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KARL H. SHELDON, ARCHITECT

A PLEASING EXAMPLE OF A MODEST RURAL CHURCH BUILDING

SOME REMARKS *on* PLANNING NON-RITUALISTIC CHURCH BUILDINGS

BY FRANK G. DILLARD, A. I. A.

Of Rowe, Dillard & Rowe

OBSERVATION leads to the conclusion that during the past fifteen or twenty years, non-ritualistic church building problems have been greatly neglected by thoughtful architects. This condition is the natural result of different causes. Churchmen have been ignorant of architectural values and are still largely so and have been unable to choose intelligently in making selection of architects to guide their building enterprises. Where they have been fortunate enough to secure the services of an able architect, they have often hedged him in with such iron-bound dicta, that he has had no inclination to study the problem from the ground up. The church has been all too niggard in providing funds for building. Architects are partly to blame for the woeful state of non-ritualistic church buildings. There has not been sufficient understanding of the basic factors involved, especially in present day church building and there is in consequence a lack of sympathy. The architect must have an intimate knowledge of the activities

of the church. These are not, as will be pointed out, confined to the service of worship and a perfunctory system of Bible instruction. Indeed the modern church program is a complex affair and demands careful analysis. There is no great need for "the church expert," "ecclesiologist" or "church specialist;" in fact, after an extended service with a church "Bureau of Architecture," during which there were many contacts with gentlemen who used such titles, I am of the opinion that churches could well discard all such "experts" in favor of the cultured general practitioner who shows an inclination to get down to a real and serious study of the needs of the congregation as related to its intra-organizations and its community.

It has come to be recognized by the best informed church leaders that there will be many kinds of church buildings when the particular needs are given careful consideration. There will be rural chapels, rural community churches, city mission buildings, churches for frontier work and

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work in immigrant colonies, for city boarding-house districts, for manufacturing districts, for residence communities of at least two or three kinds, the "downtown" or business district church, and possibly several other types. Manifestly the very special requirements of these various congregations cannot be satisfied by copying a standard type of plan arrangement for each or by using stock plans.

A good way for the architect to arrive at an understanding of a modern church

therefore, the architect will do well, no matter how thoroughly informed he feels himself to be, to inquire into the recommendations made by the general denominational boards, before beginning his work.

Changes that have come about in non-ritualistic church planning within the past ten or fifteen years, and are still more or less in a condition of development, make it worth while repeatedly to state the generally recognized fundamental elements of plan. Even with the publicity that has

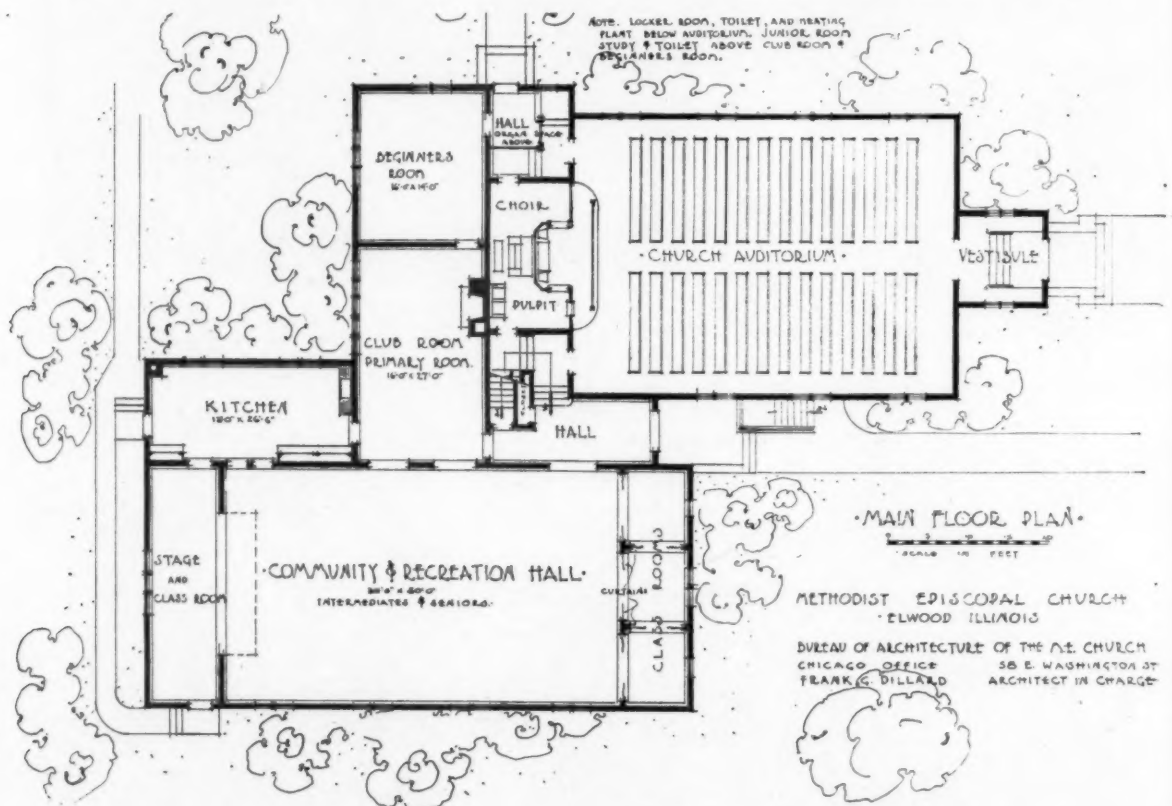


FIG. 1. TYPICAL PLAN SCHEME FOR A VILLAGE CHURCH

plan problem is through a personal interest in the working of the church, although this of itself is not always an assurance of best results. There are agencies in many denominations that render consultation service, free of charge or for a limited portion of the architect's fee. It is not because I have been connected with one of these organizations that I think it worth the architect's time to secure assistance of this kind; but rather because of a knowledge of the very valuable data and advice that are available from such sources. Many of these bureaus or departments are required to pass on plans, especially where funds are to be secured from church boards;

already been given this subject there seems, on the part of some architects, a lack of understanding of the difference between a modern plan and any one of the discarded types. The most revolutionary changes relate to that part of church work that has come to be looked on by church leaders from a technical viewpoint—namely religious education; or to use a more familiar nomenclature, the Sunday School. Social and recreational demands produce (especially in certain kinds of communities) plan arrangements, in marked contrast to those of the churches we attended when boys. The modern tendency is away from freak plans of auditoriums. The one-time popularity

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of corner pulpit is happily on the wane. A preacher with little knowledge of architecture, recently told me (without any promptings) that when preaching in a church of that kind he always felt that "everything was on a slant."

The modern conception of religious education is based on psychology and pedagogy. The lesson material is graded to suit the mental capacities of the various age-groups in the school. Not only is the lesson material graded, but the devotional

combine some of the departments for the devotional period. This is because the departmental groups in the small school will not be large enough to develop much enthusiasm. The social activities of the church, even where the school is small, will require one large room—this can be used very well for the union of departments for their devotional service. (Note plans, Figs. 1 and 2.) I have no doubt that this suggestion will be challenged by the theorist in religious education al-

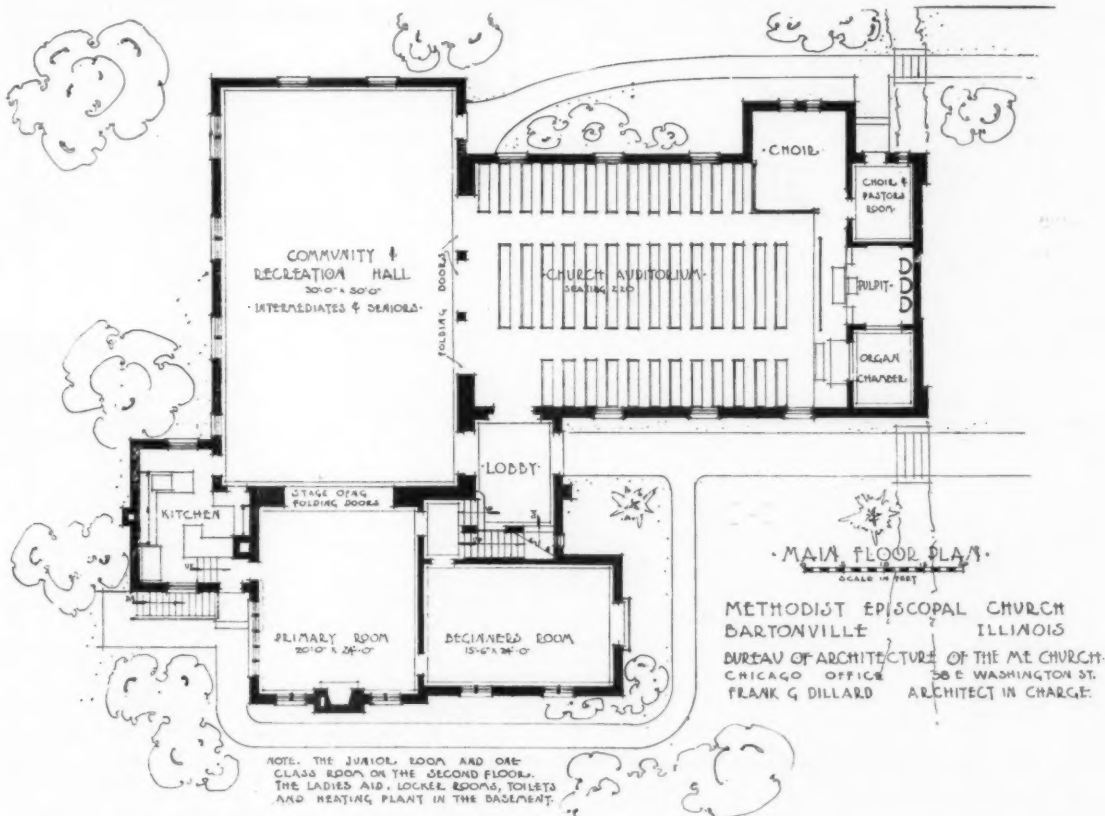


FIG. II. A VILLAGE CHURCH IN WHICH THE HALL IS ARRANGED FOR SURPLUS AUDITORIUM SPACE

and inspirational parts of the program as well. It will be seen at once that this change minimizes the importance of mass gatherings of the school. The modern church school is divided into seven departments. Each of these departments must be provided with means of following its own program without interference from other departments. As each department will have its own singing (part of its devotional period) the greatest danger of interference will be from this source; therefore, rooms separated by solid (preferably soundproof) partitions are most suitable. Where the enrollment of the school is two hundred or less there will, in all likelihood, be a logical desire to

though it is based on direct contact with a great many church schools throughout the country.

A departmental church school is similar in its organization to the agencies for secular education. The tabulation below gives comparisons which may well be kept in mind in making provision for the departments.

RELIGIOUS EDUCATION	SECULAR EDUCATION
Beginners Department	Kindergarten
Primary Department	Grammar School
Junior Department	High School
Intermediate Department	
Senior Department	College
Young People	Post Graduate School
Adult	

There is some difference of opinion among religious educators regarding the value of individual class cubicals within the department rooms. Dr. Henry E. Tralle, a well known authority, advocates the division of areas assigned to the various departments into (a) assembly space and (b) class rooms, allowing seven square feet per pupil for assembly and eight square feet for class room. These class rooms should be so arranged as to be easily accessible from the assembly space but separated from it and each other by solid partitions. Arrangement of these class rooms, in order to preserve some attractiveness in the assembly space is a subject that should be given careful study. A plan scheme suggested by Dr. Tralle (Fig. 3) does not appeal favorably to me because it requires the pupils to enter facing the glare from windows, and the side walls are largely taken up by doors. It appears to me that this assembly space would not be very attractive; and that some other arrangement (Figs. 4 and 5) might work out more satisfactorily. Opposed to Dr. Tralle are many leaders who believe that class rooms are not only unnecessary but detrimental in spaces assigned to beginners, primary and junior departments, and for moderate size schools, the inter-

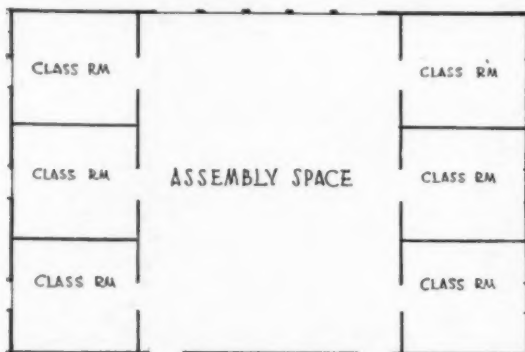


FIG. III. DEPARTMENT ACCOMMODATION AS SUGGESTED BY DR. H. E. TRALLE

mediate department also. These opinions are based on the fact that classes are more apt to become disorderly when in the seclusion of individual rooms. The pupils are removed from the supervisory eye of the department superintendent and the sense of department unity is lowered. Classes in the open department must be small (not over 5 or 6 each) and each should have a small circular table—say about three feet in diameter. If class rooms are omitted, the allowance of floor area per pupil should be fifteen square feet. This allowance will permit suitable equipment and good circulation. It seems to me that the great advantage to be gained by the open department room idea is the attractiveness and general usefulness of the large rooms for social functions as

well as educational—they should be made attractive by such permanent features as bay windows, fireplaces, etc. The church school should teach love of beauty as well as the love of truth.

For purposes of determining sizes of department rooms the following percentages of department enrollment to the total enrollment are very nearly normal—they are derived from a survey of over a thousand schools:

Beginners, ten per cent; Primary, twelve per

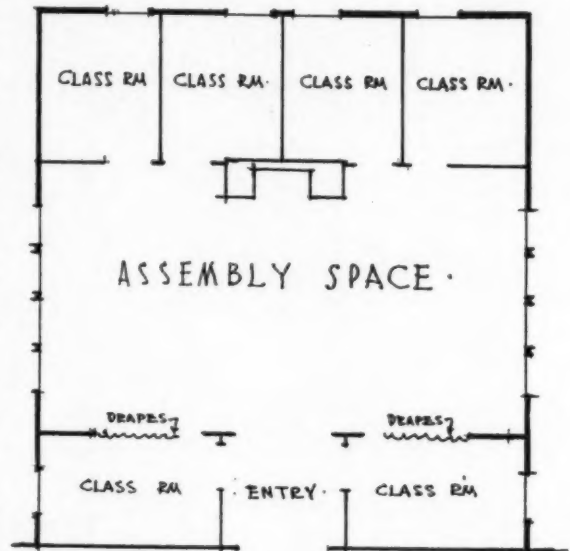


FIG. IV. A SUGGESTED MODIFICATION OF DR. TRALLE'S PLAN TO PROVIDE MORE ATTRACTIVE QUARTERS

cent; Juniors, fourteen per cent; Intermediate, twelve per cent; Senior, ten per cent; Young People, twelve per cent; and Adult, thirty per cent.

Department rooms arranged in plan so that there may be an orderly progression through the grades will help convey the *school idea* to the minds of the pupils. It is especially desirable to group the elementary departments (beginners, primary and juniors) and to provide with them as auxiliary rooms, a cradle roll room or nursery for children younger than four years and a parents' class room or two, according to the size of the school. There should be a toilet room with junior fixtures for beginners. Boys' and girls' toilet rooms should be located conveniently of access from the other elementary rooms. Storage rooms, supply cases and coat rooms are to be considered necessary adjuncts to all department rooms.

Individual class rooms are needed for pupils of the grades above the elementary departments. It must be kept in mind that here the atmosphere should be that of the high school and college. Careful attention to this will lead the architect to provide many features that will contribute to

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efficiency. Some of the individual class rooms, probably those for large classes of adults, should be located so that they can be used for social purposes through the week. The complete school layout will include also a library and geography room, the latter equipped for relief map work, modeling and other such handwork.

The architect who takes up a church building project may be surprised to find ignorance or

forces at work in the world today that are destructive of family life that it behooves every church organization to foster this fundamental factor of our civilization. The destructive forces must be counteracted. This brings us to a consideration of the preparations that must be made in a modern church building for social activities. Most churches are now conducting at least one social-educational-devotional meeting between Sundays, and many have a program of activities for the whole week. Where there is but one such meeting a week it differs greatly from the old-fashioned "prayer meeting." The basis of these meetings—"church nights" they are generally called—is a dinner served at moderate cost, to which the many families of the congregation are invited. After the dinner and general social period the crowd breaks up into various groups, some for Bible study, some for devotionals, some for business meetings and some for play and entertainment. As has been intimated above, in thinking about the requirements of religious education, the many rooms of a modern church school plant make it easily possible to have these many simultaneous group meetings. It certainly is not necessary to dwell on the fact that when whole families attend these mid-week meetings there are as many kinds of interests as there are ages represented. The little folks can be entertained with games and stories while the young people and adults are in their meetings and all can go on without confusion and interference. Thus, it seems to me, there is a distinct value in planning and designing the department rooms of the school building so that they will serve also as "club rooms" for the various departments. The building for a large congregation will probably be used every day of the week for the benefit of its members and the uplift of the whole community. There will be a multitude of intra-organizations—boys' and girls' clubs; young peoples' societies; instrumental and vocal musical organizations; forums; men's and women's organized classes and societies and many special groups, according to the type of community. In some city districts the social activity of the church extends even to elementary secular education and Americanization for those of foreign birth.

It is necessary to provide for complete supervision in a church building that aims to have full week activities. Administration and reception accommodations must be provided in a location that will afford control of the entire building. Many large church buildings contain living quarters for a custodian. Some churches have felt that, owing to the nature of community needs, dormitory accommodations should be provided, not only for workers but temporarily to shelter unfortunate and homeless individuals. A discussion of planning for such special needs is beyond the scope

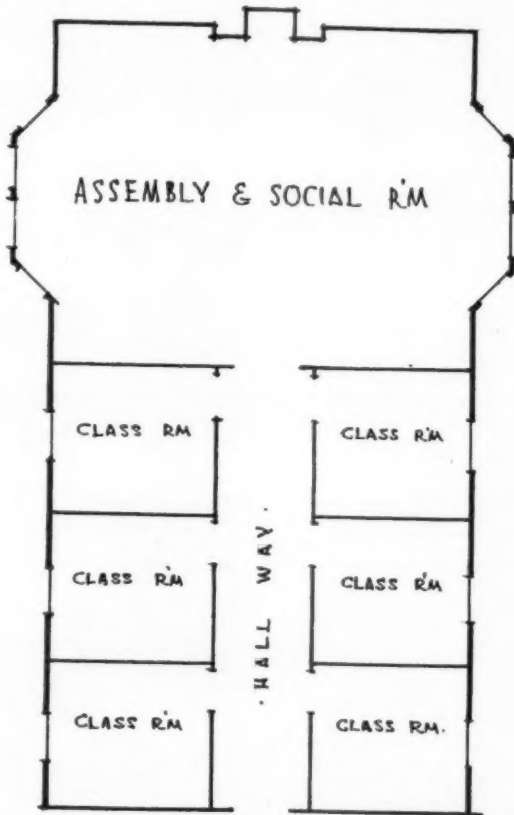


FIG. V. AN ARRANGEMENT FOR DEPARTMENT SHOWING SEPARATE CLASS ROOMS. ESPECIALLY SUITED FOR INTERMEDIATES AND SENIORS

confusion in the minds of the building committee regarding this matter of modern religious education. If this unfortunate condition prevails it devolves upon the architect to present and recommend the general principles of the newer program and to enlist, if necessary, the general board of the Denomination to help the congregation see the value of preparing in its building for systematic school work. It is to every architect's interest, as affecting his reputation for future church work, that his plans measure up to the thought of the best informed leadership of the religious world.

A present day conception (or rather a revival of the original conception) of the church congregation is that it is a family. There are so many

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of this article, but a suggestion of the many problems before the church may be of some value in bringing to the architect's attention the importance of studying with the church building committee the ways in which the church can minister to its

a hold on the younger members of "the church family." Few churches are being built today without some consideration of its value. I have always felt that the providing of a "gymnasium" (in the Y. M. C. A. sense of the word) is not the

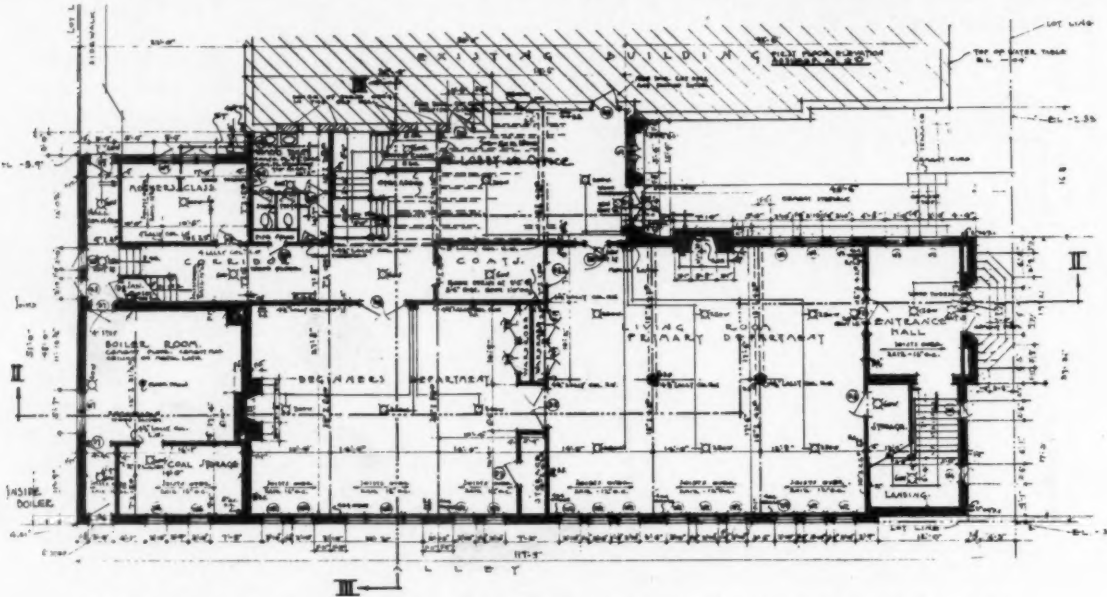


FIG. VI-A. SUNDAY SCHOOL AND COMMUNITY BUILDING FOR FIRST M. E. CHURCH, BEARDSTOWN, ILL.

ROWE, DILLARD & ROWE, ARCHITECTS

OTHER DEPARTMENTS NOT INDICATED HERE ARE ACCOMMODATED IN OLD BUILDING

particular community and the necessity of planning intelligently to carry out the program decided upon.

Recreation is an important factor in retaining

best way of meeting this need. Recreation is the aim rather than physical development. Churches that have bought and installed elaborate fixed and moveable equipment have, in many instances,

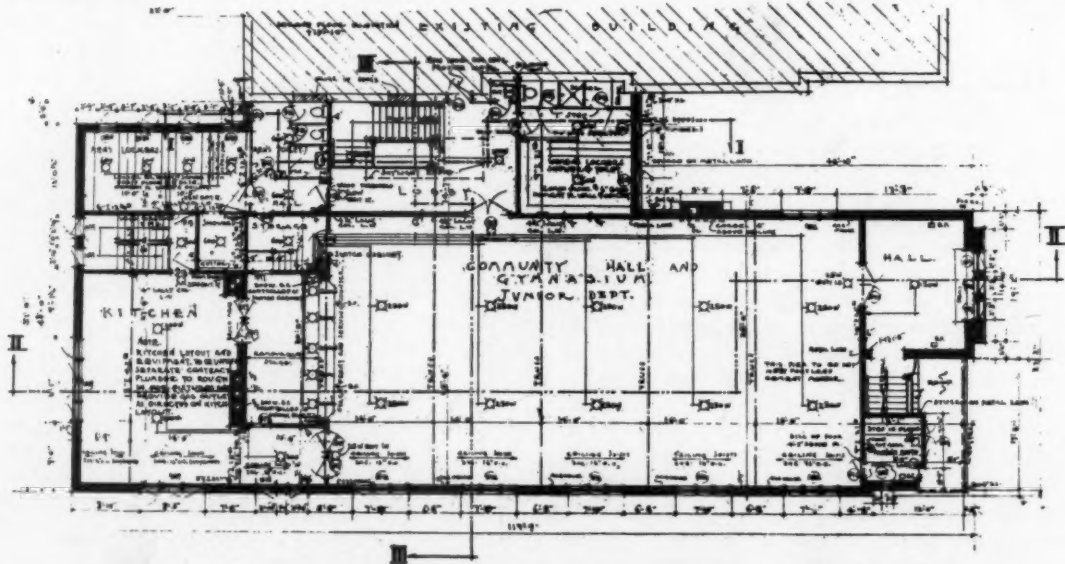


FIG. VI-B. SUNDAY SCHOOL AND COMMUNITY BUILDING FOR FIRST M. E. CHURCH, BEARDSTOWN, ILL.

