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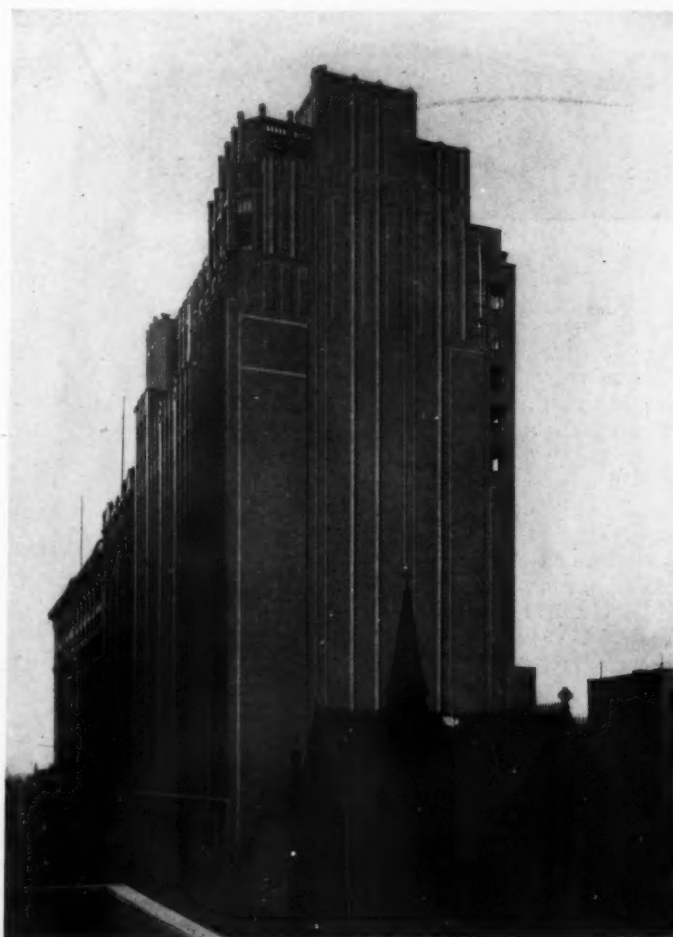
THE INFLUENCE OF ZONING ON NEW YORK'S SKYLINE

BY HARVEY WILEY CORBETT, Associate A. I. A.; Fellow of the Society of Architects, London

EDITOR'S NOTE: *The Bush Terminal Building on Forty-second Street, New York, was designed by Helmle & Corbett and the plans filed some months before the adoption of a zoning regulation in New York. Certain features of this important structure no doubt suggestively influenced the present development of the stepped back type of tall building. The following article by Mr. Corbett is, therefore, of large interest and authoritative, being written by a man whose firm has from the very outset directly influenced the design of a type of building that has, to so marked a degree, pointed the way to the artistic development of New York's skyline.*

SOME men are born with prophetic vision, some will only look and see when others point, while the great majority never raise their eyes to look up and ahead. World progress is built by the first, who are the builders of the future. Their visions of the possibilities become realistic through the efforts of those willing to see and learn, and these two classes accomplish the big things in spite of the apathy of that all too common class, whose eyes are never raised above the dead level of their own sordid interests.

In an article by David Knickerbocker Boyd, architect, which appeared in *THE AMERICAN ARCHITECT*, issue of November 18, 1908, Mr. Boyd showed the development of a prophetic vision. He expressed strong protest against the rapidly



Gilbert Building

George & Edward Blum, Architects

Another example of blank side wall decoration by means of "shadow" brick, used for the first time on the side walls of the Bush Building on Forty-second Street, and now becoming increasingly popular as an economical means of bringing uninteresting side walls into harmony with the front. The complete omission of cornices is worthy of note, being the logical solution to the high building situated in the center of a block where projections beyond the building line are only possible on the front

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Engineering Societies Building
Henry G. Morse, Architect

This shows what happens when an addition under the new law is made on a building built under the old law

increasing tendency toward "canyon streets" in our larger cities, and constructively offered a solution, which has since been accepted and today is the essence of the "set-back" building as applied to zoning in this country. Mr. Boyd proposed to "step back" every few stories on the street front of buildings. He assumed that in the further building of American cities a spirit of rampant commercialism would prevail, and that no flat, fixed and final limit of height for all buildings would be generally accepted. Specifically as to certain cities a regulation might be adopted but a country-wide acceptance of a fixed height as relating to the cities' conditions could not be hoped for. Prophetically Mr. Boyd proclaimed his theory of what might be accomplished. He advocated the "set-back" of upper stories, setting the initial height at one and one-quarter times the width of the street, or a 62½ foot high building on a fifty foot street. Just eight years after the publication, or in 1916, Mr. Boyd's prophetic vision became fact. It was then that the building zone resolution in New York City became effective.

Naturally the passage of a law that so radically affected building in New York was at the outset retarded by special and selfish interests. As would be also quite natural, many peculiar workings of the zoning resolutions resulted, and much controversy occurred. The larger part of these

disputed conditions was as to the correct interpretation of the conversion of existing buildings to other purposes. Sufficient time has now elapsed to provide a zoning law, amended and changed to fit conditions, that will secure to New York the best development in its building operations that a prophetic vision could foresee, and it is possible to make note of just what has been accomplished.

It was hoped to obtain certain highly desirable things, viz., to stabilize and conserve property values, to relieve the increasing congestion in streets and transit lines, and to stop the further building of canyon-like streets where sunlight would never enter or at best be seen for only a very small portion of the day.

Admittedly, the law could not be retroactive. We could not, therefore, hope to change existing conditions in the congested regions of the city. But the law affects every new project, as well as every proposed future building development. Any law affecting buildings is necessarily slow



Borden Building
Buchman & Kahn, Architects

An excellent example of a high building on one of the narrower streets. The "set-backs" are cleverly adjusted to an economical steel framing and yet keep almost the maximum floor area at each stage that the enclosing "envelope" would permit

in demonstrating its value. It takes a long time (even in New York where the skyline changes with a rapidity that astounds even the residents of the city itself) so to change and modify the general aspect of a city that the casual observer will begin to notice the change. The modifications in appearance come so gradually that they make little or no impression in themselves. When the law was first proposed, we thought of it as a theory and not a fact, as something that might begin to count in architectural effect in the dim and distant

people, the man in the street, the casual passerby, the visitor from out of town—are these people beginning to note the changes, and if so, what is their reaction? They would certainly be able to tell you nothing as to the stabilizing of property values and I doubt if the law has yet been in operation long enough for even the most expert real estate operator to give a definite opinion on this point. Nor could the people as a whole tell you of any apparent limit being reached in the congestion of the streets or on the transit line. Rather the opposite condition seems to be the case with increasing congestion both on transit lines and in the streets.

Finally, as to light and air in the streets, there is certainly no more freedom of air or abundance of sunlight than there has been although a careful painstaking observer may possibly be able to demonstrate that in certain newly built sections of the city there is now a little more light than there might otherwise have been, had not the "set-back" phase of law been in operation.

What, then, are the results of this law, that we



Ambassador Hotel
Warren & Wetmore, Architects

This illustrates the operation of the law in its simplest form. There is always a compromise to be made between the extreme limits of the "envelope" and the practical limits of plan arrangement, and structural limits of steel offsets

future, but certainly not in the immediate present, and so we dismissed it from our minds and went on about our affairs as usual. In saying this, I am speaking from the viewpoint of the man in the street, not from the point of view of the architect whose plans are directly affected by the law, or the operator who finds the quantity of building he can place in a certain city lot definitely limited, or the resident who happens to want a garage for his car in a zone where such structures are barred. These people all know the law; sometimes they chafe under it and lose sight of its broader purpose and benefit in the annoyance that they find in its application to their particular case.

But in a great city like New York, the sum total of those personally affected by the law forms an inconsiderable group as compared with the great mass of people, most of whom do not even know of its existence. And the great mass of



At left: Bar Building
Severance & Van Alen, Architects

At right: National Association Building
Starrett & Van Vleck, Architects

Two striking examples which hardly seem to result from the operation of the same law, but they admirably illustrate the great degree of freedom in which the architect may play in his design of the "set-back" stories. The foreground building interprets the "dormer" clause of the law to erect two flanking piers which buttress the receding center. The background building refrains from using the "dormer" except as a crown to the second "set-back"

can take note of today? Has there been anything worth while accomplished, and does the man in the street begin to sense the change that is slowly but surely coming over our city?

We do not seem as yet to have accomplished the three things for which the law was framed; yet the law is most certainly a success if in fifty years these things are accomplished. But the American of the present is not excited by something that will happen in fifty years. It is difficult enough to get enthusiastic approval of something which is to happen in fifty weeks. He is very much a man of the immediate present.

Is the zoning law doing anything for him in the immediate present? It is, but not all it intended to do. It will undoubtedly achieve in time all these desired things. It has achieved up to this time, or at least is beginning to achieve, something more far reaching in its effect on world architecture and on the world's view of architecture, than anything that was ever accomplished in any single period of history.

While this world is admittedly a three dimen-

sion world, (some rare souls seem to penetrate in theory at least to the fourth dimension) most of us live in only two dimensions. We look around about us, we look from side to side, we look down the length of the street, we often have to look out, but we don't *look up*! The new "set-back" skyline (limited as it is to the building recently erected) still makes us look up. We look up because there is something above and beyond the plain street front to intrigue the eye and fascinate the imagination.

There can be no question that within a decade practically every city of importance within the United States will have regulated the future development of its buildings along the safest and sanest lines by carefully drawn zoning resolutions.

The "set-back" building, prophetically seen by Mr. Boyd, has now become a reality. The widespread detention of building operations incident to the war has been no more seriously felt than in New York. It is only during the past year and a half that building activity has been seen. But in that limited period sufficient has been accomplished to demonstrate how splendidly these zoning resolutions have reacted. The group of pictures selected graphically to present this phase of "set-back" buildings are all of recent design and erection. But it is confidently stated that these illustrations will present to every architect the wide possibilities of buildings carefully designed in this way and the problem will be one in which he will find a recreative work in solution.

Why "Atelier"?

THE following item appeared in a recent issue of *The Builder*, a London architectural journal:

"The formation of an architectural atelier in connection with the University of London is a happy sign of the growing recognition of architecture, but why should details of the curriculum of modern architectural training always be given foreign names? The affectation of speaking of 'atelier' and 'esquisse' is a source of irritation and gives the impression that our schools are exotic imitations of those existing in Paris. British architecture should have sufficient native soil from which to produce fine modern work without going abroad and appearing 'precious' in the eyes of the ordinary man; besides, Parisian names transported into this country suggest luxury and expense, the very qualities that should be disassociated most strongly from the present-day architect. The Englishman is well aware that he pays more for Poularde Rotie than he does for roast chicken, and he naturally assumes that an *esquisse* must be a more expensive affair than a study. Let us drop these affectations and talk English."



Canadian Pacific Building
Starrett & Van Vleck, Architects

An eminently practical solution of the larger building type with ample window space, and interesting variety in the treatment of the "set-back" stories, without which more elaboration of cornice, balustrade, etc., would have been required as a fitting crown for such a mass. Note the "dormer" motif is featured over each pavilion of the street front

ARCHITECTS AND LAW MAKERS

Some Comments on Registration Laws

BY IRVING K. POND, F. A. I. A.

AS one with individualistic predilections views the so-called advance of the architectural profession during these recent years he must regret the growing tendency to circumscribe its practice with laws and rules and formulae. The laws are enacted by state legislatures. The rules are laid down by the architectural bodies themselves. The formulae are deduced by unemotional people who have a mechanical sort of imagination or who have taught so long in technical schools that to them hard and fast limitations are the breath of life. The geometricians who have "discovered" that triangles and circles and parallelograms, especially the diagonals of the latter, are the bases upon which to build all art forms, whether in two or three dimensions, are propagandizing the art world and endeavoring to fit all imaginative expression into their stiff and formal habiliments.

The rule makers are formulating codes and rules of action in an endeavor to make professionals gentlemen and ethical practitioners. I have no quarrel with those who are making this present effort along these lines and shall not have as long as social and business ethics generally are in their present unsatisfactory and chaotic condition. Until the individual begins to think in terms of the mass certain definitely presented standards would seem to be altogether desirable. Individuals who are socially- and communally-minded find it profitable to come together and formulate the guiding principles of their social and professional intercourse. With this, as I say, I have no quarrel. But it is when an agglomeration of the pseudo-socially-minded begins to make laws in restraint not only of art expression but of a rational practice of an art that I begin to feel my gorge rise within me and I am ready for the quarrel. Certain of these pseudo-social and professional reformers are now aiming their blows at individual expression, by which alone can an art advance, though the blows are to be delivered by some powerful legal commission which it is hoped in some way to establish. Generally their hope for all advance in art methods or products lies in legal or legislative enactments, as if there were not at present plenty of restrictions on the individual along all lines, extending to the lines of self-expression even when self-expression implies a virtue and not a demonstration of selfishness.

I would not have the individual run counter to the best thought or emotion of the public; but I should like to be certain that legislatively established commissions would be competent instruments

through which public thoughts and emotions could be voiced. As I have seen such commissions in operation, I have felt that they tended more and more to voice not the finer emotions of their public but the mediocre and the conventional.

Legislative enactments covering the licensing or registration of architects seem to me to have fallen far short of ministering to the development of real art or to a conservation of what is best in the public thought and taste. In fact, such laws, that is, those licensing and registering architects, must necessarily tend to throw the practice of art into the hands of mechanics and of mechanicians rather than into the hands of the emotionally endowed and thoughtful-minded artist. The reason given for the enactment of such laws is that public safety and health are thereby conserved. To me, public health and public safety, insofar as they have been endangered throughout the ages in a rational practice of architecture, are much less important factors in life than an encouragement of the public's love of and desire for beauty and comeliness. These latter are spiritual factors which need to be conserved; the former are merely physical factors which can be safeguarded in other ways than by the enactment of registration or license laws. But for the interposition of these laws we might have looked forward to a time, and that at no great distance away, when the states and the nation itself would have been educated to the public's physical needs and would have safeguarded them by doing what certain municipalities already have done,—that is, by establishing building codes, or a general building code modified by local conditions, which should control the physical aspects of building. With such a general building code, modified only as above, the public's health and safety would be insured by permitting a building to be erected from no set of plans which did not conform to the provisions of the code. If a building should fall in course of construction, or after construction, or if the sanitation should prove faulty and death or accident or sickness should occur as a consequence, the individual would have recourse against the architect in due process of law through the medium of the courts. It would be up to the architect whose building had collapsed and killed individuals to prove that he had not deviated in his plans from those accepted by the Building Commission or that, using due diligence, he had conformed to all the legal building requirements. If it can be shown that he has been remiss, civil damages or even the criminal charge of murder or manslaughter should lie against him.

The experience of past ages has shown that this method is entirely feasible and that no establishment of a privileged class or close corporation through legislative enactments is necessary to protect the public in the matters of health and safety.

In this country twenty-four of the forty-eight states have enacted laws governing the practice of architecture. These laws vary in kind and quality and make the practice of the profession a burden to architects who, by right and necessity, are called upon to practice beyond the bounds of their own commonwealth. Imagine the case when all forty-eight states shall have their laws and the architect who is practicing generally in many states is called upon for a continual and increasing payment of taxes in these various states in which he does not reside; states which in shutting him out would lose spiritually if he were really an architect and imbued with the artist's ideal and endowed with rare emotionalism and possessed of the learning and experience which are factors in

his professional equipment. I was pleased that during this last season the Royal Institute of British Architects was not swept off its feet in that it refused to endorse a proposed and powerfully propagandized scheme for unification and registration. Registration in a way seemed, however, to appeal to the British architects; but my hope is that, the current toward unification and registration being stemmed for a time, a really rational state of mind will prevail and that the practice of an art will not be limited to those only who can make good in an examination along purely physical or material lines.

These years, since the war, have been chaotic and hysterical. I am going to continue to hope, almost against hope, that we may come to our senses and that formalists and legislators and commissions and commission makers may soon be expelled from the architectural field and the bars put up so that they never again may enter.

LIVE FLOOR LOADS

BY C. H. BLACKALL, F. A. I. A.

IN the issue of THE AMERICAN ARCHITECT, of August 26, 1893, the writer presented some facts which had been gathered in the course of studies made of three of the more prominent office buildings of Boston, to determine the exact existing live loads. At that time the legal requirements of the Boston Building Law called for provision for live loads of 100 pounds per foot. The results of the investigation showed that the average total load per office was a little over 6,000 pounds, and the average load per square foot was 13.3 pounds for a minimum, and 16.4 pounds if account were taken of the largest number of people known to have been in the office at any one time. The highest unit load found was in one of the offices of the Ames Building, amounting to 40.2 pounds per square foot. At the time the investigations were made 100 pounds per foot was a minimum requirement, and this amount could not be scaled down for columns or girders, but, in theory at least, was carried without any reduction clear down to the foundations, notwithstanding the fact that at that time in many of our cities the essential soundness of principle of scaling down unit loads was recognized and applied. The investigations made in 1893 were recognized in a modification of the law, and the Boston Code at present requires a live load of only 75 pounds per square foot, and allows this load to be scaled down so that in a twelve-story building the total live load requirement amounts to only about 34 pounds per square foot on the supporting steel. There is a

very general desire at present, on account of the high costs, to make every reasonable saving in construction, and the tendency seems to be rather swinging to a minimum which a few years ago would have been thought unsafe.

Actual data in regard to loads on floors of commercial buildings is not very abundant. We have had experiments like those of Professor Johnson, at Harvard, who succeeded in crowding human beings into restricted areas in sufficient numbers to produce loads running up over 150 pounds per foot, but such conditions as were found in these experiments are abnormal, and, so far as can be determined, never exist in practice. It is, however, perfectly possible to determine within certain minimum limits just how much load comes on floors of buildings, and in order to check up the figures of 1893 in the light of today, and in view of present practice, the writer recently made a pretty careful survey of one of the largest buildings in Boston, the Little Building.

Sixty-four offices were surveyed, being taken at random without any attempt to select either the heaviest or the lightest loadings. Careful notes were made of the contents of each office, its area, and, as nearly as possible, the actual weight of each piece of furniture, with an allowance of 150 pounds for the weight of each individual. It was found that the maximum loading amounted to 2,700 pounds, which, in this particular case, represented a live load of 14.7 pounds per square foot. Only four out of the sixty-four offices had an

average of over 10 pounds per foot. Forty had an average of 5 pounds to 10 pounds per foot; twenty offices had an average of less than 5 pounds per foot; and the lightest loading was only 1.3 pounds per square foot.

A comparison of these figures would seem to show what has been suspected by every student of construction; namely, that the tendency, during the past twenty years, has been to eliminate heavy furniture in offices, substituting fewer pieces and lighter construction. Rows of books are almost lacking in the average office, heavy safes are hardly ever found, and as a rule there are fewer persons in the offices, though the human loading forms a larger proportion of the total load than was found in the 1893 investigations. In the office in the Little Building having the maximum loading, 1,200 pounds out of 2,700 pounds were for persons, and in all of the sixty-four offices not a single safe was found, and no pieces of furniture weighing over 250 pounds, with their contents. Of course the figures given are somewhat approximate, but in making the investigation, the estimates were made liberal rather than scanty, and the actual net loads might be even less than the amounts stated, but these figures show pretty fairly that in the modern office buildings the loads today are less than they were before, and far less than the minimum required by the Building Law.

But this is not the whole story when we consider the matter of safety. In the Little Building, while the average was only 14.7 pounds, if the total load of the office with the highest load per foot of 14.7 pounds, were applied to the smallest office, having only 93 square feet, a condition which might exist, it would result in a total live load of 29 pounds per square foot. Or if, in the office of the present maximum loading, all of the fixtures, tables, etc., were crowded into the smallest possible or probable space, and the people were bunched together with the furniture on the basis of $1\frac{1}{2}$ square feet to a person, the load would then be rather less than 27 pounds per square foot. Or again, in this office of the maximum load, which has an area of 198 square feet, if all the furniture were piled together and the remaining space were occupied with people at the rate of 75 pounds per square foot, the total load would be 9,825 pounds, or a little less than 50 pounds per foot. It would, therefore, seem reasonable to assume that by no probable arrangement of loading will the live load in an office amount to more than two-thirds of the minimum required by the law, or 50 pounds per foot. But again this is not the whole story. As in very many theoretical solutions of the practical problem, there are variable factors which have to be taken into account. In the Little Building the partitions are almost without exception directly over the supporting beams, and the floor slabs, which in this case were of

combination concrete and terra cotta, had to support practically no concentrated loads. The writer had some experience with another building in Boston of somewhat similar construction, the partitions being provided for by the beams, and the floor slabs being proportioned simply for a load of 75 pounds per foot. It was desired, after the building was partially completed, to divide each office in two by a partition down the center parallel to the beams, which would bring a center load on the slabs. It was then found that the floor slabs were barely of sufficient strength to support the load of the partition, and left theoretically nothing whatever for the live load which would come in the offices.

Again, a trouble which in former days was quite prevalent, but which should still be taken into account, is heavy fireproof safes. Repeatedly the writer has been called upon to assign a proper location for a fireproof safe weighing from 3,000 pounds upward, and has been obliged to resort to various most unsatisfactory expedients of skids and distributing plank in order that this heavy load should be spread sufficiently to allow for safety, even taking into account the fact that aisle spaces would probably be called for all around the safe. One unfortunate occurrence took place in a building where a safe in process of moving slipped from the skids, came down on the terra cotta arches, crushed through the floor, and, gaining momentum, went through every floor down to the basement. The writer had one case of a building of second class construction in which a tenant wanted to install a ten-ton safe, and was very indignant that he could not put it anywhere he pleased on a floor which was planned for only 75 pounds per foot. Consequently in determining the unit requirement for a floor, it is not enough to take the actual loads in office buildings, nor even to take the maximum load in the heaviest loaded office buildings, and notwithstanding the fact that the investigation of 1893 indicated apparently loads of only a trifle over 40 pounds a foot, and the investigations of today indicated only about 15 pounds a foot, the writer is convinced that the tendency to reduce the unit load is not wise, having in mind the possibilities of shifting partitions, and of concentrated loads at unexpected places, and considering also the peace of mind of the owner of the building, who is generally thoroughly vexed when he is told that he cannot make a lease to a tenant who wishes heavy loads. But the same reasoning need not apply to the designing of the girders and the columns, for in these the actual, determined minimum can be taken not only as the legal average, but might even be scaled down with a dependence upon the certainty that while concentrated loads may occur in some isolated cases, they never will occur throughout any considerable portion even of one floor. It is the

writer's conviction that the slabs forming an office floor should be constructed for a load of 100 pounds a foot in order to allow for shifting partitions, vibrations, possible safes and peace of mind. On the other hand I can see no reason for proportioning the girders for over 30 pounds per foot, and I would carry this unit load down through the columns in all stories, while for the foundations themselves I would not allow for a unit load of over 15 pounds per foot. Judging by the investigations of 1893, and also the investigations of today, such unit loads would allow a very considerable latitude in any one office, and would represent a probable maximum loading that might actually occur in the building throughout, but to construct the floor slabs for less than 100 pounds per foot means, very frequently, an experiment which is not compensated for by the so-called factor of safety. We assume in all steel a factor of safety of 4. As a matter of fact, assuming the stress of steel at 16,000 pounds per inch and the elastic limit at 30,000 pounds per inch, the factor of safety is only about 1.8. That is all right for large areas where the law of averages could be applied, but represents a very small margin for the actual areas of any single office.

As compared with the present Boston Building Law this would increase the strength of all floor slabs 50%, would lighten girders one-half, and would reduce the average unit loading on columns by about 12%. The increase in cost of the floor slabs would be between 5 and 10%, which would be more than offset by the saving on the girders and columns. It would mean a safer, stiffer and more adaptable building, and the strains could be computed more easily and more logically.

The foregoing applies to office buildings. The case of hotels and apartment houses is often considered as being distinct from office buildings. As a matter of fact the loads in hotels do not materially vary from those in office buildings, and when we consider that in a hotel the plumbing fixtures alone may sometimes result in a load of 150 or 200 pounds per square foot, it does not seem reasonable to assume a lesser load per foot for hotels than we do for offices, but the Building Law in Boston and many other cities figures only 50 pounds per foot for hotels, and this can be scaled down for columns and supporting members. There have been a number of proposals lately to reduce the unit load of hotels to as low as 30 pounds per foot. If this were allowed it should apply only to the columns and girders. There seems to be no justification for assuming any difference between the requirements for an office building and the requirements for a hotel, and in order to be on the proper side of reasonable safety and economy, I would figure hotel floors exactly the same as office floors; namely, 100 pounds per foot for all floor slabs, 30 pounds per foot for columns and girders, without reduction, and 15 pounds per foot for foundations. As compared with the present Boston Building Law, this would double the strength of all floor slabs, would lighten girders about 60% and would increase slightly the average unit loading on columns by about 20%. The difference in construction is not easy to estimate offhand, but it would mean a building more adaptable for possible concentrations of load and for shifting of partitions, and one which could be computed and checked more easily and more logically.



THE STATE OF ARCHITECTURAL EDUCATION IN ENGLAND

BY C. H. REILLY, Professor of Architecture, University of Liverpool

With a Foreword by Thomas Hastings, F. A. I. A.

NO one is better equipped to tell us of the state of architectural education in England than Professor Reilly of the University of Liverpool. His influence in England upon all matters relating to architectural education, not only in his own university work, but wherever architectural education is discussed, has been very great.

During my recent visit to London, it was my privilege to witness a judgment and to see an exhibition of the competition drawings in the Government Rome Scholarship in Architecture. I was very strongly impressed by the high standard displayed as well as by the very pronouncedly excellent quality of the school work. There appears to be a marked tendency among the younger men to encourage what they term the "French Beaux-Arts" or "American" influence in architectural education. It is highly desirable that the inter-scholastic competition or rivalry will increase with coming years, for this is undoubtedly the strength of our own system in this country. If the profession at large could only realize the large measure of good that has been accomplished under the efficient conduct of the Beaux-Arts Institute of Design, practicing architects would undoubtedly do more to encourage by financial aid and personal support the splendid work that the Institute is carrying forward.

