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Yew Tree Cottages, Petersham, Surrey

SUMPTUOUS SIMPLICITY
A NOTE ON THE ELIZABETHANS

BY P. M. STRATTON, A.R.I.B.A.

Illustrated by Sketches by the Author

WEST of the Malvern Hills and forming part of the old chace of Malvern Priory is a belt of country which still looks a tangled and purple forest from the ridge of the hills. The spaces of the fields are small, the copses are many, the earth where it shows is a purple brown, and still herds of apple trees, old and antlered, stock the meadows. Within this intricately patterned and well timbered country the building has naturally been of half timber work; it has a certain type of space which gives it a different effect from that of the half timber work in other parts of England. In Cheshire, Warwickshire, Worcestershire and Kent the width of timber is approximately the same as the width of the filling, the rhythm is that of equal day and night. In Wessex the filling is wider than the timber, though the latter is stout. In this Malvern country of close and intricate boughs, the panels formed by the wood framing are almost square, but only half the height of those elsewhere. Usually in England the uprights of a half timbered house run the height of a story, but here the height is divided into three, so that three square panels go to the height of each story. Probably roads were too bad for hauling long and heavy timbers;

therefore, as few were used as possible and the framings were designed so that the many shorter pieces of timber could easily be used up. The result is at first monotonous to the mind; then the determined simplicity of it begins to interest and ends by dominating, till at last no other proportion or rhythm appears convincing and spontaneous and characteristic. The effect is commonplace and unromantic, the result of common sense in design; it is an exercise in realism; yet its very sincerity gives it a strong attraction.

Back of an old house, Ledbury

The stories are low so the panels are small, and the prevailing scale of all the houses is small also, for the setting out of the panels determines the sizes of doors and windows.

Possibly because of the dissolution of the monasteries when this part of the country ceased to be chace and began to be built over and framed, the work as a whole is mostly of the Elizabethan time. The style peculiar to the district, extends naturally to the nearest towns of Ledbury and Bromyard, where the backs of many houses, whose fronts have been refaced at later dates, retain the characteristic panelling. To get the full meaning of this stylistic preference, and to see it from within, as it were, it must be thought of in relation to the history and literature of the Elizabethan epoch. England seemed at that time comparatively unimportant to Europe; she was overshadowed almost to extinction by Spain until the time of the Armada, and dwelt thereafter with the ghosts of that danger and that deliverance for many years. As a nation she "lived dangerously," in an electric atmosphere; in such a time, as in moments of great passion or danger in an individual, each commonplace little thing, each material object in view and especially in use, becomes extraordinarily real and surcharged with high and precious value. The Elizabethan patriots were alive to the soil, the very dirt of England, just as the Elizabethan poets were alive to her beauty. And the architects were alive to walls, doors, windows, roofs because they *were* walls, doors, windows, roofs, very real and useful things and therefore not to be symmetrically falsified, or even etherealized, or sublimated into some high intellectual rhythm, consonant though it might be, like the Gothic or classic rhythms, with the rhythmic processions of the universe.

It was in this particular that the Elizabethan architect, poorly equipped though he was, touched hands with Shakespeare. His doors were such as ordinary humanity, Shakespeare's humanity, could enter without appearing dwarfed; his rooms such as could hold snugly even Falstaff and Lear's fool and Juliet's nurse; his palaces such as Hamlet, and Richard the Second and Wolsey could feel regal, yet at home, in.

If the Elizabethan architect wanted magnificence he did not design magnificently in scale and space. He still retained his simple doors and windows and ornamented them with an incrustation of columns and entablatures, carved beasts and men, in doubtful taste but giving a curious and thoroughly Elizabethan effect of sumptuousness around simplicity; it is the kind of effect Shakespeare gives us in "The Tempest," where Ariel, Caliban, the drunken sailors, Prospero, the king and courtiers, gods and seasons and the delicately minded Ferdinand all seem to form an intri-

An old cottage, Malvern

cate gorgeous *mise-en-scene* for that simple country girl Miranda.

There was historically a further reason for this rich rusticity. The Elizabethans still held the simple moral philosophy of the mediaeval church. The seven shining virtues and the seven deadly sins had not yet been thrown into the witch's cauldron of Calvin, and been subsequently distilled into the seven dead virtues and seventy times seven attractive sins. But all round the figures of the old moralities had come flooding in the non-moral worship of beauty which constituted the Renaissance. In literature the master hand was ready and at work to retain the old simplicities, the big figures of real things handed down to that age, only to reshape them here and there to suit the new rich dress of the time, and to cut the dress also to suit the old singleness of effect. But in architecture the new decorative rhythms were longer in coming through; heavier than words, they did not reach England on the first tides, but only by cross currents from Holland and then not of the best. Such as they were, they were all gathered up and used indiscriminately, generously, and with intent to produce the genuine Elizabethan effect of sumptuous simplicity.

Within a half day's journey of the district described, at Ludlow, Stokesay Castle, and Hereford, there is work in this opulent manner. Framings, doors, windows are of small scale and simple rhythm, but all fretted with light and shadow of impossible beasts and men, naively embroidered with endless arabesques, dight with old classic beauty bludgeoned and contorted into servitude of alien masters. For this very reason of the temporary failure of the architects to assimilate the true Renaissance love of beauty, it is more fruitful to turn to the simple plain panels, the humanist spaces of grave little farmhouses near the hills of Malvern. These gave us the essential things without the trappings, and from them could be developed the rhythmic spaces and high austere unity, which the later Renaissance gave us, for the abode not so much of the body as of the spirit.

Back of a house, near the Church at Ledbury

IMPRESSIONS OF AN ARCHITECTURAL STUDENT IN SWITZERLAND

IN a recent issue of *The Builder,* an architectural journal of London, a correspondent sends in the following interesting contribution:

"It is not usual to look to Switzerland for ancient buildings which have set a style to be copied, and given inspiration to architects of all countries in search of ideas. In the larger towns the architecture is, according to the proximity to the respective frontiers, of a French, Italian, or German type. But a holiday in Switzerland can show much of architectural interest. It is in the country towns and villages where the characteristic Swiss building is found. Something—perhaps the atmosphere—has a singularly preservative effect on the structures; it is quite common to find a village church, for instance, which has been built for 150 or 200 years but looks no older than 50 at the most.

"The churches generally have Gothic pointed arches over the doors and windows, and are constructed in brick entirely covered on the outside with a cement rendering. The slender spire is characteristic, or sometimes a tower is seen with steep roof and four gables, with a hip rising from each, common to the German Romanesque architecture. At other places the tower roof has ogee-shaped gables, containing clocks, surmounted by an ogee dome, as at Vitznau, on the Lake of Lucerne. Internally, the walls of the churches are plastered, and painting is used round the openings, in imitation of mouldings. Shadows are painted on them, and at a distance are very deceptive. The caps to pillars are cubiform, or have faces and foliage carved on. Hammer-beam roof trusses are largely used, and carved and colored in bright red, blue, and gold, while liberal use is made of metal rosettes. Winged saints of typically Swiss expression gaze down in solemn dignity on the worshippers. At Stans, the crypt contains the skulls of various local celebrities tastefully arranged on shelves, and it is said that there is great keenness amongst the inhabitants to live a life so worthy that some day their skulls may adorn the walls of the crypt. In a small chapel in the churchyard is a wooden group, clothed in what were once brightly colored robes, representing the scene in the Garden of Gethsemane. The crosses erected over the graves in many cases bear a photograph of the deceased, a custom of most German cemeteries.

"Most of the well known mountains have hotels built on their slopes or summits. It is a matter of speculation as to the cost of these buildings, with the natural difficulty of getting the materials on to the site. The hotel on the Stanserhorn is at 7,000 ft., and on one side is on the slope of the hill, which at that point is nearly 60 deg. The wall is 30 ft. high before reaching the basement floor, and is in rubble taken from the surroundings. But all the rest of the material had to be brought up from Stans, at the foot of the mountain. (Perhaps it is the cost of these hotels which accounts for the price of coffee or chocolate being nearly 1s. 6d. a cup!)

"Everyone has seen photographs or models of the picturesque wooden chalets of the Swiss, with their large overhanging eaves and green shutters. The charm of these little dwellings is intensified by the beauty of their surroundings. Most chalets have a balcony supported on richly carved brackets. The roofs of those situated high up have long cross battens along the tiles or shingles. On these battens at intervals of about 3 ft. large boulders are placed to keep the roof down in case of sudden storm. The gutters are often continued beyond the termination of the eaves to a length of some 3 to 6 ft., where the rain water is allowed to drip straight on to the grass.

"In the higher districts earthenware pipes are seldom used, as they invariably crack owing to movement of the soil. Each chimney has its own little roof for keeping out the snow—it is the extravagant roof cutting that constitutes the charm of the chalet. Only in the summer is it possible for these mountain folk to spend all their time on their farms. In the winter they devote their days to wood carving, and every village of any size has two or three shops full of the work of these wood carvers. Mountain people are said to be essentially artistic, and the Swiss are certainly well ahead in this respect."

WALLPAPER, ITS STRUCTURAL QUALITIES

BY ROBERT N. HUNTER

THE revival of interest in things pertaining to interior decoration has reached a point where it is attracting universal attention. No matter where one turns, he is confronted with reminders of the interest taken. Hardly a week passes without the issue of some new book dealing with the subject. Not only are the number of monthly periodicals devoted to this subject steadily increasing, and the popular magazines one by one devoting more space to this intensely interesting subject, but even the daily newspaper has found it necessary to cater to the desires of the home builder to know "how and why."

The problem of "how" to decorate the walls of a new home may be the last, but it certainly should not be the least consideration of the architect or client. A generation ago the architect, from force of circumstances, was obliged to leave the question of decoration out of his specifications. The methods of building construction in vogue at that time made it quite impossible to decorate until a year or two had given the heavy plastered walls opportunity to dry and to crack, with the result that by the time it was seasonable to decorate, the architect had been dismissed and the problem of how to decorate became automatically a "family matter." Quite naturally, the result of amateur tinkering with this important department of home building produced an era of "hit or miss" experimentation with methods and types, which would, in the main, be more fittingly recorded as "misses" than as "hits."

As time passed, however, changes have taken place in methods of construction, whereby it is unnecessary to allow for much time before the decoration can be safely placed.

Walls are not nearly so heavy in construction and, due to the improvement in the preparation of plaster and cement mixtures, built upon foundations of lath and hollow tile, instead of wood laths, the walls do not carry so much moisture as in former times, with the result that by the time the

The introduction of panels of wallpaper of classical motives makes this staircase hall particularly attractive

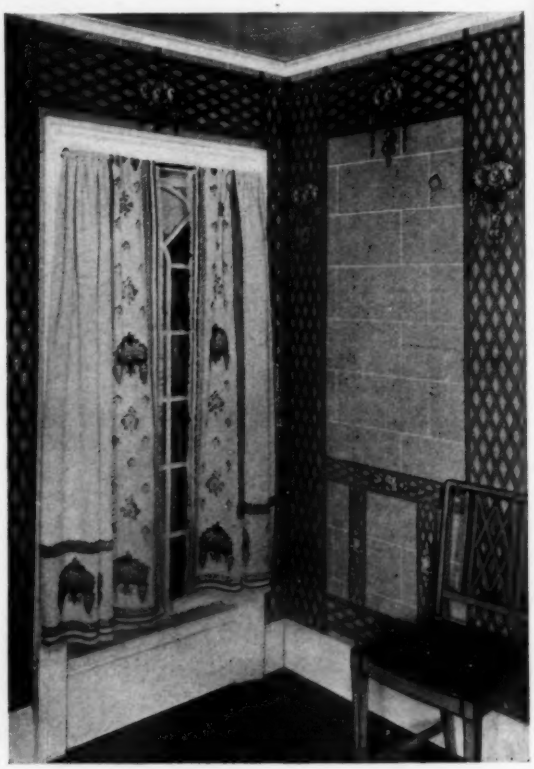
building construction is complete, all ceilings and wall surfaces are dry and ready for decoration.

For all of the reasons which can be thought of, this is a decided improvement over the methods of former times. There is no question of doubt but that the majority of clients prefer to enjoy their new homes with the proper background of decorated walls. It is unquestionably best to have the advice and guidance of the architect in the selection of the type of decorations appropriate to the design of the building, and it goes without saying that as troublesome as it may be in some instances

An effect of Caen Stone and lattice secured by skillful use of wallpaper

to co-operate with a client with reference to the decorations, it is certainly due the architect that he should, to a considerable extent, dictate as to what should be the last and finishing touch to his creations. There is, however, just one weak point in the method of wall construction today as compared with that of former times, which the architect is compelled to admit and provide for. The walls are now so thin that they are liable to show cracks due to vibration as well as to the changes of temperature caused by the extreme artificial heat in winter after the absorption of moisture during the summer months. It is generally admitted that up to the present time, no way has been found so to construct walls as to be crack-proof, except by the application of a covering after the walls are completed. The problem has been to find a covering which would be at once a reinforcement as well as a decoration. Various types of canvas, such as prepared burlap, prepared canvas and muslin, have been extensively used for this purpose with considerable success. Undoubtedly, when properly applied and treated with varnish or paint, after application, the walls are strengthened.

This method of reinforcement has not proved to be as popular, however, as its quality of reinforcement entitled it to. The cause of the loss of popularity has been due, in a large measure, to the expense, not only of the canvas itself, but the process of preparing for and applying. The treatment, being slow and laborious, is costly on account of the amount of time and labor required to carry it to completion, thereby restricting its use to a limited class of clients to whom the expense is of secondary consideration. Therefore, in order to cope with the present day tendency to reduce the time of operation, as well as the cost, to a minimum, it is necessary to consider the merits of materials more readily and economically applied. and in this connection it is worthy of note that wallpaper possesses, among other virtues, the quality of reinforcement to a considerable extent.



A good example of the structural use of wallpaper

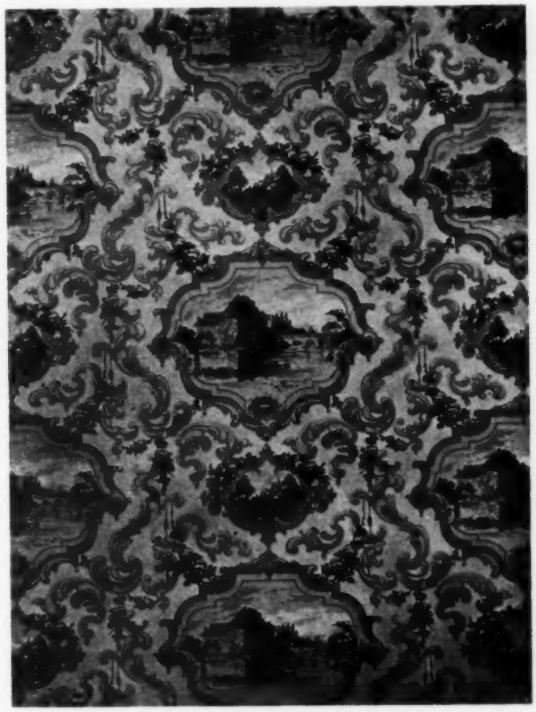
Wallpaper has been for so long a time considered in the light of a "cheaper" decoration, that very few have given serious consideration to its structural qualities. To the average person, wallpaper means a thin and inferior grade of paper stock, upon which have been applied patterns and crude colorings. As a matter of fact, the development

A wallpaper selected to harmonize with the structural lines of the interior

of wallpaper during the last twenty-five years, has steadily and progressively improved in every department, particularly in its variety of texture and weight of material. While it is true that the very cheapest grades of wallpaper are made of very light weight material, it is also a fact that it is made in various thicknesses and weights, thereby making it a material which may be specified for almost any emergency, and while it is not claimed that wallpaper is as tough or as lasting as a reinforcement for plastered walls as a heavy canvas or burlap, it is strong enough and tough enough to insure the prevention of cracks showing through during the life of the paper as a decoration. It has certainly been proven that wallpaper of good quality will prevent the showing of cracks, for a period of two or three years, whereas the uncovered wall or the wall which has not been treated other than to be kalsomined or painted, will show defects within six months.

This tendency of plastered walls to show cracks and other defects within a short period, compels serious consideration of the problem of "what to do" or what to specify to protect the client from these troublesome and unsightly defects. It is apparent that until a method of construction has been discovered whereby these conditions will cease to exist, wallpaper appears to be the most useful material to consider.

The acid test of economy and efficient management has discovered economic values hitherto overlooked or underestimated. Whereas, in the recent past, there was much appreciation and exploitation of plain, painted and paneled wall, it has apparently been discovered by large investors in hotel and apartment property that *certain defects in the construction of walls make the cost of keeping painted walls in good condition prohibitive, with the result that there has returned a renewal of appreciation of wallpaper.*



A modern wallpaper designed on an early Victorian motive

In this connection, it is surprising that the ability of wallpaper to cover up uneven surfaces and to strengthen the thin plaster shell of walls, was not hitherto appreciated to the extent that it deserved. It has not been generally recognized that wallpaper possessed this virtue, but it is a fact known by practical workers that when rightly applied, wallpaper is a real protector of plastered wall surfaces, and while it is true that the weakness of plaster has been recognized, other and more expensive materials have been adopted to

overcome these defects which wallpaper overcomes equally well at minimum cost and labor.

For instance, it has been the custom for years to use special canvas for lining ceilings and walls to prevent cracks and blisters. The process of

Wallpaper used to accent a structural effect

preparing for and applying and treating canvas is slow and cumbersome, and, because of its weight and "curling" tendencies, has many times failed to produce satisfaction because of its own defects. The closeness of contact of wallpaper can be verified by many who have endeavored to remove old wallpaper by ordinary means. Upon many occasions, the writer has been surprised, when old wallpaper has been removed, to discover cracks which were not apparent upon the surface of the paper.

The fact that there has been a recent decision to decorate the interiors of dining cars with wallpaper, in order to cater to the desire for homelike surroundings, indicates a confidence undoubtedly born of experience in the strength of wallpaper. We know of no more severe test of this product than the vibration natural to the moving railroad coach. That wallpaper may be made not only attractive, but durable, for this purpose, has been assured by the adoption of a process of varnishing the surface after the paper is applied. This preparation of the surface insures its practical utility for dining car surfaces as well as enhancing its beauty. It has been demonstrated that a special preparation of glue sizing, applied with the air brush, binds the colors of the wallpaper without smudging, and thereby prepares it to receive the varnish, and where the high gloss effect of ordinary varnish is considered objectionable, flat tone and semi-gloss varnishes are used, producing a satin-like surface.

Hotel proprietors have discovered that wallpaper produces not only the atmosphere of attractive homes, so much to be desired in a hotel, but it is also proof against the destructiveness of careless guests. Damages to wall surfaces where wallpaper is used can easily be repaired, whereas a painted wall thus damaged could not be remedied.

There are certain indications that there is a tendency to favor the return of decorated walls, and wallpaper, therefore, merits attention as a ready means to cater to this revival. This reaction in favor of surface decoration is typical of the American public in that popular taste seems to take the form of "fevers."

Sanitation and neutrality were the all sufficient reasons for bare walls; now the reaction is in favor of decoration. Wallpaper has come in for considerable attention because of its decorative possibilities, but very little thought has been given to

An attractive dining room where the design of the wallpaper supplements that of the rug in color and pattern

other qualities possessed by this product. It has always been the claim of experts that wallpaper was the least to be desired for wall covering because of its lack of sanitary properties, but in the light of recent research it has developed that wallpaper possesses supersanitary qualities, particularly when, as a part of preparation work, the old wallpaper is removed and the plastered walls well washed down and allowed to dry by ventilation. The new wallpaper, being fresh and clean, is placed upon the wall with paste partly composed of disinfectants and germicides.

Its sanitary qualities place wallpaper in a class by itself. The writer has always maintained that wallpaper, when rightly applied, was the most sanitary wall covering possible to obtain. Recent scientific research has confirmed this beyond the shadow of a doubt. Disease-breeding germs cannot propagate on a porous and well ventilated wall, and it has been demonstrated that air will pass through bricks and plastered walls. The application of wallpaper in no way retards ventilation because of its own natural porousness; whereas a wall that has been treated with varnish or paint is hermetically sealed. The non-porous surface thus presented allows the lodgment of germ-laden drops of moisture and these drops of moisture

A library covered with a low toned, heavy paper

make fertile fields for the rapid propagation of germs which thrive on moisture laden surfaces.

We have referred to wallpaper's reinforcement advantages in a general way but to get a more definite knowledge of its adaptability, it will be necessary to consider its various qualities more intimately, and, in this connection it is surprising how little is known about this important branch of the building industry. It would seem that the manufacturers have been too modest in advertising its merits.

Too much stress seems to have been laid on its "prettiness" and much too little on its practical qualities. Perhaps there has been too little effort to educate the housekeeper beyond the point of appreciating its decorative value.

However, there are indications of a change, largely due to the changed conditions in housing. The apartment house builder or owner has of necessity been compelled to consider the matter of decoration from an economical as well as from a decorative point of view and it has been interesting to watch the development of his method and adoptions. Upkeep of property is, of course, of paramount importance to the owner of apartment property and in no part of the apartment building is economy of upkeep more needed than in the main entrances, public halls and staircases. Here is where it becomes necessary to present a good appearance and at the same time have walls of such durable materials as to withstand the wear and tear of traffic as well as the transferring of furniture, baggage, etc.

About everything has been tried, and, where type of building and rentals permit, "marble halls" seem to be the solution. The average apartment building, however, cannot indulge in marble or Caen stone. Wallpaper has been found to meet this condition very satisfactorily. As we have indicated, wallpaper is made in a number of varieties and textures and the type known as "Pressed" or "Heavily Embossed," has, after a process of elimination, been found to be especially fitted to fill this need. This type of paper being made of very heavy and tough, as well as elastic, stock makes a satisfactory reinforcement for the thin plastered walls and because of its oil-finished surface, presents a washable exterior. As we have said, apartment house owners have shown their appreciation of the economic value of this type by the practical adoption of it as standard.