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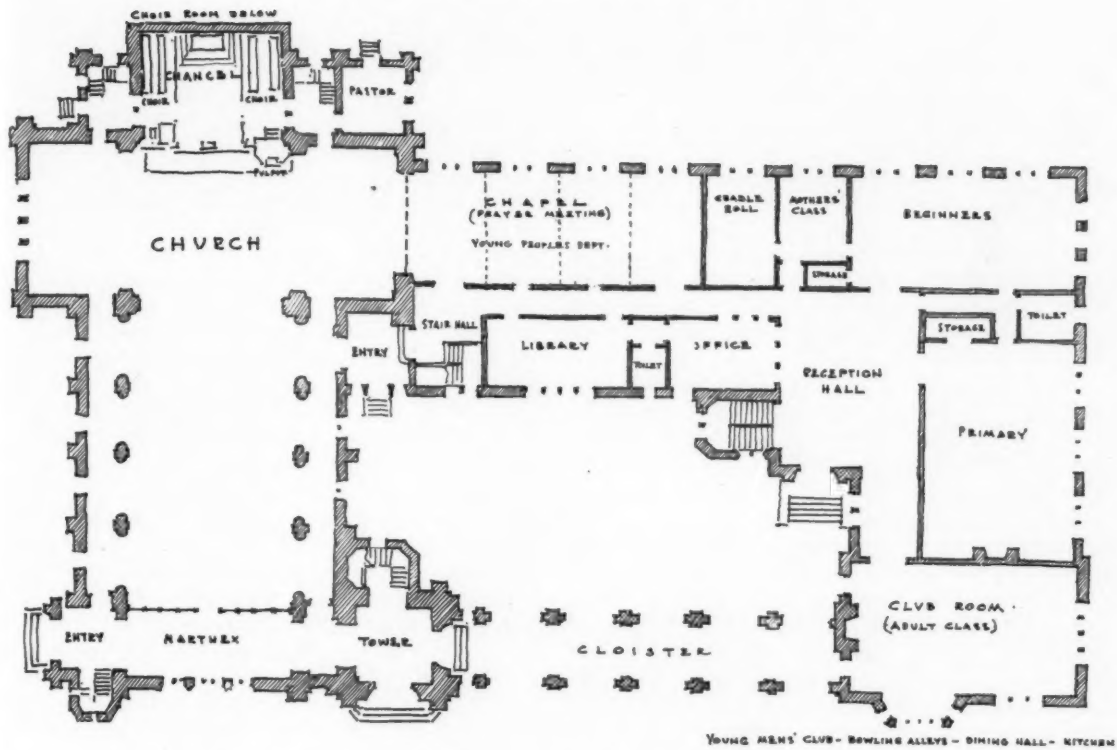


FIG. VII-A. DIAGRAM OF THE MAIN FLOOR OF A TYPICAL LARGE CHURCH

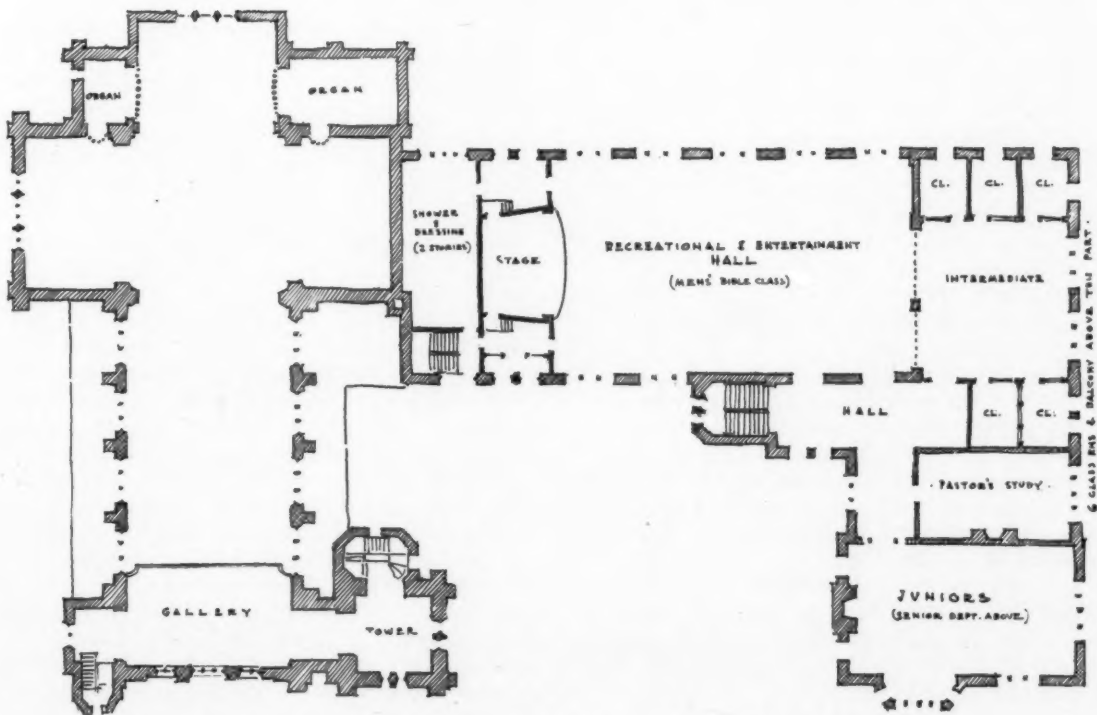


FIG. VII-B. DIAGRAM OF FLOOR PLAN OF A TYPICAL LARGE CHURCH

found themselves with "white elephants on their hands." The most popular recreation for young and old alike is from games. Basketball, volley ball, medicine ball and indoor base ball—these will be found to "fill the bill," pretty completely. All of these games can be played in a large, high-story room. Unless the church feels the need of an extensive recreational program there is no reason why this large hall should be used exclusively for games. A plain and durable stage at one end will make it usable for dramatics and concerts and in some cases the stage can even be arranged as serving space from the kitchen so that one large hall can be used for large dinners, entertainments and recreation. (See Fig. 6.) Owing to the often informal nature of recreational activities in church buildings, it is not binding that the hall be official size (30' x 50' seems the smallest useful size) but the young people will probably insist on its being as nearly as possible up to standard. Very suitable spectators' galleries (in addition to the stage) can be provided by planning the hall with the side aisles (the playing space being between the columns) slightly elevated above the main floor level. These side aisles can be utilized, by installing collapsible partitions from wall to columns, for class separation for the department that is assigned to the hall.

There has been little change in the Sunday preaching and worship program of the non-ritualistic church. It is, as the term implies, informal. There is, however, a feeling becoming more and more pronounced among preachers, that changes must be made that will contribute to a more reverential atmosphere. A great deal can be accomplished along this line by adhering more closely to the fundamental characteristics of the ritualistic church. As has already been stated, the disorderliness of the corner pulpit, bowled floor auditorium is being recognized on all hands—which in itself is a great stride in the right direction. All types of theatrical seating are to be avoided if a peacefulness and dignity are to be obtained. The oblong shaped auditorium with deep chancel at the end opposite the main entrance is good for a proper architectural treatment and for acoustics as well. The floor should be level, with pulpit elevated sufficiently to give good sight lines. The chancel should contain, as its principal features, the physical things the church holds most sacred. I can see no reason, other than prejudice, why the communion table or altar should not occupy the position of exaltation assigned to it in ritualistic church buildings. In churches where the ordinance of baptism is administered by immersion the baptistry should also have a central location. Owing to the possible unfamiliarity of some architects with the rite of baptism by immersion, it may be permissible to offer some suggestions here that will be of value in planning buildings for

churches that practice this ordinance. The baptistry should not be overelaborated nor planned for any false or theatrical effects, such as is often advocated, by the use of potted plants, scenic background and lighting effects. Immersion is a symbol of death and resurrection as well as of cleansing and to emphasize that thought the baptistry might be, more appropriately, given the simplicity—even austerity—of a tomb. Entrance to baptistries should be by ramps sufficiently concealed to permit the candidates and minister to come into view after being in the full depth of water (say about three or three and a half feet). Giving proper place to these two major ordinances of the church leads me to believe that the best location for pulpit and choir is as they are in ritualistic churches, namely flanking the chancel. There will be much prejudice to be overcome before this can be accomplished in churches that seem to fear the adoption of any idea from ritualistic communions. Many churches will fear it because it has not been done. The choir members will, in all probabilities "put up" a louder howl than usual over the idea of giving up their cherished central position back of the pulpit, although as one who has had some experience in church choirs I know nothing more tiresome than trying to get a sermon from the back of the preacher's head, staring the audience in the eye, the while. The wise architect—one who feels the spiritual significance of worship—will oppose this and the still prevalent desire to make the pipe organ pipes the major motif and will endeavor to lead the church building committee to see the wisdom of arranging the place of worship in a manner that will give the program dignity even though it be informal.

Liberal vestibule space at the church auditorium entrance and a well arranged relation of the social and educational portions of the plant to the church proper are of great importance. There should be ease of communication from one to the other. These considerations will depend largely on the site, which, by the way, should be much larger than required for former types of church buildings. One of the most suitable arrangements of plan block is U shaped (Fig. 7) or some modification thereof. The necessity of securing good window area for so many rooms seems to discredit any solid block form that will produce large floor areas more than twenty feet from windows. Plan composition is so intimately related to design of elevation and section that the two must be, in a large measure considered together. In another article the subject of design will be given major consideration and many details of plan incidentally touched upon. It has been the endeavor here to state, again, some of the fundamental factors that are common to any problems of church plan construction.

S. B. P. TROWBRIDGE, F. A. I. A., M. A., Sc. D.

1862-1925

S. BRECK PARKMAN TROWBRIDGE, an artist whose architectural handiwork is visible in the dignified beauty of many of the newer structures in lower Manhattan, New York, and whose vision and energy have done much to promote art and its appreciation in the United States, died from pneumonia on January 29, at his home, 123 East Seventieth Street, New York.

Mr. Trowbridge was born in New York May 20, 1862, the son of Professor William P. and Lucy Parkman Trowbridge. He was graduated from Trinity College in 1883 and from Columbia University School of Architecture in 1886. He received the degree of M. A. from Trinity in 1891 and that of Sc. D. from Trinity in 1910.

Following his graduation from Columbia, he was sent to Greece by the Archaeological Institute to superintend the erection of the building of the American School of Classical Studies in Athens. From Athens he went to Paris, where he studied in l'Ecole des Beaux-Arts.

Returning to New York he spent four years in the office of George B. Post, after which he became associated with Goodhue Livingston in the firm of Trowbridge & Livingston, of which he had been a member for thirty years at the time of his death.

Among the buildings for whose design Mr. Trowbridge was responsible as a member of the firm of Trowbridge & Livingston are the Bankers Trust Company building, the addition to the New York Stock Exchange, the banking house of J. P. Morgan & Co., the Chemical National Bank, the Mellon National Bank of Pittsburgh, the Bank of America, now under construction in Wall

Street; the new Equitable Trust Company building to be erected at Broad Street and Exchange Place; the Mitsui Bank of Tokio and the Altman building in Thirty-fourth Street.

Rational movements for the establishment of the arts on a firm basis in America had the sympathy and active co-operation of Mr. Trowbridge. He was an incorporator, vice-president and trustee of the American Academy in Rome, a Fellow of the American Institute of Architects and a member of the National Institute of Arts

and Letters, the National Academy of Design and the Architectural League of New York and the Society of Beaux-Arts Architects, of both of which he had been president.

He was a Chevalier of the Legion of Honor. He was an honorary member of the British Institute of Archaeology and a member of the Metropolitan Museum of Art, the American Museum of Natural History and secretary of the Society of Colonial Wars.

Mr. Trowbridge was known among his associates as a man of the finest culture. His attitude toward everything he undertook was marked by thoughtful purpose to attain the finest results

possible. His approach to the duties of his profession and other arts in which he was proficient, was marked by the unselfish attitude of genius. The abundant means that came to him as he progressed were unselfishly contributed to the cause of education in the Fine Arts and to the assistance of his less fortunate brethren.

A dominating personality, his passing has brought sorrow to a wide group of men who held him in affectionate regard and the profoundest respect.



S. BRECK PARKMAN TROWBRIDGE

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AN APPRECIATION FROM PRESIDENT WAID

To the Editor:

ANOTHER strong man has fallen from our ranks. During the past two years, "the silent forest" seems to have been shaken more often than before, and the shocks were deeply felt as one tall pine after another came crashing to earth. But the fall has been only in the earthly sense. In each case one of the giants of the architectural profession has in reality passed on and his name and influence have been raised to greater heights.

S. B. P. Trowbridge, "Breck" as he was affectionately known, is another one of whose memory architects are proud. His name is associated with notable buildings; his material success was enviably great.

To those already prosperous the temptations to overstep the bounds of honorable practice seem even more difficult to withstand than those which come to men with hungry families. No one would dare breathe a whisper against Breck Trowbridge. During a long practice he was jealously proud of the reputation of his firm, Trowbridge & Livingston. He was loyal to the ideals of The American Institute of Architects and would unhesitatingly refuse a commission of the greatest importance if his acceptance meant injustice to his fellow architect or involved himself in any questionable way.

Due praise will be given to Trowbridge for his ability, his public spirit and his generosity, but one phrase comprehends all of these—he was an architect and a gentleman.

(Signed) D. EVERETT WAID.

AN OLD PROBLEM

THE repair of St. Paul's, states *The Architects' Journal*, London, is, of course, no new problem. When the full weight of the dome came on to the piers it caused serious shattering of the stone walling, and this went on during the first half of the eighteenth century, as the rubble filling of the piers dried and became compressed. Mr. Mervyn Macartney, the surveyor to the fabric, has recorded that the serious destruction of the stonework had been covered up in an unsatisfactory way, and it was determined, so early as 1781, to carry out a complete restoration, and the Cathedral was closed for nearly two years. This restoration was performed under the direction of Robert Mylne, surveyor from 1765 to 1821, who seems to have used a large amount of stone veneer and iron cramps in his repairs. Owing to the formation of rust some of the masonry cracked and split in all directions. Under Mr. Macartney's direction every iron cramp and dowel has been removed from the southwest pier of the dome so as to safeguard the public from danger of falling stone. While repairing this pier it was discovered that many of the carved capitals were not the originals, but poor copies insecurely fixed to the stone behind them by cramps, dowels and lead. In many cases so badly had they been fixed that they fell off at the slightest attempt to examine them. A further interesting discovery was that, in the construction of the main arches, Wren built the voussoirs at the springings of the arches on a level bed, with only a short portion of the stone worked to a radius. In connection with the dome and its

supports, we remember hearing it said that so crushing is the compression of the piers that pieces of stone are known to burst off with the report of a pistol shot.

Some time ago Karshish in one of his articles recalled a story that is told in connection with the chain that is embedded within the masonry of the dome of St. Paul's. The story goes that before this chain was completely hidden in the masonry, Wren, for his private satisfaction, caused one link to be secretly cut through. It is scarcely necessary to mention that a chain is only as strong as its weakest link, and that half an hour's work with a file would completely stultify all purposes served by the chain. There is a true magnificence in the cool assurance of one who, for the sake of justifying his own self-respect as a craftsman, pits the reasoning capacity of his solitary brain against the wise caution of tradition, and who, at the risk of wrecking his *chef d'oeuvre* and destroying his reputation, defies the unproved forces of Nature. The chain, says Karshish, is of wrought-iron plates, linked together at the ends, and is now "on view;" but, as it is buried some two feet within the masonry, the task of opening it up throughout its entire length is not lightly to be undertaken—if, indeed, possible of accomplishment. It is likely, however, that the continuity, or otherwise, of the chain, and the position of fractures (if any) may be determined by some system of testing for electrical resistances. Thus it may happen that the examination of a bit of cold iron—immured for two hundred years—may strangely navigate us into the remote secret channels of a great intellect and a noble spirit.

TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, *Architect*

THE Temple B'Nai Abraham and Social Center Building, recently completed in Newark, N. J., is for many reasons one of the most complete and modern of such institutions in the country.

The temple or large auditorium is somewhat unusual in plan being a perfect oval, with the shrine platform placed on one side of the short axis, with the main entrance vestibules situated on either side of the short axis of the opposite side of wall. On the shrine side of auditorium is direct communication through an intermediate wing and stairway with all departments of the Social Center Building.

The auditorium with its balcony has a seating capacity of two thousand, the balcony seating eight hundred. By the selection of an oval plan and the placing of the shrine on the short axis, all of the seats are brought within the closest proximity of the shrine and platform.

The interior architectural treatment of the auditorium is Neo-Grec; the wall, with the exception of that immediate portion around the shrine platform, is very plain, of Zenitherm, which has a high base of dark Formosa marble. The cantilever balcony is supported by Doric columns of similar dark marble. The shrine is built entirely of rich Sienna and Formosa marbles, the opening to the shrine having a frame of carved architrave and pediment in Botticino marble.

The ensemble of the shrine is surmounted by a very rich acroterial supporting the tablets of Moses.

At either end of platform, and between the pilasters of pylons at either side of platform and facing the auditorium, are the ornate, bronze finished, organ screens, filling the entire wall space above the base. Above the shrine, in rear wall of platform, are the choir loft screens of similar bronze finish. Under the organ pylons in the base are two recessed panels; one of these is "A Memorial" and the other frames the entrance from the intermediate vestibule.

The entire ceiling of the auditorium including

the cornice members of the entablature are of ornamental plaster; the ceiling is coffered, the coffers occurring in four different levels. These levels step down from a circular central drum to the oval line of the wall. The coffers radiate from the central drum. A flat conical skylight covers the drum. It is thirty feet in diameter, of cathedral and white prism glass and is designed as a sunburst; the supporting members form a Star of David. The whole of the ceiling and cornice is rich in colors of red, blue and gold, antique finish.

The auditorium is well flooded with natural light, which comes through the skylight and three groups of memorial windows. These windows are all of opaque art glass, yellow being the predominant color, and throw a golden hue over all portions of the interior.

The indirect and semi-indirect lighting has been carried out so as to produce a similar effect of lighting at night, the warmth of this light producing an atmosphere which greatly relieves the severity of the plain walls.

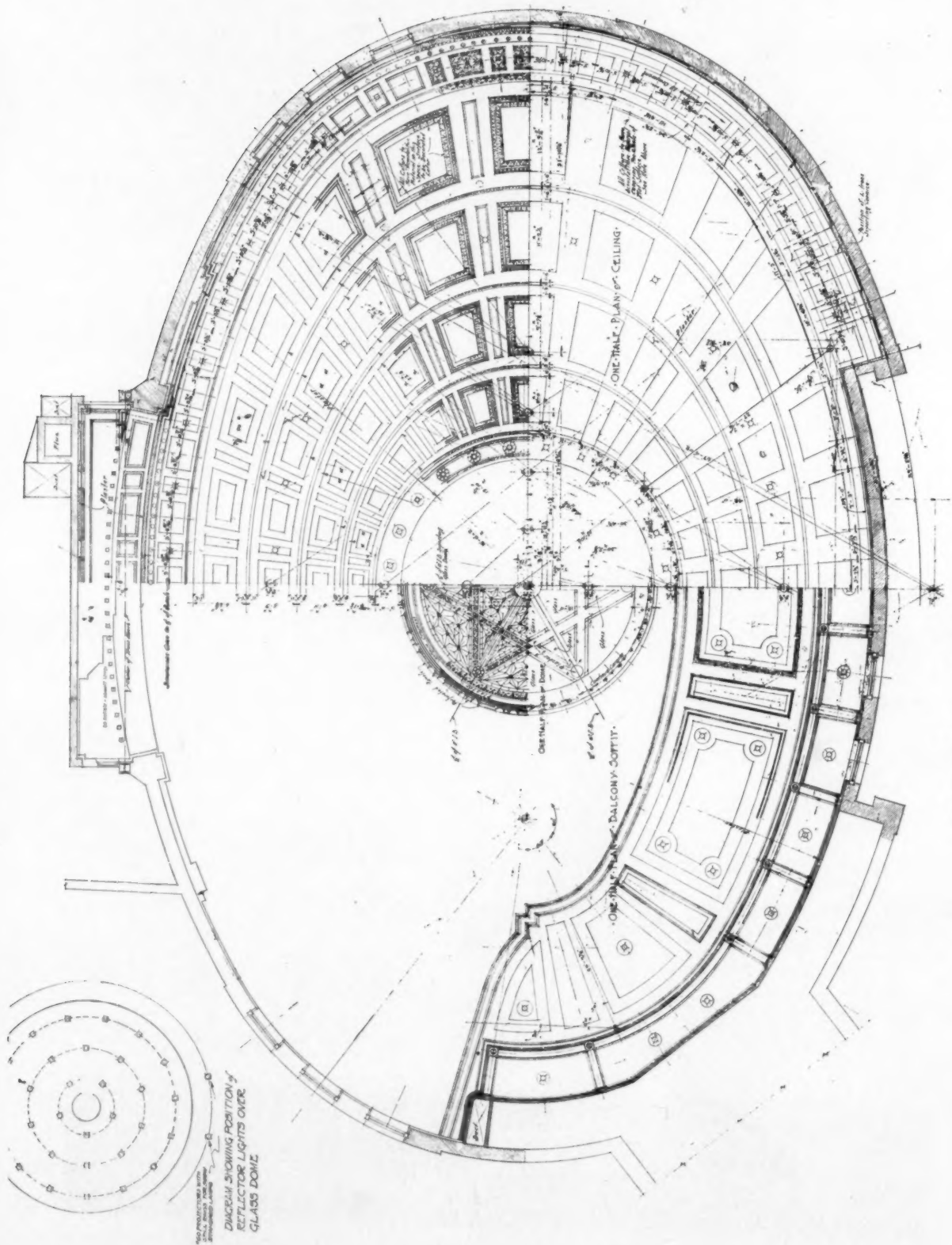
The Social Center Building is a complete institution in itself, housing on the second floor classrooms for religious teaching, domestic science rooms and a library. On the first floor are a gymnasium, kitchen and assembly hall and stage with seating capacity of six hundred. In the basement there is a fine regulation size pool of ceramic tile, with separate showers, dressing rooms and locker space for men and women.

The entire institution is heated by a modulating vapor vacuum pressure system of five circuits which may be heated independently or all simultaneously.

Both auditorium and social center buildings are ventilated by an advanced type of supply and exhaust fresh air system.

The exterior of temple and social center buildings is finished in a light buff tapestry brick and terra cotta details of Greek classic design. The building is roofed with sea green Vermont roofing slate, copper flashed and with crestings.



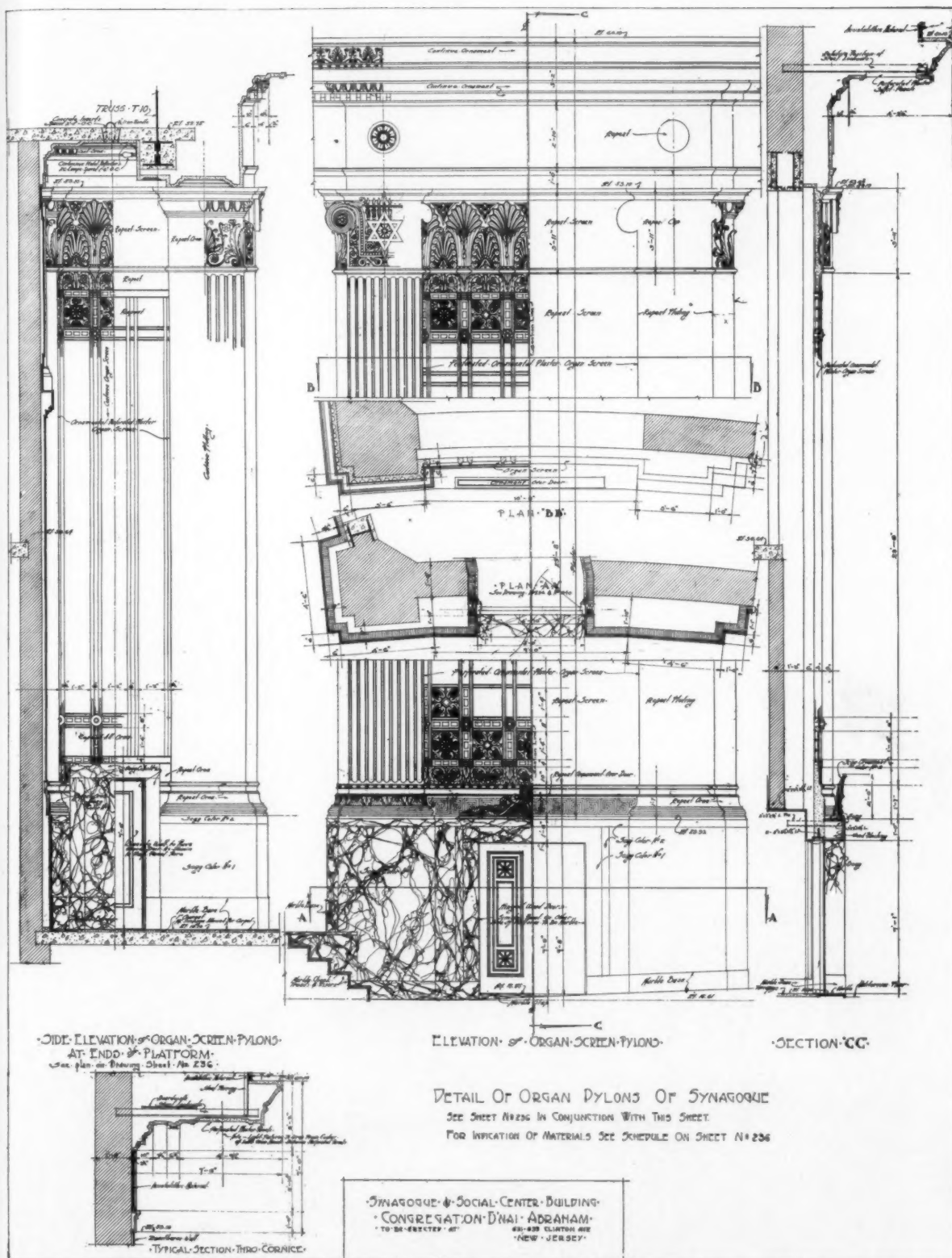


TEMPLE B'NAI ABRAHAM, NEWARK, N. J.
NATHAN MYERS, ARCHITECT

THE AMERICAN ARCHITECT

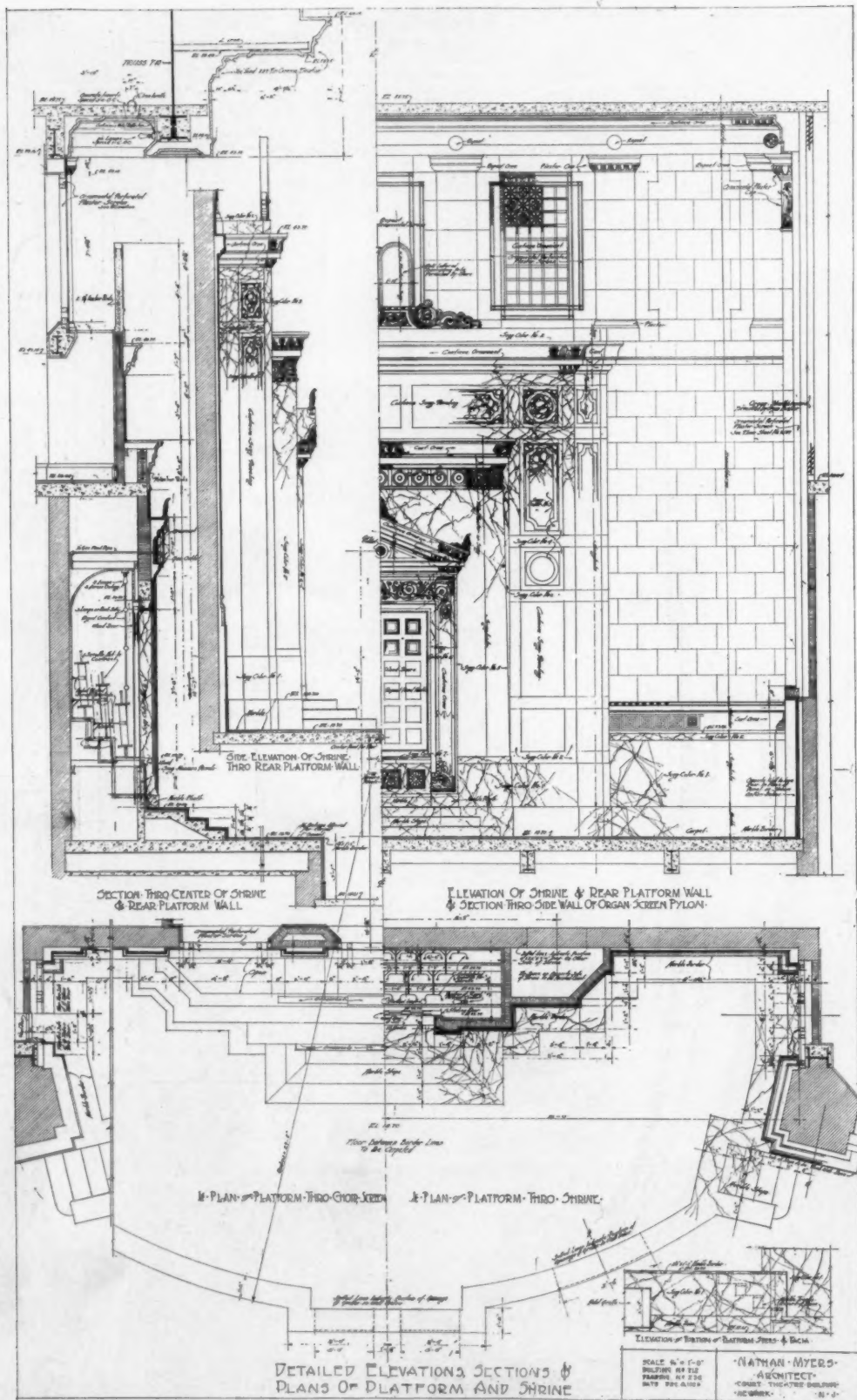
TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT



TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT



TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

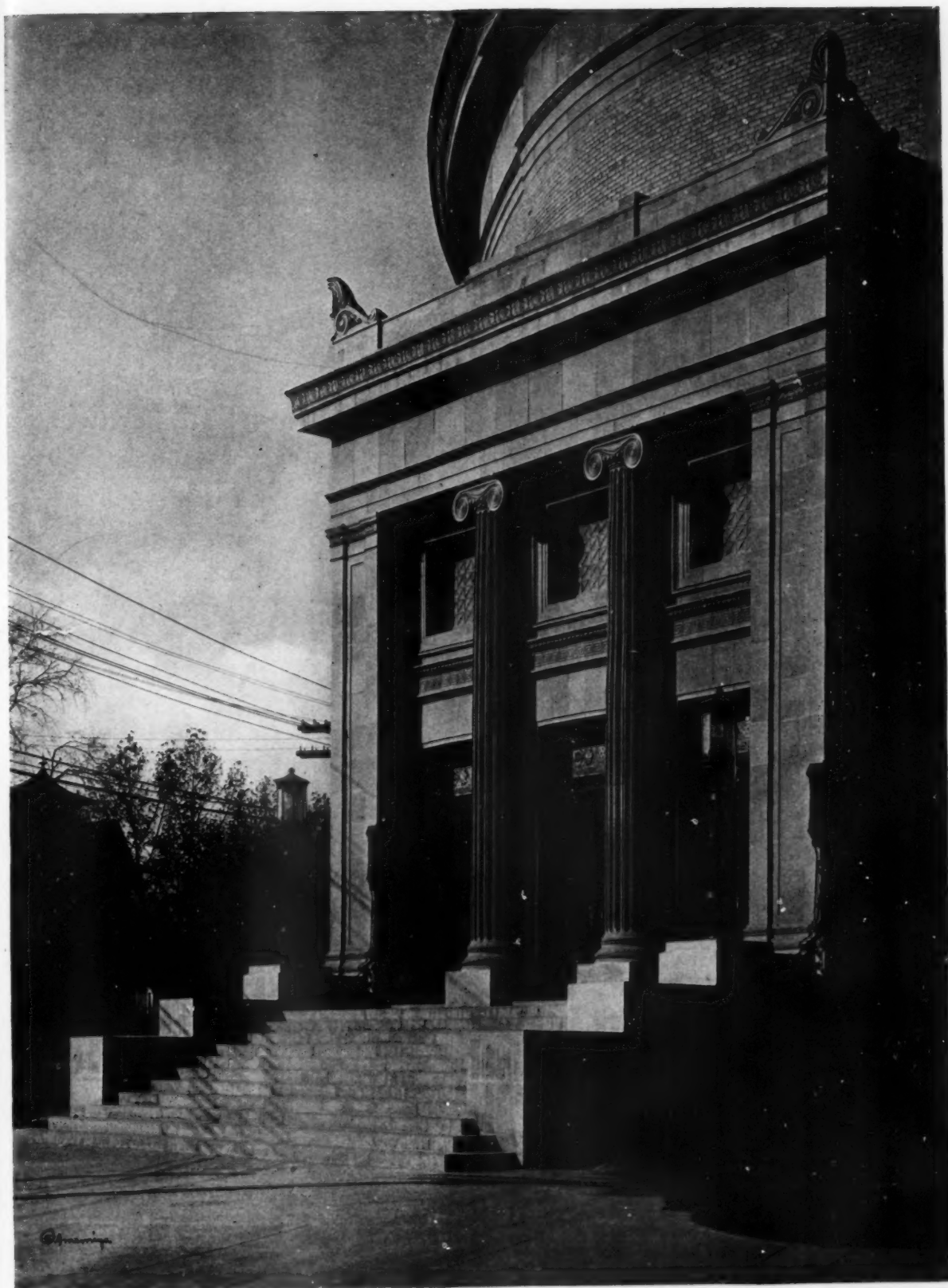
NATHAN MYERS, ARCHITECT



TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT

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February 11, 1925. Plate 29

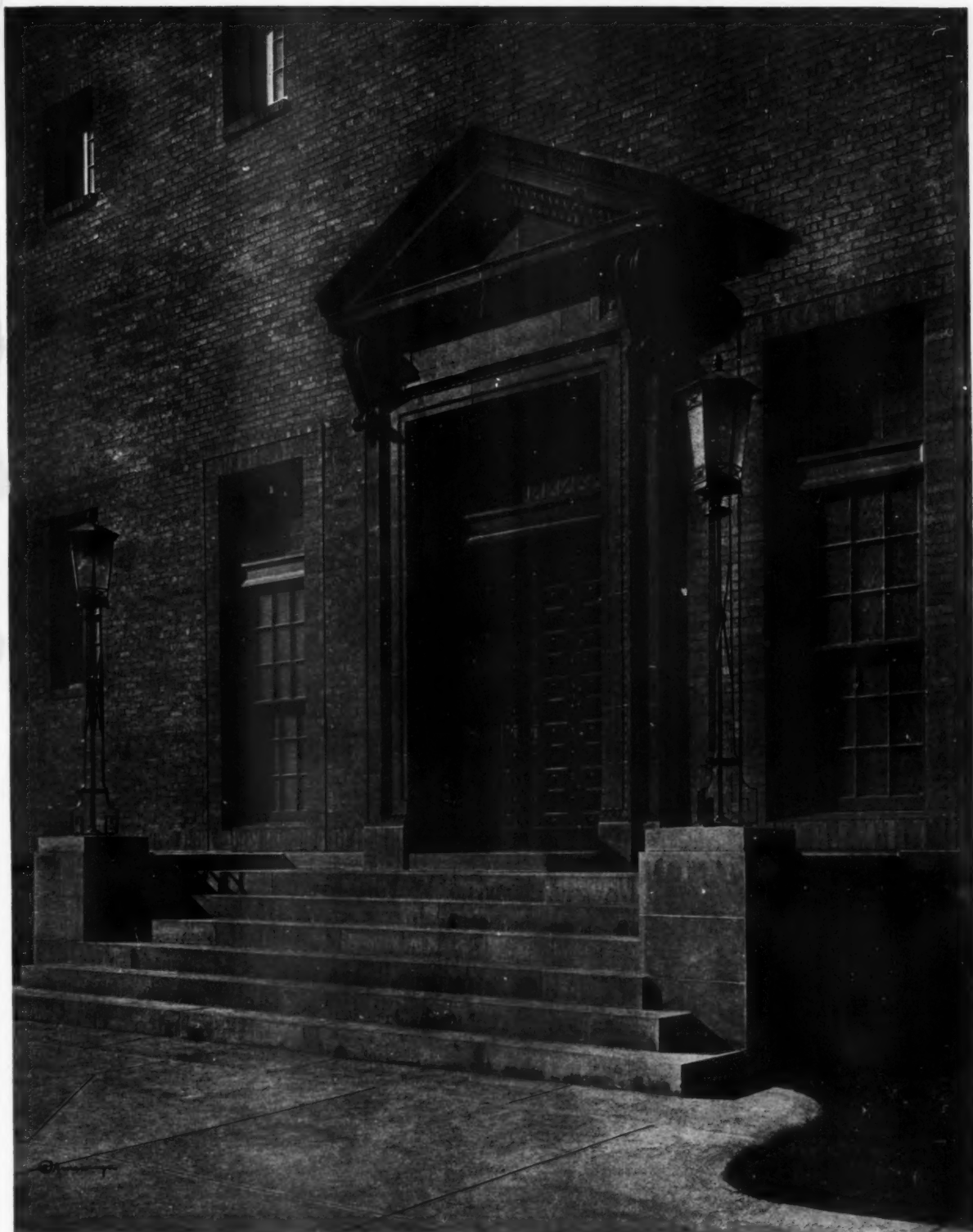


TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT

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February 11, 1925. Plate 30

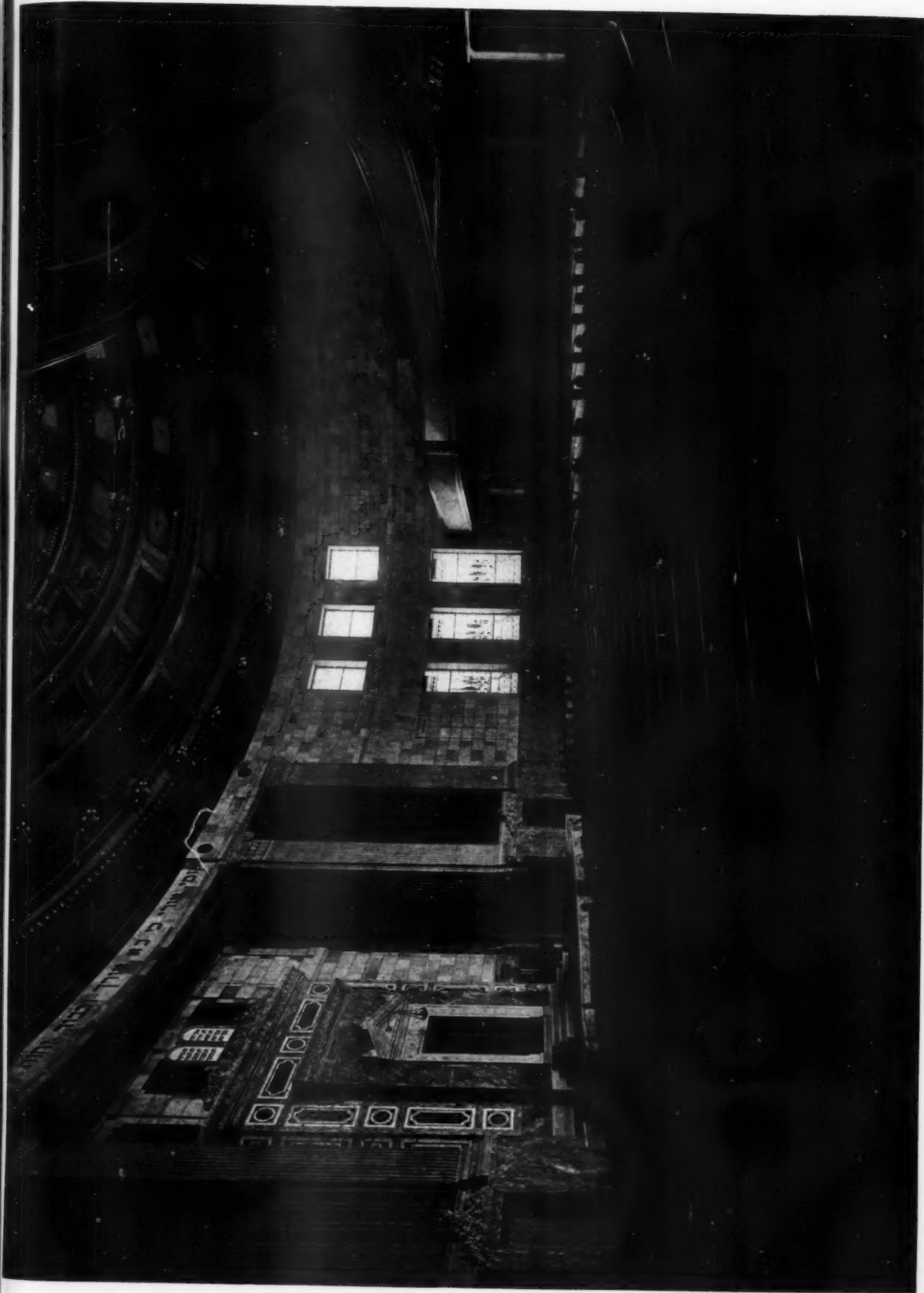




TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT

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TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT

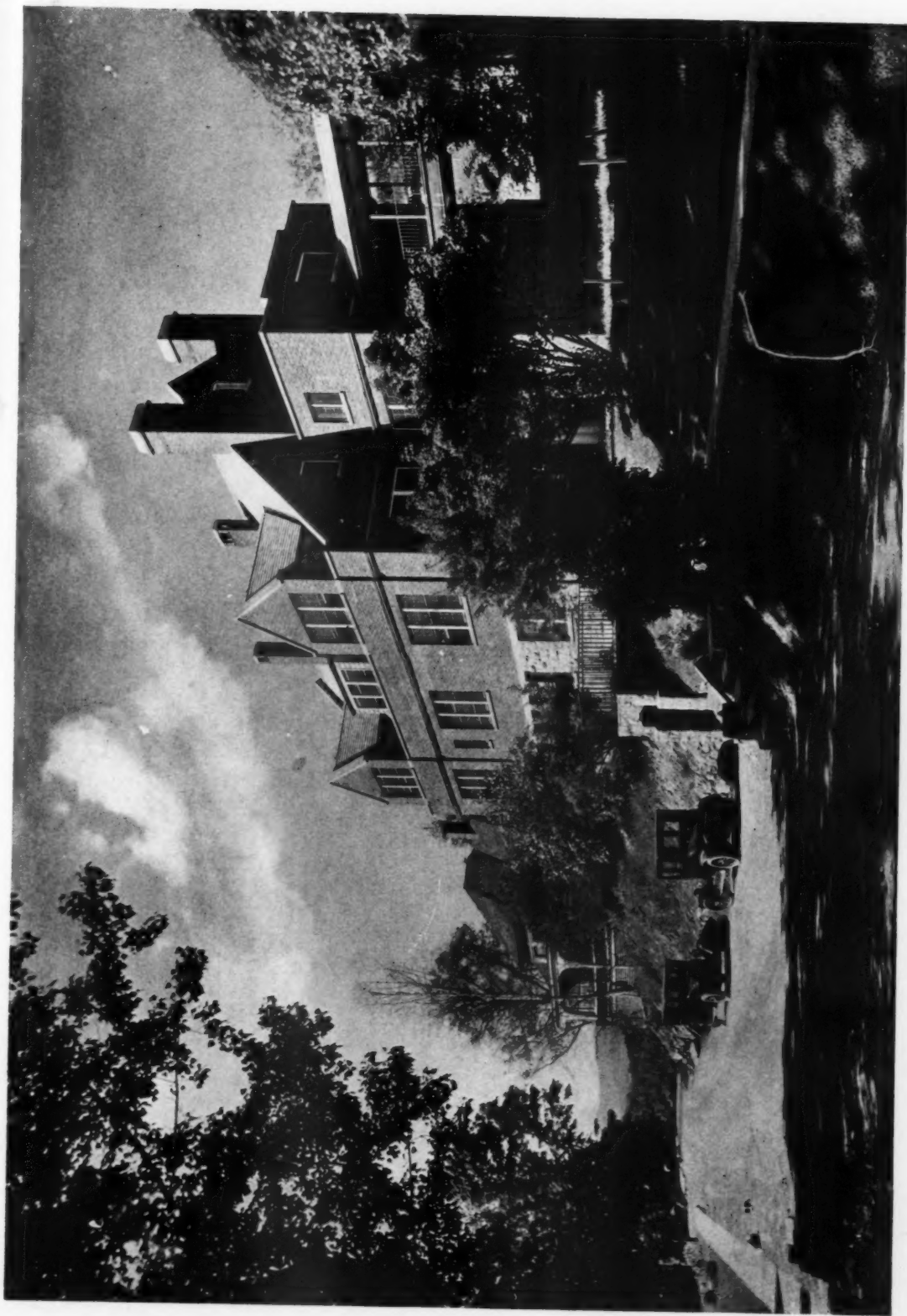
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TEMPLE B'NAI ABRAHAM, NEWARK, N. J.

NATHAN MYERS, ARCHITECT

THE AMERICAN ARCHITECT
February 11, 1925. Plate 33



LABORATORY BUILDING, TRUDEAU, N. Y.

SCOPES & FEUSTMANN, ARCHITECTS

(Description on back)

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LABORATORY BUILDING, TRUDEAU, N. Y.

SCOPES & FEUSTMANN, ARCHITECTS

THE exterior walls of this modern laboratory building, designed and erected for highly specialized occupancy, are of stone, taken from the site, and brick, laid up in Flemish bond, with limestone trimmings.

The section in which this building is located has been found to have climatic conditions that are best for those suffering from tuberculosis in its various stages. This laboratory was planned to provide the most modern facilities for research work in pathology, bacteriology and chemistry. The X-ray department has been given more space than is usual as it not only serves the institution, but the village of Saranac Lake and the outlying country. The arrangement of the plan of this department is sufficiently large to care for a great many patients. As all patients come by appointment only, a large waiting room was not necessary. Complete dressing room suites have been provided for both sexes. The laboratory floor has direct communication with the medical building by a covered way.

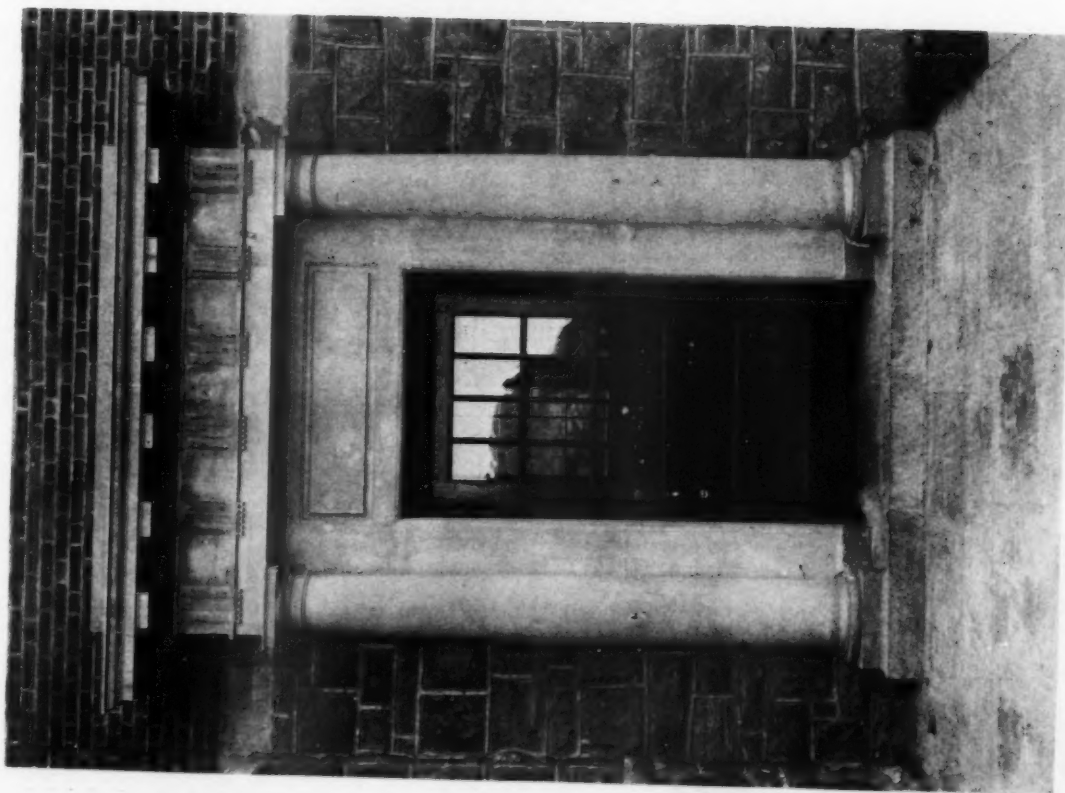
The following special features are of interest.

A perfectly tight room, seven feet high, placed in the interior of the building, away from outside walls and insulated with four inches of sheet cork on all sides, has been designed for the growth of cultures. A constant temperature is maintained by means of electric heat units operated by thermostat control. Fume hoods are provided with fan ventilation, arranged so that the flow of air is induced by aspiration through cone shaped lead nozzles. No fumes come in contact with the fan nor its driving mechanism.

The animal room cares only for animals being used for experiments. A general animal house is provided elsewhere on the grounds.

All tables and hoods are provided with electric power outlets, positive and negative pressure outlets and gas and water.

Practically all rooms have exhaust ventilation connected to a fan in the attic space over the staircase.



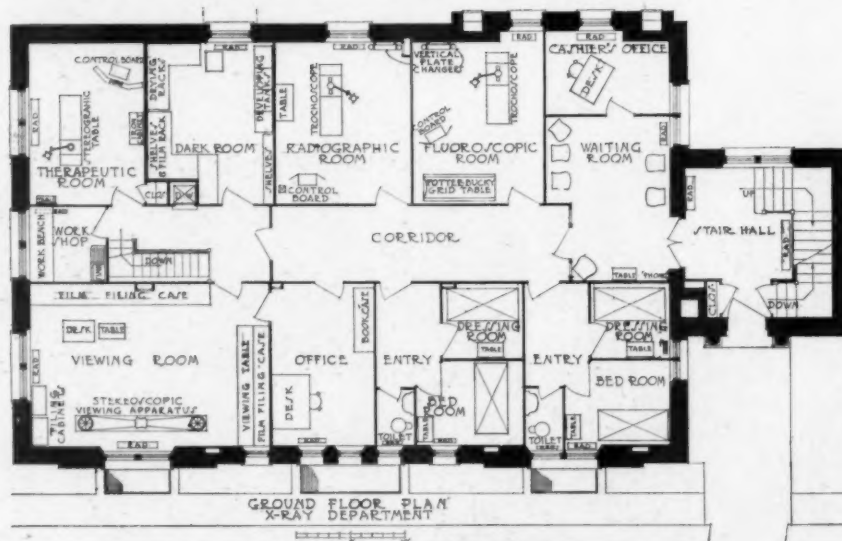
THE AMERICAN ARCHITECT
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LABORATORY BUILDING, TRUDEAU, N. Y.

SCOPES & FEUSTMANN, ARCHITECTS

(Plans on back)



GROUND FLOOR PLAN
X-RAY DEPARTMENT

LABORATORY BUILDING, TRUDEAU, N. Y.
SCOPES & FEUSTMANN, ARCHITECTS



ARCHITECTURAL DETAILS

TERRACE PORCH, HOUSE OF A. K. LAFLIN, FIELDSTON, NEW YORK CITY

DWIGHT JAMES BAUM, ARCHITECT

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EDITORIAL COMMENT

TOWARD RAPID GROWTH, sometimes overgrowth, is the tendency of the times. Banks are outgrown and additions planned before the ink is dry on the final payment for the new building. As it is in private work so it is in public buildings. Even the newer state capitols are becoming cramped and the older ones are hopelessly outgrown. The problem that faces the state authorities is a serious one. In most cases it is impossible to add to the old buildings and more often than not there is no room on the capitol grounds for new buildings. The only alternatives are to build a new and large capitol or to house the state departments in an office building built as near the capitol as the sites that are available will permit. This is the situation in Ohio. The capitol at Columbus was built about seventy-five years ago in the style of the so-called Greek revival of the time and is one of the best of the old capitols, very simple and severe, with a big Greek Doric portico and heavy piers between the windows, and a curious low dome on the top of it. It's a little stodgy perhaps but eminently respectable and much too good to remove. The plan is not particularly good and the lack of circulation prevents the addition of new wings. A little over a year ago the Capitol Commission appointed a committee of able and prominent local architects to advise them in the carrying out of the provisions of a bill enacted into law by the 85th General Assembly which authorized the construction of a State Office Building. The report of this Advisory Committee, signed by the State Architect Herbert R. Briggs, shows that the Committee have gone into the matter very thoroughly and states that in the Committee's opinion it is not feasible to add the necessary space to the old capitol in the form of a central tower or by wings, and that if new buildings are to be built on the capitol grounds they would, by the restrictions of the site, have to take the form of towers and would therefore be unsatisfactory and that an alteration to the present capitol annex or a new building on that site would be perhaps the best of solutions considered but still not entirely satisfactory, and at the request of the Commission a further survey was undertaken, and until that survey is completed the Committee recommend that no definite action be taken. All of which seems wise.

Now there is no doubt that the state departments can be housed in a building separate from the capitol, provided that such a building is reasonably convenient to the capitol, contiguous, to

use the wording of the Bill, and there is no doubt that such a building should be practical, well lighted and fireproof, and capable of future expansion, but there is also no doubt that practicality must not be obtained at the sacrifice of dignity and beauty. It must be remembered that any government, national, or city, or state, has a distinct duty that it owes to its citizens. The government should set an example. Its buildings should not be unnecessarily extravagant, but they should have a monumental and dignified appearance and should not be at all of the type of modern commercial work. There may be occasions in which a high building is a necessity, but this could only be in localities in which all the buildings were high, and it should be possible to give even to a high building, a monumental and dignified character that would suggest its purpose; but nothing could be more dreadful than to erect a cheap modern skyscraper opposite the Columbus capitol, and the Commission and its Advisory Committee are to be congratulated on their intention to make haste slowly.

* * *

IN AN ADDRESS on the subject of craftsmanship delivered at Pittsburgh, the director of one of our more important art galleries stated that he had been approached by a glass manufacturer who asked, where in this country could he find a first-class glass engraver. At the close of his address a gun manufacturer approached him with the query,—where could be found an experienced craftsman who could chase the smooth blue steel of shotgun barrels. Both of these craftsmen could be found in Europe, but not in this country. "Meanwhile," states the *New York Tribune* in an editorial reference to this matter, "the woods are more or less full of young men who may be good painters or sculptors some day, and certainly could be good craftsmen in silver, glass, wood or whatnot, and who meanwhile will starve at the one task rather than stoop to the other."

