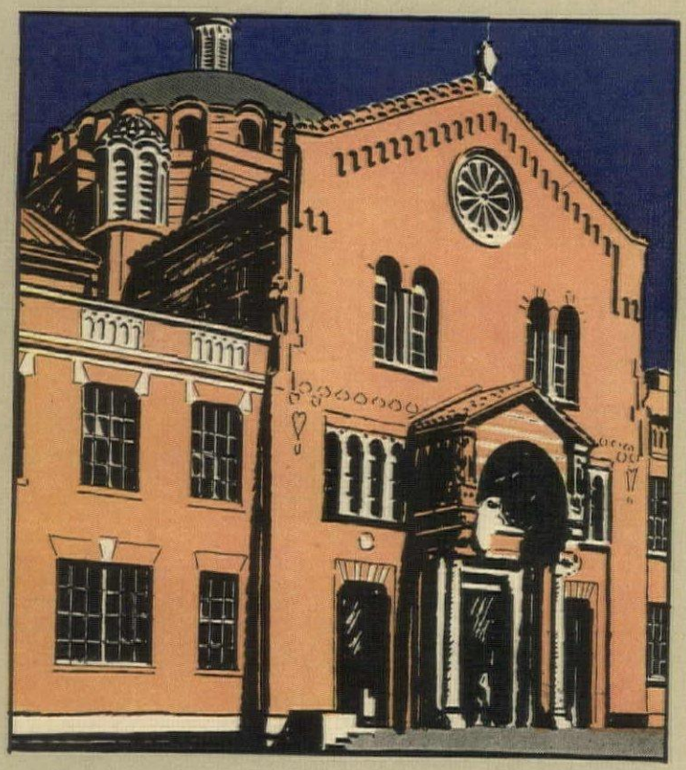
THE ARCHITECTURAL FORUM

IN TWO PARTS



PART ONE
ARCHITECTURAL DESIGN

MARCH
1928

SCHOOL BUILDINGS REFERENCE NUMBER
PRICE $3

Announcing

THE COMMON BRICK SCHOOL BUILDING COMPETITION

for PHOTOGRAPHS *and* PLANS *of* SCHOOL BUILDINGS
Having Exteriors Constructed of Common Brick*

Competition Closes November 6, 1928

PRIZES

This Competition and its Prize Awards are divided into two classes, as follows:

****GRAND PRIZE $500**
for the best building in either class

CLASS A		CLASS B	
FIRST PRIZE	$500	FIRST PRIZE	$500
SECOND PRIZE	250	SECOND PRIZE	250
THIRD PRIZE	100	THIRD PRIZE	100
FOUR HONORABLE MENTIONS	50 EACH	FOUR HONORABLE MENTIONS	50 EACH

*DEFINITION: A common brick, as defined by the Common Brick Manufacturers' Association of America, and for the purposes of this competition, is a solid building unit of burned clay having a natural surface not treated to produce special effects in color or texture of the individual brick but including "clinker," overburned, and "cull" brick. Types of common brick construction and finish admitted in this competition are explained in the following conditions and in the accompanying booklet.

**This grand prize will be awarded by the jury after selecting the first prize winner in each class. It will be awarded in addition to the first prize, making a total prize of $1,000 for the best entry in the entire competition.

THE first and second Common Brick House Competitions, held during 1926 and 1927 developed such widespread interest that architects in all parts of the country submitted photographs and plans of many of the finest common brick dwellings that have been erected in recent years. The response from the architectural profession has definitely proved the popularity and value of these competitions.

These two competitions have for the time being quite thoroughly covered the field of house design. It has been decided to conduct a competition in 1928 which will cover the very interesting field of school building design.

All types of school buildings in which the majority of rooms are used for class-room purposes may be entered in this competition, provided 75 per cent of the exterior walls is surfaced with common brick. Small or large school buildings have an equal chance to win the award in this competition for the prizes have been divided into two classes, as given below, Class "A" calling for buildings of limited volume, and Class "B" permitting the entry of the larger buildings which necessarily offer the architects a broader opportunity for fine treatments of mass and detail than is generally accorded the designer of small structures. A grand prize is offered, which will be awarded to the first prize winner in either class whose entry is judged the finest submitted in the entire competition.

The division of school buildings and prizes into two classes is made on the following basis:

Class A—School buildings having an actual cubic foot volume not exceeding 700,000 cubic feet.

Class B—School buildings having a cubic foot volume in excess of 700,000 cubic feet.

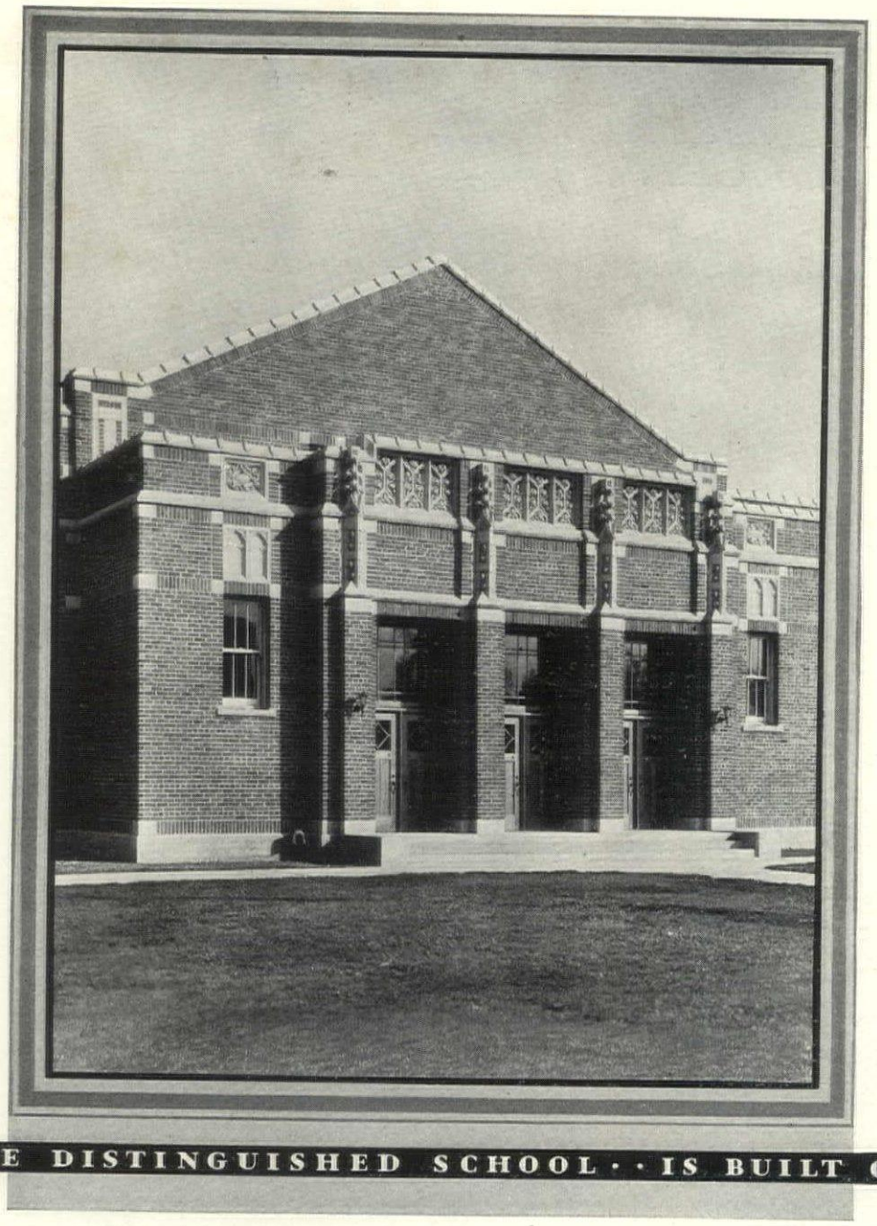
It should be noted that the buildings shall be those used predominantly for class-room purposes, which excludes structures used solely as dormitories, libraries, gymnasia, and other accessory buildings. It would include, however, buildings which may contain these facilities as accessories to space devoted primarily to instruction purposes. The competition is open to public, parochial, and private school buildings and buildings for preparatory schools, colleges and universities, falling within the limitations above defined.

This third Common Brick Competition, like the preceding competitions, is quite simple in its nature, because instead of sketch plans requiring extensive drafting-room work and new creative designing, it calls for photographs and floor plans of school buildings already constructed or which may be completed in time to submit the required entries before the closing date, NOVEMBER 6, 1928. From the point of view of the architect, it should prove to be an interesting type of competition because it requires comparatively little time, the project resolving itself into the simple procedure of obtaining good photographs and submitting them with floor plans and the cubic footage.

Send for Complete Announcement and Program Containing All Conditions of the Competition

This competition closes NOVEMBER 6, 1928 *and is conducted by*

THE COMMON BRICK MANUFACTURERS' ASSOCIATION *of* AMERICA
Guarantee Title Building, Cleveland, Ohio



A·F·B·A USE FACE BRICK —it Pays

These reference books, worthy of any library, have been compiled for your personal use:

"Brickwork in Italy," an attractive and useful volume of 298 pages, especially for the architect, profusely illustrated with 69 line drawings, 300 halftones, and 20 colored plates with a map of modern and XII century Italy. Bound in linen, six dollars postpaid. Half morocco, seven dollars.

"English Precedent for Modern Brickwork," a 100-page book, beautifully illustrated with halftones and measured drawings of Tudor and Georgian types and American adaptations; sent postpaid for two dollars.

"Industrial Buildings and Housing" treats in detail the factory, with examples of architectural beauty. Restaurants, rest rooms and employes' communities come under its scope. Bountifully illustrated. Sent postpaid for two dollars.

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Auditorium Entrance
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THE DISTINGUISHED SCHOOL · · IS BUILT OF FACE BRICK

Schools, standing as declarations of community character, are so generally constructed of Face Brick as to make further suggestion of this material for school construction almost superfluous. That its dignity and distinctive beauty, made possible by an unlimited variety of colors and textures, have given it the place of preference among Architects is evident everywhere. And many of these Architects avail themselves of the service this association and its members are prepared to render. Inquiries concerning Face Brick usage are invited.

FACE BRICK

— requires no paint or whitewash

Volume XLVIII THE ARCHITECTURAL FORUM Number 3
Published Monthly by Rogers & Manson Company, 383 Madison Avenue, New York, N. Y. Yearly Subscription: U. S. A., Insular Possessions and Cuba, $7.00. Canada, $8.00. Foreign Countries in the Postal Union, $9.00. Single copies: Quarterly Reference Numbers, $3.00; Regular Issues, $1.00.
Entered as Second Class Mail Matter at the Post Office, New York, N. Y., under the Act of March 3, 1879.

COMPETITION FOR A TRAVELLING SCHOLARSHIP

Announcement is made this month through the architectural press of a competition open to architects and architectural draftsmen for the award of a scholarship to be known as the

A. W. BROWN TRAVELLING SCHOLARSHIP

a memorial to the late A. W. Brown who was for many years President of Ludowici-Celadon Company and a leader in the manufacture of roofing tile.

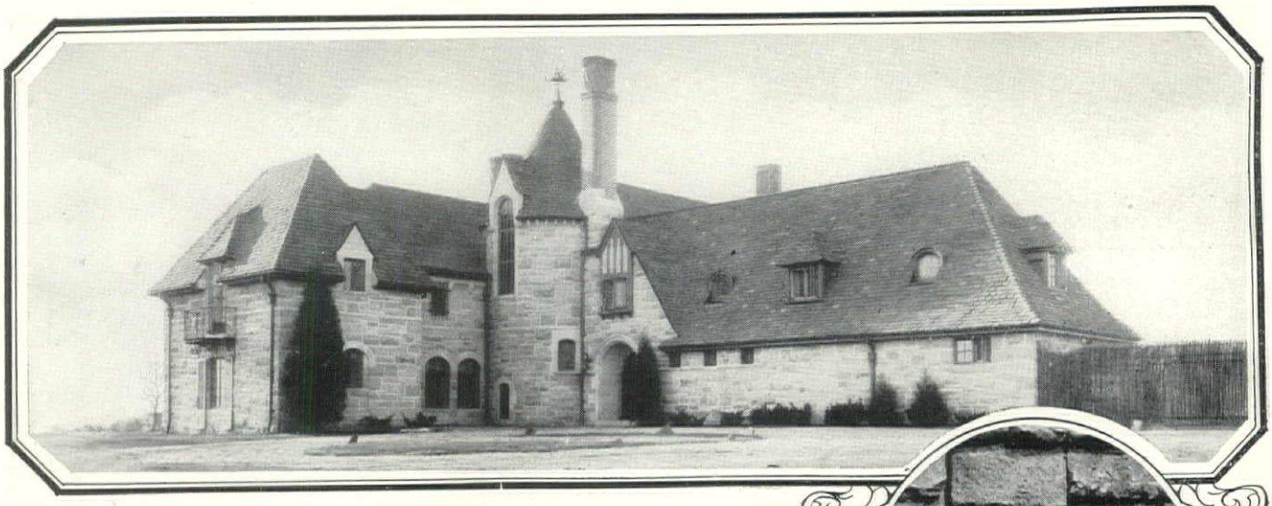
Believing in the importance to the architect of a thorough knowledge of the various materials which go to make up a completed work of architecture, Ludowici-Celadon Company is establishing this scholarship with the hope that it will offer advantages for detailed study of the uses of materials and especially of tile roofs.

The scholarship has been established in consultation with the American Institute of Architects and, through its president, a member of the Committee on Education and a member of the Committee on Allied Arts have been appointed to act with the architectural adviser as a special committee to conduct the competition and to have charge of the scholarship.

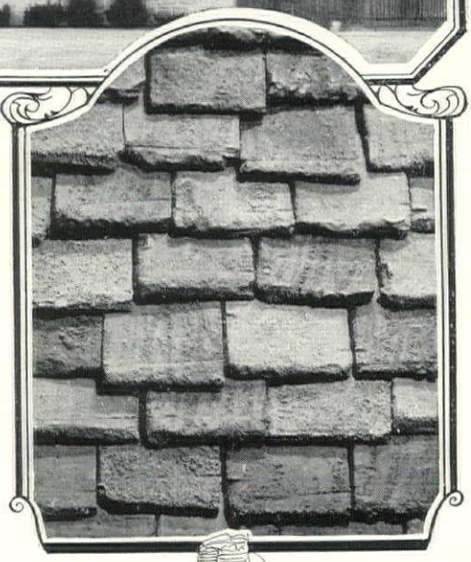
Ludowici-Celadon Company has made an agreement with the American Institute of Architects to provide the funds necessary to conduct the competition for the selection of a worthy and deserving beneficiary and further to pay to them the sum of two thousand dollars to be used in defraying the expenses of the beneficiary during a year of travel and study in Europe.

While there will be no restrictions as to the type of architecture which the holder of the scholarship shall study or the exact places which he shall visit, he will be required to prepare at least two envois consisting of measured drawings of two buildings on which burned clay has been used for roofing. It is hoped, by thus emphasizing in the work of this student the particular craft which the donors represent, that this scholarship will prove a real aid in establishing a better understanding of the use and necessary qualities of burned clay.

Details concerning the competition will be found in the editorial pages of this magazine. All those desiring application blanks should communicate with the secretary of the committee, Wm. Dewey Foster, 10 East 47th Street, New York City.



Heinz "Plymouth" Tiles—on the country home of Mr. and Mrs. Churchill Owens, Denver. Hoyt & Hoyt, Architects.

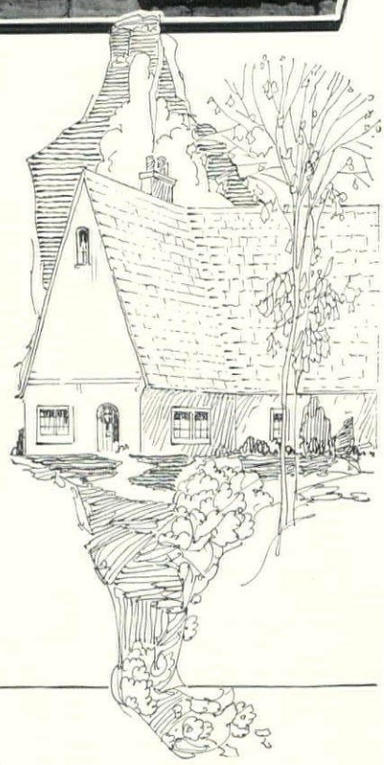


"Aged" Old English Tile

Here is a tile, fresh from the kiln, that faultless artistry has given all the mellow charm of age—the softened, broken lines, the warmth, the soothing tones, the very warp and twist that marks Old England's tile, the gently modulated coloring that comes with generations of exposure to the weather.

Subdued and restful, the delicate nuances of coloring almost escape the eye, and yet, on close inspection a wonderful variety of tints and tones appear—warm hues of burgundy, faint lilacs, dusky purples, grays of bewildering variance, browns, greens, straw yellows, salmon reds—all softly blending as if washed by centuries of gentle rain.

If you desire a roof of authentic aged appearance, as did the architect whose work is shown above, you should by all means see Old English "Plymouth" Tile. Samples will be sent or we can arrange for you to inspect a roof complete. We know you will be impressed with the rare warmth and beauty, the variety and blend of this inimitable Old English "Plymouth" Roof.



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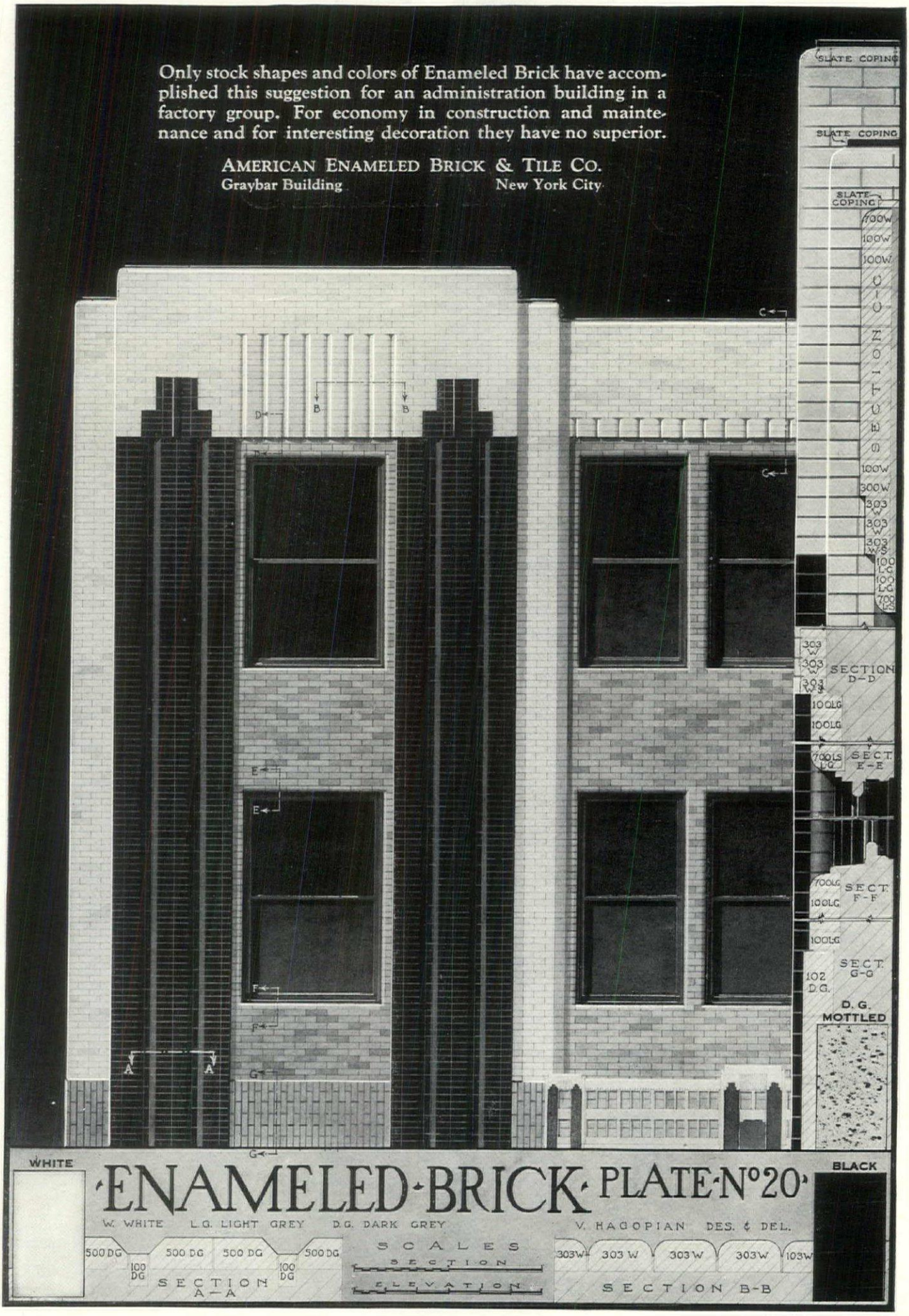
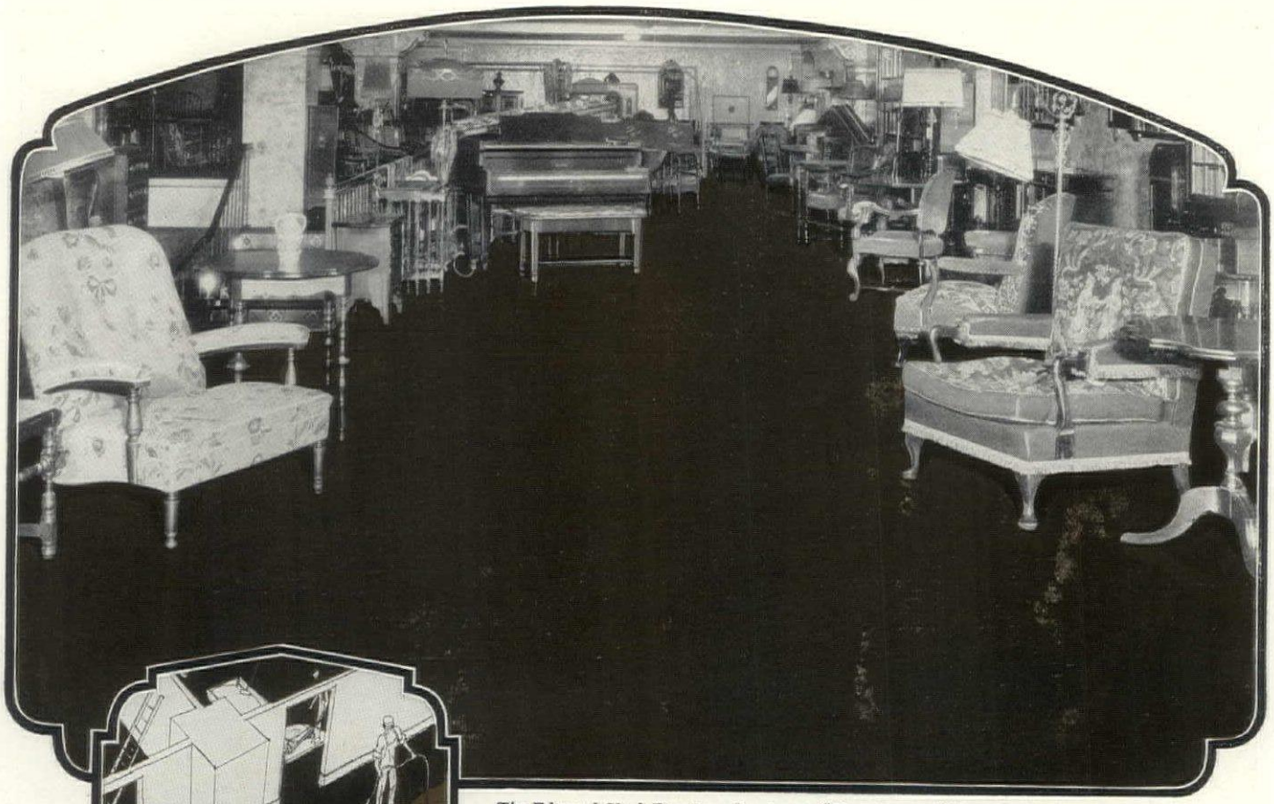
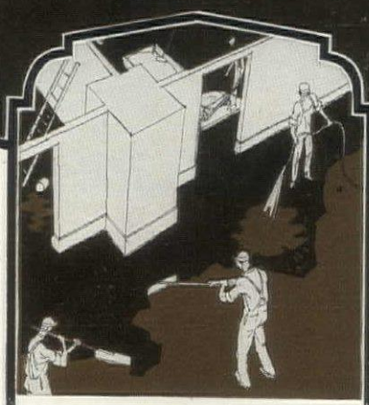


Copies of these plates in folio will be mailed upon request



The Edmund Clark Furniture Company of Detroit, say of these Brown Colormix Floors– "They were selected in place of carpet because they are not dust and moth shelters. Their brown mahogany finish is an ideal background for our furniture."



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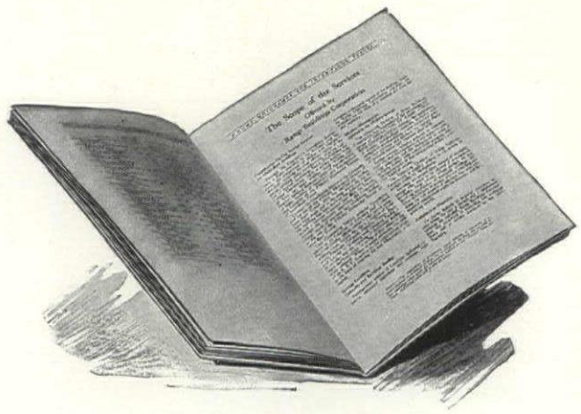

Read paragraph 3 and feel free to consult us on any question about Multi-Floor Garages.

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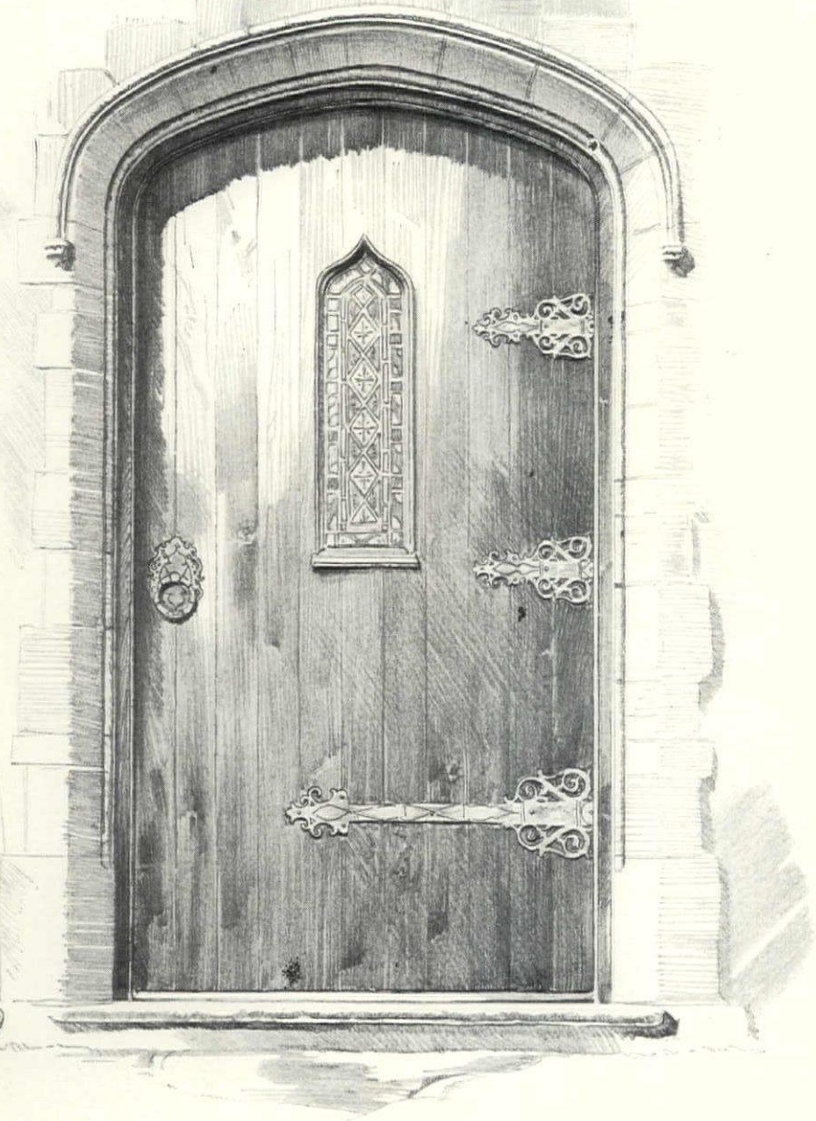

THE strikingly beautiful McKinney hinge straps and handle shown here are representative of the "Alhambra" design, one of a number of McKinney patterns fashioned in Forged Iron.

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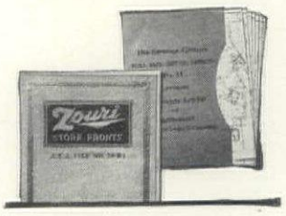

Send for this data book and helpful detail sheets

Written for the practical architect, builder and contractor, this material gives generous plans and diagrams for suggested methods of window and display space. Detailed drawings will prove helpful to specification writers. Valuable to keep on file. Send for your copy.

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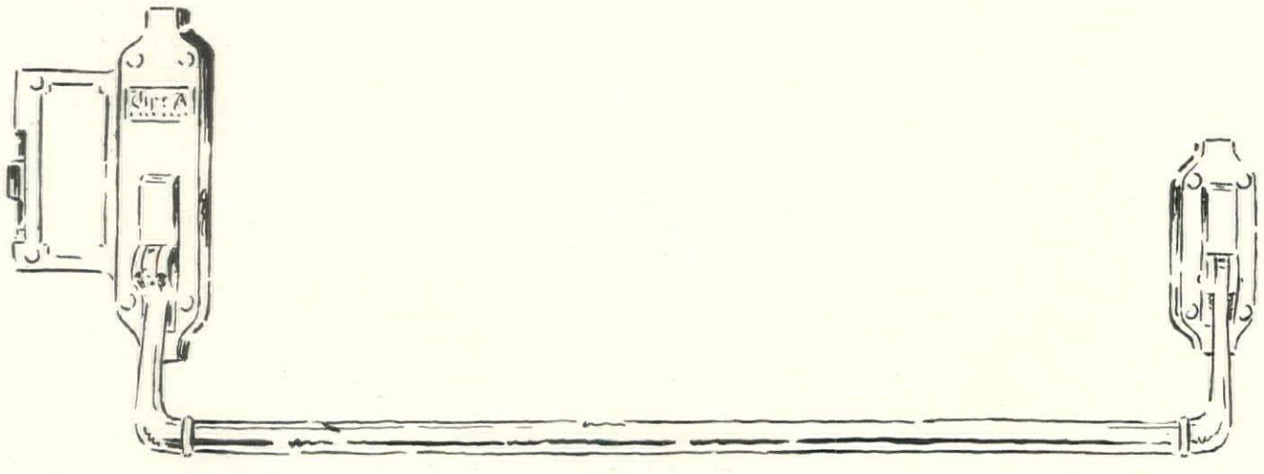

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ARCHITECTURAL EXTRUDED BRONZE

PLATE 2

THESE PLATES ARE DESIGNED TO DEMONSTRATE THE ECONOMIC AS WELL AS THE ARTISTIC POSSIBILITIES OF EXTRUDED BRONZE. NUMERALS REFER TO SECTIONS FOR WHICH DIES ARE AVAILABLE. MANY OTHERS, FROM DESIGNS BY LEADING AMERICAN ARCHITECTS, ARE ILLUSTRATED IN OUR BOOK "ANACONDA" ARCHITECTURAL BRONZE EXTRUDED SHAPES."

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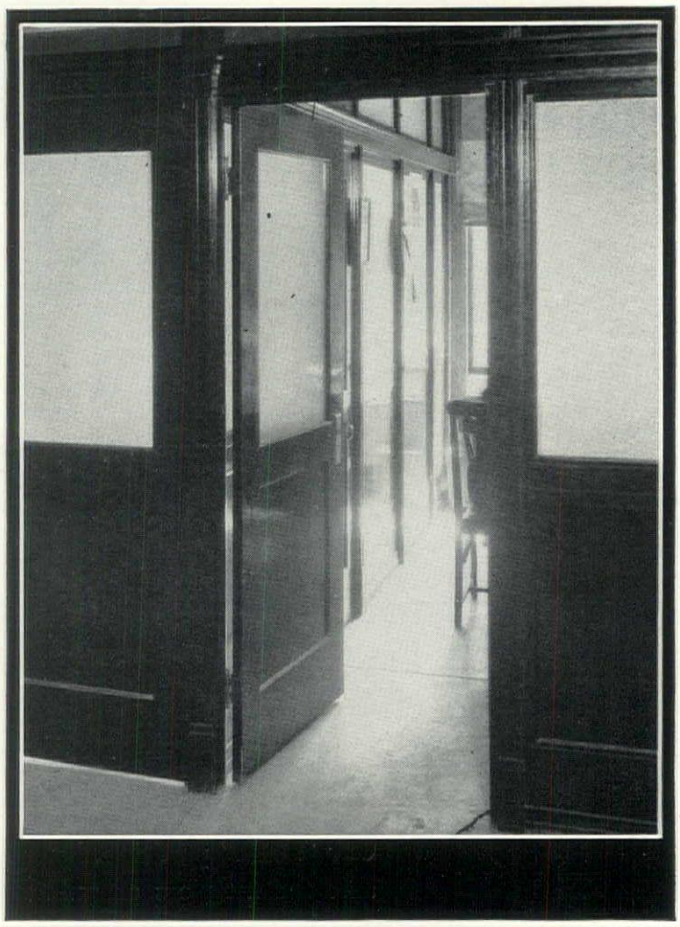

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BOOK DEPARTMENT

THE STAINED GLASS OF CENTRAL EUROPE

GENERAL SHERRILL is an indefatigable glass pilgrim, an intrepid student of stained glass, who haunts the cathedrals of Europe for the sheer joy he finds in studying the parti-colored light that streams through their stained glass windows and in reading the stories written thereon in the universal language of picture. Already he has traversed England, France, Italy and Spain on intensive stained glass tours, each journey recorded in a volume on that land; and now he has completed his quintet of volumes with his "Stained Glass Tours in Germany, Austria and the Rhine Lands."

So thoroughly has he traversed these countries that one pictures him traveling on foot, or, most luxuriously, on bicycle! Surely the railroad and the motor car could not find their sophisticated way to the obscure villages and hamlets whose cathedrals he has included in his route! In fact, it is this very thoroughness which saves his volumes from monotony. The less careful tourist who reads them is continually amazed at the beauty spots he himself must have overlooked, and he might well peruse these "Stained Glass Tours" with pencil in hand to jot down places for future investigation, or to note elements of beauty he failed to discover in those cathedrals he fancied he knew. For instance, in Notre Dame, did he stop to realize that the indescribable purple light which pours in from the north rose window is due to the fine juxtaposition of tiny pieces of red and blue glass?—or was he aware of the constant changes of light with the advance of the sun in its cycle that make the same interior quite different in the afternoon from what it was in the morning? The play of light through color forms a charming study, and the stained glass pilgrim enjoys it as keenly in the interior of a cathedral or castle as when he is among the blossoming trees of the highway.

General Sherrill makes all this clear in his book, for he is a connoisseur of glass. He knows the era to which each piece belongs,—whether to early or late Gothic, to Romanesque or to Renaissance,—and he can identify its nationality; for to him glass *has* nationality. The glass of England, France and Germany all have racial traits on their faces, and color and design that stamp it as the product of a definite country. Along the Rhine and in Austria, he says, "it speaks German with a guttural accent in the deep reds, greens and russet browns that shine through cathedral windows, and in the sturdiness of their design. It is more heavily leaded than in the other countries, and geometrical figures replace the jeweled medallions of the French. The English are preëminent in their skillful use of early *grisaille* (glass without figures or pictures); the French, for their early mosaic medallions and their glorious Renaissance pictures"; but glass workers of no other country, he explains, "can surpass the depth and warmth of tone that shines in the windows of Germany's cathedrals, churches, abbeys and castles." Indeed, it is in Germany, General Sherrill believes, that the glass pilgrim is most richly rewarded. This is because the art of glass reached a higher development there than it did in either France or England. This is due to the fact that this fine art ran uninterrupted by war through five continuous centuries,—the eleventh to the fifteenth. In England and France it was halting; art suffered interruptions by war; in Germany the course ran smoothly, and to a glorious result.

This book records visitations paid to the cathedrals, churches and castles of 97 cities and villages, some of them so tiny and obscure, so off the beaten tourist path, that they are not mentioned in any Baedeker. In fact, this volume is, in one sense, a glorified Baedeker of German and Austrian windows, including those of Alsace, which, he explains were made under German rather than under French influence. Yet to tabulate it as a "Baedeker" is to do the work an injustice. The author calls himself a "glass pilgrim," and this he truly is, but he is also a scholar, diplomat, soldier and artist with it all, which forms a rich background of experience from which to tell his story. Interspersed are bits of travel and personal happenings which make the work of interest to the novice as well as to the advanced student of glass. His tour was made in three different periods, all within ten years. Begun in 1914, it was interrupted by the war,—resumed in late 1918 with the war over, but Germany still hostile, and finished in 1925 when Germany was once more welcoming American tourists. He claims to be the only student of glass who inspected windows under police surveillance! Detained in Münster by military authorities from August 4 to 12, 1914, he obtained permission from a Prussian major to examine the old glass of the Cathedral of Hanover under the eye of a German military policeman, with whom he was forced to report every day to military headquarters! This proves the degree of enthusiasm in which his glass pilgrimages were made. Later, as adjutant general of the American forces overseas, he made his own tours in the Rhine Lands, always concentrating on the glass rather than on the fine architecture of the buildings he visited. The volume is illustrated with 18 photographic reproductions.

STAINED GLASS TOURS IN GERMANY, AUSTRIA AND THE RHINE LANDS. By Charles Hitchcock Sherrill. 304 pp., 5½ x 8½ ins. Price $4. Dodd, Mead & Co.

NEW TRAILS IN OLD SPAIN. By Vernon Howe Bailey. 313 pp., 5 x 7½ ins. Price $3.50. J. H. Sears & Co., Inc., New York.

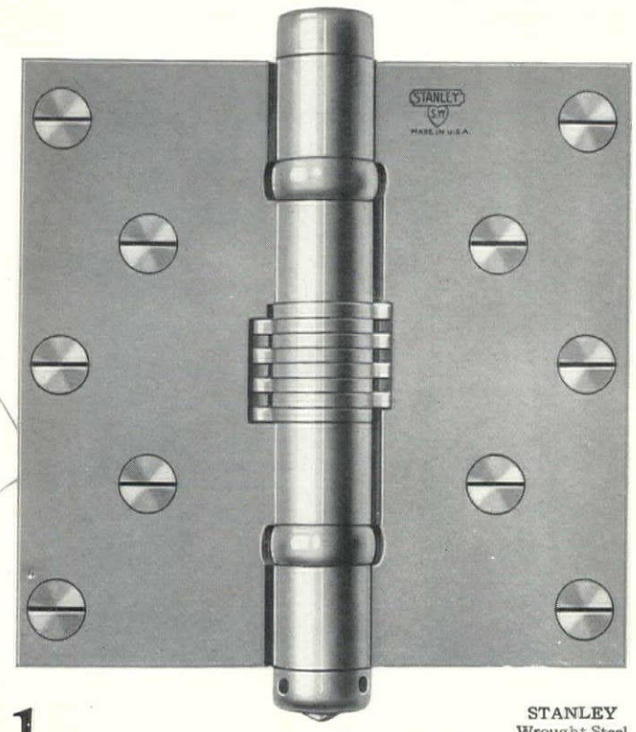
ARCHITECTS, and particularly architects interested primarily in design, may easily learn much from the "travel" books which, particularly since the ending of the World War, have been appearing in large numbers. In these volumes travelers record their experiences and their impressions of the places visited, and sometimes they bring to popular attention corners of the world not often explored. These volumes are more than ever interesting when the traveler is also an artist, and when he records in his sketchbook his impressions of the old towns to which he journeys, sketches which suggest as the printed page can never do, the actuality of what exists. This is what Mr. Bailey has done. His pages of text are illustrated by the spirited sketches, of the kind for which he is well known, and both text and sketches have a high value, and particularly for architects.

THE WALNUT COLLECTOR. By Mac Iver Percival. 294 pp., 5⅛ x 7¾ ins. Price $3. Dodd, Mead & Company, New York.

IT is the intention of the writer of "The Walnut Collector" to give the reader a comprehensive knowledge of the characteristics of walnut furniture made in England between 1660 and 1730, so that the collector may be armed with definite information when he buys from a dealer or explores out of the way haunts. This the author does in elaborate detail, first giving a general picture of the times,—how oak furniture was used by the more primitive people, while the new mode of living for the educated classes required walnut. Later chapters take up each piece of furniture in its development, and point out its distinguishing features. Up to the beginning of the walnut period, the usual method of joining the parts of furniture was with mortise and tenon. During the latter half of the seventeenth century, this method was almost entirely abandoned for court furniture, and the "dove-tail" joint come into use. Glue was used to attach veneer, and strength was obtained by a close fitting of balanced parts rather than by massiveness, as it formerly was. In about 30 years more advance was made in the shaping of legs and stretchers than in the previous two centuries. Stretchers were in use until about 1700. The French leg or inverted cup turning came into vogue about 1690. With the exception of introducing use of springs and seats, there has been no great inprovement in the comfort or convenience of furniture during the last 230 years.