An idea of the durability of this type of wallpaper may be gathered from the recent experience of the writer who inspected the walls of a hall which had been covered with this grade of paper twenty-five years ago. In spite of the fact that within the last five years a subway had been built within one hundred feet of the house, subjecting it to the vibration of the trains, which may be distinctly felt as well as heard, no crack showed on the surface, this being conclusive evidence of its toughness.

Varnished and washable tile papers used as a covering for the walls of pantries and bathrooms, have shown a remarkable durability as wall strengtheners and the experience gained in the use of certain grades of flock and felt papers, has demonstrated their long life. Hand printed papers are usually printed on very heavy stock and with the several layers of heavily coated colors laid on by hand blocks, providing a very durable and tough layer or skin of protection against cracking of walls. A certain type of embossed paper known as "Leathers" is even more successful in this respect. The writer happens to know of a

vestibule wall, exposed during at least six months of the year to the outside atmosphere, still standing in first class condition after thirty years.

Embossed or heavy pressed paper is a material having quite a wide latitude of adaptability, which fact is apparently very little understood or appreciated. There being no limitation to the depth of relief possible, it is very useful for the reinforcement as well as decoration of ceilings in place of the heavy molded plaster. It is possible to produce all of the classic designs suitable to period dining room and library decoration, and being by comparison to plaster very light in weight, adds strengthening quality instead of approaching the danger line of too much weight, so frequently the case with heavy plaster modeling. This type of relief paper being made in the "white" or "raw" is susceptible of any kind of finish immediately after being applied, instead of the delays incident to the use of the slow-drying plaster.

As important as wallpaper is as a reinforcement, it must be handled expertly by competent workmen, to insure its successful application, and with a view of illustrating this phase of the subject, we append the following suggestions to be included in specifications:—

"All walls where now papered or kalsomined to have old paper or kalsomine thoroughly removed; all cracks then to be cut out and thoroughly filled in with plaster. Walls then to be sized with glue size composed of best white glue, properly soaked in cold water and then dissolved in boiling hot water. If the walls have been previously painted, they are to be well rubbed down with No. 2 sand paper and sized with the glue size as above described, to which has been added a small portion of molasses or brown sugar (to give a degree of "tackiness" to size). Walls then to be lined with standard white lining paper and the wallpaper to be hung with butted joints and trimmed with knife and straightedge. The paste to be made of wheat floor to which has been added a touch of alum for ordinary grades and when hanging heavy pressed or embossed papers, a small amount of Venice turpentine should be added to the paste while the paste is hot and freshly made. The proportions of Venice turpentine to be half a pint of the turpentine to a pail of hot paste. When this mixture is well stirred and is allowed to cool, it may be used.

"If the walls show indications of former dampness or in any way indicate a tendency in that direction, the contractor is to apply a coat of black asphaltum varnish thinned with turpentine before sizing or applying a lining paper.

"Contractor is expected to take especial care when handling set figures and prominent designs that the same are carefully measured and properly placed in the center of the panels."

A fine decorative example of wallpaper of the Georgian Period. The buildings in background are evidently a conventionalization of a view of Paris

PLANNING SCHOOLS FOR EDUCATIONAL PURPOSES*

BY ERNEST SIBLEY, Architect

FIRST of all, let us admit the futility of attempting to cover the subject of "Planning Schools for Educational Purposes" in one brief outline. Only in a series of articles embodying great breadth of vision could one hope to render valuable service in solving a problem which touches every phase of life, every vocation, every recreation, every activity in which normal human beings participate.

For, in creating a plan for a school building designed to meet adequately the needs of children, it is not sufficient that we plan with a careful regard to the fundamentals of school organization and administration, for progressive educational thought expresses itself in a demand that the modern educational system shall be 100% efficient.

This, in short, has been expressed by a recent writer as the demand of our intelligent people today, "that the school shall assume some responsibility for the pupil's physical welfare; shall give him a taste for music, art and literature, to prepare him to use his leisure time worthily; shall Americanize him and prepare him for citizenship; shall give him experience with the materials and tools of industry; and shall offer some training for the activities of the home." What a challenge to all of us who co-operate in this vital problem of schools and schooling.

Some one has said, "Whatever you would have appear in the Nation's life you must first put in the schools. Whatever we would have appear in the home life, whatever we would have appear in the community life—we must also first put into the schools."

The 100% efficient school not only makes sure that the importance of English, spelling, reading, writing and mathematics is sufficiently stressed, but boldly lives up to the ideals of our day by satisfying all the natural requirements and cravings of child life, those natural desires taken from him under the old traditional school, without a corresponding compensation.

This recognition of the necessity for making education satisfy and develop every side of child nature is responsible for the creation of modern school programs. Educators have worked out the methods for providing the complete and well balanced curriculum, and it is the task of the school architect to plan buildings wherein these methods can be carried out efficiently. The development of the ideal plan presupposes an adequate and well located building site. Upon this site the architect must place the school home of the children with due regard to the correlation of the various school activities. I believe that wherever architects have studied school planning in an earnest effort to secure the best results, basements have been eliminated and buildings have been reduced in height.

We no longer tolerate one, two, or three flights of stairs to the sanitaries; we do not approve placing gymnasiums and rooms for cooking, sewing, dressmaking, shop work, etc., in dark poorly ventilated basements at the end of long and dark basement corridors. Rather do we recognize the large and important places these units hold in modern programs, and we are determined to feature such rooms, giving them as valuable space as any other department.

After properly locating on the grounds that portion of the building used for social and community purposes and linking up the physical training unit with the playground, an important consideration is the orientation. On this point we meet a widely diversified opinion. My experience, study and research in connection with the orientation of school buildings have brought me to this conclusion: that study, class and recitation rooms should have Northwest, North, or Northeast light. I realize that this is in part contrary to the opinions that have been maintained for the past twenty-five years, as most writers on this subject have demanded sunlight in these rooms at some time during the day. I have reached my conclusions from personal observation and through discussion on this subject with educators, with whom I come in contact. Sunlight in these rooms has been demanded principally on account of its therapeutic value.

This value is questioned, as the air in the room is constantly changing and is being brought in from the great outdoors, where the sunlight has already performed its work of purification. Any benefit derived from sunlight in study, class or recitation rooms must needs be unquestioned in order to offset the injury and discomfort provoked by the glare of direct sunlight in the eyes and on the work of pupils.

We know that architects and artists prefer the steady, uniform North light.

Personally, in studying I prefer a room where neither the sunlight nor the glare from the sunlight obtrudes, but where I can consciously, or unconsciously, glance out of my windows and enjoy the effect of the sunlight on earth and sky.

*A paper read before the State Federation of District Boards of Education, at Trenton, N. J.

One of the most enthusiastic advocates of the Northerly exposure is a high school teacher whose room overlooks the Western slope of the Palisades, with the hills of Northern New Jersey in the distance. She tells me that never before has she been so contented with her surroundings, and that the outlook unquestionably has a psychological effect upon the pupils that is worth taking into consideration.

If I were designing a school on a city block, I would want to build it with a large central court, on which all the rooms were exposed. As the pupils, at their work, glanced through these windows they would glimpse cool, ivy-covered walls, interesting bits of architectural detail, or perhaps a graceful tower. And I am confident that I do not overestimate the value of its effect on the impressionable, responsive mind of youth.

Sunlight, preferably East, is desirable in kindergartens, industrial, and household arts rooms, cafeteria, physical training rooms, auditorium and certain science rooms. An Eastern exposure is undesirable where fixed sittings are used, since the child must face the South and the direct rays of the sun until mid-day. Should heavy shades be used to overcome this difficulty, the inside portion of the room will not be adequately lighted.

In rooms with Western exposure the glare of the sun is at the back of the pupil.

I would give the Northerly rooms warmth by a suggestion of colors in the walls and pictures. After having generally located the various units of the building from the point of exposure, I would study the circulation and exits, providing lockers and sanitaries on all floors, and in a school of any considerable size, I would have corridors at least twelve feet in width.

The correlation of the various departments in a school building has been so exhaustively discussed and is so clearly set forth under the "Candle of Efficiency," as developed by the Standardization Committee of the National Educational Association that I need not seek further to impress its importance upon those interested.

If I had entire freedom in planning, I would have in every school, special rooms accommodating at one time half the pupils in the school, in line with the programs of the platoon systems now operating successfully in many school districts, under which plan these special rooms are constantly in use.

Also, I would plan and construct the building so that the different departments could be expanded or changed as the need might arise.

To offer a concrete example of the development of a school plan, I have chosen the new high school building at Hempstead, Long Island.

Here a survey of the records of former pupils, after leaving school, was used as a means of measuring the requirements of the different departments. These records showed what proportion of the pupils prepared for college, for scientific work, machine shop work, boat building, aeroplane manufacture, general gas engine work, printing, drafting, designing, etc. It was found that the proximity of an important aeroplane factory, of a large printing establishment, and of numerous boat building and machine shops, tends to attract former pupils to employment in one or another of these lines, and the new school building includes the proper facilities for carrying on the work of the various courses designed to fit the pupils for the kind of work they plan to take up after leaving school.

Trees and shrubs native to Long Island have a place in the landscaping of the grounds and form a valuable contribution to the botanical and nature study classes.

The school architect has only partly fulfilled his duty when he has perfected the plan. There has been an unfortunate tendency to ignore or underestimate the value of design in school buildings, and in certain quarters, there has even been a demand for a new style of architecture for school buildings.

But here a grave danger threatens, for architectural motifs gradually perfected throughout the ages are to design what the alphabet is to literature and the staff is to music, and only by a composition of perfected architectural motifs, or of the alphabet, or of the staff, harmoniously arranged and accented, can successful architecture, fine literature, or beautiful music be created.

Children attend school during the formative period of their lives, when the impressionable, receptive mind is favorably influenced by beauty of design and pleasing color schemes, and in a logical and natural way may begin their education in the recognition and appreciation of good architecture —that least appreciated and respected of the fine arts.

In spite of all the wonderful progress and the work of the educators and those back of them, a large percentage of the schools being erected today almost duplicate the first complete grammar school built in the United States, the Quincy School erected in Boston, Mass., in 1848; and the greater number of these have less architectural merit than this building. For this condition we must all share the blame.

And if education in the traditional school has left us with such narrow conceptions of the mission of the public schools, let us use concerted effort toward building up in the children of today, an appreciation of what a modern educational plant can accomplish, and the improvement which has been delayed half a century will come in a generation.

·EDITORIAL·COMMENT·

ON ANOTHER PAGE in this issue there will be found the address of Mr. Howard Greenley, on the occasion of the placing of a memorial wreath beneath the portrait of Sir Christopher Wren, which occupied the central position in the space set apart for the exhibit of the Royal Institute of British Architects at the exhibition, recently closed, of The Architectural League of New York.

This graceful and very appropriate ceremony was coincident with the placing of a similar wreath on Wren's tomb in St. Paul's, London, by Ambassador Harvey, as representing The Architectural League, on the occasion of the ceremonies incident to the observance by the Royal Institute of British Architects of the bi-centenary of Wren's death.

The profession in this country is placed under obligation to The Architectural League of New York by this graceful act. Had it not been for this well timed expression of appreciation and dignified co-operation, the architects of this country would have failed to signify their appreciation of one of the greatest members of their profession, and would have also been accused of an attitude of indifference that it is not possible they would quietly have borne.

* * *

A RECOMMENDATION by the United States Government which affects the building industry is important. The Department of Commerce through a committee, has recommended minimum requirements for small dwelling construction. These are made in the form of a code suitable for adoption by states or municipalities. As the government cannot control these matters, their adoption must be voluntary and this only can be accomplished through the influence of those interested. The motive as set forth by Mr. Hoover and which actuated him in appointing the committee, was to reduce the cost of building construction. To accomplish this end it is recommended by the committee that certain reductions be made in masonry construction, but in the bettering of the quality of other things this may be offset and the objective not be secured. Cheaper dwellings can be secured through the reduction of the cost of materials and labor rather than by their restricted use, this type of building having already been trimmed to the utmost limit.

The value and volume of this class of buildings are so great and the importance of government recommendations is such, that THE AMERICAN ARCHITECT publishes the essential points of the Department of Commerce recommendations in this issue.

* * *

JUST WHAT MAY BE accomplished by a Municipal Art Society whose efforts are intelligently directed is shown in the annual report of the Art Commission of the City of New York for the year 1921.

The first important Art Commission to become established in this country, it has in a competent and forceful manner safeguarded citizens from those atrocities that were put upon them in earlier years. Today New Yorkers do not have to explain apologetically to their visiting friends. Whatever of art finds lodgment in this city, is good art or it would not be tolerated by our Art Commission. Well meaning and insistent donors cannot now over-ride public sentiment. To be sure, we have as a legacy of that earlier period when "art" was ruled by political power some undesirable things, but these are becoming so conspicuous for their ugliness by comparison with the newer work installed that it may be left to public sentiment later to cause their removal.

The group of men who form our Art Commission are so competent and thorough in their effort that the result of their work has set a model for similar organizations throughout the country. Further, the results have so clearly proven the value of competent supervision of municipal art that large cities all over this country are now following their excellent example.

* * *

A REVIEW OF OUR fire loss for 1921, as presented in the report of President Morton to the National Board of Fire Underwriters, discloses the fact that despite the campaign against fire that has been waged in this country, the fire loss in 1921 approximated half a billion dollars. Analyzing this loss and comparing the totals with our government expenditures, it is amazing to find that it amounts to more than half of the total of the public debt of the United States. It would have maintained our navy for twelve months. It is a sum nearly double our expenditures for pensions in 1921.

The disquieting thing about these figures is the revelation that in a period of three years our national fire loss has increased forty per cent. "With no corresponding rise in national wealth" comments President Morton, "it would seem that the present generation is committed to the burning, rather than the building, of America."

It adds truth to this statement to learn that upward of one hundred millions of this fire loss is attributable to causes that are preventable. We are informed that the largest item is due to "matches-smoking," second is spontaneous combustion, while third and fourth are, in their order, defective chimneys and flues and stoves and boilers with their pipes.

Reasonable caution, proper inspection and competent planning would reduce these major items to a place low down in the list of classified items. Here is a public effort that architects, both as individuals and in their representative bodies, may make to some good purpose. This enormous loss is becoming a national scandal. The very fact that so large a part of it might with ordinary care be avoided, would seem to mark us a careless and indifferent nation.

The stoppage of this drainage of national wealth is something that should not be left only to the well directed efforts of Boards of Fire Underwriters. The total of arson is not as large by millions as the total due to carelessness and inefficiency. When these faults become punishable in the same way as arson, we may hope to secure a reduction in our fire loss, but probably we shall have to burn two or three large cities before we awaken to the fact that the ignorantly careless man is as grave a menace as the criminally vicious one where the fire loss is concerned.

* * *

THE INTRODUCTION of color in architecture is probably retarded by the standardization of materials. Cheaper materials are practically a monotony of tones. Of recent years brick and terra cotta have been the two outstanding materials wherewith to introduce color in buildings. But in the cheaper elements there are no opportunities to produce color effects.

A true sense of color is inherent. It may scarcely be learned in its finer use. One must be born with a color sense. Architects probably feel this to be true. They know that if their selection of color turns out unfortunately, it cannot be changed, except at very great expense, and that the building, no matter how architecturally good, would stand condemned by reason of its bad color.

Color, correctly interpreted, is more felt than seen. Every artist knows that. If he gets a result too cold or too warm in tone, the remedy lies in the correct placing of "spots" that while scarcely seen, are *felt* to give the desired tone to the canvas.

An experiment in color in our city streets could successfully be made without resorting to the large expense of coloring the entire building. During the Great War, when housing was scarce, many private residences were transformed into apartments. The usual monotony of brownstone or brick was not changed. But by the painting of window sashes, cornices and doorways, and a judicious introduction of terra cotta tile, these commonplace old structures were redeemed from ugliness. In certain quarters in this city where this form of remodelling was prevalent, entire blocks have been made to present a most attractive appearance. The added dignity and refinement of color have attracted the best paying class of tenants. Paint will accomplish most remarkably satisfactory results.

If our Municipal Art Society, which might very well seriously take up the subject of color in our city streets, could arrange a demonstration in a city block, it is believed that an example would be presented that would, if followed, redeem the out-of-doors in towns from their present monotony.

* * *

PUBLIC DOCUMENT No. 141 of the Commonwealth of Massachusetts is the Annual Report of the Art Commission for the year ending November 30, 1922. This report is an interesting pamphlet and sets forth the very valuable activities of the Art Commission. The report shows how keenly alive each member of the Commission is to the artistic welfare of his State and the fine spirit of a true Americanism that presents such loyal co-operation on the part of citizens.

We stand rapidly to lose all those fine sentiments toward our traditions if we fail to safeguard ourselves from the ignorant attitude of the large group of people who have come to this country and who with a view only to material advancement assume an attitude of indifference toward the thing the native born American reveres.

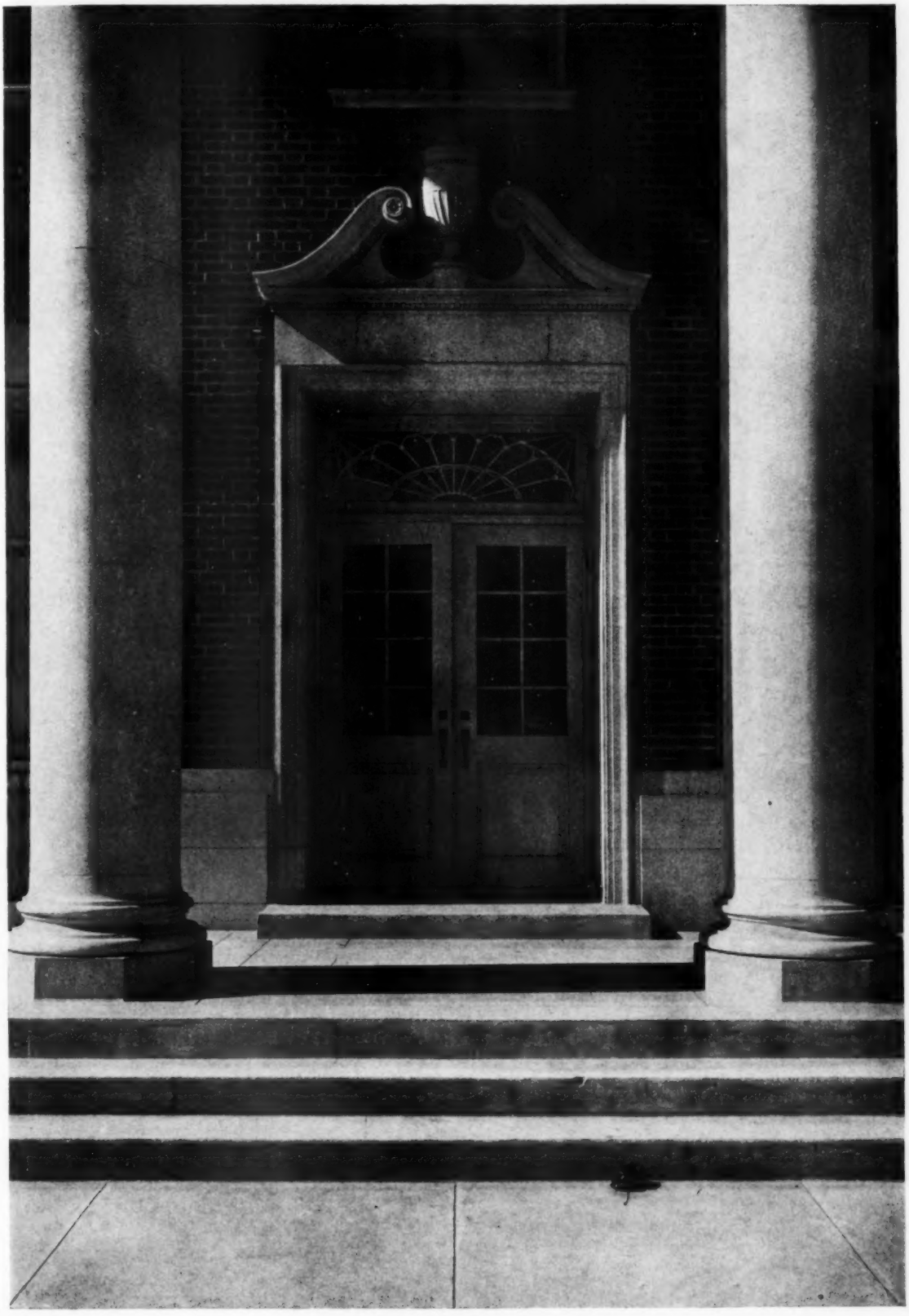
It is by the efforts of Art Commissions, thoroughly alive to their great responsibilities, that we may preserve traditional interest. The marking of historical locations with well designed tablets has been an important part of the work of the Massachusetts Art Commission. This work is much to be commended. They are warnings to the vandal who seeks to commercialize the most sacred places, that the rights of people, proud of their heritages, may not be ignored.