It would be unjust to the art of the craftsman to suggest that the "misfits" in the arts could find a proper place as workers in the crafts, but it is undoubtedly true, and most men in charge of our architectural schools will, we believe, agree, that many a good craftsman is spoiled to make a very indifferent sort of architect.

It is the habit of most writers to refer to the renaissance and to the giant craftsmen of that much referred to period, when they seek an example of the supercraftsman. In spite of the

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submergence of the craftsmen in this country in the identity of their employers, there have been and there are still living, men of the highest ability whose output is only limited by their physical power to accomplish.

"It isn't necessary," states the *Tribune*, "to go any further than our own Saint-Gaudens. Augustus Saint-Gaudens was a pretty good sculptor, and yet he began life as a jeweler's apprentice and worked for many years at the craft of cutting cameos—and undoubtedly acquired thereby much that he later turned to more broadly expressive ends in his work in low relief.

"A man who makes a good and beautiful chair comes much nearer Joseph Conrad than the man who knocks out a machine-made short story. And Conrad would have been the first to grant it. 'Efficiency of a practically flawless kind,' he said once, in writing of the dignity of labor, 'may be reached naturally in the struggle for bread. But

there is something beyond—a higher point, a subtle and unmistakable touch of love and pride beyond mere skill; almost an inspiration which gives to all work that finish which is almost art, which is art.'"

The promotion of the development of good craftsmanship will do more to increase the improvement of architectural design than any other one thing. It is logical, therefore, that architects should interest themselves in this development.

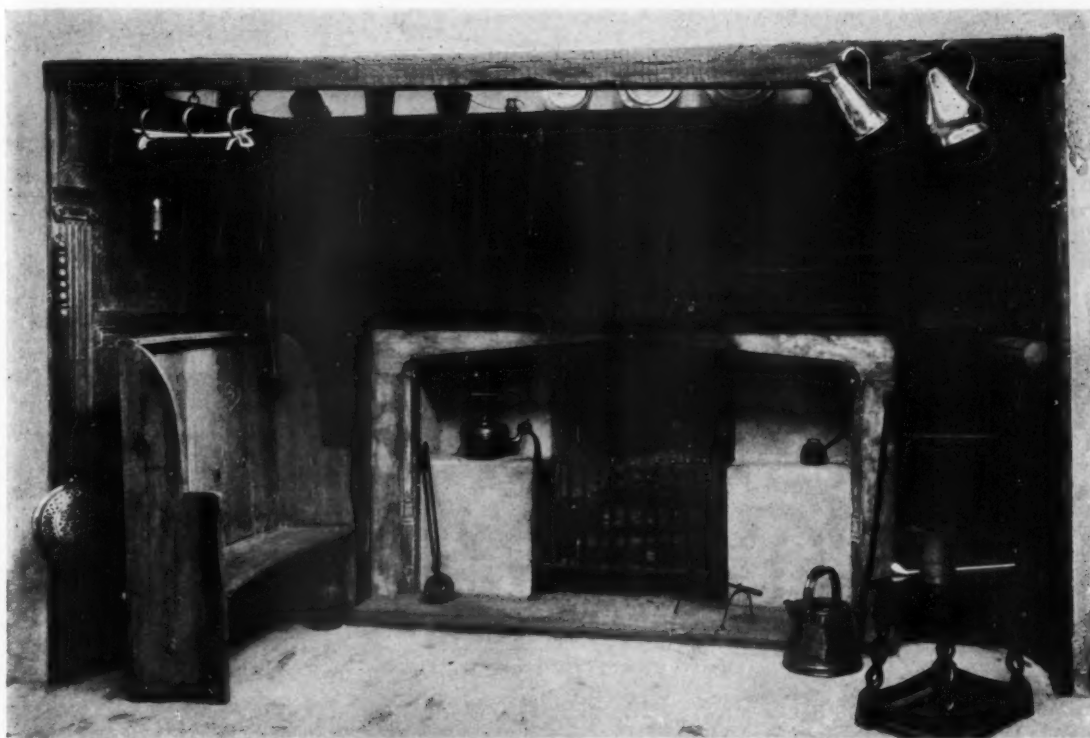
Undoubtedly the forthcoming exhibition of the Institute in New York will present the work of the craftsmen in the most dignified manner. It would seem then to be a most auspicious time to begin a vigorous campaign for the better development of craftsmanship and particularly for personal recognition of the individual worker. There will be no incentive for young men to enter the ranks of the craftsman as long as their identity is submerged.



HOUSE OF K. C. STRONG, SANTA BARBARA, CAL.

JOHNSON, KAUFMANN & COATE, ARCHITECTS

HONOR AWARD, SOUTHERN CALIFORNIA CHAPTER, THE AMERICAN INSTITUTE OF ARCHITECTS



FIREPLACE ALCOVE TAKEN FROM A ROOM IN AN OLD INN AT WOKINGHAM, ENGLAND, AND SET UP AS A WINDOW DISPLAY IN NEW YORK CITY

Many features of the Elizabethan period can be recognized; the pilasters, surmounted by slender brackets, the wood panelling itself, the timber beams, the stone fireplace and the character of the carved ornament in the panels and on the rails

INTERIOR ARCHITECTURE

The Renaissance in England: The Elizabethan Period

HISTORY has created a regrettable custom in naming the various styles and periods of decorative design after ruling monarchs. Very seldom can it be said that the crown exercised any influence whatever in the origination of a period design, and the duration of the reign of a monarch had little or nothing to do with the changing of ideas in decorative designs. Consequently, the precedent of designating the beginning and ending of a period by the dates of a monarch's reign is just as inaccurate. The transition from one period to another was always so gradual that no fixed date would be exact, although, insofar as we are at present concerned, the prevailing custom answers the purpose. The unfortunate part of it is, however, that this sycophantic or courtier-like custom to win the good graces of a sovereign entirely submerges the craftsmen, who may have played such a vital part in the creation of the period designs, just as we find the

craftsman and designer of today similarly ignored by the dominance of his employer. It is rare, indeed, that a designer has ever dominated a period enough to have his name written in history, although Hepplewhite, Chippendale and Sheraton of England, and Duncan Phyfe of this country, have risen above their entanglements so that they occupy the place, each in his own time, that Michael Angelo and the Della Robbias occupied during the renaissance in Italy, or Grinling Gibbons did during the later renaissance in England.

Following, then, this historical custom, we say that the period which marks the birth of the renaissance in England, which first began to make itself felt about the middle of the sixteenth century, was the Elizabethan period, and that it dates from 1558, the year of Queen Elizabeth's accession to the throne, and ended in 1603, the year of her death. We know positively, however, that the revival of classicism in Italy, on which the renaissance

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sance movement throughout the world is based, and to which many of the most characteristic details of the Elizabethan period can be directly traced, had spread to England, as well as to other countries of Northern Europe some time before 1558, and probably continued to influence decorative designs for many years after 1603. To prove further how misleading this method of naming and dating the periods is apt to be, it is common to find people who claim that because

of its earlier descendant and emphasized rather the architecture of the "five orders."

The Elizabethan period, then, marks the inauguration of renaissance ideas in England. The name of one of her architects, Inigo Jones, is so closely associated with English Renaissance that it is impossible to speak of one without thinking of the other. No sooner had the first suggestion of interest in classic designs reached England, than Inigo Jones, eager to take advantage of any new idea, journeyed to Italy, and there carefully studied the works of old Greek and Roman masters, especially Palladio, whose influence is readily discernible in the later designs of Inigo Jones. But English architects and designers have always had a habit of putting their own interpretation on anyone else's idea, and the designs of the English Renaissance were no exception to that rule. The style proved to be distinctly English. As has been suggested, the Elizabethan period was based on architectural motives. A striking element of symmetry, visible in most of its designs, can be traced to classic influence, and the frequent use of columns, pilasters and arches was,



LIVING ROOM IN THE HOUSE OF FREDERICK A. GUEST,
ROSLYN, L. I., N. Y.

CARRERE & HASTINGS, ARCHITECTS
CHARLES OF LONDON, DECORATORS

The woodwork for this Elizabethan room was designed and executed in England, and the character of the old English is thus even more accurately maintained

Elizabeth was a Tudor, the years of her reign should be associated with the Tudor style which directly preceded it. The truth of the matter is that her reign was marked by such distinctly original details that it is worthy of special citation, and it might better be said that the Elizabethan period was a part of the Tudor style. In a word, the distinction between the two periods is that the Tudor carried with it many of the details which had been so characteristic of the preceding Gothic, while the Elizabethan lost all trace



AN OLD STONE ELIZABETHAN MANTEL

The strapwork ornament is evident throughout the design and the style of the pilasters and the contour of the moulded members are characteristic of the period

no doubt, due to the predominance of architectural motives in classic designs. The influence of the study of old Greek and Roman temples accounts, too, for the heavy and even massive de-

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ROOM IN THE BUILDING OF THE CUNARD LINE, NEW YORK CITY

BENJAMIN W. MORRIS, ARCHITECT

The woodwork is designed in the character of the Elizabethan period, the strapwork pediment above the overmantel being especially typical of the style

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tails which were so often evident, and the development of these elements is responsible for a certain firmness which was most impressive and which tended to give the style a real English character. The designs throughout the entire period were in good taste, enriched so as to give complete satisfaction without elaboration.

The great halls of Elizabethan times, for many of the rooms of that period were large and lofty,



A ROOM IN CHASTLETON HOUSE, OXFORDSHIRE, ENGLAND, WHICH SHOWS A FINE EXAMPLE OF THE STRAPWORK CEILING WITH ORNAMENTAL PENDENTIVES SO CHARACTERISTIC OF THE ELIZABETHAN PERIOD

(From "English Homes")

offered excellent opportunity for decoration. These rooms were generally open at the top to the roof timbers and the spaces between were filled with plaster of rough texture. Wood panelling covered the lower half of the walls, the moulded stiles and beveled rails forming small rectangles. In many of the older rooms, the fields of the panels were carved with a linen-fold pattern, while, occasionally, this carved ornamentation was used only on the panels of the top tier or of the doors, where its effect would count most. The upper part of the wall was treated in rough plaster, and if the ceiling height did not warrant half-timber treatment, a rough plastered ceiling, also, was used, on whichARGE work in geometrical or natural bird or flower forms was applied. Ornamental pendants were frequently employed, and were

combined with geometric patterns to make the ceiling more ornate. The chimneypiece was often made the center of interest. It was frequently of stone, though sometimes of wood, in either case elaborately carved with human figures and intricate ornament peculiar to the times. It is interesting to note that in the earlier rooms, prior to 1575 perhaps, the ornament was quite different from that which was employed after 1600. The earlier carving was of much higher relief, and was designed in a curious blending of renaissance and Flemish motives. This ornament gradually took on a more decidedly English character, becoming flatter and flatter, naturally developing into the gouged out ornament so peculiar to the Jacobean period directly following.

But the Elizabethan period, as it is generally known, is characterized by its strapwork ornament. It was designed in any graceful arrangement of line or scroll, but its peculiarity was chiefly in the manner of its cutting. The pattern has a flat surface of equal height, from which the background is cut evenly away, very much as



THE CORT CUPBOARD OF ENGLISH RENAISSANCE TIMES

Although this particular piece is more of Jacobean influence than Elizabethan, especially in its ornamentation, its lines are the same and the bulbous turnings which support the top are typical of Elizabethan designs

though straps of ribbon were arranged to form a design. This strapwork decoration was used on mantels, ceilings, and anywhere, in fact, where ornamentation was needed. The doorways of the renaissance of England, as of other countries, have

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been well described as "doorways that invite yet check advance." They were frequently second in interest only to the mantelpiece. A fluted column

Stone mullions acted as frames for metal casement sash in the Elizabethan period, and the lights were leaded in small diamond or lozenge



HALL IN HOUSE OF ROBERT LAW, PORT CHESTER, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

A characteristic Elizabethan staircase, true in every line, detail and proportion to the old style

or pilaster of especially characteristic design on either side of the doorway supported a pediment of Greek purity, and an elegant frame was therefore formed for the door and its carved panel.

shaped panes. Stained glass insets, in the character of the earlier ecclesiastical designs, were often used to add interest. Occasionally a moulded stone trim was used, in a similar manner in which

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stone was frequently used to cover the entire mantel breast, where the wood panelling was omitted to show the stone or brick of the structural walls. Floors were generally of stone or slate, although in later rooms wide oak boards of random widths, with wide joints, were often seen.

Elizabethan rooms were rather sparingly furnished, and the spaciousness which was thus emphasized demanded robust furnishings. Each piece, however, had a real function to perform in the decorative scheme. The heavy, crude oak furniture that had so long satisfied the tastes of the English combined admirably with the Elizabethan architecture. The draw-top refectory table, supported upon four or six large bulbous legs, connected with low stretchers, was the principal piece of furniture used in these rooms. The legs and apron were generally richly carved in characteristic ornament, and the table added a note of decoration to any room. The cort cupboard was prominent too, in the furnishings, also richly carved and decorated with gouge work.

Seating furniture consisted largely of stools and benches with heavy turned legs and carved aprons. Lighting fixtures were generally of wrought iron, although brass fixtures were often seen. The walls, the floor and the furniture being usually of dark, lustrous oak, there was a necessity for the use of strong color in the hangings and floor and furniture coverings. Window hangings were often of rich and even brilliant colored damasks and brocades or large figured printed linens of striking color combinations, while coarsely woven case-ment cloth was used for sash curtains. Fireplace accessories played an important part in these rooms in keeping with the size and importance of the fireplace and mantel, being generally of hand wrought iron in interesting and characteristic designs.

Acknowledgment is made to the following firms for their courtesy in supplying illustrative material: Louis L. Allen; Matthews Bros.; Arthur Todhunter.



AN ELIZABETHAN ROOM SHOWN IN THE RECENT EXHIBITION OF THE ART-IN-TRADES CLUB, NEW YORK CITY,
FEATURED BY CHARLES OF LONDON

The panelling of the room was taken from an old house at Thetford, Norfolk, England, a house which was used as a hunting seat by Queen Elizabeth. The details of the mantel are characteristic of the early Elizabethan period in which Renaissance and Flemish ideas are peculiarly mixed



HOUSE OF MRS. MARY L. BOWMAN, BRONXVILLE N. Y.

LEWIS BOWMAN, ARCHITECT

(Description on back)

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HOUSE OF MRS. MARY L. BOWMAN,
BRONXVILLE, N. Y.

LEWIS BOWMAN, ARCHITECT

House built in 1924, and is of wood frame construction.

The exterior walls are half-timber, brick veneer. The bricks are laid on edge.

Floors, oak, partitions framed.

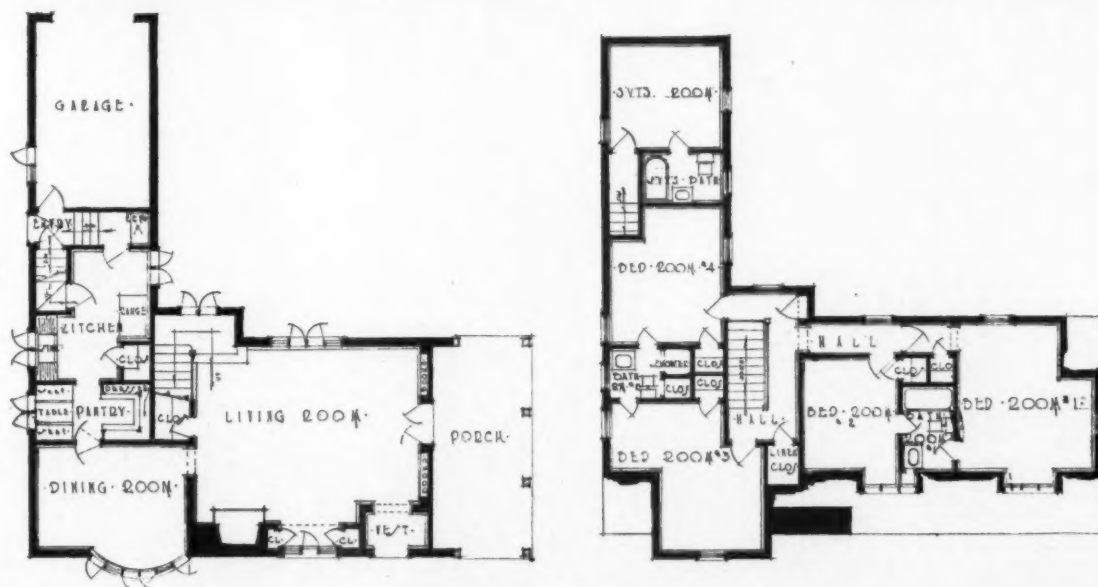
Roof, shingles.

Interior trim, whitewood.

Hot water heat.

Electric light.

Cost not available.



HOUSE OF MRS. MARY L. BOWMAN, BRONXVILLE N. Y.
LEWIS BOWMAN, ARCHITECT



HOUSE OF MRS. MARY L. BOWMAN, BRONXVILLE N. Y.

LEWIS BOWMAN, ARCHITECT

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FELLOW BUILDING, CAMBRIDGE, ENGLAND

ONE OF A SERIES OF "WORKING PHOTOGRAPHS" FROM THE COLLECTION OF JOHN RUSSELL POPE, F. A. I. A.

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The LAW as to ARCHITECTURE

BY CLINTON H. BLAKE, Jr., of the New York Bar

I HAVE recently had submitted to me a very interesting article by Mr. Whittla Stinson of New York City on standard building contracts and arbitration. The article, among other things, gives an interesting analysis of the uniform contract of The American Institute of Architects of 1907 and of the standard documents of 1915 to 1918. It refers, also, to the proposed standard construction contract of 1924 and the proposed standard contract for engineering construction of that year. Mr. Stinson is a warm advocate of arbitration. His views on the subject will be of interest to the readers of THE AMERICAN ARCHITECT, in view especially of the discussions which we have had from time to time in these columns with respect to the advantages and disadvantages of arbitration. In next month's issue, I shall, at the conclusion of Mr. Stinson's article, have occasion to comment briefly on the points which he makes and on the general question of arbitration as applied to architects and builders. I am in hearty accord with much that Mr. Stinson says, but there is undeniably much to be said on the other side. A frank discussion in this way of the virtues and defects of arbitration will be helpful.

STANDARD BUILDING CONTRACTS AND ARBITRATION

AN analysis of The American Institute of Architects uniform contract for 1907, of its standard documents of 1915-1918, of the proposed standard contract for the construction of buildings of 1924, together with that of engineering construction of the same year, as to what is and what is not left to arbitration by these contracts, affords some interesting sources of reflection.

Lawyers whose practice has principally been concerned with litigation growing out of these contracts will assert that arbitration, so-called, has failed in the majority of cases that have come under their observation, that arbitrations have ended in compromises, that there has been a sacrifice of legal right to expediency, that a juggling of facts and law ending in the usual fifty-fifty settlement characterizes the conclusion of the matter, that no one is satisfied, and least of all the arbitrator.

Arbitration, however, under the New York law is not compromise, but, through the consent and compact of parties, involves a direct judicial resolution of controversy which can only result from the application of law to the facts. The award is lifted by the statute above the ordinary obligation of contract and is made enforceable by the courts. Arbitration, in this sense, is not advisory or mediatory. It decides; it does not compromise. It lays to the line and plummet of the law and rights founded in the law. Only awards flowing from such arbitration are entitled to judicial notice by the courts.

Let us suppose an agreement between the owner, the architect and the builder to arbitrate; the owner choosing an architect whose disinterestedness, impartiality and experience will justify fair consideration of the right in question; the contractor choosing another contractor, whose knowledge and integrity will equally dignify the impartiality of his award. These two arbitrators shall then choose a member of the bar as umpire, an attorney having no interest in the decision either way, save its justice and the fair ap-

plication of established principles of law to the arguments in the case. His assent or dissent will be conclusive. The consensus of opinion among those studying the possibilities of arbitration as to these building and engineering contracts informs us that this is the ideal constitution of an arbitral board touching the arbitration of their varied provisions, and widely ramifying aspects.

A more serious question arises in respect to the arbitration clauses of these contracts, whether arbitration can be effective, useful, and fulfill its purpose under any legislative provisions, unless it comprehend, by and large, the whole contract; whether arbitration grudgingly conceded as to particular questions only, is not rendered futile in the first instance by the fact that arbitrable questions are so inter-related with almost every other arising under the contract, as to ultimately involve the consideration of all, if justice is to be substantially achieved.

Let us examine these contracts; it is to be observed that the 1915-1918, and the 1924 standard documents stipulate that the law of the place of the building (construction) shall govern the construction of the contract. The engineering contract omits this stipulation.

The uniform American Institute of Architects contract of 1907 allows arbitration a very narrow operation. The arbitration clauses appear to be confined to the sums to be allowed for alterations, extras, and extensions of time incident to delay through neglect or default of owner, architect, other contractor, strikes, fire, or unavoidable casualty.

The architect appears to be empowered finally to conclude the parties as to work to be done under the contract, construction and meaning of drawings and specifications, as to unsound or improper work and materials, as to neglect, refusal or failure of contractor, as to sufficiency of the work, materials, skill required, and diligent prosecution, and as to the appraisal of damages for such default.

In case of evidence of any lien or claim, for which, if established, the owner of the premises might become liable and which is chargeable to the contractor, or any such claim arising after all payments to the contractor, it is apparent that the contract seeks to establish a continuing liability in the contractor, but makes no provision as to how such liability, or its validity, shall be ascertained (Art. IX). Again, while a certificate of final payment is alone conclusive evidence of the performance of the contract, no payment is to be construed as an acceptance of defective work or improper materials (Art. X). The continuing liability of the contractor would seem to rest here in the discretion of the architect as to what is latent defect. The obligation of the owner to insure, and the making payable to the parties of insurances recovered in case of loss, as their interests may appear, is apparently left open to controversy, (Art. XI).

By the American Institute of Architects Standard Documents of 1915-1918 it is stipulated (Art. I) that the law of the place of the building shall govern the construction of this contract. On the other hand (Art. IX) the architect is to be the interpreter of the conditions of the contract and judge of its performance; it is sought to make the architect in these particulars the impartial arbiter between the owner and the contractor. The decisions of the architect shall be final (Art. X) if within the terms of the contract documents; and except as otherwise provided in the general conditions thereof (of which the architect is said to be the interpreter), all of the architect's decisions are subject to arbitration. It is to be observed that the architect is empowered to make decisions on all claims of the owner or contractor and on all other matters relating to the progress and execution of the work or the interpretation of the contract documents. The architect is the agent of the owner (Art. IX) to the extent provided in the contract documents, or when specially or by written authority authorized to act. It is difficult to see that where the architect is in fact the agent of the owner and the judge of the contract documents

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and conditions, that he may or can impartially arbitrate between the owner and the contractor.

Arbitration is specifically provided for with respect to corrections of work after final payment (Art. XVI), with respect to cost of emergency operations (Art. XVIII), with respect to settlement with insurers (Art. XXI), with respect to reasonable damages arising from wrongful act or negligence (Art. XXXIX), with respect to damages caused by the contractor to other contractors at the latter's option. Arbitration is provided (Art. XLV), subject to the provisions of Article X, of all questions in dispute under the contract, and at the choice of either party. If neither party elected to arbitrate, it is apparent that this expeditious and desirable form of judicial determination could be evaded, whereas the object of the arbitration clause is to restrict the parties to its procedure, and limit by mutual agreement in the first instance their recourse to the courts.

The stipulation for arbitration (Art. XLV) obviously contemplates partisan representation in the Board of Arbitrators. The failure of the two arbitrators, one to be named by each party, to agree on the third, and his appointment by the presiding officer of the nearest bar association, nearest to the place of building, which obviously might be in another jurisdiction, is not as advantageous, as would be submission of the controversy to the agency of the Arbitration Society of America, endorsed by the American Bar Association, and its uniform procedure. Insofar as the dispute concerned construction work to be performed within the State of New York, or contract made within that state by which the parties were made amenable to its jurisdiction, the arbitrators would by statute have all incidental powers necessary for the taking of testimony, etc. By the New York statute the decision of arbitrators is made binding, and enforceable by the courts.

This contract fails to define with any degree of accuracy the exact sphere of arbitration, so extensive is the power reposed in the architect, both as agent and judge. What is or what is not reasonably necessary for the proper execution of the work, properly inferable from specifications, drawings and instructions, what is consistent therein with the contract documents, and the large degree of responsibility imposed upon the contractor, relieving both architect and owner of liability, makes it very difficult to determine the architect's lawful *respondiat superior*. In fact it would seem that in a number of instances the burden of responsibility is so shifted to the contractor that he becomes the guarantor or surety for the architect or for the owner or both, and this depending upon the determination of the latter. To what extent the mutuality of the contract is thereby impaired it is difficult to say.

The Proposed Standard Contract for Construction of buildings, 3rd Tentative Draft, 1924, goes much further in the direction of an explicit submission of disputes to arbitration. The architect's decisions on all claims of the owner or contractor, and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents, shall be final except as to the element of time and the financial considerations involved. It is to be observed that all time limits stated in the contract documents are of the essence of the contract (Art. I). This provision, therefore, greatly restricts the effect of the arbitration clause. Arbitration is then limited to financial considerations touching the performance of the contract. Patently these considerations would involve cost of alterations (Art. XV), extras (Art. XVI), possibly deductions for uncorrected work (Art. XVII), delays and extensions of time (Art. XVIII) (includes unusual delays in transportation), contractor's right to stop work or terminate contract (Art. XXI), corrections of work before and after final payment, the latter being specifically made subject to arbitration (Arts. XXII and XXIII), damages (Art. XXXI), mutual responsibility of contractor (Art. XXXIV). In the main this tentative draft is open to the same objections as the 1915-1918 standard form. At least arbitration is not contingent on the agency of the architect in all cases. The arbitration clause is substantially the same.

Under the Proposed Standard Contract for Engineering Construction, it is to be observed that all decisions of the engineer on claims of the contractor and all other matters relating to the execution and progress of the work

or the interpretation of the contract drawings shall be final except as to the element of time and the financial considerations involved, which latter may be arbitrated, (Art. XXXIX). Whether claims of the principal whom the engineer represents are or are not subject to arbitration is not clear. The provisions of the contract are substantially those for building and architectural construction.

