

THE AMERICAN ARCHITECT

FOUNDED 1876

SAUMUR AND ANGERS

TWO ANCIENT CITIES OF THE ANJOU

Notes and Sketches by Samuel Chamberlain

JUST beyond the Touraine, out of range of the charabancs and megaphone wielders, is a wine-soaked, chateau-dotted bit of France known as the Anjou. Visitors dash through its placid stretches, madly bent for Brittany, ignoring the fact that they will encounter nothing so restful as the pastoral plains of the Anjou, nothing more imposing than its feudal chateaux, nothing so enticing as the douceur of its wines. Despite its importance on the map of France and its rich historical past, the Anjou remains modest and unexploited, reserving her treasures for those who

are willing to hunt them out. And there are no more happy hunting grounds than the sites of its two most noted cities, Saumur and Angers.

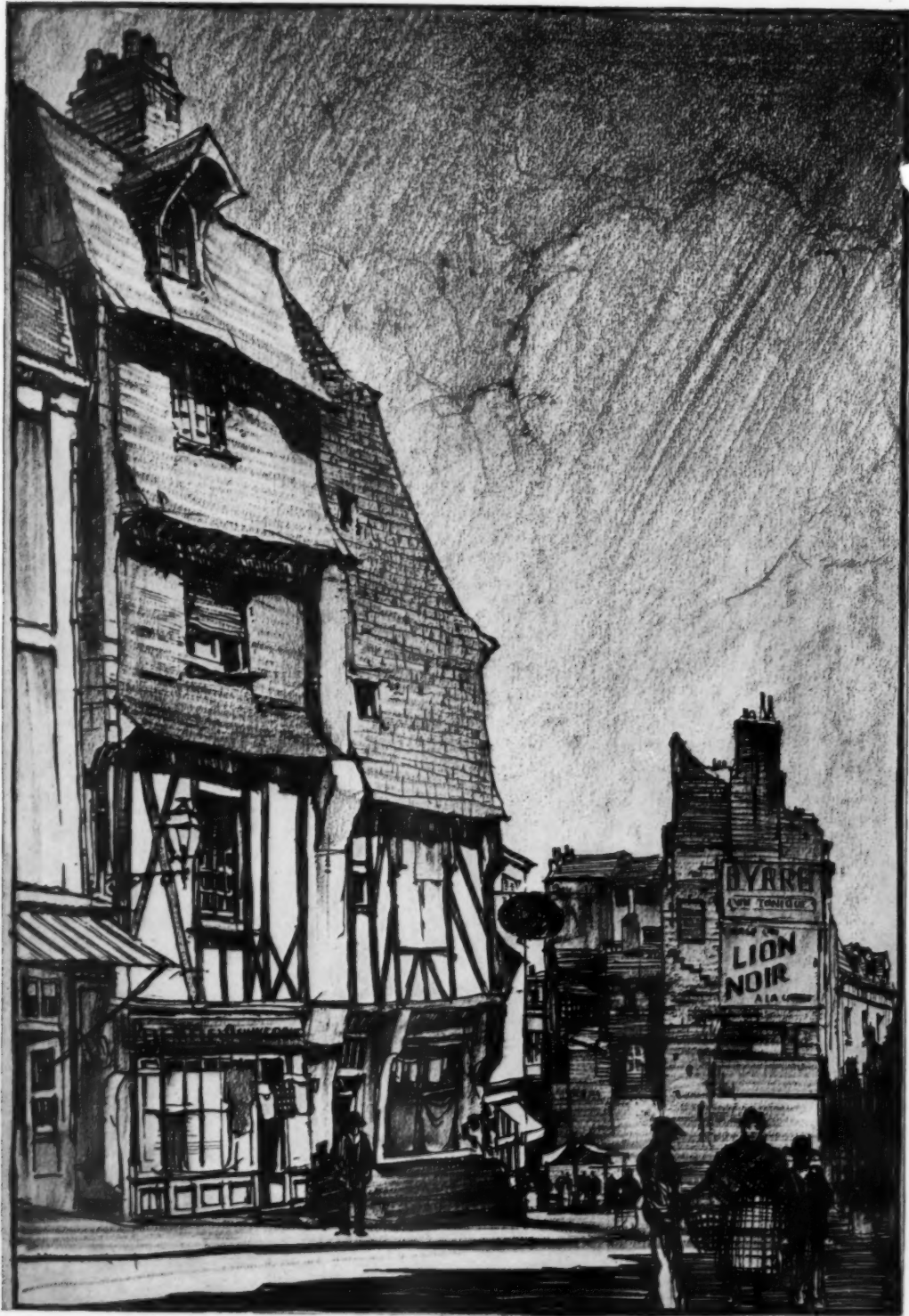
Saumur is a classic little place, huddling under the gray heights of a bellicose chateau, a former walled town, long since shorn of its fortifications, courageously imbedded on the windswept banks of the Loire. All that remains is a delicate vignette along the river front, a profile of spiny fleches, of gilded weather vanes and steep slate roofs which glisten silver in the sunlight. Historically it is as ancient as the dolmens which repose on its out-



OLD ANGERS

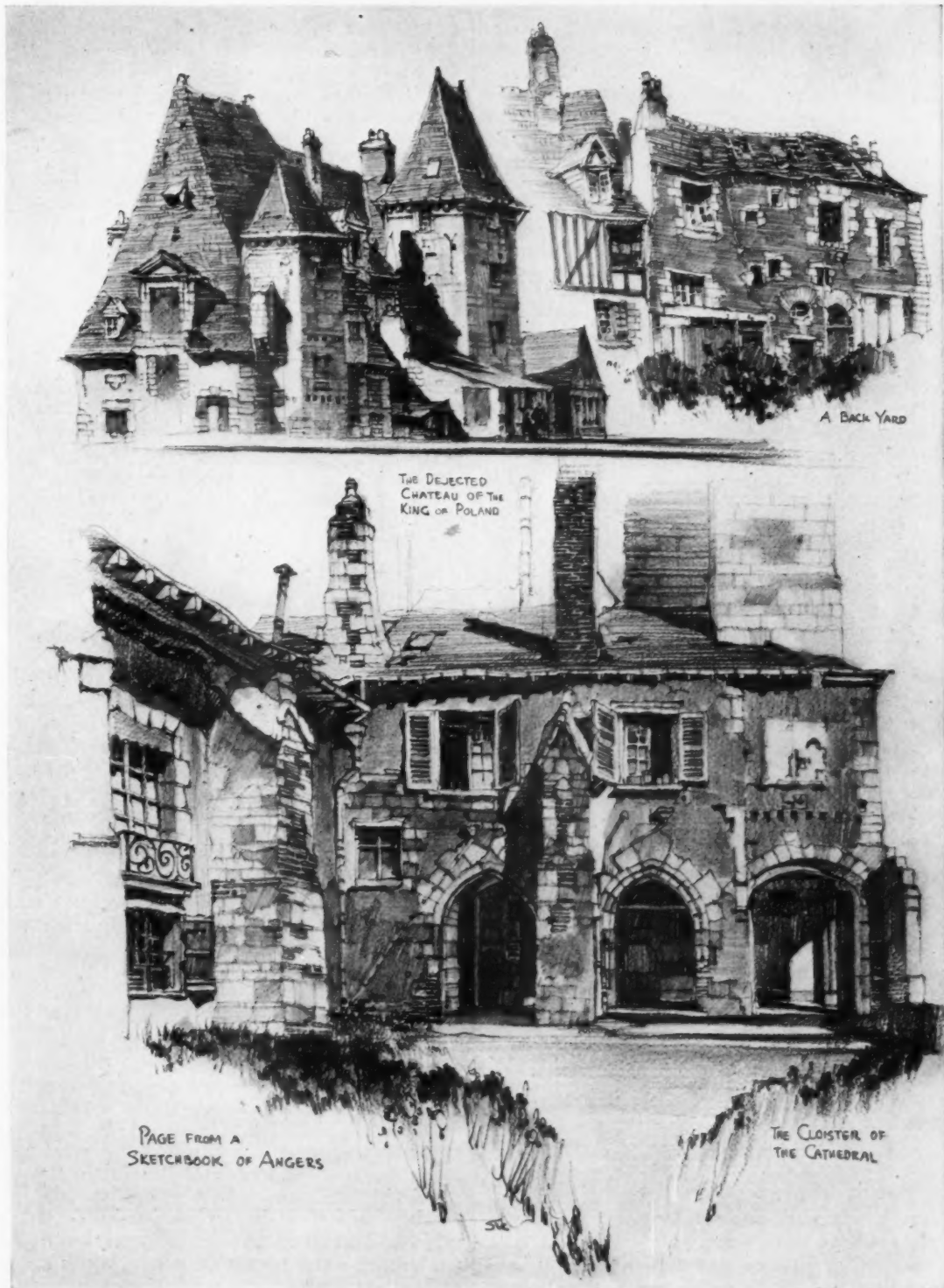
OLD ANGERS

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ANGERS

FROM THE ORIGINAL SKETCH BY SAMUEL CHAMBERLAIN



PAGE FROM A SKETCHBOOK OF ANGERS
FROM THE ORIGINAL SKETCHES BY SAMUEL CHAMBERLAIN

skirts. Architecturally it preserves a calm classicism which is as complete as it is restful. The most modest cottage is embellished with carefully chiselled mouldings. The proximity of quarries of easily worked sandstone has much to do with it, but it takes more than soft stone to perpetuate a classic tradition. Proud dwellings of the 16th and 17th centuries fill its streets, bearing with great dignity marks of a battered old age. Their iron balconies have been eaten with rust, and the moisture of centuries has crumbled the smooth surfaces of their facades, but their poise has not deserted them. They are still stalwart enough to house a large part of the population of Saumur.

There remain a few forlorn remnants of the old timbered houses which once grouped around the church of St. Pierre, two of which make up the rather dramatic mass shown in the present lithograph. Desperately they clutch one another to keep from crashing to the ground in a shower of worm-eaten splinters. If this lithograph seems a bit hectic, I should explain that it was made under the window of a refined young ladies' Pensionnat, and that the refined young ladies tortured me with the most ghastly symphony of simultaneous music lessons that can be imagined.

The chateau of Saumur, one of the most military in France, frowns down from a truly formidable ridge of rocks, more awe-inspiring than Amboise or Luynes or even Chinon. So inaccessible it is, in fact, that it remains unsketchable save from a respectful distance or else from a high grassy plot adjoining the entranceway, where a series of stairs and towers and fortified portals are seen to pile up behind a wide acreage of wall. Bullets have peppered the facing of the walls, especially where a narrow slit, for sharpshooting defenders, appears on the surface. A tottering concierge leads you through endless halls of magnificent emptiness, whose rigidity bespeaks the recent restoration by the inspector of "monuments historiques." The work was effected, incidentally, with the aid of some of the original plans which were discovered among the manuscripts of the Duc de Berry.

A Hotel de Ville of consummate grace has been bequeathed to Saumur, a structure as disturbing as it is intriguing—disturbing because its principal facade is divided precisely in the middle. One wing dates from that tremulous period when florid

flamboyancy was not enough, and Gothic form began to take on the contours of relaxed rubber bands, while the other wing is the model of feudal grace which appears in the enclosed sketch. What admirable style, what strength and what fragility are manifest in this rare bijou of medieval architecture! And what crimes have been committed on this Hotel de Ville partie!

Saumur is a "ville elegante," due to the prestige lent by its cavalry school and the elite corps of officers who canter through its boulevards. Representatives of many nations are enrolled in the school, including officers of our own army, and gay are the evenings in the town cafes when they clank in with spurs and sabres. The menial task of attending to an army of horses is given over to Algerian soldiers. Red fezzes and baggy mustard

trousers have become parts of the Saumurian scene. I retreated from Saumur before an invading horde of horsemen who had come for the annual sale of thoroughbreds, not being the possessor of either a pair of leather top boots or a fancy vest.

Angers is an energetic city, joyous and vibrant. There is much of the garishly new in the city, but reminders of its ancient charm and splendor are wedged in everywhere. Two of the noblest old houses in France remain serenely in place on its busiest



THE CHATEAU TOWERS, ANGERS

street, unmoved by the squawking of French horns and the rumbling of trucks. The mossy ruins of the Eglise Toussaint hover next to a garage, and its beautiful, vine-covered tracery yawns at the sputtering of exhausts. The chateau walls, bolstered with plump, striped towers, are the more impressive because they face a modern slaughter house in the worst *art nouveau* tradition.

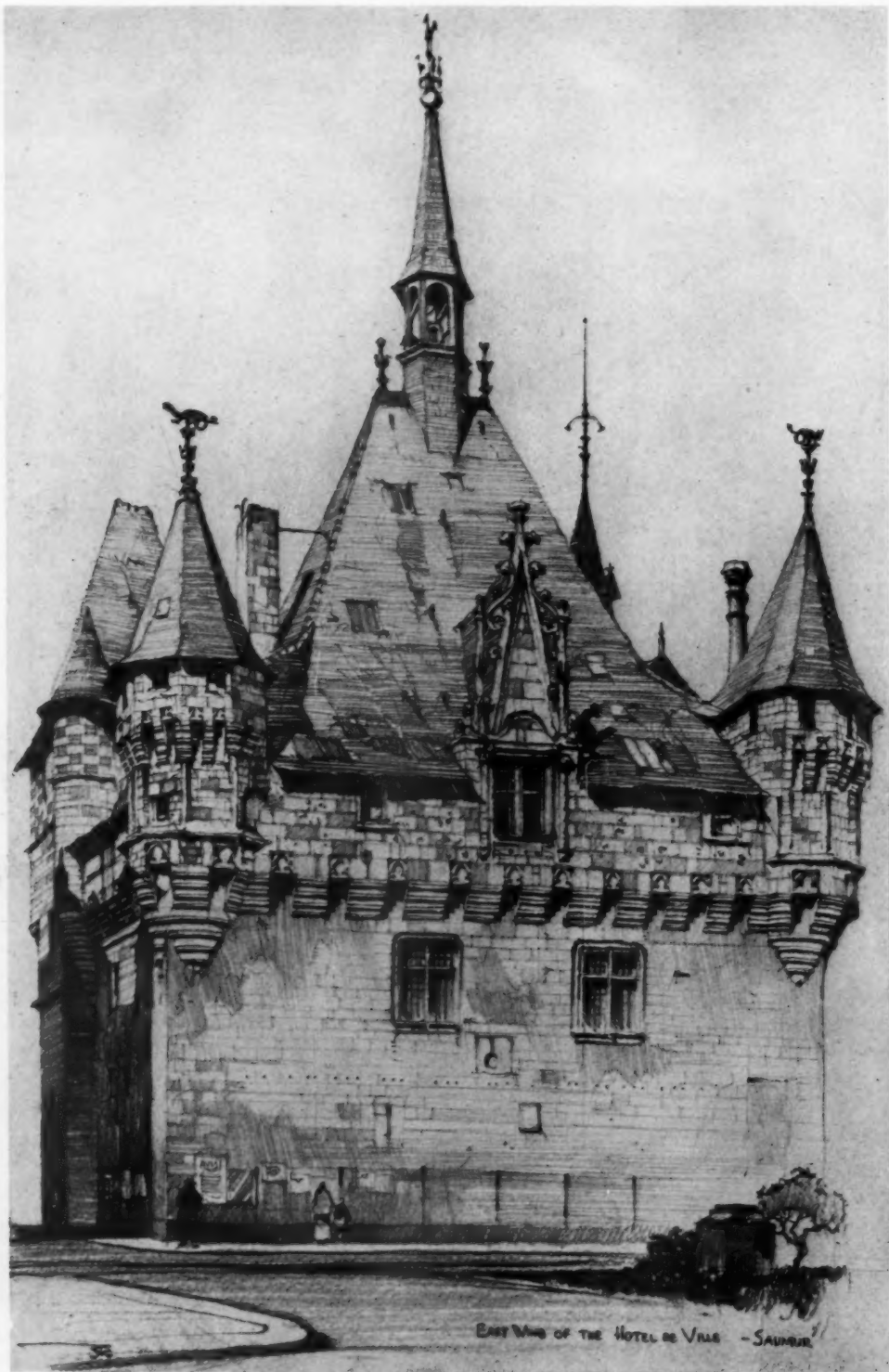
The gaiety of Angers comes as a relief to the itinerant pencil pusher, weary of drab evenings in the bushes. Luxurious theatres and cafes supplant the lonely stroll on the village green. Parisian chic replaces the homespun rusticity of the meadows. Sidewalk orchestras substitute for the tinkling of cow bells. Angers has quite a tonic effect.

Many of its old houses are irresistible sketch subjects. There is a group on the "other side" of the river, facing a staunch little fountain, which makes as charming a melange as can be found in many a day. No hint of the color can be given in paltry black and white, which is regrettable, for a patine of soft, luminous tones covers the sagging timbers



STREET SCENE, ANGERS

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN



EAST WING OF THE HOTEL DE VILLE, SAUMUR
FROM THE ORIGINAL SKETCH BY SAMUEL CHAMBERLAIN



VIEUX SAUMUR

FROM THE ORIGINAL LITHOGRAPH BY SAMUEL CHAMBERLAIN

and walls, set off by the flashing primary colors of posters. The timbers of many houses in the Anjou are painted a soft blue green, a tone which harmonizes well with a rich creamy stucco also in wide use.

There is another noble block of masonry on the banks of the Maine, once the chateau of a King of Poland and the scene of much pomp and splendor. Today it is the humble tenement of fishermen and basket workers. Its windows have been blocked to avoid the window tax. Its roof is covered with patches. A dingy cafe has been implanted in the space once used as a sheltered carriageway, and smelly "poivrots" get raucous and violent within. Grimy children scamper about the once princely precincts, unmindful of the screeches of frowzy mothers.

The flawless Hotel de Pince, surely one of the purest specimens of Renaissance art in France, has been recorded by etchers and lithographers for decades. So has the grotesque Maison D'Adam, whose networked timbers climb up and up, ending in a dizzy peak. The wood carving is exquisite; in spots, Rabelaisian. The men tourists leave the women folks, go around to the facade tactfully overlooked by the guides, and indulge in pointing and coarse laughter.

One does not speak of the cathedral of Angers as one of the great cathedrals of France, yet in two respects it is unique. It is approached by a

magnificent avenue of steps, giving its slender, Chartres-like facade a vast dramatic force, and its nave is embellished from one end to the other with a glorious and unmatched gallery of tapestries.

The chateau of Angers is an overwhelming pentagon, flanked with seventeen towers, which served as a stronghold and refuge for all of Angers in the days of battering rams. Doubtless it could contain all of Anger's 60,000 inhabitants even

now. A cavernous moat, dug out of slate, surrounds the bulging walls on three sides. It has been used as an arsenal, a prison, an insane asylum, and a powder works. Now it echoes the broken English of an Italian guide. Once inside the enclosure there is a bleak emptiness, broken only by a forlorn little building, the so-called Petit Chateau, which is, in reality, an ancient Conciergerie. Alternate strips of black blocks of slate and light sandstone give the solemn towers a fantasy and interest which otherwise they would lack. Viewed from across the swollen river,

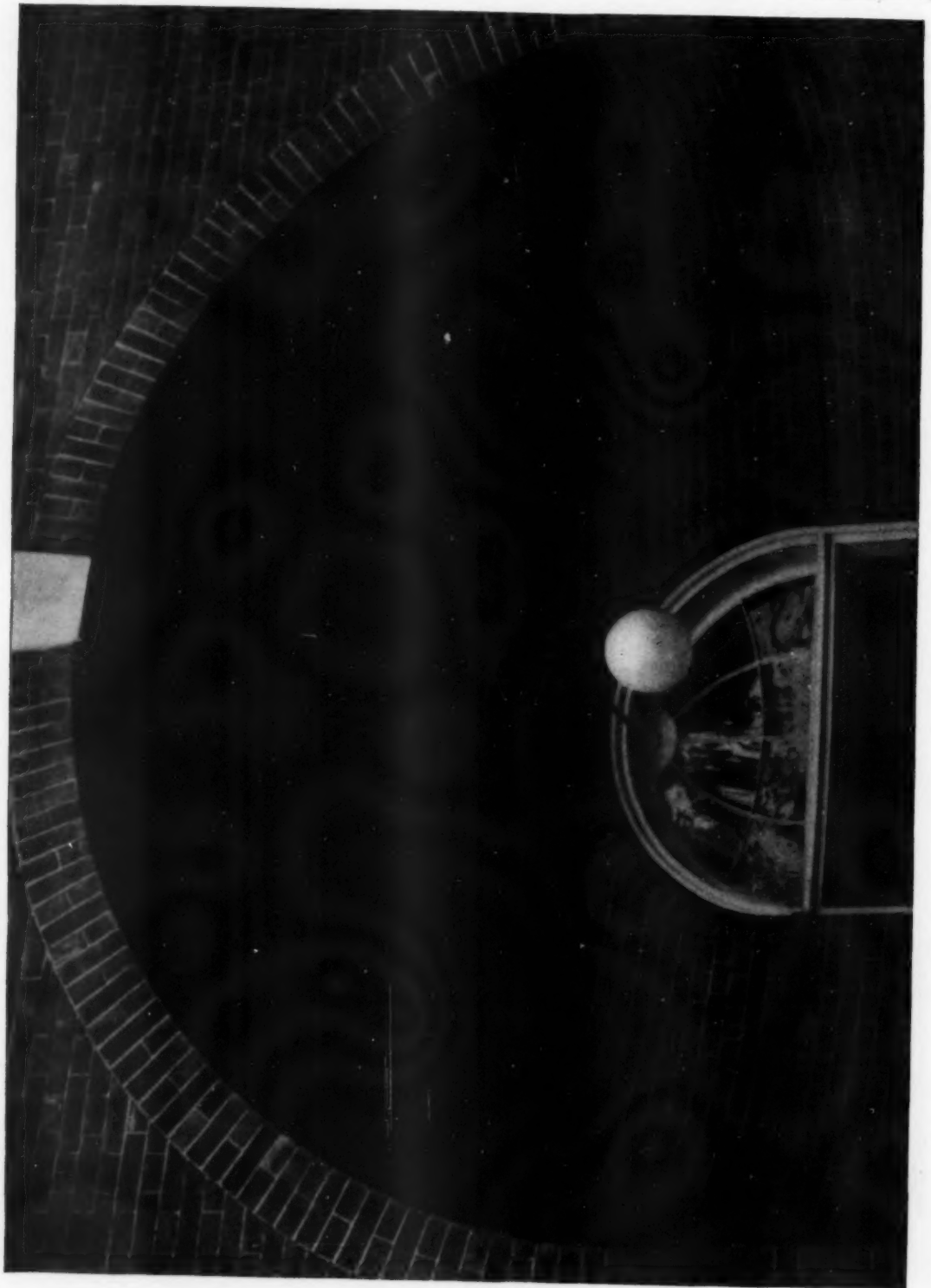
the chateau attains its full magnificence, composing into one of the most perfect ensembles imaginable. It would have appeared in these pages save for the fact that one must sit in the front yard of the abattoir to get a good point of view. And the bedlam of the slaughter house is not conducive sketching.



ENTRANCE TO THE CHATEAU OF SAUMUR



AN OLD HOUSE NEAR SANDWICH, MASS.—THE PROTOTYPE OF MANY LATER HOUSES
WORKING PHOTOGRAPHS—SERIES II
FROM THE ORIGINAL NEGATIVE BY BRIGHT JAMES BAUM, ARCHITECT



BRICK HALF DOME, MAIN ENTRANCE, OLD COURT HOUSE, WISCASSET, ME.

EXAMPLES OF EARLY NEW ENGLAND BRICKWORK

WORKING PHOTOGRAPHS—SERIES II, COLLECTION OF DWIGHT JAMES BAUM, ARCHITECT

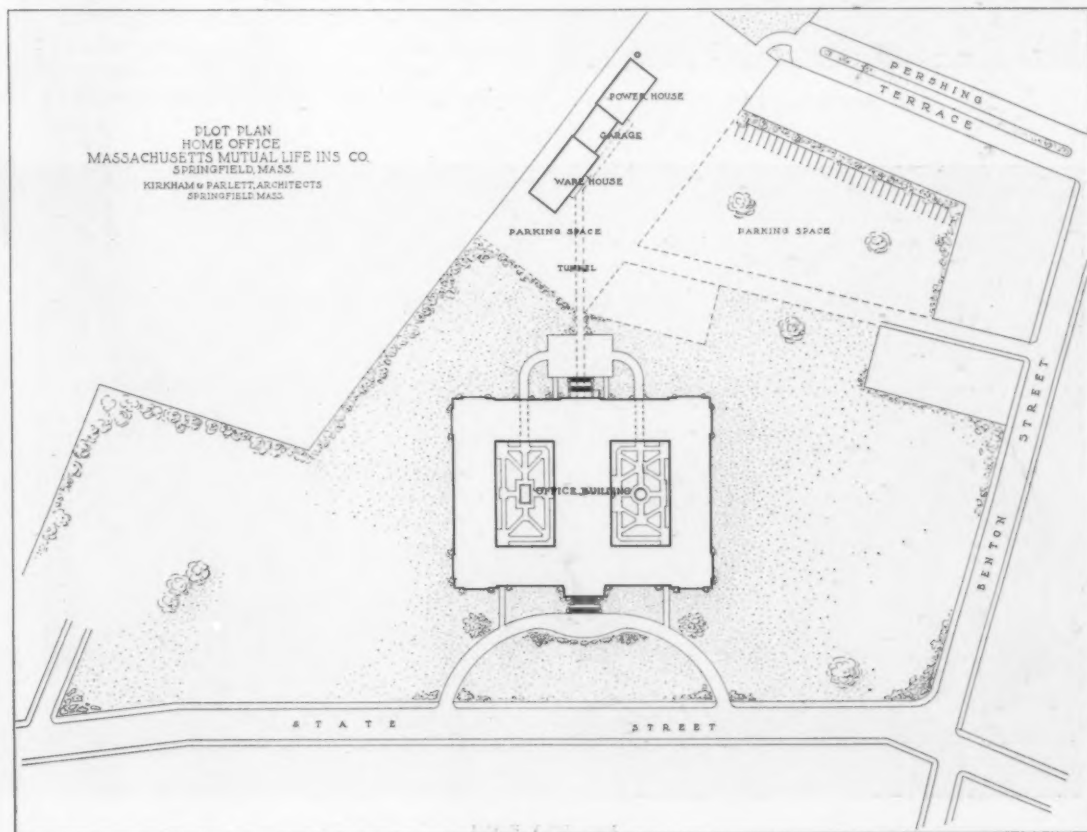
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY'S HOME OFFICE BUILDING, SPRINGFIELD, MASS.