I am inclined to believe that it is a mistake to

call these methods "French" or to associate them with any other nation than our own. They have been so called perhaps because the French School in the last few generations has been so far in advance of the rest of the world in this direction. We are too inclined to associate as French, educational methods which have always obtained, with the Ecole des Beaux-Arts, even if they have been similarly applied in this country. When we consider, for example, the plans of ancient Rome, or of any other early period, is it not true that the same skill in composition, ability in planning, and methods of expression are identical with those that have been so thoroughly taught for the last few generations in Paris? It, therefore, seems reasonable to assume that no people or nation has any just claim upon a system which has always obtained throughout the history of art. The ground plan of the Baths of Caracalla, the plan of Chartres Cathedral or of Blenheim Castle, are as brilliant and full of color as though made by the most clever student of the Ecole des Beaux-Arts. The great traditions of English architecture, so thoroughly national in character, have consistently formed the basis of a progress that, if we except the interruption set up by the so-called Victorian revival, has steadily been marked by the ability of great interpretation of architectural design.

ORGANIZED architectural education in England has had a long and painful childhood. It has not yet grown to the full adult stage it has reached in America. Pupilage, with its mediaeval associations and narrow outlook, is still with us in the remoter parts of the country, though its justification in a concrete tradition to be handed on has long since ceased. When there were great masters and a vital tradition nothing could have been more inspiring. In an age of eclecticism with little faith and much striving for knowledge it was bound to be a failure. The realization of this brought about the rise of the schools. The oldest, founded in 1894, is the School of Architecture of the University of Liverpool. Here the Chair of General Aesthetics was at that date changed to a Chair of Architecture, but no great endowments either to library, equipment or buildings followed. The School has grown slowly but surely and now maintains an

average of one hundred students, or thereabouts, with courses which have been lengthened from two to five years. Next in point of age and larger in present numbers (about 150) is the Architectural Association School in London. The Architectural Association is a society of the younger architects closely allied to the Institute. It had long had evening classes and in 1897 determined to follow Liverpool's example and found a day school. This it has carried on with increasing success, especially under the direction of its present head Mr. Robert Atkinson. It now grants a Diploma after a five years' course but not being allied to or part of a University it cannot, according to English practice, grant degrees. London possesses however a second school, that of University College under Professor Richardson, which being an integral part of London University is able to give degrees to its students. Other provincial Universities such as Manchester and Sheffield have since

founded Schools of Architecture and grant degrees, but so far Liverpool is the only University to grant a technical degree of Bachelor of Architecture, B.Arch. All other Universities, which give degrees in architecture, including Cambridge, give a B.A. However, these are minor distinctions. The main thing is that Architecture is now taught as both a liberal and technical study in most English Universities and University Colleges, Oxford, with its wonderful *milieu*, being the notable exception. In Scotland there are flourishing schools at Glasgow, Edinburgh and Aberdeen, but so far these schools are disconnected from the Universities in the same towns, though it is understood that the Royal Institute of Scottish Architects is now endeavoring to secure their affiliation with the Universities.

Co-ordinating the work of schools and to a certain extent fostering them, by giving to their graduates exemptions from its own examinations, which however it still maintains, is the Board of Architectural Education of the Royal Institute of British Architects. On this Board sit representatives of the chief recognized schools, which in turn agree to appointing external examiners approved by the Board. Under this safeguard the Institute has granted exemption from all its examinations for Associate Membership, save for a single paper in its own trades union subject of Professional Practice, to the five chief schools, which have established acceptable five year courses. The R. I. B. A. in addition holds an annual exhibition of selected work from each student who has qualified for its membership through the schools, not with the view, however, of disqualifying any particular student, but in order to see that no school is abusing its privileges by lowering standards. This exhibition is of great use in comparing methods and standards both in draftsmanship and design in the four or five leading schools. For the best set of drawings exhibited the Institute has this year for the first time granted a medal, which has come to a Liverpool student.

Competition between the schools is further stimulated by the Institute Prize Competitions and most of all by the Government Rome Scholarship in Architecture. This chief prize has been awarded five times since its foundation. Twice it has gone to the Architectural Association School, London, and three times to the Liverpool School. As the jury consists of members of the Faculty of Architecture of the British School at Rome and these remain from year to year and are among the leading men in the profession, the standards of the Rome Scholarship are more constant than those for the Institute Prizes, where the complexion of the jury varies yearly. England, however, has

nothing corresponding to the Beaux-Arts Society, with definite criteria of judgment and point of view, to stabilize the work of the various schools by means of inter-school competitions. Our methods, I fear, are much more anarchic and individualistic, but the foundation of the Rome Scholarship and the British School at Rome will no doubt in time help to build up again a more consistent standard of taste.

The general effect of organized architectural education has not yet been felt in England as it has in America. No Englishman can visit the States without being struck by the high level of achievement maintained in all the chief towns. All English architects of any knowledge now subscribe to one or more of the American Architectural Journals. Here in England, however, the mass of work is still being erected by the old office-trained men. Both the great new buildings recently put up in London, the London County Council's Hall on the River and the Port of London Building, belong to that era. It is only in the last ten years that students have gone in any large numbers to the English Schools of Architecture, and only a few of these at last are getting into their stride in actual practice. The next ten years, I am convinced, as the trained men begin to get the work, will show a very great improvement in the general level. We are only now in England beginning to replace our lost faith by knowledge. The splendid old men of the early nineteenth century, whether they belonged to Greek or Gothic School, believed with a veritable fury of faith in all they did or attempted. Those that followed them, including the mass of practicing architects today, having little faith did not even base their catholicism on the requisite scholarly knowledge. They changed the fashion of their work from season to season as a woman does her clothes. The result has been all the bad experiments in half-understood styles with which the last seventy years have flooded our towns. The newly trained men, who have taken five year courses, and have at least learnt the value and use of an architectural library, may lack plenary inspiration, but they will certainly not commit the blunders and solecisms which abound today. The future can, I think, safely be left in their hands. It may be some time before we produce an English building in England as good as Mr. Corbett's Bush Terminal Building in London, but at any rate we now have a clearer idea of what is good and what is bad and that is half the battle. If, finally, the English schools have been able to reach this point, speaking for Liverpool, I can say, honestly and with gratitude, that it has been largely due to American precept and example.

AN ARCHITECT'S RELATION TO TOWN PLANNING

BY GEORGE W. MAHER, F. A. I. A.

THE visualizing and developing a plan for a growing village or town that has been incorporated for a period of years embraces many angles of approach involving a knowledge and appreciation of the history, spirit and customs which cluster around every center wherein people reside. All of these influences should be carefully considered at close range by the planner if he wishes to initiate and execute the proposed development in an orderly manner with due regard to the ideals and aspirations of the community.

The voluntary grouping of people together for a number of years and for mutual association and livelihood breeds a distinct community individuality. Certain characteristics are also affected by racial origin, as, for instance, the nationality of the pioneer settlers who originally erected the first dwellings.

Thus one of the inspiring notes in comprehensive planning is the historic background which is an indigenous part of all town or city life and should be fully enlarged upon and not by any means neglected or destroyed. So to the extent that the spirit, the business acme of the community is interpreted and expressed in the general plan is it likely to be a successful solution and meet with approval.

A brand new or ready made town plan, usually undertaken for great industrial expansion and accommodation or real estate enterprises or subdivisions in connection with the normal growth of a town or city is a very important phase in planning, which should be executed by an expert in a practical and artistic manner. This, however, seems on consideration to be of secondary importance. That which is of the first importance to this country at the present time is the regeneration and orderly development of thousands of small villages and towns throughout this broad land, already functioning as such, but with seemingly little hope or ambition to improve their physical or municipal surroundings.

Therefore, particular attention should be directed toward this defect in our American municipal growth, that the prevailing disorder and sheer ugliness of these many centers be brought to the attention of the residents. In many of these communities there reside people of culture and refinement whose immediate public surroundings in no wise reflect their taste, education or advantage of travel. It is this phase of the problem that should be considered and brought into the light of publicity. The general public is very lax in exercising the power it possesses as citizens to improve its physical surroundings, making them orderly

and attractive in appearances embracing art and beauty. The ideals of a democracy do not always prevail in our American life. This is a challenge, a responsibility involving all alike and the fact that the architectural profession, especially the publications, are giving the subject serious thought and publicity bodes well for the future in regard to this issue.

In order to lend assistance to the movement in every way, attention should be particularly directed to the preparation, the education of students who wish to follow such specialized work. Town planning involves basically the training included in the education of an architect, which requires a knowledge of planning of wide range, engineering and the æsthetic phases of a problem as well as those broad intuitive human qualifications already alluded to in this article, and which are essential. There is no question that the responsibility for carrying on town planning must necessarily rest upon the architectural profession and it should prepare for this service.

The agitation for zoning laws has already done much to advance the movement for better regulation of town growth. It is, however, obvious that before such zoning laws can be properly considered, let alone put into effect, there should be prepared in advance a comprehensive city plan to act as a guide in the proposed regulation and restrictions of buildings and future areas. Here again is the necessity for visualizing and planning in a broad sympathetic manner, or as suggested, so as to obtain the support of the entire community so far as it is possible.

To generalize upon a few of the essentials in comprehensive planning, it might be mentioned that direct thoroughfares should be established. These main highways, like arteries in the human system, are of utmost importance; they prevent congestion affecting oftentimes the entire normal growth of the community. It follows that these thoroughfares be wide and spacious and so located strategically to give direction to the traffic and pass it rapidly through the corporate limits with a minimum of obstruction and confusion. This principle of establishing thoroughfares also reacts in a satisfactory manner to the entire city and is of especial benefit to the residential districts, relieving them of unnecessary traffic, also the accompanying danger, noise and dust.

Sufficient parks, playgrounds, spacious sites for schools and future schools and open areas in many districts are a cardinal principle in comprehensive planning. Every community, city or town, be it large or small, is in the process of growth and ex-

pansion; therefore, the securing of unimproved ground in time is of utmost importance.

The railroad entrances, depots and stations should always be given the most careful study both from utilitarian and attractive considerations. Here should be ample areas for uninterrupted and free circulation for the parking of motor cars for general traffic and safe movement of pedestrians. Here should also be opportunity for beautification of flowers, fountain, statuary and architecture which adds charm to the public areas surrounding the depots. The traveler's first and lasting impression of a place is the railroad center, the gateway to the city. The citizen also takes great pride in a splendid railway approach as indicative of the progressive and cultural spirit of his home town.

Aside from the topographical layout of the streets and thoroughfares which are fundamental, great interest should be centralized upon the æsthetic developments so that when completed the general effect will be artistic and architectural, where taste is sought and beauty encouraged in all proposed permanent improvements. Thus a town planner should be competent not only to plan the utilitarian features from the commercial standpoint, but he should also be able to visualize the plan as it will appear when completed architecturally. The planner should be competent to carry his task into effect, combining the constructive features with the artistic. This is a very important part of his professional service and, in order to accomplish this end, demands not only a broad knowledge of the principles involved but also of human nature and people in general to gain their support.

The first permanent improvements of the architectural features should be executed by the town planner who prepared the drawings, in order to establish the municipal developments according to the proposed intent of the comprehensive plans. Herein lies the crux of the situation in America today and the most difficult to solve satisfactorily and which time and experience alone will remedy.

A municipality may be induced by public spirited citizens to have a town plan prepared. The plan may be satisfactory and eventually approved by the citizens. Unfortunately at this critical period or at the acceptance of the plans the services of the author, the town planner, are considered finished and his services terminated and the plans entrusted to the political status, the public officials of the municipality. The query at this juncture is, who is there in such public service under a fixed salary endowed with sufficient knowledge, pride and enthusiasm to guide a plan of any magnitude to realization and success? The official talent in most centers is not equal to such a task. Their co-operation is, of course, necessary, but the very nature of their political position prevents disinterested service or judgment of the order required.

The psychology of the average city at present is seemingly prejudiced against employing for a period of years, architectural experts to develop municipal improvements. There may be reasons for this attitude, nevertheless, the present political status is an extravagant one for which the taxpayer must suffer. As it becomes generally known that it is more efficient and far more economical to employ a specialist to carry on city planning and expansion, the present method will be superseded by the more modern one suggested.

If this principle of engaging for a period of years competent professional assistance in the developing of a city-wide plan were in vogue, many of the splendid comprehensive plans that have been proposed in recent years would now be a reality instead of a mere dream on paper to the great and irreparable loss to many towns or cities.

The example of the Chicago Plan Commission in its city-wide operations should be known by all progressive communities. Its services are continuous through the years and exemplify in a splendid way the beneficial results of a permanent unpolitical centralized organization in the orderly developing of a great city.

Architecture as an Art

By H. VAN BUREN MAGONIGLE, F. A. I. A.

IT is well to have a hobby or two tied at one's door so that, when asked for a few words of review or prophecy or warning, one may vault easily into the saddle. The steed I choose for the present occasion is Architecture as an Art—not as a Business, not as a Science, not as a Theory of Life,—as an Art.

Thus mounted and lightly caracoling, I seem to see that the profession in this country has been drifting unconsciously away from the broad highway and bewildering and bemusing itself in excursions into the wilds and morasses of Business Getting and Efficiency, of the Routing of a Check or a Product through Bank or Factory, of Emulation of the Business Man without his Training or Mental Habit, of Socialism and its Wriggling Brood, of all those things about which the men who built when Architecture was an Art never bothered their blessed heads, and whose products the Efficient Architect of the present day feverishly cribs because—is it because Business, Scientific Management, and Social Problems take up so much of his time that there is none left for Design?

Should the Businesslike and Efficient Person the architect is so fast becoming pause for breath and do as real Merchants do—Take Account of Stock, and see whether the dusty shelf from which Art has almost disappeared would better balance the other merchandise if put to use again?

EDITORIAL COMMENT

THE WISCONSIN Industrial Commission has leaped into prominence by the utterance of the following sensible reminder to taxpayers who object to the cost of fireproof schools:

"There are only two classes of buildings where attendance is involuntary—schools and jails. If the house or flat in which you live is a fire-trap, you are at liberty to move out. If you believe that a certain hotel or theatre is unsafe, you need not patronize it. But if your school is in daily danger of becoming a fiery furnace—the law compels your children to attend, just the same."

Every architect who is a planner of school-houses should make a copy of the foregoing sixty-nine words in large letters and frame the saying to hang in a prominent place in his office where every client may read it.

* * *

BY THE RESIGNATION of Mr. C. B. J. Snyder, Superintendent of School Buildings of New York City for 31 years, the people lose a progressive designer and builder of school-houses. Under his charge the department developed into a magnificent organization, admirably fitted to cope with the many vexing problems arising in connection with the design, construction and maintenance of public school buildings. Not the least of the troubles with which he had to contend during the last year of his service, as evidenced by newspaper reports, was the opposition of certain elected members of the Board of Education, who are reported to have criticized the organization of the department. Judging from newspaper descriptions of the re-organization proposed by one of the critics the department will become inefficient and unduly expensive. It is regrettable that able men who devote the best years of their lives to the public and wave aside the chances for gainful employment in private practice should be victims of criticism at the end of a long, unselfish and worthwhile term of service.

* * *

THE SKYLINE of a city in these days of high buildings becomes an architectural asset with the adoption of zoning laws. Within one or two generations the skyline of New York City will be remarkable for a definite character absent now from the ragged juttings of towers and piles of brick and stone with which visitors from abroad are so impressed. The planning of cities will, in the future, take into consideration elevations of groups of structures as well as the laying out of

streets, avenues and boulevards. The grouping of the immense buildings near the lower end of Manhattan, viewed from the deck of an incoming vessel, cannot be surpassed anywhere in the world. The view, when the morning sun touches their tops, makes one think of the grouping of mediaeval castles; of towers and minarets; of trees and cliffs of fairyland, pictured in such rich profusion on the gayly illuminated covers of the wonder tales of childhood; of Mont Saint Michel and the castle crowned hills of Europe. The effect of the zoning laws on New York has already been good and this, more than any other single thing, impresses visitors from cities where opposition to zoning is encountered. The splendid work so far done as described by Mr. Corbett in this issue is but a slight indication of what we are confidently to look forward to. With it all comes regret that towering structures to contain lofts for manufacturing purposes, continue to be planned and are being rapidly erected in congested districts. The transportation problem is daily becoming worse because men will build in the heart of an already thickly built district, without taking thought as to how their employees will arrive and depart. The subways, the elevated trains and all other methods of transportation are overcrowded with no hope of new facilities being provided within several years, yet within a short distance of this office tenants are moving into a building which it is said will shortly house ten thousand workers. The irony of the thing lies in the fact that nearly all of them live in outlying boroughs. Within two blocks other buildings of equal capacity will shortly be ready for occupancy. The buildings that soar to the skies and cause visitors from abroad to gasp with amazement at their beauty and the beauty of their grouping are all inhabited during working hours by people who travel underground like moles to get to their work and return to their homes, nearly all of them standing packed in the cars like sardines. When will common sense convince the employers that factories are best built near the homes of workers and should be surrounded by light, air and trees? There is really no reason for a transportation problem in New York City, cupidity alone being responsible for the present discomfort and inconvenience suffered by millions of people daily. Much is expected from wise zoning laws to alleviate the transportation difficulties. In the meantime the architect is enabled to plan buildings without having to leave ugly blank side walls to be hidden—perhaps—by a neighboring high building. In a zoned city the question of how to treat side and rear walls is solved. For so much let the profession give thanks.

THE CHICAGO TRIBUNE competition was a notable event in architectural history in America. Nearly one hundred and fifty architects from twenty different countries sent in ideas of how the problem should be treated. The result was a collection of pictures with which the business men of the country will soon become familiar. Already enterprising publishers are announcing the early appearance of volumes containing reproductions which, to quote one inspired advertising man, "give to the American business man an unsurpassed collection of views which will enable him to form ideas of how to deal with the problem of his new business structure." Perhaps publicity is good for architecture and perhaps at times it may be too much of a good thing. The files of the leading architectural journals will help more than any collection of views of a prospective building, and it is certain that these same files were freely thumbed by ambitious designers in search of inspiration for the gaining of a big prize. On the whole such competitions are good for the architectural profession, giving to the older men the spur given to the younger men in the Beaux-Arts competitions. It is good to dream and happy is the man whose life from time to time is graced with dreams. The work involved in the study of the problems met with in the design of a building such as that demanded by a metropolitan newspaper, that it might be a monument to the journalistic profession, was not wasted and even those competitors whose work did not get a mention, wrought well for their art and have advanced it in public estimation.

* * *

SPECIFICATION WRITERS seem to be abandoning the habit of using the words "or equal" that so often marred otherwise well thought out and well written specifications. There is in nearly all the specifications we have had an opportunity to study during the year just ended, a sureness of expression and evidence of a grasp of the problem that distinguishes them from the average of specifications written a few years ago. The American Specification Institute must be given credit for much of the change for the better but the manufacturers are responsible for most of it. To one who has made a practice of reading trade literature the decided change for the better within quite recent years cannot fail to have been evident. There is less florid writing and more definiteness in claims for performance and descriptions of how to install, maintain and use the equip-

ment advertised. With this has come the strength of will on the part of specification writers to select what they want before writing the specifications and of making no changes after bids are called for. An evidence of the desire on the part of manufacturers to have their salesmen properly approach architects was given by a manager who recently asked the editors of a number of architectural journals to give the names of books which his salesmen would profit by reading. In a letter to an editor of one journal the manager said that he had a number of salesmen but the two who brought in the bulk of the business were men who had worked some years as architects. Times today are so good for architects he was unable to obtain any more architectural salesmen so he intended giving to his other men Christmas presents of books dealing with architectural history and styles, in the hope of enabling them intelligently to approach architects in their lairs.

* * *

A YEAR AGO there was a note of forced optimism in much that was written about business conditions and prospects. There was considerable unemployment, and uncertainty as to whether the bottom had been reached in prices was holding back much needed work. From reports coming in these days it appears that there is not the normal amount of unemployment; wages are going up in every line of industry because of a real shortage of men; prices are advancing again because of demand exceeding production and because of transportation difficulties and shortage of fuel; contracts for building construction exceed in volume anything before experienced. Architects are busy and draftsmen are in demand. There is no forced optimism now, neither is there any evidence of the false optimism that leads to inflation, speculation and booms. The farmer is getting into better shape than he has been in for three years and when the farmer comes into prominence as a buyer and not a borrower, the nation takes heart. Solely the unsettled affairs in Europe and uncertainty as to their possible reaction on the United States, remain to trouble the thoughts of students of affairs. The year just past has been a good one for the architectural profession. That the new year will bring prosperity and content to all is little to wish for and hope for. The signs at the beginning of the year seem most propitious.



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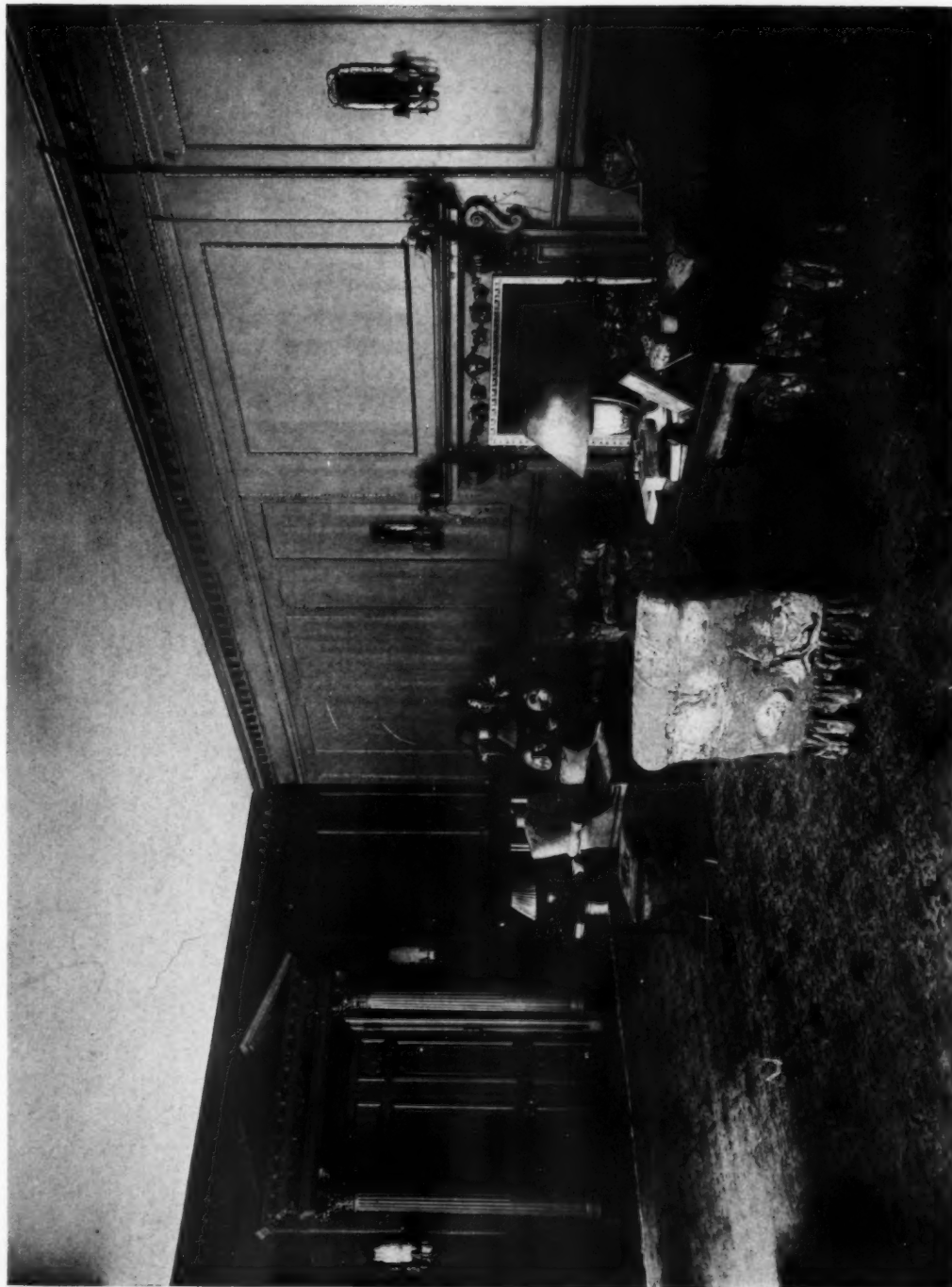
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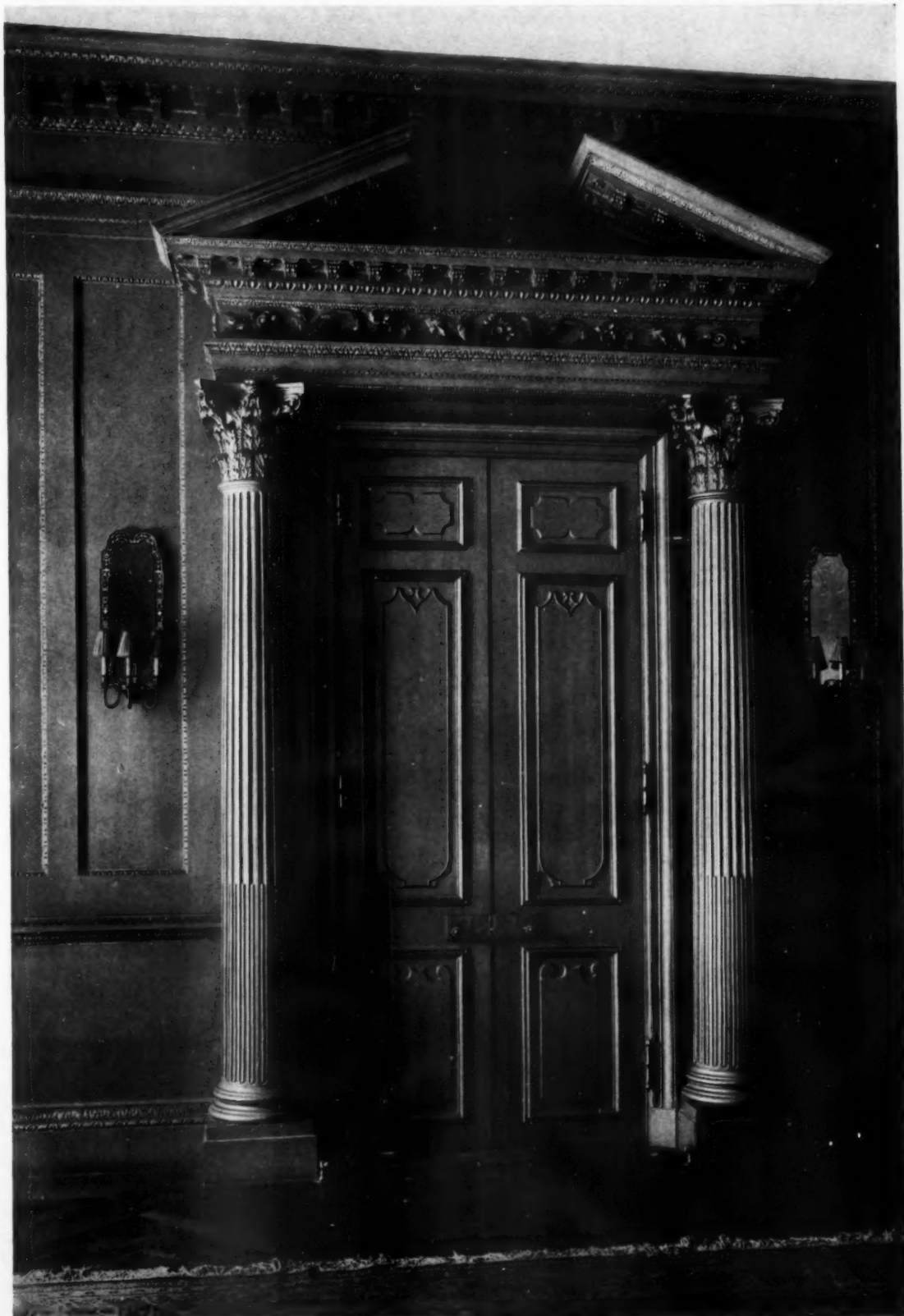