Walnut is an ideal wood for chair making. Many interesting chairs were designed, the Charles II with the caned backs, the William and Mary, and the small Queen Anne chair with the cabriole leg. Tapestry coverings were popular during all that time. Black chairs, chairs of painted woods, and those of ebony veneer are interesting examples that can often be picked up easily, due to their being unfamiliar to the smaller dealers. All day-beds are rare. The usual type of the seventeenth century day-bed is a long, narrow couch, with a caned seat, having a supported back at one end. This is frequently arranged as a movable panel, adjustable to the convenience of the user. The ornament and construction are quite similar to those of chairs and stools of the time, and without doubt day-beds were designed to be used "en suite" with chairs and stools to match. The "drop-in" seat settee was introduced late in Queen Anne's reign; both back and legs on the best of these are beautiful examples of the chair-maker's art. The frames, while following the general lines of two armchairs side by side, sometimes have only four legs; six however, are more common, and there are a few three-back settees having eight legs. Stools were used by women who by reason of their rank were entitled to sit in the presence of royalty. During the walnut period, they were mainly in the nature of survivals, being made in most instances for great houses or royal palaces, and they were generally of fine workmanship. Genuine old stools are rare and in great demand, and the prices are higher than for chairs. It is no wonder that so many stools are copied by those specializing in antique models. The buyer should exercise caution.

The canopy bed was popular among the richer classes and was hung with magnificently embroidered silk, linen or chintz. Chintz, while not as expensive as silk, was very popular and was considered suitable for the "best



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beds," not counting the "state beds." Queen Mary held this fabric in high esteem. There were also beds with no canopies but with ornamental head pieces. Among tables, one finds many of marquetry,—card tables, a few of the "gate leg" type, and candle stands. Before 1725 dining room tables were of oak. There were comparatively few independent cupboards. Book cases and china cabinets were rare; china was generally kept in recesses in walls. Mirrors were very fashionable, but scarce and expensive. Toilet mirrors frequently came "en suite" with the toilet articles, or matched tables and *gueridons*. Marquetry-framed mirrors came in the reign of Charles II, and were important features in the decoration of a room. Glass-framed mirrors were much admired. Some of the mirrors may have been of English workmanship, but the greater number were imported from Venice. The seventeenth century saw an enormous increase in use of time pieces. The long case clocks were all very much alike, a straight-sided, tall, narrow body, mounted on a base, with a head almost invariably rectangular, with the dial flanked by a pillar on each side. Small clocks, except in size, followed the pattern of the larger. Walnut chests of drawers survive in large numbers in almost every form,—bureaus, single, double and cabinet chests, "baby" and "giant" chests. At the present day, chests can be bought more easily than other pieces of walnut.

There are several types of desks,—the cabinet with the flap; the chest with a pull-out drawer for writing; the sloping top bureau, sometimes with secret drawers in the recesses; and the "knee hole" writing desk. The general arrangement and proportions of these cabinet bureaus differed very little throughout the period. A chapter devoted to brasses gives examples of the pear-drop handle, of ornate escutcheons, and practical advice on original and reproduction hardware. In concluding, the author discusses the preservation and care of walnut furniture, giving a formula for furniture polish along with much useful information and advice on the problems that confront the average collector. He also tells of his own interesting experiences in hunting for furniture. There are short paragraphs on the more important furniture designers and clock makers, and an excellent and useful glossary explains the terms used in the book.

INTERIOR ARCHITECTURE; THE DESIGN OF INTERIORS OF MODERN AMERICAN HOUSES. By R. W. Sexton, with Foreword by Charles A. Platt. 114 pp., 9¼ x 12½ ins. Price $7.50 Net. Architectural Book Publishing Co., Inc., New York.

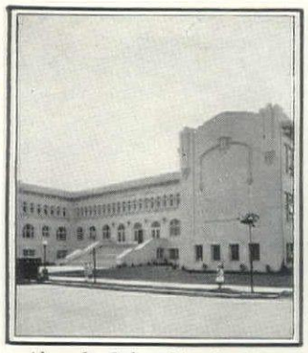
CURRENT publications which deal with architecture, decoration, furnishing and like subjects supply a rich and varied record of the standards which just now obtain in those spheres of effort, and the importance of their illustrations gives them a value sufficiently great to cause regret that their preservation in some other form is not more frequently attempted. It is a cause for satisfaction, therefore, when there appears a volume made up largely of illustrations which have already seen the light of print in some periodical, accompanied, now that they appear in volume form, by text dealing with the subjects which the cuts illustrate. Such is the present volume, devoted to illustrations of American interiors, entirely of residences, and presumably of those of moderate size and cost. The text which accompanies them deals with topics likely to interest architects and particularly valuable to decorators, in addition to being useful to home owners.

THE ESSENCE OF ARCHITECTURE. By William Roger Greeley. 119 pp., 6 x 9 ins. Price $2.50. D. Van Nostrand Company, Inc., New York.

THOSE whose sphere of effort lies within the province of any field of art are often likely to miss something of the message which the art should convey,—to lose, in a sense, vision of the forest because the view is shut off by the trees close at hand. Particularly is this true when one is an architect, absorbed by matters of designing and questions of actual construction, the demands of clients and the intricacies of dealing with contractors and builders. Only when the routine of the office is out of mind and when there comes an opportunity for obtaining a proper view of the forest, do the mystery and beauty and the splendor of its verdure become evident and visible. Only then can they be enjoyed.

These interesting essays or chapters upon different phases of architecture are probably the fruit of interludes in the work of a busy architect. They prove that exercise of the critical faculty is by no means confined to the composition of facades or to the drawing of floor plans, nor to details of fenestration or designing interior woodwork, but that this faculty is perhaps even more properly and effectually exercised when it is devoted to emphasizing or underscoring certain passages in the message which architecture is quite ready to convey to those who have but the patience to give heed. Many of these passages have been emphasized again and again, but just as the Gospels have provided texts for discourses for 20 centuries and are not yet exhausted, so the teachings of architecture still provide matter for teaching when one starts out to present architecture's message in terms which are fresh and new, which the world really needs.

This is what Mr. Greeley has done. Much writing on architecture fails of fulfilling its mission, or else falls short somehow of complete success, because of vague or perhaps indefinite treatment,—much use of metaphors not readily understood and of language which is vague and indefinite, the result being the discouraging of precisely those most in need of enlightenment. Many writers might object to one's demanding the pointing out of the wholly obvious to those who have—or should have—mastered the fundamentals; but unfortunately many people who are quite willing and even anxious to learn are unfamiliar with even the elements of architectural appreciation, and it is necessary to point out the obvious to those not yet able to see—or rather to discern—for themselves. Unless this is done,—and Mr. Greeley does this and far more,—it is merely like preaching to the already regenerate—to those not in need of the message. There is probably no art more in need of easily understood interpretation. Because this has been to so great an extent lacking, the enjoyment or even the understanding of architecture is still a sealed book to many. The headings of some of the 14 chapters indicate the scope of the work and suggest the definite terms in which the subject matter is treated:—The Arts; The Fine Arts; Architecture; Elements in Architectural Composition; The Background; The Purpose; The Medium; Architectural Personality; Unity; Balance; Emphasis; Proportion, etc. The work might well be studied by anyone interested in obtaining knowledge of what architecture really is, and its teachings are well worth the attention of even the advanced student. Most fortunate has been the selection of the illustrations which explain and elucidate the text pages.



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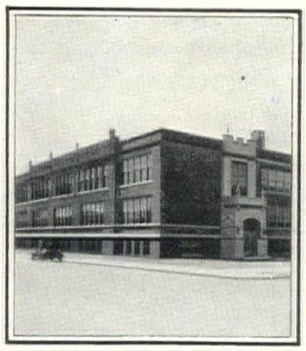
Detroit, Mich.—Central High School



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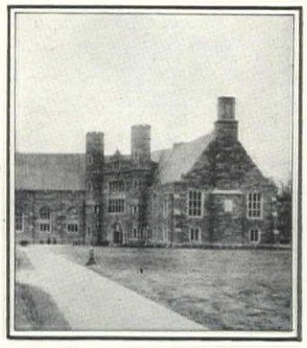
Huntington Beach, Cal. — Union High School



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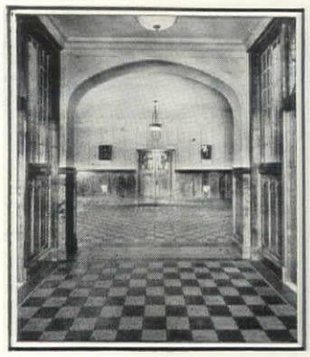

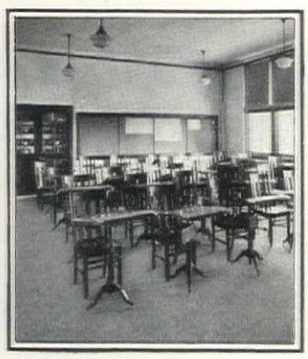

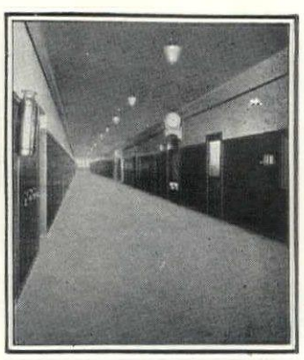

OLD HOUSES OF NEW ENGLAND. By Knowlton Mixer. 346 pp., 5½ x 8 ins. Price $5. The Macmillan Company, New York.

THE student of domestic architecture finds that certain of the old buildings of New England derive their characteristics from far back in English architectural tradition. True it is that many of the later buildings reflect all the changes that the fluctuations of custom and fashion brought to England during the Queen Anne period and the Georgian era, but the older houses of the colonists were closely akin to the homes they had left behind in England,—not of stone, to be sure, and not often even of brick, but wrought of the materials easily and quickly to be had in the new land, materials which beneficent Nature had placed at their convenient disposal.

There are, of course, countless works on the old buildings of New England, and yet each of the many possesses certain qualities which render it valuable. In this particular volume the quality might be said to be primarily architectural, for the author has dwelt not so much upon the historical side of these old houses nor even upon the social life for which so many formed the setting as upon their architectural charm,—the charm inherent in rigid simplicity, huge and cavernous fireplaces, brick ovens, rough-hewn beams, and "overhanging" upper stories, or the later and more refined and sophisticated charm which is given by paneling, traceried transoms, and delicate woodwork and stairways. One element of the volume's value to the architect lies in its illustrating old homes in many parts of New England, for the old houses at Duxbury or Ipswich differed considerably from those around New Haven, New London or Providence. The illustrating of these varied types side by side presents an opportunity of studying the different types or versions of what is broadly known as "New England Colonial," and the study is likely to induce in the work of discriminating architects a careful adherence to type which gives to the style an added charm and a new and stronger interest. The work possesses a high value for architects.

HOW TO KNOW JAPANESE COLOR PRINTS. By Anna Freeborn Priestly. 78 pp., 7 x 10 ins. Price $5 Net. Doubleday, Page & Co., Garden City and New York.

STUDY of Japanese color prints is one of those subjects which beguile and lead one into interest unawares. Long scorned by the upper classes of Japan, the color print was beloved by the masses of the common people; it was indeed a "popular art," a "mirror of the floating world," and in the print there were portrayed the happenings of the day,—the life of the crowded city streets, or in some of the most beautiful prints, the mystery of gorges or mountains under snow. In common with the rest of the discriminating world, the Japanese now value these characteristic expressions of their national art, and they are buying back, often at high prices, the prints which a few years ago they parted with for a song.

This work seems likely to widen if not to greatly deepen interest in Japanese color prints. The author in preparing her text seems to have leaned rather heavily on Mr. Fenollosa and Mr. Ficke, though possibly there is little which could be added to the knowledge which the researches of these writers have made possible. One useful detail is the inclusion of a glossary, defining terms used.

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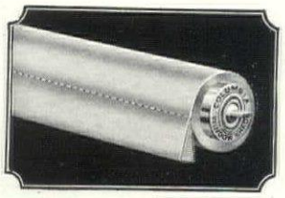

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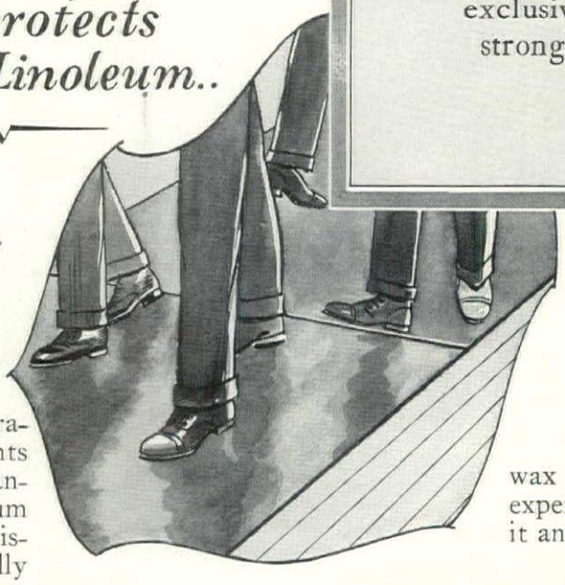

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PART TWO—ENGINEERING AND BUSINESS

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THE EDITOR'S FORUM

A NEW TRAVELING SCHOLARSHIP

ANNOUNCEMENT is made of a competition for the selection of a beneficiary for the A. W. Brown Traveling Scholarship, this competition to be held under the direction of a committee of the American Institute of Architects. Programs will be mailed to approved applicants about March 19, drawings to be delivered on May 7, 1928. This scholarship is the gift of the Ludowici-Celadon Company and is a memorial to the late A. W. Brown, who was for many years the president of that company and a leader in the manufacture of roofing tile. The value of the scholarship is $2,000, to be used toward defraying the expenses of a year of travel and study in Europe by a worthy and deserving architect or architectural draftsman. Traveling expenses between the winner's place of residence and the port of New York will be paid in addition to this amount. An award of $250 will be made to the competitor whose design is placed second.

Under the terms of the gift, the selection of the beneficiary of this scholarship is to be made by means of a competition to be held under the direction of a committee, the drawings to be judged by a jury of from three to five practicing architects chosen by that committee. The general requirements of the problem given for the competition shall be similar to those of the Class A problems issued by the Beaux Arts Institute of Design, but the jury shall give due consideration to the personal qualifications of the competitors as well as to the excellence of the designs submitted in the competition. It is further stipulated by the donors that the competition shall be open to any architect or architectural draftsman who is a citizen and resident of the United States, who has never been the beneficiary of any other European scholarship, who has passed his 22nd but not his 32nd birthday on May 1, 1928, and who has been in active practice or employed in the offices of practicing architects for at least six years, or if a graduate of an architectural school has had two years since graduation. The beneficiary will be required to complete, during his European study, at least two *envois*, which shall consist of measured drawings of buildings on which burnt clay has been used for roofing. Other than this there will be no restrictions as to the type of architecture that shall be studied or the type of work that shall be done, except as the committee may deem it necessary to advise from time to time in order that the intention of the establishment of the scholarship may be realized. Those wishing to compete should secure application blanks from William Dewey Foster, at 10 East 47th Street, New York.

A GUY LOWELL SCHOLARSHIP

IN memory of the late Guy Lowell there has been instituted an annual scholarship of the value of $1000 for the benefit of architectural draftsmen desiring foreign travel and study. The competition is open to draftsmen between the ages of 21 and 29, who are also citizens of the United States, who have had at least three years' experience in architects' offices, and who have not been beneficiaries of other traveling scholarships. The competition for 1928 is in the nature of a week-end sketch problem to be conducted April 28-29. The program will be given out at the same time throughout the country, and will be issued at five o'clock on a Friday afternoon, the drawing to be completed by nine o'clock the following Monday morning. In each case the work will be conducted under the supervision of an architect, and is to be performed without outside help or criticism, in an attempt to secure work that shall be in every way representative of the individual applicant's own capacity. A jury of award will be appointed by the committee in charge to consider the drawings submitted, and the final award will be made on the basis of the judgment thus rendered. The committee which is governing the competition consists of Edward S. Hewitt, Henry P. Richmond, and William Emerson, chairman, Mr. Richmond being in active charge, at 12 West Street, Boston.

PRINCETON ARCHITECTURAL PRIZES

TWO competitive prizes of $800, in the School of Architecture, Princeton University, are announced. The prizes will be awarded to the winners of a competition in design to be held from May 21 to May 31, 1928. The candidates shall be unmarried male citizens, not less than 21 nor more than 30 years of age on September 1, 1928, and shall have been employed as draftsmen for not less than three years. Applications to compete for the prizes must be filed on or before April 18, 1928.

ROTCH SCHOLARSHIP COMPETITION

PRELIMINARY examinations for the annual Rotch Traveling Scholarship will be held this year on April 2 and 3. The candidate chosen will be awarded the scholarship for a term to be determined by the committee, but not for more than two years. The scholar will receive $2,000 for one year or $3,000 for two. The Boston Society of Architects has yearly offered a prize of $100, which has been awarded to the candidate placed second, on the recommendation of the committee. Further information regarding the details of the scholarship may be had of C. H. Blackall, 31 West Street, Boston.

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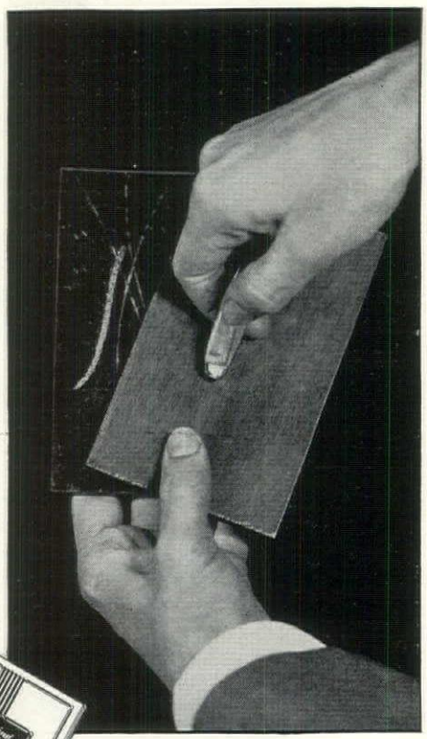

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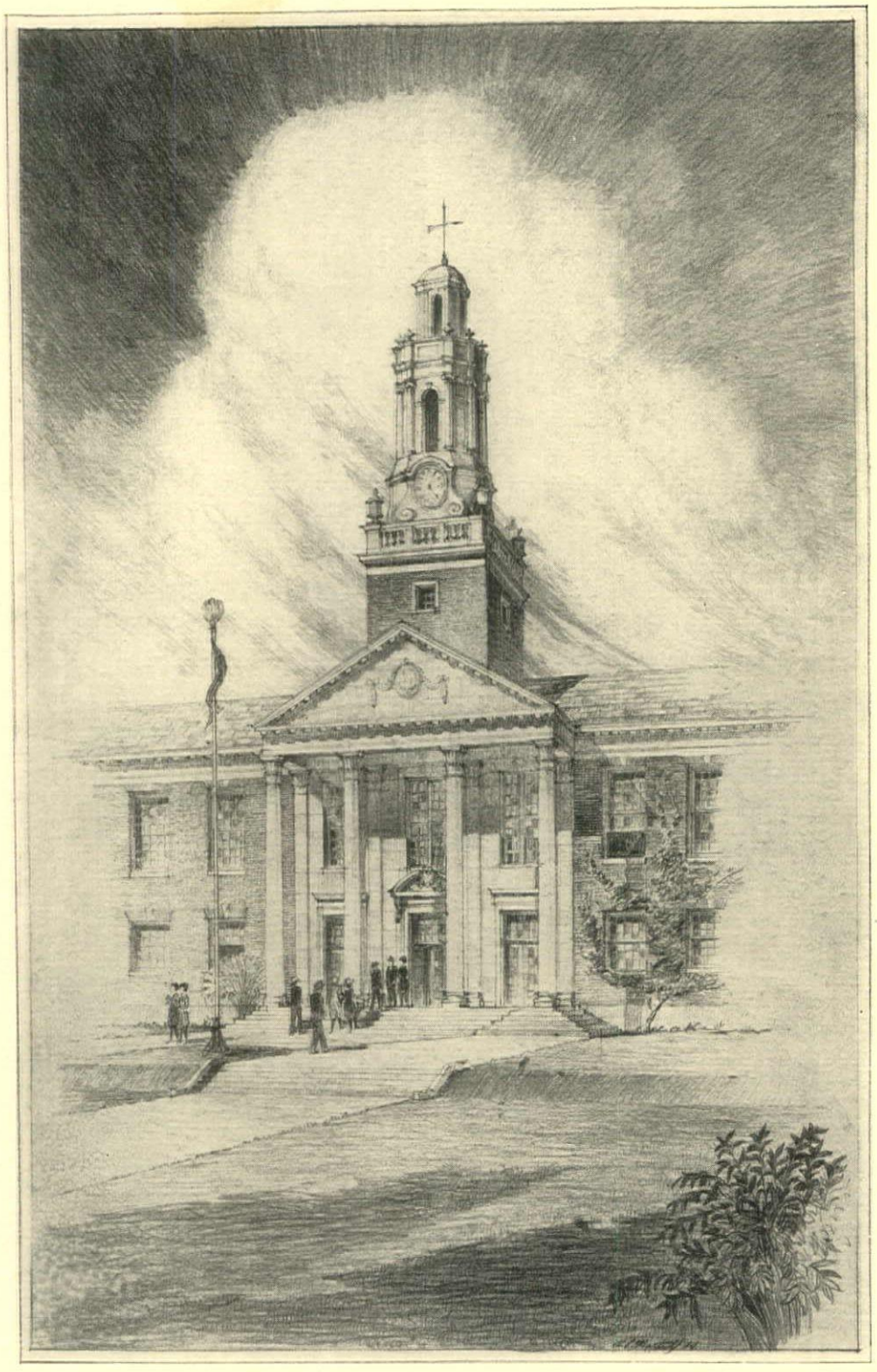
QUARTERLY REFERENCE NUMBERS

IN August, 1922 THE ARCHITECTURAL FORUM published the first of its Quarterly Reference Numbers. Since then 22 of these numbers have appeared, and the first cycle has been completed. The subjects starting with the present issue, devoted in its entirety to Schools, will be repeated, thus bringing the architect up to date on the major developments which have taken place in the intervening six years.

The classes of buildings to be covered are Banks; Country Houses; Hospitals; Industrial Buildings; Hotels; Churches; Shops and Stores; Office Buildings; Apartment Hotels; Golf and Country Clubs; Motion Picture Theaters; Apartment Houses; University Buildings, in two parts; Small Houses; Club and Fraternity Buildings; Memorial Structures; Automotive Buildings; Public Buildings, in two parts; and Libraries and Museums.



ENTRANCE PORTICO AND TOWER
COMPLETE SCHOOL, LONGVIEW, WASH.

WILLIAM B. ITTNER, ARCHITECT

FROM A PENCIL SKETCH BY A. L. MARTSOLL

The Architectural Forum

THE
ARCHITECTURAL
FORUM

VOLUME XLVIII NUMBER THREE

MARCH 1928

FUNDAMENTALS IN PLANNING SCHOOL BUILDINGS

BY
WILLIAM B. ITTNER, ARCHITECT

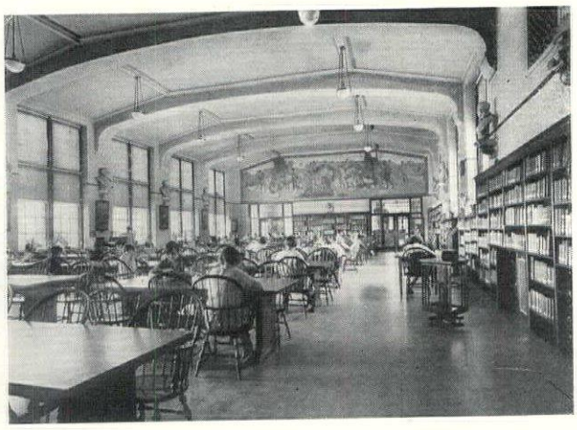
PRESENT-DAY educational objectives,—health, the fundamental operations, citizenship and worthy home membership,—constitute the initial considerations and the all-important fundamentals in present-day school house planning. These objectives have been generally accepted as goals of education, and school communities of the country have reorganized and expanded their curricula in order that these objectives may be brought to realization. Concretely stated, city and town schools are offering physical education and health activities, expanded science courses and social studies, a variety of workshop activities, diversified music and art courses, and many kinds of work that relate directly to home enrichment. Yet, although practically all school communities have expanded their educational programs in line with the comprehensive objectives, no two curricula are alike. Some schools, especially in industrial communities, stress vocational activities; some give far more time and attention to health and physical education than others; some place emphasis on music and art and the formal classroom work.

School building policies, as well as educational programs are variable. In many communities, the tendency toward centralization, viz., the building of larger and fewer schools, prevails; in other words, the policy of combining all grades in one school is dominant. For instance, Gary, Indiana has pursued this complete school plan for the past 20 years. Greenfield, Ohio and Longview, Washington have recently adopted the policy. In most cities and towns, however, there is still much segregation of grades into elementary, junior and senior high schools.

The Test of the School Architect of Today. The real test of an architect's ability to plan schools rests principally on his skill in adapting a building plan to a particular program, so that the building will give 100 per cent educational service. The variation in curricula, in methods of school procedure and in building policies, makes every school building an individual problem. Every building plan is or should be the result of the creative thought of the architect. An attempt to standardize a school building plan is as absurd as an attempt to standardize painting and sculpture. Standards have been developed as guides to safety, lighting, ventilation and sanitation of schools. These are of service to the less experienced architect. To the master school house planner, however, the mechanical elements are incorporated in the plan almost unconsciously. He knows them so well that they are really in the background of his thought, just as proportion, balance and symmetry are automatic with the skilled artist. If a school building plan is successful in meeting the diversified educational program, if the building gives maximum educational service, safety, good lighting and ventilation, economy and beauty should follow as a natural outcome. On the other hand, a building may conform to every rule for the mechanical elements and be a failure as an adaptation to the educational program.

The School Architect and the School Superintendent. A school architect cannot be expected to interpret the curricular offerings and proposed organization of individual schools. He may know in a general way that physical education, the fundamental operations, shop work, music and art are offered. He may know that auditorium work for special groups is desired. But he doesn't know how classes are to be grouped for the diversified activities, nor about the time allotments. He must depend on the superintendent and his assistants for the interpretation of the curriculum and operating program. The educationists and the architect together must evolve the extent of health and recreational quarters, the number, sizes and correlation of classrooms, laboratories, shops, home economics quarters, auditoriums, music and art rooms. Following this preliminary study, the building becomes almost entirely the architect's responsibility. His chief problem consists of weaving all the requirements into an ensemble plan that will function educationally and at the same time stand as an engineering and architectural success.

Important Considerations in Plan Development. There are several elements that must be considered in developing a school plan from a list of educational requirements. The first of these is climate. The general type of plan, height of building, lighting and ventilation, size of health quarters and kind of building materials are all affected by climate. In the South and in California, for instance, the plan should be



Exterior View and Library, Complete School Group, Greenfield, O.
William B. Ittner, Architect

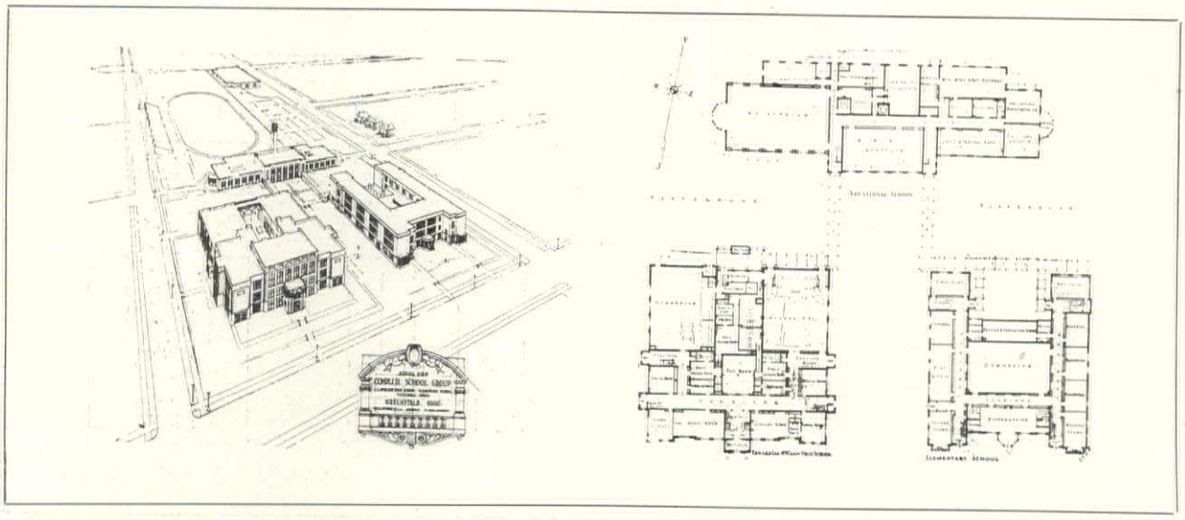
as open as possible. The building may be one or two stories in height; less window area will be required, and window ventilation may suffice for the entire school year. The health quarters may be minimized, due to the all-year-round out-of-door play. Construction, although durable and fire-resistive, may be lighter. The architecture should exhibit the influence of the traditions of that part of our country. In the Middle West, North and East, school building plans are of a more compact type. As a rule, they cannot be spread out as much as in the warmer climates, owing to the long runs of heating pipes and to the large areas of exposed wall surface. The buildings are usually two or three stories in height, the window areas should be greater than in the South, and full indoor health facilities are essential. Window ventilation, except occasionally, is not practical. The most efficient type of heating and ventilating apparatus becomes a requirement. Construction must be heavier, brick being the preferred material. The architecture in most cases becomes an adaptation of Colonial, Tudor or Georgian.

Site conditions constitute a second important consideration in planning of schools. A restricted site calls for a closely knit plan and additional height. These plan requirements bring about diverse problems in safety, lighting and ventilation aside from the problem of the varied educational quarters. Frequently the site is of sufficient size for an "open plan," two-story building, but it may have peculiarities of grades and an abrupt slope. Such a situation will present an entirely new problem of planning for educational service in addition to the mechanical and architectural features of the building. A consideration which architects are altogether too likely to overlook or neglect is that of plan elasticity and possibilities of expansion. School buildings today are fire-resistive and durable. Most of them will stand the test of a century. Educational thought and practice, however, are constantly changing, and enrollments will increase from year to year. Possibilities for expansion and alterations should be inherent in every original school building plan. Wherever possible within the building, units should be planned so that they can be enlarged or decreased in size. The locations of supporting walls, the arrangement of the classroom units and the grouping of special rooms all have an important bearing on the matter of elasticity of building plan.

Classification of American Schools. American public schools are classified generally as rural, elementary and secondary. There are variations of these. The rural school may be a one-room school or a consolidated school, serving several rural districts. The elementary schools include the first six, the first seven or the first eight grades and kindergarten. Secondary schools include four or six upper grades. If the latter, they are designated as junior-senior schools. There are also secondary schools known as technical high schools and vocational high schools. In several of our largest cities, high schools have been segregated into separate buildings for boys and girls.

The Rural School. The ideal rural school situation is represented by the centralized complete school at Greenfield, Ohio (page 306). Greenfield has a population of about 6,000. It is surrounded by a rich agricultural country. The one complete school, centrally located and with playground immediately adjacent, serves not only the children of the town but the children from 17 rural districts. At this school the children may enjoy an enriched education in a beautiful environment, under the influence of a high type of teacher, and still live in the country and enjoy God's great out-of-doors. Greenfield has set an example which may well be followed by the small towns of our country. The three-building school group at Greenfield serves a district of approximately 100 square miles in extent and has accommodations for 2,200 students from the kindergarten through the high school. The school population is now 1,800. One thousand, two hundred of these students belong to Greenfield; the remaining 600 are transported from the 17 adjacent rural districts in motor buses. There is thus a leeway for growth of 400 students.

For its program of health the schools include:



Perspective and Plan, Complete School Group, Greenfield, O.
William B. Ittner, Architect

1. A high school gymnasium (65 x 90 feet) provided with seating capacity for 1,000 spectators, locker and shower rooms and accessory rooms for home and visiting teams.

2. An elementary school gymnasium (52 x 80 feet) for grades three, four, five and six and a playroom for the youngest children in grades one and two.

3. Two tile-paved, open-air gymnasiums, each 90 x 60 feet, and an athletic field with provisions for all major out-of-door sports,—football, baseball, track and tennis.

4. A swimming pool (32 x 75 feet),—the largest ever installed in a public school building,—equipped with ultra-violet ray process for water purification. The pool room expands into a sun parlor at one end, and provisions have been arranged for 800 spectators. A laundry and a full complement of lockers and showers make up the accessories.

5. A home hygiene room and adjacent clinic for examination, first aid, and for instruction in cleanliness, sanitation and home nursing.

6. A cafeteria seating 250 at a time, for those who remain at the school all day.

The accompanying plans illustrate the arrangement of the facilities for the fundamental operations:

1. In the elementary school, the kindergarten, which is a double unit (22 x 50 feet).

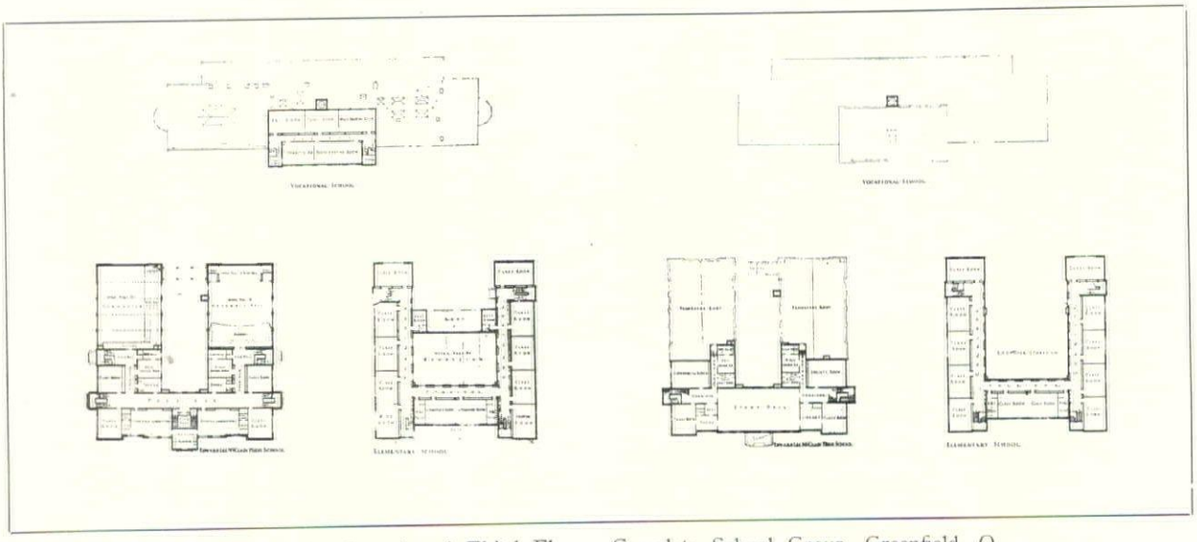
2. Eighteen classrooms, each with dimensions 22 x 32 feet. Owing to the organization of the elementary school on the work-study-play plan, only half the usual number of classrooms are required.

3. The ten classrooms in the high school are varied in size, owing to the variation in size of classes.

4. There are two libraries, a small room accommodating 70 pupils at a time in the elementary school, and a large room (42 x 82 feet) in the high school.

The high school library (page 306) is probably unrivaled as a beautiful room for its purpose. The plan, the unusual proportions and the lighting give it charm and an atmosphere of cheerfulness and spaciousness rarely achieved. The walls, a neutral tone, are book-lined on three sides. A number of Caproni casts appear in appropriate settings, and the upper end panels have been embellished by two of Vesper Lincoln George's murals. For the purpose of socializing and integrating the work of the school, two auditoriums are provided,—one for daily auditorium work with small groups is located in the elementary school, and the other, with capacity for 1,000, including a large stage and equipped with motion picture machine, radio outfit and magnificent pipe organ, is located on the main floor of the high school. Two of the three buildings of the Greenfield group,—the high school and the vocational building,—are the gifts of E. L. McClain, citizen-philanthropist of Greenfield. The elementary unit for the first six grades and kindergarten was erected by the board of education. Mr. McClain equipped all three of the schools. His gifts of sites, and athletic field, murals, paintings and sculpture are in addition to the two buildings and equipment. The combined cost of the three buildings without grounds and equipment approximates $950,000, yielding a per-pupil cost of $432, as the school plant will normally accommodate 2,200 students. When consideration is given to the fact that there are schools in the country with $1,000 per pupil costs, not offering the enriched educational opportunities described, the significance of the Greenfield school is apparent.

At Deering, Missouri is an example of consolidation on a small scale. This school is located in a village and serves as the center for the educational and community activities of the district. Although the accommodations of such schools are limited, the quarters may be planned for multiple uses. In the Deering school (page 312) we find a small auditorium which must also serve as the health and cafeteria units, and a limited number of class and special rooms planned and equipped for a variety of uses. The school has a capacity of 360 pupils and was



Plans of the Second and Third Floors, Complete School Group, Greenfield, O.
William B. Ittner, Architect

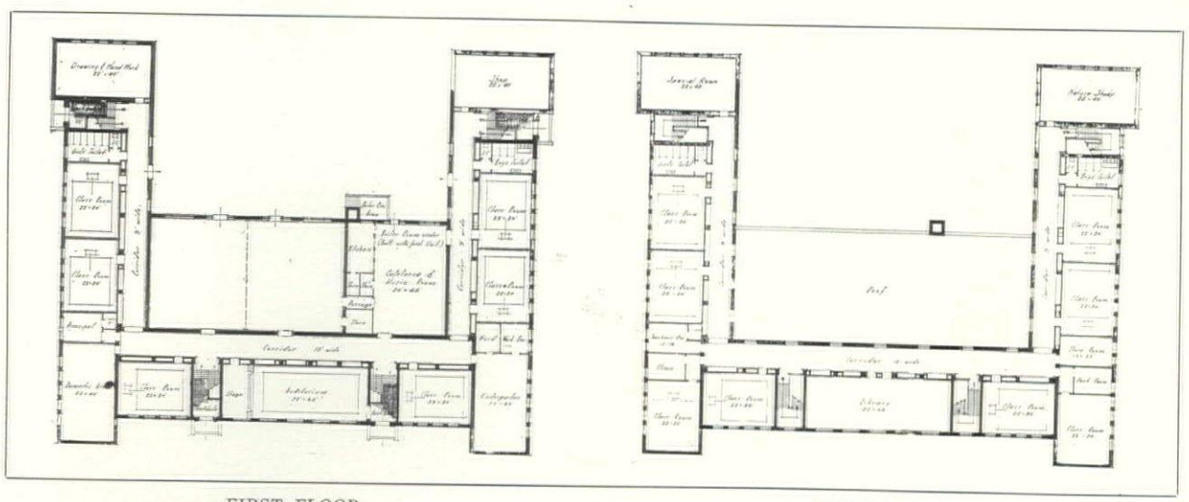
erected at a cost of $58,200 or about $162 per pupil.

The Present-Day Elementary School. The greatest changes in education have probably taken place in the elementary school field. Elementary schools used to be groups of classrooms with perhaps a basement playroom and occasionally a small auditorium which was used only on rare occasions. The buildings were badly planned, improperly lighted, poorly constructed, and most of them were stiff, unattractive, box-like structures. The country owes a debt of gratitude to Dr. William Wirt of Gary, Indiana more than to any other individual for the enriched education the masses of our children are enjoying today. The work-study-play plan evolved by Dr. Wirt has served as the administrative device in making the enriched elementary school financially possible for all school communities. The curricula of elementary schools organized on the work-study-play plan call for health quarters, auditoriums and special rooms for elementary science, handwork and music, in addition to classrooms, but only *half* of the usual number of classrooms are required. A large number of cities and towns of the country have reorganized their elementary schools on the work-study-play or "platoon" plan. The cities include Pittsburgh, Detroit, Dallas, Birmingham, Alabama, St. Paul, Greenfield and Dayton, Ohio. One point about this reorganization is interesting. Although all of these cities have used the same administrative plan as a guide, no two schools are alike. At Birmingham, a typical elementary school plan was developed to serve as a guide for the erection of new schools organized on the work-study-play plan. Yet there were no duplicates. Every school situation presented individual problems of site, pupil enrollments, and variation in curricula and methods.

