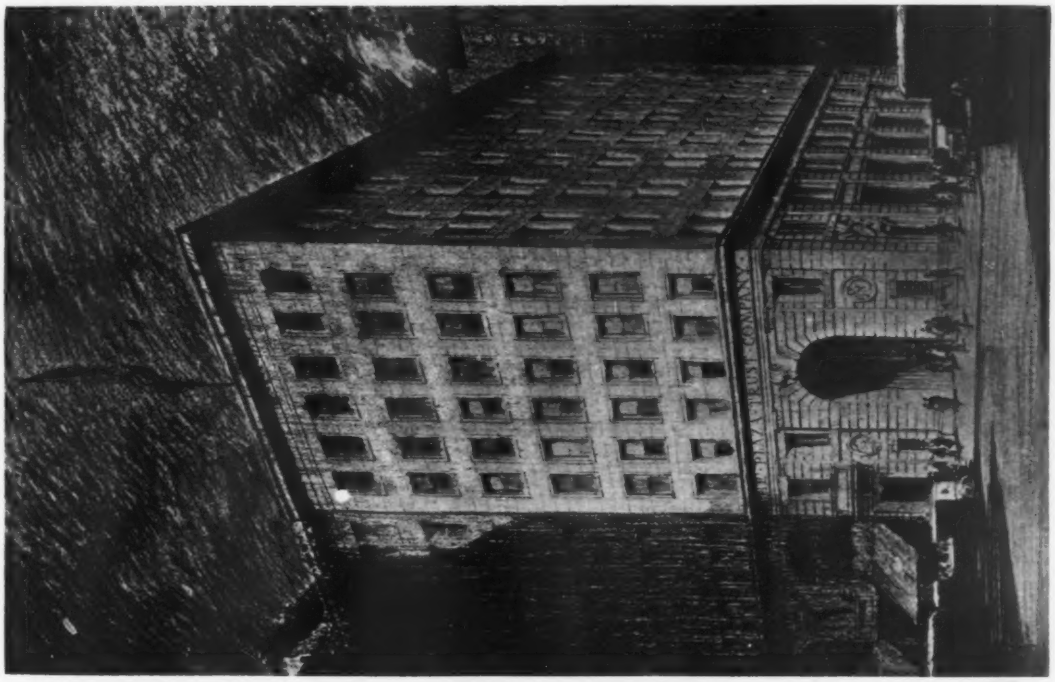
Photos by Gillies

DETAIL OF ENTRANCE TO BANK BY DAY AND BY NIGHT

PLAZA TRUST COMPANY, NEW YORK—HELMLE, CORBETT & HARRISON, ARCHITECTS

Photo by Brown Bros.

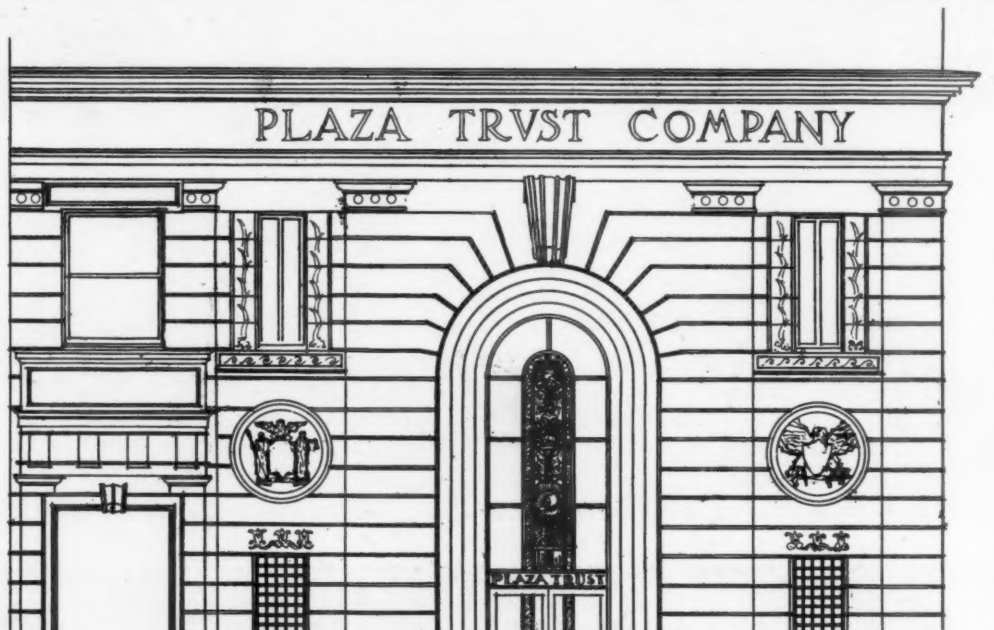
THE OLD BUILDING BEFORE ALTERATIONS WERE MADE



ARCHITECTS' PERSPECTIVE SHOWING ALTERATIONS
From the drawing by Chester B. Price

PLAZA TRUST COMPANY, NEW YORK—HELMLE, CORBETT & HARRISON, ARCHITECTS which was retained. The windows that were introduced were aligned with the existing openings in the stories above.

The final result attained is peculiarly successful. The facade has a modern character in keeping with the service which the bank renders, and yet that part of the old building which has remained intact in no way seems out of place or objectionable.



FRONT ELEVATION AND PLAN TO SCALE

PLAZA TRUST COMPANY, NEW YORK

HELMLE, CORBETT & HARRISON, ARCHITECTS

INTERIOR ARCHITECTURE

▾ ▾ ▾

AN APPLICATION OF THE MODERN THEORY

By Andrew L. Henkel

THE prime factor in the newer school of architecture is Function. Given a definite problem, the adherents to this school believe that the solution must lie, first, in a resolution of the problem into its fundamental elements from the point of view of function, and second, in a coördination of the demands of these elements into a simple and complete unit. The æsthetics, they claim, are inherent in the result.

Without wasting words in arguments either pro or con, this theory was put into practice in planning the office of George Enzinger, president of the Olson and Enzinger Advertising Agency, Milwaukee, Wis. The fundamental soundness or weakness in the functional theory as it is brought out by this particular problem, therefore, can best be judged by the results.

In planning Mr. Enzinger's office, the first task, according to theory, was to determine as accurately as possible the occupant's work and habits. This was done by consulting his secretary, and a routine was worked out which conformed closely enough to his daily schedules for 350 working days to warrant using it as a definite requirement of the problem. Thus, the client's needs were the real basis for working out the problem, not decorative picturesqueness alone as in many of the so-called "period" offices. In this way the office equipment was made to fit the demands of the work and the man; not the man and the work to fit the office equipment.

CORNER IN AN EXECUTIVE'S OFFICE
THE PROBLEM IN DECORATION WAS WORKED OUT SOLELY ON THE BASIS OF THE CLIENT'S NEEDS

The desk, the most important piece of furniture in this case—hence the motive of the room—was designed in an L shape, the longer element serving for conference purposes and the shorter for personal business. The chair was placed in the angle, so that the executive had only to swing in his chair to turn from his letters to his client. Thus, behind his desk at all times, the executive was enabled to meet his appointments and carry on his personal business from two separate points without doing more than to turn in his chair.

As the central point in the design, the desk determines the minor units. All functions revolve around it. The chairs, the ash trays, the lighting fixtures, the position of windows, the arrangement of drapes—all these details are made to conform to this central unit.

Thus at no point in the room is either executive or visitor embarrassed by faulty disposition of chairs, inability to make himself heard, annoying high lights or shadows, or made uncomfortable by any of the usual irritations inherent in designs ignoring the demands of comfort and function.

This theme of comfort was further carried out in the color scheme of the room. Four values of chrome green were used on the ceiling and walls. This color is yellow-green and its psychological effect is one of cheerfulness and peace. The surface texture of the walls was such as to maintain a liveliness of light and color without creating distracting high lights. Monotony was relieved by deeper values in window and door frames. These accents are echoed in the color scheme used in the furniture so that the feeling of movement of color is through space and not one of surface decoration. Thus demands of æsthetics are satisfied directly through the satisfaction of the demands of function.

This is typical of the aims of the modern theory of function, the fundamentals of which are—

First: simplicity

Second: continuity of line such as is found in the stream line of modern motor car bodies

Third: plain surfaces

Fourth: admission of structural necessity

Fifth: dramatization of the intrinsic beauty of materials—textile, wood, stone, metal or glass

Sixth: the achievement of the maximum convenience

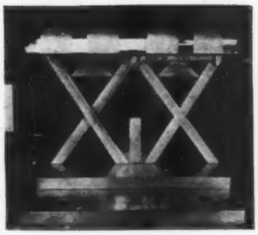
Industry is the keynote of modern civilization. Modern theories based upon function are an expression of its significance as well as they are an expression of demand for speed, efficiency and flexibility. In architecture the quantum of interest is achieved by the grouping and proportion of rooms and furniture to satisfy these demands.

And beauty? Le Corbusier answers, "This is an imponderable which cannot function except in the actual presence of its primordial bases: the reasonable satisfaction of the mind (utility and economy); after that, cubes, spheres, cylinders, cones, etc. (sensorial). Then . . . the imponderable, the relationships which create the imponderable; this is genius, inventive genius, plastic genius, mathematical genius, his capacity for achieving order and unity by measurement and for organizing, in accordance with evident laws, all those things which excite and satisfy our visual senses to the fullest degree."

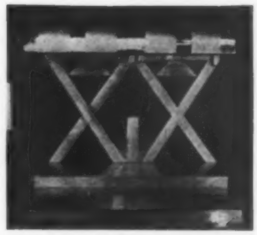
In the attitude of a student I have accepted the teachings of Le Corbusier in an effort to solve the problem presented here.

GENERAL VIEW OF EXECUTIVE'S OFFICE

THE L-SHAPED DESK IS A FEATURE OF THE SCHEME



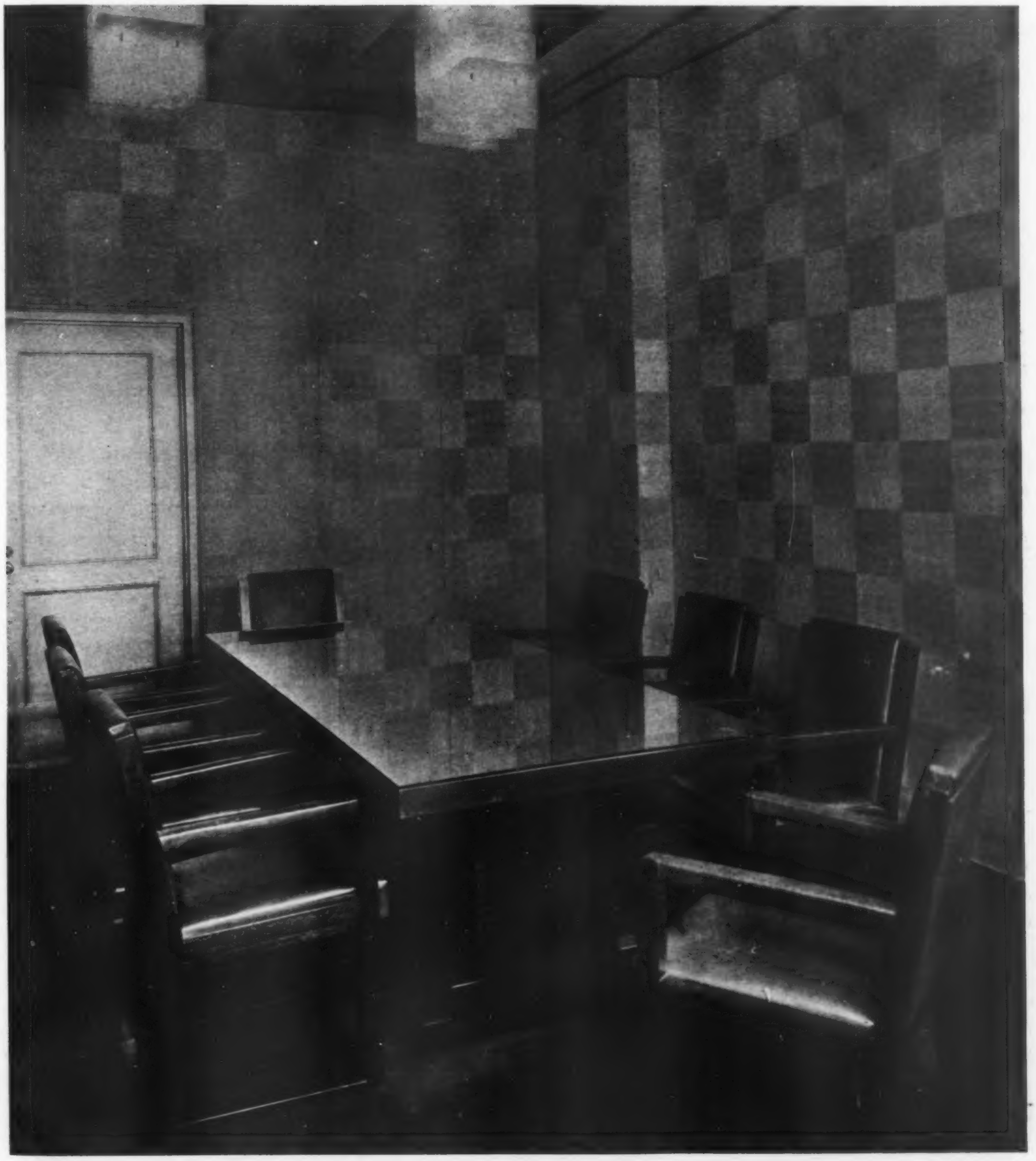
THE MODERN STYLE



REFLECTED IN THE DESIGN OF THE OFFICES OF

RUDOLPH MOSSE, Inc., NEW YORK

WINOLD REISS, *Interior Architect*



THE CONFERENCE ROOM. LACQUERED PAPER IN BEIGE TONES COVERS THE WALLS, THE CARPET IS DEEP ORANGE, THE FURNITURE IS UPHOLSTERED IN SIENNA

