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FOUNTAIN AND TERRACE—RESIDENCE OF
MRS. B. F. PEPPER, CHESTNUT HILL, PHIL-
ADELPHIA. WILLING & SIMS, ARCHITECTS.

THE ARCHITECTURAL RECORD

VOLUME XLVIII



NUMBER V

NOVEMBER, 1920

~ RESIDENCE OF M^{RS} B. F. PEPPER ~
CHESTNUT HILL, PHILADELPHIA

WILLING & SIMS, ARCHITECTS

By
WILLIAM LAWRENCE BOTTOMLEY

THE development of style is obscure and slow, but it is as inevitable as Nemesis. It is easy from the perspective of two or three hundred years, looking back at a period, to see its characteristics, to trace its origins and development. On the other hand, when working in a period of great activity and growth, such as the present, it is extremely difficult to gauge its trend or to analyze its spirit.

All the arts in one period have common characteristics which differentiate them from other times. Literature and music, painting, architecture and sculpture are welded together in a unified group by their resemblances. All are closely related, and yet how hard it is to see what these relationships are from

close range. What, for instance, is the influence of the Cubist style of painting upon the work of the sculptors or the architects? Or what common cause is affecting the work of the poets and the musicians? Anyone can see certain outstanding elements that are new to an art, such as the Cubist movement in painting, when it is a striking, a conscious, one might even say a blatant departure. Good or bad, subtle or obvious, the fact remains that here is something new. It causes the most diverse opinions and intense discussions. This kind of a novelty in an art is noted by everyone who is at all interested in that art. Many are puzzled at its cause—some have a consciousness of a similar tendency in another art, as, for example, in

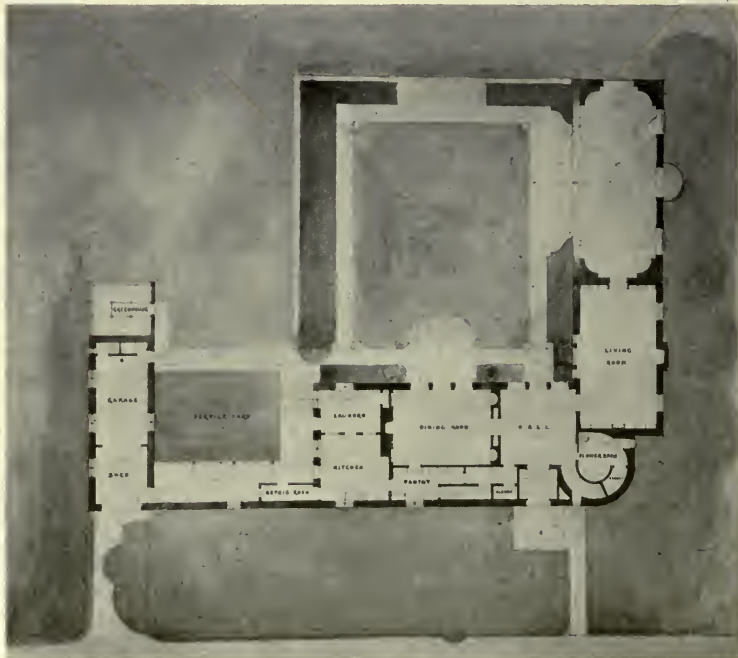
sculpture, where the effect in certain instances is marked; but few people have the analytical faculty, the time or the interest definitely to trace its influence.

Certain characteristics of the style of the house of Mrs. B. F. Pepper, at Chestnut Hill, Pennsylvania, by Messrs. Willing & Sims; architects, of Philadelphia, mark it at once as an unusual and original piece of work, aside from its great charm and distinction. Anyone can see at a glance that it is very beautiful and that it is different from the typical house that is being done today, but it is interesting to search further and see just what are its salient points, what has inspired them, and where else they may be seen. What effect they will have in the future it is almost impossible for anyone to foretell.

There are tendencies in the work of some of the architects today which those who run may read. It is not the work of the academic school. It is a cult of taste, a liking, sometimes a striving, for picturesque effects. In the work of this

new movement one finds a reaching back into the far past, the past of the Gothic or the early Renaissance periods of France, England and Italy. There is a new fondness discernable for old motives dexterously handled, and handled in a new and original way, such as towers, casement windows, curved buttresses and consoles, interesting roof lines and different levels of floors. All of these characteristics may be seen in this new and beautiful American house. They are so cleverly used that the effect is one of perfect unity and balance; and while novel in its composition and treatment, the house undoubtedly is colloquial in its style and fits into its surroundings to perfection.

The fusing of all these foreign motives is accomplished successfully by a just and proper proportion between the different parts, by the use of a consistent scale, and by broad and simple wall surfaces of stone which serve the architect in much the same way as the color scale serves the painter. The result is un-



GROUND FLOOR PLAN—RESIDENCE OF MRS. B. F. PEPPER,
CHESTNUT HILL, PHILADELPHIA.
Willing & Sims, Architects.



MAIN ENTRANCE AND STAIR TOWER—RESIDENCE
OF MRS. B. F. PEPPER, CHESTNUT HILL,
PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



GARDEN, FROM GATE TO GREENHOUSE—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



TERRACE—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



GARDEN SIDE—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



GARDEN ELEVATION—RESIDENCE OF MRS.
B. F. PEPPER, CHESTNUT HILL, PHILA-
DELPHIA. WILLING & SIMS, ARCHITECTS.



HALL—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA.
Willing & Sims, Architects.

doubtedly harmonious, when if slightly less skilfully handled it would have been a jumble.

The plan follows the best traditions of country house design in making the gardens an integral part of the whole, as necessary to the composition as they are for the perfect enjoyment of the house. The principal mass of the house contains the hall and the dining room and the service portion, with wings extending from it to form a long L shaped plan. The living room is lengthened by a delightful outside walled garden facing on the garden court, and from the other end of the house the kitchen is linked up with the garage and greenhouse and outhouses by a servants' porch and service court. Both the living room and the dining room give on an enclosed garden to the south and east, the dining room being related to this court by a half octagonal arbor, which forms a delightful shade for out-of-door meals in the summer, while giving full light to the dining room

in the winter part of the year when the leaves are off the trees. It is interesting to notice that the evil, old roofed-in piazza, darkening all the main rooms of the first floor, has entirely disappeared. There is not even a roofed and screened living porch. The rooms are all perfectly lit, have abundant sun, and afford as much outside air when the windows are open as it is possible to get. In bad weather the choice is to remain indoors in comfort, with plenty of air, or put on rainy day clothes and get right out into the weather and get some real exercise. This is a vast gain to the appearance of the house, and it is also logical. Certainly the open arched garden with its sheltered seats and corners is an infinitely more beautiful, restful and pleasant place to sit than any enclosed porch with a roof that can be conceived. This treatment is more Italian or English—these two foreign peoples understanding out-of-door living better than any other Europeans. It is the direct opposite of



HALL — RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



DINING ROOM—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA.
Willing & Sims, Architects.

all American ideas and is an interesting departure.

The sleeping porch is also conspicuous by its absence, this, too, being a matter of personal taste.

I can imagine nothing pleasanter than actually living in the open air in what is practically a series of out-of-door rooms such as these gardens. The shelter from the wind is perfect, and yet a sunny spot can always be found if it is chilly, and on a hot, sunny day shady arbors and retreats are provided for every part of the day. And, best of all, for the winter, when the leaves are off the trees and vines, there is nothing to obstruct the sun from any window in the house.

The treatment of the planting of trees, hedges, shrubs and vines is well done and shows plainly not only a clever design in the beginning on the part of the architects, but also an insight and an appreciation on the part of the owner afterwards, as delightful as it is rare. Anyone could tell by looking at the rows of pots, with plants of every kind, standing here and there, placed on walls or

stood on the pavement, of the intimate knowledge and love of growing things in that household. Also the care with which the paving in the walled garden has been laid around the trees may well be noticed (page 357 and Frontispiece).

The roof of the half octagonal breakfast porch, opening from the dining room, is supported by fine iron lattices with a quaint, early Victorian feeling, and around the garden side of the house, above the first story windows, is a really notable and successful treatment of a lattice for vines, formed of graceful wrought-iron consoles supporting wood strips which hold the vines out from the wall, giving a delicate shade and yet adding greatly to the appearance of the house (pages 374, 376 and 377). The wood strips, of course, are the best material that could be devised for holding the stems of the vines, and the iron consoles give a beauty and interest to these lattices which is quite unusual.

Other interesting pieces of wrought-iron are seen in the balconies of both the garden and entrance sides of the house



DINING ROOM—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA.
Willing & Sims, Architects.

(pages 372 and 375), where, although the design is of the simplest type, the balconies count in a strongly decorative way because of the fine contrast with the background of stone.

Another general characteristic of this house which lends it great distinction is its restraint. There is not a dull part in either the exterior or the interior, and yet it is all simple to the last degree. It is seldom, even in France, in the smaller houses of the fourteenth to the seventeenth centuries, from which this house has drawn certain reminiscences, that a design is found so little labored in effect, so genuine in freshness; here is often a certain tendency to overaccentuate minor detail.

The only note in the exterior which is discordant to me is the dormer window on the garden side, with its heavy flanking obelisks and curved tympanum and consoles—a dormer that lacks the elegancies of the rest of the design, and recalls a Dutch motive.

There are certain points in the exterior which should be noted: the arches with

the surrounding lattices for vines and the fountain of the enclosed garden seen in the Frontispiece, the stone work of the walls and the circular stair tower with its pyramidal roof, and the wrought-iron half-round transom of the front door, well shown on page 373.

There is a simplicity, almost austerity, about the interiors that suits the charming old Colonial furniture, and at the same time a distinctly modern feeling about the architecture, imparting to the house the same quality that is found in contemporary sculpture, in the work of Manship or Nadelman.

The main entrance door of the house opens into a square hall of generous proportions (page 378) that is most suitably furnished. There is about the whole house a singularly harmonious effect between the furnishings and the rooms themselves. In the hall we may note an interesting treatment of the plain plaster wall surface and a cornice that is nothing more than a small cove moulding running under the ceiling. From one corner the circular stair winds to the second story.



LIVING ROOM—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA. WILLING & SIMS, ARCHITECTS.



LIVING ROOM—RESIDENCE OF MRS. B. F. PEPPER, CHESTNUT HILL, PHILADELPHIA
Willing & Sims, Architects.

This is certainly an attractive feature, but the effect would be better if the stairs had been made of stone or at least were all of one color. The hall is painted a light green grey, with blue green curtains at the windows and hooked rugs on the floor.

The dining room (page 379) opens directly from the hall. It is a light putty color, with grey and gold brocade curtains. The view up the few steps that separate the two rooms is charming in that simplicity which is so characteristic of the house. There is a very slight trim about the doors and the china cabinet. At the farthest end of the dining room is a niche with the minimum of wood-work set in the plaster wall (page 379). There are some lovely portraits in both dining room and hall that emphasize the eighteenth century feeling, and the beautiful china and old silver add greatly to the effect (page 380).

From the opposite side of the main

hall a door opens into the long living room (page 383), a room with windows on three sides, where the sun pours in all day long. The living room has a beamed ceiling, the narrow beams running close together and contrasting strongly with the heavy girders. There is no cornice here, and the beams rest on the rough plaster wall. The stone fireplace is set flush with the wall instead of against a chimney-breast (page 382). This is a reminiscence of the early styles and is a departure from the Georgian tradition. The bookcases cover one side of the room. The color here is delightful. The rich bindings, the brocade over the fireplace, the paintings and rugs echo their lovely reds and golds from one part of the room to another.

Altogether the house is a refreshing piece of work. It is virile and new, and stands for the best of a movement in this country that is bound to have an important effect on future work.



SOUTHWEST TOWER—OHIO STADIUM, OHIO
STATE UNIVERSITY, COLUMBUS, OHIO.



~ The ~
OHIO STADIUM
AT OHIO STATE
UNIVERSITY

JOSEPH N. BRADFORD, UNIVERSITY ARCHITECT
HOWARD DWIGHT SMITH, DESIGNER

By Howard Dwight Smith

THE jubilee gift of funds for a great stadium by alumni and friends of Ohio State University, on the occasion of the semi-centennial celebration of the founding of the University, is of general interest because of the place which this new structure takes in the movement to provide housing accommodations for the nation-wide expansion of recreational activities,

The increasing recognition of the necessity for coordination of physical and mental development has not been confined to institutions of higher education. But it has been left largely to the college and the university to foster amateur athletics and to provide ideals and leadership for all sorts of recreation and

physical diversions. That these ideals have been provided and have been kept free from commercialism is sufficient evidence that the colleges and universities have been successful in the execution of their trust.

In the football season just closing there have been over 1,500 regularly scheduled games played by teams representing schools of major importance, and some 1,000 or more by the teams of the so-called secondary schools. This in itself is an indication of the widespread interest in that one branch of college athletics alone. A very conservative estimate of the number of spectators at the major games would be, say, two millions of people. There is a marked tendency

toward increased numbers of spectators each year at these major events. The ever increasing number of partisan spectators has given rise to the building of huge seating structures for the accommodation of crowds who willingly pay to see intensive contests when the reward for victory to the contestant is the mere thrill of winning and the sentiment attached to the defense of home colors.

To the casual observer these great structures do not signify their real meaning. The superficial impression of a great structure may be expressed in terms of thousands of spectators, but to the student the great structure represents the climax of his school's recreational activities, the show place for himself and for those of his fellows who happen greatly to excel in any one particular branch of athletic endeavor. The great structure at any institution is the climax of its athletic system, the acropolis of athletic inspiration, the typification of a great ideal which spurs each student on to do his best in his own recreational pursuit.

The English ideal of personal participation in athletics has found expression in more or less scorn for a mere spectator. For a long period in America, highly specialized athletics in our colleges and the development of well trained first teams, to the exclusion of the general athletic development of the student body, overlooked the great good of the English ideal. Much pedagogical criticism of athletics from within has been directed at this fault; but happily this condition has been mostly overcome. Now the "Varsity" is merely the apex of the athletic pyramid, an incentive, a goal for all athletic participation, and intercollegiate contests are but a development of intramural efforts.

GROWTH OF ATHLETICS AT OHIO STATE.

Conditions at Ohio State are so typical of conditions at scores of similar institutions that it might not be amiss briefly to sketch the development of athletic activities at that institution. In many institutions expansion in athletics has been greater than the general growth of the institution, not all as phenomenal as at Ohio State, but sufficient to place them

in the great general class of colleges where physical education and its attendant activities have been extended in recent years.

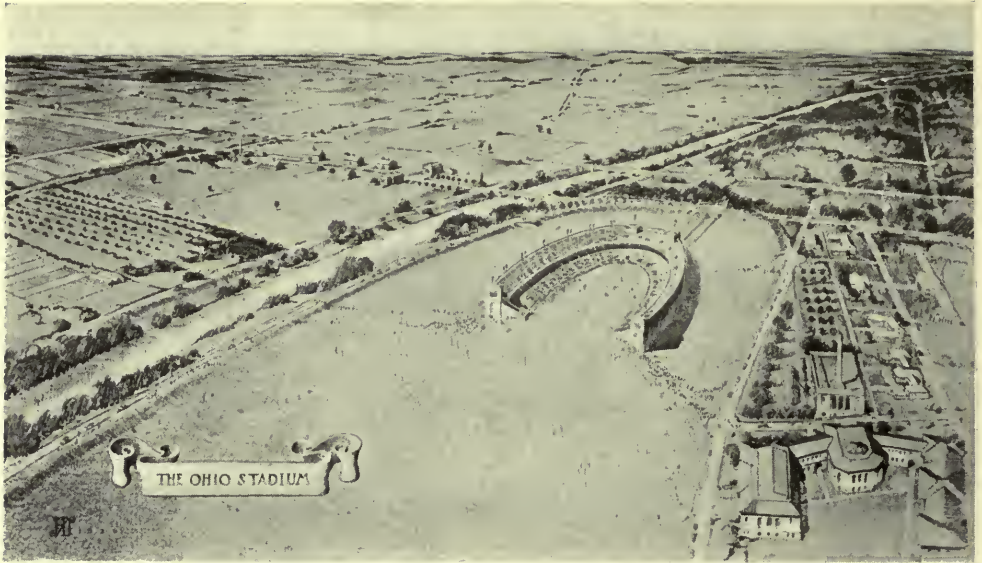
The administration of school lands granted by the Morrill Act of 1862 to certain States and of the funds derived therefrom has varied greatly in character. In Minnesota, for instance, the lands were mostly kept intact, and today the income from leases of ore and oil lands furnishes funds for University use. In Ohio, however, the lands were disposed of in one way or another until today the State University (under the original grant known as the "Ohio Agricultural and Mechanical College") is dependent upon a fixed levy on the tax duplicate of the State for its tuition and maintenance, upon special appropriations by the State Legislature for its buildings, and special bequests.

The significance of this condition and its bearing upon the Ohio Stadium will be apparent when two facts are pointed out. The first is that there are in Ohio some forty or fifty colleges and universities, many of much longer standing than the State University and among which the interests of the citizens of the State have been pretty well divided. The second is that all expenditures for the State University show up quickly in State taxes. So while John Smith was sending his son to Ohio Wesleyan and his daughter to Harcourt and paying well for it all, he could not be expected to bring much pressure to bear upon his representative in the State Legislature to push through appropriations for an institution in which neither he nor perhaps any of his neighbors had an interest. For years, therefore, Ohio State University dragged along slowly as an educational institution, with barely enough funds for academic existence and no subsidy for physical education or athletics. And even now, after fifty years of existence, when the University has been placed by common consent at the head of the State's education system, the use of State funds for construction of such a structure as a Stadium could not be dreamed of.

Steady growth and corresponding increase in athletic prowess during the



Plot Plan, showing proposed layout of the main portion of the campus, with the Stadium at the head of the great recreation axis, at the left. This plan includes all of the present buildings of the University proper, about forty in number.



Airplane View of Recreation Field, with a small portion of the campus to the right and the Olentangy River and University farm to the left, including the projected group of buildings for the Animal Husbandry Department.

decade between 1900 and 1910 led to a certain prestige in Ohio athletics, and preëminence in the "Big Six" or Ohio Conference was fairly conceded by the end of that period. A peculiarity of athletic enthusiasm in any given institution is that it feeds on its own growth. Once its preëminence is conceded the athletic youth of the State are drawn thither, and by 1912, when Ohio State was admitted to the "Big Ten," or Western Conference,* she had gained sufficient momentum to win the football championship of that group twice in succession (1916-1917), and to be the runner-up in a third season (1919), when she lost to Illinois in that now famous "last eight seconds."

This great enthusiasm at Ohio State, which has made possible the Ohio Stadium, has reached its crest at a time when it has benefited by the impetus of two great impulses. Athletic enthusiasm, or enthusiasm for athletics, has become very marked since the revelations made by the recent draft statistics of the surprisingly poor physical condition of many

of our nation's youth. Military training has emphasized the importance of systematic physical training as nothing else has done in recent years. The great advantage enjoyed by the college trained man, and particularly the college trained athlete, has emphasized the beneficial effect of college athletics upon physical training. The spirit of the American army is as well typified by the clean spirit of college sport as by any other one thing.

Great impetus to athletic enthusiasm has been given by the movement for so-called "mass athletics," a movement which recognizes that only insofar as every student in any institution participates in some form of athletic activity can the ideals of coordination of mental and physical development be reasonably and rationally obtained. Mass athletics has for one of its aims, for instance, that condition of affairs where each student has on his study card at least one form of competitive athletics in which he shall be graded and in which he shall attain the same degree of proficiency as is required of his academic work. Few persons know or realize that as a result of this mass athletic movement, there was conducted for an entire week last spring.

*The "Big Ten" is composed of Michigan, Minnesota, Iowa, Purdue, Wisconsin, Chicago, North Western, Illinois, Indiana and Ohio.

without any interference with academic work, a "mass athletics" meet in the Western Conference, in which the actual scores in time, distances, etc., counted little more than did the number of contestants in the events. This mass athletics movement, taken together with intramural athletics, as, for instance, at Ohio State, where there are thirteen separate colleges within the University, indicates the universality of participation of the great body of students in recreational activities.

It has been argued that athletics in an institution should end with this "mass" participation and with intramural contests, and that intercollegiate contests of a spectacular nature are entirely superfluous. It is admitted that the greatest good for the greatest number has been derived from athletics by this participation of the rank and file. But the intercollegiate, the spectacular contest, is the logical climax which has made the entire system effective. As professional baseball without a world's series, boxing bouts without decisions, peace without victory, or a banquet with no dessert, so would be an extensive amateur athletic system without the spectacular contests of the specially trained few. And so with every well developed college or university athletic system for the past quarter of a century has come the demand for some structure to seat large numbers of spectators.

THE GENERAL PROBLEM.

The problem which presented itself at Ohio State is not unlike the one which presented itself to other institutions—Harvard, Princeton, Yale, Syracuse, Michigan, Wisconsin, etc. In fact, the main problem is always the same, that is, to place as large a number of seats as is possible around a field of play and to provide as nearly perfect vision of the field as possible. There are but few minor variations of this problem which may occur, and these variations depend upon whether the structure is to surround a field used for football only, or for football and track, or for football, track and baseball.

At Ohio State, as elsewhere, the matter

of providing more seating space was a business proposition with the Athletic Board. But because of the close relationship between athletics and physical education, the Athletic Board realized the necessity of providing a structure which could be used for the greatest number of purposes. The administration and financial management of intramural and intercollegiate athletics is vested in the Athletic Board, appointed jointly by the Trustees, the President and the Alumni Association. The executive is the Director of Athletics, who is also the head of the academic department of Physical Education with the rank of professor. This arrangement has proven a very satisfactory point of contact, which unfortunately does not always exist between academic and athletic interests in all institutions of higher education.