KIRKHAM & PARLETT, Architects

IN the latter part of 1924, officers of the Massachusetts Mutual Life Insurance Company and the architects co-operated in making a survey of the requirements for a new home office building. The area devoted to the Company's business in their then occupied offices was approximately 75,000 square feet. Judged by present standards 150,000 square feet would have been considered no more than adequate for the Company's business at that time. The Company records for the preceding three decades indicated a rate of growth averaging over 100% every eight years. In the erection of any new building, there has, of course, to be taken into account increased growth. The new home office building covering 300,000 square feet should provide for at least ten years to come. This was accomplished with four floors of 75,000 square feet each, the first or ground floor to be used for storage of records, the second and third floors for the main working departments, the fourth floor for recreational rooms and cafeteria. Beyond the al-

lotted period, enlargement may be gained by either vertical or horizontal expansion. For vertical expansion the steel frame has been designed so that the building may be extended to the legal limit, providing four additional floors. Horizontal expansion may be carried out through duplication of the four story east and west wings with interior courts.

Following preliminary studies, an inspection was made by the architects and officials of the Company, of insurance buildings recently erected in this country and Canada. This inspection largely confirmed the soundness of the first study on which the existing structure is based. The plan resolved upon, broadly described, is that of a hollow square divided by a central-sector, thus forming two interior courts. This arrangement provides excellent lighting and intercommunication throughout. The east and west wings of the first floor provide space for the storage of records, the central sector for the security vault. On the second floor the central





ENTRANCE ROTUNDA

sector accommodates the financial departments, the west wing the executive offices, the east wing the actuarial department. On the third floor the central sector is assigned to registry, agency, and agency auditing departments; the west wing to the new business departments and the east wing to the renewal department. On the fourth floor the assembly hall (important for agency conventions and other uses) and gymnasium occupy the central sector; the cafeteria the west wing, while the east wing is at present unassigned.

An important feature of the general plan is the location of the storage and power house group at the rear of the main building. Both structures are connected by an underground passage carrying utility piping and wiring. The pipes, wires and ducts are all distributed from a sub-basement space in which are located switchboard and fan rooms, and other mechanical equipment. The store house is served by central elevator to each of its three floors. The power house, with pump room, switchboard, transformer, boiler room, etc., is lined with gray-white enameled brick. Four 250 H. P. boilers arranged in pairs for either coal or oil provide for the required heat in all buildings. The ventilation system furnishes washed and humidified air delivered at the top of all rooms. The electrical system provides both high and low tension wires based upon an outlet for every thirty square feet throughout the floor area. Intercommunicating telephones, a pneumatic tube system for conveying papers from one department to another, and a co-



ASSEMBLY ROOM

ordinated electric time system controlling all clocks, were included in the installations.

It has been the aim of the architects to produce a design consistent with the best Georgian tradition as transplanted to New England. The principle of appropriateness, of fitness for service and expression of purpose, controlled the selection of material and the form of design throughout. Rockport granite, Bedford limestone and a Pennsylvania shale brick were selected for the exterior. The entrance rotunda, as the central and pivotal point, has received a richer treatment both in materials and design than any other part of the building. Here the floor is of Tennessee marble, the base courses of dark Levanto, the columns of Breccia Opale, and the walls and cornice of Botticino marble. Grilles, balcony railing and clock are of bronze.

Opening from the rotunda, the elevator lobbies and cashier's lobby continue the treatment in harmony but in much simplified form. The floors are of Tennessee marble, the walls of Botticino marble and elevator doors of bronze. The rear entrance lobby and all corridors are floored with travertine and wainscoted with Tennessee marble. The corridor at the executive offices is broadened and given certain refinements of detail. The president's room has a fireplace with mantel of black and gold marble. The distinctive feature of the directors' room is the fireplace with facings of black and gold and mantel of Botticino marble. The walls, cornice and ceiling of this room, as well as the president's



EAST COURT



GYMNASIUM

room, have also received a distinctive treatment.

Other parts of the building deserving especial attention are the assembly hall, gymnasium and cafeteria. The assembly hall, with capacity of 900, is simply but effectively treated in light, warm colors, and the ornament concentrated around the proscenium arch. The gymnasium walls are faced with a smooth faced red brick pointed with white

given the treatment appropriate to its character and use.

Olmsted Brothers, landscape architects, developed a simple, well-ordered scheme of planting with large lawn areas and parking space. The two interior courts, each about 90 by 160 feet, contain evergreens and flowering shrubs and walks of green and purple flagging.



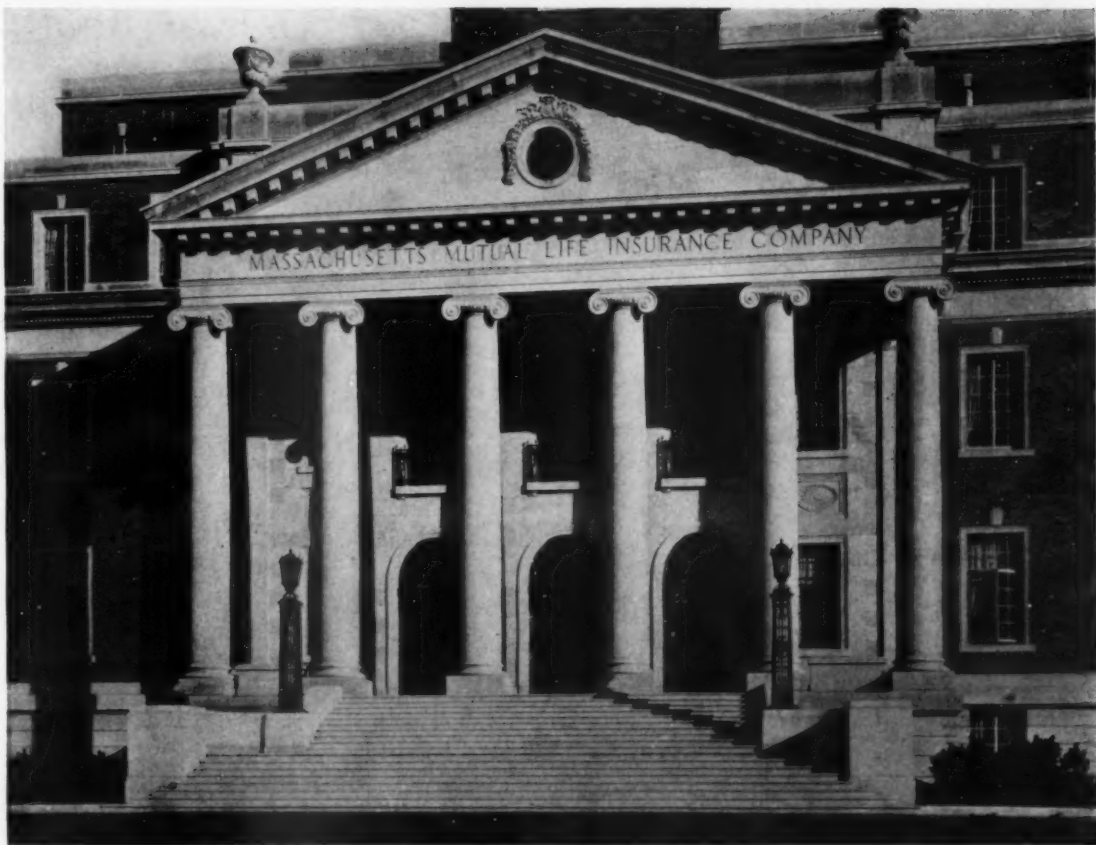
DIRECTORS' ROOM

mortar. The maple flooring in these two rooms includes practically all the wood used throughout the structure. The floor in the cafeteria is of heather-brown tile and the walls are painted a soft brown yellow and delicate green. The work rooms are finished with the utmost simplicity. Sound correction has been extensively employed to insure perfect working conditions. In fact, all parts are distinctly designed for service, each part being

The Boston office of the Turner Construction Company, the general contractors, conducted the construction with marked efficiency, carrying it to completion within a period of two years. The architects affirm that high praise should be given to them and to all superintendents, foremen and workmen, who maintained a fine spirit of co-operation and demonstrated an unusual degree of interest and pride of craftsmanship throughout.



GENERAL VIEW

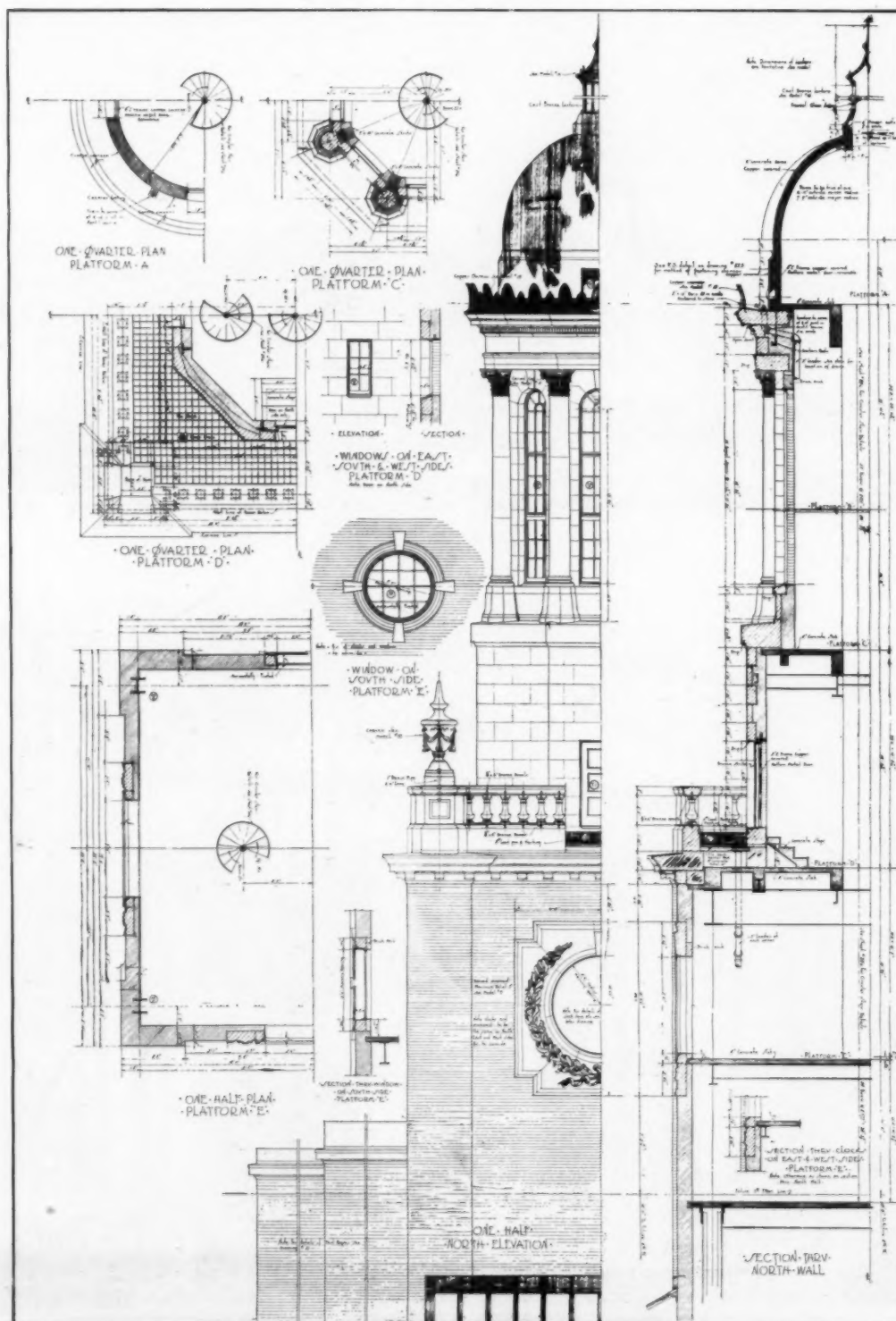


DETAIL OF MAIN PORTICO

HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, SPRINGFIELD, MASS.

KIRKHAM & PARLETT, ARCHITECTS

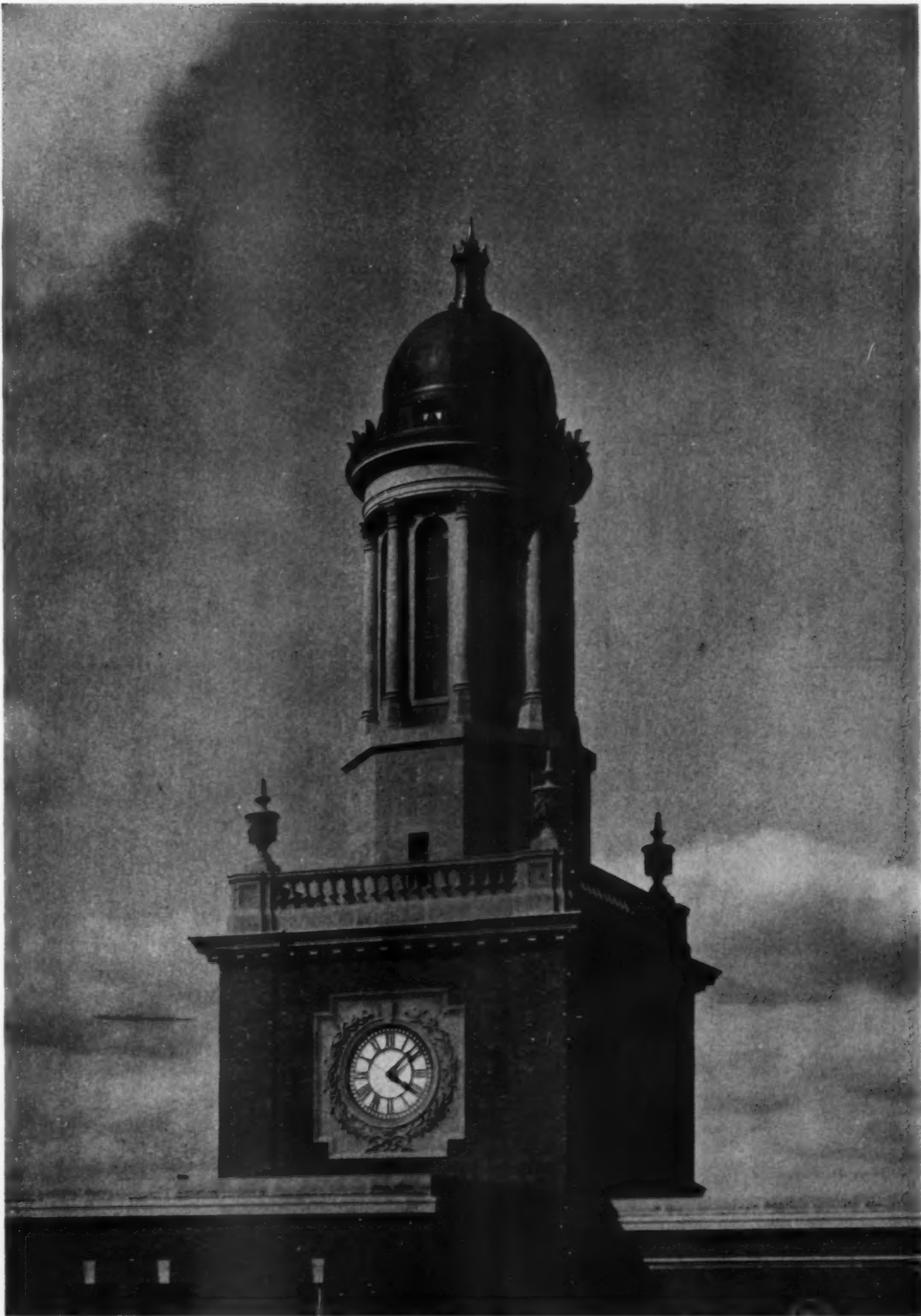
(See detail drawing of cupola on back)



DETAILS OF CUPOLA

HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, SPRINGFIELD, MASS.

KIRKHAM & PARLETT, ARCHITECTS

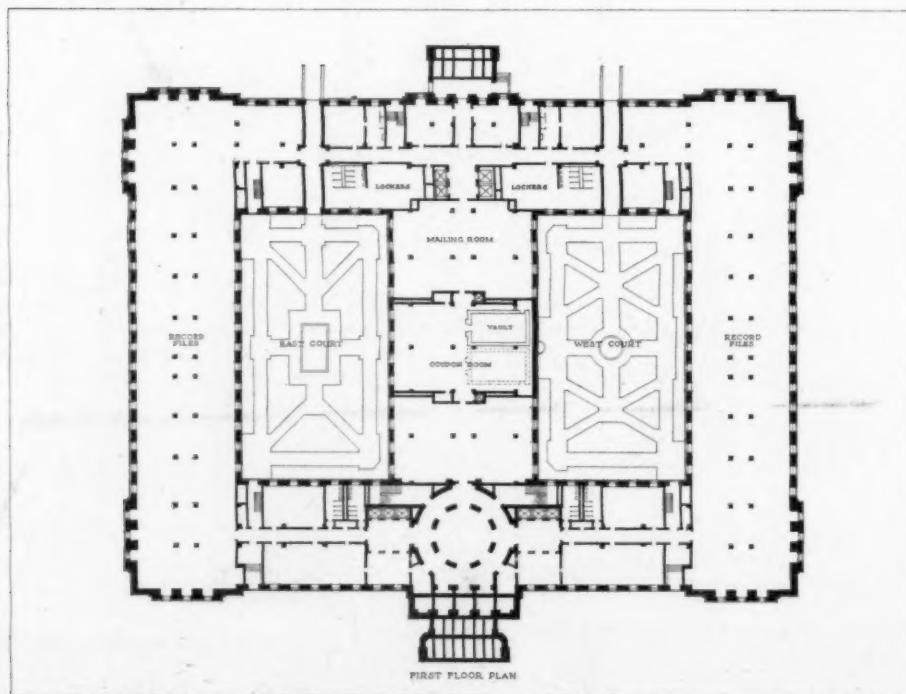
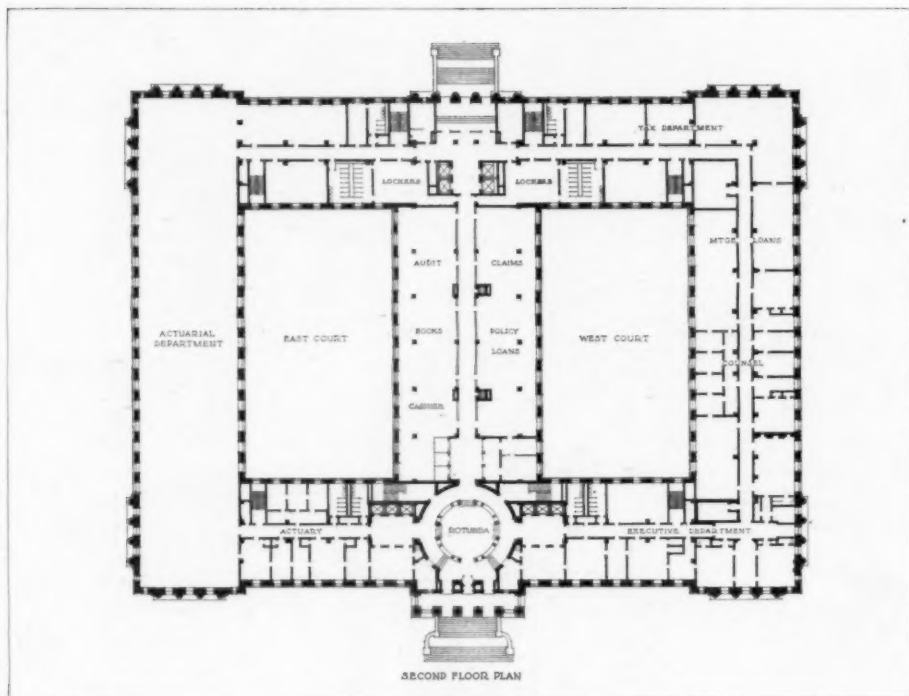


DETAIL OF CUPOLA

HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, SPRINGFIELD, MASS.

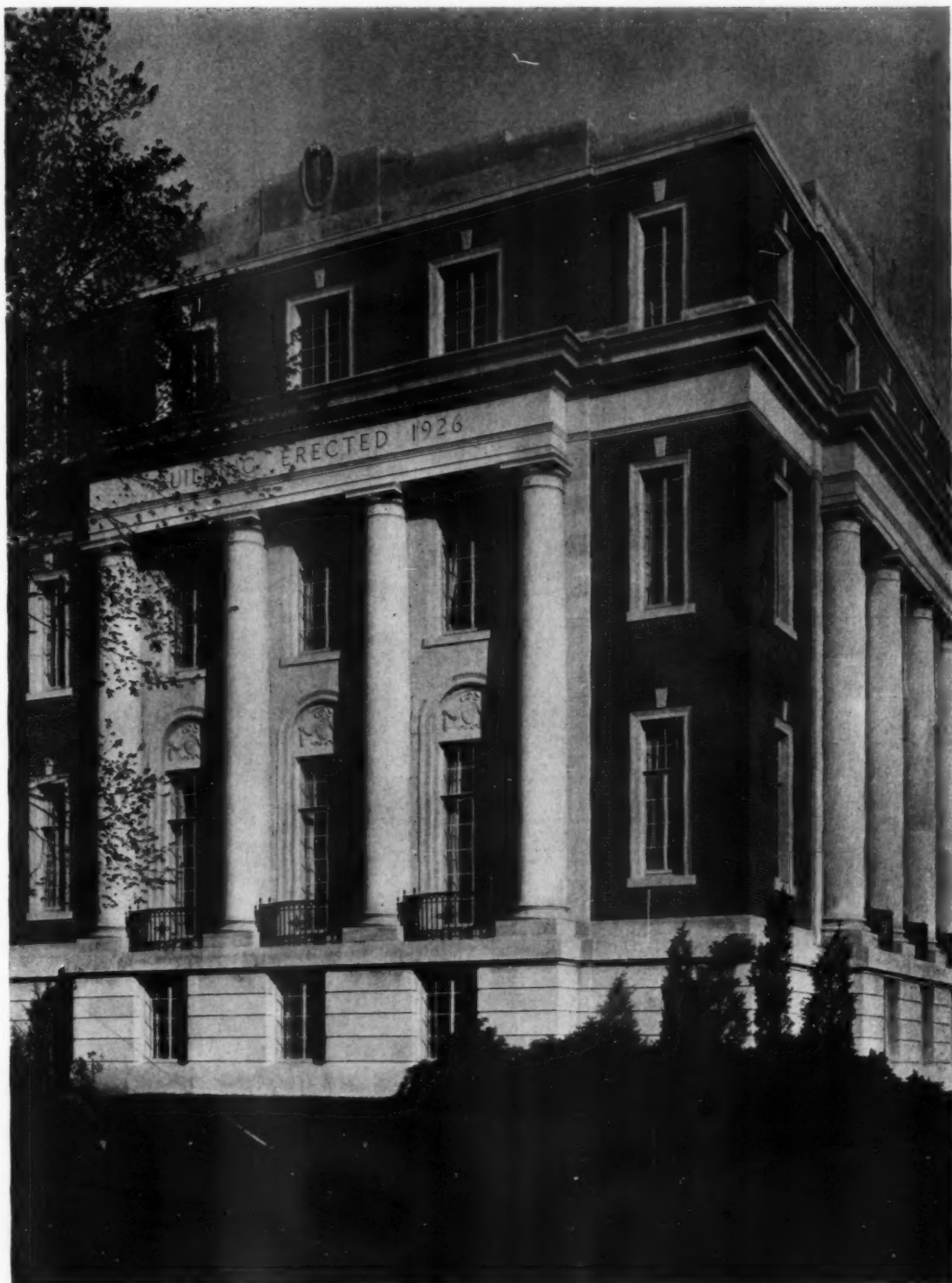
KIRKHAM & PARLETT, ARCHITECTS

(See plans on back)



HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY,
SPRINGFIELD, MASS.

KIRKHAM & PARLETT, ARCHITECTS

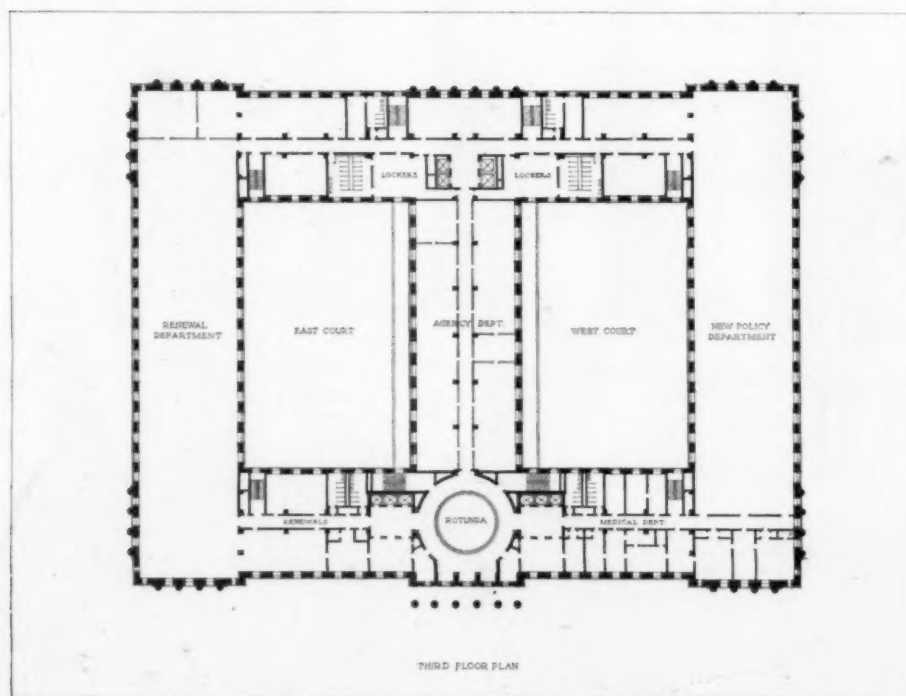
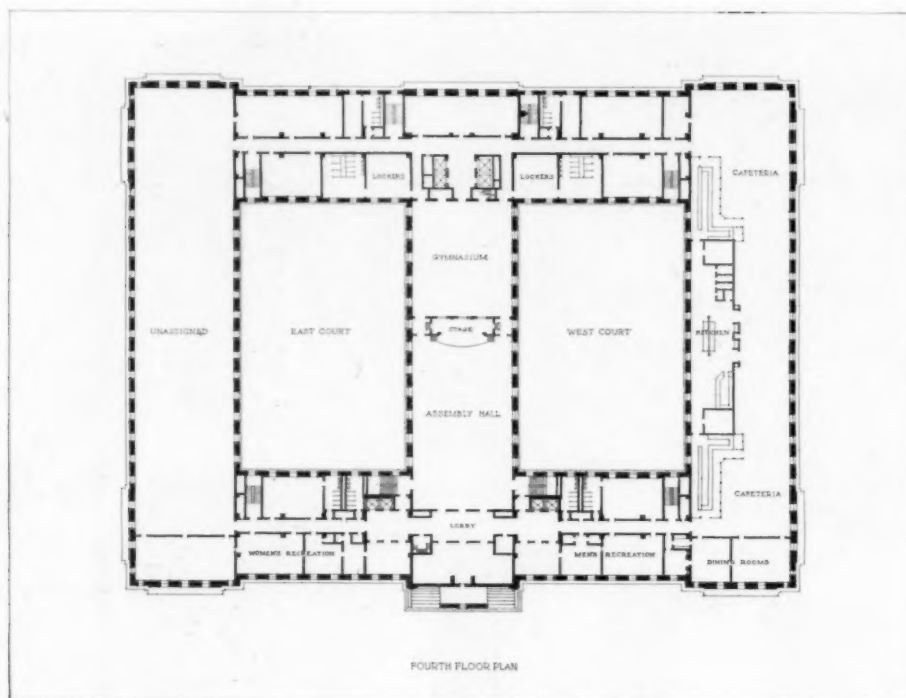


DETAIL OF CORNER PAVILION

HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, SPRINGFIELD, MASS.