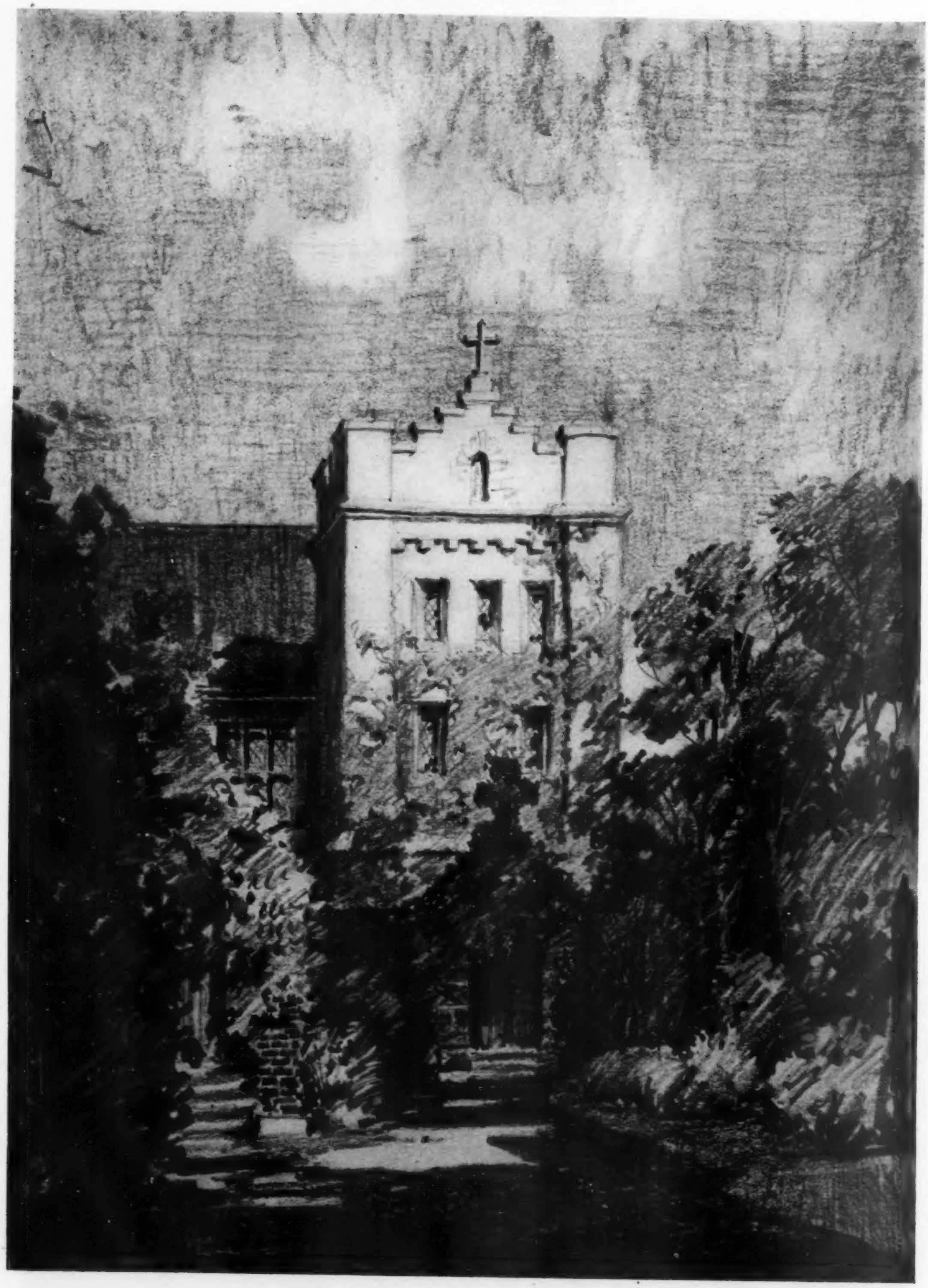
THE WALLS OF THE RECEPTION ROOM ARE STENCILLED

A CEILING FIXTURE OF GEOMETRIC LINES LIGHTS THE OFFICE

THE OFFICES OF RUDOLPH MOSSE, INC., GRAYBAR BUILDING, NEW YORK—WINOLD REISS, INTERIOR ARCHITECT

THE OFFICES OF RUDOLPH MOSSE, INC., GRAYBAR BUILDING, NEW YORK—WINOLD REISS, INTERIOR ARCHITECT

A MODERNISTIC VERSION OF THE SWIVEL CHAIR IS THE NOTE OF DOMINATING INTEREST IN THIS OFFICE



EPISCOPAL CHURCH, HADDONFIELD, N. J.

From the original drawing by Geo. C. Sponsler, Jr.

EDITORIAL COMMENT

ARCHITECTURAL PUBLICITY

ONE of the New York newspapers has recently inaugurated a policy of devoting a page of its Sunday edition to the subject: "The American House and its Setting." This page is under the surveillance of a member of the New York Chapter of the A.I.A., with the Public Information Committee of the Institute acting in an advisory capacity.

The general procedure is to have some one architect of the metropolitan district submit an article on types of domestic architecture, accompanied by illustrations of his own work, and this article is supplemented by one dealing with landscape architecture and interior decoration.

The article on this page in one of the recent issues of the paper stated that the best results were obtained by a client working out a rough plan of the first and second floors of the house to suit his individual needs and later turning these over to an architect to be put into workable shape. He goes on to state that, up to this stage, no consideration need be given to the site. In fact he suggests that, after the preliminary plans have been drawn, it is time enough then to go out and find a site to suit the house.

We cannot get up much enthusiasm over such publicity as this. This page, we judge, is intended to arouse the interest of the prospective home builder in good architectural design and to encourage the services of an architect no matter how small the house may be.

The Institute would do well to give all the publicity it can to such a policy, but we question very much if the majority of the members of the architectural profession will agree with the procedure of designing the house first and then going out to find the site to suit it.

While on this subject of publicity, we call attention to another article which appeared in another newspaper recently which made a feature of the fact that the architectural profession, during one year, receives $80,000,000 in fees. This would seem to be bad enough in itself, but further on we read that 10% of this $80,000,000 is wasted by those of the profession who are the recipients.

We wonder what the Institute is coming to when it broadcasts such information as this in the guise of architectural publicity.

This journal and, we think it is safe to say, all other professional architectural journals in this country, are doing all in their power to encourage the services of architects. We pounce on any magazine which makes a practice of selling plans and specifications by the yard.

In abiding by such a policy, as we have done during our entire existence of over 50 years, we feel, and always have felt, that the architects of the country in a body are with us and appreciate our efforts.

Without stepping on any one's toes, we now make so bold as to express ourselves as opposed to the type of publicity which the Institute is now fostering.

A FIVE YEAR COURSE IN ARCHITECTURE

ON the editorial page, in the issue of January 20th, we published a letter from Frederic Child Biggin, Dean of the School of Architecture of Alabama Polytechnic Institute, relative to increasing the course in architectural schools to five years. Professor Goldwin Goldsmith, of the School of Architecture, University of Texas, has given expression to his ideas on the subject and they are printed here in full.

"Schools or departments of architecture may be divided into three classes by the length of their curricula—four, five and six years. As with other professional courses the four year curriculum is found to be inadequate. Law and medicine have been forced to increase to five and six years and it is generally recognized that six years, during which the A.B. degree is attained in four, is the time necessary for the proper granting of the Bachelor's degree in these subjects.

"Architecture, as a professional subject, is tending toward this same lengthening of the course. It has been handicapped by its greater kinship to business. Its method of doing business on a percentage basis has made its recognition as an art and a profession more difficult. The better architects in the profession realize that success necessitates a better grounding in the fundamentals of design and construction and a broader culture than can be acquired in the four years of the ordinary course in an architectural school. The schools themselves have long recognized this fact.

"Three prominent schools of architecture, two in the East and one on the Pacific Coast, require six years for the degree in architecture, granting the A.B. degree at the end of the first four years. This does not mean, however, that the holder of an A.B. can enter these schools and secure his degree in architecture in two years more. The work in architecture begins in the early years of the course and the A.B. degree is secured with architecture as the major subject. To this condition all schools of architecture should possibly aspire.

"Perhaps working toward this end, certainly with the realization that four years is not sufficient, a number of architectural schools and departments have increased the length of the course to five years. In doing this they have not all increased the amount of work required 25 per cent of the work formerly given in four years. Many of the four year schools require as high as 140 credit hours in the four year curriculum, or 35 credit hours for each of the four years. In going to the five year basis the increase is usually an additional 20 hours, making 160 for the five years, or even less. A few require more.

"In making this increase the additional work may be equally divided between technical and cultural subjects or an even greater proportion of the latter. Certainly the schools are stressing the need for a broader education for the architect. It must be granted that many of the so-called technical subjects in architecture are also cultural. The handicap for many architectural students lies in the lack of a cultural background in early environment and secondary school preparation.

"A few years ago the schools of engineering, through an important society, discussed the proposition that all engineering courses be increased to five years. Had the architectural departments been wide awake at that time they might have done much toward securing their own desired increase. For the present such an increase has been decided in the negative by the engineering schools, and this fact will tend to hold down the length of the course in architecture in those departments allied to schools of engineering.

"The solution, of course, for these departments would be to separate from the engineering schools, but in many cases this would not be possible, and in some not wholly desirable. In some schools the number of students in architecture and architectural engineering together is about one-third of the total number of students in the engineering school. Unless the total number is large, to separate into two schools would mean two weaker schools in the university and greater expense of maintenance. Generally, in the state schools, the students in the department of architecture are about equally divided between the two options; and the engineering school would protest against conceding the architectural engineers to the school of architecture at the time of separation.

"There would be the further question of whether or not the course in architectural engineering should be lengthened to five years with the architects or kept at four years with the other engineering courses. This would be more easily settled under complete separation of architecture from the engineering school with, of course, the retention of the architectural engineers by the separate school of architecture.

"A desirable aim would be to develop the department of architecture into a school of architecture and allied arts, or into a school of fine arts. Both of these have been done. But in the state schools, supported by legislative appropriations, architecture is often looked upon by the legislators, many of whom are not deeply interested in the arts, more as a practical engineering subject than as one of the fine arts, despite the efforts of the department faculties to raise it to the latter status.

"As a practical solution the department of architecture, which is now only a department in an engineering school, might well work for the comparative independence to be attained through at least a partial recognition of its individuality by becoming an entity in a School of Engineering and Architecture, with the privilege of lengthening its curriculum to five years, leaving to the future the question of whether it can or should achieve the distinction of complete freedom as a full fledged professional school on a six year basis."

OLD SHOP AT PROVINCETOWN, CAPE COD, MASS.

WORKING PHOTOGRAPHS—SERIES II

FROM THE ORIGINAL NEGATIVE BY DWIGHT JAMES BAUM, ARCHITECT

OLD MILL AT CHATHAM, CAPE COD, MASS.

WORKING PHOTOGRAPHS—SERIES II

FROM THE ORIGINAL NEGATIVE BY DWIGHT JAMES BAUM, ARCHITECT

◉ ENGINEERING AND CONSTRUCTION ◉

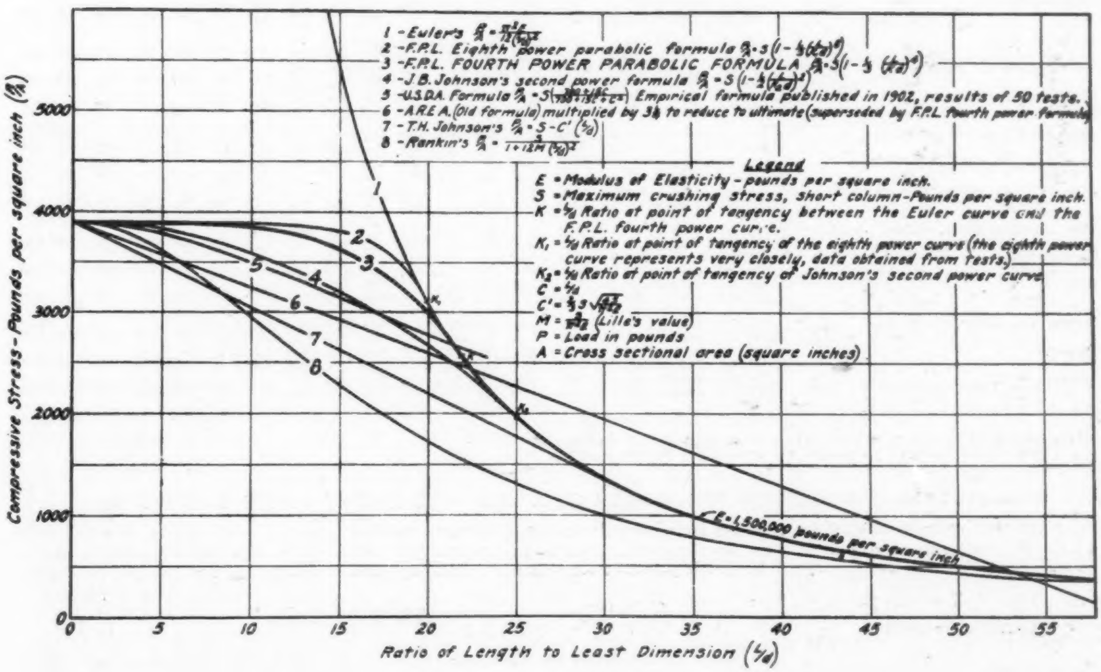
▼ ▼ ▼

THE FOREST PRODUCTS LABORATORY FORMULA FOR COMPUTING COLUMN STRENGTH

A NEW and simple formula for computing the strength of wooden columns commonly used in buildings, bridges, and other structures has been worked out by the Forest Products Laboratory, U. S. Forest Service.