ELEVATION FROM OLD TEANECK ROAD

ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

Fronts on Old Teaneck Road, overlooking the valley and Western slope of the Palisades. Constructed of rough textured red brick and trimmed with cut cast stone. Entirely fireproof with black slate roof, and wood cupola



DETAIL OF ADMINISTRATION ENTRANCE

ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

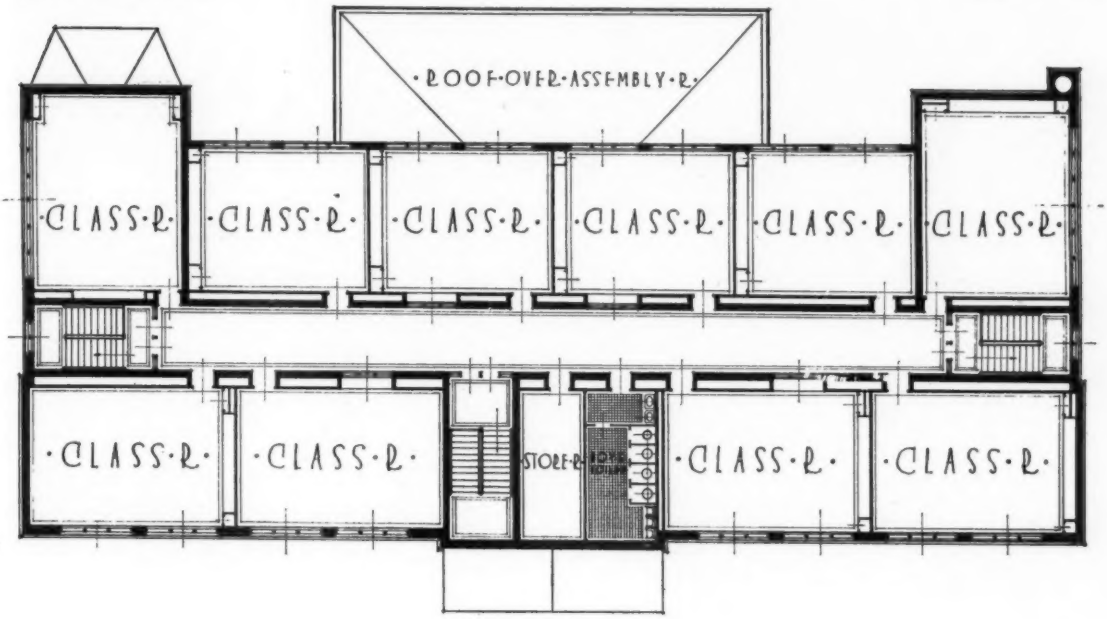
Of cut cast stone, wood doors and leaded transoms. Main entrance to both administrative offices and assembly room

DETAIL OF PUPILS' ENTRANCE

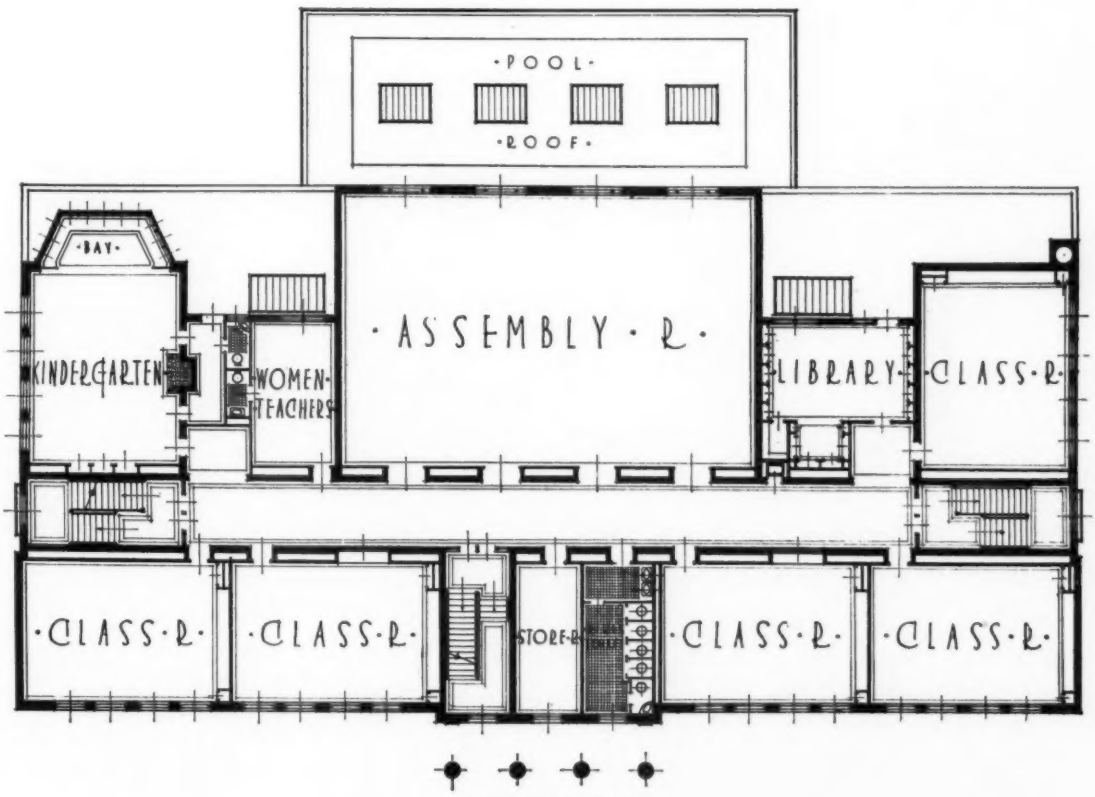
ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

Of cut cast stone with wrought iron railings. Double steps due to contour of ground and narrow lot. One of two similar entrances



SECOND FLOOR PLAN

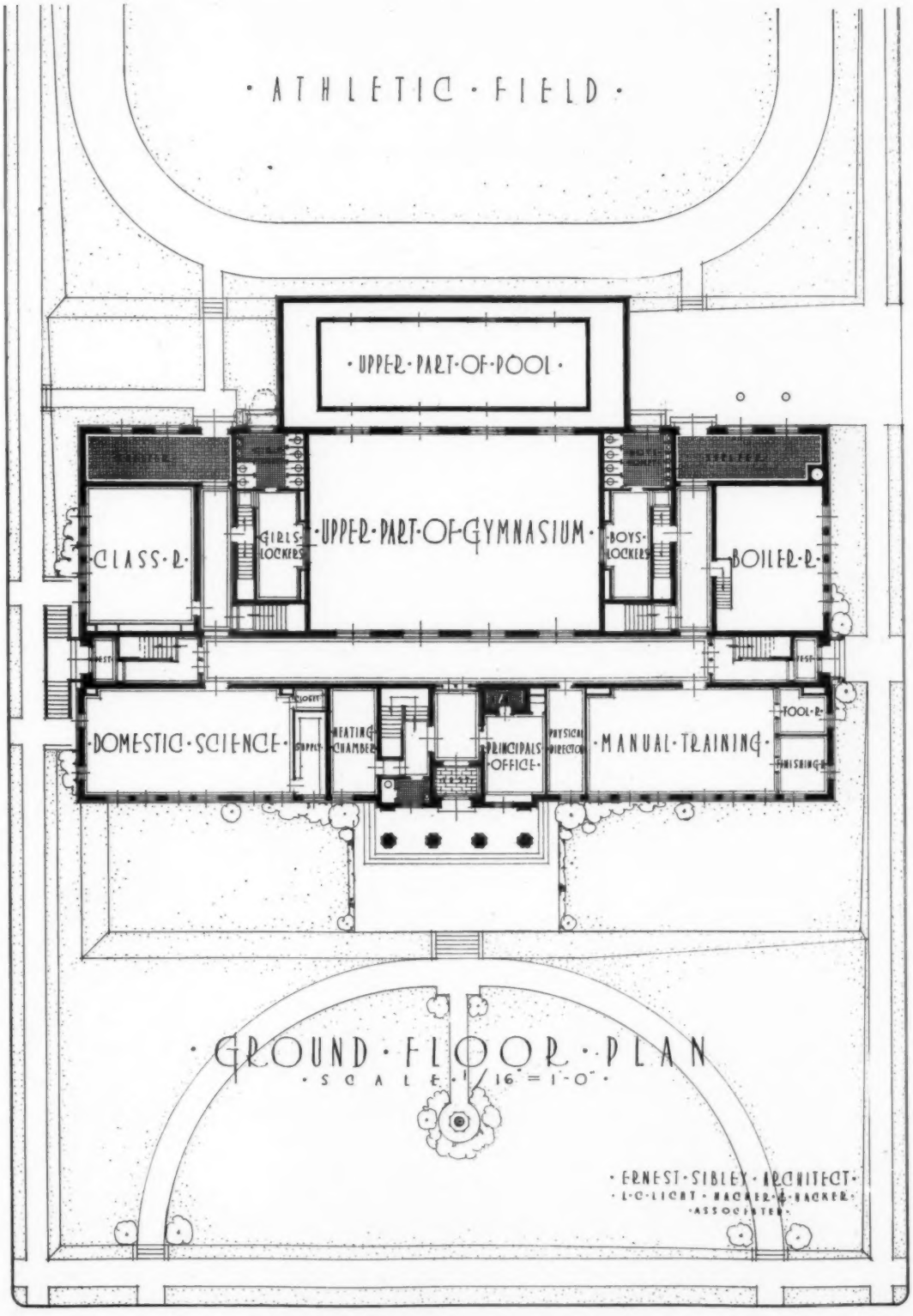


FIRST FLOOR PLAN

ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

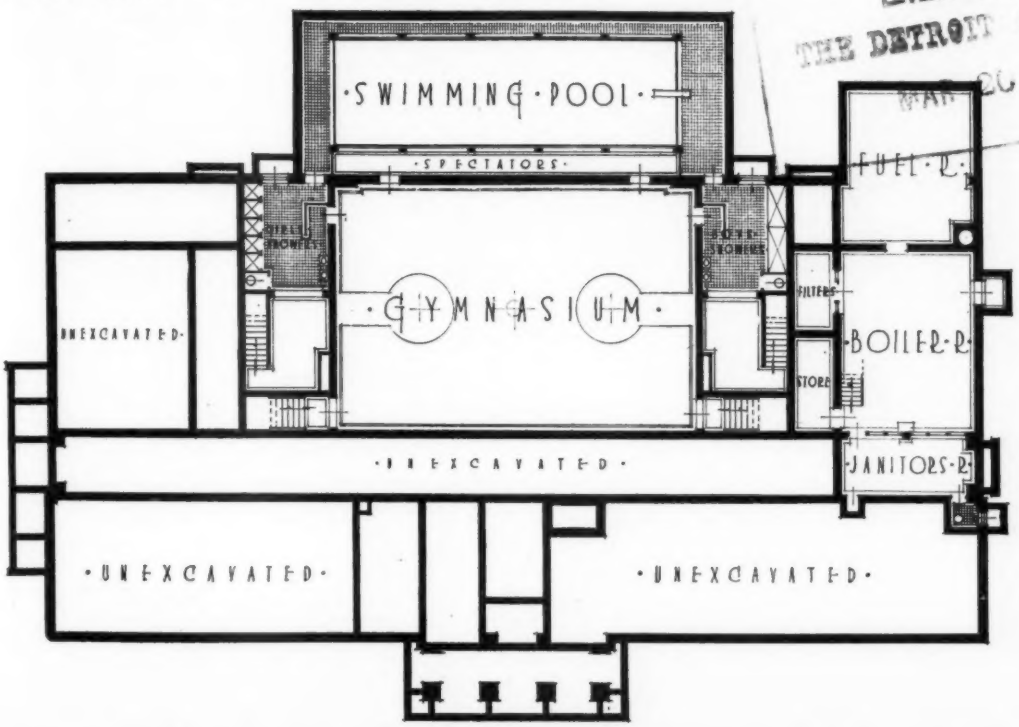
Assembly room has a seating capacity of five hundred. No balcony. Large well lighted kindergarten with Southerly exposure



ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

School completed in 1922. Total cost $373,000.00. Accommodates six hundred and fifty pupils. Cubic foot cost 38 cents. Plan adapted to narrow plot allowing necessary space for athletic field in rear, and for proper setting in front. Corridors lined with light red brick, rough plaster walls above. Heated and ventilated by low pressure combination unit and plenum system with thermostatic control

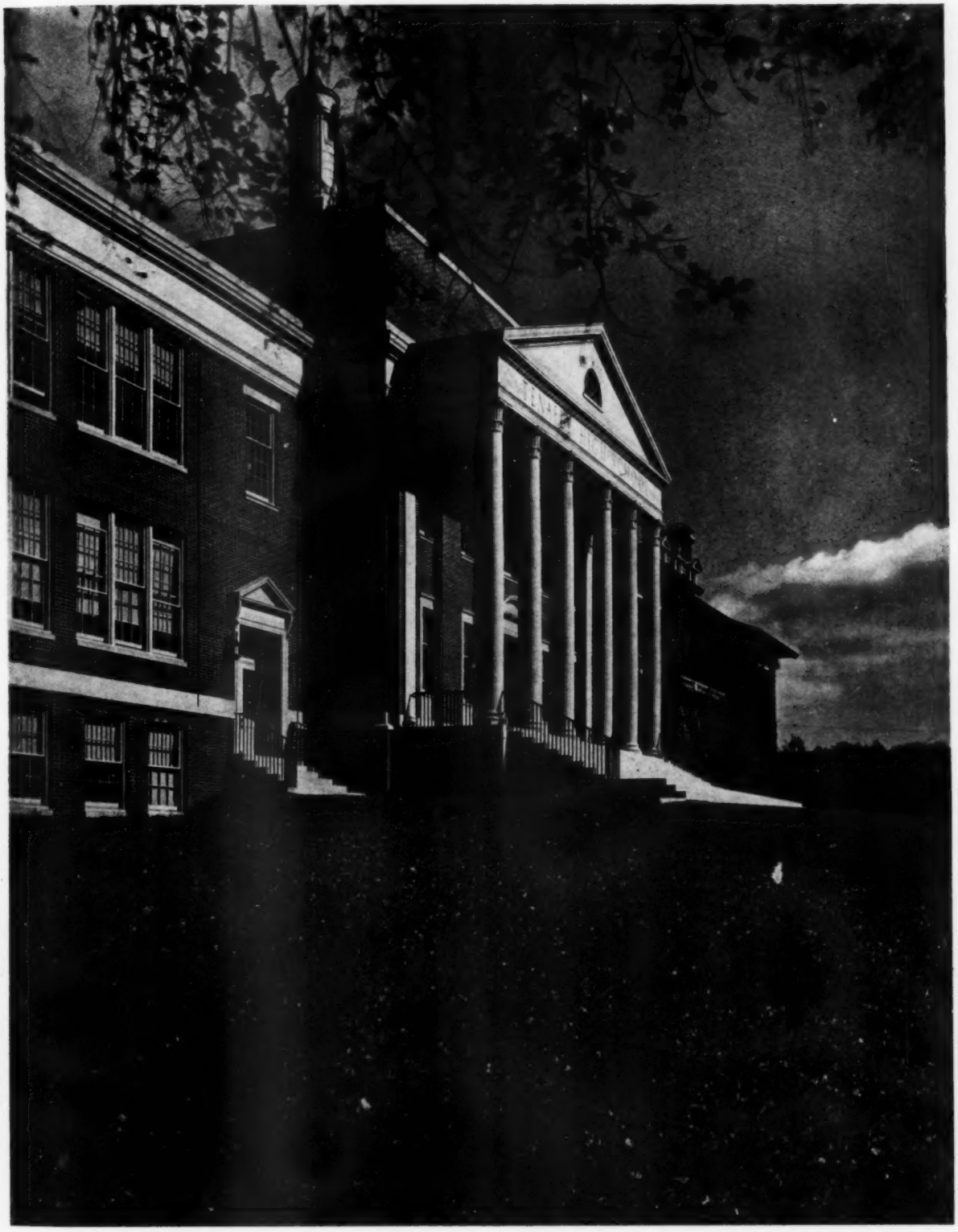


BASEMENT PLAN AND REAR ELEVATION

ROOSEVELT SCHOOL, RIDGEFIELD PARK, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

An interesting elevation. Shelters, pool, gymnasium, and assembly room walls outlined against main mass of building



DETAIL OF AUDITORIUM PORTICO

TENAFLY HIGH SCHOOL, TENAFLY, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

Design of building harmonizes with existing architecture of Northern New Jersey. Constructed of red rough textured brick, trimmed with cut cast stone containing white crushed marble aggregate. Construction entirely fireproof with black slate roof. Wood cupola surmounts roof over portico. Placed far enough back from street to give the proper setting

PUPILS' ENTRANCE

Of cut cast stone with wrought iron railings. Wood doors with leaded transoms. One of four similar pupils' entrances to building. Also used as entrance to gymnasium at games and dances

CONNECTING CORRIDOR ENTRANCE

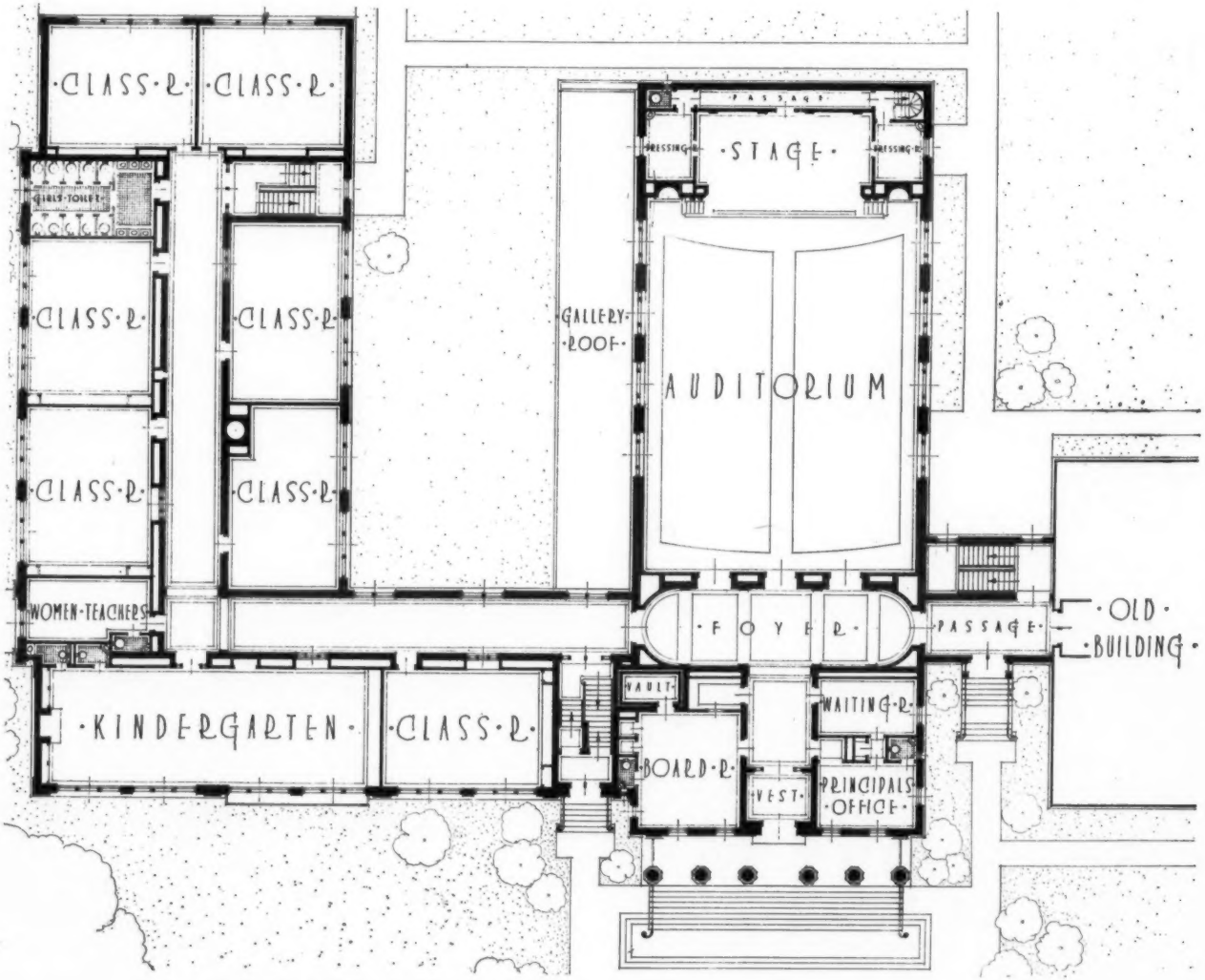
Entirely of wood with leaded transoms. Stone steps and wrought iron railings. Replaces entrance to old building eliminated when school was built

TENAFLY HIGH SCHOOL, TENAFLY, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

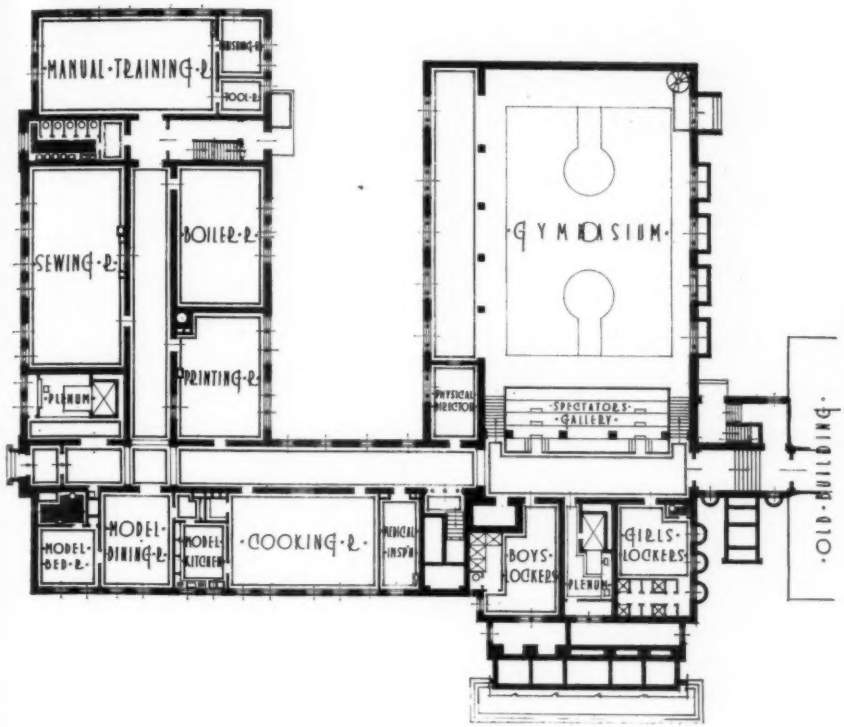
FIRST FLOOR PLAN

School completed in 1922. Cost $376,000.00. Accommodates 800. Cubic foot cost 36.5 cents. Provides for necessary expansion of old building and new high school. Corridors well lighted, lined with artificial limestone wainscot, plaster walls above with vaulted ceilings. Kindergarten has Southerly exposure. Auditorium including balcony has seating capacity of seven hundred. Projection booth in balcony. Heated and ventilated by low pressure plenum system including thermostatic control and humidifying apparatus



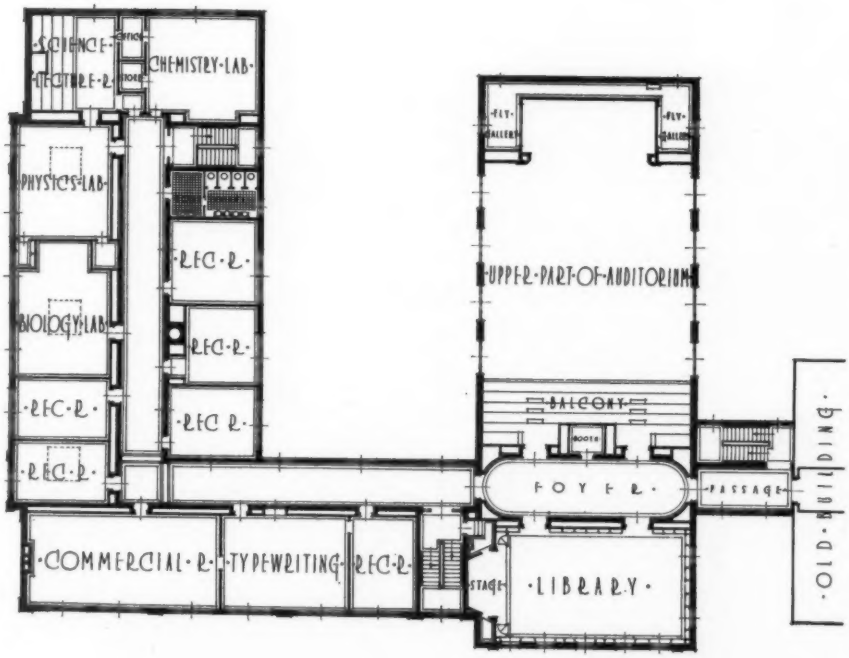
TENAFLY HIGH SCHOOL, TENAFLY, N. J.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED



GROUND FLOOR PLAN

Well lighted gymnasium, ample space for regulation basketball court and for spectators. Contains rifle range on level of boiler room for the local rifle club



SECOND FLOOR PLAN

Features large library containing stage, used for small community lectures and meetings of the local American Legion. Study hall and boys' and girls' locker rooms on Third Floor over library and foyer

TENAFLY HIGH SCHOOL, TENAFLY, N. J.