With this community of interest, therefore, the Athletic Board approached the problem of providing a structure which would best satisfy all the needs of the University. The problem at once divided itself into its fundamental three parts as in the case of other institutions. The first, the plan and seating arrangement, to provide the proper field space, and the maximum income for minimum expenditure; the second, the appearance of the structure and its relation to other structures, or groups existing or proposed; the third, structural expediency and stability.

LOCATION AND ACCESSIBILITY.

As the facts of the case now show, the Athletic Board considered size and shape of much greater importance than location, and their first efforts were spent in determining how large a structure could be built and what shape would be most advantageous. The matter of location, by order of the Board of Trustees, however, placed the problem directly in the hands of the University architect, charged with campus development. The problem then became one of joint study, always with relation to the general scheme of campus improvement as well as of athletic needs.

Fortunately, Ohio's campus, now of nearly 900 acres, is all contiguous—for



RENDERED PLAN—OHIO STADIUM, OHIO
STATE UNIVERSITY, COLUMBUS, OHIO.

the most part, except the portion used for farm purposes, within the city limits—and in spite of the present more or less informal location of buildings of diverse style, the possibilities of group planning are quite wonderful. Fortunately, also, the problem of the location of the Stadium was given to one who is responsible for the aspect of the 900 acres, for it was upon his drastic recommendation that some ninety-two acres of fertile bottom land was appropriated from the College of Agriculture and given to the Department of Physical Education and the Department of Military Science.

In the recent studies for campus development the group, or axial, plan has been used, superseding the informal unit plan. This scheme was followed in recommending a location for the Stadium. It is placed on a new and important axis, now known as the recreation field—groups on other axes being the academic, engineering, agricultural, medical, dormitory, etc. This location is far enough removed from the existing buildings of the University to avoid conflict of scale. The area covered by the enclosure of the Stadium walls is as great as any ten buildings on the campus, and its height is over twice as great as the average height of the fifty other structures on the campus. The fact that the general level of the bottom land is about 25 feet below the average level of the main part of the campus is not to be overlooked in this connection. The accessibility of the new location from the campus, however, avoids the difficulty experienced in many institutions where athletic plants are not contiguous to the main portion of the campus.

The location of the Stadium on the new recreational axis carries with it several other interesting features. The straightening of the Olentangy River bed and the control of its flow between levees provide a boulevard and terrace along the west side of the ninety-two acre plot, which is to be reclaimed on the east by a similar boulevard and terrace. The Stadium, therefore, occupies a focal position in this somewhat irregular ellipse, at the head of the axis on a practically level field, which is devoted to athletics and all

recreational activities, infantry drill, artillery practice and aviation.

It should be mentioned in passing that the question of external circulation was one of the early considerations in the problem of location. The gathering of a crowd of 60,000 people presents no small problem as regards approach, parking and retreat. The boulevard around the entire field is of particular advantage. There are two main avenues of approach through the main part of the campus and five roads of approach and retreat outside the campus, with provision for a private car track loop connecting with the city lines, with sufficient trackage to hold in reserve enough rolling stock to carry a third of the capacity of the Stadium itself.

FEATURES OF THE PLAN.

There are three principal features in the design of the Ohio Stadium which distinguish it from other structures of its class. These are (1) the double deck, (2) the "bowed" or curved sides with an open end, and (3) the extensive use of the space under the lower deck. All of these features grow out of the desire on the part of the designers to satisfy certain definite parts of the problem as presented by the Athletic Board and studied by them in conjunction with the University architect. These features, as well as all other details of the structure, have been studied in the light of precedent, both architectural and structural, not only of ancient buildings of similar nature, but particularly of contemporary structures. All of the important stadia and amphitheatres used for athletic purposes have been quite fully described in technical magazines from time to time, and all data with reference to them are readily available for study. This study has been amplified by inspection and by interviews with persons who are now interested in their care and management, in order to determine just wherein these contemporary structures have been successful and wherein they have failed or might be improved upon. A report of these inspections appeared in *The American Architect* for July and August, 1920. In the light of lessons learned from all

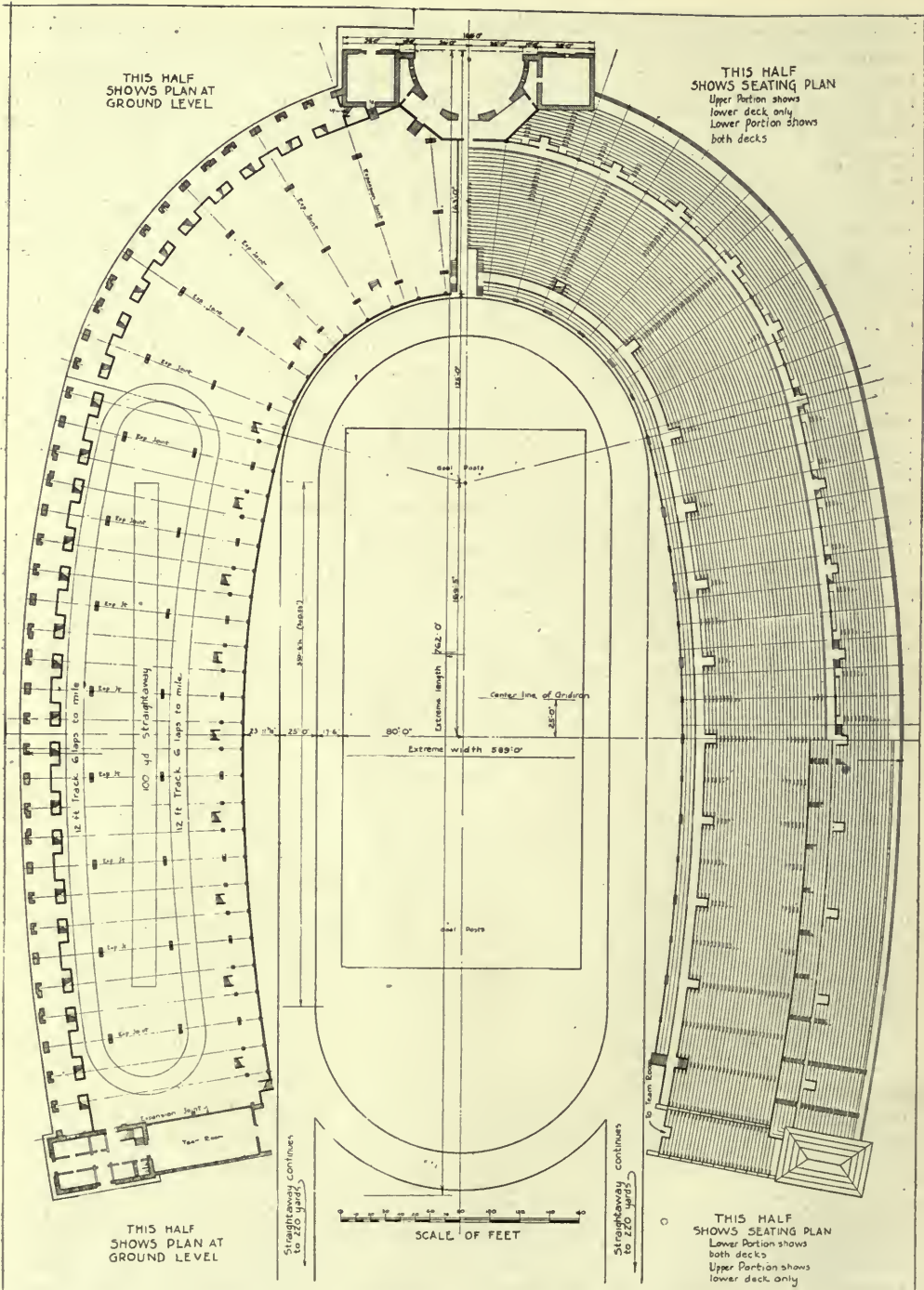


DIAGRAM SHOWING STRUCTURAL SYSTEM AND SEATING ARRANGEMENT—OHIO STADIUM, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

sources, it is thought that, for the present at least, the Ohio Stadium represents a satisfactory solution of the University and community seating problem for outdoor events. Of the three features mentioned above, the double deck is perhaps the most distinctive. It presents several intricate problems of plan, circulation, appearance and structural stability which have made it a hard proposition to solve. Before discussing this feature it will be more logical, however, to consider the plan arrangement which involves the second of the distinguishing features, the "bowed" side with the open end.

OPEN AND CLOSED TYPES OF STADIA.

Of preceding structures, both ancient and modern, there are two types: one (of which the Harvard Stadium is a modern example and the Roman Circus Maximus a classic example) has straight sides and an open end; the other (of which the Yale Bowl and the Roman Coliseum are typical) is entirely closed with all seat lines curved in plan. There are certain features of both types which are of advantage for staging modern athletic events, and there are other features of each type which experience has shown to be of decided disadvantage.

Aside from imperfectly designed details and imperfections of execution the advantages and disadvantages of the two types may be briefly stated. In favor of the straight-sided, open-end type they are (1) that it can be conveniently built around a quarter mile running track with "straightaways" for dashes; (2) simplicity of construction; (3) it lends itself easily to good architectural composition, and (4) the open end gives proper ventilation. The faults to be found in the straight-sided structure are not very serious, but the chief ones may be enumerated as follows: (1) great inequality of seat values; (2) loss of the "crowd psychology," and (3) tendency to expense and disfigurement in placing temporary seats at the open end to increase capacity. In favor of the closed or amphitheatre type are two very strong points: (1) beneficial effect of "crowd psychology" in a structure where every

spectator is sensible of the presence of nearly every other spectator, and (2) approximate uniformity of seat value. A third virtue might be noted in the possibility of unity and simplicity of architectural composition. Opposed to these virtues, the closed type, particularly those with curved sides, presents these drawbacks: (1) a quarter-mile track cannot be placed within the structure unless the first seats are at a very great distance from the football gridiron; (2) no straightaway track for dashes; (3) poor ventilation, particularly at the level of the playing field, and (4) expensive construction involved in building all seat lines to curved plan.

If nothing were to be considered but football, there is no question but that the closed bowl type is much to be preferred. The Yale Bowl presents ideal conditions for football. By ignoring all consideration of other sports, particularly track, it has been possible to construct an elliptical tier of seats, the inside row of which is very close to the gridiron. The method of determining the size of this ellipse was a simple one. The athletic authorities determined just how close to the four corners of the gridiron the seats could be placed for convenience and safety to players. Through these four points the inner perimeter of the seat tier was described.

The method of determining size at Harvard consisted in fixing the minimum distance for convenience and safety between gridiron and cinder track, and the minimum width of track. These dimensions added to the width of the gridiron have determined the diameter of the curved or closed end. This makes the average distance of the first row of seats from the gridiron somewhat greater than is the case at the Yale Bowl. At the open end of the Harvard Stadium the track is completed, extending out just far enough to make the entire length a quarter mile. It should be remembered that no record events on the track can be run on less than a quarter mile. These details of the Harvard and Yale structures are dealt with at some length because of their influence on the plan adopted for the Ohio Stadium.

THE OHIO PLAN.

With a view to combining the advantages of both types, as outlined above, and avoiding as far as possible their disadvantages, the Ohio plan was adopted. The curve on the sides has been made as great as is considered practical without making the middle seat sections appear too far away from the gridiron. This curve is calculated to give all the advantages of the "crowd psychology," which is a very attractive feature of the Yale Bowl. An added advantage of the "bowed" side is the equalizing of seat values. It has been found that in the case of the Harvard Stadium the seats opposite the middle of the gridiron on each side are considered far superior to those opposite the ends of the gridiron. The pushing back of the center sections has a tendency to make the seats toward the ends of the playing field relatively more desirable than they would otherwise be. This, of course, reduces the difficulties attendant upon the sale of seats.

The width of the track being determined at 25 feet to accommodate six 4-foot lanes (reduced to $22\frac{1}{2}$ feet on the curves) and a minimum space of $17\frac{1}{2}$ feet being established between track and gridiron sideline, the diameter of the inner wall of the closed end of the Ohio Stadium becomes automatically fixed at 250 feet. By methods of "cut and try," it has been determined that the depth of the "bow" on each side should not exceed $24\frac{1}{2}$ feet.

The entire length of the structure is 760 feet, determined largely by the required seating capacity, fixed by the Athletic Board at approximately 60,000, and the maximum distance deemed desirable for good view of the playing field. In plan the gridiron is not placed with its middle line on the cross axis of the Stadium or the track, but is moved up 25 feet toward the closed end in order to equalize the seating value of the extreme ends of the wings and the circular portion. The distance from the actual center of the gridiron to the farthest seat at the circular end is 420 feet and at the two end towers is 390 feet. By way of compari-

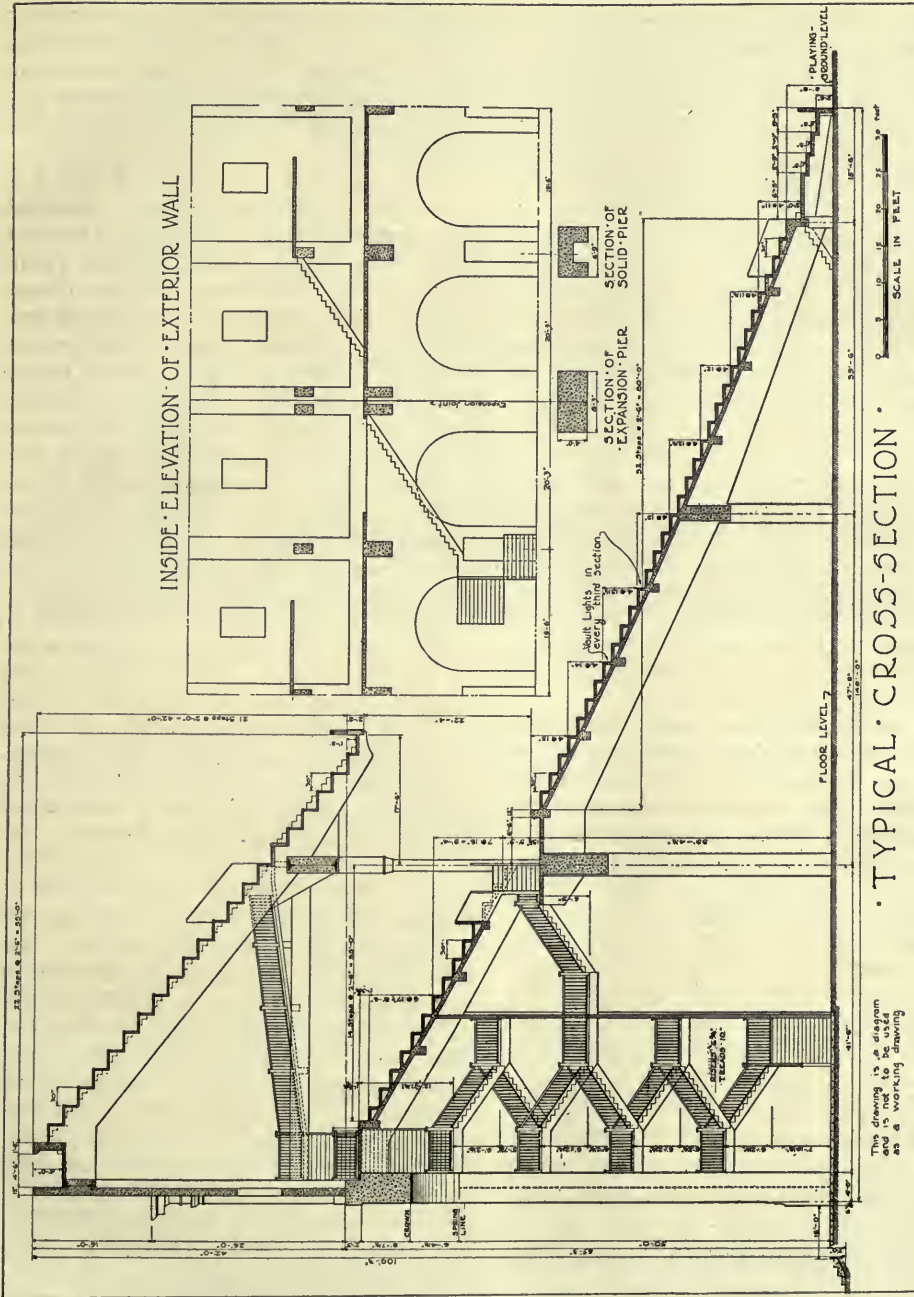
son it is noted that the distance from the actual center of the gridiron to the nearest box seat is 150 feet, and to the topmost seat on the upper deck directly opposite the middle of the gridiron is 286 feet.

Compare these figures with the following corresponding ones at Harvard and Yale. At Harvard the nearest box seat to the center of the gridiron (temporary boxes built out over the cinder track) is 87 feet and the uppermost seat on the same line is 205 feet from the center; the farthest seat at the closed end is 400 feet from the actual center of the playing field. At Yale the nearest seat is 152 feet from the center of the ellipse and the topmost seat on the cross axis is 375 feet away, while the topmost seat on the long axis is 475 feet from the actual center of the field.

OTHER TYPES OF MODERN PLANS.

It is interesting to note that Syracuse has attempted to combine the good features of both the open and the closed type by using straight sides and two closed ends, building the structure around a regulation quarter-mile track. This has been fairly successful, except in the location of a straightaway for dashes. The 220 yard straightaway has been provided by running a tunnel through one end of the enclosure on a line with one of the straight sides of the track. It has been noticed that runners are at a decided disadvantage in running on tracks of this kind, because of variations in temperature and atmospheric conditions in the tunnel and the invariable outward draft, due to difference in temperature on the inside and outside of the Stadium. Even when atmospheric conditions are nearly uniform inside and outside of the tunnel, the mental hazard handicaps the runner who is unaccustomed to running under such peculiar conditions.

It is also interesting to state that at the University of Washington, where it is proposed to build a large new Stadium, the architect, Mr. Carl F. Gould, and the engineers associated with him, without conference with the designers of the Ohio Stadium, but by strikingly similar lines



DETAIL CROSS SECTION — OHIO STADIUM,
OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

of study, have arrived at a very similar "bow-sided" plan, with a somewhat similar cross section and sight line, although all other details are quite dissimilar.

The proposed Stadium for the city of Chicago, designed as a recreational civic center for the municipality, is to be a straight sided, open end structure, but of such huge dimensions, particularly as to length, that of its potential seating capacity of 100,000 not more than 25,000 or 30,000 seats can be conveniently arranged about a football gridiron. The architectural success of the attenuated plan in this instance, however, is assured.

THE CROSS SECTION.

To any one studying Stadium design the cross section tells the most interesting story. The cross section determines the ease and convenience of circulation, the convenience of sight and the sitting convenience of the spectators. The cross section of the Ohio Stadium is particularly interesting, because it shows the details of the upper deck feature.

Of the dozen or so large stadia and amphitheatres in this country, the one detail in common which is most easily compared is the relationship between the rise and tread of the seating section. The principal ones are tabulated as follows:

Name.	Tread, in.	Rise, in.
Harvard	27	15
Princeton	30	15 to 17
College City N. Y.....	28	16
Yale	30	8 to 12
Syracuse	27	18
Michigan	24½	9 to 12½
Tacoma	27	18
San Diego	30	17
Chicago (proposed)...	30 approx.	8 to 12
Ohio State (low. deck).	30	11 to 17
Ohio State (up. deck).	30	24

It is generally conceded that Harvard's 27-inch tread is a little too narrow, and that the 30-inch tread at Yale and Princeton is practically perfect for seating comfort.

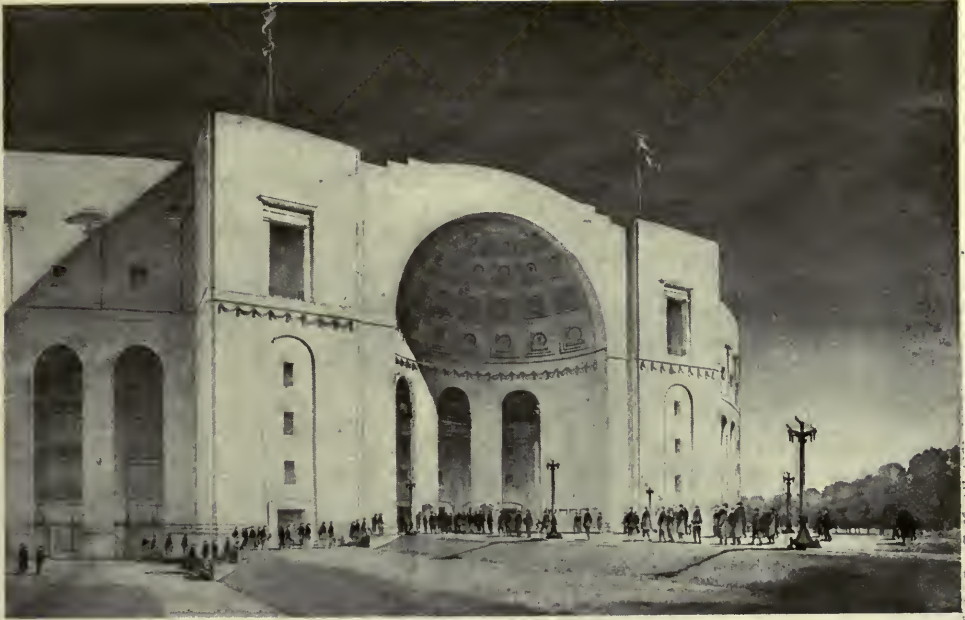
Variation in the riser to provide a clear sight line for the lower seats has been determined in the Ohio Stadium by assuming for each row a clearance of four inches over the average head line of the row immediately below it. The sight line is assumed so that spectators in the seats

on the long axis at the curved end will be able to see the goal line at the far end of the field. This assumption, of course, makes the average sight line along the sides more favorable. For convenience in building the risers vary in blocks of four for the bottom two-thirds of the lower deck. The sight line is also so arranged that the spectators in the lower rows may see the middle line of the cinder track. The location of the lower edge of the upper deck has been determined by assuming a sight line on the long axis for a person standing at the outside wall and being able to see the goal line at the opposite end of the gridiron.