In order that the type of column to which the formula applies may be understood, it should be stated that for building purposes three types of columns are recognized, namely: long columns, which depend for their strength on stiffness; short columns, which depend for their strength on crushing strength in direction of length; and intermediate columns, which depend on a combination of stiffness and crushing strength. The new formula applies to intermediate columns, those used most frequently in structural work. The application of the formula to structural timbers was demonstrated in a test of southern yellow pine and Douglas fir timbers.

Since both stiffness and crushing strength enter into calculations of the strength of intermediate columns, values for both these properties must be known in order to determine the necessary size of intermediate columns. The Forest Products Laboratory (Madison, Wis.) has prepared tables which give values for the safe crushing stress, modulus of elasticity (measure of stiffness), and also for K, for most of the commercial species. The values for K represent the slenderness ratios (length to least dimension) below which the formula



COLUMN FORMULAS

NOTE THAT THE EIGHTH POWER CURVE BECOMES TANGENT TO THE EULER CURVE AT A POINT FOUR-FIFTHS OF THE COMPRESSIVE STRESS OF THE TIMBER, OR, IN OTHER WORDS, IT ASSUMES A FIBER STRESS AT ELASTIC LIMIT OF 80 PER CENT. OF THE COMPRESSIVE STRESS OF THE WOOD. THE FOURTH POWER CURVE ASSUMES AN ELASTIC LIMIT STRESS OF TWO-THIRDS THE MAXIMUM COMPRESSIVE STRESS. THE EIGHTH POWER CURVE FITS THE TEST DATA BETTER THAN ANY OF THE OTHER CURVES REPRESENTED, BUT THE USE OF THE FOURTH POWER CURVE IS RECOMMENDED BECAUSE IT TAKES INTO ACCOUNT MORE ADVERSE CONDITIONS OF USE THAN THE EIGHTH POWER

Species	Modulus of elasticity[1]	Grades	Value of K	When slenderness ratio L/d is: Short columns	12	14	16	18	20	22	24	26	28	30	35	40	45	50
				Pounds per square inch														
Ash, commercial white	1,500,000	Select	23.7	1100	1076	1055	1023	978	913	827	714	608	524	457	336	257	203	164
	1,500,000	Common	26.5	880	868	857	840	818	784	740	682	607						
Aspen and largetooth aspen	900,000	Select	23.0	700	682	668	645	612	566	505	428	365	315	274	201	154	122	99
	900,000	Common	25.7	560	551	544	532	515	492	460	418							
Basswood	900,000	Select	23.0	700	682	668	645	612	566	505	428	365	315	274	201	154	122	99
	900,000	Common	25.7	560	551	544	532	515	492	460	418							
Beech	1,600,000	Select	23.4	1200	1172	1148	1112	1061	988	888	761	649	559	487	358	274	216	175
	1,600,000	Common	26.2	960	946	933	915	889	852	801	734							
Birch, yellow and sweet	1,600,000	Select	23.4	1200	1172	1148	1112	1061	988	888	761	649	559	487	358	274	216	175
	1,600,000	Common	26.2	960	946	933	915	889	852	801	734							
Cedar, Alaska	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Cedar, western red	1,000,000	Select	24.2	700	686	674	656	629	592	542	476	405	350	304	224	171	135	110
	1,000,000	Common	27.1	560	553	547	538	524	505	479	445	402						
Cedar, northern and southern white	800,000	Select	24.5	550	540	530	516	496	468	430	381	324	280	244	179	137	108	88
	800,000	Common	27.3	440	435	430	423	412	398	378	353	320						
Cedar, Port Orford	1,200,000	Select	23.4	900	879	861	834	796	741	666	571	487	419	365	268	206	162	132
	1,200,000	Common	26.2	720	709	700	686	667	639	600	551							
Chestnut	1,000,000	Select	22.7	800	779	762	734	694	638	564	476	405	350	304	224	171	135	110
	1,000,000	Common	25.3	640	629	620	606	586	557	519	468							
Cottonwood, eastern and black	900,000	Select	23.0	700	682	668	645	612	566	505	428	365	315	274	201	154	122	99
	900,000	Common	25.7	560	551	544	532	515	492	460	418							
Cypress, southern	1,200,000	Select	21.2	1100	1063	1030	981	909	810	679	571	486	419	365	268	206	162	132
	1,200,000	Common	23.7	880	861	843	818	781	729	658								
Douglas fir (western Washington and Oregon)	1,600,000	Select	23.7	1175	1149	1127	1093	1045	975	862	761	649	559	487	358	274	216	175
	1,600,000	Common	27.3	881	870	861	847	826	796	757	706	640						
Douglas fir (dense)	1,600,000	Select	22.6	1285	1250	1221	1177	1113	1024	903	761	649	559	487	358	274	216	175
	1,600,000	Common	24.9	1060	1041	1025	1000	964	914	845	756							
Douglas fir (Rocky Mountain type)	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Elm, rock	1,300,000	Select	21.1	1200	1158	1122	1067	988	877	734	618	527	454	396	291	223	176	142
	1,300,000	Common	23.6	960	939	920	892	852	795	718								
Elm, slippery and American	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Fir, commercial white	1,100,000	Select	25.4	700	689	678	664	641	611	569	515	446	385	335	246	188	149	121
	1,100,000	Common	28.4	560	554	549	542	530	515	493	465	430	384					
Gum, red, black, and tupelo	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Hemlock, eastern	1,100,000	Select	25.4	700	689	678	664	641	611	569	515	446	385	335	246	188	149	121
	1,100,000	Common	28.4	560	554	549	542	530	515	493	465	430	384					
Hemlock, western	1,400,000	Select	25.3	900	885	872	852	823	783	728	658	567	490	426	313	240	189	153
	1,400,000	Common	28.3	720	712	706	696	680	660	632	595	549	489					
Larch, western	1,300,000	Select	22.0	1100	1068	1041	999	937	851	737	618	527	454	396	291	223	176	142
	1,300,000	Common	24.6	880	863	849	828	798	752	694	617							
Maple, sugar and black	1,600,000	Select	23.4	1200	1172	1148	1112	1061	988	888	761	649	559	487	358	274	216	175
	1,600,000	Common	26.2	960	946	933	915	889	852	801	734							
Maple, red and silver	1,100,000	Select	23.8	800	782	768	746	712	666	604	524	446	384	335	246	188	149	121
	1,100,000	Common	26.6	640	631	623	612	594	572	540	498							
Oak, commercial red and white	1,500,000	Select	24.8	1000	982	967	943	908	860	795	709	608	524	457	336	257	203	164
	1,500,000	Common	27.8	800	790	783	771	753	728	695	650	595						
Pine, southern yellow	1,600,000	Select	23.7	1175	1149	1127	1093	1045	975	862	761	649	559	487	358	274	216	175
	1,600,000	Common	27.3	881	870	861	847	826	796	757	706	640						
Pine, southern yellow (dense)	1,600,000	Select	22.6	1285	1250	1221	1177	1113	1024	903	761	649	559	487	358	274	216	175
	1,600,000	Common	24.9	1060	1041	1025	1000	964	914	845	756							
Pine, northern white, western white, western yellow, and sugar	1,000,000	Select	23.4	750	733	718	695	663	617	555	476	406	350	304	224	171	135	110
	1,000,000	Common	26.2	600	591	583	572	556	532	500	459	405						
Pine, Norway	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Redwood	1,200,000	Select	22.2	1000	972	947	910	856	781	679	571	486	419	365	268	206	162	132
	1,200,000	Common	24.8	800	786	773	754	726	688	636	567							
Spruce, red, white, and Sitka	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Sycamore	1,200,000	Select	24.8	800	786	774	753	726	688	636	566	486	419	365	268	206	162	132
	1,200,000	Common	27.8	640	632	627	617	602	582	556	522	476						
Tamarack	1,300,000	Select	23.1	1000	976	955	923	877	817	726	618	527	454	396	291	223	176	142
	1,300,000	Common	25.8	800	788	777	761	737	706	660	602							

[1] The modulus of elasticity values given are the averages for the species. A factor of three has been applied to these values in obtaining the safe working stress for long columns.

SAFE WORKING STRESSES FOR TIMBER COLUMNS USED IN DRY INSIDE CONDITIONS

The table contains safe working stresses for rectangular columns for three conditions of use, and various $\frac{L}{d}$ ratios from 12 to 50. The stresses apply to two grades of material, Select and Common. The values in the table were obtained by the use of the Forest Products Laboratory fourth power parabolic formula and the Euler formula for long columns, pin-end conditions.

The F.P.L. fourth power parabolic formula: $\frac{P}{A} = S\left\{1 - \frac{1}{3}\left(\frac{L}{Kd}\right)^4\right\}$

The Euler formula: $\frac{P}{A} = \frac{0.274E}{\left(\frac{L}{d}\right)^2}$

LEGEND

P = load in lbs.
A = section area, sq. ins.
S = comp. parallel stress, lbs. per sq. in.
L = unsupported length, ins.
d = least dimension, ins.
E = mod. elas., lbs. per sq. in.
K = constant for given species, grade and condition of service

The stresses have a factor of safety of 4 based on the average crushing stress for short columns and a factor of 3 based on the average modulus of elasticity of the species.

With any given species the modulus of elasticity is the same for the two grades and three conditions of use since the influence of moisture and defects on modulus of elasticity is relatively small. Therefore, as an Euler column, each species has for a given $\frac{L}{d}$ a single stress for both grades and the three conditions of service.

Round Columns.—The values in the table may be applied to round columns by reducing the cross-sectional area of the column to an equivalent square timber, "d" the side of the square being taken as seven-eighths of the diameter, measured one-third the length from the small end. **The crushing stress at the small end must not exceed the allowable stress for a short column.**

applies. For greater ratios the Euler formula should be used.

The load-carrying capacity of a long column is dependent upon its stiffness and its cross-sectional dimensions may therefore be determined by the well known Euler formula, $\frac{P}{A} = \frac{0.274E}{\left(\frac{L}{d}\right)^2}$.

If the slenderness ratio $\left(\frac{\text{length}}{\text{least dimension}} \text{ or } \frac{L}{d}\right)$ of a column is 11 or less, the column is considered as short. The size of a short square column required to support a given load is found by dividing the load by the allowable crushing stress of the material, and extracting the square root to find d, the side of the column.

The Forest Products Laboratory formula, it should be understood, applies to intermediate columns, which are the ones most frequently used in structural work. The formula is as follows: $\frac{P}{A} = \left[1 - \frac{1}{3}\left(\frac{L}{Kd}\right)^4\right]$, in which P=load in pounds; A=cross-sectional area in square inches; S=maximum crushing stress (pounds per square inch) or, in case of working loads, the safe stress, for short columns; L=unsupported length in inches; K is a constant, depending on modulus of elasticity and crushing strength, for the given species, grade, and condition of service; and d=least dimension in inches.

Intermediate columns range from an $\frac{L}{d}$ of 11 to an $\frac{L}{d}$ equal to K, above which a column is classed as a long column.

As an example of the use of the formula, suppose that it is desired to determine the size of columns necessary to support the floor girder in a dwelling or store building.

The wood to be used is western hemlock, common grade. The safe crushing stress (that is, the allowable stress for short columns) when used in dry locations is 720 pounds per square inch, and the value of K is 28.3, as shown in the tables of safe working stresses.

Assume a load of 20,000 pounds and the length of the column 9 feet (108 inches). First compute for a square column.

The formula $\frac{P}{A} = S\left[1 - \frac{1}{3}\left(\frac{L}{Kd}\right)^4\right]$ (1)

is solved as follows:

Substituting d^2 for A,

$$\frac{P}{d^2} = S - \frac{SL^4}{3K^4d^4} \qquad (2)$$

multiplying through by d^4,

$$Pd^2 = Sd^4 - \frac{S}{3}\left(\frac{L}{K}\right)^4 \qquad (3)$$

transposing and dividing by S,

$$d^4 - \frac{P}{S}d^2 = \frac{1}{3}\left(\frac{L}{K}\right)^4 \qquad (4)$$

completing the square,

$$d^4 - \frac{P}{S}d^2 + \left(\frac{P}{2S}\right)^2 = \left(\frac{P}{2S}\right)^2 + \frac{1}{3}\left(\frac{L}{K}\right)^4 \qquad (5)$$

extracting the square root,

$$d^2 - \frac{P}{2S} = \pm\sqrt{\left(\frac{P}{2S}\right)^2 + \frac{1}{3}\left(\frac{L}{K}\right)^4} \qquad (6)$$

transposing and extracting the square root,

$$d = \sqrt{\frac{P}{2S} + \sqrt{\left(\frac{P}{2S}\right)^2 + \frac{1}{3}\left(\frac{L}{K}\right)^4}}. \qquad (7)$$

Substituting in equation (7) the values for P, S, and K as previously given,

$$d = \sqrt{\frac{20,000}{1440} + \sqrt{\left(\frac{20,000}{1440}\right)^2 + \frac{1}{3}\left(\frac{108}{28.3}\right)^4}}.$$

Solving, d=5.49, the side of the square column.

Since the nominal 6 by 6-inch column (American Lumber Standards) when surfaced is actually 5⅝ by 5⅝ inches, the 6 by 6-inch column would be the smallest one that could be used under the circumstances. Obviously a 5 by 5-inch column, the next lower size, would be too weak to use.