The typical elementary school plan for Birmingham is interesting. After a survey of building needs, Birmingham re-zoned the school city and adopted the policy of having fewer and larger elementary schools. School units of 1,000 to 1,500 pupils became the basis for the re-districting. Consideration was given to 5-, 10- and 15-year growth. In other words, the school enrollment of a new district at the time of the survey may have been but 500. If the prognostication of growth, however, revealed a school population of 1,000 or more in less than a decade, the typical 1,000-pupil school plan was decided upon for that district although only a section of the building was immediately erected. The typical 1,000-pupil school was planned so that it could be erected in three sections; first the center portion, followed by the wings when enrollments demanded enlargements. The 1,000-pupil school contained a kindergarten, 14 classrooms; a small auditorium; a library; a room for domestic arts, drawing and handwork; nature study and music rooms, and a shop for boys. A playroom was arranged for two classes at a time, and the cafeteria opened upon the playground. The cost of the typical building complete was $225,000, at a per capita cost of $225.

With the traditional plan of organization, about 26 classrooms would have been required for 1,000 pupils. A reference to the plans (page 309) reveals the fact that although only 14 classrooms are provided, the total operating capacity of the special rooms is equivalent to about half the enrollment. This fact demonstrates a working principle of the work-study-play plan by means of a departmental operating schedule which rotates classes from classrooms to special rooms at periodic intervals. Approximately one-half the school is studying in classrooms while the other half is working in the special rooms. Only half the usual number of classrooms therefore are required. It is for this reason that the work-study-play schools can offer children an enriched school life at approximately the same cost as that of the restricted, purely classroom school of the past.

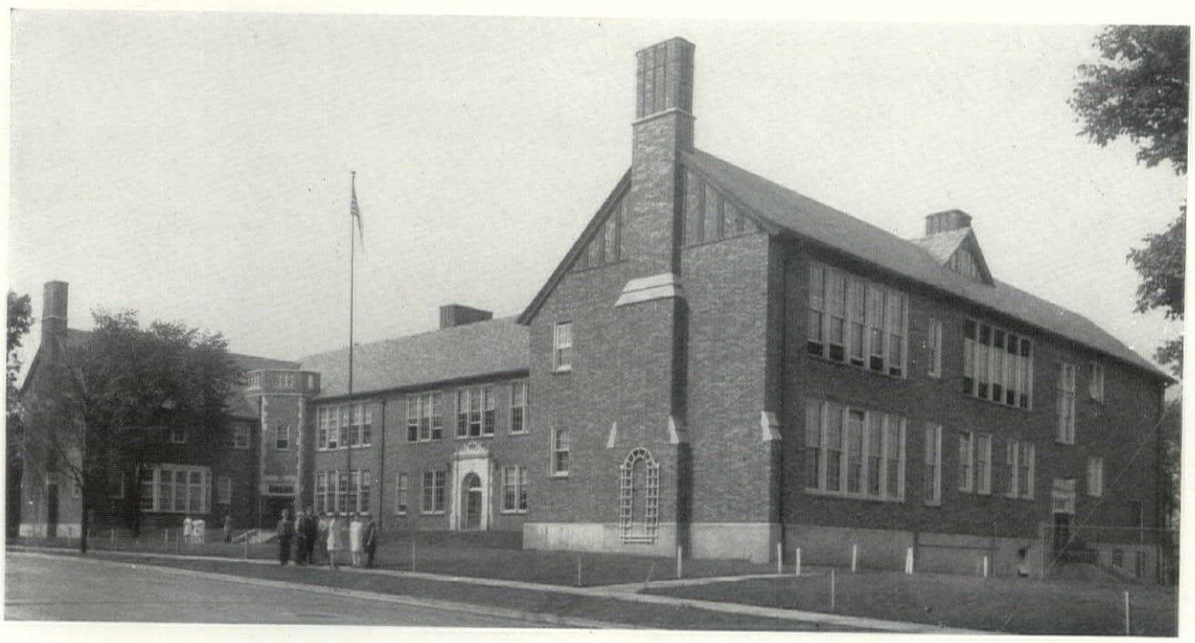
The Goliad School, Galveston (page 310) is an example of the enriched elementary school, organ-



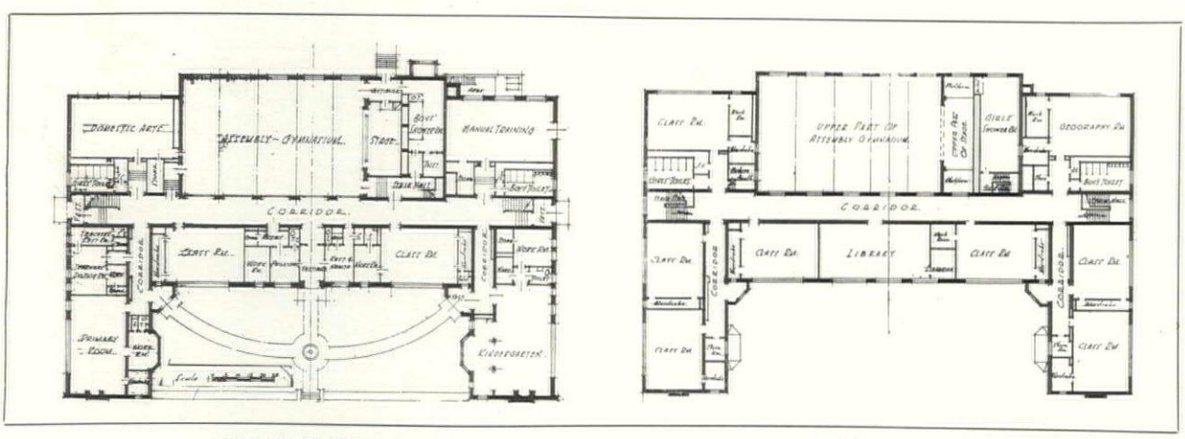
FIRST FLOOR SECOND FLOOR

GRADE SCHOOL, BIRMINGHAM, ALA.

WILLIAM B. ITTNER, CONSULTING ARCHITECT



GENERAL VIEW



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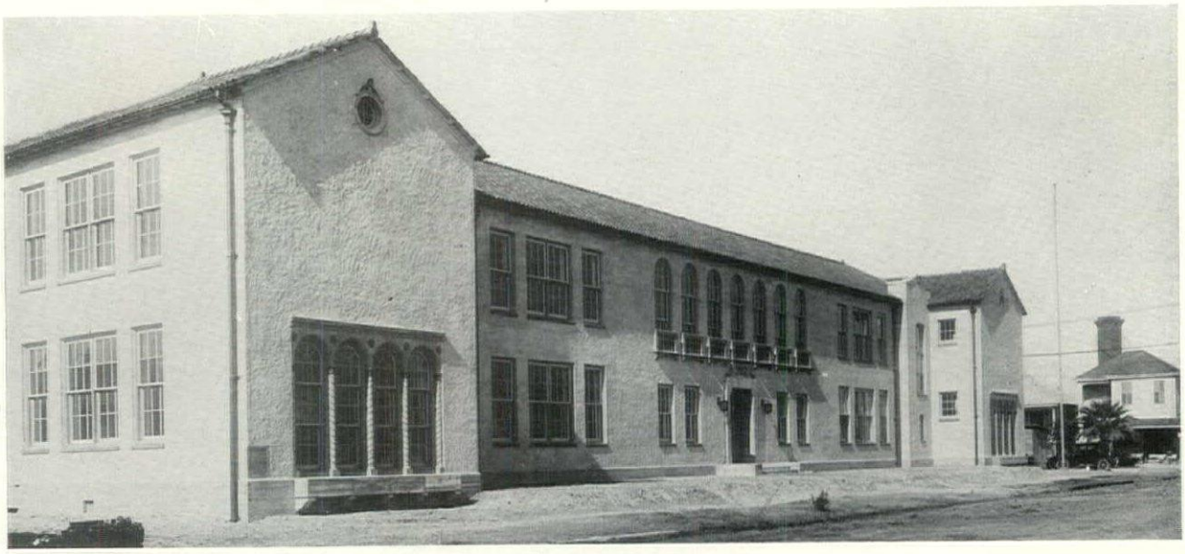
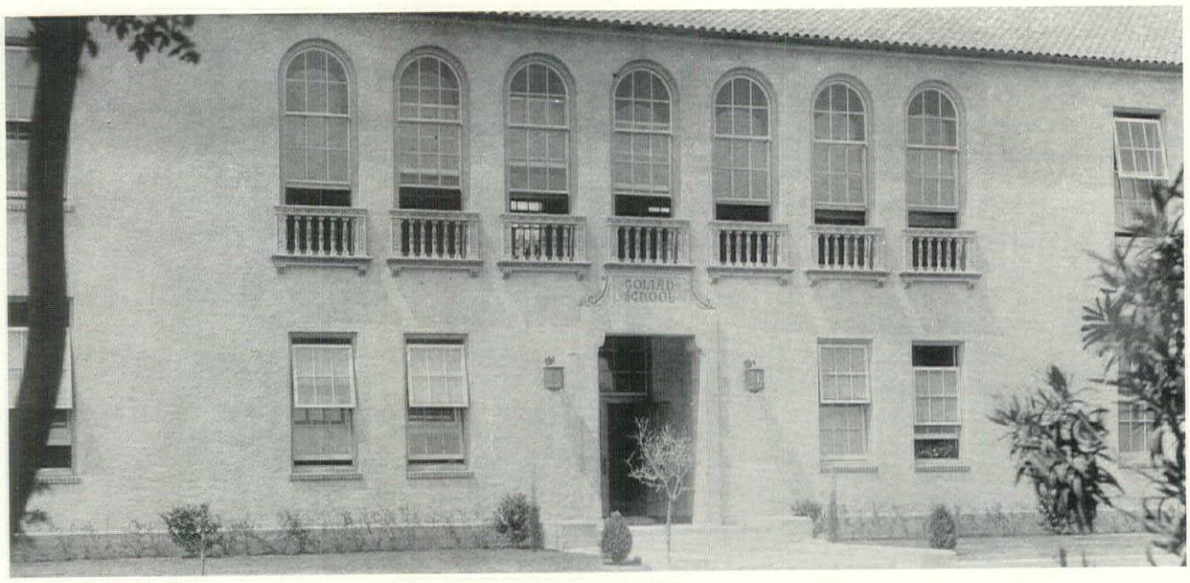
JEFFERSON ELEMENTARY SCHOOL, BATTLE CREEK, MICH.

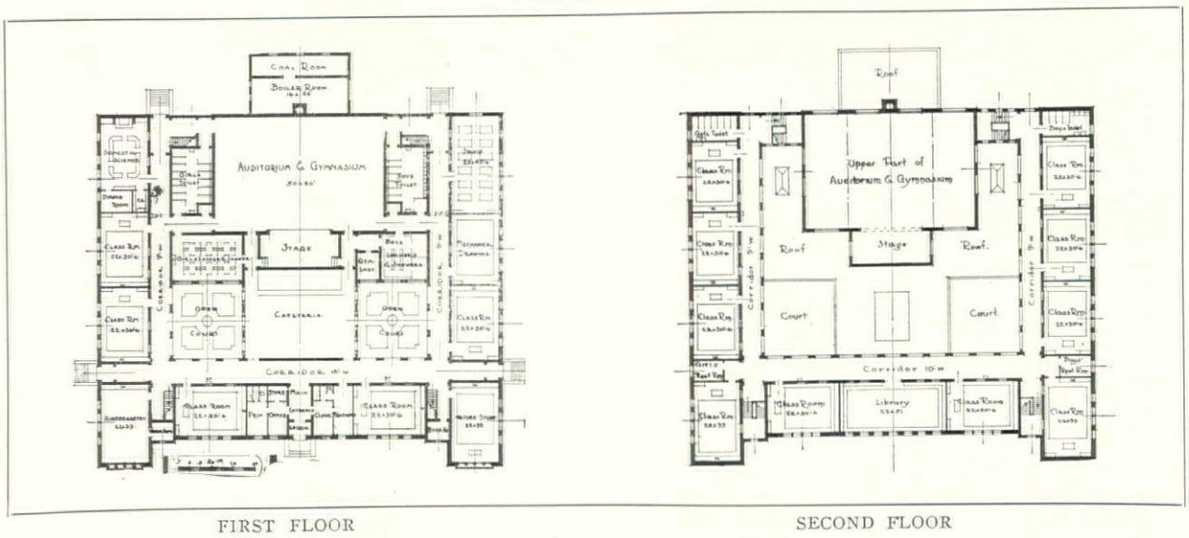
WILLIAM B. ITTNER, ARCHITECT



GENERAL VIEW



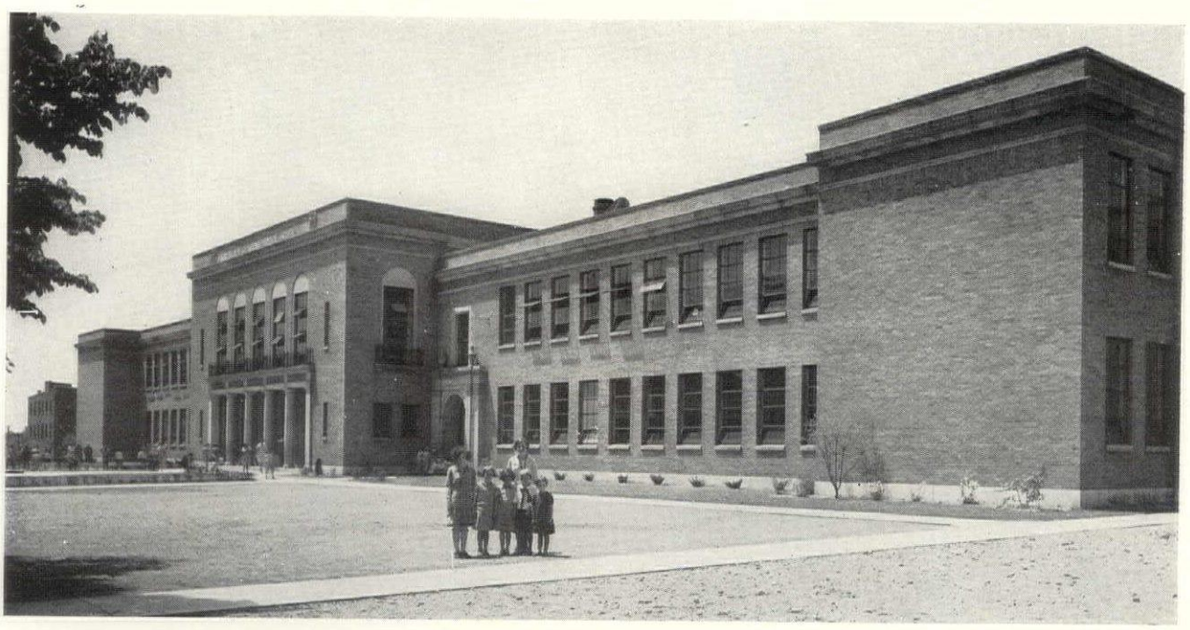
MAIN ENTRANCE



FIRST FLOOR SECOND FLOOR

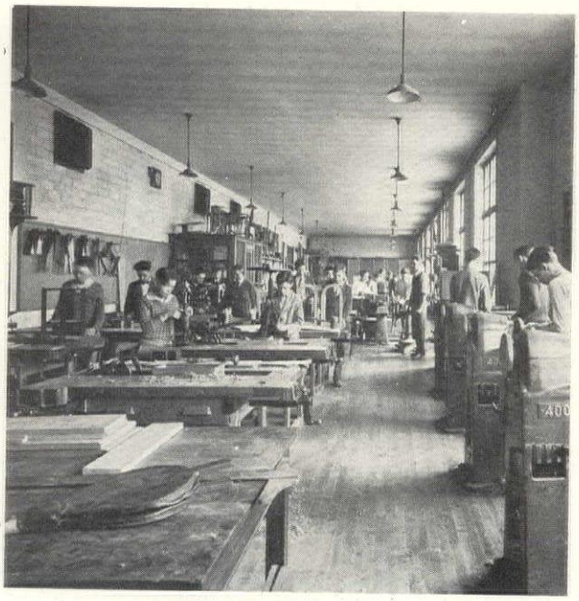
GOLIAD ELEMENTARY SCHOOL, GALVESTON

WILLIAM B. ITTNER, DeWITT & LEMON, ASSOCIATED ARCHITECTS

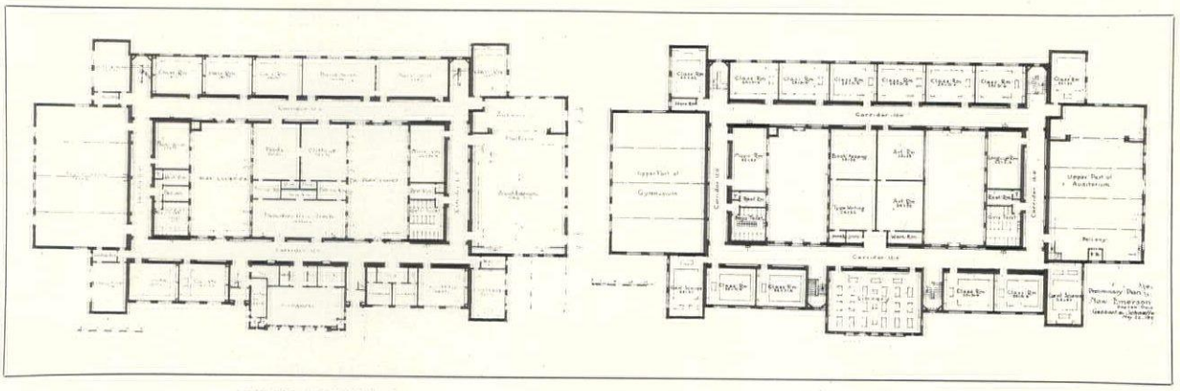


GENERAL VIEW

GYMNASIUM



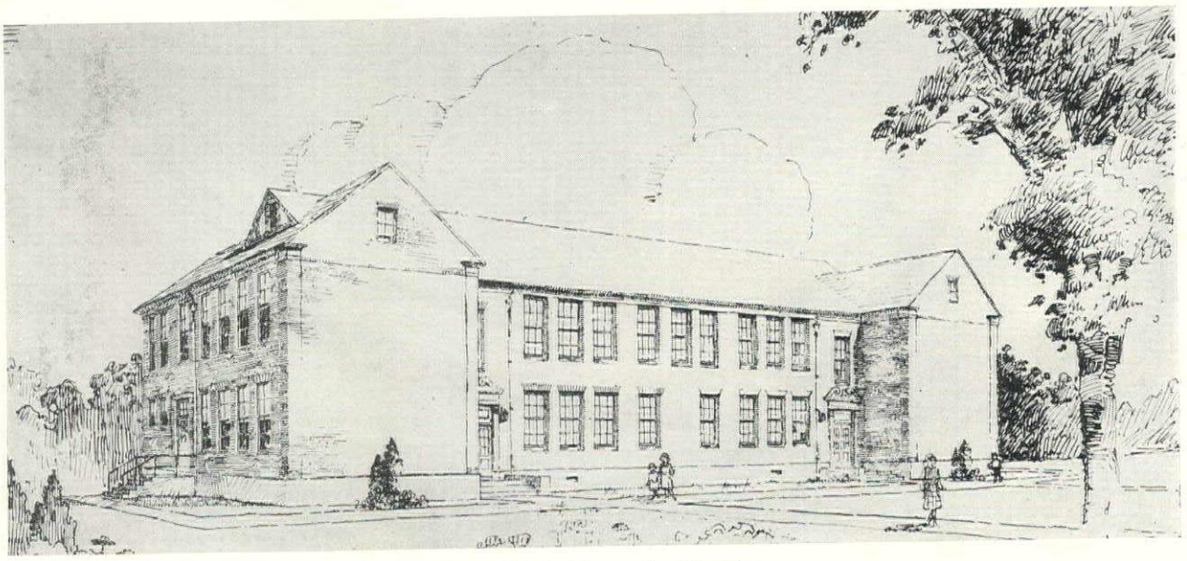
BOYS' GENERAL SHOP



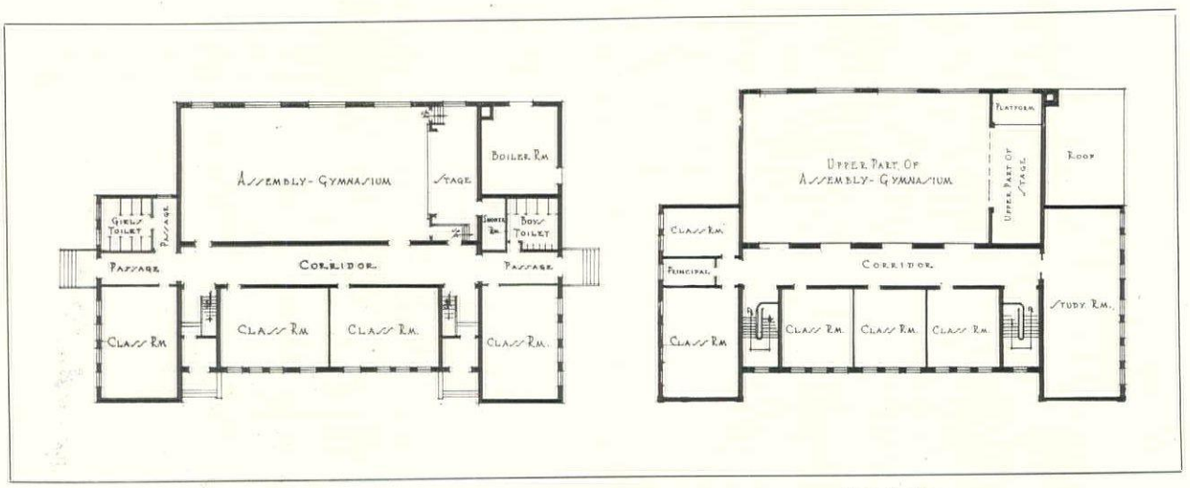
FIRST FLOOR SECOND FLOOR

EMERSON ELEMENTARY JUNIOR HIGH SCHOOL, DAYTON, O.

WILLIAM B. ITTNER, GEBHARDT & SCHAEFFER, ASSOCIATED ARCHITECTS



Pen and Ink Perspective Drawing



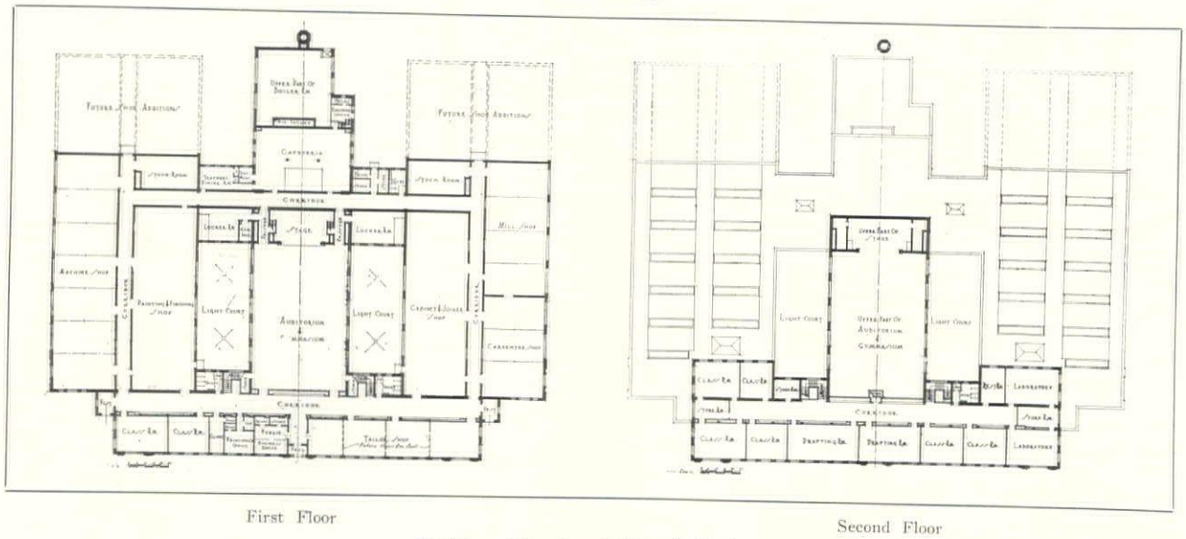
First Floor Second Floor

Grade School Building for Deering, Mo.
William B. Ittner, Architect

ized on a modified work-study-play plan. The climatic conditions prevailing in this gulf port city find expression in a building erected around two open courts or patios, upon which the corridors open to the fullest extent. The desire for maximum air circulation results in giving the auditorium-gymnasium windows on all sides. Windows on the inner walls of all class and special rooms give maximum air circulation to pupils at study or work. As the educational program did not include auditorium work as a daily performance, a combination auditorium-gymnasium was planned for this school with locker and shower accessories. A cafeteria was arranged in correlation. An elementary shop for boys; a domestic arts room for girls; a nature study room and a library-literature room, complete the educational facilities of this school in addition to the classrooms. Like many other buildings in this section of the country, the exterior is designed in the Spanish tradition in stucco and trimmed with polychrome terra cotta. The building complete, without equipment and architects' fees, cost $220,000. The normal capacity of the building is 830 pupils, making a per capita cost of $265.

The Jefferson Elementary School, Battle Creek, Michigan (page 309), although an enriched school differs fundamentally from the Goliad School at Galveston. The plan is of a more compact type. Here again, the climatic conditions have had an underlying influence upon the plan. The difference in the architectural expression of the two buildings is also interesting. The school is unusual in the fact that six of its classrooms are provided with small auxiliary work or classrooms for use by small groups of pupils in special or project problems. The individual classroom plan at this school shows what effect a variation in classroom method will have on a building plan. Besides the auditorium-gymnasium, with its locker and shower facilities arranged for community as well as school uses, the building provides an elementary shop for boys; a domestic arts room

General View



First Floor

Second Floor

Peckham Vocational School, Buffalo

William B. Ittner and Ernest Crimi, Associated Architects

for girls, and a library-literature classroom. The school accommodates 600 pupils and was erected at a cost of $236,473, exclusive of equipment and architects' fees, or $395 per capita.

Secondary Schools

The Junior High School. This school includes the seventh, eighth and ninth grades. There is not a great difference in the planning of junior and senior high schools. The difference is really one of scope and emphasis. The health and recreational quarters of the junior school are not as extensive as in the senior. The laboratories are for general science only, while in the senior school they are specialized. As a rule, departmentalization is not as highly developed in the junior as in the senior school. With the advent of the enriched elementary school and the work-study-play plan of organization, the need for the segregated junior high school has materially diminished. A plan of combining the enriched elementary school with the junior high school has been carried out at Dayton, Ohio with signal success.

The Emerson School at Dayton, Ohio (page 311) was originally planned as an elementary school for 1,462 pupils and for the work-study-play or "platoon" organization. It was discovered, however, that by the addition of three special units the capacity of the school could be expanded to 1,640 and the junior grades could be included and given all the facilities called for by their courses of study. The units added were two general science laboratories and the commercial suite. The physical education, the library, the auditorium, the home economics and shop quarters had already been included in the plan. The Emerson School is a notable example of a building planned to a carefully prepared work-study-play schedule. Thoughtful educational planning on the part of the superintendent, coupled with skillful structural planning on the part of the architect, enabled the board to turn back $165,000 of the amount

appropriated for the building. The plan is interesting from the point of pupil circulation and the location of the special quarters. Site peculiarities necessitated the location of the health quarters on one side of the building and the auditorium on the other, as the plot was long and narrow. The auditorium is arranged with separate entrances, and the stage is planned so that it can be used as a classroom. On the first floor may be noted the unit arrangement of the home economics, small gymnasium and play courts. On the second floor, the distribution of the classrooms and laboratories, the size and location of the library and special rooms are points of interest. The building cost complete was $498,000, exclusive of equipment and architects' fees, at a per pupil cost of $314. Many cities segregate the junior high school into separate buildings. At Jacksonville, Florida two segregated junior schools similar in plan and size have been erected.

Junior High Schools, Jacksonville,—two junior high schools,—recently completed, are representative of various ramifications of buildings of this type. In this case the buildings are three stories in height and are built around open patios. The corridors encircle each building, giving maximum circulation and egress. The auditoriums and gymnasiums find their places at either end of the buildings, convenient for the community use of the one and accessible to playgrounds for the other. The shops, all of generous sizes, are grouped upon the first floors, the study rooms and libraries on the intermediate floors, and laboratories for science and domestic arts, together with the cafeterias, are grouped upon the third floors. Each building accommodates 1,700 pupils and was erected complete, excluding equipment and architects' fees, for $555,000, at a per capita cost of $326.

Senior High School. These schools (grades 10, 11 and 12) represent what might be termed the last word in educational expansion. They cause the greatest per capita drain on the taxpayer, and the reasons are obvious. First of all, the sites must be large, owing to the athletic requirements. Next, it is scarcely possible to plan for definite class groups, owing to the large number of electives and collateral courses. Furthermore, the accessory units for all the various departments are most extensive. In some senior high schools the studies of the first two college years have been absorbed. The college course addition has no particular influence on the plan. Any well planned senior or four-year high school includes all the facilities required for junior college work.

The Senior High School-Junior College, Muskegon, Michigan (page 317) is one of a group of four buildings centrally located. An athletic field and stadium are adjacent to the school grounds. The outstanding features of this building are its auditorium-gymnasium stage and health quarters. The auditorium seats 1,300. With the steel curtain separating stage and gymnasium raised and the suspended bleachers dropped, additional seating capacity is provided for 500. The health quarters, located on the ground floor and readily accessible to the play field, consist of two examination rooms; two clinics; a dental room and two corrective gymnasiums. Together with locker and shower rooms for both boys and girls, the physical education facilities can care for 500 at a time. A supplementary auditorium for music and dramatics is located on the ground floor and in close proximity to the large auditorium. This room is unique in its plan and interior treatment. Two practice rooms and a band and orchestra room are also included in the ground floor plan. A cafeteria with 500 seatings flanks one side of the auditorium-gymnasium and is located under the court and top-lighted. It is supplemented by a faculty dining room, kitchen, kitchen store room and rooms for male and female kitchen attendants. Another feature unusual in schools is the museum. The cost of the building complete without equipment and architects' fees was $704,000,—a per capita cost of $454.

The High School, St. Petersburg, Florida is an outstanding example of planning for Southern climates. In a community of almost perpetual sunshine, the plan has been opened up to the fullest extent for natural ventilation. Provision for mechanical ventilation is conspicuous by its absence. The height is confined to two stories and is built around two open courts or patios upon which the corridors are entirely open as an arcade. Windows upon the inner wall above the blackboards permit of full cross ventilation to the classrooms. The school health activities, being conducted largely in the open, where ample playgrounds and an open air swimming pool are provided, permit the indoor health facilities to be reduced to a combination stage-gymnasium arrangement. Ample indoor locker and shower facilities are also provided. The building executed in the traditional Spanish is of tinted stucco trimmed with polychrome terra cotta. It accommodates 1,700 pupils and was erected complete without equipment and architects' fees for $426 per capita.

The Central Technical High School, Columbus, Ohio forms one of a group of buildings comprising the new civic center of Columbus. Being the first building to be erected, it was executed in monumental design in stone, serving to give the keynote for the buildings which are to follow. It occupies a commanding site on the west side of the Scioto River and is flanked on either side by monumental bridges. Its outstanding features comprise a music-lecture room facing two sunken gardens in the forecourt, the main entrance approach being across its roof. This brings the room into a location where it can be turned over for community uses without entrance to the school building proper. Another outstanding feature of the building is an auditorium to seat 1,500 with a double gymnasium-stage combination. The double combination includes a stage 20 feet deep separated from the girls' gymnasium by a steel soundproof curtain, the boys' gymnasium adjoining the other side to the rear. It is possible by this arrangement to throw the entire health suite together for

pageants, large choruses and the social features of the school. An art group comprising a room for drawing, a room for commercial art, printing, ceramics and art metal work, are grouped upon the uppermost story around an art gallery, all of which are top or gallery lighted. The cost of the building complete, without equipment and architects' fees, was $1,167,377. The pupil accommodation approximates 1,800, giving a per capita cost of $592.77.

The Bennett High School, Buffalo represents the full development of a comprehensive high school. Built to accommodate 2,500 pupils and occupying a commanding site, it comprises one of Buffalo's chief educational assets. The building is complete in the educational facilities it furnishes which include: 35 classrooms for academic classes; a group of eight domestic arts rooms; four art rooms; eight science laboratories; ten study rooms; two gymnasiums, a swimming pool; an auditorium seating 2,000, and a supplementary auditorium or music-lecture room, separate cafeterias for boys and girls, each seating 500, and a faculty dining room, seating 70, all served from a common kitchen. The building cost $1,500,000 without equipment and fees, or $600 per capita.

The Vocational High School

Present-day high school planning tends toward the incorporation of vocational activities in junior and senior high schools, rather than toward a segregation of trade courses in separate vocational buildings. By providing vocational courses in high schools, all students have the advantage of shop activities close at hand, and those who desire to pursue any certain type of trade may devote to it some school time and all leisure time. In cities that are highly industrial, however, a centralized vocational school is erected in addition to the vocational departments in the high schools. In such schools vocational activities are pursued as trade courses. The plans for a vocational building as a rule make limited provision for the academic or strictly educational quarters of the building, as the students attend other schools of the city, coming to the vocational school only for intensive training in vocational courses.

In the Peckham Vocational School, Buffalo the academic features of the building are confined to a two-story structure containing a limited number of classrooms and laboratories, a combination auditorium-gymnasium and a cafeteria. The remainder of the school consists of large, undivided, top-lighted areas capable of being split up into vocational units as the varying requirements demand. The building was erected complete at a cost of $462,129, exclusive of equipment and architects' fees.

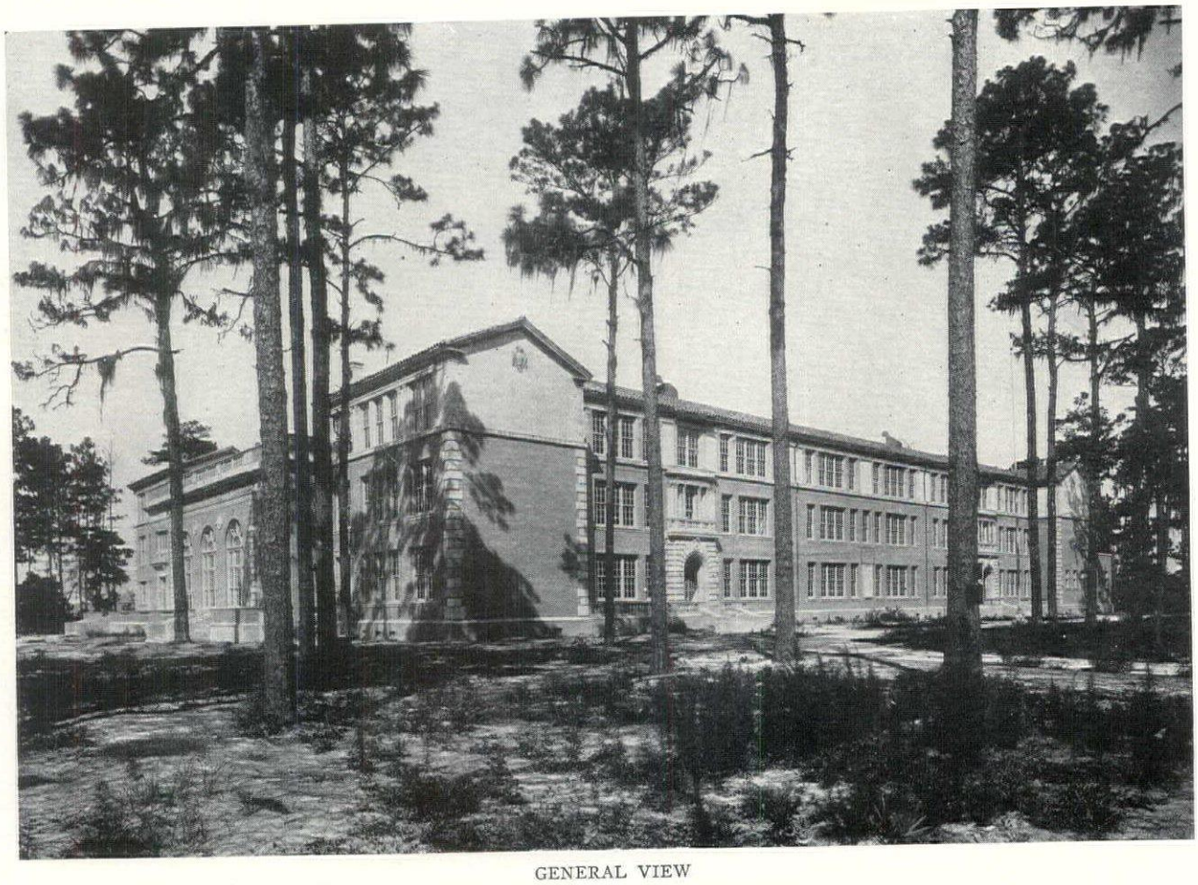
The Complete School. A concentration of all grades in one school represents a departure from the usual in school building policies. Several small cities have adopted this plan. The arguments presented by the advocates of this plan are:

1. There is no convenient dropping-out place.
2. The enriched facilities of the high school are available for the younger children when not in use by high school students.
3. The situation is more natural when older and younger students are in personal contact with one another a part of the school day, as, for instance, during recreation and some of the more informal periods of special activities.

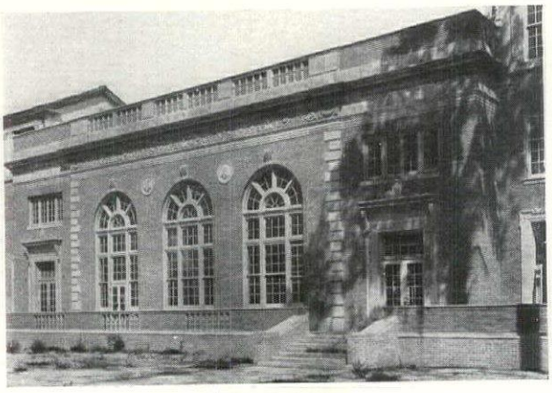
The Complete School at Longview, Washington, the home of the Long-Bell Lumber Co., is the gift of R. A. Long, president of the company. This school is planned for 2,800 pupils and includes all grades from kindergarten through the high school. The three building units, the elementary, the junior and the senior high, are located on a 39-acre site. As Longview is in the strictest sense an American city, Colonial architecture was chosen. The center building, the senior high school, houses the school and community auditorium with its capacity for 1,000. Directly behind the auditorium, across the corridor, is the double gymnasium divided by sliding door walls. There is a very definite relationship between the gymnasium and the cafeteria (38 x 164 feet). Although separated by a small court, both units are readily accessible to the public.

The two wings that connect the center senior unit with the elementary and junior schools are part of the senior school and house the vocational and home economics departments. The library-study on the second floor runs across the front and commands a view of the landscaping below. It is an unusual room, 24 x 140 feet, with a capacity of 200 students. Most of the classrooms are distributed on this floor. The junior high school also contains a double gymnasium with complete accessories. There are no shops or home economics rooms in the junior unit, since those provided in the senior high school will serve all students. The library-study overlooks the grounds and has a capacity for 70 students. The art room, 20 x 45 feet, is centrally located on the second floor. A feature of the elementary school is the covered play court in place of a gymnasium. The climate at Longview permits of almost continuous out-of-door play. The kindergarten is planned with a bay and with its own outside entrance. A music room with a small stage is provided, so that it can also serve as an auditorium for smaller groups. The two large classrooms on the second floor are the nature study and handwork rooms.

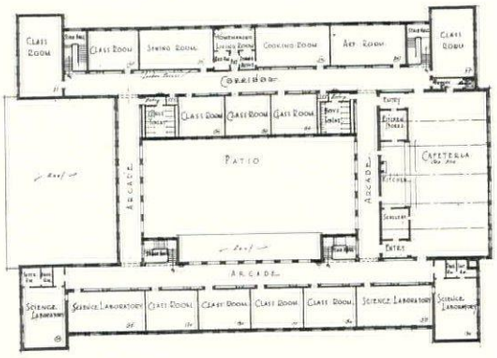
Summary. As educational programs and methods of school procedure are variable factors in school communities, and as building policies, climate and site conditions are also variable, every school building becomes an individual problem. Rules and formulæ can and have been evolved as guides to safety, lighting and sanitation of schools. The real test of the success of a school building, however, is its working efficiency. Therefore, an intimate relationship must exist between the educational plan and the building plan. If a school building renders maximum educational service, the mechanical elements will exist as natural accompaniments.



