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SOUTH COLONNADE

UNION COLLEGE *and* the JACKSON GARDEN

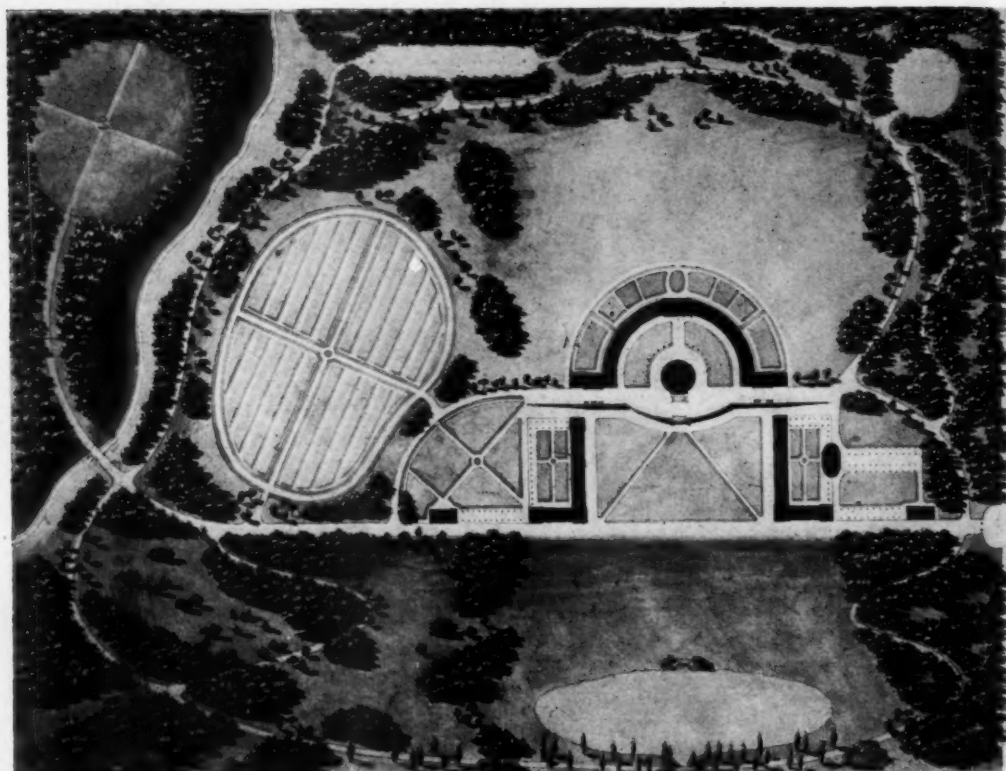
BY RICHARD SCHERMERHORN, Jr., *Fellow, American Society of Landscape Architects*

UNION COLLEGE in Schenectady, New York, was founded in 1797 and is one of the twenty oldest colleges in the United States and the second oldest in New York State. It is the home of American College Fraternities, Kappa Alpha the oldest of these fraternities having been founded there in 1824. Apart from these natural distinctive features and its high reputation as a seat of learning, it possesses two other distinguishing characteristics, especially interesting to art lovers, architects and landscape architects. These have to do with the architectural and landscape features of the college campus and building layout, and the old-time garden that still remains there, known as the "Jackson Garden."

There are few colleges in this country whose growth was considered and studied so far in advance as to result in the early formation of a "Group Plan." Such a plan was produced for Union as early as 1813, and most of the characteristics of this plan have since been followed in providing for the natural growth of the college. In the year above mentioned, a French architect, Joseph Jacques Ramée was retained by the college authorities to design certain of the college buildings and to prepare a general plan which would take into consideration future needs. Ramée was

an architect of distinction and had come to America in 1811, remaining here until 1816. During this period he executed many commissions for a well-to-do clientele, and it would appear that his special line was concerned with country houses and their grounds. He planned the estate of James Duane in Duaneburgh, and another large estate by name of "Calverton" in Maryland. He also made plans for the development of an entire island in the St. Lawrence River, where at this period a number of wealthy New Yorkers maintained extensive estates. Copies of these plans are still in existence. The Union College buildings and grounds still remain as a mark of his work and have been a source of pride to Union and of great interest to architects and those appreciating superior architectural design and old-time atmosphere. Ramée's plan has not been followed in all details and neither have all buildings erected in the past two or three generations followed the spirit of the original architectural treatment. Some of the later buildings unfortunately followed the taste of that all too sadly recognized age of architectural and general art atrocities, known as mid-Victorian, and opportunities for Union being superlatively renowned as the possessor of a college group of perfect artistic merit were lost. But the fact remains

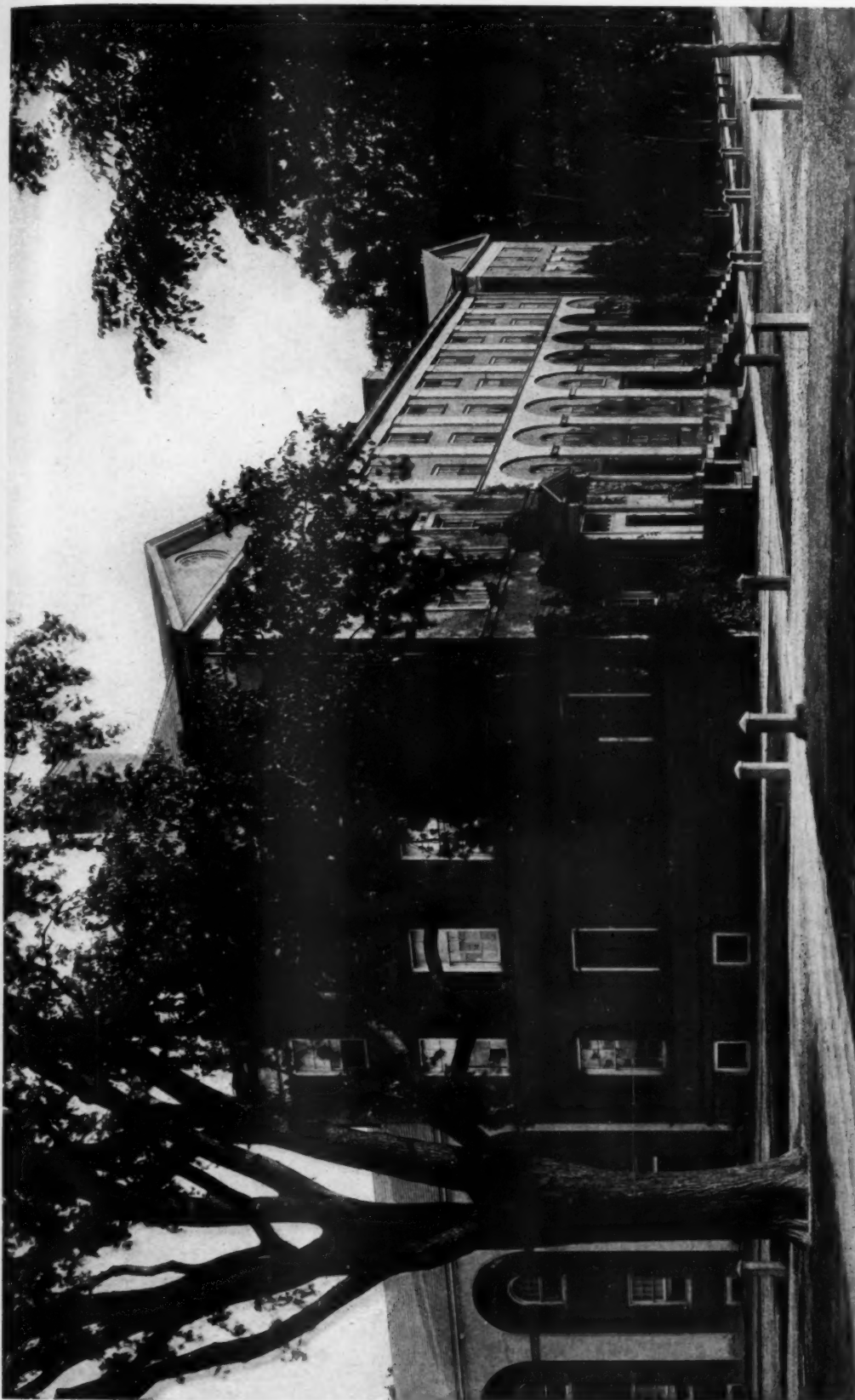
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GROUND PLAN



CAPTAIN "JACK'S" GARDEN
UNION COLLEGE, SCHENECTADY, NEW YORK



SOUTH COLLEGE
UNION COLLEGE, SCHENECTADY, NEW YORK

that, even with these digressions, Union is still an unusually attractive spot to those who enjoy well designed architecture and harmonious landscape. After extensive inquiry, the author has found only one other American college which adopted a general group plan at an early day and adhered to it. This is the University of Virginia, planned by Thomas Jefferson in 1807.

The old Jackson Garden is located near the Northern end of the college grounds, in the same section, apparently, as that designated by Ramée for a garden, though the garden of the latter was on a much greater scale and was likely meant to be quite pretentious. The Jackson Garden might almost be called a "woods garden." One enters from the "Long Drive," through a modest little iron gateway, and his eye is cast upon a dark woody scene as the path continues. Along this path, which is termed the "Lilac Path," are giant lilac bushes, and finally one is led, by a turn, into what would appear as a woodland glade, taking the form of what has been called a natural amphitheatre, the path at this point entering at an elevation considerably above the open area. Within this area a flower garden has been developed. There has been no attempt made here to form a series of winding paths and a forced naturalesque treatment, which might ordinarily be considered proper for this type of garden, but long, straight axial paths have been constructed, with curved paths along the border, following the brook on one side, and the general contours of the foot of the ravine on the other. The paths are bordered with thick masses of peren-

nial plants, most of them the old-time favorites, and back of these are flowering shrubs, the latter plantations melting softly into the woodland border of gigantic forest trees. Leaving the glade, the paths traverse the woods again, winding here and there, passing and crossing a most picturesque little brook which flows by the North border, emerging now and then into smaller open places, where grassy areas have been developed with some massive tree, or group of trees, as central features. Within this area is the old elm, called the "Nott" elm, which has been estimated to be four hundred and fifty years old. The garden as a whole is most original in most of its features, not bearing the stamp of any studied design but nevertheless leaving the impression that the planner was one who understood how to obtain most pleasing and impressive landscape effects. One of its remarkable features is that the woodland scenery it possesses is located almost within a stone's throw of the live activities of the campus on one side and a residential section on the other, yet one can easily guide his thoughts, while wandering through, to the impression of passing through virgin forest which here and there, however, has felt the domestic touch of the hands of man.

Isaac W. Jackson, who developed the garden, was a graduate of Union College and was a professor there from 1831 to the time of his death in 1877. He was greatly interested in horticulture and was a friend of Wilder of Boston and a close student of landscape architecture as it was then propounded in the works of Repton and London.



FACULTY HOUSE



SEAT OF STONE



WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

BRIDGE ARCHITECTURE

IT is quite generally agreed that there is a bridge architecture. Its place in bridge construction has not been clearly defined. Of late years the subject has been discussed more as to who should be in responsible charge of bridge design—architects or engineers. This cannot be determined without some clearly defined limitations as to what constitutes bridge architecture. Of the several points to be considered, there are included (1) what constitutes a bridge, (2) the elements of bridge design, (3) the limitations of architecture and engineering, (4) competency for bridge designing.

A bridge (1) may be defined as a structure which is self-supporting between two points of support and includes a thoroughfare. It may consist of one or more spans. The types generally used are the framed truss, cantilever, suspension, girder and arch. They are generally constructed of steel, the girder and arch may be made of concrete and the arch of stone. Framed bridges may be made also of a combination of wood and steel.

The elements of a bridge (2) consist of the foundations; piers, columns or abutments that support the span ends; the span structure; the thorough-

fare floor system and anchorage for suspension bridge cables. These parts are proportioned to support the traffic loads, the dead weight of the structure, to resist stresses induced by wind, flood and ice and flotation. They are also proportioned to comply with predetermined general conditions, such as dimensions of span, widths, elevations, supporting soil and traffic. The designing as a simple structure must conform to certain established practice and formulae. The practical experience, skill and judgment of the designer make possible economies in design and erection. Economical design, reduced to the utmost limit should be one of the factors. The study of the problem for appearance should be undertaken at the conception of the project. It is understood that economical design includes the characteristics of stability and durability. These elements of bridge design are ordinarily of a purely engineering character.

The limitations of architecture and engineering (3) naturally are fixed by the nature of the two arts. Engineering is usually confined to the elements already described (2). Complying with mechanical laws they often possess beauty. Curves in a suspension bridge, such as the catenary and

parabola, cannot be made more beautiful than the form which they naturally assume. Designers appreciate this and also realize that their distortion for the purpose of attempting to enhance the artistic effect often induces structural conditions that seriously increase the cost. In steel girder bridges the arrangement of the vertical web stiffeners naturally assumes a position in accordance with the demands of mathematical analysis. These proportional spacings cannot be improved from the artistic aspect. The point is that those things which comply with natural laws possess inherent beauty. Nature is never ugly. Pure engineering results in a skeleton structure, the parts

with all its evils. To attach some ornamental architectural curlicues to such a structure is ridiculous; ornament would be lost. A footway railing, lamp posts or brackets are things of service and if highly ornamental would be out of place. Architecture is not ornamentation.

The arch and girder bridges are susceptible of architectural treatment because they possess volume which is enclosed and displaced space. Ancient aqueducts can be considered as bridges, being thoroughfares for water. In most instances they are treated as structural masonry. In some places they, unfortunately, have been encumbered with misplaced architectural details.



SOUTH PARK DRIVE, WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

of which are so disposed and proportioned as to resist induced stresses. Some types of bridges cannot be other than skeletons but even so are susceptible to a measure of aesthetic treatment.

A through steel bridge of long span, supporting several railroad tracks, is a structure of massive parts. It is a skeleton and there is no reason for enclosing it to secure volume and mass. Its very size and sturdy parts possess dignity. It typifies stability, durability, work performed and service rendered. Its outline is determined by mechanical laws and its variation to produce an artistic outline should be undertaken in such a way that it will not result in a disarrangement

The long span arch bridge is a modern thing, made possible by the use of steel and reinforced concrete. The early masonry aqueducts and stone bridges were restricted to short spans. With permissible spans up to 400 feet, concrete bridges present possibilities of design that should be free from the limitations and precedents of old work. To apply architecture to bridge design, it is apparent that the precedents of building design must be used with caution and forms and details applicable to bridge treatment be used. In other words, architects must think and see in terms of bridges and not buildings. They must also think in terms of concrete when designing a concrete bridge.



WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

A few things are common to both buildings and bridges. Of these the balustrades, pylons, approaches and lamp brackets and posts can be mentioned. Bridge arches have little analogy to arches in buildings because they are usually much larger and serve an entirely different purpose. To some, unfortunately, an arch is merely an arch regardless of its special function. It will be found that the engineering properties of a bridge arch will frequently develop a pleasing outline. Constructed of reinforced concrete, the outline of the intrados and extrados of the arch can be made to conform

by offsets or mouldings. In this manner the desirable and necessary shadows can be obtained. Concrete is a plastic material cast in forms and should be designed in accordance with this quality.

The designing of bridges should be confined to those who are competent (4). Competency in bridge architecture is not necessarily the attribute of either architects or engineers and can be common to both. Responsible charge can be placed with each profession. It is as possible for the engineer to include a competent architectural designer in his organization as it is for an architect to



NORTH APPROACH, WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

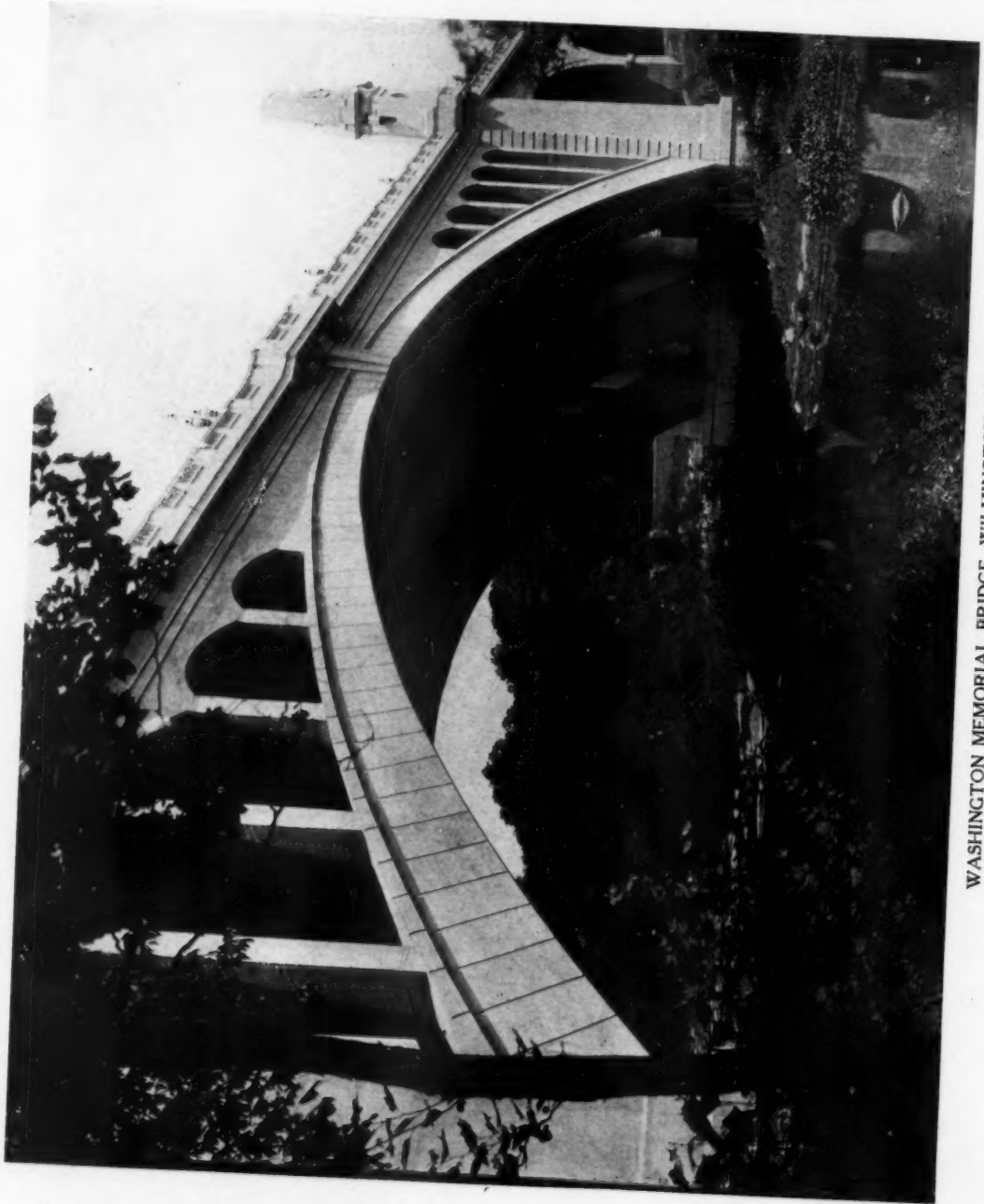
to any reasonable architectural demand without greatly violating economical limits. This is one of the advantages of reinforced concrete construction.

Aside from the balustrades, lamp posts, pylons and approach accessories, the parts of a concrete bridge are monolithic except for expansion joints which are infrequent. These joints can be hidden or be left frankly exposed because necessary. Designing on this hypothesis, a monolithic structure may or may not have the appearance of an articulated stone structure. The surfaces of a monolithic structure may consist of different planes separated

include a competent bridge engineer in his. This is not desirable in either case because there is not a sufficient volume of bridge work to justify many such organizations. The reasonable course seems to be the employment of both architects and engineers on an exactly equal basis. The selection of the engineer is a comparatively easy matter as his competency is manifest in successfully accomplished work. The ability of architects to design bridges *as such* and in suitable materials is a much more difficult problem owing to their lack of experience with that kind of structures.



MAIN SPAN PIER WITH LARGE PYLON, WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER



WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

AT RIGHT: MODEL OF OR-
NAMENT, LARGE PYLON



BELOW: STAIRS AT SOUTH
APPROACH



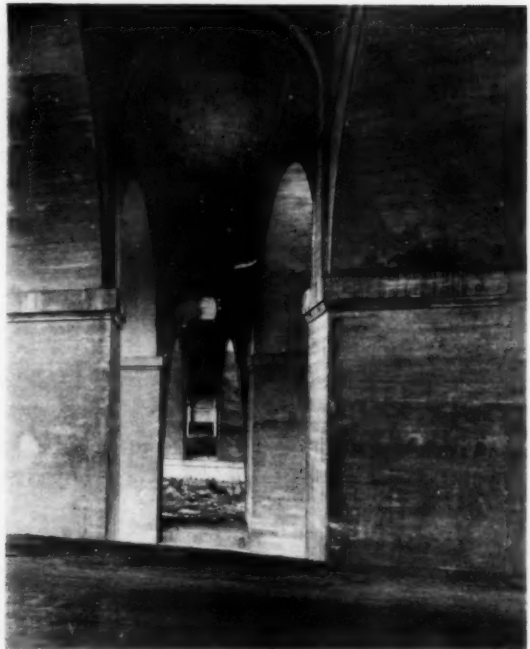
WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.
VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

A most happy collaboration of the architect and engineer is evidenced in that of Vance W. Torbert, of New York City, architect, and Benjamin H. Davis, engineer, in the designing and construction of the Washington Memorial Bridge at Wilmington, Delaware. The Bridge Commission was represented by Frederick W. Carpenter, executive officer and consulting engineer.



MEMORIAL TABLET, LARGE PYLON, WASHINGTON MEMORIAL BRIDGE

This bridge is a most happy combination of architectural and engineering designing. It satisfies the requirements of both elements and is particularly appropriate to its park-like surroundings. It serves an important thoroughfare and spans a park district along the historic Brandywine Creek. Its five arches span the North and South Park Drives and sidewalks, the North and South Long Races, the Brandywine Creek and a branch line of the P. B. & W. R. R. Owing to the direction of the overhead street and the lower

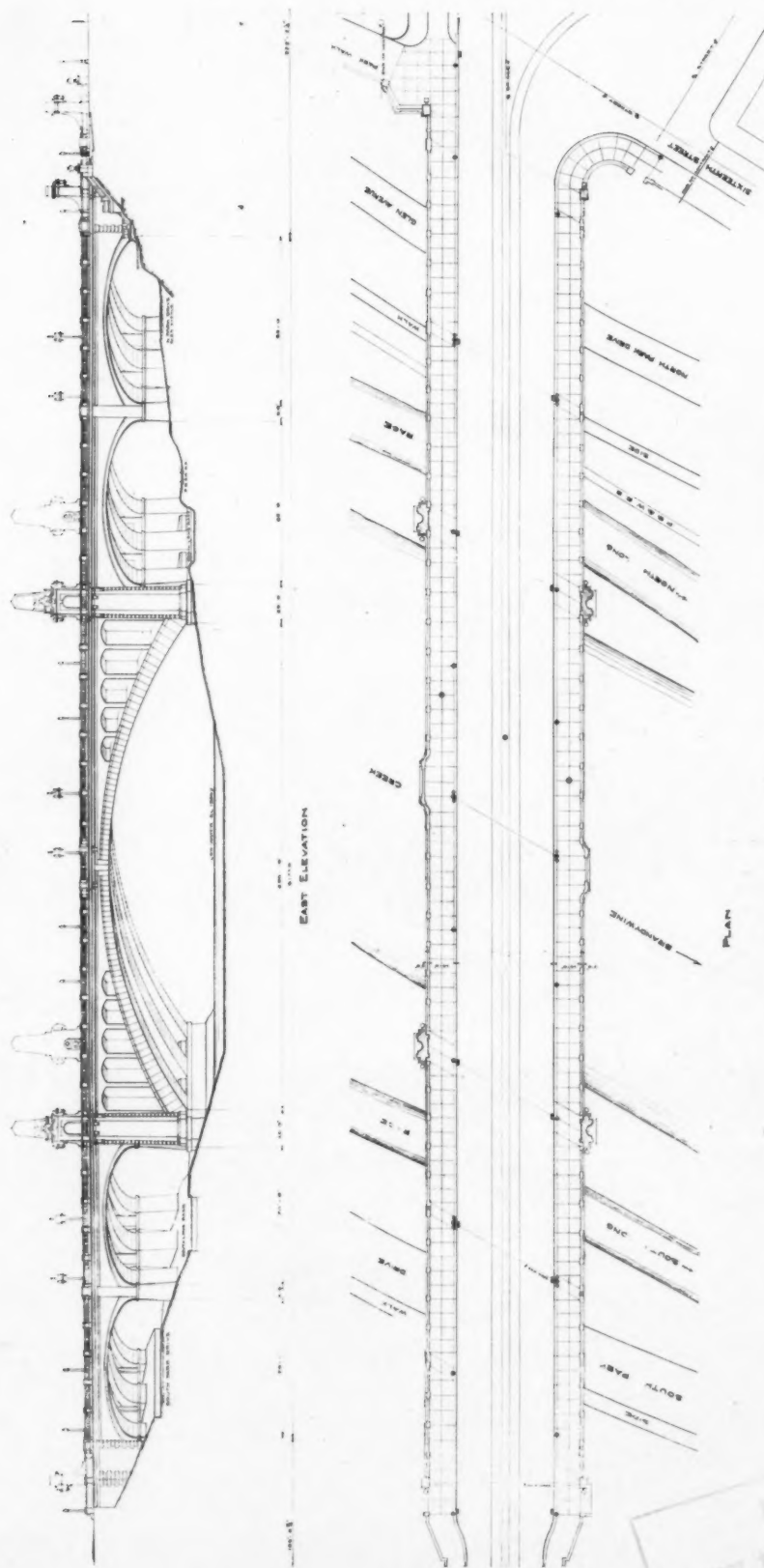


LONGITUDINAL VIEW BETWEEN THE SPAN ARCHES, WASHINGTON MEMORIAL BRIDGE

grade streets and the creek, the abutments and piers are placed askew. This enhances the attractiveness of the bridge from every viewpoint. Access



LARGE PYLON, WASHINGTON MEMORIAL BRIDGE



PLAN AND ELEVATION, WASHINGTON MEMORIAL BRIDGE, WILMINGTON, DEL.