If some other form of rectangular column is desired, it is necessary to know either the ratio of least dimension to width or the least dimension. In varying widths of columns of the same thickness it is evident that the load is proportional to the width. Therefore, if the ratio is known, multiply the load by this ratio, substitute the result for P in equation (7), and solve as shown for the square column. If the least dimension is known, equation (1) may be written

$$\frac{P}{bd} = S\left[1 - \frac{1}{3}\left(\frac{L}{Kd}\right)^4\right].$$

Substitute the known value of the least dimension for d in this equation and solve for b, the greater dimension.

In computing the size of a round column required, solve first for a square column. The diameter of the round column will be one-eighth greater than the side of the square column. This diameter must be taken at a point one-third of the length of the column, measured from the small end. The unit compressive stress, $\frac{P}{A}$, on the small end should also be computed, as the small end area is often the controlling factor in determining the safe load which the column may sustain. If the unit stress thus obtained exceeds the allowable crushing stress for short columns of the given species, then a column of greater diameter must be used.

An interesting discovery made in connection with the formula test was that of the influence of knots on the strength of long columns. It has been quite generally recognized for many years that knots have little influence on the stiffness of timbers. Since the long column is dependent upon stiffness for its strength it follows that knots have little effect on strength of long columns. This was borne out by the tests of the formula.

WHAT HAVE ARCHITECTS TO GAIN BY COÖPERATION?

By F. S. LAURENCE, *Executive Secretary, the Producers' Council*

A GREAT deal has been going the rounds of the profession lately in the way of opinion on the value of closer coöperation between the architect and the manufacturer of materials used in building.

Much of this has been opinion for, and some of it opinion against, the growing tendency represented in the question. That such a tendency exists there can be no question, for people otherwise would not be talking and writing so much about it.

The divergence of opinion one hears expressed appears due to differences in the understanding held of what is meant by "coöperation," "manufacturers' collaboration," etc. Just what do these terms imply?

If either term means that the manufacturer shall assume some of the architect's proper functions as a designer of buildings, certainly there is no gain to be seen in any such tendency. Unfortunately, enough of just this sort of thing has been developing lately to give complete color of reason to the idea that this is what closer relations with the producer means to the architect. And it is true that some in the profession of architecture appear not averse to divesting themselves of everything in the way of detail study and drafting which the manufacturer, contractor or sub-contractor can be induced to load himself with, until in such cases the architect has become a mere broker for creative work by others.

On that conception it might be remarked in passing that the mechanical science of certain trades makes this necessary to a large degree. Plumbing, heating and electrical installations require layouts based on actual manufacturing knowledge, but the furnishing of these by each trade, for its own installations purely, is a very different matter than the assumption of a general engineering or architectural function in plans covering other features of construction or finish.

Undoubtedly there have been instances of such trespass offered as an inducement to obtain business by various producers of materials which enter more completely into the aesthetic results of design, and, possibly, some architects are too ready to farm out their own functions in this way. But even here better results to the client may sometimes follow and the ethics of professional practice be completely observed by this practice. Knowledge of the peculiar technique of certain arts is a prerequisite to intelligent treatment of detail therein—metal work, glass and ceramics, to say nothing of remoter touches in finished architectural effects. For, as someone has said elsewhere, a building is built to be occupied and whatever enters into the necessities of occupancy comes under the purpose for which it is built and that purpose and its accomplishment is architecture.

But the subject nowadays does not end with these admissably proper exceptions in the practical and aesthetic aspects of design. Building work has become so complex, and practical features so much a matter of specialized science, that one might well question how much is left to the architect after all, when all these diverse problems have been properly worked out by competent specialists.

Well, there is coördination, for one thing, all the way through from design to the work of erection. Coördination, first, for beauty, that compelling and necessary condition, if the result is ultimately to pay, in the growth of public taste, which is steadily keeping pace with the spread of public education. Can beauty be envisioned and given successful expression otherwise than by detachment from the commonplace in interest and aspiration?

The answer would seem to be in what constitutes beauty in any given time or age. In architecture is it not, when all is said, that condition under which the eye is satisfied by the sense of graceful sufficiency to purpose of the building erected, and of its appropriate treatment in terms of material under the known characteristics of the medium used?

Is not a modern building, say a skyscraper, the embodiment of a highly pulsating, organized, co-related life, a practical enterprise bespeaking executive grasp, direction and control in its very creation as well as operation? And is not the measure of its beauty, ultimately, the degree to which the sense of the beholder is satisfied that the whole thing is working smoothly and went up smoothly and gracefully to its appointed purpose?

Right here is where the value of coöperation comes in for the architect. It is not alone in the technical problems to be met and mastered. The business man or group contemplating such a structure inevitably associates, with the conditions which spell beauty, the human qualities of the man who designed it and carried it through to completion. The man who is financing it knows from his own executive experience that a satisfying functional result is the product of a high degree of coördination. That coördination is an attribute of leadership and he knows that this leadership is not attained in the aloofness of professional seclusion, but is born in the sweat of effort in the market-place among men, working with them in a common purpose and by the means by which every leader in these days must rise—by humanly appealing qualities, readiness to accept coöperation, absence of snobbish superiority, generous understanding, sympathy toward and ability to inspire effort in others; fairness, force, decision and the strength which is unafraid of cordial intercourse with all classes of men.

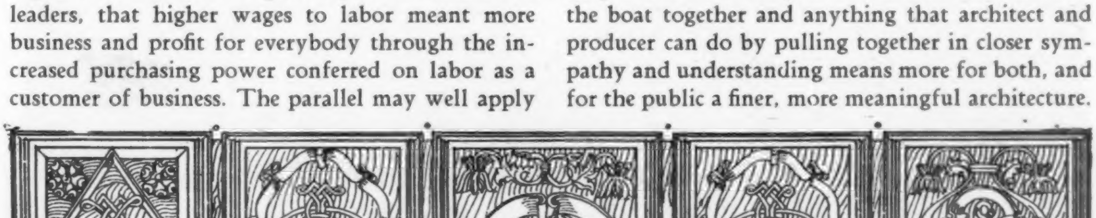
How can these qualities be cultivated in a shell? And what, in any event, has it all to do with the problem of bringing before a prospective client the reputation for this sort of proficiency? Is not this entirely a question of former clients' testimony? Not wholly. The "grapevine telegraph" exists in the building world today as it did in earlier days in another relation. Reputation travels by word of mouth and the manifestation of characteristic qualities is nowhere more constant and far reaching in its possible effects than in the daily relations of the architect and the men who serve him with work and materials. Many of these are men of widespread financial interests outside their own immediate business. Glance over the list of directors and stockholders in almost any bank or loaning institution which projects some notable improvement and see how many friends one as an architect *might* have. Failure to recognize some name unknown to you, but to whom you may be known, quite indifferently, may be due to your never having taken the trouble to meet and know personally the men at the head of the enterprises serving you and to have imbued them or their subordinates with a more cordial view of your competence.

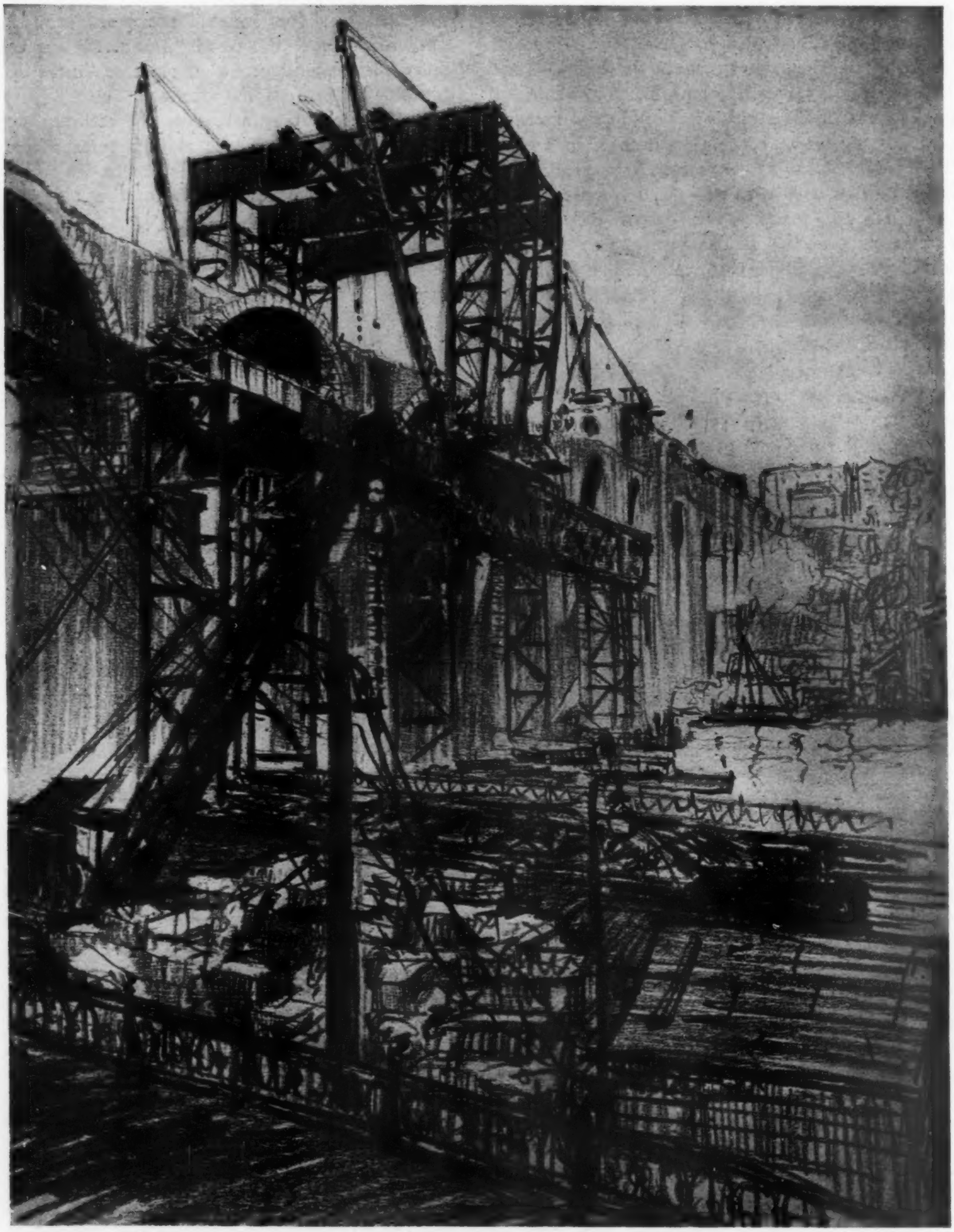
Is this introducing too venal a touch? No more than Henry Ford did when he sprang the astounding doctrine, since accepted by other industrial leaders, that higher wages to labor meant more business and profit for everybody through the increased purchasing power conferred on labor as a customer of business. The parallel may well apply by substituting for "wages" the word coöperation," for "labor" the word "producer," and for "more business and profit" the phrase "more opportunity for professional success."

But, someone may ask, does the architect not already coöperate with the manufacturer wholeheartedly and completely? Assuredly, in many cases, and most splendidly. By far the large majority shows this disposition in specific matters and questions which call for it. Yet there remains in the general attitude of the profession, as a profession, and sometimes in the attitude of the individual, the suggestion of an aristocratic distinction of interest from that of the common herd which does not sit well with the necessities of leadership in a democratic age. The World War ended that in respect to the prestige and leadership of more than one class or profession. The architect as a leader will not survive any conception of him as working in an atmosphere of aristocratic detachment.

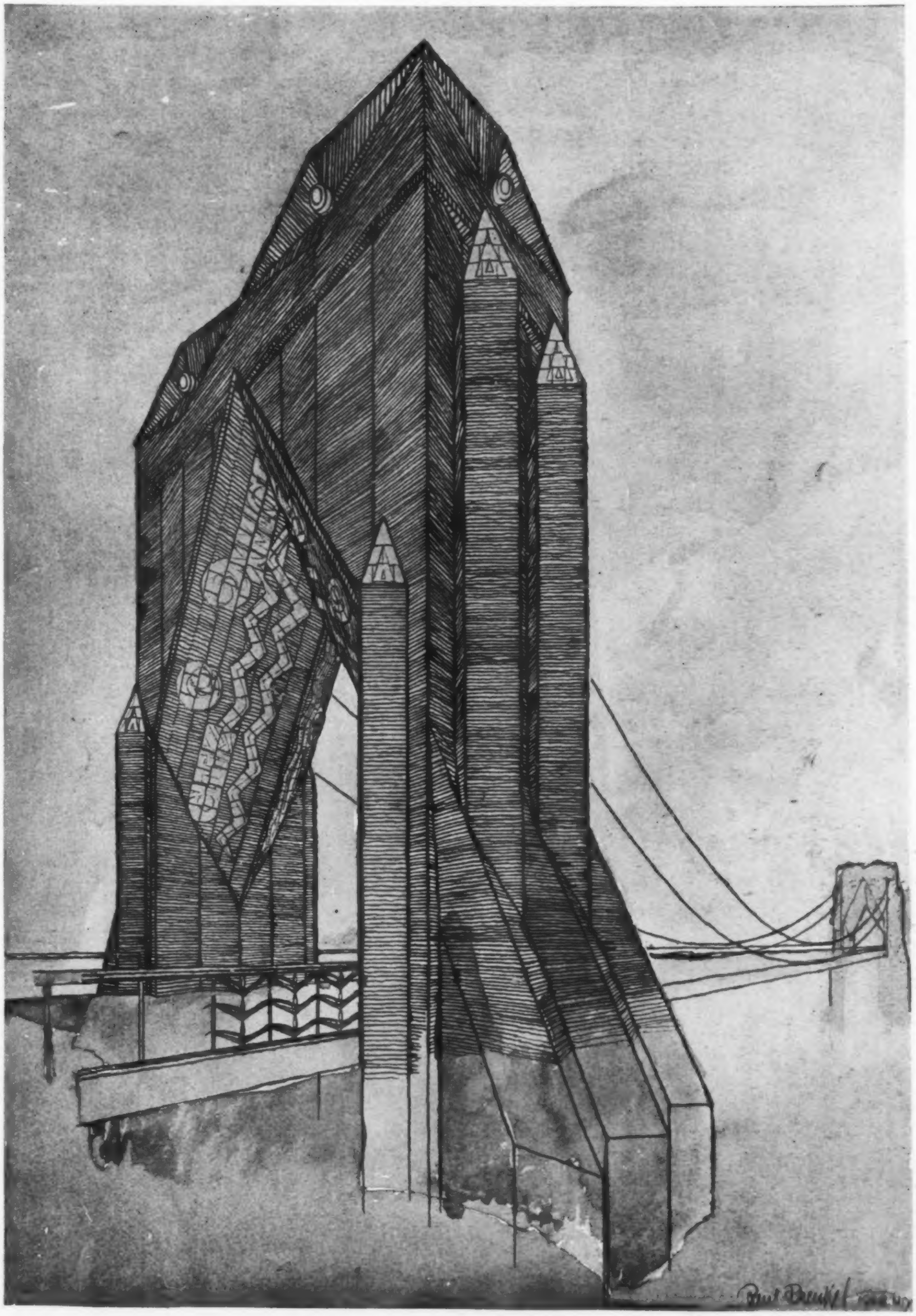
What the architectural profession can best do, to achieve that commanding position in our national life which the splendid character of its purpose and personnel deserve, is to come down from the heights of Olympus and walk more with the people it must lead—which include producers of material—learning to know better and to sympathize more with their problems and to impart to them a better understanding of their own. This, which is perhaps a matter partly of the more open door in office policy, is also one of group coöperation in the various ways which exist for this outside the architect's office where the maintenance of some privacy is necessary if the creative mind is to function at all. Producers are coming more and more to recognize that and to seek ways in which this privacy may be respected while meeting the somewhat desperate necessity of having their own work and aims better understood.