It is difficult to make recommendation relative to the form of arbitration clause appropriate to these forms of contracts. It is necessary that the architect or the engineer should have complete authority as to the performance of the work, that it should be promptly executed, and in accordance with the contract terms and stipulations, yet fairness demands that all claims, disputes, differences and controversies resulting from the completion of the contract, and consistent with the legal and/or equitable rights of the owner or principal and the contractor, whether or not incident to the exercise of full discretion by the architect or engineer, should, agreement failing, be made the subject of arbitration, that, by an independent, impartial court of arbitration, such as that established and conducted by the Arbitration Society of America, Inc., in accordance with its rules of procedure and in pursuance to the law of the State of New York. The Arbitration Society of America seeks the adoption of uniform rules of procedure, which may be incorporated by reference in the contract, and the co-operation of the bar in effectively administering this important judicial function, together with the aid of experts in the particular sphere which the controversy touches. The arbitrators would naturally be governed by the *lex locus*, in respect to the application to the controversy of principles of established law.

If the right to arbitrate is made contingent upon the execution of the work to be performed, whether or not the demands of the architect are arbitrary, the foregoing recommendations will have particular force. Such a plan would peculiarly address itself to the favor of bonding companies, and lends itself very especially to cost-plus contracts, the payment of profits being held in escrow pending the outcome of arbitration, or sufficient to cover the case.

If the contractor is to do no work without proper drawings and instructions, he is substantially the judge of what is reasonably necessary for the proper execution of the work, properly inferable from drawings, specifications, etc. However mandatory upon the architect to make decisions on all claims of the owner and contractor, or in respect of the execution and progress of the work, interpretation of contracts and drawings, supported by power to enforce faithful performance, however final his determinations, what is and what is not properly covered by and reasonably inferable as to the intention of the contract documents is made by the 1915-1918 standard contract and proposed draft of 1924 equally, if not more, incumbent upon the contractor to ascertain. In this particular these more recent standard forms are differentiated from the 1907 standard contract, which probably has a very much more general use.

While in the 1907 form, the architect's decision as to constructions and meaning of drawings and specifications is final, it is not so as to the later forms of standard contracts. By the latter, it will also be observed, the architect is under a clear duty to furnish additional drawings, consistent with the contract documents which include the general conditions thereof, all of which, it is stipulated, shall be governed by the law of the place of building or construction; yet, the builder is in fact charged with a superintendence as to these. Even the approval of the architect as to the contractor's shop drawings fails to relieve the contractor from responsibility, incident to their preparation, for deviation from the architect's drawings or specifications, or *error of any sort*. The 1907 contract however requires no performance by contractor in pursuance of extra drawings not consistent with the purpose and intent of the original drawings and specifications. It would seem that in the later forms, the agency of the architect ends with these original documents; thence, the burden is shifted to the contractor.

The architect's decisions appear to be final and conclusive where provided in the specification. They would seem then to be conclusive as to all claims growing out of

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the interpretation of these, including necessarily extra drawings, etc., and whether consistent with or not consistent with the exercise of reasonable and lawful discretion by the contractor to do no work without proper drawings. The owner would be relieved of all liability, were it not the considerations of public policy, law and equity, and the contractor made the guarantor for the mistakes of the architect, whether or not the owner's agent; and if not secondarily liable, then primarily so. Truly, this suggests an anomaly in contracts, such that the actual obligation and liability of the owner vanishes entirely. If specifications are conclusive on the builder, they must be equally conclusive on the owner, and the only *terra firma* of the contract is to be found in reasonable construction of the original documents and those proper inferences of fact and of law resulting therefrom; otherwise, the contract would have no mutuality. If the owner be not bound by his architect, there is no agency; if not bound, even when the incompetency of the architect is attributable to the owner's negligence, and bound only when the exercise of the architect's discretion will in his or the owner's judgment, be beneficial to the latter, we have indeed a futurist coloring to the law of agency.

If the architect's power to stop the work when in his judgment necessary to insure the proper execution of the contract can be justified, the exercise of that power must rest upon some deviation from what the contract requires, and the decision must bind the owner, constructively as his own act. If the architect's decision cannot be final, even in relation to matters of artistic effect, except within the terms of the contract, and the contractor be not excused for following them, the whole fabric of the contract is endangered. Its restrictions must fall, and the courts will be bound to hold void and unenforceable unreasonable provisions placing the contractor at the mercy of the owner or his architect. Whether or not it was intended to make these standard contracts architect-foolproof, or so vulnerable to attack as to invite litigation *ad infinitum*, it is certain that these considerations strongly emphasize the necessity of making absolute, by the terms of the contract, the ultimate submission of all controversies growing out of the interpretation of the original drawings and specifications, to arbitration and some impartial agency thereof. They emphasize the necessity for more specific definition in the contract of the responsible authority and agency of the architect. (Re: Articles I, II, 1907; articles I, II, III, IX, X, XI, 1915-1918; articles II, III, XXXIX, 1924.)

Article V (1907) makes refusal, neglect, or failure of

contractor, as to sufficiency of workmen, skill thereof, materials, or prosecution of work with diligence, and expense and damage incident thereto, chargeable to the contractor, the architect's decisions being conclusive on the parties. The architect is thus sole arbiter as to the performance; that is to say as to the executory obligation of the contract. Yet, by Article X no payments certified by the architect are conclusive as to the acceptance of defective work or improper materials, as to which his determinations are said to be final. His determinations then, in such particular, are conclusive only on and as against the builder, a rather anomalous circumstance, fatal to his agency, his power to bind the owner as to the just consideration for work done. This situation stresses greatly his duty of impartiality, good faith, and expertness, as to what is deviation from the express terms of the contract.

By the 1915-1918 contract the architect is the agent of the owner, when authorized to act for him. He is empowered, then, as agent, to stop work whenever necessary to insure its proper execution, a power he enjoys under Article V (1907). It is then conceivable that his failure to stop the progress of improper work, as the agent of the owner, might result in ultimate heavy loss to the contractor, of which the architect is the arbiter, and as to which, the contract obviously seeks to relieve the owner of all responsibility. The existence of this possibility but adds force to observations already made. These repugnancies between the agency of the architect and his arbitral power speak for themselves. Their elimination, by fair exception, definition, and limitation, must go far to reduce controversies otherwise inevitable to a minimum. The sense of articles IX, XI, XIII, XIV and XV (1915-1918) would seem to impose on the contractor, the expense and damages incident to work condemned, though resulting from primary error of the architect as the owner's agent. If not, this should be made more clear. Article XVI makes it mandatory upon the owner to give notice of defects with reasonable promptness; but, if the burden is on the contractor to notify the architect as the agent of the owner, it would seem in general that these stipulations are nugatory; if not, the provision to arbitrate in the premises. The matters with which Article XVI deals seem, in common sense, to involve rights, duties, privileges and exceptional immunities, alike irreconcilable when read together, and extending to the four corners of the contract, inconsistencies which it is impossible to collate or to measure.

GOLD MEDAL OF THE A. I. A.

SIR EDWIN L. LUTYENS, R. A., Vice President of the Royal Institute of British Architects, has recently been informed that he has been awarded the Gold Medal of The American Institute of Architects, and he has been invited to attend the Architectural Convention in New York in April, 1925, to receive the medal in person. This is the first occasion for eighteen years that the Gold Medal of the American Institute has been awarded to a British architect, the last occasion being in 1906, when it was awarded to Sir Aston Webb.

A VALUABLE PAMPHLET ON DEPARTMENT STORE PLANNING

THE attention of readers is directed to a pamphlet recently issued by the U. S. Department of Commerce. This is a supplement to the regular issues of Commerce Reports and is

Trade Information Bulletin No. 291, November, 1924. Its title is Retail Store Planning. The pamphlet will be extremely valuable to architects and should be in their files. It thoroughly discusses features of retail store planning, the location of the various departments and the reasons for such location, based on the answers received from a questionnaire sent to department store managers all over the United States. Store fronts, windows and entrances are also very fully discussed.

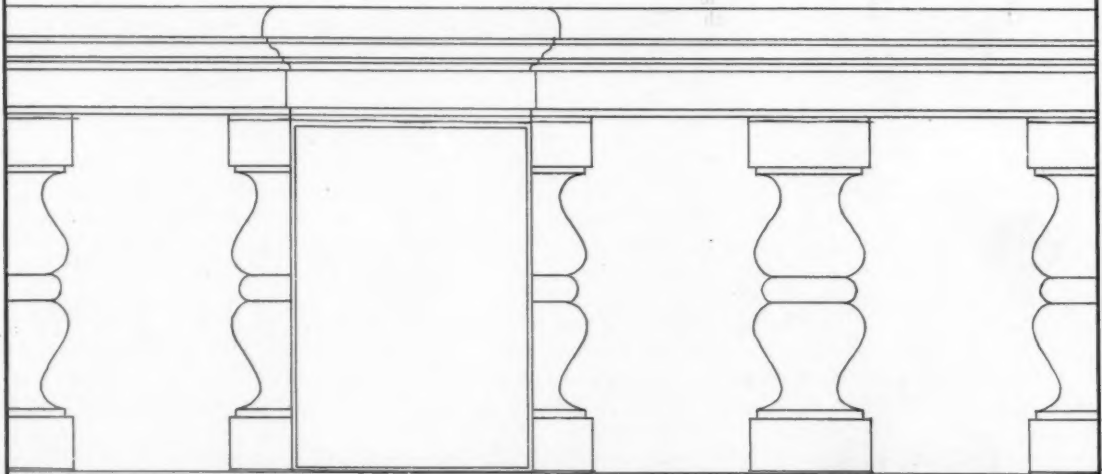
GERMANY TO EXHIBIT AT INSTITUTE'S INTERNATIONAL EXHIBITION

IN response to an invitation extended by The American Institute of Architects to participate in the international exhibition to be held in New York concurrently with the Institute convention, the Federation of German Architects has signified its acceptance, and is preparing an important exhibit.



THE Chateau of Chenonceau has surrounding it one of the most pleasant gardens of the French chateaus. It is also interesting architecturally, as the balustrades dividing the parterres are interestingly situated and form pleasing comparisons to both the planting and the chateau.

Immediately in front of the chateau is a level garden beyond which the ground drops off very rapidly. The level garden is surrounded by a balustrade, shown in the accompanying drawing. This balustrade is typical garden architecture, being heavy and massive, to form, in this case, a pleasing contrast to the delicateness of the planting and the small gardener's house and well heads nearby. The balustrade is square, having a very prominent outline and a certain ruggedness one would not expect to find the French designing. It would be interesting to compare these with the balustrades at the Villa d'Este, which is shown elsewhere in this series.

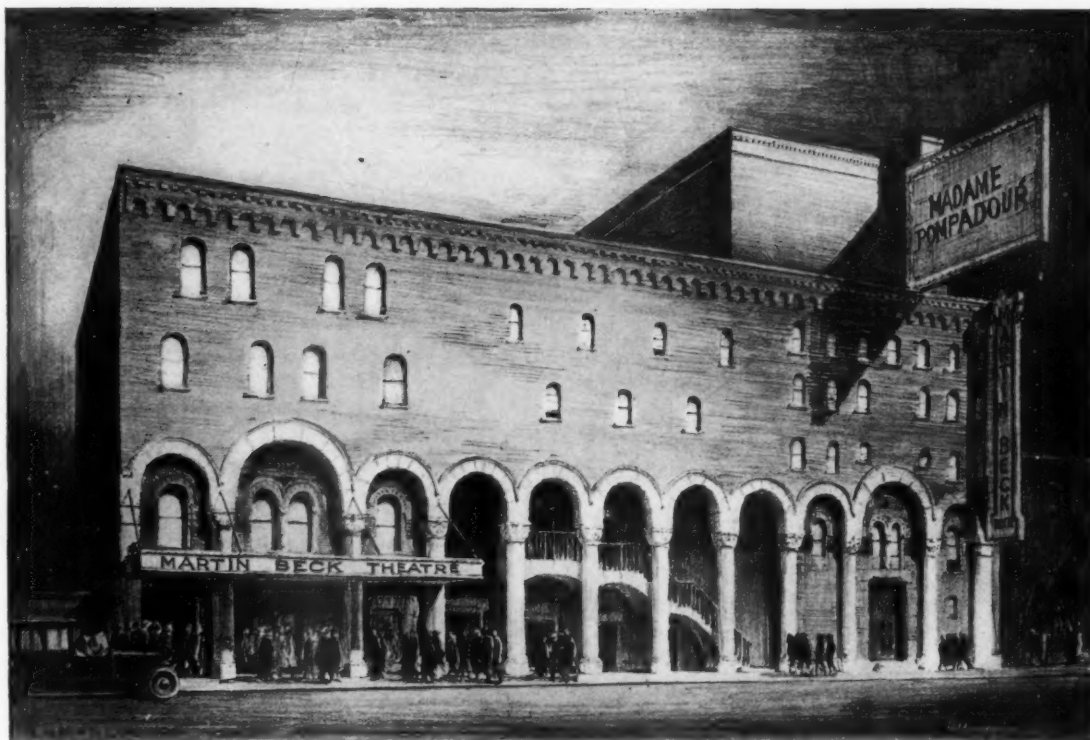


GARDEN ELEVATION



CHATEAU GARDENS, CHENONCEAU, FRANCE

MEASURED AND DRAWN BY ROBERT M. BLACKALL, ARCHITECT



PERSPECTIVE VIEW OF THE MARTIN BECK THEATRE, NEW YORK

G. ALBERT LANSBURGH, ARCHITECT

FROM A LITHOGRAPHIC PRINT THE ORIGINAL FOR WHICH WAS RENDERED ON PAPER BY V. HAGOPIAN

LITHOGRAPHY *in* ARCHITECTURAL SKETCHING and RENDERING

BY V. HAGOPIAN

DISCOVERED by Senefelder in 1796, lithography, as a means of multiplying a drawing made on a slab of limestone with a greasy substance, has replaced engraving, etching and woodcuts in the illustration of printed matter on account of its easier execution until photo-engraving became the general practice because of the advantages it offered in type setting and the possibility of printing type and illustration in one operation.

Similarly to etching which keeps its favor on its intrinsic artistic merits, lithography retains all its possibilities as a medium rich in results and more convenient in execution in the making of the plate and in the printing of any number of proofs, each of which has the quality and value of an original drawing. Drawings done in this manner by contemporary artists are regaining favor in art displays and the possibilities of lithography to

architectural draftsmen are being appreciated. In addition to purely pictorial representations of picturesque and monumental subjects, architectural renderings of proposed buildings are being done in lithography.

This gives decided advantages over drawings done in other mediums. If reproductions are needed the cost of these is less than in photography and the results are more satisfactory, each print being identical with the original in size, shade and color. The architect can now part with an original drawing and still keep it. Copies may be distributed for the purpose of promoting a scheme or for display in real estate and bond and mortgage offices, etc. Should the drawing have to be published in the press or magazines, the customary glossy prints are no more needed as each copy given out is an original.

Prints in two or more colors are also obtain-

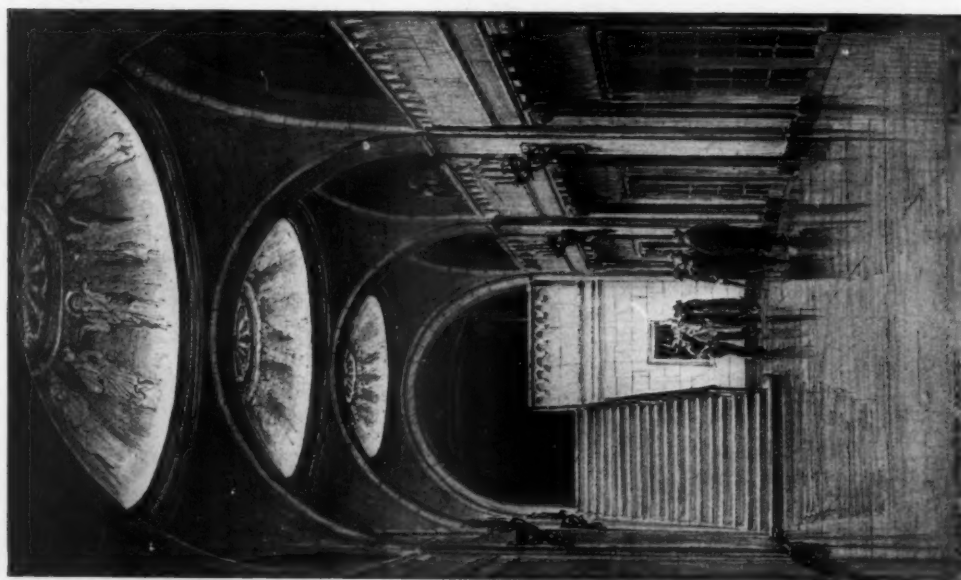


INTERIOR OF VESTIBULE AND
VIEW TOWARD STAGE IN THE
MARTIN BECK THEATRE,
NEW YORK

G. ALBERT LANSBURGH, ARCHITECT



FROM LITHOGRAPHIC PRINTS OF
RENDERING ON PAPER BY
V. HACOPIAN





INTERIOR PERSPECTIVE OF THE MICHAELIAN GALLERIES, PALM BEACH

MARION SIMS WYETH, ARCHITECT

FROM A PRINT OF A RENDERING ON ZINC BY V. HAGOPIAN

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able, a plate being made for each color which is printed separately on the same sheet of paper after a register has been carefully made on the corresponding plates.

It would naturally not be practical to carry slabs of limestone or even sheets of zinc in architects' offices for the making of such drawings, but all that is really needed is a wax crayon, and a drawing made on most any paper, although a specially

drawings were then offset on zinc and after some retouching to the plate the proofs illustrated here were pulled. The drawings for the Michaelyan Galleries in Palm Beach, Marion Sims Wyeth, architect, were made directly on zinc after the carbon guide lines had been transferred to same from the tracing paper on which the perspectives were drawn by the ordinary process.

Work on stone or zinc is much more preferable



PERSPECTIVE VIEW OF THE MICHAELYAN GALLERIES, PALM BEACH

MARION SIMS WYETH, ARCHITECT

FROM A LITHOGRAPHIC PRINT THE ORIGINAL FOR WHICH WAS RENDERED ON ZINC BY V. HAGOPIAN

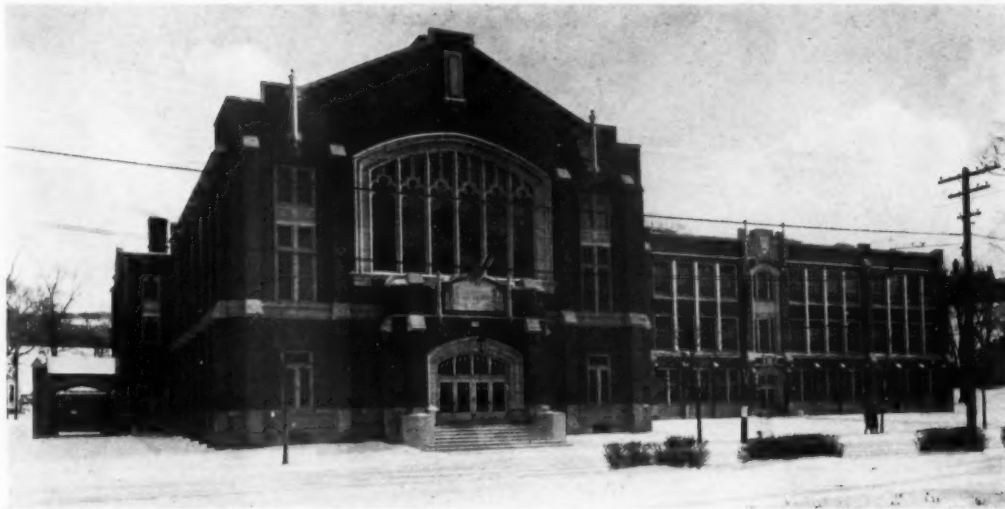
coated paper is preferable, can be offset by the printer on the stone or zinc from which it is printed.

The accompanying halftone cuts, made from lithographic prints, illustrate the results obtainable. The drawings for the Martin Beck Theatre in New York, G. Albert Lansburgh, architect, were made on paper from which glossy prints were made for the newspapers as in this case the lithographic prints could not be had at once. The

to the writer as the control of values is easier, results more certain, and the directness of the method assures a texture more agreeable and particular to lithography.

Drawings in this process taking no longer time to make than the ordinary charcoal or crayon, the cost element is about the same with the advantage that further prints can always be had if the plate is not destroyed.

ENGINEERING *and* CONSTRUCTION



CHARLES T. PLUNKETT JUNIOR HIGH SCHOOL, ADAMS, MASS.

MOVABLE BLEACHERS *for* SCHOOL GYMNASIA *and* GIRLS' GYMNASIUM DRESSING *and* SHOWER BOOTHS

A New Type Designed *for the* Charles T. Plunkett Junior High School
at Adams, Mass.

FRANK IRVING COOPER CORPORATION, *Architects and Engineers*

THE designing of a schoolhouse gymnasium is influenced by several factors. Among them is the local condition composed of the kind of pupils and the special aims of the school administration; the relation of larger to smaller gymnasia in other schools of the same city, and the amount of money available for schoolhouse construction. Another feature which influences the design of a gymnasium is whether it is used purely for gymnasium purposes or whether it is to be combined with an auditorium. There are some instances where the accommodation of the public as spectators of gymnasium activities is not an important feature. In other instances, this is an important feature, especially when inter-scholastic competitions take place, and in these schools bleachers for spectators are of prime importance.

The construction of permanent bleachers necessarily involves a large cubic content of building, entailing a large cost which becomes an item of fixed charge. In schools where lack of funds renders it impossible to construct permanent bleachers or where the use of a gymnasium for exhibition purposes is quite limited, the expense of permanent bleachers cannot be justified.

In designing the Charles T. Plunkett Junior High School at Adams, Mass., it was decided to make the bleachers a secondary item in the design of the gymnasium. In order to accomplish this, a system of movable bleachers was designed and constructed.

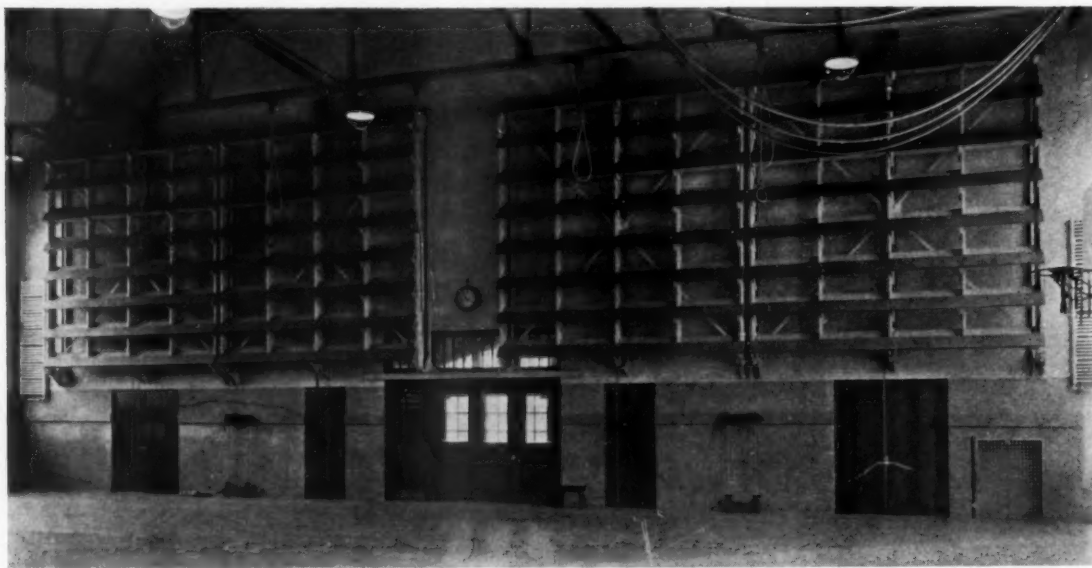
The gymnasium room proper is 81'-0" x 72'-0" in size and is divided into two sections by the use of a movable canvas curtain. One of these sections is used for girls and the other section for

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MOVABLE BLEACHERS IN POSITION FOR USE AS SEATS

Above the outside and center stringers of each section is the channel iron guide attached to the wall. In this guide is the roller which is fastened to the upper end of the stringers and which, in this position, rests on a steel bracket or stop. Above the center guide is attached to the wall the chain hoist for raising and lowering the section. To the lower end of the outside and center stringers of each section is attached a roller which runs on the floor

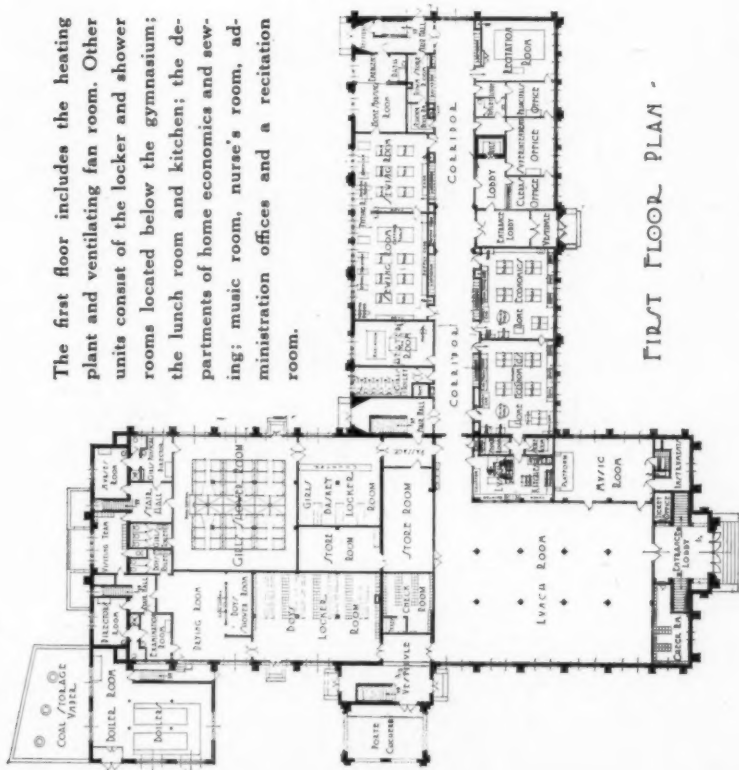


MOVABLE BLEACHERS HOISTED IN POSITION AGAINST THE WALL, PERMITTING AN UNOBSTRUCTED FLOOR AREA
The rollers at the lower end of the outside and center stringers of each section rest on a steel bracket or stop fastened to the wall at the bottom of the channel guides

CHARLES T. PLUNKETT JUNIOR HIGH SCHOOL, ADAMS, MASS.