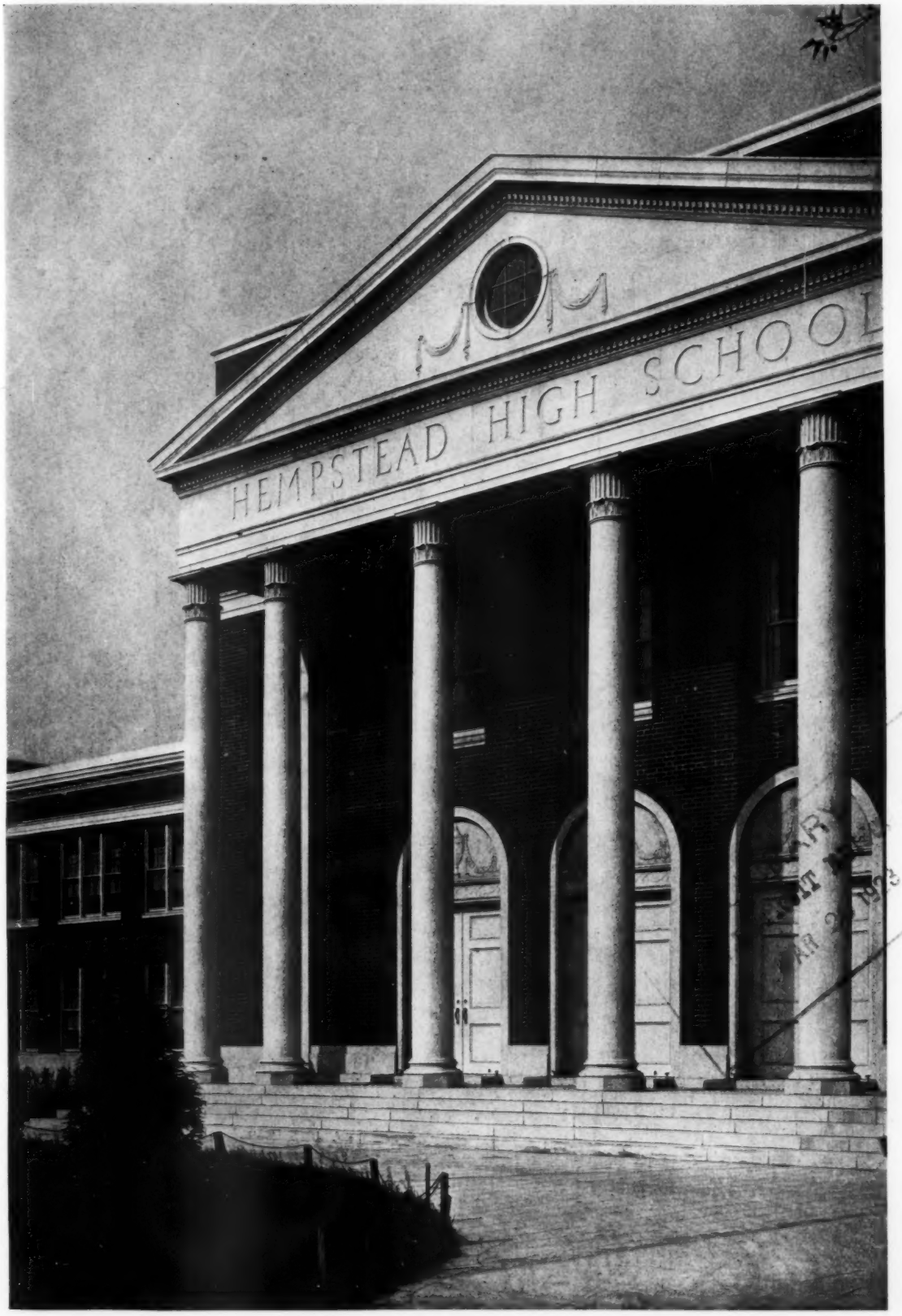
ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

ELEVATION FROM GREENWICH STREET

HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

The architecture of old Long Island, of which Hempstead furnishes many fine examples, gives the locality a character which it seemed desirable to incorporate in the design. Constructed of brick ranging from light shades of red to salmon shades laid in flemish bond. Trimmed with cast cut stone, containing white crushed marble aggregate. Construction entirely fireproof, with roof of fading green slate. Building placed on plot to give necessary space in rear for athletic field, baseball field and tennis courts, and far enough back from street to give the proper setting. Planting about school also used in the studies of the classes in botany

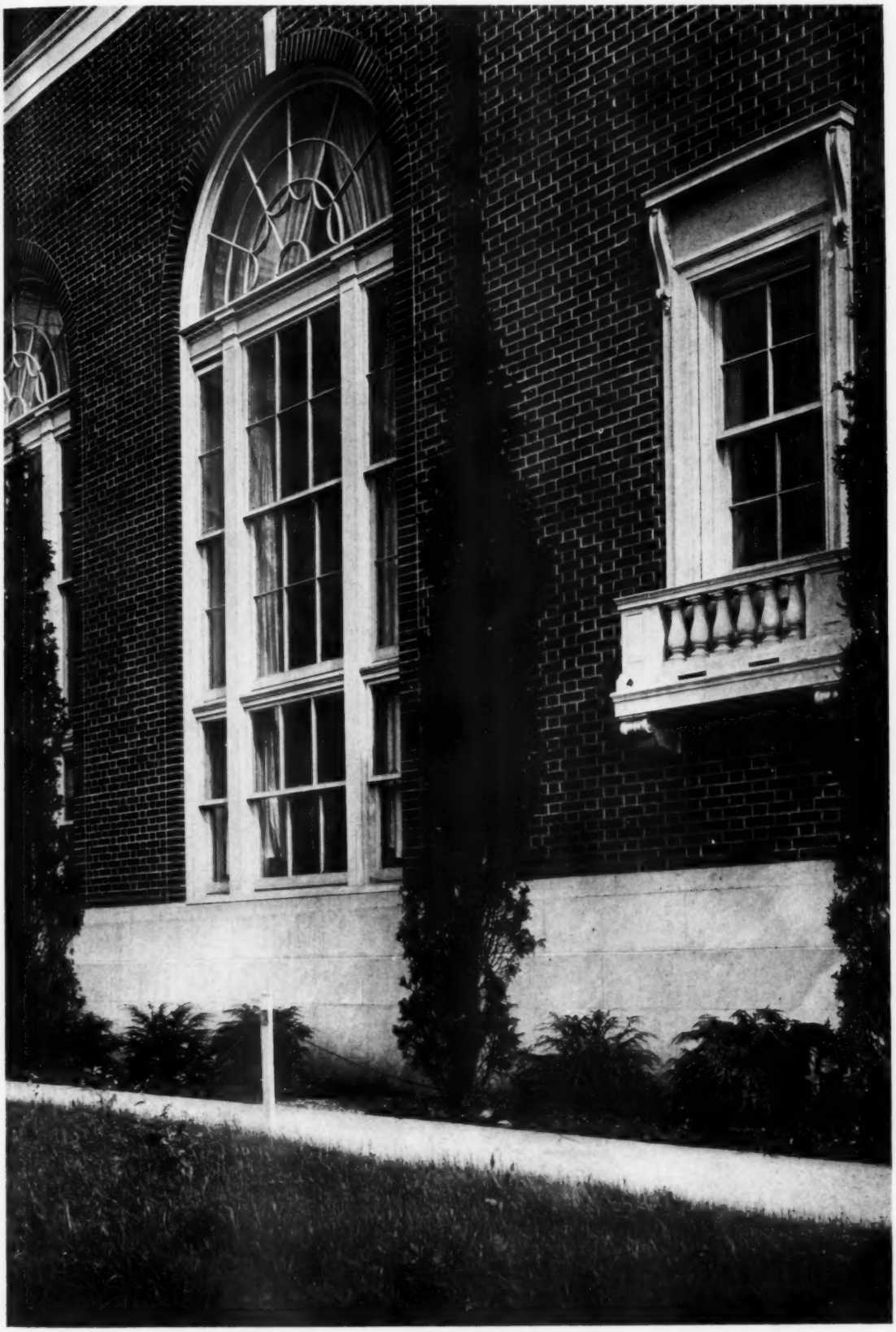


DETAIL OF AUDITORIUM PORTICO

HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

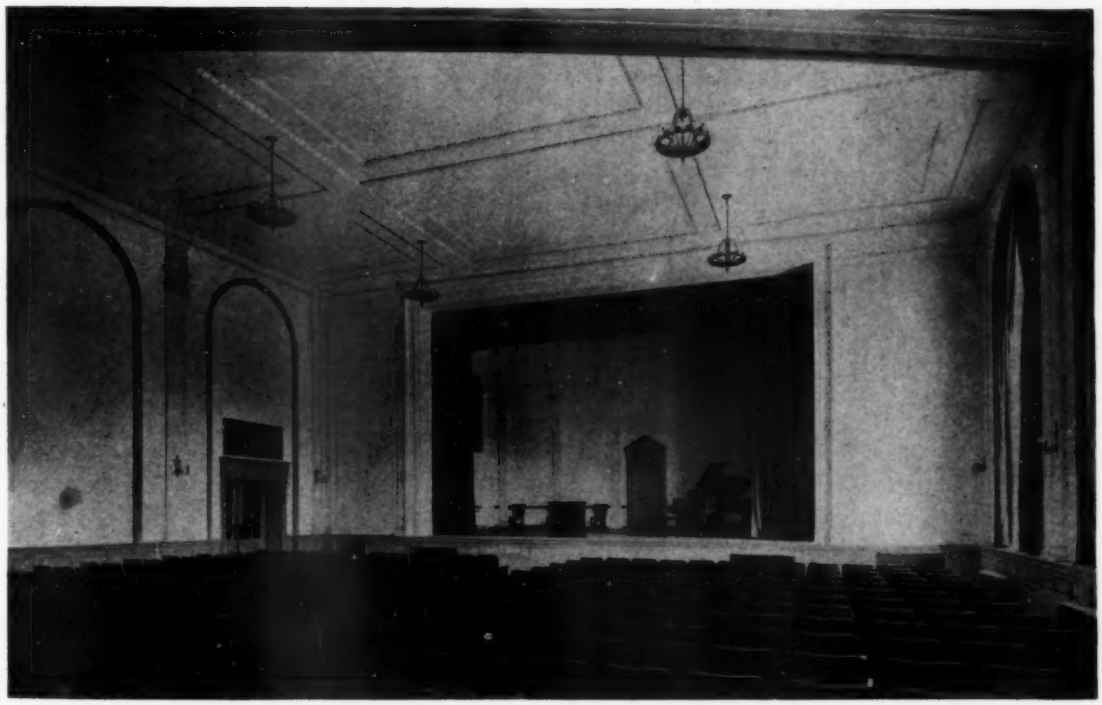
Three entrances serve the main auditorium and driveway properly arranged for convenience of autos. Portico gives ample protection to public in inclement weather



DETAIL OF AUDITORIUM WINDOWS

HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED



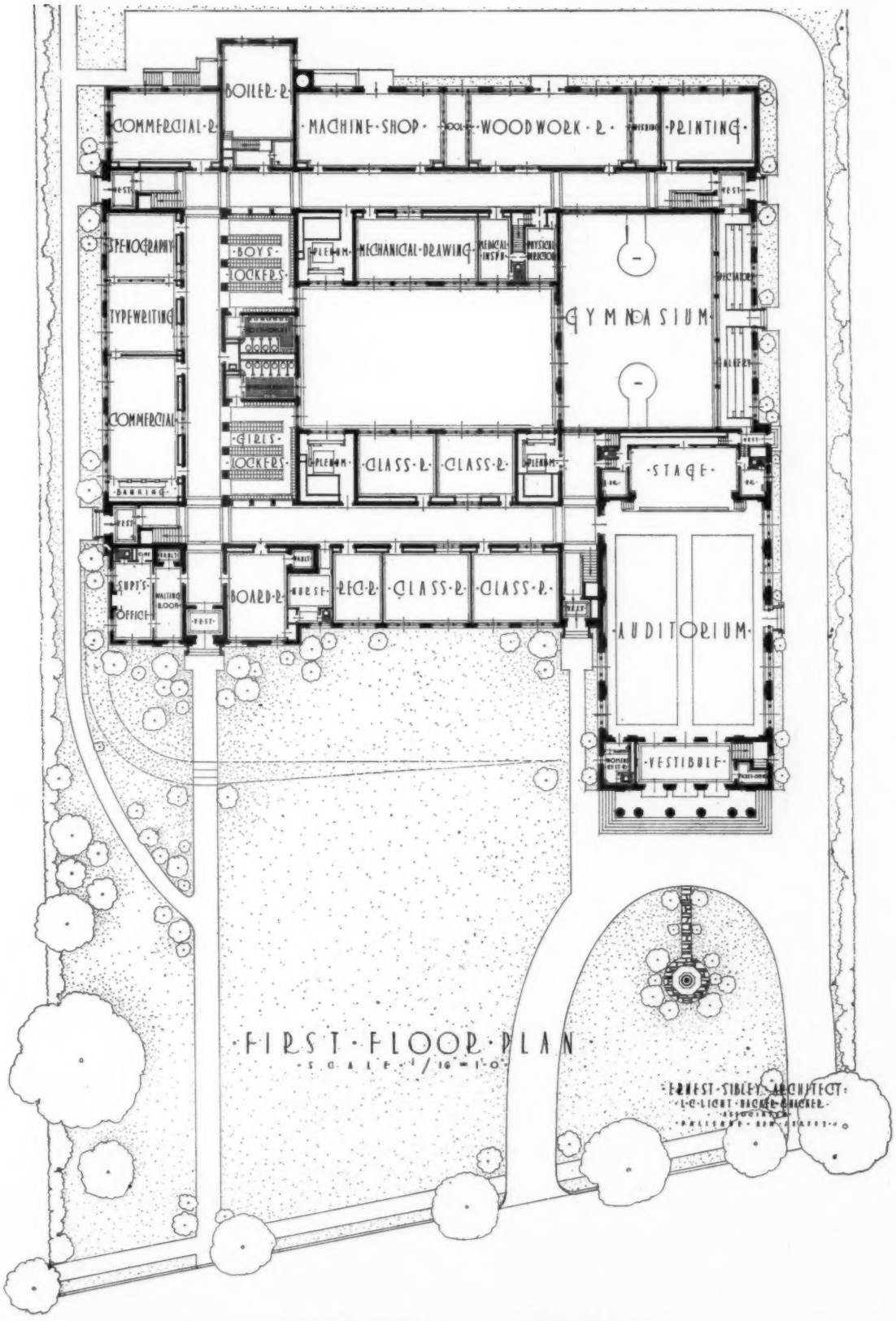
ABOVE: SUPERINTENDENT'S OFFICE—BELOW: AUDITORIUM

HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

Superintendent's office has a wood wainscot and mantel with plaster walls above all painted putty color. Mantel has black and gold facing with variegated slate hearth. Windows trimmed with casement cloth curtains

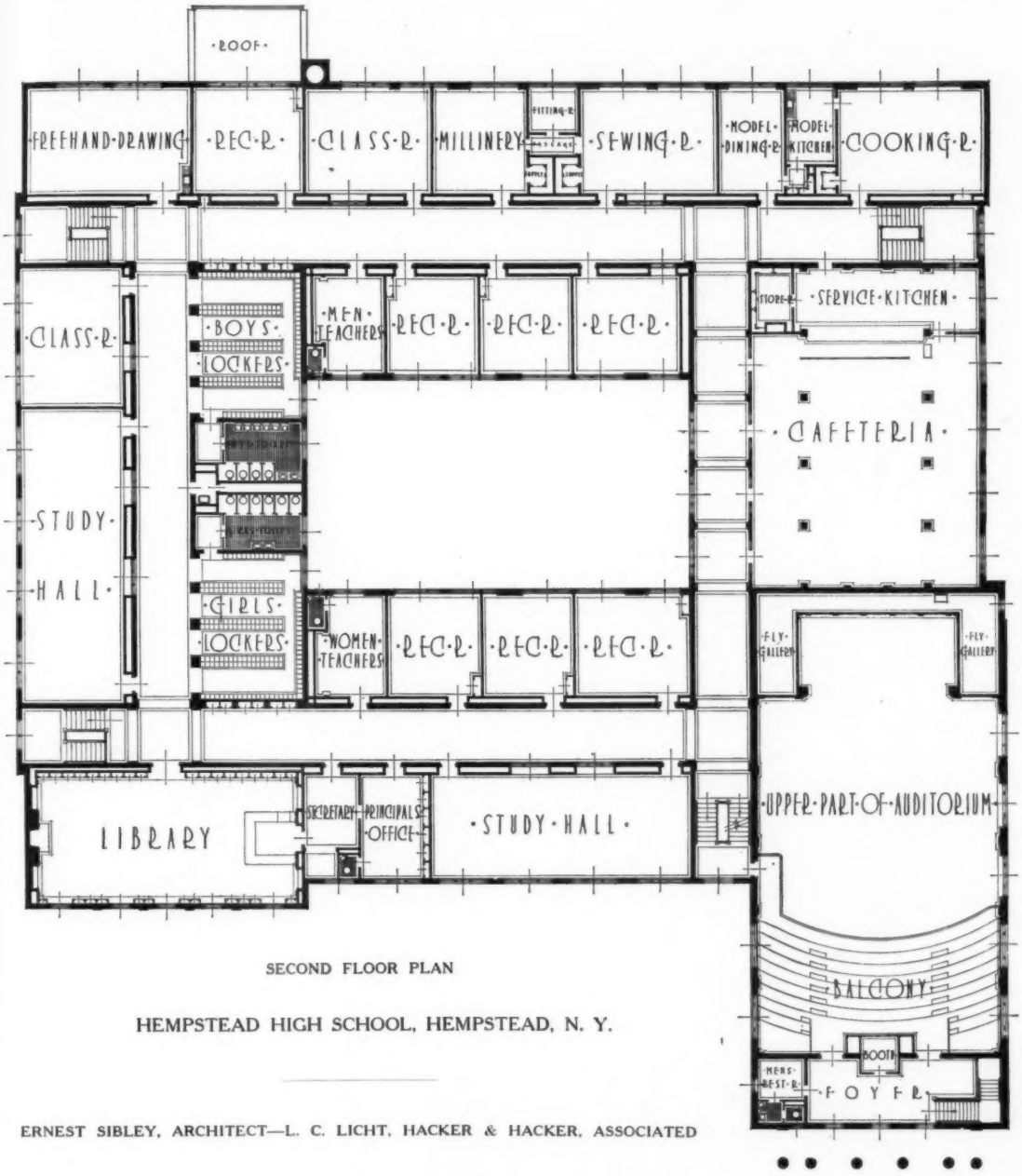
The Auditorium including balcony has a seating capacity of one thousand. Pupils enter on front at both auditorium and balcony levels. Wood wainscot forms base, with plaster walls above all painted. Chairs of walnut covered with old blue leather. Window curtains of old blue velour and so arranged that room may be darkened for use of machine in balcony projection booth. Separate retiring rooms for men and women



HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

School completed in 1921. Total cost $654,000.00. Accommodates 1200 pupils. Cubic foot cost 37.4 cents. Auditorium and Gymnasium accessible to public without interference with school work. Provision made for future girls' gymnasium in central court. Auditorium, gymnasium and cafeteria have Southerly exposure. Corridors lined with artificial limestone wainscot, with rough cast plaster vaulted ceilings. Floors of auditorium, library, offices and corridors covered with battleship linoleum. Heated and ventilated by low pressure plenum system including thermostatic control and humidifying apparatus. Separate control of heat for auditorium and gymnasium