There seems plenty of reason for hoping that the present tendency of architects and manufacturers to coöperate more closely will continue. We are all in the boat together and anything that architect and producer can do by pulling together in closer sympathy and understanding means more for both, and for the public a finer, more meaningful architecture.

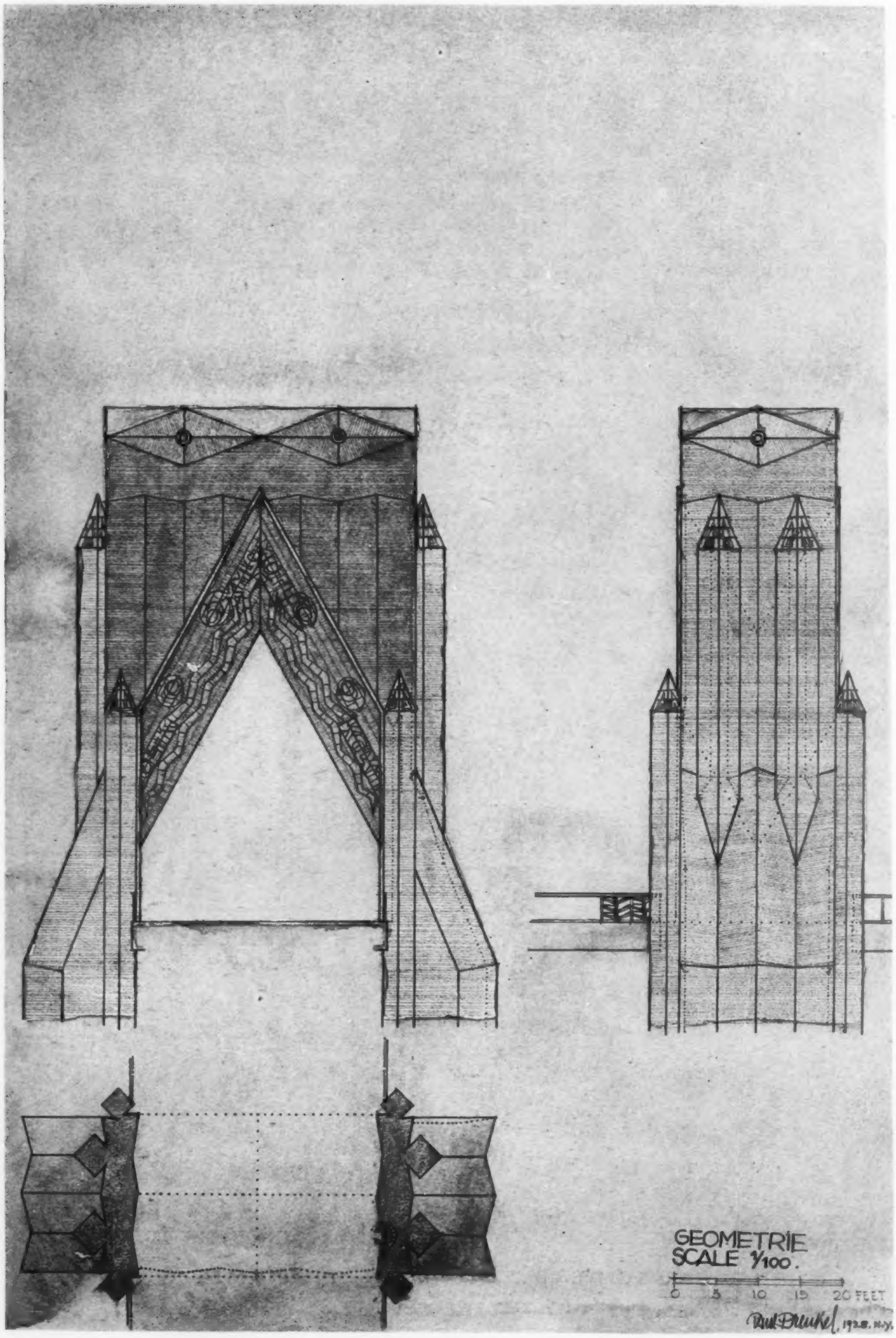




HIGH BRIDGE, NEW YORK
E. P. CHRYSTIE

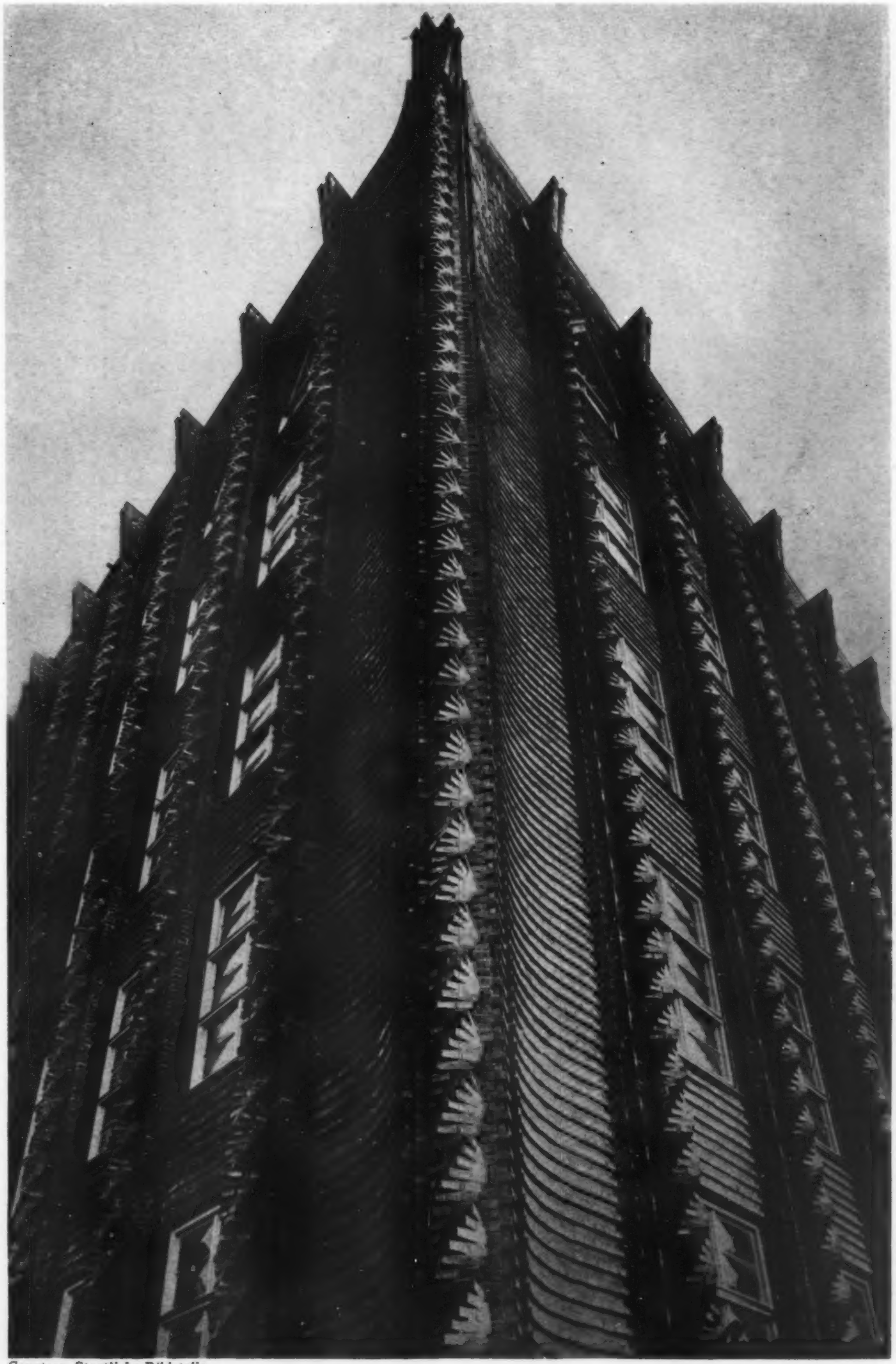


PERSPECTIVE OF BRIDGE-HEAD IN MODERN STYLE
DESIGNED BY PAUL BRENKEL



BRIDGE-HEAD IN MODERN STYLE OF ARCHITECTURE

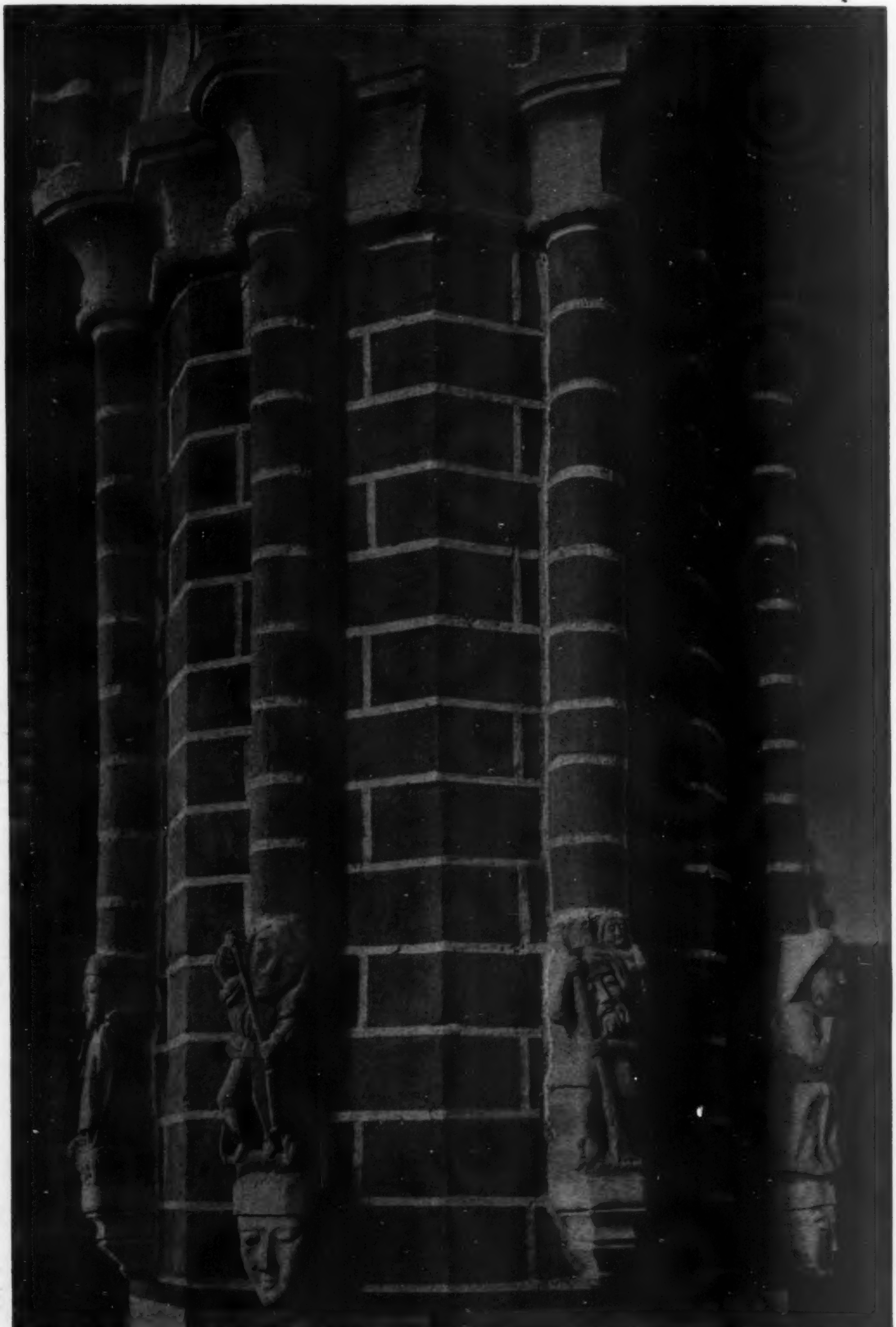
DESIGNED BY PAUL BRENKEL



Courtesy Staatliche-Bildstelle

CIGARETTE FACTORY, HAMBURG, GERMANY

FRITZ HOGER, ARCHITECT



Courtesy Staatliche-Bildstelle

PIER BASE, VILLAGE CHURCH

PARKENTHIN, GERMANY

A SIMPLE, HONEST USE OF MATERIALS

Photo by Gottscho

THE HOUSE OF THOMAS A. O'HARA, KING'S POINT, LONG ISLAND, N. Y.