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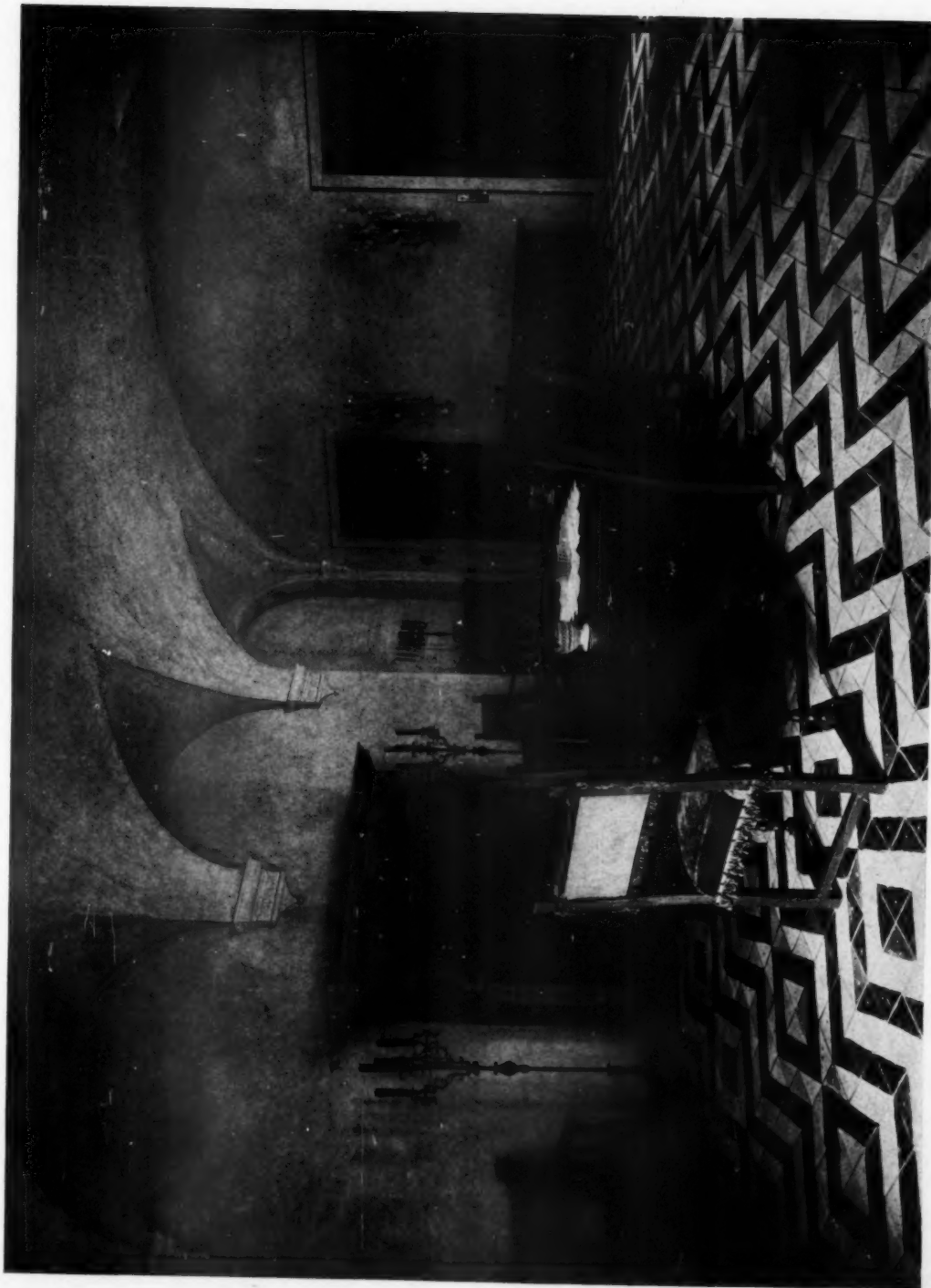
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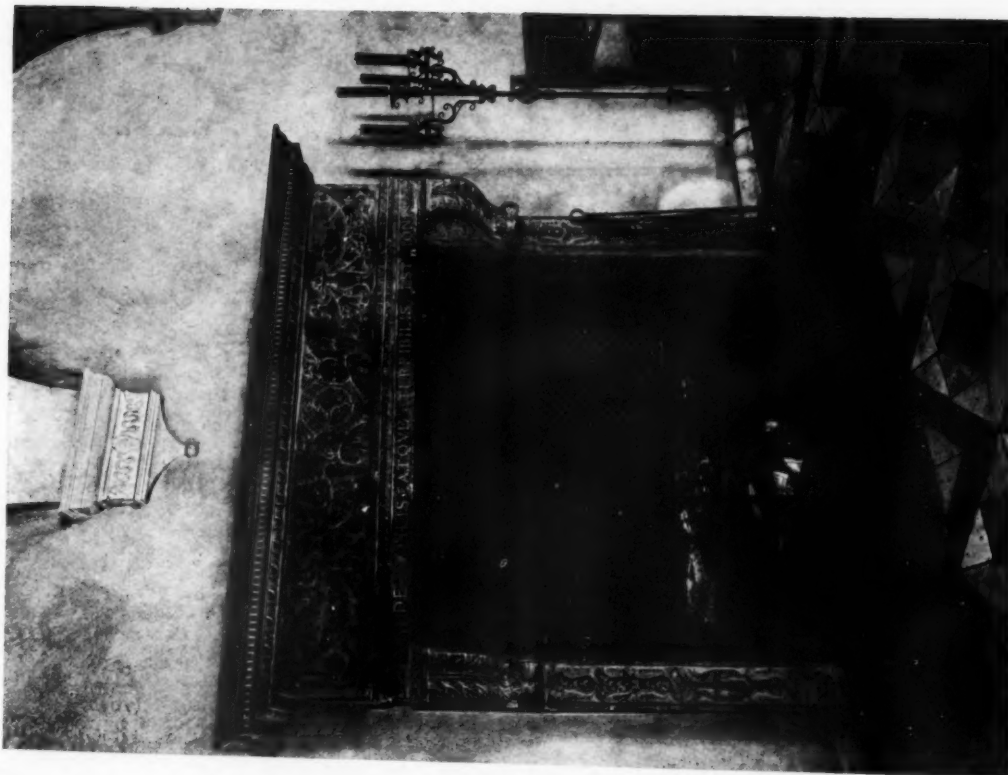
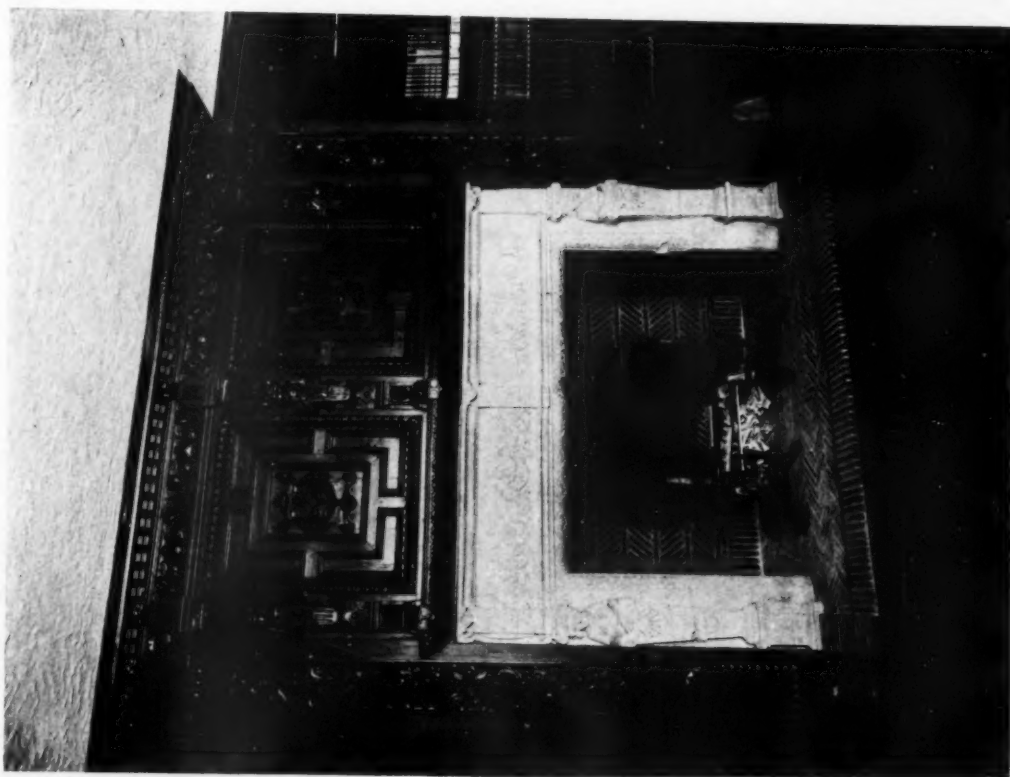
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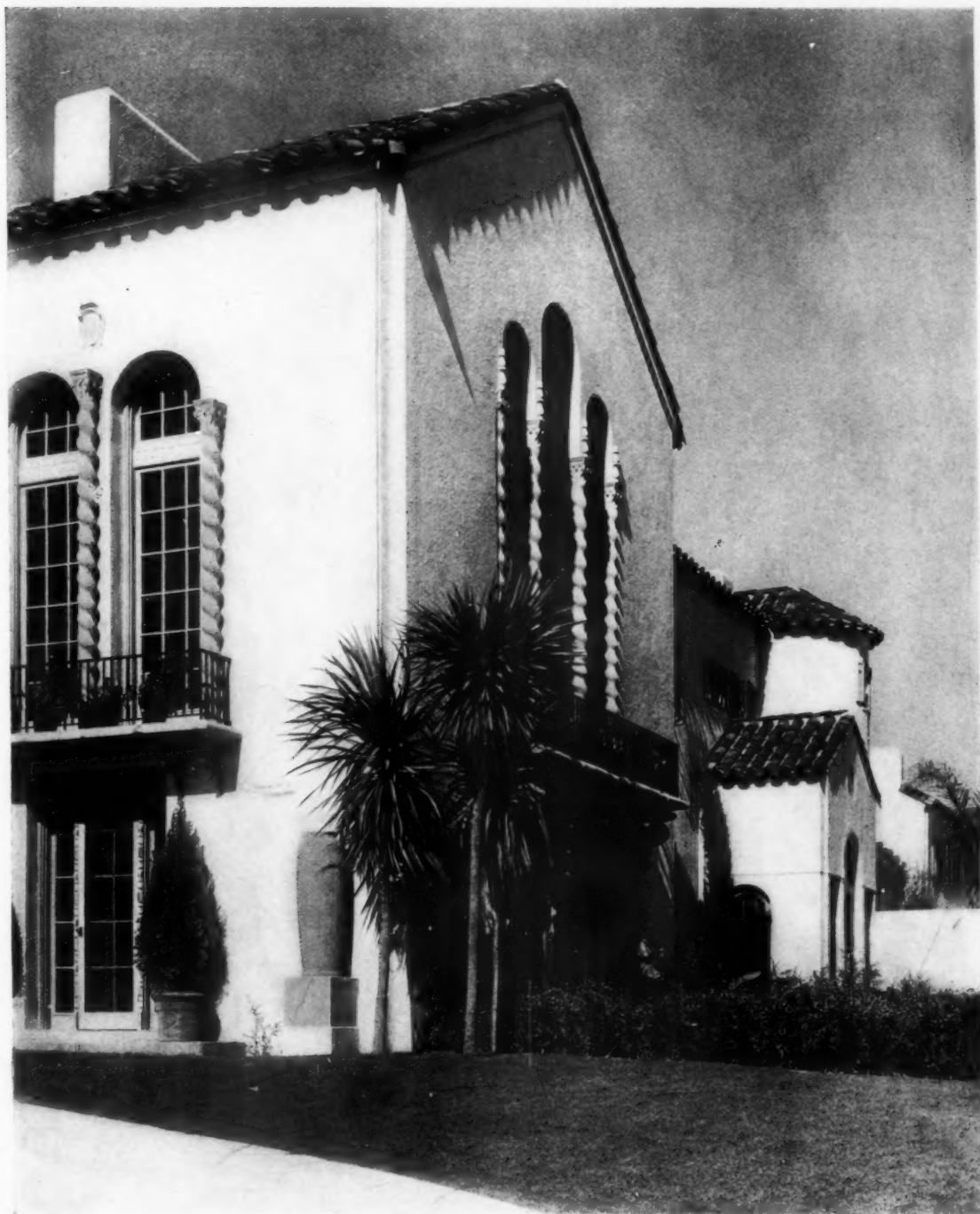


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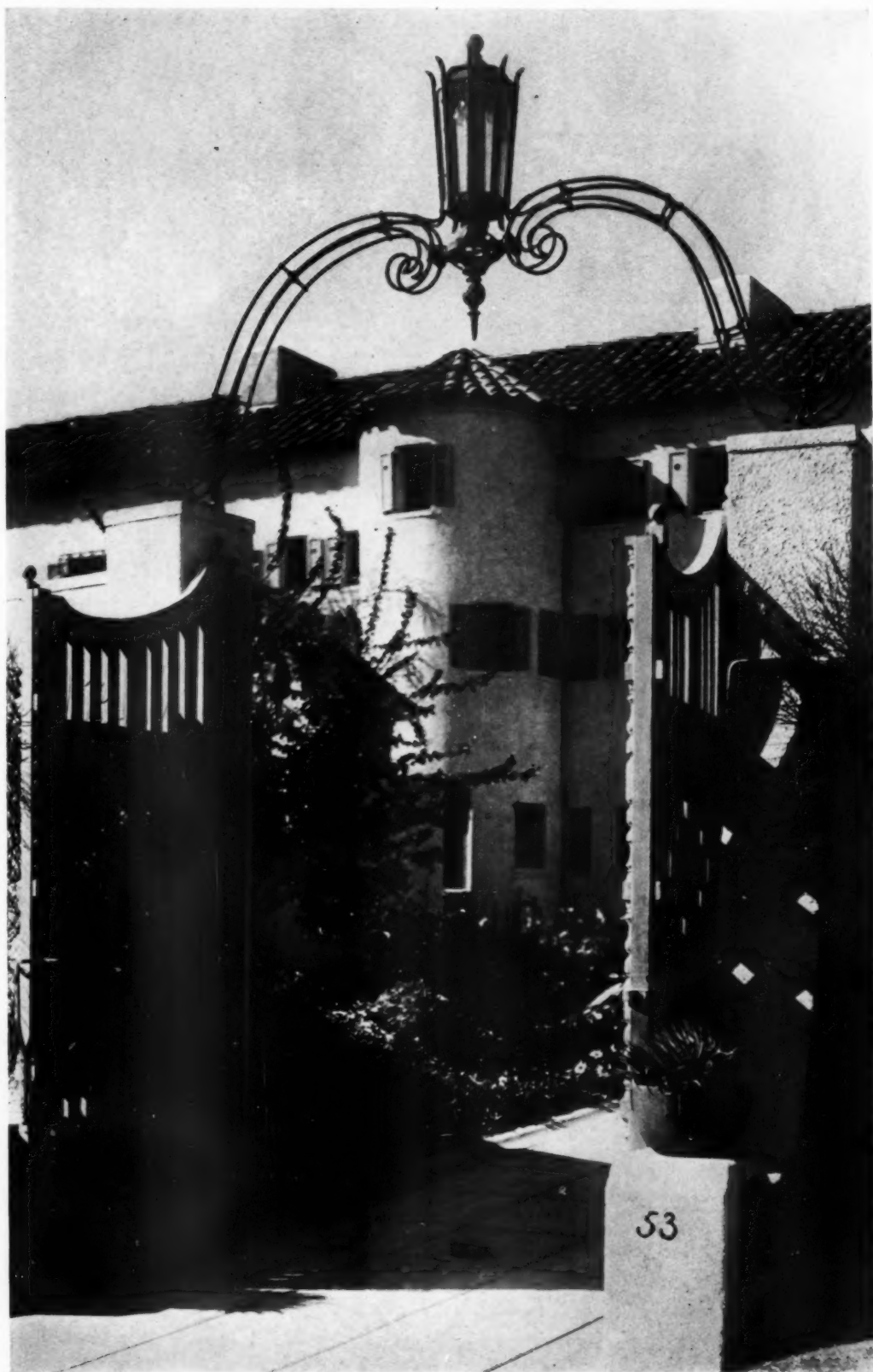


HOUSE OF JAMES SHULTZ, ESQ., LOS ANGELES, CAL.
HARWOOD HEWITT, ARCHITECT

A building that is reminiscent of Spain and days of romance in the early history of California. The exterior suggests the disposition of the halls, rooms, offices and patio. Admirably fitted for a setting of rolling land near mountains in a country of bright sunshine and long weeks without rain



HOUSE OF JAMES SHULTZ, ESQ., LOS ANGELES, CAL.
HARWOOD HEWITT, ARCHITECT



HOUSE OF JAMES SHULTZ, ESQ., LOS ANGELES, CAL.
HARWOOD HEWITT, ARCHITECT



HOUSE OF JAMES SHULTZ, ESQ., LOS ANGELES, CAL.
HARWOOD HEWITT, ARCHITECT



VIEW IN GARDEN OF SAMUEL UNTERMYER, ESQ., GREYSTONE, N. Y.
WELLES BOSWORTH, ARCHITECT

ITALIAN RENAISSANCE IN DETROIT

The Library

BY W. FRANCKLYN PARIS, M. A., L. H. D.

THERE is a certain sober melancholy about large cities, particularly those in Northern latitudes, which the fancy of an artist might well ascribe to color, or the lack of it. Where a million inhabitants, each garbed in neutral tints, encumber the landscape, it is not likely to emerge as festive and joyful as when the per-

there are any number of frescoed façades in Italy upon which time has but faintly dimmed the brilliancy of the original pigment. If bright colors induce a sensation of gaiety and light-heartedness, it would seem as if their use were more needed in localities which the sun visits grudgingly than in cities basking under



East End of Barrel Vault showing design of panelling, Detroit Public Library, Detroit, Mich.

Cass Gilbert, Architect
Decorations by Paris and Wiley

spective is sparsely dotted with figures decked in primary colors. When this million moves between smoke-grimed buildings, prosaic in outline and monotonous in their uniformity, the ensemble is cheerless and the atmosphere solemn and depressing.

In countries "where it is always afternoon," the natives attune their costume and their habitations to nature's color scheme and the houses are white and sometimes pink, and occasionally frescoed with rainbow colored decorations. The Parthenon was once gaudy with colors and

its golden radiance; and yet, the dress and habitations of men are gayest in sunny climates and most sombre in regions where fog and smoke are prevalent.

While Detroit is not "the City of Dreadful Night," it cannot be claimed for it that it lies along the "côte d'azur," or that its sky is always blue. The architect of the Detroit Public Library deserves great commendation, therefore, for having bedecked it with gay mosaics and a golden cornice on the outside, and with gorgeously colored ceilings on the inside.

In the matter of ceilings, nature has given us the cue and set the model for all artists to follow. In the caparisoning of the "dome of Heaven" we find inspiration for the decorating of what we have over head indoors. Just as a leaden sky is depressing and tedious to the eye, just so a flat, monochrome, or white, ceiling is neurasthenic in character and dispiriting in its effect. It is no doubt because of this that the architect of the Universe paints the ceiling of the Cosmos with such a variety of outline and such a wealth of coloring. There seem to be two methods in nature, just as there are two methods in human practice. By day, the sky is painted over with masses of color in great compositions covering wide surfaces. At night the decorative scheme is one of a fixed background into which the same motif, the stars, is repeated in a symmetrical arrangement.

In art the practice has been similarly divided between the spreading of masses of color in scenic compositions containing one or many figures, and the arranging of a repeated motif, or of several motifs, in a balanced and more or less geometrical manner.

The height of the ceiling, the character of its area (flat or arched), and the architectural and structural interruptions that divide or cut up its surface must all be considered before one or the other method is employed. A square or rectangular flat surface will lend itself better to a ceiling of the repeated pattern style, while a vaulted ceiling, cut up by intersecting arches will demand a decoration in which the soffits, spandrels, architraves and demi-lunes will all receive a distinct design. By reason of the Detroit Public Library building providing ceilings both broken and unbroken, it has been possible to utilize both genres of decoration.

The most imposing and most important of these plafonds is the barrel vault spanning the double stairway and bisecting the building along its entire width. This is divided into five main sections by four wide bands of ornament in relief. These bands cross the vault from East to West and are subdivided into oblong panels separated from each

other by hexagonal or round cartouches which contain book marks, printers' devices, emblems, escutcheons and various other ornaments of a bibliographic character.

There are four long oblong panels in each of the bands and each panel contains a seated figure symbolizing some form of art or letters. The figures in the first band typify Epic Poetry, Didactic Poetry, Elegiac Poetry and Lyric Poetry. In the next are pictured Ancient History, Modern History, Conservatism and Invention. The next portrays Romance, Tradition, Biography and Fame. The fourth band, that at the Northerly end, contains presentments of Biology, Science, Cartography and Geology.

The interlace ornament which forms part of the four dividing bands and follows the intersection of the pendentives is in relief and gilded over a background of color. Of the five main sections into which the vault is divided, the three middle sections are subdivided as follows: An ornamental octagon modelled in relief and edged with gold forms the center of the group. A Greek fret, in relief and gilded over a blue ground, surrounds this panel

and also serves as border to rectangular panels, flanked by cameo-like cartouches of a Pompeian flavor. In the panels of the center section are inscriptions—Letters, Arts, History, Science.

In the panels of the two lateral sections are seals respectively of the United States, State of Michigan, University of Michigan and City of Detroit.

The main section to the South, the first of the five, contains a large rectangular panel bearing an inscription, and smaller panels on either side with the names of distinguished authors. In the South section the names are Homer-Virgil and Whitman-Emerson, while those in the corresponding section at the North end are Milton-Hugo and Lowell-Poe.

The inscription in the South panel reads "Consider what Nation it is whereof ye are: a nation not slow and dull, but of a quick, ingenious and piercing spirit, acute to invent subtle and sinewy



Perspective of Corridor Ceiling, Detroit Public Library, Detroit, Mich.

Cass Gilbert, Architect
Decorations by Paris and Wiley

to discourse, not beyond the reach of any point the highest that human capacity can soar to."

In the panel of the North section is inscribed "Reading, trying all things, assenting to the force of reason and conviction, what wants there to such a towardly and pregnant soil but wise and faithful laborers to make a knowing people, a nation of prophets, of sages and of worthies."

There are six penetrations in the vault, three on either side. Four of them are filled with modelled ornament, a vase in the center typifying the fountain of Pirene flanked by the winged horse—Pegasus. The central penetrations contain each a single figure "Inspiration" seated on an eagle, and "Genius" on a winged horse. The dominant color tone is a soft moonlight blue, while the ornamental mouldings are a deep antique gold, relieved here and there with grey.

The corridor which immediately adjoins the barrel vault, and which the eye takes in with the vault itself from the stairs, has naturally had to be treated in the same spirit as the vault and in a manner to harmonize with it. It is made up of seven sections separated by flat arches. Each section is made up of four curved triangular panels formed by the intersecting vaults, the groins of which are ornamented with the same interlace used in the decorations of the barrel vault.

In the central section the four panels are ornamented with architectural frames in stucco relief containing figures representing Architecture, Painting, Sculpture and Mosaic. The sections at the North and South ends are treated in the same manner, each with four figures seated. These represent Tragedy, Harmony, Symphony, Justice, Government, Equality, and Fraternity.

The other four sections in the corridor show two standing figures, each in architectural frames. These typify Astronomy, Mathematics, Chemistry, Geography, Poetry, History, Dialectics, Rhetoric. The ornamentation is closely related in motif to that used in the pendentives in the barrel vault.

The decoration of the flat arches which divide the corridor into seven sections consists of hexagonal medallions containing miniature scenic tableaux illustrating various literary or historical subjects. The color note is deep blue with a soft time-mellowed finish. The setting of this lapis-lazuli, the stucco relief that frames the various panels, rondels, cartouches and all the flat surfaces—is subdued gold touched with grey. It is a princely ceiling but without garishness or sumptuousness.

The spirit of the decoration is purely Italian Renaissance and the noble traditions of Raffaele and Giovanni da Udine, to say nothing of their predecessor Pintoricchio, have been observed and followed.

In the decoration of the ceiling of the Main Delivery Room, where a vast flat surface is available, the second manner, the symmetrical arrangement of a repeated decoration upon a fixed background, has been adopted. The room is one of noble proportions, 75 feet square with a ceiling 35 feet high, and permits the use of a pattern of coffers and rosettes of large dimensions in deep relief. The constructional beams which form the octagonal

coffers are painted a light neutral grey, with a pale green background for the modelled plaster ornament on the soffits of the beams. At the intersection of the beams are four gilded rosettes which surround a simple larger rosette of pale blue. The ornamental mouldings of the coffers are richly gilded and accented with deep reds, blues and violets. The center of each coffer is filled with a large gold rosette in high relief against a background of dark blue.

This ceiling, resting above a large band of blue carrying an inscription in gold letters, contrasts agreeably with the sober limestone walls which have been given a tooled surface in order to produce the desired color tone. In any other surrounding it would have seemed too vivid, too blatant in coloring, but here, it is as a glimpse of the sun shining through a break in the clouds.



Lateral Section of Barrel Vault showing interlace and inserts, Detroit Public Library, Detroit, Mich.