KIRKHAM & PARLETT, ARCHITECTS

(See plans on back)



HOME OFFICE BUILDING, MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY,
SPRINGFIELD, MASS.

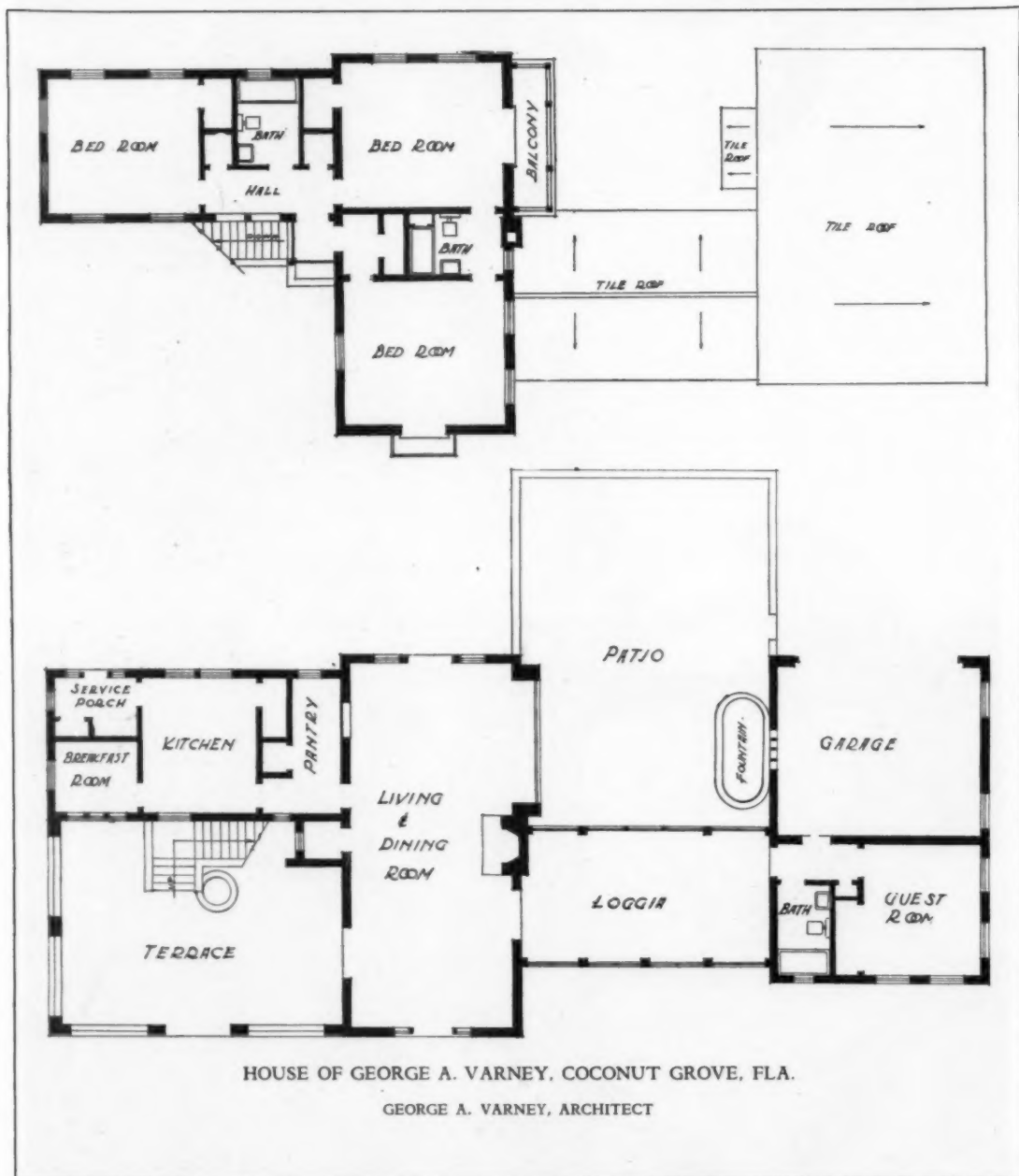
KIRKHAM & PARLETT, ARCHITECTS



HOUSE OF GEORGE A. VARNEY, COCONUT GROVE, FLA.

GEORGE A. VARNEY, ARCHITECT

(See plans on back)





HOUSE OF GEORGE A. VARNEY, COCONUT GROVE, FLA.

GEORGE A. VARNEY, ARCHITECT



HOUSE OF GEORGE A. VARNEY, COCONUT GROVE, FLA.

GEORGE A. VARNEY, ARCHITECT

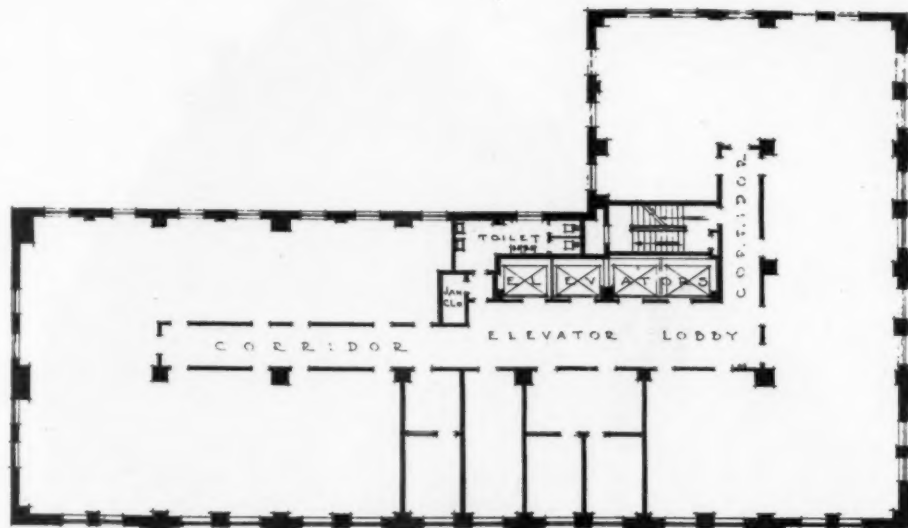




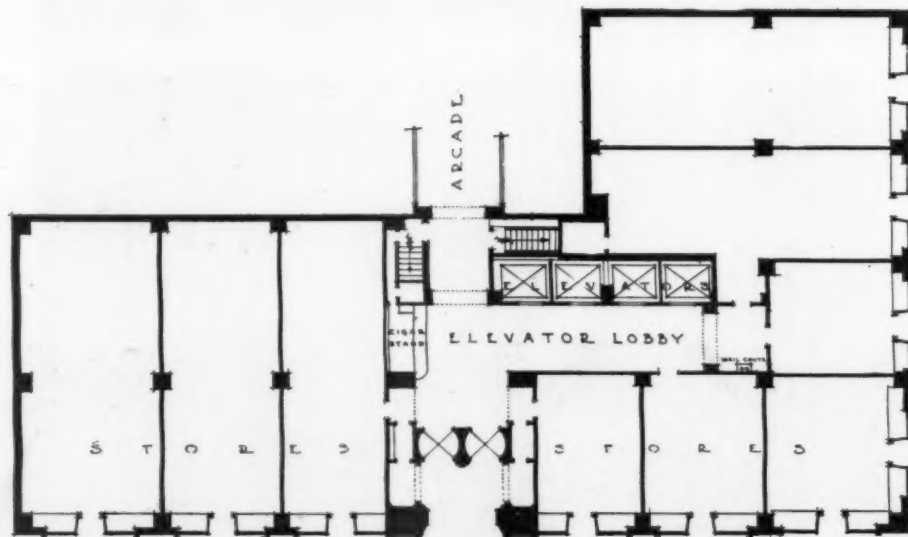
BAKER BUILDING, MINNEAPOLIS, MINN.

LARSON & McLAREN, ARCHITECTS

(See plans on back)



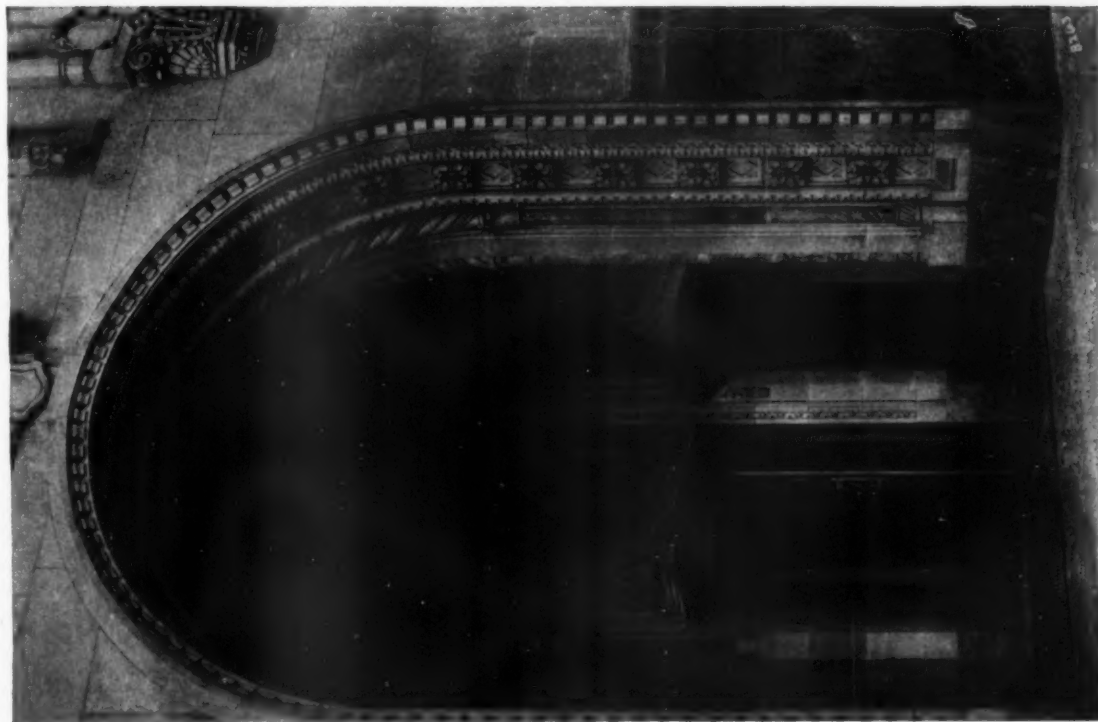
TYPICAL FLOOR PLAN



FIRST FLOOR PLAN

BAKER BUILDING, MINNEAPOLIS, MINN.

LARSON & McLAREN, ARCHITECTS



BAKER BUILDING. MINNEAPOLIS. MINN.
LARSON & McLAREN, ARCHITECTS





EDITORIAL COMMENT



ELSEWHERE in this issue there will be found extracts from a talk recently delivered by E. J. Mehren before the New York Building Congress, on the subject of foreign competition and its effect on the building industry. The facts and suggestions as presented by Mr. Mehren contain food for thought. We were about to say reflection—but reflection is not so much required as action. In many lines of commercial endeavor the pressure of foreign competition is already felt. As Mr. Mehren so clearly points out, high building costs must be absorbed in the selling price of merchandise and if keen foreign competition is to be successfully met, no opportunity for cost reduction can be lost. Building costs compared with many other items are amazingly high—more than double pre-war costs. Some of the contributing factors, especially those in which demand exceeded supply, have now been settled and the building industry is in a more stable condition than at any time during the past ten years. It is now time that the building industry as a whole set about the matter of determining the cause of continued high costs, and that steps be taken to correct those in which wasteful practices are indicated.

Many building codes in the larger cities, and in many instances, state laws, contain antiquated clauses, requirements probably important when enacted but with advance in the art of building, now no longer needed. Many of the codes are prepared to cover the broad field of building and make no allowance for unusual conditions. As a result, unnecessary provisions must be made in plans, equipment or construction that increase building costs to no good purpose. The building code situation is one that logically appears to warrant investigation and correction.

The general acceptance of the recommendation made by the Department of Commerce and manufacturers for simplified practice and the elimination of waste should accomplish results that are more than theoretical. Until these recommendations are generally accepted and practically applied, however, cost reduction through this means must remain a matter of theory and not of practice.

The architectural profession can do its share in a cost reduction movement by lending moral support and assistance wherever required. It can also help by intensively studying further economies in the planning and designing of buildings, so that the purpose for which the structure is erected can be accomplished within a minimum space, so equipped and planned that the efficiency of labor is increased, and so constructed that wasteful

structural design and non-essentials are avoided. There is no good argument against such procedure and many good arguments for it. To follow this practice should result in a simplification in design and result in better architecture. Economy in design should not necessarily "cramp" a designer's style. It may require more intense study to secure results, but the end secured is worth the effort.

It is of interest to note the thoroughness and earnestness with which European nations are studying and accepting the idea of cost reduction. No item is too small to warrant attention and correction, if waste is found to exist. If the present era of building prosperity in the United States is to continue unimpaired by foreign competition or public reaction, it is essential that we give immediate recognition to the problems with which the industry is faced today and exert our efforts, through whatever channels are necessary, to bring about conditions conducive to prosperity and the meeting of future competition.

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AT least a part of the work undertaken by the Producers' Council affiliated with The American Institute of Architects is in direct line with the necessity of cost reduction as indicated by Mr. Mehren's investigation. The owner of a building ordinarily considers that he has paid for the land, materials and cost of construction. This is true, but included in these items there are many others that he fails to visualize or else accepts them as a matter of course. In the matter of building materials and equipment, the cost of merchandising the product must be included in the selling price. If the cost of merchandising is higher than necessary, an unwarranted burden is ultimately carried by the building owner. While merchandising waste may represent but a small percentage of the total cost of the building, a number of similar wasteful practices may mount up into a surprisingly large total.

Among the aims of the Producers' Council is the reduction of waste in the advertising of building products. Before the initiating of the movement that culminated in the formation of the Producers' Council, wasteful advertising practices were everywhere seen. Ill-advised advertising and sales efforts, advertising literature improperly prepared destined to find its way into the waste-basket, and other misdirected efforts calculated to perfect the sale of products were known to exist. Since the formation of the Producers' Council there is a noticeable improvement in manufacturers' advertising literature sent to members of the architectural profession.

Serious study has been given the subject of how manufacturers can give architects the information needed by the profession as well as the information the producers want the architects to have, with the least expenditure of architects' time. In addition to a saving of time and the elimination of useless advertising literature, a result of great importance to the building owner is also achieved, namely, the enabling of architects more intelligently to choose and specify materials and appliances.

The Producers' Council movement consistently pressing the elimination of waste in advertising to a conclusion, immediately helps in two important ways to reduce costs. First, by merchandising methods to keep the cost within reasonable limits and, second, by supplying architects with facts, materials, and equipment selected to better serve their purpose. The second has a favorable effect on the cost of manufactured articles and rentals that is reflected in industrial conditions generally.

There are undoubtedly many other phases in the relation of producers and architects to building construction and industry as a whole that require correction. When these are worked out, recognized and applied, that desirable end, cost reduction, may be nearer at hand. It is hoped that the Producers' Council will continue to function in this direction and accomplish results commensurate with the effort.

THE designs submitted by architects of practically all the Member States for the League of Nations building at Geneva, in a competition, reference to which is made in another column of this issue, are interesting if for no other reason than that they are suggestive of the tendencies which dominate architectural design in the several European countries today. A study of the prize winning designs indicates that the modern influence is paramount

throughout Europe. While there is a certain similarity in the designs of contemporary architects of the various countries, the manner of expression is quite distinctive and there are certain details which give the designs from each country peculiar character. Although the buildings in the majority of cases are only four or five stories high, many of the designs are featured by the vertical motif which we in this country have found so appropriate to the design of tall buildings.

According to the designs, architects in Italy today still cherish principles of the classic, with colonnades, porticos and broken pediments. The prize winning architects representing France have reverted to an architecture of right angles, which seems not at all to suggest the French architecture to which we have been accustomed and which we have so frequently admired. The Swedish architects have turned toward absolute simplicity, with an occasional use of the column and the dome. It has remained for the German architects, however, to present the most unusual and daring. Vertical piers five stories high, with intervening spaces set in deep reveals, become monotonous in such a large mass, and there is little else to the design to relieve it. The plans are of various shapes; many of them are interesting and suggest rare possibilities.

Not being a member of the League, this country could not submit designs in the competition. It would have been interesting to see how our designs would have compared with those of Europe. We rather think that, in the event that we had been represented, the designs submitted by American architects would have been more European, as we know and love European architecture, than those of either Germany, France, Italy or Sweden. Modern art in Europe today seems really to be more an effort to create something different than actually to represent the development of a style that reflects the modes and manners of the people of the times.





INTERIOR ARCHITECTURE



A BACHELOR'S COUNTRY HOUSE IN BEAR LAKE, PA.

THE architect's objective was to design a summer house for a bachelor of means on a site in the Pocono Mountains of northern Pennsylvania. The fact that the selected location was twenty-five miles distant from the nearest railroad station must be taken into account, as it would be desirable from an economic standpoint to reduce to a minimum hauling over the rough and little used roads which intervened. It must also be borne in mind that in one direction only a beautiful view was afforded which must be taken advantage of. Further than that, consideration must be given to the location of a caretaker's living quarters, which, unlike the master portion of the house, must be suitable for all-year-around residence. These constitute the outstanding conditions of the problem with which the architect, Lewis E. Welsh, was presented.

The principle on which the farmhouses of old New Hampshire were laid out served as inspiration in the development of the plan. A wing at the right of the master portion of the house housed the service quarters. A break in the plan at this point allowed the occupants a better opportunity for enjoying the view than would otherwise be possible. The service quarters were connected with the caretaker's cottage by a wood shed, which was necessary under the conditions already referred to.

The caretaker's cottage—a stucco structure, in contrast with the frame construction of the balance of the house—includes on the first floor a suite for the chauffeur, who, like the owner, lives here only during the summer season. Another interesting detail of the plan is the porte-cochere. Its primary purpose is to allow the owner to park his car under shelter, without going to the garage, which is located beyond the caretaker's cottage. The great depth of the porte-cochere is to allow a car to pass when another is parked there.

As to the design of the interior, wood walls and visible ceiling beams were determined upon for three very good reasons: first, this treatment seemed to be more suggestive of a summer house; it seemed cooler; second, it offered a more harmonious setting for the furniture, many of the pieces of which were collected by the owner before the house was even planned; and, third, it eliminated much hauling, which another scheme might have necessitated. It should be recorded here that, while the owner showed more than ordinary judgment in collecting authentic examples of historic styles to serve as a nucleus for the scheme furnishing, the new pieces that were introduced were just as carefully chosen, and satisfactorily completed the composition. Credit for this phase of the work is accorded the decorators, Woodville, Inc.



HOUSE OF G. S. McCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT



ENTRANCE HALL, SHOWING STAIRCASE AND DOOR TO GROUNDS AT REAR. A BEAUTIFUL VIEW IS AFFORDED FROM THIS SIDE OF THE HOUSE. WALLS ARE OF WOOD PLANKS, AND THE CEILING IS ALSO OF WOOD. AN ELEVATION DRAWING TO SCALE OF THIS WALL OF THE HALL IS REPRODUCED ON THE OPPOSITE PAGE



ENTRANCE HALL, SHOWING MAIN ENTRANCE DOORS

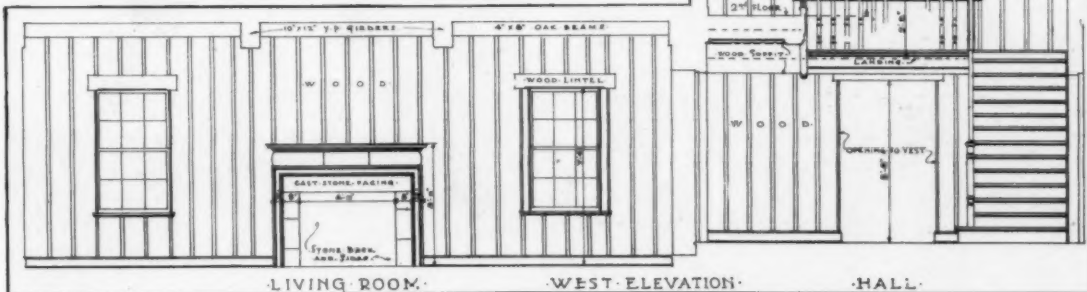


DINING ROOM, SHOWING DOOR TO ENTRANCE HALL

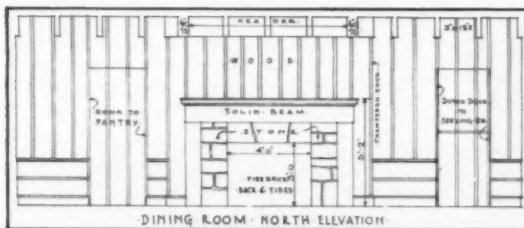
HOUSE OF G. S. MCCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT



LIVING ROOM IN WHICH THE WALLS AND CEILING ARE ENTIRELY OF WOOD. THE FURNITURE, WHICH HAS BEEN CAREFULLY SELECTED, IS IN PERFECT HARMONY WITH THE ARCHITECTURAL TREATMENT. ELEVATION TO SCALE OF MANTEL WALL OF LIVING ROOM AND CORRESPONDING WALL OF HALL IS REPRODUCED BELOW



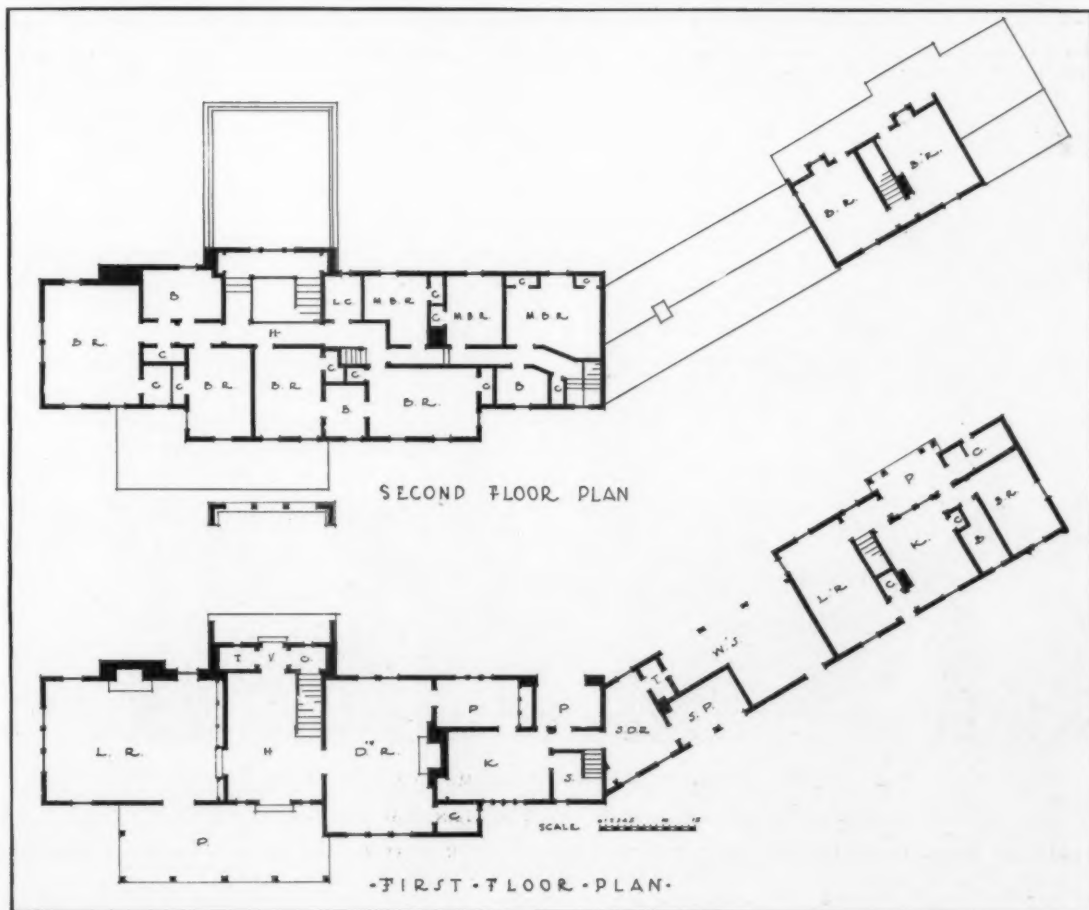
HOUSE OF G. S. MCCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT



DINING ROOM IN WHICH THE ARCHITECTURAL TREATMENT IS SIMILAR TO THAT OF THE LIVING ROOM. MANY OF THE MORE IMPORTANT PIECES OF FURNITURE WERE COLLECTED BY THE OWNER BEFORE THE HOUSE WAS DESIGNED, AND THE INTERIOR ARCHITECTURAL SCHEME WAS DEVELOPED SO THAT THESE PIECES WOULD BEAR PROPER RELATION TO IT, IN BOTH PLAN AND DESIGN. ELEVATION TO SCALE OF THE MANTEL WALL IS REPRODUCED AT THE LEFT