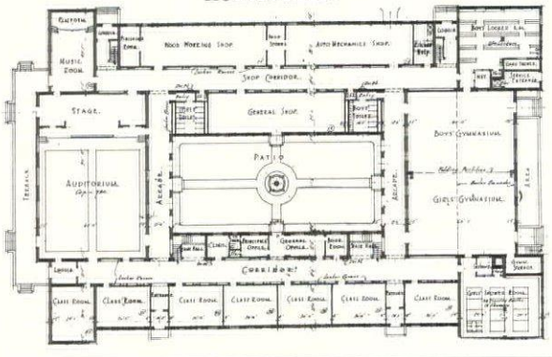
GENERAL VIEW



AUDITORIUM



THIRD FLOOR



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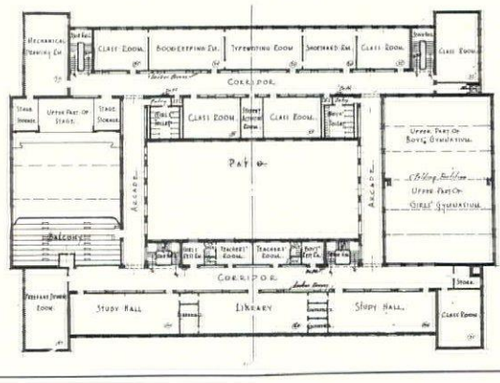
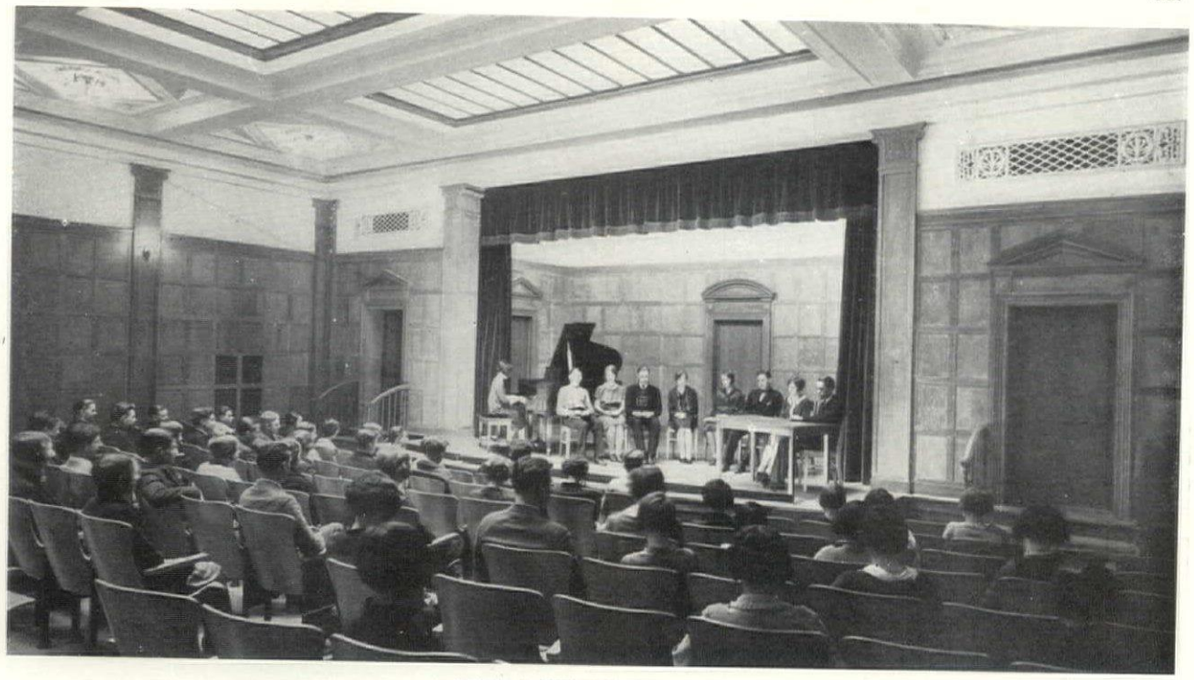


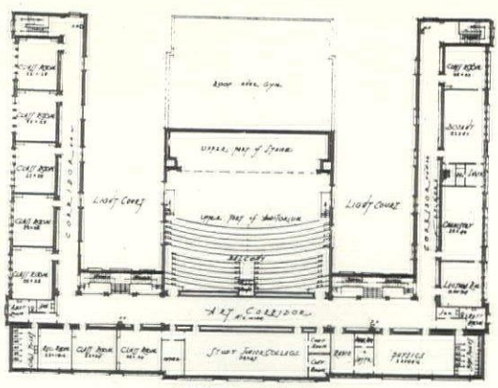
SECOND FLOOR

ROBERT E. LEE SENIOR HIGH SCHOOL, JACKSONVILLE, FLA.

MARK & SHEFTALL, ARCHITECTS; WILLIAM B. ITTNER, CONSULTING ARCHITECT



MUSIC EXPRESSION ROOM



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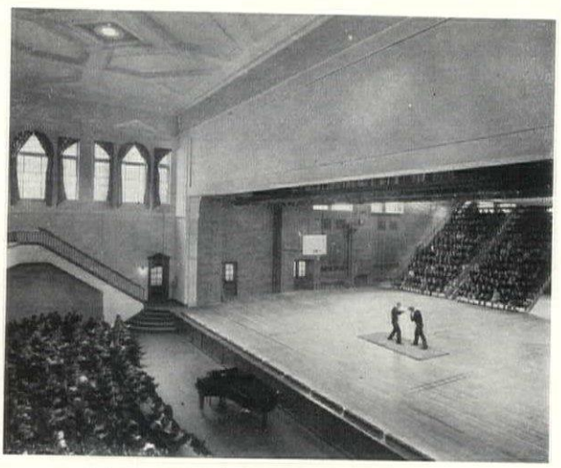
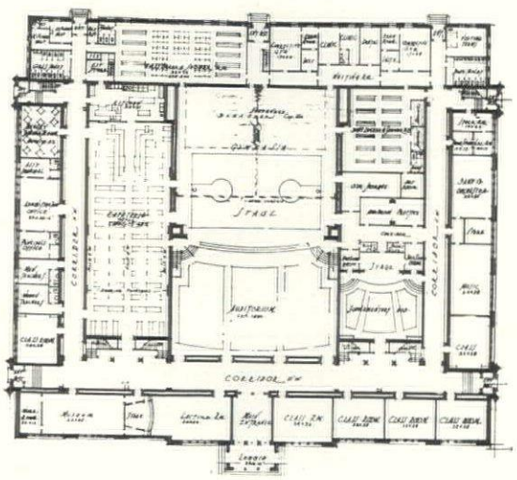


AUDITORIUM AND STAGE GYMNASIUM



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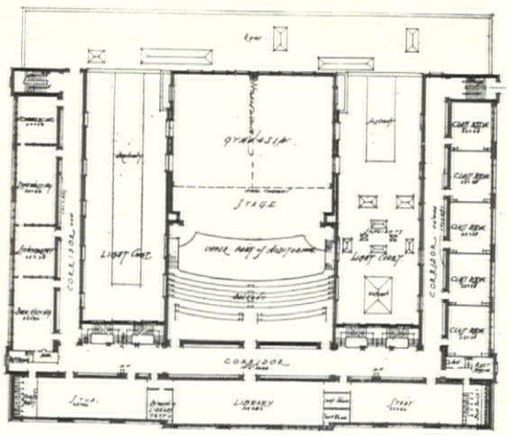
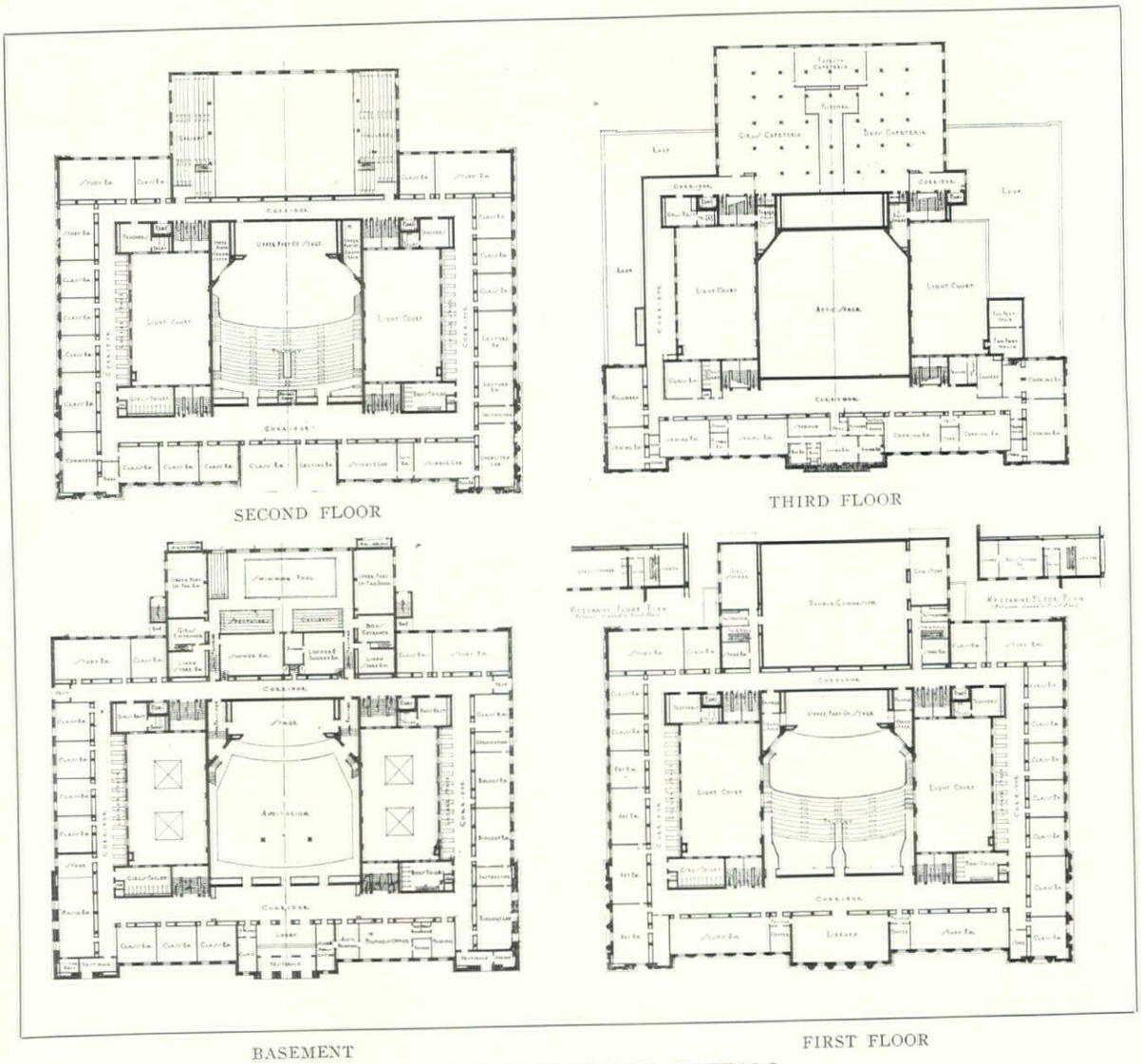


SECOND FLOOR

SENIOR HIGH SCHOOL—JUNIOR COLLEGE, MUSKEGON, MICH.

WILLIAM B. ITTNER, ARCHITECT

GENERAL VIEW



SECOND FLOOR

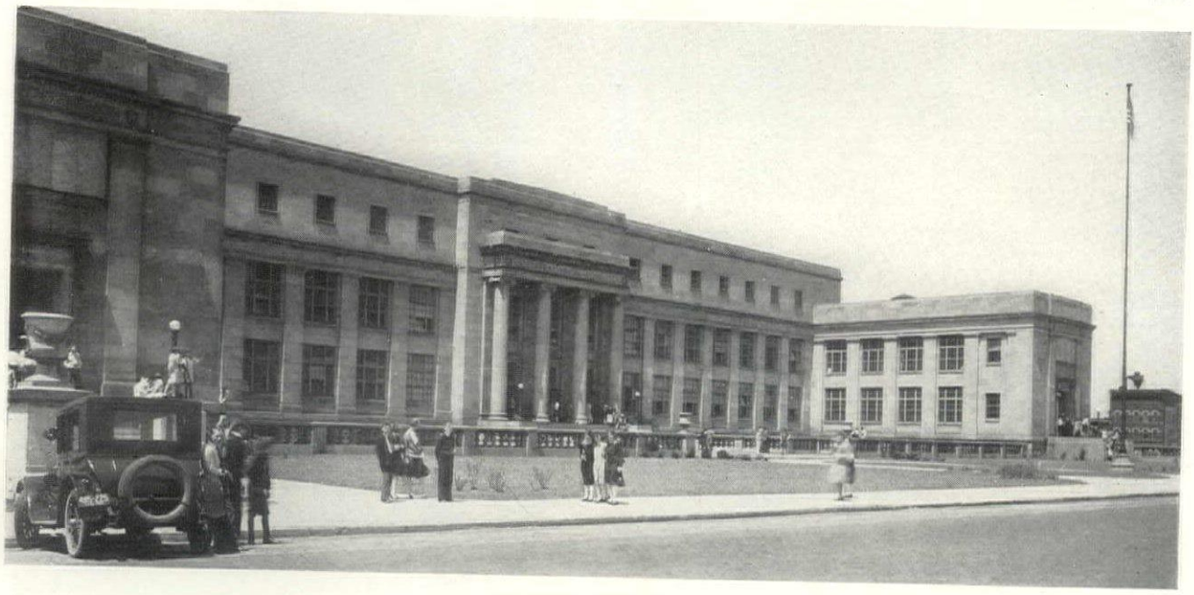
THIRD FLOOR

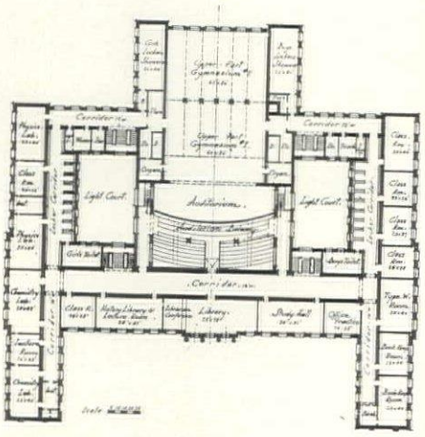
BASEMENT

FIRST FLOOR

BENNETT HIGH SCHOOL, BUFFALO

WILLIAM B. ITTNER, ASSOCIATED BUFFALO ARCHITECTS, ERNEST CRIMI, ASSOCIATED ARCHITECTS





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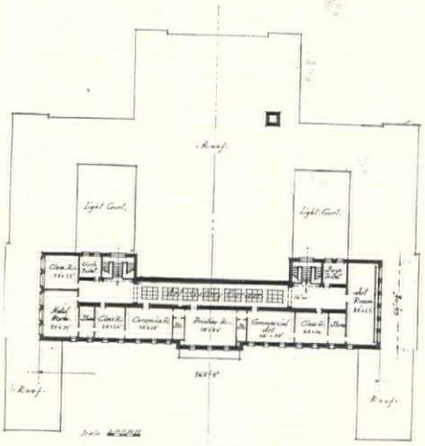

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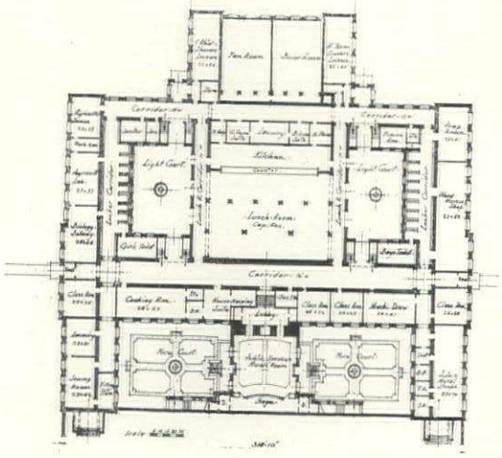
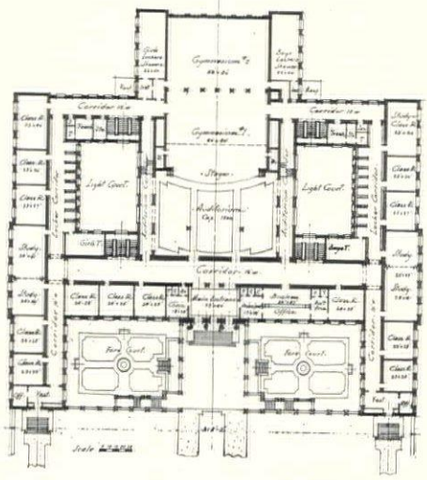


BASEMENT

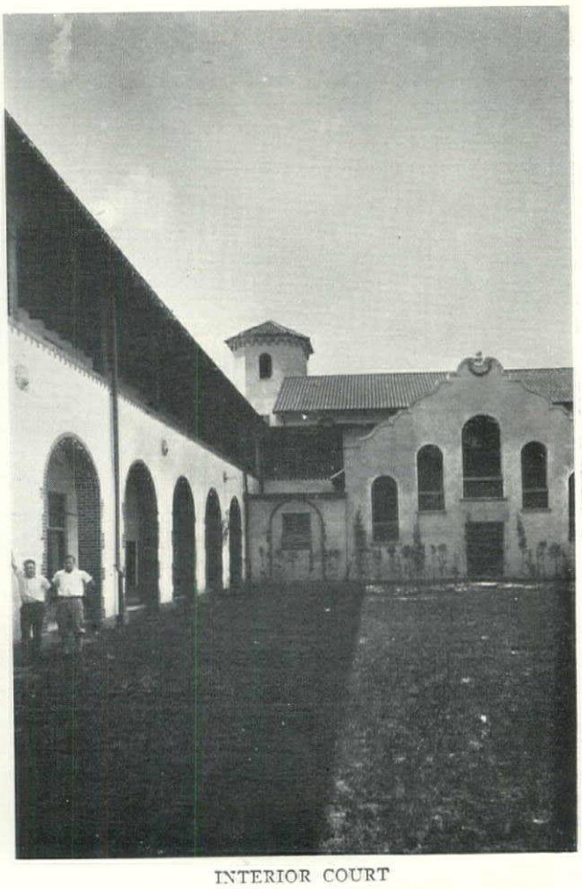


FIRST FLOOR

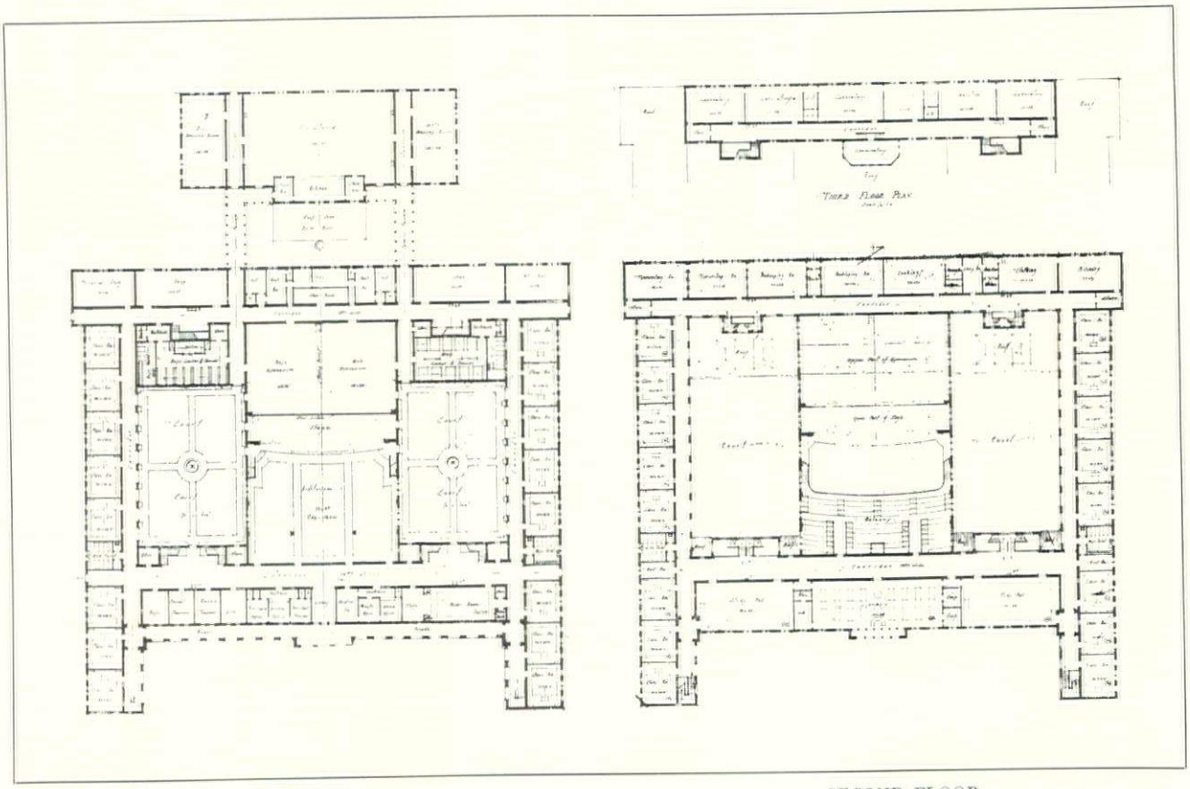
CENTRAL TECHNICAL HIGH SCHOOL, COLUMBUS, O.

WILLIAM B. ITTNER, ARCHITECT

MAIN ENTRANCE



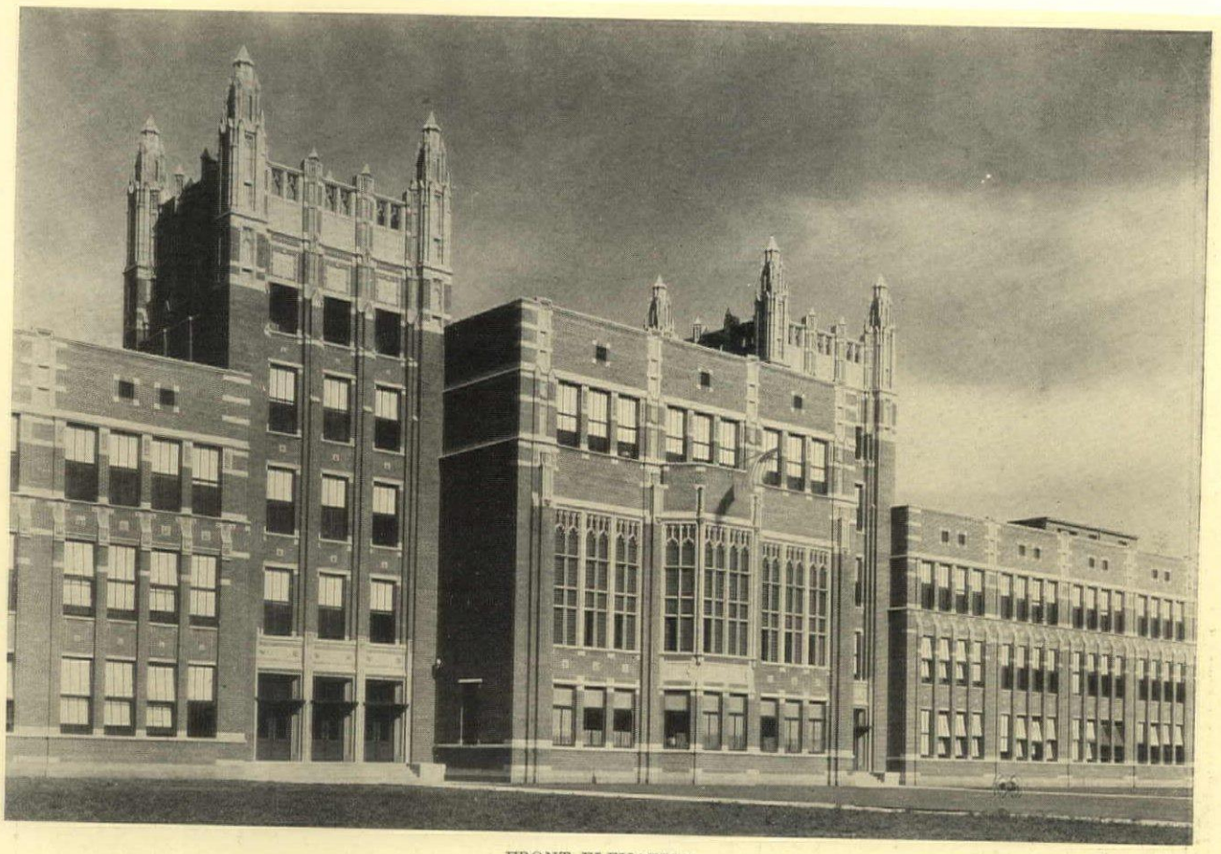
INTERIOR COURT



FIRST FLOOR SECOND FLOOR

ST. PETERSBURG HIGH SCHOOL, ST PETERSBURG, FLA.

WILLIAM B. ITTNER AND M. LEO ELLIOTT, ASSOCIATED ARCHITECTS



FRONT ELEVATION

Photos. Chicago Arch. Photo. Co.

Plan on Back

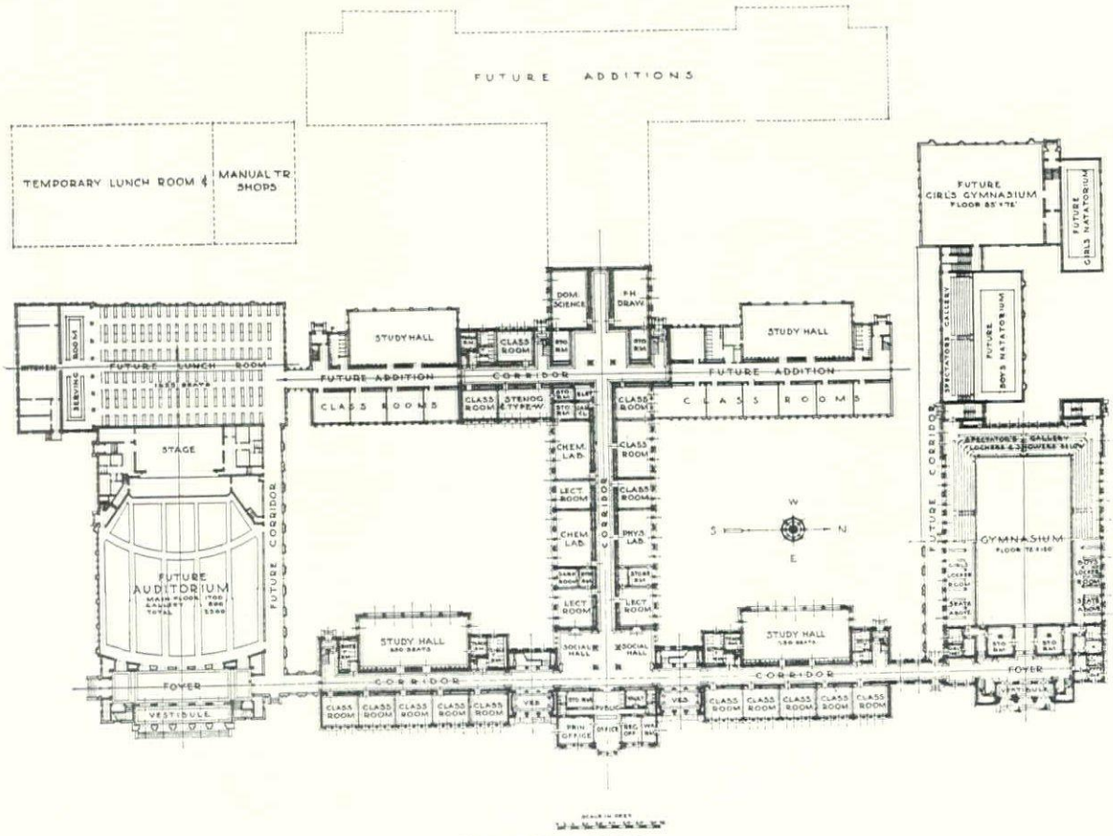
ENTRANCE TO GYMNASIUM

EVANSTON TOWNSHIP HIGH SCHOOL, EVANSTON, ILL.

PERKINS, FELLOWS & HAMILTON AND HAMILTON, FELLOWS & WILKINSON, ARCHITECTS

COST AND CONSTRUCTION DATA

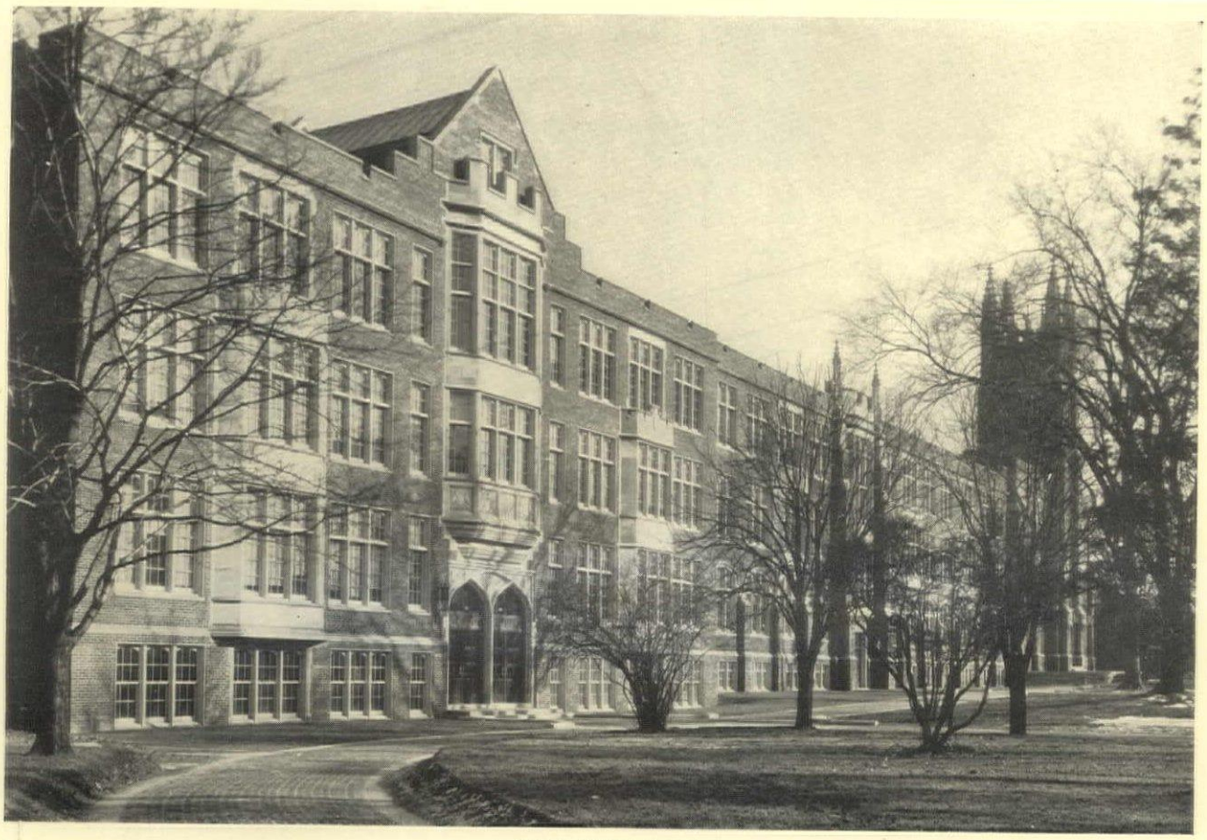
Designed to eventually accommodate 4,000 or more pupils, only a portion of the academic building and the main gymnasium wing have been built as yet. The cost of these units including the power house and the temporary lunch room and manual training shops was approximately $1,800,000, which on the basis of 1,800 pupils now enrolled makes a cost of about $1,000 per pupil. The unit cost of both the academic and gymnasium sections with the cost of separate heating plant apportioned to them was 37.1 cents per cubic foot. The exterior treatment is brick trimmed with terra cotta, and the general construction is fireproof.



FIRST FLOOR PLAN

EVANSTON TOWNSHIP HIGH SCHOOL, EVANSTON, ILL.

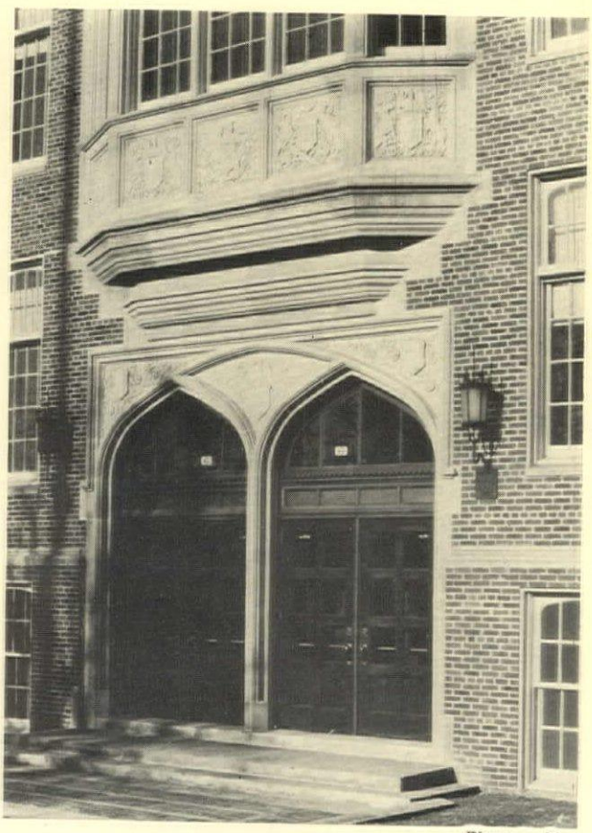
PERKINS, FELLOWS & HAMILTON AND HAMILTON, FELLOWS & WILKINSON, ARCHITECTS



MAIN ELEVATION

Photos. Swain

AUDITORIUM



GYMNASIUM ENTRANCE

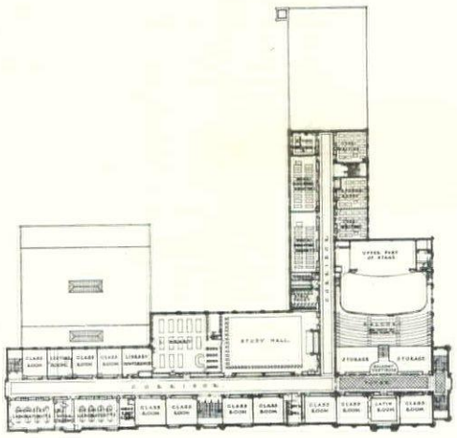
Plans on Back

JACKSON HIGH SCHOOL, JACKSON, MICH.
CHILDS & SMITH, ARCHITECTS

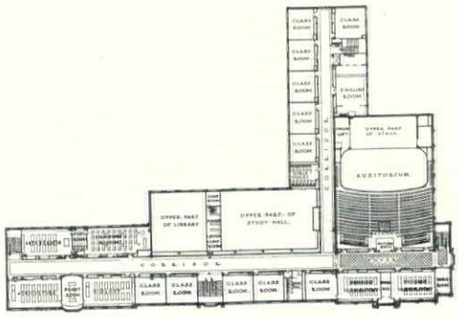
COST AND CONSTRUCTION DATA

Completed September 1927, this school has a capacity of 2,000 pupils and was built at a cost of $1,130,000 or 33 cents per cubic foot. The cost per pupil is approximately $565.

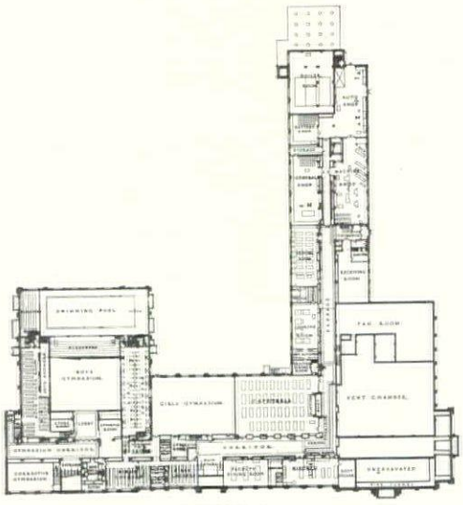
It is fireproof in construction, and the exterior finish is brick with cut stone trim. The roofs are covered with tar and gravel composition.



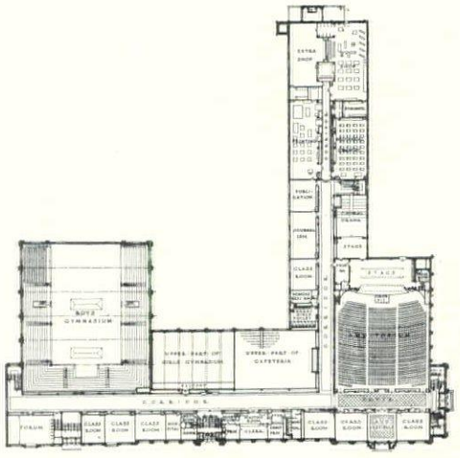
SECOND FLOOR



THIRD FLOOR



BASEMENT



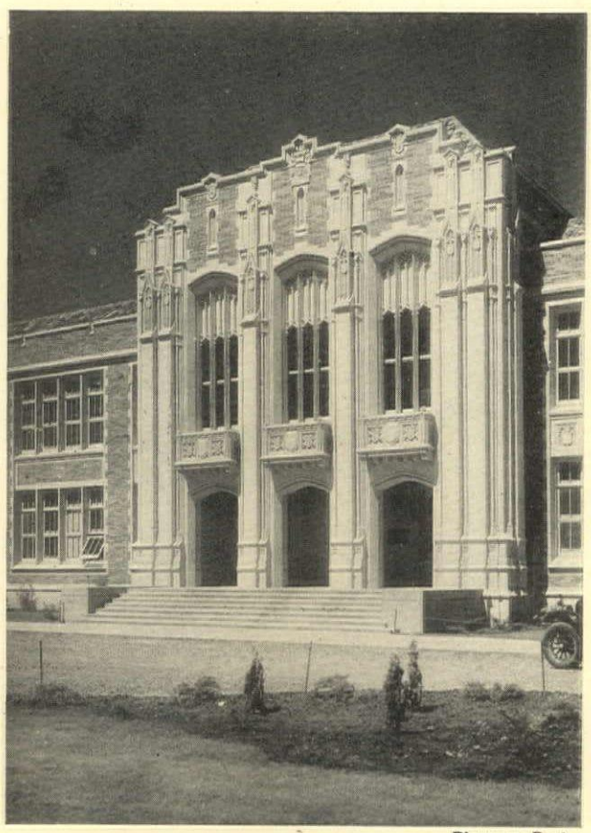
FIRST FLOOR

PLANS, JACKSON HIGH SCHOOL, JACKSON, MICH.

CHILDS & SMITH, ARCHITECTS

GENERAL VIEW

END BAY OF AUDITORIUM



MAIN ENTRANCE

Photos. Gabriel Moulin

Plans on Back

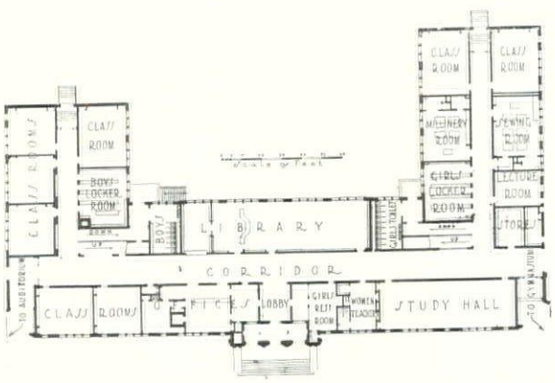
SANTA ROSA HIGH SCHOOL, SANTA ROSA, CAL.

W. H. WEEKS, ARCHITECT

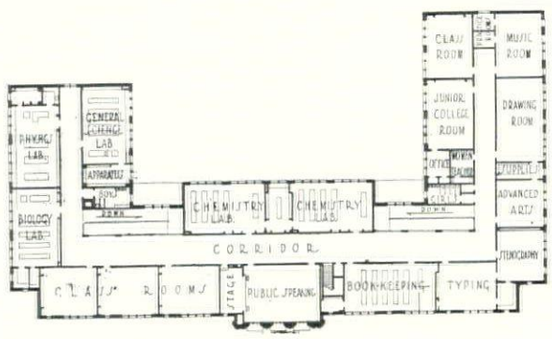
COST AND CONSTRUCTION DATA

Having a capacity of a thousand pupils, this school was completed in 1925 at a cost of $368,305 or 24 cents per cubic foot, making a unit cost of about $368 per pupil. The cost of equipment used in this building was $40,000.

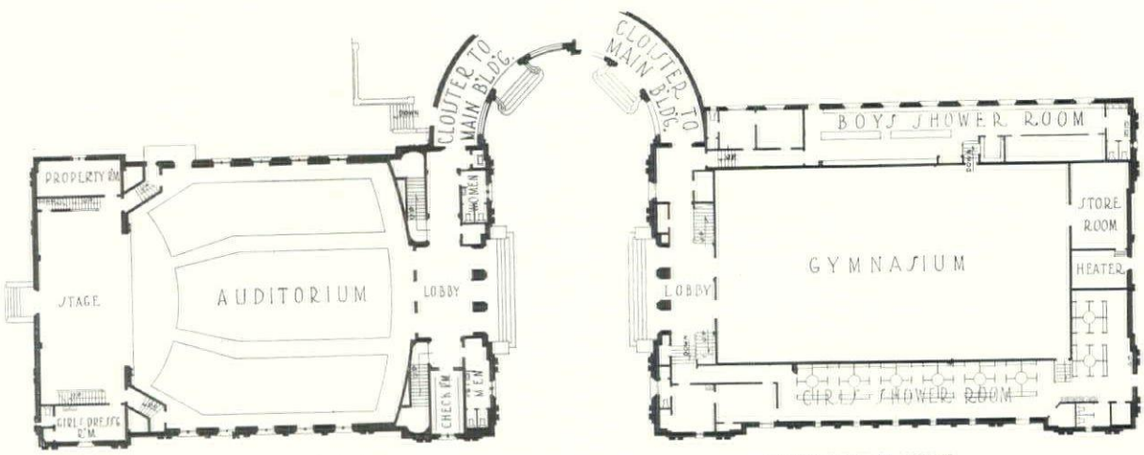
Pressed brick in variegated shades trimmed with cast stone and terra cotta are used for the exterior finish, while the roof covering is of terra cotta tile. The general construction is fireproof.