Cass Gilbert, Architect
Decorations by Paris and Wiley

Less brilliant and not quite as magnificent and ornate, are the other decorated ceilings of the library, but in all of them color has been used to fine advantage in adding beauty to form.

The ceiling of the Open Shelf Room is a pattern of hexagons and small triangles made by the meanderings of an intersecting round moulding. The walls above the shelves are a rich yellow, without any ornamentation. The center of the hexa-

moulding of floral detail, with rosettes at the intersections. Each square contains a large rosette of which there are several designs. The four squares in the center of the ceiling are omitted and their place is filled with a large circle framing a picture symbolizing Wisdom counselling Statesmanship. The frieze is made up of arabesques and circles containing portrait heads. The color scheme of the ceiling is blue gold and light grey,



Central Arch of Barrel Vault with detail of ornamentation, Detroit Public Library, Detroit, Mich.

Cass Gilbert, Architect

Decorations by Paris and Wiley

gons and triangles is decorated with rosettes and a flat band runs on either side of the round moulding. The moulding and the rosettes are gilded, the flat bands are grey. The background of the rosettes in the hexagons is grey, while the background of those in the triangles is red. The general tone is yellow grey.

The Social Science Room also has yellow walls but of a deeper shade. The frieze around the room is a series of semi-circular drums separated by triangular pendentives which carry the ceiling down to the wall. The ceiling itself is divided into oblong squares by a bold four-inch round

the gold being used on the mouldings and rosettes and the grey on the other ornaments.

The Fine Arts Room, which runs parallel with the façade of the Library, has a very handsome ceiling of simple design, somewhat after the manner of the ceiling of the Church of Santa Maria Maggiore in Rome. The walls finish with a frieze which is made into panels by pairs of brackets equally spaced about the room. These panels are filled with delicate arabesques in different designs suggesting Pompeian grotesques. The soffits of the beams which divide the ceiling into squares have ornament in relief and the center of

the squares contain rosettes. No metallic color has been used in the decoration of this room. The walls are a soft mulberry; pale yellow and grey blue are used in the frieze and brighter blues and greens color the beams. The ornamental rosettes and mouldings are finished in pale yellow and grey.

The ceiling of the Music and Drama Room is reminiscent in its general design of the Ducal Palace in Mantua. The walls are blue and the very elaborate plaster ceiling is done in dull grey relieved with gold, used with studied restraint, in connection with subdued shades of reds, greens and blues. The rosettes in the center of the octagonal panels are blue and the masks and lyres in the ornamentation are gilded.

The Reference Room does not require special mention, being a different chromatic treatment of the Open Shelf Room, but the vestibule and entrance Hall deserve a brief description. Here the tone of the Tennessee marble, which is soft grey with a suggestion of pink, has influenced the choice of the colors used above the walls. The ceiling is divided longitudinally into three main sections by two marble entablatures supported by Doric columns. These main sections are subdivided into octagonal and square panels by flat beams ornamented with a Greek fret broken at intervals by rosettes. The octagons alternate with squares and contain figures in low relief, grey white on a red ground, which have been treated like cameos. The squares contain circles in which is set an ornamental composition relieved with gold and detaching itself against a blue background. Gold is also used with grey on the ornamental mouldings and white has been introduced in some of the small square panels. The general effect is rich and quiet.

The succession of ceilings within the Detroit Public Library constitute a combination of form and color that reflect the spirit of Giovanni da Udine and of the Roman, Florentine and Venetian

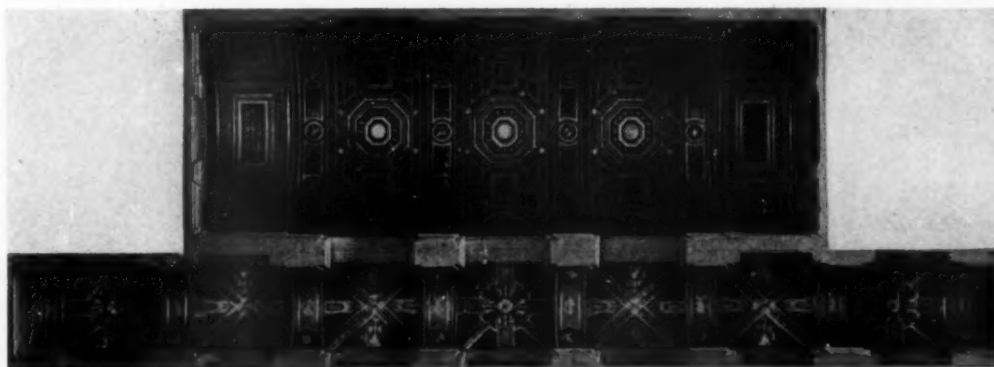
schools of the XVIth century, when the practice of combining relief surfaces produced by stucco, with flat surfaces ornamented with a painted composition, came into favor. At the hands of masters like Raffaele and Michel Angelo, to say nothing of artists like Peruzzi, Poccetti, Vasari, and Battista Franco, it attained a development that spread to every civilized nation in Europe and that filled Italy with soffitti that must compel the admiration of generations.

There had been decorated ceilings before the XVIth century, as the remains of the Pantheon of Agrippa will attest, but they had consisted of applied decoration more or less limited by the structural and architectural divisions of the ceilings, the apparent beams used for support. These beamed ceilings, elaborately painted like missal illuminations and standing out against a background of carved plaster work called *Yeseria*, are one of the glories of Spain of the XVth century.

The Infantado Palace at Guadalajara, the Town Hall in Seville, the Casa de Mesa in Toledo, the Aljaferia in Zaragoza, the monastery of Santo Domingo De Silos in Castile, are only a few of the palaces and religious edifices of Spain containing examples of this type of ceiling, known as "*arte sonado*." The process of painting these beams is very primitive. The surface of the wood receives a preliminary coat of size and thin yesso, or plaster wash, after which the color is applied flat, in tempera, with no modelling. The effect however, is very sumptuous.

The Sala Capitular of the Toledo Cathedral contains a ceiling of this character finished in 1508. The ceiling is flat, with a central panel divided into thirty-two coffers so arranged as to form a cross of St. Andrew in the soffit. The dominating note is gold. The painted decoration is confined to the soffits of the coffers and the

(Concluded on Page 21)



Ensemble view of Barrel Vault and Corridor, Detroit Public Library, Detroit, Mich.

Cass Gilbert, Architect
Decorations by Paris and Wiley

THE OUTLOOK IN THE BUILDING INDUSTRY FOR 1923

BY S. W. STRAUS, President, S. W. Straus & Co.

IT is my belief that during 1923 we will see a steady continuation of the remarkable volume of construction which has made the present year a record breaking one in the history of the American building industry.

We do not yet know, of course, what the exact figures for the present year will be, but from the enormous total of the eleven months just closed and the fact that up to the opening of December there was practically no seasonal decline, except in the extreme Northwest, where weather conditions interfered, it is safe to say that the figures for the twelve months of 1922, for the entire country will surpass three and three-quarter billion dollars.

When we contemplate the possibility of duplicating or surpassing this volume of construction during the coming year it appears to be a monumental undertaking, but I believe it is more than likely we will accomplish it.

The universal activity in all forms of construction, which we have witnessed during the present year, was in consequence of a general demand for new buildings in all parts of the country. At the beginning of 1922 the whole country was in urgent need of new and better structures of all types and there was a particularly acute shortage of residential buildings in every city and town. The real extent of this demand was not then fully realized but as new buildings were finished and occupied it was possible to realize how general the demand was.

As the year closes and reports from all sections continue to come in, showing that the progressive cities are still underbuilt on nearly all types of structures, it is plainly evident that in spite of the record breaking volume of construction during these past eleven months, the demand has not been satisfied. In hardly any section has new construction afforded anything but temporary relief. It is inevitable, therefore, that during the coming year, if not for a number of years to come, building activities of large proportions must continue. No one can read the future. No one can tell just what the coming months will develop. But from the present outlook it is my opinion that the percentage of increase in 1923 over 1922 will be substantially as high as, if not higher than, the increase which 1922 will show over 1921.

In any estimate of prospective building in the United States, for some years hence, there is one factor sometimes lost sight of by many but which must be taken into consideration. This is in addition to the natural increase of population and the normal expansion of general business which cre-

ate a demand for new structures. By this new factor I mean the demand which is created through higher standards of living.

People everywhere, especially in the United States and Canada, are setting a higher estimate upon the importance of comfort, convenience and sanitation, not only as regards their homes, but their offices and factories as well.

In this respect I think the world is progressing quite as rapidly as, if not more rapidly than, in any other particular. Modern, efficient apartments and apartment hotels, not only in the large cities, but also in the smaller cities and towns, have pointed to a new mode of living, with a maximum of comfort and convenience and a minimum of labor and annoyance. The city worker finds this mode of living not alone more comfortable but more economic, a conservator of time, giving more hours for pleasure and beneficial recreation and a relief from cares which add to the nervous strain of an active business life. For the wife and family it means freedom from domestic drudgery and affords the mother additional time for relaxation and improvement. In the modern hotel the traveler finds a comfortable home instead of merely a temporary place at which to stop. On every hand are the conveniences which have become so essential and necessary for the proper conservation of time and health.

In the modern office building and factory the worker is provided with better light and air and everything which makes for a more efficient day and the preservation of energy and health.

The people are rapidly learning the advantages and values in this better mode of living. The desire is cumulative and the benefits are unquestioned. They will never go back to the old standards. It is far more reasonable to believe they will demand still greater improvement. The luxuries of yesterday are today necessities. This is the history of all advancement and expansion.

So we must always bear in mind this new controlling factor in an attempt to look into the future of our home and commercial building.

In addition to this, when we consider prospective building from the standpoint of the conditions which control the amount of building directly, such as labor and material costs and available capital for new construction, we certainly have nothing to fear for the coming year. In none of the reports which we have from the larger cities of the country, where the activities of S. W. Straus & Co. are concentrated, do we find the least timidity or hesitation on the part of builders in making

plans for next year. The general feeling regarding the outlook for 1923 and beyond, is extremely optimistic.

It must be remembered, however, that the demand for better buildings has affected construction costs, probably permanently, certainly until labor and material prices decline. Neither of these important items, taking the country at large, shows any tendencies downward. On the contrary, the cost of erecting buildings from a nationwide viewpoint, tends upward. During the past year material prices rose in a majority of the cities where building was active from early spring until late in the fall, after which they continued to hold firm in nearly all localities where the open weather permitted construction to proceed without the usual seasonal interruptions, and there is every reason to believe now, in view of the great quantity of building scheduled for next spring, that we may then look for further stiffening in material prices.

We cannot look either, for a decline in the price of building labor. The available supply of unskilled labor is inadequate, even on the basis of

the volume of construction which prevailed this year and in the face of the prospective volume for 1923 it will be surprising if the price of unskilled labor does not increase.

The supply of skilled labor is also insufficient. In addition, the skilled mechanics in the building trades have, like many other classes of workers whose services were indispensable during the war, adjusted their living expenses to the higher levels and they are naturally holding tenaciously for a maintenance of the present wage scales. In numerous localities they are demanding and receiving an increase. Only a decided, general recession in our building program, which is beyond the range of possibility, would lower the price of labor.

Supplementing these definite conditions, which affect composite building costs, we must not lose sight of the fact that modern, efficient buildings of all types have greater comforts and conveniences. These necessary refinements increase the initial costs, but they represent a permanent investment in better health and greater happiness for everybody.

Italian Renaissance in Detroit

(Continued from Page 19)

beam panels. The background of the coffers alternate between deep peacock green in one coffer and dark burnished copper in the adjacent space. This same alternation of background is carried out in the beam panels with the pattern always in gold.

When Michel Angelo divided the plafond of the Sixtine Chapel in compartments containing painted compositions having no relation whatever to the architectural or structural features of the ceiling, he established the precedent that the ceiling could be an independent decoration and the beams ceased to be of importance in fixing the design of this decoration. The relief heretofore produced by the cedar rafters, was produced with stucco and modelled plaster. This medium being infinitely more plastic than wood, it follows that the effects obtained were far in advance of those secured by the older method. The wonderful grotesques of the Loggia of the Vatican, designed by Raffaele and executed in slightly raised stucco, could never have been fashioned had wood been

the basis of the composition. One has but to view the wonderful ceilings of the Library in the Ducal Palace of San Marco in Venice to realize the limitless possibilities of stucco relief and color combined.

The Golden Staircase vaulted ceiling in particular, is like a rainbow imprisoned in gossamer goldsmith and filigree work. This shimmering mass of gold and soft tints which covers every inch of the stucco mouldings, consists of a series of square and octagonal panels joined by boldly sculptured bands, each compartment filled with painted decoration from the brush of Battista Franco.

The architect of the Detroit Public Library and the decorative artists whom he entrusted with the duty of putting his ideas into color and form, have not produced a work as dazzling as the ceiling of San Marco but one feels that they could have done so had the edifice to be adorned warranted as brilliant an outburst of gold and rainbow tints. They have used restraint, but a certain reserve was in good taste in a building which is neither a theatre nor a ball room, but one given over to silence and reposeful reading.

THE RELATION OF FINANCE TO CONSTRUCTION

BY WILLIAM McCLELLAN*

THE effect of the war on construction industry in general has not yet disappeared.

The new centers of manufacturing, distribution and housing brought about by war needs do not seem to fit the purposes of peace times and as a result there are unused facilities in some places and a great need for such facilities in others. It is plain that a huge amount of construction of many kinds is needed by the country and that if this does not go forward immediately, it will be due to certain temporary and local economic and financial conditions, rather than to any over-development.

There are no unsolved problems, either technically or financially, in the construction of residences, office buildings, factories, shops, public buildings, schools, etc. If the owner has the money and knows just what he wants to build, he needs but to consult an architect or engineer and later proceed to build.

Unquestionably, one of the greatest fields of building construction is in railroad and other freight terminals and in additional electric power facilities, particularly in large cities. If the amount of this kind of construction, which is certainly needed, were totaled, it would amount to hundreds of millions of dollars. It will have to wait chiefly because it is directly or indirectly a part of the great transportation problem of this country. This problem is not only unsolved technically, but if the solution were ready we should have to find some means of financing it, either with the help of the public utilities and railroads, or without them. The financing of building construction in the United States has never been organized to meet all its needs. A man desiring to build a home for himself has little difficulty in getting a mortgage if he personally can supply the "equity" financing. This is also true if the structure is an office building, warehouse, apartment or hotel well located in any large city and if the amount of money required on mortgage is within safe economic limits.

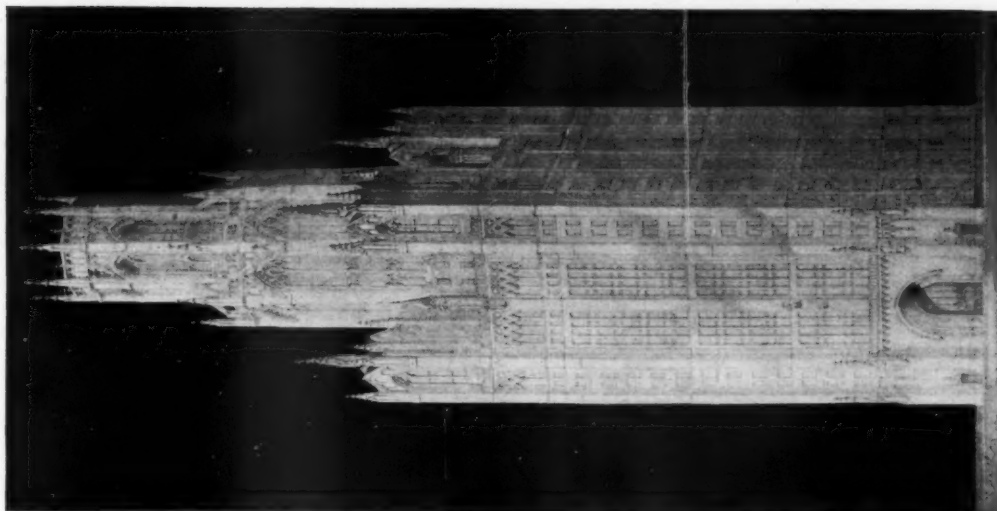
There are a number of desirable structures which are either completely held up because of inability to finance them, or excessive cost of financing. It is true that these buildings may be somewhat speculative, but many of them are much less so than is apparent at first glance. They differ from the usual industrial or public utility

in that their total cost can be calculated more closely in advance. In addition, the income not only can be closely computed, but it can be expected to grow to its maximum value very quickly. The truth is, the best investment bankers in the United States have paid little or no attention to the need for such financing. They have developed lists of investors which will absorb a large amount of public utility bonds and stock, but these same investors will not so readily absorb bonds or stock on structures. A certain portion of money will always be furnished by the great insurance companies or financial institutions representing them at very low rates. These investors, however, are necessarily extremely conservative. No investment banker could possibly furnish the money as cheaply as these because he must add at least the expense of advertising and selling the securities. However, there are numerous propositions which would stand a reasonable selling expense and at the same time not add materially to the cost of the money. One could discuss for a long time the need for developing some facilities for providing the equity or junior financing of meritorious building structures which are well located and bound to be adequately patronized. It is well known that the methods used heretofore sometimes result in loading the building with excessive fixed charges, and sometimes in taking the real ownership out of the hands of the originators.

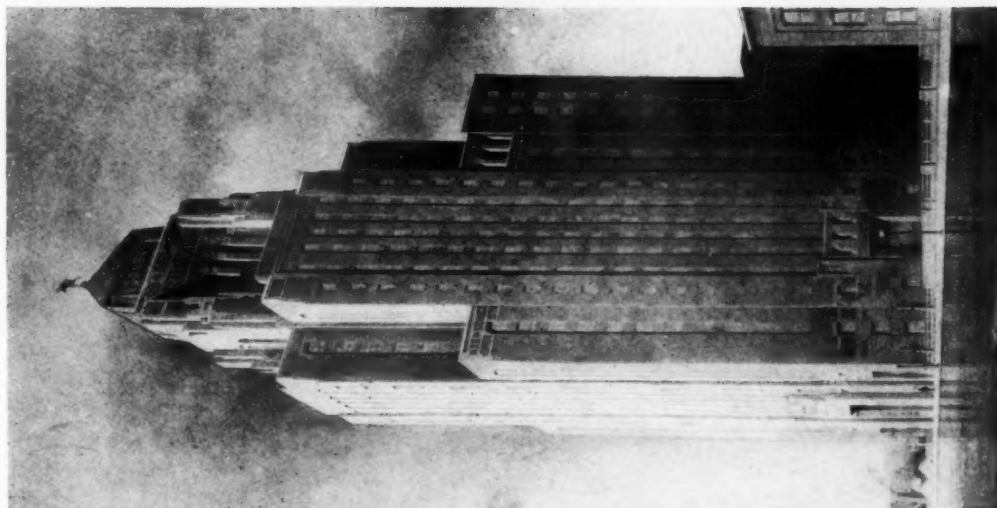
It would also be interesting to discuss the form of contract for the construction. The lump sum contract and the fee or commission contract each has many attractive features and, where properly and faithfully performed, should result in getting the maximum of ability on the part of the contractor for the very least expense to the man paying the bill. The reasons for using either form of contract predicated so much on the time element and the fluctuating costs of labor and materials, as well as the particular method of financing, that no general statement may be made with safety. Each operation will develop its own solution if properly analyzed.

A general view of the building construction industry as a whole today would indicate that there is not much to be said about the technical methods, but there is room for a great deal of originality and organization in connection with the financing of meritorious projects which have not an easy and direct call on existing sources of money.

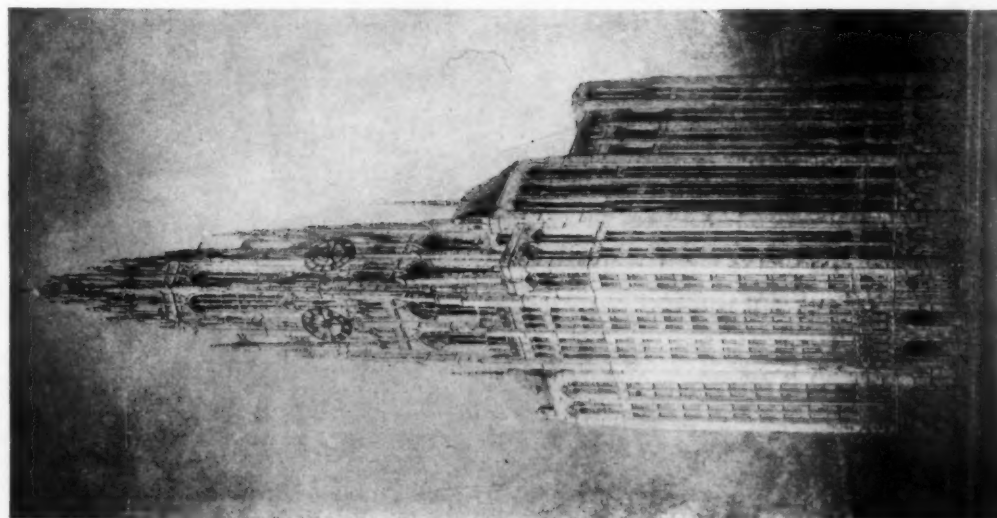
*Of McClellan & Junkersfeld, Inc., Engineers



GUY LOWELL, ARCHITECT,
BOSTON, MASS.

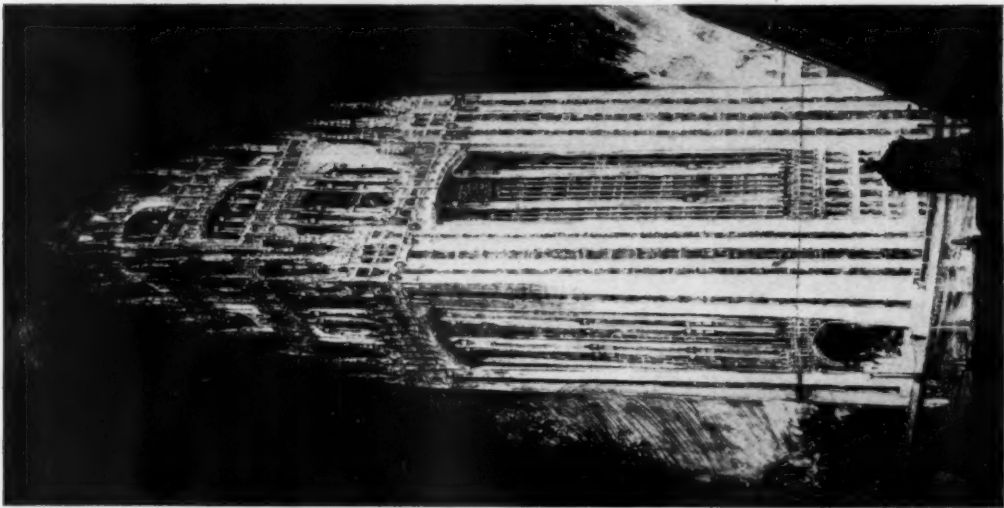


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NEW YORK

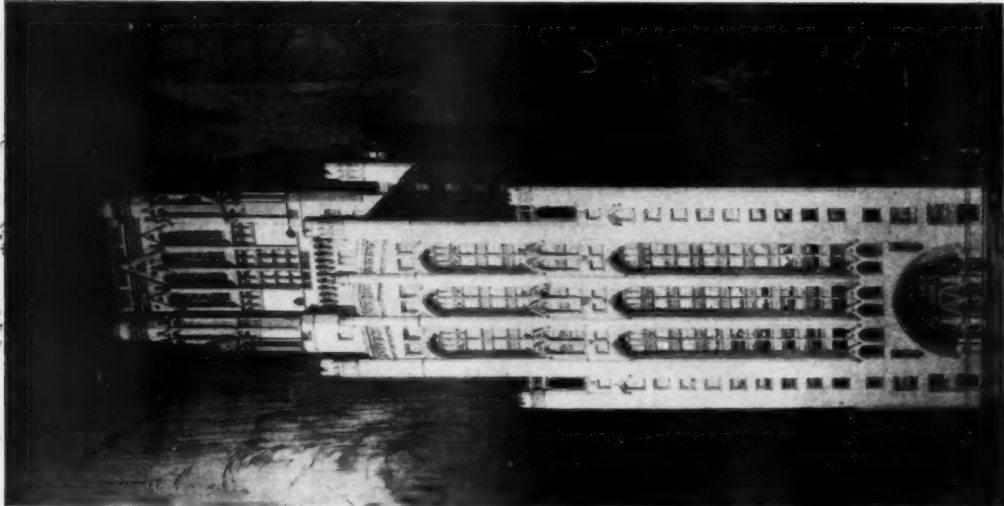


JAMÉS GAMBLE ROGERS, ARCHITECT,
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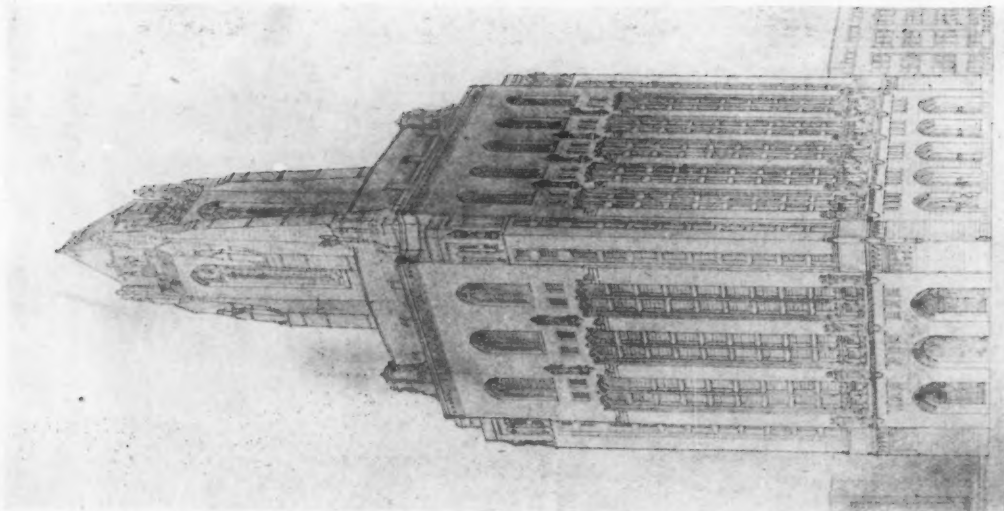
DESIGNS AWARDED HONORABLE MENTION—CHICAGO TRIBUNE BUILDING COMPETITION