HOUSE OF G. S. MCCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT



HOUSE OF G. S. McCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT



DECORATIVE SCHEME FOR LIVING ROOM OF A FRATERNITY HOUSE

FROM THE ORIGINAL SKETCH IN COLOR BY FRANCIS H. BACON COMPANY

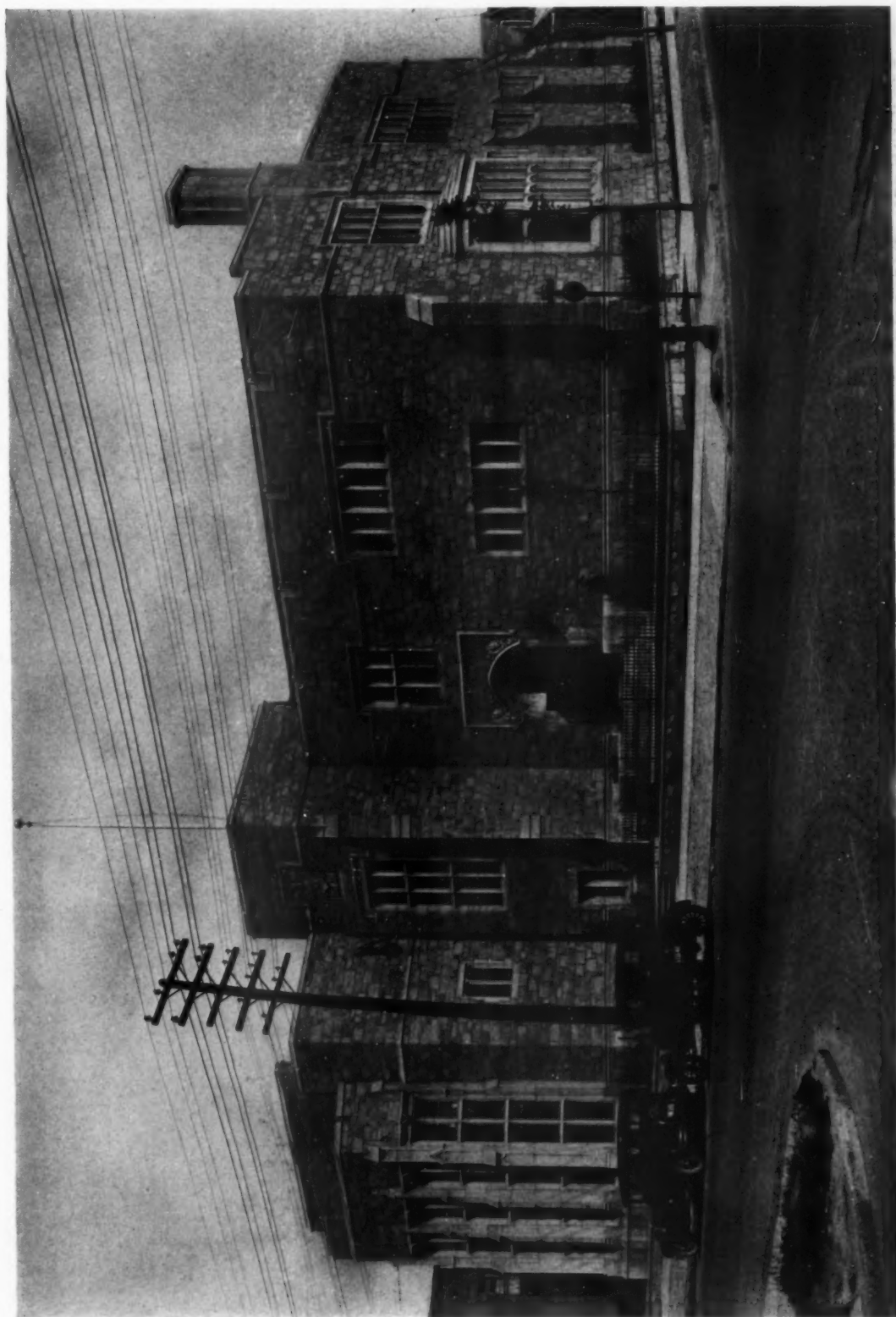
WALLS AND WOODWORK ARE TINTED IN AMBER AND THE FURNITURE IS OF WALNUT. THE UPHOLSTERED CHAIR AT THE RIGHT IS COVERED IN RED AND THE ARMCHAIR AT THE LEFT IS COVERED IN A TAPESTRY. THE WINDOW HANGINGS ARE OF BLUE AND GOLD DAMASK



SUGGESTION FOR THE DECORATIVE SCHEME OF A LIVING ROOM

FROM THE ORIGINAL SKETCH IN COLOR BY FRANCIS H. BACON COMPANY

LIGHT TAN WALLS ABOVE AN IVORY DADO ARE RELIEVED BY GREEN DAMASK HANGINGS AND WALNUT FURNITURE OCCASIONALLY TOUCHED OFF IN GOLD



DETROIT PUBLIC LIBRARY, MONTEITH BRANCH, DETROIT, MICH.

SMITH, HINCHMAN & GRYLLS, ARCHITECTS AND ENGINEERS



INTERIOR DETAIL



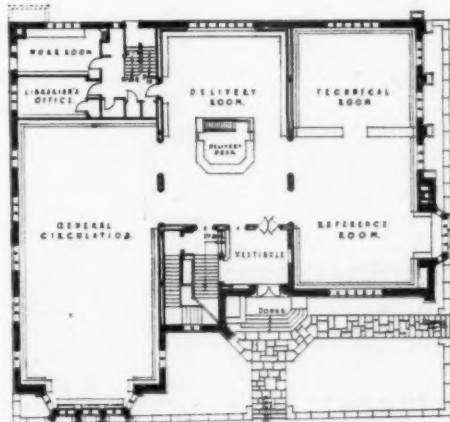
ENTRANCE DETAIL

DETROIT PUBLIC LIBRARY, MONTEITH BRANCH, DETROIT, MICH.

SMITH, HINCHMAN & GRYLLS, ARCHITECTS AND ENGINEERS



PUBLIC READING ROOM

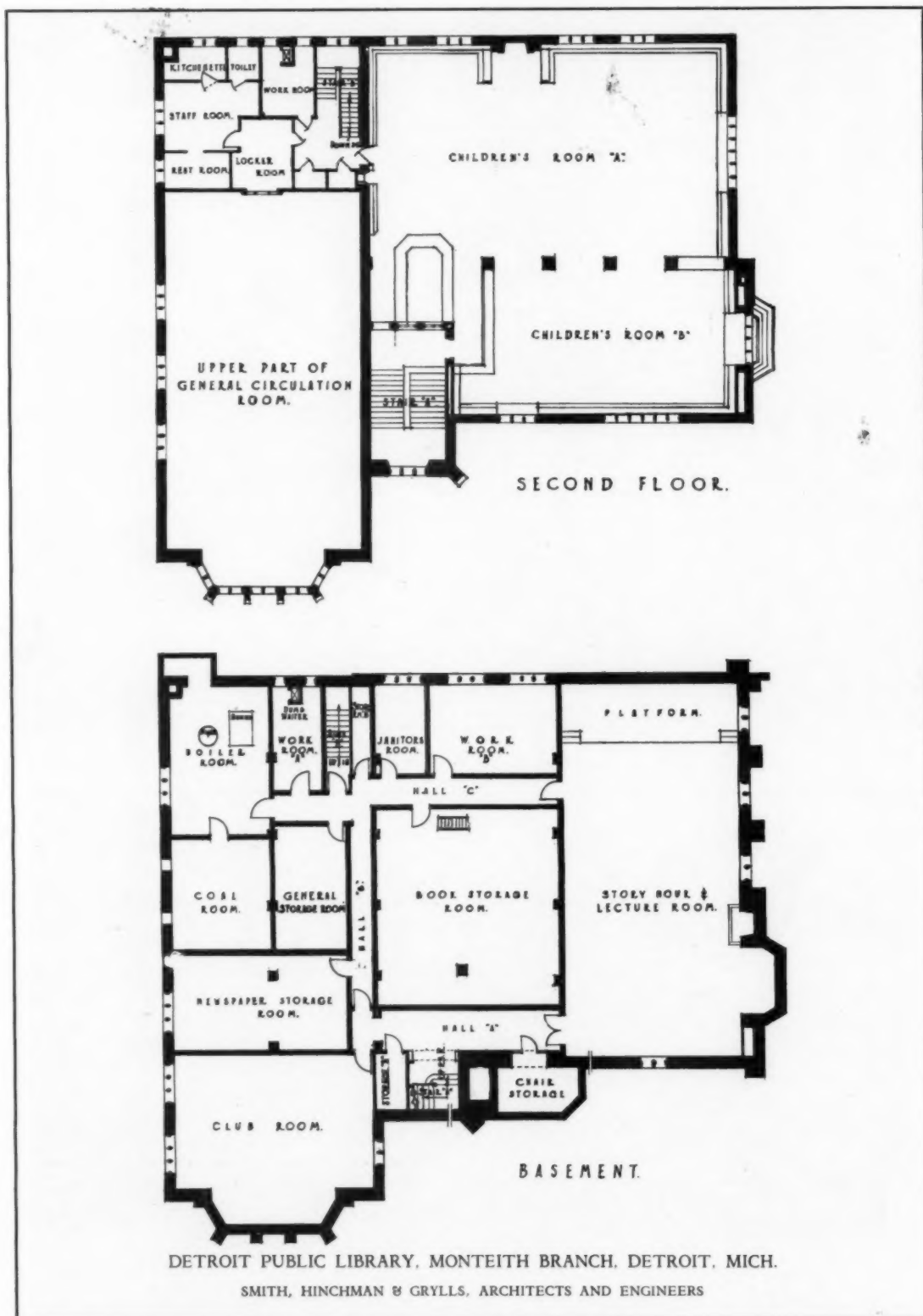


FIRST FLOOR.

DETROIT PUBLIC LIBRARY, MONTEITH BRANCH, DETROIT, MICH.

SMITH, HINCHMAN & GRYLLS, ARCHITECTS AND ENGINEERS

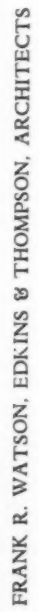
THE BUILDING IS OF REINFORCED CONCRETE CONSTRUCTION. THE EXTERIOR WALLS ARE OF GRANITE, LAID IN RANDOM SIZES. WINDOW AND DOOR ARCHITRAVES ARE OF BEDFORD STONE. PARTITIONS ARE OF HOLLOW TILE AND FRAME, PLASTERED. THE FLOOR IN THE VESTIBULE AND IN HALLS AND STAIRS IS OF SLATE, AND THE BALANCE IS OF CORK TILE. TRIM IS OF STONE AND HARDWOOD. STEAM HEAT IS INSTALLED AND ALSO ELECTRICITY. THE BUILDING WAS ERECTED IN 1925, AT A COST OF 49 CENTS PER CUBIC FOOT





ST. COLMAN'S CHURCH, ARDMORE, PA.

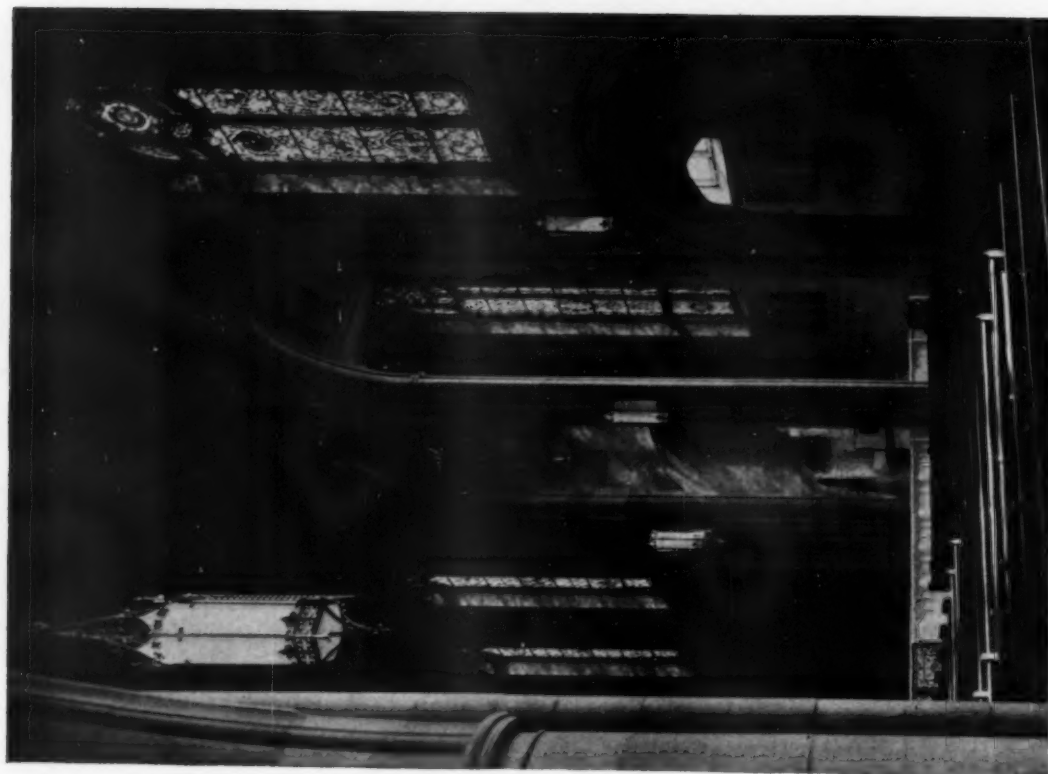
FRANK R. WATSON, EDKINS & THOMPSON, ARCHITECTS





ST. COLMAN'S CHURCH, ARDMORE, PA.

FRANK R. WATSON, EDKINS & THOMPSON, ARCHITECTS



ST. COLMAN'S CHURCH, ARDMORE, PA.
FRANK R. WATSON, EDKINS & THOMPSON, ARCHITECTS

COLLABORATION*

By JOHN GREGORY

FROM the sculptor's point of view, collaboration with architects and the allied artists is not only a necessity, but also a great stimulant: it widens his outlook and releases his imagination in a broader field. He is concerned with bigger problems than those of simply satisfying himself and uttering his own reflections, and in the company of his allied professionals, he absorbs from them additional strength for his own performances and is broadened and excited to unthought of possibilities. He is sustained beyond his own native powers and builds better than he knows. The backwaters of art are avoided and he travels on the broad flow of the stream. Without this stimulant of collaboration, the artist becomes a specialist and a producer of museum pieces. For his own salvation it is necessary that the sculptor should confer and study with the architect and the painter, so that he may work in harmony with them and, as far as possible, understand their points of view.

As a student, the architect familiarizes himself with the technique of sculpture and painting, and the artist sometimes attempts to grasp the principles of architecture, with the result, that an appreciation of the other's art is accomplished, and it is on this as a base that an enlarged appreciation and understanding should be built, by a continued relation in professional practice. Architects should make themselves familiar with the limitations and the possibilities of plastic and graphic expression and artists should at least learn to distinguish between the styles and to draw a moulding. For the architect to attempt to execute in the decorative arts would probably result in emotional distortion rather than in plastic or graphic rhythm, and the efforts of artists to design architecture would be equally unsatisfactory. Therefore we may assume that in producing a combined work of art, that they are dependent on each other, though paradoxically enough, they must be entirely independent of each other. They must cohere and at the same time retain their identities in the fashion of the rods bound together in the Roman fasces.

In the great periods of art collaboration was spontaneous. It is only since the end of the Renaissance that sculpture and painting have become independent arts, no longer exclusively the handmaidens of architecture. In this regard, architecture has been compared to a book, and sculpture and painting to the illustrations which serve to explain the text and decorate the volume. It might be argued that the text is a work of art and needs no decoration, but it can also be argued that the book will be more complete and more beautiful if there is the added interest of artistic and explanatory illustrations. In the case of a building, sculpture, painting, and ornamental decoration can be employed to explain the architecture, to symbolize the use of the building and to give additional interest and beauty to it. Any general use of these embellishments on a large scale is more than can be hoped for at present on account of the numberless limitations which beset the architect, but every effort made is an advance, and cumulative, in the task of bringing about a full use of the pleasures of art, and the perfect expression of its practitioners in collaboration under the leadership of architecture.

To this end, it will be necessary to organize on a working basis and to remove any inequalities. At the present time, there are certain inequalities in this relationship. Collaboration, as a rule, means that the sculptor shall do exactly as the architect directs,—and quickly. Time is flying, the ground is producing no revenue while building is going on, and the client is impatient for results. The plans and elevation show the sculptor the limitations and opportunities of his problem, he proceeds hastily to work on these terms and compresses his dreams and

aspirations within the limits of time and space imposed on him. The architect criticizes the work in progress with an eye to harmony and scale with his plans, and the work is terminated on the approval of the architect and the expiration of the time limit.

This is a reasonable arrangement under present conditions and leads to results. The architecture is fittingly decorated, good taste is safeguarded and scale is maintained. But,—very often the result is uninteresting. Uninteresting,—because the sculptor has been subjected too much to the hurry and demands of the occasion. In not having time to consider, he may lack inspiration and in subjecting his work to changes determined on by the architect, he may exhaust himself and produce a labored effect which he has not the time to reconsider and revitalize. Furthermore, the combined restraints of space, scale, style and subject may make it impossible to produce a spontaneous and harmonious composition.

It is not suggested that these are unreasonable problems and restraints except inasmuch as they are imposed by limits of time and the impossibility of adjustment. Neither is it suggested that they are always or wholly imposed, but it is too frequent that the sculptor is given a problem which can only be solved by compromise.

It might be said that compromise is a reasonable way out. It is, no doubt,—but it is unfortunately only a partial realization of the object attempted when the two professions meet in collaboration. Compromise is always at the artistic expense of the scheme, it works injustice to the sculptor and in no way dignifies the work of the architect.

Any attempt to synchronize the efforts of the two professions can only be made with the understanding that the sculptor is to be less under control of the budget than is usual, and that he should be placed more directly in contact with the germinating of the sculptural idea. It is not enough to determine the problem and then call him in to solve it. Sometimes there is no proper solution. He should be called in while the design is still plastic, and his instinctive preferences as to where sculpture will combine harmoniously and as to where it will be most favorably displayed, should be considered. This immediate collaboration is desirable as it is only the sculptor himself who can realize the limitations of his own expression,—limitations that are not apparent in the pencil drawing.

In the case of a drawing made of an imagined piece of sculpture the third dimension is at hazard and may develop in an undesirable way.

Too often, the sculptor is called when the plans are entirely finished and the spaces and projections with which he is to work have been unalterably determined. He may be required to compose in a space which is unsuited to the subject given him, and have to patch out with drapery and accessories. True sculptural composition is effected by positions of the human figure alone, and drapery which plays the part of accenting and giving vivacity, is not a primary factor. Drapery has no weight and its volume cannot be used as a balance to the human figure. Accessories also play a very minor part in sculptural composition, their place being in the ornamental decoration of the building, and while the human figure can be treated ornamentally, the excessive use of ornament with it takes away from its dignity. Directness of expression and sculpturesque quality are dependent on the artist's having a suitable space in which to display his figures in their proper proportions and attitudes. How they are clothed and in what style they are executed are secondary considerations.

In brief, the sculptor is limited by the technique of his art and the materials with which he works, and can only accom-

*Address delivered at the last convention of The American Institute of Architects.

plish his best expression under conditions which permit him to base his work on nature.

The lack of coordination of study in the arts today, the architect being trained in the historical styles and the artist in various schools of naturalism, makes collaboration difficult.

The builders of the Parthenon had a simpler task. In the golden age of its conception, the arts, ripened in unison, burst into flower in a culminating perfection. At that time there was no source from which bad taste could have been drawn.

Gothic architecture and sculpture were both of one mould, the one partook of the nature of the other.

In the Renaissance, the work of Michael Angelo in sculpture and architecture is all of one pattern and one mood, the creation of one mind.

In the elaborate style of the Baroque and later, collaboration was made easier by the very intricacy of design. In this welter of decoration and complicated forms, faults of design could be masked by vivacity of treatment and lack of inspiration covered by the introduction of the bizarre.

Today, in spite of our confusion of style in details and our multiplicity of materials and requirements, there is crystallizing a purity of intention and a will to design frankly, with simplicity as the first principle. This conflict makes the problem of reconciling our requirements and our aspirations most difficult. The ancients built as came naturally to them, we must build as we determine best, consciously, as students and scientists.

Two modern collaborations well known to you, the great hall of the Cunard Building and the exterior of the new Philadelphia Art Museum, are interesting examples. In the first case, the architect had at his command a whole company of workers trained exactly to his requirements by the American Academy in Rome, and the success of this great hall, due primarily to the vision and talent of the designer and to his intelligent leadership, owes a great deal to his judgment in choosing the associated artists. There was no hesitation of any kind in attacking the work, and there can hardly be said to be any un-

successful performance either in whole or in part. This result is probably due to the common training and common ideals of the collaborators. The work was all planned in miniature in a scale model and carried out rapidly under what might have been an unfortunate pressure of time.

The Philadelphia Art Museum was of an entirely different growth. There was no schedule or budget and no pressure from anxious stockholders. The associated artists were collected together gradually and much time passed in experiment and preparation. The idea of color introduced itself gradually, first in the walls and later in the use of polychromed terra cotta. Elaborate scale models were made and every detail was tried out at small scale in form and color. Later full-sized models in colored plaster were hoisted into position on the building and the effect judged. This work has become an education as well as a collaboration to those associated in it. It is a link between the classic and the modern, a development of what has been done and at the same time, a forerunner of what will be done. Its scholarly roots are in Greece, but its flowering crest is in the clouds.

Enterprises of commerce and culture will engage the practitioners of the arts in colossal activities. Cities will be remodelled and great areas of nature brought under control and embellished. With the perfection of machinery the people will be released for the enjoyment of the pleasures of art, and beauty will be the natural interest of their leisure.

The nation will be engrossed in art. Streets will lose their present character and become canyons of brass and color. They will be designed in units rather than as collections of buildings and with the increase of scale and the reduction of design to the simplest lines, decoration will be of vital necessity and collaboration between the arts imperative.

So many elements of grandeur and beauty are added to architecture every day, that a great vision is promised, a vision of coordinated artistic effort of gigantic proportions, a Titanic collaboration extending from coast to coast.



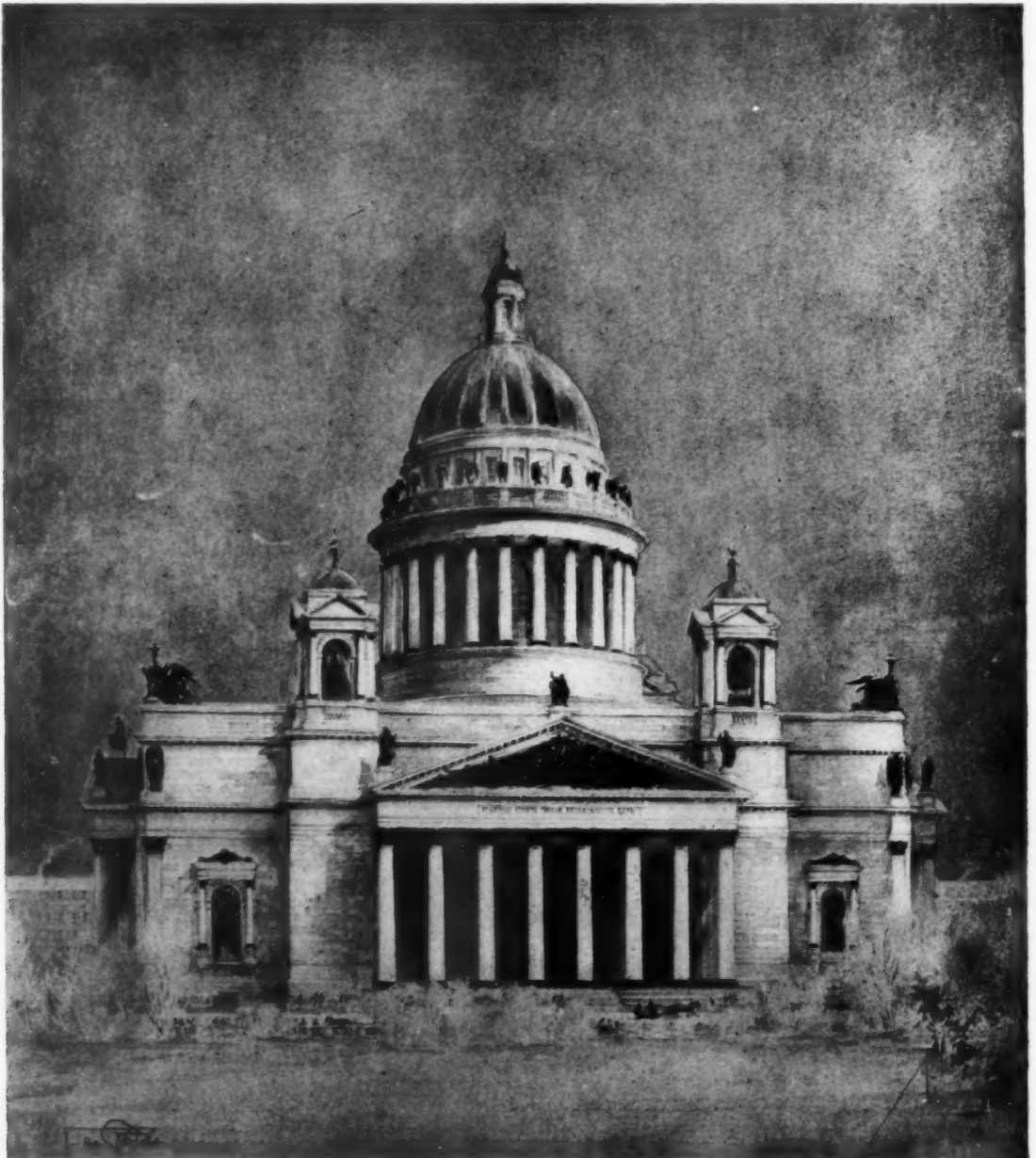
REPRODUCTION OF ARCHITECT'S RENDERING OF EXTERIOR OF LOG CABIN OF R. M. M. CARPENTER, BOHEMIA, DELAWARE