FIRST FLOOR



SECOND FLOOR



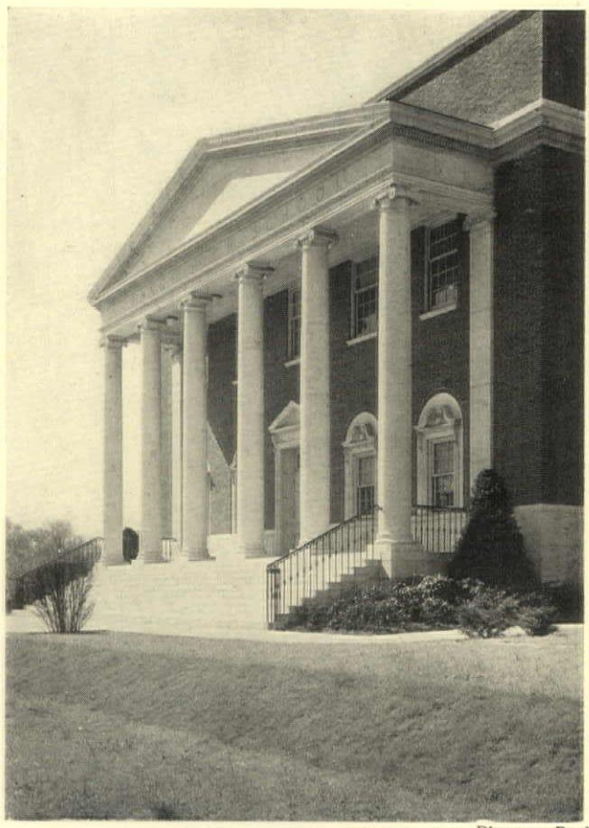
AUDITORIUM WING

GYMNASIUM WING

PLANS, SANTA ROSA HIGH SCHOOL, SANTA ROSA, CAL.

W. H. WEEKS, ARCHITECT

GENERAL VIEW



Photos. John Wallace Gillies *Plans on Back*

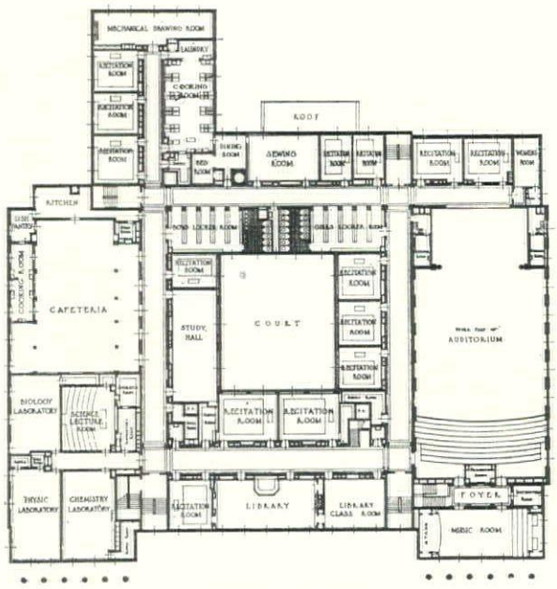
CORRIDOR ENTRANCE GYMNASIUM ENTRANCE

ORANGE HIGH SCHOOL, ORANGE, N. J.

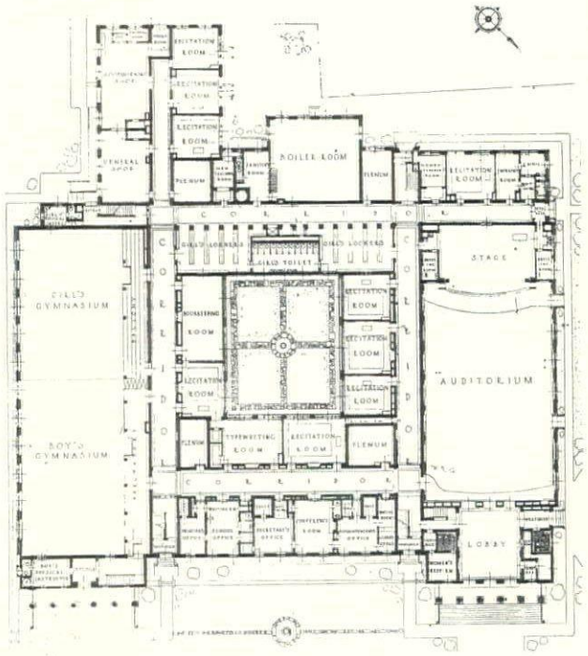
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS

COST AND CONSTRUCTION DATA

The capacity of this school is 965 pupils, and it was completed in 1925 for $781,000 or 41.4 cents per cubic foot.

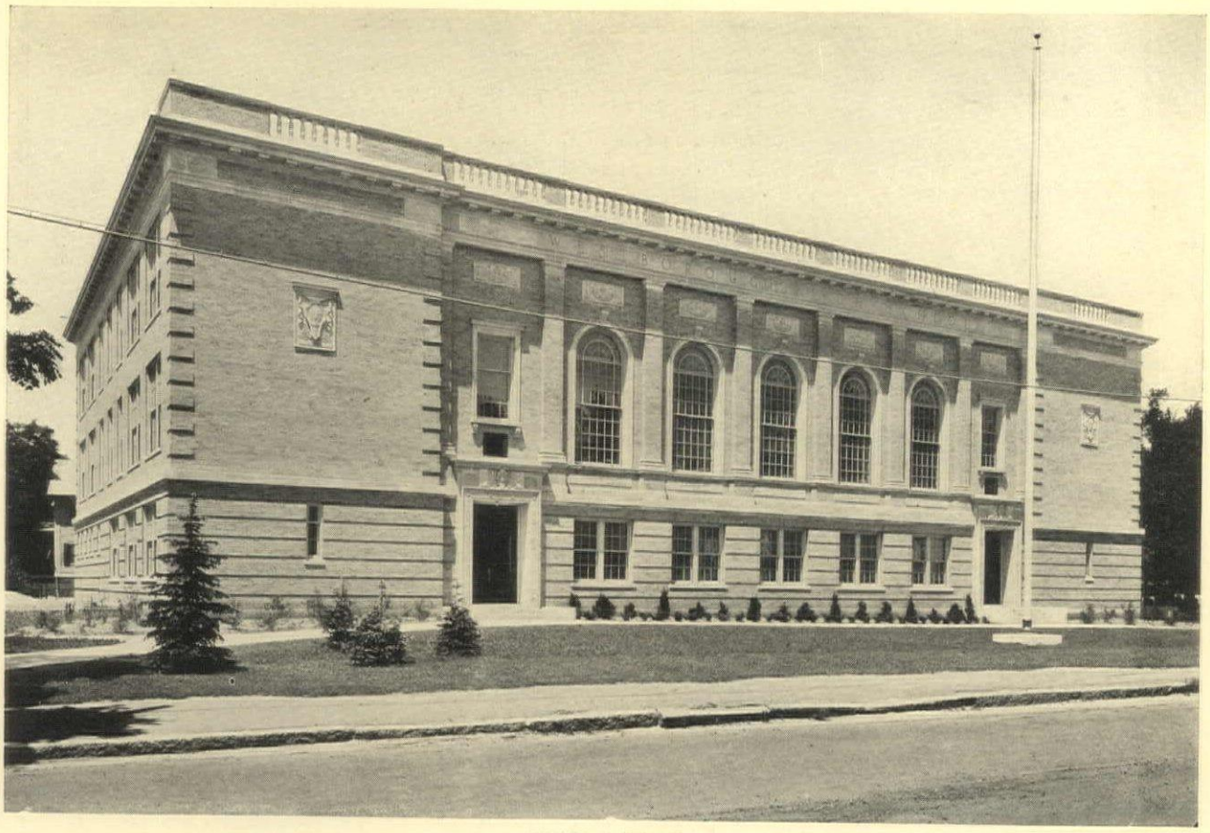


SECOND FLOOR

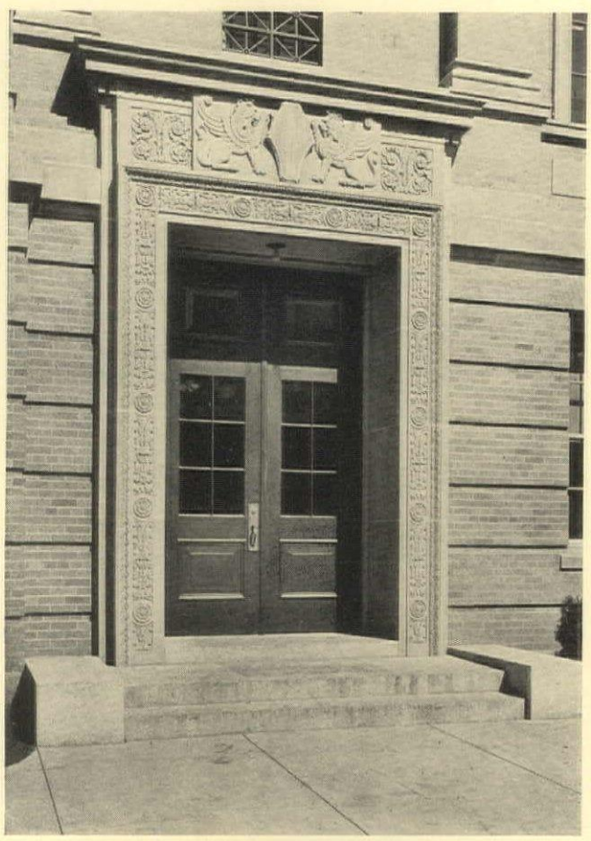


FIRST FLOOR

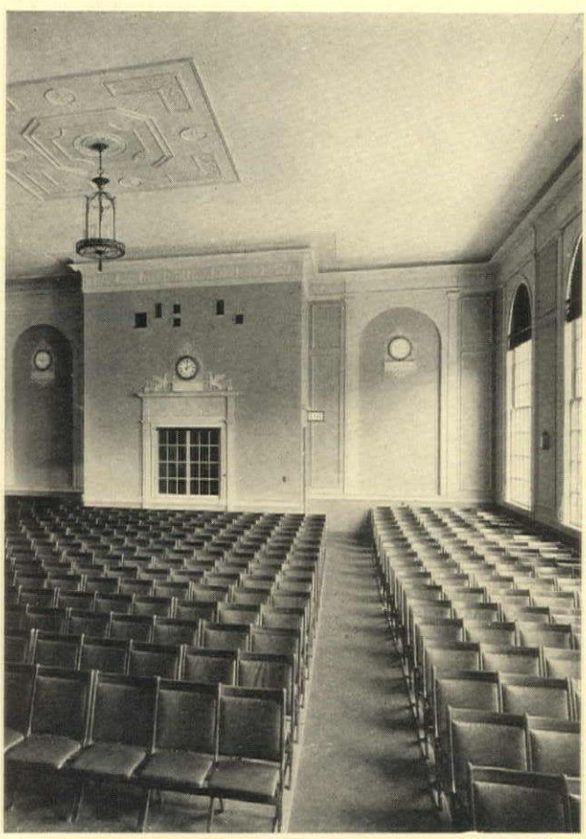
PLANS, ORANGE HIGH SCHOOL, ORANGE, N. J.
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS



GENERAL VIEW



ENTRANCE DOOR



REAR OF AUDITORIUM

Plans on Back

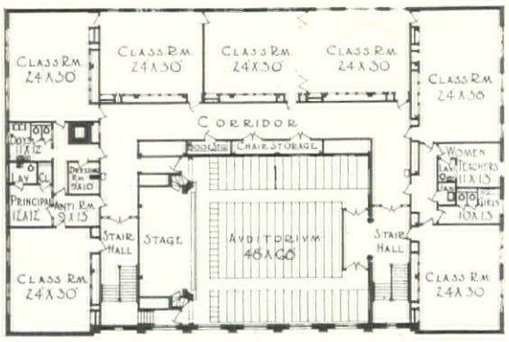
WESTBORO HIGH SCHOOL, WESTBORO, MASS.

JAMES H. RITCHIE & ASSOCIATES, ARCHITECTS

COST AND CONSTRUCTION DATA

Work on this school was completed on May 22, 1926. The total cost was $264,000 or 39.6 cents per cubic foot. It is designed to accommodate 500 pupils, making the cost per pupil $528. The equipment cost was $16,800.

It is built in the Georgian style of light colored brick with limestone trim. The roofs are covered with tar and gravel.



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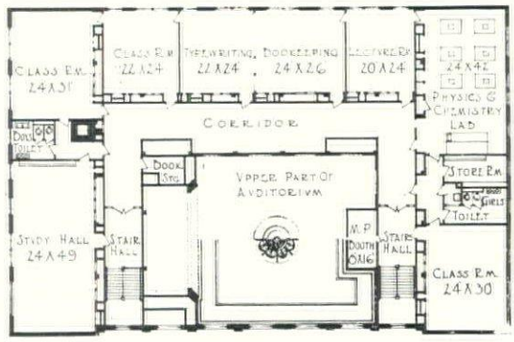

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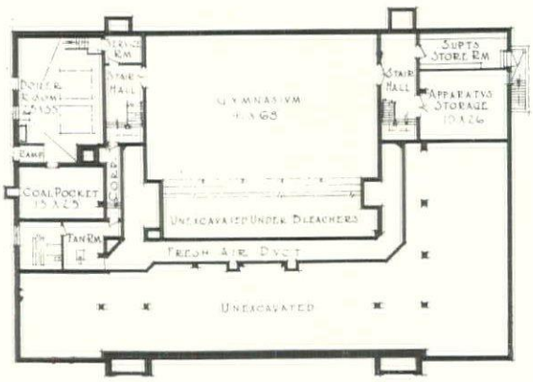
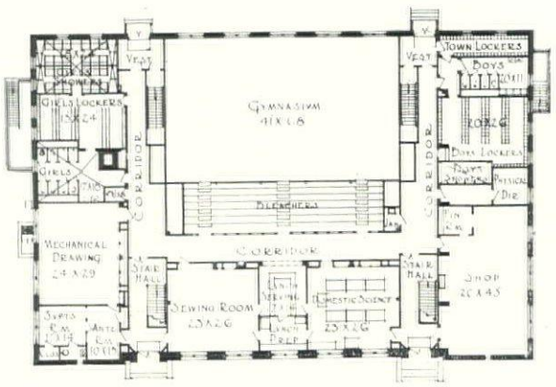


BASEMENT

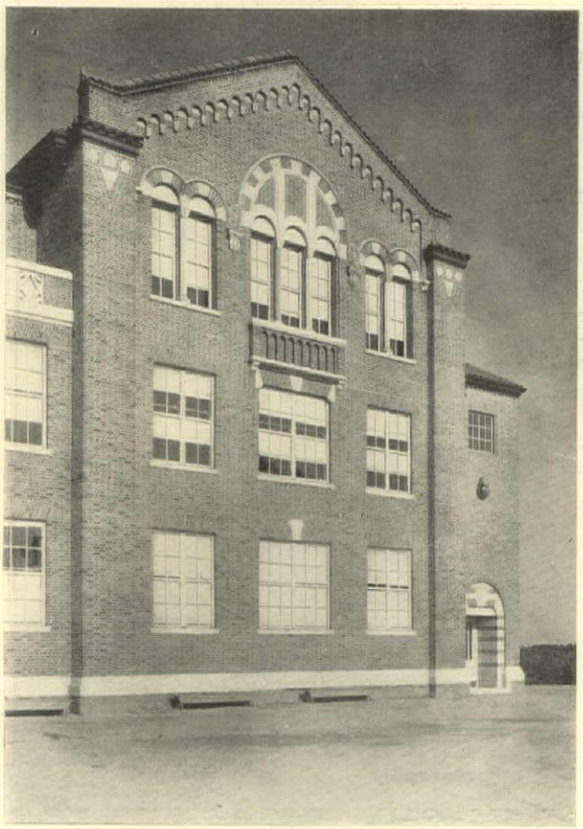


FIRST FLOOR

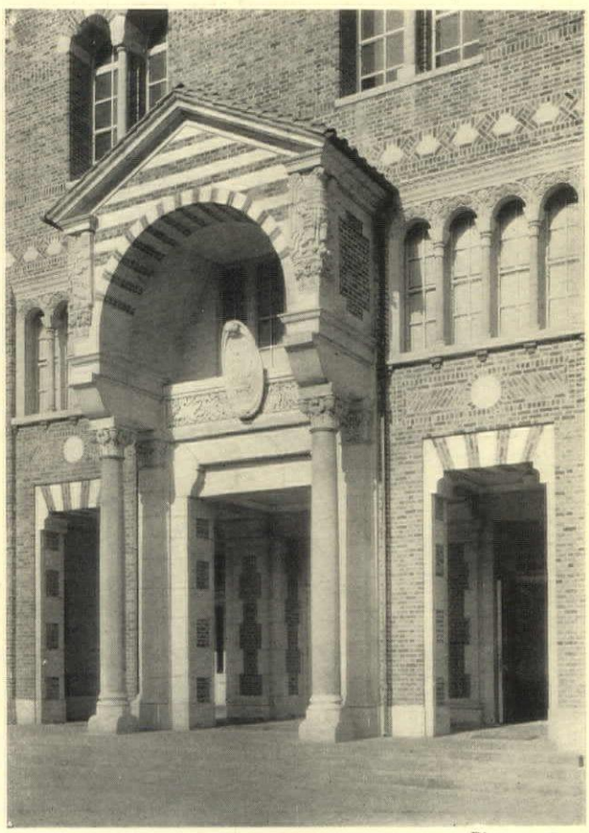
PLANS, WESTBORO HIGH SCHOOL, WESTBORO, MASS.

JAMES H. RITCHIE & ASSOCIATES, ARCHITECTS

GENERAL VIEW



END BAY



MAIN ENTRANCE

Photos, Tebbs & Knell, Inc.

Plans on Back

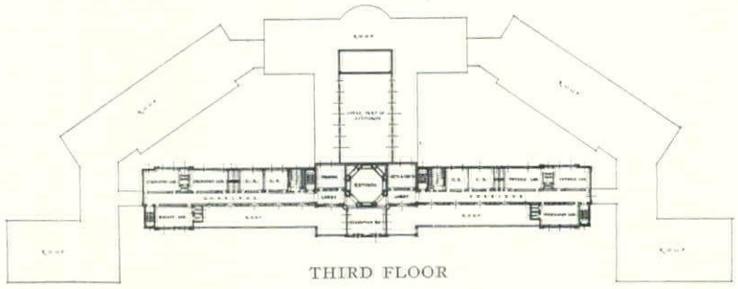
GIRLS' SENIOR HIGH SCHOOL, ATLANTA

EDWARDS & SAYWARD, ARCHITECTS

COST AND CONSTRUCTION DATA

The first or central unit of this building was completed in January, 1926 at a total cost of $500,000 or 40 cents per cubic foot. Its capacity is 1,300 pupils, making the cost per pupil about $384. Equipment costing approximately $45,000 has been installed in the building.

The general construction is fireproof.



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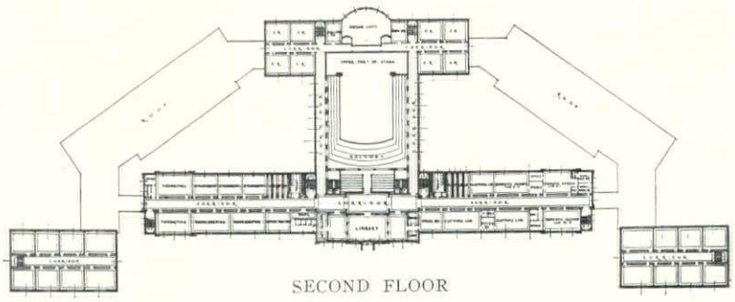

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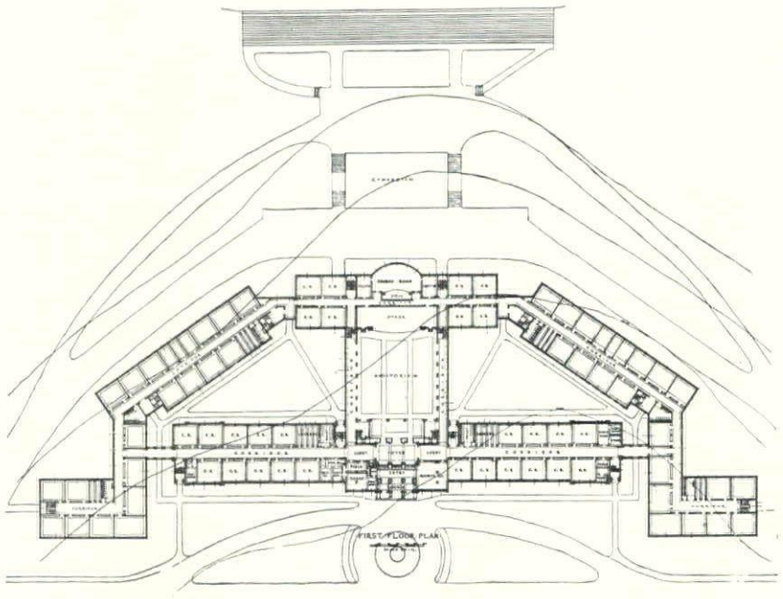
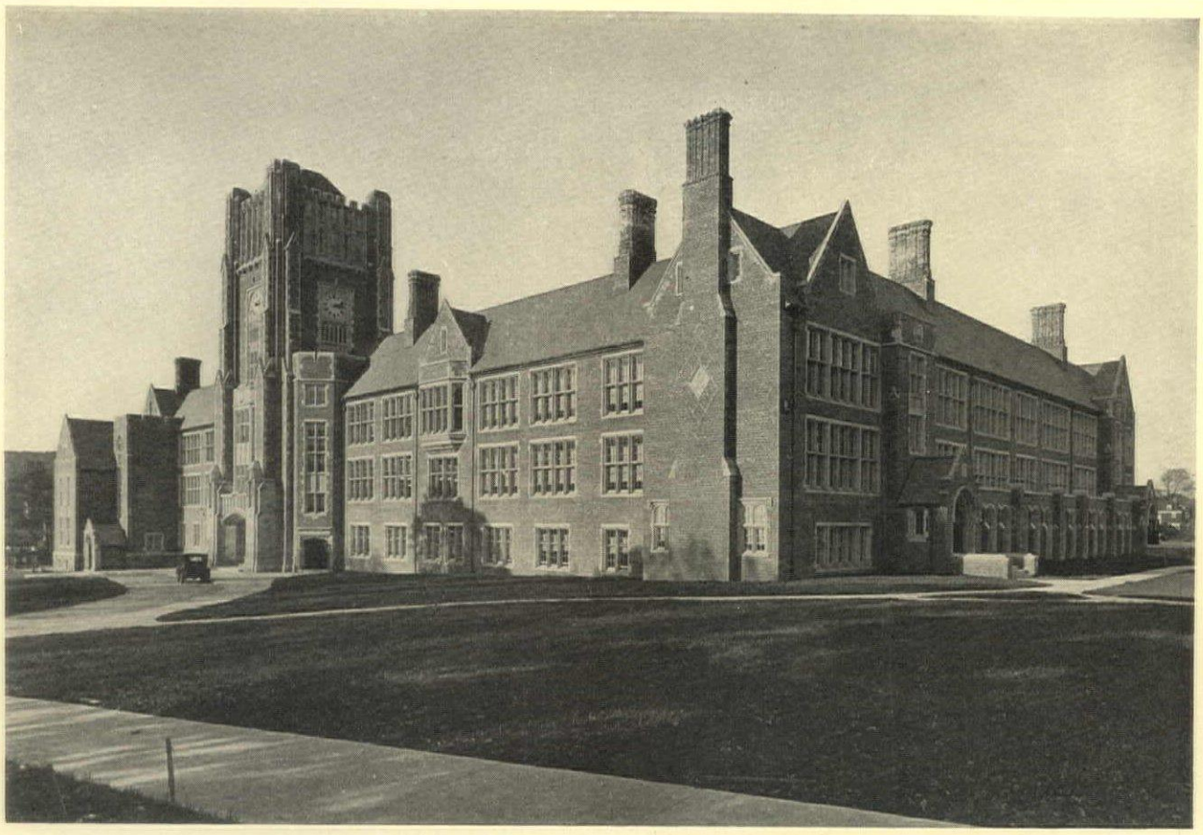


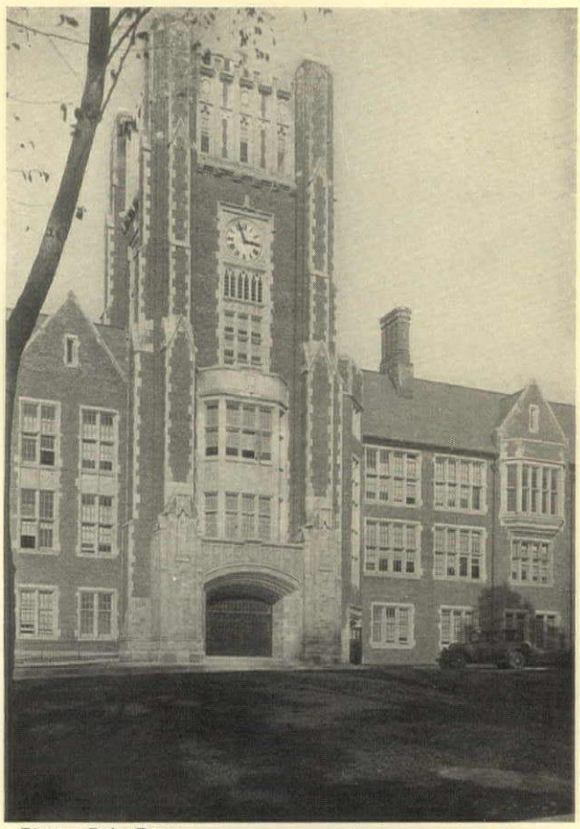
FIRST FLOOR

PLANS, GIRLS' SENIOR HIGH SCHOOL, ATLANTA

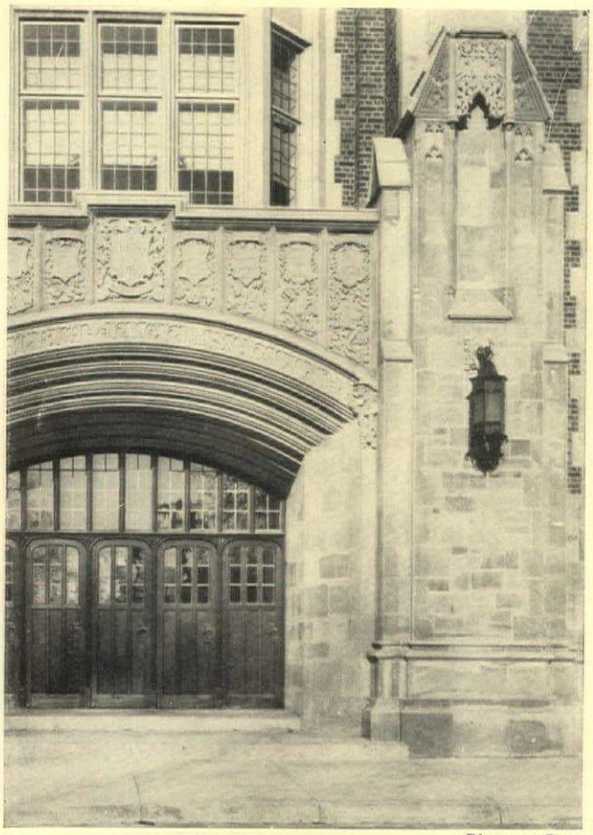
EDWARDS & SAYWARD, ARCHITECTS



GENERAL VIEW



CENTER TOWER



ENTRANCE DETAIL

Photos. Drix Duryea

Plans on Back

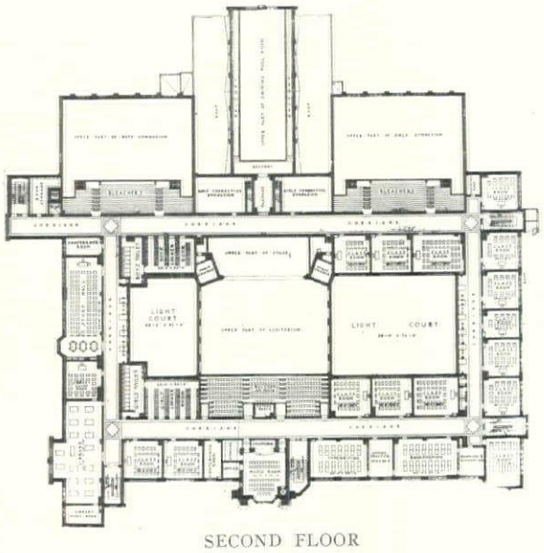
COLUMBIA HIGH SCHOOL, SOUTH ORANGE, N. J.

GUILBERT & BETELLE, ARCHITECTS

COST AND CONSTRUCTION DATA

Completed in September, 1927 at a total cost of $1,493,105 or 52 cents per cubic foot, this building has a capacity of 1,630 pupils, making it cost about $916 per pupil.

Slate is used for sloping roofs, and pitch and slag composition on the flat roofs. The exterior walls are of brick trimmed with limestone, and the general construction is fireproof.



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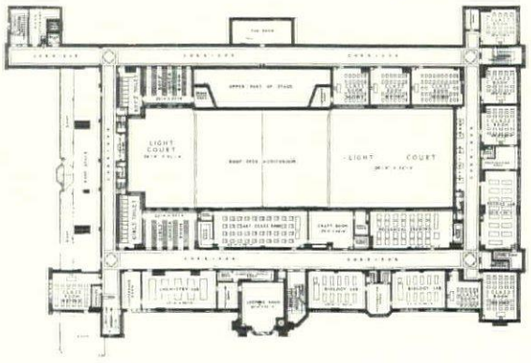

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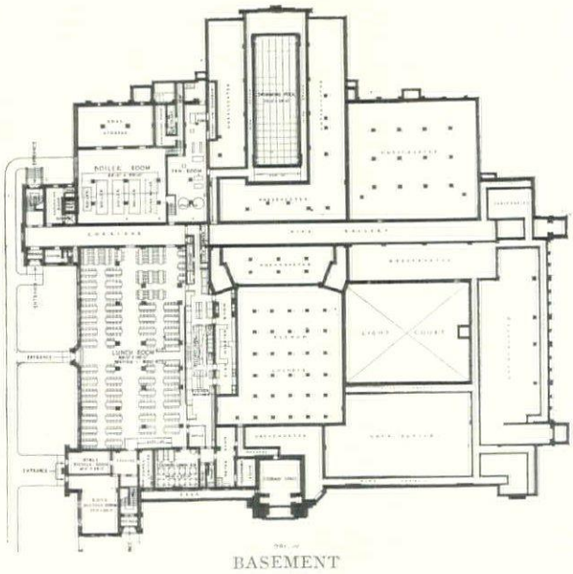
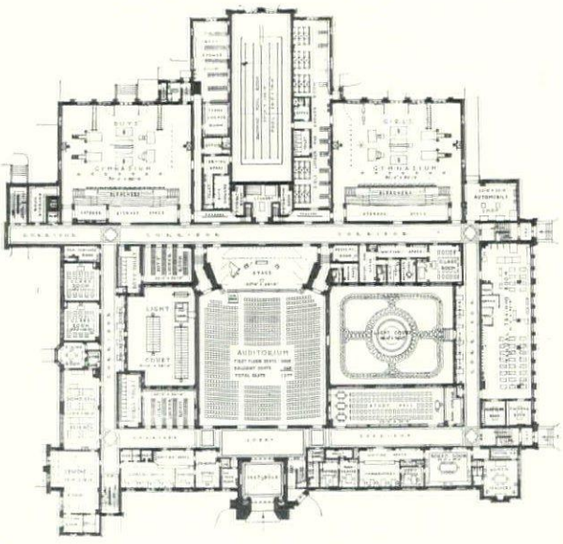


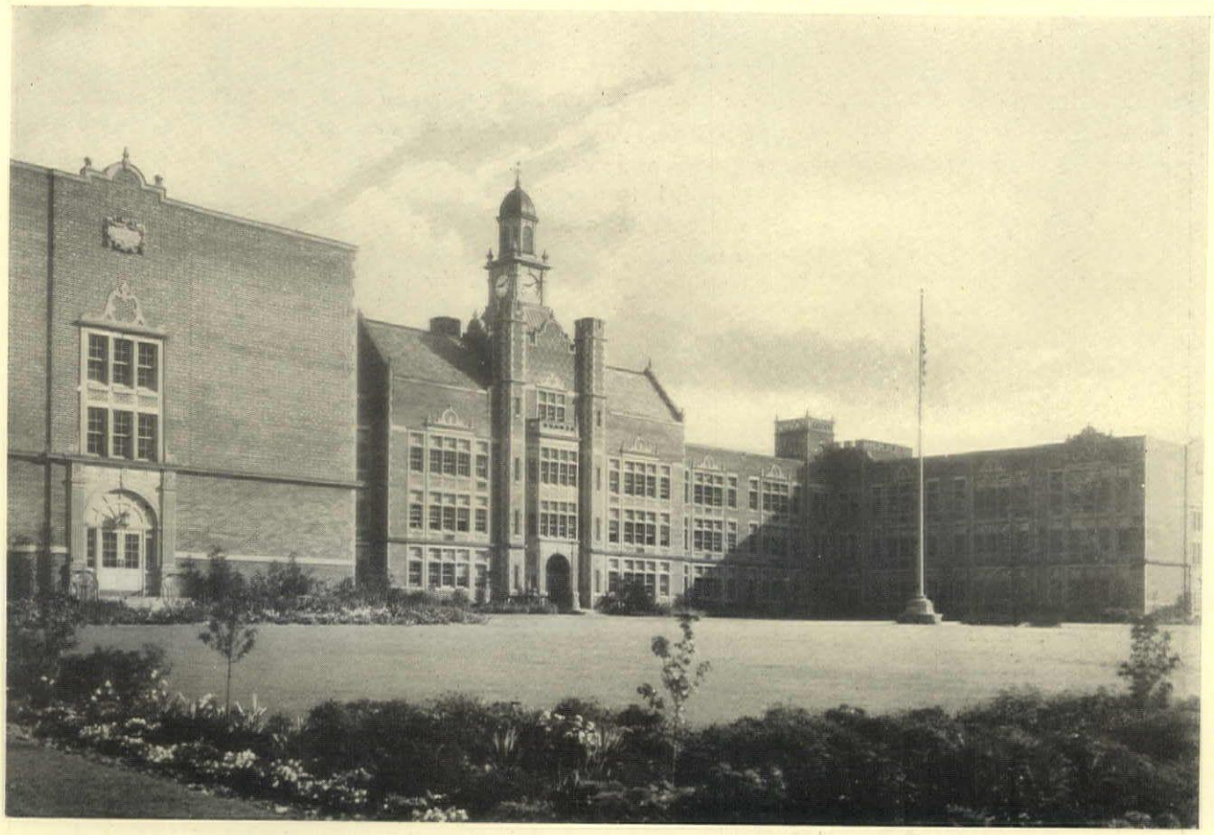
BASEMENT



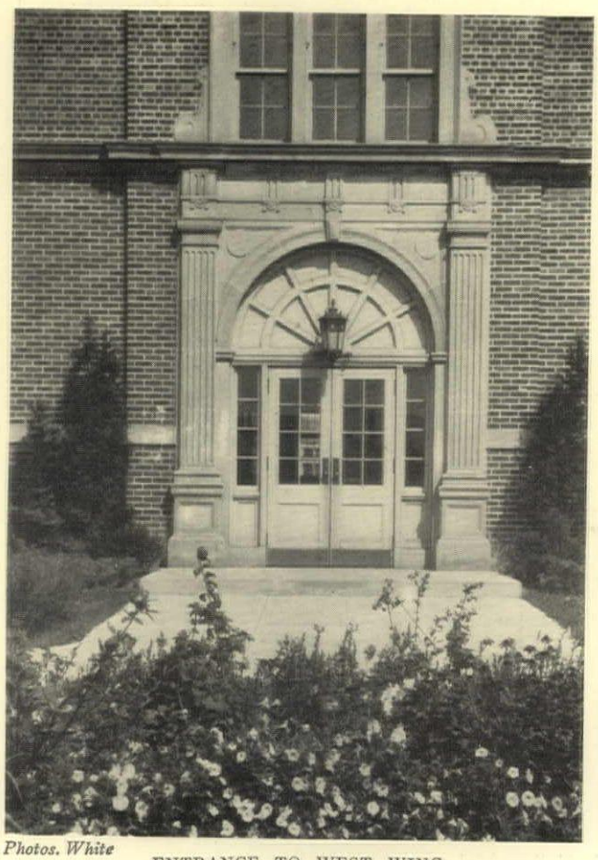
FIRST FLOOR

PLANS, COLUMBIA HIGH SCHOOL, SOUTH ORANGE, N. J.

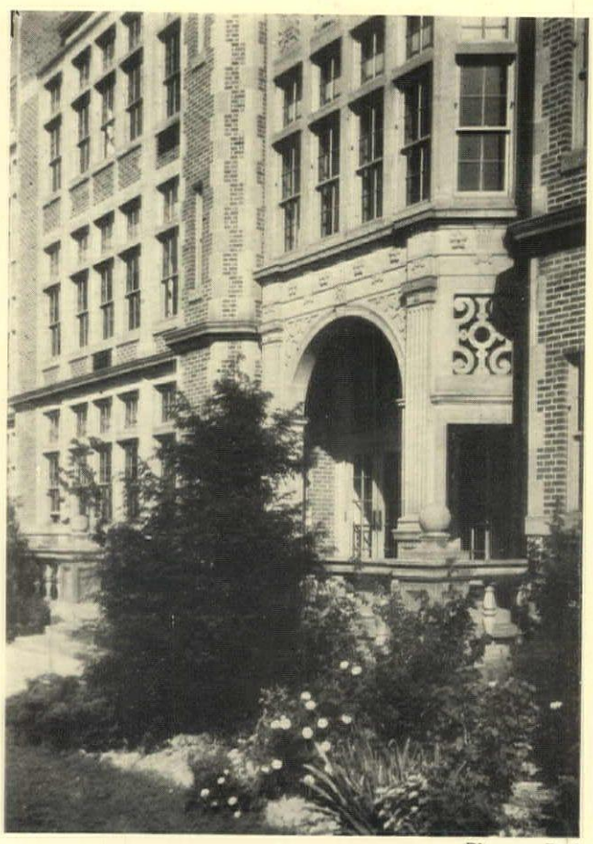
GUILBERT & BETELLE, ARCHITECTS



GENERAL VIEW



ENTRANCE TO WEST WING



SIDE ENTRANCE

Photos. White

Plans on Back

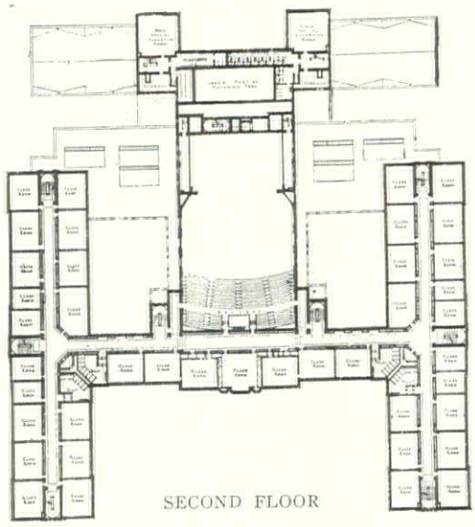
CLEVELAND HEIGHTS HIGH SCHOOL, CLEVELAND

WARNER, McCORNACK & MITCHELL, ARCHITECTS

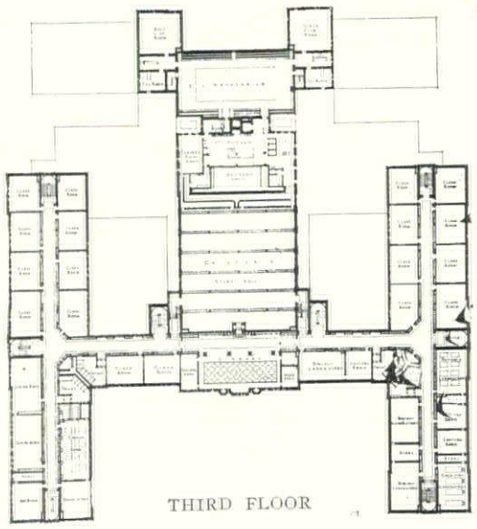
COST AND CONSTRUCTION DATA

Exclusive of the equipment which cost $82,913, the total cost of this building was $1,430,685 or 53 cents per cubic foot. It is designed to accommodate 2,100 pupils, which makes a unit cost of about $681 per pupil.

The construction is fireproof, the exterior walls being of brick and stone and the roof covering slate and composition.