VANCE W. TORBERT, ARCHITECT—BENJAMIN H. DAVIS, ENGINEER

LIBRARY
THE DETROIT EDISON CO.
DEC 21 1927

for pedestrians to the different levels is provided by monumental stairways which are in correct scale with the spacious dimensions of the bridge.

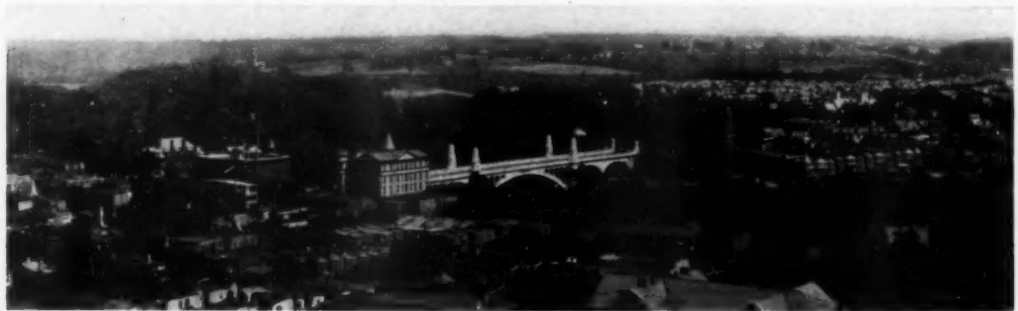
The bridge is 720'-0" long and 72'-0" wide. Of the five reinforced concrete arch spans there are two of 70'-0", two of 85'-0" and one of 250'-0". Each span consists of three arch ribs, the two outer ribs 11'-0" wide and the central rib 16'-0" wide. The deck of the bridge consists of two sidewalks 14'-9½" wide and a 40'-0" roadway paved with sheet asphalt. The center span of 250'-0" has a 40'-0" rise and is one of the longest low-rise skew-arch spans in this country, if not in the world.

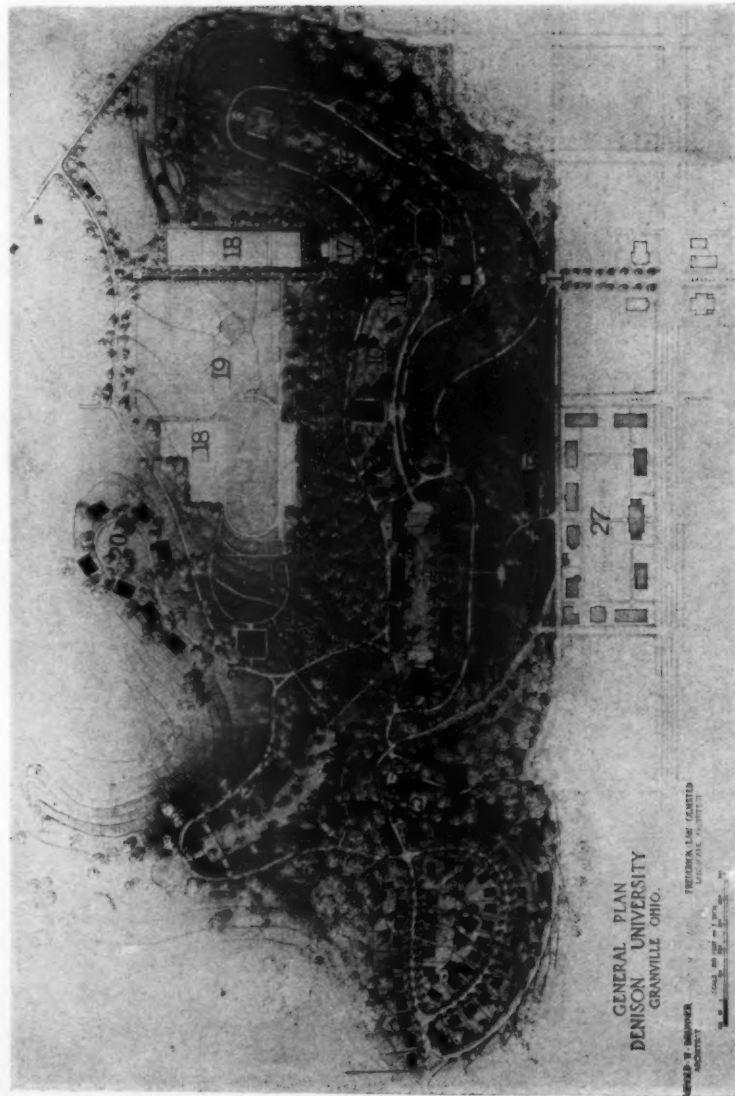
Eight pylons are placed on the bridge, the four larger ones over the piers of the central arch, the four smaller ones at the bridge approaches. The large pylons are about 40'-0" high and have on their inner faces large bronze memorial tablets. On these are also placed two large bronze lighting brackets. These pylons are fine examples of dignified designing and are in fine scale accord with the entire structure. The smaller pylons are of

a different character and in harmony with their location and purpose. They also support small bronze tablets and lighting brackets. The approaches are especially good in plan arrangement and the parts unite in an ensemble of dignified and graceful simplicity befitting the bridge.

Over the arch ribs and immediately under the floor slab, there are continuous galleries. Of these one will be used for high tension electrical conduits, one for low tension electrical conduits and the third for gas and water mains. The balustrades, urns, eagles and shields were separately cast and specially finished.

Fortunate, indeed, is any city which has a structure of such great beauty to fill one of its most important landscapes. This bridge clearly demonstrates that such a structure can be made to harmonize with and add to the natural attractiveness of its surroundings. And, equally important, it makes plain the desirability of perfect collaboration between the architect and engineer on such works.



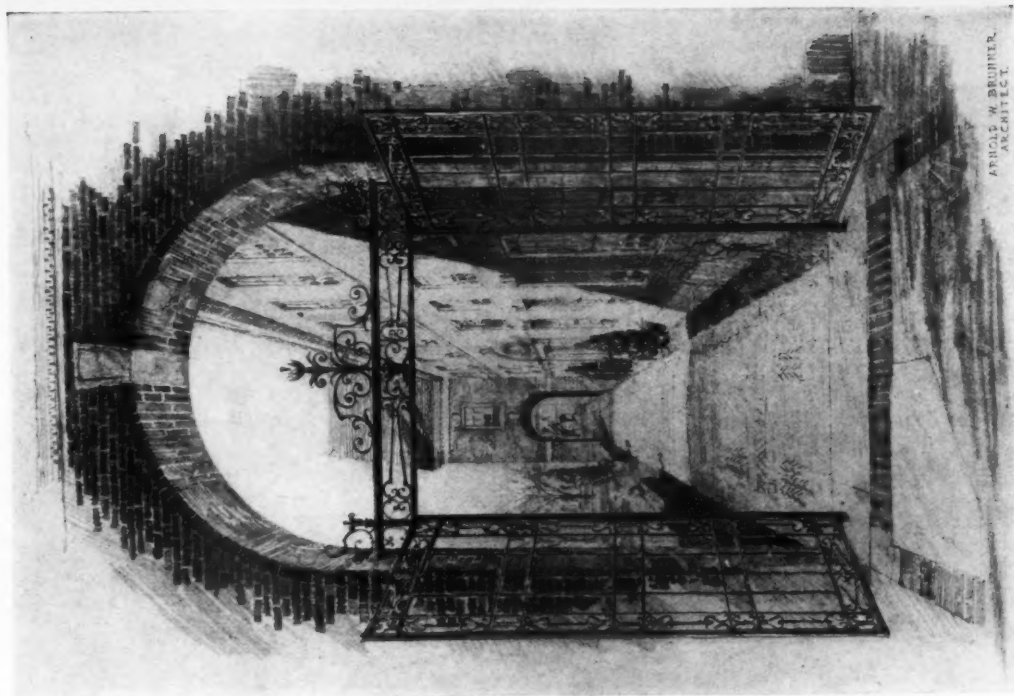


1. MAIN ENTRANCE GATE
2. SWASEY CHAPEL
3. ADMINISTRATION BUILDING
4. LIBRARY
5. CAMPUS WITH ACADEMIC BUILDINGS
6. BARNEY HALL
7. DOANE HALL
8. CLEVELAND HALL
9. PRESIDENT'S HOUSE
10. SWASEY OBSERVATORY
11. WOMEN'S GYMNASIUM
12. AUDITORIUM AND WOMEN'S RESTAURANT
13. MUSIC BUILDING

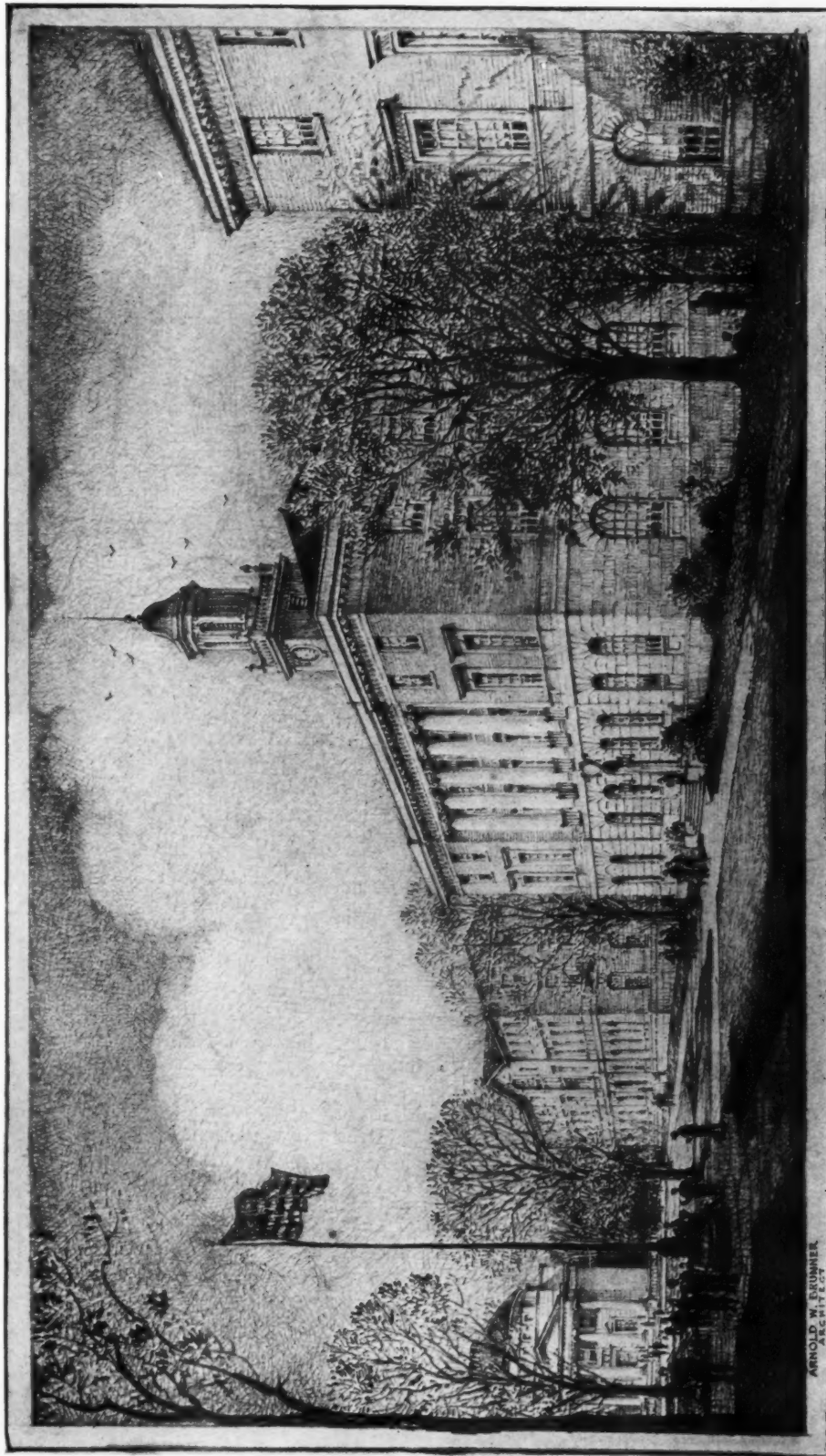
14. INFIRMARY
15. SOCIAL HALL
16. WOMEN'S DORMITORY GROUP
17. OPEN AIR THEATRE
18. TENNIS COURTS
19. ATHLETIC FIELD
20. FRATERNITY HOUSES
21. MEN'S GYMNASIUM
22. MEN'S COMMONS
23. MEN'S DORMITORY GROUP
24. TECHNICAL LABORATORY GROUP
25. SERVICE BUILDINGS
26. FACULTY HOUSES
27. GRANVILLE ACADEMY

DENISON UNIVERSITY, GRANVILLE, OHIO

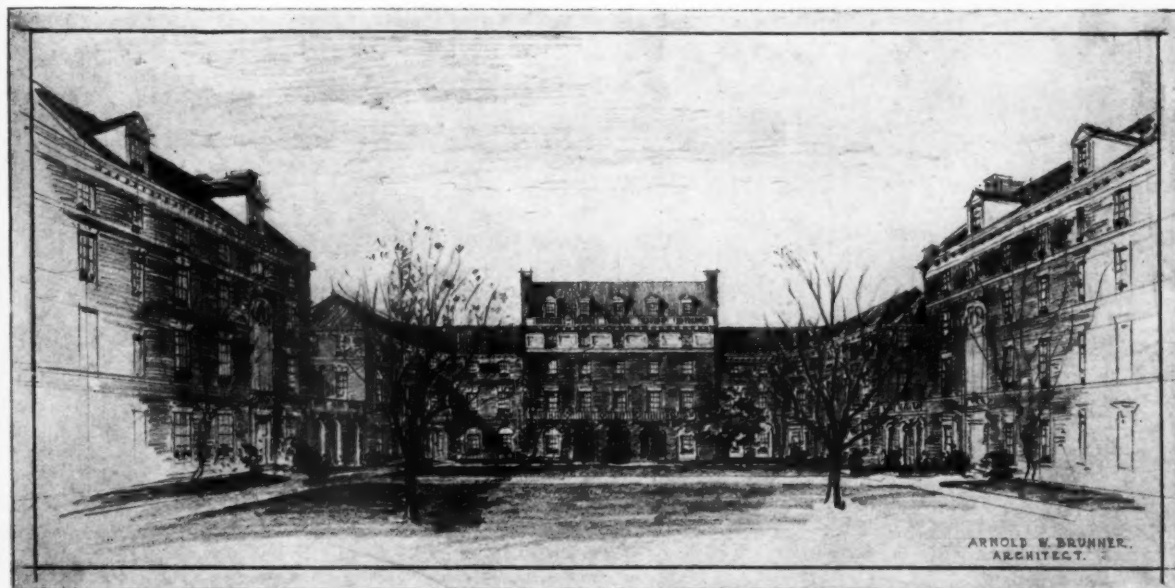
ARNOLD W. BRUNNER, ARCHITECT



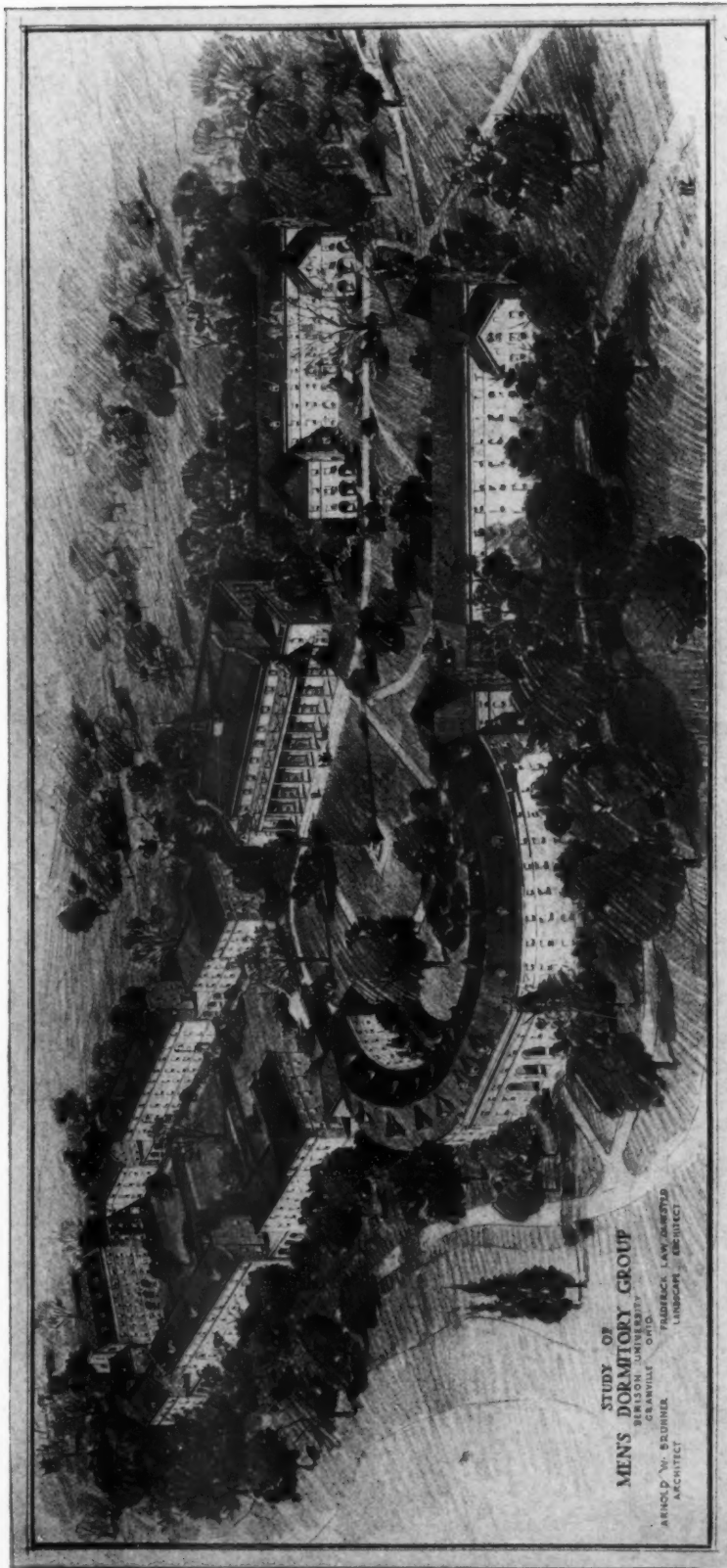
OFFICE SKETCH OF DETAIL



ADMINISTRATION BUILDING
DENISON UNIVERSITY, GRANVILLE, OHIO
ARNOLD W. BRUNNER, ARCHITECT



MEN'S GROUP
DENISON UNIVERSITY, GRANVILLE, OHIO
ARNOLD W. BRUNNER, ARCHITECT

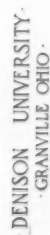


MEN'S GROUP

DENISON UNIVERSITY, GRANVILLE, OHIO

ARNOLD W. BRUNNER, ARCHITECT

THE AMERICAN ARCHITECT THE ARCHITECTURE

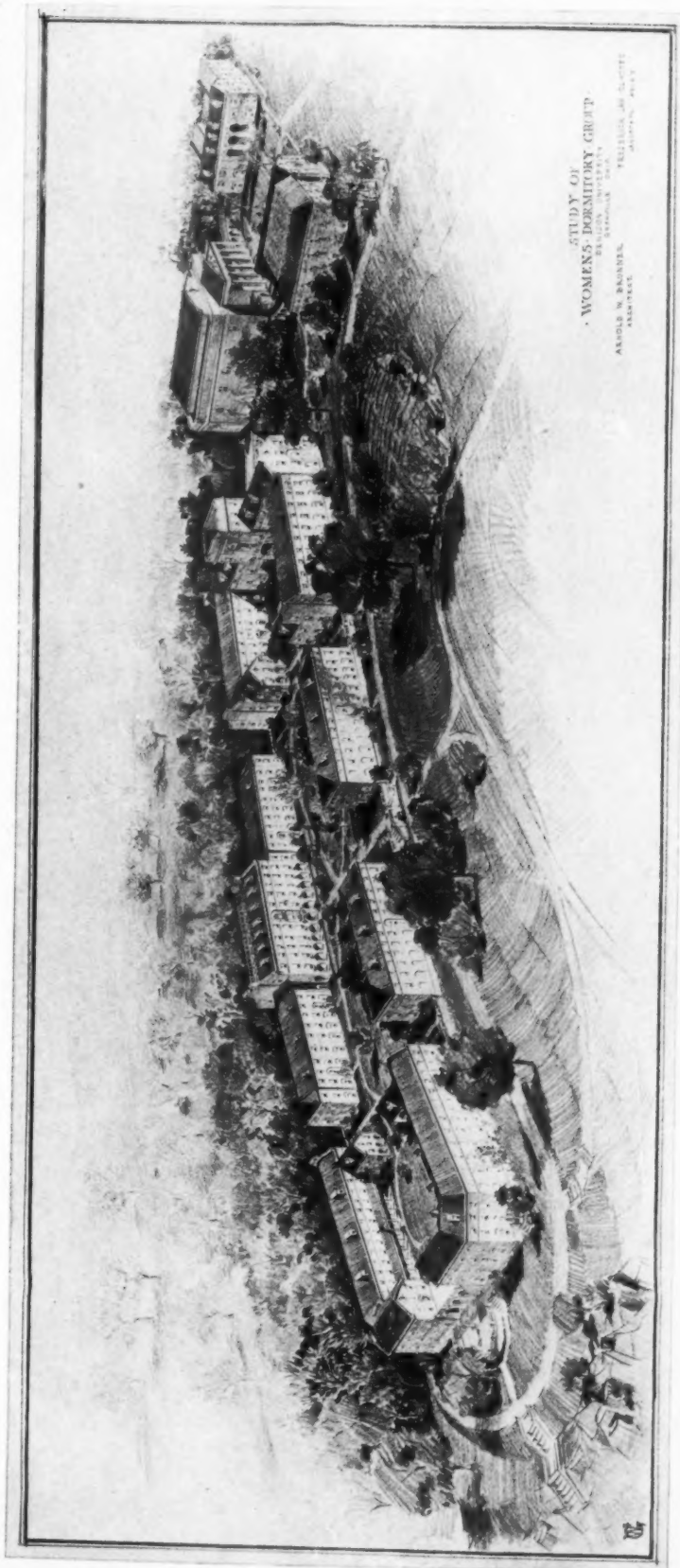


PLAN OF MEN'S DORMITORY GROUP.
CAMPUS FLOOR LEVEL.