DESIGNED BY ROBERT VON EZDORF OF FRANCIS H. BACON COMPANY

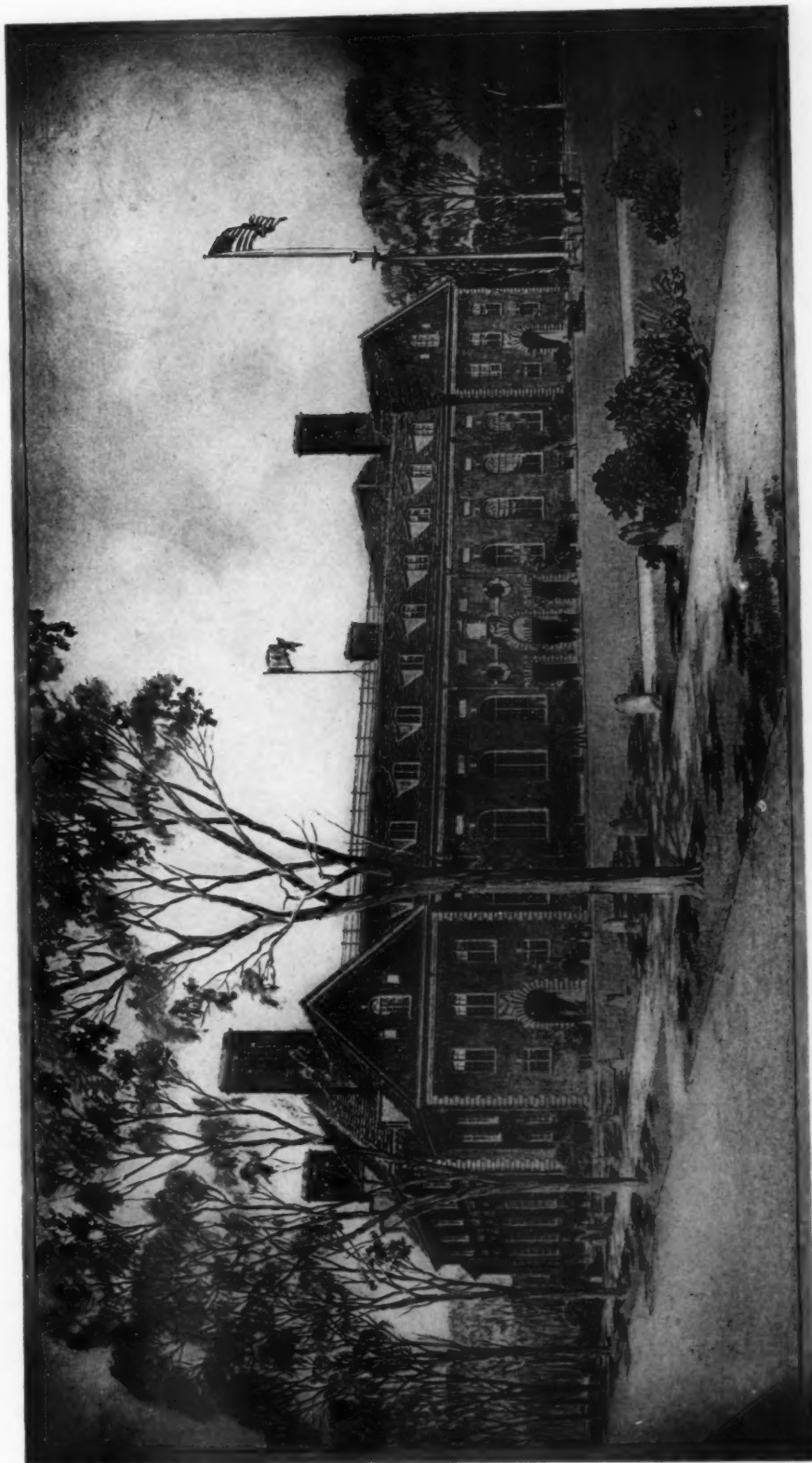


TRINITY CHURCH, NEW YORK

FROM THE PASTEL BY THEODORE DE POSTELS



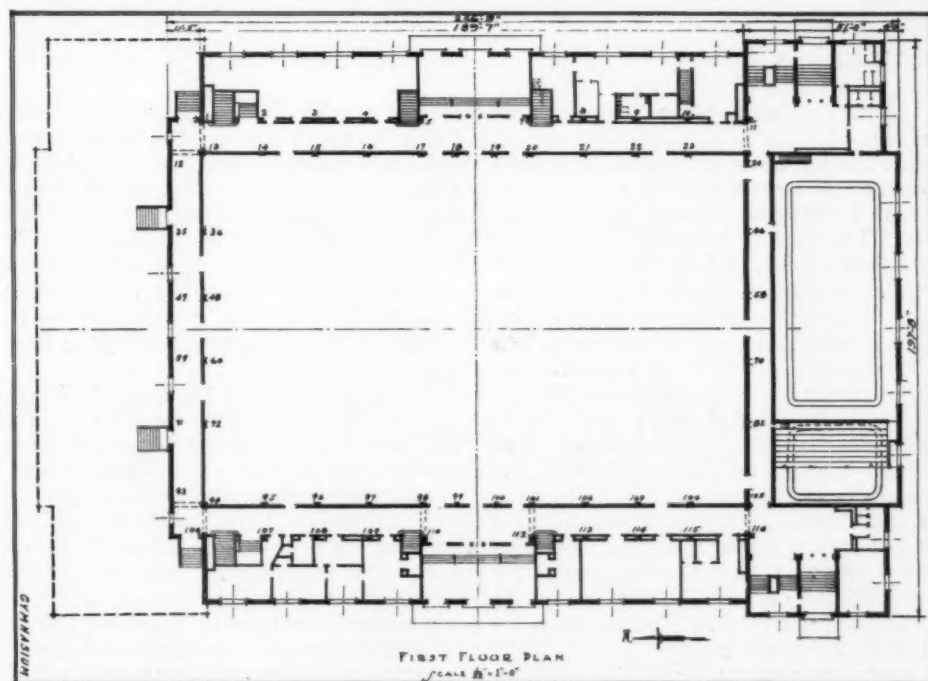
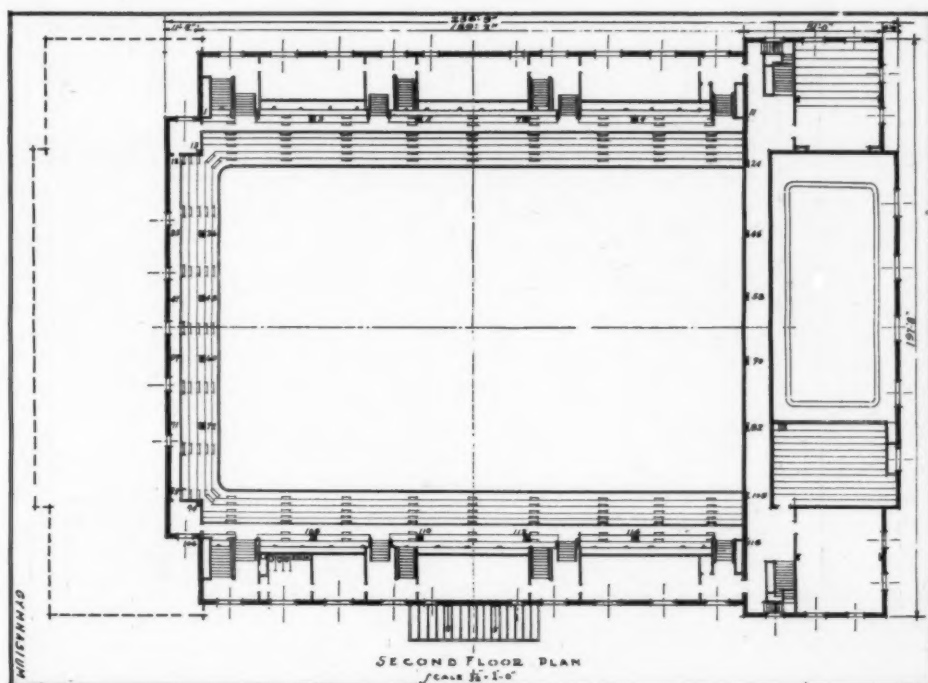
ST. ISAAC'S CATHEDRAL, PETROGRAD, RUSSIA
FROM THE WATER COLOR BY THEODORE DE POSTELS



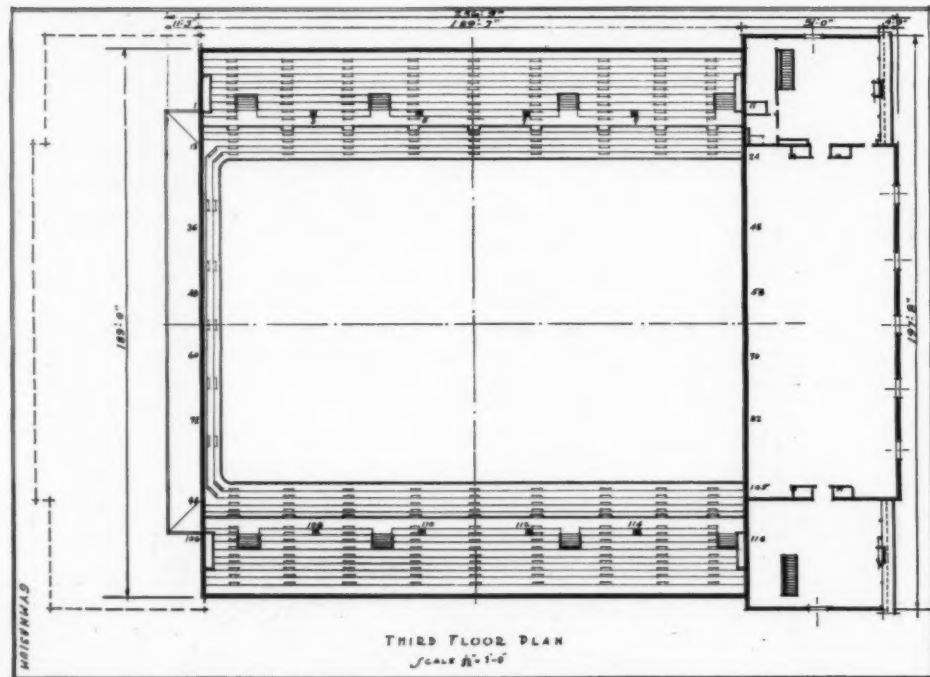
GYMNASIUM FOR UNIVERSITY OF ILLINOIS, URBANA, ILL.
CHARLES A. PLATT AND JAMES M. WHITE, ASSOCIATED ARCHITECTS



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GYMNASIUM FOR UNIVERSITY OF ILLINOIS, URBANA, ILL.

CHARLES A. PLATT AND JAMES M. WHITE, ASSOCIATED ARCHITECTS

THE University already has a fully equipped gymnasium. This one is to supplement the existing one, being designed so that it may be used for basketball games and as a general university auditorium. It may also be used for large social functions. The exterior of the building is of Danville cloister brick, laid Flemish bond, with a tight joint, and trimmed with Bedford stone. The roof is graded unfading green roof slate with a maximum thickness of one inch. The visible sheet metalwork is of lead-covered copper. The roof slab is a poured gypsum slab over a centering of wood fibre board, used for its sound-absorbent qualities. The building is of fireproof construction except the structural part of the roof.

The main room of this gymnasium has a floor of 189 by 122 feet with a gallery on three sides and the room on the level of the top of the balcony is 189 feet square. The seating capacity for a basketball game is 7,000. The balcony opera chairs seating 3,000 persons allow $17\frac{1}{2}$ by $28\frac{1}{2}$ inches space per person. The knock-down bleachers, which accommodate 4,000 people, stand on the gymnasium floor and allow 17 by $23\frac{1}{2}$ inches per person.

The playing floor is lighted by three skylights having an area equal to one-fifth the area inside the balcony lines. For artificial illumination, 1,000-watt units with special deep bowl reflectors are used, designed to give a minimum of ten foot candles on the playing floor. During a varsity basketball game, all of the lights except those directly over the playing floor are turned off. This is of great advantage to the players as they do not face any glare from the sides.

It is possible to play four basketball games at one time on the floor of the main room when the temporary bleachers are removed. Fourteen baskets for basketball are available in addition to four more baskets for free-throw practice.

The first floor rooms on the west side of the building are used for the offices of the athletic association, instructors, coaches, etc. The corresponding rooms on the other side of the building are used for training quarters. The second floor rooms are used for classrooms and offices. There is a basement under the entire building which is lighted around the outside where shower and locker rooms are located; in the center is a cinder track and space for handball purposes.

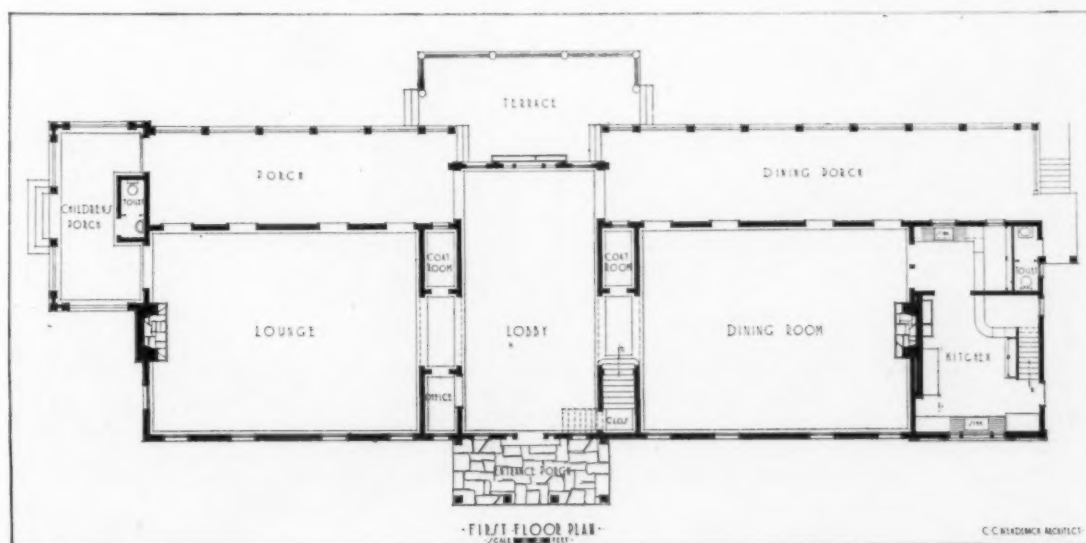
A GROUP OF BUILDINGS OF MODERATE COST

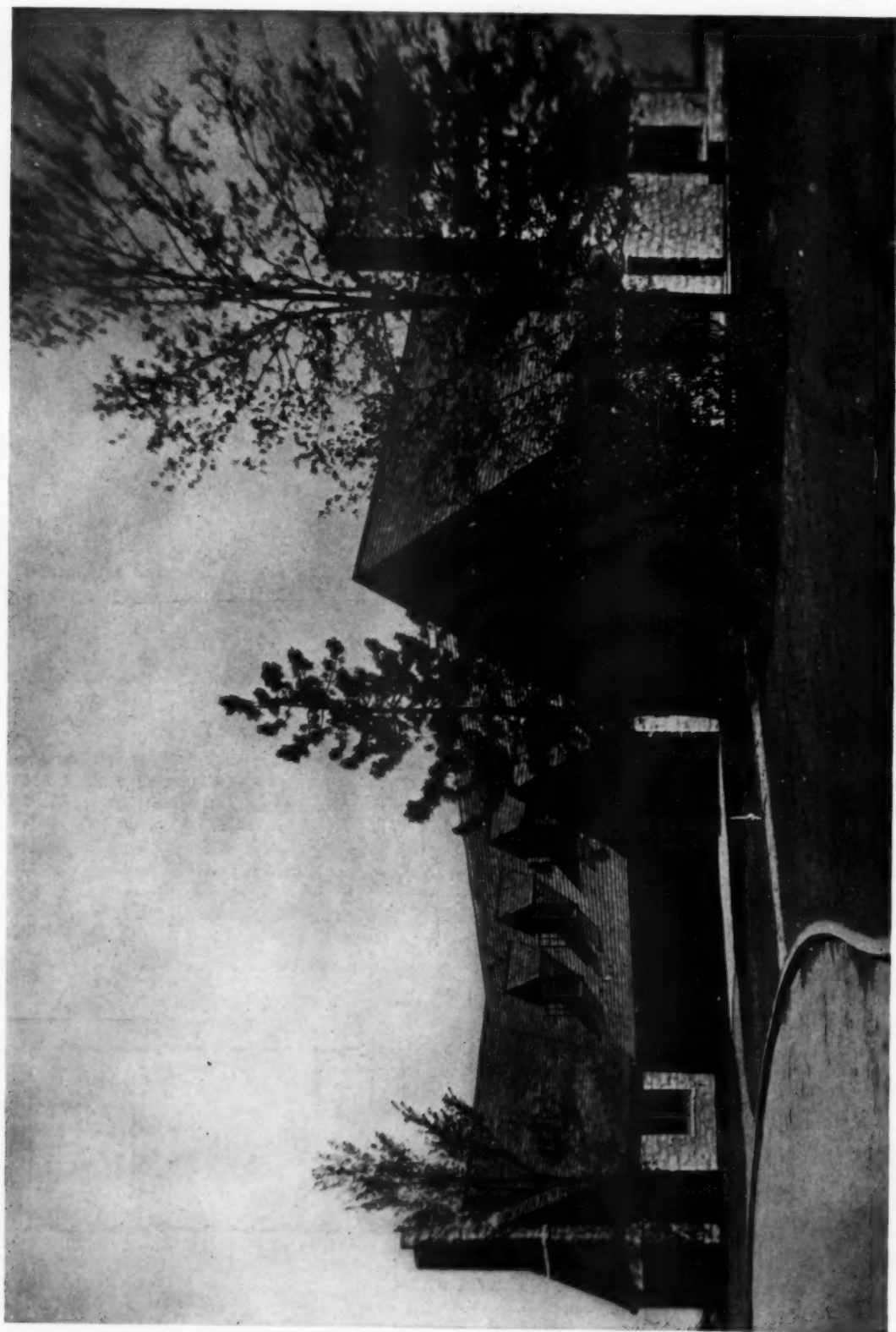
WITH DETAILS OF CONSTRUCTION, MATERIALS AND CUBIC COST



TOKENEKE CLUB, DARIEN, CONN.—C. C. WENDEHACK, ARCHITECT

THE SPECIFICATIONS CALL FOR A FRAME AND STUCCO CONSTRUCTION WITH ROOF OF WOOD SHINGLES AND CHIMNEYS OF STONE. THE CLUB IS LOCATED ON THE EDGE OF THE WATER AND IS PRIMARILY A YACHT CLUB. THERE IS SPACE IN THE BASEMENT FOR LOCKERS, SHOWERS, ETC. TENNIS COURTS ARE ALSO LOCATED ON THE GROUNDS





OSAGE COUNTRY CLUB, ST. LOUIS COUNTY, MO.—BEVERLEY T. NELSON, ARCHITECT

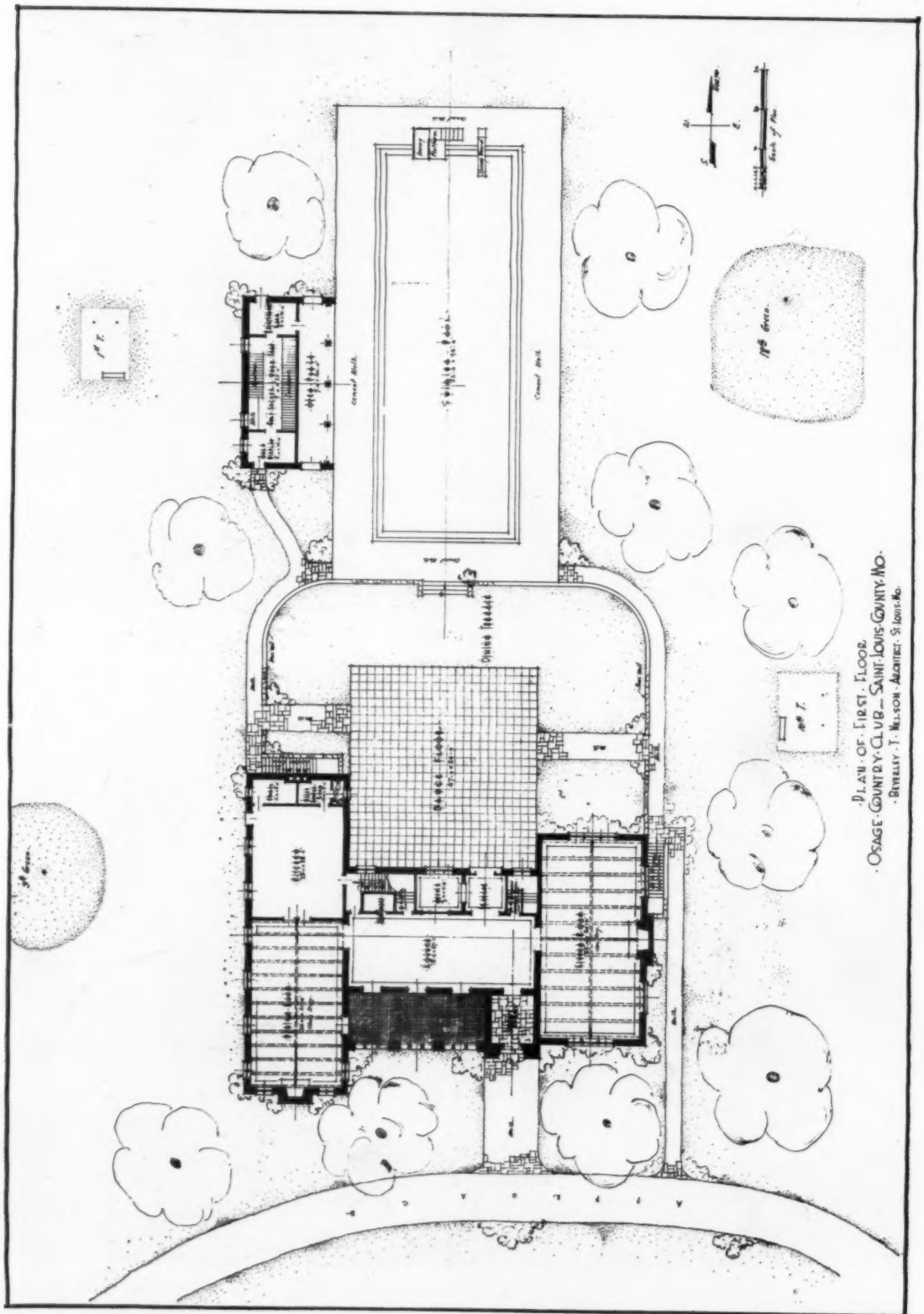


ENTRANCE DETAIL



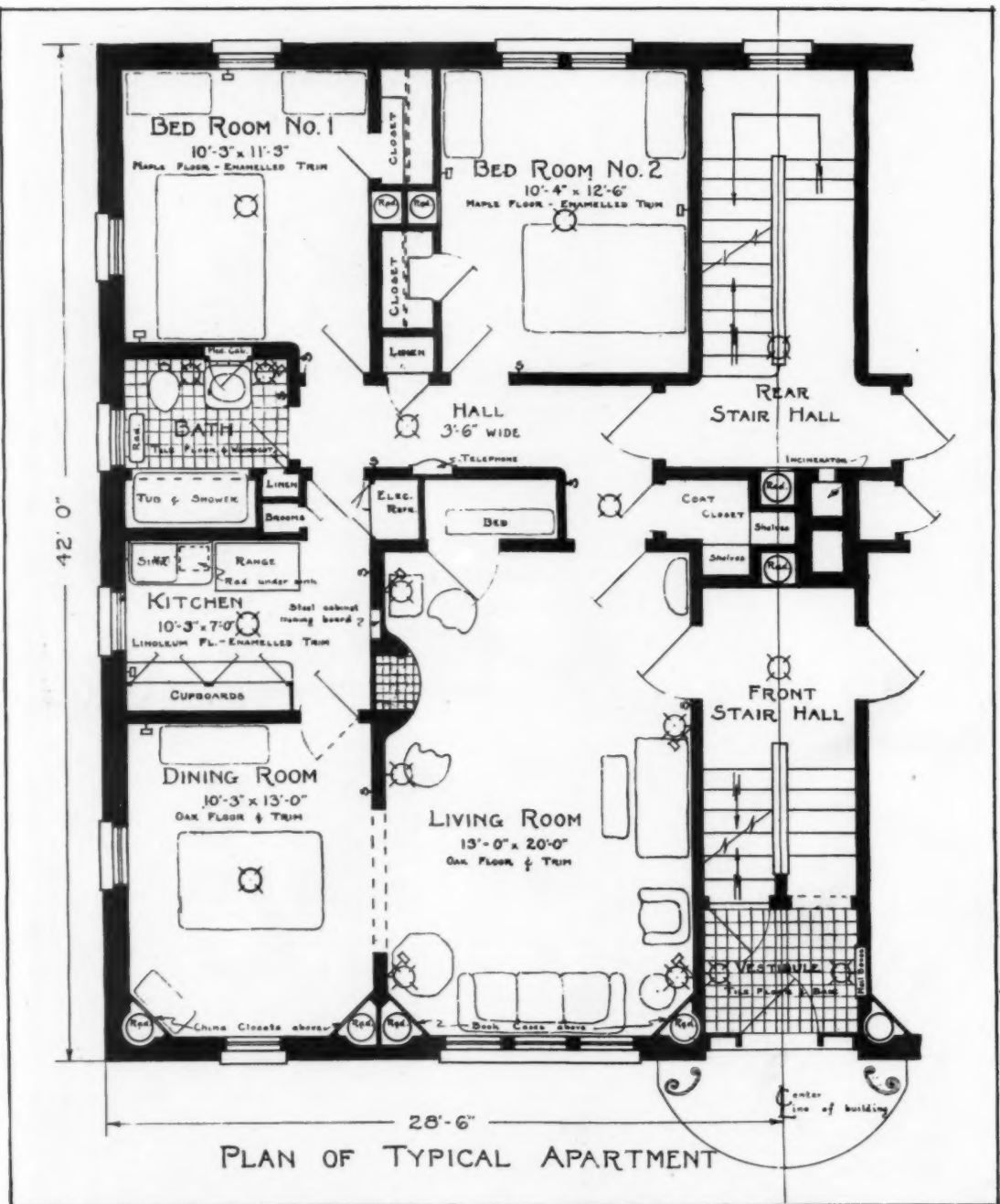
THE LOCKER HOUSE

OSAGE COUNTRY CLUB, ST. LOUIS COUNTY, MO.—BEVERLEY T. NELSON, ARCHITECT





APARTMENT HOUSE IN MINNEAPOLIS, MINN.—ARTHUR DAHLSTROM, ARCHITECT



APARTMENT HOUSE IN MINNEAPOLIS, MINN.—ARTHUR DAHLSTROM, ARCHITECT

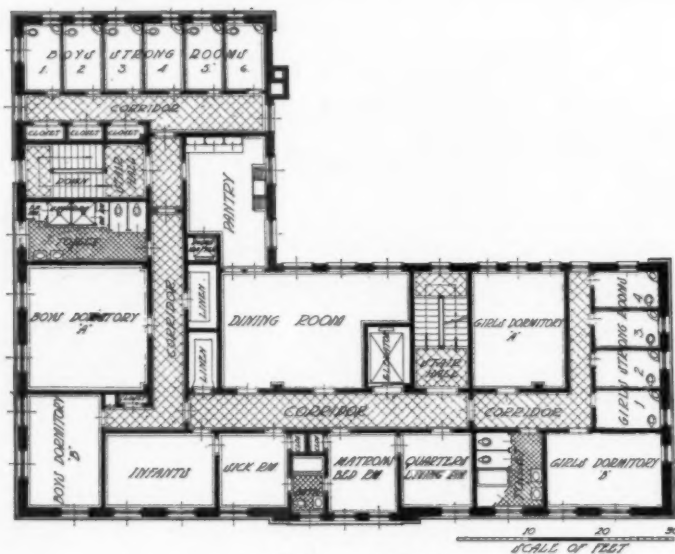
A FRAME CONSTRUCTION WITH EXTERIOR WALLS OF BRICK VENEER OVER A BASE OF KASOTA STONE. STONE IS ALSO USED FOR THE EXTERIOR TRIM. INTERIOR WALLS ARE FINISHED IN PLASTER AND PAPERED, EXCEPT IN THE VESTIBULE AND ON THE CHIMNEYS, WHICH ARE TREATED IN A ROUGH TEXTURED PLASTIC FINISH. FLOORS ARE OF WOOD, WITH THE EXCEPTION OF THE VESTIBULE AND BATHS WHERE TILE IS INSTALLED, AND LINOLEUM IS LAID IN THE KITCHENS. THE BUILDING WAS ERECTED IN 1926 AT A COST OF 33 CENTS PER CUBIC FOOT



JUVENILE AND DOMESTIC RELATIONS COURT BUILDING, RICHMOND, VA.