LOUIS BOURGEOIS, FRANCIS E. DUNLAP, AND CHARLES
L. MORGAN, ARCHITECTS, CHICAGO

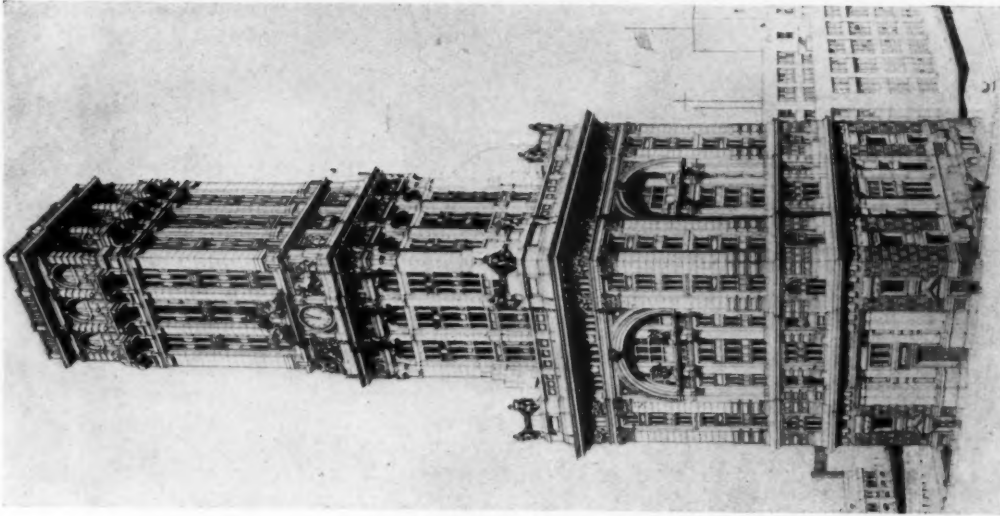


SCHMIDT, GARDEN & MARTIN, ARCHITECTS,
CHICAGO

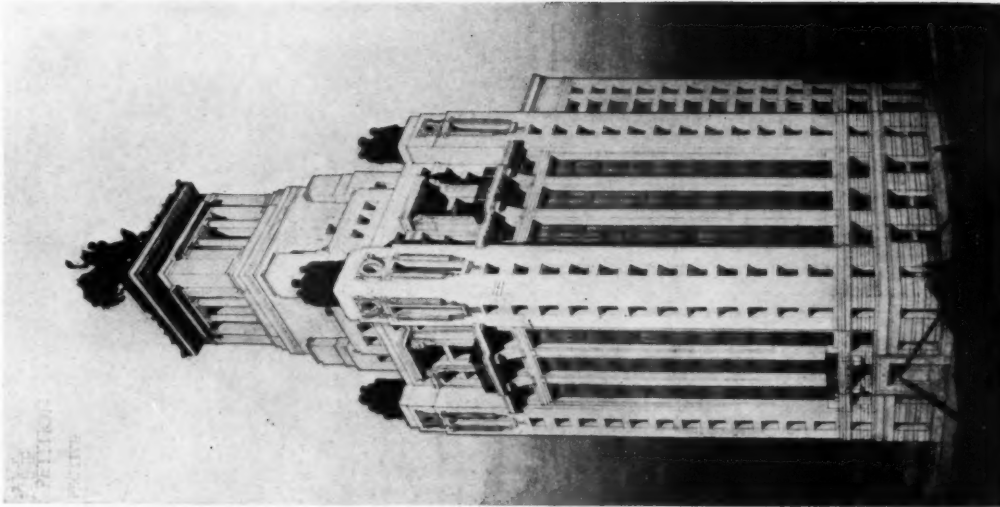


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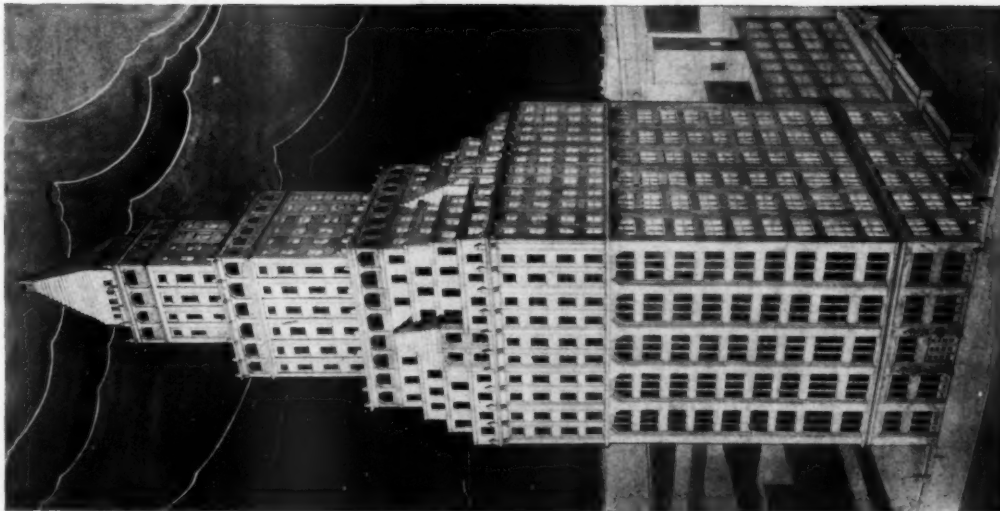
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PROF. GIUSEPPI BONI, ARCHITECT,
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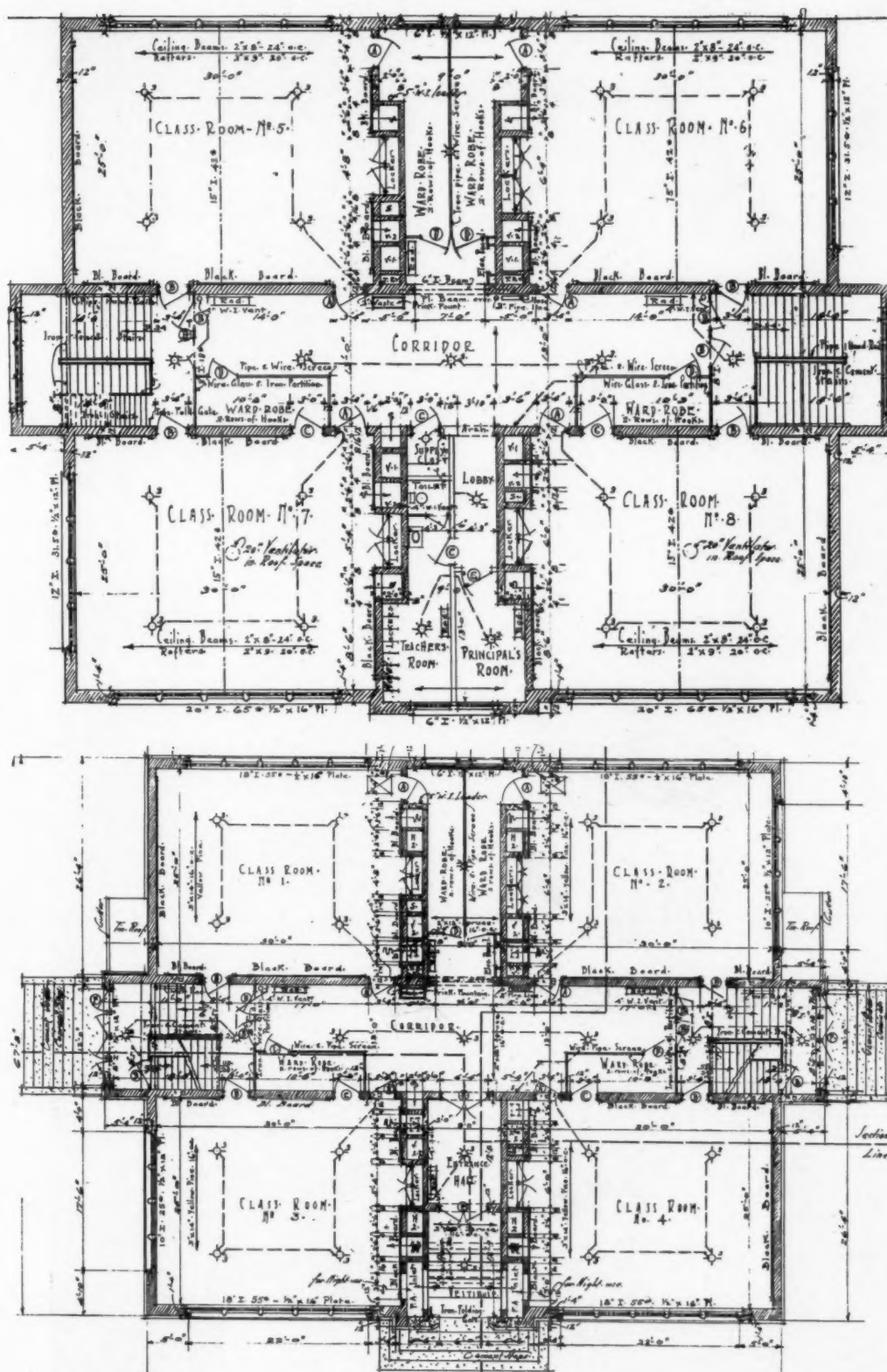
RICHARD YOHJIRO MINE, ARCHITECT,
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REVIEW OF RECENT ARCHITECTURAL MAGAZINES

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

THE scholar or tourist who has seen, in Rome, the original model of the dome of St. Peter's by Michelangelo and who has compared it with the dome as it exists today cannot but feel that steps should be taken to complete the dome as originally intended by the master architect."

This is the opening sentence of an article entitled *Comparative Notes On The Dome of St. Peter's and The Original Model by Michelangelo*; which appears in the *Journal of the American Institute of Architects* for December, and which is written by Victor L. S. Hafner, a Fellow of the American Academy in Rome in Architecture. It is hard enough to write an opening sentence anyway, but it is a stroke of genius to write one which contains in five lines two such surprising misstatements as does this. In the first place, most scholars or tourists who have seen the model, say "how interesting" and pass on to the next exhibit; if they happen to be architects, in addition to being scholars, they

are devoutly thankful that the dome was built as it is built and not as it is shown in the model; and in the second place, the model does not show the dome as Michelangelo originally intended it, nor as he finally decided to build it. It merely represents his ideas at the particular time the model was made; it is only a study, sketch if you like, and by the aid of this trial model, very important corrections and changes were made in the design that were not before apparent to the architect. Some of these changes, as noted by Mr. Hafner, are trivial. The alternating of the heads of the pedimented windows was a general practice at that time; possibly little attention was paid to

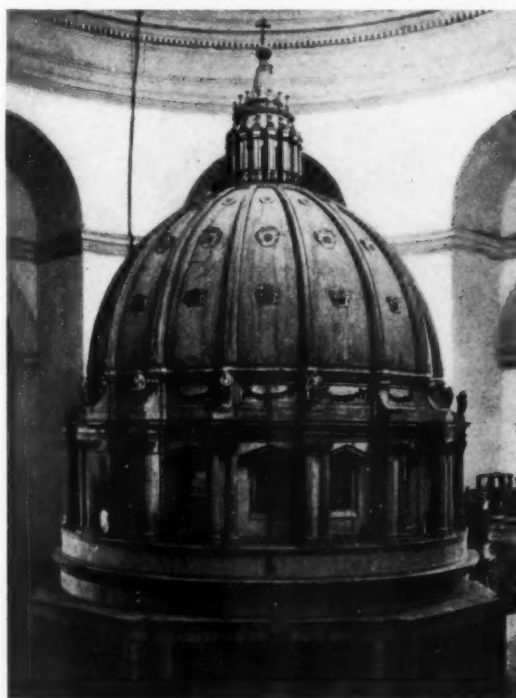
such details on the model; and the swags and capitals being done by a wood carver are naturally inferior to the execution in stone. The really important changes are very important indeed, the principal one being the heightening and the change in curvature of the dome itself, and the second, the deliberate omission of the

curved buttresses in the attic of the drum.

The change in curvature can possibly be explained as follows: It is only natural to assume that those in control of the work in Rome wished to outdo Brunelleschi's dome in Florence and that they wanted something better, and something that did not at all resemble it. The Florence dome is very pointed, and was primarily made so for structural reasons. In Rome a more classic feeling prevailed, and it was to be expected that the designs of the original architects Bramante, Sangallo and others, would follow more closely the lines of the classic Roman flat dome. Michelangelo, however, rightly felt that such a dome would never be seen,

and further appreciated that the Roman dome was only a roof and generally not intended for exterior effect. He, too, wanted to outdo Brunelleschi, and he did. He felt that height was essential, and he raised his dome on a drum, and to make this drum stable he buttressed it by coupled columns, free standing perhaps at first, and later filled in solid to the drum for added strength. The consoles were probably part of his original conception, and the statues too, and there is no doubt that they have considerable constructive value, but they were purposely eliminated for reasons that I will later try to explain. I don't doubt the original conception of the dome was much flatter

From "The Journal of the A. I. A."



Michelangelo's Model of the Dome of St. Peter's

than the model; in fact I think the existing model is only one of many that were made. It must be remembered Michelangelo was primarily a sculptor; he could, and he probably did, model hundreds of little domes, and as they were probably of clay or wax, it is quite understandable that none of these models is in existence now. Then, too, Michelangelo was suspicious. He had reason to be, and he probably kept his designs very secret in the fear if there were available careful

models or designs of his dome, powerful influences might secure his discharge and the completion of the work might be made under other direction. It is quite possible, therefore, that he destroyed his models and his sketches, keeping merely the figured data in such shape as to be intelligible only to himself. I have no doubt the dome was heightened very gradually; it was hard to come back to the pointed Florentine example; but when the great model was finished there was no doubt in the designer's mind that the curve was too flat and he wisely increased it. Now, just what the curve as it exists really is, I don't know, and frankly I don't think anyone knows. I am aware

there are careful monographs on St. Peter's but I don't see how anyone ever measured the dome. Unless there are undoubted proofs to the contrary, I must consider all figures mere approximations. The curve seems to be a portion of a true arc with the center considerably one side of the axis. Possibly a telephoto taken from some point that would give the dome practically in elevation might, if enlarged, give a basis of a closer approximation, but there is no question the dome as built is much finer than the model.

Now, as to the consoles. In the first place, it is the obvious thing to do, constructively and artistically; on a drawing in elevation some easing off of the outline seems essential. It was also a common practice in Rome. But actually when built the consoles would be fussy in the extreme and the outline lost when seen in perspective. Michelangelo saw that at once from his large

model, although it may not have been so apparent in the smaller and less carefully made ones; and he finally decided to abolish the consoles and the statues entirely, and that this omission was made by Michelangelo himself is admitted by Mr. Hafner when he says "It is known that the dome had reached the height of the buttresses at the time of his death." Now, the reason for this confusion of outline is because the dome is circular. It is a fact that is self evident that projec-

tions from a form circular in plan tend to confusion, because they catch the light in different ways, and because they continually present different faces to the observer and continually change in outline. It is absolutely essential that all projections that are similar should be in the same surface of revolution and that they must be simple in outline. To illustrate this, consider a Corinthian cap. Unless the leaves are so modeled that all projections on the leaves are on one surface of revolution, the foliations being merely cut back from that surface, as it were, the cap will be confused in outline and present a poor imitation of a well worn feather duster. One has only

to compare the simple and majestic outline of St. Peter's with that of the Invalides, Val de Grace, Santa Maria della Salute, and some domes in this country to appreciate the wisdom of Michelangelo's simplification of outline.

But, there are other changes which Mr. Hafner has not noticed, the chief among these being the accentuation of the break of the cornice back of the coupled columns of the drum. This break is one of the most subtle things on the dome and that it exists at all in the model is conclusive proof that there must have been models prior to the existing one. The rational treatment of the entablature over the columns would be an unbroken return to the pilaster. Now, if the pilaster is in its natural position back of the column, the line of this unbroken cornice would form a decisive line which is not normal to the curve of the dome, and furthermore because of the fact

From "The Journal of the A. I. A."



The Dome of St. Peter's as Executed

that the distance between the pilasters on the drum of the dome would be quite a bit less than the distance between the coupled columns, the cornice of the drum wall would be very much shorter than the space between the cornice of the columns, and the wall face of the drum would be apparently lessened. The drum of the dome would seem to explode, to radiate unduly. Now, this condition can be only appreciated from a model. I know this because I have had several domes modeled, and I'm therefore sure prior models must have been made. A comparison of the photographs of the model and of St. Peter's will show that this breakback of the cornice has been much accentuated in reality, the pilaster is not in its natural position, and the coupled columns stand almost as isolated piers. It is a very clever stunt and done solely for effect.

There is another change which is significant, and that is the increased projections of the middle tier of windows on the curve of the dome. These windows or cartouches have a peculiar reason for being. The projection of the ribs is considerable, seemingly more on the dome than on the model. Now, when seen from below these ribs cross each other so that there is a depression in silhouette at the point of crossing. This is awkward and the windows are put in to cover up this defect in outline. Here again, it is absolutely impossible to conceive of this from a drawing; it only shows on the model, and this strengthens the suppositions that there were earlier models; otherwise these windows would not have been put on the wood model.

As to the inner dome, there can be no question. The change was undoubtedly made by Michelangelo himself as the result of study from the model. The Pantheon is, or is supposed to be, a true hemisphere, but in any dome raised on pendentives a full circle dome is depressing, particularly if there is, as is usual, in Renaissance domes a considerable space between the pendentives and the spring of the dome.

I find I have given much more space to this article than I had intended when I started, but it is of the greatest interest, to me at least, and I very much regret that such a series of misleading statements should be published in the *Journal of the American Institute of Architects*, and apparently with the sanction of the American Academy in Rome.

It is a far cry from Peter's dome to the tall, ungainly structures in this country which are known generally by the ridiculous and bumptious title of skyscrapers, but there is a certain similarity in the statements of Mr. Hafner above referred to, and those of Mr. John Taylor Boyd, Jr., who, in the December number of *The Architectural Record*, writes of A New Emphasis In Skyscraper Design. Mr. Boyd has discovered that somebody else has discovered the real and

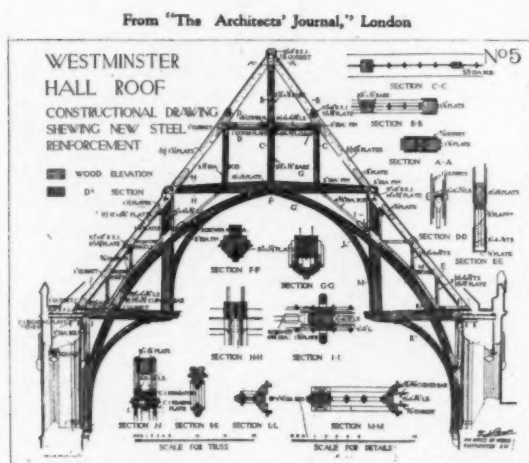
only way to design these apparently undesignable buildings, which "to the World at large," so Mr. Boyd says, "are the one supreme feature of modern American architecture." "Citizens in the streets" he says "are thrilled by the lofty towers" and Europeans cry out "true child of American genius!" In spite of this unbridled enthusiasm shown by the man in the street, Mr. Boyd is rather inclined to be pessimistic about the architect's part in it all. "When the World beckons" he says "why does the architect hang back?" particularly as "the World cannot be expected to draw fine distinctions as to the quality of architecture." This implied reluctance on the part of the American architect to accept commissions to build skyscrapers, even with the comforting assurance that the world is not captious, seems a little strange to us in these lean years, but Mr. Boyd has given thought to the matter, has taken it up rather seriously, it seems, and has arrived at certain conclusions which, if carefully followed, will enable any young, struggling architect to lay aside his natural modesty and accept any commission, no matter how large. In the nice arrangement of the rules as advanced by Mr. Boyd in the young architect's *Vade Mecum*, there naturally occurs first a series of Don'ts; Don't use classic motives; Don't use the column formula of base, shaft and cap; Don't use large motives; Don't use Renaissance cornices five stories in height and above all don't use Gothic. We are quite willing to admit that five story cornices is putting it a bit strong, but as to Gothic—well, of course, skyscrapers are not churches, but still we do have a faint recollection that the Bush Building and the Woolworth Tower and the West Street Building have received rather favorable comment; but, of course, "the World cannot be expected to draw fine distinctions"—and in making this quotation we hasten to acquit Mr. Boyd of any Kleagleistic statements by saying emphatically that no reference is made to any particular newspaper—but as we have said, even if the man in the street or the world at large does have a sneaking fondness for Gothic, Mr. Boyd will have none of it; and states firmly that the scale is the thing. "The secret of skyscraper architecture" he says "would seem to lie in its small scale." "There are," he says, "ranks of rather small windows, almost domestic in scale, a hive where people work in offices," and with a further dip into Natural History he says "Even if we consult 'Nature,' as seems to be the vogue in discussions of this kind, do we find the cat less beautiful than the crab because the cat's skeleton is less evident in its design?" Looked at in this light, of course, there is nothing further to say. To be sure, the cat might be an up-to-date cat and repeat monotonously "Day by day in every way my skeleton becomes more evident." In fact, we have seen

cats who have obviously been obsessed with the idea of becoming as beautiful as a crab, and in our poor judgment have succeeded admirably; but still, of course, the argument holds and Gothic is taboo. And yet, with all our appreciation of Mr. Boyd's method we can't help feeling his argument would go better if he omitted the illustrations; for, if by following this method New York is to be completely filled with buildings such as he cites as beautiful examples, "the ideal, which the World in a vague way demands," then, in that case, we confess we would yield completely to the bucolic charm of some sylvan dell and abjure the city forever.

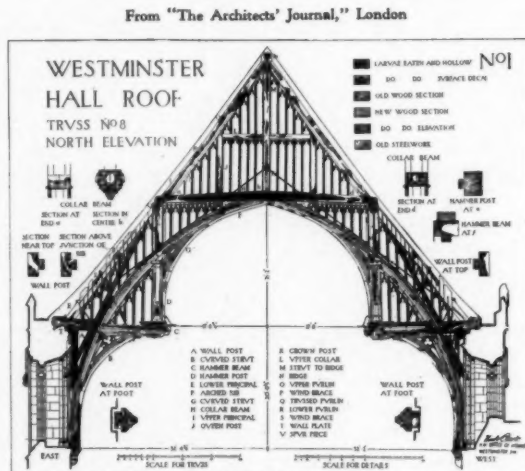
But, speaking of advertising, there is more

"Hugh Herland's problem was to re-roof the hall in one great span and to find timbers suited to the work. He adopted the principle of the hammer-beam truss with a timber arch, which acted as a brace, extending from the wall corbel to the collar beam. The design had been referred to as incomparable—the construction was also incomparable. The enormous great brace had been the means of actually holding the roof, when the destruction of the joints caused the roof to fall in. The main brace included three members, two members continuous, and the middle one discontinuous." At this juncture we venture to express the hope that the Office of Works spliced the main brace before starting this arduous task. It can't be done here but in England such bracers are still possible. "The original roof of Hugh Herland contained no iron in any shape, oak pins were used throughout for fastenings.

"The decay was not a new thing; it had been taking place at least for the past three or four hundred years. Even a comparatively few years after the original building was built we hear that repairs had to be made. The



Details of New Steel Reinforcement, Westminster Hall Roof
Sir Frank Baines, C. B. E., M. V. O., Architect for the Restoration



A Truss Before Preservation, Westminster Hall Roof
Sir Frank Baines, C. B. E., M. V. O., Architect for the Restoration

than one way to do it; one can have one's self interviewed by Young Boswell in the *Tribune*, and one does.

Westminster Hall in London is famous chiefly for its wonderful hammer-beam roof, said to be the finest example of medieval carpentry the world has ever seen, and it was with feelings akin to dismay that news was received last year that the roof had so far decayed that its fall was imminent, and that repairs were being made by the Office of Works. In *The Architects' Journal* of November 8, there is a report of an address by Sir Frank Baines, C. B. E., M. V. O., principal architect to the Office of Works, on the Restoration of Westminster Hall roof, the address being given at a meeting of the Institute of Mechanical Engineers. Westminster Hall was originally roofed, quite properly it seems, in the reign of William Rufus, and this roof having fallen into decay was replaced in 1394 by order of Richard II and the present roof was designed by one Hugh Herland, a master carpenter. The span of the roof was 69 feet.

cause of all the trouble was not dry rot, but a grub called the *Xestobium tessellatum*. But for the action of this insect it might have been expected that the roof would have been as perfect today as when originally constructed. * * *

"The attack of the beetle had occurred at all junctions. There were huge cavities in the principals; in the main collar there was actually a cavity of almost 22 in. In the past some wise person had filled one of these large cavities with concrete; this had been taken out. * * The beetle had attacked along the whole length of the hammer-beam and all the principals; that the rafters themselves had largely escaped the reason was obvious; the rafters were steeply pitched, and the female beetle would not lay her eggs on them for they would roll off. The main beam, however, was horizontal, and a good egg-laying ground. There had apparently been no seasoning of the original oak whatever; it was practically impossible that it could be seasoned as the oak was cut between the years 1393 and 1396. Certainly, therefore, the oak used was green. A sample had been taken of some of the timbers. They were put in a humid atmosphere for a time and they warped; though it had been cut in the thirteenth century. Oak could only be seasoned satisfactorily in the ultimate form in which it was to be put up. Therefore they had taken their courage in their hand and used the oak green, it not having been possible to cut it as desired before erection."

The problem before the Office of Works was not a mere patching of decayed wood work, it was

the substitution of steel trusses to carry the load of the roof and the concealing of these trusses so that the great timber roof would look just as it did before the alterations were begun. It was a slow tedious task and has apparently been most successful. The wood has been treated with some preservative so that there will be no further recurrence of the trouble. We venture to add one more quotation:

"The *Xestobium tessellatum*, or wood-boring beetle, of which samples would be shown, lived three years in the timber. It did not want for food or water, these it got from the timber, which passed through its body, and emerged in the form of the well known dust. The eggs were laid by the female on the timber, and the grub hatched out by natural temperature. It immediately

started boring. When about to take chrysalis form it bored laterally to the nearest timber surface. On emerging from the chrysalis, it broke the timber skin and flew away. The tapping known as the death watch was the beetle's sex call. Sir Frank Baines said he had a live specimen in his office in Westminster Hall. With the beetle twelve feet away he had imitated this tapping. At first the beetle took no notice, but when, with a little practice, he got the perfect rhythm of the call, it instantly answered."

It is rather distressing to find the famous death watch has a merely Freudian significance, and it seems a little unkind of Sir Frank to tantalize the little *Xestobium*, but the roof has been saved, and the love song of the beetle is no more heard in the land.