The proper disposition of boxes is also a matter to be determined on the cross section. For actual seeing value only those boxes near the center of the field are of much worth, but the usual demand for box seats in any location for social purposes is one which it is profitable to meet, provided it can be done without interference to other seating. In the Ohio Stadium three rows of steps are devoted to boxes, with the top row placed on the same level as the principal bottom horizontal circulation just above the level of the playing field. The total capacity of the box space is approximately 1,700.

CIRCULATION AND CONTROL.

Circulation within the structure involves two principal considerations. The first is that of convenient distribution of the spectators as they assemble and the rapid and safe dispersal as they leave. The second is the matter of control and ticket taking. Chiefly for architectural composition, and not for the concentration of assembling crowds, has the entrance feature at the circular end been emphasized. As a matter of fact, it is recognized that the best results in handling assembling crowds are obtained by selling tickets at isolated points away from the structure and by effecting the greatest possible distribution outside of the structure itself, and that the route from entrance to seat be as short and direct as possible. This is a problem both of plan and of cross section. The location of "eyes" or portals is a matter of cross



NORTH ENTRANCE—OHIO STADIUM, OHIO STATE UNIVERSITY, COLUMBUS, OHIO.

section. At Yale and at Princeton the portals are located at the midway point of the cross section. The spectators are delivered to these portals by ramps and are allowed to distribute themselves up and down from the midway point. This system has proven very satisfactory in practice. In both cases admission tickets are taken at two isolated points in an enclosing fence at some distance from the structure, and reserved seat stubs indicate the proper entrance portal.

At Harvard the cross section shows two rows of "eyes" or portals, dividing the cross section into three parts. The upper row of portals is fed by four great staircases and a distributing promenade. This system proved quite effective in emptying the seats rapidly, but experience has shown that rapid emptying of the Harvard is not altogether desirable because of the excessive congestion that occurs at the Larz Anderson Bridge over the Charles River, across which practically the entire crowd must circulate. In recent years, therefore, the upper row of portals has been closed with temporary seats for major games, increasing the

seating capacity by about 550 and not interfering with the control or distribution of the spectators.

In those structures where topographic conditions permit the entry of spectators from an outside level above the playing field, as at Yale, Princeton, and the proposed Seattle Stadium, the problem of vertical circulation is comparatively simple. But in the Ohio Stadium, as at Harvard, where the ground level is very close to the water level of the adjoining river, the entire crowd must be elevated to the seating tiers by means of vertical circulation.

The accompanying diagram shows the circulation system as finally developed for the Ohio Stadium. Portals are provided at the rear of the boxes just above the level of the playing field, at the promenade line two-thirds of the way up and in the upper deck one-third of the way up from the bottom. Around the entire structure is a circulating corridor, which can be entered through any arch in the exterior wall. Directly opposite each exterior arch opening there is an opening in the inner screen wall of this circulating



Exterior Elevation of a south tower and a portion of the adjoining wall according to the final scheme of continuous, open and exposed expansion joints.

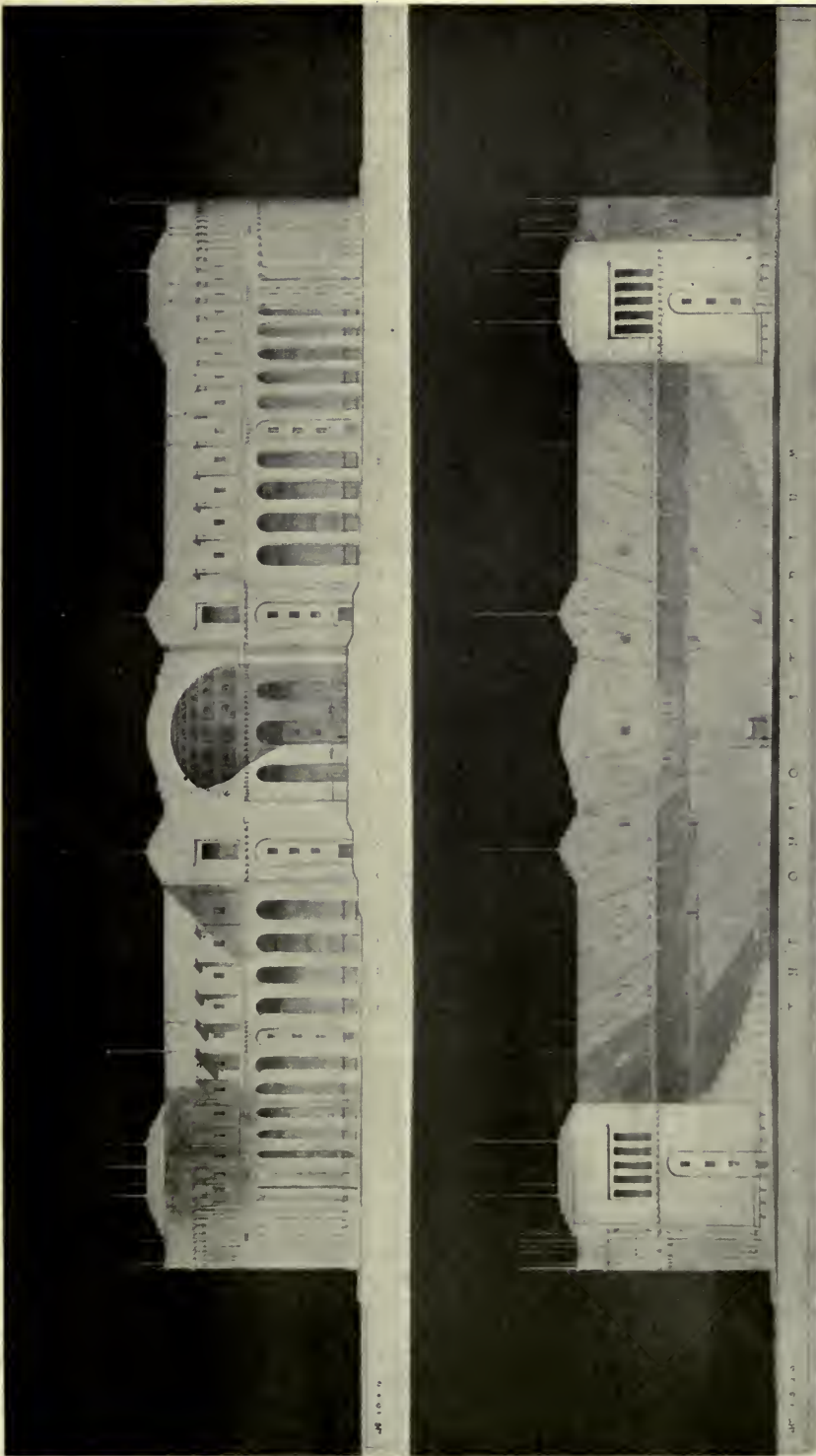
corridor, which leads directly to one seating section. The diagram indicates by various kinds of lines the line of travel from this corridor to each of the portals in the seating tiers. Every third opening leads directly across the structure on the ground level to the lower row of portals by which the boxes and the bottom half of the lower deck are served. All other openings lead directly to stairs which end in ramps leading to the upper portals. These stairs are arranged in pairs in such a way that cross circulation may be prevented entirely. By this system all confusion in ushering spectators is avoided by proper guidance and control at the ground level. By appropriate marking of the arches on the exterior wall it is possible to make almost perfect distribution of any large crowd as it assembles.

The extreme flexibility of this scheme of circulation, as indicated by the diagram, will be apparent from even a casual inspection. Spectators may be admitted

to the circulating corridor through any number of exterior arches, allowing secondary distribution in the corridor itself. By the simple expedient of opening the gates of the exterior arches into and across the corridor it is possible to control each seating section at the exterior wall. The possible combinations of control are thus practically unlimited and can be arranged and rearranged almost instantly, according to the size and intensity of the crowd to be handled. The success of the double-deck venture is largely dependent upon the convenience of that part of the vertical system which serves it.

THE DOUBLE DECK.

The chief reason for the use of a double deck is to provide a larger proportion of the entire seating capacity near the playing field than is possible with a single deck. From the cross-section it will be noticed that the upper deck is hardly more or less than an upper section of a single deck moved forward until



Above: North Elevation. In this rendering the original scheme of expansion joints concealed behind pilasters is shown. Below: South Elevation, looking into the "horseshoe."

it overlaps the lower sections. These seats are therefore placed just that much nearer the playing field. This device presents two new problems which are not found in a single deck. They are (1) the structural problem of isolated supports to interfere least with sight lines, and (2) difficulties of architectural composition. The athletic authorities are agreed that the increased value of seating space near the playing field, as well as the very great advantage of roof protection thus afforded to a portion of the lower deck seats, is worth the study and expense necessary to produce satisfactory results. The question of sight lines has been discussed before and also that of shutting off the view of the rear seats of the lower deck.

The support of the upper deck is affected by a series of posts located along the line of horizontal circulation two-thirds of the way up the lower deck. These columns are approximately sixty feet apart (three bays on the line of the exterior wall measure sixty feet) and are doubled in order to provide separate support for each structural section of the Stadium. These columns support girders about seven feet deep, over which the lower fourth of the upper deck is cantilevered. Structural stability is secured by horizontal braces from the column tops to the outside wall and by knee bracing in the three other directions.

The arrangement of columns is such that lines drawn from gridiron goal posts, past the columns along the two sides of the structure show that there is a large triangle of seats between each two posts extending back to the outside wall, where the view of the gridiron is entirely unimpeded.

The protection which this upper deck affords over a portion of the lower deck is of considerable importance. The spectators at early fall games experience some inconvenience due to warm temperatures, but in many instances at spring and summer games the spectators actually suffer from exposure to the sun. Only recently there appeared in the Sunday graphic section of one of the metropolitan newspapers a photograph of an athlete performing in the Olympic trials before a

"sweltering crowd of 22,000 people." The upper deck of the west wing of the Ohio Stadium will shade approximately 12,000 seats by the middle of the afternoon in summer. The roof value in inclement weather is of some importance, but this is not a prime consideration.

The engineering problems involved in the upper deck scheme may be solved by sufficient ingenuity and the proper expenditure of funds. The architectural problem involved is not so easy of solution. The great overhang of the cantilevered portion and the great distance between supports create a condition which no architect relishes. The elimination of a closely spaced colonnade deprives the designer of a graceful and powerful architectural device for depicting scale. The apparent weight and massiveness of an upper deck of masonry, carried on few partially concealed supports, create an anachronism to the eye of a profession trained in the proportions of stone masonry. This seeming structural paradox can only be overcome by logical expression of reinforced concrete forms, designed and executed in the same good taste and reasonable proportion as is required of stone masonry.

ARCHITECTURAL CHARACTER.

Properly to express the ideals for which it is built and influenced by all the ties of sentiment and historic precedent, the Ohio Stadium follows the example of most of its contemporaries and depends upon monumental simplicity and classic severity for its architectural character. While the double deck determines very largely the architectural composition of the structure, the expression of monumental character in the use of an upper deck is a new and untried thing. There are examples of double-deck stadia, notably those of professional baseball, such as the Polo Grounds in New York, but in no instance has there been any pretense to monumental character. Indeed, in all such cases there is a decided theatrical character which it is desirable to avoid in these collegiate structures.

The horizontal subdivision made by the wide flat band on the exterior wall sug-

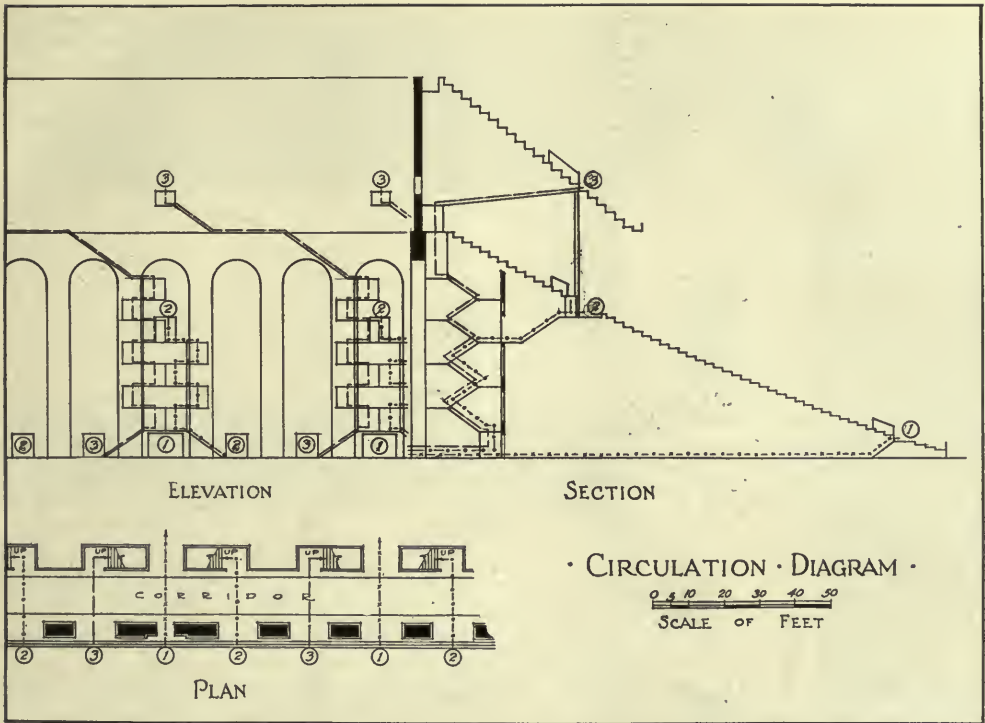
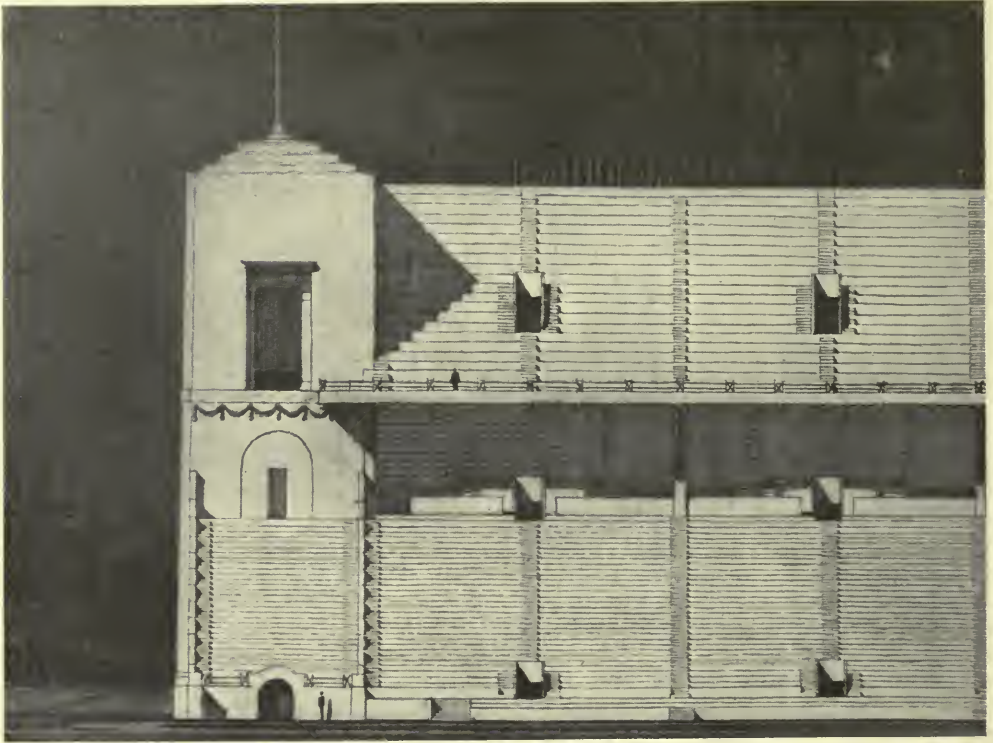


Diagram of the circulation system, showing method of control along outside corridor.

gests the top of the lower deck. This band has been carried around on the inside and is made to coincide exactly with the concrete beam which forms the lower fascia of the upper deck. This fascia, twenty-seven inches deep, extends around the curve over 1,500 feet in length from tower to tower, and is relieved of the apparent incongruity of being an attenuated beam by the regularly expressed ends of the concrete rafters which support it at intervals of approximately eight feet.

Externally the principal feature is the great semi-circular entrance at the closed end, with its coffered semi-dome. The arch over this entrance is one hundred feet high and seventy-two feet in diameter and suggests the character of the great niches of the Roman baths. The coffered ceiling also suggests the very well-known example in the Roman Pantheon. The continuity of stilted arches along the lower portion of the exterior wall suggest, perhaps only remotely, the composition of the Roman aqueducts and bridges. The

screen wall of the upper deck, with its small, square windows and its engaged pilasters, partakes somewhat of the character of the top story of the Coliseum. Thus the exterior is fairly well connected with accepted classic tradition. The use of these classic forms, however, does not detract from the novel composition suggested by the south elevation and the interior views. The impression created is that the structure consists of a long two-storied horseshoe, terminating in towers at each end, and that in front of this structure has been placed an inner tier of seats extending down to the ground level. This is especially emphasized by the design of the end features, where the tiers of seats have been set between stepped wing walls placed symmetrically about the axis of the tower. The arched entrance to the team quarters forms an interesting spot in the composition of the end feature. The treatment of the end motives has been designed to avoid the apparent bareness and incompleteness



Interior Elevation of a south tower, a portion of the seat tiers, and the entrance to the team room.

felt in the end walls of the Harvard and the Princeton stadia.

The entrance feature is emphasized but little on the interior. The seats of the upper deck pass right over the semi-dome. The irregular shaped space between the semi-circular entrance and the line of columns supporting the upper deck is taken up with rest rooms and space for motion picture projectors, spot lights, etc.

All moulding profiles are susceptible of being worked in concrete. Relief from monotony of color and surface is afforded by the inlaying of terra cotta ornament in the form of a festoon band on the towers around the semi-dome, and over each of the blind arches of the exterior wall. These blind arches are introduced to relieve the monotony of the continuous arcade and to give expression to the vertical circulation of the upper deck. The entablature of the enclosed order in the towers is of colored terra cotta. The engaged pilasters on the up-

per screen wall represent points of reinforcement in that wall and are of the same Tuscan order as the enclosed order of the towers. The embellishment on the curved walls of the front entrance consists of a wainscot of bronze panels, upon which are found the names of the founders, patrons, donors and subscribers whose generosity has made the Stadium a possibility.

For surface treatment of the concrete, the Ohio Stadium follows the frank expression of material found in the Harvard Stadium, which after seventeen years of wear has proven very successful. The interesting texture given to the great flat areas of concrete by the form marks may not have been entirely intentional. The effect, for instance, of the markings from horizontal planks placed at regular intervals in sections of vertical planks in the end towers of the Harvard structure is as interesting in composition and proportion as it is in the frankness of mate-

rial expression. The possibilities of this economical method of obtaining interesting surface texture are also suggested by the results obtained at the Army Supply Base in Brooklyn by Mr. Cass Gilbert, where no extra surface treatment has been resorted to to eradicate the form markings or even the marks left by the wire cross bracings. Surface tooling, which was begun on the Harvard Stadium but abandoned because of its expense, is used to great advantage in giving a finishing touch around mouldings and openings.

STRUCTURAL SYSTEM.

The acceptance of concrete, both plain and reinforced, as the most effective material for large operations both for economy and facility of construction has presented new problems for the designer as well as for the engineer. The science of concrete slab and beam construction has been as standardized as that of the rolled steel section. For the engineer, however, the two great problems involved in concrete construction of great size are first the necessary inspection to insure laboratory perfection of execution, and second the location and design of expansion joints. The first only affects the architectural designer insofar as it should influence him in avoiding the creation of intricate or impossible conditions.

The problem of expansion joints, however, has come to be as important for the architectural designer as for the structural engineer. Experience of the past decade has proven that in large operations it is impractical to conceal expansion joints. Experience also shows that simple butt joints in single planes are most effective and present the least difficulties in maintenance.

Consequently, the structural system employed in the design of the Ohio Stadium is that of building integral sections consisting of three bays each, which measure sixty feet along the face of the outside wall. The central portion of the main entrance forms a structural unit. Each of the towers on either side of the entrance arch and the two at the south ends of the structure also form separate

units. Thus the Stadium consists of thirty-four separate and distinct units which have nothing in common except footings. Pier-dimensions and arch spans in the exterior wall have been so proportioned as to accommodate the joints between adjoining units without any overlapping or slip joints. The vertical supports at these expansion joints are all doubled so that girders and beams of each section may be supported entirely by elements of the units in which they occur. This is an amplification of the successful system used in the substructure of the Harvard Stadium, where girders of each section bear upon piers located about three feet from each end, with the girders of adjoining sections butting together leaving a 6-foot space between the adjacent columns.

The only extraordinary features of structural design involved are the heavy girders spanning the 60-foot space between the columns which support the upper deck, and the design of these coupled columns to make them as thin as possible in order to obstruct as little as possible the view of the playing field from the seats in the upper portion of the lower deck.