SECOND FLOOR



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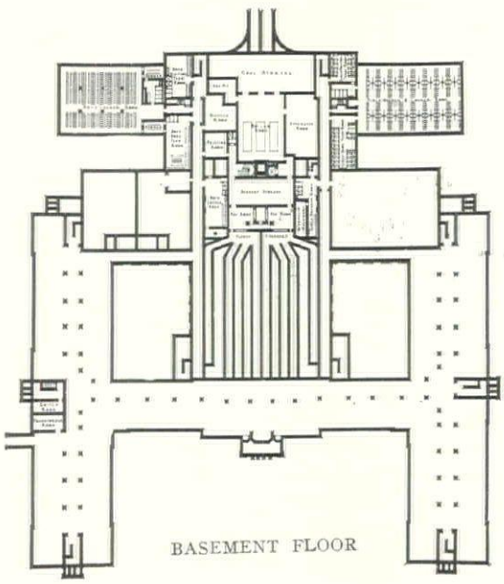
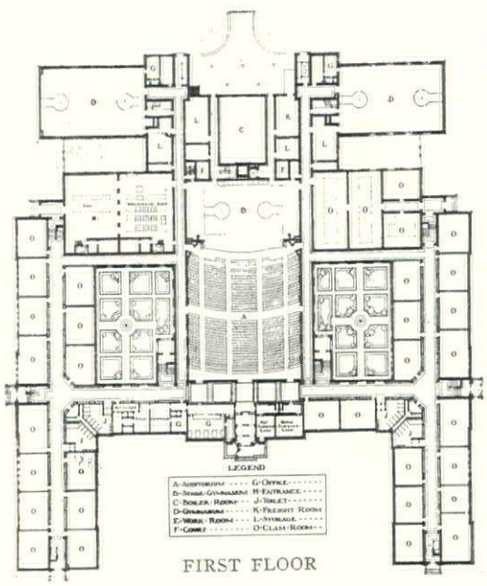


BASEMENT FLOOR



FIRST FLOOR

CLEVELAND HEIGHTS HIGH SCHOOL, CLEVELAND
WARNER, McCORNACK & MITCHELL, ARCHITECTS

THE NEW SCHOOL BUILDING, THE ARCHITECT, AND THE BOARD OF EDUCATION

BY

JAMES O. BETELLE

OF THE FIRM OF GUILBERT & BETELLE, ARCHITECTS

THERE will always be a demand for new school buildings or additions to old schools as long as our country continues to grow and remains a democracy. At the present time there are hundreds of thousands of school children in the United States housed in makeshift buildings, portable schools, rented spaces and dwellings, stores, annexes, attics and basements. There are an equal number or more attending school only part time, and in addition to this, every city has a greater or less number of overcrowded classrooms. From this it can be seen that crowded school conditions exist today, and they probably will always exist for the reason that like all public work, school accommodations are added slowly and are always behind the actual needs. The demand for additional school accommodations manifests itself in a number of different ways. Its first symptoms are overcrowding in classrooms, then the renting of outside accommodations or the erection of temporary portable school buildings on the school grounds. When conditions have reached such a stage as this, there is not much for the local board of education to do to convince the citizens that additional school accommodations are necessary. The crowded conditions and the part-time classes have probably so upset the daily routine of the homes that the demand for more accommodations comes from the citizens rather than from the school board.

An architect is always interested in the erection of a school building or the development of a school building program. He is interested, first as a citizen and taxpayer, and second as an architect, whose business it is, among other things, to design and supervise the erection of school houses. This article will discuss the various phases of an architect's interest in the new school building, from both a business and a personal standpoint.

After the need for additional school accommodations is recognized, the intelligent thing to do is to ascertain the extent of the need and to decide upon a remedy. If merely an addition to an old structure, or the erection of a single new building is necessary, the situation is comparatively simple. It may happen that the community in question has, for one reason or another, neglected its school buildings, or that the community has experienced unusual growth, with the indications that further increased additions of population are in store for it. In the latter case, it would be wise for the architect to recommend that an educational survey be made to determine the best means of providing the additional school accommodations needed immediately, and to provide a comprehensive future building program, extending over a period of years. It might not be amiss to say here that the making of an educational survey is a special line of work, wherein the services of an educational administrator are of greater value than any that could be rendered by an architect. While it is true that architects at times attempt to make educational surveys, such surveys have not the value of those made by a trained educator, who has specialized in this type of work. It remains for the educational authorities to outline the problem in the terms of buildings to be erected, their sizes and uses, and then for the architect to work out this problem in like terms. It is no more reasonable for the architect to attempt to do educational work than it is for the educator to do architectural work. Both lines of effort are specialties and are of sufficient scope and importance to be made a life-long study, and it is hardly within the realms of possibility for any one person to know both subjects sufficiently to render creditable service.

In a school building program, the architect should be retained early in the proceedings. If there are not sufficient funds or authority available for retaining the architect to design the buildings contemplated, there should be enough money made available by the board of education to retain an architect for special services and advice until the full appropriation has been obtained. In the case of the selection of school sites, the architect can be very useful. The ideal way to make a selection of a site is for the board of education to place before the superintendent of schools several attractive sites for the building, and ask his opinion as to their advantages from a school administration standpoint, and at the same time to ask the architect's views from a building standpoint. What may appear to be an impossible site on account of grades and topographical peculiarities, may develop into a very advantageous site under a skillful architect. What may appear to be a good building site to the layman, may upon investigation by the architect prove to be unsuitable for some such reason as wet soil, underlying rock, or the limited bearing power of the ground. After the question of site has been put up to both the superintendent of schools and the architect, and they agree on the same site, there can be little ground for argument, but should they differ on the site to be selected, it then becomes the duty of the board of education to weigh the merits of the case and come to a decision which will be for the best interests of the community.

The adoption of a building program covering a period of years by the board of education has many advantages. It permits the selection ahead of time, and for that reason allows the purchase of school sites at reasonable prices, thereby often saving thousands of dollars to the taxpayers. The adoption of a building program permits these sites to be selected at proper locations long before those particular parts of the community have been built up, and when large

tracts of land of sufficient sizes for school purposes can be obtained at relatively low prices. It is to be regretted that many communities wait until everything is built up and more school accommodations needed before purchasing sites for schools. This means that the size of the site is restricted and the small piece of ground obtained is very expensive, due to the surrounding improvements.

An element in regard to the erection of a new school building that is of primary interest to the architect is the point of view of the board of education in making a selection of an architect to do the work, and it is probably of equal interest to the board of education to know the points of view of the architects who are being considered in connection with the work. Every owner naturally wants to secure the finest and largest possible school building for the money available, and every architect who is in touch with the school board naturally feels that he should be selected to do the work. With this situation confronting a school board, it is not an easy task to select an architect, as each candidate for the work has his friends and adherents, and they do not hesitate to press the claims of their favorites upon the individual members of the board of education. The board is a public body, and as such is in duty bound to give courteous and patient attention to the claims of the various architects.

The final selection may be arrived at in one of three ways. First, the board may invite a number of architects to appear on a certain evening at a special meeting and then give each candidate a few minutes to tell his story. This is the most unsatisfactory way of any, because after interviewing a few candidates the members of the school board, who are already tired out from a hard day's work before the evening meeting, are practically exhausted after hearing two or three architects endeavoring to sell their services,—and the half-dozen yet to come get but little consideration. Besides this being an unsatisfactory way for an owner to select an architect, it is undignified and almost humiliating as far as the architects are concerned. To wait in an anteroom with possibly ten or a dozen fellow architects, all scrambling for the same commission, and kicking one's heels together until it is time to be called by the board and given a few minutes to tell his story, is not a very inspiring sight or a dignified position for a capable architect. The selection of an architect made on this basis is sure to end in regrets. The architect is placed in an unfavorable position from the start. He has not the opportunity or sufficient time to tell his story or answer the questions of the board or to discuss their problems with them. He is also placed on a competitive basis very often as to the price of his services, as well as to what he claims he can do for the money available. It then results in the selection of the architect who makes the most extravagant promises and tells them what a large building he can give them for little money, the great amount of services included in his commission, or for how small a fee he will do the work. The average school building is likely to be a relatively large work in the ordinary architect's office, and inasmuch as the architect is making his living by designing and supervising buildings, he is naturally very desirous of obtaining the commission.

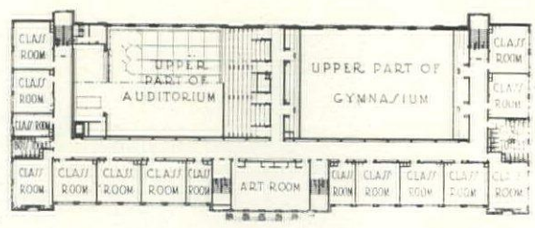
The conservative and reliable architect is not the one usually selected on this basis. He is careful in the statements and promises he makes, and is, therefore, no match for the high powered salesman who agrees with all the demands of the board and describes in flowery language the kind of building he can design for little or no money. If conscientious and upstanding architects would refuse to be parties to such a scramble for work, school boards would soon realize that there are other and better methods whereby an architect can be selected, as the only men responding to their invitation would then be those who were the least desirable to engage. It has been found that reduced architects' commissions or the inclusion of a clerk of works on the site all the time, or payment of traveling expenses, have very little influence with a broad-minded board of education. They are quite willing to pay the usual 6 per cent fee for architectural services of quality, and such concessions tend to lose a good commission for the architect rather than to win it. An architect who agrees to design a building for an absurdly small fee has but little respect for his services,—but then he probably knows what they are worth.

It would seem a fair proposition that if a school board wanted to interview the architect, they should have some process of elimination and select only two or three, and then give each of these an evening to discuss the problem, after which the board can make an intelligent selection. Surely there can be no complaint from the board if the architect agrees to match his time and experience against theirs, with the resultant benefit to both parties. The two or three architects to be given a final interview can be selected and the others eliminated by the issuance of questionnaires, which will set forth the education, office organizations, and past performance of the applicants, together with specimen sets of working drawings and specifications of similar buildings.

The third method of selecting an architect is on the basis of an architectural competition in which drawings are submitted and a judgment made. It is to be regretted that school boards are not more familiar with the fact that the American Institute of Architects has a standard form of competition program which has been prepared for the convenience of committees proposing to hold competitions, that copies of this document can be obtained by simply writing to the headquarters of the American Institute of Architects, 1741 New York Avenue, Washington, or that they can be obtained from the local chapters of the Institute, located in the important cities of the country. The terms of this program are, of course, familiar to all architects, are easily understood by school boards, and are recognized as

Photos. Drix Duryea

FRONT ELEVATION



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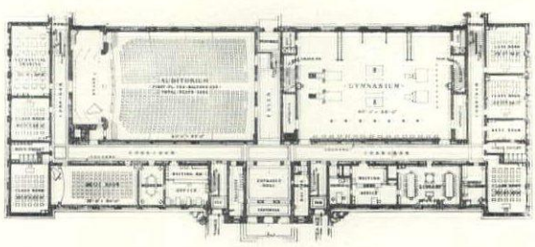
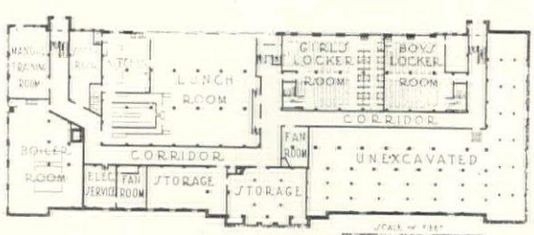
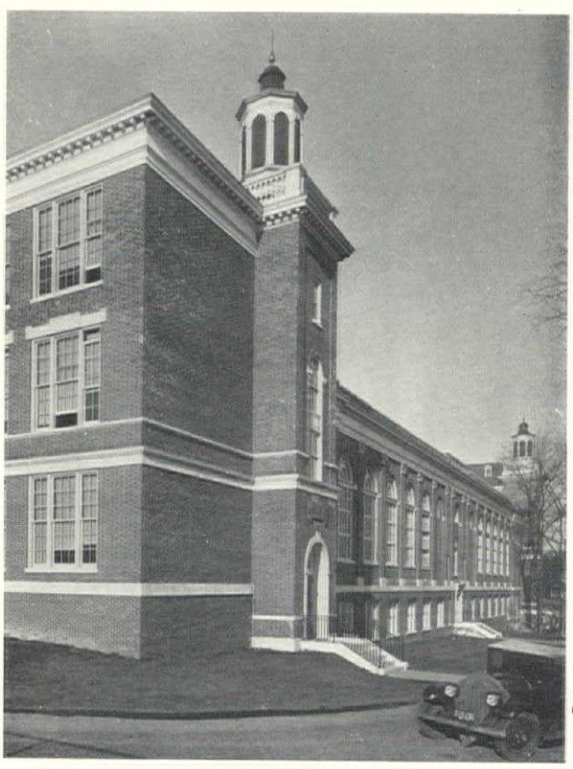


FIRST FLOOR



BASEMENT



REAR ELEVATION

The architectural treatment of the stairway towers at either end of the rear elevation is one of the interesting features of the Greenwich High School. Both the auditorium and the gymnasium are located at the back of the building on the first floor level.

GREENWICH HIGH SCHOOL, GREENWICH, CONN.

GUILBERT & BETELLE, ARCHITECTS

fair to both the owner and competitor. It is strongly recommended that school boards, which have in mind architectural competitions for school buildings, obtain copies of this competition circular and program, and they will find that the good results obtained by its use will justify their action.

Assuming that the architect has been selected, he should not only get acquainted with the members of the board of education, but he should get in especially close contact with the superintendent of schools. After all, the superintendent of schools is the executive officer of the owner, and it is to him that the owner looks for guidance, not only in educational matters, but also as to the requirements for the new school building. It will be found that school superintendents are now much better informed with regard to the requirements of an up-to-date school building than they have been in the past. Inasmuch as the school superintendent has a working knowledge of the building requirements and can discuss them intelligently with the architect, it is as little as the architect can do to know the operation of a modern school, to study the educational requirements of the superintendent, and to try to understand his point of view. The best results can be obtained only through this knowledge, mutual understanding, and respect. There are many items of information that the architect will have to know in a preliminary way before starting to make sketches for the new building, such as the kind of school needed, what is to be its capacity, a survey of the site, and other details.

Generally the appropriation has been made before the architect is engaged, but now and then it happens that the appropriation has not been made, and this is a better situation, as far as the architect is concerned, than having a definite sum of money allotted for the new building. As a rule, the appropriation is nothing more than a guess, and the requirements and ideas of the board do not correspond to the amount of money appropriated, as the appropriation is small and the ideas are large. So, if the appropriation is still to be made, the architect is in a good position to start his sketches on proper lines and to advise the board as to the cost of the building after the sketches have been adopted, and the proper amount of money obtained before the bids are received.

It should be realized early in the situation that most states have departments of education, which in turn have sub-divisions which must approve and pass on plans for new public school buildings before they can be erected. It is, therefore, incumbent upon the architect to obtain a copy of the state school building law and the latest regulations of the department having in charge the erection of school buildings. Even if the architect has designed other school buildings in the same state, he is likely to experience regret unless he obtains the latest rules and regulations of the department early in the sketch stage. If he does not, it may be embarrassing later on and possibly mean expensive alterations and changes in the plans. After the sketches are drawn and reach the stage of meeting the approval of the owners, it is then wise to send prints, or better still take them personally, to the state department of education and go over them with the individual in charge of buildings. This will make sure that the sketches are along lines that will be finally approved when the working drawings are completed. If this procedure were always followed it would save heartaches and much unnecessary expense to architects who have failed to submit their plans in sketch form, but waited until the working drawings were completed and then found that fundamental changes in their layouts were required by a department of education.

With regard to the plans of the building, we hear a great deal these days about standardization. As far as the general plan of the building is concerned, no standardization is possible if the building is to meet the requirements of the particular community in which it is built, and fit the site and be in character with the surroundings. Standardization of detail is possible in large cities or in architects' offices making a specialty of school building design. These standards apply only to such things as stairs, classroom fittings, toilet rooms, equipment of special rooms, etc., but never to the layout or general plan, as this has to be designed to fit the individual needs of the building, the points of the compass, the topography and shape of the lot, and other conditions.

With regard to the proper architectural style to be used in a school building, it is hardly necessary to mention the various elements controlling this, but in spite of fear of repetition, it may not be amiss to mention some of the limiting conditions. In the first place, a school building should look like a school and not like a public library or a city hall. The architectural style adopted should be in keeping with the community; that is to say, if the town is in New England with colonial traditions, a Colonial building would be appropriate. If the building is in a college town adjacent to the college buildings which are of Collegiate Gothic, a building of similar style would be appropriate. If it is in California or the southern part of the United States, a Spanish or Mission style might be appropriate, so that local conditions and good taste should govern the style adopted.

With regard to the materials used in a school, it is hardly necessary to say that these materials should be simple and substantial. Elaborate marbles and bronzes and expensive materials are out of character in a public school building, and the architect must realize that he is not building a state capitol. Elaborate decoration, either inside or outside, not only costs money but is inappropriate. A school building has sometimes been called an educational factory or workshop, and it is on that basis that it should be designed. Cheap imitations and substitutes for more elaborate and expensive materials should also be avoided. These imitations and substitutes have not the wearing qualities of the imitated material, and it is much better to get a simple and substantial building than an elaborate structure built of substitutes.

A school building, while not occupied many hours in the day, is nevertheless subjected to excessive wear. When it is realized that the building houses thousands of pupils and that they change classes every 45 minutes or thereabouts, it can be seen that tremendous wear is received and that only the most substantial materials will stand up under it. A simple, straightforward, businesslike building is looked upon with favor by the taxpayer, who has no objection to paying for the essentials, but who finds fault with what he considers undue elaboration and expense in connection with school buildings.

In connection with the materials to be employed, a word about the use of new materials and appliances might also be in order. The careful architect will go slowly in specifying any new material or appliance for use in a school building. In private work the architect may be a pioneer and, with the consent of his client, try out and adopt any new apparatus or material that strikes his and the owner's fancy, and which his judgment dictates as appropriate. In a school building the situation is different; this is a public structure and every taxpayer is a part owner. If new materials or appliances are adopted and turn out failures, every citizen and newspaper has a right to criticize; whereas if they turn out satisfactorily, no particular credit is given the architect for taking the chance. This is quite different in a privately owned building, as whether it turns out satisfactorily or otherwise is the concern of no one but the architect and his client. High powered salesmen are continually importuning the school architect to adopt new materials and methods and new appliances, and if an architect succumbs to their high powered methods, he may sooner or later find himself in an embarrassing position. It is a good principle to insist that any material or appliance entering into a public building have a background of a number of years of successful use and a number of satisfied users. "Safety first" is a good motto.

In connection with the layout of the plan, it may be found that the demand for space and capacity is more than it is possible to meet and keep within the sum which it is possible to have appropriated. This is where the skill, experience and knowledge of the educational demands, on the part of the architect, are very valuable. It has been previously said that the architect should know something of educational requirements and routine, and he is then in a position to show how economy in space can be carried out and educational demands still met. There are many different types of economy, such as economy in materials, economy in layout, and economy in use,—that is, the school building used to capacity without unnecessary and idle rooms and spaces. Each of these types of economy must be used with discretion and judgment; otherwise they become false economies, which constitute a form of extravagance. Another type of economy, and after all economy must be practical if we are to meet the tremendous demands for new school buildings, is the economy brought about by the duplicate use of rooms and spaces. This duplicate use is where a single room is used at different times for one or more purposes, such as a combination gymnasium and auditorium; the use of the lunch room for school purposes except during the middle of the day; a combination sewing and cooking room; or a combination physical and chemical laboratory. These duplicate uses are not as satisfactory as having separate rooms for each and every purpose, but in a small school where the scholars are not of sufficient number to use the special rooms 100 per cent of the time, such economy is necessary, as spaces which are vacant the greater part of the time cannot be justified.

A school building was never known to be large enough to be adequate for more than a few years, so that it should be made flexible in order that future additions can be readily made; in fact these future additions should be planned and thought of from the start, and indicated on the preliminary sketches. It should also be flexible in that partitions can be moved and altered without affecting the structural features of the building, as this may be necessary as time goes on, inasmuch as educational methods change.

To get full value out of a school building it should be planned so it can be used by the citizens for community purposes. It is not only the auditorium and gymnasium that can be so used, although these are the first thought of. The kindergarten can be used for small social gatherings, dances or meetings of the Parent-Teachers' Association. One of the classrooms which has movable furniture can be used for a men's debating club, and in combination with all these purposes the lunch room is always useful. There are other community uses for our schools that do not interfere with their primary purpose, and if we want the community to stand back of the schools, we should encourage their use to the fullest extent.

It is often asked what is the proper number of stories in height for a school building, from the standpoint of desirability and cost. For the purposes of this article, school buildings over three stories high can be ignored, as they are only suitable in large cities, such as New York or Philadelphia, where ground area is not available, and where necessarily the building must be high in order to get capacity. Like all other decisions, the proper thing to do can be determined only by knowing all limiting conditions. Generally speaking, a two-story building is desirable where sufficient land is available; this means only one flight of stairs to climb, and it makes a very safe type of school in case of trouble. A two-story school is in better scale with the surrounding houses than a three-story building. A three-story structure is better for a high school, where the pupils are older, than it is for a grade school. A one-story school has its uses and also its limitations; while large one-story schools have been built, they spread over such large areas as to become unwieldly, and a two-story building in such cases is much better. It would seem that a maximum

size for a one-story building, especially where an auditorium and gymnasium is to be included, would be not more than 10 to 14 classrooms. As to which type of building is cheaper, the single-story or multiple-story, there are figures available to prove either way you want it. The decision as to the number of stories in a school building should not be based on cost. The differences in cost between the different types of same size and capacity are not sufficient to be the deciding factors. The deciding factor should be what is wanted or what is thought to be proper under the particular circumstances of the case.

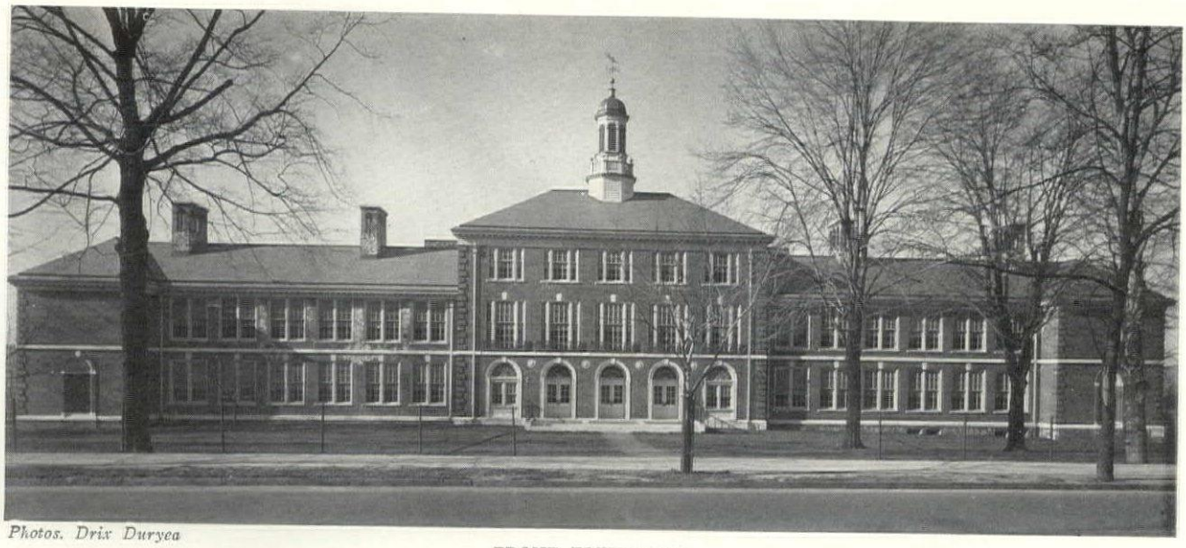
It is realized that school building costs are always of interest, but they are very difficult to state accurately or in such a way that they would be very useful. These school building costs vary from year to year, due to labor and material market conditions, and in various parts of the country due to local labor and material costs. Prices in the New York metropolitan district do not apply elsewhere, and the architect will have to depend upon his own knowledge of local conditions and building costs to approximate the cost of the proposed building. It has at times been suggested that approximate estimates be obtained from contractors on sketch plans and memoranda specifications. This sounds like a good method, inasmuch as the contractor who deals with costs all the time is in a better position to make a price than the architect could be. In practice, however, this does not work out. No contractor is going to take the time and trouble to take off quantities or carefully go into the cost of a proposed school building, for the reason that he is too busy figuring on actual work and constructing the buildings he has contracts for. Out of courtesy to the architect he makes up some sort of a price, and he sometimes asks what the architect wants it to cost, and, trying to be accommodating, he puts it in at that figure, so that in the last analysis preliminary figures from contractors on sketch plans are useless, especially as there is no responsibility attached to the contractor and no commission to be given out at that particular time; all of which is not very encouraging to accuracy. The architect must, therefore, make up his own figure as to the cost of the building, based upon his knowledge of costs and experience in buildings of similar kinds,—and stand or fall by the result.

There are several methods of stating the cost of a school building, and one of the oldest methods and one still in the minds of school boards and school superintendents, is the "cost per classroom." Years ago, when a school building was simply a box-like structure divided into so many equal parts, each of which was a classroom, it was very easy to determine the cost of the building per classroom. Today, with all the various activities in our schools, especially high schools, it means there are rooms of varying sizes, such as laboratories, shops, libraries, etc., all of larger size than the standard classroom, and in addition, lunch rooms, auditoriums, gymnasiums, and similar large spaces; so it is obvious that the cost per classroom is not now the basis on which to state the cost of a school building. Another method is to find the cost of a school building "per scholar." This is more definite than the classroom basis, but still somewhat indefinite, due to different methods of computing the scholar capacity of the building. The American Institute of Architects and the National Education Association have fixed upon a method of computing the number of scholars accommodated in a school building, and it might be useful to describe this method here: "Compute the number of pupils normally accommodated in rooms designed for classes only. Special rooms are to be figured at the actual number of pupils accommodated for one class period only. Auditoriums and assembly rooms are to be ignored, but gymnasiums may be figured for one or two classes, as the accommodations may provide. No gymnasiums, however, shall be accredited with two classes, if below 40 by 70 feet in size."

The most accurate way and the most familiar way of stating the cost of school buildings is the same way architects state the cost of any other building, and that is the cost per cubic foot. All architects know how to compute the cubage of their buildings, and they are based on more or less the same methods. Since it is felt that a cubic foot method is the most suitable, it might not be amiss to give some figures as to cubic foot costs, even if they do not apply to all parts of the country or at all times. The average fireproof school building, outside of New York, costs from 45 cents to 50 cents per cubic foot. As we get farther away from New York the labor costs are less and there is a corresponding reduction in prices. A building of semi-fireproof construction can be built for from 35 to 40 cents per cubic foot in the eastern section of the United States.

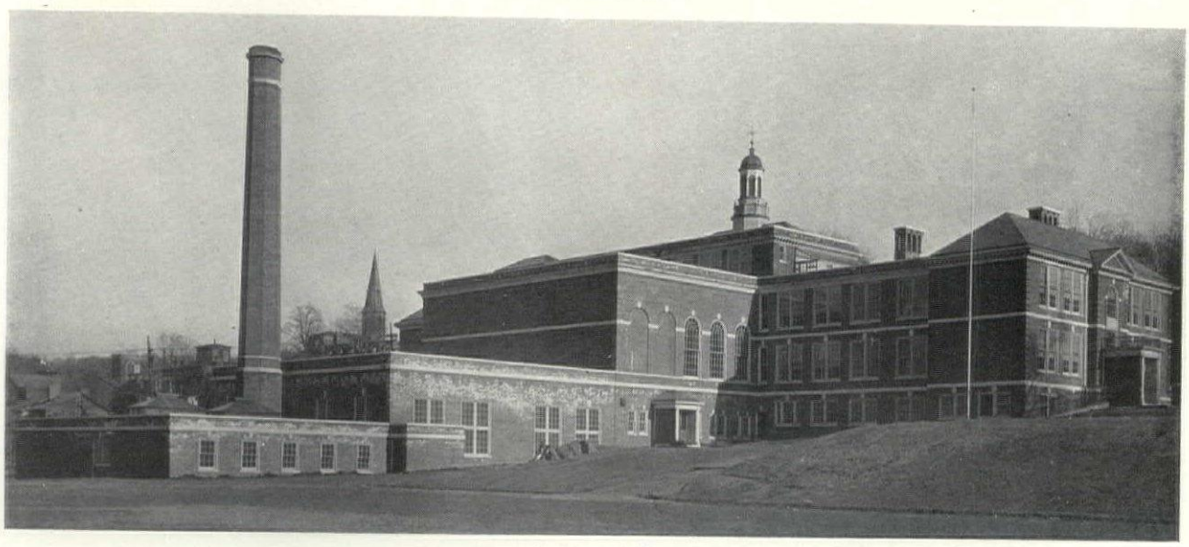
Another item of interest is the number of cubic feet per scholar in a school building. This varies in different types of schools, averaging around 800 to 1,000 cubic feet per scholar in a grade school; 1000 to 1200 cubic feet per scholar in a junior high school, and 1200 to 1500 cubic feet per scholar in a senior high school. If an architect were asked the cost of a 600-pupil high school, he would not be very far wrong if he figured out in his mind, 600 scholars times 1500 cubic feet per scholar, or 900,000 cubic feet; which multiplied by the cost per cubic foot that the architect determines is the price in his particular district, gives a quick and close approximation of the probable cost of the building. The basis of cubic foot per scholar is on the usual school building without any extraordinary facilities in it, being simply the average. If facilities out of the ordinary are added or omitted, the number of cubic feet per scholar should be adjusted accordingly.

Another question coming up in the minds of boards of education is the time required to get the plans drawn and the school building completed after the appropriation has been made. This is something that is again indefinite, but the board's question has to be answered, at least approximately. The

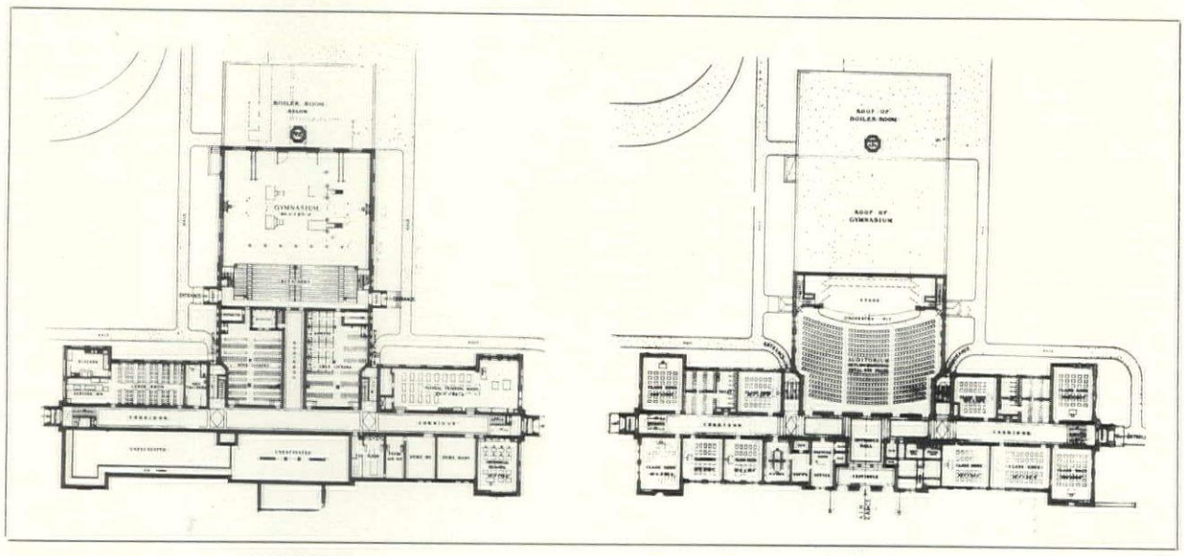


Photos. Drix Duryea

FRONT ELEVATION



REAR VIEW



BASEMENT FIRST FLOOR

WASHINGTON IRVING HIGH SCHOOL, TARRYTOWN, N. Y.

GUILBERT & BETELLE, ARCHITECTS

part of the work that is going to take up considerable time and cannot be always counted upon is the time given by the board of education to considering the preliminary sketches and deciding upon a definite scheme, which can be adopted and the architect ordered ahead with the working drawings. At the very quickest it takes one or two months to get the preliminary plans adopted by the board, and during that time a number of schemes have been submitted and discussed. After the preliminary plans have been adopted it takes the architect 10 or 12 weeks to make the working drawings, depending more or less upon the size of the building. After this it takes three or four weeks for the contractors to submit their figures, and probably 12 months for the contractor to complete the structure ready for occupancy. Altogether, this means at least 18 months from the time the money is appropriated to the time the building can be ready for occupancy. It can be done in less time, but it generally takes longer than this.

The contractors very seldom finish within the time stipulated in the contract for completion, and one reason for this is the type of contractors who are usually successful bidders on public work, such as schools. It should be realized that price is the only thing that is considered in awarding a contract on public work, for the reason that the law usually prescribes that the contract shall go to the lowest responsible bidder. It is very difficult to prove a contractor is not responsible, especially when he can get a surety bond guaranteeing completion of the work. Contractors of ability and with large organizations will not figure on school work, because they cannot compete in price with the newly organized and inexperienced concerns and the contractor without organization. But as one usually gets what is paid for, the board gets a slow, and possibly unsatisfactory, building from the lowest bidder, whom they would probably not permit to bid on any of their private work,—and the more responsible and efficient builders are eliminated from the situation.

The architect and the superintendent of schools should get together even during the preliminary plan period and decide upon the size and equipment of the special classrooms, such as laboratories, shops, cooking rooms, etc., which are usually built too small to contain the special furniture and equipment needed for their proper use. Each of these special rooms should have the equipment and furniture laid out to scale as the plans are developed, and the architect can with profit get in touch with one of the many equipment concerns, so that when the building is completed these special rooms can be properly furnished. This layout is also necessary in order that the various electric, plumbing, heating and water outlets can be properly located.

The modern American school has shown vast improvements in plan layouts and architectural expression in the past decade, due to continued coöperation between the architect and school authorities.

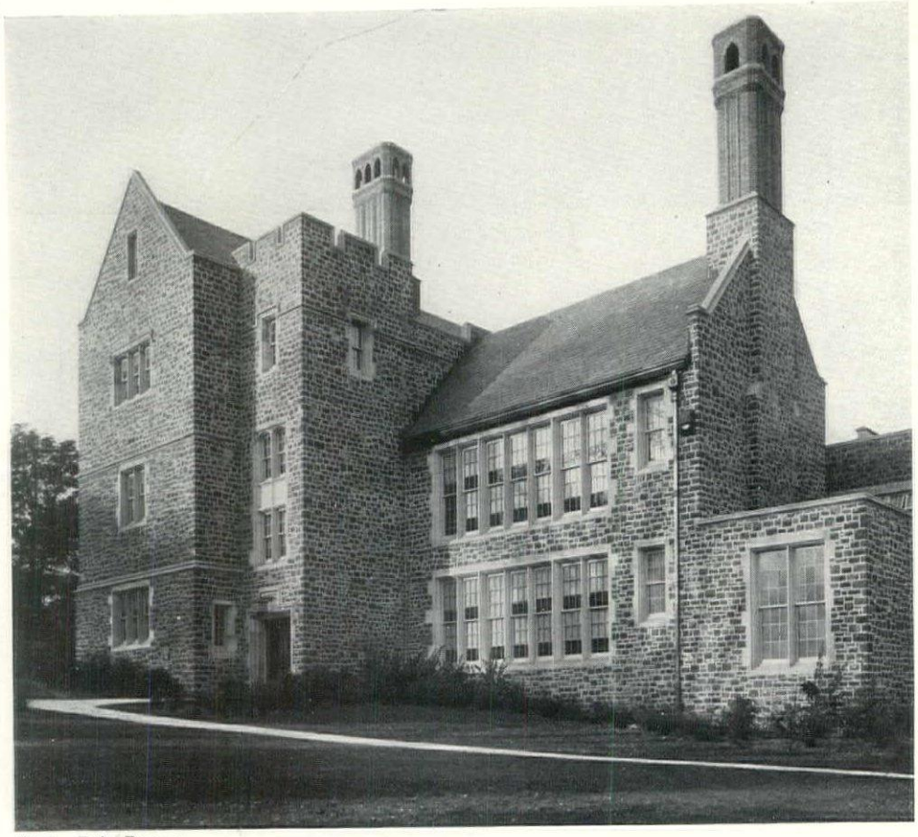
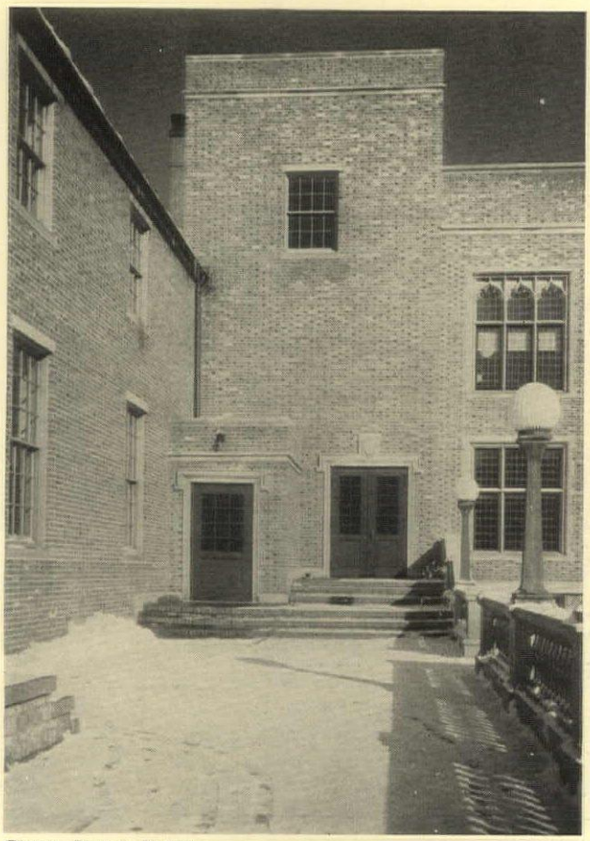


Photo. Drix Duryea

End Elevation, Jefferson School, South Orange, N. J.

Guilbert & Betelle, Architects

GENERAL VIEW



Photos. Paul J. Weber *Plans on Back*

SIDE AND AUDITORIUM ENTRANCES SOUTHEAST WING

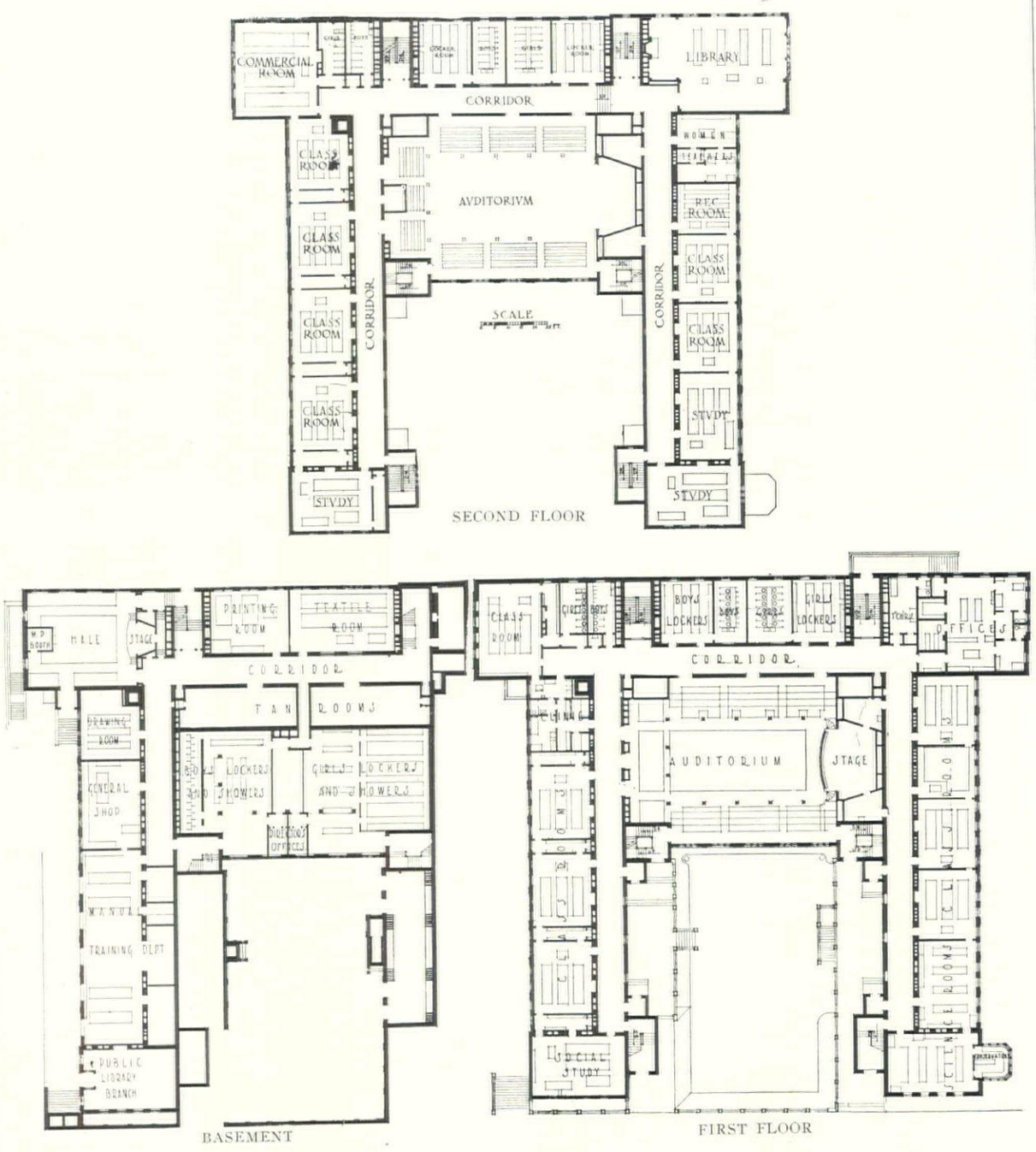
NORTH PARK JUNIOR HIGH SCHOOL, FALL RIVER, MASS.