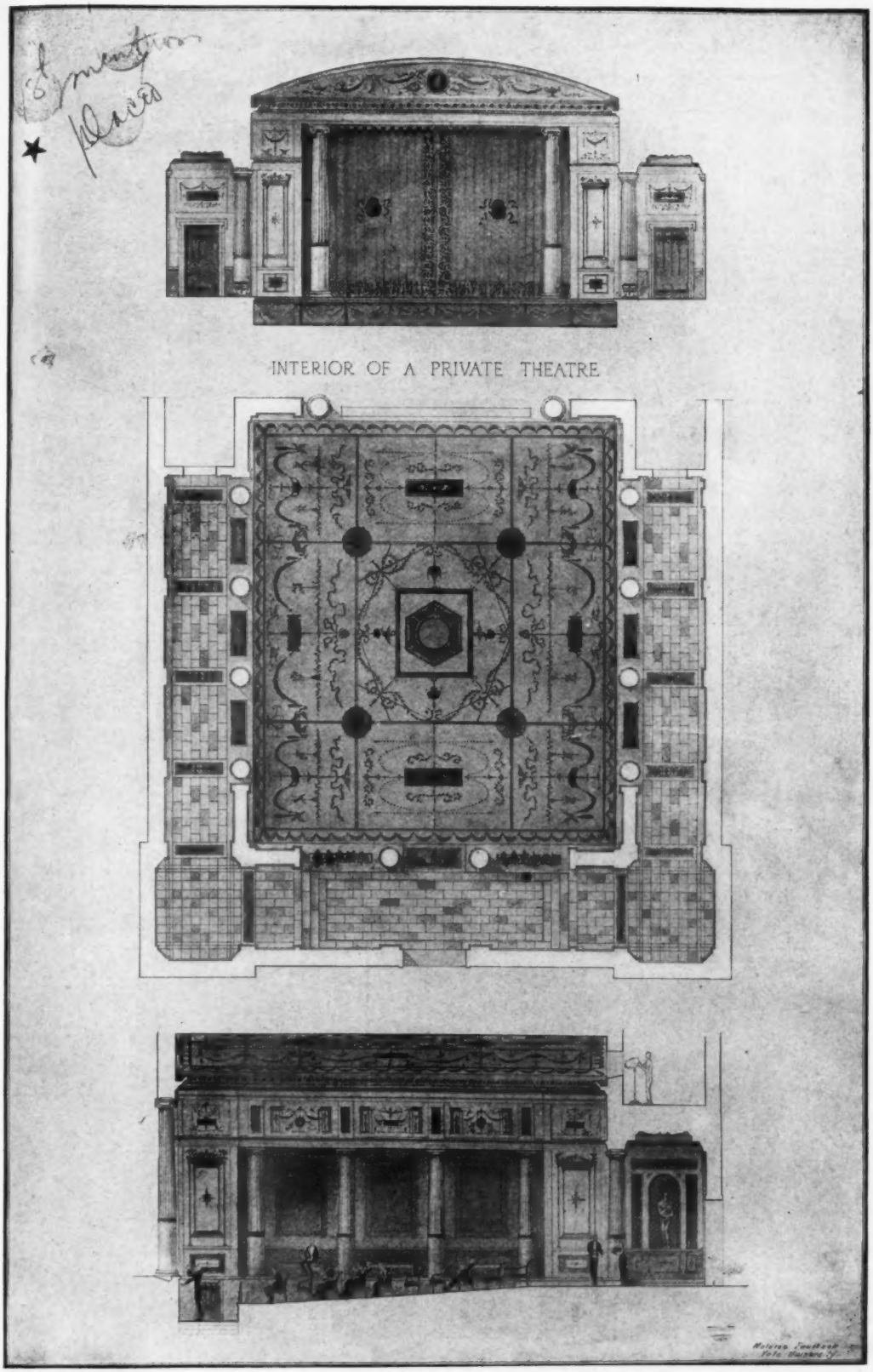


SECOND FLOOR PLAN

HEMPSTEAD HIGH SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY, ARCHITECT—L. C. LICHT, HACKER & HACKER, ASSOCIATED

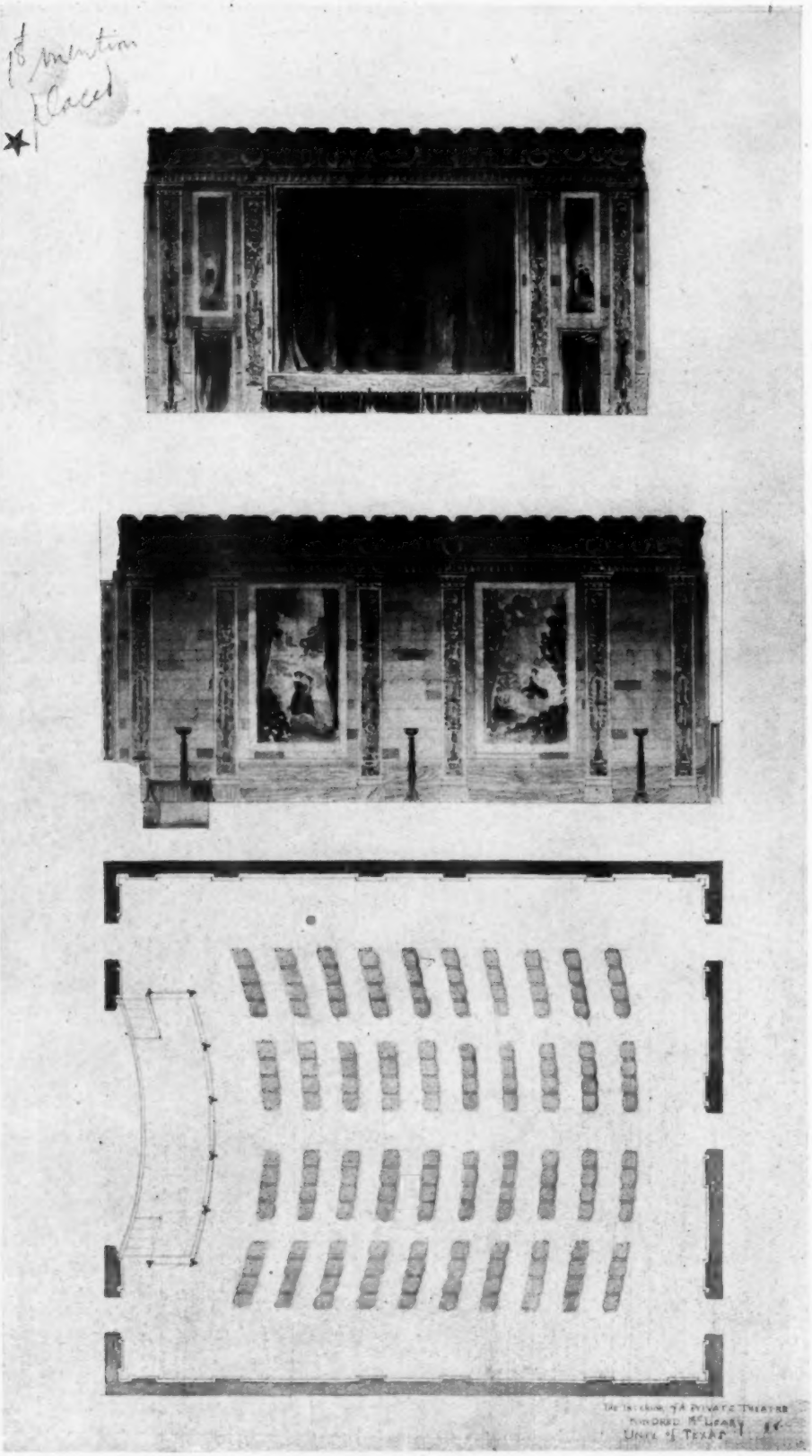
Library and Cafeteria interesting features of this plan. Library accommodates sixty pupils. Trimmed with wood wainscot plaster walls above, all painted putty color. Wood mantel has black and gold facing. Room has rough cast plaster vaulted ceiling. Cafeteria accommodates three hundred pupils. Large well lighted room with center portion vaulted. Entire science department on Third Floor, over auditorium and entirely isolated from rest of building



W. FAULKNER — FIRST MENTION PLACED — YALE UNIVERSITY

CLASS B–"II" PROJET—THE INTERIOR OF A PRIVATE THEATRE

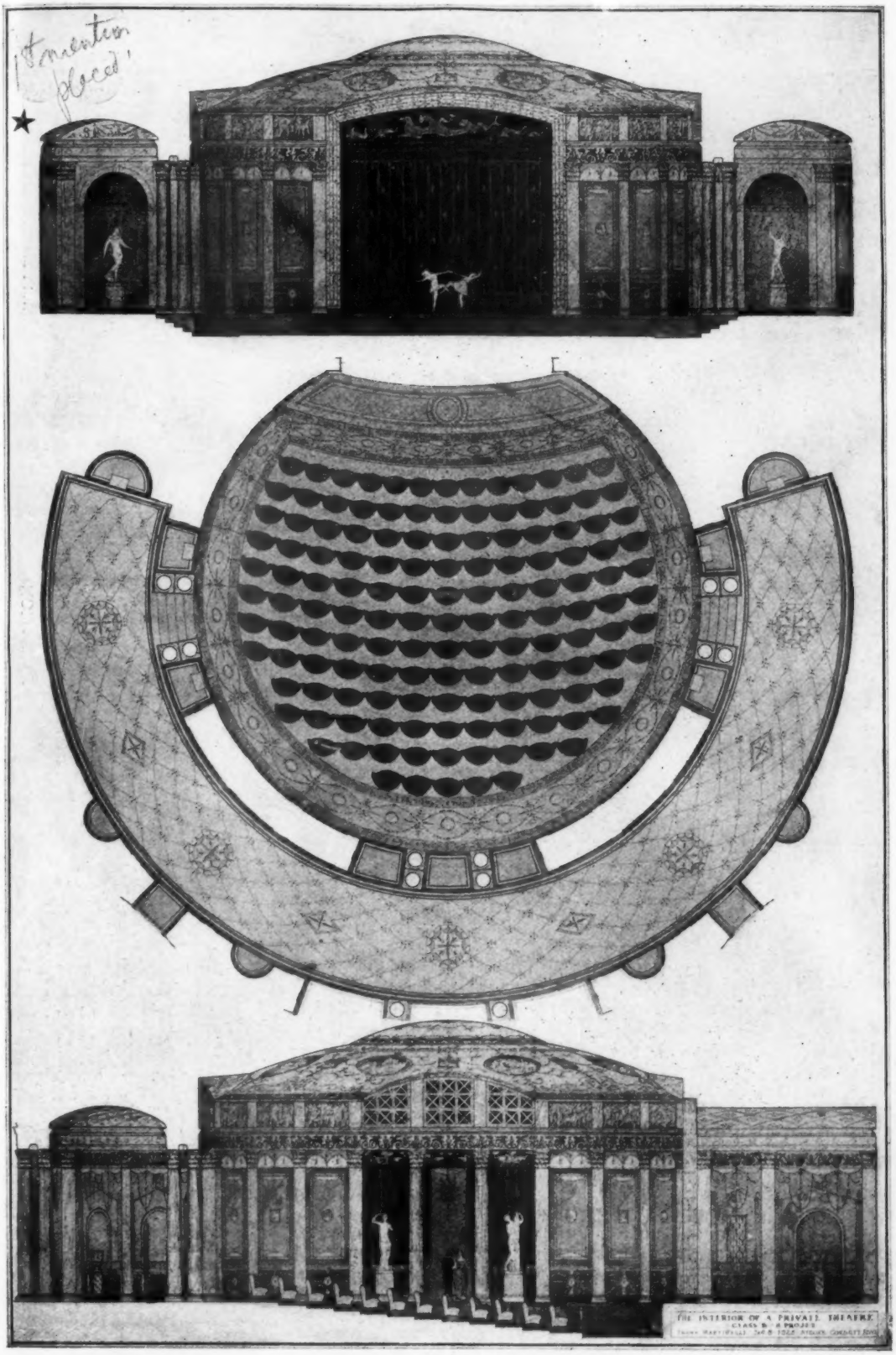
STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS



K. McLEARY FIRST MENTION PLACED UNIVERSITY OF TEXAS

CLASS B–"II" PROJET—THE INTERIOR OF A PRIVATE THEATRE

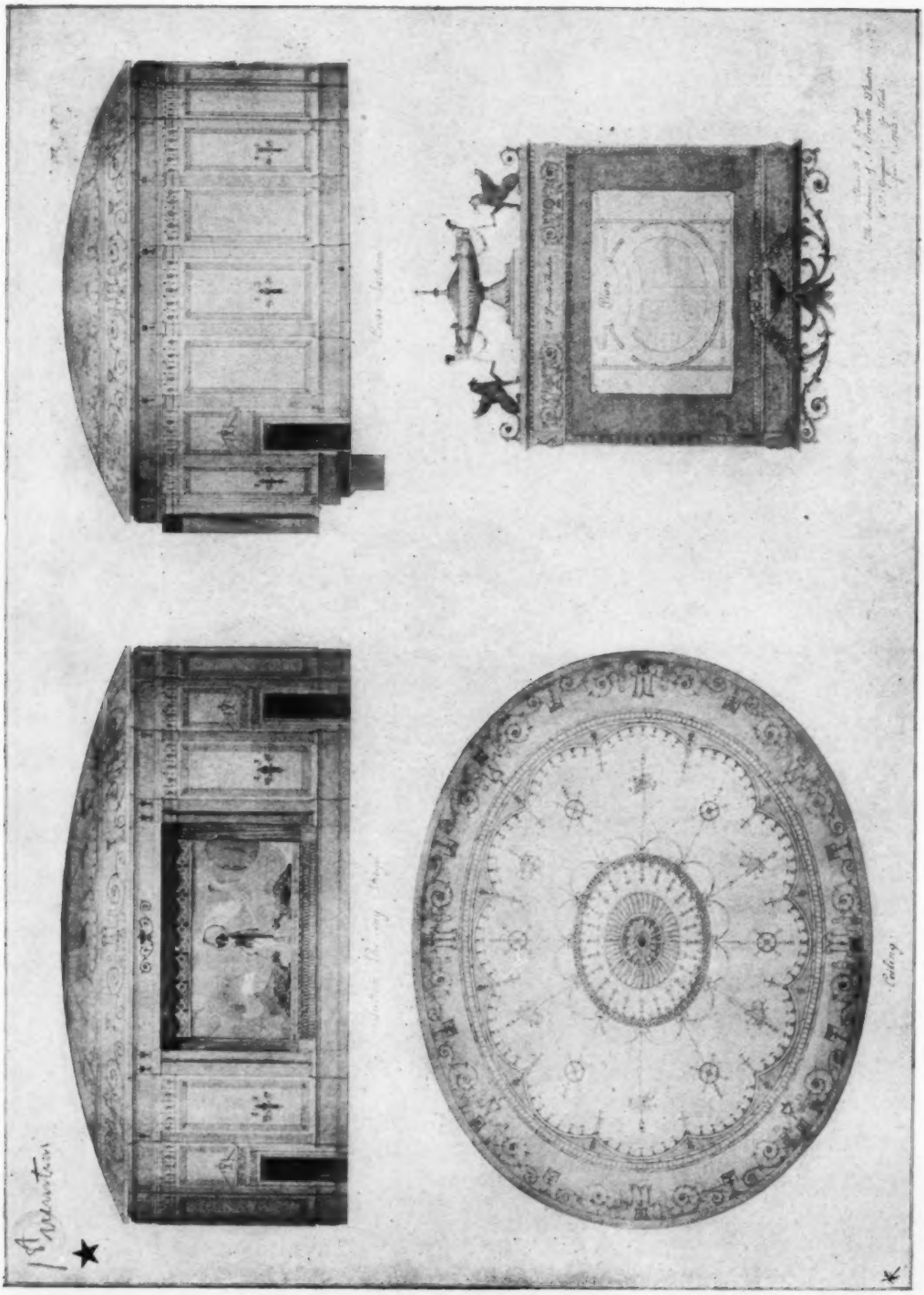
STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS



F. MARTINELLI — FIRST MENTION PLACED — ATELIER CORBETT-KOYL

CLASS B-"II" PROJET—THE INTERIOR OF A PRIVATE THEATRE

STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS



FIRST MENTION

CLASS B-"II" PROJET—THE INTERIOR OF A PRIVATE THEATRE

STUDENT WORK, SOCIETY OF BEAUX-ARTS ARCHITECTS

W. P. GRAYDON

GEORGIA SCHOOL OF TECHNOLOGY

SOME COLONIAL LETTERING—PART II

BY WM. M. CAMPBELL

SOURCES of the type set and pen drawn letter of Colonial times are more available than the cut stone or other types of lettering, as the documents that have preserved them are more numerous and have not been subjected to the weather, but have been carefully kept in libraries, museums, and institutions devoted to historical research. For the most part, these documents are on either parchment or linen rag paper, and for this reason, those that have not been burned or otherwise destroyed are in a good state of preservation.

Much of the interest in this phase of Colonial lettering, as in the cut stone, lay not only in the form of the individual letter but also, and perhaps to a greater extent, in its relation to its neighbors.

Pick up almost any well made book of today, the type may be beautiful, the alignment and spacing perfect, but the chances are it will be lacking in the composition and interest found in the average book of a century and a half, or two centuries ago.

The letterer of that day, whether he was type setter, stone cutter, metal worker, or sign painter, had around him the good examples, and before him the precedent, that made his daily task of composition comparatively easy.

The period is marked by a greater legibility than we have today, and if lettering is not legible, although it may be pretty, it is not good.

This legibility was obtained by an individually legible letter, usually of a good size, easily spaced, and the monotony relieved by placing words in different planes of importance in either different fonts of type, or in ink of another color. The judicious use of red or vermillion ink for capitals and important words gave a very pleasing effect. Then as a final touch, the printer had recourse to various ornamental initial letters, borders, ornamental bands, and spots of individual ornament. Figure 1 shows one of these initials and an ornamental border. The initial at the beginning of this article was taken from a bill of lading for the "Good Sloop Charming Nancy"—1751 and was printed by Benjamin Franklin. Figure 2, an alphabet copied from a book printed in 1783, shows some of the individual ornaments and plain bands. This alphabet is widely used today in practically an unchanged form.

Exceptions to legibility, of course, are not hard to find, and one of them is Figure 3, the title page to "The United States Gazetter"—1795. It is neither beautiful nor legible, but it is interesting, in that the printer seems to have used every font of type that he had in his shop, black letter of two kinds, upper and lower case, both vertical and in italics and also script, to say nothing of divers flourishes and scrolls. This is an extreme case of poorly studied type mixing, a method that can hardly be called successful.

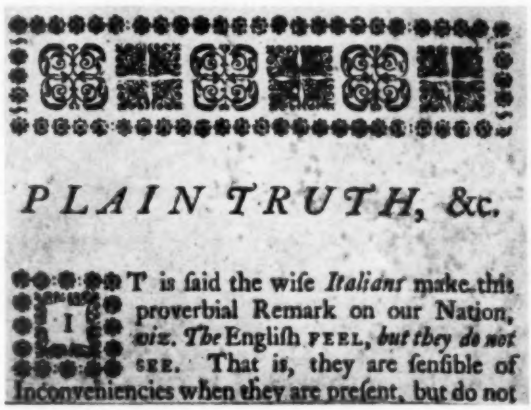


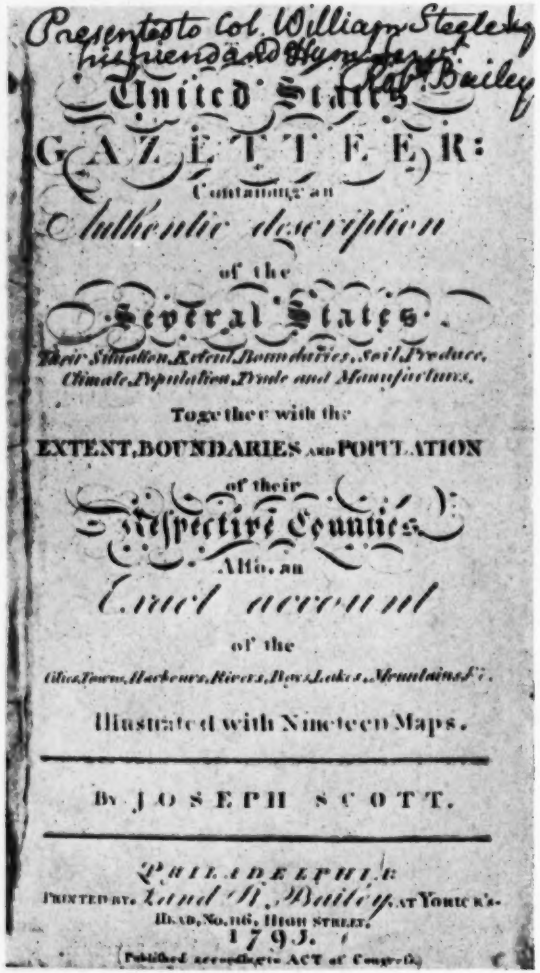
Fig. 1

The tailpiece to this article shows another one of these ornaments. This is from the laws of New Jersey for 1752, and was printed by Bradford. Imagine our state printers of today running wild and ending an official volume in such an extremely frivolous manner.

The only difference in the actual forms of the letters of Colonial times and today, were the long s, which was like the f excepting that the cross bar was only on the left side. This form was used only in the body of the word or at the beginning, the round s, our present form, being used at the end. In early work, the th in the word the, was contracted by the letter y, but was pronounced as though it was spelled with a th. The cross bar on one form of the capital J and the curved capital Y constitute the last actual difference in letter formation.

Abbreviation was very common, especially the e in a final ed such as, surpriz'd, sack'd, warn'd; and such abbreviations as 'tis and tho' were common. As for splitting a word on two lines, where it was split did not seem to make much difference —e.g., an-y, uni-on, coun-try, a-gricultural, Philadelphia, etc.