CARNEAL & JOHNSTON, ARCHITECTS

IN PLANNING THIS BUILDING IT WAS THOUGHT DESIRABLE TO ARRANGE FOR THE COURT ROOM AND OFFICES FOR THE COURT STAFF ON THE FIRST FLOOR, AND TO PROVIDE DETENTION QUARTERS FOR THE WARDS OF THE COURT ON THE SECOND AND THIRD FLOORS. THERE IS COMPLETE SEGREGATION OF THE RACES AND SEXES. THE WHITE CHILDREN ARE ON THE SECOND FLOOR WITH AN ENTRANCE FROM THE CLAY STREET SIDE OF THE BUILDING; THE COLORED CHILDREN ARE ON THE THIRD FLOOR WITH ENTRANCE FROM THE TWELFTH STREET SIDE. QUARTERS FOR THE GIRLS OF EACH RACE ARE PROVIDED IN THE WEST END OF THE BUILDING, AND FOR THE BOYS IN THE EAST END, WITH DINING ROOM, KITCHEN AND MATRON'S QUARTERS BETWEEN. THE KITCHEN IS LOCATED ON THE SECOND FLOOR WITH DUMBWAITER SERVICE TO THE COLORED DINING ROOM ON THE THIRD FLOOR AND FROM THE GENERAL KITCHEN STORAGE IN THE BASEMENT. A CENTRALLY LOCATED CLOTHES CHUTE CONVEYS THE SOILED LINEN TO THE LAUNDRY IN THE BASEMENT. THE BUILDING IS ENTIRELY FIREPROOF, BEING OF CONCRETE FLOOR SLABS AND COLUMNS AND BRICK CARRYING WALLS. THE FINISHED FLOOR IS OF INCOMBUSTIBLE MATERIAL AND THE INTERIOR PARTITIONS ARE OF GYPSUM BLOCK. THE EXTERIOR IS OF RED BRICK TRIMMED WITH STONE. THE COST OF THE BUILDING, INCLUDING HEATING AND ELECTRIC WIRING, WAS APPROXIMATELY \$100,000.00, GIVING A UNIT COST OF 42 CENTS PER CUBIC FOOT. THE BUILDING HAS A FRONTAGE OF APPROXIMATELY NINETY FEET AND IS SEVENTY-FIVE FEET DEEP, LOCATED ON A CORNER LOT. THE BUILDING LINE IS ABOUT TWELVE FEET BACK OF THE SIDEWALK. BEING L-SHAPED, THERE IS LIGHT ON ALL SIDES. THE DESIGN OF THE BUILDING IS DIGNIFIED IN KEEPING WITH ITS PURPOSE, AND THERE IS PRACTICALLY NO ORNAMENT INTRODUCED TO DETRACT FROM THE SERIOUSNESS OF ITS INTENT



TYPICAL FLOOR PLAN



FIRST FLOOR PLAN

JUVENILE AND DOMESTIC RELATIONS COURT BUILDING, RICHMOND, VA.

CARNEAL & JOHNSTON, ARCHITECTS



MECHANICAL REFRIGERATION FOR DOMESTIC USE

THE primary function of refrigeration for domestic use is the preservation of foodstuffs. Before the question of refrigeration can be properly understood, it is necessary to be familiar with the causes of food spoilage, such as the formation of molds, yeast and bacteria. Science has found that within the limits of 50° F and 150° F the growth of molds, yeasts and bacteria is most prolific. While they can be killed by pasteurization, which requires subjecting them to a temperature of 140° to 160° F, this procedure is not generally feasible except in laboratories and especially equipped commercial plants. Below 50° F their growth is prevented or retarded. This condition can be readily secured through refrigeration. A mean temperature of 45° F has been determined by practical tests as satisfactory to preserve foodstuffs in good condition without affecting their food value or taste.

Refrigeration may be accomplished in various ways such as the method of evaporation used by the ancients, the use of a spring house or well, ice or snow, or by mechanical refrigeration.

To appreciate the mechanics of refrigeration the physical laws of heat or thermodynamics must be understood, for refrigeration is largely a matter of heat removal to produce a lowered temperature.

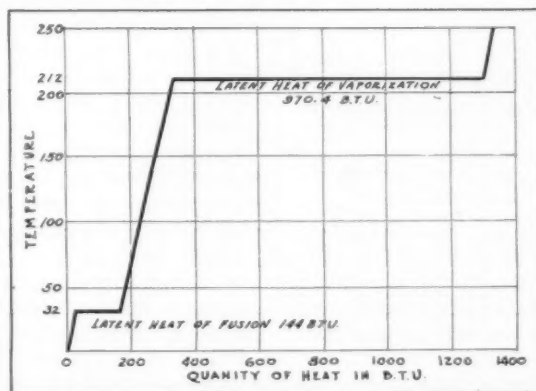
The kinetic theory of heat assumes that heat is always present above absolute zero or about 500° F below zero. Heat is a form of energy and as such must be measured by the effect it produces. The commonly accepted unit of measurement is the British Thermal Unit which to all practical purposes is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit. Temperature as measured or indicated by the thermometer is the measure of apparent or sensible heat. It is not a measurement of heat energy. Heat and temperature are two terms that are frequently confused. Under natural conditions

heat flows from a low level to a higher level; and from a hot body to a cooler body, always seeking to maintain a balance or equality.

A substance may exist in one of three states; as a solid, liquid or gas, depending upon the amount of heat contained in it. In changing a body from a solid to a liquid or a liquid to a gaseous or reverse state, heat must be expended and absorbed or removed from the body. In changing a substance from one state to another, a certain amount of heat energy is required to effect this change, and is known as latent heat. This is termed the "latent

heat of fusion" or the "latent heat of vaporization" depending upon the change of state which occurs. Latent heat, especially the latent heat of vaporization, is an important element in the process of refrigeration.

Water is perhaps the most familiar substance in which the laws of heat may be easily observed. When heat is applied to ice, the temperature is raised and the ice begins to melt at 32° F. Continued application of heat will cause



HEAT TEMPERATURE DIAGRAM SHOWING AMOUNT OF HEAT REQUIRED PER POUND TO HEAT ICE FROM 0° TO 32° F; TO MELT THE ICE; TO HEAT THE WATER FROM 32° TO 212° F; TO EVAPORATE THE WATER; AND TO HEAT THE STEAM FROM 212° TO 250° F

no change in temperature of the ice water until the water has entirely passed from its solid to liquid state. Up to 32° F the heat applied to the ice has been used to raise its temperature. At 32° F the heat is utilized to change the state of the water or, has become latent heat. At 212° F the water will "boil" and pass into a gaseous or vapor state, commonly referred to as steam. Continued application of heat to the water will not change the temperature, however, but simply continue the vaporization process. In the change from water to steam, an example of latent heat is again seen. If the pressure on the water were lowered, the temperature at which it would boil or vaporize would also be lowered and fewer heat units would be required to convert the water from a liquid to a gas. If the gas or steam were confined in an enclosed vessel,

and continued to be heated, pressure would be developed, the amount of which would depend upon the quantity and temperature of the steam.

These physical laws of heat practically applied have made possible large mechanical refrigeration systems and small units suitable for use in houses, apartments and numerous commercial buildings where a relatively small amount of refrigeration is

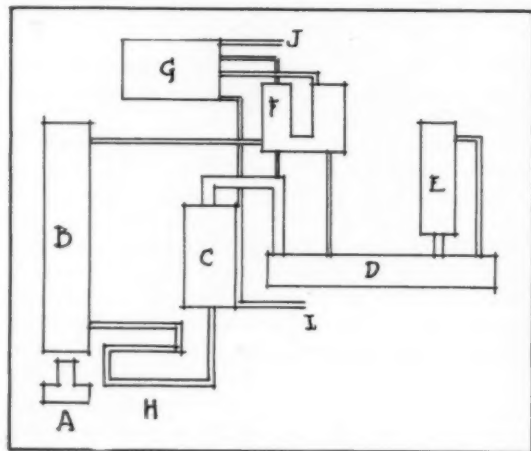


DIAGRAM OF TYPICAL ABSORPTION TYPE REFRIGERATING MACHINE

- | | |
|----------------------|----------------------|
| A—HEATING ELEMENT | G—CONDENSER |
| B—GENERATOR | H—HEAT EXCHANGER |
| C—ABSORBER | I—COOLING WATER |
| D—GAS HEAT EXCHANGER | INLET |
| E—EVAPORATOR | J—COOLING WATER OUT- |
| F—RECTIFIER | LET |

required. While an ice producing plant may be referred to in terms of the number of pounds or tons of ice produced, the capacity of a refrigeration machine has a somewhat different meaning. The "ice melting" capacity of a machine does not mean that it will make that quantity of ice. In this case it means that the cold produced is equivalent to the melting of the stated weight of ice at 32° F into water at the same temperature.

Mechanical refrigeration systems are a practical application of the latent heat of vaporization brought about by alternately liquefying and vaporizing a liquid, known as a refrigerant, that will "boil" below refrigeration temperatures. The change in state of this liquid is secured by either forcing the refrigerant through the cycle by means of a compressor or through the agency of heat. The first method results in what is known as the compression system. The second is known as the absorption system. In either type it is through the vaporization of the refrigerant in a chilling or cooling unit placed in the refrigerator and the incident removal of heat from the refrigerator box that the desired temperatures are maintained.

The compression system consists of a compressor or pump driven by an electric motor; a con-

denser which may be either air or water cooled; and a cooling unit, evaporator or expansion tank which is placed in the ice compartment of the refrigerator. The connection (pipe line) between the compressor, condenser and cooling unit, is known as the "high side" and the connection (pipe line) between the cooling unit (after the refrigerant has expanded) and compressor, is known as the "low side." Temperature control is maintained by either a thermostat or pressure control diaphragm, the operation of which starts or stops the motor. The admission of the refrigerant into the cooling unit or evaporator is accomplished by either a float valve or an expansion valve. Some types of machines use brine tanks surrounding the cooling unit. These are known as long cycle machines due to the fact that they run for long periods. Machines that do not use brine tanks are known as short cycle machines since they operate at shorter periods. The total running time or current consumption of either the long cycle or short cycle machine is practically the same during a twenty-four hour period, since under normal conditions both require an average running time of eight hours. Evaporation takes place below refrigeration temperature and converts the heat of the refrigerator into latent heat in the vapor. This latent heat is in turn removed in the condenser. In other words, the heat in the refrigerator is absorbed through the cooling element and transferred to the water or air cooling medium in the condenser. The process is one of removing the heat of the refrigerator at a low temperature and disposing of it at a higher temperature.

The refrigerants in common use are sulphur dioxide, methyl chloride, ethyl chloride, isobutane and ammonia. Ether and carbon dioxide may also be used. A satisfactory refrigerant should possess a number of desirable properties. Among these are the following: high latent heat and high ratio of latent heat to specific heat of the liquid; relatively low boiling point; a condensing temperature at relatively low pressure; non-inflammable, non-explosive and non-injurious to health. Other considerations of the refrigerant are cost, stability or resistance to deterioration under working conditions, chemical affinity or reaction between the refrigerant and lubricants; and non-corrosive action on metals. The various refrigerants now in use vary in their properties. These characteristics are taken into account by the designing engineers and machines are designed to use the refrigerant selected as advantageously as possible.

The condenser may be cooled by air or water. The method determined upon by the designing engineer is a matter of obtaining efficient and economical operating results as required by the refrigerant used and general mechanical design. This feature, however, has an important bearing on the installation of refrigerating units, for which allowance must be made in the preparation of plans for

new buildings. Where the water cooled type is selected a cold water supply line must be brought to the refrigerating unit. In addition a drain line, connected with the house drain, is required to remove the condenser cooling water. Practically all mechanical refrigerating units have eliminated the usual refrigerator drain since a defrosting pan readily serves the same purpose. From time to time the chilling unit or evaporator placed in the cold chamber of the refrigerator becomes coated with "frost" due to moisture in the circulating air freezing on the cold surfaces of the evaporator. When this frost becomes $\frac{1}{2}$ inch thick it acts as a heat insulator and interferes with the normal operation of the system and must be removed. This is accomplished by stopping the apparatus long enough for the frost to melt off into the defrosting pan.

Air cooled condensers have the advantage of lower initial cost, lower installation cost, and result in a simplified machine that can be readily moved about. They must usually, however, operate at higher condensing pressures than the water cooled type, resulting in a somewhat lower efficiency. Various methods of application of both the air and water cooling methods are found in equipment of different manufacture.

The evaporator placed in the cooling chamber of the refrigerator may be dry or flooded or a combination of both. From the standpoint of results and operation, each system has its own particular advantage. Evaporators may be further differentiated as "direct" or "indirect." The direct type consists of pipes or tubing directly exposed to the air. The indirect type consists of pipes or tubes immersed in a small brine tank. Either system has its individual minor advantages and disadvantages. The location of the evaporator in the cooling compartment is perhaps of greater importance than whether this part of the equipment is direct or indirect, dry or flooded. There should be ample clearance of about 3" all around the sides and bottom of the evaporator. There should be no obstruction to prevent the circulation of air through the refrigerator. Porcelain shields are furnished by most manufacturers to prevent the storage of foodstuffs under the cooling unit.

Practically all compressor type refrigeration machines are driven by a small electric motor either belt, gear or direct connected to the compressor. Here again the method selected by the designing engineer is largely governed by the design of the mechanism as a whole. The panel box of the electric system should provide a separate circuit to supply current to the electric motor. The electric wiring plans should indicate that this circuit is to be brought as near as possible to the motor location and terminated in a fused safety switch to which the refrigerator machine contractor can connect the motor service wires.

While large commercial installations are often manually controlled, it is common practice to make

small types automatically operated to maintain refrigerator temperatures as nearly uniform as possible. Automatic controls are usually one of two types, thermostatic or pressure. A thermostat placed in the brine tank, when one is used, or in the refrigerator box, is arranged to open or close the electric circuit to the operating motor between fixed temperature limits. The pressure control is actu-

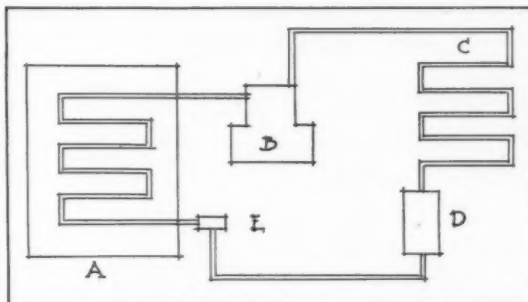


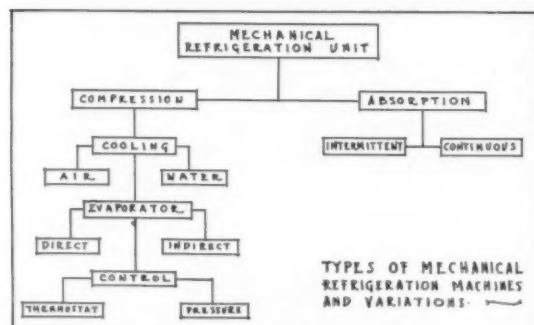
DIAGRAM OF TYPICAL COMPRESSION REFRIGERATING SYSTEM: A—EVAPORATOR OR CHILLING UNIT, B—COMPRESSOR, C—CONDENSER, D—RECEIVER, E—EXPANSION VALVE

ated by pressure in the evaporator which is dependent upon the temperature in the refrigerator. Fluctuating temperatures or pressures in the evaporator cause the operation of a small bellows or diaphragm which in turn opens or closes a switch controlling the operating motor. The temperature of any refrigerator varies about 10° between the top and bottom. The food compartments should never exceed 50° F nor fall below 40° F. As stated before, the refrigerator should be maintained at a mean temperature of 45° F.

In the absorption systems ammonia is generally used as the refrigerant because of its affinity for water. The refrigerant is heated, and the resulting gas passes into the cooling unit where it expands and is then sucked back into the receiver by a vacuum created in the system. There are two types of absorption refrigeration systems—continuous and intermittent. The continuous type utilizes a small gas flame for giving small continuous refrigeration, while the intermittent uses a pilot gas flame continuously and a larger flame at intervals giving intermittent refrigeration. The small amount of heat needed by the absorption machine, makes possible the use of manufactured, natural, compressed or bottled gases, electricity, or kerosene, as a source of heat for operation.

Small machines of both the continuous and intermittent absorption type are now manufactured. In either type ammonia, hydrogen and distilled water are employed as the refrigerant. The heating element (gas, electricity, or kerosene) heats a mixture of ammonia and water in the generator. Ammonia gas is liberated and is condensed to liquid ammonia as it passes through the condenser. The liquid ammonia passes to the evaporator where it evaporates

in an atmosphere of hydrogen. The evaporation process absorbs heat from, and thus cools, the refrigerator. The mixture of hydrogen and ammonia is conducted to the absorber, where the ammonia is absorbed by water. Hydrogen is insoluble and goes back to the chilling unit, while the ammonia and water go back to the generator to continue the process. The operation is automatically controlled



by means of a device that regulates the flow of heat required for operation. Absorption type machines are water cooled.

The installation of absorption type machines requires a gas or electric connection, depending upon the heating element used; a water connection, and a waste line connection. Outlets for these connections should be extended to a point near the refrigeration machine.

The construction of the icebox or refrigerator is an important phase of automatic refrigeration. A poorly constructed and insulated box can only be maintained at a uniform temperature with difficulty, if at all. In any event, the heat transferred through the walls of an inferior box will probably require almost constant operation of the mechanical equipment to maintain the desired temperature and result in an excessive operation charge. To obtain minimum operation cost with maximum efficiency, it is highly important that the refrigerator be of first class construction and properly insulated without reference to the particular apparatus selected to remove the heat from the box. The construction of refrigerators now manufactured varies to a considerable degree. The design of the wall and door construction must be such that maximum insulating results are obtained with economy. The number of layers of insulating materials, air spaces, etc., are of less moment than the question of ultimate results. The outside casing should be pleasing in appearance and the inside lining designed for ease in maintaining the refrigerator in a clean condition.

The American Engineering Standards Committee is at present considering the matter of establishing specifications and standards for household refrigerators. A recent bulletin issued by the committee states that, if necessary, a number of care-

fully defined grades may be established. The standards would probably cover the subjects of insulation, size of cooling compartment in relation to food compartments and mechanical design of refrigerator door handles. The American Society of Refrigerating Engineers also has under consideration the standardization of refrigerator box design and sizes.

At present there are no well established rules governing the selection of the correct size refrigerator to serve a family of a given number of persons. Refrigerators are at present made in numerous shapes and sizes. In making space allowance on plans it is necessary to select a particular refrigerator and determine the space required. This is especially true of the built-in unit.

Practically all domestic refrigerators may be divided into one of two groups "self contained" or "ordinary refrigerator." The self contained refrigerators have a compartment either in the top or bottom of the refrigerator for the mechanical unit, while in the "ordinary refrigerator" the mechanical unit is located outside of the refrigerator generally in the basement or in an adjoining room. The cooling units or evaporator units are placed in the ice compartment of the refrigerator. However, in some types of absorption machines the cooling unit and mechanical unit are combined and placed in a compartment built into the side of the refrigerator.

Refrigerator machines may be classified into three general groups, as domestic; semi-commercial and commercial. The domestic group is composed of machines used for individual house installation. The semi-commercial group includes apartment house and store refrigeration equipment. Ice making plants comprise the third or commercial group.

Self contained units or ordinary refrigerator types compose the domestic group. The semi-commercial types consist of a large mechanical unit connected to about ten cooling units placed in the refrigerators in the various apartments. This arrangement is referred to as the multiple unit system. The commercial system is made up of a large unit, usually circulating brine to the desired location where refrigeration is required.

For apartment house use the domestic (single unit) or semi-commercial (multiple unit) group are usually selected. Both systems have their advantages and disadvantages. The initial cost of the multiple unit system is usually less than the single unit, but the operation cost may be higher. The single unit operates as required by the refrigerator it serves and can be connected to the gas or electric meter as the case may be, serving individual apartments. Each tenant thus pays for the exact amount of refrigeration used. The use of the multiple unit system requires that the cost of refrigeration be included in the rental of the apartment. Apartment vacancies and carelessness of tenants may result in uneconomical operation of the refrigeration ma-

chine of the multiple unit system. The single unit system usually requires the placing of the mechanical unit in the apartment, while the multiple unit system places the operating machine at some remote location. Single units with the mechanical equipment located in the apartment avoid the necessity of piping the refrigerant from the machines to the refrigerators.

General cost comparisons between different types of systems and between mechanical refrigeration and ice are not practical, for such comparisons must be based upon local conditions in every instance. In addition to the local factors involving cost of ice, electric current or gas, and in the case of water cooled equipment the cost of water, the insulation efficiency of the icebox and the temperature of the room in which it is placed must be taken into consideration. In comparing the cost of ice and mechanical refrigeration, owing to the cost of the machine, the factor of convenience and saving in food spoilage through more uniform temperatures must also be considered. Individual operation of equipment may also enter into the question of cost in exactly the same manner as it enters into the cost of operation of a heating plant. Frequent opening of the icebox doors, placing hot foodstuffs in the box or leaving the refrigerator door open, all contribute to added cost of operation. For the purpose of cost comparison between manufactured ice and refrigeration furnished by electrically operated machines, experience indicates that an average ratio is 1 kilowatt hour to 15 pounds of ice or in other words, electric current at 5 cents per kilowatt hour is approximately equivalent to ice at $33\frac{1}{3}$ cents per 100 pounds.

The value of adequate service on the part of the manufacturer is of primary importance in the selection of any mechanical refrigeration equipment, because all mechanical equipment requires occasional servicing. The promptness with which this servicing is carried out is a great factor in maintaining dependable refrigeration.

In determining upon any particular mechanical refrigerating system, the following should be considered.

1. Purpose for which refrigeration is to be used
2. Space required by refrigerator and equipment

3. Capacity required
4. Safety and dependability of machine
5. Mechanical construction of machine
6. Method of cooling condenser
7. Does it conform to local municipal regulations?
8. Temperature variation and accuracy of control

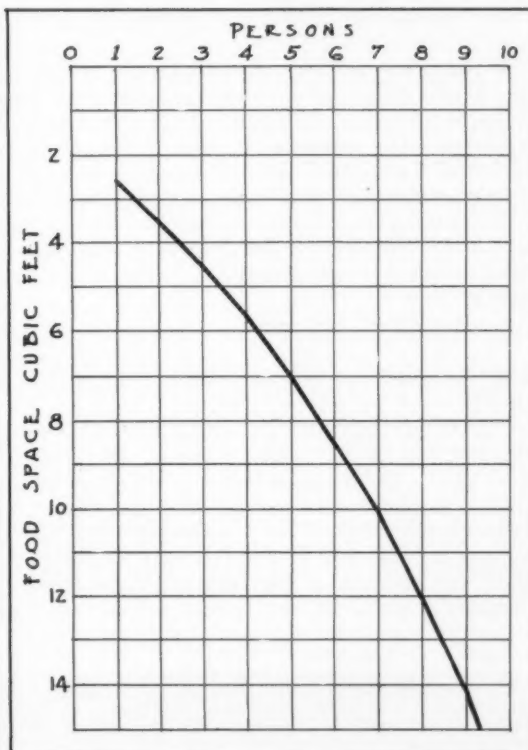


CHART FOR DETERMINING THE APPROXIMATE SIZE OF REFRIGERATOR REQUIRED

EXAMPLE: FOR A FAMILY OF SIX PERSONS A REFRIGERATOR HAVING 9 CU. FT. OF FOOD SPACE WILL, UNDER ORDINARY CONDITIONS BE AMPLE IN SIZE. EIGHT CUBIC FEET IS A TRIFLE SMALL.

9. Operating cost
10. Is operation quiet?
11. Construction insulation and finish of cooling box
12. Local service facilities

HOW WOULD YOU SOLVE THIS PROBLEM?

A SECOND story porch covered but open on two sides is located over a living room having a plastered ceiling. The house is of frame construction. How should the porch floor be constructed to

- (a) safeguard against leaks damaging the lower story?
- (b) not require unusual frame construction?
- (c) provide a suitable and presentable porch floor?

A subscriber to THE AMERICAN ARCHITECT has recently submitted the above problem to us for advice and solution. There are apparently a number of possible solutions. If any of our readers who have been called upon to solve the same or similar conditions will forward their solutions or suggestions to the Service Department of THE AMERICAN ARCHITECT, we shall be glad to publish the replies for the benefit of all readers of this journal.