The upper deck is constructed largely of steel, much after the scheme of the entire Harvard Stadium. Precast seats in short lengths are used, and the steel work is protected with cement. The entire lower deck is constructed as a sloping roof slab, in order to form proper protection to the space below. On this roof slab are placed precast seat sections, in short lengths, resting on lugs cast in the sloping slab. A system of seat drainage is provided, with catch basins at numerous intervals throughout the cross section in order to prevent the weathering effect of water washing down over great areas of seats. Gutters are provided under expansion joints, to take care of the unavoidable leakage at those points. The stairways of the vertical circulation system are of firescape construction. The footings for the entire structure rest on the gravel of the former bed of the Olen-tangy River, which now flows to the west of the entire recreation field.

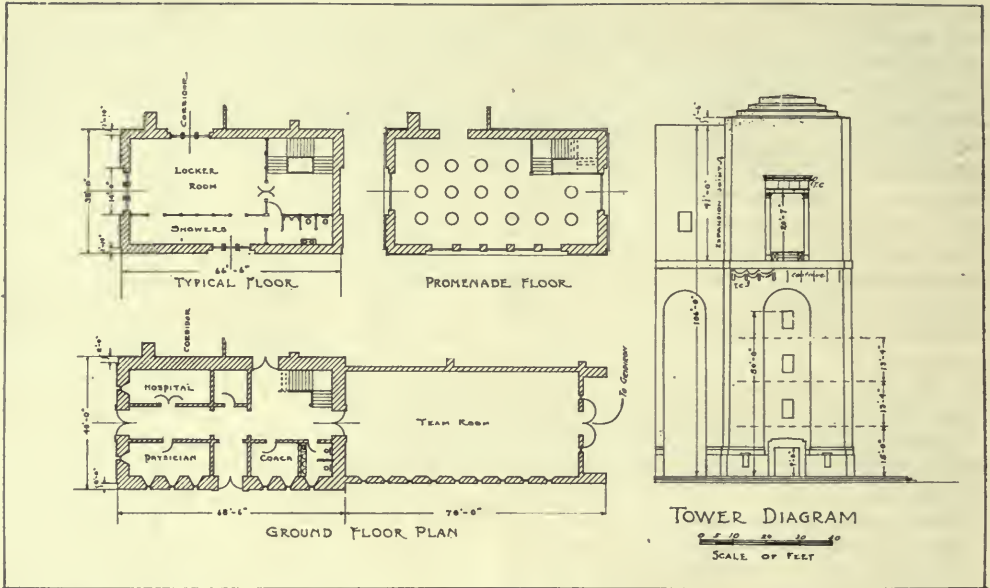


Diagram Elevation and Floor Plans of the south towers, showing their use for housing a portion of the recreational accessories.

UTILITARIAN FEATURES.

When the South Side Park Commission undertook to conduct a competition for the choice of an architect and a scheme for the Municipal Stadium for the City of Chicago, one of the requirements of their program was that the space under the seats of the amphitheater be put to some use besides mere circulation.

To attract the support of a great variety of business and civic interests, the inclusion of such a feature in the Stadium project was a valuable one. That feature received a great deal of attention from the competitors and several interesting and practical ideas were developed. The availability of the open arena itself for civic events, pageants, dramatics and other things besides athletic activities has not been minimized, but that particular use of such structures has always been more or less accepted.

In the new Ohio Stadium the capacity of the semi-circular end of the structure is nearly 20,000 on account of the double-deck feature. Convenient use is made of the irregular shaped spaces between the curved walls of the great entrance and the straight walls facing the interior of

the arena on the various levels for housing projection booths and spotlight apparatus, as well as ticket offices, dressing and retiring rooms. With a removable stage across the upper end of the arena unlimited possibilities are suggested for the use of the Stadium. But such extensive use of the space under the seats, as suggested by the Chicago project, is new, if not in idea, certainly in execution in this country. The fact that the space is there, and is available if properly disposed and finished, is sufficient reason for trying to extend the use of the capital invested in the structure as far as possible.

Few large college stadia make any use of the space beneath their seats for any purpose except for storing the caretaker's tools or some such comparatively insignificant use. At Yale, of course, there is no available space, all the seats resting directly upon earth. At the City College there are showers and stairs in the towers. At Princeton there is a little storage space. At Harvard there is a track under the outside corridor, but it is not continuous. The structural system at Harvard, with small precast seat sections resting directly on steel supports,

leaves a great many interstices which are not weatherproof. Many who have been at the Harvard Stadium testify to the fact that the stands "leak like a sieve." While it would be well if the space under the stands were available for track or training purposes, still the existing condition is evidence of one of the secrets of the present excellent structural condition of the Harvard plant. Natural expansion and contraction of the concrete is taken up in the small seat units and no attempt is made to keep the interstices between them cemented up.

The need of space for training quarters, for team rooms, and the like, at Ohio State, and the possibility of greater appeal to the friends of the University who have so generously supported it have led to the development of the scheme for using all the available space under the stands for some purpose or other, giving the greatest return for the investment in the structure.

Since ample stairways have been provided around the entire structure, the end towers are not needed for extensive vertical circulation. They have, therefore, been given over entirely to team rooms, showers and lockers. Economy and convenience of maintenance have made it advisable to keep the small rooms and those quarters requiring mechanical equipment, such as plumbing and heating, arranged in the tower units. The main power plant of the University is located only about a thousand feet from the southeast tower. The plans are arranged so that for football, for instance, the Varsity will use one tower and the Freshmen the other, and for intercollegiate contests the visiting team will use the Freshmen quarters. Entrances from these quarters to the field are by the low arches on the axis of the end section of seats at the towers.

The space under the seats, however, is made available for use by the roof slab covering over it and by the judicious arrangement of columns in it to allow as much free space as possible. The inside screen wall of the great circulating corridor around the entire Stadium is mostly of glass, in metal sash, such as are used for factory work. This, together with

vault lights in every third seating section, gives light into this inside space. The placing of all vertical circulation along this outside corridor frees the interior space from use for circulation except for aisles on the ground level leading in from every third arch. A series of heavy columns comes directly under those previously mentioned which support the upper deck; but between this row and the next row of columns, toward the center of the arena, a continuous space is provided, forty-four feet wide, which is unencumbered by supports of any kind. This space is undivided and is available for training purposes for all branches of athletics, as well as for exhibitions, carnivals, industrial and trade shows. Along one wing is provided a six-lap to the mile indoor running track for training purposes, so arranged that the coach or trainer can see every portion of it from a central point. While there is sufficient height for pole vaulting along the high side, yet the track authorities venture the opinion that the mental hazard of a concrete roof above will prevent the best work in that branch in the interior quarters.

HOW THE FUNDS WERE RAISED.

To the profession the line of thought which has produced the structure herein described is perhaps of at least passing interest. To the layman it will be of equal interest perhaps to know how the project was "put over." It may not be irrelevant, therefore, to make some mention of the plan by which the Ohio Stadium has been made possible.

As has been pointed out in these pages, the current financial support from the State for University purposes is so entirely absorbed in keeping up with the educational demands of the State along purely academic lines, that to expect any assistance from the legislature for a huge athletic plant has never been deemed possible. The influence of far-seeing legislators, however, has made it possible to use the land and to provide from time to time for certain parts of the larger scheme—the great recreational field and those features of it which come under regular campus development and maintenance.

Through the guidance and direction of the Athletic Board, therefore, it has fallen to the alumni and friends of the University to give this great thing to the Institution and to the State. In the fifty years of the University's existence, its alumni have not been generous toward it. In fact, taking for granted that the school is the child of the State, its alumni have never felt the need of giving to its support. But just as its alumni list is growing at the rate of a thousand a year, and these alumni are seeing on every hand the alumni of other institutions giving liberally to the support of privately endowed colleges, they have been called upon to participate in the erection on the campus of their Alma Mater one of the greatest athletic plants in the country.

The scheme has been developing in the Athletic Board for several years, and the Board of Trustees liberally authorized the University Architect to cooperate in the development of the scheme, which made it possible for all commercialism to be removed from the study of the project. The Athletic Board has been assisted by a general committee of alumni and prominent Ohio citizens.

The basis upon which financial support was accorded was upon the sale of seat options. Founders, those whose gifts amounted to \$5,000 or over, secured options on boxes for a period of ten years; Patrons, those contributing from \$1,000 to \$5,000, secured options on six seats; Donors, contributing from \$200 to \$1,000, secured options on four seats, and Subscribers, whose contributions ranged between \$100 and \$200, secured options

on two seats, in each case for a period of ten years.

That the actual study and designing of the Ohio Stadium has been the work of willing hands is evidenced by a glance at the personnel of the force which is responsible for its production. The men who have worked on the problem have been men who are not only interested in its success from an architectural and structural point of view, but who by close ties to the University itself have had a sentimental interest in it which has inspired them to their best efforts.

Professor Joseph N. Bradford, class of 1883, is head of the Department of Architecture and since 1912, as University Architect, has been in charge of all building construction and development on the campus. He has been assisted by Professor Howard Dwight Smith, '07; C. F. Mayer, Jr., '09, and H. F. Reichard, '13. The structural engineering on the Stadium has been in charge of William S. Hindman, formerly of the Civil Engineering faculty and Bridge Engineer of the State Highway Department. Professor Clyde T. Morris, class of '98, has been in consultation on concrete design.

As an alluring commercial venture the creation and use of the Ohio Stadium presents its least appeal. As a great ideal it has crystallized in and about itself a new and vigorous University enthusiasm, a strong community spirit and the loving pride of a great State.

That our youth may have strength, in spirit, in mind and in the body, to fulfill their broader service to humanity.



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.

BUILDING A NATION SOCIAL ASPECTS OF ENGLAND'S HOUSING PROGRAM

By

LAWRENCE VEILLER,
SECRETARY OF THE NATIONAL HOUSING ASSOCIATION

IT is a thrilling sight to see a nation that a few months ago was fighting for its life, with its back to the wall, resolutely setting itself about the colossal task of building all the houses that the country needs, to the number of 500,000, and at the staggering cost to the taxpayers of over one hundred million dollars' loss every year for a period of sixty years. That is what England is doing.

There has probably been no instance in history where a nation has undertaken housing operations on so vast a scale, and the advantages and disadvantages of the experience thus afforded have value for the other countries of the world.

America faces very much the same

situation, a shortage estimated at a million houses, the almost complete cessation of private building for a period of five years, a serious lack of the requisite materials and labor, with uncontrolled and constantly rising prices, involving rents beyond the purchasing power of the people.

The problem which has confronted the Government in England has been how to meet the housing shortage in the least time at as low a cost as possible, and with the least unsettlement of social, industrial, and economic conditions.

It is beyond the purpose of this article to enter upon a discussion of the merits of the much mooted question of government ownership and operation of public utilities, or of the desirability or unde-



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.
Variety obtained by simple means.

sirability of Government's entering the fields of commerce and industry and interfering with the natural laws of trade.

It should be stated, however, that the method adopted by England, of meeting her housing needs at the close of the war, does involve placing upon the taxpayers of Great Britain very heavy burdens. For, the taxpayers of that country are being called upon, to the extent of over one hundred million dollars a year, to make good the loss resulting from the building of houses at a time of excessive costs—houses which cannot be rented upon the basis of an economic rent.

No person can view this departure from fundamental economic law without serious misgivings. It is essentially unsound, and those in the seats of authority in England who are carrying out this policy so regard it. They justify it, however, as a post-war emergency measure.

The Government in England, wisely or unwisely, has felt it to be its paramount duty to meet its housing needs in the quickest possible time, irrespective of what it may cost the country, although

every effort is being made to keep down the cost of houses to the lowest possible basis.

What it has done has been to obtain from Parliament large powers with which to deal with this question. The Government has chosen deliberately not to build houses through a central federal organization, but to rely upon the ability of 1,800 different local authorities, scattered throughout England and Wales, to cope with their own local problems, the Central Government furnishing guidance, advice, direction and financial assistance.

The method of furnishing the funds needed has been to approve the issuance of bonds by the larger municipalities, bearing interest at six per cent., and, in the case of smaller communities, to make direct loans from the Central Government. In addition, the Central Government has guaranteed to the various communities to make good the annual loss that is bound to be incurred by building at a time of excessive cost.

In order to encourage private enterprise to reënter the housing field, from which it had almost entirely departed,

the Government is also offering subsidies to private builders of £260 for each cottage erected. As such cottages are costing at the present time on an average £1,000 each, it is apparent that the Government is offering a subsidy of practically one-fourth of the cost of the house, in order to encourage the private builder.

To what extent the offer of these subsidies will attract the private builder back into the field it is hard to say. The latest figures available show that up to September 3 plans had been passed for 18,639 houses to be built by private builders who are to receive the Government subsidy, representing a commitment by way of subsidy of £4,515,008. Already the sum of over £236,633 has been paid out in subsidy by the Central Government for 1,137 completed houses.

The disadvantages of the policy which the Government in England has adopted are chiefly of an economic nature.

Some observers believe that it will mean the permanent elimination from the housing field of the unsubsidized private builder. The natural consequence of this will be the commitment of the Gov-

ernment to the permanent policy of Government-built and Government-operated houses for all the people of the country.

It is also feared that the adoption of the present policy of renting houses below an economic rent will mean the establishment permanently of subsidized houses and the consequent pauperization of labor.

All of this naturally involves the placing of heavy financial burdens upon people already overburdened with high taxes. So far as can be observed these seem to be the chief disadvantages of England's present policy.

The advantages, however, resulting from England's undertaking at this time the task of providing all the houses needed by her people are very great.

In the first place, houses are actually being built to meet the very serious situation resulting from the housing shortage. While the number of houses actually completed at the present time is comparatively small, namely, something less than 3,000, the present indications are that the number produced will in a short time be very large. Up to August 11 83,014 houses had been included in



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.
Containing five rooms and bath. In 1911 each house cost £300, as against £1,125 today.

signed contracts, and building had actually commenced on 23,300 houses, of which at that time 2,303 had been completed. The Central Government had on September 18 received from the local authorities over 5,838 applications for the approval of house plans involving the erection of 257,184 houses, and of these 5,122 applications providing for 241,294 houses had been actually approved. Contracts for the erection of 144,615 houses had been approved. It is thus seen that practically one-fourth of all the houses needed are under way.

If there were no other results to be obtained from the Government's embarking on its present policy than the bare meeting of the housing shortage, that alone would seem to be worth while; for, not only is England getting production of houses in large quantities, but the kind and quality of the houses being built literally mark a new epoch in the development of the housing movement the world over.

To appreciate fully what the change means, one must realize the kind of housing that was produced by the operation of private enterprise in England prior to the War. While for many years the Government, through building bylaws (housing ordinances), did control to a large extent the essentials of good living from the point of view of sanitation, the securing of adequate light, ventilation, plumbing, drainage and so forth, it was not able to control the production of houses that were attractive to live in.

No intelligent person who has seen at first hand the dreary miles of monotonous rows of houses stretching in unending distances through the industrial districts of the Midlands, or for miles in the poorer quarters of London, can help admitting that no country could expect to produce from such dreary surroundings citizens of the highest type.

With the exception of the comparatively few houses that were being produced through the splendid enterprise of the Garden City, Garden Village, and Garden Suburb movements, not much was being produced prior to the War other than these unending miles of dreary

"brick boxes with a slate lid," so dreary as to make one almost prefer that other house, shorter and not so wide, but no more rigid in type, referred to in the old epitaph discovered in a wayside churchyard which runs:

"In memory of Rebecca Rogers, who died August 22, 1689, aged 44 years.

A house she hath it's made of such good fashion,

The tenant ne'er shall pay for reparation,
Nor will her landlord ever raise the rent,
Or turn her out of doors for non-payment.

From chimney money too, this cell is free,

Of such a house who would not tenant be?"

The Government's entrance into the field of housing has meant the end of this period.

It must be admitted, even by one who does not believe in the Government's undertaking enterprises of this kind, that the steps which have been taken in these Government-built houses are so far in advance of anything that has been done in the past, and the types of houses being produced are so good—well-designed and attractive in appearance, with pleasant surroundings, with adequate light and air, with variety of outline and of color and ample gardens; that, apart from the economic considerations involved, the results to England are bound to be productive of tremendous good.

Even though it may cost millions of dollars each year to the taxpayers, England, after all, will get something for the money and will ultimately, if the present Government policy is carried out, be freed from the blight of the slum.

From now on there will be produced no long, monotonous rows of dreary houses all alike. While houses will still continue to be built in rows or groups, there will not be more than eight houses in a group, and as a rule seldom more than six, and generally not more than four, and more often the houses will be built in pairs. Always they will, in whatever combination, have individuality and charm.



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.
 Neighborhood shops need not be an eyesore.

The type of house hereafter to be built in England for the housing of the workingman will be the cottage and not the tenement. England's experience with tenement houses in the larger cities, where they had been built chiefly by the public authorities to replace slums, had shown her conclusively a number of years ago that this type of house was not one suited to the genius of the British people nor adapted to English conditions. The best of the block tenements have been universally condemned for many years past, and the whole trend of public sentiment in England has been toward the development of the cottage type of dwelling.

It would not be inaccurate to say that so thoroughly convinced is the British public of the undesirability of building block dwellings or tenements in connection with this post-war building, that the question has not even been considered, in fact it was not even raised. Everyone has assumed, as a matter of course, that the only type of house that would be

built with Government funds would be the cottage.

The extraordinary success of the Garden Village, Garden Suburb and Garden City movements, developed to their highest degree in England during the past ten years, has impressed upon the British people the great advantage of having all classes of society, the poorest as well as the richest, live under conditions that are not only sanitary but attractive, with gardens both for flowers and vegetables—in other words, garden communities with all the amenities of civilization.

The houses that are being built are attractive in appearance and of good architectural style, well proportioned, and not encumbered with meaningless ornament, and rely for their design upon line, proportion, symmetry and fenestration.

This result has been achieved by the Government's calling into co-operation at an early date the persons in England who had given most attention through many years to the housing problem.

Among the more important elements

which enter into the new type of houses may be cited the adoption of a larger unit of frontage, namely, not less than 20 ft. Over 90 per cent. of all the houses being erected are houses with a wide frontage. In the past, in the commercial developments the usual frontage had been 15 or 16 ft.

Probably the most important improvement has been the elimination of the so-called back extension, which had become a rather serious evil in England, diminishing light and ventilation and producing an unattractive and inconvenient type of dwelling.

The new type of cottage being built with Government funds is thus a reversion to the earlier type of cottage development found in both the rural and urban districts of England, namely, a house but two rooms deep, securing its light and ventilation from the front and from a generous backyard at the rear, being without courts or air-shafts, and permitting that most important requirement of modern sanitary science—through circulation of air or cross-ventilation.

The type of house adopted is, as a rule, the two-story self-contained cottage type. In some cases cottages of one story and a story and a half are being built, but the predominant type is the two-story cottage. These are, as a rule, being built in groups of four, sometimes of six, often in pairs. Under the requirements of the Government, and in response to what has become practically a general sentiment throughout Great Britain, the number of houses to the acre is being strictly limited to 12 houses to the gross acre in urban communities and 8 houses to the gross acre in rural districts. In the few instances where it has been thought wise to depart from these standards in such crowded communities as London, organized labor has strongly resented this lowering of standards and is threatening to "down tools" unless the Government adheres more closely to the higher standards.

It is of considerable interest to note the changes that are taking place in the English type of cottage, bringing that type much closer to the American type.

Until recently the parlor has not been a usual feature of the English type of cottage construction; but in the new types that have been built by the Government a large number of houses with parlors are being provided, in response to the almost universal demand for such a room.

The upstairs bathroom is also beginning to be provided, although the English still cling strongly to the practice of keeping the watercloset fixture in a separate room downstairs; whereas in Scotland the practice corresponds with the American practice, and the bathroom is found invariably upstairs, and, as a rule, contains the watercloset fixture in the same compartment.

One respect in which the English type of cottage differs radically from the American type is in the absence of a cellar, and consequently of a central heating system. Except in the houses of the rich the cellar is practically unknown. It is possible, therefore, to produce houses at a very much lower cost than would be the case if cellars had to be provided. This, however, makes impossible any central heating system either by hot air, hot water, or steam, though there are some developments in which central station heating is being tried.

It is somewhat surprising to an American to find an open fireplace provided in every room. While it is true that these fireplaces are rather small and narrow from the American point of view, it does mean considerable addition to the cost of construction. The presence of the fireplaces does not mean, however, that fires are maintained in all the rooms in a workingman's cottage. There is not much cold weather in England: that is, cold weather as we know it in many parts of the United States, and fires are, as a rule, maintained only in the living room and scullery. Though fireplaces are provided in each bedroom, I am informed, by persons who know, that fires are maintained in these rooms only when a person is sick. One reason for the providing of the fireplaces is a requirement of the bylaws, based unquestionably on the



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.
Row houses that are not monotonous.

advantages of ventilation that are secured through the presence of such flues in each room. An interesting variant of this requirement is to be found in the smaller bedrooms where no fireplace is provided. Here, under the bylaws, in lieu of a fireplace it is required that there shall be an open grating in the wall of the room, leading directly to the outer air. It is very strange to look out through these gratings to the outdoor world, and one cannot help wondering what happens to them and to this means of ventilation when cold weather really comes, and whether they are not stuffed up by the tenants in order to keep the cold air out.

Of great interest to the architectural profession is the advice given to local authorities in the "Manual" issued by the Ministry of Health, dealing with the main points of design in cottages of this type. It is here pointed out that there should be adequate frontage given to the building to allow convenient planning, good lighting of all the parts, and the avoidance of back projections. It is

stated that each house should ordinarily include living room, scullery, larder, fuel store, watercloset, bath in separate compartment, and three bedrooms; and, it is added, most schemes should include a considerable proportion of houses having parlors, and also a certain number of houses having more than three bedrooms. In some cases it may be desirable to include a proportion of houses with only two bedrooms.