The word Esquire, or its abbreviation Esq., was often, in a very quaint manner, put at the end of the sentence instead of directly after the man's name, as, "William Peer Williams, late of



Presented to Col. William Steele by his friend and Humble Servt. Rad. Bailey

United States

GAZETTEER:

Containing an

Authentic description

of the

Several States,

Their Situation, Extent, Boundaries, Soil, Produce, Climate, Population, Trade and Manufactures.

Together with the

EXTENT, BOUNDARIES and POPULATION

of their

Respective Counties:

Also an

Exact account

of the

Cities, Towns, Harbours, Rivers, Bays, Lakes, Mountains &c.

Illustrated with Nineteen Maps.

By JOSEPH SCOTT.

PHILADELPHIA:

PRINTED BY Lang & A. Bailey, AT YORICK'S-HEAD, No. 116, HIGH STREET.

1795.

(Published according to ACT of Congress)

Fig. 3

A B C F J L N O P S

a b d e f g h i k l m

n o p r ſ s t u v w x y

ffi ſi ſt Juſtices of this Colony

A C F G H I L

M P R S T X Y

a b c d e f g h i j l m

n o p ſ s t u v y fl ſt

1 2 3 4 5 6 7 8 9 0.

being w 1747, Confirmed by

Fig. 4

Type from William Bradford, 1752, "Printer to the King's Most Excellent Maiesty for the Province of New Jersey"

At left: Title page of the United States Gazetter. An unfortunate example of improper type mixing

At right: A Page from the Laws of Philadelphia, printed by Benjamin Franklin

ANNO REGNI

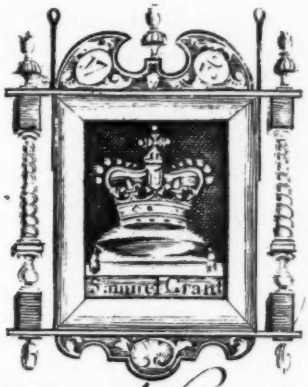
GEORGII II.

REGIS

QUINTO.

At a GENERAL ASSEMBLY of the Province of *Pennſylvania*, begun and holden at *Philadelphia*, the Fourteenth Day of *October*, *Anno Dom.* One Thouſand Seven Hundred and Thirty-one, in the Fifth Year of the Reign of our Sovereign Lord *GEORGE* II. by the Grace of GOD, of *Great Britain*, *France* and *Ireland*, KING, Defender of the Faith, *&c.* And from thence continued by Adjournment to the Tenth of *January*, 1731.

Fig. 5



Mr *Bought of*

Samuel Grant

At the Crown and Cushion in Union

Street near the Town Dock

Boston

Fig. 9

A

CONFERENCE

Held at St. *George's* in the County of *York*, on the Twentieth Day of *September*, *Anno Regni Regis* GEORGII *Secundi*, *Magnæ Britanniæ Franciæ et Hiberniæ*, *Vicesimo Septimo.* Annoque Domini, 1753.

BETWEEN

Sir *William Pepperrell*, Baronet, *Jacob Wendell*, *Thomas Hubbard*, and *John Winslow*, Esqrs; and Mr. *James Bowdoin.*

COMMISSIONERS

Appointed by His EXCELLENCY

WILLIAM SHIRLEY, Esq;

Captain General and Governour in Chief, in and over His Majesty's Province of the *Massachusetts-Bay* in *New-England*,

to Treat with the

Eastern Indians

of the one Part,

and the Indians of the *Penobscott* Tribe of the other Part.

BOSTON in *NEW-ENGLAND*
Printed by Samuel Kneeland, Printer to the Honourable House of REPRESENTATIVES. 1753.

Fig. 7

AN

ACCOUNT

OF THE

TREATY

BETWEEN

His Excellency

Benjamin Fletcher Captain General and Governour in Chief of the Province of *New-York*, &c.

AND THE

INDIANS

OF THE

Five Nations,

VIZ.

The Mohaques, Onevdes, Onnondages, Caiouges and Hennekes, at *Albany*, beginning the 15th of *August*, 1694.

Printed & Sold by William Bradford, *Printer to Their Majesties, King* William *and Queen* Mary, *at the Sign of the Bible in* New-York, 1694.

Fig. 8

An early example of printing, in which eleven fonts are used, including "black letter"

Fig. 2

At right:—An alphabet showing a wide difference between the thick and thin lines. Note difference in many of same letter

At left:—An alphabet of upper and lower case with figures and embellishments, characteristic of the Georgian Period

WE all knowing the great Learning and Ability of the Author do allow and approve of the Printing and Publiſhing the REPORTS of *William Peere Williams*, late of *Gray's Inn*, Eſq;

June 24. 1740.

Hardwicke C.
W. Lee,
J. Verney,
J. Willes,
J. Comyns,
F. Page,
Law. Carter.
E. Probyn,
J. Forteſcue A.
W. Forteſcue,
W. Chapple,
T. Parker,
M. Wright,
Ja. Reynolds.

Fig. 12

Gray's Inn, Esq." or "William Byrd, of Westover, which is in Virginia, Esq."

In bookwork the first word of the page was repeated as the last word of the preceding page, and put on a line by itself.

Two of the most noted printers of the day were Benjamin Franklin of Philadelphia, and William Bradford, "Printer to the King's Most Excellent Majesty for the Province of New Jersey." Figure 4 is taken from a copy of the Laws of New Jersey for 1752 printed by Bradford. The type is much, although not exactly, like the examples shown by Franklin. Figure 5 is a page from the

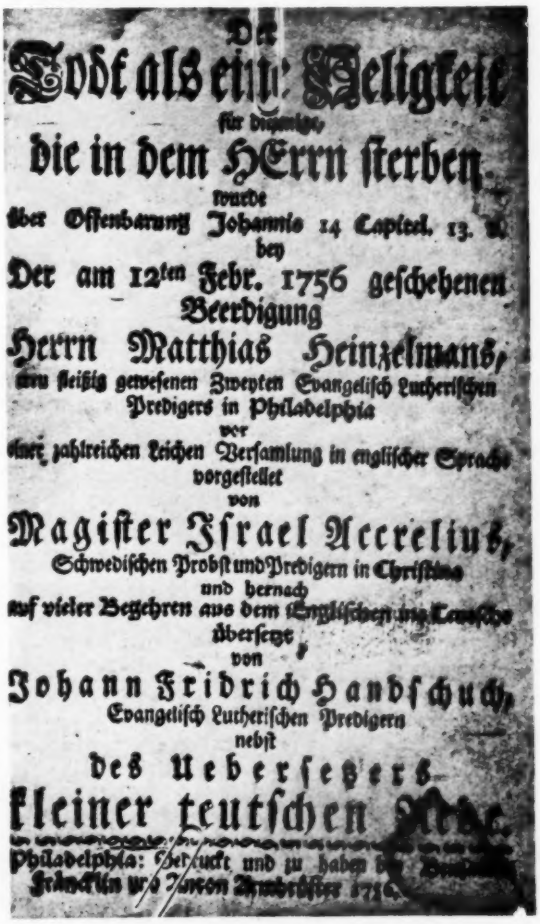

Der
Tod als eine Seligkeit
für diejenige,
die in dem HErrn sterben.
wurde
über Offenbarung Johannis 14 Capitel. 13. V.
bey
Der am 12ten Febr. 1756 geschehenen
Beerdigung
Herrn Matthias Heinzelmans,
des fleißig gewesenen Zweyten Evangelisch Lutherischen
Predigers in Philadelphia
vor
einer zahlreichen Leichen Versamlung in englischer Sprache
vorgestellet
von
Magister Israel Acrelius,
Schwedischen Probst und Predigern in Christina
und hernach
auf vieler Begehren aus dem Englischen ins Teutsche
übersetzt
von
Johann Fridrich Handschuch,
Evangelisch Lutherischen Predigern
nebst
des Uebersetzers
kleiner teutschen
Philadelphia: Gedruckt und zu haben bey
Fränklin und Hamon Ambrüster 1756.

Fig. 11

Laws of Pennsylvania of the same date, printed by Franklin. Compare this with a copy of state laws published today, notice how easy it is to read due to the size of the letters, (the small lower case letters being about an eighth of an inch in height and the GEORGII about one half of an inch) the easy spacing, and the absence of monotony. This page is a good example of successful type mixing, five different types being used in the body of the page, the title itself using four.

Another pleasing page is Figure 7, the work of Samuel Kneeland of Boston, 1753. In both selection of type and composition it is very good and no one would suspect, without counting, that to produce it he has drawn from fifteen fonts.

An early example by Bradford is Figure 8 printed in 1694, in which he uses eleven fonts of type including black letter. The black letter word Boston, in Figure 9, has a distinctly Georgian character especially in the form and method of connecting the s and t. This was a bill head engraved in 1736. How different from the bill head of today.

There was at the time of the Declaration of Independence in Pennsylvania a large settlement of Germans and hence we find many Colonial documents printed in the black letter type of that country. Figure 11 is a title page by Franklin, 1756.

Figure 12 shows an alphabet in which there is a wide difference between the thick and the thin lines. In each of these alphabets there is a considerable difference in many of the same letters Note the upper part of the W in Wright and in W. Fortescue and the irregularity of the lines and right angles of the letters, the different angles at which the letters are set and the varying width of the same line. All of these imperfections, due to the human equation, in handwork, help instead of hinder, in giving much of the character that we find in the lettering of the Colonial period, that we have lost today due to our "improved" methods.


The *E N D.*

An example by William Bradford. From the Laws of New Jersey, printed in 1752

SIR CHRISTOPHER WREN

Address of Howard Greenley, president of The Architectural League of New York on the occasion of the placing of a memorial wreath beneath the portrait of Sir Christopher Wren

THE thirty-eighth annual exhibition of The Architectural League is strengthened and embellished by a comprehensive exhibit of the work of notable contemporaneous English architects officially shown for the first time in this country through the courtesy and interest of Paul Waterhouse, Esquire, the President of the Royal Institute of British Architects, seconded by the untiring efforts of our esteemed member, Mr. Alfred C. Bossom.

This exhibition takes on further significance by the fact that simultaneously in England and here in America we are offering to Sir Christopher Wren, perhaps the most notable of all English architects, the honors of bi-centenary remembrance. His lofty expression of the value and importance of architecture may be summed up in his own words. "Architecture has its political use, public buildings being the ornament of a country. It establishes a nation, draws people and commerce, makes the people love their native country which passion is the original in all great actions of a commonwealth."

Born on October 20, 1632, his early education was acquired at Westminster School and afterward at Oxford. Until he was thirty years old he displayed no distinct tendency toward the art of architecture, confining himself to matters of science to which he made valuable contribution. After the great fire of London in 1666 he developed a comprehensive plan for the rebuilding of the city which in point of design can be said to be some 200 years in advance of his time. His masterpiece is unquestionably the Metropolitan Cathedral of St. Paul in London, originally begun upon the lines of Inigo Jones, of which great master he was the pupil. To show the prodigious quality of his work in his capacity of Surveyor General of the King's Works, a position he held for forty-nine years, reference should be made to the churches of London of which he reconstructed over fifty on their mediaeval sites in the Rennaisance manner, with special attention to St. Mary le Bow in Cheapside, St. Bride's in Fleet Street and Saint Martin's on Lodgate Hill, whose towers and steeples are of surpassing beauty. Of equal importance are the new wing at Hampton Court Palace, Greenwich Hospital, Kensington Palace, Marlborough House and the Library at Trinity College, Cambridge.

Perhaps one reason for his success can be attributed to the extremely able body of fellow craftsmen he gathered around him, a subject of unusual significance to the members of the League in the principle of its own composition. Such names as Strong, his master mason, Jennings his master carpenter, Cibber and Grinling Gibbons, his sculptor and carver, and Jean Tijou his iron worker, are the craftsmen that worked under him.

The last five years of his life until his death in February 1723, are somewhat clouded by the neglect he suffered at the hands of his official patrons. Nevertheless he has left us a memory as imperishable as the monuments he conceived and executed.

The architecture of Christopher Wren in England represents the soul of a man of whom England should ever be proud. An architect, sprung from and nourished by herself and worthy to be placed in first rank of men of genius of all time.

And so, with entire consciousness of the honor of representing you, The Architectural League of New York, in this memorial ceremony which we are conducting here today and which will be also performed at the ceremonial in the Cathedral of Saint Paul in London by his Excellency the American Ambassador, I place this tribute from American architects of today at the feet of the great architect of yesterday whose name and whose work are an inspiration for all ages, Sir Christopher Wren.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

SMALL DWELLING CONSTRUCTION

Minimum Requirements Recommended by the U. S. Department of Commerce

A MOVEMENT for a standard, universal building code was instituted by Mr. Herbert Hoover, Secretary of Commerce, in the appointment of a Building Code Committee which was organized in May, 1921. The personnel of the committee consists of Ira H. Woolson, Consulting Engineer, National Board of Fire Underwriters, New York City, Chairman; Edwin H. Brown, A. I. A., of Hewitt & Brown, architects, Minneapolis, Minn.; W. K. Hatt, Professor of Civil Engineering, Purdue University, Lafayette, Ind., Rudolph P. Miller, Consulting Engineer, former Superintendent of Buildings, New York; John A. Newlin, Forest Products Laboratory, Madison, Wis.; E. J. Russell, F. A. I. A., of Mauran, Russell & Crowell, architects, St. Louis, Mo. and Joseph R. Worcester, Consulting Engineer, Boston, Mass.

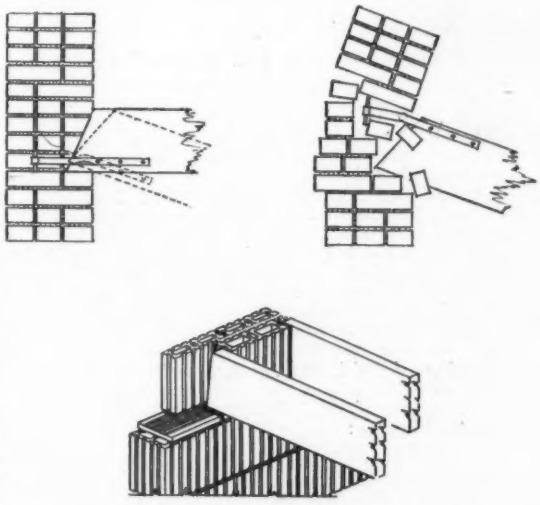
The first consideration of the committee was the one and two family dwelling. The importance of this type of construction is evidenced by the building experience of 1920 of which this class of buildings constituted about 75 per cent of the total cost of dwellings erected in cities and about 28 per cent of the total cost of all classes of building construction. They also made up 42 per cent of all building operations reported. The committee worked in conjunction with city building officials, technical and trade organizations. The Recommended Minimum Requirements for Small Dwelling Construction is issued and its main features are here given.*

The code is short and consists of 9 articles containing 43 sections. Its brevity is commendable and the form well arranged. A very completely illustrated appendix explains the various sections and the sources of data employed in formulating the code. It is in effect a short manual of dwelling house construction. Only the principal construction features will be described in a condensed form.

Price 15 cents (stamps not accepted). Sold only by the Superintendent of Documents, Government Printing Office, Washington, D. C.

Limitations. These requirements apply only to buildings used as dwellings either detached, semi-detached, in rows or intended for the occupancy of not more than two families in each unit.

Heights and Areas. The number of stories in dwellings having masonry or concrete walls of the minimum thickness permitted is limited only by the permissible height of the walls. Dwellings classified as frame construction, when built for accommodation of two families, are limited for the purposes of this ordinance to two and one-half stories. A half story is a story situated wholly within the roof framing or having a floor level not more than 3 ft.



Correct and incorrect method of anchoring joists. Good method of seating joists in thin tile walls

below the top of the roof plate. No family shall be domiciled within such half story.

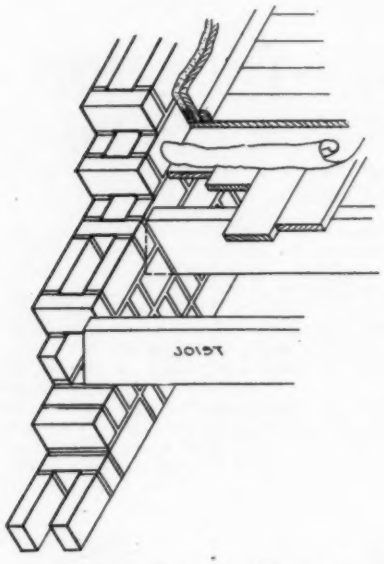
No limitations are placed on the allowable floor area of dwellings for which minimum requirements are herein prescribed, except that not more than two families shall be housed within the same division or exterior walls.

Dwellings with Solid Brick Walls

Walls. The minimum thickness of exterior solid brick walls shall be 8 in. for a height not exceeding

30 ft. with a permitted additional height of 5 ft. to the peak of a gable. Header course every sixth course or a header in every 72 sq. in. of wall surface.

Piers. Unsupported height of isolated brick or plain concrete piers shall not exceed 10 times their least dimension. Stone posts shall not be used as supports for girders or walls in cellars or basements.



Details of 8 in. hollow wall of brick (all rolock), illustrating best methods of joist support

Chases. Chases shall not be permitted in 8 in. walls. In thicker walls the backs of chases shall be not less than 8 in. thick.

Arches and Lintels. Openings shall have well buttressed arches or lintels of masonry, plain or reinforced or of metal which shall have a bearing at each end of not less than 4 in. on the wall. On the inside of openings less than 4 ft. wide, in which the thickness of lintels or arches is less than the thickness of the supported wall; timber which will rest at each end not more than 2 in. on the wall, cut to serve as centers for arches, may be used.

Quality of Brick and Mortar. Brick of clay or other materials used in 8 in. exterior, party or chimney walls and piers, shall at least meet the following requirements:

	Face	Common
Absorption limits, per cent		
Mean of five tests, maximum	10	12
Individual, maximum	12	15
Compressive strength (flat) lbs. per sq. in.		
Mean of five tests, minimum	1500	1500
Individual, minimum	1000	1000
Modulus of Rupture, lbs. per sq. in.		
Mean of five tests, minimum	300	300
Individual, minimum	250	250

When sampled at the plant the age of concrete brick, when tested, shall be not less than 28 days nor more than 60 days. Tests may be made on the brick delivered on the job.

All cements and limes shall conform to the standard specifications issued by The American Society for Testing Materials.

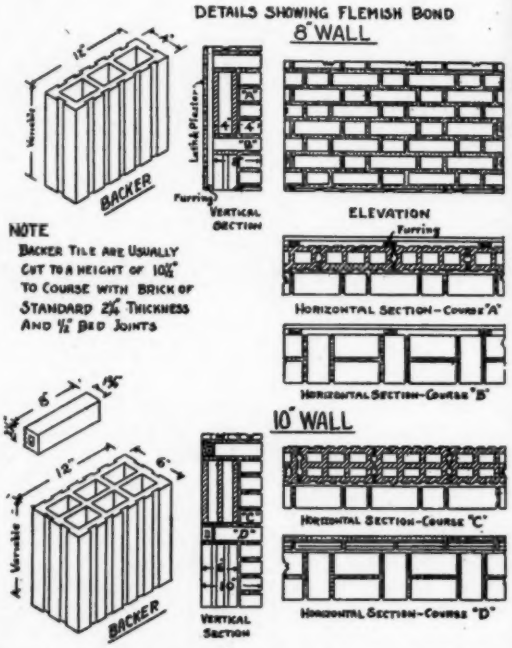
Mortar for foundations, exterior walls, chimneys or piers shall have a strength not less than that of a cement-lime mortar made by volume of one part Portland cement, one part lime and one part sand.

Dwellings with Walls of Hollow Building Tile, Hollow Concrete Block or Hollow Walls of Brick

Walls. The minimum thickness of exterior walls built of hollow building tile, hollow concrete blocks or hollow walls of brick shall be 8 in. for the uppermost 20 ft. The total height shall be limited to 30 ft. with a permitted additional height of 5 ft. to the peak of a gable.

All tile and block walls shall be bonded in every course by breaking joints at least 3 in. Where a 3 in. facing of stone ashlar or terra cotta or a facing of brick is used, the thickness of the hollow wall backing may be 2 in. less than that required for exterior walls, provided the facing is well bonded to the wall.

Note. Hollow walls of brick are made of all rolock courses with 4 in. air space; each row is of alternate headers and stretchers and an all header course immediately below and above the ends of joists.



Details of building brick veneer on tile backing, 8 and 10 in. walls

Piers. Isolated piers of hollow building tile or hollow concrete blocks must be filled solidly with concrete. The unsupported height of such piers shall not exceed ten times their least dimension.

Load Bearings. Walls on which beams, joists or concentrated loads bear shall be provided with bearing plates or courses of solid tile, brick or concrete.

Chases. Chases shall not be permitted in 8 in. walls. In thicker walls chases shall not be cut, but may be built in and the back of the chase shall be not less than 6 in. thick.

Quality of Materials. Hollow building tile laid with cells vertical shall have an average compressive strength of 1,200 pounds per sq. in. of gross sectional area tested with webs vertical; when laid

with cells horizontal to have an average compressive strength of 700 pounds per sq. in. of gross sectional area, tested with cells in that position. Hollow concrete blocks shall have an average strength of 700 pounds per sq. in. gross sectional area tested as used in the wall. Hollow concrete block or tile shall not exceed 10 per cent absorption under 48 hour test. Brick and mortar to be as hereinbefore specified.

CONCRETE DWELLINGS OF MONOLITHIC, UNIT OR STRUCTURAL FRAME TYPE

Monolithic Concrete Dwellings. Monolithic concrete construction containing not more than two-tenths of 1 per cent of reinforcement shall be classed as plain concrete. Solid bearing walls shall be at least 6 in. thick. Reinforcement not less than two-tenths of 1 per cent, computed on a vertical height of 12 in., shall be placed over all wall openings and at corners of structures to prevent cracks. Floor and roof connection details shall be designed to transmit safely the vertical and horizontal loads imposed.