PLASTIC MAGNESIA CEMENT FOR FLOORING AND WAINSCOTS, U. S. GOVERNMENT SPECIFICATION

U. S. Government master specification No. 445 covering Plastic Magnesia Cement (magnesia-oxychloride) for use as flooring, bases, wainscots, etc., has been issued as circular of The Bureau of Standards No. 323. This specification has been officially promulgated by the Federal Specifications Board for the use of Government departments. Circular No. 323 contains 16 pages and may be ob-

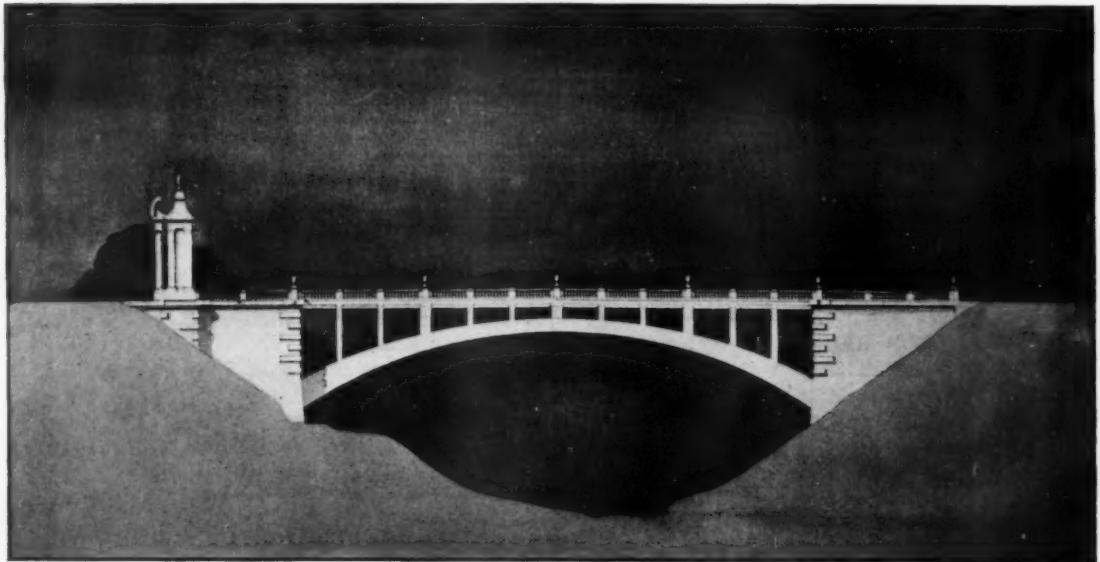
tained from the Superintendent of Documents, Government Printing Office, Washington, D. C. Price, 5 cents per copy.

LIGHTING GLASS FILING FOLDER

THE Gleason-Tiebout Glass Company has recently prepared a filing folder for the convenient use of architects in filing the advertising literature of this company. The folder is indexed with the A. I. A. Standard Construction Classification Number 31 f 23. Engineering data applying to the subject of illumination is printed on the folder. This data will be found convenient for determining the proper spacing of electric outlets and the required wattage. We are advised that this filing folder, as well as other valuable literature relating to the subject of illumination, will be sent to any architect upon request.

UNITED STATES GOVERNMENT MASTER SPECIFICATIONS

AN alphabetical index and numerical list of U. S. Government Master Specifications promulgated by the Federal Specifications Board has been issued by the Department of Commerce, Bureau of Standards, as Circular No. 319. This index is complete to June 10, 1927, and supersedes miscellaneous publication No. 73. Instructions for ordering specifications are given. This index may be obtained from the United States Government Printing Office, Washington, D. C.



HETHS RUN BRIDGE, ENTRANCE TO HIGHLAND PARK, PITTSBURGH, PA.

STANLEY L. ROUSH, ARCHITECT

THE EFFECT OF FOREIGN COMPETITION ON THE BUILDING INDUSTRY

By E. J. MEHREN, VICE PRESIDENT, MCGRAW-HILL COMPANY

TEN years ago we witnessed one of the great catastrophes of history. A complex machine, the result of generations of struggle in Europe to improve the material welfare of men and favor their spiritual and intellectual growth, was almost destroyed. Millions of men, women and children were brought to hardship and suffering. Now we are witnessing the rebuilding. A hopeless task it seemed. But the living had to live and here with courage, there with despair, began the task. Goodly progress has been made. Does this new industrial Europe now in the making hold any lessons for us of the building industry?

Two European developments, in particular, hold special interest for us. The first is the drive to reduce production costs, in progress all over Europe, and second, the new relation between employer and employee. Both of these developments spring from one source, the realization throughout Europe that her economic difficulties spring from lack of purchasing power. Her industrial machine is ready and anxious to work. But buyers are lacking. Her own people and those of many other countries have a diminished purchasing power. There are evidently two ways to restore this power—first, to lower prices and thus enable the salary and the wage dollar to buy more goods, and, second, to increase the number of salary and wage dollars. If profits are reasonable, selling prices can be lowered only by reducing production and distribution costs. These solutions, evidently, are those which we have accepted in America in recent years.

The progress in both cost reduction and labor relations is most notable in Germany, and I shall refer principally, therefore, to German developments. First, let us consider Germany's drive to reduce production costs. Under the name "rationalization" every conceivable means of cost reduction is being studied. By "rationalization" they mean the scientific organization of labor, simplification of varieties, standardization of materials, parts and finished products, elimination of industrial wastes, and the consolidation of industries. These methods sound familiar to us. In almost all of them we have led and are leading. This the Germans fully concede. The significance of the movement in Germany is the intensity with which their studies are being prosecuted. Under the spur of necessity and with traditional thoroughness, the Germans may outdistance us, their teachers. If they apply American methods, with American machinery, and their lower wage, we can readily see the competitive advantage they will have, for a time at least.

A few minutes' attention to their methods is warranted. The German is a firm believer in Government aid. To encourage research and study in cost reduction methods, he has set up a government trusteeship for the study of economy in production. This body surveys all co-operative research and standardization efforts by industry. If important problems are not under inquiry, it appropriates funds for starting the work. The trusteeship gives the initial push; the industry is expected then to take up and liberally finance the studies.

THE following article consists of extracts from a talk delivered before the New York Building Congress on October 5, 1927. Mr. Mehren was a delegate to the World Economic Conference at Geneva and while abroad attended the International Chamber of Commerce at Stockholm and studied industrial conditions in Italy and Germany. Mr. Mehren's observations of conditions in Europe, as they exist at present, have led him to draw conclusions that are important to the welfare of the building industry as well as to the commercial life of the United States—The Editors.

Before the trusteeship was organized, such inquiries were already widespread; the trusteeship is, therefore, intended to be a guaranty that no worth while area for cost reduction effort remains unexplored. The studies are shot through the whole of industry, and have been extended even into office methods and household equipment. Standards for materials, for finished products, for hand tools; inquiries into methods of doing work; fuel studies; development of apprentice systems—all these are vigorously under way.

The building industry is no laggard in this race for cost reduction. In materials alone there have been erected standards for the whole of Germany on bulk building materials, construction machinery, hand tools, window and door frames, win-

dow sash, stairways, roofing, gutters and downspouts, plumbing fixtures and pipe, rolled shapes and even nails. The purpose in such standardization work is evident; by concentrating demand largely on a few standards, mass production, general stocking of product and lower selling prices are possible. But that is not the end of the cost reduction story. Having adopted standards or arrived at other conclusions the German presses for their adoption, and carries on a persistent campaign both in industry and to the general public. As a result there is a widespread knowledge and rapid acceptance of this cost reduction work, reaching from industrial head even to the housewife.

In the new relationship between capital and labor, Germany is again in the lead. This new relationship shows itself in the solicitude of the employer for the welfare of his employee and in the heartiness with which the worker is co-operating with the cost reduction efforts of industry. The solicitude of the employer for his employee springs not primarily from humanitarian motives, but, as stated before, from the realization that Europe's lack of prosperity springs from the insufficient purchasing power of her people and of those in other lands. It has dawned on the manufacturer that well paid workers are good customers and that good customers keep factories busy. Of course, the manufacturer is not rushing at once to raise wages, but his former resistance to wage increases is tempered by the conviction that his prosperity is tied up with that of his workers. Further, the cost reduction drive works hand in glove with the new labor attitude, for the means to raise wages will come from the savings effected through the cost reduction drive. The worker is looked upon as a good customer, and that implies something more than ability to buy the mere necessities of life. I would say that this development in Germany is but another evidence of the soundness of the American theory of labor relationship.

Here then we have the picture of two leading industrial developments in Europe, and particularly in Germany; first, the intensive cost reduction drive, and second, the new labor relationship. What is the significance to America and what, especially, is their significance for the building industry? Let it be noted, first, that the new labor relationship makes for

the same result as the cost reduction effort and helps lower production cost.

The significance of these efforts lies in the new grip which they give Europe in foreign markets. With Germany under the terrific urge of a lost war, adopting our production methods, often using American machinery and with a lower wage scale, we shall be hard put to it to match her costs. We may, to an extent, keep her out of our own markets by the tariff, but we can meet her in foreign lands only by producing at the world price. No less a student than Dr. Edgar B. Brossard, of the U. S. Tariff Commission, on returning recently from investigations in Europe, stated that we "must expect and prepare for the keenest competition in history for the markets of the United States . . . American industry must produce efficiently and economically in order to meet these renewed efforts to capture this, the largest and richest market in the world." Under these circumstances, American industry must bestir itself to the utmost. Its present leadership in production economy must be maintained, for such economy, tariff or no tariff, is the only sure basis for retaining our trade.

Where does the building industry come in? We are not engaged in foreign trade. We do not build mansions and send them erected and complete to Rio. We do not build hotels to the roof and ship them to Paris or Tokio. In that sense, the building industry is not in foreign trade. But, nevertheless, it is interested in foreign trade, for it places a burden on every shoestring, and typewriter, every machine tool, and electric motor that is shipped across the sea, and on every shoe, or yard of woolen goods or pocket knife made in this country, and that must meet the competition of foreign articles. If that building burden is unduly high, we handicap Uncle Sam; if low, we help him. The building burden on manufactured goods is both direct and indirect: direct in the charge for factory and office buildings; indirect in the rent element in every salary check and in every wage envelope. If home rents are abnormally high, salaries and wages must be raised proportionately, and the cost of goods goes up. If house rents are low, selling prices can be proportionately reasonable.

What are the facts? Has the building industry unduly burdened other industries? Index figures show that the cost of building has risen more in this country since 1913 than have the selling prices of most of the items that enter into our every day life. As against prices in 1913, food prices for the country are up 59 per cent; clothing 65; fuel and light 81; house furnishings 105; building cost 110. In other words, building costs have more than doubled. In New York, building costs are 114 per cent above 1913, so that building costs have risen more in New York than in the United States as a whole. The true picture, then, of the building industry's influence on both foreign and domestic trade is given by the building cost index, for that must be the mark toward which rents will climb if building costs are not cut. Another consideration for us is that some prod-

ucts are cheap now, or at least no higher than in 1913. Automobiles, electric current, and incandescent lamps are notable examples. The industries with such a record are the real helps to Uncle Sam. An equal ambition might well inspire the building industry: to do as well by our country as the best.

It would seem, then, that we are at least in danger of being a handicap to Uncle Sam rather than a help. The vital question is, how much can we lessen the handicap? Can we find a motive or motives that will put our building industry under an economy drive comparable with the cost reduction drive of Germany? They are pressed by necessity. They have made sacrifice and cooperation national slogans.

Europe is arming for the commercial battle. In our ability to meet it, rests our prosperity, your prosperity, my prosperity, the prosperity of everyone in the building industry. Are we in the building industry to work against our own interests? We can be prosperous only when the whole country is prosperous. Further, the motive of self interest should prompt us to inquire whether the public will not punish us if we callously allow our costs to remain out of line. We feel a certain sense of security, because ours is a protected security. Kokomo cannot compete with us. It cannot build the Paramount Building there and ship it glazed, decorated and roofed to New York. But Kokomo can compete with Detroit and St. Louis and Syracuse in building and selling automobiles or rugs or breakfast food or clothing. If a man wants a building in New York, only New York can give it to him. But that protection afforded our industry by the nature of our business is not a guaranty of immunity from public displeasure and discipline. The community is always more powerful than any of its parts. It can administer a severe punishment. It starved the railroads which incurred its displeasure. It forced electric railways by the dozens into receivership. It promises to go to the bottom of public-utility financing and no one can foresee the results.

We need, I believe, a thorough understanding of why building costs are high. Much cost data is available and known to architects, contractors and material men whose business is to know and study costs. But the figures must be spread before the industry as a whole and must be so complete that conclusions can safely be drawn. When one talks of high building costs, there is always the suspicion that he is thinking of labor costs only, for those have been most frequently discussed. Undoubtedly labor costs need to be studied, but so also do the city building code, the state factory laws, the prices of building materials, and the relations between architects and contractors and between the contractors and material dealers. So long as our costs continue to be out of line, so long as other industries show sharp downward price trends and even sell goods at or below the 1913 figure, we shall be challenged by our fellow citizens; the more so in the immediate future when our trade will be challenged by stiff European competition.



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THE LAW AS TO ARCHITECTURE

By CLINTON H. BLAKE, JR., of the New York Bar

LAST month we discussed some of the legal requirements with which it is advisable the practicing architect should be familiar, in the interests primarily of his client. This month a word seems to be in order with respect to some of the statutory requirements with which the architect must be familiar if he is to protect his own interests, entirely aside from any consideration of those of his client.

I have in mind not so much matters of court decisions, such as determinations with respect to the architect's agency and the like, but rather situations having to deal with state statutes or local ordinances which, while not specifically referring to the architectural profession, nevertheless directly affect it.

An excellent example of what I have in mind is the legislation with respect to school districts and boards of education. Take, for instance, the provisions of the New York State Education Board with respect to the rights of a union free school district. An architect dealing with such a district, unless he realize the importance of differentiating between a private individual or corporation, as a client, and a public body, may well run into serious difficulty. Section 310 of the Education Law gives the school district the right to construct schoolhouses and additions thereto when designated by a meeting of the district. Section 314 provides that no board of education may incur a district liability exceeding the amount appropriated by a district meeting, unless the board is especially authorized by law to do so. These sections do not refer specifically to architects, and it is a very simple matter for the practicing architect to be ignorant of them or, if he knows of them, to fail to appreciate their significance. The importance of provisions of this kind to the profession is realized when their application is invoked to prevent a recovery by the architect for the services which he has rendered.

The courts have held for years that, where one deals with a municipal corporation or similar public body, one is assumed to know the extent of its powers and the limitations placed by law upon its powers. As the New York Court of Appeals said in an early decision:

"It is fundamental that those seeking to deal with a municipal corporation through its officials must take great care to learn the nature and extent of their power and authority."

In a more recent case, the same court said that the defendant was obliged at his peril to inquire into the authority of the commissioners to make the contract and was bound to know the limitation of their powers. These decisions are merely

an application of the general rule that municipalities and other public bodies may only act in the special manner which is prescribed by their charters and that, in order to charge them with liability, the provisions of their charters and the general statutory provisions affecting them must be complied with.

If a school district asks an architect for an estimate and the architect gives one and the district then votes an appropriation of a like amount or an amount sufficient to cover the cost, and the architect then proceeds with the preparation of plans and specifications and, on bids being received, it appears that the cost will exceed that which the district has authorized, the architect will not be allowed to recover for the plans and specifications. This is on the theory which we have just discussed, that he is bound to know, in the contemplation of the law, that the erection of the building and his right to recover as against the school district are contingent upon the cost and expense coming within the appropriation made by the district, in view of the provisions of Section 314 of the Education Law, to which I have referred.

The effect of such a situation is substantially the same as if the contract between the architect and the client had contained a definite specified cost for which the building designed could be erected. Ordinarily, as we have seen in other discussions, an architect, if he use reasonable skill and care, may not have his right of recovery defeated because the cost exceeds that which was contemplated, unless it was definitely agreed that he should prepare plans for a building not to exceed a specified cost. By reading into such a situation the provisions of the statute limiting the right of the school authorities to the erection of a building not exceeding the cost authorized by the district, the situation is immediately changed and the architect's recovery may be contingent upon the cost limit being complied with.

In a case such as we have just discussed, the courts have allowed an architect, however, to recover for preliminary studies, where it was shown that he was duly employed by the school authorities to prepare them. If the studies, however, were sufficiently detailed so that it could be established, by proof, that the cost of a building erected in substantial compliance with the studies would exceed the legal limitation or the amount appropriated, it would seem that the architect might well be out of luck with respect to a recovery for the studies as well as for the plans and specifications.

There are many similar statutory provisions which may affect the rights and liabilities of the architect. It would be idle to attempt to detail



CLEVELAND
UNION
TERMINAL
Cleveland, Ohio

REPRODUCED FROM THE ORIGINAL RENDERING THROUGH THE
COURTESY OF MESSRS. GRAHAM, ANDERSON, PROBST & WHITE.

Architects—GRAHAM, ANDERSON, PROBST & WHITE,
Chicago, Illinois.
Contractors—JOHN GILL & SONS, Cleveland, Ohio.

A WALL of the Cleveland Hotel, which was laid up in Carney Cement ten years ago this winter, had to be wrecked for the purpose of tying-in with the new Union Terminal. Mr. Henritze, the brick foreman gave the following account of the operation.

"They started wrecking the brickwork from the roof with chisels and hammers. The mortar was so tough and hard, and had adhered to the brick so well that they had to resort to air

drills, which they found to be the only possible way to make speed. Several of the wrecked panels were thrown down, thinking that they would break when they hit the ground. No brick could be saved on account of the mortar still adhering to the brick."

If any of the walls of the new Union Terminal ever have to be torn down, air drills will again be needed. Carney Cement was used for this mortar—also during freezing weather.

THE CARNEY COMPANY

Cement Makers Since 1883

DISTRICT SALES OFFICES: CLEVELAND, CHICAGO, DETROIT, ST. LOUIS, MINNEAPOLIS

Specifications:

1 part Carney Cement to 3 or 4 parts
sand depending upon quality of sand.

CARNEY CEMENT
for Brick and Tile Mortar

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them here, and it is obviously unreasonable to expect an architect to be acquainted with all of them. He can quite easily, however, place in his mind the fact that, in dealing with any public body, whether it be a board of education or otherwise, or in dealing with officials representing any corporation, even a private corporation, it will be in order for him to exercise some reasonable care to ascertain the sources of the client's authority and the limitations upon it. In a given case it will not be a difficult matter for him to do this. His attorney can advise him at a modest expense, if necessary, and in many instances he can find out what he needs to know without any reference to his attorney. Even if some expense be involved, however, it will be far better economy to ascertain the situation before proceeding, than to go ahead with plans and specifications in good faith and then find that a recovery for the work done is impossible.

LEGAL DECISIONS

A DISTRICT meeting, properly called and held, voted a specific sum to cover the cost of construction of an addition to a school building in the district. It developed that an addition suitable for the needs of the district could be erected for a sum less than that which was so appropriated. A question arose as to the duty of the board of education to carry out the action of the district meeting and its obligation to expend the full amount appropriated under these conditions.

It was held that the board of education was under the duty of carrying out the action taken by the district, but that it was not obliged to spend the full amount appropriated by the district, if it found that a suitable addition to the school building could be erected for a lesser sum.

Appeal from Refusal to Call Meeting, 34 St. Dept. Rep. 5.

A SCHOOL board was authorized by a district meeting to construct or repair a school building in the district. Certain plans for the work were presented at and were before the district meeting, but

the meeting did not specifically direct that the construction or repair work should be in accordance with these plans. The question was presented whether, on its appearing that it would be necessary to modify the plans in order to bring the cost of the work within the statutory appropriation limit, the board of education would have the right to make such modification. It was held that it would have this right and that it might modify the plans to such extent as might be requisite to bring the cost within the appropriation.

Opinion Education Department, 23 St. Dept. Rep. 350.

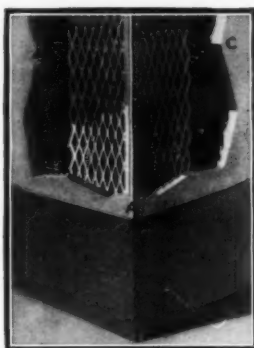
A UNION free school district engaged an architect to prepare plans and specifications for a proposed school building. In submitting the plans and specifications, the architects estimated the cost at \$95,000. The school district, in reliance on this estimate, voted an appropriation of \$125,000 to cover the cost of the work. When bids were received, it appeared that the cost of construction exceeded the appropriation, and the district thereupon abandoned the use of the plans and specifications. In an action by the architects to recover on the contract, it was held that the school district had authority under Section 310 of the Education Law, to contract for the personal services of architects and the preparation of plans and specifications for school buildings and that the district would be liable for the services rendered by the architects in preparing preliminary sketches for a contemplated building program, but that the district had the right to abandon the use of the plans and specifications, upon the receipt of the bids, since the architects were bound to know that the erection of the buildings and their right to recover under their contract for their services in the preparation of the plans and specifications for the buildings were conditioned upon the cost of the buildings falling within the amount appropriated by the district, under the provisions of Section 314 of the Education Law.

Pierce v. Board of Education, 125 Misc. 589.



HOUSE OF G. S. MCCLINTOCK, BEAR LAKE, PA.—LEWIS E. WELSH, ARCHITECT

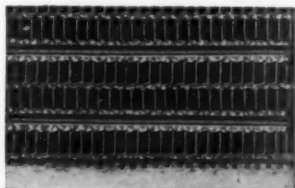
(See article on Page 523)



A—"Expansion" Corner Bead No. 1, conceived, perfected and patented by Milcor. C—Milcor Stay-Rib Metal Lath No. 1. Specify and insist on genuine Milcor Products—for safety.



B—The new BULL NOSE "Expansion" Corner Bead No. 10 (Pat'd.) Architects everywhere have hailed this new product with an enthusiasm that eliminates "or equal" from their specifications. Send for sample. You will then appreciate why there can be no compromise on this unique BULL NOSE bead.



Milcor Stay-Rib Metal Lath No. 1 possesses ideal stiffness, requires less plaster, provides perfect bond with plaster, saves materials and labor. Write for samples. Also investigate $\frac{1}{8}$ " Stay-Rib No. 2 and $\frac{3}{4}$ " Stay-Rib No. 3.

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TOPICAL ARCHITECTURE

THE photographs reproduced and illustrated in the Topical Architecture section of this issue were selected from the library of the Metropolitan Museum of Art, New York. Acknowledgment is herewith accorded to the Museum for the courtesy in allowing us to reproduce these interesting examples of tile work.

LEAGUE OF NATIONS BUILDING COMPETITION

A COMPETITION was recently held for the design of a League of Nations building at Geneva. Architects of all the Member States were invited and three hundred and seventy-seven architects submitted thousands of drawings. The nine members of the jury, representing nine Member States, distributed the 165,000 Swiss francs placed at their disposal as follows: Nine prizes of 12,000 francs each; nine honorable mentions, Class I; 3,800 francs each; nine honorable mentions, Class II; 2,500 francs each.

A study of the various designs submitted discloses the tendencies of architecture in the several countries today. The lines of the classic are generally adhered to by Italian architects; the influence of the modern movement is seen in certain of the designs submitted by French architects; while the ultra modern is represented by German and Viennese entries. On the whole, the twenty-seven prize winning designs, which are illustrated in a publication presented by the World Peace Foundation, American Agents for publications of the League of Nations, are interesting and worthy of careful study. The publication referred to may be purchased from the Foundation in Boston, Mass., at \$1.00 a copy.

MEDALS AWARDED AT ARCHITECTURAL CONGRESS AT BUENOS AIRES

OF six exhibits of work done by students in architectural design at the University of Pennsylvania and displayed at the third Pan-American Congress of Architects in Buenos Aires, five have won gold medals and the sixth a silver medal. Dr. Warren Powers Laird, Dean of the School of Fine Arts, stated recently after receipt of a cablegram from the Secretary of the congress.

At the same time Dean Laird announced the presentation to the university of two Fellowships in Architecture, each of which is valued at \$1,000 a year and will be awarded for the first time this Fall.

Thirty-one designs were submitted by American universities represented in the competition in Buenos Aires and seven gold medals, three silver medals and seven honorary mentions were awarded.

A design for "A Center for the Exhibition of Building Materials," by John Lane Evans of Philadelphia, which won a gold medal and diploma,

was also selected by the jury to represent America in an international competition.

In awarding the two Fellowships in Architecture, which were given by an anonymous donor, and applications for which may now be made, preference will be given to candidates working for the Master's degree in architecture and to those who have shown most promise in design.

ART IN NEW YORK

THE Arts Council of the City of New York was organized last Winter under the auspices of The Architectural League and the National Academy of Design to develop and further the current interest in design, music and drama. Among its trustees are representatives of the various arts as well as laymen interested in the promotion of a higher standard of public art appreciation. The first publication of the group has just appeared in the form of a directory of the many works of art and the museums, societies, clubs and schools devoted to the arts in New York City. The booklet, in pocket size, paper cover, is illustrated, the frontispiece being a reproduction of a photograph of City Hall. It includes also a map of the city with routes of the various lines of transportation adjoining. It is on sale at book stores and museums and at the Art Council's headquarters. It is especially valuable to out-of-town visitors to the city, and to such residents of New York who have never been to the top of the Woolworth Building or who have seldom, if ever, found time to visit the Metropolitan Museum of Art.

ORNAMENTAL IRON AND BRONZE

THE National Association of Ornamental Iron and Bronze Manufacturers has just published an interesting portfolio for the use of architects on ornamental iron, bronze and wire work. The introduction takes the form of an article by Harvey Wiley Corbett, F.A.I.A., F.R.I.B.A., entitled "Ornamental Iron and Bronze—Its Place in the Building Scheme." Then follows a group of reproductions of photographs of various details in iron and bronze, each illustration being accompanied by a specification descriptive of the manner in which the metal work has been executed. Among the illustrations are entrance doors, stair railings, gates and fences, balconies and general accessories. The book is free to architects, the association "believing that it shows the possibilities of greater ornamentation and finer decoration, yet entirely consistent with the aesthetic tastes and artistic desires of the man whose favor and co-operation we so earnestly solicit—the architect." It is the purpose of the association to issue, in the future, other books of a similar character. The book may be obtained by addressing the national association at Cincinnati, Ohio.

\$15,000⁰⁰ in cash prizes for a slogan about WOOD

No one better qualified to enter this contest than the architect. Facts about America's vast supply of timber. The beauty of wood; its durability; its economy.



Wood has always been closely associated with the finest traditions of American architecture. You will find the following paragraphs well worth reading for their own sake.

No timber shortage

Almost everyone has been induced to believe that this country is confronted by an acute shortage of timber. This is not true.

In fact, Col. William B. Greeley, U. S. Forester, urges the nation to "Use wood and conserve the forests." For timber is a *crop*. It needs to be cut when ripe. Failure to do so means *waste*.