JULIUS GREGORY, ARCHITECT

Photo by Gottscho

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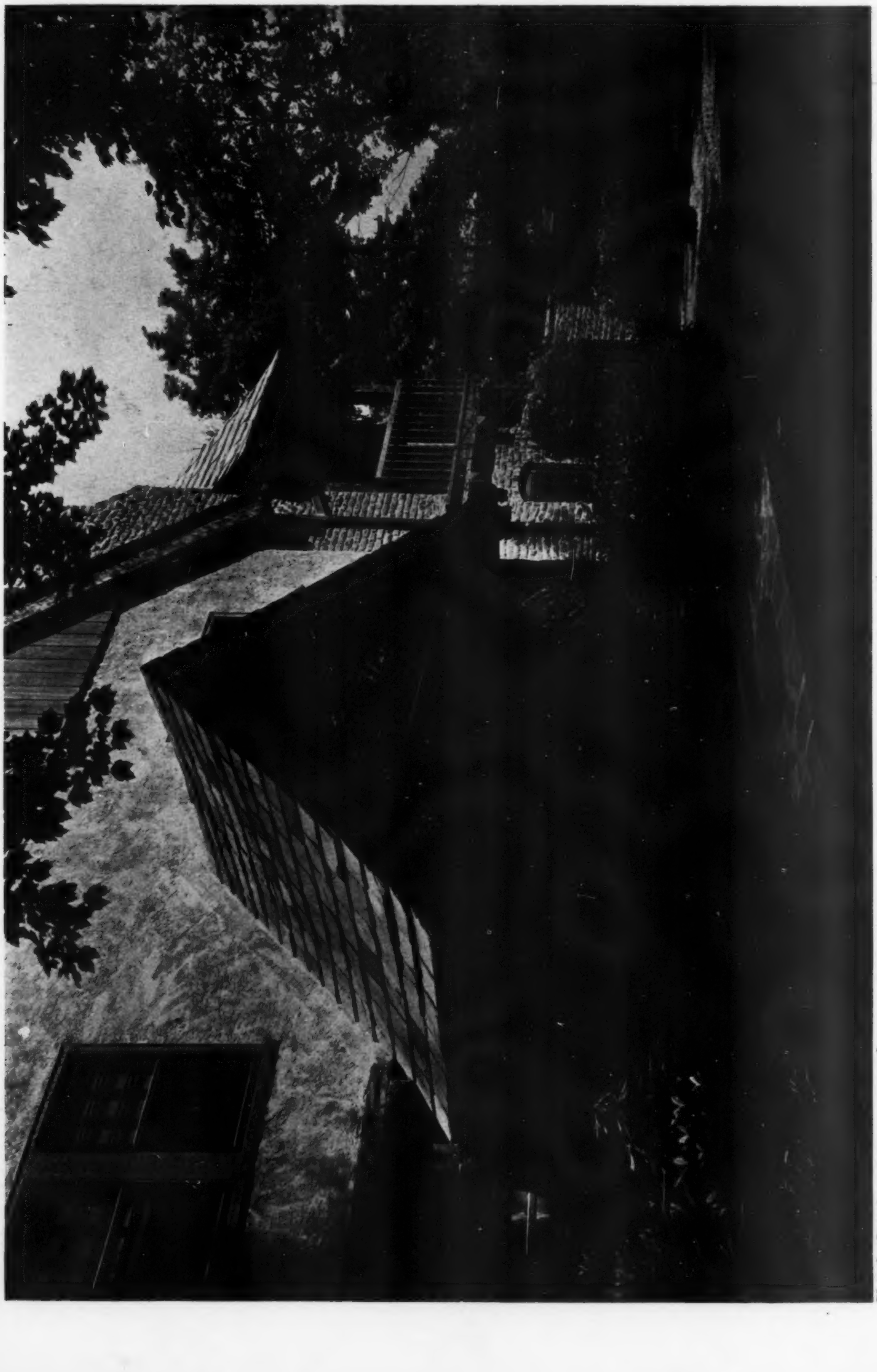

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THE HOUSE OF THOMAS A. O'HARA, KING'S POINT, LONG ISLAND, N. Y.

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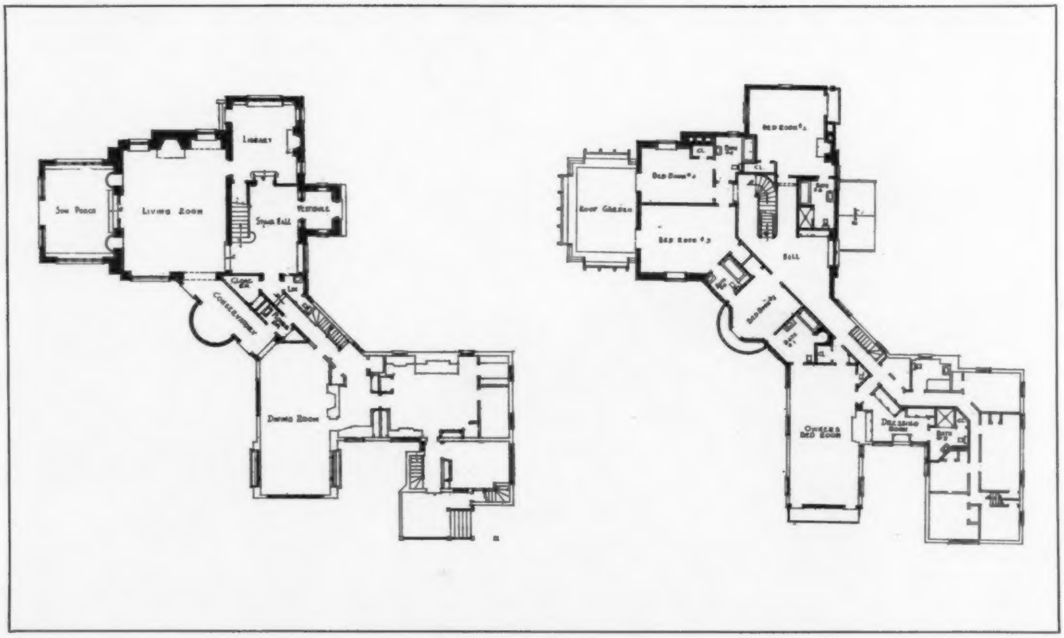
THE HOUSE OF THOMAS A. O'HARA, KING'S POINT, LONG ISLAND, N. Y.

JULIUS GREGORY, ARCHITECT

Photo by Gottscho

THE MIRRORED BATH ROOM



THE HOUSE OF THOMAS A. O'HARA, KING'S POINT, LONG ISLAND, N. Y.

JULIUS GREGORY, ARCHITECT

SPECIFICATIONS

Communications relative to specifications addressed to THE AMERICAN ARCHITECT *will be answered, in the pages of this department, by H. R. Dowswell, of the office of Shreve & Lamb, Architects.*

THE manufacture, fabrication and erection of structural steel have probably become more standardized than of any other material entering into building construction. The Standard Specifications of the American Society for Testing Materials for Structural Steel for Buildings fully covers the manufacture of steel and the rules and practices of the American Institute of Steel Construction clearly set forth requirements governing the furnishing, fabrication and erection except where unusual design features call for special conditions. The New York Building Congress Standard Specifications for Structural Steel, Part B, has accordingly been written so as to incorporate the American Society for Testing Materials specifications and the rules and practices of the American Institute of Steel Construction with provision for such modifications as may be demanded by local Building Code requirements. These specifications and rules and practices are now so well known that it was considered unnecessary to reprint them except where amplification seemed necessary. In such cases quoted portions appear within quotation marks.

The specifications and rules and practices above referred to do not, however, sufficiently establish the relation of the Architects' or Engineers' drawings to the work, nor the Contractors' responsibility in the preparation and submission of shop drawings. Paragraphs 5 to 17, inclusive, cover these items in detail.

Paragraph 21, under "Inspection and Testing," leaves the requirements in regard to mill, shop and field inspection to be set forth under Part A. These should be clearly and definitely stated.

Paragraphs 26 to 54, inclusive, describe requirements which have become practically standard practice, but were not covered under the rules of practices of the American Institute of Steel Construction.

The kind and quality of paint for Structural Steel cannot be standardized, not because information is lacking, but because there are more opinions on this subject than there are paints. Paragraphs 55 and 65 therefore leave the Architect and Engineer free to choose. Part A should definitely state the kind and grade of material required.

A.I.A. DIVISION 13.

New York Building Congress Standard Specifications for STRUCTURAL STEEL

PART B.

General Conditions.

1. GENERAL CONDITIONS OF THE CONTRACT of the American Institute of Architects, current edition, shall form a part of this Division, together with the Special Conditions, to which this Contractor is referred. **General Conditions**

Arbitration Clause.

2. Any dispute or claim arising out of or in relation to this Contract, or for the breach thereof, shall be settled by arbitration under the Rules of the Arbitration Court of the New York Building Congress or the American Arbitration Association and judgment upon an award may be entered in the court having jurisdiction. **Arbitration Clause**

Scope.

3. The rules and practices as adopted by the American Institute of Steel Construction, as standard for the industry, current edition, shall govern all conditions for the furnishing, fabrication and erecting of Structural Steel except where, under Part A of this specification, other requirements are specifically mentioned, and subject to the additional requirements specified hereinafter. Portions within quotation marks are reprinted from the Standard Specification for Structural Steel for Buildings as adopted by the American Institute of Steel Construction. **Scope**

New York Building Congress Standard Specifications—STRUCTURAL STEEL—*Continued.*

4. These rules and practices, however, form a part of the Contract only insofar as they describe the items mentioned in Part A of this specification, or as shown on the accompanying Structural Steel Contract drawings. These specifications are to be supplemented by the Building Code of the community in which the work is erected. The requirements of such code, where in excess of the specified requirements, shall be complied with the same as if specifically noted in these specifications.

Drawings.

5. The Contract drawings indicate the general arrangement and dimensions of the structural iron and steel. In general, the structural drawings are made to scale, but scale dimensions shall not be used. If all the distances and dimensions required are not given in figures, they shall be obtained from the Architect and/or Consulting Engineer. If any inconsistencies or disagreements are found, they shall be immediately referred to the Architect and/or Engineer. **Drawings**
6. This Contractor shall, in all cases, furnish the exact sections, weights and kinds of material called for, and must follow the exact details, methods and instructions called for by these specifications and the accompanying drawings, to their full extent and purpose, unless otherwise agreed in writing.
7. Substitution of other shapes of equivalent strength and no greater dimensions than those shown on the drawings will be allowed, subject to the approval of the Architect and/or the Engineer.
8. Until mill orders are placed, the Architect and/or Engineer reserves the right to change the sections and sizes of material shown on the plans to others of equivalent weights without affecting the conditions of the Contract or the cost of the work, provided the character of the work is not materially changed.

Shop Drawings.

9. This Contractor shall prepare and submit to the Architect and/or Engineer, in triplicate, prints of erection plans and checked prints of all detail shop drawings. These drawings will be checked by the Architect and/or Engineer, and one print of each returned, either for correction, or with his general approval. **Shop Drawings**
10. When corrections are required, these shall be made and prints in triplicate again submitted.
11. Each erection plan shall bear the number of the floor. All erection plans and detail drawings shall bear the name and location of the building, the name of the Architect, Consulting Engineer, General Contractor and Structural Steel Sub-Contractor. Each drawing shall be dated and shall bear the name of each correction or revision.
12. The Architect's approval will cover the location of steel members in relation to walls, partitions and openings and the general design, only, of details.
13. Where Architect's and/or Engineer's corrections, in the opinion of this Contractor, affect the strength of any member, connection or other detail, this Contractor shall call the Architect's and/or Engineer's attention to it in writing, so that the condition may be modified.
14. This Contractor alone shall be responsible for correctness of fit or strength of details.
15. The omission from Contractor's shop drawings of any material shown on Contract drawings, or called for in the specification, shall not relieve this Contractor from furnishing same, or money equivalent, even though the Architect and/or Engineer has returned such drawings as approved.
16. After final approval, this Contractor shall furnish the Architect and/or Engineer one set of erection drawings on cloth and with additional prints for the use of his inspector. When prints are required for the use of other trades, they shall be furnished, by this Contractor, at the cost of reproduction.
17. When requested, this Contractor shall also, as a part of this Contract, furnish the Architect and/or Engineer with duplicate copies of all order sheets and material and shipping bills.

Material.

Steel Shapes:

18. "Structural Steel shall conform to the Standard Specifications of the American Society for Testing Materials for Structural Steel for Building, Serial Designation A 9-21, as amended to date." **Material**
19. Where stock material is approved for use it shall conform to the requirements set forth in Section 5 (a) of the Code of Practice of the American Institute of Steel Construction.

New York Building Congress Standard Specifications—STRUCTURAL STEEL—*Continued.*

Cast Iron:

20. All structural cast iron shall be made of tough grey iron and shall be free from cold-shuts or blow holes, true to the pattern and of workmanlike finish.

Inspection and Testing.