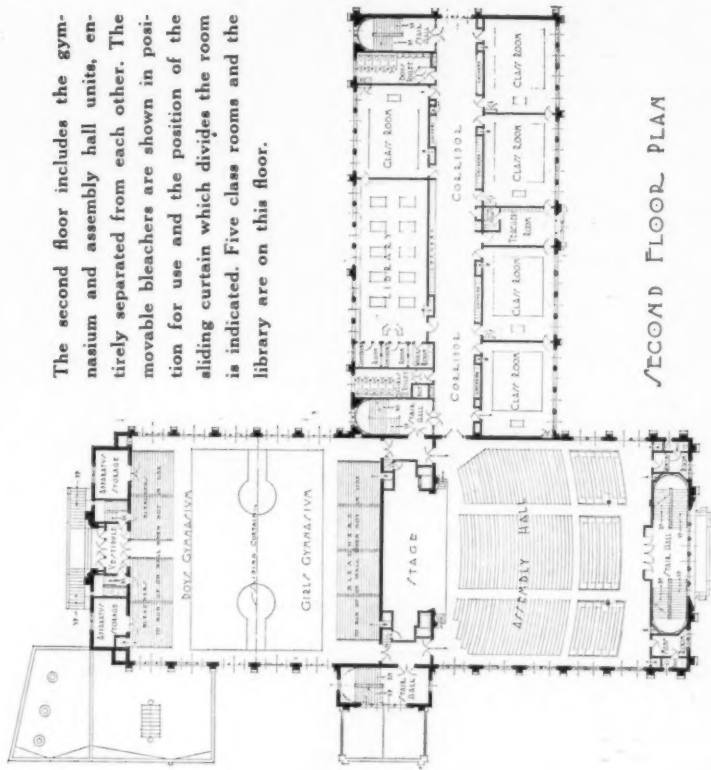
FRANK IRVING COOPER CORPORATION, ARCHITECTS AND ENGINEERS

The first floor includes the heating plant and ventilating fan room. Other units consist of the locker and shower rooms located below the gymnasium; the lunch room and kitchen; the departments of home economics and sewing; music room, nurse's room, administration offices and a recitation room.



FIRST FLOOR PLAN

The second floor includes the gymnasium and assembly hall units, entirely separated from each other. The movable bleachers are shown in position for use and the position of the sliding curtain which divides the room is indicated. Five class rooms and the library are on this floor.



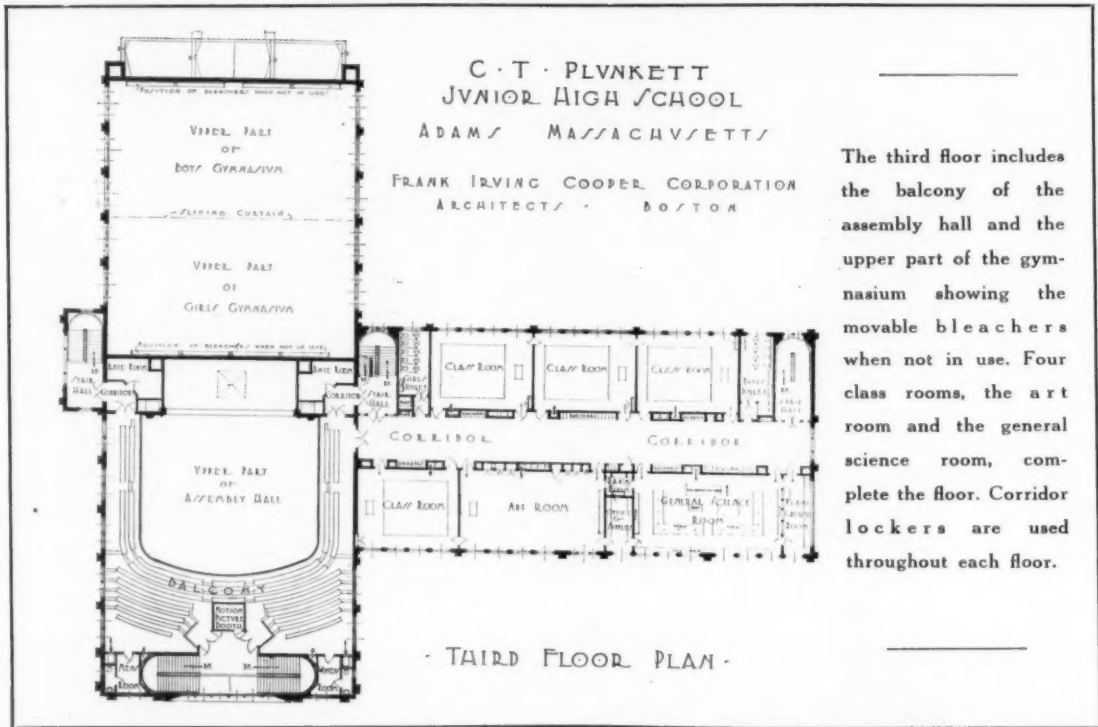
SECOND FLOOR PLAN

CHARLES T. PLUNKETT JUNIOR HIGH SCHOOL, ADAMS, MASS.
FRANK IRVING COOPER CORPORATION, ARCHITECTS AND ENGINEERS

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boys. When match games are to be held the canvas curtain is drawn aside and bleacher accommodation for 400 spectators is required. To provide this accommodation there were installed along each of the 72'-0" sides, four sections of movable

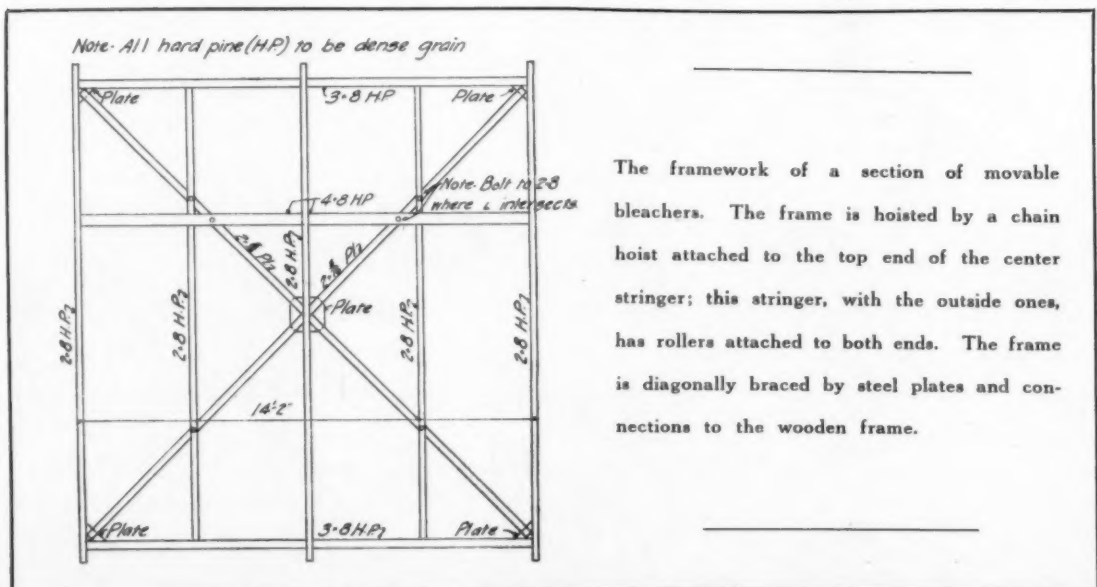
The photographs show four sections of the bleachers on one side of the room. One illustration shows the bleachers placed for use as seats and the other shows them raised to a vertical position against the wall, leaving the entire floor area of



The third floor includes the balcony of the assembly hall and the upper part of the gymnasium showing the movable bleachers when not in use. Four class rooms, the art room and the general science room, complete the floor. Corridor lockers are used throughout each floor.

bleachers. These bleachers project 13'-6" into the room, leaving a distance between the fronts of the lower seats of 54'-0" with a length of 72'-0" between the end walls.

the gymnasium unobstructed. The underlying scheme is to hoist the bleacher in a vertical position close to the wall when not in use. The raising and lowering of these sections are accomplished

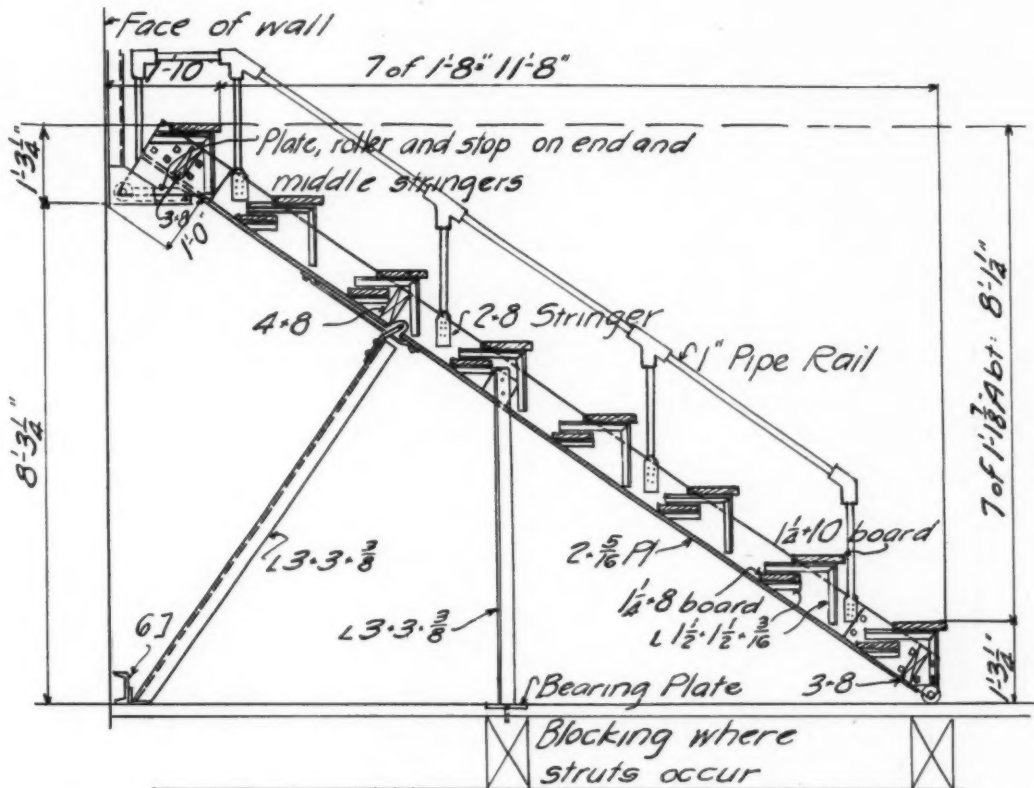


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by the use of a chain hoist attached to the wall, above the center of each section. The sections are composed of five stringers made of 2" x 8" hard pine joists. Between these stringers, and attached to them with angle irons and bolts, are placed 3" x 8" and 4" x 8" hard pine timbers. Angle-iron supports are attached to the stringers on which

attached to the stringer, assuming a vertical position when the bleacher is hoisted against the wall. By supporting the center of these stringers, it is made possible to use the light 2" x 8" hard pine stringers. This light construction permits of the easy and quick handling of the bleachers.

Each section of the bleachers is provided with



SECTION THROUGH A MOVABLE BLEACHER

The rollers at the upper end of the outside and center stringers of each section rest on a steel bracket attached to the wall at the bottom of each channel iron guide, the rollers at the lower end of these stringers travel horizontally on the floor. The inclined strut is used on one set of bleachers and the vertical strut on the opposite set. These struts are attached to and hinged to the stringers and assume a vertical position when the bleacher is hoisted in place on the wall

rest the seats and foot rests for the spectators. At each end of the center and end stringers is attached a roller. The upper roller travels vertically in a 3" channel-iron guide; the lower roller travels horizontally on the gymnasium floor. When the bleacher is in position to be used for seating purposes, the roller attached to the upper end of the stringers rests on a steel bracket or stop, and when it is hoisted to its position against the wall, the roller at the lower end of the stringer rests on the same bracket or stop. The center of the end and middle stringers is supported by angle-iron struts. These struts are hinged at their upper ends and

2" x 5/16" steel diagonals with center and end connection plates, which tie the section together in such a way that it can be raised with the chain hoist without distorting the section, or wracking the connections between the various parts.

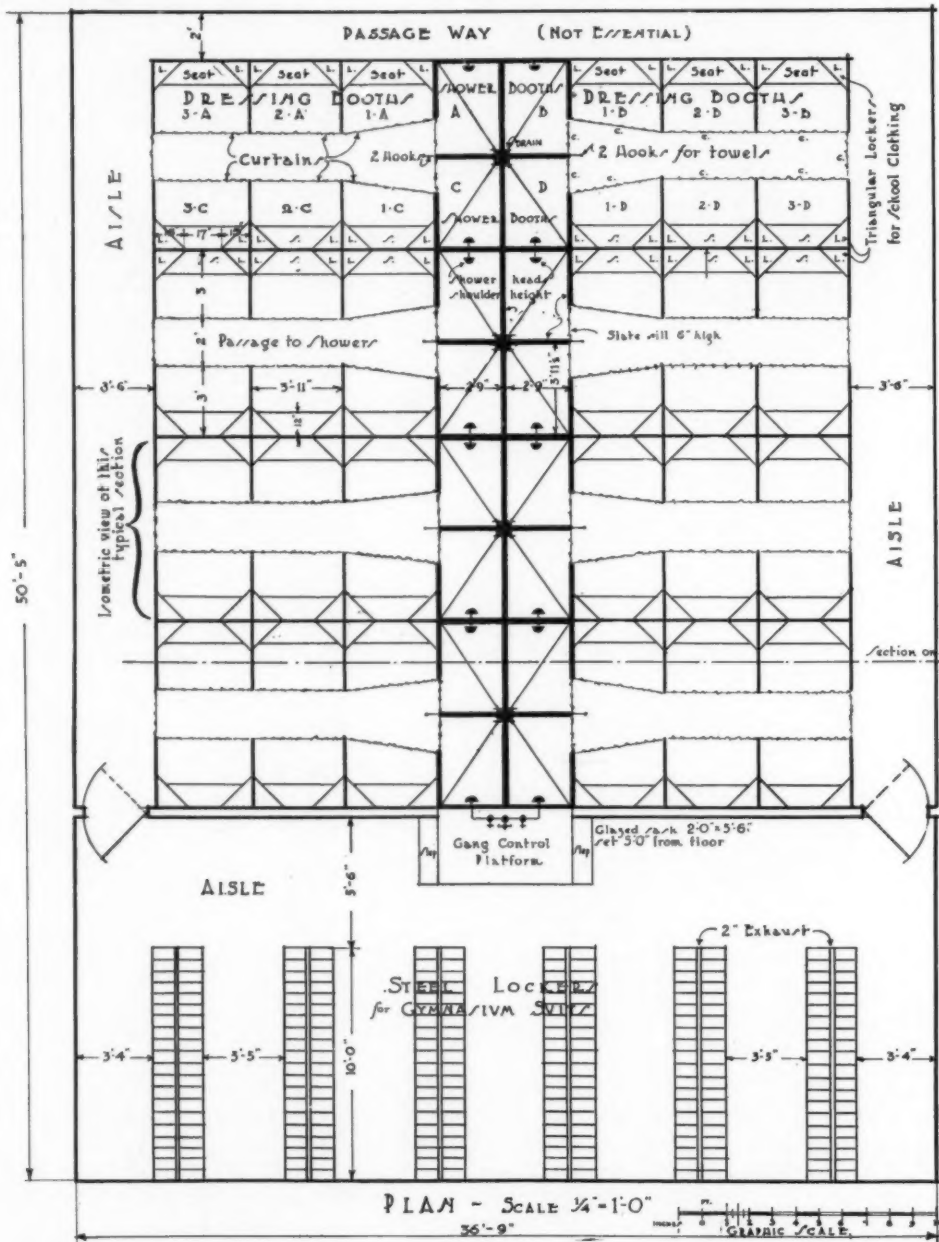
By observing the clock shown in the illustrations it will be seen that these bleachers were lowered into position in about fifteen minutes. The labor involved in the moving of these sections is inconsiderable.

The girls' gymnasium dressing and shower booths in this building are arranged in a very compact manner with a resulting economy in floor

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space. It will be seen that 24 sq. ft. of floor space are used per pupil including the dressing and shower booth, passage to the shower and the aisle

the booth. The showers can be operated by a gang control located on a raised platform at one end of the shower booth channel. Individual shower



TYPICAL PLAN OF GIRLS' GYMNASIUM, DRESSING BOOTHS, SHOWER BOOTHS, GANG CONTROL AND GYMNASIUM LOCKERS

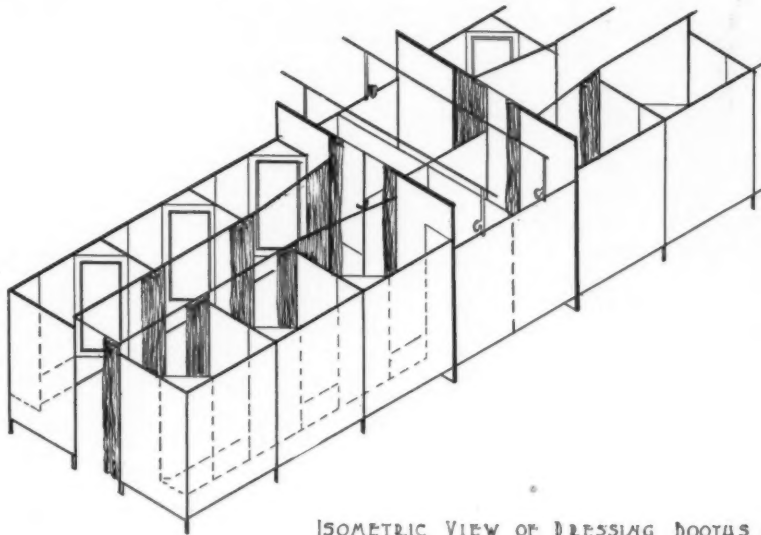
outside of the booths. The shower booths are arranged in nests of four, having one drainage outlet and are 2'-9" x 3'-11 1/2" in size. The shower heads are placed at shoulder height at the end of

control is also provided in each booth. This arrangement provides the greatest possible flexibility of shower control. Three dressing booths are provided for each shower head, each containing a

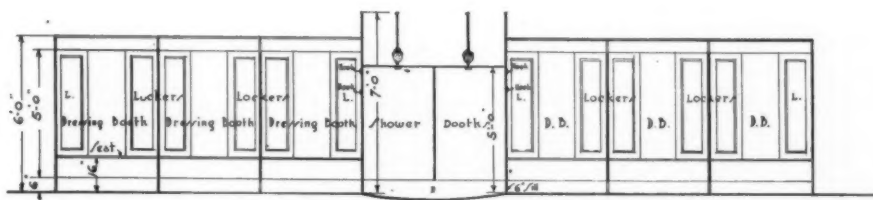
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seat and two triangular lockers for school clothes. Each dressing and shower booth and the passage are closed with a curtain which provides that

7'-0" high. Six inches clearance is made under all of the dressing booth partitions and the partitions separating the shower booths. The par-



ISOMETRIC VIEW OF DRESSING BOOTHS & SHOWERS



SECTION THRU DRESSING BOOTHS & SHOWERS

GIRLS GYMNASIUM DRESSING BOOTHS, SHOWER BOOTHS, GANG CONTROL, AND GYMNASIUM LOCKERS.

48 DRESSING BOOTHS	- 3'-11" x 3'-0"
16 SHOWER BOOTHS	- 2'-9" x 3'-11½"
400 STEEL LOCKERS	- 6" x 12" x 36"

privacy essential to girls' showers and dressing rooms.

The partitions about the dressing booths are 5'-6" high and those about the shower booths are

titions about the shower booths extend to the floor with a 6" high sill at the entrances. Each passage to the showers serves six dressing booths.

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HOLLOW CONCRETE BUILDING UNITS

AT last we have definite and dependable information concerning what are usually called "hollow concrete blocks." The manufacturing of these blocks was first undertaken largely by inexperienced persons who bought a machine of some kind and undertook their production without any knowledge of concrete or its making. This, together with some distressingly ugly shapes, led to some prejudices against their use. However, we now have a report of tests made at the Underwriters' Laboratories, Chicago, for The American Concrete Institute, the Concrete Products Association, and the Portland Cement Association. The report can be secured from the latter, 111 West Washington Street, Chicago.

Nineteen fire tests were made, six of them on 10'-0" x 11'-0" panels. A summary of observations and conclusions completes the report. Four appendices are included: the manufacturing of concrete building units; description of the test furnace No. 2; standard specifications for fire tests; and the stability of thin walls. The recommendations of the Underwriters' Laboratories are given.

There is a large and legitimate field for these products when they are properly made and a compliance with the recommendations contained in this report will greatly extend their use. The report is well worth having and reading.

REDUCTION OF NUMBER OF SIZES, STYLES, AND FINISHES OF BRASS LAVATORY AND SINK TRAPS

FOR the past two or three years the manufacturers of brass lavatory and sink traps have been convinced that the steadily increasing variety of sizes, styles and finishes of these commodities has become an unnecessary burden on the industry, and therefore an avoidable economic waste.

At a preliminary meeting of the manufacturers to consider steps for reducing this diversity, data were presented by five producers which showed that of the 1,114 combinations then manufactured 382 represented 98½% of all sales. The remaining 732 combinations, therefore, were carried to meet a 1½% demand.

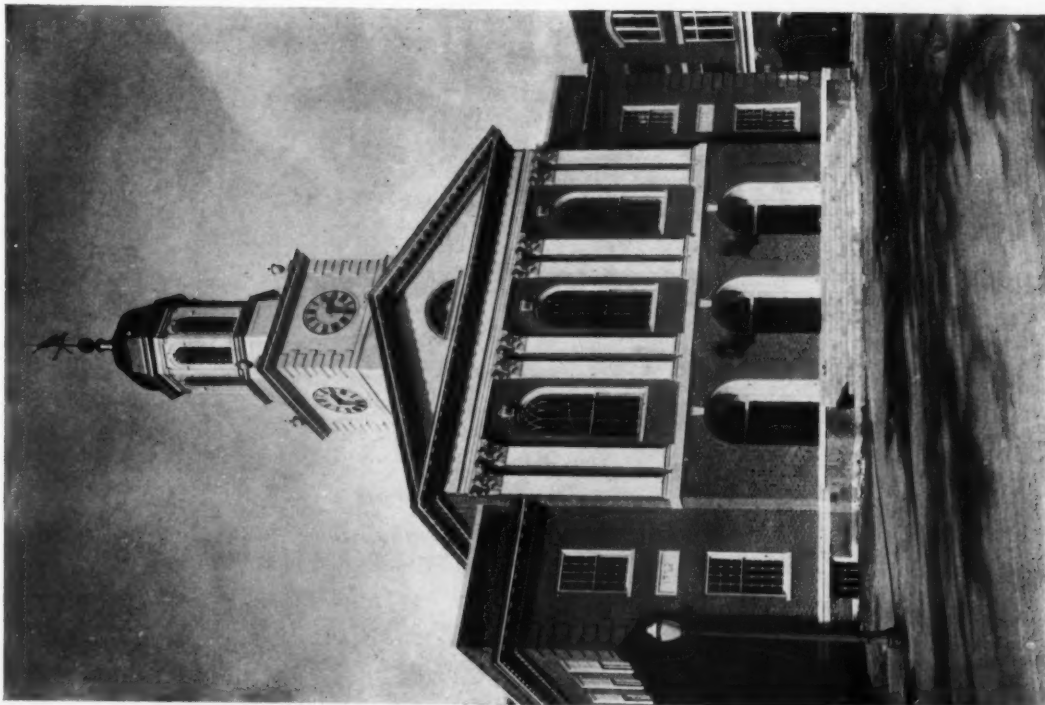
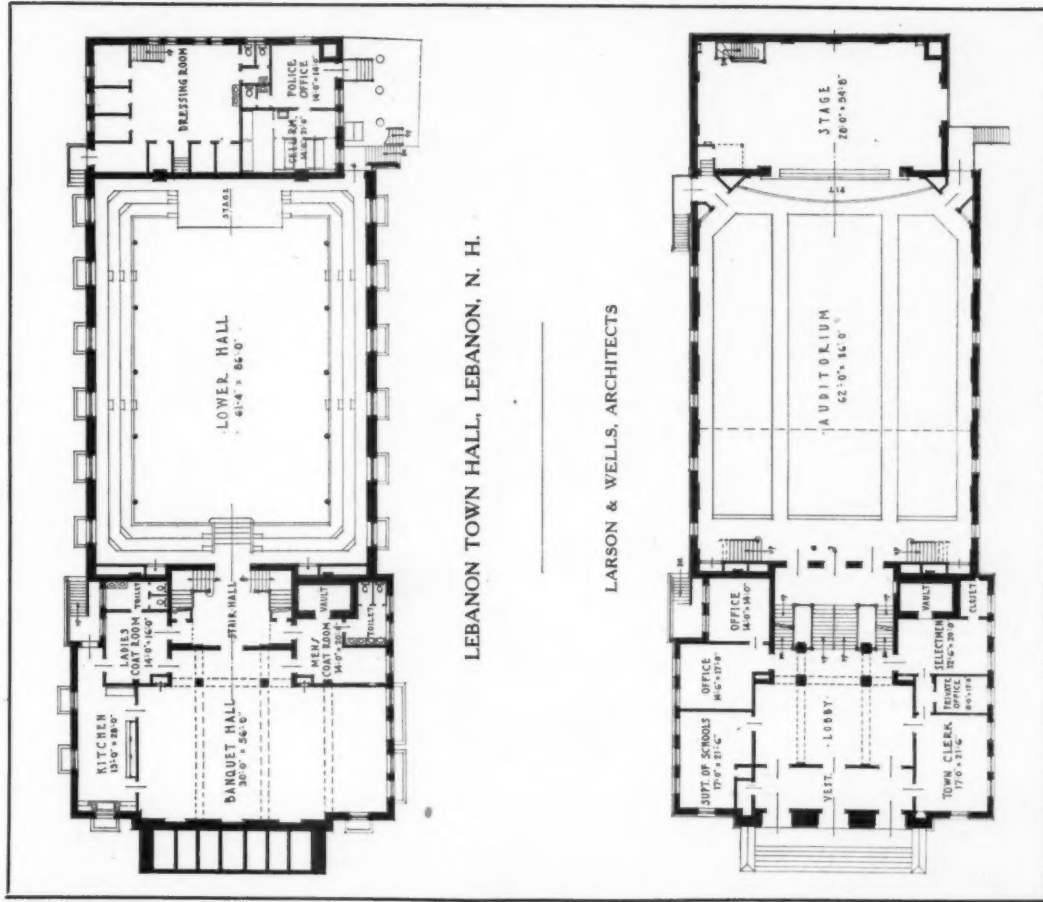
The Department of Commerce was requested to call a general conference of all interests to discuss and agree upon a reduction of varieties to be carried in future as stock items. The result of this conference was the elimination of all but 72 items. In addition, the conference recommended that the industry use but two gauges, number 17 and 20, and the stamping on each article, of the name of the manufacturer and the gauge. This recommendation became effective January 1, 1925.