There is enough standing timber in the United States today to build a new six-room house for every family in this country, Canada, South America, all of Europe and the entire British Empire! And the *additional* lumber supplied by the *yearly growth* of standing trees would build a continuous row of these houses along both sides of a street reaching from New York to San Francisco.

Better lumber than ever

Not only plenty of lumber—but *better* lumber! Today, *American Lumber Standards*, adopted by the industry and endorsed by the U. S. Government, give the purchaser protection he never had before.

Certified by official inspectors and responsible manufacturers, lumber is now a *guaranteed* product. The user knows exactly what he is buying, and is sure of getting what he pays for.

Wood endures

The oldest and most beautiful homes in America are houses built of wood. Many of them stand today, as sound in timber and beam, and *as livable*, as they were before the Revolution. These early American homes teach us that when you build of wood and build right, the building lasts!

Wood endures—and the supply is enduring. It is the only one of our natural resources that *grows*. The mine becomes a gaping hole; the forest forever *renews*.

Wood is beautiful

Wood possesses a pleasing natural beauty of grain and texture that mellows and deepens

with age and defies imitation. Wood can be fashioned and carved and fitted into thousands of charming designs.

And surely it is significant that the American architect prefers lumber for his own home!

Wood is friendly

Of all materials there is none so *friendly*, with such a sense of human companionship, as wood. Wood is warm and alive to the touch. The handle of a tool, the steering wheel of your car, the arm of your chair, the bowl of your pipe—you like the feel of them because they are wood.

Wood is economical

Wood is stronger, pound for pound, than any other material. It is easily and cheaply fitted to special forms for special needs. Its moderate cost is due today, in no small measure, to the elimination of waste. There is a grade of lumber for every purpose, a right wood for every need.

To inspire renewed and greater appreciation of wood, manufacturers of American Standard Lumber in the National Lumber Manufacturers Association are preparing an extensive educational campaign. The first thing the Association wants is a "slogan." In sending yours, please use coupon.

NATIONAL LUMBER
MANUFACTURERS ASSOCIATION
Washington, D. C.
Manufacturers of American Standard Lumber

Contest Closes
December 15th



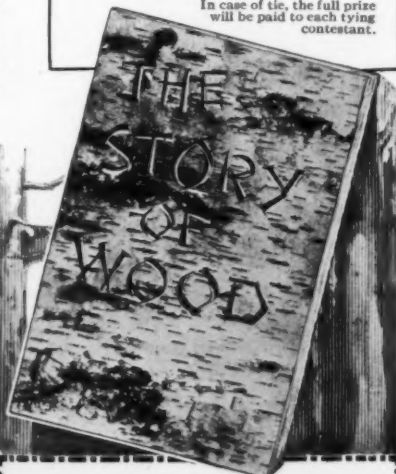
**This free Booklet
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Send to day!**

Mail coupon below and booklet will be sent you postpaid. It contains the *Official Blank On Which Your Slogan Must Be Submitted*.

This may mean \$5,000.00 added to your bank account. So mail your coupon right now.

First Prize . . .	\$5,000
Second Prize . . .	2,000
Third Prize . . .	1,000
Four Prizes (each) . . .	500
Fifty Prizes (each) . . .	100
Total, \$15,000	

In case of tie, the full prize will be paid to each tying contestant.



National Lumber Manufacturers Association,
P. O. Box 811, Washington, D. C.

Gentlemen:—I want to enter your \$15,000 Prize Slogan Contest. Please send me free copy of your booklet, "The Story of Wood," so that I may qualify.

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AA 10-20-27

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GARDEN TREATMENT

THE treatment of garden paths is described by a contributor to the *Daily Mail*, London, in a manner that should prove useful to architects and garden lovers, and his suggestion that the colors of the flowers in the edging should be selected to compose well with the color of the path is in accordance with a sound principle of color decoration, writes Astragal in *The Architects' Journal*, London. Perhaps the statement that bricks of a red hue "will tone down and become satisfactorily weathered before long" is somewhat optimistic, for we are all too painfully aware of certain types of red brick which refuse to grow old gracefully; but the gardener who follows the hints with discrimination will probably be saved from employing them. One of the redeeming features of the bungalow is that it is possible to hide it with vegetation in considerably less time than would be taken in the case of a two-story building, but if the bricks are red and shiny, the attempt to improve matters may be worse than useless if gaudy pink is selected for part of the camouflage of blossom. A lot can be done to mitigate the hardness of a new building by the judicious employment of flowers and foliage, but for those whose color sense has not been developed by practice, the advice of an experienced garden-planner is necessary.

OLDEST HOUSE PLAN

AN architect's drawing, believed to be by far the oldest in the world, was recently discovered in Mesopotamia. This four-thousand-year-old equivalent of a blueprint was in a fragmentary condition, but three of the pieces fit accurately together, showing part of the ground plan of what must have been a very large house. The walls and doorways for seventeen rooms are indicated by accurately and closely drawn lines. The largest room was 40 by 46 feet and the scale of the drawing is 1 to 360.

PERSONALS

Sylvester J. Bauman, architect and engineer, has moved his offices to 110 East Forty-second Street, New York City.

M. S. Fallis Architect Company have moved their offices to suite 482 Gas and Electric Building, Denver, Colo.

Bremer W. Pond, landscape architect, has moved his offices from 18 Tremont Street to 100 Arlington Street, Boston, Mass.

Verlyn A. Trussell, specification writer, has opened an office in the Graybar Building, 420 Lexington Avenue, New York City.

Edward B. Seely has taken over the architectural office of Nathaniel Blaisdell and will continue practicing at the same address, 255 California Street, San Francisco, Cal.

Edward Stotz, architect, has moved his office from the Monongahela National Bank Building to the Bessemer Building, Sixth Street and Duquesne Way, Pittsburgh, Pa.

Collins & Sheffield, architects, are now located in their new offices at 3020 Southwest Fifteenth Street, Miami, Fla., having moved from 1015 Exchange Building, that city.

Luther Fentress, architect, has moved his architectural studio to 1223 Sherwood Street, San Marino, Cal. Manufacturers are requested to send catalogs and samples.

F. Worthington has moved his architectural and engineering offices from 253 Totowa Avenue to 17 Ryerson Avenue, Paterson, N. J., where he would be pleased to receive manufacturers' samples and catalogs.

Alexander L. Levy and William J. Klein, architects, announce the removal of their offices from the Conway Building to 2049 Builders Building, Wacker Drive and North La Salle Street, Chicago, Ill.

Girard Lindsley and John Tomlinson Ferris, architects, have formed a partnership for the general practice of architecture under the firm name of Lindsley & Ferris, architects, Globe Building, Washington Park, Newark, N. J.

Wilson A. Gosnell announces that the firm of Crutchfield & Gosnell has been dissolved and that he will continue the practice of architecture under his own name at the same location, 1239-41 Volunteer Building, Chattanooga, Tenn.

The firm formerly known as Marye, Alger & Alger is now to be known as Marye, Alger & Vinour, architects and engineers, Atlanta, Ga., Oliver J. Vinour having given up his Palm Beach office and become a member of that firm.

Jules F. Reither and A. F. Lindsay have formed a partnership for the general practice of architecture under the firm name of Reither & Lindsay, architects, 523 Himmelberger-Harrison Building, Cape Girardeau, Mo., where they will be pleased to receive samples and literature for preparation of their reference files, particularly of those materials and products obtainable in southeastern Missouri and adjacent markets.



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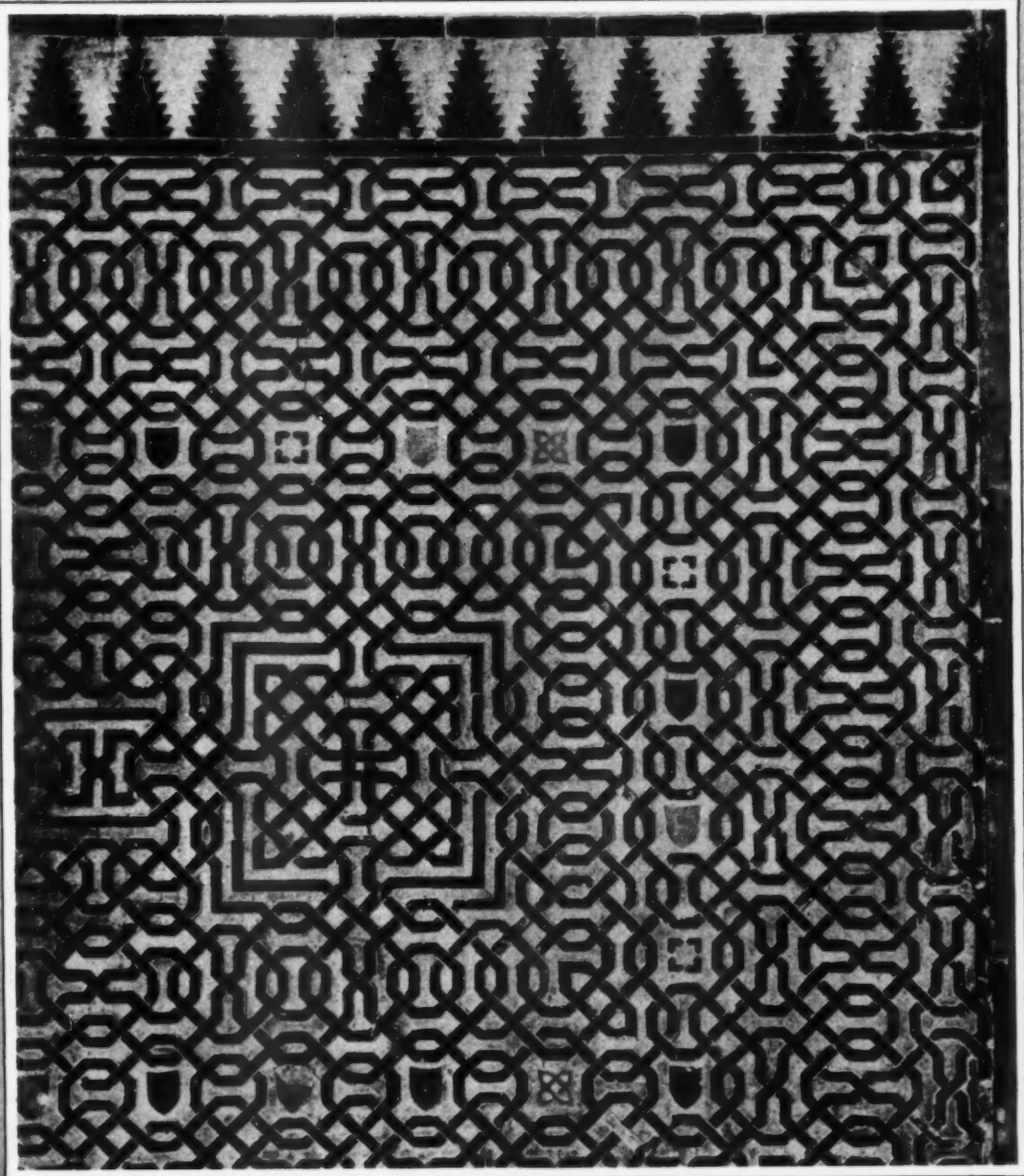
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PART II

OCTOBER 20, 1927

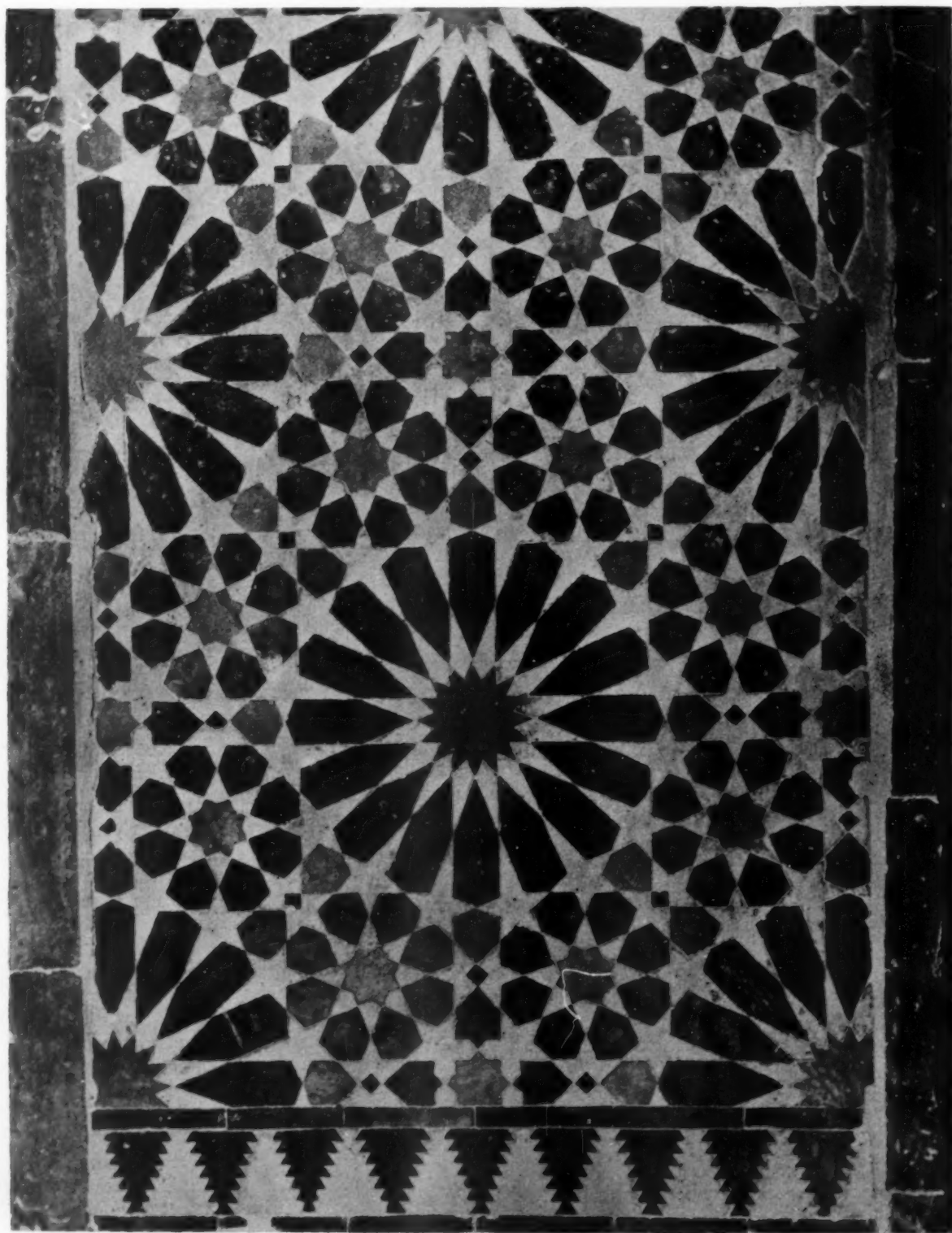
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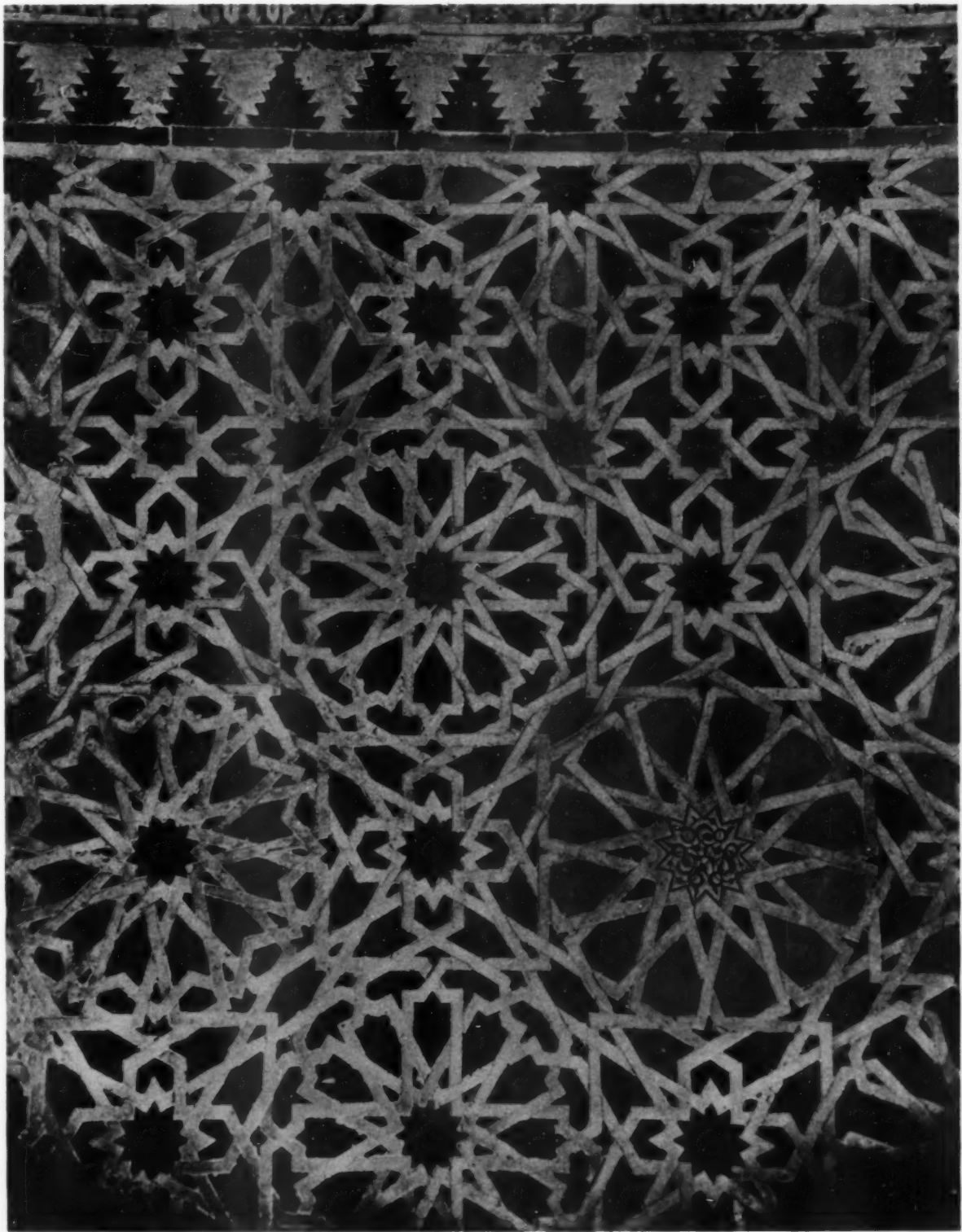


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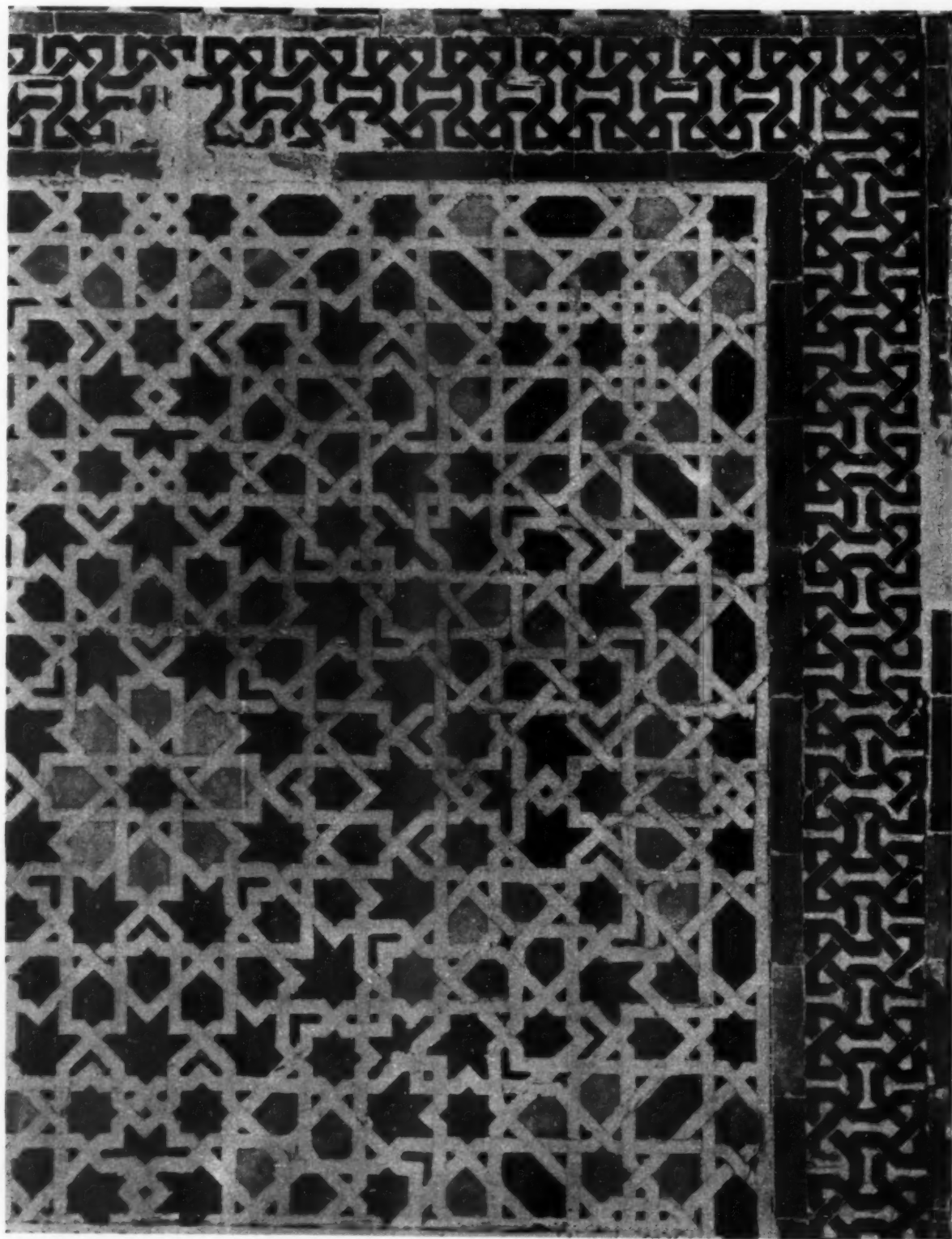
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DETAIL OF TILE WORK, THE ALHAMBRA, GRANADA, SPAIN



DETAIL OF TILE WORK, THE ALHAMBRA, GRANADA, SPAIN



DETAIL OF TILE WORK, THE ALHAMBRA, GRANADA, SPAIN





THE PUBLISHERS' PAGE

DISTRIBUTION of the ninth edition of **THE AMERICAN ARCHITECT Specification Manual** is now well under way. Each year this valuable volume is revised and brought up to date. The present volume for 1927-28 contains many revised specifications and new specifications that have not appeared in previous editions. For the convenience of specification writers, specifications have been arranged in the same consecutive order as the Standard Construction Classification of The American Institute of Architects. This parallel arrangement will be found convenient in many ways. The Standard Construction Classification is printed in full in the new edition of the Manual and has been corrected to June, 1927. This classification is intended as a system for filing manufacturers' catalogs and data on building materials. Its inclusion in the Specification Manual insures a copy being instantly available for use, since it is not easily mislaid or destroyed.

In this Manual of Standard Specifications there will be found instructions for the installation of practically all types and kinds of building materials. This data has been prepared or approved by America's representative producers.

A copy of **THE AMERICAN ARCHITECT Specification Manual** will be sent without charge to any established architectural office requesting one upon business stationery. Since the edition is limited and requests are honored in the sequence of their receipt, we suggest that those who have not yet asked for a copy do so as promptly as possible.

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In this issue there will be found an article of timely interest entitled, "A House Built Like a Skyscraper," in which is described a house now being constructed at Forest Hills, Long Island, N. Y. During the past few years much interest has been attached to the development of houses framed in structural steel. Various systems have been devised and several have been used in the building of "model" houses to test their practical application. The majority of these systems have closely followed the wooden "balloon" frame and resolved themselves into a matter of replacing wooden studs, joists and rafters with steel members. Many of the steel frame systems applied to house construction have apparently failed to consider all of the factors involved and especially the relationship of the steel frame to other building materials with which it must be combined.

Since the steel frame is essentially structural it would appear logical, even for house construction, to design it from this standpoint. The enclosing walls and roofs are required to secure protection from the weather and provide the necessary insulation against heat and cold. Their structural

value, when used in conjunction with a supporting framework, is negligible. This is the basic principle of skyscraper design. The construction of the house now being erected at Forest Hills, Long Island, has made use of the principles of skyscraper design, and is, therefore, of more than usual interest.

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These are days of economy. We economize on initial cost by minimum space; we economize on steps by combination living-dining rooms and kitchen nooks, and we economize on energy by compactness and efficiency in arrangement of service accessories. This all has a vital effect on the plan of modern houses. How can we reduce the floor area of the kitchen and retain its efficiency? The interesting point is that it has been done and done successfully. The pantry, too, has been eliminated, and in many cases the dining room also. An article in the Department of Interior Architecture, in an early issue, will be devoted to this subject. Plans of modern kitchens in both apartments and private houses will be shown, kitchens of less than a hundred square feet, yet complete and efficient. Built-in furniture has much to do with the success of these seemingly small kitchens, just as beds which fold behind a door during the day are effective in very small apartments. There is a complete dining set, for example, consisting of table and two benches seating four, which folds into a reveal in the wall between meals and makes of the room in which it is installed a dining room only at meal times. The successful solution of modern architectural problems depends on complying with the great economical questions of the day. The article which the Department of Interior Architecture is soon to feature is intended to acquaint architects with certain ideas which may materially assist them in solving the difficult problems with which they are constantly confronted.

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The Neils Esperson Building, a skyscraper in Houston, Texas, designed by John Eberson, is fully illustrated in this issue. We regret that it is impossible to show the photographs in color, for the building is rich in its color treatment. Colored terra cotta is freely used in the design of the facade. There is a demand for more color in architecture to which architects throughout the country are complying. A black and white photograph cannot do justice to a building which is so full of color as is the Neils Esperson Building. It is only fair, therefore, that mention be made of the fact that color is introduced so that in reading the black and white reproduction allowance be made for this interesting feature of the design.



THE OLD VANDERBILT HOUSE ON 57TH STREET AND 5TH AVENUE, NEW YORK, FOR MANY YEARS AN ARCHITECTURAL MASTERPIECE, AND RECENTLY DEMOLISHED. PLAZA HOTEL IN BACKGROUND

FROM THE CRAYON SKETCH BY THEODORE DE POSTELS

THE AMERICAN ARCHITECT