NATHANIEL S. CHASE, ARCHITECT; R. CLIPSTON STURGIS, ASSOCIATE ARCHITECT

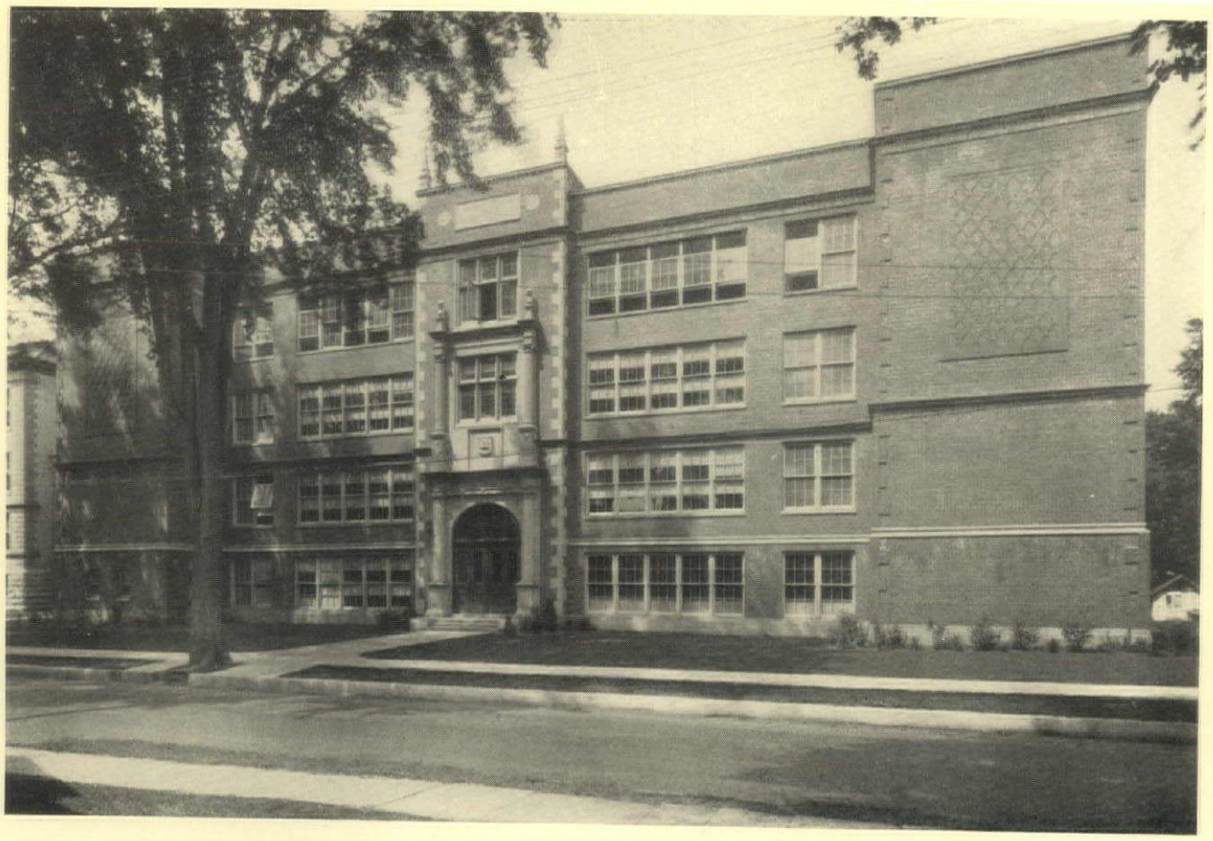
COST AND CONSTRUCTION DATA

This school was completed in 1924 at a total cost of $685,000, or 53 cents per cubic foot. It is designed to accommodate 1200 pupils, which makes the cost per pupil about $570. Equipment costing $59,000 has been installed in the building.

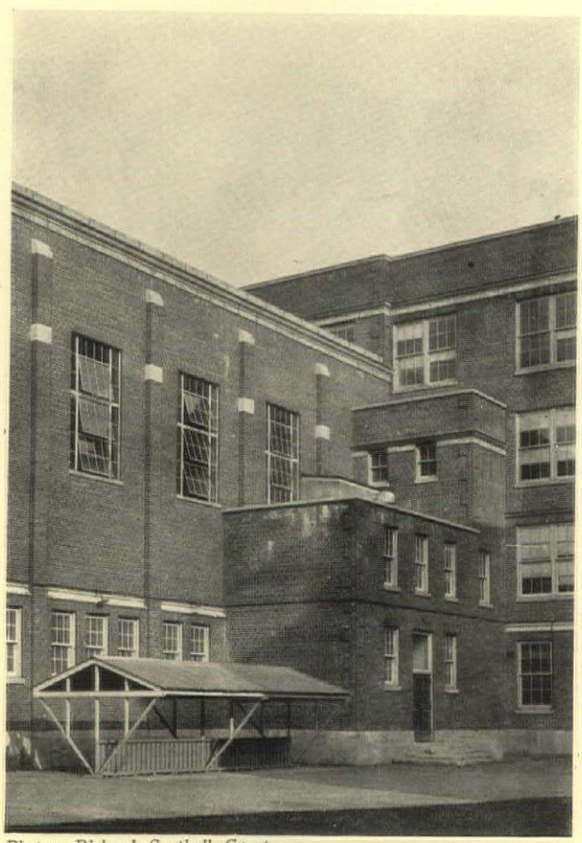
The construction is fireproof with wood roof structure. The exterior walls are of brick; the roof is covered with slate.



PLANS, NORTH PARK JUNIOR HIGH SCHOOL, FALL RIVER, MASS.
NATHANIEL S. CHASE, ARCHITECT; R. CLIPSTON STURGIS, ASSOCIATE ARCHITECT

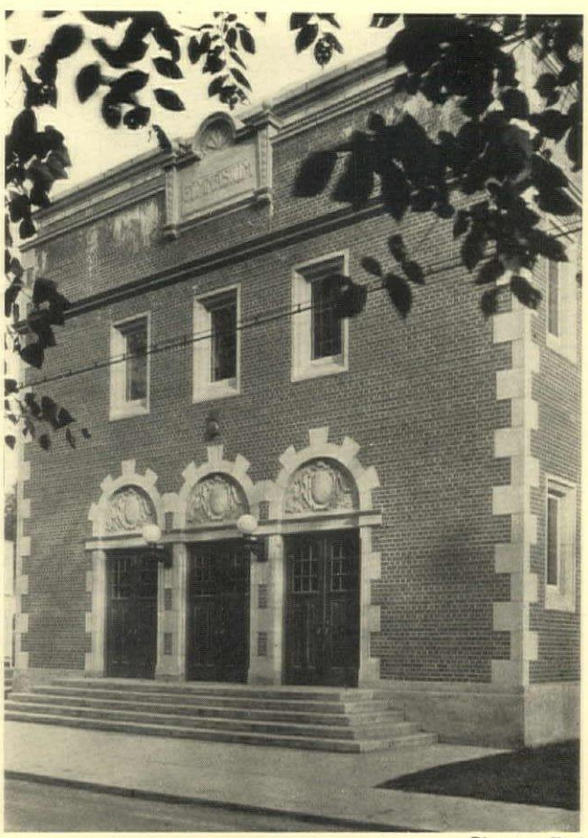


GENERAL VIEW



Photos. Richard Southall Grant

ENTRANCE TO GIRLS' LOCKER ROOM



Plans on Back

AUDITORIUM ENTRANCE

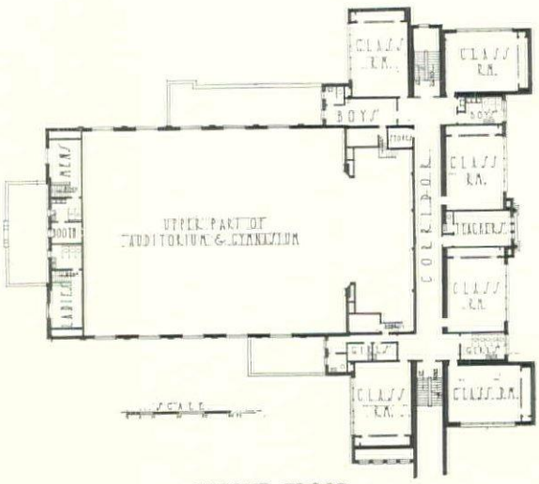
JUNIOR HIGH SCHOOL, GLENS FALLS, N. Y.

TOOKER & MARSH, ARCHITECTS

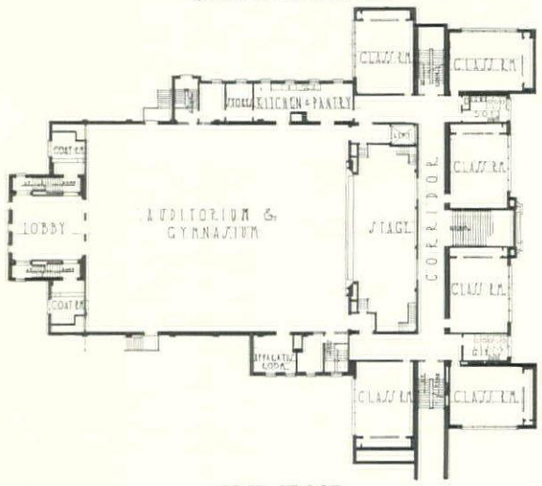
COST AND CONSTRUCTION DATA

Designed to accommodate 630 pupils, this school was completed in 1924 at a total cost of $360.000, or 33 cents per cubic foot, making the cost per pupil $571.

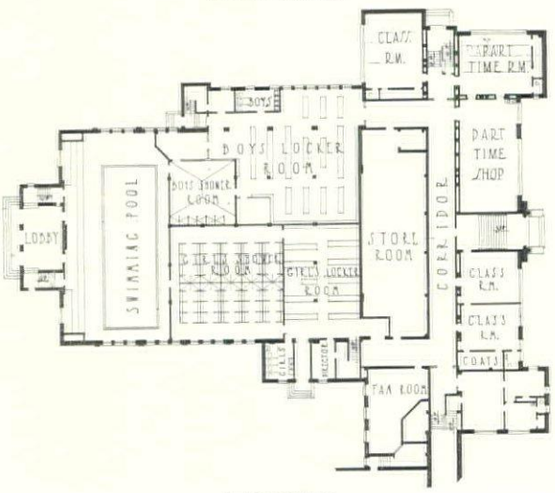
The general construction is fireproof, the exterior walls being of brick trimmed with tile. The roofing material is asbestos.



SECOND FLOOR



FIRST FLOOR



BASEMENT

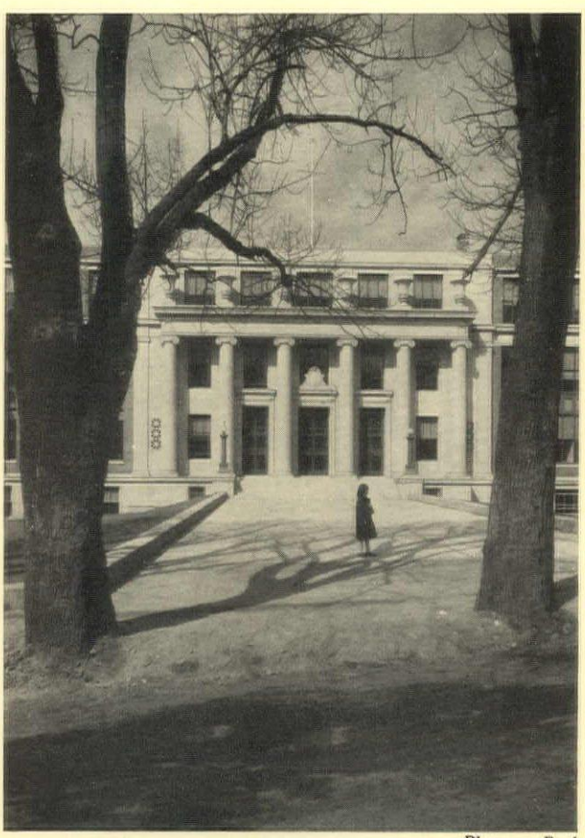
PLANS, JUNIOR HIGH SCHOOL, GLENS FALLS, N. Y.

TOOKER & MARSH, ARCHITECTS

GENERAL VIEW

Photos. Paul J. Weber

GALLERY IN AUDITORIUM



Plans on Back

ENTRANCE PORTICO

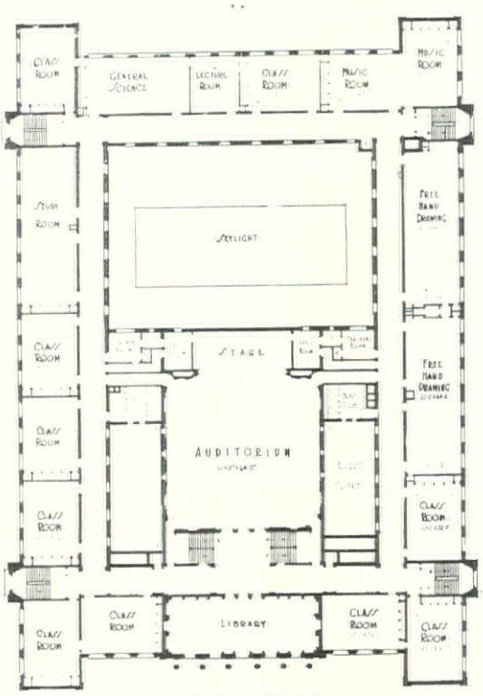
JUNIOR HIGH SCHOOL, WORCESTER, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS

COST AND CONSTRUCTION DATA

Erected in 1922 and 1923, this building has a capacity of 1762 pupils and cost $935,000, not including ground and equipment, making the cubic foot cost 40.7 cents. The cost per pupil is $530.

The building has a flat roof and the exterior finish is of sand-struck brick trimmed with artificial limestone. The stairs, corridors, and auditorium are of fireproof construction.



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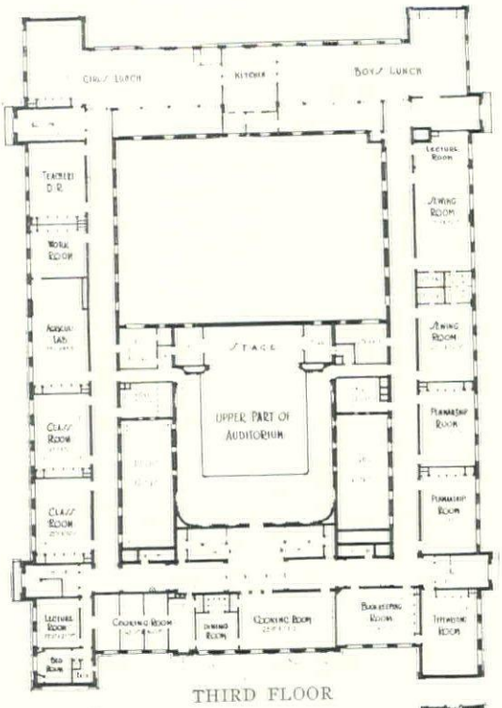
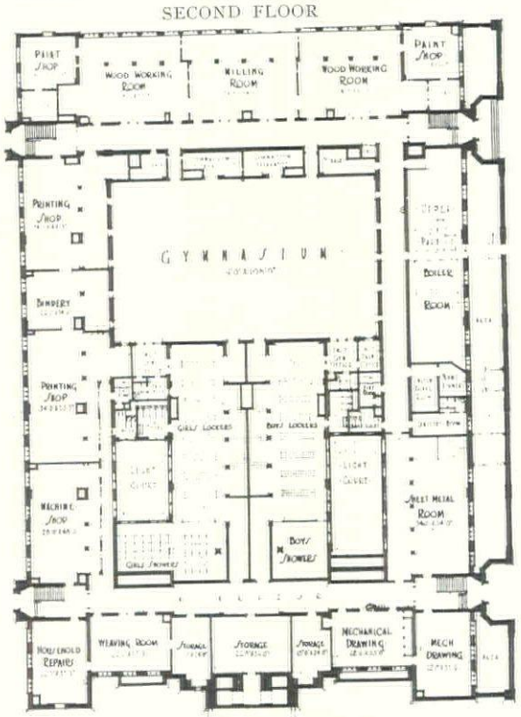
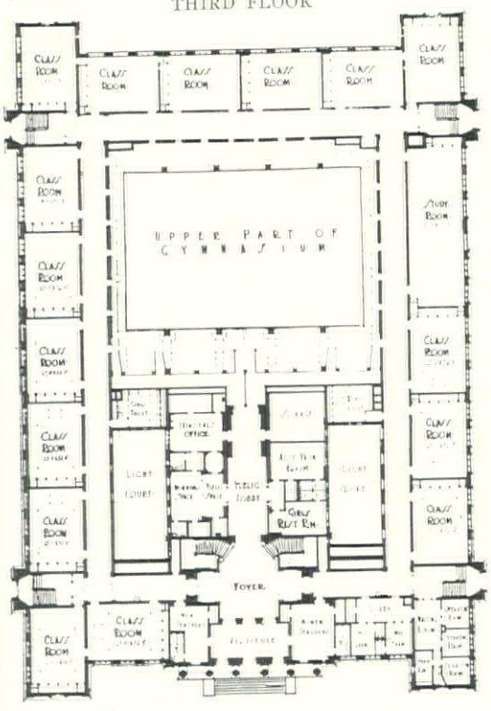


THIRD FLOOR



BASEMENT



FIRST FLOOR

PLANS, JUNIOR HIGH SCHOOL, WORCESTER, MASS.
JOSEPH D. LELAND & COMPANY, ARCHITECTS

GENERAL VIEW

Photos. Paul J. Weber *Plans on Back*

SCHOOL ENTRANCE MAIN ENTRANCE

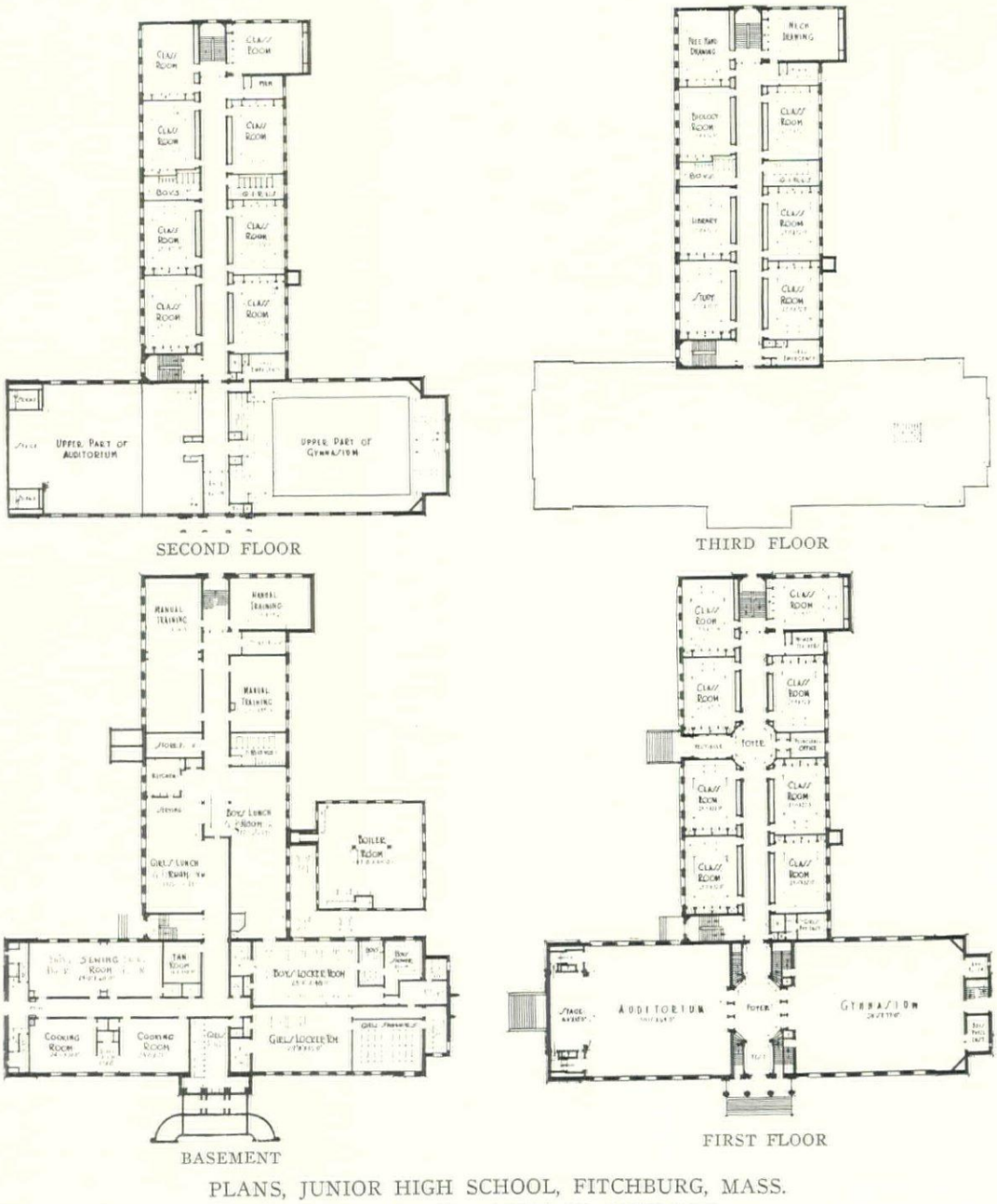
JUNIOR HIGH SCHOOL, FITCHBURG, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS

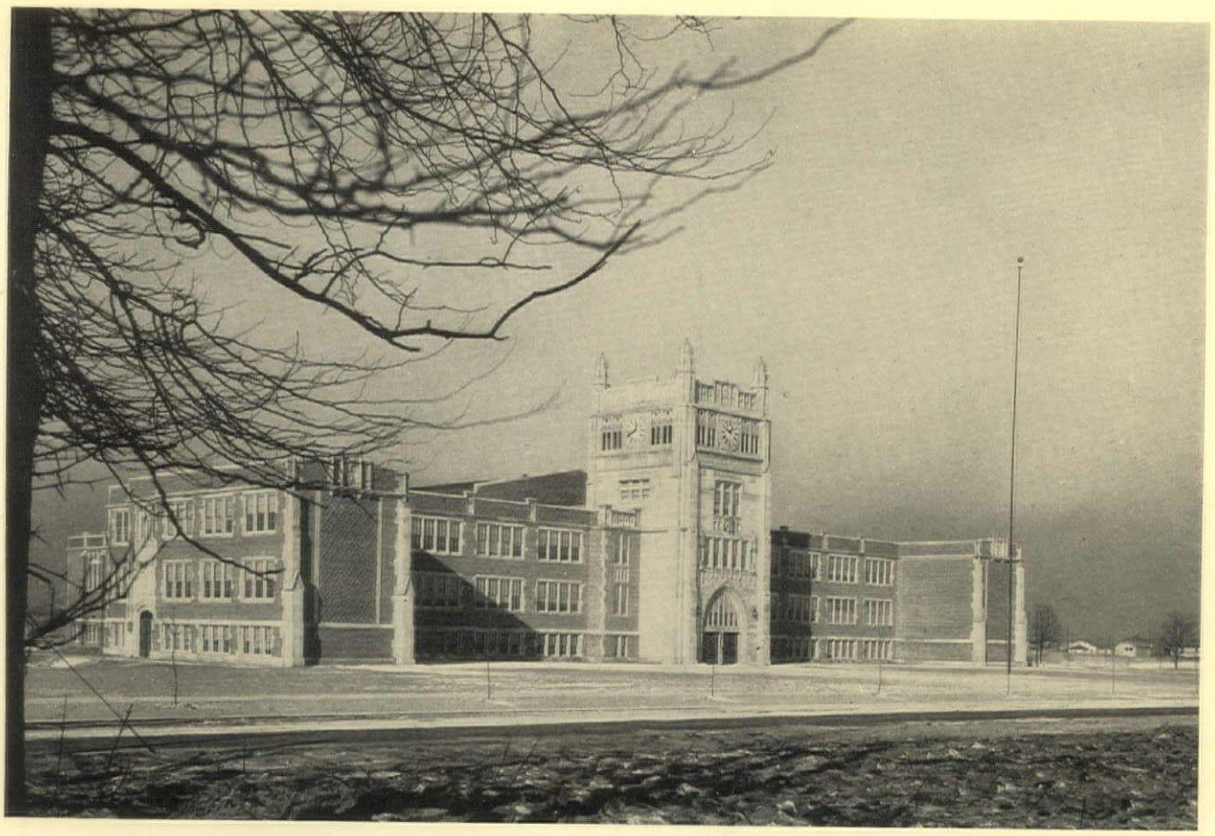
COST AND CONSTRUCTION DATA

Exclusive of ground and equipment, the total cost of this building was $394,135, or 32 cents per cubic foot. It is designed for 915 pupils, making the cost per pupil $430.

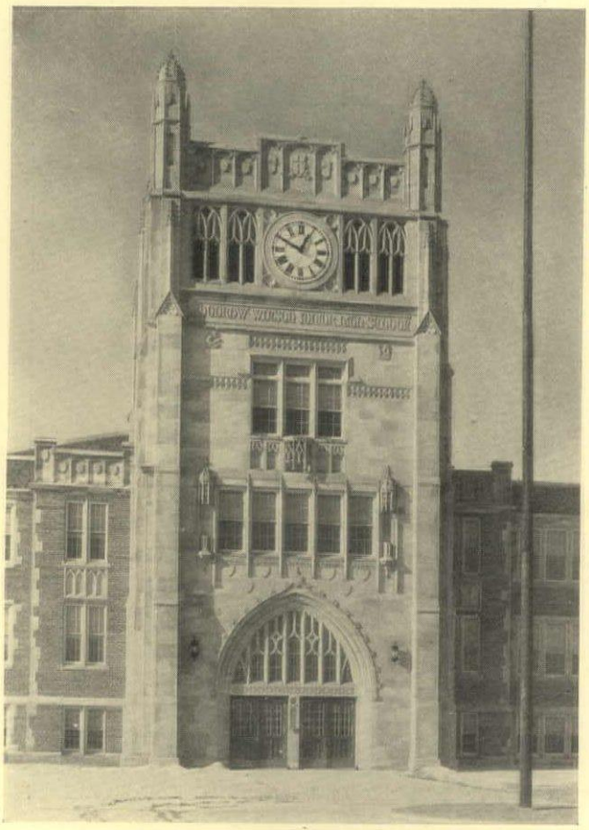
The corridors and stairways are fireproof in construction, and the exterior walls are of red waterstruck brick with limestone trim.



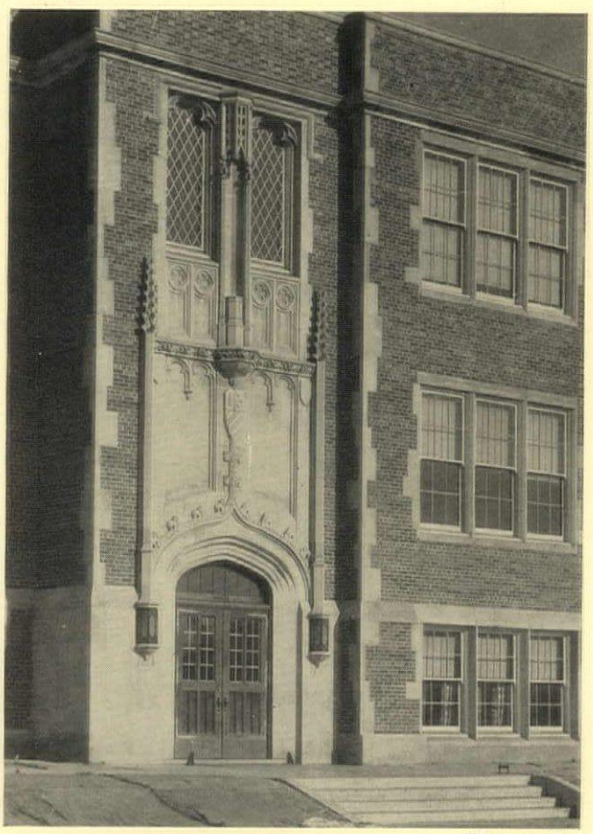
PLANS, JUNIOR HIGH SCHOOL, FITCHBURG, MASS.
JOSEPH D. LELAND & COMPANY, ARCHITECTS



GENERAL VIEW FROM THE SOUTHEAST



MAIN EAST ENTRANCE



SOUTH ENTRANCE

Plans on Back

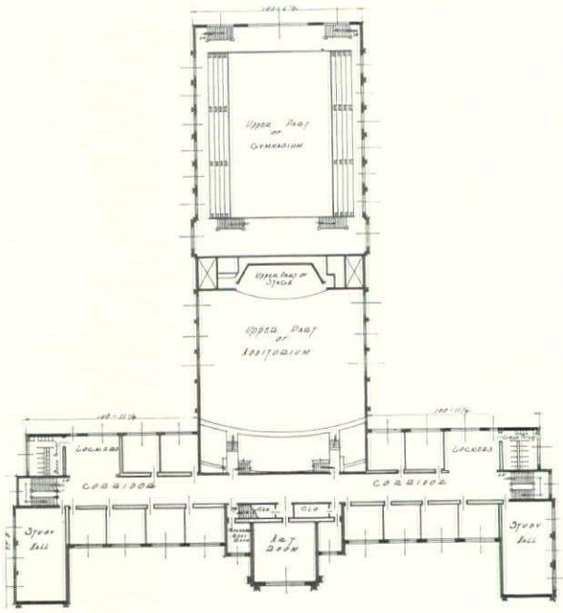
WOODROW WILSON JUNIOR HIGH SCHOOL, TERRE HAUTE

JOHNSON, MILLER, MILLER & YEAGER, ARCHITECTS

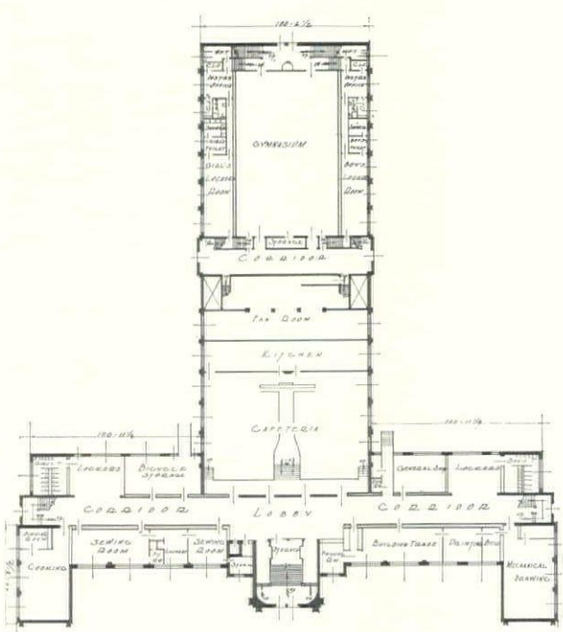
COST AND CONSTRUCTION DATA

Approximately 1800 pupils can be accommodated in this building, which was completed in June, 1927, at a total cost of $687,425, or 24.6 cents per cubic foot. The value of the equipment is $35,000.

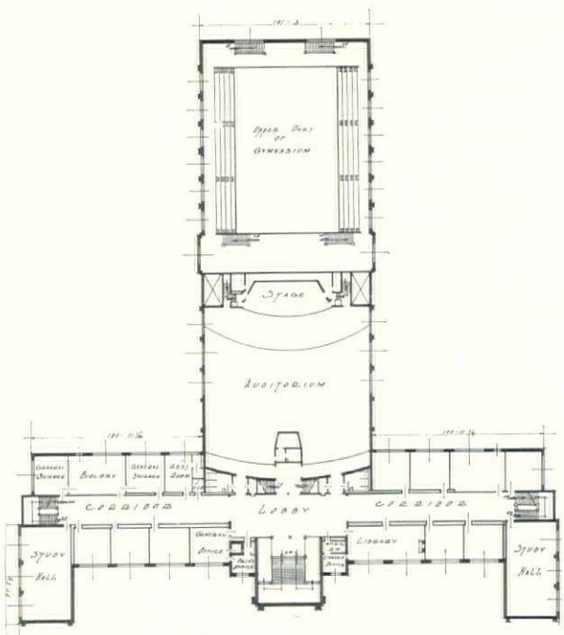
Reinforced concrete construction, brick exterior finish and composition and tile roofing make it fireproof throughout.



SECOND FLOOR



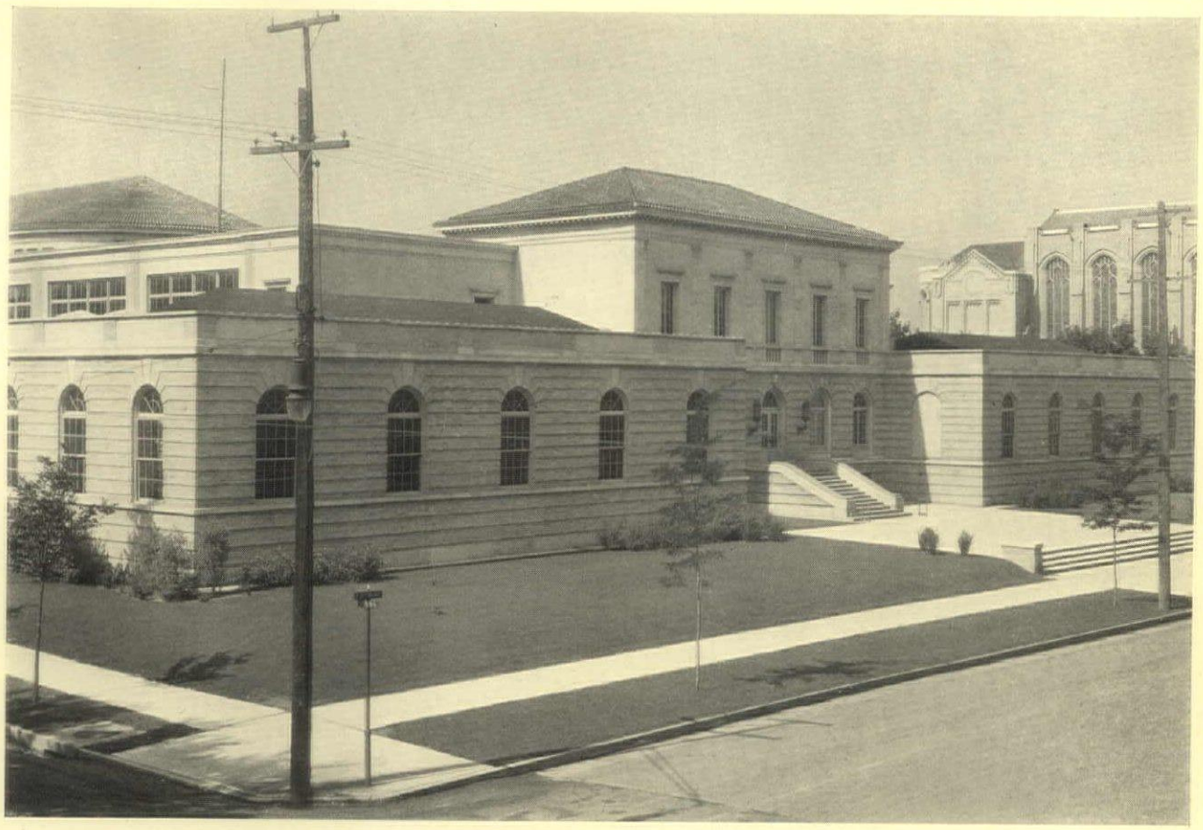
BASEMENT



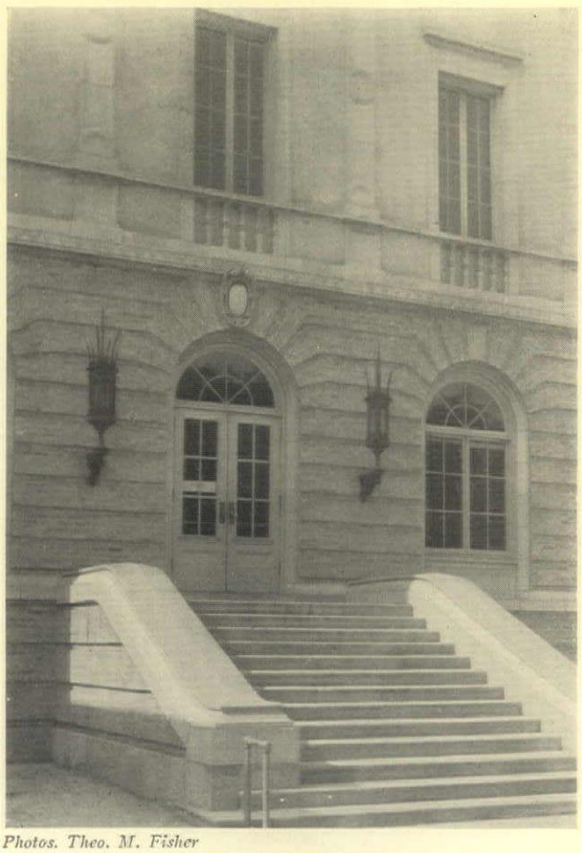
FIRST FLOOR

PLANS, WOODROW WILSON JUNIOR HIGH SCHOOL, TERRE HAUTE

JOHNSON, MILLER, MILLER & YEAGER, ARCHITECTS

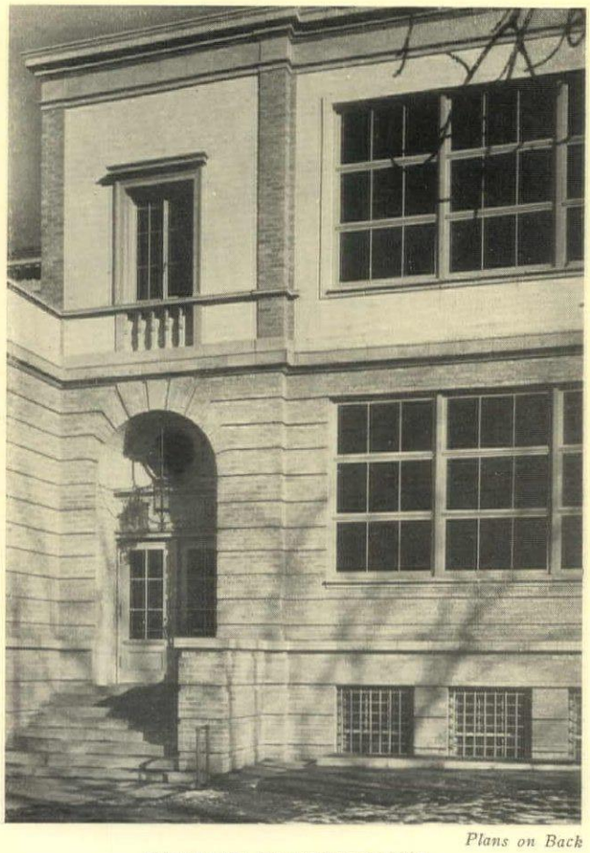


GENERAL VIEW



Photos. Theo. M. Fisher

MAIN ENTRANCE



Plans on Back

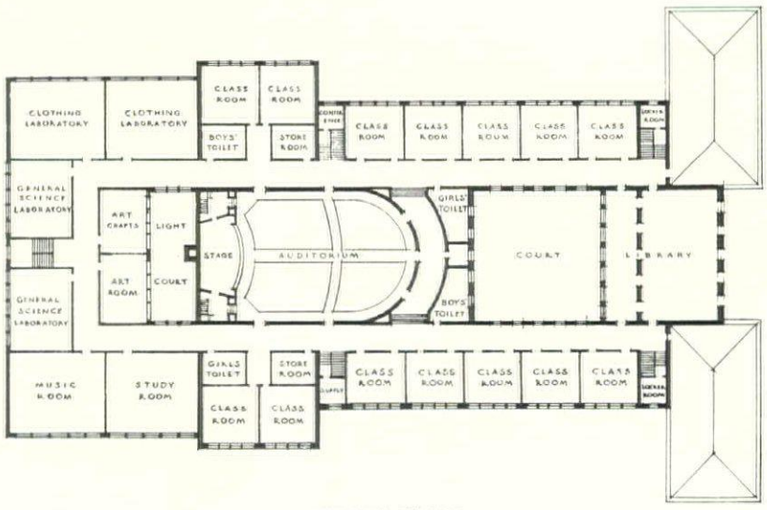
ENTRANCE TO CLASSROOMS

MOREY JUNIOR HIGH SCHOOL, DENVER

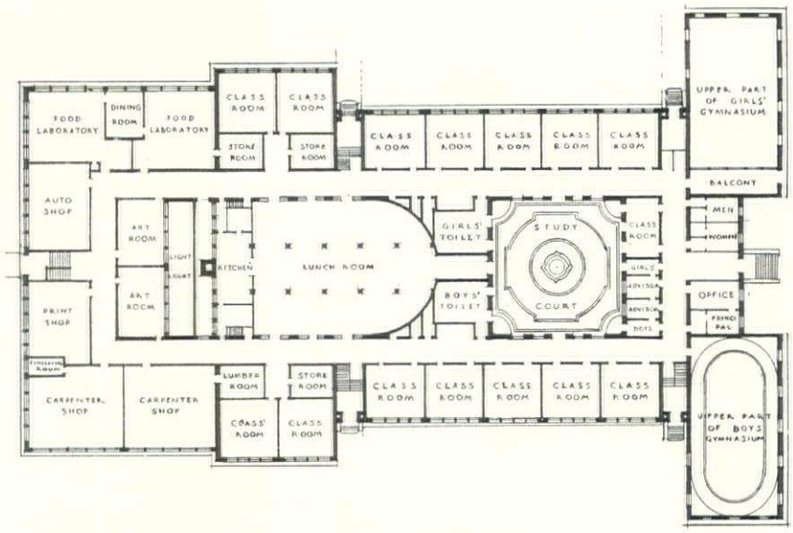
WILLIAM E. AND ARTHUR A. FISHER, ARCHITECTS

COST AND CONSTRUCTION DATA

Constructed of reinforced concrete with tile roof, this building was completed in 1926 at a cost of $775,000, or 40 cents per cubic foot. It has a capacity of 1600 pupils, making the cost per pupil approximately $484. The equipment used in this building cost $40,000.