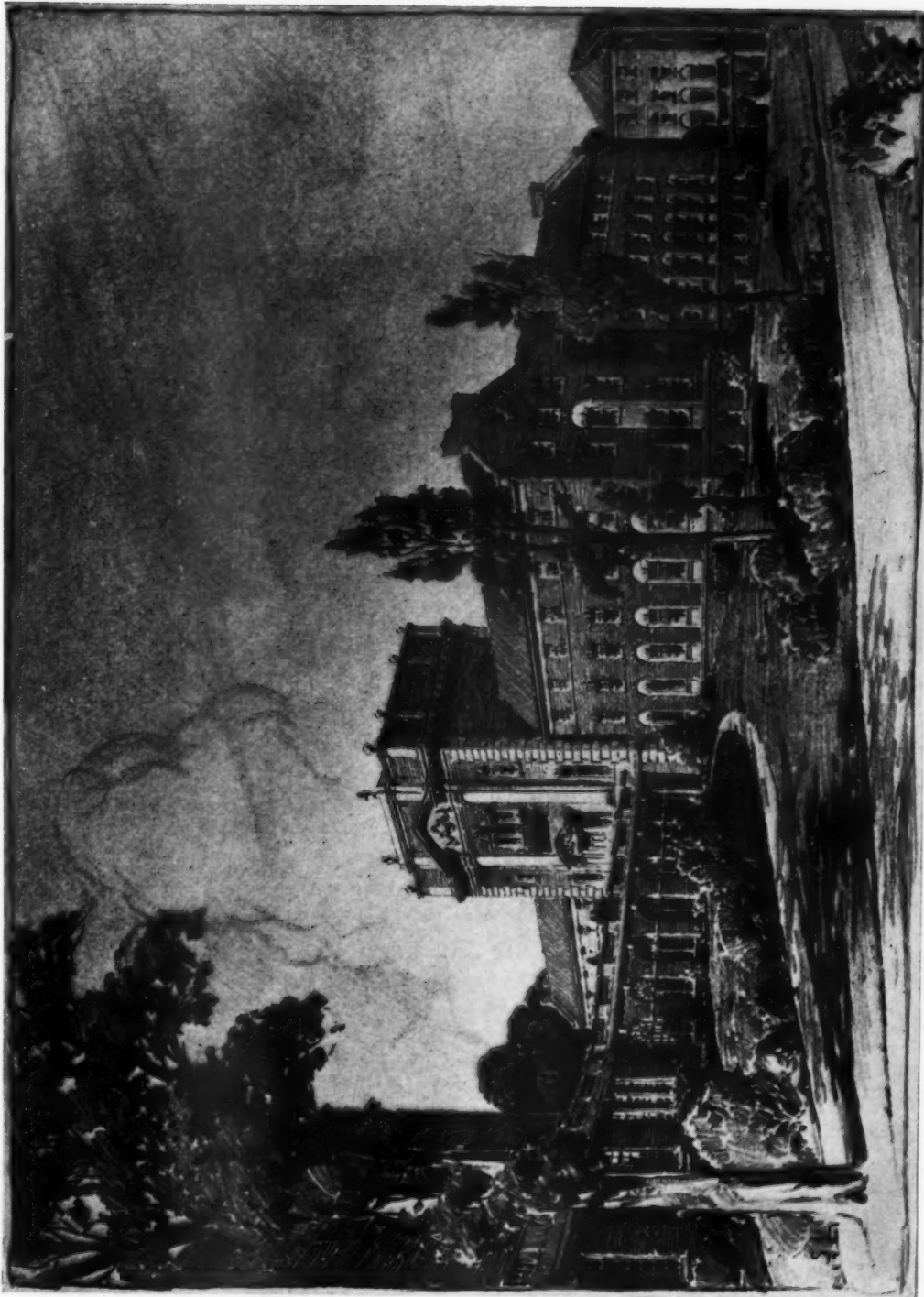
ARNOLD W. BRUNNER
ARCHITECT

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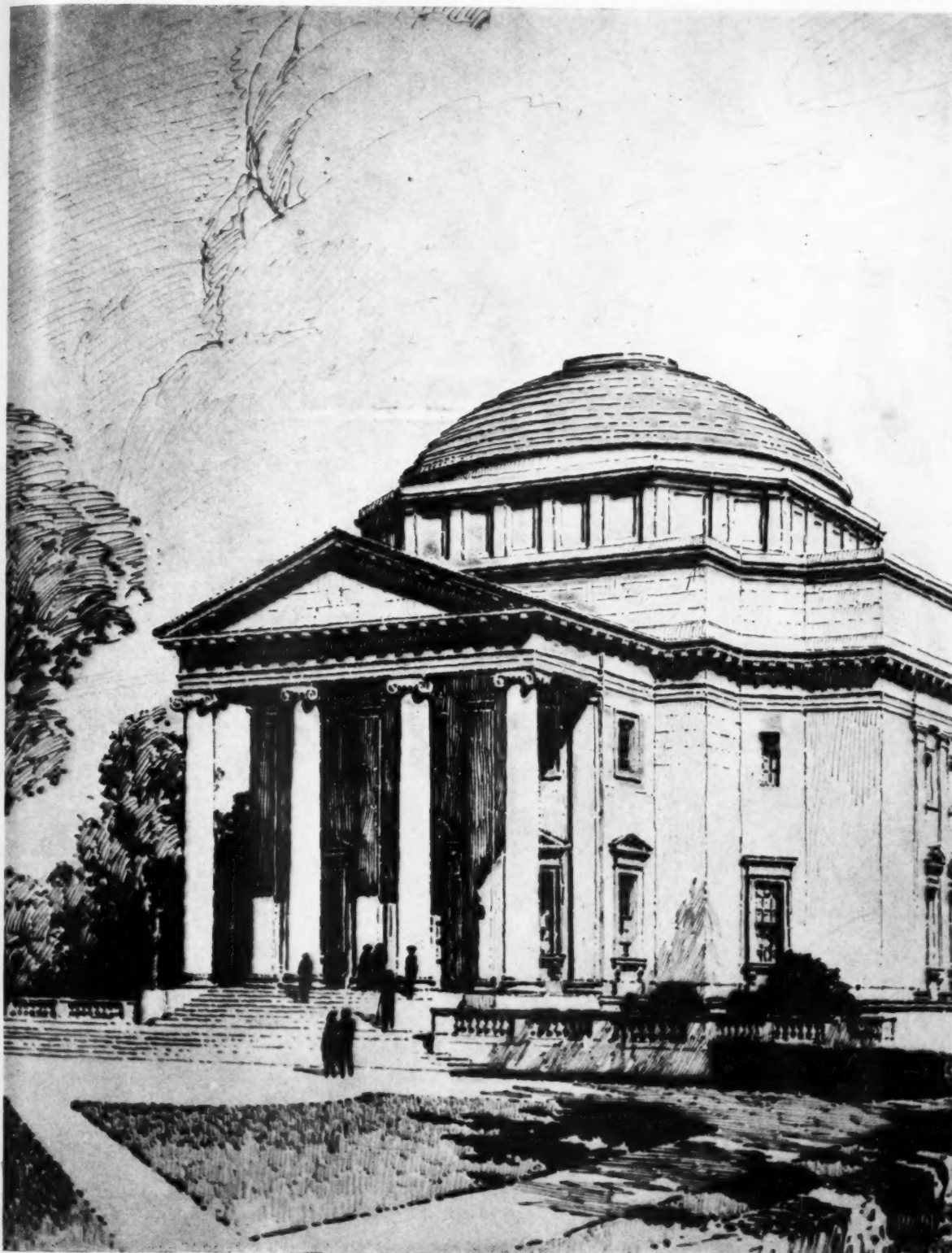
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WOMEN'S GROUP
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SOCIAL HALL, WOMEN'S GROUP
DENISON UNIVERSITY, GRANVILLE, OHIO
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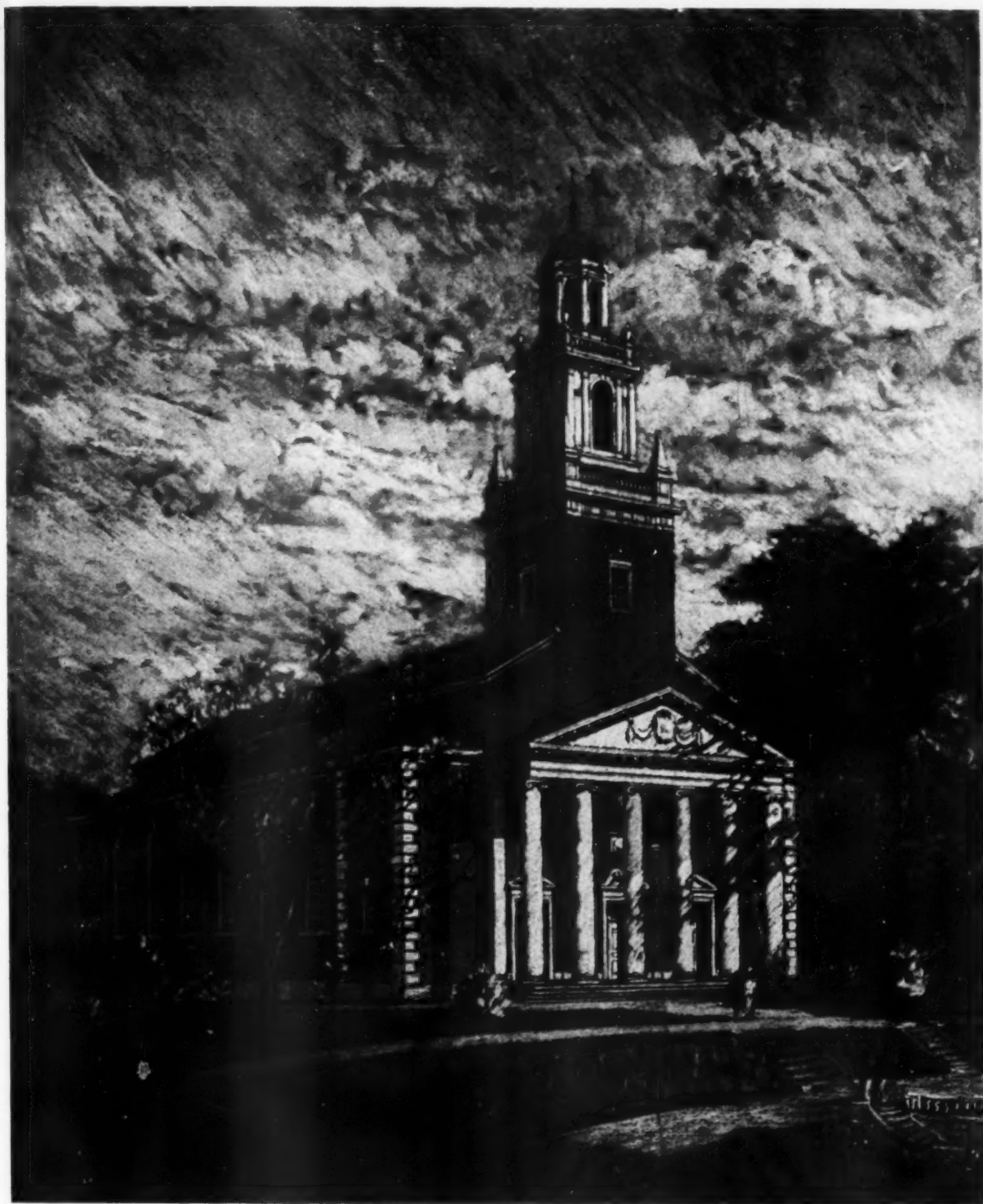
LIBRARY

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SCALE MODEL OF CHAPEL
DENISON UNIVERSITY, GRANVILLE, OHIO
ARNOLD W. BRUNNER, ARCHITECT



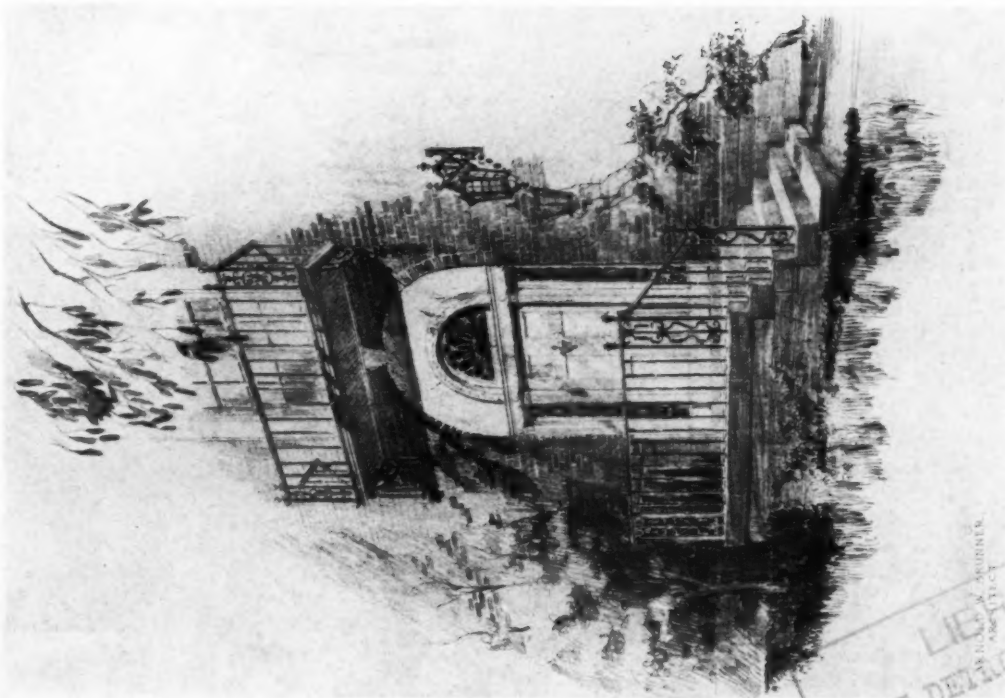
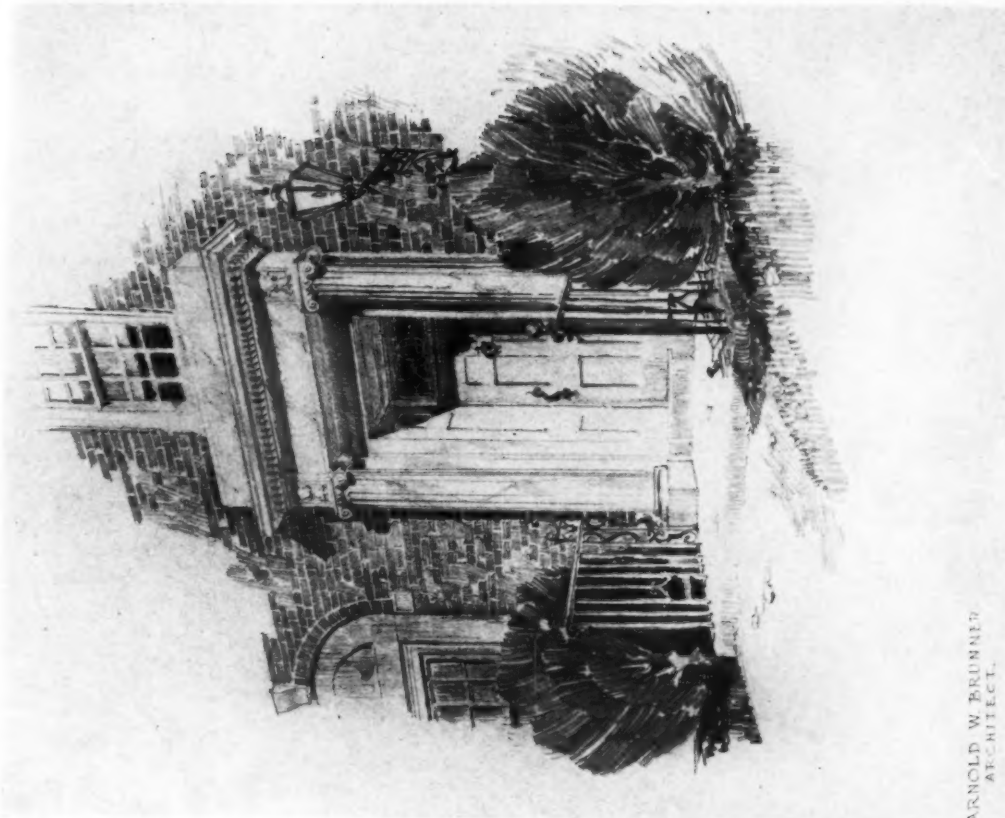
CHAPEL

DENISON UNIVERSITY, GRANVILLE, OHIO

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CHAPEL INTERIOR
DENISON UNIVERSITY, GRANVILLE, OHIO
ARNOLD W. BRUNNER, ARCHITECT

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OFFICE SKETCHES OF DETAILS
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EDITORIAL COMMENT

W• **STANLEY PARKER**, Second Vice President of The American Institute of Architects, addressed the recent National Housing Conference in Philadelphia. Mr. Parker's topic was "The Irregularity of Employment as a Factor in High Labor Costs."

Mr. Parker emphasized in his address that in spite of the scientific attitude toward many phases of industry that characterize present day practice, surprisingly little thought had been expended on the element of economy in our use of human beings in the building industry. Mechanics in the building industry, quoted Mr. Parker, "work by the hour but live by the year." The problem of a better conservation of labor was, he believed, largely a question of seasonal unemployment.

Referring to the investigation set afoot by the Boston Building Congress, as presented in a recent report, it appears that in each year covered by the investigation there was a very marked degree of unemployment. Two trades showed in their slack period twenty-five per cent unemployment, six trades showed fifty per cent unemployment, four showed sixty per cent unemployment, one sixty-five per cent and three seventy-five per cent.

The extreme slack periods varied in length from one and one-half to four months and it appeared to take from one to five months for employment to improve sufficiently to absorb the normal membership of the craft. Similarly the high peaks of employment varied from three to six months with slackening-off periods varying from one to five months.

Averaging these curves to show the average employment each year for each trade it is found that the two trades showing a maximum unemployment of 25% showed an average employment of just under 90%. The other trades ranged roughly from 80% to less than 70%.

It is the fact of long periods of unemployment on which labor bases its demands for increased wages. But, on the other hand, if these seasonal periods of idleness could be eliminated, it is undoubtedly true that labor would be quite willing to discuss a reduced scale of wages based on regular employment the year round. The present chronic dissatisfaction with wages is due to the feeling of uncertainty as to these slack periods. The solution is a better distribution and a more steady employment.

The element of weather is, of course, the principal and underlying cause of seasonal unemployment. As the weather may not be controlled and the recurrences of the seasons are inevitable, some

means must be found to adjust building operations in a manner that will result in the least interruption to progress.

Mr. Parker expresses the belief that nothing can be done to relieve the difficulty of seasonal unemployment without the co-operation of the building public. This conclusion is practically in line with the findings of the Hoover Committee. While the building industry is more vitally concerned with the question of seasonal unemployment, and present conditions largely contributory to high building costs, it is significant that labor is the one element in the industry that has given serious consideration to the matter.

"The building industry," stated Mr. Parker, "should through its Building Congresses strive to educate the public to an appreciation of the facts, but unless the public lends a sympathetic ear and takes steps to change some of its present day habits in relation to the initiation of building projects and repair work, it will continue to pay the cost of uneconomic practices. The dollars and cents involved in their building operations however constitute the more unimportant of the two principal results of such procedure. The other and the vastly more important one is the unstable living condition among the ranks of the mechanics created by the constantly recurring periods of unemployment, the natural result of which is a poor mechanic and a less valuable citizen.

"For these the owner does not pay, for these he cannot square his responsibility by any mode of exchange except that of human understanding, sympathy and co-operation. By these alone can a real cure be wrought."

* * *

WITH THIS ISSUE the one hundredth and twenty-fourth volume of **THE AMERICAN ARCHITECT** is closed and there is rounded out a history of forty-seven years. These volumes are records of the progression of the practice of the profession of architecture from a time when our buildings were but a re-echo of classic precedent to the present when the practice of architecture has reached a development as great as anywhere in the world.

It is undoubtedly true to state that **THE AMERICAN ARCHITECT** has kept step with this development, and that its pages reflect the highest ideals of a profession that is the oldest of the arts.

Its various departments bear witness to the wide extension of architectural practice. The modern architect while necessarily a highly trained

artist must also be an equally highly trained man of business. It is to supplement the artistic phase of practice that new departments have from time to time been added to these pages. In those branches of technical construction found in the duties of an architectural engineer, in the economic aspect of the field of building construction, in the many and intricate laws that affect the relations of architect and client, the pages of this journal supply through its various departments a means of information that is encyclopedic in character. A recently added department of Interior Architec-

ture supplies a long felt need and should prove to be in the largest sense helpful. The review of the architectural press is a literary presentation that all readers enjoy, as it gives every worth-while feature that is of interest in this country and in Europe.

It will be the policy of the editors and publishers of this journal to maintain all the high traditions that have made THE AMERICAN ARCHITECT the most dignified, most representative and most widely circulated strictly architectural publication in its field.



NORREY, NEAR CAEN



HOSPITAL TOWER, COUTANCES

CHURCHES IN FRANCE

(From a series of photographs by Robert M. Blackall, Architect)

INTERIOR ARCHITECTURE

Characteristic Details of the Georgian Colonial Style

THE word Colonial as applied to architecture is a general term referring to the work of the builders in this country between about 1700 and 1800. These men naturally showed in their work certain influences and characteristics which they brought with them from their mother country, and thus, for a time at least, accuracy demanded that the word Colonial be prefixed by the country of its origin. So there were English or Georgian Colonial, originated by the Puritans in New England; Mission or Spanish Colonial, in Florida and California; French Colonial, along the St. Lawrence and in Louisiana; Swedish Colonial, on the capes of the Delaware, and Dutch Colonial in New York and environs. All these various types of Colonial architecture, each bearing certain features of the prevailing style in the mother country, gradually became more and more closely allied and woven together, so that since

found their way to America and were accepted at once as Colonial, while the plank trim and plaster wall combination was imported directly from Spain. Today the word Colonial is an inclusive designation of this early work regardless of the influence suggesting it. It has often been said that there is nothing new, and all modern styles and periods can be traced back to medieval times for their inspiration. The Italian mosaic shows clearly its Oriental ancestry; the Adam brothers had their original inspiration from France, which previously had imported it from Pompeii, which in turn had come from the old Greek, who, still further back, had taken his cue from the Egyptian. It is, thus, the adaptation or interpretation of these different ideas that stamps the Colonial as a style of its own, more, perhaps, than its originality of design.

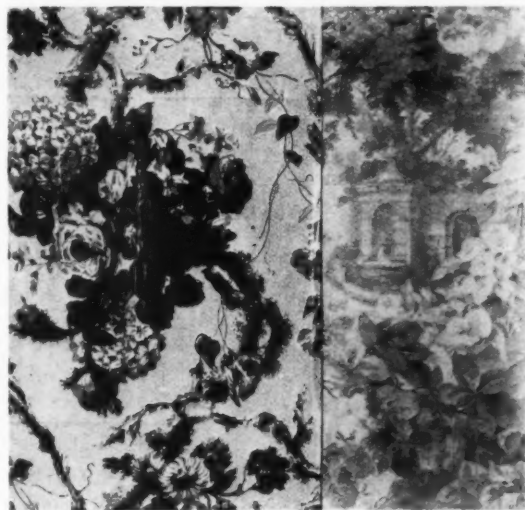
Much of the stately dignity of the original old world interiors has been eliminated, enrichments have been noticeably simplified or done away with entirely, and the result is that informality and simplicity are the chief characteristics of the Colonial style. This element of informality is first discernible in the floor plan, where there is a decided tendency to the square type of room. This at once makes the furniture appear as one big group and prohibits, to a great extent, the stiffness and uncordiality often found in the long.



COLONIAL MANTEL CARRIED IN STOCK

Its chief characteristics are its overhanging shelf, the grouping of the elongated columns, and the details of the mouldings and ornament, which show decided Georgian and French feeling

the establishing of the states, the word Colonial has been used to describe this style of American architecture. It is interesting to note that the term Colonial was not used thus until perhaps a quarter century after the colonies became states. While just as original as many of the prevailing European styles, it possessed many details which could readily be traced to the country of their ancestry. The Queen Anne and Georgian of England show a decided influence in the wall treatment and woodwork details; there are many features of the Louis XVI of France, which, with slight changes during the process of adaptation, have become a definite part of the Colonial; many Dutch details, so noticeable in the William and Mary, and Queen Anne periods in England, also



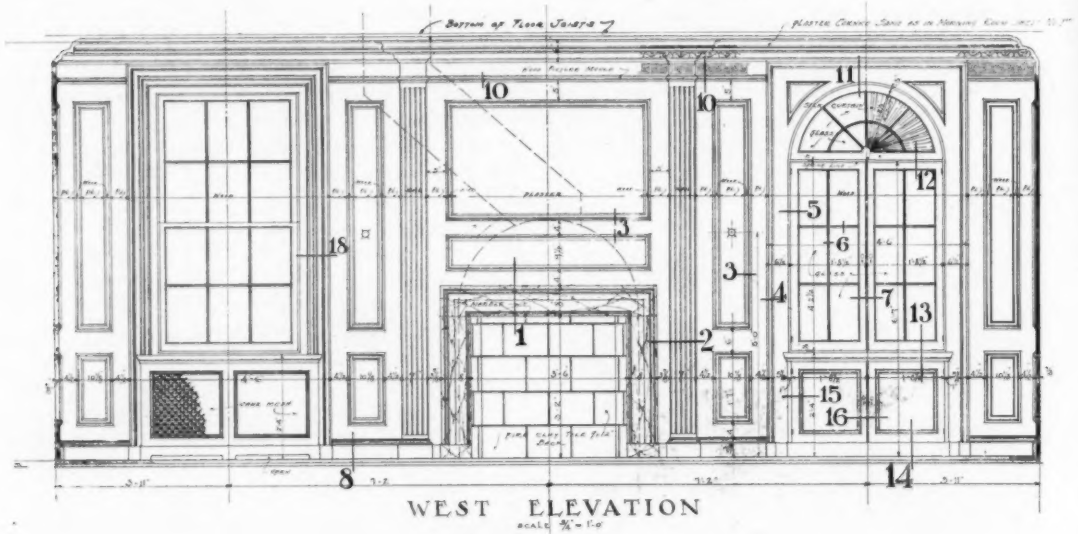
GOOD ENGLISH DESIGN GLAZED CHINTZ COMBINED WELL WITH A TYPICAL COLONIAL PAPER

The chintz is in bright colors, while the paper is entirely in grays and buffs. Notice how the background of the chintz is relieved of its plain whiteness by a delicate line pattern

narrow type of room. The low ceiling, so noticeable in all Colonial interiors, also adds to this informal effect. Wall panels, often a part of the design, are thus of informal proportions, low wainscots with papered walls above help to make the ceiling appear even lower, and wide window and door openings further emphasize the feeling of informality and cordiality.