Hollow monolithic walls shall have not less than 6 in. aggregate thickness of material. Wall openings and corners shall be reinforced in the same manner as solid monolithic walls. The inner and outer parts of such walls shall be securely braced and tied together with non-corrodible ties or other means to bring them into common action. Where floor and roof systems are carried by such walls, provision shall be made for the distribution of these loads to all parts of the wall.

Unit Construction. Precast concrete units for construction of dwellings shall be of sufficient strength and where necessary shall be reinforced to carry safely the loads imposed. Connections between the several parts of such structures shall be sufficiently strong and rigid to resist the vertical and horizontal forces which may be imposed.

Concrete Structural Frame with Enclosing Walls. Dwellings constructed with monolithic reinforced concrete frames cast in metal lath or other forms, and with enclosing walls of concrete plastered or shot on metal lath, or of precast units carried by such frames, or having reinforced concrete bearing walls, shall be designed in accordance with standard methods of reinforced concrete design to carry safely the dead weight of the structure and the live loads which may be imposed. Enclosure or panel walls shall be of sufficient strength and rigidity to resist lateral forces and transmit them to the framework.

Height of Concrete Exterior Walls. The height of exterior concrete walls of minimum thickness specified shall be limited to 30 ft. with a permitted additional height of 5 ft. to the peak of a gable.

Floors, Floor Beams and Columns. Shall be designed in accordance with standard methods to carry safely the loads imposed.

The committee made a considerable investigation of the subject of the thickness of exterior walls. The requirements of 134 selected building codes, the opinions of about 225 building inspectors, 400 fire chiefs and marshals and 350 insurance companies and adjustment bureaus, were tabulated. Tests were made by the U. S. Bureau of Standards on large size test walls of different construction. On these data the recommendations are based. It is presumed that the laboratory tests were properly discounted. The material and workmanship entering these test panels are generally of far better quality than what is usually secured in building operations. There is also the absence of stress due to eccentric floor loads, roofs and wind and the natural weakening of a wall at the ends of the floor joists. Such tests can only be indicative of general characteristics.

Although the code is specific as to the quality of materials, it is generally acknowledged that effective inspection of materials and workmanship used in this class of buildings is impossible.

The 8 in. hollow brick wall is not used to any great extent in this country. Nominally one-third of the brick content is saved. The horizontal brick joints are 4 in. apart instead of 2 in., which is a reduction of 50 per cent in the number of bed joints. The bed joints in brickwork are usually 4 in. or 8 in. wide with only one free face. In the hollow wall the bed joint is 2 in. wide with two free striking faces, one of which cannot be struck. It is doubtful if any saving can be made in mortar. The bricklayer would have to learn practically a new trade and it is doubtful if he would do it, especially under the present conditions of labor shortage. The displacement of masonry by joist ends is much greater in this type of wall than in the solid wall. The penalty of 33 1/3 per cent in permitted height may be sufficient to compensate for the inherent weakness of this type of wall.

The stability of 8 in. walls is affected by foundation troubles more than thicker walls and this should be carefully considered. It is doubtful if the 8 in. wall used to the limits permitted will be generally employed in structures of this kind by persons who build for their own use or for permanent investment.

Very few codes have made any particular provision for exterior concrete walls in this kind of building. The limitations of this code are evidently proper. The use of this material for this purpose will probably be limited. The cost of forms and the attractive finishing of exposed surfaces will tend to prevent its use. To make such houses attractive in appearance is a matter not yet accomplished except at an unwarranted expense.

Note: The balance of the code will be given in our issue of March 28.

The Metal Trim Case

THE National Board for Jurisdictional Awards met in Washington on February 19 for further consideration of the metal trim case. The dispute between the carpenters' and the metal workers' unions as to which should install metal doors and trim was considered by the Board two years ago and a decision rendered in favor of the metal workers. The carpenters claimed that they were not given opportunity to present their case at that time. The facts are that they refused to appear after repeated notices and requests had been sent to their officials. They simply held aloof and ignored the proceedings of the Board.

At the recent meeting the carpenters were represented by the president of the international organization who did not participate personally in the proceedings. A contractor for the installation of metal doors and trim presented the carpenters' interests through Mr. Hope Thompson, a leading attorney of Chicago. About two days' time was given to that interest and over a day's time to the further consideration of arguments presented by the metal workers.

The Board decided to have transcripts made of the proceedings and take the case under advisement until the next regular meeting in May when it is expected that a decision will be rendered.

Utilization of Blue-Stained Lumber

WHILE it has been established that blue stain in lumber is not an early stage of decay, but merely an indication of the presence in the sapwood of a fungus which does not materially affect the strength of the wood for ordinary commercial purposes, no absolutely effective method of preventing it other than kiln drying has been found. Kiln tests at the Forest Products Laboratory, of the Forest Service, have shown that a temperature of 140° F. for a period of 6 hours is sufficient to kill the blue-stain fungus in the center of test pieces up to 4 by 4 inches square. No chemical dip for green lumber has been found which is remedial in periods of continued rain during the warm months. Until a suitable method of prevention is found applicable in cases where kiln drying is not feasible, intelligent utilization of the discolored stock will remain the only means of discounting the damage done by the blue-stain fungus when the methods now available have failed to keep it out. Resurfacing will not help when the fungus has made substantial penetration.

As blemish in any degree would destroy the beauty of the grain of the wood, bright, stain-free stock is highly desirable for a large variety of uses requiring a natural finish. But for many purposes where the wood is to be covered up or painted and where the use of sapwood is permissible, there is no reason for discriminating against blue-stained material, provided no wood-destroying fungi are associated with the stain.

As the conditions which favor the development of stains in sapwood also offer the opportunity for infection with the wood-destroying fungi, the holder of such material should assure himself that no indications of these harmful fungi are present before recommending the use of badly blued stock.

Blue stain is freely accepted in rough lumber, lath, scantling, plank, and some of the larger sizes of dimension. More could well be used in the manufacture of sash, doors, millwork, and other products when the discoloration is to be painted or otherwise hidden from view.

A few uses for blue-stained material are given below, referring to material to be painted or stained in uses where appearance is important.

Board walks	Rails and balusters
Casings and baseboard	Sash
Ceiling	Scaffolding
Concrete forms	Screens and screen doors
Doors	Sheathing
Finish, exterior	Shelving
Gates and fences	Shingles
Joists	Siding
Lath	Stairs and stepping
Partition	Structural timbers
Rafters	Studding
	Sub-flooring

Actual Live Loads

THE Building Code Committee of the U. S. Department of Commerce desires to secure data concerning actual live floor loads for all classes of buildings. This information is to be used in formulating their recommendations for floor loads. It is generally agreed that the usual live floor load requirements are excessive and are responsible for a tremendous waste in building construction. The truth concerning these loads should be the basis of design rather than conjecture on the age-old traditions of building codes. Architects and engineers should investigate these matters and send all data to Mr. Ira H. Woolson, 76 William Street, New York City.

Building Officials Conference

THE next annual meeting of the Building Officials Conference will be held at Toledo, Ohio, April 24-27 inclusive. Mr. Rudolph P. Miller, 100 Morningside Drive, New York, president of the Conference is preparing the program and will entertain suggestions for subjects to be discussed.

COMPARATIVE TESTS OF ROOF VENTILATORS*

Report of Tests of Five Distinct Types and Description of Method and Apparatus Used

BY F. B. ROWLEY, Professor of Mechanical Engineering, University of Minnesota

UNTIL recent years very little attention seems to have been given to the comparative efficiency of different types of roof ventilators. Recently, however, several papers have appeared in the *Journal* which seem to indicate a growing interest in this field. It may, therefore, be of interest to report the following tests which while not covering a complete range of ventilators, represent five distinct types, and these tests are therefore submitted as an additional contribution to the other data published.

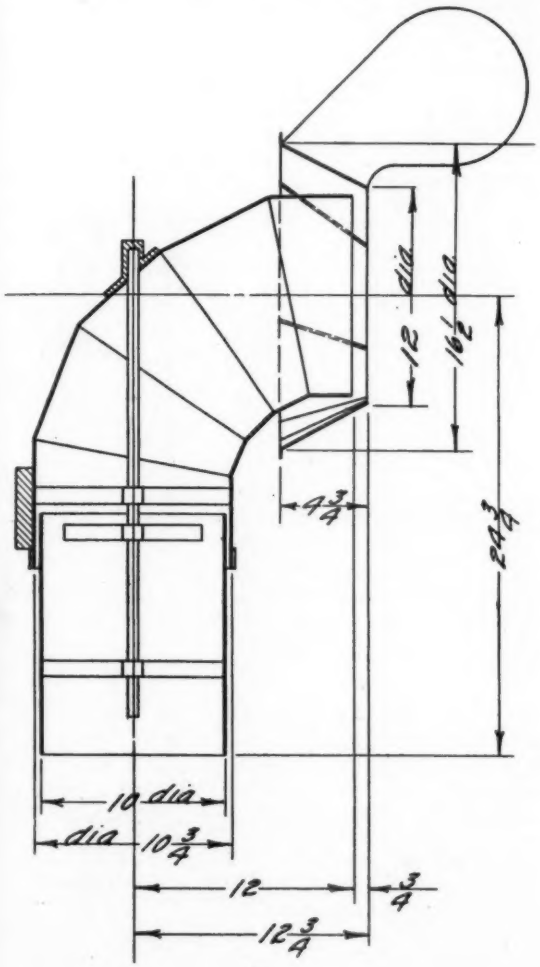


Fig. 1

The five different ventilators are illustrated in Figs. 1 to 5. The detail dimensioned drawings are given because it is apparent that the dimensions have much to do with the efficiency of the ventilator. It will be interesting to note that in tests of ventilator No. 1, the dimensions were changed, first by increasing and then decreasing the opening around the outlet. It was found that when this dimension was varied in either direction, the draft created by the ventilator was diminished, indicating that the proper dimensions had been selected in the original design. It appeared also that this dimension had been selected more by accident than by scientific determination.

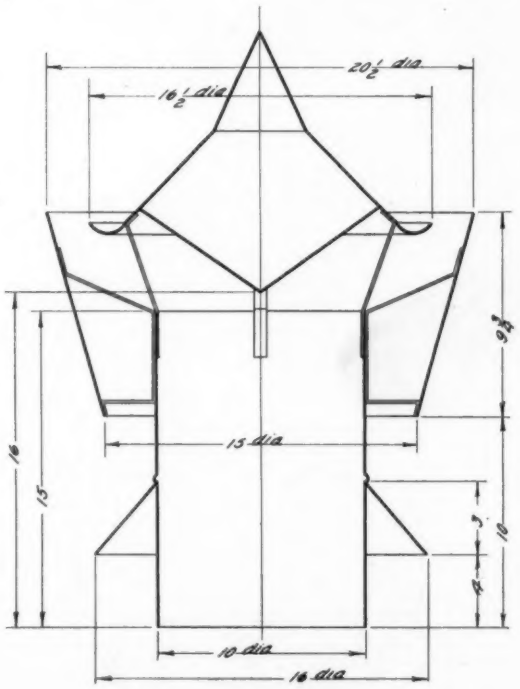


Fig. 2

The ventilators were all 10 in. in diameter and were mounted as shown in Fig. 6, which shows the general arrangement of the ventilator set up, together with the fan for producing the air veloc-

*Presented at the Annual Meeting of the American Society of Heating and Ventilating Engineers, Washington, D. C., January, 1923

ity around the ventilator head. The wind velocity was produced by a No. 8 double-inlet Sirroco fan, discharging through a 36 in. circular duct. The ventilators were placed 3 ft. 10 in. in front of the outlet and in such position that the center line

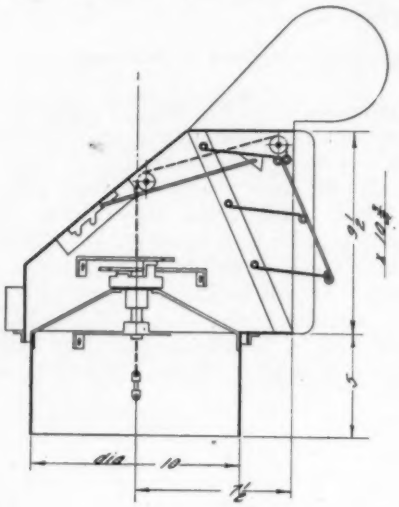


Fig. 3

of the head was as near as possible in the center line of the duct. The ventilator pipe was supported in a frame, the bottom of the pipe being approximately 2 ft. from the floor line.

The wind velocity and the air velocity created in the ventilator shaft were measured with anemometers. In order to determine the wind velocity the ventilator pipe was removed and the wind velocity in the plane of the ventilator taken at five different points. The average was taken as the true wind velocity, the greatest variation from the average being less than 7 per cent. While this set-up may give somewhat different results from those when the ventilator is placed in a wind tunnel, the results on the various ventilators will be comparative; and since the velocity of the air over the full section of the ventilator is practically uniform, as shown by the

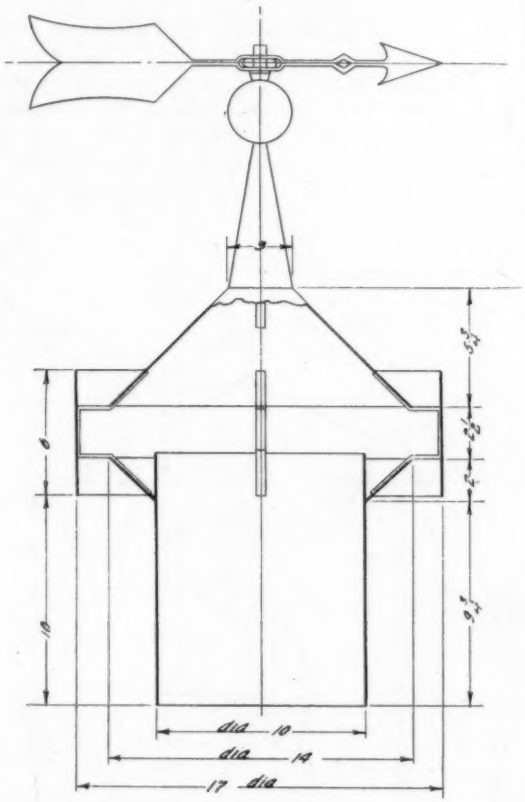


Fig. 4

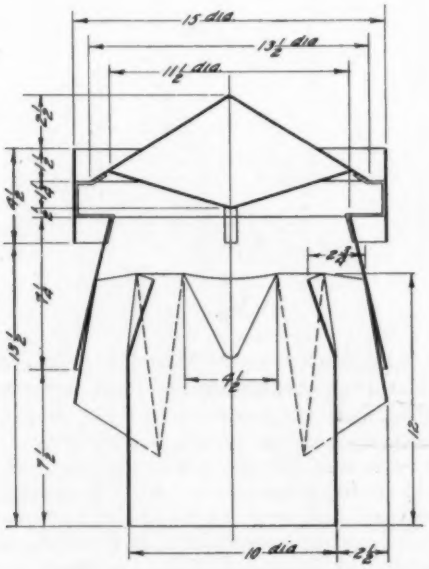


Fig. 5

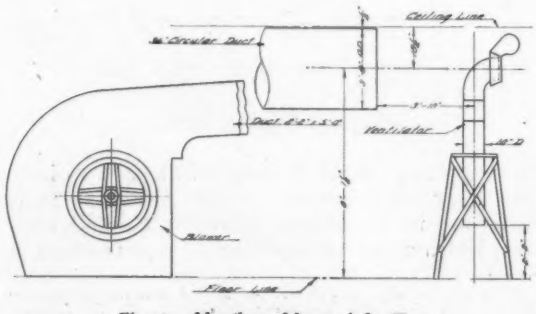


Fig. 6. Ventilator Mounted for Test

anemometer test, it should give results which approach practical conditions.

TABLE 1. TESTS OF ROOF VENTILATORS

Test No.	Ventilator	Average wind velocity	Average velocity in ventilator pipe
1	1	453	201
2	2	452	178
3	3	451	155
4	4	447	94
5	5	455	95
6	1	835	434
7	2	816	419
8	3	813	338
9	4	815	283
10	5	830	246
11	1	1225	702
12	2	1272	710
13	3	1238	539
14	4	1255	474
15	5	1244	417
16	1	1593	940
17	2	1572	919
18	3	1573	754
19	4	1572	650
20	5	1549	555

The results of the tests are shown in Table 1 and in the accompanying curve sheet, Fig. 8. In comparing the results of these tests with those obtained by Professors J. P. Calderwood, A. J. Mack, and C. J. Bradley of Manhattan, Kansas, and reported in the July, 1922, issue of the *Journal*, it will be seen that ventilator No. 1 in these corresponds to those classified by them as the rotary siphoning type. The results obtained in both series of tests, as shown by the curves, correspond very closely. No. 4 of this test corresponds to the plane stationary ventilator and No. 5 of the stationary siphoning of the former tests. The results in these two cases are inverted, that is, the plane stationary giving greater efficiency in these tests while the stationary siphoning gives the highest efficiency in the tests made at the Kansas Agricultural College. This may be accounted for by the different dimensions of the ventilators used.

Ventilator No. 2 in these tests would, no doubt, be classified in the former tests as plane stationary; yet this ventilator shows efficiencies which are very close to the best ventilators in either set of tests. The plane stationary ventilators in the former tests show the lowest efficiencies.

It would appear that it is impossible to take ventilators of the same class and expect uniform results, but that ventilators even though similar,

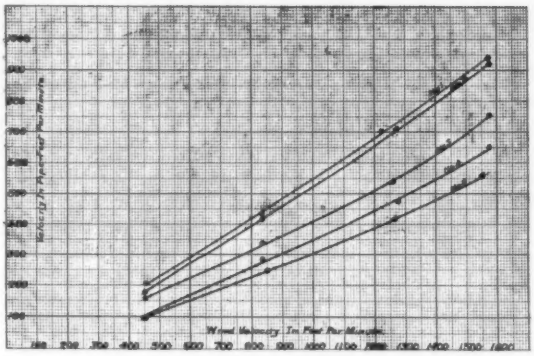


Fig. 8. Chart of Results of Roof Ventilator Tests

and classified as the same, will give entirely different results, depending upon the dimensions and proportions.

The St. Louis Bond Issue

THE approval of bonds to be issued for public improvements was voted at an election held in St. Louis, Mo., on February 9. Of the 21 items presented 20 were carried by the necessary two-thirds favorable votes of the total votes cast. Less than one-third of the registered voters cast their ballots. Many of these projects were defeated at an election held in 1920 and a campaign was instituted by the city officials and the civic organizations which were represented by a joint committee.

Those items of particular interest to architects are as follows:

ST. LOUIS BOND ISSUES AUTHORIZED AT ELECTION ON FEB. 9

Buildings, including in some cases sites and equipments:	
Municipal auditorium and community center	5,000,000
Additions to hospitals	4,500,000
New court house and site	4,000,000
Reconstruction public markets	1,250,000
Municipal power and service building, including machine shop, garage, and laundry for municipal requirements	1,000,000
Fire engine houses and equipment	772,500
Aquarium	400,000
Municipal plaza and buildings	6,000,000
Union Station plaza	2,600,000
	$25,522,500

The only project that was defeated was a National Guard Armory to have cost $1,000,000. The total issue of bonds authorized is $87,372,500.

THE IMPORTANCE OF KEEPING RECORDS

IT is the duty of architects to give to each client a complete set of drawings when a building is completed. This is especially important in connection with structural work. Furthermore the client should be told that the drawings should be preserved as long as the building stands. The two incidents following may serve to show the importance of the matter.

In a certain large city in the middle West the edict went forth that all floors in business buildings were to be placarded to show the safe live loads. The minimum loading for any floor was forty pounds per square foot. A certain manufacturer asked a structural engineer to tell him what it would cost to measure the structural members and give a certificate so the Building Department could issue the placards. The engineer said he would do the work for one hundred and fifty dollars. The owner found a young engineer graduate, working as a foreman for a contractor, who undertook the work for seventy-five dollars, as a chance to earn some extra money after working hours. He did the work and the Building Department refused to accept his figures, saying that certificates would be accepted only from responsible men who were paying office rent. A friend of his, a registered engineer, signed the certificate and assumed responsibility for the computations.

Then the owner was notified that he must strengthen all columns, beams and girders, the computations showing that the strongest floor could be placarded for only thirty pounds per square foot, while some of the floors could carry safely only seventeen pounds per square foot. On calling at the City Hall he found that the young man had carefully measured all the framework and made his computations on the basis of net sizes, whereas nominal sizes were permissible. In describing the material he had called it white pine and in his computations had used the safe stresses permitted for that wood. When asked why he had assumed it to be white pine he said that the date on the gable of the building was 1872, at which time no yellow pine was sold in that market. He also said that the owner told him he had no information of any kind, a set of plans and specifications given to him by the architect having been thrown away five years before because he hated to see them taking up space in his vault.

The owner was obliged to spend a large sum to reinforce every structural member. He employed the engineer who had asked a fee of one hundred and fifty dollars, to prepare the plans and take charge of the work. This engineer discovered that the material was yellow pine for which the safe fibre stresses were more than double those permitted for common white pine. The Building Department refused to accept any change, fearing to establish a precedent and give critics an opportunity to say the officials were improperly influenced. Had a reconsideration been granted the use of nominal sizes with yellow pine fibre stresses would have permitted the weakest floors to be placarded for a forty-one pound live load instead of seventeen pounds.

When the reinforcing work was completed all floors were placarded for a forty pound live load. The engineer, curious as to how a building of that age in that locality had yellow pine members, made an investigation which was not completed until several months had elapsed. He finally was able to prove that a fire had gutted the building in 1890 and five years later the old walls were repaired and the interior was reconstructed with yellow pine. The destruction of the plans by the owner who did not like to see them taking up space in the vault, cost him between two and three thousand dollars. The architect died in 1905 and no one remembered the name of the contractor, who was later found by the engineer in his search for information.