The number of bedrooms is one of the questions about which discussion rages in England at the present time. At the recent Inter-Allied Housing Congress held in London last June, at which practically all the nations of civilization were represented, there was a strenuous debate on this question, the British delegates wishing to bind the other nations to the acceptance of the principle that a house without at least three bedrooms was not fit accommodation for the ordinary workman's family. The resolution finally adopted, however, recognized the necessity of adjusting the type of houses to the



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.
The charm of curved streets.

different standards and different habits of different people and did not attempt to express in specific terms the actual number of bedrooms which might be required as a minimum, contenting itself with the declaration of principle, namely, that there should be sufficient bedrooms to provide proper accommodation and proper privacy for the different sexes.

How carefully the Government has considered the design of the houses may be noted by the importance that is given to the orientation of the house. In the plans considered and published and widely circulated by the Government and being generally followed in most of the houses that are being built, one will find different groups of plans very much the same in character, but one group marked "Houses with southerly aspect" and another one marked "Houses with northerly aspect."

In the "Manual," already referred to, the authorities point out that the best aspect for the living room is southeast, and add that it must never have a

northerly aspect except when sunlight can be admitted at the other end of the room. It is also pointed out that the living room should be arranged with as few doors as practicable, and that these should be so placed that they will not interfere with the comfort and convenience of those occupying the spaces about the windows and fire.

With regard to the parlor, it is stated that this should be planned so as to leave comfortable space around fire and window; that the best aspect is a westerly one, but that preference should, however, be given to the living room in this matter of aspect. When it comes to the scullery, attention is called to the fact that the scullery especially depends for convenience on arrangement as well as on size, and that when it is used as a place for cooking it should be provided with the necessary space for small table and cupboard. It is further pointed out that, while sufficient space should be given for convenient use, it is not desirable to

encourage the use of the scullery as a living room.

The larder, which takes the place of the American ice-box, it is stated, should be on the northerly side of the house, and it is added that where this is impracticable the window should be screened from the sun. Even so apparently unimportant a thing as the coal storage space has been considered by the Government, and it is suggested that the coal store should generally be so placed that coal may be delivered from the outside and "fetched for use" under cover. When it comes to the bedrooms, it is recommended that these should be placed as far as possible on the more sunny side of the house and that two at least of them should have fireplaces, and adequate ventilation should be provided for any not having fireplaces. In every bedroom there should be one window, of which the top is at least 6 feet 6 inches from the floor, and if sloping ceilings are adopted proper headroom must be provided for furniture.

In addition to these requirements, intended or designed to secure great comfort and convenience in the use of the buildings, consideration has not been lost of the necessity for economy, and it is pointed out that economy must be secured in every possible way. Among other means it is suggested that it may be obtained by adopting simple planning and designing, by placing those parts of the house requiring plumbing and drainage services as near as possible together, by grouping the flues into as few chimney stacks as possible, by adopting a reasonable height for the rooms, and by avoiding needless exterior works requiring periodical painting, such as "barge boards, fascias, and imitation timber." It should not, however, be secured by cutting down unduly the size of the rooms or by unsound methods of construction.

We have seen similar high standards adopted in other countries, and one values the educational purpose that they serve. But in England they do much more than this; for, practically all the houses that are being built at the present

time are conforming to these high standards.

The types of houses being actually built are practically ideal types designed to meet the real needs of the people occupying them, and are consistently designed and of attractive architectural appearance.

It is not too much to say that a new standard of taste in housing is being set, the influence of which will extend through countless generations. It will, unfortunately, take many years to overcome the false standards of taste set by the horrors of the early Victorian style of architecture.

But, with 500,000 houses built in England in conformity with these new and higher standards, it is safe to say that the next generation of English workers who will have had before them a high standard of type of house, during the formative period of their lives, will unconsciously demand the very highest standards in future years.

Not only are houses of the right type being built all over England, but such houses are being placed upon the land in accordance with the very best town-planning practice.

One of the reasons which led the Government to undertake the building of the houses needed by England was the determination to prevent in future the growth of slums and to secure to the great masses of the people of England right conditions of living—the conviction expressed by the slogan, now placarded on the walls of London, "England's destiny is linked with England's homes." There was a clear recognition on the part of the Government of the undesirability of reproducing in future the long, straight, monotonous streets lined on either side with dreary houses, all of one pattern, stretching in monotonous unending rows, about as attractive as miles of cattle sheds. And so it is not surprising to find the new houses being built under Government auspices representing the very best principles of modern town-planning practice.

Under the requirements of the new Housing and Town Planning Act of

1919, the obligation is imposed upon every local authority with a population of 20,000 or more to prepare by January 1, 1926, a complete scheme for the development of all the undeveloped land within its boundaries.

The consequences of this are so vast and are fraught with so much importance to the future welfare of England that it is at first a little hard to grasp their significance. What it means, however, is that in six years from now a rational well-ordered and well-developed plan will have been elaborated, for the future development of all the undeveloped land in towns of any size in England and Wales.

And these plans will be along modern scientific town-planning lines, with a proper consideration of all the advantages that are derived in the United States from the application of Zoning

Laws, from the due observance of the relation between through-traffic thoroughfares and minor residential streets; through the grouping of buildings in civic centres where that treatment is appropriate; through the adoption of gently curving streets, avoiding the unattractive rectangular gridiron plan which prevails in so many American cities; and more especially through preventing congestion of population by the definite limitation of the occupancy of the land, so that there shall not be more than twelve houses to the acre in urban communities and not more than eight houses to the acre in rural communities.

Summed up in a word, it means that the future England is to be made up of Garden Cities, Garden Villages and Garden Suburbs.

England is building more than houses. She is building a nation.



LONDON COUNTY COUNCIL COTTAGES AT HAMMERSMITH.

IS IT ADVISABLE TO REMODEL ~ SLUM TENEMENTS ? ~

By
ANDREW J. THOMAS

WITH COMMENT *by* ROBERT D. KOHN

I HAVE been requested to give my opinion on the advisability of remodeling slum tenements in the City of New York. After a very careful review of the situation as one of the judges for the Reconstruction Commission's recent competition* for the remodeling of slum districts, having examined the numerous plans submitted to the Commission, I have positively come to the conclusion that remodeling is not a practical solution. There are many reasons for this belief. Some reasons rest on facts which are so well known that it is not necessary to do more than to refer to them, while others need to be particularly emphasized. Furthermore, to have real practical value any discussion of the problem should take account of the crisis in housing existing at the present moment.

In the first place, I assume that most people know how miserably deficient are the old-law tenements in the necessities of light, air, sanitation, ventilation, plumbing and heating. Their construction is hardly better than their design, because their builders evaded the building laws as much as they dared and because their owners became discouraged at the carelessness of the tenants and have allowed the buildings to fall into a condition that is not far from actual decay. Twenty years ago the people of New York, by the passage of the Tenement House Act, definitely pronounced those old tenements as below standard. They are much further below standards of decent habitations now than they were twenty years ago, because since then

housing standards have advanced greatly. The adoption of the Tenement House Act was bitterly opposed by both investors and architects, as ruinous to real estate; but after the Act had been in operation a short while everyone saw how necessary and how absolutely desirable it was. Today exactly the same sort of situation has arisen. Because we can build a much higher standard of multiple family dwellings, offering larger and far more secure returns to the investor than the "new-law" tenements permitted by the Act of 1901, and because of changed economic conditions, such as increased cost of construction and improved living standards, it is again requisite to put tenement housing on a new basis.

In deciding whether it is profitable or desirable to try to salvage ruined and obsolete properties, there is first the question of design. The prize design in the remodeling competition can hardly be said to meet even low standards of light, heat and air, with its enclosed courts and with the buildings occupying 71½ per cent. of the lot area. Operation was not thought of when these buildings were originally designed, and it does not appear to have been considered in the remodeled plan. Any one familiar with tenement housing knows what this means. A group of buildings not designed for operation is a poor investment. It is too expensive to operate properly, and its owners usually end by giving up the attempt and allowing their property to deteriorate. Thus the million dollars, more or less, which it would cost to rehabilitate such a block, would probably all be swallowed up in depreciation after a few years, and the property would be structurally about as worthless as it was before the alteration.

To compare this prize plan with new

*Competition held under the auspices of the Joint Legislative Committee on Housing and the Reconstruction Committee of the State of New York for remodeling the block of old-law tenements bounded by Rutgers, Madison, Jefferson and Monroe Streets, Manhattan.

construction, I submit a plan of six apartment houses, designed to cover the block in question. It contains 384 apartments, with a total of 1,584 rooms, which a competent builder estimates would cost \$1,199,636 to build (50 cents a cubic foot), and yet occupies only 51 per cent. of the area of the block. In a large scale housing operation covering many blocks, however, certain economies, hitherto not considered a possibility, could be introduced which would materially reduce this figure and at the same time reduce the rent. The prize plan provides, on an area of 71½ per cent., 1,481 rooms in 353 apartments, and its estimated cost is \$985,000. The new plan thus offers 103 more rooms at a cost no greater than \$214,636 more than the cost of remodeling, and which probably could be reduced by some \$150,000 through salvaging the materials in the present structures. The following table shows the greater size of the rooms in the new plan:

Size of Rooms.	THOMAS—(OR NEW)—PLAN					Totals.
	Below 70 sq. ft.	71-85 sq. ft.	86-100 sq. ft.	101-120 sq. ft.	121-135 sq. ft.		Above 135 sq. ft.
Chambers .....	..	289	213	50	..	552
Living Rooms .....	..	..	..	82	302	384
Kitchens .....	..	126	258	..	..	384
Loggias .....	..	264	..	..	..	264
Totals	390	547	213	132	302	1,584
Percentages..	24.6	34.7	13.4	8.3	19.0	100
PRIZE PLAN NO. 10						
Bed Rooms.....	25	346	357	42	..	774
Living Rooms .....	..	..	38	85	147	357
Parlors	42	25	..	90	85	306
Kitchens .....	..	..	10	10	..	20
Dining Rooms .....	..	..	..	..	22	24
Totals	67	371	405	227	254	1,481
Percentages..	4.5	25.0	27.4	15.3	17.2	100

The new construction plan has almost twice as many rooms, of an area of more than 135 square feet, as the prize plan. It has no rooms below 70 square feet, whereas the prize plan has 67 rooms (4.5 per cent.), of an area ranging from only 52 to 67 square feet—less than the present legal minimum. These are bedrooms and parlors, which are also likely to be used for sleeping purposes, although totally unfit therefor. Two-thirds of the smallest rooms in the Thomas plan are the loggias, which have an exceptional

number of window openings, and the remainder are kitchens. The playground and garden space in the center of the block has an area of 15,850 square feet, almost three times that of the prize plan.

The merits of the comparison can be disclosed only by a study of the primary data upon which this table is based. The rooms in the new plan are uniformly larger in practically all cases. They all open on the outer air, and there is a large number of corner rooms. Whereas all but 46 of the 774 bedrooms in the Prize Plan No. 10 are 100 square feet or less, the smallest chambers in the new plan are 9 feet by 11 feet, an area of 99 square feet. The smallest living rooms are 11 feet by 13 feet, an area of 132 square feet. Furthermore, the rooms in the prize plan are long and narrow. This is especially true of the bedrooms, a very large proportion of which is less than 8 feet wide. The difference is merely that the new plan is modern, designed to meet present-day needs and habits, while the prize plan shows the best that can be done with the relics of the middle ages of tenement house architecture.

Comparing the rental income of the two plans, it is not so easy to determine their relative value. The Committee figured the monthly rental of the prize plan on a basis of \$10 per room, although nearly twice as much is being received for completed apartments which house the same class of people. These are the rental figures of the City and Suburban Homes Co. in their recently completed group, and the reasons therefore should be understood. These are that, following the recent great improvement in financing, a carefully designed financial structure has been built to safeguard the property. In this financial structure the existing abnormal costs of construction are paid for by increasing the rentals for the next few years—which is sound business. This and the fact that the operation of the City and Suburban Homes Co. was not as large in scale as I advocate explain why these rentals are as high as they are. At \$10 per room the monthly rental of the Thomas plan would be \$15,849, or \$989 more per month than could be obtained from the reconstructed

dwellings. The introduction of stores into the group complicates the problem. In the rental figures for the prize plan some forty or more stores, a "movie" and a clubhouse were included, thus sacrificing housing space. This fault could be avoided in the new plan by having only eight stores, although in the plan as shown no stores are included. These could be located in good positions on the corners, and would, as every real estate man knows, produce a higher proportionate rental than a large number of competing stores in old tenement properties. Thus by introducing stores into the Thomas plan its added cost would be largely paid for by the income derived from these sources.

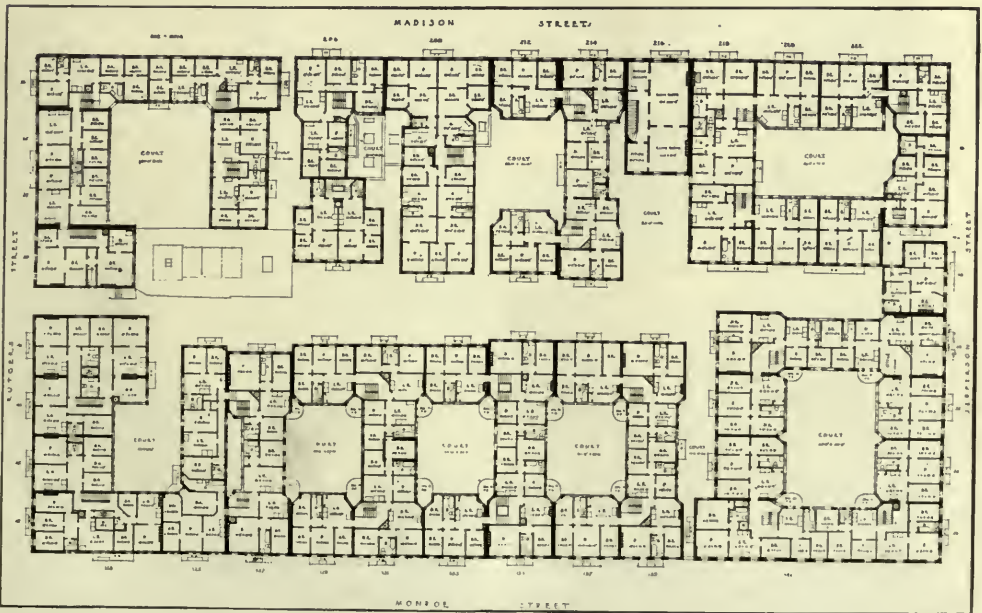
All this comparison of rental, it must be remembered, does not take into account the larger size of the rooms of the Thomas plan, their superior attractiveness, nor the desirability of the rear rooms opening on the garden. In fact, I have said nothing of the infinitely greater architectural value of a newly constructed block with its yard and recreation space.

In a housing development on a large

scale—and after all, the only way possible to get good housing—care should be taken in the preparation of a financial scheme, so that the buildings may, at the expiration of a period of years, not be in the same predicament as our present slum districts are in; when they have served their purpose they should be in a position to be scrapped without loss to the investors.

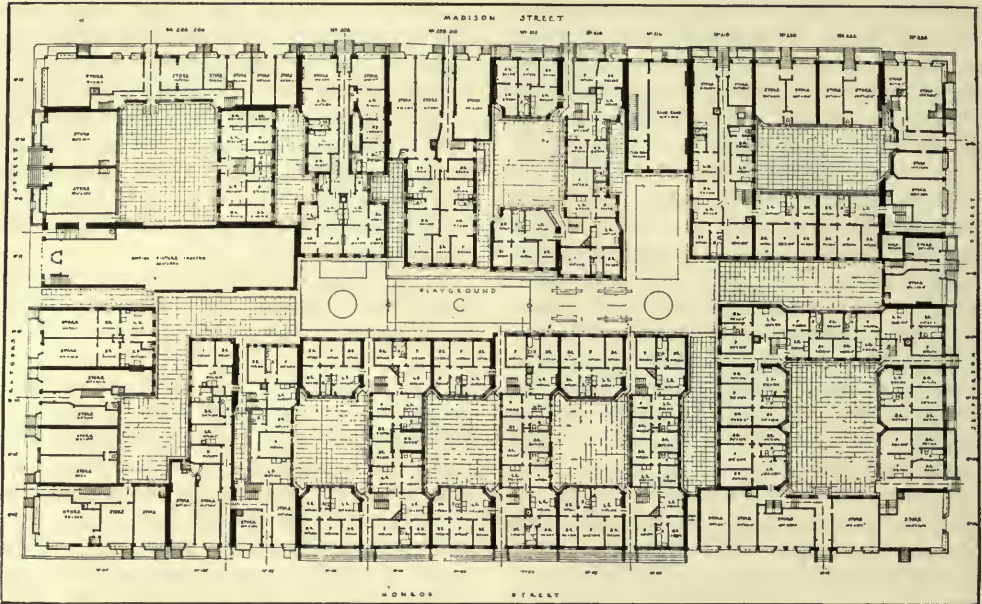
In working out the financial basis for my plan, I present the following statement, prepared by Mr. T. David Zukerman:

"If costs are to be kept down the financial plan proposed must be practicable and safe. The standards that may safely be set are those that will permit of recognition by the state authorities as legal investments for savings banks, insurance companies and trust funds. This means that there must always be a safe margin between the actual market value of the property and the securities outstanding. Provision must be made for the possibility that building costs may decrease in the near future, and may result in the competition of housing facilities



CHARACTERISTIC FLOOR PLAN.

Winning design of Sibley & Fetherston in competition for the remodeling of a New York City tenement block, held under the auspices of the Joint Legislative Committee on Housing and the Reconstruction Committee of the State of New York.



GROUND FLOOR PLAN.

Winning design of Sibley & Fetherston in competition for the remodeling of a New York City tenement block, held under the auspices of the Joint Legislative Committee on Housing and the Reconstruction Committee of the State of New York.

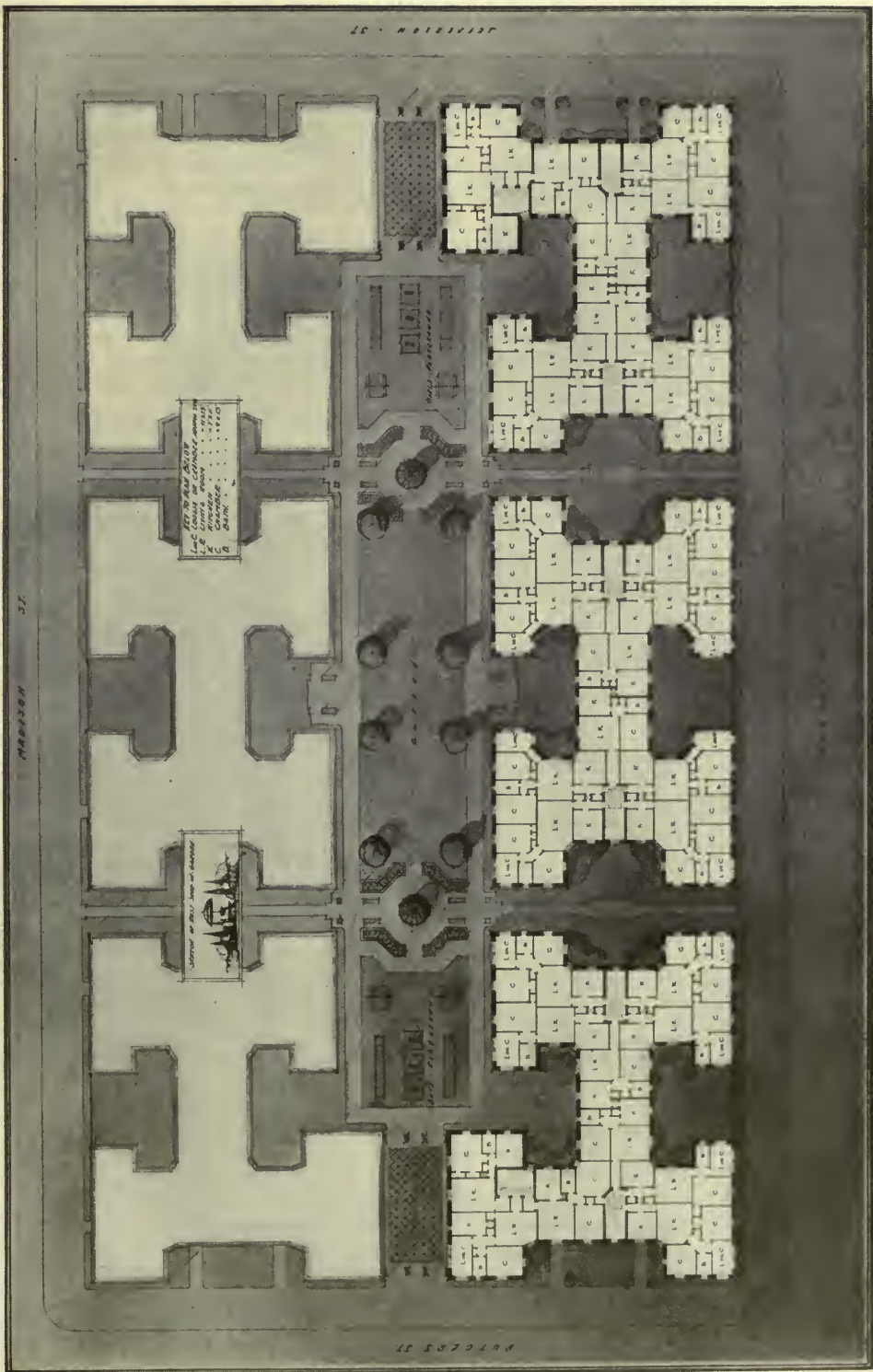
constructed more cheaply than at present, and thought must be given to the question of obsolescence. The financial plan must aim to obviate the retention of depreciated structures after their period of real usefulness is over. It is this condition which creates slums.