As generally interpreted, walls are panelled from floor to ceiling in wood, one low panel of chair rail height being surmounted by a large one, and finished above by a wood cornice. In most cases of this kind, the dado moulding is omitted, with a wide rail or stile separating the two panels. A similar and cheaper effect is often obtained by forming the panels with wood mouldings applied

The details of the more architectural features of the decorations adhere closely to the Georgian, especially those of the time of the Adam brothers. In the American adaptation of the Adam motives, the details are much heavier, both in line and ornament. In the use of columns and pilasters, the laws and rules of Vignola are completely shattered, both as to proportion and details of mouldings. The circular headed window is very much in evidence, and appears often, flanked on either side by a narrow window the top of which is on the line of the spring of the arch of the circular one. Narrow pilasters separate the windows and form the outside trim of the narrow ones, surmounted by an entablature, on which rests the moulding which forms the trim of the circular



HOUSE IN WISCONSIN, CHARLES A. PLATT, ARCHITECT

Elevation of a wall of a room in accurate Georgian Colonial style. The panelling, the low ceiling, the pilasters, the mantel and the built-in cupboard are all characteristic of the style. The breaking of the window trim into the frieze and the use of the cornice and frieze of the room as the entablature of the pilasters are in perfect keeping with the details of the period. The forming of the mantel by a marble moulding with no shelf is Queen Anne

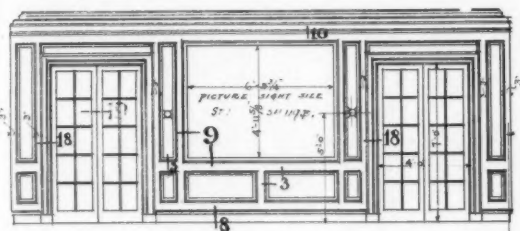
directly to the plaster surface. As in the Georgian, the cornice is apt to be rather heavy in size and detail. The room cornice is often used as the top member of the entablature of columns and pilasters at doors, windows or mantel breasts, the architrave and frieze sometimes not continuing around the room. This, of course, was again made necessary by the low ceilings, and is especially characteristic of the style. This same low ceiling necessitates an interesting and unusual proportion to the wall panels, quite the opposite to those of the original Georgian rooms, where the high, stately ceiling was sought for, if only brought about by effect in the proportioning of the panels. In the American adaptation, however, no effort is made to conceal the low ceiling, but rather the wall panels are shaped further to emphasize it.

head. The arch is used rather extensively throughout designs, surmounting columns or pilasters in colonnades or wall decoration. The Greek and Roman orders are frequently used, the Tuscan and Ionic predominating. The wide doors and windows appear exaggerated in their proportions with the low ceilings, and the use of mahogany doors with short, wide panels only further emphasizes this effect. Windows frequently break into the frieze of the room, which is thus forced to stop abruptly against the trim. Mahogany is used extensively in Colonial designs, as in the Georgian period. Handrails, treads and cap mouldings are frequently of mahogany; doors, as just mentioned, are almost always of panelled mahogany, and its contrast with the prevailing white woodwork is very striking. The beautiful effect of well selected

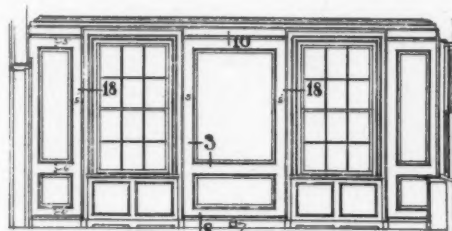
mahogany, where the figure of the wood makes a picture which only nature can draw, is thus made a distinct feature of this style. Finished properly in the rare old Sherry wine color, as it has been well described, these panelled doors give the keynote of the scale as well as of the color scheme of the whole room.

Very often papered walls are a decided feature of the decorations. The walls are treated with a low wood wainscot with paper above, capped by

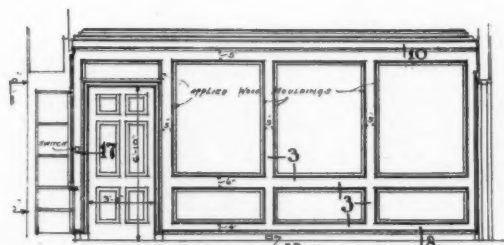
background purposes it is very pleasing, as its colors are so soft and delicate that it is more like a mottled plain surface than a repeating pattern. As a result, bold, figured chintz combines well with this paper, the contrast in design as well as in color being so pronounced that any chance of unrest or uneasiness caused by similarity is not possible. There are many other interesting wall papers, typical of the style, as those designed from the old chintz patterns, in bright colors on a white



EAST ELEVATION

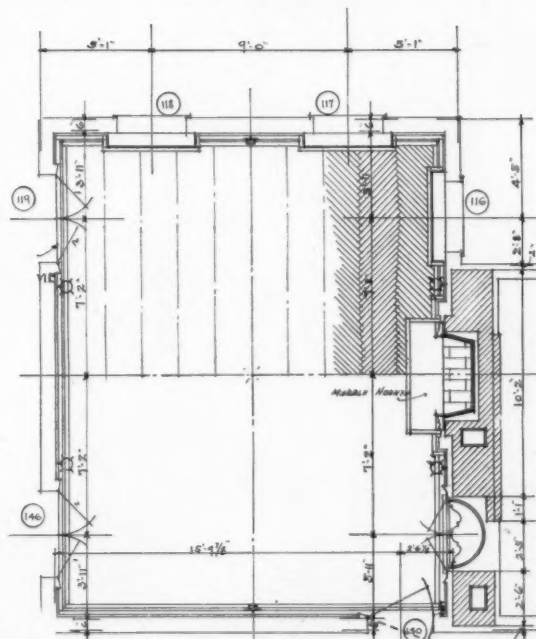


SOUTH ELEVATION



NORTH ELEVATION

REMAINING ELEVATIONS AND PLAN OF ROOM SHOWN ON OPPOSITE PAGE. IN THE SHAPE OF THIS ROOM THE COLONIAL PROPORTIONS ARE ADHERED TO. THE MANTEL IS PLACED SO THAT IT OFFERS THAT CORDIAL WELCOME ON ENTERING THROUGH THE MAIN DOORS. NOTE ALSO THE PROPORTIONATELY LOW CEILING, DEEP CORNICE, AND SHAPE OF WALL PANELS, LEANING TOWARD THE SQUARE



PLAN OF DINING ROOM

SCALE 1/4" = 1'-0"

HOUSE IN WISCONSIN, CHARLES A. PLATT, ARCHITECT

a substantial wood cornice. This type of room, with its simple white woodwork delicately relieved by the soft buffs and grays of the figured wall paper, both contrasted sharply by the bright colors of the chintz hangings, creates an effect of coziness and cheerfulness, yet devoid of any trace of monotony, that is hard to improve on in any style. A distinctly characteristic type of wall paper is that which combines in its design foliage and landscape, in several shades of buff and gray. For

background, broken often by a delicate design of lines. These papers run from the large, bold type of flowers to the very small set "bouquet" pattern. The low ceilings and consequent small wall surfaces allow of this type of paper without the monotonous effect which would result under other conditions. With these papers, great care should be taken in the selection of chintz hangings to avoid what might appear as an attempt to match the paper, and, failing, get the closest thing to it. The



FIRST BAPTIST CHURCH, JAMAICA, L. I., N. Y.

JOSEPH HUDNUT, ARCHITECT—W. E. MANHART, ASSOCIATE

Satisfactory adaptation of the Colonial to a modern church. The woodwork and plaster walls are in shades of light buff, relieved by the mahogany cap mouldings here and there and the natural pine floor. The proportions throughout are very typical of the style and the triplicate window behind the choir loft is very accurate in detail. The lighting fixtures, too, are well designed, in perfect keeping with the architecture and add an interesting note of color as well, being of polished brass. Simplicity and informality are the keynotes and very appropriate here

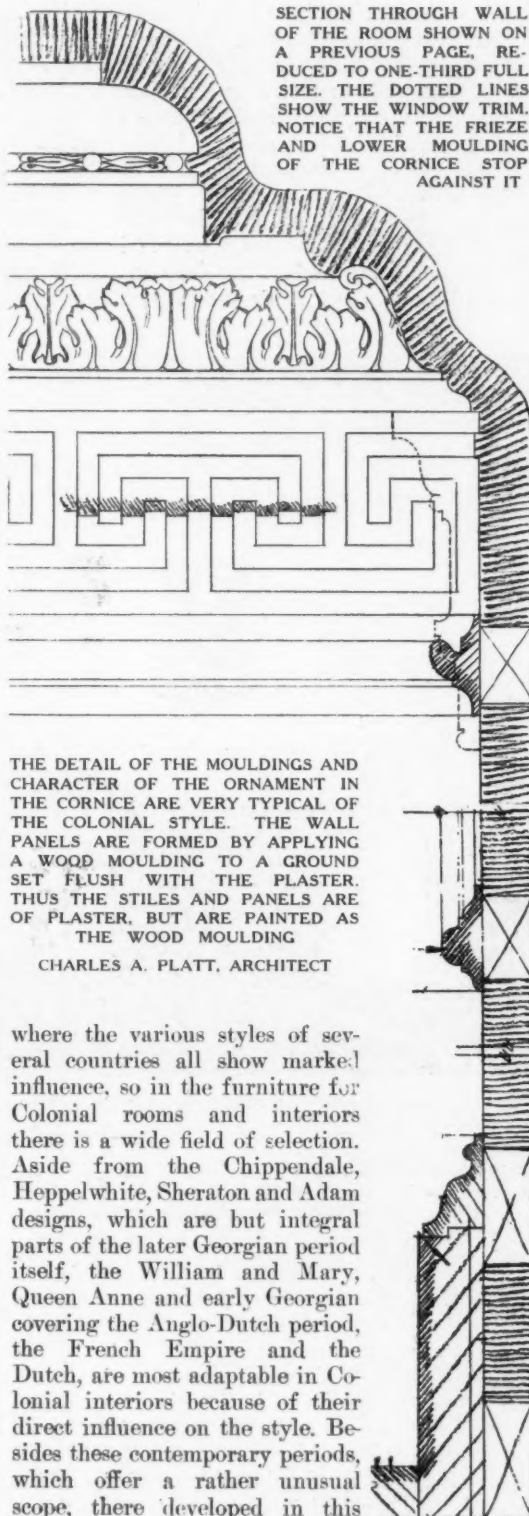
two designs must be totally different in line, while, of course, harmonious in color. For instance, a bold floral design should be used for the chintz with a small bouquet pattern wall paper.

Glazed chintz is very characteristic of this period in the development of fabrics, and is used frequently in the French as well as the English Colonial. It lends itself especially well to the gay colorings of the designs, while its texture is unique and interesting. A more or less extreme use of this material is to make roller shades of it, combining with it for curtains a plain silk, which acts like a frame for the bright colored shades. This is more of a sun porch scheme where the regulation shades, frequently pulled down and visible, grow rather tiresome. Chintz curtains can be bound on the edges with a plain color fabric of the same color as that which dominates the design of the chintz, and can be used again in various places in the scheme of the room and its furnishings, emphasizing the dominating color in proportion.

The Colonial style is adaptable to almost any type of room. In fact, in the average home it could be used advantageously throughout the entire house. A living room with wood panelled walls, relieved by an ornamental door surround, and a good Colonial mantel; all painted in shades of ivory; well chosen Colonial furniture, with an occasional Queen Anne or Georgian piece of mahogany, and hangings and furniture covering in good taste, make a room that satisfies the moods and requirements of the most fastidious. A hall with papered walls from baseboard to cornice of a foliage and landscape design in grays and buffs, white woodwork, and the use of mahogany for doors, handrail and treads of the staircase, and furniture, gives that cordial first impression to a home that is so desirable. A dining room with low wainscot, simple chintz paper above and bright glazed chintz hangings make the few hours spent in that room full of interest. Additional charm may be obtained in the selection of the furniture, for in this period, more than in all others, dining room furniture can be really attractive, and "suites" are not necessary.

However, the possibilities of the Colonial style are not limited to the rooms of the home. In that group of large interiors, including the theatre, the hotel lobby and lounge, and the church, the various Colonial styles can be applied most satisfactorily. Their bright colorings appeal to the designer of theatres; the air of cordiality especially interests the hotel architect, while the informal dignity is greatly in favor with the church designer. In fact, this style seems to embrace all those qualities which are so necessary to make good interiors,—cordiality, refinement and dignity,—and it devolves on the architect to choose from these the correct ones to suit the conditions.

As in the design of the architectural details,



SECTION THROUGH WALL OF THE ROOM SHOWN ON A PREVIOUS PAGE, REDUCED TO ONE-THIRD FULL SIZE. THE DOTTED LINES SHOW THE WINDOW TRIM. NOTICE THAT THE FRIEZE AND LOWER MOULDING OF THE CORNICE STOP AGAINST IT

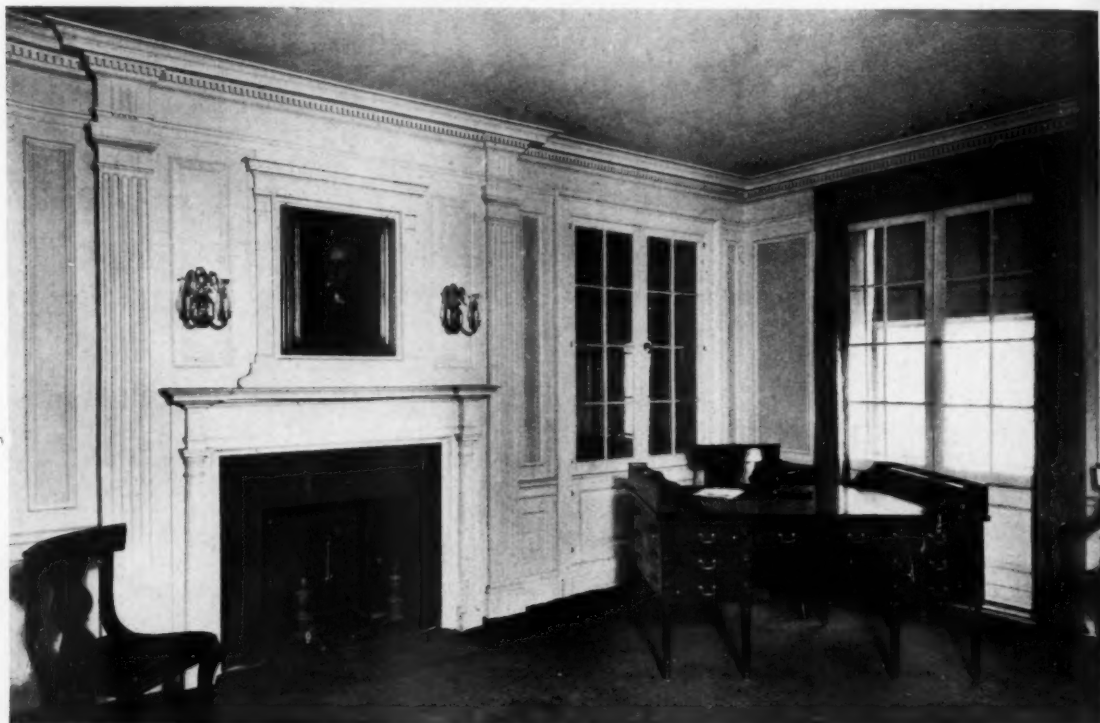
THE DETAIL OF THE MOULDINGS AND CHARACTER OF THE ORNAMENT IN THE CORNICE ARE VERY TYPICAL OF THE COLONIAL STYLE. THE WALL PANELS ARE FORMED BY APPLYING A WOOD MOULDING TO A GROUND SET FLUSH WITH THE PLASTER. THUS THE STILES AND PANELS ARE OF PLASTER, BUT ARE PAINTED AS THE WOOD MOULDING

CHARLES A. PLATT, ARCHITECT

where the various styles of several countries all show marked influence, so in the furniture for Colonial rooms and interiors there is a wide field of selection. Aside from the Chippendale, Heppelwhite, Sheraton and Adam designs, which are but integral parts of the later Georgian period itself, the William and Mary, Queen Anne and early Georgian covering the Anglo-Dutch period, the French Empire and the Dutch, are most adaptable in Colonial interiors because of their direct influence on the style. Besides these contemporary periods, which offer a rather unusual scope, there developed in this country a type of furniture designed along more original lines, although showing, to a certain extent, the influence of the country

of its origin. Here is felt the influence of Dutch, French Empire and English Empire. The earliest American furniture includes that crude, hand made type built in the seventeenth century, when machines were not available. Maple was the prevailing wood of this type, and it was left in its natural finish. Seats of the chairs were of hand made rush, and the whole effect was unusual and unique. This group shows a decided tendency to the Dutch feeling, and later on the influence of the French Empire is very evident. With the establishing of the Colonies and the stabilizing of

not interfere at all with the use of the original styles, whose influence is ever present. In fact, the adaptation of certain ornament and details of these original designs into the Colonial pieces forms a note of harmony between them which makes their use together in the same scheme decidedly satisfactory. For lighting fixtures, polished brass and pewter were used most, and the designs were often given a distinctly American touch by the embodiment of the spread eagle in its composition. Floors were generally laid of oak or pine strips and left in their natural finish. The



PRIVATE OFFICE OF HENRY W. FLETCHER, NEW YORK CITY

FRANCIS Y. JOANNES, ARCHITECT

This private law office, fitted up in true Colonial style, is all the more interesting when it is known that it is on the twenty-first story of a modern skyscraper. The walls, ceiling and woodwork are in shades of buff; carpet of dull green-blue; tan hangings, and mahogany furniture. The desk is an exact replica of the one used by George Washington

business, machinery appears in the execution of cabinet work and the effect of these more modern methods of construction was very noticeable in the production of furniture. While this type of American built furniture shows a decided tendency toward the English, Dutch, French and Spanish periods, according to the nationality of the maker, as in architecture generally, Colonial furniture has many pleasing characteristics which stamp it as a style of its own. This style, therefore, only increases the field of selection of furniture for the various Colonial interiors and does

hand woven rag rug of many colors came into being during this period, and today, in its more modern construction, gives a note of old Colonial days that is very appropriate and pleasing.

Architects are invited to correspond with the editor of this department regarding any problems of interior design or the availability of materials. Acknowledgment is made to the following firms for their courtesy in supplying illustrative material: Brecher Co., Inc., F. J. Emmerich Co., Witcombe McGeachin & Co.

ARCHITECTURAL ENGINEERING

STADIA SIGHT LINES*

BY BERT M. THORUD,† A. W. S. E.

ALTHOUGH there have been numerous articles on stadia in the various technical publications during the past ten years, with much good descriptive matter, very little exact data is available on the subject of sight lines. There is usually a mere reference as to the size of riser and tread, without any explanation as to the methods by which they were determined. A few are further described as being of a bowled cross section, or of having sight lines which assume for each row a certain clearance over the average head line of the row immediately below, without specifying the limits of vision, process of calculation, etc. The following table illustrates in approximately the sequence of erection, various grand stands and stadia with their respective size of riser and tread:

TABLE OF COMPARATIVE RELATION OF RISE AND TREAD OF SEATING SECTION OF VARIOUS GRAND STANDS AND STADIA

	Rise	Tread
Polo Grounds, New York ..	16"	2'6"
Sox Park, Chicago, Main Stand	9"	2'7"
Sox Park, Chicago, Balcony	15"	2'7"
Cleveland, Main Stand	16"	2'8"
Federal League, Brooklyn ..	6" to 8"	2'9"
Lehigh University	16½"	2'7"
Harvard University	15"	2'5"
Princeton University	15" to 17"	2'6"
College, City of N. Y.	16"	2'4"
Yale University	8" to 12"	2'6"
Syracuse University	18"	2'3"
University of Michigan ...	9" to 12½"	2'0½"
University of Tacoma	18"	2'3"
University of San Diego ...	17"	2'6"
University of Ohio State:		
Lower deck	11" to 17"	2'6"
Upper deck	24"	2'6"
University of Illinois:		
Lower deck	8" to 11¼"	2'2"
Upper deck	14¾" to 17"	2'2"
Grant Park Stadium	8" to 12"	2'6"

It will be noted that the earlier types, of which the baseball grand stands are prominent, have equal risers and equal treads, and that the later types, of which the university stadia are typical, use a variable size riser with equal treads, thus producing a bowled section.

Sight lines are a most important factor in present day design of stadia, in that they should determine the cross section of the stand. A sight line may be defined as a straight line starting from the normal position of the eye of a spectator seated in any row of the stand, clearing the heads of the spectators below and in front and terminating at a point on the field, which represents the limiting point nearest the stand which is included in the spectator's view.

Figure 1 illustrates a line of sight for a typical cross section with the vertical scale exaggerated. The point "O" represents the point of sight on the level of the field. The point "e" represents the normal position of the eye, a distance "h" above the level of the feet of a spectator, normally seated; "i" represents the horizontal variation of the normal position of eye from the face of the riser, and "x," the clearance for each row, is



FIG. 1. DIAGRAM OF TYPICAL SIGHT LINE

the vertical distance between the position of the eye and the top of the hat of the spectator. The line of sight is the straight line from "e" to "O," passing through the point of clearance, distance "x" above the position of eye for the row immediately in front.

The effect of equal risers on sight lines is shown in Fig. 2. It will be noted that the sight lines in this case, for any constant clearance "x" are parallel lines, and that for any succeeding row back of the first, the point of sight becomes further away from the stand. Consequently each succeeding row back of the first has a lesser seat value. In order to provide an ample view of the field

*Presented before the Western Society of Engineers, Chicago
†Structural Designer, Holabird & Roche, Architects, Chicago

from the top seats, a higher riser is required, which is usually greater than need be for the lower seats. To avoid using an impractical height of riser it is also usually necessary to place the stand further from the playing field than would be required for a stadium, with a bowled section of stand, that is used for football and track only. Where a stand is used for baseball, this feature is not so important because a considerable distance is required between the diamond and the stand for fielding of foul balls.

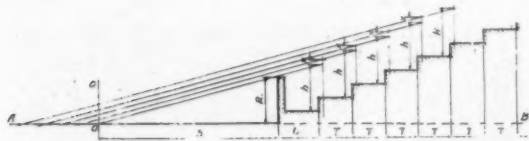


FIG. 2. DIAGRAM OF SIGHT LINES OF EQUAL RISERS AND EQUAL TREADS

The advantages of equal risers are convenience and simplicity in construction by repetition of a typical section of rise and tread. The disadvantages are loss of seat values for the upper rows and a smaller seating capacity due to the lesser number of risers that is possible in a practical height of stand.

These disadvantages greatly offset the advantages.

Figure 3 represents a diagram of variable risers with sight lines from a constant point of sight, "O," with a constant clearance, "x," at each riser. This diagram illustrates how the sight lines should determine the cross section of the stand. Note that having previously determined other factors, the size of each riser is dependent upon the sight lines radiating from the point of sight "O," and that each riser back of the first is of increasingly greater height than the riser immediately below.

The factors which must be previously determined are indicated in the diagram by symbols for which the following explanation is made.

"S" is the distance from the field edge of the stand to the point of sight "O." The point of sight is located by the layout of the field. Where a football field and a track are to be provided, the track usually surrounds the football field and the stand is located close to the outer edge of the track. The point of sight is then determined as a point which will include a good view of all track events. Sometimes this point is selected at the level of the field and the center of the track, but preferably this point should be

taken in the first or second lane of the track at a level above the track about waist high of a runner. The advantage of the latter procedure is apparent in Fig. 3, where a line of sight from "O" at the center line of track on the level of the field to the uppermost position of eye indicated cuts the vertical line through "O" at an appreciable height above the line A-B, which represents a level waist high above the field. For a line of sight from "O" to the position of eye for the top row of a full section of stand (there are about 70 rows in an average stand) this variation is usually sufficient to cut off the view of a runner in the first or second lane. When no track is included, the point "O" is usually located on the level of the field somewhat outside the playing field or gridiron to allow a view of an "out of bounds" play.

"T," the width of a typical tread, is determined by the comfort to be provided for the spectator and the required number of rows, or treads, necessary for the desired seating capacity, in the space available for the depth of the stand. The $24\frac{1}{2}$ " used on the Michigan Stadium should be a minimum and 30" is considered ample for comfort, unless backs are to be provided for the seats, in which case 31" to 32" gives better space for the spectator's knees. If any row is used as a cross aisle, as the first tread is often used, it should have extra width. The symbol "U" is used in the diagram to indicate this width of aisle plus the thickness of the railing or field wall along the edge of the stand. The height "R" of this field or railing is fixed by other practical considerations.

"h" represents the height of the position of eye above the tread at the level of the feet for a spectator normally seated, which may be taken at 4'0", and "i" represents the horizontal distance by which the normal position of eye may be considered to vary from the face of the riser, which averages 4".

"x," denoting the clearance for each row, is determined as the normal distance from the

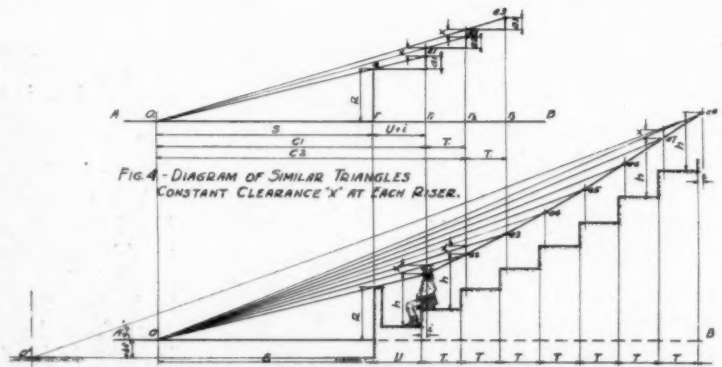


FIG. 3. DIAGRAM OF VARIABLE RISERS FOR CONSTANT POINT OF SIGHT
CONSTANT CLEARANCE "X" AT EACH RISER

theoretical position of the spectator's eye to the top of his hat. This is generally between 5" and 6".

The elevation of the first tread or cross aisle is determined as follows:

A sight line is drawn from the point of sight "O" (see Fig. 3) through the highest point of the field wall or railing and continued to a point on the vertical line through the position of eye for the first riser, a distance "i," from the face of the riser. Measuring down a distance "h" from this point locates the level of the first tread. A second sight line from "O," through the point of clearance for the first riser, a distance "x" above the point of position of eye for the first riser, continued to a point on the vertical line through the position of eye for the second riser, locates the level of the second tread at a distance "h" below this point. The difference in elevation between the first and second treads gives the theoretical height of the first riser. Continuing similarly for each riser, the height of each riser from the first may be successively worked out. Evidently this method is graphical and subject to more or less error in laying out the entire cross section of a stand.