"No. 10 Downing Street"

NO. 10 Downing Street, the foundations of which have lately become so insecure that the Office of Works have been called in to strengthen them, is one of a number of houses built during the latter part of the seventeenth century by Sir George Downing, after whom the street is named, states a recent issue of *The Architects' Journal*, London. Downing had no idea of the official character that it was eventually to assume, for it was not until the reign of George II, when the premiership was inaugurated, that No. 10 became, as it has since remained, the official London residence of the Prime Minister. It had been occupied previously by the first Earl of Lichfield, but it went to the Crown as a result of the Earl's adherence to the fortunes of the exiled Stuarts, and in 1731 Sir Robert Walpole persuaded George II to attach it to the office of the First Lord of the Treasury. The description of Downing Street in Seymour's "Stow" no longer applies. Writing in 1735 he describes it as "a pretty open space, especially at the upper end, where are four or five very large well built houses . . . each having a pleasant prospect into St. James's Park, with a Terras Walk." These houses have been swept away, and with them the "Terras Walk," which has been succeeded by the flight of

steps that now terminates the street towards the park. If Sir Gilbert Scott had had his way Nos. 10 and 11 would also have disappeared, for his public offices, which form the Southern side of Downing Street, were intended to be extended Northwards, across the Western or park end of the street. So much is to be gathered from the unfinished arches on the North front of the Foreign Office. No. 10 Downing Street is not so much a house as a unit in a very complex mass of buildings forming the Treasury, and including the Court of Judicial Committee on the Southeast, the old Treasury of Cardinal Wolsey on the Northeast, the Treasury buildings on the Northern front, the Cockpit on the Western side, and, finally, 10 Downing Street. There is no external evidence to show that these are all part of one and the same building; and there is great difficulty in identifying the several parts, all of which are closely connected. Here, within the space of a few square yards, may be found the handiwork of Wolsey, Wren, Kent, Vardy, Adam, Soane, and Barry. There has been a great deal of controversy about the position of the Cockpit; but the late Mr. Loftie, after much research, was convinced that it stood on the site of what is now the Old Council Chamber, a small but handsome apartment within the Treasury buildings.

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

OFFICIAL NOTIFICATION OF AWARDS

JUDGMENT OF DEC. 5TH, 1922

CLASS "B"—I ANALYTIQUE

"AN ORANGERIE"

The difference in level between two portions of a formal garden is taken up by an Orangerie which thus forms a terrace wall facing the lower garden.

The wall faces South, and should have openings of as great size as will be compatible with its architectural character to permit of the taking in and out of plants and small trees, and to give as much sunlight as possible to the interior. The facade of the Orangerie shall be built of stone and the student's attention is particularly called to the garden architecture of France and Italy.

The difference in level between the upper and lower gardens is 25'-0" and the dimensions of the Orangerie shall not exceed 80'-0" in length, and 25'-0" in depth. At either side of the Orangerie a terrace wall may be continued or exterior stairs giving access from one garden to the other may be introduced.

JURY OF AWARDS:—R. M. Hood, H. O. Milliken, W. Warren, W. E. Shepherd, Jr., J. H. Freedlander, E. S. Hewitt, P. A. Cusachs, F. R. King, Jacques Lambert, F. C. Hiron, J. V. Van Pelt, E. A. Park, F. Hitchens and G. S. Koyl.

NUMBER OF DRAWINGS SUBMITTED:—201.

AWARDS:—

FIRST MENTION PLACED:—F. O'Brien, Atelier Corbett-Koyl, N. Y. C.; V. G. Tilbrook, Carnegie Inst. of Tech., Pitts.; G. Gonzalez, Atelier Hiron, N. Y. C.

FIRST MENTION:—H. C. Lippincott, Jr., A. M. Ham, G. A. Deacon, A. K. Goehring, D. S. Garber and A. F. Muhl, Carnegie Inst. of Tech., Pitts.; F. E. Gilson, H. J. Williams, Columbia Univ., N. Y. C.; W. G. Jamieson, Atelier Denver, Denver; H. Swenson, S. Baum, J. J. Murno and O. Wiggins, Atelier Hiron, N. Y. C.; V. Galier, John Huntington Poly. Inst., Cleveland; C. Tatore, care of R. M. Hood, N. Y. C.; W. D. Edgerton, Syracuse Univ., Syracuse.

SECOND MENTION:—M. C. Basen, P. H. Shonberg, G. Sole and W. Packman, Atelier Corbett-Koyl, N. Y. C.; E. M. McMillin, W. F. Koppes, W. W. Hibbs, U. Schoenberger, F. J. Taylor, J. S. Douglass, J. Tillotson, C. A. Lundquist, L. C. Stevens, H. H. Thayer, G. B.

Allison, D. C. Doig, R. R. Young, J. P. Crowgey, W. S. Forsyth, A. H. Rousseau, T. B. Garman, J. R. Reed and Elizabeth Constantine, Carnegie Inst. of Tech., Pitts.; J. G. Reiss, S. F. Abrahms, L. Rome, C. J. Kidder, D. E. Milone, F. DeRosa, H. G. Schoonthal, H. H. Rabin, J. L. Wilson, R. V. Merwin, S. F. Edson, I. Adelsohn, N. R. Mastrangelo, W. T. Anderson and S. Goldstone, Columbia Univ., N. Y. C.; T. McCormack, W. C. Fortlage, V. J. Gerdes, O. C. Clarry and G. Franz, Cincinnati Archtl. Soc., Cincinnati; F. F. Cook and H. V. Yards, Atelier DeNiff, Jersey City; Q. Getzlaff, Atelier DeGelleke, Milwaukee; F. Kellman, M. J. Slack, J. G. Meem, Mary McCullough and J. J. Burke, Atelier Denver, Denver; M. C. Hobson, J. F. Wolfe and W. V. MacDougall, George Washington Univ., Wash., D. C.; J. M. Leonte, Atelier Fougner, Newark; R. Clement, Atelier Hiron, N. Y. C.; B. Krinsky, A. A. Hanke, N. S. Zajack and G. C. Walters, John Huntington Poly. Inst., Cleveland; W. F. Mullan, G. B. Briney, J. G. Beckman, R. H. Wiese and J. E. Rogers, Los Angeles Archtl. Club, Los Angeles; F. Wolcken, Atelier Norfolk, Norfolk; H. F. Bossert, E. D. Cassel, L. Pirola, H. O. Nelson, W. M. Knezicek, D. S. Eberhart, M. K. Lyon, Jr., E. D. Thomas, E. F. Wallden, J. Alstrom and W. F. Swenson, Atelier Parsons-Chic. Archtl. Club, Chicago; J. S. Shanley, A. P. Davis, F. W. Roudebush, R. I. Powell and A. D. Morgan, Princeton Univ., Princeton; G. E. Wells, H. W. Johnson, E. B. Sterrett, J. F. Mullins, S. M. Rutter and H. D. Davies, Pennsylvania State College, State College; C. Matterson, P. Sweeney, C. S. Harder, A. Llorens, R. H. Burden and K. A. Marvin, Syracuse Univ., Syracuse; E. K. McNinch, H. R. Truelsen, Jr., H. Langley and J. H. Devitt, San Francisco Archtl. Club, San Francisco; H. B. Collins and F. A. Barcus, Thumb Tack Club, Detroit; E. Cachiona, J. E. Jackson, W. F. Ziegler, F. J. Duane, F. F. Schumann, W. J. Brach and T. W. Pulman, "T" Square Club, Phila.; E. K. Crowell, R. Teige and B. Eckberg, Univ. of Minnesota, Minneapolis; R. J. Pearce, G. M. Shigaki, E. Montgomery and J. I. Mattson, Univ. of Washington, Seattle; W. P. Cunningham, E. H. Abbuehl, G. L. Geery, C. H. Duffield, E. C. Johnson, C. Paulsen, F. P. McArthur and H. Petersen, Univ. of Kansas, Lawrence; M. L. Lemon, Marguerite L. Kirker, G. V. Palmer, H. F. Schaefer and N. L. Low, Univ. Southern California, Los Angeles; F. C. Johnson, S. C. Haight, H. M. Munger and P. S. Graham.

CLASS "B"—I PROJET

"A COLLEGE CLUB HOUSE"

A college club, whose aim is to promote good fellowship, social and scholastic activities, and also to provide a common eating place for its members, has obtained permission to build its club house on the college campus. The club will have approximately thirty active members, but it will provide at the same time a center and a home for the alumni who occasionally come back to visit their Alma Mater.

The campus abounds in beautiful trees and is comparatively flat. The space to be occupied by the building is a rectangle which shall not exceed 100'-0" in its longest dimension.

The building shall provide, in not more than two stories, a lounge, a dining room and kitchen, a library, a billiard room, five or six bedrooms for visiting alumni, a small apartment for the caretaker, and the other necessary services. The principal rooms should be planned with reference to the reunions, dances and banquets that occur principally at commencement time. For this purpose they should be arranged more or less in suite, and the

THE AMERICAN ARCHITECT—THE ARCHITECTURAL REVIEW

lounge in particular should be a room of generous, fine proportions.

JURY OF AWARDS:—R. M. Hood, H. O. Milliken, H. R. Sedgwick, W. E. Shepherd, Jr., J. H. Freedlander, J. W. O'Connor, F. L. Ackerman, F. B. Chapman, H. M. Woolsey, P. A. Cusachs, J. C. Levi, H. W. Corbett, F. C. Hiron, F. Hitchens, O. Faeltton, G. M. Simon, A. L. Kocher and E. I. Blum.

NUMBER OF DRAWINGS SUBMITTED:—216.

AWARDS:—

FIRST MENTION PLACED:—C. H. Dornbusch and S. Whinston, Columbia Univ., N. Y. C.; B. G. Martin and A. B. Lowstuter, Carnegie Inst. of Tech., Pitts.; W. Faulkner, Yale Univ., New Haven.

FIRST MENTION:—C. Leonardi, Myrtle P. Dyke, J. B. Walther, E. N. Kaeyer and L. R. Claeson, Columbia Univ., N. Y. C.; W. C. Pyle, L. R. Turcotte, J. F. Taylor, A. D. Reid, W. Z. Bane and E. M. Gearhart, Carnegie Inst. of Tech., Pitts.; H. B. Hays and A. F. Euston, Atelier Hiron, N. Y. C.; H. H. Stewart, Pennsylvania State College, State College; E. R. MacDonald, San Francisco Archtl. Club, San Francisco; W. C. Chance, "T" Square Club, Phila.; H. B. Hoover, Univ. of Washington, Seattle; R. W. Ramsdell, Yale Univ., New Haven.

SECOND MENTION:—V. N. Antonelli, A. E. Klueppelberg, H. A. Dumper, Mary A. H. Chapman, T. Kuniyoshi, R. Gottlieb S. Gerson, G. M. Burch, B. Schlanger and M. G. Maybeck, Columbia Univ., N. Y. C.; J. Delo, C. P. Zimmers, J. W. Fritz, H. I. Lynch, H. L. Carter, J. W. Everhard, V. A. McGowan, J. S. Wood, A. S. Vincent, P. F. McLean, L. Cousins, M. B. Parker, K. O. Sonnenmann, D. M. Patterson, G. D. Schade, J. B. Blair, P. J. Hohorst, Louise Barton, M. A. Brace, Elizabeth Burkhardt and L. C. Page, Carnegie Inst. of Tech., Pitts.; J. E. Miller, Catholic Univ., Wash., D. C.; F. Fredericks, Jr., Cleveland Sch. of Art, Cleveland; W. Bloodgood, Cincinnati Archtl. Soc., Cincinnati; F. Martinelli, Atelier Corbett-Koyl, N. Y. C.; R. E. Stiffler and C. M. Kellogg, Atelier Denver, Denver; Dorothea Porter, H. Bradley, C. W. Jones, L. Chatelain, Jr., Dorothy M. Sigman, T. J. Rowland and C. L. Nutt, George Washington University, Wash., D. C.; J. B. Gill, L. C. McClure, R. W. Alling, J. S. Thomas, Jr., W. P. Graydon, R. S. Brantley and H. R. Weeks, Georgia Sch. of Tech., Atlanta; J. M. Judge, Atelier Hiron, N. Y. C.; C. J. Poiesz, H. F. Whitworth, L. A. Balicki, F. Sakata, A. B. Mitchell and F. O. Rensson, John Huntington Poly. Inst., Cleveland; J. R. Daniels, Los Angeles Archtl. Club, Los Angeles; H. Shacklette, J. H. Savolaine, E. Willson and D. M. Carr, Pennsylvania State College, State College; T. Ross, Jr., J. M. Hodgdon and F. Eiseman, Atelier Parsons-Chic. Archtl. Club, Chicago; W. P. Crabtree, Jr., C. H. Fournier, S. E. Chambers, A. F. Eldridge, H. T. Woolley, C. I. Cromwell, E. Malczewski, H. A. King and F. W. Hunt, Syracuse Univ., Syracuse; Louise Russell, Southern Branch-Univ. of California, Los Angeles; S. Berger, W. R. Harer, G. T. Daub, F. Raudenbush, H. S. Shaw and C. A. Langzettel, "T" Square Club, Phila.; W. B. Glynn, J. T. Jacobse, E. P. Newbury, E. W. Osgood, W. W. Lund, L. P. Fey, Helen Geri, Doris A. Seibert and V. N. Jones, Univ. of Washington, Seattle; E. H. Sammons, Univ. of Texas, Austin; R. Coolidge, M. C. Hyre, J. Radotinsky and M. L. Sorey, Univ. of Kansas, Lawrence; S. M. Cundiff, Gervase Ker Wenzell, L. C. Banks and R. H. Crawford, Univ. Southern California, Los Angeles; G. W. Draper, E. K.

Hodgkins and E. D. Stevens, Univ. of Virginia, Charlottesville; C. H. Brower, W. E. Herrick, J. Claus, A. F. Harrer and I. J. Silbert, Atelier Wynkoop, N. Y. C.; H. P. Staats, I. Horton and W. N. Jacobs, Yale University, New Haven.

H. C. :—J. P. Bills, Catholic Univ., Wash., D. C.; D. Marquis, Los Angeles Archtl. Club, Los Angeles; J. H. Dowd, Pennsylvania State College, State College; G. C. Andersen, Univ. Southern California, Los Angeles; C. Ferrari, Yale University, New Haven.

THE WARREN PRIZE

The gift of Messrs. Whitney Warren and Lloyd Warren offered for excellence in planning a group of buildings.

FIRST PRIZE—\$50.00 SECOND PRIZE—\$25.00
"A MEMORIAL PARK"

Between a boulevard running parallel to a river, and the river bank, is a rectangular piece of ground 1000'-0" long in the direction parallel to the boulevard and 1500'-0" deep from the boulevard to the river. The ground slopes uniformly towards the river, the boulevard being 200'-0" above the level of the river.

In memory of an illustrious citizen of the country, it is proposed to develop this piece of ground as a Memorial Park, the chief motive to be a small museum devoted to the arts of which he had been a munificent patron. An abundant water supply can be brought through the grounds to create fountains, pools, or other water effects to enhance the beauty of the park, and the existing grades between the boulevard and the river can be changed by terracing to conform to any design desired. It should be noted, particularly, that the park will command a splendid view of the river and the water front should be developed accordingly.

With the museum, therefore, as a focal point, the park should be laid out in a manner to provide a setting of dignity and beauty bearing in mind that a park should always be a place for rest and recreation. Terraces and alleys should, therefore, be laid out with this purpose in view, and even playgrounds for children should be introduced, although handled in a discreet way so as not to affect the beauty of the whole composition.

JURY OF AWARDS:—R. M. Hood, H. O. Milliken, W. Warren, J. H. Freedlander, W. E. Shepherd, Jr., Jacques Lambert, P. A. Cusachs and E. S. Hewitt.

NUMBER OF DRAWINGS SUBMITTED:—48.

AWARDS:—

FIRST PRIZE:—E. L. Babitsky, Atelier Wynkoop, N. Y. C.

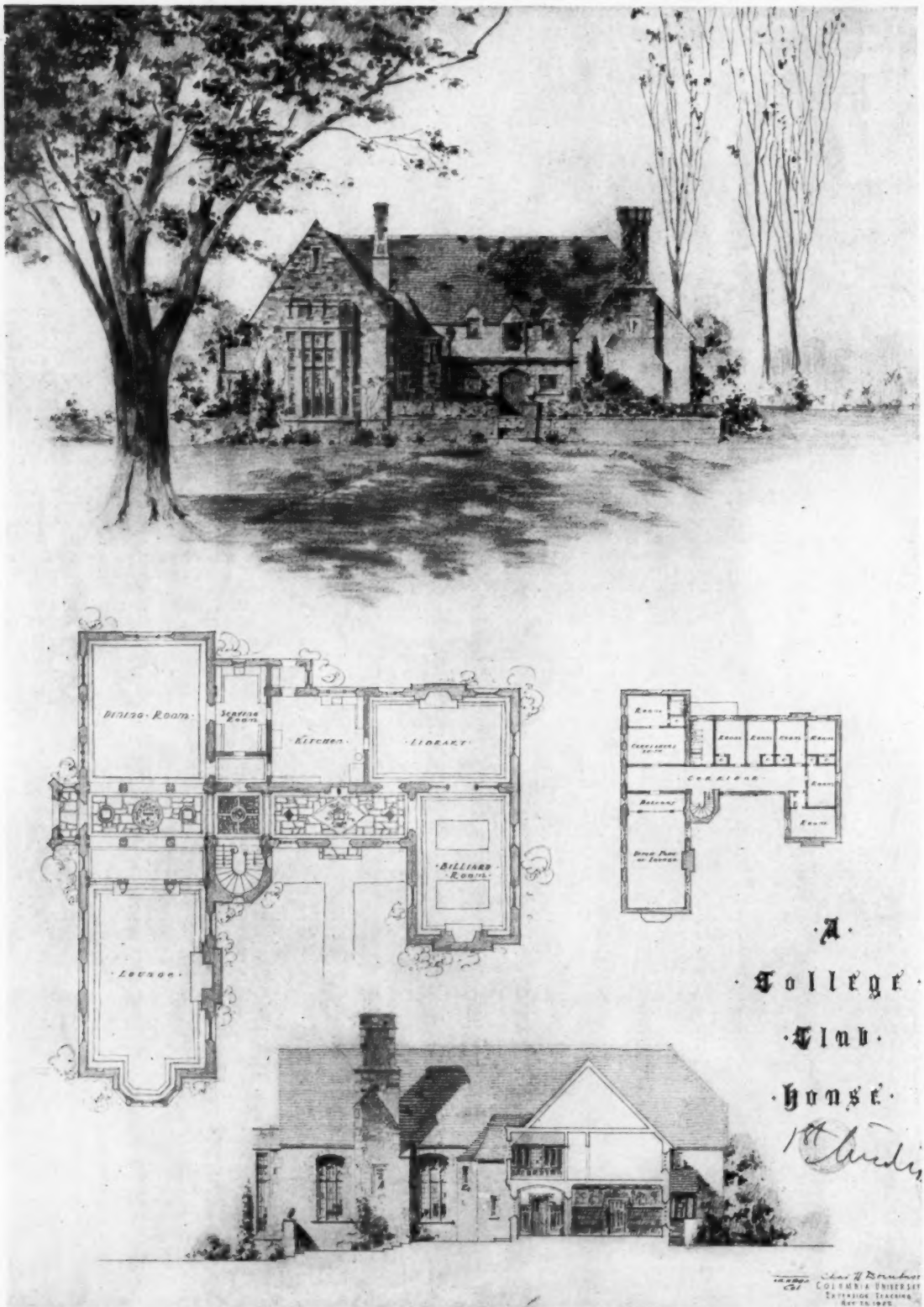
PLACED SECOND:—(Not qualified for Second Prize):—A. F. Deam, Columbia Univ., N. Y. C.

PLACED THIRD—SECOND PRIZE:—P. C. Smith, Columbia Univ., N. Y. C.

PLACED FOURTH:—R. DeGhetto, Atelier Hiron, N. Y. C.

PLACED FIFTH:—H. Van der Lyn, Atelier Hiron, N. Y. C.

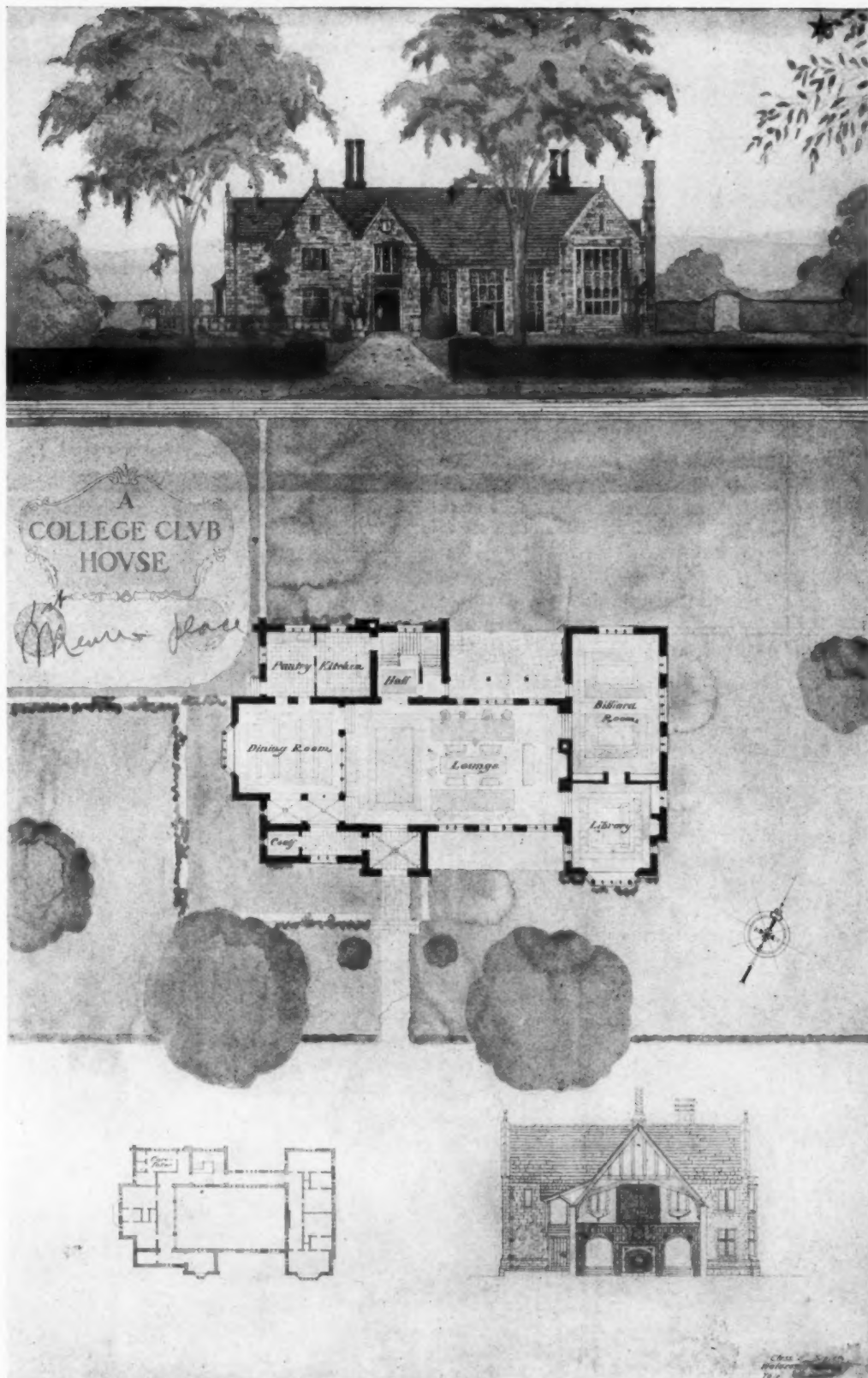
Note: In our issue of January 17 there will be found illustrations, reference to which appears in the text for this Judgment.