Inspection and Testing

21. Inspection and testing of steel and cast iron, consisting of mill, shop and field, will be required only as called for under Part A.
22. Where Structural Steel is taken from stock, this Contractor, if required by the Architect and/or Engineer, shall certify that the material conforms to the requirements given under Paragraph 19.
23. In addition to furnishing test specimens and other data and facilities, this Contractor shall allow, in his proposal, cash allowance per net ton called for under Part A. This cash allowance shall be expended at the discretion of the Architect and/or Engineer, any unexpended portion reverting to the owner.
24. "Material or workmanship not conforming to the provisions of this Specification shall be rejected at any time defects are found during the progress of the work."
25. "The Contractor furnishing such material or doing such work shall promptly replace the same."

Workmanship.

Workmanship

26. Unless otherwise specified under Part A, all workmanship shall be in accordance with the "Standard Specifications for Structural Steel for Buildings," Section 20, and the "Code of Standard Practice," Section 5, adopted by the American Institute of Steel Construction, current edition, and the following clauses.

Column Bases.

Column Bases

27. "The top surface of all column bases or slabs shall be planed for column bearing."
28. Where rolled slabs, 4" and over in thickness, have a bearing on steel, they shall be planed on bottom as well. Those under 4" in thickness shall be straightened before milling of the top surface.
29. "Machine finished surface shall be protected against corrosion" as specified under Part A.

Columns.

Columns

30. All ends of columns shall be milled at right angles to the axis of the column.
31. Where the metal of one section does not secure complete bearing on the section below, one of the sections shall be reinforced so that complete bearing is secured.
32. Where seat and top angles are provided on columns, the clear distance between the seat and top angles shall not exceed one-quarter of an inch (¼") plus the depth of the beam. Where wind bracing is required, no clearance over the depth of the beam will be permitted. Beam seats shall be clipped so as to remain within the fireproofing of the beams and columns.

Girders.

Girders

33. All girders shall have riveted shear connections. Where specified under Part A, all members and the members into which they frame shall have their field connections sub-punched and reamed to a metal template.

Separators.

Separators

34. Separators shall be furnished where indicated on Contract drawings.

Framing Connections for Beams.

Framing Connections for Beams

35. Where one beam frames into another, standard framing connections shall be used. These framing connections shall be equal to those shown on the latest edition of the Hand Book of the American Institute of Steel Construction, current edition, unless the local Building Code requires an excess, which shall then be followed.
36. "Full provision shall be made for stresses caused by eccentric loads."

Bearing Connections.

Bearing Connections

37. In all cases when the loads are transmitted from one member to another by direct bearing, the details shall be made so that one bearing surface shall come directly over the other. All wall bearing beams shall have standard bearing plates and anchors.

Clip Angles to Support Masonry.

Clip Angles to Support Masonry

38. Wherever spandrel beams do not extend by the face of columns, clip angles to support masonry must be provided by this Contractor. Clip angles shall also be provided to support masonry at any other points shown on the Contract drawings.

New York Building Congress Standard Specifications— STRUCTURAL STEEL—*Continued.*

Holes for Anchors, Ducts and Pipes.

39. Anchors required in connection with the work of other trades will, unless specifically called for under Part A, be furnished under another division. This Contractor, however, will be required, as a part of the Contract, to provide any holes in Structural Steel work necessary for their installation and also for pipes and ducts when shown on Contract drawings; provided correct information regarding location of such holes is furnished not later then the date upon which framing diagrams are finally approved. **Holes for Anchors, Ducts and Pipes**

40. Where such holes are larger than two inches (2") in diameter, the surrounding material shall be properly reinforced, provided correct information regarding location of such holes is furnished not later than the date upon which framing diagrams are finally approved.

Erection.

41. "The frame of all steel skeleton buildings shall be carried up true and plumb and temporary bracing shall be introduced wherever necessary to take care of all loads to which the structure may be subjected, including erection equipment and operation of same. Such bracing shall be left in place as long as may be required for safety." It shall finally be removed by this Contractor as part of his equipment. **Erection**

42. "As erection progresses the work shall be securely bolted up to take care of all dead load, wind and erection stresses."

43. "Wherever piles of material, erection equipment or other loads are carried during erection, proper provision shall be made to take care of stresses resulting from the same."

44. "No riveting shall be done until the structure has been properly aligned."

45. "Rivets driven in the field shall be heated and driven with the same care as those driven in the shop."

Hoisting Machinery.

46. Hoisting machinery and other equipment such as compressor, boilers or engines shall be in all cases located so that smoke and other products of combustion will not injure any of the work of this or other contracts. **Hoisting Machinery**

Field Connections.

47. The following field connections shall be riveted unless otherwise specified under Part A:— **Field Connections**

All column connections.
All connections of beams and girders framing into columns.
All beam and girder connections within three (3) feet of column centers.
All beams framing into plate girders and connection of girders to girders.
All beams and girders carrying walls or tanks or beams supporting offset columns or elevator machinery.
All members forming cantilever construction.

48. Unless otherwise stated under Part A, all other connections may be bolted After the nuts are screwed up tightly, the threads must be nicked to prevent the heads from loosening.

49. Where riveting is called for, but conditions make it impossible to drive rivets, bolts may be used. This shall only be permitted after the matter has been brought to the Architect's and/or Engineer's attention, and their approval has been secured. In such cases the number of holes provided for the connection shall be increased twenty per cent over the requirements specified for field rivets. This Contractor shall be guided by the above in preparing details and erecting this work.

50. Electric or other welding will only be permitted where specifically stated under Part A, or where the written permission of the Architect and/or Engineer is obtained.

Bearing Plates.

51. Steel bearing plates shall be provided by this Contractor for all beams resting on masonry. Bearing plates generally shall be of standard sizes listed in Steel Manufacturer's Hand Books for the various sections, unless otherwise indicated on drawings. Where conditions require special sizes, these shall be furnished. **Bearing Plates**

Lintels.

52. This Contractor shall furnish all lintels over masonry openings where shown on Contract drawings or listed in schedules accompanying Contract drawings. These lintels shall be of angles or built up of beams, angles and channels as indicated, and will be loose unless otherwise shown. **Lintels**

New York Building Congress Standard Specifications—STRUCTURAL STEEL—*Continued.*

Setting Bases, Bearing Plates and Lintels.

Setting Bases, Bearing Plates and Lintels

53. Unless otherwise specified under Part A, all grillages, cast bases, or billets shall be set by this Contractor, but will be grouted in under another division.
54. Bearing plates and loose lintels will be set by the Contractor for Masonry.

Painting.

Painting

55. All steel work, including cast iron and cast steel, except steel to be encased in stone concrete, shall be thoroughly cleaned of all loose scale, rust, oil and dirt and painted "shop" and "field" coats, using materials as called for under Part A.
56. All painting must be done on dry surfaces and, unless protected, shall not be executed in wet, damp or freezing weather.
57. The paint shall be thoroughly worked into all joints and open spaces.
58. Parts, not in contact but inaccessible after assembling, shall be properly protected by paint. Surfaces to be riveted in contact need not be painted.
59. After the work has been erected and riveted, all parts where paint has been rubbed off shall be repainted and all field rivets and bolts painted, using the paints specified for the shop coat.
60. When this last thoroughly dries, all exposed surfaces of the entire structural steel work shall be given a heavy field coat of paint of the kind noted under Part A.

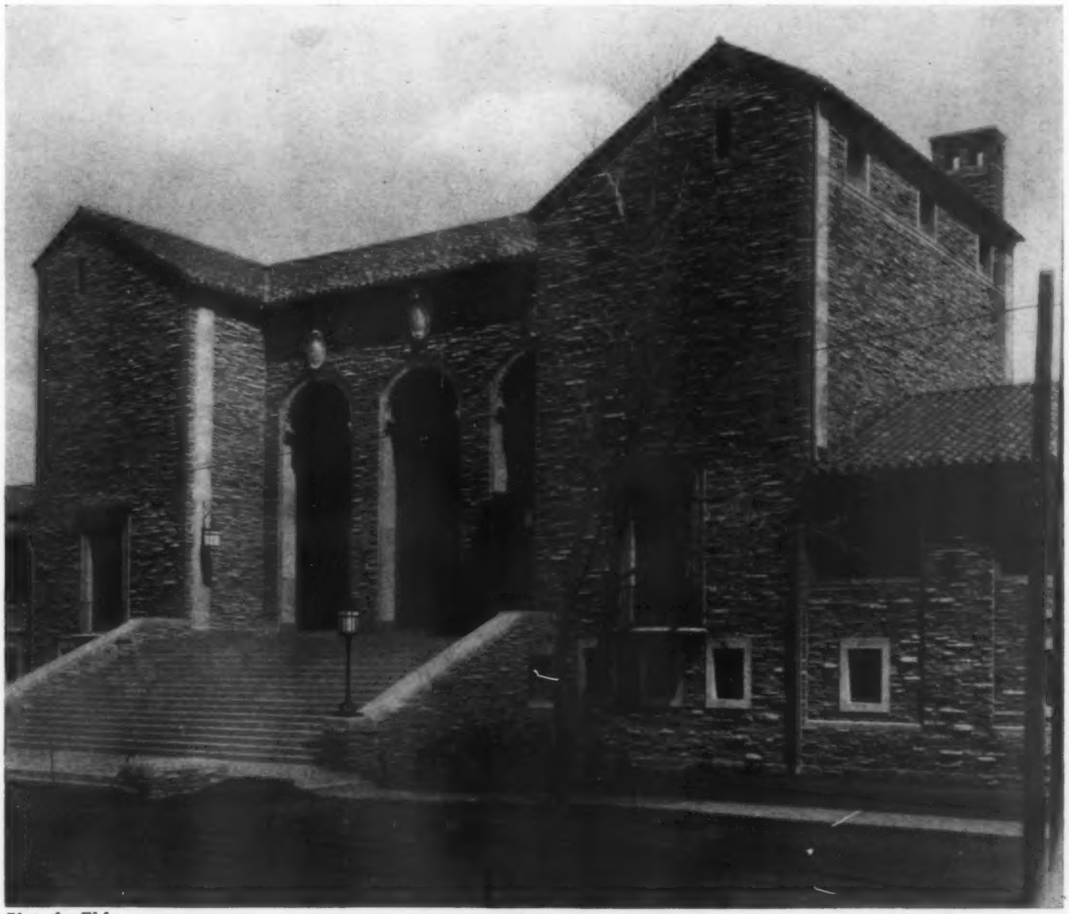


Photo by Fisher

GYMNASIUM, UNIVERSITY OF COLORADO, BOULDER, COLO.

DAY & KLAUDER, ARCHITECTS

SOUTHERN BELL TELEPHONE & TELEGRAPH COMPANY BUILDING, ATLANTA, GA.