An exact result is possible by the solution of similar triangles, as indicated in Fig. 4. The elevation of the first tread must be solved for first, as follows:

A right angle triangle is formed by the horizontal base line A-B, the vertical line at the face of the field wall or railing and the sight line from the point of sight "O" through the point "e" ("e" representing the highest point of the field wall or railing). Two sides of this right angle triangle are known, "S" and "R," determined as previously explained. Continuing the sight line to point "e₁," which represents the position of eye for the first riser, another right angle triangle is formed, which is similar to the first, and of which the horizontal distance "U" plus "i" is known. By solution of similar triangles the vertical line of the second triangle, "a₁," can be solved for, thus:

$$a_1 = \frac{R(U+i)}{S}$$

The elevation of the first tread can then be located as equal to $R + a_1 - h$, above the elevation of the field.

It is next necessary to solve for the elevation of the second tread, which is as follows:

A second sight line from "O" through the point of clearance for the first riser, a distance of "x" above the point "e₁" forms a right angle triangle of which the base line is equal to $S + U + i$, all of which are known and which may be denoted by the symbol C_1 . The vertical line of this triangle is known and is equal to $R + a_1$

+ x." Continuing the sight line to the position of eye "e₂" for the second riser, a second right angle triangle is formed of which the horizontal distance "T" is one side and is known. By solution of similar triangles the vertical side a₂ is

$$T(R + a_1 + x)$$

found equal to $\frac{C_1}{C_1}$. As the differ-

$$C_1$$

ence in elevation between the first tread and the second tread is equal to the height of the first riser, and this difference in elevation is found to be equal to $(R + a_1 + x + a_2 - h) - (R + a_1 - h)$, $r_1 = x + a_2$, where r_1 denotes the height of the first riser.

Repeating this solution for each successive riser from the first, the theoretical height of each riser can be accurately determined, thus:

$$a_n = \frac{T[R + \sum a_1 \dots a_{(n-1)} + (n-1)x]}{C_1 + (n-2)T}$$

where $C_{(n-1)} = C_1 + (n-2)T$.

or,

$$a_n = \frac{T[R + \sum a_1 \dots a_{(n-1)} + (n-1)x]}{C_1 + (n-2)T}$$

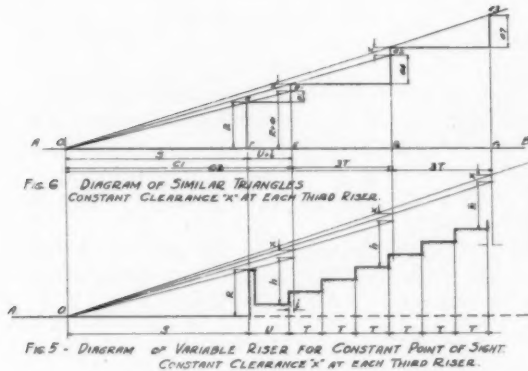
and the value of any riser $r_n = a_{(n-1)} + x$. It will be noted that every riser from the first must be solved for before the value of any succeeding riser can be determined.

A line drawn through the points of position of eye for each successive riser forms a curve of increasing upward curvature. As it is impractical to build a stand having risers which vary by fractional increments as determined by this method, it has been customary in recent work to assume a series of tangents to this curve of position of eye, varying the slope of the tangents to give risers varying in height by one inch or by some convenient fraction of the inch.

If the clearance "x" of 5" to 6" is used for each riser, the curve of position of eye is found to have a rapidly increasing upward curvature, such that for a desirable number of risers an impractical height of stand is required, with large sized risers. Where this method has been used, a maximum clearance of 4" has been usual, and the risers have been found to vary from 11" to 17" in height.

An improvement on the above method is indicated in Figs. 5 and 6. In this method a constant clearance "x" is taken for each third riser. This is based on the assumption that a spectator in any row can easily look between the heads of the spectators in the two rows immediately in front of him. In this method, using a full clearance of 5½" for each third riser, it is possible to derive for the same point of sight "O" a curve of position of eye of less upward curvature than that obtained by the previous method of a clearance of 4" for

each riser, such that the variation in size of riser will be from 8" to 12". It is evident that this effects a considerable saving in the height of the stand.



The solution is the same except that the similar triangles are solved for each third succeeding riser only, and the risers in between are assumed to vary proportionately.

In order to obtain the closest practical approximation to the theoretical risers determined by either of the two preceding methods, it is recommended that the variation in size of risers be made by $\frac{1}{4}$ ", it being considered as practical to use this variation in construction as a greater variation, if any variation is to be used at all. There will result an appreciably closer approximation to the theoretical determination of the point of sight.

these seats increases the upward curvature of the curve of the position of eye for these upper deck rows, and consequently increases the slope of the tangents to this curve. Thus a higher riser is required for these seats, as noted in the previous table of risers and treads.

A typical section through a double deck stand is shown in Fig. 7. It is evident that another consideration of sight line is necessary here. This is to fix the lowest elevation of the front of the balcony, usually the lower edge of the front rail or the underside of the slab of the first tread at the back edge of same so that a line of sight from the eye of a normal spectator in the uppermost row of the lower deck will terminate at a point in the stand at the opposite side of the field, which will include a desirable portion of the lower part of this stand within the range of vision. In addition it is desirable that this sight line includes a good view of an average punt of a football.

As the upper deck is not always contemplated to be used for track meets, it is not necessary in such a case to use the same point of sight for the upper deck as was used for the lower deck, because a view of the track is not essential. Then the risers of the balcony can be made smaller by determining the point "O" at a desirable distance from the edge of the gridiron to include a view of a play "out of bounds."

Figure 7 also illustrates the advantage of using a point of sight in the first lane of the track at waist high level above the field, as the point O on the vertical line O'-O', in preference to the point O1 at center line of track on the level of the field. Note that a sight line from the uppermost seat

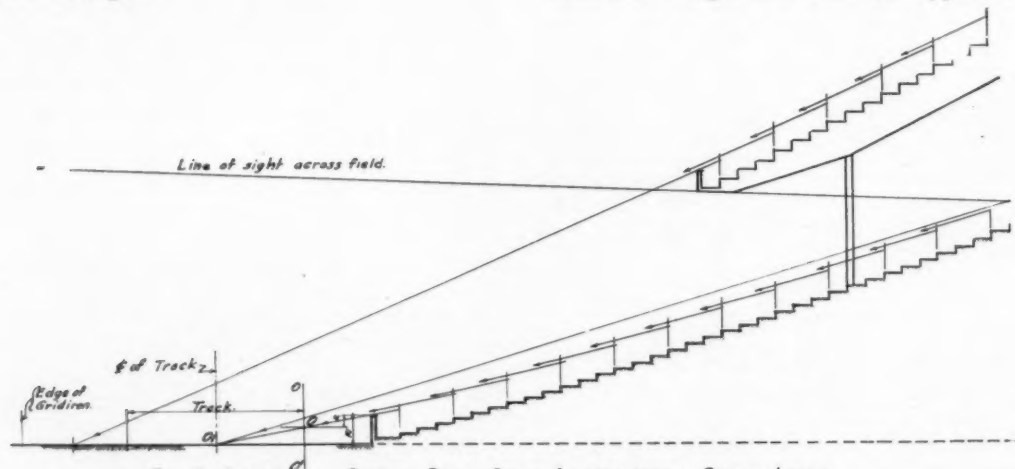


FIG. 7 - DIAGRAM OF DOUBLE DECK STAND ILLUSTRATING SIGHT LINES.

It will be recalled that in previous reference to the Ohio State and Illinois University stadia that a lower and upper deck were mentioned. This feature of these two stadia has the effect of bringing closer to the field the top rows of a single deck than would be required for the same seating capacity. However, this bringing forward of

row of lower stand to point O1 cuts the line O'-O' at a considerable height above O.

Another method used for the Grant Park Stadium, which may be termed "the method of increasing increment of riser" may be used to obtain a bowled section.

This method is used where the height of stand

is fixed by other considerations. In the Grant Park Stadium the top of the uppermost riser was fixed by the elevation of the promenade, which is directly behind it and which was determined in elevation by the architectural design. Also a cross aisle at about the two-thirds height of the stand from the field, was fixed in elevation by the system of ramp approaches used to reach the same. Therefore the variation in risers has to be adjusted between these levels and the level of the first tread which was determined as for the preceding methods.

In this method the risers are independent of the lines of sight, but are adjusted by cut and try methods to approximate as closely as possible the theoretical point of sight determined upon.

The number of treads are fixed by the depth of the stand divided by the width of tread which it is determined to use, which it may be necessary to adjust slightly to suit the number of risers that

are found to be practical between the heights already established.

The height of the first riser may be worked out as previously described. We will assume here that the first riser will be 8 inches as was determined for the Grant Park Stadium. Denoting the increment of increase of rise by D the total rise between any two levels will equal the number of risers contained in this height (or in the depth between the two elevations under consideration) denoted by $N[8'' + \frac{(n-1)D}{2}]$ by substituting the number of risers for N , the value of D may be solved for. Then the height of any riser $= rn = 8'' + (N-1) D$.

Determining a section of stand by this method, a trial of sight lines at various points will show the variation of point of sight. If the variation is too excessive, an adjustment will be necessary, either in the elevations of the top steps or in the number of risers, or in the size of the first riser.

TESTS OF CAUSTIC MAGNESIA

AN interesting investigation of the effect of various treatments of magnesite ores has been concluded by the Bureau of Standards and the results recorded in Technologic Paper of the Bureau of Standards, No. 239. The program was very carefully formulated and information of value obtained. An abstract of the investigation is here given.

The properties of oxychloride cement have been studied, particularly in relation to the source (or properties) of the magnesite ore, conditions during calcination of the ore, and various oxychloride cement mixtures. Ore from Greece, from two different sources in California, and from the State of Washington were used. The first three are of the amorphous variety; the last is coarsely crystalline. Each ore was crushed and separated into three lots, differing only in size of particles. Each lot was then calcined under fixed conditions throughout the operation. The temperature range, including all burns, was from 700 to 1,100° C. Each lot of calcined ore was prepared for use by grinding—in some cases "aging" was necessary—and used in three flooring formulas, two stucco formulas, and one laboratory test formula. Only one concentration (22° B.) of magnesium chloride solution was mixed with the dry materials and the consistencies of the wet mixtures (except the laboratory test mix) were kept as nearly the same as possible.

Service tests were made in conjunction with the laboratory tests. The service tests consisted of the laying of flooring panels; erection of stucco panels, all exposed to actual service conditions; and subsequent observations. The chief laboratory tests were: (1) Time of set, (2) strength tests (tensile, transverse, and compressive), (3) water resistance, and (4) change in volume. The results show that the various ores used require different conditions of calcination in order to produce caustic magnesia of approximately the same quality. The behavior of the cement mixture is affected to a very great extent by variations in: (1) The degree of calcination of the ore, (2) the various types of aggregates often used in practice, and (3) the relative amounts of given constituents in a mixture.

The conclusions resulting from the investigation are as follows:

1. In order to obtain a caustic magnesia of the optimum properties for use in making oxychloride stucco or flooring from ores of different origins, a study of burning conditions must be made for each ore. This should include a determination of both the temperatures and duration of burning of the uniformly sized ore. This is due to the fact that ores of different origin may, and generally do, require different conditions of burning.
2. Very light calcination produces a magnesia too active for present practice unless it is "aged" by exposure to moisture. Even then its use is dangerous, owing to the excessive contraction which often occurs under such conditions. In no instance was an ore calcined to a sufficiently high degree to produce undesirable effects.
3. The tendency to condemn an oxide because it will not produce a satisfactory product when used in a given formula is at fault. The same oxide can generally be made to produce a good result by changes in the formula.
4. On the other hand, a change in one or more of the aggregates in a formula may cause an oxide to give unsatisfactory products, though the same oxide has given satisfaction before the change.
5. The oxides have acted differently in flooring than in stucco formulas. The results lead to the conclusion that in order to produce the most satisfactory material, a different oxide is required for flooring than for stucco. In other words, an oxide which is highly satisfactory for the type of mixtures used in flooring will not give the greatest satisfaction in stucco or *vice versa*. This statement should be interpreted broadly, otherwise it would be contradictory to the second conclusion.
6. The magnesia has a great deal to do with the water resisting properties of a hardened composition, but the effect of the mix predominates. A number of magnesias tested in one mix probably would not fall into the same relative positions if tested in another.
7. The influence of the magnesia predominates over that of the mix in effecting the volume changes. All test bars containing the very lightly calcined magnesia contracted and those containing magnesia calcined at 900° C. or above expanded.

INTERIOR TEMPERATURES in CONCRETE*

AN important investigation of the temperatures which obtain in new concrete work has been made by J. B. Hunley, engineer of bridges and structures of the Cleveland, Cincinnati, Chicago & St. Louis Railway. Several previous investigations have been made along this line, but none as far as we know, in which the same care was used to correlate all of the facts, and to endeavor to establish, if possible, whether there is any relation between the exterior and in-

below the freezing point. The next day and the following night there was a continued reduction, until the thermometer registered slightly more than 20 degrees. Temperatures did not go below 20 degrees but remained below freezing, rising during the day and falling again during the night, for several days. In a very short time cracks were noted at a number of places on the face of the pier. It was reported to Mr. Hunley, who made an immediate investigation. It was

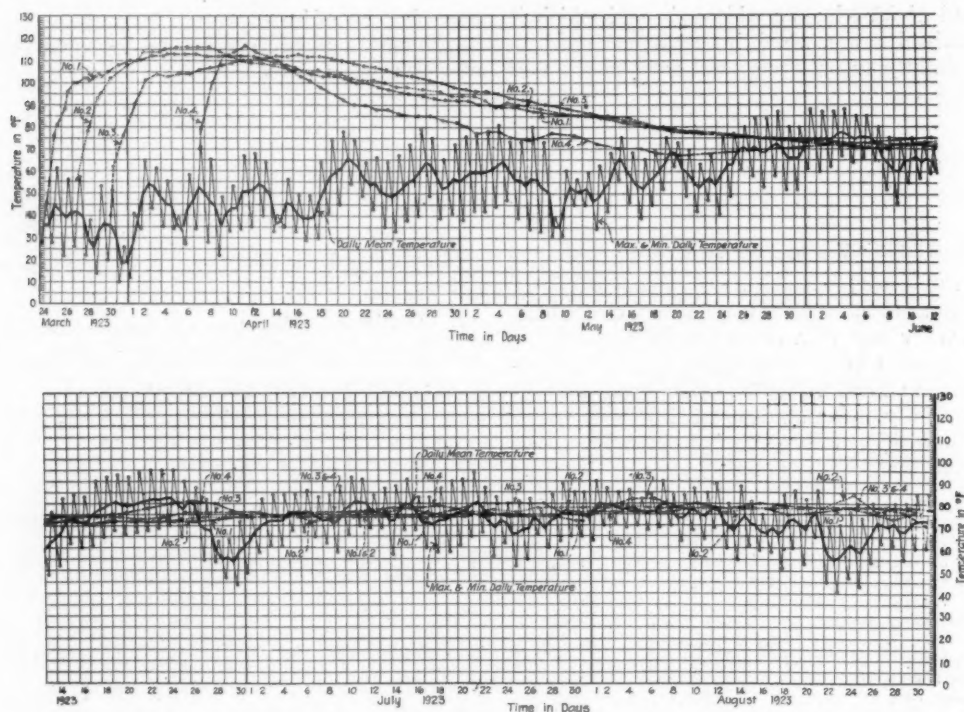


DIAGRAM SHOWING TEMPERATURES, FROM DAILY READINGS OF THE FOUR THERMOMETERS AT INTERIOR PIER NO. 1. ALSO DAILY MAXIMA, MINIMA, AND MEAN ATMOSPHERIC TEMPERATURES

terior temperatures. This investigation is made at a concrete bridge being built by the railroad company over the Miami River, as a part of its line revision at Sidney, Ohio.

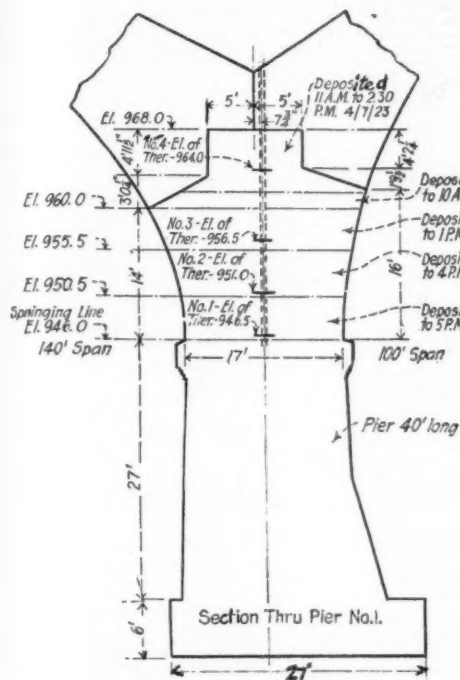
During the latter part of February, 1923, the forms were removed from one of the piers which had been finished for some time. The weather had been moderate for that season of the year and the day the forms were removed was warm and clear. That night, however, the temperature began to fall and continued to do so until it was

found that the cracks were not the result of mere surface checking, but on the other hand they did not extend deeply into the concrete.

During the period between the depositing of the concrete and the removal of the forms, the structure had been protected from low temperatures by a layer of well packed straw outside the forms and over the upper surface. At the time the forms were removed there was no evidence of the checking which appeared shortly after. After considerable study the conclusion was reached that the trouble was caused by a much more rapid re-

*From *The Railway Review*, October 6, 1923

duction of the temperature of the surface of the pier than of that part slightly below the surface. In other words it was believed to be due to rapid surface radiation, but this necessarily presupposed comparatively higher interior temperatures than were known to exist.

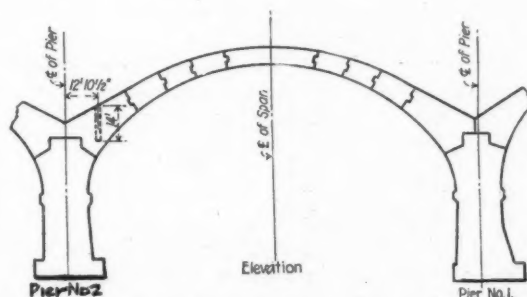


SECTION THROUGH PIER NO. 1 SHOWING LOCATION OF THERMOMETERS, READINGS OF WHICH ARE SHOWN GRAPHICALLY

Partly to test out this theory and partly to determine what does take place, so far as temperatures are concerned, in the interior of a mass of freshly deposited concrete, the investigation above mentioned was determined upon. Recording thermometers of the maxima and minima type were secured. A pipe of sufficient diameter to accommodate the thermometers was installed and one of the thermometers inserted near the bottom of the mass of concrete deposited each day. Four of these thermometers were placed on the following dates: March 24, March 27, March 30 and April 7. Readings were taken daily and will be continued indefinitely. The chart shows the mean daily readings of the recording thermometers, the maximum and minimum atmospheric temperatures for each day and the daily mean temperature, from the time the concrete was deposited to August 31, 1923. The daily atmospheric temperatures were secured from the Weather Bureau.

Thermometer No. 1 was inserted at five p. m. March 24. At that time the atmospheric tempera-

ture was 44 degrees and the temperature of the concrete was 46 degrees. By midnight the temperature of the concrete had risen to 60 degrees and by morning to 76 degrees. The rise continued at a rapid rate until on the morning of March 27 it had reached 100 degrees. This is at a rate of approximately 0.86 degrees per hour for a period of 63 hours. The temperature continued to increase, but at a much less rate until on April 4 it reached 115 degrees. In the succeeding four days a further rise to 116 degrees was recorded, after which there was a gradual but nearly uniform fall until June 7, a period of two months from the time of depositing the concrete. Subsequent to this date the thermometer readings fluctuate with the outside temperatures, but to a much less degree, and it will be noted that the readings in the interior of the pier are not affected for a week or ten days, depending on the amount of rise or fall of the outside temperatures. Prior to June 7, fluctuations of the external temperature do not seem to have in any way affected the interior temperatures of the concrete. The same phenomena were observed with all other thermometers. It will be noted that after the maximum readings were recorded by thermometer No. 4, the initial fall in the temperature was considerably more rapid than in the case of the others. The influence of the external temperatures was not observable until approximately the same period had elapsed. This more rapid fall and the continued lower temperature for No. 4 can be accounted for by the greater radiating surface and the fact that the other sections of the pier were protected above and below by adjacent masses of concrete at the recorded higher temperatures. Means were provided to protect the upper end of the pipe in such a manner that the thermometers would in no wise be affected by external conditions. No efforts were



PLAN AND ELEVATION OF ARCH SHOWING LOCATION OF THERMOMETER, READINGS OF WHICH ARE SHOWN GRAPHICALLY

made to prolong the protection of the pier, which is 17'-0" x 40'-0" in cross section at the points where the thermometers were inserted, beyond what would ordinarily have been done had the investigation not been under way.

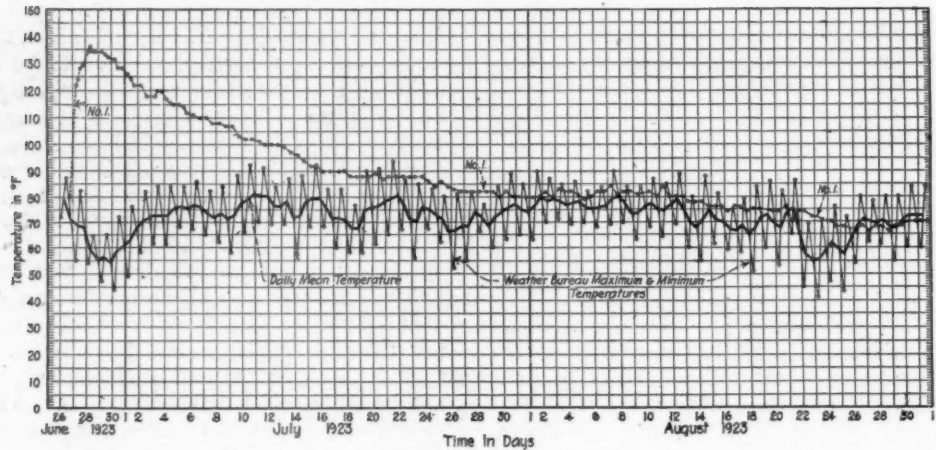


DIAGRAM SHOWING TEMPERATURES FROM DAILY READINGS OF THERMOMETER IN ARCH RING, ALSO DAILY MAXIMA, MINIMA, AND MEAN ATMOSPHERIC TEMPERATURES

The data secured from the pier were of such interest that another thermometer was inserted in the arch ring near the haunch of the arch. This thermometer was placed 1'-0" from the face of the arch and at a depth of 14'-0" from its upper surface. The record of this thermometer

quite nearly parallels that of No. 4 in the pier.

To determine whether the same phenomena can be observed in the thinner sections of the spandrel arches four thermometers will be inserted at various points in the rings of one of these arches and the same data will be recorded.

CAR PARKING SPACE REQUIREMENTS

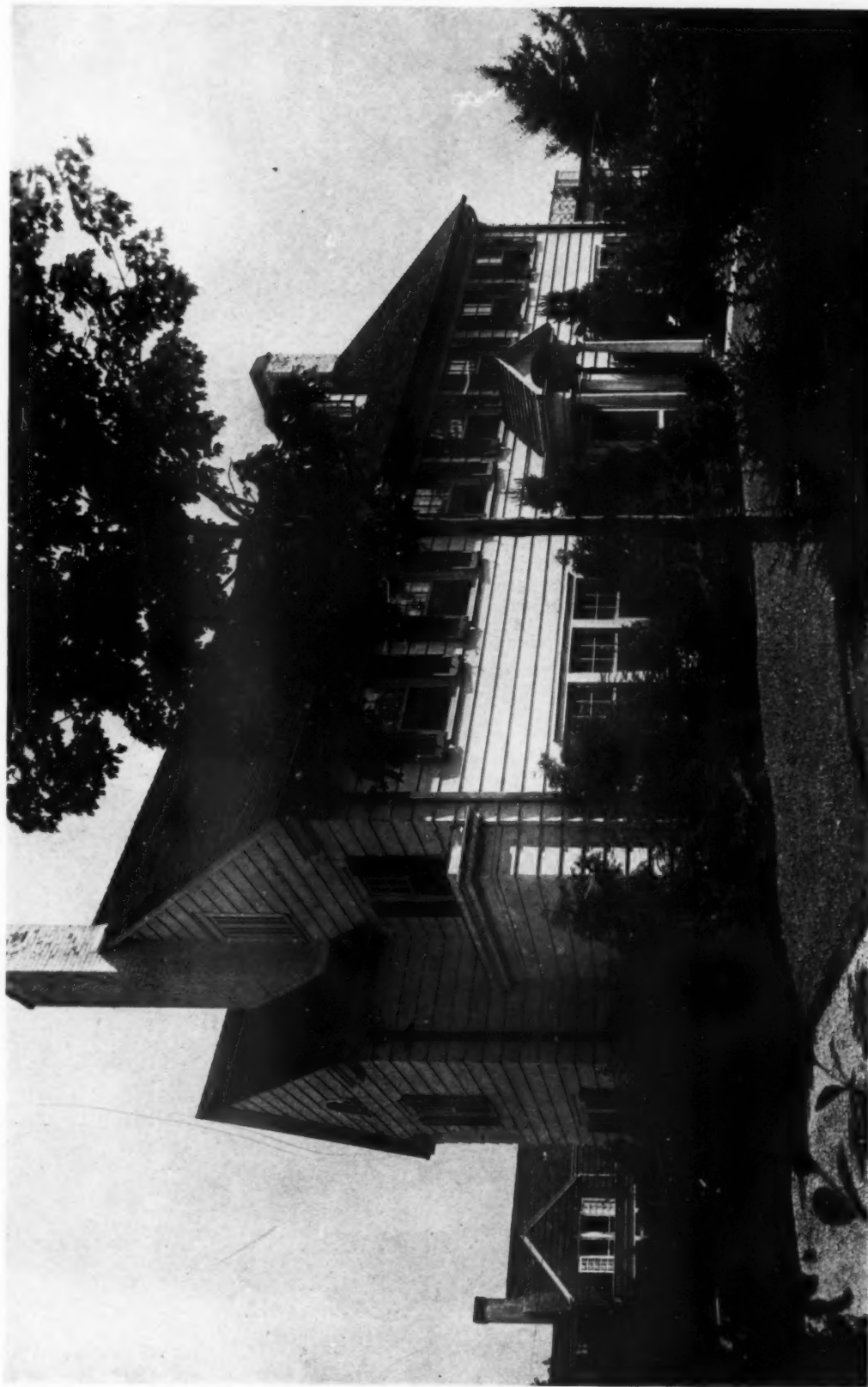
TO provide means for parking automobiles in garages and open spaces is becoming increasingly important. It resolves itself ultimately into using a minimum unit of storage space. There are two systems used, where cars are parked at right angles and diagonally to a base line. Arguments are advanced for both systems and while each has advantages, the greater number are favorable to the right angle plan.