"Hence it is proposed that the period of amortization shall be thirty-five years. Within that period every dollar invested, whether on mortgage or otherwise, must be paid off from rentals and all securities representing such investment destroyed. As a further safeguard, especially during the period of reconstruction, at least 30 per cent. of the total should be paid off during the first seven years and 50 per cent. during the first fourteen years. Then, during the next seven years 17½ per cent. should be paid off, and the last 32½ per cent. during the remaining fourteen years.

"The result will naturally be that the rentals, which must be fixed to permit of such amortization, will decrease as the buildings age, and as the process of amortization continues. The payments

themselves can be arranged serially in either annual or semi-annual instalments in such fashion as to stabilize the rentals within the seven year periods. The decrease in expenses will be partly offset by the increase in the cost of repairs and replacements as the structures become older, because a depreciation fund will not be necessary. The depreciation requirements will be fully taken care of by the amortization scheme.

"The money required to finance each group of dwellings should be obtained from the sale of bonds. There might be two or three kinds. For example, assume that an average of \$4,000 per apartment is required to finance the project; the life insurance companies might be called upon to finance 50 per cent. at 6 per cent. interest, or \$2,000. The only difference would be that, instead of a mortgage, the company would have its lien in the form of first mortgage bonds, the maturities of which extend over a period of fourteen years. The prospective tenant would subscribe for the balance, but would probably be able to pay



PLAN FOR REBUILDING OF BLOCK BOUNDED BY
 MONROE, MADISON, JEFFERSON AND RUTGERS STREETS,
 NEW YORK CITY. SUGGESTED BY ANDREW J. THOMAS.

for his subscription in part. He might be able to pay \$500 in cash and the balance in instalments of \$100 annually for fifteen years. It would thus be necessary to finance the unpaid instalments. These



AN OLD-LAW TENEMENT PLAYGROUND.

could be sold to the general public as sound investments. As they matured and were taken up, they would be transferred to the tenant. Since he would receive interest on his \$500 investment, it would be necessary for him to pay only \$70 additional for the first \$100 instalment, and \$6 less for each additional instalment. The total that he would actually be called upon to pay during the fifteen years would be only \$400 in addition to his initial \$500. In return he would have \$2,000 worth of bonds paying him 6 per cent. interest. The interest would be sufficient to pay from three to four months' rental on the average apartment; besides, the principal itself must be returned to him in the end.

"Summarized, it means that the first mortgage will be retired from rentals within fourteen years. During practically the same period the second mortgage will be transferred from outsiders to the tenants. The margin between the value of the property and the amount of

securities outstanding in the hands of others than tenants increases constantly. Nevertheless, the investments of the tenants are safeguarded as carefully.

"If desired, an insurance feature can be added to the scheme at slight additional cost, to cover unpaid instalments. Then, if the breadwinner dies, the rental must still be paid, but it will be unnecessary to make any further payments on the investment which will, nevertheless, increase just as though they were continued. In case the tenant wishes to move away, he is not tied to the apartment, because he has not bought it. He can dispose of his holdings, either by selling out to his successor or to the com-



OLD-LAW TENEMENT COURT IN REAR OF 41 RUTGERS STREET, MANHATTAN.

pany which has a fund created for the purpose. Or he can retain his holdings as an investment."

All these factors treated above are important in determining the superior advantages of new construction; but the chief consideration, which beyond all others settles the matter, is the question of the valuation of the properties. This

Monroe Street block is assessed for \$838,000. We should be obliged to add this figure to the cost of building in each case. Thus the cost of operation is:

	Assessed Value	Building	Total
Thomas Plan	\$838,000	\$1,199,636	\$2,037,636
Prize Plan	838,000	985,000	1,823,000
Difference			\$214,636

that it will be high and about the same for each. Even here the comparison is again in favor of the Thomas plan, because it gives better housing and better management. Besides, in the prize plan the rents should be very much increased in the first few years of occupancy, in order to safeguard the rapid depreciation which is almost inevitable in that property.



INTERIOR COURT IN BLOCK DEVELOPMENT OF THE CITY & SUBURBAN HOMES CO., ON EAST SIXTY-FOURTH STREET, MANHATTAN.

This difference is not so great on such a large scale operation, and, as noted above, would be largely offset by salvaging materials in the old buildings and by introducing eight stores. It is not necessary to compute the rental on such a high cost, but the reader will realize

But if new construction is undertaken, the cost of the excessive valuation of the Monroe block need not be incurred. If my plan is constructed on \$3,500 lots the cost of land will be 29 1-5 lots times \$3,500, or \$102,200. Then the comparison is:

	Assessed Value	Building	Total
Prize Plan	\$838,000	\$985,000	\$1,823,000
Thomas Plan ...	Land Value 102,200	1,193,636	1,301,836
Difference			\$521,164

This shows an immense saving in favor of a new plan. This sum of over a half million dollars may be said to represent the real financial risk which would be incurred in undertaking to remodel the old tenements.

Based on this cost of locating apartments on cheap land, the average rent per room per month would begin at \$12 and would descend to \$7.50 after twenty-one years. Spread evenly over thirty-five years the rent would be \$10. This is computed on a construction cost of 50 cents a cubic foot, which could be reduced in large scale operation covering several blocks. Thus the opportunity to choose cheaper land is the great argument in favor of economy of new construction. It is the competition of this new construction on cheap land which the rehabilitation undertaking would be likely to meet.

I wish, however, to emphasize the fact that housing must not be considered in the light of brick and mortar, but must be treated from all its various standpoints, and above all as a human problem. In the block taken for the competition, the areas left open for light and ventilation were filthy and congested with rubbish. We cannot, in our planning, throw too many safeguards around the prevention of repeating these conditions in years to come.

I believe I have said enough to show that considerations of finance, in investment, rental and management, would make is too great a risk to put nearly one million dollars into such ruins as the old-law tenements. I have taken the prize design as the basis of comparison, because I do not believe that the design of Mr. Ecob offers a real solution of the problem.

But in conclusion, I wish to point out that all this discussion of the possibilities of rehabilitating city housing has little practical value unless we consider what agency is to accomplish it.

I have said, at the beginning of this paper, that the whole project should be considered in the light of the unusual conditions in housing which are causing so much public discussion. If it is true that we are facing a crisis, with the need of averting popular disturbances arising from the intolerable conditions, then the only way out of the situation is for the most powerful citizens to effect a combination of the interests of the city, all working together disinterestedly on a large scale, to place the housing industry on the basis necessary to meet modern needs. The most prominent financial leaders should lend their great ability to insure that the undertaking is financed and managed on the soundest business principles. This requires also the full co-operation of labor, working in the same spirit, or the right kind of housing is not possible. Housing is, when all is said, labor's own particular problem, from which labor is the greatest sufferer. With the help of these citizens, working in a limited dividend corporation, its capital drawn from the surplus of the investors of the city—the very people whose welfare is at stake and who profit by the enterprise—then housing may be put on the proper basis. Some such sacrifices as these, like those made in the war undertakings, are needed if we are to prevent the adoption of solutions which threaten the most unfortunate consequences. Municipal housing will be something more than an emergency measure. It is more likely that it will prove the entering wedge for policies which will be extended to every other field of effort.

This, and this only, will be the cure for the slums of New York.

COMMENT ON MR. THOMAS'S PAPER

BY ROBERT D. KOHN

I am always interested in whatever Mr. Thomas does. I am firmly convinced that he has done, and is doing, the best planned, reasonable cost, multiple dwellings in the United States. I think he has more original ideas on the subject of tenement houses than any other architect I know. And what is more to the point he has not stopped with his first solution of the problem; he keeps developing and does better and better work each year.

Having thus expressed my opinion on the subject of Mr. Thomas's architectural work, I may perhaps be permitted to say that I am not so ardent an admirer of his logic. I am sure that he thinks perfectly straight when he is designing tenement houses, but I am equally sure he thinks less logically when he tries to show, as he does in his article, that it is unwise to consider a scheme for improving the housing of New York by altering the conditions of existing sub-standard tenement houses.

In order to simplify my statement, I will acknowledge at once the obvious fact that New York would be infinitely better off if by some wonderful stroke of good fortune we could get rid of 50,000 old New York tenement houses, similar to those on the Monroe Street block in question and replace them by admirable housing of the type that Mr. Thomas produces. My first point is that this is unlikely to be within the bounds of possibility in my life time. If such things were possible, then I should much prefer to secure a more admirable transformation whereby industry would be so decentralized as to make it unnecessary to house people at the rate of 500 human beings per acre. Mr. Thomas seems to ignore the point that an effort was to be made to see whether anything could be done with the old houses now existing and which never are torn down except to make room for factories and other non-housing developments. To the question, "Do the results of the competition show that anything worth while can be done

with the existing houses?" Mr. Thomas answers, tear them down and put up new houses; the rooms will be infinitely better and the cost will not be very much greater than to alter the old ones.

My reply to Mr. Thomas's argument is that they are not going to be torn down, particularly at a time like this when there is such a frightful shortage of housing in New York. If money becomes available for new housing builders would certainly not tear down existing houses and build new ones in the lower part of the City of New York, but would naturally go to a location where land is cheaper and in healthier environment. Since these miserable houses are not to be torn down, must we leave them standing there as rotten as they are to be occupied as they have been for years by people who cannot pay the price for new and better housing?

What I claim the competition has fairly shown is that there are a number of interesting ways in which existing houses of the "dumb-bell" and other bad types can be improved. I think the competition has shown that, even if an entire block cannot be remodeled at one time as a profitable venture, groups of three or six houses adjoining each other may be changed so as very materially to improve the living conditions. I think the competition and resultant estimates of income have shown that even with a modest increase in rent the resultant income from the improved tenements will probably return 4 or 5 per cent. on the increased investment. I realize that this return is insignificant at the rates that can be had for capital today in some other business. I believe, however, that some owners and others may be induced to improve these existing buildings and do away with some part of the horror of dark rooms, provided a modest return can be earned on the additional investment.

Finally, I answer Mr. Thomas's statement of cost and return on investment from new buildings as against the im-

provement of the old, by saying that Mr. Thomas cannot, at present prices, produce his buildings to rent in New York for less than \$13 or \$14 per room per month (those he has just completed are renting at \$17 to \$20 per room per month). The average rental now received for rooms in the Monroe Street block is something like \$5 per month. The estimate of income from the improved block submitted to the Jury of the Reconstruction Commission was based on a rental of something over \$9 per room per month after

the improvements had been made. Since we cannot with one wave of a magic wand do away with the whole economic structure of the world, will it not be necessary for some time to come to provide less good, less high-priced housing than that furnished in the new model dwellings which will have to rent for three times the price of the old tenement apartments in lower New York? Is it not worth trying to convert some of those old houses into something a little better and at least bearable?



REAR YARDS OF BLOCK DEVELOPMENT AT 511 EAST SEVENTY-EIGHTH STREET, MANHATTAN.

RECENT DEVELOPMENTS IN HOUSING FINANCE



By



JOHN TAYLOR BOYD, JR.

~ PART I ~

SINCE the war an urgent need has arisen for improved methods of financing housing. Owing to the great increase in cost of building construction about twice the amount of capital is now needed in order to put through a housing operation. In the face of this increased requirement, there is less capital for building than before the war. Investors have withdrawn capital from real estate, because they fear the risk of building under the uncertain conditions of the day, and because they can obtain a higher return on well-secured stocks and bonds.

This money-famine has occurred in a time of exceptional housing shortage—a hunger for homes all over the country. The lack of shelter has so threatened the prosperity of communities that, in many cities and towns, the principal business interests have felt called upon to intervene. Hence it is that we see the unusual spectacle of boards of trade and chambers of commerce organizing housing finance corporations in order to stimulate the building of houses in their respective communities. Such a movement is surely welcome, because through it housing finance should be placed on a sounder basis. For the motives, as well as the financial ability of these financing corporations, are high. They demand a fair return on the capital subscribed, which is just; but their chief purpose is to advance the interest of the community, and consequently the interest of the individual home owner. To this end they enforce the highest standards of design and construction in houses; they see to it that the number of new houses built keeps within needs of the city's growth; and they aim to sell the houses—of a type within the wage-earners' means—on the fairest and most reasonable terms.

Here surely—in this triple purpose of raising the standards, of stabilizing the local housing industry, and, most important, of giving the home buyer every possible advantage—is a new departure in housing finance. One need only recall the older financial practices in order to appreciate the contrast. Without reviewing them at length, it may be said that, even in the better class of real estate schemes, the seller did no more for the buyer than the necessities of competition required him to do. He hardly recognized even that principle of modern salesmanship which bids the seller cultivate the needs of his "prospects." A fair product, a fair price—could one ask more? This is the spirit of older selling plans. And as for the less responsible class of housing promoters, the less said of them the better.

Only the building and loan associations seemed to have grasped fully the housing needs and wants of the community. In fact, their admirable system of cooperative housing was developed to fill just this gap that was left by the crude, unscientific finance plans of speculators, whose operation bore so hardly upon the wage earners. To them the building and loan association offered a protection.

While the new housing finance corporations did not develop from the building and loan system, undoubtedly they profited by its example, because they follow many of its principles. And they have the further merits of enlisting some of the leading business ability and the strongest financial resources of the community in the service of housing, and they are able to tap new sources of capital.

Such in brief is the activity of these new developments in housing finance. It

seems evident that they bring a new conception into real estate finance. So significant it is that one should understand its essential character if one is to appreciate all the elements of the technical details of finance of these housing companies. This means, in short, that one should grasp the fundamental human relationships which are at the basis of housing finance. The whole point of housing finance is the human contractual relations which determine the deed of sale. This seems obvious enough, yet it is precisely the weakest point of much of the older housing finance practice. That is true not only in the ways noted above, in the actual plans, but it is also true of most writings on finance. Too often writers become so lost in the intricate technical details of the mechanics of finance—of loans, mortgages, payments—that they overlook the fundamental human factor. Thus the mechanical details come to be thought of as the end, instead of the means.

Accordingly, the first object of housing finance is to picture the case of the home buyer, and the best plan of finance is the one which best satisfies his needs.

The key to the human factor in housing finance lies, I think, in the fact that in the United States the home owner is disappearing. He is becoming a renter. Why did 52.2 per cent. of Americans live in rented homes in 1890, 53.9 per cent. in 1900, and 54.2 per cent. in 1910, with now, as estimated, nearly 60 per cent. of our people living in rented homes? These are telling figures. They prove that increasing numbers of our people are finding home ownership too burdensome to attempt. It is a situation detrimental to both the individual and to society. Essentially, tenantry for the bulk of the populace is not an American ideal. It bids us inquire into the causes, and particularly prompts us to determine how far housing finance customs and practice are responsible for this evil condition of the growing habit of tenantry.

One may safely assume that the normal American appreciates the value of a settled, permanent home in a good neigh-

borhood. The recent popular "home-owning" movement established this truth beyond a doubt—if any proof were needed. Why, then, do people prefer to rent their homes instead of owning them? Here again is an important fact. The reasons for renting should be known in framing any financial plan. The issue of renting vs. home owning is the basis of housing finance.

We must understand the renter's attitude of mind, and, in dealing with it, we should avoid the common error of blindly condemning it without seeking to know its causes. But so convinced of the virtues of home owning are most people that they cannot change their attitude and view the situation through the renter's eye. This is necessary. The best of these new plans of the housing companies show a real desire to meet the renter's objections to owning a home. True, this purpose they do not avow directly, for they are mostly straightforward, matter-of-fact statements of sale plans. They claim only to be meeting a local need in the best way they can. But, whatever be their object, a survey of scores of plans shows that it is just this feature which distinguishes them above older methods. This difference is far more fundamental than methods of handling details, such as mortgages for instance.

For the custom of renting, it must be admitted, has firm root in the conditions of modern society. The truth of the matter is simply that the individual feels himself so insecure, so helpless, in the face of the changes and the complexity of business life, that he fears to buy a home which he may not be able to dispose of at short notice without heavy loss. In other words, a man measures the problem of home ownership by the chances of changing—or of losing—his job. He knows that the chance is always present, and he hesitates to buy a house. He wishes to be free to move. This is the case with all classes of citizens, whether wage earners or salaried employees. Thus renting has a deep hold on the individual, because it rests on the modern desire for mobility in society.

What are the reasons which lead men

to change their habitation? They are various, as might be expected of deeplying human emotions. Some are good, and a few are bad. The more they are thoroughly understood, the easier we may determine which of them can be allowed for, and to what extent, in financing.

The more worthy motives which are at the root of mobility of employment are easily stated. Often a man may lose his job through his employer's fault. The business or factory in which he works may close down, or reduce its force; or change its character, so that it no longer needs his type of services; or it may fail altogether. Also, certain kinds of employment are by nature haphazard, seasonal, hazardous, or itinerant. A man may better himself by changing his job. Then there is always the chance of transfer elsewhere, as a promotion, or the opportunity for better employment in another district. This motive may be strongest with the ablest men who desire to preserve their freedom of choice so as not to lose opportunity when it comes to them. Here, surely, are a set of motives at the bottom of mobility of labor, which are to be judged worthy as long as American enterprise shall be thought a virtue.

Added to these economic reasons which threaten permanent residence, there is a list of personal and family ones. I mean those simple tragedies and disabilities of life which create such havoc in a family. Illness, accident, old age, dependency, death, are some of these. The physician may pronounce the climate unfit for certain members of the family. Again, the family may move to better its position, particularly in order to give better education or better opportunity of employment to children who are coming of age.

Among motives accounted less desirable for changing residence, there is that complex set of factors called "labor turnover." It is not necessary to enter upon this subject at length, except to point out certain of its bearings upon housing.

Even labor turnover is not altogether an evil. In the first place, industrial experts agree that labor turnover is not entirely a matter of restlessness nor of ir-

responsibility. They recognize that the very nature of some employments encourages it. Certain industries, like seasonal industries, develop a class of migratory workers. To young, unmarried workers, a change of employment may be a stimulus—the nearest approach to an education, "seeing the world." For a man who has taken a job, which he finds does not do him justice, it is better to shift than to remain where he is, a round peg in a square hole.

It is not necessary to pursue the motives at the basis of the mobility of employment further. Enough has been said to show how complex are the causes which develop the practice of renting. It is clear that some are stronger than others; that they operate differently in different localities, in different industries, and among different classes and individuals. But no matter what are the conditions of a given problem, one is always dealing with a powerful impulse, perhaps the most powerful human impulse there is—the instinct for self-preservation. Therefore, it is best to give the fullest possible play to the renting instinct in any financial plan. If this is not done, people will rent instead of buying.

In framing specific financial plans, it may not be a wise policy to assume that, in certain localities where labor is apparently contented and conditions seem settled, the habit of renting can be ignored. The conditions may change. If they do change, an inflexible finance scheme which does not allow for mobility of labor may turn out to have aided in developing the renting habit. Correspondence with a number of these finance corporations disclosed this danger. In answer to a question, as to how far they had allowed for mobility of labor in their plans, a few replied that this was not necessary, because theirs was a favored community of contented people who had no desire to go elsewhere, and who were only too eager to buy a home. Despite such optimism, it may well turn out, in the course of years, that these particular enterprises were faulty. They risk somewhat their investment in ignoring the renting instinct because of temporary

conditions favoring permanent residence, which may change in course of time.

Several conclusions may be drawn in this complex problem of the relationship of mobility of labor to the financing of housing. In the first place, it is safe to assume that most of the motives described will be likely to operate, and should be allowed for in the plan. On the other hand, in those peculiar cases where one is dealing with industries where seasonal or itinerant labor is the rule, the best financial plan can hardly prevent renting. Another fact is that extremes of conditions exist. One is the case of small towns where there are only one or two industries. Here the workers will not be willing to place themselves at the mercy—as they conceive it—of a single employer. There is much to be said for this attitude, because in the past employers have been known to take unfair advantage in making wage arrangements when they knew that their employees were tied to a home. There was consequently not that equality of situation which legal opinion holds to be the essence of an equitable contract. At the other extreme are the big labor markets, like Philadelphia or Detroit or Newark, where the workers have little fear of owning homes, since they have such a wide choice of employment among the many factories of the district. However, it must be remembered that the motives, described as family and personal, will still be present in those cases. So, there seems to be no escape from the conclusion that, no matter what the specific situation, the best policy of finance will take the fullest account of the factor of mobility of labor. It is an impulse among individuals which is deeply rooted in the social conditions of the times. Nor can we claim it to be nothing more than momentary unrest due to the war. It is more likely to increase than to decrease, and the statistics quoted above prove that the habit of tenantry has been growing steadily in America for thirty years.

When we come to take account of mobility of labor in a finance plan, one feature is essential. If possible, to satisfy the motive of mobility of labor, flexi-

bility of ownership should be offered. The plan should contain every provision that could aid the owner to dispose of his holding at a minimum loss, if circumstances compel him to move. Right here is the chief point of superiority of these new finance corporations over older methods. They are able to provide a flexible ownership. Working as they do on such a huge scale, the failure of a few individuals to hold on to their property does not embarrass them; and, in addition, their control of the housing industry of the district permits them to discountenance real estate "booms" and thus prevent a surplus of houses. They keep the supply of houses within the demand. Hence they find no trouble in aiding the individual to transfer his holdings to another with little or no loss.