MARYE, ALGER & VINOUR, INC., ARCHITECTS

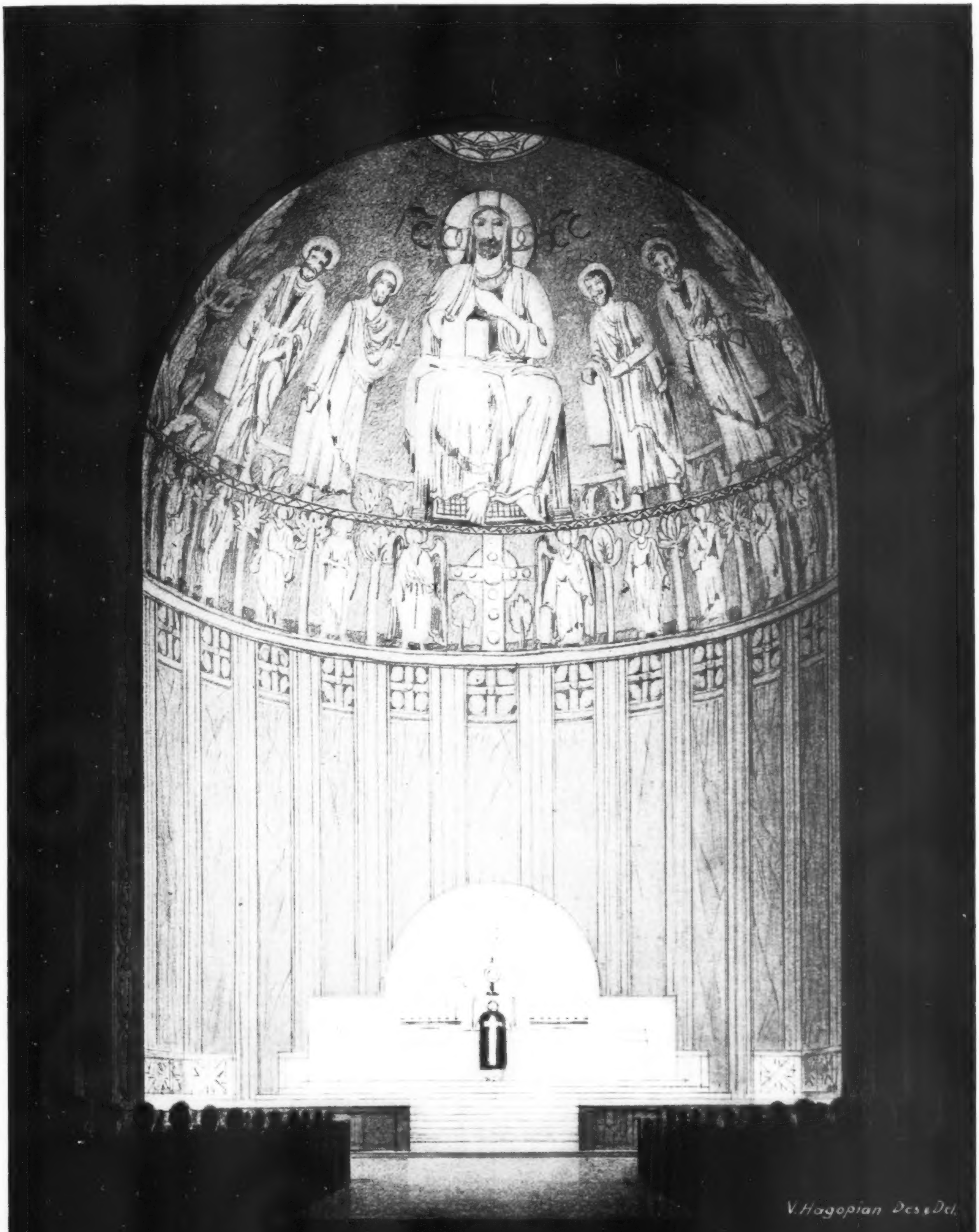


Plate No. 12

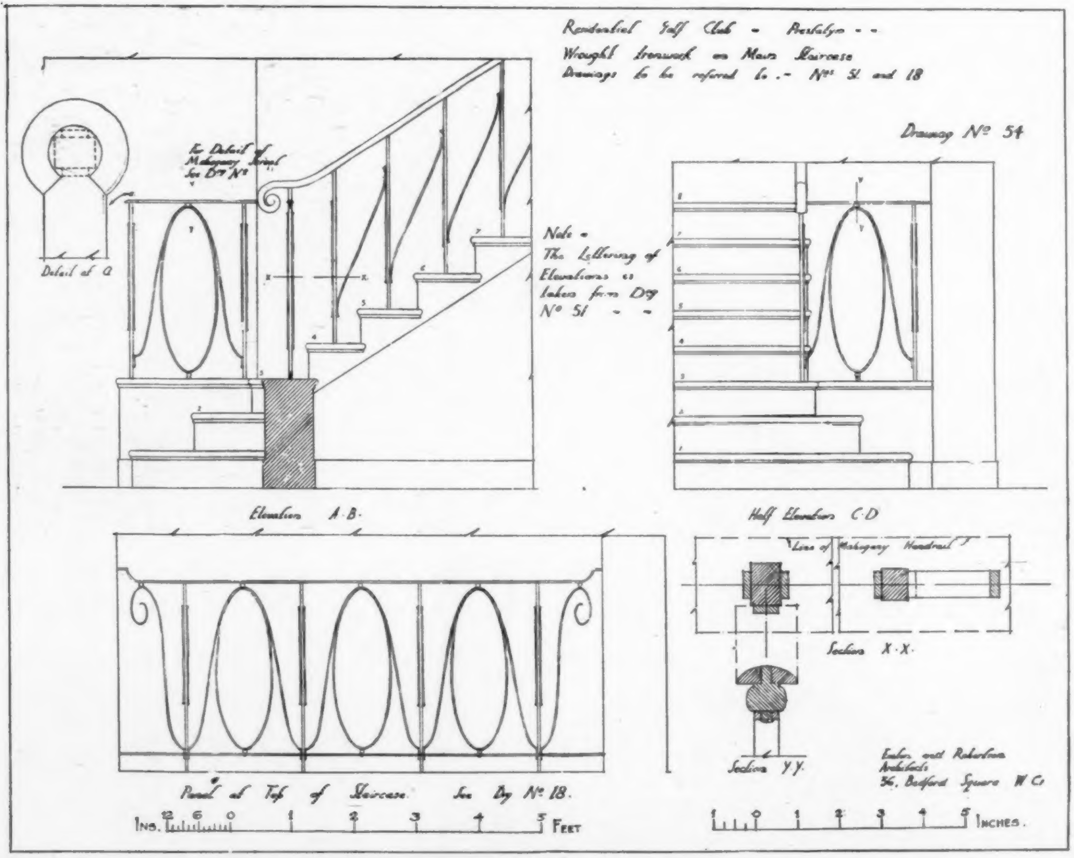
Complete folio of these drawings sent on request

MODERN ARCHITECTURAL DETAILS

DRAWINGS of architectural details always have an appeal as drawings, as well as a record of what has been, or what is to be done. English details of work, old or new, are always particularly interesting in these respects. The English draftsman has a bent for making details that are well drawn and, as a result, are clear and readily understood, and that are good to look at.

For all of these reasons we welcome the opportunity of examining first-hand a recent volume of modern architectural details. The book is really a portfolio of eighty loose plates of photographs and working drawings contained in board covers. The details given cover a wide variety of subjects from altar crosses, "cinema" details, exterior doors, fireplaces, garden details, gates, and interior doors to iron work, shop fronts, stair cases and windows. The subjects have been apparently selected with care, and names of many prominent British architects are noted as designers of the buildings from which the features shown have been taken—Sir Edwin Lutyens, Sir Giles Gilbert Scott, Basil Oliver, L. Edmund Walker and Henry M. Fletcher are among the outstanding names that are listed. A brief description of the feature illustrated, covering the materials, finish or unusual conditions that influenced the design, is given in connection with each subject. The inclusion of descriptions is commendable, since it helps the reader to better understand the drawing, color scheme and the designer's point of view or limitations of the problem. These details will be found a valuable addition to any architectural library.

Modern Architectural Details. London: The Architectural Press (9 Queen Anne's Gate, Westminster, S. W. 1). 80 plates, size 9 x 12½ inches. 12s. 6d. New York: William Helburn, Inc. (15 East 55th Street). $5.00 net.



THE STAIRCASE AT THE GOLF HOUSE, PRESTATYN, NORTH WALES

FROM "MODERN ARCHITECTURAL DETAILS"

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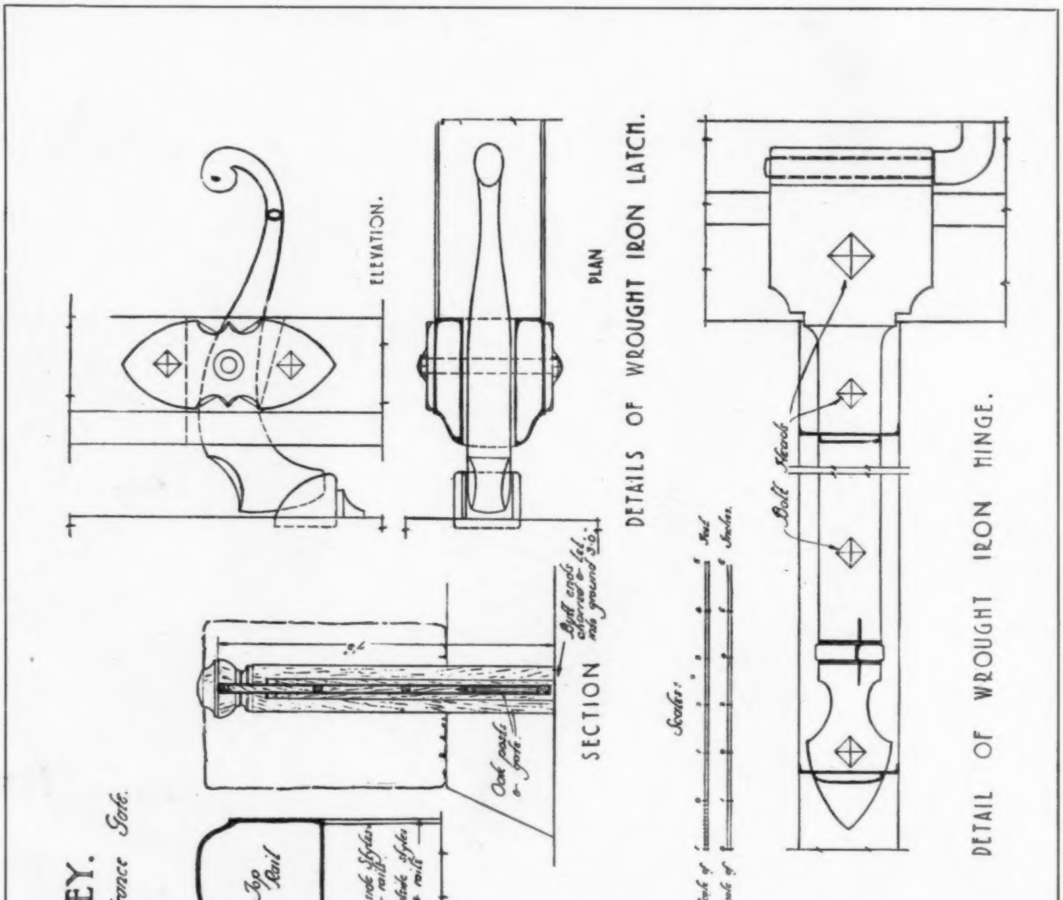

THE ENTRANCE GATEWAY AT MONTMEAD, BELMONT, SURREY—FROM "MODERN ARCHITECTURAL DETAILS"

CURRENT NOTES

DECLARATION AGAINST PRICE CUTTING

THE practice of price cutting is an economic evil which has proved seriously injurious in many lines of industry.

The Reading Iron Company, recognizing that this practice disorganizes and demoralizes the business not only of the manufacturer but also of other distributors, has announced its policy with respect to the resale prices of its goods, which declares that the company refuses to make further sales to any distributor who fails to observe the minimum resale price. Their legal right to declare and enforce this policy is based on a decision of the United States Supreme Court which holds that a manufacturer "may withhold his goods from those who will not sell them at the prices which he fixes for their resale."

A CREDIT CORRECTION

AMONG the outstanding buildings of architectural merit that have been erected in Chicago in recent years few have greater interest than the University of Chicago Chapel, Bertram G. Goodhue, and Bertram G. Goodhue Associates, architects.

An illustration of the chapel was used in connection with an advertisement of the Johnson Service Company of Milwaukee, in THE AMERICAN ARCHITECT issue of February 5, 1929. The description of the chapel credited the design and supervision of the structure to Bertram G. Goodhue. This statement was not entirely correct. A correct statement of the facts appears in the advertisement of the Johnson Service Company in the current issue. Mr. Goodhue was commissioned to design the chapel in 1918, but, due to his untimely death in 1924, did not live to see the project under construction. Before construction was begun the University conferred with the Bertram G. Goodhue Associates, who had undertaken to carry on and complete Mr. Goodhue's work, and certain modifications were made in Mr. Goodhue's original design. The chapel as built is from the drawings prepared by the Bertram G. Goodhue Associates following this conference with the University and further study of the building.

We are very glad to make a statement of the situation and to give the architects due credit.

ARMSTRONG CORK COMPANY MOVES OFFICES

AN announcement has been received from the Armstrong Cork Company stating that the offices of all its divisions will be consolidated at Lancaster, Pa., effective April 1st, 1929. This involves the removal from Pittsburgh of the general office of the Company and all executive offices of the Armstrong Cork Company, Cork Division, and of the Armstrong Cork & Insulation Company, with the exception of the Purchasing Department, which will remain in Pittsburgh. Communications are to be addressed to Lancaster after April 1st.

A.I.A. CONVENTION

THE dates of the Sixty-second Convention of the American Institute of Architects are April 23rd, 24th and 25th in Washington, and April 26th in New York. Headquarters in Washington will be the Mayflower Hotel. The annual meeting of the Producers' Council, affiliated with the American Institute of Architects, will be held on April 22nd in Washington.

The principal theme of the Convention will be "The Development of the National Capital." The Convention reports of the Committee on Public Works—Milton B. Medary, of Philadelphia, Chairman—and of the Committee on the National Capital—Horace W. Peaslee, Chairman—will be read. The opening ceremony of the evening session at the Corcoran Gallery of Art on April 23rd will be the presentation of the Gold Medal award to Milton B. Medary. This will be followed by the opening of an exhibition of drawings and models showing the development of the Plan of Washington to date, including some of the new buildings now under way in The Triangle.

On the third day, April 25th, the Convention will adjourn to meet in New York the next morning. It is planned that April 26th will be devoted largely to the Forty-fourth Architectural and Allied Arts Exposition of the Architectural League. The Convention will be concluded with a dinner, under the joint auspices of the Institute and the Architectural League, to be held at the Hotel Roosevelt, New York, April 26th, 7:30 P. M. The dinner will be followed by a dance at the Architectural League Club House, 115 East 40th Street, to which all delegates, their wives and guests will be invited.

THE opportunity to design a group of detached houses, varied to meet the needs of individual owners, but harmonious in architectural character, is the dream of the average architect. It is one that is not often realized. Robert Rodes McGoodwin, of Philadelphia, is one of the few men in the profession to whom such an opportunity has come. In this issue we illustrate several houses in a "French Village" development at Chestnut Hills, Pennsylvania. This is an out-of-the-ordinary development that is worth more than a passing glance. With two issues relatively close together devoted to the publication of a single large building, we believe our readers will welcome the variety of topics covered and illustrations shown in the current issue—schools, houses, boat house, decorative subjects, sketches, telephones, apartment houses, sculpture and specifications represent the interests of many members of the architectural profession. In a recent issue announcement was made that a large portion of the issues dated May 5th and May 20th would be devoted to the annual exhibition of the Architectural League of New York and the sixty-second Annual Convention of the American Institute of Architects respectively. The recently completed Union Trust Building in Detroit is one of several important buildings that will be featured in an early issue of this journal. In the field of practical articles, we look forward to the presentation of the Intra-Mural Sports Building at the University of Michigan; a worthwhile article on Architectural Acoustics; "Sound Absorption Coefficients of Materials" by Dr. Paul E. Sabine; and a valuable article on pipe organ space requirements and factors influencing the type of organ selected for various purposes. We at all times welcome suggestions from our readers relative to the illustrating of material or presentation of articles on subjects that they would find particularly interesting.

April 20, 1929 *The Publishers*

TUDOR CITY, FROM 41ST STREET AND LEXINGTON AVENUE, NEW YORK

Drawing by E. P. Chrystie