A recently published analysis of this subject states that, measured from a common base line, the projection of a diagonal car space perpendicular to the base line is ten per cent greater than that of a right angle car space. In other words, a car 15'-0" long parked diagonally projects into the aisle 1'-6" more than when parked at right angles. Right angle placing will permit of parking about fifteen per cent more cars in a given space than can be placed diagonally.

Diagonal parking involves difficulties in the column spacing which tends to increase the cost

of garage construction. It is claimed that diagonal parking permits easier driving in and out of the parking space. Either one of these advantages can be secured. If the car is slanted in the direction that the cars leave, it is easier to drive it out of its space. To place such a car necessitates making a turn in the aisle. The advantage of a quick exit does not compensate for the disadvantages of narrow aisles, loss of storage space, expense of irregular column spacing and the trouble of backing the car into place.

A new development in multi-story garages is the filling of cars on each floor rather than at the entrance or exit of the building. The latter practice necessarily interferes with the traffic on all floors. If the filling is done on each floor, that floor alone is affected by the operation. Three systems are in use, approved by the Fire Underwriters, and they are operated by air pressure, hydraulic pressure or electrically driven pumps. These methods offer a choice of apparatus which can satisfy any particular demand.



HOUSE OF CLARENCE M. SCHWERINE, GREAT NECK, L. I., N. Y.

THE PATTERSON-KING CORPORATION, ARCHITECTS



HOUSE OF CLARENCE M. SCHWERINE, GREAT NECK, L. I., N. Y.

THE PATTERSON-KING CORPORATION, ARCHITECTS

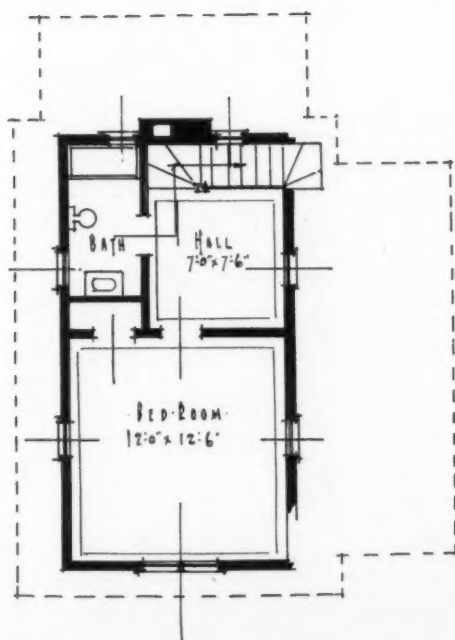
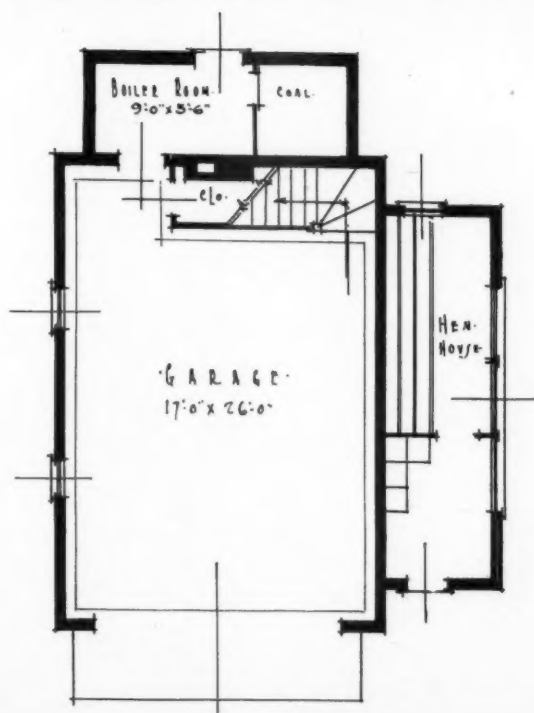


LIVING PORCH



LIVING ROOM

HOUSE OF CLARENCE M. SCHWERINE, GREAT NECK, L. I., N. Y.
THE PATTERSON-KING CORPORATION, ARCHITECTS



GARAGE AND CHICKEN HOUSE AT HARTSDALE, N. Y.

FRANK J. FORSTER, ARCHITECT



DESIGN SUBMITTED BY JOSEPH VAN NECK, BRUSSELS

COMPETITION for NEW BUILDINGS for UNIVERSITY of BRUSSELS under GIFT of COMMISSION for RELIEF in BELGIUM EDUCATIONAL FOUNDATION

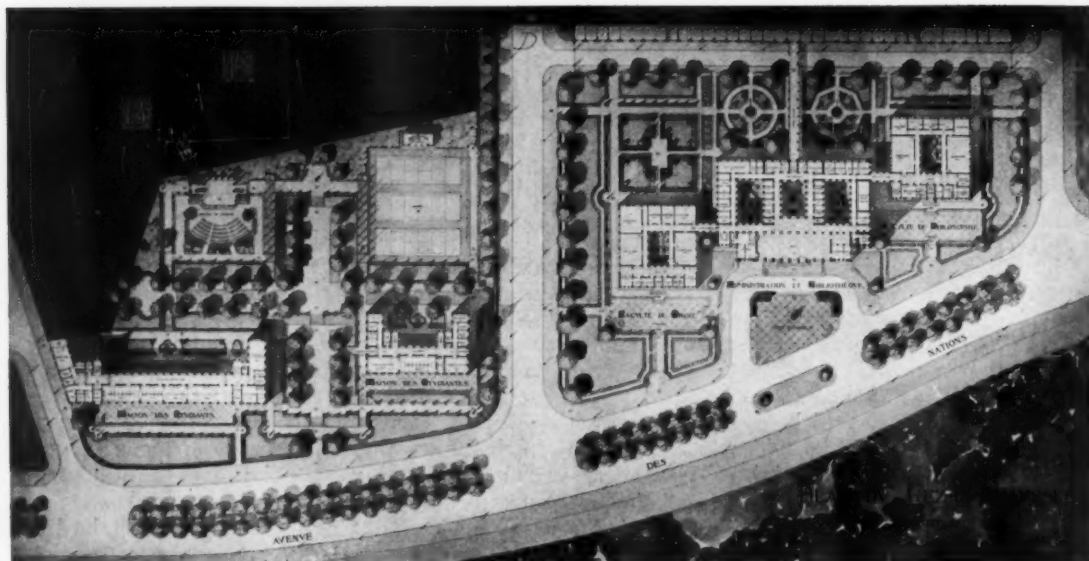
At the end of the War, the Commission for Relief in Belgium found itself with certain monetary balances on hand. These had accrued partly through profits from sale of food to those able to pay, and partly through sale to persons and countries outside of Belgium. The disposition of these balances was referred to the Belgian government, which requested Herbert Hoover to outline a plan. Under this plan, which was accepted by the Prime Minister, two commissions were formed to replace the Commission for Relief in Belgium. These are the Commission for Relief in Belgium Educational Foundation in America, with Herbert Hoover as president, and the Foundation Universitaire in Belgium, with Emile Francqui as president.

The Commission for Relief in Belgium Educational Foundation in following out its purpose of assisting Belgian education and promoting the exchange of intellectual ideas between Belgium and America, among other undertakings, entered into an agreement with the University of Brussels for the erection of certain buildings for the University at Brussels.

After considerable study, it was decided that this group of university buildings should be erected in a new quarter of the City of Brussels near the Bois de la Cambre. The land was largely controlled by the City of Brussels which has given the fullest co-operation to the plans of the University and the Foundation.

As this brought in the question of architectural advice, John Mead Howells, accompanied by Raymond M. Hood, was sent to Belgium in January, and together with the resident members of the Commission for Relief in Belgium obtained the desired land from the city.

The program for the competition was finished and translated in Belgium and five Belgian architects were invited to compete, after a study of work and apparent ability. These architects are as follows: MM. Alexis Dumont, Eugene Dhuicque, Ernest Jaspar, Adolphe Puissant, and Joseph Van Neck. Of these five, one, Mr. Dhuicque, unfortunately was ill and unable to submit his drawings. The competitors, being specially invited, are paid under the program twenty-five thousand Belgian francs each. The winning architect will undertake



PRIZE WINNING DESIGN
SUBMITTED BY ALEXIS DUMONT, BRUSSELS
COMPETITION FOR NEW BUILDINGS FOR UNIVERSITY OF BRUSSELS

the construction of the buildings. The program contains not only the terms of the competition but the number and superficial area of all important rooms or communications. The summary of the program in a few words is as follows:

Buildings are to be designed for the administration of the university. The library, the law school, the school of arts are to be placed together on the

the university, which is also characteristically American.

All the land back of the university group is owned by the university and occupied by a newly constructed school of sciences. All the land back of the dormitory group and up a pleasant slope is owned by the Foundation, and will be occupied by athletic grounds and houses for professors and other supplementary buildings for the University. The plans submitted were examined by experts for the areas and cubical contents, and were during the week of November 5 to November 11 judged by the Jury, as designated in the program, with the following membership:—



DESIGN SUBMITTED BY ADOLPHE PUISSANT, BRUSSELS

land in front of the present school of sciences. On the land showing to the left of this will be placed the Maison Des Etudiants and the Maison Des Etudiants at different parts of the land. These buildings are for the purpose of housing a certain number of students, but cannot be described as what we in American colleges call "dormitories." These are rather homes, or club houses, carefully supervised both for men and girl students and serving to take care of students coming from a distance. In this way, however, the American dormitory idea will be introduced for the first time in a Continental University. From this dormitory system it is hoped will grow up something of that love of the Alma Mater found among American graduates. This will build up an alumnus body valuable to



DESIGN SUBMITTED BY ERNEST JASPAR, BRUSSELS

Herbert Hoover, President of the Commission for Relief in Belgium Educational Foundation and Honorary President of the Foundation Universitaire.

Dr. Paul Heger, President of the University of Bruxelles.

Professor Auguste Slosse, of the University of Bruxelles.

Arthur Brown, Jr., D. G. F., San Francisco, Corresponding member of the Institute of France.

John Mead Howells, D. G. F., New York, Consulting Architect to the Commission for Relief in Belgium.

PERSONALS

Aloys Frank Herman, architect, announces the removal of his offices from Room 411 to Rooms 710 and 711 Owen Building, Detroit, Mich.

Maurice Courland, architect, has moved his office to the McCreery Building, 366 Fifth Avenue, New York City.

Howard T. Yates announces the opening of an office for the practice of architecture and engineering at 411-412 Dillaye Building, Syracuse, N. Y.

Announcement is made that W. Eugene Haskell has opened an office for the general practice of architecture in Brattleboro, Vermont.

It is announced that A. L. Salzman has resumed his practice of architecture and structural engineering and will occupy offices at 10 N. Clark Street, Chicago, Ill.

John Walker Emart, architect, has opened offices for the practice of his profession at 610 W. Main Street, Alhambra, Cal. Manufacturers' catalogs and samples will be appreciated.

Samuel B. Birds, architect and engineer, has moved his office from 310 Citizens National Bank Building to 310 Frost Building, 145 South Broadway, Los Angeles, Cal.

John Stafford White, architect, formerly with W. E. Milwain, architect, of Oakland, has moved from Walnut Creek, Contra Costa County, to 916 North Louise Street, Glendale, Cal.

It is announced that Max J. Unkelbach, architect and civil engineer, has moved his office from 162 Main Street to the Porter & Dyson Building, 52 Main Street, New Britain, Conn.

Benjamin Brown, architect, of Philadelphia, Pa., has opened an office at 205 Chelsea National Bank Building, South Carolina and Atlantic Avenues, Atlantic City, N. J.

Somervell & Putnam, architects, have moved their office from 604 Mercantile Bank Building, Dallas, Tex., to 706 Hibernian Bank Building, Los Angeles, Cal.

Francis Louis Abreu has opened an office for the general practice of architecture at Tarpon Bend, Ft. Lauderdale, Fla. Manufacturers are requested to send catalogs and samples.

C. Gadsden Sayre, architect, of Anderson, S. C., has opened a branch office at 201 Allen Building, Raleigh, N. C., with A. R. Turnbull in charge. Manufacturers' catalogs and samples are requested.

Hoener, Baum & Froese, architects and engineers, announce the removal of their offices from 1519 Federal Reserve Bank Building to the Grand Laclede Building, Northwest corner Grand Boulevard and Laclede Avenue, St. Louis, Mo.

Announcement is made that James V. Richardi, architect, has opened an office for the general practice of architecture at 103 Columbia Avenue, Jersey City, N. J. Manufacturers are requested to send catalogs and samples.

Bernard Herzbrun, A. I. A., announces the removal of his offices to 135 West Forty-second Street, New York City, where he would be pleased to receive manufacturers' cards and catalogs. Mr. Herzbrun will practice interior decoration as well as architecture.

Lawrence Flagg Hyde announces the removal of his office and architectural business from his former residence and studio at 2745 Twenty-sixth Avenue to his new residence and more commodious studios at 372 Hanover Avenue, Oakland, Cal.

Louis Cowles, architect, formerly at 501 Mendocino Avenue, Santa Rosa, is now located in care of "S. L. Studios, San Diego," La Mesa, Cal. Mr. Cowles has recently become the architect for Hart, Loring, Wells, a corporation producing moving pictures, especially of an educational character.

Warren A. Dedrick, formerly of Billings, Mont., and E. R. Bobbe have recently obtained licenses to practice architecture in California, and have formed a partnership with the firm of Piper & Kahrs, under the new firm name of Piper, Kahrs, Dedrick & Bobbe, 1 East First Street, Long Beach, Cal. Manufacturers' catalogs and samples are desired.

B. H. Whinston, formerly senior member of the firm of B. H. & C. N. Whinston, 2 Columbus Circle, and H. Hurwitz, of 1170 Broadway, have formed a co-partnership under the firm name of Whinston & Hurwitz, architects, 41 West Thirty-third Street, New York City. Mr. Whinston is one of the architects who received honorable mention in the recent international competition for the Chicago Tribune building.

From "The Architectural Review," London



AN ARCHITECTURAL COMPOSITION. INDIAN-INK WASH

BY ROBERT ADAM

REVIEW of RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

IT is now nearly two years since the writer agreed, with some trepidation to be sure, to deliver to the Editor once each calendar month a fair copy, typewritten on one side only, of an article of about twenty-five hundred words under the title above given. The Editor was quite serious about it—all editors are—and we ourselves took the matter very seriously at first, that is to say we laboriously read all the printed matter, and looked at all the pictures, and even ran through the advertisements of some half-hundred magazines that completely submerged the table in our small office. It was interesting and no doubt instructive, but it was some job. And then after saturating ourselves (the devil of this business is that one has to use the editorial we) after we emerged, we endeavored to do our twenty-five hundred and in doing it to comment on each good or each bad article in each magazine. But frankly

it could not be done, not in twenty-five hundred words it could not. So gradually and by degrees we got to skipping; we only hit the high spots, and sometimes if there were no high spots we just drifted off into something else, much like the little patriotic group of ladies in a small New England town who were making calico flags to decorate the Town Hall, and got tired of cutting out stars, so they made hearts and rounds. The Editor, a sympathetic soul, God bless him, did not mind, but still the idea has often occurred to us that we'd either have to change our habits or the title, and so, gentle reader, this month we will revert to early days and try to comment on a good many magazines, that is, if we have any space left after the opening paragraph.

We will start with *The Architects' Journal*, London. We always read this first anyway because there is always the hope it may contain an article

by Karshish, and there is an excellent one in the November 21 number, anent Posters With A Punch, which is too long to quote entire, but which should be read by every gentle reader. The same journal also publishes occasionally reports of meetings of the Royal Institute of British Architects and other societies, which reports are made notable by the clever caricatures of H de C. Not knowing the originals, much of this humor is probably lost to us but they are enjoyable none the less. From the October 31 issue we reproduce an

From "The Architectural Forum"

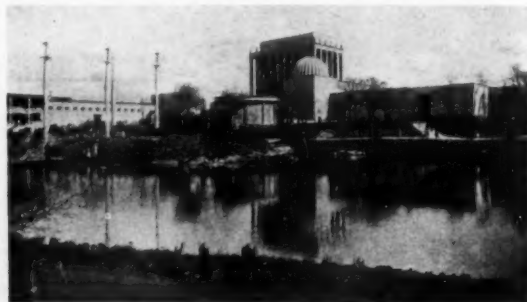


END OF LOBBY
LOS ANGELES-BILTMORE HOTEL, LOS ANGELES, CAL.
SCHULTZE & WEAVER, ARCHITECTS

exterior view of the new Caird Hall in Dundee by James Thomson, F. R. I. B. A., a good, massive building. The termination of the portico by two square piers is unusual and perhaps unnecessary, but the effect seems good from the illustration, and will be better when large groups of sculpture are placed on the plinths in front of these piers. In the same number is a description of the Gothenburg Exhibition in which we find the following: "Reproduction of historical styles is completely absent, but indebtedness to them is not. Shapes tend to be fanciful, and proportions show a bias in favor of the tall and narrow, sometimes of the low and broad." Just how this crazy nonsense is indebted to historical styles is beyond us. We are not particularly familiar with the historical styles of Swedish architecture, but we doubt whether the

hard headed Swedes ever conceived anything like this before. In some ways it recalls pictures of an oasis in Sahara or Timbuctoo and then again we come on an enlarged cowbarn with a portico of match-like Ionic columns, the frieze and architrave broken around them and the cornice only

From "The Architects' Journal," London



LILY POND AND MEMORIAL HALL
GOTHENBURG JUBILEE EXHIBITION

carrying across. This is called the Congress Hall. Of course it is easy to criticize what is hard to do. An exhibition is an ephemeral thing, a thing not of bricks and mortar but of lath and plaster, and there is ground for the criticism often made of our exhibition buildings, notably of the World's Fair of '93, that the architecture was too serious, that it was stone architecture, and that such buildings should have a more festive air and that there should be a frank recognition of the material, and all that. No doubt it is all true, but still there is

From "The Architects' Journal," London



CONGRESS HALL
GOTHENBURG JUBILEE EXHIBITION

no reason for doing ugly shapes because they are novel, nor for abandoning all sense of proportion in an effort to be original.

In *The Architect*, London, of November 16 under the head of Notes and Comments we learn that "a campaign has been started to bring about the abandonment of Canberra, the expenditure on which has already reached £1,500,000." We do not remember very much about this, but as we

recall it Sydney would not agree that the Capitol should be constructed in Melbourne and Melbourne was unalterably opposed to its being built in Sydney, so they selected some inland place, not particularly accessible, and held a world wide competition for a city plan. It was a gigantic project, one only conceivable by a young and vigorous nation; presumably they were thinking of Washington when they did it. On the face of it, it seems a pity to abandon the scheme, particularly as an American architect was the author of the plan, but on the other hand, it would be also a pity to build a lot of elaborate buildings in a locality which may never be populous. On a small scale the same thing has been repeated in some of our states. In Missouri, for example, there was the same rivalry between Kansas City and St. Louis. As the result of a compromise the Capitol was in 1836 established in the geographical center of the State, at a little place called Jefferson City. It is a small town, on the Missouri River to be sure, and the country around is really beautiful, but it is a way-station on one railroad and will probably never be a city of any importance. No one ever goes there except those who have business at the Capitol or at the Penitentiary; those going to the Capitol are too intent on politics to think about architecture, and those who go to the Pen have other things to think about.

In *The Journal of the Royal Institute of British Architects* for November is an article by Albert Louvet, Hon. Corres., Mem. R. I. B. A., on French War Memorials, giving brief descriptions of some thirty memorials of the Great War erected or in course of erection. There are not many illustrations and those given generally have been reproduced before—the monument of Verdun, the Tranchée des Baionnettes, etc. They are all very modern and to our way of thinking not particularly good. There is an attempt at massiveness which only succeeds in being clumsy, and a simplicity which is not grand. They suggest the attempts of a child with building blocks rather than the serious work of trained architects.

The Architectural Forum for November has a nice yellow picture on the front and inside is entirely devoted to hotels, all sorts of hotels, and much valuable information from experts regarding

them. Generally the interiors shown are very good and the exteriors are high buildings. It is all perhaps a little overdone; a little more simplicity might be better. We recall a story told us by an architect who had met a distinguished Dutchman of the same profession and took him to lunch in a large, new hotel. The visitor focused his attention, not on the lunch but on a particularly offensive doorway opposite. "Why," he would say repeatedly, "why did he make it so oogly?" At the end of the meal he suddenly emitted a howl of delight and bringing his huge fist down on his host's knee with a force that almost fractured the leg, exclaimed "Now, I know why he made it so oogly. He did not know how to make it any ooglier."

But this does not apply to the interiors shown in the *Forum*. The number is very valuable and all architects will save it entire.

The Architectural Record for November is also a special number and is given over to country houses; a very good number and very good houses. The American country house is a different thing now from what it was twenty years ago, not that there were not good houses built then, but they were the exception;

now their name is legion. It is a difficult thing to do a good country house; it is a fussy, finicky sort of job, and the smaller and cheaper it is, the harder it is. And it must be done for the love of it, for it is very unremunerative. It is difficult to single out any one house that is better than the rest—there are many good ones—or any one architect, but among them we might mention the Office of John Russell Pope, Leigh French, Jr., Chas. C. May, Robert Rhodes McGoodwin, David Adler and doorways by Walter D. Blair and Lawrence Hall Fowler.

The Architectural Review of London for November is, as usual, well printed and illustrated, and has Part IV of the article by James Burford on the Historical Development of Architectural Drawing to the End of the Eighteenth Century, from which we reproduce a very striking drawing by Robert Adam which has much more virility and strength about it than one would expect from his completed work. These articles of Mr. Burford are extremely valuable contributions and will, we hope, be published in book form. Unfortunately mixed up with this good work is a silly

From "The Architects' Journal," London



SOUTH FRONT
CAIRD HALL, DUNDEE
JAMES THOMSON, F. R. I. B. A., CITY ARCHITECT

article on the Frescoes of Gino Severini who was, so the article says "once a leader of the wild futurists" but who has, also according to the article, reformed and now "follows the rules of the Section

From "The Architectural Review," London



SHERFIELD COURT, HAMPSHIRE

d'Or $\sqrt{\frac{5-1}{2}}$. We do not quite know what this means but the results are absurd. There is another little job for Mussolini, it seems.

As an antidote to this there are some good pic-

tures of excellent pottery now being done in Arezzo under the direction of Professor A. Del Vita.

The Journal of the American Institute of Architects for November has for a frontispiece a so-called woodcut representing Strassburg, apparently done during an air raid, and a leading article on the First Regional Conference of the Sixth District featuring LOCALITY and HUMILITY, much in the style of the *Evening Journal*. The main proposition advanced at this conference was about our old friend the Competition Code and to the effect that the whole thing should be left to each chapter to run as it saw fit. This is LOCALITY with a vengeance. As we see it, one of the most important things the Institute has done was the establishment of a National Competition Code based on fairness to the owner and to the architect, and the attempt of any group in any locality to nullify this national code may be a death blow to the solidarity of the Institute. If the conditions of practice vary so radically in different parts of the country, it might be better to abandon the idea of a National Institute completely, rather than have an Institute that is national only in name.



LE FOELGET



BRETTEVILLE, NEAR CAEN

CHURCHES IN FRANCE

(From a series of photographs by Robert M. Blackall, Architect)

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BY special arrangement with the Society of Beaux-Arts Architects, there appears in each issue of THE AMERICAN ARCHITECT an average of five pages devoted to the presentation of drawings selected from the Beaux-Arts Institute of Design exhibitions, and also the listing of awards and the promulgation of all notices to students. These matters will be exclusively presented to students of the Beaux-Arts Institute of Design through the pages of THE AMERICAN ARCHITECT. By arrangement with the publishers of THE AMERICAN ARCHITECT, a special student subscription rate of \$5.00 per annum has been secured. Further particulars with reference to this service to Beaux-Arts students may be obtained by addressing THE AMERICAN ARCHITECT, 243 West 39th Street, New York City.