C. H. DORNBUSCH

FIRST MENTION PLACED
CLASS "B"-I PROJCT—A COLLEGE CLUB HOUSE
STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS

COLUMBIA UNIVERSITY



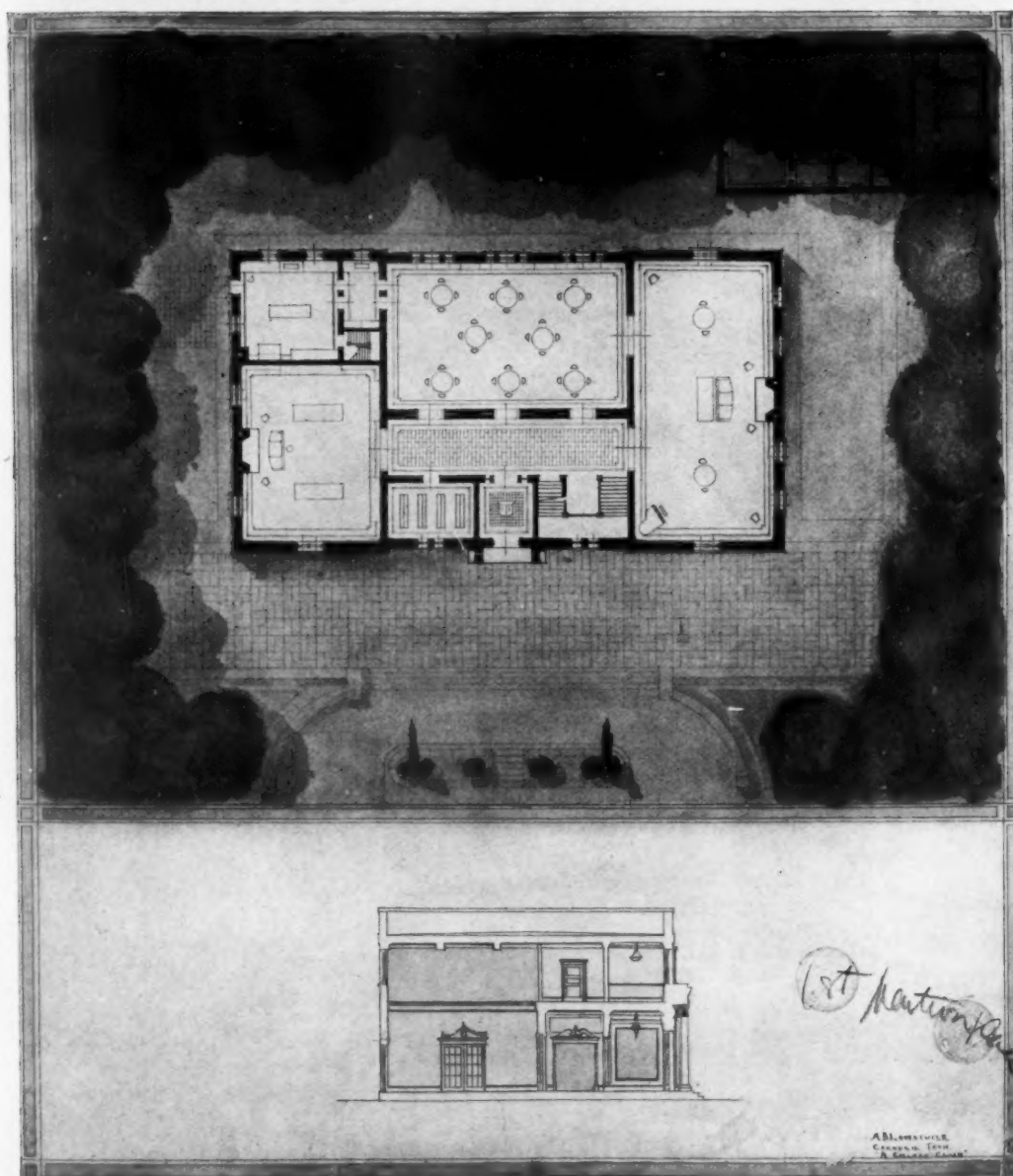
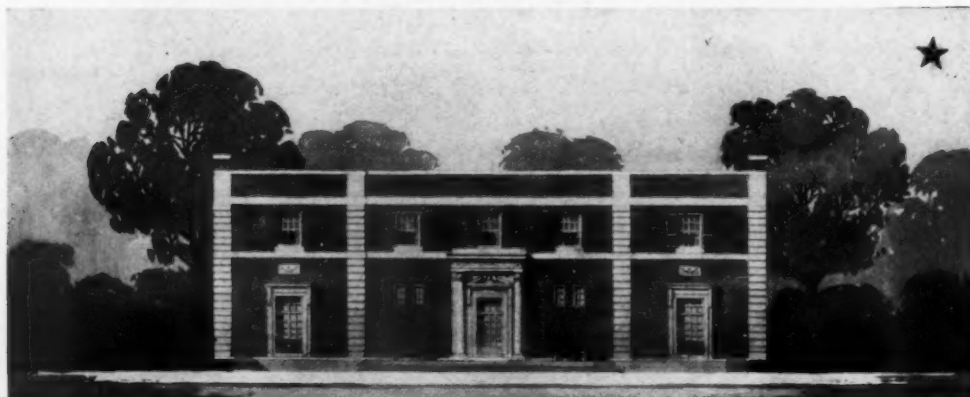
W. FAULKNER

FIRST MENTION PLACED

YALE UNIVERSITY

CLASS "B"-I PROJCT—A COLLEGE CLUB HOUSE

STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS



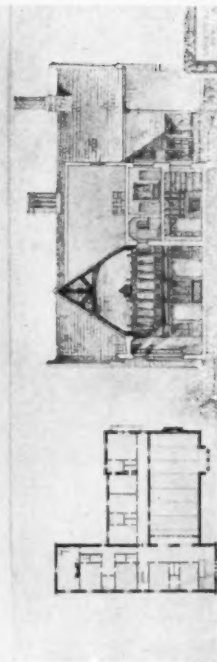
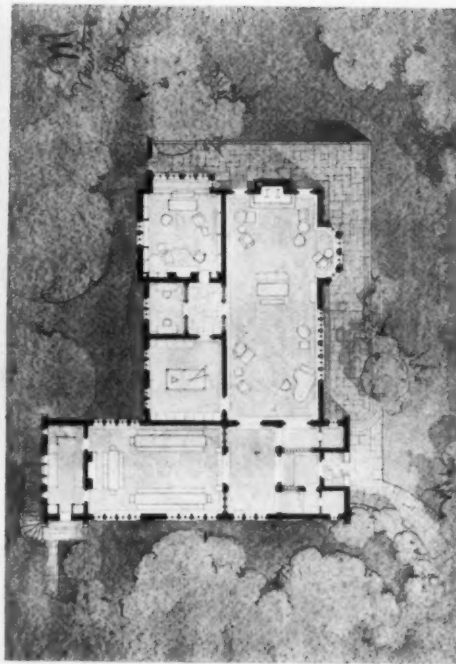
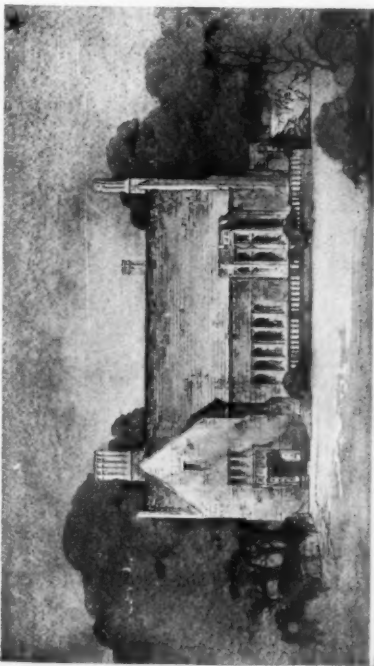
A. B. LOWSTUTER

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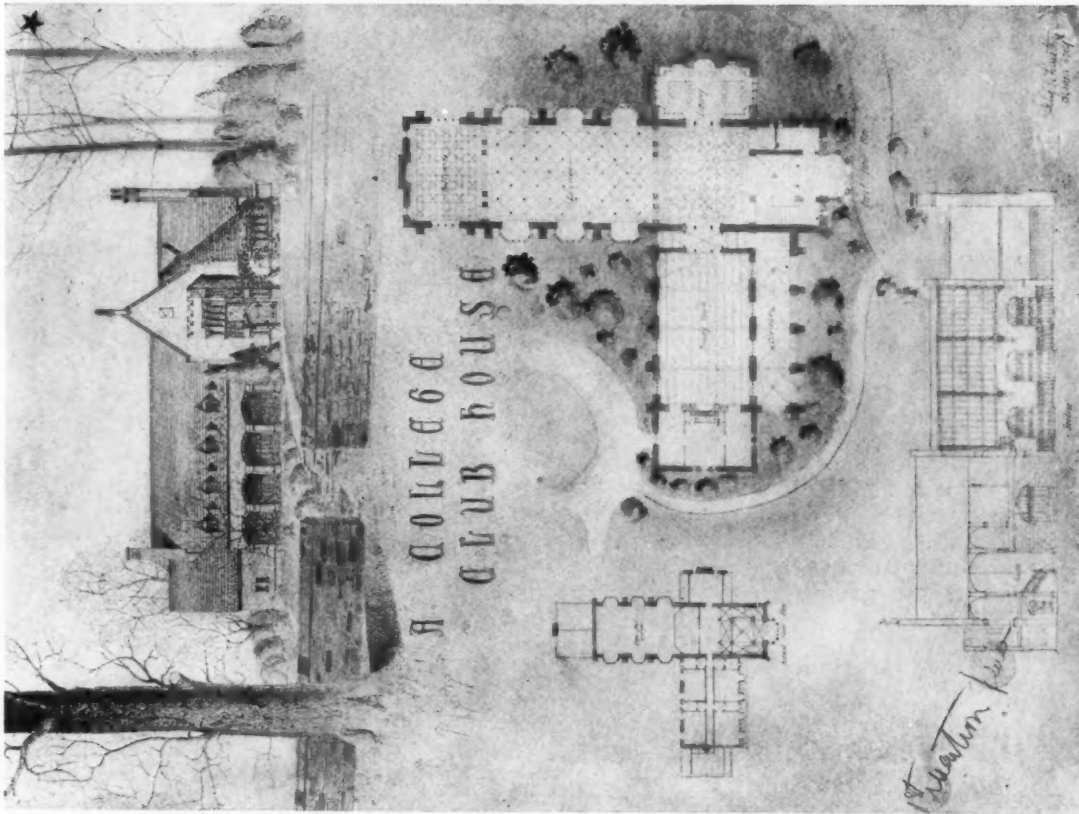


B. G. MARTIN

FIRST MENTION PLACED

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CLASS "B"-I PROJET—A COLLEGE CLUB HOUSE
STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS



S. WHINSTON

FIRST MENTION PLACED

COLUMBIA UNIVERSITY

DEPARTMENT OF ARCHITECTURAL ENGINEERING

THE VALUE OF LIGHT WEIGHT FLOORS

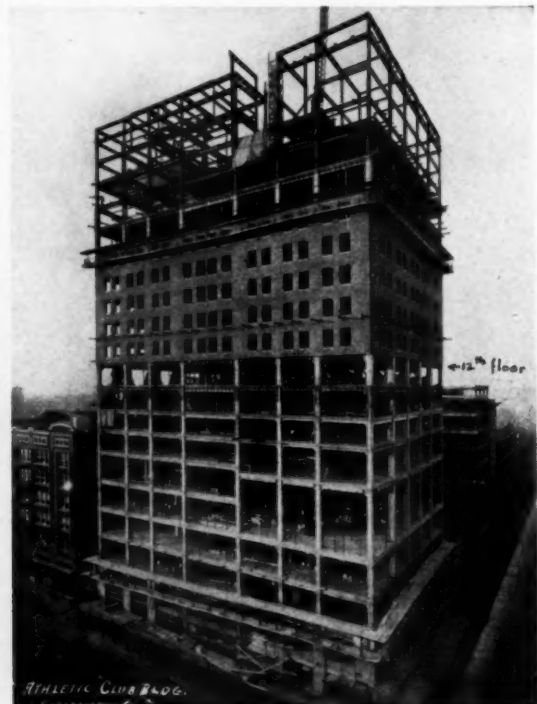
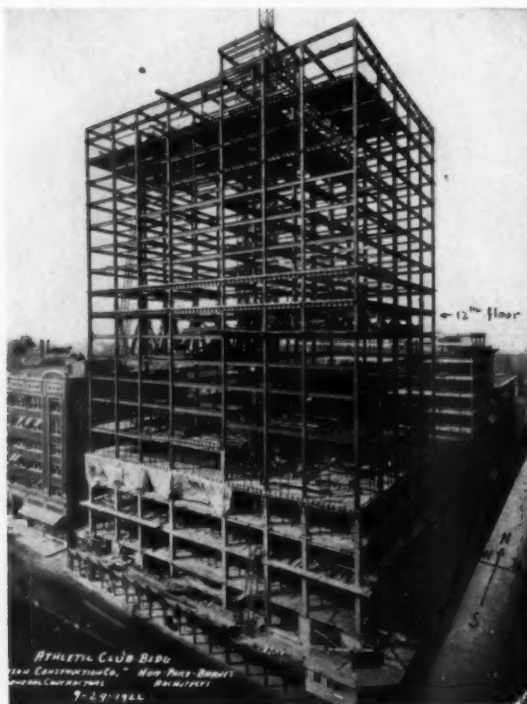
The use of pressed steel floor joists in reducing weight and increasing rentable space

THE original plans for the Kansas City Athletic Club Building called for nineteen floors and a roof garden. After the steel was erected the owners decided to add two bedroom floors, increasing the height to twenty-one floors and roof garden.

The floors throughout, according to the original

also adhered to in the changed plans for the main roof, roof garden and pent house construction.

The east fifty-six feet of the building from the eleventh floor up is carried over the space occupied by the gymnasium by heavy steel trusses. The lower chords are in the eleventh floor construction and the upper chords are in the twelfth floor con-



Kansas City, Mo., Athletic Club Building

Hoit, Price & Barnes, Architects

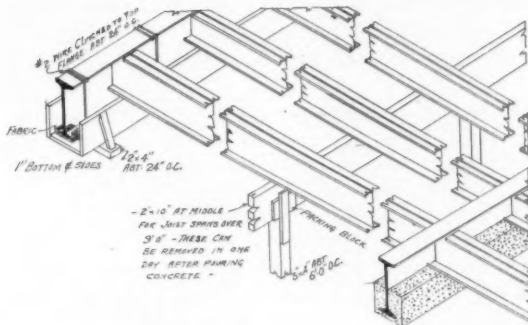
Showing steelwork erected for 19 floors and view two months later with 21 floors placed

plans, were to be of ribbed concrete type. This construction in the completed building is used up to and including the level of the bottom chords of the trusses in both ends of the building. It is

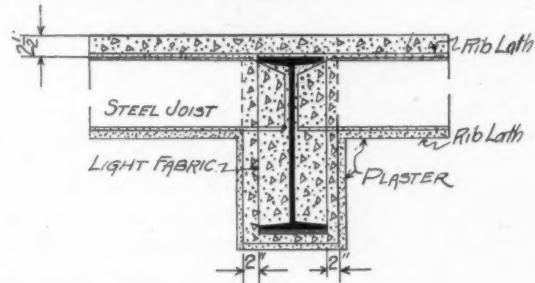
struction. The west fifty-six feet is carried over the space occupied by the swimming pool by similar trusses extending from the tenth to the twelfth floor. These latter trusses are placed in the par-

titions above the pool between the handball courts. In checking the design for the two additional floors, it was found that while the columns were capable of carrying the load even if all the floors were of ribbed concrete construction the great

tions of the truss details were necessary. The construction of the building was changed from the twelfth story to the twenty-first story inclusive, from the ribbed concrete type to the pressed steel joist type carrying a slab $2\frac{1}{2}$ -in. thick with suspended ceiling. The details of construction are shown in the accompanying illustrations, from the architects' working drawings.



Details of pressed steel joist Floors used in the upper eight stories of the Kansas City Athletic Club Building
Hoit, Price & Barnes, Architects



trusses had not been designed with so much excess strength. They were intended to carry only the original floors from the twelfth to the nineteenth and the roof.

The use of pressed metal floor construction was studied beginning at the twelfth floor, or level of the top chord of the trusses. The resulting saving in dead load in eight floors was sufficient to compensate for the additional load of the twentieth and twenty-first floors. The total load on the trusses was increased so slightly that no altera-

The matter of relative fire safety of the pressed metal floor construction as compared with the more solid reinforced concrete construction in the event of a fire such as that in the Burlington Building, Chicago, was discussed. The owners considered the additional two stories to be of such importance and the probability of a similar fire so remote, as to justify the change in construction.

The architects for the building are Hoit, Price & Barnes of Kansas City, Mo. and the Swenson Construction Company has the general contract.

THE LIGHTING OF SCHOOLHOUSES*

A Study of the School Room Lighting Problem and the Solution

AT a conservative estimate twenty-five per cent of school children suffer from defective eyesight. Investigations by national and local committees to ascertain the status of vision among school children have been practically unanimous in their findings. The reports show an intimate relation between defects in eyesight and school life; a seriously large percentage of children with eye troubles, and a marked increase in defective vision during school life.

One of the large contributing factors to the impairment of eyesight is the poor lighting of the class rooms, both natural and artificial. It is

stated on competent authority that with few exceptions, state laws are deficient with regard to natural lighting, that a large number of states still have no laws governing the construction of school buildings, and that still fewer states regulate, in any way whatsoever, artificial lighting.

In the northern zones where there is a great deal of cloudy weather, natural lighting is inadequate many days in the year and must, therefore, be supplemented by artificial lighting. The artificial lighting becomes, therefore, a prime factor in reducing eye strain and must be not only adequate in quantity, but so distributed as to meet the well known and established standards of good lighting.

There are one hundred and twenty-three school plants in the Cleveland School System. A survey

*A digest of a paper by Henry B. Dates, Department of Electrical Engineering, Case School of Applied Science, Cleveland, Ohio; presented at the Annual Convention of the Illuminating Engineering Society, September, 1922.

of the plants as of January 1, 1921, showed that there were seventy-four buildings in the system in which the artificial lighting was markedly inadequate. The other buildings might be classed as fairly well lighted.

It was recognized that there was a pressing necessity for eliminating the defective condition in the lighting of the seventy-four buildings mentioned, and it was the desire of the Director of Schools and his staff to adopt some standard plan for the lighting of new buildings, which plan could also be adopted in the renovating and lighting of the older buildings of the system. It was appreciated that a careful study of the conditions was necessary before deciding upon the exact plan to follow and as there was no illuminating engineer attached to the staff of the schools, the writer was asked to make a survey of the problem and make recommendations.

To this end, Outhwaite School, a building situated in a rather congested district, typical of the general conditions to be met in Cleveland as to smoke and dirt and consisting of an original building of the older type with an addition of a more modern design was selected as a working laboratory. The various dealers in lighting fixtures and supplies were advised by the Board of Education that they could submit samples of glassware for this study and as this building contained rooms having both four and six outlets per room, complete equipments of all the units submitted were installed in both types of rooms.

The mounting heights were specified and were uniform in all cases. The fixture holder used in all installations was the standard school holder and conformed to the specifications of the architect's office.

The qualities considered in the study of the installations were:

- (a) The intensity of the illumination on the desks.
- (b) Uniformity of distribution.
- (c) Density of shadows.
- (d) Location and number of units.
- (e) Surface brightness.
- (f) Degree of glare.
- (g) Depreciation due to dirt.
- (h) Ease of maintenance.

The installations included among others, the following:

- One type of enameled glass enclosing semi-indirect units,
- One type of metal and glass open semi-indirect unit,
- One type of prismatic glass enclosing semi-indirect unit,
- One type of prismatic glass open semi-indirect unit,
- Four types of enameled and crystal glass enclosing direct lighting units,
- Six types of opalescent glass enclosing units of various shapes.

One hundred-watt lamps were, at this time, in use in all of the schools and at the request of the department in charge of the tests, the first studies were made using six units per room with 100-watt

clear lamps in each unit and four units per room with 150-watt clear lamps in each unit. The rooms averaged about 28 feet x 32 feet, there being, as usual, some difference in the actual floor area in the rooms of the same building, the actual floor areas running between 875 and 930 square feet. The mounting heights were in practically all cases 9 feet ten inches.

The rooms having six units installed averaged approximately 900 square feet floor area. Neither the

walls nor ceiling had been repainted for six years. The color of the walls was a light buff, in rather a soiled condition, and the ceilings were of a medium cream more or less dirty. Outhwaite building is used as a grade school. The average height of the desks was two feet, and all illumination readings were made on a working plane two feet from the floor.

A very careful illumination survey was made in each room, using twenty to twenty-five stations per room, and covering practically the entire floor area. From three to five readings were made at each station. Figure 1 shows for room 202 the location of the lighting units and the location of the test stations. The desk area is indicated by the dotted lines. This layout of stations is typical of that made in all the rooms. Figures 2 to 9 inclusive show views of the various installations used in the illumination survey of the school rooms. Table I shows the minimum, average

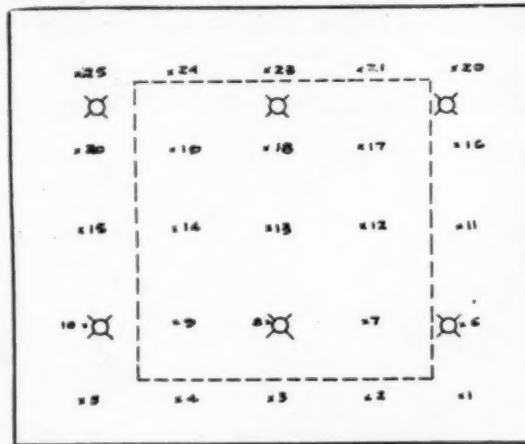


Fig. 1. Sketch showing location of outlets and test stations in typical class room

and maximum intensities found in typical rooms.

A first inspection of the data showed in most cases, an apparent superiority in average illumination in the four unit rooms over the six unit rooms, but this was due entirely to the difference

TABLE I.

Total power—600 watts; six unit rooms—600 watts					
Room	Unit number	Intensities			Watts per sq. ft.
		Average	Maximum	Minimum	
106	1	3.14	4.27	2.63	0.647
101	2	3.01	4.04	1.86	0.686
202	3	2.66	4.15	1.65	0.683
103	4	2.60	3.47	1.94	0.669
201	5	2.59	4.75	1.68	0.662
105	6	2.42	3.31	1.62	0.645
101	7	2.33	3.54	1.51	0.685
202	8	2.09	2.37	1.77	0.647
102	9	1.53	1.91	1.05	0.647
Four unit rooms—600 watts					
110	5	2.81	8.00	1.52	0.777
108	6	2.74	6.60	1.43	0.705
112	7	2.74	4.40	1.55	0.773
205	3	2.64	3.72	1.39	0.650
112	4	2.63	5.60	1.45	0.773

in the size of the rooms and when reduced to the same floor area this superiority disappeared. The average illumination intensity was very much below values which good lighting practice indicates should be used, the highest values obtained being only 3.1 foot-candles, this with the lamps new and with the glassware clean. With the depreciation due to aging of lamps and the glassware becoming dirty, the illumination would be materially below this value.

The study was, therefore, carried on using six units per room with 150-watt clear lamps in each unit. The results are found in Table II.

In addition to a study of the intensity of illumination, uniformity of distribution, glare and surface brightness, the units were very carefully ex-

TABLE II.

Six unit rooms—600 watts					
Room	Unit number	Intensities			Watts per sq. ft.
		Average	Maximum	Minimum	
101	10	2.36	3.33	1.29	0.876
104	11	2.12	2.66	1.52	0.995
206	12	2.75	4.35	1.96	1.005
202	14	2.48	3.52	1.52	0.968
204	15	3.10	4.47	2.25	1.006
204	16	3.16	4.39	2.05	1.006
204	17	3.35	4.60	2.37	1.006
204	18	3.52	5.04	2.48	1.006
101	2	3.58	4.49	2.42	1.025
203	18	3.35	4.30	2.35	1.006
106	1	3.67	5.47	2.25	0.920
105	6	2.60	3.29	1.92	0.969

TABLE III.

Six unit rooms—1200 watts					
Room	Unit number	Intensities			Watts per sq. ft.
		Average	Maximum	Minimum	
203	18	5.00	6.20	4.00	1.34
102	19	3.36	4.06	2.55	1.259

amined to determine the ease of cleaning and the effect of the collection of dirt.

The surface brightness was found to range from 1.5 to 6 and 7 candles per square inch.

To determine the effect of the accumulation of dirt, six units were selected as representative of the various types. Regular installations of these units, four or six per room, were made and left undisturbed and without cleaning for the same period. At the end of this period careful tests were made of the illumination values before and after cleaning with results as shown below.

Unit number	Per cent increase in illumination due to cleaning
7	13.3
18	14.5
4	33.0
9	35.5
5	20.4
6	30.3
1	11.0



Fig. 2. Outhwaite School, Cleveland, day view of original installation, four 100-watt bowl frosted Mazda C lamps in prismatic glass, direct lighting reflectors

Cleveland is essentially a manufacturing city burning chiefly soft coal. There is, therefore, present in the atmosphere at all times, a very considerable amount of soot and dirt.

As a result of this survey and a study of the physical conditions to be met, together with the maintenance possible, it was decided that any unit selected must necessarily be a totally enclosed piece of glass. The present financial situation does not permit repainting walls and ceilings of class rooms oftener than once in six or seven years. Before the end of this period the surfaces have become decidedly dirty and have depreciated materially in reflecting power.

The conclusion was reluctantly forced upon the investigators that under the conditions encountered in Cleveland, the depreciation of surfaces, the maintenance possible and the financial questions involved, a direct lighting system should be chosen, though for well established reasons a semi-indirect system would otherwise have been preferred. It

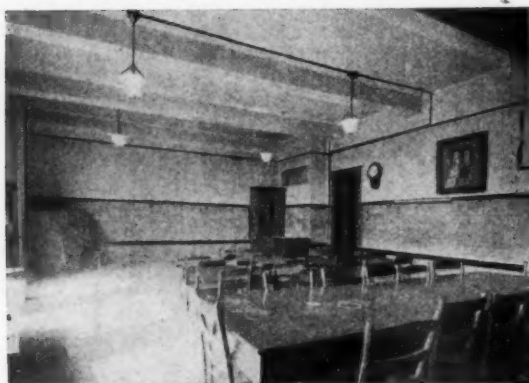


Fig. 3. Outhwaite School, day view of original installation of bowl-shaped, opalescent glass, open, semi-indirect units

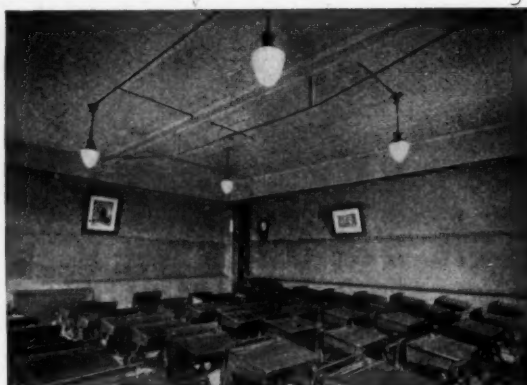


Fig. 4. Outhwaite School, day view of typical test installation, four-unit layout, statactite shape, opalescent glass enclosing globes

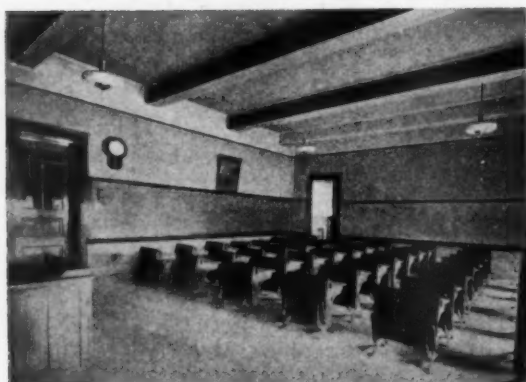


Fig. 5. Outhwaite School, day view of typical test installation, four-unit layout, enamelled glass enclosing semi-indirect units

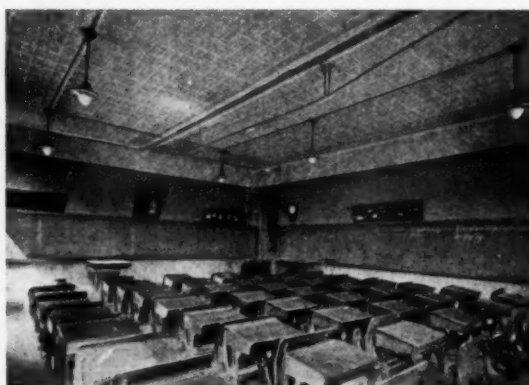


Fig. 6. Outhwaite School, day view of typical test installation, six-unit layout, enamelled and crystal glass enclosing direct lighting globes



Fig. 7. Outhwaite School, day view of typical test installation, six-unit layout, aquat-shape, opalescent glass enclosing globes



Fig. 8. Outhwaite School, day view of typical test installation, six-unit layout, enamelled and crystal glass enclosing direct lighting globes

was further decided that units of one piece of homogeneous diffusing glass were to be preferred, that the surface brightness should be kept as low as possible, and that the units selected should be of large diameter.