It is easy to see that the older practices of finance, particularly those of speculators, cannot offer the same accommodation to the buyer. A speculator has no control over the supply of houses, and his supply of capital is limited. Consequently he could not accept the risk of offering to take back houses from his buyers. The operation would be likely to cause him or them heavy loss. With this fact apparent, the great weakness of older speculative methods is revealed. Their very nature hinders them from meeting the modern need of mobility of residence. They do not fit conditions and, since they do not, it is pertinent to enquire: Are they not largely responsible for the rapid growth of tenantry and landlordism in the United States?

With the essential need of housing finance thus stated, a description of these new finance corporations and their methods is in order.

As noted above, the movement to form such organizations spread all over the country after the war, principally in the year 1919. They are now found in cities and towns all over the United States, but particularly in the industrial section in the eastern and middle western sections of the country. Just how many of them there are, it is difficult to say. They are still being formed; while of those already organized some are marking time until

conditions in the building industry become more favorable than at present. But it seems reasonable to assert that the number of these board-of-trade sponsored corporations is between forty and fifty at least. They are of all sizes from the \$2,000,000 corporation of St. Louis to the \$200,000 company of Rome, N. Y.

The most striking fact about the organization of these concerns is a general resemblance of type combined with a great variety in details. The variety in details is clearly due to differences in local conditions. They all seem to be aiming at one ideal form, and some of the best of them contain nearly all the best features of the others. For these reasons they resist attempts to classify them, such as is made in the admirable report of the Pennsylvania State Chamber of Commerce. This reports sets forth a number

of plans; but a careful listing of the differences of these plans makes the classification seem arbitrary, and it has the effect besides of making the common mistake in treating finance, as remarked above—that of emphasizing technical details at the expense of the underlying human essentials. So, because of the difficulty of classification, I have thought it better to describe in full the characteristics of these companies, and the principles which they put into operation, with consequent reference to the plans of many companies, in order to illustrate practical points. Particularly is it necessary to show how local conditions govern the working of these principles, emphasizing some in certain cases more than others. How these companies operate will be shown in detail in the next paper.





PORCH — RIVERDALE COUNTRY CLUB,
RIVERDALE-ON-HUDSON, NEW YORK
CITY. DWIGHT JAMES BAUM, ARCHITECT.

RIVERDALE COUNTRY CLUB

RIVERDALE-ON-HUDSON
~ NEW YORK CITY ~

DWIGHT JAMES BAUM, ARCHITECT



By MICHAEL A. MIKKELSEN

RIVERDALE-ON-HUDSON is a residence neighborhood in the north-western part of New York City. It lies athwart a narrow stretch of land flanked on the west by the Hudson River and on the east by Van Cortlandt Park. The land is well wooded, rolling and hilly, with an average elevation of 200 feet. The neighborhood is laid out with winding streets and rather large building plots, and is suburban in character. The preservation of its suburban aspect is assured partly by real estate covenants, partly by isolation from typical city developments, except on the north and south. Convenient of access, with wonderful views of the Hudson and the Palisades, and with an extensive public reservation of woodland and meadow adjacent, the neighborhood has attracted a population that is fairly homogeneous and, therefore, capable of sharing neighborhood interests. The population consists of about seventy families, some of which are prominent in the social and business life of the city, and all of which are presumably in more or less comfortable circumstances.

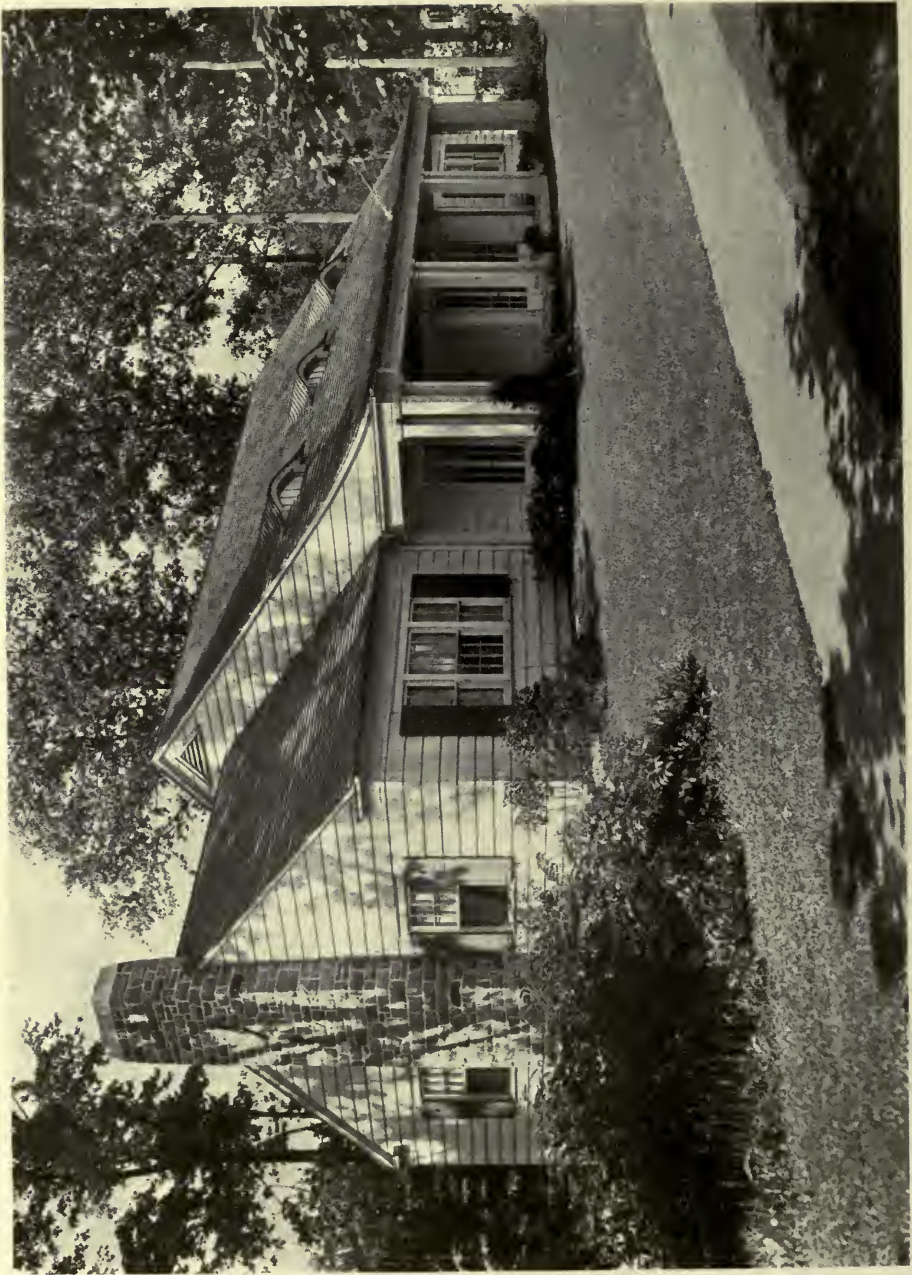
About the time the United States entered the war the people of the neighborhood were brought together through their common interest in Red Cross work and in various patriotic activities; and the need for a meeting place arose. It was decided to build a club house, and the Riverdale Country Club was formed, among the members being Cleveland H. Dodge, George W. Perkins, George B. Cortelyou, Arthur I. Keller and Charles E. Chambers. The building, in addition to providing for recreation, was to serve as a com-

munity centre, where something of the spirit and functions of the early New England town meeting might be revived. Since the war its main room has been used impartially for local dances, political gatherings, and the weekly Sunday evening meetings of the Riverdale Forum.

The architect of the building was Dwight James Baum, a charter member of the club. When it was constructed in 1917 non-essential expenditures were under the ban of public opinion. With a view to economy, Mr. Baum designed the furnishings as well as the building, using inexpensive materials and relying for artistic effect mainly upon proportion, line, color and texture. The cost of the club house, including furnishings and equipment, fell within \$25,000.

The design is an unobtrusive version of the Colonial, in keeping with the suburban residential atmosphere of the neighborhood. The site falls abruptly toward the rear, so that the basement floor is on a level with the tennis courts. The grounds are not extensive, Van Cortlandt Park with its golf links being nearby, and consist mainly of two double tennis courts, built over what was formerly a swamp. The clay of the swamp was taken out and replaced by broken stone and clay, making fast courts with good drainage.

The principal room is the "great hall" on the first floor. It is about thirty by sixty feet, with an alcove at one end twenty feet square. This serves variously as a sitting room or "lounge," as a speaker's platform and as a stage; and has a fireplace which burns six-foot logs. On one side of the alcove is a store room



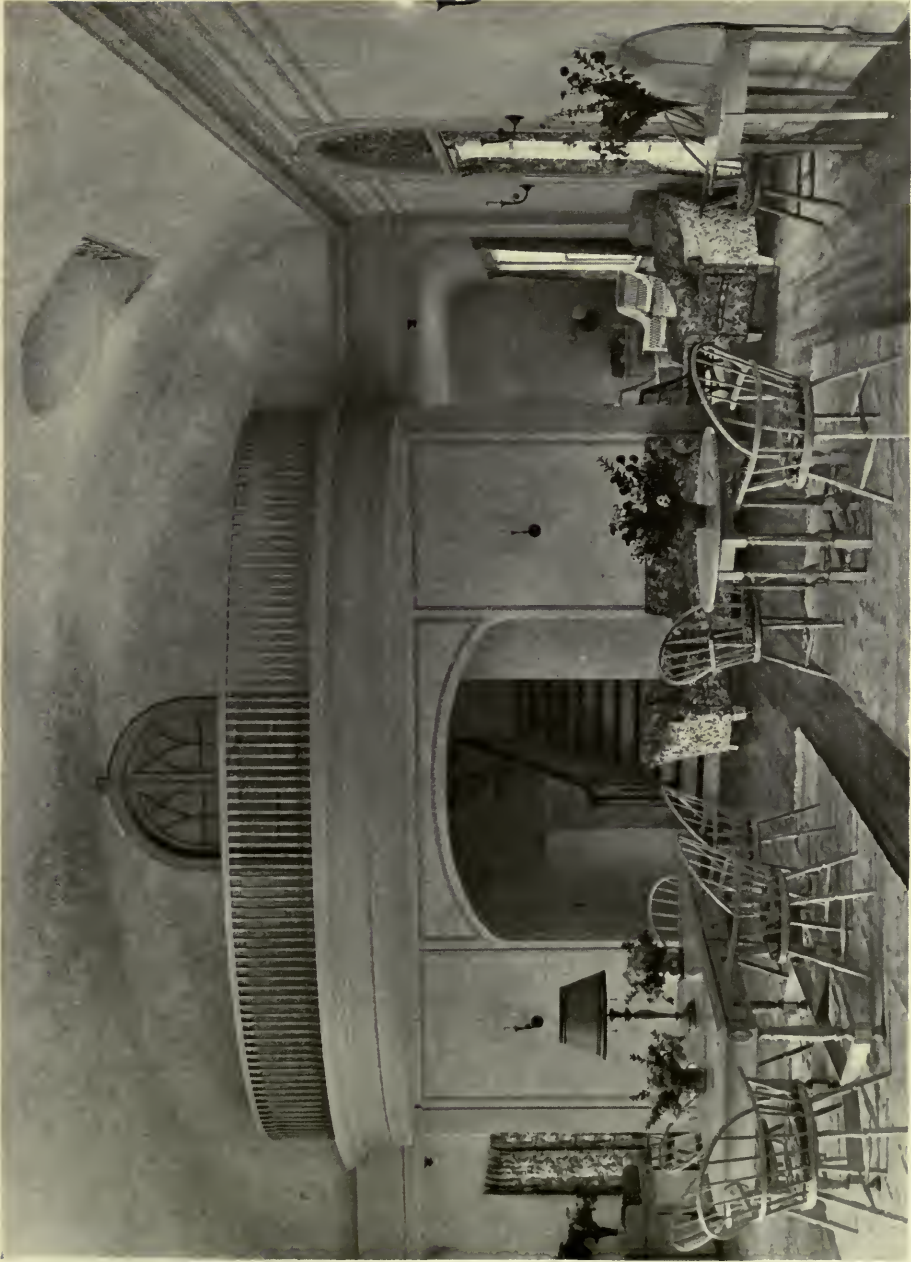
FRONT VIEW—RIVERDALE COUNTRY CLUB,
RIVERDALE-ON-HUDSON, N E W Y O R K
CITY. DWIGHT JAMES BAUM, ARCHITECT.



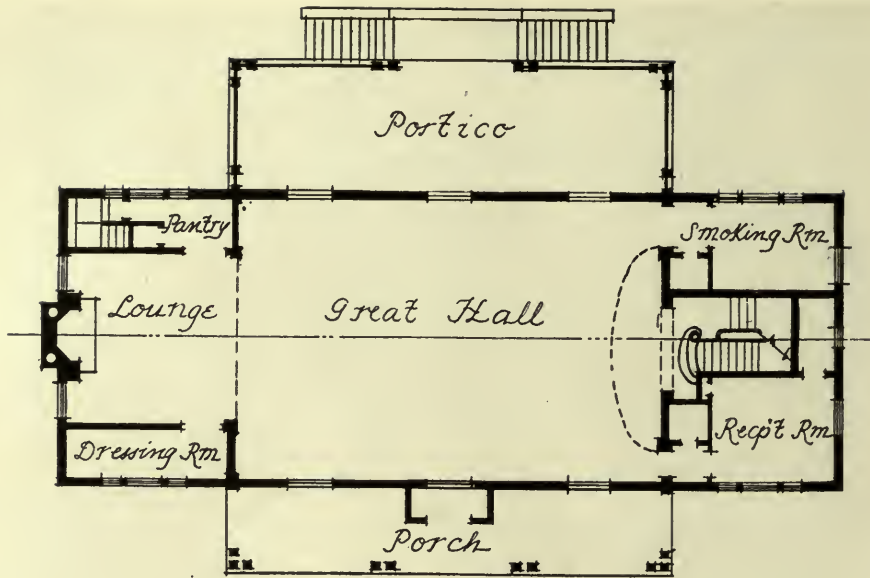
REAR VIEW.—RIVERDALE COUNTRY CLUB,
RIVERDALE-ON-HUDSON, N E W Y O R K
CITY. DWIGHT JAMES BAUM, ARCHITECT.



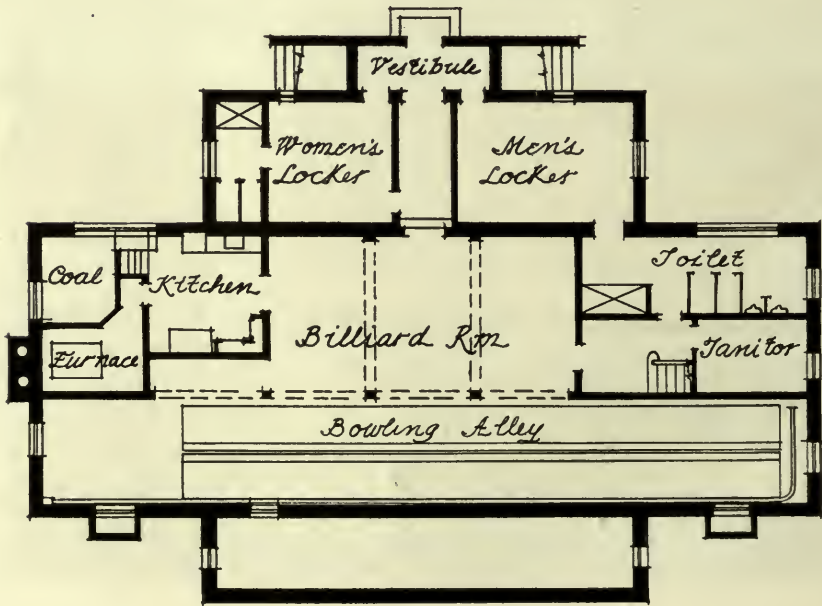
THE GREAT HALL, LOOKING TOWARD ALCOVE—RIVERDALE COUNTRY CLUB, RIVERDALE-ON-HUDSON, NEW YORK CITY. DWIGHT JAMES BAUM, ARCHITECT.



THE GREAT HALL, LOOKING TOWARD MUSICIANS' BALCONY
—RIVERDALE COUNTRY CLUB, RIVERDALE-ON-HUDSON,
NEW YORK CITY. DWIGHT JAMES BAUM, ARCHITECT.



First Floor Plan



Basement Floor Plan

FLOOR PLANS—RIVERDALE COUNTRY CLUB,
RIVERDALE-ON-HUDSON, NEW YORK
CITY. DWIGHT JAMES BAUM, ARCHITECT.



FIREPLACE OF ALCOVE IN GREAT HALL—RIVERDALE COUNTRY CLUB, NEW YORK CITY.
Dwight James Baum, Architect.



BILLIARD ROOM—RIVERDALE COUNTRY CLUB, NEW YORK CITY.
Dwight James Baum, Architect.



BOWLING ALLEYS—RIVERDALE COUNTRY CLUB, NEW YORK CITY.
Dwight James Baum, Architect.

for scenery, and a dressing room; the other side is balanced by a serving pantry, which has a dumbwaiter to the kitchen below, a storage closet for china, and a stair to the kitchen. The arch trim of the alcove forms a proscenium arch.

At the other end of the hall is a staircase leading to the musicians' gallery and to the club rooms below. On one side of the staircase is the ladies' reception room, and on the other the men's smoking and card room. At the rear of the hall is a porch which overlooks the tennis courts, with steps leading down on either side to the courts.

The general color scheme of the main floor is French gray, in both woodwork and furniture; gray cretonnes with birds of bright plumage and with dark flowers give the requisite touch of color, aided

by polychrome electric lighting fixtures.

On the basement floor is a pool and billiard room, bowling alleys, a kitchen adequate to serve one hundred people, a living room for the steward, and two locker rooms with showers, for men and women, respectively. The locker rooms have separate entrances at the level of the tennis courts.

The Riverdale Country Club, in addition to promoting social intercourse, has succeeded in bringing the neighborhood together for action on local civic affairs; and this achievement is without doubt attributable both to the circumstance that the club is neutral in relation to those questions which normally divide a community, and to the fact that the club house is admirably adapted to the dual purpose for which it was designed.

L'OMBRELLINO, AT PIAN de' GIULLARI ~ NEAR FLORENCE, ITALY ~

By

HAROLD DONALDSON EBERLEIN

L'OMBRELLINO (The Little Umbrella), so called in allusion to the little umbrella that tops the weathervane, did not begin its existence as a villa nor has it ever quite achieved independence as a villa in its own right, being an appanage—if one may use so dignified a term in speaking of such an unpretentious place—of the adjacent Villa Pazzi. Nevertheless, L'Ombrellino possesses not a little individuality and an interest of its own from an architectural point of view.

Early in the fourteenth century a part of L'Ombrellino was built by the family of the Bonaccorsi—it was then known as the Spedale della Santa Trinità al Pian de' Giullari—as an hospice for the shelter and succor of sick travelers and for pilgrims going to Monte Ripaldi. It was a modest little building containing a chapel or oratory and an equipment of two beds, with such necessary building as that limited hospital capacity implied.

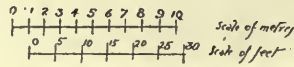
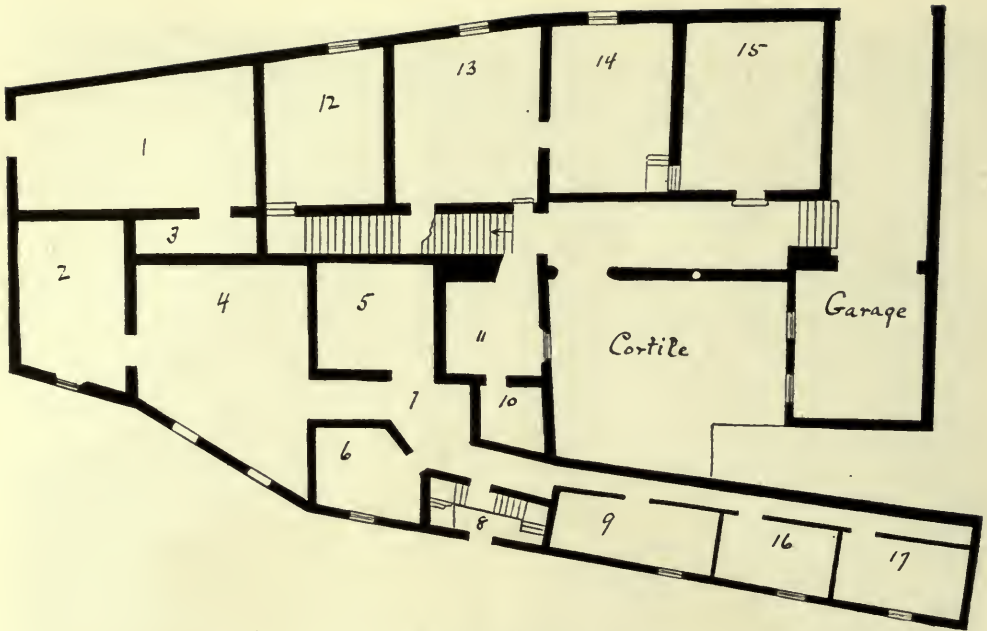
From time to time additions were made until the fabric assumed its present form, a completion effected, however, at an early date. Its function as an hospice came to an end in the latter part of the sixteenth century when the oratory was annexed to the adjoining Villa Pazzi.

The stuccoed walls are a pinkish grey

in color and the shutters are dark green. The entrance is not on the side facing the little piazza or square of Pian de' Giullari in which appear the old chapel door and another doorway, but is reached by the road at the left and adjoins the gatekeeper's lodge of the Villa Pazzi.