JUDGMENT OF NOVEMBER 13, 1923

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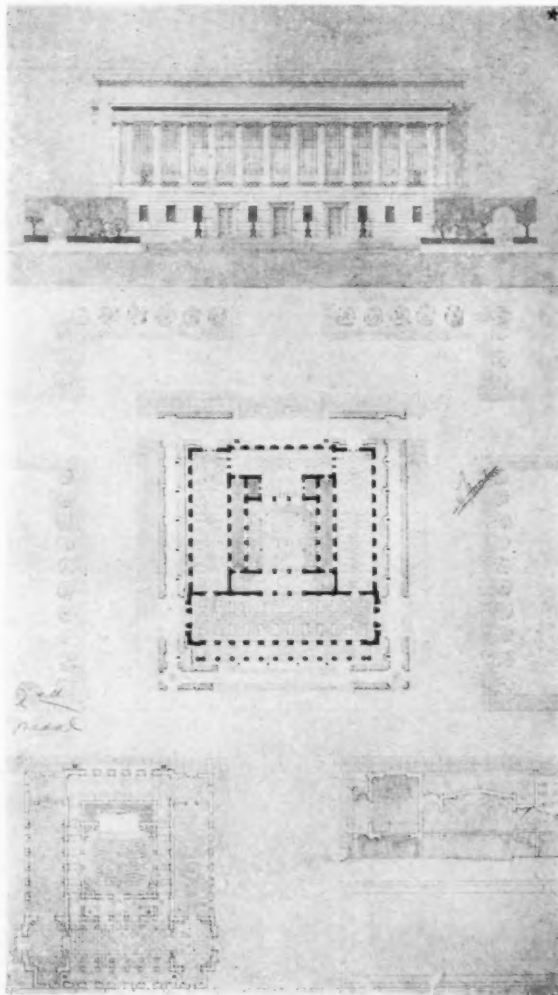
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There should be three principal floors—the ground floor, the main floor and one other. The ground floor should contain a large assembly room with access direct to the street as well as to the entrance hall of the library itself, a newspaper and periodical room, packing and receiving rooms, janitor's quarters, storage rooms, etc. The main floor will contain a delivery room and the main reading or reference room. On the floor above this, and in mezzanines if desired, shall be the children's reading room, special reading rooms, administration offices, rooms for exhibitions, etc.

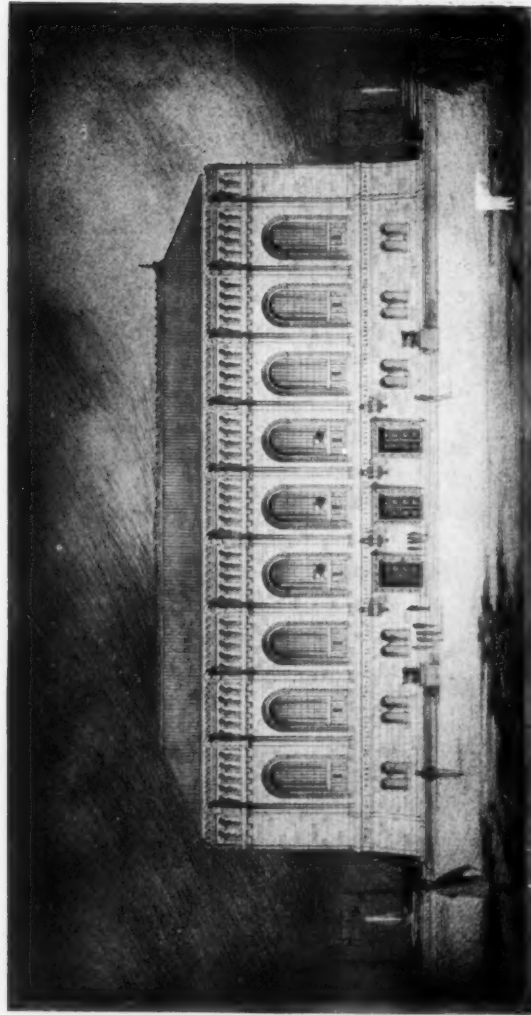
The library stack should run through all floors so as to be accessible to all parts of the building.



J. FRANKLIN SECOND MEDAL CARNEGIE INSTITUTE

CLASS "A"—I PROJET—A PUBLIC LIBRARY

particularly to the delivery and reading rooms of the main and upper floors.



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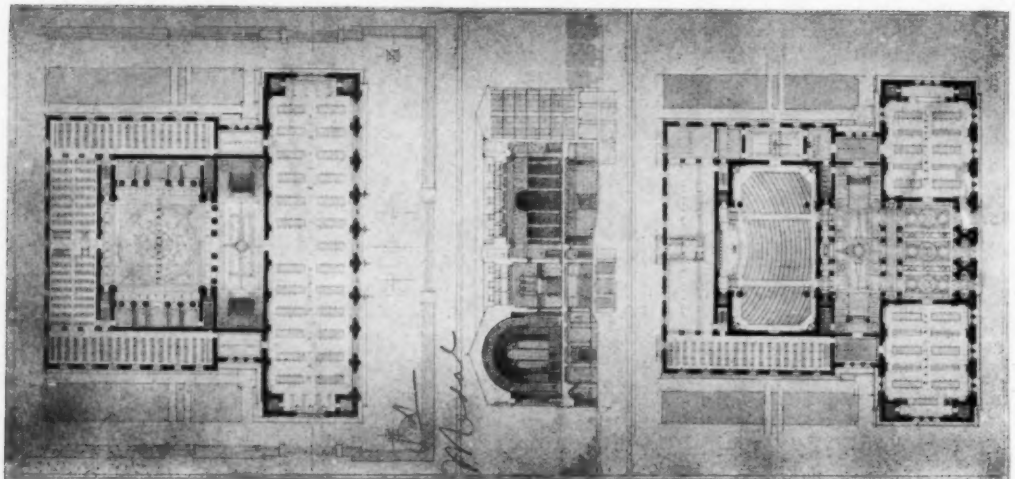
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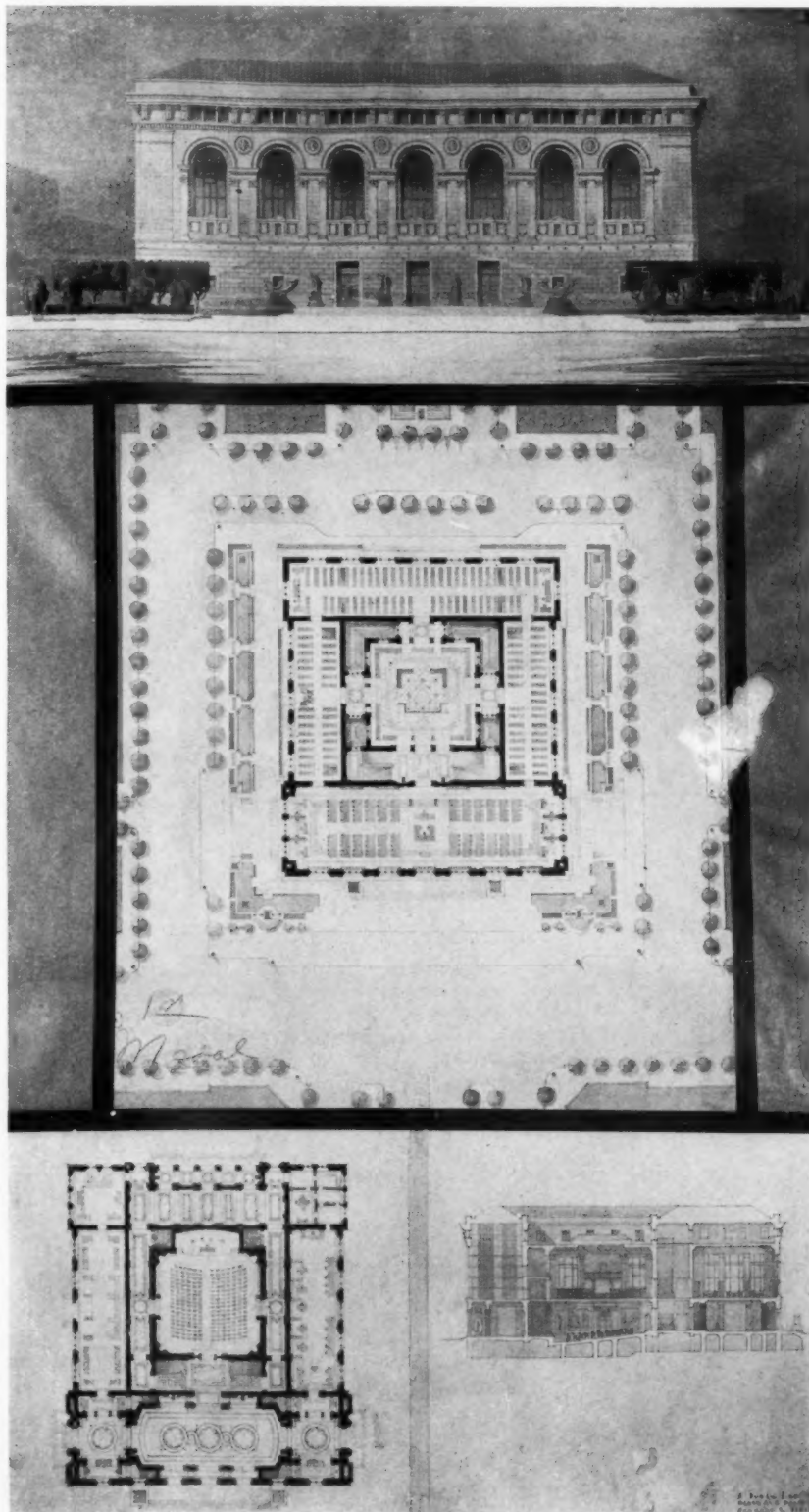
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W. R. AMON



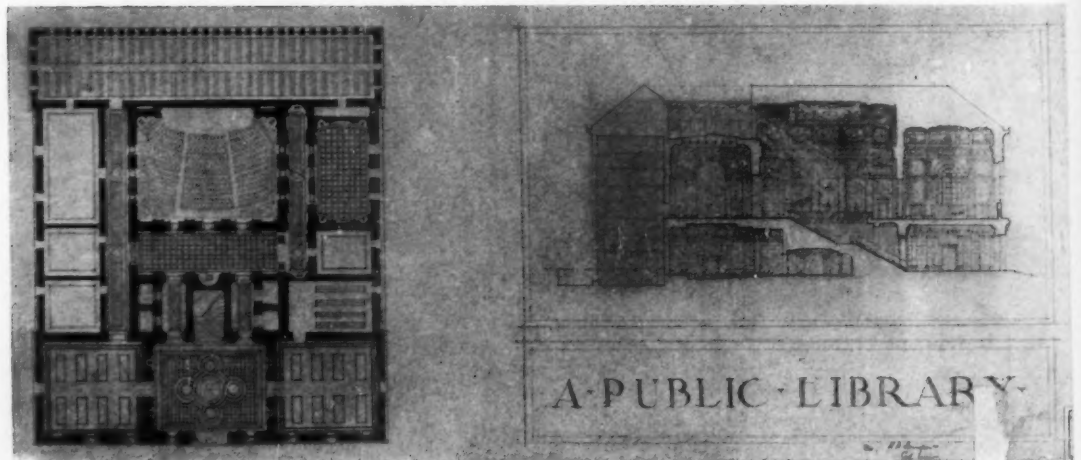
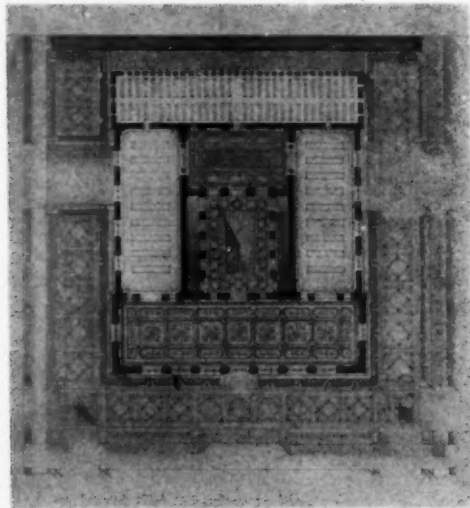
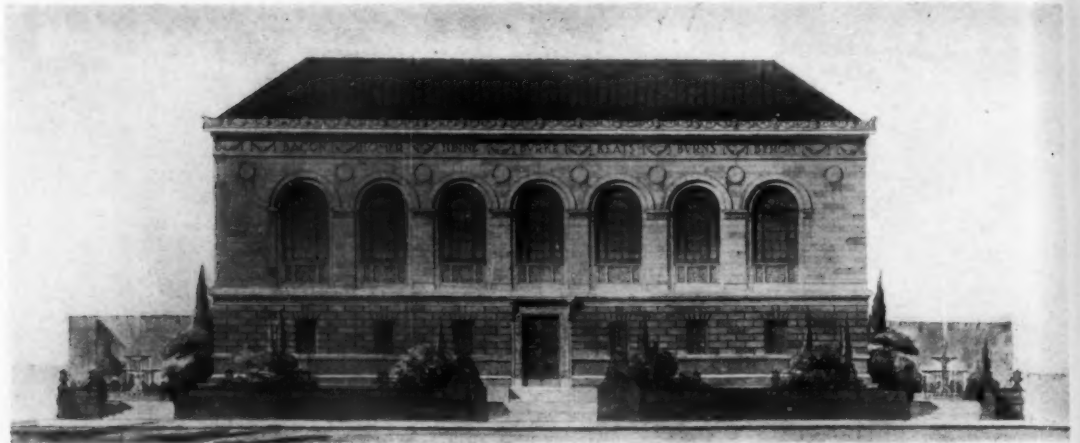


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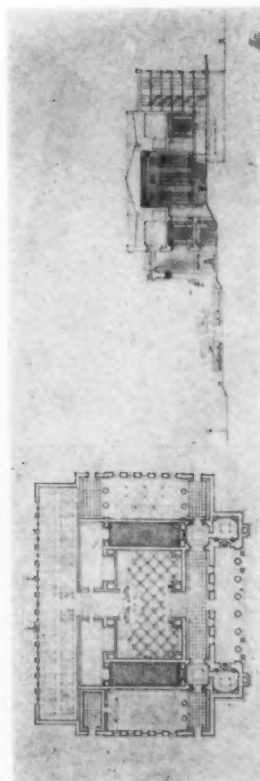
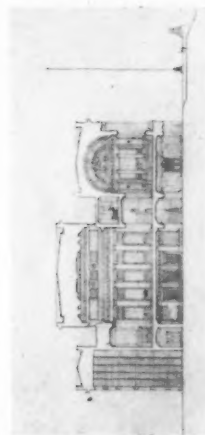
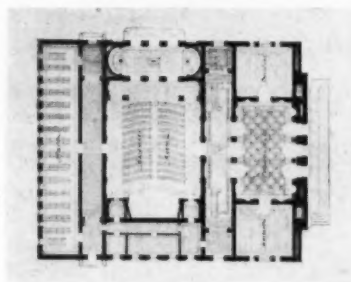
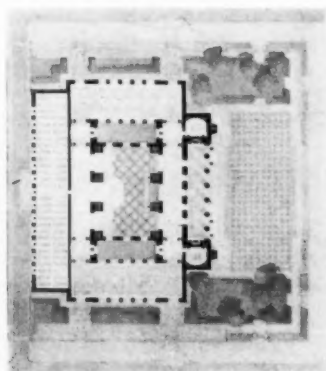
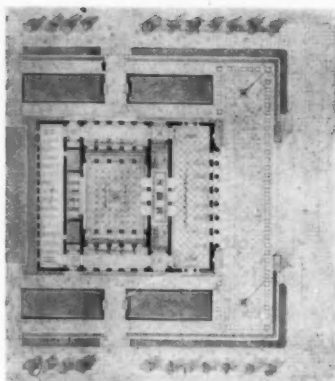
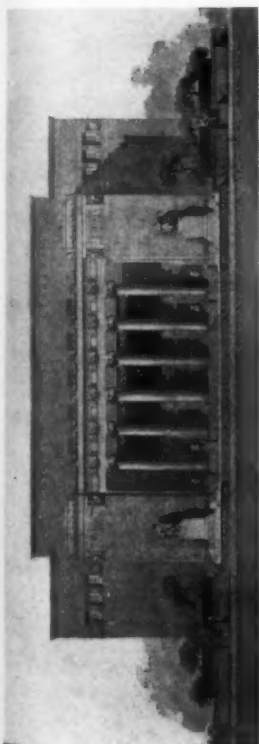
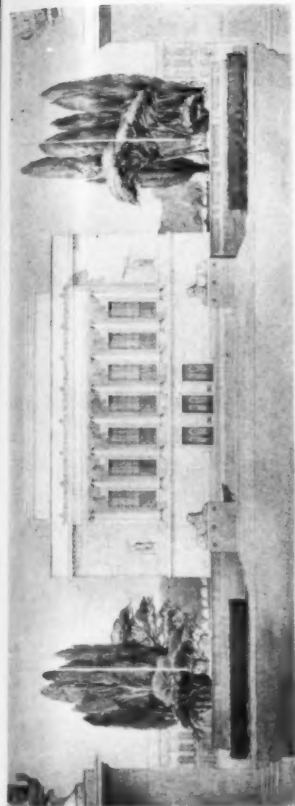


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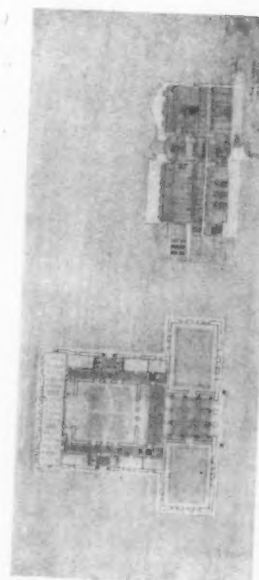
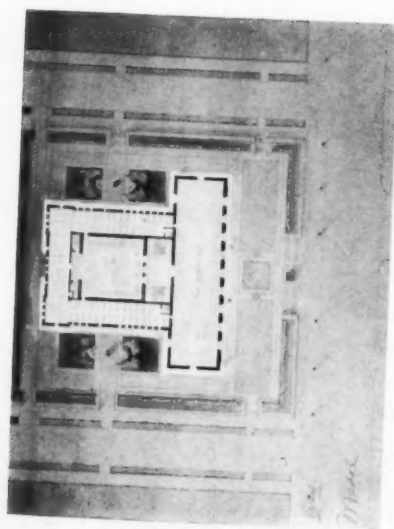
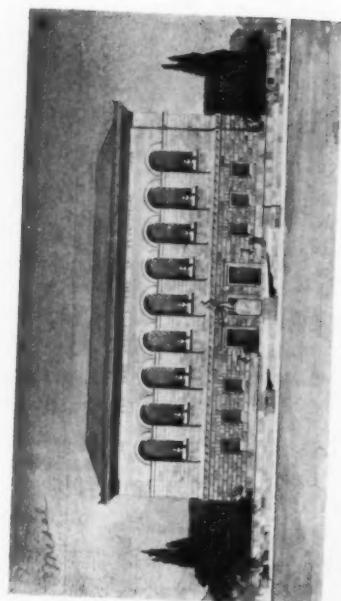
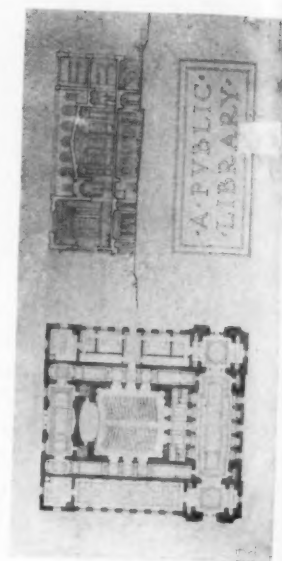
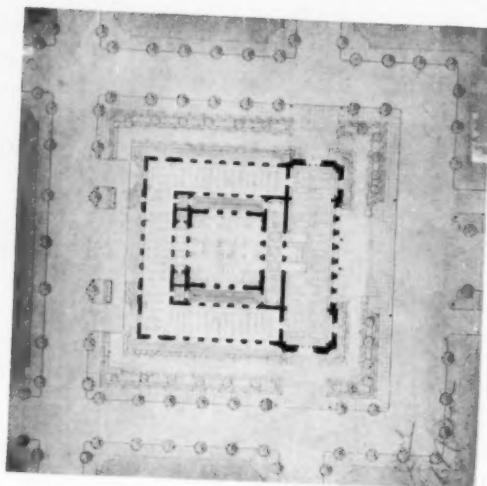
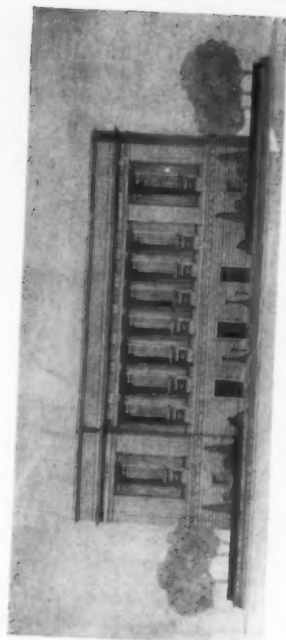
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ECONOMICS as RELATING to ARCHITECTURE

Economic Factors Which Underlie Construction Activity—Prepared for
THE AMERICAN ARCHITECT by the American Chamber of
Economics, Incorporated*

THE rather startling amount of jobs that were transferred from the architects' boards to the hands of contractors in October adds its early confirmation to a previous forecast of a busy Winter for the building industry. Some analysis and comparisons furnish still fuller significance of October's achievements. The value of new building contracts awarded in the 27 states covered by the F. W. Dodge Corporation during the month of October totalled approximately \$320,000,000. It has been the heaviest, from the point of view of jobs begun, of any October in the industry's history. The gain over September was 25 per cent, and a similar advance was shown over October a year ago. The unusually liberal contribution made by October to the year's volume of new building has given 1923 a distinct lead of approximately \$60,000,000 over 1922.

Now the value of contracts awarded in October, based upon a ten year average of the Dodge statistics, normally shows a gain over September of about 9 per cent. This much, then, of October's 25 per cent gain may be attributed to the ordinary, seasonal influences, while the remaining 16 per cent provides a rough index of the prosperity, activity, and demand prevailing within the industry.

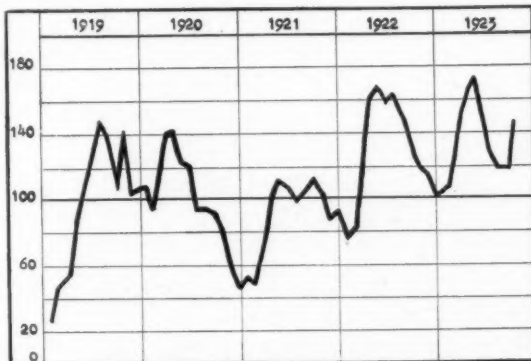
The momentum established by October's record might foster the expectation of a heavy November and December, although under some conditions such expectations would not necessarily be war-

ranted. In this instance, however, the volume of building permits, according to *The American Contractor* and to Bradstreet's, was similarly heavy, and inasmuch as permits usually anticipate by a comparatively short time the beginning of a job by a contractor, October's heavy granting of these permits presages a relatively heavy volume of contracts to be awarded in November. Seasonal weaknesses usually depress the volume of new building started in November some 18 per cent under the average month of October. November's volume, therefore, is likely to fall short of October's, but the prospects favor the maintenance of the industry's activities in a relatively high plane. December's construction, likewise, has a strong prospect of being heavy for that month, but the value of contracts awarded in December customarily falls about 8 per cent short of the value of contracts awarded in November.

The shortage of new building continues to be the greatest single power and still the most intricate, individual puzzle behind

the industry's prosperity today. It is comparable to a subterranean pool, of unknown capacity and resources, feeding bounteously the demand for the product of an industry. It has limitations, of course, and these are drawn nearer in point of time by just such huge drains as the month of October has been. The industry would have fared more comfortably, and its present prosperity would have persisted longer, if October could have been more nearly a normal month.

Measuring the remaining shortage, and calculating the effect of that deficit upon the actual and potential demand for the industry's product will be the single and outstanding economic problem in the building situation in 1924. Several of its most notable characteristics afford some indication of the problem's complexity. In the first



October's volume of awarded contracts has carried the total amount of new building into new high territory for this season of the year. November's and December's achievements will probably carry the curve to lower levels, but there is every prospect of the volume of new building remaining in relatively high territory. The above curve depicts the trend of the value of contracts awarded in the 27 states covered by the F. W. Dodge Corporation. 1919 equals 100

*The American Chamber of Economics conducts a consultation and educational service for executives, in economic principles. Its Supervising Director is George E. Roberts, Vice President of the National City Bank of New York. Co-operating with the Chamber are James B. Forgan, Chairman of the Board of First National Bank, Chicago; Frank A. Vanderlip, Financier and Economist, New York; Samuel Insull, President, Commonwealth Edison Company, Chicago; Joseph H. Defrees, Ex-President, United States Chamber of Commerce; Henry S. Pritchett, President, Carnegie Foundation; Edward J. Nally, Managing Director, International Relations Radio Corporation of America.

place, a shortage of new building was known to be in positive existence when there was an element of urgency present, for that very pressing need carried with it an impassioned appeal and cry for construction that made the degree of acuteness of the shortage unmistakable. But this insistence is partially or wholly appeased now, and the determination of the length and breadth of the existing deficit grows increasingly difficult, for, as time goes, this shortage loses more and more of its assertiveness, more and more of its definiteness and tangibility.