Units 9, 10, 11, 14 were semi-indirect units and the conditions to be met were unfavorable to the semi-indirect type. The final choice narrowed down, therefore, to a very few units. These units were subjected to further critical study with regard to the distribution of light in the different zones, the surface brightness, diffusion, and freedom from glare, depreciation due to accumulation of dirt and the ease with which they could be handled and cleaned.

As a fairly extensive program of redecorating was contemplated, installations of units number 3, 18, 15, and 17 were made in Hough Avenue School, a building which had just been redecorated. These units were all 16-inch units. Sets of six units were installed in succession in the same class room with 150-watt Mazda C clear lamps. The results obtained are summarized in Table IV.

It was found possible to secure glassware of homogeneous texture, having excellent diffusing properties which in the 16-inch size, with 150-watt Mazda C clear lamps gave distribution of light in the various zones, in percentage of lumens of the bare lamp as follows:

0 to 60 degree zone
0 to 90 degree zone
0 to 180 degree zone

25 to 28 per cent
45 to 48 per cent
80 per cent or better

TABLE IV.

Six unit room — 900 Watts				
Unit Number	Intensities			Watts per sq. ft.
	Average	Maximum	Minimum	
20	5.88	7.71	3.54	0.99
18	5.86	7.60	3.21	0.99
17	5.74	7.23	3.39	0.99
15	5.52	7.26	2.92	0.99



Fig. 9. Murray Hill School, Cleveland, night view of typical class room 33x22 feet, lighted by six 150-watt Mazda C lamps in squat-shape opalescent glass enclosing globes, 16-inch diameter (Trojan)

with perfectly good results in this size of unit, it was felt that the financial conditions did not warrant recommending at the time, further increase in lighting bills by the use of higher wattage lamps. However, the use of this large size globe, 16 inches, keeping as it does, the brightness to very low values, permits the use of 200-watt lamps in cases where it is desired to raise the intensity, as for sewing and other special work. The rooms are wired for two circuits per room and the wire is of ample size to permit the use of larger size lamps whenever and wherever advisable.

(To be continued)

Values of surface brightness at 35 degrees and 70 degrees ranged from 1.5 to 1.9 candles per square inch.

It was recommended that all class rooms be wired for six outlets per room, to be equipped with direct lighting fixtures and fitted with totally enclosing glassware, 16 inches in diameter. The glassware to be either Trojan or Monax 4386 or equal approved quality and used with 150-watt Mazda C clear lamps.

While the writer would have preferred to have increased the illumination intensities by the use of 200-watt lamps, which size of lamps could be used



George Washington High School, New York City
C. B. J. Snyder, Architect

AN ADMIRABLE ARCHITECTURAL ORGANIZATION

A description of the organization of the office of the Superintendent of School Buildings in New York City

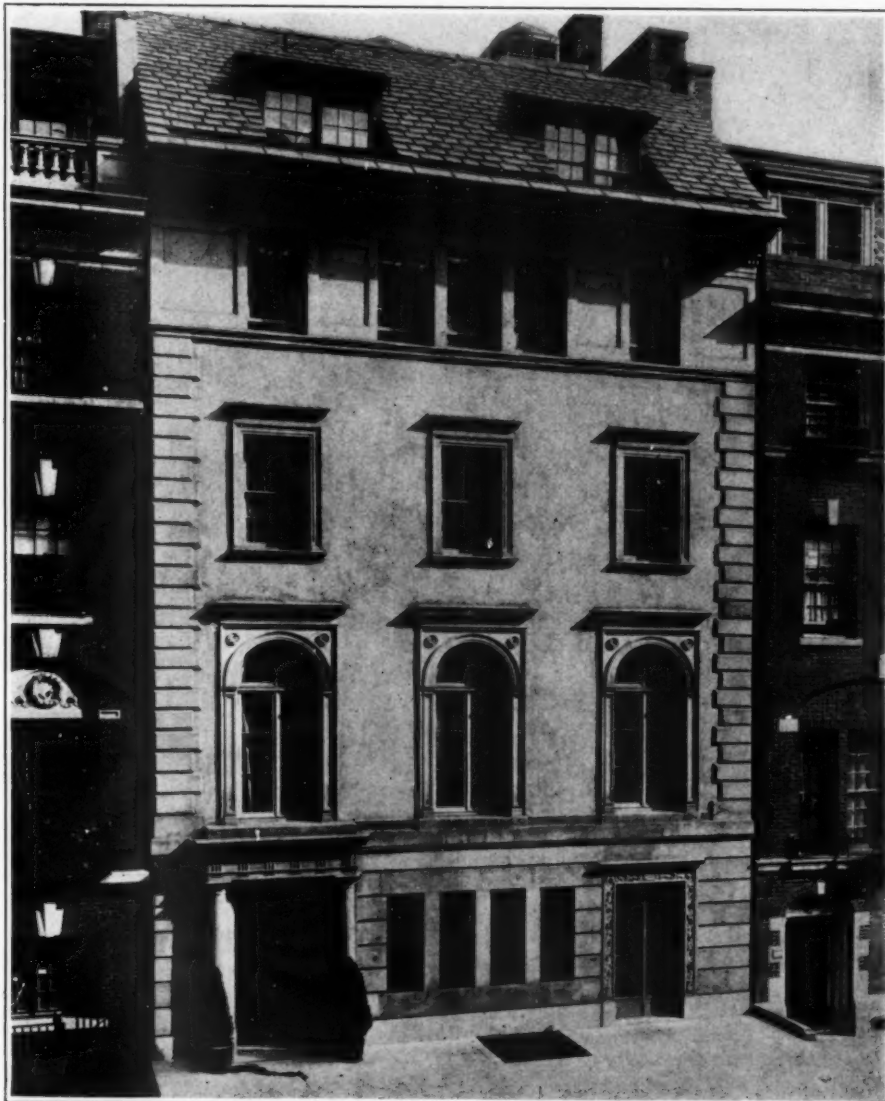
THE decision of Mr. C. B. J. Snyder to retire from the position of Superintendent of School Buildings, which he has held for the past thirty-one and one-half years, has created renewed interest in the organization he built up. Mr. Snyder asked to be retired on July 1, 1922, but upon urgent request of the Board of Education and the Superintendent of Schools consented to remain until December 31, 1922, in order to help along the extensive building program and to give the Board of Education time to select his successor.

The reputation of Mr. Snyder in connection with school design, construction and maintenance is worldwide and his consistent advocacy of fire-proof construction has brought him much commendation. He developed standard systems of planning and construction that are the envy of school architects and are copied wherever schools are built. The last piece of work with which he was connected is the Washington High School, on the site of Old Fort George, New York City. It is a successful application of Colonial architecture, a bold piece of design that might easily in such a large structure with modern window requirements have been a failure.

The organization of his department is as follows: Under the Board of Direction is the Super-

intendent of Schools, the chief executive officer. Reporting directly to him is the Superintendent of School Buildings, the title held by Mr. Snyder. He is executive officer of the Bureau of Construction and Maintenance and architect of new buildings and additions. He has an office force under a chief clerk, a total of 21 employees. Four divisions report directly to him, namely, General Drafting Division, Heating Division, Sanitary Division, Electric Division and Furniture Division. There are also five offices, one each in Manhattan, The Bronx, Brooklyn, Queens and Richmond. Each borough office supervises construction and equipment of new buildings and maintenance of old buildings, with the exception of heat. Each office has a chief with clerks, draftsmen, inspectors from each division and mechanics representing each division. There is a total of 203 employees in these five offices.

The Heating Division has a chief and 4 inspectors to supervise installation of heating and ventilating work. The Sanitary Division has a chief and one clerk to supervise the installation of sanitary work. The Electric Division has a chief, a chief clerk, one clerk and 14 draftsmen to prepare plans and specifications and supervise installation of electrical work. The Furniture Division has a chief, a clerk and 4 draftsmen to prepare plans



The mansard roof, easily seen from the street, adds a most interesting element to this residence of Mr. Bayard Dominick, Jr., 115 East 54th Street, New York City, and accentuates by contrast the formal treatment of the facade. Mr. Wm. F. Dominick was the architect.



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and specifications and supervise installation of furniture. The offices of the various divisions are in the building occupied as headquarters by the Superintendent of School Buildings, the men in them directing the inspectors, draftsmen, mechanics, etc., attached to the five borough offices. There are 29 employees in the division offices mentioned.

The General Drafting Division contained a year ago 209 employees but at present has only 144. Here are prepared all plans and specifications for the construction and maintenance of, as well as additions to, school buildings, and all work connected with plumbing, heating and ventilation. The division is in charge of a Deputy Superintendent of School Buildings, Mr. Clarence Dobbin, and one assistant. It is divided into a plan section, a structural section, a plumbing section, a carpenter section, a full size detail section, a heating and ventilating section; each under a foreman at the head of a squad of draftsmen. There is also a special section containing designers, computers, specification writers, photographer, general inspectors, clerks, blue printers, etc. Each section reports directly to the Deputy Superintendent. Not the least of the troubles of the Superintendent of School Buildings has been the selection and training of squad foremen and section and division heads. During the past year plans were prepared and contracts let for 48 buildings. It is estimated

that during the next three years this force can take care of 150 new buildings.

The cost of running the department averages well under two and three-quarter per cent of the cost of construction, a record not equalled in many well equipped architectural offices. The department has been operated so efficiently that in one year when a total of three million dollars was spent on contracts the bills for extras amounted to two hundred and ninety-five dollars, due to unexpected and unforeseen difficulties. For a period of six years during which time the money spent on construction amounted to more than twenty-eight million dollars the total spent on extras, caused by circumstances beyond control, was twenty-three thousand dollars, about 85/100 of one per cent.

Some elected members of the Board of Education, in view of the retirement of Mr. Snyder, have aired opinions in certain newspapers and criticised the organization as being inefficient. One member, according to newspaper reports, says there are 225 draftsmen employed and that he proposes adding 100 more, divide the total number into squads of 5 men each and build 125 schools within the next three years. That his ideas apparently meet with favor is due to general ignorance on the part of the public as to how efficiently the department is working.

A New Architectural Journal

THE Society of Architects, London, with the issue of the Journal for November 1922, enters upon a new stage in its career. The Journal hereafter will be known as *Architecture*. The page size is now 8x10 in. and the type is large and clear. The Secretary says:

"*Architecture* means to give what is to be found in no other paper at the present day: a careful and reasoned criticism of buildings, old and new, but especially new. Each month at least one lay-writer will contribute an article; and the regular articles dealing with contemporary work which are grouped under the title of CRITICAL REVIEWS should prove of special interest."

The first issue of the Journal in its new form is pleasing. The inclusion of advertisements marks a departure from the older type of society journal and should be of benefit to the Society treasury.

Cleveland's Home Sold

GRAY GABLES, the "summer White House" of the late ex-president Cleveland, and comprising 100 acres near the west entrance to the Cape Cod Canal, has been sold to a syndicate and will be divided into building lots, it became known recently through press announcements.

Competition for Cover Designs for The House Beautiful

IT is announced that two prizes, one of \$500 and another of \$250, will be awarded to the successful contestants in a competition for cover designs for *The House Beautiful*. The competition will close February 10, 1923. Other particulars of the conditions to be observed may be had upon application to the Competition Committee, 8 Arlington Street, Boston, Mass.



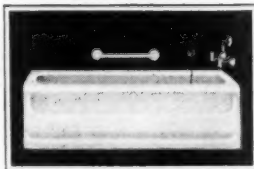
If This Catalog Had Only One Page—

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Publishers, THE AMERICAN ARCHITECT AND

THE ARCHITECTURAL REVIEW.

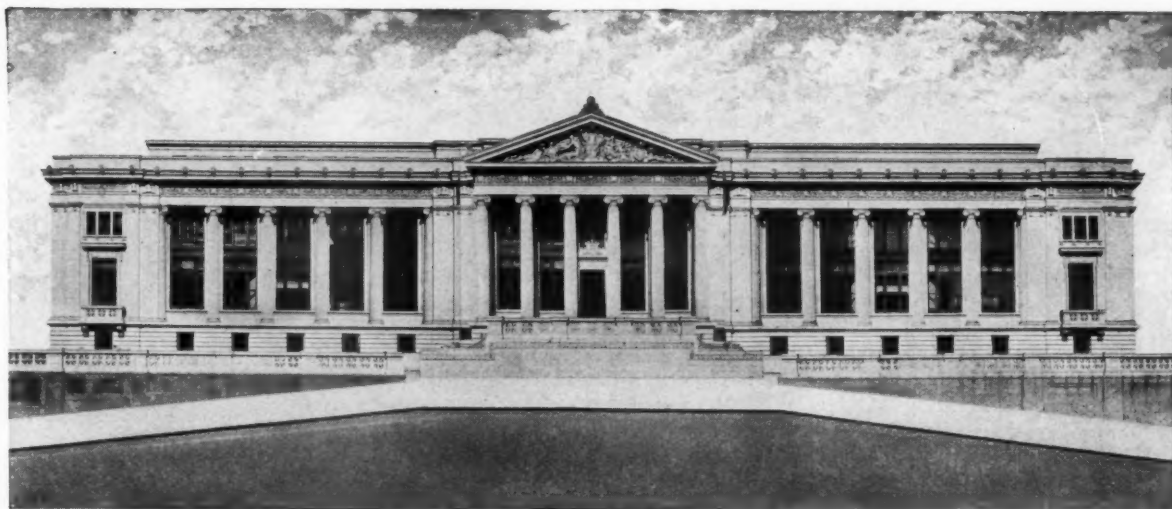
IT is obvious that every specification writer cannot inspect carefully and in person all plants that manufacture the thousand and one things that are to be specified, nor can he make himself acquainted with the many branches of building construction work unless he devotes particular attention to either of these pursuits without neglecting his remunerative labors. The average person will procrastinate in the accumulation of technical matter necessary in the formulation of his specifications unless he has a compelling urge under the stimulus of which he keeps up to date in the acquisition of information of value to him.

The American Specification Institute through bulletins that are published at frequent intervals places in the hands of its members information concerning the subject matter of specifications and of materials that enter into building and engineering construction. A comprehensive knowledge of materials and their most economic use in building construction is being accumulated from the experience of members, all of which is available to members when they desire information concerning particular matters.

The architect or engineer who is responsible for the design and construction of a building or engineering structure must be intimately acquainted with a vast number of materials and processes

and as his knowledge of these and his skill in their use increase, he will find his objective more easily accomplished. The person who writes specifications for such structures must have a thorough knowledge of the subject matter of the various subdivisions of his specifications and since the average mortal cannot hope to learn through personal experience all he must know in order that he may achieve success, he must look to some source or sources of authoritative information for assistance. The American Specification Institute will render to its members every possible assistance in producing specifications of the best quality.

Intimately related to the desirability of knowing how any product is made is the knowledge of its economic worth with respect to the work of which it will eventually become a part. A knowledge of what is called "engineering economics" is becoming of increasing importance, especially since it seems that construction costs are seeking a stabilized level considerably above that to which most of us became accustomed during the five year period before the World War. This knowledge is not to be gained by those who wish for it unless they attempt to study the question from a broad knowledge of the factors that are fundamentally in control. There is hardly a building constructed but that there arises the question as to which of two or more materials or methods should be used



COLOR *and* PRECEDENT

GREEK architecture in its finest period drew lavishly upon the resources of color for the enhancement of formal style.

The Metropolitan Life Insurance Company Building illustrates an effective adaptation of this chromatic precedent. Its pure white Terra Cotta facade is enriched by the brilliant polychrome frieze in which detail is developed in white, green and yellow glazes upon a luminous blue field.

Literature on color and the principles of its application will be sent free to recognized architects, draftsmen and professional schools. Address: **National Terra Cotta Society**, 19 West 44th Street, New York City.

Completed building of the Metropolitan Life Insurance Company, San Francisco, Cal. I. R. Miller, Architect. Executed in white matt glazed Terra Cotta with polychrome frieze. (The original building designed by N. Le Brun & Sons is incorporated as one wing of the complete structure shown.)

TERRA COTTA

Permanent

Beautiful

Profitable

in case the structural characteristics are on a level but the dollar price varies. A correct understanding of economic values cannot fail to be of very great assistance where utilitarian motives govern; and it may act as a guide in those cases where esthetic value seems to be about equal to economic value.

The American Specification Institute is organized to stimulate the acquisition of knowledge of engineering economics and to put into the hands of its members all known facts relating to the production of the materials that they deal with. Intimately connected with this study is a program of discussion as to the best methods of erection and installation work to the end that structures, their equipment and embellishment, will be erected and installed in the best possible manner.

As stated in the "Plan and Scope" two of the activities of The American Specification Institute will be:

1. Study of materials with respect to
 - a—The production and physical properties of raw materials
 - b—Methods of manufacturing, fabrication and finishing
 - c—Relative value based on appearance, initial cost and maintenance, effect of combinations with other materials and proper materials for various types of buildings of varying grades
2. What methods of construction and installation should be used

Specifications may be divided into four classes insofar as their contents are concerned. These classes are materials, methods, construction and equipment. Many specifications and, in fact, most specifications that are used in building and engineering structures, combine three of these four elements, that is to say, for building and engineering structures the specifications will embrace materials, methods and construction while for the equipment there will be these same elements with a sub-element of installation after shop construction.

Specifications are essential to the proper and orderly conduct of the business of all those concerned in buildings, engineering structures of all classes and for all manner of equipment of whatever kind which may be placed in or about such works. We have, then, the following classification of users of specifications: Engineers, architects, contractors, manufacturers, vendors, labor, owners, buyers, operators.

Each one of these classes is vitally interested in having at its disposal good specifications, the intent and purpose of which cannot be questioned. To each of them a good specification brings the assurance that there will be smooth operation and

cordial relations for all concerned, whereas mediocre specifications mean everything but cordiality and happiness.

Every specification comprises certain elements that are necessary in order to convey to the mind of the reader all fundamentals that will govern in the execution of the work. Although it is not expressed in so many words, practically all specifications have been prepared with a view to the economic use of materials and methods, consistent with the component parts available to use and with the results that are considered most desirable. Economic values always must be considered, else the wasteful processes that will be encouraged by a disregard of such consideration will bring to the engineer or architect a reputation that will not be to his credit.

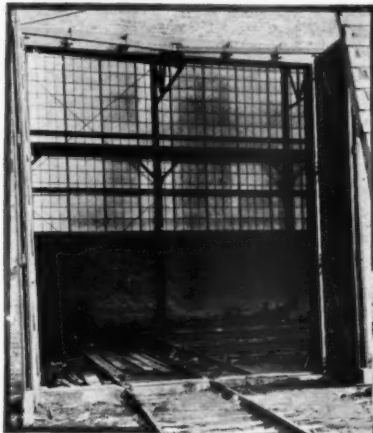
Certain standards of excellence in workmanship or materials must be specified so accurately that there will be no question as to the aims of the author of the specifications. Likewise it is oftentimes necessary or desirable to present to the one who is to execute the work a choice of several alternative ways of accomplishing the ends sought. In order that both of these elements may be provided for with scientific precision, it is necessary that the architect or engineer become acquainted with the standards and alternatives that are available for use and that are most desirable for any particular operation. The description of materials, methods and their use cannot be made in a brief, concise, coherent and accurate manner unless the one writing the specifications has, at his finger tips, all facts that will be of assistance to him in formulating his judgment.

All specifications for building and engineering structures and for many classes of equipment or co-related operations must be accompanied by general contract conditions and instructions to bidders. It is rare to find these elements missing although they may not have been given sufficient consideration to give them prominence.

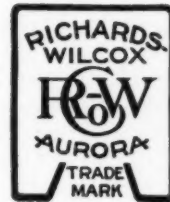
Bulletins are issued by the Institute semi-monthly for the use and criticism of members. Where the subject matter of bulletins eventually will become a standard for the members' use, all criticisms are studied with a view to perfecting the original bulletin and it is re-issued until it seems to satisfy the requirements of all members. Each member is given a loose-leaf cover in which all bulletins are filed.

REQUIREMENTS FOR MEMBERSHIP

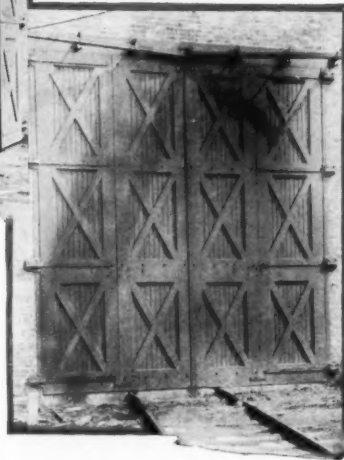
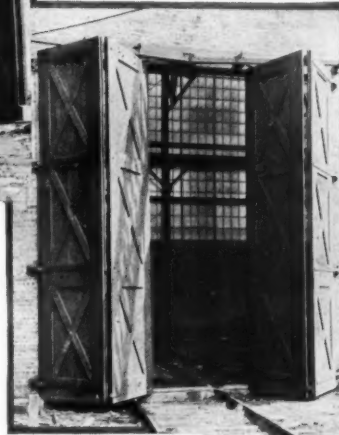
Membership in the Institute shall consist of the following grades: Active, Associate and Honorary members and Patrons. No persons who are engaged in the production, manufacture or distribution of materials that are purchased or used under specifications shall be eligible to membership.



Slidetite Industrial Door Hardware



Making Big Door Easy to Handle



You will realize the great size of the doorway shown in the illustrations when you know that railroad box cars are run through it into the building to be loaded or unloaded under cover.

To handle ordinary swinging doors of such size and weight would be difficult, especially in a strong wind. There would be constant danger of breakage; the doors would have a tendency to sag on their hinges, preventing tight closing, and making opening and closing increasingly hard.

The doorway pictured is equipped with *Richards-Wilcox Slidetite Industrial Door Hardware*. R-W equipped doors expose a smaller area to wind pressure, and never sag. They fold out of the way, and move so smoothly and easily that a boy can operate the largest doors. They always close tight against cold and stormy weather and prowlers.

Richards-Wilcox Mfg. Co.

A Hanger for any Door that Slides

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If your local hardware or lumber dealer can't supply "Slidetite" hardware, it may be obtained from our nearest branch.



Quality gives its imprint

Write for full information and particulars of how our engineering department can assist you in planning new equipment or altering old style doors.

**American Academy in Rome
Fellowship Competitions**

THE American Academy in Rome announces its competitions for Fellowships in architecture, painting, sculpture and landscape architecture. The stipend of each Fellowship is \$1,000 a year for three years, and residence and studio are provided free of charge at the Academy. All Fellows will have opportunity for extensive travel.

The awards of the Fellowships will be made after competitions, which are open to unmarried men who are citizens of the United States. Special attention is called to the fact that in painting and sculpture there will be no formal competitions involving the execution of work on prescribed subjects, as heretofore, but these Fellowships will be awarded by direct selection after a thorough investigation of the artistic ability and personal qualifications of the candidates. To this end, candidates are requested to submit examples of their work and any other evidence that will assist the Jury in making the awards.

Entries will be received until March first. Any one interested should write for circular of information and application blank to Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York City.

**Thirty-eighth Annual Exhibition, Architectural
League of New York**

THE Architectural League of New York announces that the thirty-eighth annual exhibition will open at the American Fine Arts Building, 215 West Fifty-seventh Street, New York City, Sunday, January 28, and will close Saturday, February 24.

The Committee on Annual Exhibition and Jury of Selection are Howard Greenley, Russell F. Whitehead, Leon V. Solon, Arthur Covey, Horace Moran, Edward McCartan, Ferruccio Vitale, Robert Aitken, D. Putnam Brinley, Arthur Crisp, Ely Jacques Kahn, Otto W. Heinigke, J. Monroe Hewlett, Birch Burdette Long, H. Van Buren Magonigle, Ernest F. Tyler. Committee on Architecture are William Adams Delano, Leon N. Gillette, Ely Jacques Kahn, Calvin Kiessling, H. Van Buren Magonigle, Charles A. Platt. Committee on Decorative Painting are W. T. Benda, Arthur Crisp, Arthur Covey, J. Monroe Hewlett, Fred Dana Marsh, Ezra Winter. Committee on Sculpture are Herbert Adams, Robert Aitken, Edward McCartan, Leo Lentelli, H. A. MacNeil, A. A. Weinman. Committee on Landscape Architecture are Harold A. Caparn, Ferruccio Vitale, James L. Greenleaf. Committee on Crafts are John P. Adams, Horace Moran, Lorentz Kleiser. Committee on Catalogue are Kenneth S. Carr, Gerald A.

Holmes, Alfred C. Bossom, Raymond M. Hood, John M. Montfort, W. Whitehall.

Medals of honor will be awarded for architecture, decorative painting, sculpture and landscape architecture. A medal of honor will also be awarded for design and craftsmanship in native industrial art. These medals are offered annually and are intended to encourage the submission of works of merit, to raise thereby the standard of the League's exhibition, and shall therefore be given only in recognition of superiority in work actually submitted and placed.

The Avery Prize (of \$50) will be awarded to the most meritorious piece of small sculpture by a living artist under 30 years of age and a special prize of \$300 for the best design submitted by an architect, sculptor and mural painter in collaboration. The Committee on Competitions and Awards are Stepan de Kosenko, Alfred Geiffert, Jr., John Gregory, J. Scott Williams, and Harvey Wiley Corbett, Chairman.

PERSONALS

Frank V. Nickels, architect, has moved his offices from 225 South Sydenham Street to 15 South Twenty-first Street, Philadelphia, Pa.

Charles S. Klein, architect and engineer, formerly at 2730 Hastings Street, Detroit, Mich., is now occupying offices at 1015 Detroit Savings Bank Building, that city.

President Harding announced the appointment on December 1, 1922, of M. B. Medary, Jr., F. A. I. A., of Philadelphia, to the Fine Arts Commission, succeeding John Russell Pope of New York. Mr. Medary is a graduate of the University of Pennsylvania and a member of the firm of Zant-zinger, Borie & Medary, F. A. I. A., Philadelphia, Pa.

John J. Donovan, architect, member A. I. A., school building specialist and author of "School Architecture" wishes to announce that Dr. Frank W. Hart, Associate Professor of Educational Administration and L. H. Peterson, Associate in Educational Administration of the Department of Education, University of California, are now associated with him for the purpose of providing an enlarged and improved consulting service to school boards and architects by closely combining the architect's training and experience with the professional school administrator's knowledge of the modern educational demands upon the school plant. The office is located at the old address, 512 Pacific Building, Oakland, Cal.



THE CATHEDRAL, SYRACUSE, GREECE

THE AMERICAN ARCHITECT