STEEL CONSTRUCTION

THE greatest impetus given to building construction throughout all time, was the making and using of structural steel. The invention of the steel frame, skeleton-type building made possible buildings of a size and strength that could not be attained by any other means. Standards were established years ago and they have remained in use without the majority of them being questioned. The necessity for reducing building costs to a minimum, consistent with stability and durability, has led, in recent years, to a close scrutiny of all of the elements of building construction. The American Institute of Steel Construction, 350 Madison Avenue, New York, is an association of steel fabricators and they have undertaken the work of standardizing and revising the methods of steel construction. Their work has been very effective.

The Institute has recently issued a booklet entitled "Steel Construction" which includes its standard specification for the design, fabrication and erection of structural steel which has been incorporated in the building codes of some 25 cities including Boston, Los Angeles, New Orleans, Detroit, Buffalo, Kansas City, Washington and Baltimore. That it will be adopted by practically all of the American cities within a few years is certain. The specification was prepared by Professors George F. Swain and Milo S. Ketchum; E. R. Graham, of Graham, Anderson, Probst & White, architects; W. J. Thomas, chief engineer, George B. Post & Sons, architects; and W. J. Watson of Cleveland. The high standing of the members of this committee gives to the report a prestige that is unquestioned. They represent a combined experience of about one hundred and fifty years in an industry that is scarcely thirty-five years old. A demonstration of the specification is given.

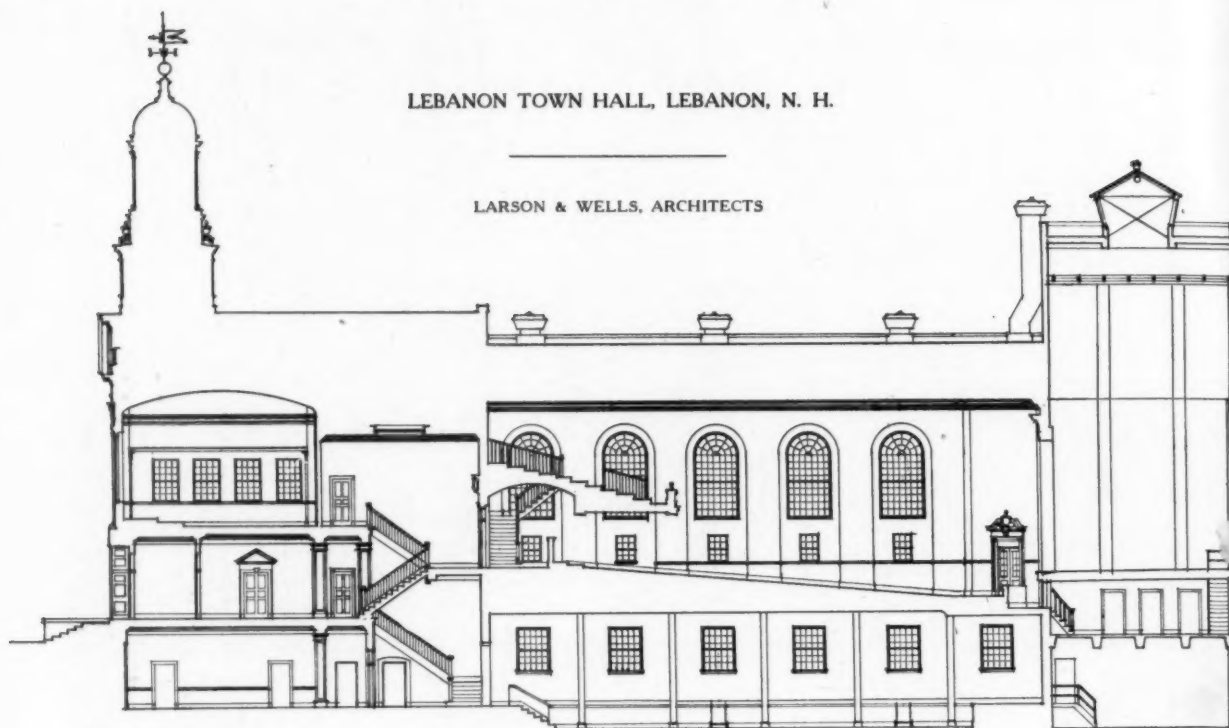
There is also included the Code of Standard Practice recently adopted. This code is recommended to architects, engineers and contractors to the end that it will obviate many of the unfortunate practices in the classification of steel products which now obtain. By the use of this code a rational and economical procedure will ensue, resulting in an extended use of structural steel consistent with its natural limitations. There is every reason for architects and engineers to give the recommendations of the American Institute of Steel Construction their support, to use them in their practice, and to urge their adoption, all to the end that the building industry will be benefited and the cost of construction reduced.



THE AMERICAN ARCHITECT

LEBANON TOWN HALL, LEBANON, N. H.

LARSON & WELLS, ARCHITECTS



THIS type of building has had its best development in the New England States. It offers to the small community a place where people may congregate in all the many activities that constitute the civic life and where the best expression of a progressive Americanism may be fostered.

Lebanon Town Hall was built during the Winter of 1923-24, its foundations having been started on November 1, and the brickwork on January 5. The building was completed in the early Spring. Bricks were laid dry, in hot mortar, at times during a temperature of 10° above zero. No damage has resulted.

Construction, steel frame with metal lumber joists for auditorium floor.

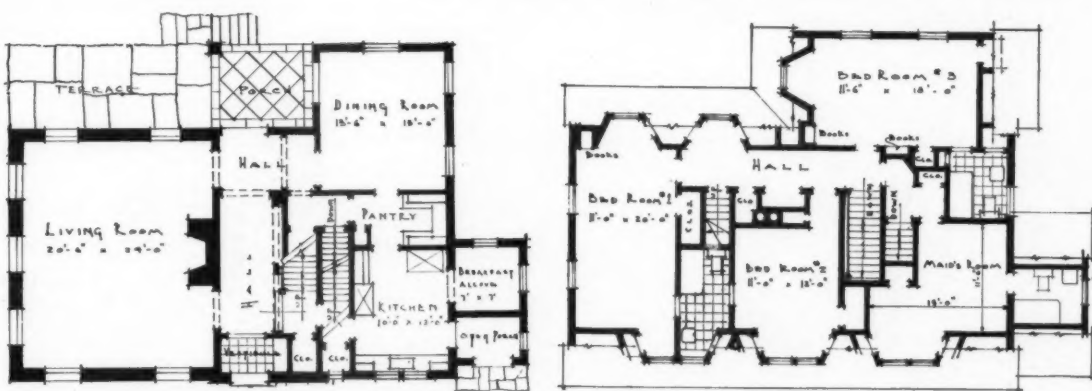
Floors, reinforced concrete. Flooring, first floor hall and vestibule, rubber tile, balance first and second floor 2¼ maple, basement except lower auditorium, granolithic. Auditorium, wood surfaced.

Roofing, tar and gravel.

Heating, one pipe steam, low pressure.

Cost per cubic foot, 34½¢ without furnishings; 37.7¢ with all furnishings.

THE AMERICAN ARCHITECT



AWARDED HONORABLE MENTION
 HOUSE OF MRS. C. A. VERNOU, ANN ARBOR, MICH.
 CUTHBERT & CUTHBERT, ARCHITECTS
 DISTINCTIVE SMALL HOUSE COMPETITION



THIS house was constructed with exterior walls of interlocking tile stuccoed and stone of a native variety, boulders. The interior is finished in gumwood, partly stained and in parts painted. The house is heated by a fan system of hot air with oil fuel. Floors throughout are of oak except in the kitchen portions which are cement and in bathrooms and vestibules which are faience tile. Sand finish plaster is used extensively. Refrigeration and heat for cooking are by electric systems.

This building is an example of Winter construction, in a very much exposed location. No serious difficulties consequent on the season were encountered.

Cost per cubic foot, 54c.

AWARDED HONORABLE MENTION

HOUSE OF MRS. C. A. VERNOU, ANN ARBOR, MICH.

CUTHBERT & CUTHBERT, ARCHITECTS

DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



AWARDED HONORABLE MENTION
 HOUSE OF MAJOR L. B. LAWTON, SKANEATELES, N. Y.
 CARL C. TALLMAN, A. I. A., ARCHITECT
 DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



THIS house is situated on the shore of Skaneateles Lake, on a curve in the village street.

The requirements called for a large living room, dining room, lake room, small serving pantry and electric kitchen, garage and a studio for the display of antique oriental rugs.

The second floor requirements were a master's room with bath and sleeping porch, two guest rooms, a general bathroom and a maid's room and bath.

The topography of the lot called for a low house with the roof lines sloping down toward the lake.

The exterior walls are covered with 24" gray shingles. The roof is of unstained shingles. The exterior trim is painted to tone with the shingles, the only accents of color being the white sash and the green blinds and doors.

The interior trim is painted. The floors are oak throughout except in the bathrooms which are tile and in the kitchen which has a linoleum floor.

The heating system is warm air.

Basement under the entire house, excepting studio and garage.

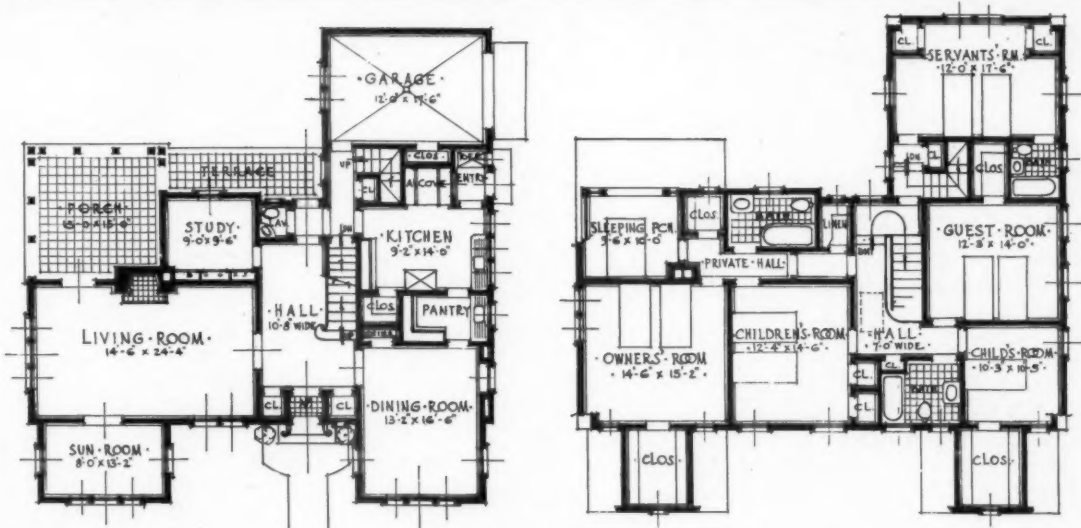
AWARDED HONORABLE MENTION

HOUSE OF MAJOR L. B. LAWTON, SKANEATELES, N. Y.

CARL C. TALLMAN, A. I. A., ARCHITECT

DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



AWARDED HONORABLE MENTION
 HOUSE OF HUMPHREY F. REDFIELD, BRONXVILLE, N. Y.
 GEORGE F. ROOT, 3RD, ARCHITECT
 DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



THE principal purpose of the owner was to obtain a low studded house of Colonial derivation which would give the maximum cubage, appearance and efficient arrangement for the minimum outlay consistent with sound materials and structure. Waste space was particularly to be avoided; at the same time easy circulation from any part of the plan to any other part must be provided. The owner's and younger children's quarters together with sleeping porch must be ensuite, and of the four bedrooms, two must be adjacent to each bathroom. The servants' quarters should be made remote, with easy access to rear stairway, which in turn must also serve for passage from the garage to the main second story. Proper orientation of rooms and utilization of South, West and North outlooks should be effected. The plans submitted have attempted to fill these conditions to the maximum extent. A feature to be noted in connection with the elimination of waste space is the contraction in width of the second story hall as compared with the first. This allows considerably greater usable floor space where most needed.

The material is frame with exterior facing of hand hewn cypress shingles stained white, the foundations being of concrete and the roof wood shingles.

The total cost of the house, ready for occupancy but exclusive of decorating is 54c per cubic foot.

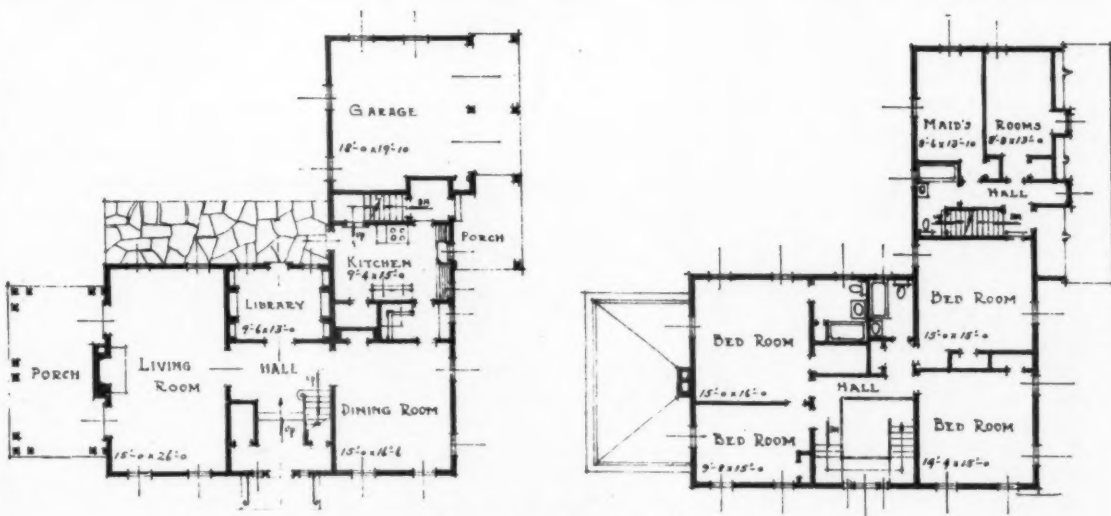
AWARDED HONORABLE MENTION

HOUSE OF HUMPHREY F. REDFIELD, BRONXVILLE, N. Y.

GEORGE F. ROOT, 3RD, ARCHITECT

DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



AWARDED HONORABLE MENTION
 HOUSE OF JAMES T. GORDON, SHORT HILLS, N. J.
 KENNETH W. DALZELL, A. I. A., ARCHITECT
 DISTINCTIVE SMALL HOUSE COMPETITION

THE AMERICAN ARCHITECT



THIS house was started in April and completed in December, 1924. It is of frame and shingle construction, with oak floors throughout, steam heat, with magazine feed boiler. The interior woodwork is painted. The walls of the living room and dining room are painted, the hall papered with Colonial wood block print and the bedrooms are done with chintz papers.

The cost, exclusive of grading, landscaping and architectural fees is:

General Contract	\$20,173.00
Hardware, living room fireplace mantel and electric fixtures	693.00
Total	\$20,866.00

The cubage of the house is as follows:

House and garage having a total of	48,280 cu. ft.
One-half open porches	1,000 cu. ft.
	49,280 cu ft.

Cost per cubic foot, 42c.

AWARDED HONORABLE MENTION

HOUSE OF JAMES T. GORDON, SHORT HILLS, N. J.

KENNETH W. DALZELL, A. I. A., ARCHITECT

DISTINCTIVE SMALL HOUSE COMPETITION

SPECIFICATIONS

RECENT discussions in these columns have included the possibility of standardized specifications. That there is some value to the suggestions therein presented has been forcibly brought to the attention of one specification writer. About two years ago the first unit of a building which would eventually be about five times larger was designed by his office. When the specifications were written there was a recognition of the opportunity for preparing a standard specification for the entire building, so arranged that it could be used with an accompanying supplementary specification that would cover the individual or peculiar necessities of the unit in question.

The scheme followed was to include in the standard specifications all items that are the same in practically any operation, such as provisions for surveyors' services for checking grades, the proportions and mixture of concrete, the painting of structural steel and literally hundreds of other such items. Then, for each unit, the supplementary specification was to carry the specific scope of contract, work not included, distribution of materials in the case of finishes such as plaster and marbles and other paragraphs that might apply to the separate unit but to no other or perhaps only one more.

As the proof of the pudding is in the eating, so has the value of this scheme been proved in the preparation of the supplementary specifications for the second unit. A rearrangement of the plans for future construction now calls for the construction of the second unit together with a portion of the fifth unit. The change in the construction program has not caused one difficulty in the handling of the standard or supplementary specifications. Better harmony could not be expected and of course, the ease with which the specifications as a whole have been prepared for the next phase of the work (this preparation requiring about two days' effort) now shows the extreme value of some thought on how to handle such a proposition to cut down future production costs.

There seems to be no reason why a specification writer who is accustomed to a fair size practice could not prepare a standard general specification of this character and follow it up with a supplementary specification covering particular phases of the individual operation. His problem would be relieved of some difficulty if his practice is restricted to a few types of construction, but even if the practice is of a rather heterogeneous

nature, some forward step might be possible along these lines. As stated in past discussions, there is a sufficient number of materials and processes that may be the subject of one choice, with perhaps one or two alternatives, that the specification writer could very easily compose his standard specifications so that elimination of one or more of these alternatives could be accomplished clearly in the supplementary specifications. Such efforts should clarify the specification situation in a surprisingly simple manner and it most certainly would entail sufficient study to cause a stiffening of what might be termed the architects specification attitude, at the same time enabling the establishment of certain standards of practice.

SPECIFICATIONS FOR ORNAMENTAL IRON AND BRONZE WORK

Following the last discussion of specifications for this section of the work, which ended with suggestions as to the production of models, it is necessary to mention the proper methods governing the execution of the cast ornamental work.

The specifications, as has been mentioned before, cannot be expected to force a shop accustomed to producing mediocre work to change its skill suddenly and cast or otherwise fabricate work in a first-class manner. However, they should be written so that general principles that former practice has proved to be correct or at least eminently satisfactory, may be understood as governing the work. Shop practice, which has everything to do with the work and which, of course, is the determining factor, will require some specification control so that rejection or, at the least, alterations in unsatisfactory material may be required before acceptance by the architect.

For the general fabrication of cast ornamental iron or bronze the specifications should require first that castings be made in as large sections as possible where divisions or ornament must be made. Joinings should be accomplished with hair line joints so that the separation will be as invisible as possible and sufficient thickness of metal must be allowed at the joints to provide ample reinforcement. Each unit or separate casting must be uniform in profile and where warping has occurred it must be eliminated or so adjusted that smooth joints will result. These hair line joints should be located so that they will be quite inconspicuous and this usually can be accomplished with ease, especially if the designer has had this necessity in mind.

THE AMERICAN ARCHITECT

The castings should be required to be so produced that when removed from the moulds they will require the minimum amount of handwork finishing. Some filing or chipping must be expected but a great amount of this sort of work will tend to destroy the excellence of the castings. At the same time, when pierced work is involved the specifications should require explicitly that all sight lines or edges of pierced work be perfect in line and curve.

The specifications should require that castings should be assembled in the shop, with all fitting-up work done there, and match marked for correct field assembly. Reinforcements, braces, anchors and such devices should be included in the process of assembly and all screw holes provided in the required manner. Machine screws and bolts should be brass, bronze or monel metal. The usual steel screws should never be allowed even though it seems the material will be fixed permanently. One never knows when cast metal work will be remodeled and although it is not very difficult to drill out screws that are rusted in place, still a screw not so fixed is more to be desired. On the other hand, however, some means for holding screws or nuts from turning under vibration must be provided.

In the finishing of bronze castings the specifications should require even more rigid casting, shop fitting and anchorage. This metal is used ordinarily because of the better quality of work it is possible to produce with it and every opportunity must be given for taking full advantage of it.

Specifications for shop fabrication for the many miscellaneous items of this work need cover only the production of the work as shown on the drawings with rivets neatly driven and headed, counter-sunk or chipped as necessary and with all exposed surfaces reasonably smooth. Draw-filing should be done to remove unusual roughness and if it is desirable to have especially smooth surfaces this requirement must be specified clearly enough that there need be no argument as to the architect's desires in this phrase. If there be any special work that may not be clearly shown on the drawings that will require extra effort in the shop the specifications should not fail to be clear on all these points.

It is usually customary to have one shop coat of paint applied to all iron and steelwork and the specifications should require that exposed surfaces at least and preferably all surfaces of the various items be cleaned thoroughly, removing all grease, rust, scale, etc., before application of the shop coat. Liberal use of wire brushes and benzine usually will accomplish the desired result. It might be well, in the interest of accuracy, to avoid disputes and to insure substantial erection, to specify that all reinforcements, anchors, braces

and similar items be given one shop coat of paint. Chances are that they will not be given a coat of paint in the field and it is not good practice to install good work in such a way that a dozen or so years will cause such deterioration of the metal supports and anchorages that serious damage may result. It is even advisable at times to specify some patented rustproofing process, of which there are several available, where moisture conditions seem to be especially difficult to contend against. Galvanizing may be all right if done by responsible persons who will apply a heavy coating, but it seems almost impossible to expect a heavy coating even though the owner is willing to pay for it. Therefore a patented rustproofing process is to be recommended for this work.

The ornamental bronze work may have almost innumerable finishes, ranging from brightly polished to a most beautiful flame produced patine with wiped high-lights. The specification writer must have personal knowledge of how these finishes are produced and what results may be obtained by them before he determines this specification requirement. The character of the work, its position in the building and the shop that is to do the work all have an influence on the results that are to be anticipated by the specifications.

Wrought iron work should be painted or oiled. The specifications should indicate which finish is desired. Sometimes, for the producing of antique finishes a flame or other mechanically produced finish may be desired. The specifier must have a definite finish in mind when preparing his specifications for such antique work or else simply specify the general effect desired and leave it to the contractor.

Cast iron surfaces often are given a rough hammered treatment after annealing that produces quite a beautiful finish which some persons believe resembles wrought iron closely enough to permit its substitution. This finish may be specified by calling for such an effect. Again, cast iron may be given an oil and flame finish that comes in the antique class.

The specifications for all of these metal finishes must require that samples (except as to paint, possibly) must be prepared in sufficient number and in such size that the architect will be able to judge as to whether or not the proposed finish is the one he had in mind. For gold-plated bronze work samples also may be required as several very beautiful effects may be obtained thus and its use is sufficiently expensive to warrant great care in its choice.

MISCELLANEOUS SPECIFICATION DATA

For some years there has been in use in Europe a quick-setting alumina cement that proved very efficacious during the World War. During recent years *Engineering News-Record* has had

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Residence of Mr. H. W. Lowell
Lockport, New York

Mr. W. George MacTarnaghan
Architect, New York

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ANACONDA BRASS PIPE specified for the hot water lines supplying three bathrooms, a wash room and laundry in this house increased the cost of the plumbing installation one hundred dollars.

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

THE AMERICAN ARCHITECT

several articles concerning the physical and chemical properties of this cement and they have been so full of promise of a new material that will be of great use in building construction that news as to its availability in this country is quite welcome.

The Atlas Portland Cement Company has announced in its Contractor's Atlas for January that they are now able to ship LUMNITE cement through the Atlas Lumnite Cement Company in ample quantities to meet any demand. Specification writers should give this material study as they can find many uses for it. The producers

report that this cement attains full strength in twenty-four hours with only a slight increase in strength in three months. This quick attainment of full strength is said to be not due to especially rapid initial set, as concrete may be handled as when Portland cement has been used, but that after the initial set its high strength develops with great rapidity. The process of setting, from the inside out, and the heat generated during setting make the cement quite desirable for winter use. But, again, the specification writer should not specify any alumina cement without knowing all about it.

DINNER TO D. KNICKERBACKER BOYD

TO mark his retirement from the presidency of the Philadelphia Building Congress and formally to express appreciation of long and highly valued service, D. Knickerbacker Boyd, F.A.I.A., was the guest of honor at a dinner given by the Building Congress. As the meeting was scheduled to occur in Mr. Boyd's birthday month, it was thought appropriate to announce that it would be an anniversary dinner.

There were upward of one hundred guests present. The speakers at the dinner were as follows:

D. Everett Waid, President of The American Institute of Architects, who emphasized the relation of the architect to the Building Congress, the importance of co-operation, the opportunity for service and the value of the Congress to the community.

Wm. Stanley Parker, President of the Boston Building Congress, told of the work and accomplishments of that Congress in Boston, referring especially to the reduction of seasonal unemployment.

Thomas F. Armstrong, member and former Vice-President of the National Terra Cotta Society, spoke of the value of consummating ideals and the effect on the individual.

Julian F. Millard, State Supervising Architect of Pennsylvania, outlined the work of the Pennsylvania State Art Jury and its efforts to elevate the standards of design in communities outside of the first-class cities.

Morris L. Cooke, consulting engineer of Philadelphia, discussed the value of arbitration, conferences and co-operation between employers and employees with specific reference to a National Industry.

James S. Meade, Secretary of the Brotherhood of Electricians, spoke of the value of co-operation between employers and employees and outlined the benefits to be derived.

Mr. Boyd, responded to the toastmaster's request and expressed his appreciation to all who have co-operated in the Building Congress movement in Philadelphia.

A NEW CONTRACT LAW PROMISED

HAPHAZARD business operations that have been fastened on the government by a mass of conflicting contract laws are soon to be escaped, stated General H. M. Lord, Director of the Bureau of the Budget, in addressing the annual meeting of the Associated General Contractors of America.

He announced that a standard contract form which will make a "contract with the government a prize to be secured rather than a pest to be avoided" will soon be presented to President Coolidge for his approval.

That the government's present manner of contracting for work is resulting in gross waste of the public funds was indicated by General Lord when he stated the country has "paid dearly" for the chaotic conditions imposed by 224 separate contract laws passed by Congress. Many of these laws overlap and thus befuddle the government agencies.

General Lord also announced plans for the drafting of a single contract law to replace the befuddling legislation which now governs the letting of federal contracts.

PALACE OF KNOSSOS EXCAVATED

DESPATCHES from Crete state that the excavation of the Palace of Knossos, dating back to about 4000 B. C., has been completed. An interesting feature of this important work was in the unearthing of evidence of a drainage and plumbing system in many respects fully as efficient as those in use today.

The Experience of Many Architects

MANY prominent members of the architectural profession have found that knowledge of the STRAUS PLAN of financing, and acquaintance with S. W. STRAUS & CO., have resulted in large profits which they otherwise would not have made.

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BOOK NOTES

COLOR IN ARCHITECTURE

IN writing this book, *Color in Architecture*, Mr. Laurence has considered the subject in all of its aspects and with particular attention to its aesthetic value. Historical precedents are illustrated and described and application of color to modern commercial and public buildings is suggested by colored plates. A careful reading of this book and a study of the fine illustrations cannot fail to instill a sense of the desirability of color in architecture in some, and to strengthen an already existing appreciation in others. In publishing this book in its present form and distributing it to architects, the writer of it and the National Terra Cotta Society have rendered a distinct service to American architecture.