The second instance is more interesting. In 1908 an eight story building of reinforced concrete was erected. The owners were given a complete set of drawings blue printed on cloth. The building changed hands and the drawings disappeared. The architects went out of business and could not be found. The contractor died. The new owner wishes to add two stories to the building and has employed a firm of architects to prepare plans and take charge of the work. In their search they discovered the firm that sold the reinforcing material had destroyed their drawings, it being the policy to keep no papers more than ten years. The name of the designing engineer was given and he was finally located in another city.

This engineer when moving a few years ago had destroyed all papers, etc. he believed to be no longer valuable because copies had been given to owners and former employers. His memory is not clear on the building in question, but he does remember that in 1908 (15 years ago) there was some talk of the possibility of some day adding a couple of floors. He suggests cutting into the roof slab to lay bare the reinforcement and thus determine whether it was designed for a thirty pound roof load or a seventy-five pound floor load. He also suggests an examination of the columns to ascertain their load carrying capacity. He knows what stresses he used for the Chicago reinforced concrete ordinance in force in 1908 were followed.

THE LEGAL SIDE OF ARCHITECTURE*

THERE is hardly anyone, I suppose, who goes through life without in some way coming in contact with the matters that are treated of under the general heading of the law of architecture and building. There is hardly any one of us that, at some time or other, does not have to come in contact with a building operation. It may be a bungalow that we are interested in. It may be a mansion on Fifth Avenue, an apartment house, or nothing but a dream house. But in one way or another, as a rule, sooner or later, the great majority of people come in contact with these questions that lie at the root of the legal relationships and business relationships of the architect and his client and the contractor.

Of course, your primary conception, and rightly so, of architecture, or the profession of architecture, is that it is a fine art. That is unquestionably true. It is unquestionably the basic characteristic of the profession of architecture and its broadest one.

The thing that I have been preaching for a number of years since I began to take up this subject from the legal point of view is that there is another totally distinct side of the profession which must be appreciated by the modern architect today if he is going to be really successful in the practice of his profession. As you probably know, I refer to the business side of architecture.

This is a side of the profession that a great many architects, especially those that graduated some years ago, have failed, up to this time, to appreciate or understand, as they should appreciate it and should understand it.

There is nothing incompatible between the artistic side, if I may term it such, of the architect's work and the business side. I have been met a great many times with the statement that an architect is not fundamentally, or cannot fundamentally be, at once and the same time, both an artist, in the proper sense of the term as applied to his profession, and a business man. Now, that, I think, is nonsense. I *know* that it is nonsense, from the experience that I have had. Clients of mine whose work I know intimately, architects whose names are nationally known, are fine artists, fine craftsmen, and, at the same time, mighty good business men. Of course, that is the ideal combination.

What I have tried to do in my writings, and in my talks to architects and students, is to get them to place in their minds as it were the main danger signals and danger points which they will meet in the practice of their profession, not to get you to try to memorize or understand as a lawyer understands, or is supposed to understand, all of the legal questions entering into the practice of architecture, but to get you to place in your minds the main headings, the main points, the main basic principles, upon which your relations with your clients and their relations with the contractor, and your relations with the contractor, are based; to get these points sufficiently fixed in your minds so that when you, in the course of your practice, approach the place where the ice is a little thin, although you may not know it, you will, nevertheless, sense that fact. The effort is so to prepare you that, while you may not know just what course you ought to take, you will know, in a general way, that you are approaching a point where it behooves you to go slowly and carefully, and, if in doubt, to get competent advice.

I can say to you from personal experience—from what I have seen of the relationships of architects and clients and builders—that if these basic principles could be instilled into the minds of the students in our schools of architecture today, it would save literally hundreds of thousands of dollars in litigation and in loss, and untold thousands in ill feeling, in loss of clients and in misunderstandings, in the practices of those students as architects, during the next few years.

I have in mind various clients of mine especially, architects whom you would recognize instantly as leaders in their profession. They have primarily the artistic temperament. They are not business men, although they could be business men if they cared to apply their minds in a business way. They have been keen enough, however, to recognize the need in their organizations of this business element, and they have made a part of those organizations men who are good business men. These men have organized and built up business organizations within their respective office organizations, and these business organizations are excellent examples of what attention to the business details of a practice will accomplish.

The artistic side of the work, the planning, and preliminary interviews are carried on by the architects themselves. When it comes down to making a contract, to attending to the bids of the contractors, to guarding the client's interests, all these devolve on the business side of the organization. The result is, that the clients whom these offices serve are protected in their dealings, not only with the architect—these are put on a definite basis, so that there can be no misunderstanding—but in their dealings with the contractor, from the day the contract is signed until the last item of work is done and the final payment made.

I have seen instances, for example, where the contractor, without the client ever discovering it,

*Lecture delivered by Clinton H. Blake, Jr., to the Students of the School of Architecture of the Boston Institute of Technology.

possibly without any intention on the part of the contractor, would have gotten away with a great deal of money belonging to the client, if it had not been that the business organization of the architect was "on the job."

I remember one case in particular, where a contract called for bids by units and for the payment in installments in the usual way, and the contractor lumped all of the higher charges in the earlier items; that is, he built up, beyond what they should have totalled, the early items in that construction. He put in his excavation work at a very much higher figure than it should have been put in at, his foundation work at a higher figure, and the framing work. If the unit items in the bid of this contractor had not been carefully examined and analyzed, the result would have been that, when the contractor had completed a part of the building—when the foundations had been put in and the framework erected—he would have been entitled, on the figures submitted by him, to an amount which, on a true basis of valuations and a true proportion between the value of the work done and the value of the total work to be done, would have been largely in excess of the sum to which, in fairness, he was entitled. If his units had not been checked and revised by the architect, he would have been entitled to perhaps three-quarters of his bid at a time when, on the basis of actual work done and cost to him, he should have received only about one-third thereof.

In this particular case, when a part of the building operation had been completed, the contractor went into bankruptcy. Now, if the architect in that case had not checked these items and seen that the contractor was overloading earlier units of construction, charging an excess on those over what was fair at prevailing rates for labor and material, the contractor would have been paid prior to the time when he failed a very much larger proportion of the cost of that building than he should have been. When he failed, the client would not have been able to collect damages from him or force him to complete the building. He would have had to get someone else to complete the building and he would have been out the excess cost.

The architect did check those payments and found that the contractor was charging too much and he had the contractor come into his office and he made him reduce those items, so that when he was paid the preliminary payments he was paid an amount that was substantially equitable. When he failed, therefore, and the owner had to get a new contractor, there was enough money left unpaid so that the owner was able to complete the building without any appreciable loss.

That is a practical example of what I have in mind when I speak of the business side of the architect's organization.

LEGAL DECISIONS

A SUB-CONTRACTOR undertook the construction of concrete forms in connection with the erection of a building and purchased a certain amount of lumber from a Mill Company. The lumber was not paid for and the Mill Company filed a lien. The Trial Court held that, under the State statute, providing that a lien may be had for all materials used in the construction of a building, the Mill Company was entitled to a lien for the amount of the lumber used in making the concrete forms. On appeal, it was contended, among other things, that the recovery allowed for the lumber was too large. This contention was based on the fact that the architect threw out certain lumber which the contractor had first proposed to use, and for which he was to pay $6.50 per thousand. The lumber which was purchased was purchased at a cost of $8 per thousand with an extra dollar for delivery. There was no evidence establishing the fact that lumber approved by the architect could have been bought at a less price. The court held that the architect clearly had a right to throw out the unfit materials, and that the reasonable value of the sound lumber furnished at $8 per thousand could not be measured by comparison with the unsound lumber condemned by the architect. It further appeared that the sub-contractor for the construction of the concrete forms had executed a bond conditioned for the performance of the contract, and the court held that the sub-contractor and its surety were liable on this bond for the payment of the material used in the construction of the forms.

Stimpson v. Feigenson, 170 *Pacific* 573.

AN action was brought on a contractor's bond to secure the performance of a contract. The specifications were made a part of the contract. An issue was raised as to whether an architect's certificate of partial completion was correct and binding on both parties. The contractor's bond provided that any suit brought thereon must be instituted within the time allowed by law for instituting a suit to enforce a lien. The owner did not, in fact, bring his suit on the bond on account of the contractor's default within this time limitation. The court held that the owner was not required to do this, since he could not, within such time, have had any knowledge of the extent of his damages, as mechanics' lien or other claims might have been brought and sued on after the expiration of the time limitation provided in the bond. The court further held that the specifications were admissible in evidence on the issue of whether the architect's certificate of partial completion was correct and binding on the parties.

Gintjee v. Knieling, 170 *Pacific* 641.

DEPARTMENT OF SPECIFICATIONS

SPECIFICATION OUTLINE FOR REINFORCING STEEL

I. GENERAL CONDITIONS

a. A paragraph referring the reader to the General Conditions that will be made a part of the contract, and which will be read by all bidders. This will be a standard clause.

II. SCOPE OF CONTRACT

a. Extent of the work given in brief outline, to be followed by

b. A schedule of general items that are to be included in the work. This schedule should be drafted from the general outline or master specification and should be completed only when the specifications are finished, when the paragraph, or sub-division captions may be used. This schedule, in tabulated form, will improve the clarity and the businesslike appearance of the documents. In many cases, the scope of reinforcing steel work may be referred to in the following words: "All reinforcing steel shown on the structural or reinforced concrete drawings."

c. Work of a similar character that already has been done by other contractors, arranged in schedule form.

d. Work of a similar character that will be done by other contractors concurrently with or subsequent to this contractor's work, in schedule form.

NOTE: If the reinforcing steel contractor is to furnish bar reinforcing only, with sheet (expanded metal or wire fabric) reinforcing furnished by others, this should be made clear under item "a" above. Also state whether reinforcing steel is to be delivered to building only or if installation is to be included.

III. DRAWINGS

a. Schedule the drawings that will be made the basis of the contract, giving the number of each sheet and its title.

b. A statement that further drawings explanatory of those scheduled in the preceding paragraph will be available at later dates.

NOTE: It is probable that the General Conditions of the contract will have clauses covering the drawings, but the information suggested above will prove invaluable to everyone interested in the specifications. For instance, the bidder will know whether or not he has been furnished all the drawings he should have.

c. State who is to furnish detail drawings, bending and erection diagrams. Also note if an allowance is to be made for reimbursing consulting engineer for preparation of these drawings.

IV. SCHEDULES AND MILL ORDER LISTS

a. State who will prepare these, whether
Consulting Engineer
Architect
Contractor for reinforcing steel

V. QUALITY OF MATERIALS

a. Each material that the contractor will be required to furnish should be listed here, and the standards of excellence that will govern their acceptance or rejection should be specified. It is suggested that this grouping be made under this heading so that all readers of the specifications will know where to turn when looking for materials and their required qualities. All physical characteristics that will be considered should be mentioned, such as grade, weights, gauges, processes of manufacture, etc.

b. List all materials entering into the required work somewhat as follows:
1. A. S. T. M. standards
Billet Steel
Structural grade
Intermediate grade
Hard grade
Rail Steel
2. Plain, twisted or deformed
3. Particulars as to sheet reinforcing

VI. SHOP OR MILL INSPECTION

a. If certain materials are to be inspected by testing engineers, state so, laying down all conditions that the contractor will be required to meet.

b. It is suggested that testing engineers be employed and paid by the Owner direct.

VII. FIELD INSPECTION

a. State particulars and by whom paid.

VIII. FABRICATION

a. Specify any peculiar or specific governing conditions.

IX. Shipment
   a. bundled and tagged
   b. shipping invoices

X. Placing of Reinforcing Steel
   See issue of August 30, 1922, page 203, for detailed outline covering this part of the work.

Suggestions for Painting Specifications

Mr. Frank G. Breyer, Chief of Research Division of the New Jersey Zinc Company gave an address before the Building Managers' Association of New York City on March 14, 1922. The subject of the address was "The Painter's Judgment and the Building Manager's Specifications, An Attempt At a Balanced Presentation of the Subject of Interior Painting." Mr. Breyer asked the question, "What are the principles and the specifications based thereon that the architect and building manager should specify and insist upon being observed in a paint job and where do the details begin that properly lie within the province of the painter's judgment?"

The answer to this question has been given in the most searching and illuminating manner in a booklet recently published by the New Jersey Zinc Company in which Mr. Breyer's address is printed. Specification writers can gain much of benefit from this address and it should go far toward making painting specifications more accurate and perhaps more capable of honest accomplishment.

Portions of Mr. Breyer's address are as follows:

An Analysis and Discussion of the Principles of Interior Painting

A—The Object of Painting. (Just what is desired from the painted surface, fresh and throughout its life.)

B—What paint will produce the desired job? What paint will give us the results that our analysis under A demands?

C—How shall that paint be applied?

D—What can be done to preserve its pleasing and useful life?

A Formula for Drawing Up Specifications Based on the Discussion of the Principles of Painting

The object of writing any specification is twofold. First, to make the one who desires a result really think about what he wants and settle on something definite, and second, to make clear to the contractor or supplier what the definite desired result is. Probably more specifications are justly condemned, because the writer didn't really know what he wanted than for any other reason.

If you know nothing of the principles of painting, don't try to write a painting specification. There are a lot of people who say, "Yes, but I know what I want, all the same, even though I don't know A from B about painting principles." These people probably have their mind on one or two qualities in the desired result, but don't realize for a moment that every other quality of the job is intermixed with the ones they have picked out and that a description of just these will mean one thing to one man and an entirely different thing to another.

The above isn't much more than just plain common sense, and yet how often is common sense absent in painting jobs.

To accomplish the object of writing painting specifications, therefore, the writer must understand the principles of painting first, and second, the principles of clear description.

The principles of clear description require first, the power of analysis, and second, a knowledge of the accepted general and technical terms used in describing the particular subject of the analysis.

The elements of a painting specification may be analyzed as follows:

(a) How to describe clearly the effect desired in the finished job
(b) How to define the paint to give the desired job
(c) How to describe the method of application of the paint
(d) How to describe the maintenance of the paint in good order

A—How to Describe the Desired Pleasing Effects in Terms of

Color Brightness Finish

These three effects, generally combined, may be described in numerous ways, such as by color cards, or by reference to specific colors and finishes of a specific paint manufacturer. The very best scheme, however, is to finish a panel exactly as desired and specify that result.

Balance and harmony can be specified best by the use of several panels indicating shadings in color and finish. The description of the useful effects desired, total light reflecting and dust shedding are best accomplished by the use of panels.

B—How to Define the Paint to Give the Desired Job

The day is not far off when we will define paint in purely physical terms, and leave the question of ingredients and their method of compounding entirely to the supplier of paint. This is the ideal way and a well equipped laboratory can specify paint that way with certainty today.

It is only a question of time before the physical testing apparatus and technique will have been developed to such a state that this method will be available to everybody.

In the meantime, we will have to be satisfied with the ingredient type of specification for most

purposes. How far can you go in specifying the ingredients? That's entirely a matter of how well you are equipped to test for the ingredients specified. Government, State and Municipal specifications, for example, can be very explicit. They buy in large quantities and have ample laboratory facilities for determining whether the ingredients and compounding are as specified in detail.

What you want the vehicle to do is first, bind the pigment, second, give a finish (i.e., flat eggshell, etc.), third, hold on to the wall, fourth, stay elastic, and fifth, hold its color over a period of years.

The first two requirements are met satisfactorily by conformity to specimen panels. The holding ability and elasticity of a paint film are both seated in the same fundamental property of the vehicle, so that the elastic life fairly well measures the adherence life.

Non-yellowing specifications for the vehicle are best written in terms of yellowing of the finished panels in the warmest, dampest, darkest spot to which the paint is to be exposed.

As in the case of the panels for elasticity, it is always best to compare your paints with known standards and make up enough panels, say five at least, to get an average difference over a period of time.

C—How to Define the Conditions and Method of Application of the Paint

It is not often that the condition for application of a paint, bought on specification, is seriously at fault. Some leeway is allowed the painter in the priming coats, on account of the variability in the porosity of the wood or walls. The painter's judgment here should only be allowed to extend to the question of how much oil he may add to the priming coat, always, however, within the limits set, in order to saturate with oil the porous plaster.

The inspector or owner can tell readily by the uniformity of the gloss of the priming coat whether all the pores have been satisfied and a specification should be very explicit on this point. For the top coats, the exact amounts of thinners, if any, as required by the paint supplier, should be insisted upon and no tampering whatever allowed, else the finish cannot be held up to the paint supplier.

Specifying what conditions the surface shall be in, to which the paint is to be applied, is, however, the greater part of the story of obtaining a satisfactory long life job.

The writer of specifications is up against the problem here of specifying a thing about which there has been much talk, but little application of analytical thought.

For the present, the best way to define the surface is in terms of the days of drying the surface must have after the water is put into it. This is certainly highly unsatisfactory in that the weather influences this time tremendously.

Here's where a general specification may fall down by being too strict, but a specific one may be written for this particular clause a short time before the paint is to be applied, when full knowledge of the weather and drying conditions, likely to be met with, are at hand. Never paint below forty degrees Fahrenheit (water condenses on wood and plaster rapidly below this temperature), nor on a surface that is too hot for the hand to bear comfortably. The paint dries out or hardens more rapidly than it has been designed for. The terms no laps, no brush marks, or dry spots in the surface, which measure skill in applying paint, are all quantitatively defined by the panels used in the clauses under A, which panels should be amply large, several feet square at a minimum, and kept in a light, clean, dry, airy place for reference.

Specify clean smooth wood or plaster surfaces, if you want them in the finish. Paint films are only about three thousandths of an inch thick, and won't cover up cracks or irregular patches in wood or plaster.

D—How to Describe the Service You Expect from the Painted Surface

The maintenance of the accomplished pleasing and useful effects at their maximum is, of course, essential to the whole success of the paint job. The service wanted of the paint job is fairly well defined under the vehicle specifications, since the vehicle essentially determines the maintenance of both color and elasticity, the loss, of one or the other or both of which, usually finishes the paint service.

The color of flat finishes can be specified as holding essentially as bright as the original exposures wood in offices, hotel rooms, or living rooms, up to a period of one year.

Glosses yellow somewhat in dark, damp places and the amount of this yellowing can only be specifically restricted by reference to a paint to be made up to the color it shall not exceed at the end of a year's time, which paint is to be carefully preserved for comparison.

In this clause of the specification, you will be guided by your findings under clause B dealing with the vehicle, and your best choice may be to say the job shall not yellow or lose tint more than a standard paint sample, as determined by the dark, damp closet test.

There are certain deteriorating influences, for whose effect on the service the paint job renders the contractor has no responsibility. Such things as water leaks, improper stuffing under the window sills, sweating pipes, the use of strong alkaline washing compounds, and the use of very stiff or wire brushes for cleaning, all of which may cause local failures, shall release the contractor from the responsibility for the job at the points where applied, but at no other points.

THE AMERICAN SPECIFICATION INSTITUTE

Member of The American Society for Testing Materials

19 South LaSalle Street, Chicago, Illinois

THE Board of Governors represent memberships in the following national societies: American Institute of Architects; American Society of Civil Engineers; American Society of Mechanical Engineers; American Institute of Electrical Engineers; American Society for Testing Materials; American Concrete Institute; American Iron and Steel Electrical Engineers; indicating the scope and activities of The American Specification Institute.

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

Bulletins

THE work of preparation of bulletins is progressing quite rapidly. A vast amount of informative data for use of the Board of Governors has been accumulated and assistance is being given by some of the members in the assembling of manuscript for discussion. There is a realization that if the members could hear the discussions of the matter in one bulletin, such as the one outlined below, they would have a greater sense of the ultimate value of the tentative specifications.

Members have been requested to send to the Executive Secretary's office suggestions for bulletins on specifications that would be of immediate use to them. With the bulletins now issued as a standard of form every member should be able to assemble the substance of a proposed bulletin in similar form. If this is done there probably will be some agreeable surprise that the standard form really is more flexible than one may suppose from a cursory examination of it. Also suggestions given in such a manner will be of great assistance to the Board of Governors in editing the bulletin for publication. The most earnest co-operation of all members in this respect is requested and the Board of Governors wish to take this opportunity to acknowledge gratefully the assistance that already has been offered by some of the members of the Institute.

Following is given the outline of Bulletin No. 25, which will be distributed shortly:

Tentative Specifications for Steel Breeching

Bulletin No. 25 — Serial No. 94.20

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

I. CONTRACT AND LEGAL

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

II. ECONOMIC

Scope of Contract:

9. Work Included:
10. Work Not Included:

Methods of Analysis and Comparison of Bids:

11. Methods:
12. Basis:
13. Detailed Information:
14. Conditional Payments:

III. GENERAL DESCRIPTIVE

CHARACTERISTICS:

15. Location:

SERVICE CONDITIONS:

16. Railroad Siding:
17. Visiting Site:
18. Working Facilities:

IV. PRELIMINARY PREPARATION

19. Field Measurements:
20. Shop Drawings:
21. Samples:

V. MATERIALS

22. Properties, Chemical and Physical:
23. Sizes, Weights, Gauges:

VI. DESIGN AND CONSTRUCTION

24. Breeching:
25. Damper:
26. Inspection or Clean-out Doors:
27. Expansion Joints:
28. Breeching Supports:
(Note:)
29. Breeching Lining or Covering:
(Note: See A.S.I. Specification.)
30. Shop Work:
31. Connection to Stack:

FIELD WORK:

32. Erecting Forces:
33. Connections:
34. Finish:
35. Co-operation With Other Contractors:
36. Protection of Work:

VII. SCHEDULES

37. Shop Production:
38. Shipment and Delivery:
39. Field Operations:

VIII. RESULTS

40. Inspection and Performance:
41. Guarantee:
42. Tests:
43. Rejection:

Panel for Sixteenth Street Bridge, Pittsburgh, Pa., Warren & Wetmore, Architects
Leo Lentelli, Sculptor

SANTA MARIA DELLI GRAZIA, BRECIA, ITALY

(From the photograph by Atlee B. Ayres)