Unpretentious and devoid of all ornament as the exterior of L'Ombrellino is, the interior is even more rigidly simple. There are no vaultings, no carved corbels, no decorative door or window trims, no beams nor painted ceilings. There is no architectural effort whatever about L'Ombrellino either within or without; it is merely a spontaneous utilitarian structure and calls to mind the dictum of a certain architect, anent these Tuscan villas, that "much of their charm lies in the fact that there is so little architecture about them."

Between L'Ombrellino and the Villa Pazzi the connection is so close that, along with the illustrations of L'Ombrellino, are included several showing the little chapel and the entrance to the inner enclosure of the Villa Pazzi. This little detached chapel of the Villa Pazzi stands at the top of a steep, straight roadway which ascends through olive orchards from the lodge and from L'Ombrellino.



KEY TO NUMBERS ON PLAN:

- | | |
|----------------------|--------------------|
| 1. Chapel. | 10. Water Closet. |
| 2. Room over stable. | 11. Store Room. |
| 3. Old Sacristy. | 12. Dressing Room. |
| 4. Bedroom. | 13. Pantry. |
| 5. Box Room. | 14. Kitchen. |
| 6. Kitchen. | 15. Cellar. |
| 7. Corridor. | 16. Bedroom. |
| 8. Hall. | 17. Bedroom. |
| 9. Bedroom. | |

Ground Floor Plan—L'Ombrellino, Pian de' Giullari, near Florence, Italy. Owing to the many additions and the great diversity of levels it is hard to say what is ground floor and what is not. The drawing room is one long room above numbers 14 and 15.



NORTHEAST FRONT—L'OMBRELLINO, PIAN
DE' GIULLARI, NEAR FLORENCE, ITALY.



SOUTHWEST END — L'OMBRELLINO, PIAN
DE' GIULLARI, NEAR FLORENCE, ITALY.



THE CORTILE—L'OMBRELLINO, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.



DRAWING ROOM DOOR—L'OMBRELLINO, PIAN
DE' GIULLARI, NEAR FLORENCE, ITALY.



WITHIN THE CORTILE—L'OMBRELLINO, PIAN
DE' GIULLARI, NEAR FLORENCE, ITALY.



DRAWING ROOM — L'OMBRELLINO, PIAN
DE' GIULLARI, NEAR FLORENCE, ITALY.



CHAPEL AND CYPRESS WALK TO
FARM—VILLA PAZZI, PIAN DE'
GIULLARI, NEAR FLORENCE, ITALY.



ENTRANCE AND CHAPEL — VILLA PAZZI,
PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.



THE CHAPEL—VILLA PAZZI, PIAN DE'
GIULLARI, NEAR FLORENCE, ITALY.

A BIBLIOGRAPHY OF MUSEUMS

BY CHARLES OVER CORNELIUS

THE museum building today is peculiarly the manifestation of the changes which have taken place of recent years in the aims and functions of museum administration. Originating as a storehouse to receive and preserve objects of art of intrinsic and aesthetic value, the museum has undergone a transformation into a complicated organization which utilizes this valuable accumulated material in an active effort of definite educational purpose. In this intra-museum transformation, the original aim of the museum—the preservation of the art of past civilizations—has not been lost; but with the addition of the educational aim there are created a number of lines of interest, into which the museum's effort must be directed. A thorough understanding of these aims, familiar enough to museum workers, is necessary to an intelligent solution of the architectural problems which a desire for their realization creates. The literature of this group, which we may entitle "Museum Ideals," is extensive and is continually increasing.

Obviously, the site chosen for a museum building will affect very largely the effectiveness of its work and the safe preservation of its contents. Committees of trustees or other administrative officials are best qualified to judge of the desirability of any given site as it affects certain phases of the actual administration; but, in other questions, the architect can supplement these opinions when the matters of local conditions of climate, atmosphere and soil are presented.

The plan of the building is the vital point in the consideration of the proper functioning of the museum. Two types of existing museum building must be recognized. In the one, the chief interest has lain in designing a great monumental pile with dignified and symmetrical façades and an imposing axial interior disposition, into which the material to be exhibited must be placed as best it can. In the other, the collections to be contained in the architectural shell

dictate the disposition of the galleries and rooms, each unit being adapted to the best installation of the material for which it is designed, with facilities for its study and use, the whole architectural scheme resolving itself into the finest sort of background and container for the material and activities which prompt its erection.

The practicability of the former method of museum designing is negated by the modern museum ideals of administration and policy; and in selecting a bibliography of museum architectural literature, it seems best to reject treatments of such a nature except where they may prove of interest in the secondary elements of design.

In planning the museum as a container and background, the main considerations are the disposition of the various departments to which the care of the material is entrusted or the museum administration confined, the connections between these departments, and, in the case of exhibition galleries, the circulation within the departments themselves, this latter being dependent upon the arrangement of the actual material. Three types of plan as affecting circulation may be instanced as most frequently utilized either alone or in combination: first, the "basilica" type, with the great central hall, flanked by smaller exhibition rooms; secondly, the so-called "gallery-and-adjacent-corridor" type, which renders unnecessary the use of any gallery for circulation, and thirdly, the arrangement of galleries en suite. In most recent museums will be found combinations of these schemes.

Closely connected with the plan is the method of lighting, whether top or side, and if the latter, whether low, high or clerestory. The actual uses of the rooms must determine the most desirable method of lighting, and this, in turn, affects the plan materially where, for instance, top light is required.

From the question of fenestration, it is but a short step to the treatment of

wall and ceiling surfaces, and yet another to that of floors. In all of these the physical effect upon the gallery visitor must be considered as well as their desirability with reference to the show material. The interior finish, such as floors, walls, ceilings, colors, wood, metal and stone work, is so closely allied with the installation of the material, that here again it is the museum official who holds the key through his familiarity with the uses of the rooms and galleries.

Artificial lighting, heating, ventilating and humidifying are questions for specialists working in conjunction with museum officials. Some experiments have been worked out with regard to these matters, but there has been little publication on the subject, and the most satisfactory information is to be had from museums where various standard methods are found in satisfactory operation.

The works recommended below will therefore be grouped under the above headings for easier reference. The number of books is perforce small, since the changes in the aims of museums have come so recently that many hitherto authoritative works have been rendered obsolete. The purpose, too, has not been to compile an exhaustive bibliography of every book on the subject of museums, but to select a limited number of treatments which will prove of use in designing a museum along the lines of the most recent and approved methods of museum construction.

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THE PRACTICAL BOOK OF INTERIOR DECORATION. By Harold Donaldson Eberlein, Abbott McClure and Edward Stratton Holloway. J. B. Lippincott, Philadelphia, 1919.

To quote from the authors' foreword, "it is hard to understand why someone has not written such a book as this before." It answers a need in modern life for information and direction in the matter of interior decoration, set down in a form useful equally to architects, decorators and interested laymen.

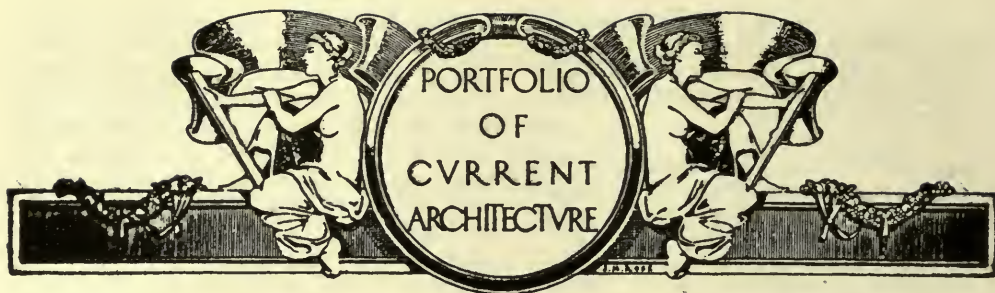
The subject matter falls naturally into

three parts. The first takes up historic period decoration in England, Italy, Spain and France as a necessary basis for part two, wherein is considered practical decoration and furnishing in the light of past and present knowledge. The third part develops the method of decoration and furnishing which is put forward as the most satisfactory for modern usage.

Part I correctly assumes that those decorative forms that have value today are a result of the leaven which the Renaissance early in the sixteenth century introduced into all the arts. Throughout this study, a consistent scheme has been adopted (reminiscent of Banister Fletcher's Architectural History) of dividing the discussions in each country and each period into the definite subdivisions of the decorator's art—architectural backgrounds and fixed decoration, furniture and decorations, other decorative accessories and movable decorations, materials and color arrangement—which, facilitating comparisons, render most significant the changes from period to period in usage of forms and materials. In the chapter of this part dealing with the nineteenth century is a judicial statement of the aims of the modern method of interior decoration.

In Part II the practical details of decoration and furnishing are gone into with considerable thoroughness. Four methods of furnishing are suggested, each succinctly stated with its virtues and defects. Then the more technical questions of execution are considered from the points of view of color: the treatment of walls, floors, windows, and artificial lighting, the choice of furniture and textiles and the use of small accessories.

In Part III is taken up the spirit of the Renaissance as it spread throughout Europe and showed itself in its various incarnations in Early Renaissance, Baroque, Rococo, Neo-classic. Here again in detail, are considered the elements of Renaissance design—the use of materials and color, the choice of forms for the units of furniture and the points of relationship between styles in the several countries—as an expression of the same art impulse impregnating all.



PORTFOLIO
OF
CURRENT
ARCHITECTURE



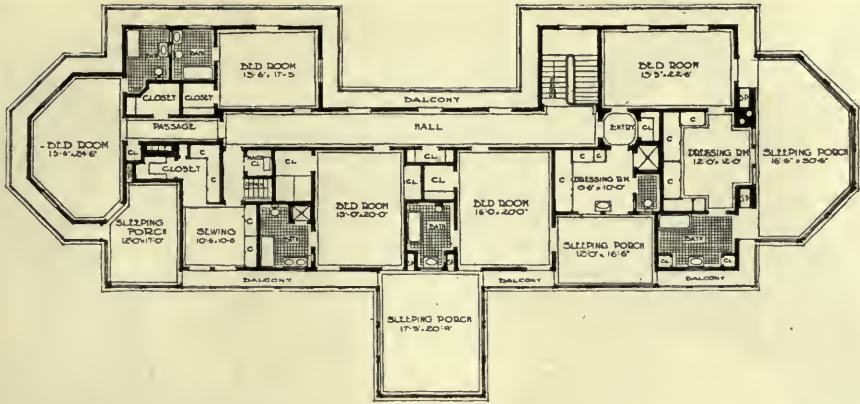
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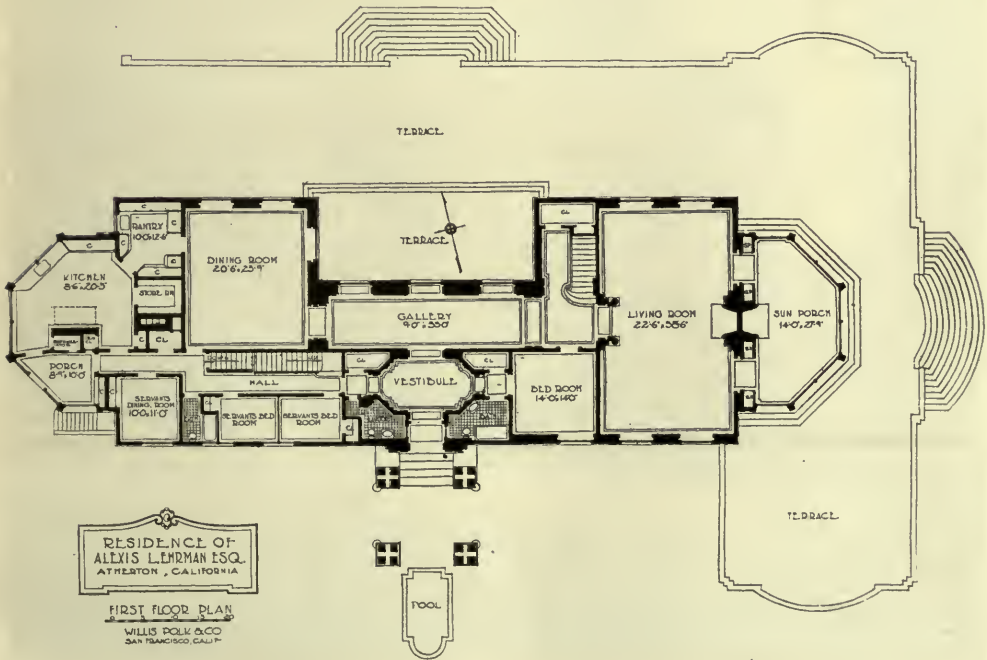


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SECOND FLOOR PLAN

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SAN FRANCISCO, CALIF.



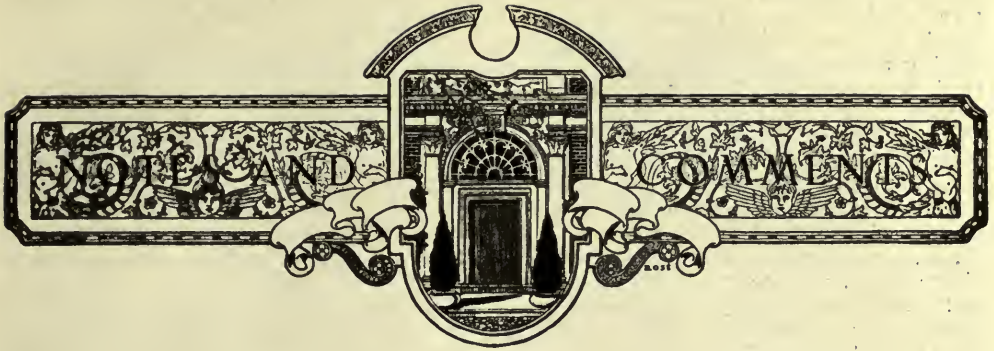
RESIDENCE OF
ALEXIS LEHRMAN ESQ.
ATHERTON, CALIFORNIA

FIRST FLOOR PLAN
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FIRST AND SECOND FLOOR PLANS—RESIDENCE
OF MRS. ALEXIS L. EHRMAN, ATHERTON,
CAL. WILLIS POLK & CO., ARCHITECTS.



RESIDENCE OF MRS. ALEXIS L. EHRMAN, ATHERTON, CAL. WILLIS POLK & CO., ARCHITECTS.



**A Jury of Artists
Appraises the
Architecture of
Los Angeles.**

In endeavoring to interest the public in high standards of architecture, the Southern California Chapter of the American Institute has taken a significant action. The layman who desires information about architecture often finds himself baffled when he applies to individual architects. He may receive from them opinions that are not clearly expressed, or which may be partisan. Sometimes a layman may recognize clearly that he is not talking to an artist, but rather to a specialist who is more interested in technical points than in salient aspects of design. So long as artists stand apart from the world, in dire confusion of ideas, unable to agree on standards or ideals or principles, or style or taste, why should they expect anything but indifference from the public? If without convictions in art themselves, how may they hope to convince others?

American architects are further from this unhappy condition, and are leaving it behind them faster, than other classes of artists. Before the war, it seemed clear that, in the east, the Philadelphia architects had really succeeded in establishing a native art in their regional architecture. The Philadelphians were followed closely by New York architects, who, since the war, are equalling them with their own regional type. Yorkship village and the Bridgeport war housing, designed by Electus D. Litchfield and R. Clipston Sturgis, are native American art. The goal is in sight when leaders like Charles A. Platt, John Russell Pope, Mellor, Meigs & Howe and Cass Gilbert, in their latest published work, forsake eclecticism and cosmopolitanism for native styles. Then there are the younger men,

to whose researches and training, more than anything else, go the credit for the achievement. Now we are beginning to see that on the west coast the Californians have performed similarly.

Of course, the result does not please our intellectuals. It does not meet their preconceived ideas of what American art would be. There is nothing new in their predicament. Dante and Boccaccio scandalized the critics of their day by seeking inspiration in the vernacular. For, like our own, those old Italian critics were committed to cosmopolitanism, in the form of it then prevailing which insisted on following Latin models. "How can you," they said in effect, "expect to be read by cultured people the world over, when you write in a local dialect that only the vulgar of Florence can understand?"

This, then, is the deliberate purpose of leading architects—to design in a local style that the people can understand, and which, incidentally, they and their draughtsman can understand. That is why this California action is so interesting. It is as clear and coherent a formulation by native artists of the ideals of native art as exists so far. Hitherto, architects have left it to others to read their ideals from their works. Their written judgments have been limited to reporting the results of competitions for projected buildings, and hence have been concerned with paper architecture, in which some of the real fundamentals of art can hardly be determined. Only completed buildings can reveal the picture of architecture in its outdoor setting, can demonstrate how its design is profoundly influenced by the shapes and lives and colors of the land and of the foliage surrounding it and enframing it—above all, the clear, brilliant sunlight which floods the whole scene. From such influences come the

fundamental qualities of style in architecture. And, as they are geographical facts which vary in each region, they enforce local or regional style in architecture. This truth, scarcely realized yet in modern architecture, is strikingly evident in California. Those great sweeps of mountain and plain must not be negated by the slopes and lines of architecture or of garden. That statuesque, often decorative foliage, must be worked into the decoration of walls and forms, often forcing them to take a subordinate place, as screens or foils for trees and shrubs and the play of shadows. That strong sun requires light, clear color if the color of architecture is to be in key with it; in some cases it requires that the building be a simple mass in order to count in the midst of so vivid a landscape. How can you fit an art suited to misty, rainy, grey North Europe into such a scene? How can you standardize that South California outdoors into any intellectual abstraction of cosmopolitanism or of world culture?

Such is the ideal of art and of criticism that the Californians have established. Their criticism is thorough, clear and of real vision. They organized a jury of architects, landscape architects, and other artists who chose the "ten most notable examples of architecture, the five of landscape architecture, the three of public sculpture, and the five most notable examples of small houses"—all of them within twenty miles of the Los Angeles City Hall. Note that twenty-mile radius struck from the Los Angeles City Hall, in its significance to a regional art. The findings of the jury were embodied in a report, fully illustrated with photographs and drawings, published in the *Architect and Engineer* of San Francisco, in the August issue, where it occupies seventy-three pages.

Besides the great significance of their establishing principles of a native art, there are other points of interest in the report. Some of its conclusions apply elsewhere in the United States. The committee emphasizes the importance of house architecture. They point out that no business building has a place on the list. They refused altogether to list the public sculpture. Public architecture was similarly pronounced deficient except for schools and libraries, and among the ten most notable buildings five were residences. All this means simply that the immediate future of American art lies in the art of the home and of the small town. This again may jar certain critics, misled by the theatrical qualities of our skyscrapers and by the ignorant

praise of them by visiting Englishmen of letters. Our city architecture will be successful only when we attain a rational and an artistic conception of a city, together with a tradition and a culture formed upon it. Meanwhile our native art develops in those of our smaller communities and neighborhoods which are not commercialized.

It may seem strange thus to speak of architectural traditions in California. They derive from the half-dozen old buildings left by the Spanish missionaries. This choice has been considered by some to be an affectation, but they are mistaken. These old Spanish master works were a simple provincial derivative of an architecture that was developed in a somewhat similar geography in Spain. The California architects, therefore, found ready to hand in the old mission buildings the fundamental qualities of a native style, and it is to their credit that they recognized the value of what they saw. Within the last generation they have progressed rapidly, incorporating into the old style the modern ideas of flexible planning which came originally from Paris, the domestic atmosphere of the Anglo-Saxon in its American variety, and modern ideas of color and of decoration. The result is a beautiful native American architecture already counting to its credit many master works of art.

Such art, such judgment by artists, is a real event in American culture. It points the way ahead to all architects, and, one may believe, to other artists. But, even more than that, it shows that the architects on the Pacific Coast, as well as those on the Atlantic coast, have developed a native art and have found a public that welcomes it.

JOHN TAYLOR BOYD, JR.

The Passing of a Unique Office Building.

A striking illustration of the rapid change in architectural practice is found in the contrast between the typical skyscraper of today and the old building which stood until recently at the corner of Alamo Plaza and Houston Street in San Antonio, Texas. It was the first large office building erected in the city and when it was completed in 1886 was the most pretentious of the city's structures.

Its designer, while launching out boldly in emulation of the many-storied buildings which his contemporaries were erecting in the North, still clung to the traditional "gal-



DETAIL OF IRONWORK—OLD MAVERICK
BANK BUILDING, SAN ANTONIO, TEXAS.

leries" so characteristic of the architecture of the old South. The result was a five-story building typical of the time but enclosed by a nimbus of galleries.

Such a structure was essentially a product of the South, where the intense glare of sunlight rendered the deep shadows of the galleries most grateful, and the opportunities which they offered for quiet smokes and the discussion of cooling drinks in the intervals between financial transactions were doubtless relished by the ranchmen and cattlemen who made old "San Antone" their clearing house.

The many galleries of the old building were made doubly interesting by their elaborate ironwork, which was a distinguishing feature of the design, each story having an individual pattern.

Many of the details of construction are interesting as illustrating the progress in building made since 1886. Steel framework, reinforced concrete, hollow tile, etc., were of course absent; the building had timber framing, wood floors, lead water pipe, and other obsolete features.

A lover of the picturesque can not but regret the passing of this old structure, for it was an unique feature of a city that possesses much of artistic and historic interest. The quiet, easy going days have passed, even in the South, and the many-galleried buildings, which looked peacefully for so many years across Alamo Plaza toward the old mission buildings, must now make way for a successor more in harmony with the times.

I. T. FRARY.



OLD MAVERICK BANK BUILDING, KNOWN LATER AS SWEARINGER-McGRAW BUILDING, SAN ANTONIO, TEXAS.