The increasing interest in the use of color in architecture is a most promising indication. The importance of this element in our buildings is appraised by Ralph Adams Cram in a recently published book as follows: "The complete loss of color out of architecture is one of the curious phenomena of the Renaissance, casting its drab shadow in lengthening lines and ever-increasing gloom over the art of building in modern times." This is unfortunately true and except for some of our residential structures, our commercial and monumental buildings present a uniformly drab appearance.

We seem to have avoided the use of pronounced colors, perhaps for fear of being classed as gaudy; forgetting that a more meretricious gaudiness in the form of overelaboration of detail, as in colonnades and other excrescences, has been considered proper form. Even gaudiness due to color caused by improper application, is desirable to gaudiness of detail because the color could be changed, while the detail cannot.

Color in Architecture, By F. S. Laurence. Illustrated with 12 suggestive color plates and numerous halftones, also including an appendix and bibliography. 64 pages 9 1/4" x 12 1/4", boards. Published by The National Terra Cotta Society, 19 West 44th Street, New York City.

MANUAL OF OFFICE PRACTICE

THE architectural worker will find this book a valuable assistant. It is revised and enlarged from the version compiled by the author for use in the office of McKim, Mead and White. The routine of an architectural office is concisely tabulated for the use of the workers therein and others having to do with building construction.

The work is divided into sections devoted to ordinances and building codes, drafting section, administrative section, and field section; the general and special requirements of hotel structures and equipment; hints for draftsmen; a very com-

prehensive checking list and a complete set of forms for all purposes, building charts and other data.

Manual of Office Practice, By Frederick J. Adams, A.I.A. 96 pages, 5" x 7 1/2", cloth. Published by Charles Scribner's Sons, 597 Fifth Avenue, New York. Price \$1.25.

HISTORY OF THE PORTLAND CEMENT INDUSTRY IN THE UNITED STATES

THIS book is a complete history of the cement industry in this country, describing the development of the mechanical methods used in its manufacturing, the plants and also the uses of cement. It also contains an account of the organizations that have been instrumental in the promotion of the manufacturing of cement and in promoting its use by means of experiments and scientific investigations.

History of the Portland Cement Industry in the United States. By Robert W. Lesley. 330 pages, 6" x 9", illustrated, cloth. Published by the International Trade Press, Inc., Chicago, Ill.

A HISTORY OF ARCHITECTURE ON THE COMPARATIVE METHOD

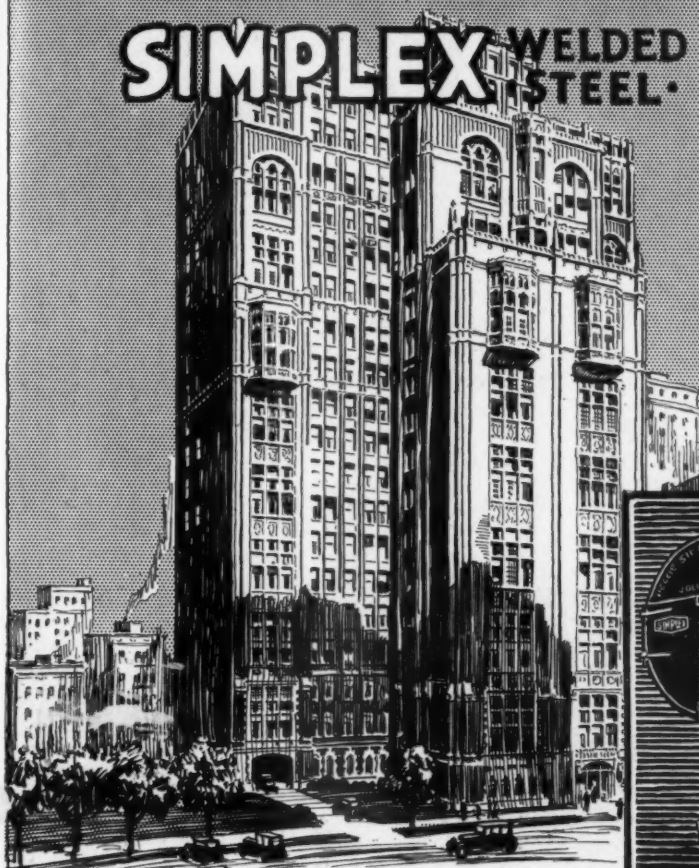
THE first edition of this work was printed in 1896 and this, the seventh edition, is greatly enlarged and completely revised and contains about three thousand five hundred illustrations. It is truly the alphabet of architecture and the historical styles are treated separately.

A complete exposition is made of each style, introduced by an explanation of the historical influence of geographical location; geological factors that control the materials of construction; the climatic, religious, social and political conditions. The architectural character of the style is described and illustrated by examples of typical buildings. The comparative analysis treats of the plan, walls, openings, roofs, columns, mouldings and ornaments. A list of reference books is given for each style and a map also renders assistance to the reader. The illustrations are particularly complete and of a fine quality of reproduction.

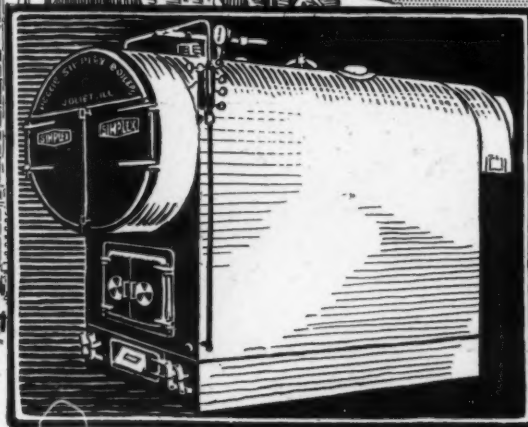
This book well serves the student of architecture and also to refresh the memory of the architect concerning the distinctive features of the styles and their period modifications. It will also serve as a ready means for making an architectural diagnosis. Every architectural library should have a copy of this book.

A History of Architecture on the Comparative Method. By Sir Bannister Fletcher, F.R.I.B.A. Seventh Edition, 934 pages, profusely illustrated, 6" x 9 1/4", cloth. Published by Charles Scribner's Sons, 597 Fifth Avenue, New York. Price \$12.00.

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IMPORTANT SPECIFICATIONS AND DETAILS

ONE of the most important and at the same time most neglected details of building construction is the connection made between a roof covering and the adjacent walls. Flashings should always be detailed, not only for the direction of the contractor but also to enable the superintendent to see that the work is properly executed. There are other places about every building where the exclusion of water or moisture is vital. The necessity for providing such protection is being better appreciated as buildings become more valuable and complicated in design.

A series of such details together with specifications providing for standard roof covering has been prepared and is ready for free distribution

Standard Specifications. 30 pages, illustrated, folder. Published by The Richardson Company, Fisk Building, 250 West 57th St., New York City.

THE CHURCHES OF ROME

A TOUR of the churches of Rome is embraced in this very interesting and readable book. Of each of the thirty-five churches included, is given a historical introduction followed by descriptions of their principal exterior architectural features and of the interior architecture. The embellishment of the interiors by means of paintings, statues and tablets and the tombs, which are notable features of all of these churches, is very adequately described. Forty-eight pages of halftone engravings illustrate the book. To those who wish to improve their knowledge of these repositories of ancient and mediaeval art, this book will be found of value.

The Churches of Rome. By Roger Thynne. 460 pages, 4½" x 6¾", cloth, illustrated with 48 pages of halftone engravings and one map. Published by E. P. Dutton & Co., 681 Fifth Avenue, New York City. Price \$5.00.



DETAIL IN LOBBY

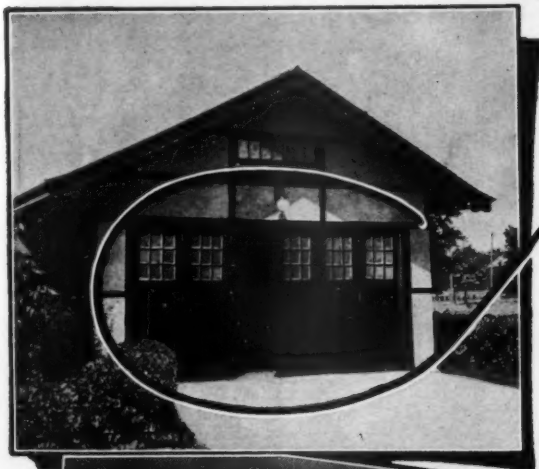
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The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, THE AMERICAN ARCHITECT.

OUTLINE OF TENTATIVE SPECIFICATIONS FOR ELECTRIC RESISTANCE THERMOMETER SYSTEM

A. S. I. Classification No. 73

I. CONTRACT AND LEGAL

1. Parties
2. Drawings
3. Agreement
4. Terms of Payment
5. General Conditions
6. Regulations and Codes
7. Standards
8. Patents

II. ECONOMIC

9. Scope of Contract
 - 9-1. Work Included
 - 9-2. Work not Included
 - 9-3. Schedule of Main Items
10. Method of Analysis and Comparison of Bids
 - 10-1. Methods
 - 10-2. Basis
 - 10-3. Form of Bids
11. Conditional Payments

III. GENERAL DESCRIPTIVE

12. Characteristics
13. Design

14. Service Conditions

- 14-1. Visiting Site
- 14-2. Working Limitations
- 14-3. Working Facilities

15. Ultimate Requirements

IV. PRELIMINARY PREPARATIONS

16. Field Measurements
17. Shop Drawings
18. Samples

V. MATERIALS

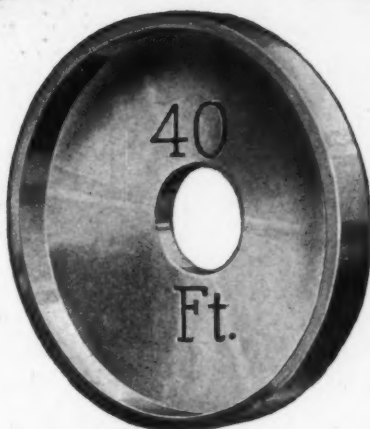
19. Properties, Chemical and Physical
20. Sizes, Weights, Gauges
21. Quantities

VI. DESIGN AND CONSTRUCTION

22. Shop Work
 - 22-1. Thermometer Bulb Instrument
 - 22-2. Case
 - 22-3. Schedule of Thermometer Instrument Locations
 - 22-4. Bridge Box
 - 22-5. Leads
 - 22-6. Schedule of Wire Sizes
 - 22-7. Conduit and Outlet Boxes
 - 22-8. Calibration of Instruments
 - 22-9. Battery
 - 22-10. Battery Charging Equipment

The orifice in each regulating plate is proportional to the size of the radiator on which the plate is used.

**What the
Dunham
regulating**

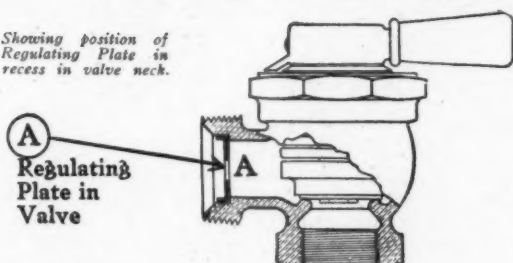


It will be noted by the illustration that the plate is plainly marked with the sq. ft. surface of the radiator for which it is designed.

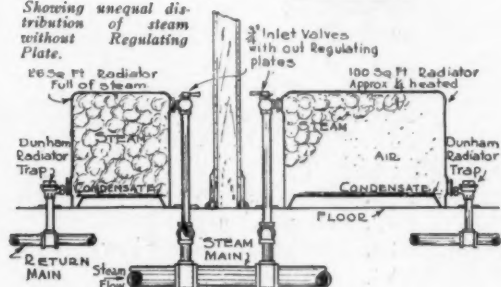
**plate means
to the
architect**

An important DUNHAM Development

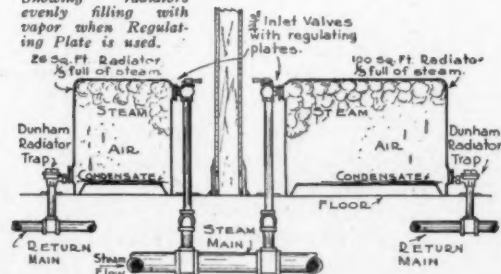
Showing position of
Regulating Plate in
recess in valve neck.



Showing unequal
distribution of steam
without Regulating
Plate.



Showing radiators
evenly filling with
vapor when Regulating
Plate is used.



THE Dunham Regulating Plate marks an important step in the development of the ideal home heating system. It therefore is of more than ordinary interest to every architect.

By means of this plate the correct proportion of vapor necessary to properly heat each radiator is exactly provided. As will be noted by the illustrations, the Dunham Regulating Plate is inserted in a recess in the neck of the valve, the orifice in the plate being calibrated to the number of feet of radiation in each radiator.

The use of the Dunham Regulating Plate simplifies many things which have been serious barriers to progress in the art of heating, *for without this plate*

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- The resistance opposing the flow of condensate and air from the radiator to the boiler is not uniform for each radiator.
- The size of the opening through which the steam vapor flows to each radiator is not closely proportioned to the supply required by the radiator.
- The steam is not always maintained at the pressure for which the piping is designed.

The Dunham Regulating Plate overcomes these difficulties and thus Dunham again leads in further progress toward the irreproachable vapor system.

For further information regarding the Dunham Regulating Plate and its application address

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REG. TRADE MARK
HEATING SERVICE

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THE AMERICAN ARCHITECT

- 23. Field Work
 - 23-1. Erection
 - 23-2. Conduit Installation
 - 23-3. Wiring, Etc.
 - 23-4. Cutting and Patching
- 24. Finish
- 25. Protection of Work
- 26. Co-operation with other Contractors

VII. SCHEDULE

- 27. Shop Production
- 28. Field Operation
- 29. Shipment and Delivery

VIII. RESULTS

- 30. Inspection and Performance
- 31. Guarantees
- 32. Test
- 33. Rejection

OUTLINE OF TENTATIVE SPECIFICATIONS FOR UNLOADING TOWERS, BUCKETS, TROLLEY AND HOISTING ENGINES

A. S. I. Classification No. 94

I. CONTRACT AND LEGAL

- 1. Parties
- 2. Drawings
- 3. Agreement
- 4. Terms of Payment
- 5. General Conditions
- 6. Regulations and Codes
- 7. Standards
- 8. Patents

II. ECONOMIC

- 9. Scope of Contract
 - 9-1. Work Included
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 - 10-2. Basis
 - 10-3. Form of Bids
- 11. Conditional Payments

III. GENERAL DESCRIPTIVE

- 12. Characteristics
- 13. Design
- 14. Service Conditions
 - 14-1. Visiting Site
 - 14-2. Railroad Siding

- 14-3. Working Limitations
- 14-4. Working Facilities
- 15. Ultimate Requirements

IV. PRELIMINARY PREPARATIONS

- 16. Field Measurements
- 17. Shop Drawings
- 18. Samples

V. MATERIALS

- 19. Properties, Chemical and Physical
- 20. Sizes, Weights, Gauges
- 21. Quantities

VI. DESIGN AND CONSTRUCTION

- 22. Shop Work
 - 22-1. Coal Handling Towers
 - 22-2. Direct Acting Bucket Engine
 - 22-3. Bucket Engine Details
 - 22-4. Direct Acting Trolley Engines
 - 22-5. Auxiliaries
 - 22-6. Operating Gear
 - 22-7. Automatic Buckets
 - 22-8. Bucket Hinges
 - 22-9. Bucket Shell
 - 22-10. Bucket Sheaves
 - 22-11. Bucket Chains
 - 22-12. Boom
 - 22-13. Trolleys
 - 22-14. Sheaves
 - 22-15. Cables and Guys
 - 22-16. Tools and Equipment
- 23. Field Work
 - 23-1. Erecting Force
 - 23-2. Foundation
 - 23-3. Anchors, Bolts, Sleeves, Etc.
 - 23-4. Erection
 - 23-5. Piping
- 24. Finish
- 25. Protection of Work
- 26. Co-operation with other Contractors

VII. SCHEDULE

- 27. Shop Production
- 28. Field Operation
- 29. Shipment and Delivery

VIII. RESULTS

- 30. Inspection and Performance
- 31. Guarantees
- 32. Test
- 33. Test of Engine
- 34. Rejections
- 35. Insurance



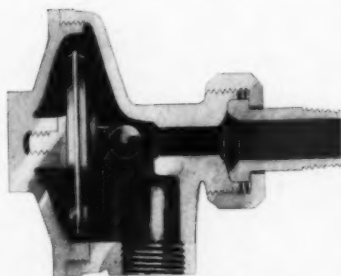
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ILLINOIS HEATING SYSTEM

Selected for this Architectural Gem

The same taste and judgment of values apparent in the architectural features of this monumental Temple, were also evidenced in the selection of the mechanical equipment installed so that the completed structure is harmonious in every detail.

Illinois Heating System was selected to insure positive and satisfactory heating of this Temple.



THERMO RADIATOR TRAP
the original vertical seat
self-cleaning positive

Specify ILLINOIS HEATING SYSTEMS

Our Engineering Department will cooperate with installation details, and our guarantee covers satisfactory operation.

THE PRODUCT OF 25 YEARS OF SUCCESS

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OUTLINE OF TENTATIVE SPECIFICATIONS FOR ENDLESS CABLE RAILWAY SYSTEM

A. S. I. Classification No. 94

I. CONTRACT AND LEGAL

1. Parties
2. Drawings
3. Agreement
4. Terms of Payment
5. General Conditions
6. Regulations and Codes
7. Standards
8. Patents

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16. Field Measurements
17. Shop Drawings
18. Samples

V. MATERIALS

19. Properties, Chemical and Physical
20. Sizes, Weights, Gauges
21. Quantities

VI. DESIGN AND CONSTRUCTION

22. Shop Work
 - 22-1. Track
 - 22-2. Track Gauge
 - 22-3. Track Ties
 - 22-4. Switches
 - 22-5. Idlers
 - 22-6. Sheaves
 - 22-7. Hoisting Engine
 - 22-8. Bed Plate
 - 22-9. Motor
 - 22-10. Controller
 - 22-11. Cable Cars
 - 22-12. Number of Cars, Size, Etc.
 - 22-13. Cable
 - 22-14. Duplex Gate Valves
 - 22-15. Track Scale
 - 22-16. Tools and Equipment
23. Field Work
 - 23-1. Erecting Force
 - 23-2. Foundation
 - 23-3. Anchors, Bolts, Templates, Etc.
 - 23-4. Erection
 - 23-5. Wiring, Etc.
24. Finish
25. Protection of Work
26. Co-operation with other Contractors

VII. SCHEDULE

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TEXAS STATE CHAPTERS POSTPONE CONVENTION MEETING

THE proposed convention of the three Texas State Chapters, A. I. A., that was originally to be held in January, has been postponed to an undetermined date, either late in March or early in April.

During the convention it is proposed to hold an architectural exhibition at Dallas under the auspices of the Dallas Architectural Club. The

annual medal for best example of residential work built during 1924 will be awarded.

MILWAUKEE CHAPTER ELECTS OFFICERS

AT the annual meeting of the Milwaukee Chapter, A. I. A., the following officers were elected.

Walter W. Judell, President; G. J. DeGelleke, Vice President; Alexander C. Guth, Secretary-Treasurer.

The PUBLISHERS' PAGE

MECCA Temple, illustrated in this issue, is an interesting building. It was designed and erected to serve the needs of certain branches of the Masonic fraternity in New York.

Designed and planned at the outset by H. P. Knowles, the work at the time of Mr. Knowles' death, shortly after the building was started, was given over to Messrs. Clinton & Russell who carried the building to completion along the lines as laid down by Mr. Knowles.

The really interesting feature is in the engineering problems that were introduced into the fabric. These are very fully described in this issue.

* * *

The second of Mr. Dillard's articles on the planning and designing of the non-ritualistic church appears in this issue. There's a large amount of valuable information packed away in these two articles, and it is safe to assume that our readers will want to file these articles for future reference.

The evidence that these articles have a large suggestive value is already at hand. The editors have received letters commending Mr. Dillard's treatment of his article on planning, out in the last issue, and a statement that his suggestions have enabled a subscriber to sustain his contention with refractory clients.

* * *

An appreciative subscriber writes to us:—"Aside from the personal satisfaction in receiving recognition in your recent competition, there is a feeling of hope that more interest will be taken, both by the architectural press and the profession as a whole, in the cause of architecture in the smaller cities of the country. As small town architects we feel that *THE AMERICAN ARCHITECT*, the first architectural journal to realize these conditions, has more than ever become *our paper*."

The illustration of buildings of moderate cost, to which a certain section of each issue is assigned, begun with our January issue and to be continued throughout the year, will not be confined to houses, but will include all the various types of buildings to be found in the smaller cities. Attention is directed to the further publication of houses that received honorable mention in our Distinctive Small House Competition.

* * *

The Marcus L. Ward Home for Aged and Respectable Bachelors and Widowers is comprised in a group of buildings soon to be erected in Newark, N. J. John Russell Pope is the architect, and Alexander Trowbridge consulting architect.

An unusual problem has been presented in the development of the property to meet a certain character of occupancy. In our next issue, March 11, there will be presented a series of original sketches by Otto R. Eggers, the ground plans and details, and an article that will exhaustively describe this unusual architectural undertaking.

* * *

The annual exhibitions of the New York Chapter of The American Society of Landscape Architects are a fine presentation of the development of

landscape art in this country. The New York Chapter will present the work of its members to the public at an exhibition to be held in the Arden Galleries in New York. A comprehensive illustration and description of the exhibition will be given in a March issue.

* * *

Mr. Samuel Chamberlain has visited "the Free Republic of Montmartre," and sets down his impressions in his usual breezy and well written manner. Every architect who has been to Paris knows Montmartre, and will find in this article much to interest him. It will revive the dormant impressions of some "artistic" hours.

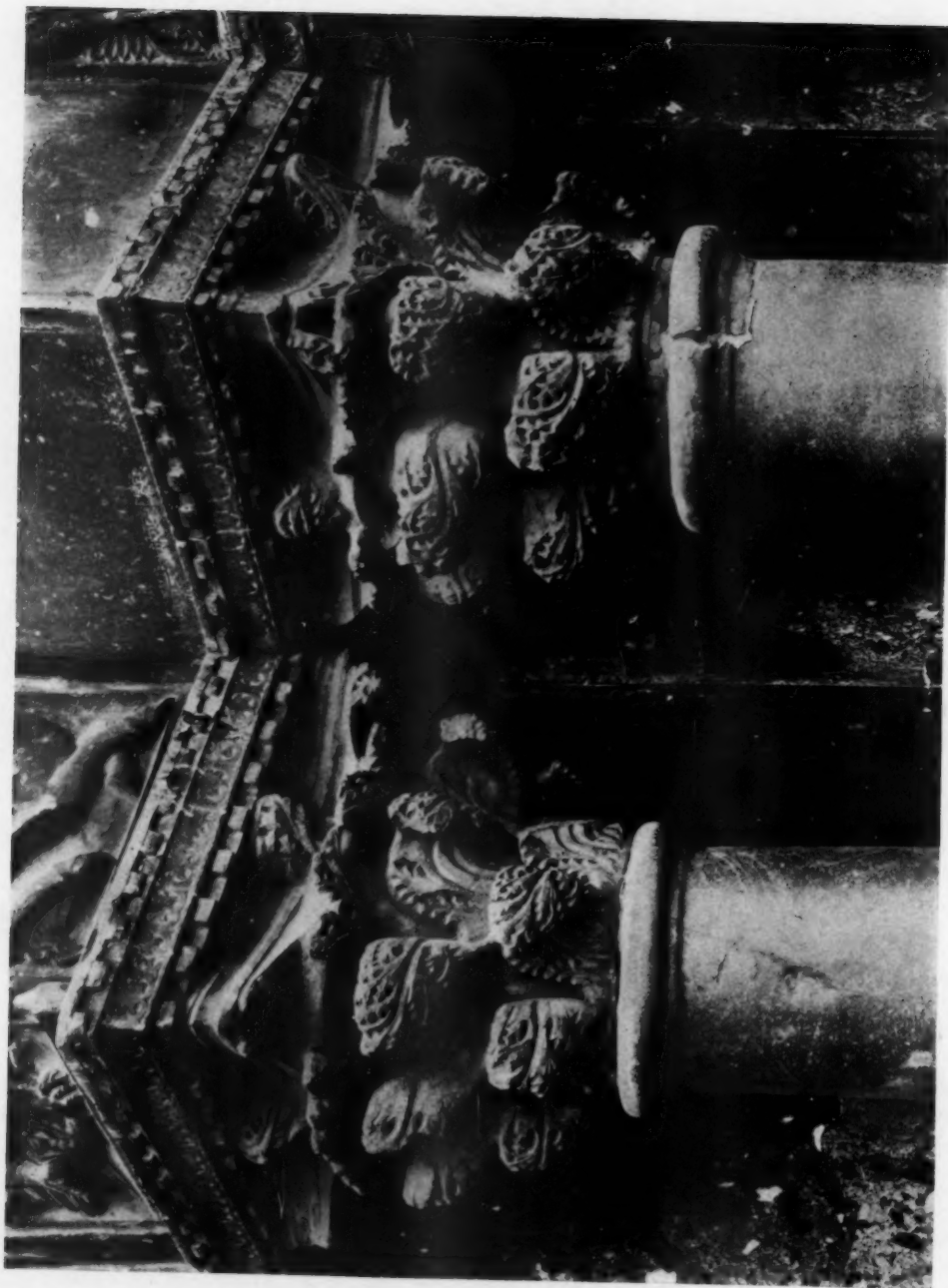
DEVONSHIRE HOUSE

DEVONSHIRE House in Piccadilly, near Berkeley Square, at one time the London residence of the dukes of Devonshire, will soon be but a memory.

On that historic site another Devonshire House, a modern apartment house hotel and a feature new in London, will shortly be begun. Thomas Hastings is the architect, associated with Professor C. H. Reilly, of the University of Liverpool. By special arrangement, *THE AMERICAN ARCHITECT* will first present the various drawings for this building.

The architectural merit of the new Devonshire House will undoubtedly set a standard for buildings of its type in London. The drawings which it will be the privilege of this journal to present are marked by the high artistic quality that characterizes the work of Carrere & Hastings' office. An article descriptive of the building, with some reference to its historic predecessor, will also appear.

It is expected to present Devonshire House in a March issue.



CAPITALS, ST. MARK'S CHURCH, VENICE

THE AMERICAN ARCHITECT