Again, the problem's intricacy is heightened by the fact that the shortage owes an indeterminable, but substantial, part of its existence to an advancing standard of living, and to a very wide redistribution of wealth and income that took place during the war and post-war period. Now when the building shortage lost the greater part of its acuteness about a year ago, it may be said with some safety that shelter existed for those seeking building accommodation. But some individuals and some associations of individuals can today afford something better, and their tendency, all other factors favoring the move, is to leave their present habitations to others, who in the reallocation of wealth and income in 1914-1919 and again in 1920-1921 were not similarly blessed. Obviously, a demand built upon a shifting standard of living has an intangible, subtle, elusive power, containing a large psychological element which does not bow to statistics, and which, in the intensity of its assertiveness, is most susceptible to outside and qualifying modifiers.

Just how involved the significance of the present construction shortage is may be seen by adding to this list of complexities the observation that the industry is drawing upon its store of demand in sometimes surprisingly light and again in notably heavy requisitions. Granted one knew the exact extent of the shortage, it would be a problem to tell under the prevailing and irregular apportionment just how long the resource would last. It can be easily seen that the importance of the construction deficit is any man's guess. It is a guess, nevertheless, that every man in the next six months must make if he contemplates building or advising builders, and upon his conjecture stake his profits. Commitments should be made carefully and in conservative amounts, and no builder in 1924 should allow himself to become a party to a procedure or practice that will elevate costs. It is obvious that the building industry is entering into the most speculative of its present cycle.

High and rising rents furnish some index of the equilibrium that exists between the supply of shelter and the demand for it, and these rentals will not recede until supply exceeds demand. They are not a good barometer of the future. At the moment, however, the firm and buoyant trend in

rents does clearly indicate that the demand for new construction is comfortably in excess of supply, and these high and rising yields will attract many investment and speculative builders. The acute rise of costs and the frowning of mortgage-money bankers upon speculative ventures have dimmed the radiance of the speculator's return, and it is unlikely that he will figure as prominently in 1924 as he did in 1923.

An active and strong market for new construction has grown out of the enormous demand that has hitherto existed for completed new structures. The possibility of a ready sale is a constant assurance to many builders of a quick return of their money and a probable profit. But this feature of ready marketability, like prevailing high yields, is contingent upon the demand for new construction and the support which that demand has from the existing shortage.

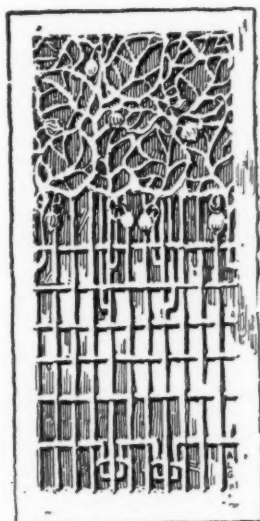
Finally, new building will be sustained by the needs of business so long as those needs are expanding. The outlook for the first and second quarter of 1924 strongly favors a progression of business in about its present volume. This has been foretold by the complete about-face in industrial and speculative sentiment, which has been the most significant development of the past month. Confidence has been steadily rising, and stock prices, the barometer of future business, have been moving moderately upward. Industrial improvement has been irregular and restricted, and progress limited and spotty. As a result of outstanding gains in industries whose output was a component part of their index, the Federal Reserve Board reported an increase of 3 per cent in the production of 22 basic industries for October. It is probable that a change from this result will not be great in the November and December showing. Costs, particularly wages, are very high, and these, together with comparatively low commodity prices, have compressed profit margins within discouragingly narrow limits and have dulled the hope and prospect of large dividends. The tendency of costs to remain stable, however, and the slightly stronger movement in commodity prices hold out hopes of better earnings in the closing quarter of 1923. As the stock market's action would seem to forecast greater earnings, slightly higher commodity prices and heavier forward buying may be expected in the first quarter of 1924. Soon after the holidays money rates will probably begin to work seasonally easier in a movement entirely favorable to moderate industrial expansion, and so it seems that all major underlying factors favor a modest, progressive movement in general business. The demand created by these expanding needs of business will undoubtedly be reflected in a stable demand for the building industry's product as long as business retains its present movement.

FERROCRAFT GRILLES

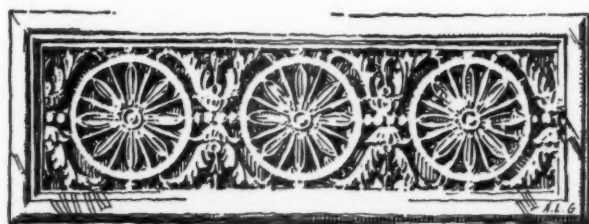
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Rising wages within the construction industry have been for the most part offset by a seasonally drooping tendency in the prices of building materials, and the net change in construction costs has been only nominal. The *Engineering News-Record's* index on November 1 stood at 221, which is 17 per cent higher than it was a year ago, 19 per cent under the peak of 1920, and 121 per cent above 1913 levels. Materials prices, according to the Bureau of Labor, are just where they were last year at this time (183), 39 per cent below the 1920 peak (300) and 83 per cent above 1913 levels. Costs may dip fractionally in recognition of passing and seasonally depressing influences, but the trend is by no means downward.

Structural steel has been the only one of the basic materials whose price level underwent no change during November. Business has apparently been booked by manufacturers in sufficient volume to warrant capacity operations throughout the Winter. Prices are firm and no substantial change is expected. Extraordinarily heavy production of cement, and still heavier shipments have made it possible for manufacturers to overtake demand, and the result has been the usual seasonal decline in prices. Dealers' stocks are low, and cheaper cement should soon stimulate buying to replenish inventories. While the undertone of the market may be weak for some weeks, a notable change in prices either way is not expected.

Production of lumber, according to the report of the National Lumber Manufacturers' Association is running about 5 per cent above normal, with shipments about 10 per cent and orders approximately 15 per cent behind production. Buying for Japanese account has slightly deferred the normal seasonal decline in prices. Heavy production, however, has at last prevailed and the market has been irregular, revealing a slightly downward tendency. The brick industry is accumulating inventories, and these growing stocks and a receding demand are resulting in slightly easier prices. Some plants are reported to be preparing to operate all Winter, and it is hoped that these huge stocks will stabilize next Spring's business and next Spring's markets. Heavy inventories would prevent pushing the industry beyond its capacity of production.

Wages persist in their advance, and increases continue to exceed cuts in the reported changes in regular wage scales. Since October there has been

a notable recession in bonus payments, and wages, generally speaking, have subsided perceptibly in the rate of their advance.

A deflation in labor costs is not in early prospect. The future of both general business and the building industry suggests a high rate of employment for the first quarter of 1924 and possibly the second. The shortage of workmen at the present time is confined almost exclusively to the trowel trades, but, generally speaking, the deficit is not acute.

During the Winter months a general advance in wages is unlikely, for it is not a season when a forced shortage of labor gains the ends desired. Undoubtedly some labor organizations will seek advances as early as January 1—New York building craftsmen furnish a single instance—and their efforts and results will probably be reflected later in other localities. The outlook depends largely on the regulations imposed by the industry upon itself. If unbridled demand or advancing prices set employers bidding against one another, wages will surely rise. If living costs continue their advance, and commodity prices rise sharply, there will be an organized movement to raise wages, when the season comes that will make a forced labor shortage most effective. Prevailing profit margins cannot be made to finance wage increases indefinitely, and the curtailment in production during the Autumn months has created today some competition for jobs and heightened the reluctance of labor to hazard now a general crusade for higher pay. An advance in business generally, however, would soon remove this barrier, and as it seems that business is to have a good Spring, labor disturbances in scattered quarters may be expected as the season approaches.

The mortgage-money market has undergone little, if any, change. Rates are where they were a month ago. Bankers and investors continue to scrutinize risks rigorously, and are very assiduous in the protection of their equity. The conservative banker and investor are making the builder finance a heavier portion of the cost price of his structure than usual, for values are high, and in the not distant future they will probably work lower. The man playing the role of banker, then, must guard himself against a probable depreciation of these valuations. A readjustment in market prices and worth must come before the conservative banker can change his attitude without altering his commendable policy of conservatism.

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OUTLINE OF TENTATIVE SPECIFICATIONS FOR STEAM PUMPS

(The form of this bulletin conforms to the arrangement of Elements of a Specification as given in Bulletin No. 5 ANALYSIS OF A SPECIFICATION, Revised January 20, 1923.)

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

SCOPE OF CONTRACT:

9. Work Included:
10. Schedule of Work:
11. Schedule of Work not Included:

METHOD OF ANALYSIS AND COMPARISON OF BIDS:

12. Methods:
13. Basis:
14. Form of Bids:
15. Conditional Payments:

III. GENERAL DESCRIPTION

16. Characteristics:

SERVICE CONDITIONS:

17. Location:
18. Railroad Siding:
19. Visiting Site:
20. Working Limitations:

ULTIMATE REQUIREMENTS:

IV. PRELIMINARY PREPARATION

21. Field Measurements:
22. Shop Drawings:
23. Samples:
24. Models:

V. MATERIALS

25. Properties, Chemical and Physical:
26. Sizes, Weights, Gauges:
27. Quantities:

VI. DESIGN AND CONSTRUCTION

SHOP WORK:

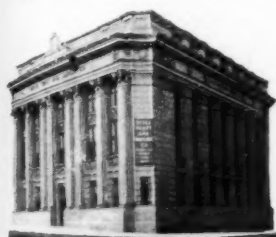
28. Capacity of Pump:
29. Steam Cylinder:
30. Steam Valves:
31. Piston Rods:
32. Water End:
33. Pump Valves:
34. Pump Plungers and Bearings:
35. Pump Frames:
36. Piston Rod Stuffing Boxes:
37. Oil Pump:



Bankers Trust Co., New York, N. Y.
Arch.: Chas. I. Birge. Con't: R. H. MacDonald. Rfr.: Tuttle Roofing Co. All of New York City.



Federal Reserve Bank, Boston, Mass.
Arch.: R. Clippitt, Sturgis, Wm. Stanley Parker, Wm. Adams, Wm. B. Coffin, S. Winkthrop St. Claire. Asso. Arch. Lewis A. Bacon. Con't: L. P. Soule & Son. Rfr.: W. A. Mursfeldt. All of Boston.



Utica Trust & Deposit Co., Utica, N. Y.
Arch.: Mowbray & Uffinger, New York, N. Y. Con't: Griffiths & Pierce, Utica, N. Y. Rfr.: Mohawk Valley Rfg. Co., Utica, N. Y.



National Exchange Bank, Augusta, Ga.
Arch.: Mowbray & Uffinger, New York, N. Y. Con't: Southern Ferro-Concrete Co., Atlanta, Ga. Rfr.: C. P. Murphy's Sons, Atlanta, Ga.

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Hibernia Bank & Trust Co., New Orleans. Arch.: Favre & Linaud, New Orleans. Con't: George A. Fuller Co., New York. Rfr.: Kracke & Flinders Co., New Orleans.



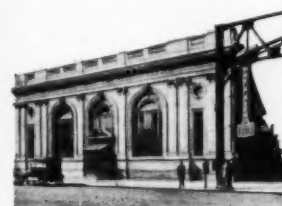
Corn Exchange Bank, New York. Arch.: S. E. Gage. Con't: J. H. Taylor Const. Co. Rfr.: Ford Roof Const. Co. All of New York City.



Birmingham Trust & Savings Bank, Birmingham, Ala. Arch.: Miller & Martin. Con't: Day & Sachs. Rfr.: George F. Wheelock Co. All of Birmingham, Ala.



Federal Reserve Bank, Atlanta, Ga. Arch.: A. Tm Eyck Brown. Con't: Gads & Co. Rfr.: G. P. Murphy's Sons. All of Atlanta, Ga.



Market Street Title & Trust Co., Philadelphia, Pa. Arch.: W. L. Blüher. Con't: Cramp & Co. Rfr.: Clausen-Lincoln, Inc. All of Philadelphia, Pa.



Federal Reserve Bank, Richmond, Va. Arch.: Sills, Buckler & Fenhagen, Baltimore, and Cornall & Johnston, Richmond. Con't: J. T. Wilson Co., Richmond. Rfr.: Warren Ekret Co., Philadelphia, and N. W. Martin & Bro., Richmond.

38. Air Chamber:
39. Packing:
40. Pump Suction and Discharge:
41. Bed Plate:
42. Pump Accessories:
43. Lagging:
44. Piping:
45. Foundation Bolts, Templates, etc.:
46. Tools:
47. Drain and Drip Pipes:

FIELD WORK:

48. Foundation:
49. Erection:
50. Finish:
51. Protection of Work:

VII. SCHEDULES

52. Shop Production:
53. Field Operations:
54. Shipment and Delivery:

VIII. RESULTS

55. Inspection and Performance:

GUARANTEES:

56. Workmanship Guarantee:
57. Steam Consumption Guarantee:
58. Capacity Guarantee:
59. Tests:
60. Rejection:
61. Insurance:

BOOK NOTES

GEORGIAN COLONIAL INTERIORS

LEIGH FRENCH, JR., architect, has compiled a series of interior illustrations and Charles Over Cornelius has written an introduction to the work. Mr. French calls his book "Colonial Interiors" and Mr. Cornelius, throughout an otherwise well written article, also refers to the work as "Colonial." Reference to the illustrations shows that they are all Georgian, or English Colonial. Why not make the title and reference more specific? It is useless to hope that the general public will have a specific understanding of the true meaning of Colonial in this country if this incorrect practice is pursued, and it is not fair to those other countries whose Colonial architecture in the United States is a part of our prized architectural heritage, to assume that the only Colonial we have that is worth while, is Georgian or English.

In reviewing this work the foregoing is in no sense to be taken as in disparagement of its value as a reference book for architects or to detract from acknowledgment of the patience and fine sense of discrimination that Mr. French has shown in selecting his material. But, the misleading title will annoy a purchaser who has a right to expect that a book on Colonial interiors will present the widest range of Colonial precedent in this country, and will not confine itself to one country.

Familiarity with the Georgian as extant in this country has led to the belief that all that is good has been many times illustrated. But we find in this series of plates many examples, and good ones too, that we do not recall having heretofore seen.

The series of plates have been well arranged to make their reference and comparison easy. The grouping of interiors is followed by details of

fireplace, stairs, doors, windows and cupboards. Appended is a fine series of scaled details. A further valuable feature is a chronology of the illustrations.

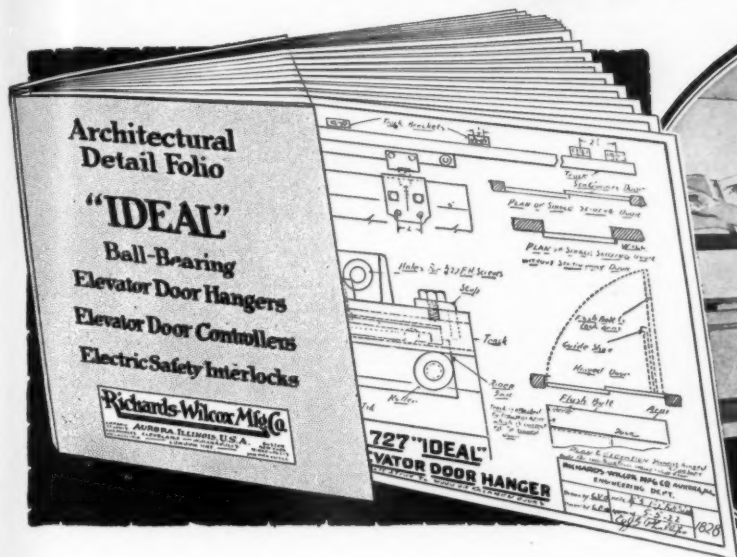
Colonial Interiors. Photographs and Measured Drawings of the Colonial and Early Federal Periods. By Leigh French, Jr. Full cloth, size 9 x 13 inches. New York, William Helburn, Inc. Price \$15.00.

THE ENJOYMENT AND USE OF COLOR

PROFESSOR WALTER SARGENT of the University of Chicago has produced a book on The Enjoyment and Use of Color, which, he tells us in a preface, has been arranged primarily as a textbook. As the study of color is one that may be taken up either during school years or later life, a method that will be of benefit both to the pupil and to the older man is valuable. Unfortunately for the better appreciation of color, most works prepared on the subject are so ultra technical as to be beyond understanding by any but the most advanced student in physics. Nothing, perhaps, is so universal, and nothing has a more important influence on our surroundings than color. And yet, color in its true sense and correct application is seldom thoroughly understood.

Professor Sargent has gone carefully into his subject, and has made a book that, divested of ultra technical discussion, leaves the reader after perusal with a clear and workable idea of the true meaning and use of color. This book will be useful to architects and one that will prove of considerable reliable reference value.

The Enjoyment and Use of Color, by Walter Sargent, Professor of Art Education in the School of Education, The University of Chicago. Full cloth, 270 pages, size 5 1/2 x 8 inches. New York, Charles Scribner's Sons. Price \$2.50.



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This unusual detail folio took our Engineering Department more than a year to prepare. Nothing quite like it has ever been offered by any manufacturer. Contains information hitherto unavailable to architects. Gives complete facts instantly in technical form for plans, specifications and detail drawings. As the detail drawings in the book cover practically every elevator door installation problem, many architects are now making blueprints directly from it, thus saving time and labor. This detail folio will be sent without cost or obligation. Just drop us a line.

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ARCHITECTURE and the CINEMA*

MUCH has been written and published in periodicals and the daily press lately to rouse public interest in the arts, and in architecture in particular. It is believed that, had the aims of these able writers been directed more toward the cinema and its possibilities, their efforts would have met with more success in dealing with a twentieth century public. At a cinema, not long ago, it was refreshing to see a film of a recent addition to London's civic architecture, and appreciative remarks (not strictly architectural) on the outstanding merits of the building were plainly audible. The writer's pulse throbbed with delight and surprise when he felt that the audience were really interested. The picture was part of a "topical film," but there was no "cinema" or "unvoiling" crowd present. The building had apparently been filmed just because of its architectural interest and general impressiveness, and was shown in detail, slowly passing from the ground level to the crowning feature, with, in addition, the groups of sculpture full picture size. It is a pity, however, that the name of the architect was not given.

On another occasion a fairly successfully tinted film of one of our great Gothic cathedrals, was shown, exhibited to a scale large enough to show jointing, carved details, and expression in the sculpture. The film of the general building and the feeling of life in an interesting foreground, followed by large details showing the great scale of the structure, made it a picture of general interest. Apart from the immense value of such films to students and architects, it is an encouragement to others, to the general community, to be appreciative of additions to civic surroundings—which are generally paid for by the ratepayers—and to take a real live interest in the "public" art of architecture.

The public will not stand forcible education in matters of art, but comfortably seated with a pipe or chocolate between its teeth, a lot could be done to cultivate and foster an interest, by getting our cinema managers to sandwich a really good "sculpture" or "architectural" film between our "Charlie Chaplins" and "Mary Pickfords."

Speaking generally, it is what might be called the "poster" qualities of architecture that appeal to the "man in the street" most directly. There is no real depth in public appreciation or criticism of the mistress art. Great scale, picturesqueness, so-called originality or novelty, take the place of tradition, good proportion, beautiful expression, and refinement in the arts. With the means at the disposal of film experts and their decided

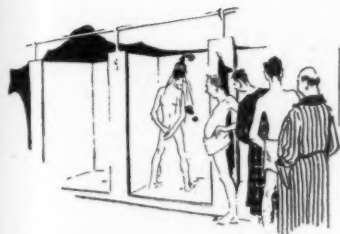
ability to take advantage of the best and often unusual viewpoints, along with grand effects of light and shade, even a small but refined and well proportioned work of architecture could be served calculated to impress, and palatable to the most commercial taste. For there is a plane of quality where all critics agree and where the architect finds it less difficult to persuade his client that the great work of the past is the correct basis for all work of today and of the future.

Children at school are taught drawing and painting, dancing and music; visits to art exhibitions and orchestral concerts are also sometimes included in the curriculum. But what is wrong with architecture that it is not included or a sufficient knowledge of it imparted to enable the young student to appreciate the art of our city streets? Has the subject ever been thought of, or considered by educational authorities? It seems to be a clear duty of citizenship. It would open up new vistas and avenues of thought, and the study of the styles, in a general way, would give additional importance and interest to otherwise dry historical dates and geographical facts of elementary school training. For the purpose of illustrating such art study the cinema could not be put to better service.

Apart from the general educational value, it would be a real treat for any architect to be taken, by film, round the Acropolis at Athens, or even the Pyramids, familiar as they are in shape to all of us; yet few there are who have any real notion of their scale or the size of the stones of which they are built, and their charming surroundings.

The Temples of Luxor and Karnak would form delightful subjects of general interest. A moonlight study is always attractive, and it makes more readily apparent the general architectural mass and proportions of these picturesque temple ruins of "the glory that once was Egypt's." It is the spirit of adventure associated with exploration, the thrill of discovery and the stupendous estimated value in pounds sterling of the finds, resulting from the recent excavations in the Nile Valley, that impress the public most. The forging of another link in the long still uncompleted chain of ancient history and art is an entirely secondary consideration. To see a film record of the locality, the tomb, the excavators at work, and their newly found treasure, would fire the imagination of the layman and rouse public interest in the "basic" arts of ancient civilization. It is to be hoped that in this twentieth century some such record will be "produced" for the information of posterity, all art lovers, and others interested.

*Reprinted from *The Architects' Journal*, London.

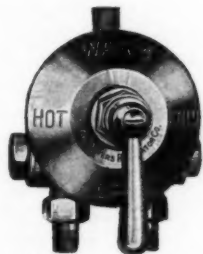


They Stood in line at the Union League Club

The showers of this prominent Chicago club were formerly equipped with ordinary mixers. The management decided to test the Powers Mixer on one of the showers. Members say that the men quickly found out that it did all we claim for it and actually stood in line to use it.

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Style A
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Piping

The Powers Shower Mixer

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Has this ever happened to you?

Have you ever been cheated out of a pleasant, enjoyable shower by a sudden, unexpected "shot" of cold or scalding hot water? This menace to your complete enjoyment of a safe and comfortable bath is eliminated by the Powers Shower Mixer.

30 years of Specialization in temperature control behind this Mixer

The Powers Shower Mixer is different from all other mixers. Turn the handle of the ordinary mixer to "Warm," and if cold water is drawn from nearby showers, faucets, flush valves, etc., the reduced pressure on the cold water line allows a "shot" of hot water to reach the bather. Ordinary mixer's give no protection against changing water pressures.

How the Powers Mixer Works

A simple all-metal pressure balancing valve instantly equalizes the pressure of hot and cold water before they enter the mixing chamber, so that regardless of pressure changes, a Powers Mixer always holds the temperature of the water right where you want it.

Bul. 154 gives full information and roughing-in dimensions. May we send it?

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The public has really very little opportunity or facility for obtaining guidance in the general study of our street architecture. Apart from schools of architecture for professional students, public instruction in the subject is never provided. Our universities and corporations arrange free public lectures during the Winter months, on subjects of general interest, literature, citizenship, political economy, but architecture is seldom, if ever, included in the program, and yet, even without the aid of the cinema, the evolution of style in architecture is a story of intense interest and fascination.

In America the services of the cinema are being utilized to promote the welfare of many forms of municipal, public, and private activity, such as town planning schemes, disposal and layout of estates, clearing of slum areas, etc., the idea of the promoters being to carry public opinion with them and so encourage voluntary public subscription. In one particular case, an unusually attractive suburban plot was selected, model houses were constructed and suitably furnished. A five reel film was produced showing the actual erection of this six-apartment brick house, equipped and furnished complete with a family "living happily ever after." The theory was that any one seeing the construction of such an attractive model would be persuaded to become an owner. The film and descriptive "titles" are said to correct some of the popular misconceptions of the difficulty and cost of building.

All these ideas might be further developed. In picture houses, between films and during the raising and lowering of the lights, slides might be shown of a good painting, an acknowledged piece of sculpture, or an architectural masterpiece, with short descriptive notes, and so give one the opportunity to carry away something in the mind's eye which will be of service in genuinely improving the taste and forming a sounder basis for art judgment.

Silly things can be shown so beautifully on the screen that it is a pity the cinema is not always used to the best advantage. There are great possibilities for the "screened" picture on the lines indicated, and any corporation, enterprising cinema manager, or educational authority who gives these suggestions serious consideration

would be doing a real service to the community.

EDUCATING THE PUBLIC IN ARCHITECTURE

THE Rt. Hon. Lord Riddell, in proposing a vote of thanks to J. Alfred Gotch, F. S. A., on the occasion of Mr. Gotch's opening address as president of the Royal Institute of British Architects, stated, in part as follows:

We know that the education of architects is an important matter. I said at the Institute, when I last had the pleasure of speaking to you, that doctors bury their failures in the churchyard, lawyers bury theirs in the Bankruptcy Court but architects' failures remain for all time as a public menace. That shows how necessary it is to educate architects. But there is another thing that is equally necessary, and that is the education of the public. Nothing is more important from a municipal, an ethical, and indeed from every other point of view, than that the public should be educated about architecture. Nothing gives more pleasure than to understand what are beautiful buildings. It is very cheap looking at buildings; it costs money to see picture galleries, but even the poorest can admire beautiful buildings. I would only like to say this, it lies within the scope of every architect to do missionary work. The press is a curious institution. The public believe that the press is always anxious to move. Not at all. The press requires to be moved, and to be satisfied that the person who wishes to move it can provide good copy in which the public will be interested. As you know, the press is moved from various directions. But my complaint about architects is that they do not move the press enough. It is open to every architect to be a missionary. I do not propose to detain you longer, but I would venture to stress the point that every architect should be a missionary for architecture, for good architecture; and that every architect who lives in a provincial town should get into touch with the newspaper in that town, with a view to inducing the editor to devote a certain amount of space to architecture. You will never get rid of the monstrosities referred to by the President until you educate the public. There are many ways of doing this, by lectures, etc., but one of the best ways is through the medium of the press.

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