SECOND FLOOR



FIRST FLOOR

PLANS, MOREY JUNIOR HIGH SCHOOL, DENVER

WILLIAM E. AND ARTHUR A. FISHER, ARCHITECTS

PART OF MAIN FACADE

AUDITORIUM ENTRANCE

MAIN ENTRANCE

Plan on Back

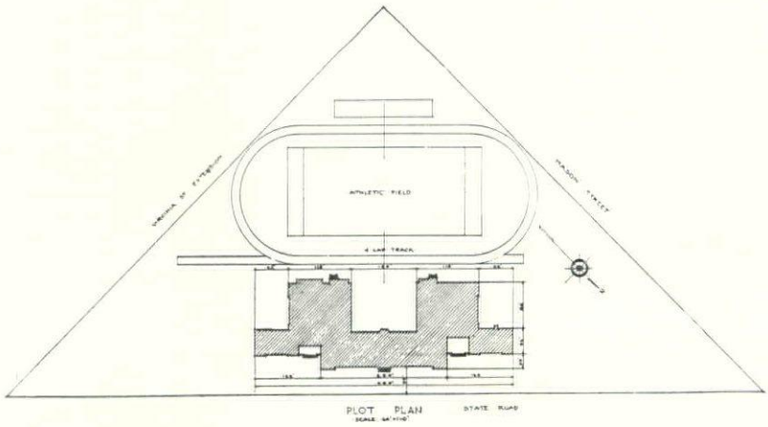
WILSON JUNIOR HIGH SCHOOL, APPLETON, WIS.

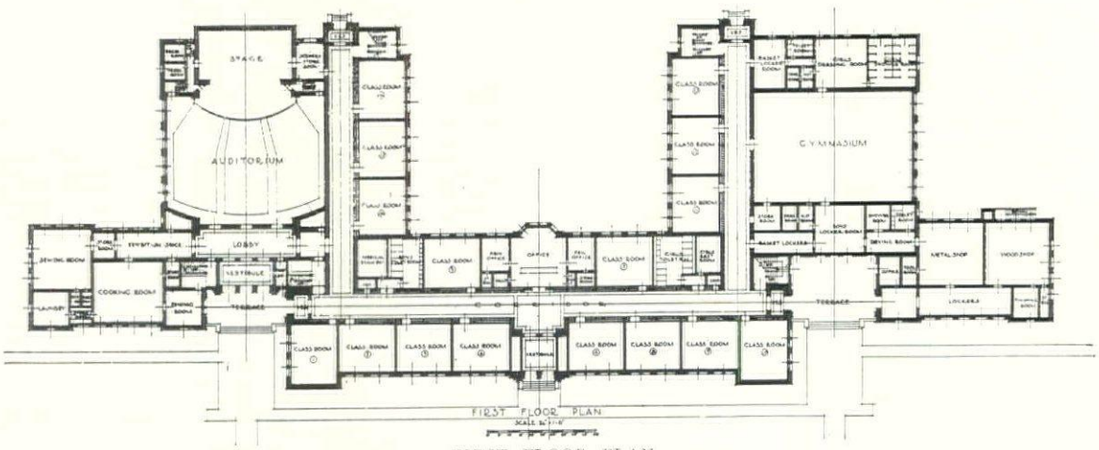
PERKINS, FELLOWS & HAMILTON, ARCHITECTS

COST AND CONSTRUCTION DATA

Sections of this school, designed to accommodate 600 pupils, were completed in September, 1924, at a cost of $294,-904, or 29.6 cents per cubic foot. The cost per pupil was about $491.50.

Tile and composition roofs were used in connection with brick exterior walls. The general construction is fireproof.



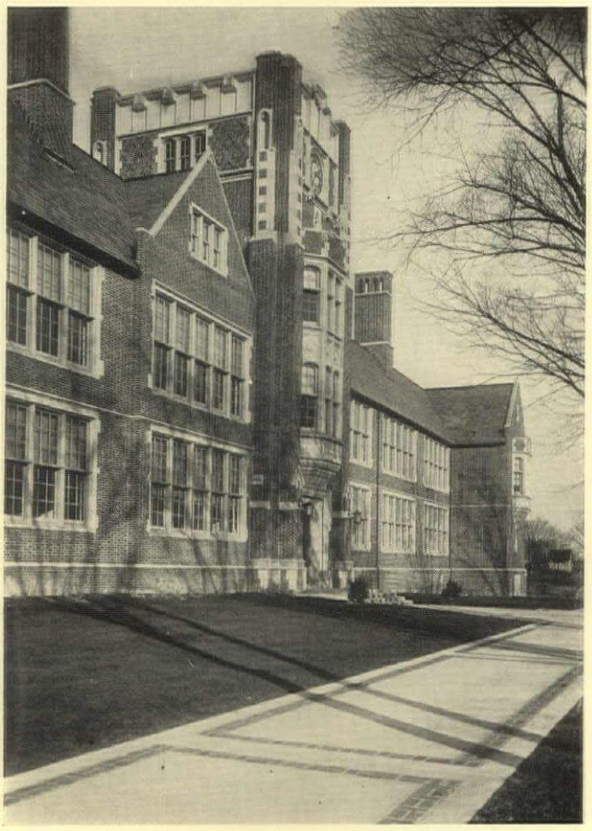


FIRST FLOOR PLAN

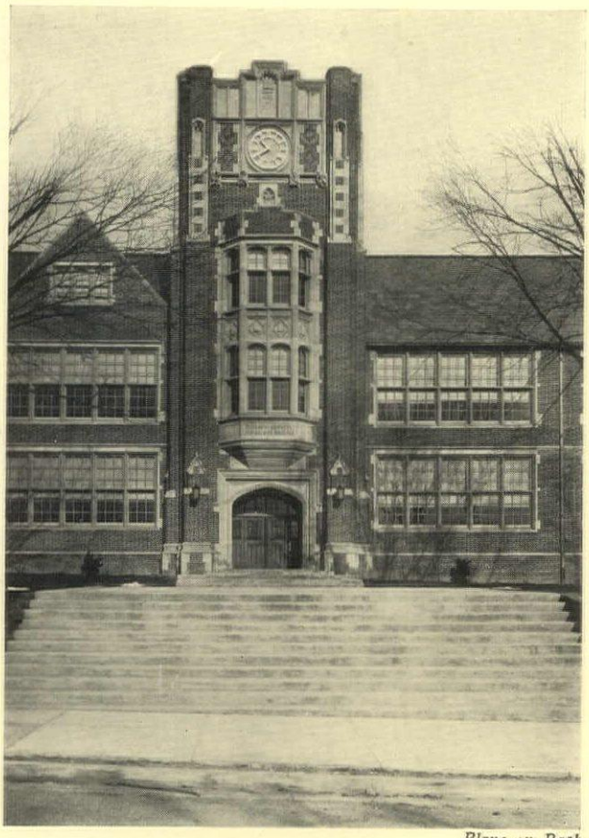
WILSON JUNIOR HIGH SCHOOL, APPLETON, WIS.

PERKINS, FELLOWS & HAMILTON, ARCHITECTS

GENERAL VIEW



PRINCIPAL FACADE



MAIN ENTRANCE

Plans on Back

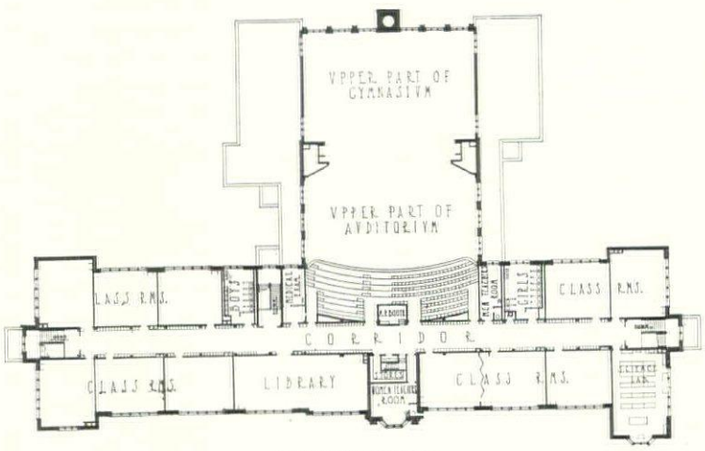
THADDEUS STEVENS JUNIOR HIGH SCHOOL, WILLIAMSPORT, PA.

GUILBERT & BETELLE, ARCHITECTS

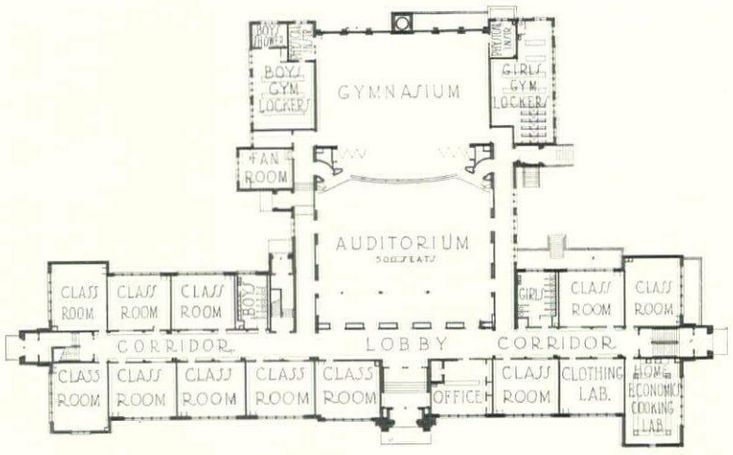
COST AND CONSTRUCTION DATA

Completed in August, 1927, this school cost $409,127, or 40.75 cents per cubic foot. The capacity is 983 pupils, making the cost per pupil about $406.

The construction is fireproof with brick and limestone exterior finish, and the flat roof is covered with a pitch and slag composition.



SECOND FLOOR



FIRST FLOOR

PLANS, THADDEUS STEVENS JUNIOR HIGH SCHOOL, WILLIAMSPORT, PA.
GUILBERT & BETELLE, ARCHITECTS

SOME NOTES ON JUNIOR HIGH SCHOOLS

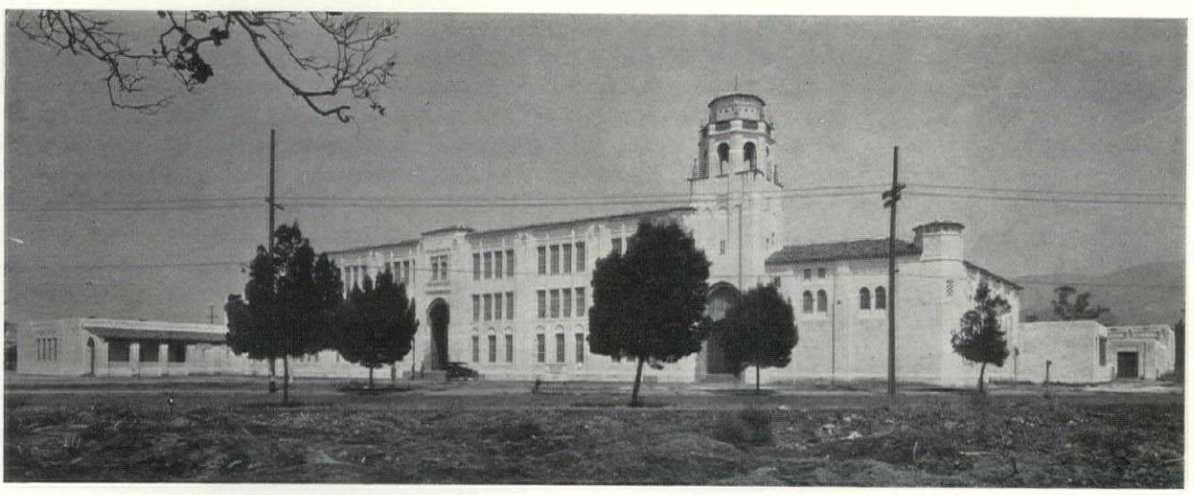
BY
R. CLIPSTON STURGIS, ARCHITECT

THE public knows that schools, both the buildings and the instruction, are costing more and more. Increases in teachers' salaries can be understood and accepted; the cost of the buildings cannot. The blame has been put on the architect and his demand for at least some expression of beauty. This article is to ask for more beauty and less cost in our schools, and to show that wasteful expenditure is in the plan, in the demands of popular pressure for needless rooms and equipment, and not in bricks and mortar, nor in decoration. As a matter of fact, in a school building, the amount that can reasonably be put into ornament either inside or out is a perfectly insignificant item in the total cost. This is a plea for more beauty in our schools.

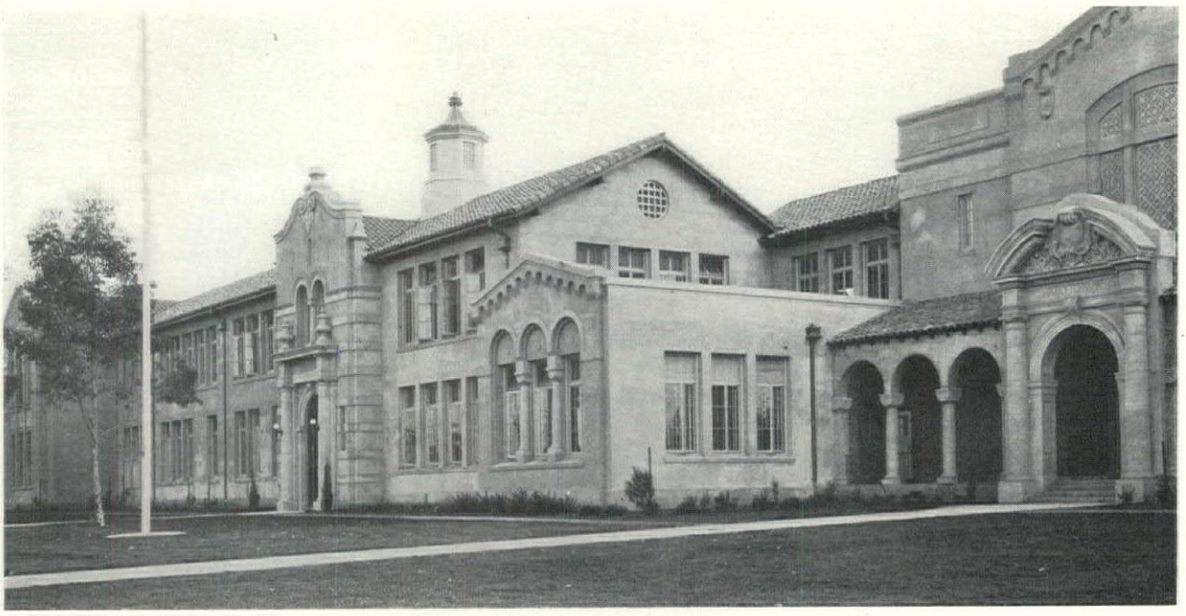
To understand the problem of the junior high school, it is perhaps well to review the steps which led to the demand for this type of school. Before 1900 the generally accepted division of the 12 grades was eight elementary and four high. The elementary was usually divided into four lower elementary or primary and four upper elementary or grammar. In most eastern cities there was a principal in the grammar school, and he was the head of the primary schools in his district. In response to a general demand for some kind of industrial education in the elementary schools, classes were established in cooking and woodworking for the two upper grades. In the grammar school also was the hall, which was frequently put under the high roof, the most dangerous place in the building for a crowd.

Educators generally were interested in an experiment started at Gary, Indiana. The ideas there embodied were not altogether new, but they emphasized what many were thinking about,—the growing cost of schools; and this was one solution. It came naturally in a manufacturing town, and was the application to the schools of a commonplace of manufacturing,—that a plant should be run to its capacity in working hours, and that, as far as possible, all machines should be running all the time. The school was a costly plant. It was idle during vacations. That perhaps could not be helped; but parts of the school were idle part of every school session. The hall was generally unoccupied. The industrial rooms might be filled every school hour, but the desks of the pupils at work elsewhere were empty. The Gary idea was to arrange a schedule so that every room and the hall would be in use every school hour. I believe two sessions a day for two sets of scholars, and summer school also, were included in the plan to make the schools work every day, all day, and all the year. This is mentioned merely as indicative of the fact that citizens were beginning to question the increasing cost of schooling and schools, and educators were trying to answer their questions.

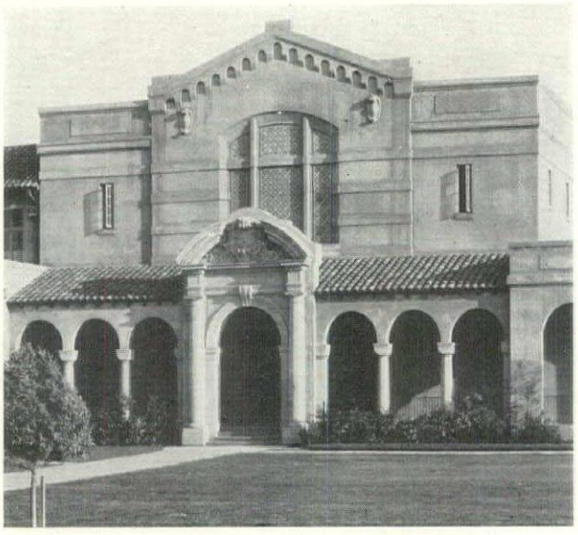
Before 1914 careful study had been made, in various parts of the country, of the requirements for the three types of school, lower elementary, upper elementary, and high, and an attempt to arrive at a standard of cost for each one of the three. This was done with some success for the elementary schools. The lower, with classrooms only and no principal, cost $140 per pupil. The upper elementary, with principal, hall and industrial rooms, as well as classrooms, cost $180. The high school was another matter. Its cost was from $400 to $600 and $700;—an enormous jump from the elementary. The worst of it was that there were an increasing number of pupils going on to high school, and as the teaching was equally expensive, the burden was becoming very heavy. One curious reason for the great cost of the high school was that the home-room system of the elementary was continued in the high,



Frick Junior High School, Oakland, Cal.
Blaine & Olson, Architects



FRONT ELEVATION OF SCHOOL BUILDING

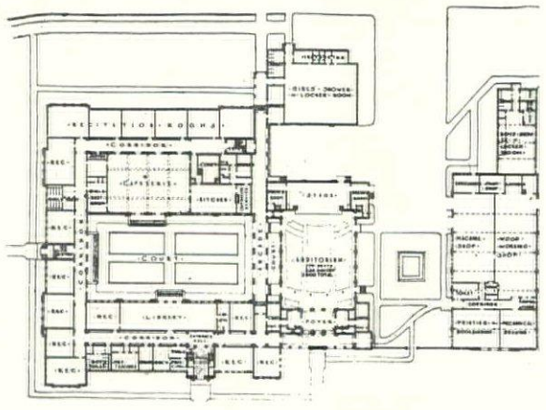


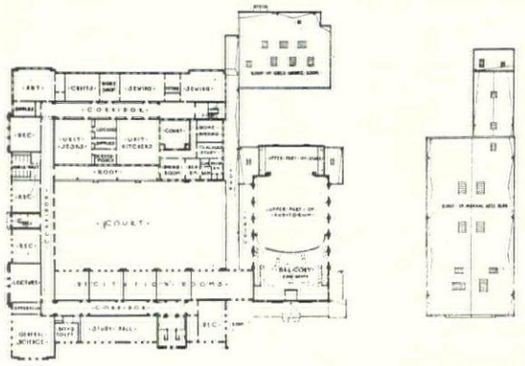
AUDITORIUM ENTRANCE

COST AND CONSTRUCTION DATA

This junior high school was built in 1922 at a cost of $340,000 or 20.9 cents per cubic foot. It will accommodate between 1200 and 1400 pupils and has equipment costing $50,000.

The interior partitions are of metal lath and plaster on wood studs, and the stairways are of fireproof construction. The exterior finish is stucco on masonry walls.

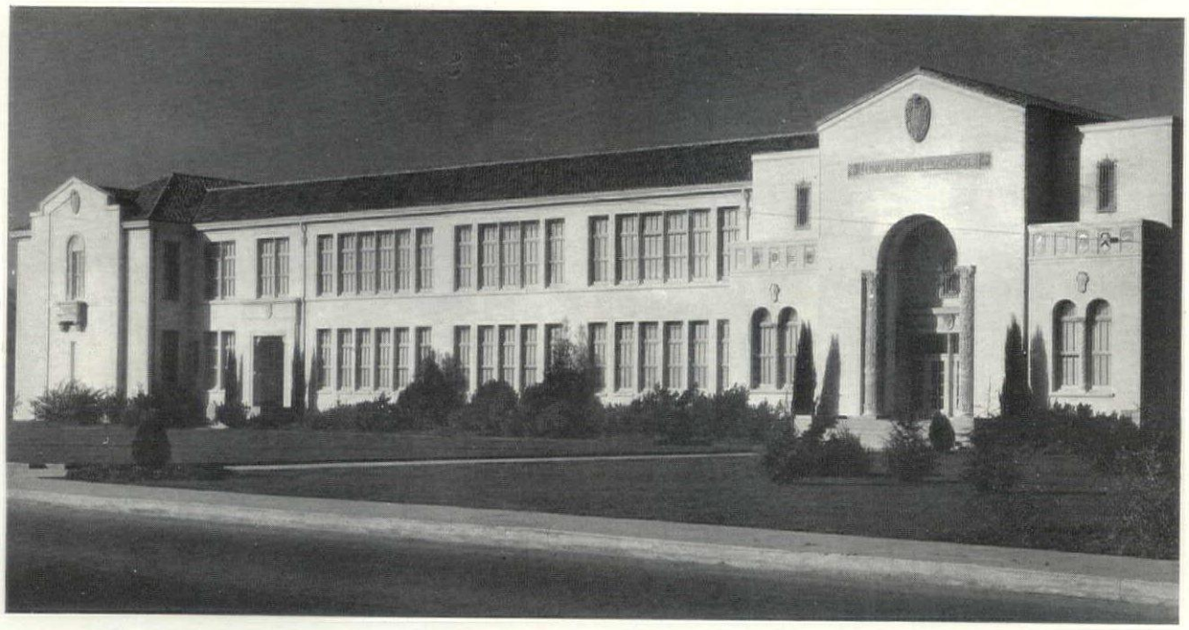




FIRST FLOOR SECOND FLOOR

THEODORE ROOSEVELT JUNIOR HIGH SCHOOL, SAN DIEGO

T. C. KISTNER & CO., ARCHITECTS



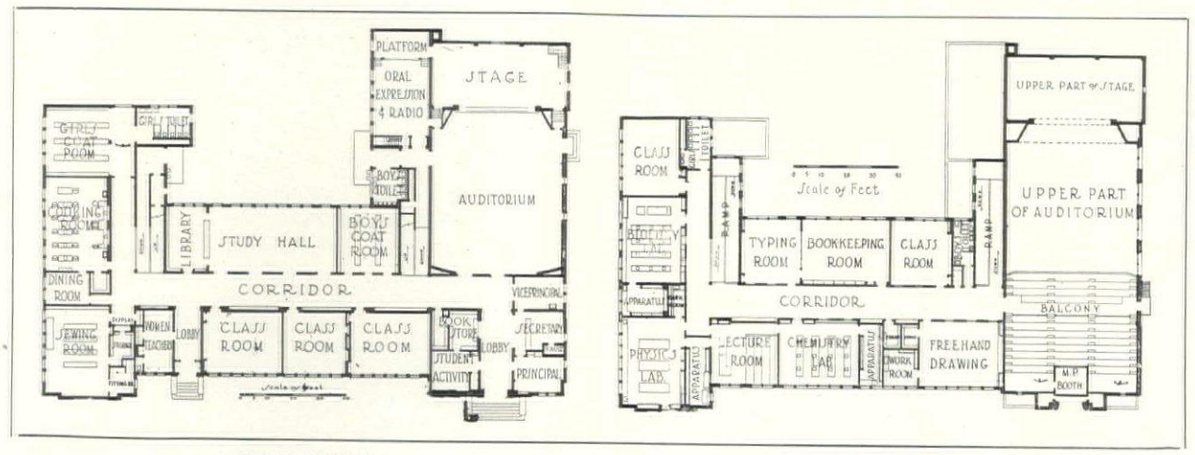
FRONT ELEVATION

COST AND CONSTRUCTION DATA

Costing $198,700 or 24 cents per cubic foot, this school building was erected in 1924 to provide facilities for 400 students, making the cost per student about $497. Equipment costing $25,000 has since been installed.

The construction is reinforced concrete with an exterior finish of stucco, and the roof is of terra cotta tile. All corridors, ramps and stairways are of fireproof construction, and the interior trim is Douglas fir with hardwood doors.

DETAIL OF MAIN ENTRANCE



FIRST FLOOR SECOND FLOOR

MOUNTAIN VIEW UNION HIGH SCHOOL, SAN FRANCISCO

W. H. WEEKS, ARCHITECT

and every pupil had his 26-inch desk in his home room, which was vacant a good part of the time while the pupil was elsewhere, or occupied by some other pupil; whereas in the grammar, there were but two places outside the classroom where a pupil might be,—woodworking or cooking; in the high school there were half a dozen or more, so that the pupil was more often out of his room than in it. The obvious remedy was to do what was being tried at Gary, even in the elementary school,—make the rooms recitation rooms or study rooms, and let the pupils keep books etc. elsewhere. School authorities were loath to give up a system to which they were accustomed, and discussion was going on over the costly high school, when attention became focused on a solution which touched the elementary, as well as the high, and seemed not only logical but economical.

In the grammar, but two grades, seven and eight, had industrial work. The other two were educationally on the same basis as the lower elementary. Why not put these with the four lower grades in the less expensive building? If the first grade of high were withdrawn and put with grades seven and eight, one would have a school in which all grades would be taking industrial work, all would be about to change from the home room to the departmental recitation room, and the schedule could be so arranged that every room would be occupied at every period by a class. The hall might well serve as a place for physical exercise, for which there was now a general demand; so shops, hall and recitation rooms would be fully occupied. This school was the intermediate or junior high. It was to be the stepping stone between the elementary and the high. There would be no expensive science department, nor commercial, such as was in the high, and the hall would be simply a large room for physical exercise and occasional meetings. One has noted already the economy of putting grades five and six into elementary buildings. There was a further economy in putting grade nine into a building less expensive than the high school.

The problem before the architect then, was to built to fit these conditions. They were not new; it was nothing but the old grammar school with slightly increased industrial teaching and with the hall planned to serve as a gymnasium. It should have cost little more than the grammar. The figures quoted are pre-war figures. They had been practically constant for ten years. When school building was renewed after the war, communities had got accustomed to rising prices, and before we entered the war they were far above 1914 (150); but then they jumped unexpectedly and soared with all building to the peak in 1920 (250), and then slowly receded, until today the factor is two as compared with 1914. If we apply the factor of 250, to allow for added industrial equipment, to the 1914 prices, upper elementary $180, we get $450 for the junior high. The actual costs of the junior high, which have never been in any way stabilized any more than the requirements, have run from $400 to $700, and in cases even more, but the low figure represents a building in essentials nothing but the old grammar.

The taxpayer certainly has a right to inquire the reason of this and to ask if anything has been obtained equivalent to the cost. Hitherto it is the building cost alone that has been mentioned, but the teaching has also increased in cost and for the same reason. Miscellaneous industrial work of every description and larger and more elaborate auditoriums and gymnasiums have been demanded and provided in these junior high schools, which was never contemplated in the original plan. That was a simple but comprehensive plan of economy; the present junior high is an elaborate and expensive addition to the school plant, requiring more teachers as well as the expensive plant. It will be seen that many of the buildings here shown provide gymnasiums in addition to halls and sometimes two, for boys and girls, and dressing rooms and showers are provided. Whether or not all this equipment is required is not a question for the architect. He is not supposed to know the educational end of the problem but merely to provide the rooms required. It is thus that the new elaborate and costly buildings have grown. It is an ungracious, as well as unprofitable task, for an architect to point out to his employer how to economize, and yet the architect is the only one who knows enough about the economy of planning to be able to lead the community to a clear understanding of the subject of school costs; and if by wise economies in the plan he can save for the beauty of his building, it is certainly time well spent.

At the risk of repeating what architects already know, there might be mentioned two fundamental factors in the economy of planning a school building: (1) Have no area larger than is required for its purpose, and of course no area that is useless. (2) Have no unnecessary height. This results in a compact plan, in both area and cube. It seems at first sight simple to follow these rules. It is not. School authorities will often determine the sizes of rooms, and a study of the requirements of the rooms, with a view to modifying the dimensions, is neither required nor allowed. Needless area is often provided due to this. At the time when sizes of classes were reduced (from 56 to 42), many teachers urged that the sizes of rooms should be retained, nor did it occur to the educational authorities that a building with 500 children in 12 rooms would cost more than one housing them in ten rooms. One of the most fruitful sources of waste was in corridors. On the theater principle, corridor widths are determined by the numbers using them. Applying this, quite wrongly, to schools, regulations fixed legally the minimum width of corridors. The children file out, and a corridor in excess of what is necessary for two double files is not only wasteful but dangerous as likely to cause disorder. The same thing applies to stairs. It would have been more reasonable if the law had limited the width and fixed the maxi-

mum, but better still if such matters were not put on the statute books, to become obsolete or ridiculous. Some of the legal requirements about air have no longer a semblance of any relation to health.

One touches on these things because in many cases the casual citizen seeing a school of some architectural beauty at once concludes that it is this, to him useless or at least unnecessary beauty, which is making the costs of schools mount. It is nothing of the kind. The cost is due to what is in the building, the wastefulness of its plan, its elaborate and costly equipment of halls whose use, by the schools, hardly justifies the expense; the gymnasiums for boys and girls, baths, and swimming pools. Consider for a moment the baths. The ordinary physical exercises are school routine, and in many places at least are not such exercises as require a complete change of clothes or a bath. In such schools the bath equipment need be only sufficient for athletic teams. Even here the girls' equipment is costly, as girls are not expected to bathe or dress together, and must have individual dressing rooms and lockers.

There is often no standard in a state, or even in a city, as to what industrial equipment should be provided. One school will have two or three classroom units for the boys' and about the same for the girls' industrial; another will have double this amount. One expects to find the second a larger school, but often it turns out to be smaller. It is, or should be, obvious that these industrial class subdivisions should be in a definite ratio to the number of pupils in the school, as a half-class generally is the standard in an industrial room. In the same way the capacity of the hall would be in proportion to the size of the school, to seat half the school, or the whole; to take double units or single on the floor for exercises, and so a standard would be established. If the hall is to be used by the town or city as a general auditorium, it is hardly fair to build it at the cost of the school appropriation. The school use alone would not justify the large halls here shown. Again the gymnasium. It is ideal to have a hall and separate gymnasium for boys and girls. If the building accommodates 3,000 to 4,000 pupils, such equipment is justified. If the building has less than 1,500, perhaps one gymnasium would have to serve. If 1,000 or less, a combined assembly hall and gymnasium would seem the reasonable limit.

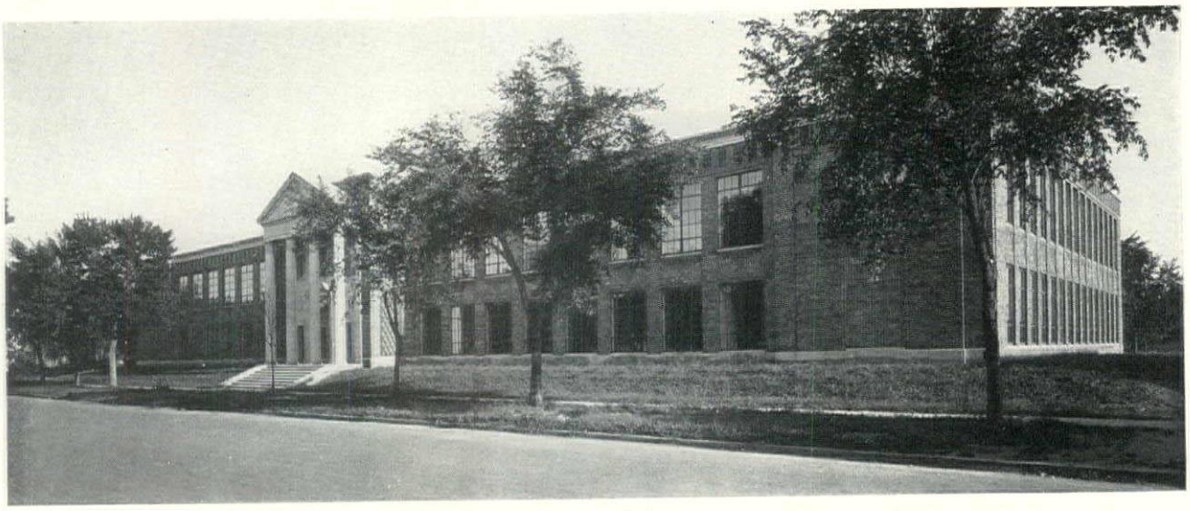
A glance at the plans of junior high schools illustrating this article and in the foregoing plate section will show exactly what is meant. The Stevens, Glens Falls, the Lincoln and Kearney schools are more or less the same size. The Stevens has for hall and gymnasium 73 x 120, the Glens Falls 80 x 130, the Lincoln 70 x 120, Kearney 80 x 144. Not even the smallest of these is justified by the size of the school or needed for school purposes. Some have assembly hall and gymnasium combined, using a deep stage for the gymnasium. The hall is not available when the gymnasium, behind a movable partition, is in use, and the stage, provided by opening this partition, is useless in size. Kearney takes this overgrown stage for the boys and then has another gymnasium over the cafeteria for the girls. Glens Falls has a very large dressing room and bath equipment and swimming pool, which the others have not. There is no standard, and this one unit in all these plans is the large item in expense. California is lucky. All this is done out of doors. A couple of one-story locker and bath buildings and the open air,—and the gymnasium problem is solved.

On the next count, industrial equipment, there is still less correspondence. The Fall River School has perhaps the largest, with wood working, metal working, drawing, printing, textiles, etc. for boys; and sewing, millinery, cooking, household science and drawing for the girls; a general science and special music room and library as well.

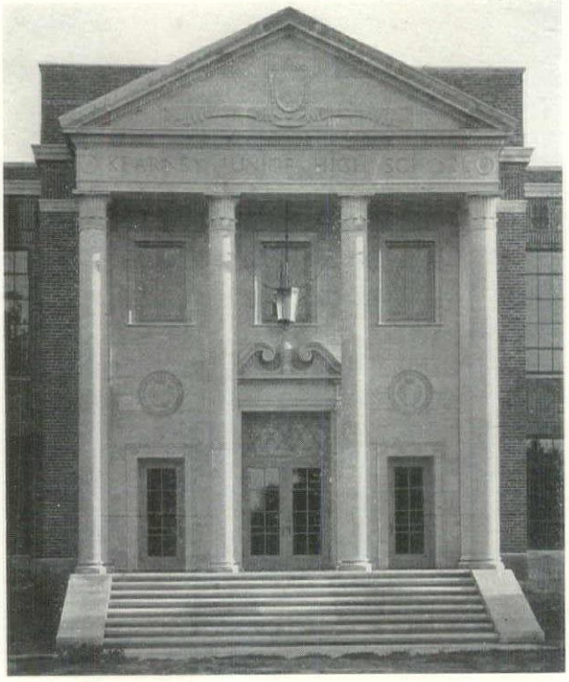
As against this at the other extreme, the Thaddeus Stevens has a shop for boys, two for girls and a science room,—hardly more than would have gone into a grammar school of this size 20 years ago. The Glens Falls school seems more like a town hall, with a few classrooms added as an afterthought. If the plans of Glens Falls and Fall River are put side by side, one cannot believe them to be solutions of the same problem. Still both are called "junior high."

The North Park Junior High was planned for by a superintendent and school committee who knew just what educational end they were aiming for in Fall River. It may not apply anywhere else, and it may not be the solution of a junior high. It is at least a genuine attempt to obtain junior high accommodation without extravagance. A brief description may be of value. Of the three grades, about 400 each to be housed, the seventh was put in home rooms with wardrobes, the other two, eight and nine, had lockers for books, and were on the departmental system, going to recitation rooms. The hall was arranged so that the floor clear of the galleries was large enough for 70 to exercise; and chairs, in place elsewhere, would provide for morning service. The expense of baths and lockers was definitely faced and accepted, and the boys and girls have a period long enough to include a bath. Two other exercising spaces were provided,—one on the hall roof, and one in the enclosed and paved courtyard. Unusual and costly features were included to meet definite demands,—a public library branch, an extra small hall, and a good sized music room. The cost of these does not really belong to the school. Otherwise it is a junior high where the amount of industrial equipment is justified by its location in a mill town.

To complete the comparison, this is the cost per pupil in Thaddeus Stevens, North Park, the Lincoln and Glens Falls;—The Thaddeus Stevens accommodation is 915, cost $409,127, $450 per pupil. The North Park accommodation is 1200, cost $685,000, $570 per pupil. The Lincoln accommodation, 780, cost $410,000, $520 per pupil. The Glens Falls accommodation, 890, cost $360,000, $400 per pupil.



GENERAL VIEW

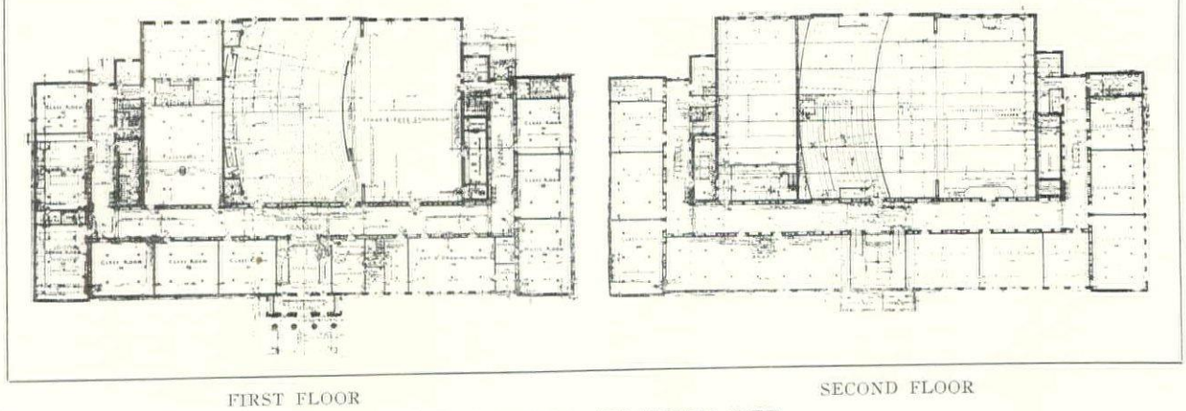


ENTRANCE PORTICO

COST AND CONSTRUCTION DATA

This high school building was completed in December 1925 at a cost of $216,000, or 20.4 cents per cubic foot. The cost of equipment installed in the building was $20,000, and it is designed to accommodate 750 pupils, making a cost per pupil of $288.

All corridors, classrooms and stairways are of fireproof construction. The roof structure is of wood, and the interior finish is of oak with oak floors in the classrooms. The exterior walls are of face brick with stone trim.



FIRST FLOOR SECOND FLOOR

HIGH SCHOOL, KEARNEY, NEB.

DAVIS & WILSON, ARCHITECTS

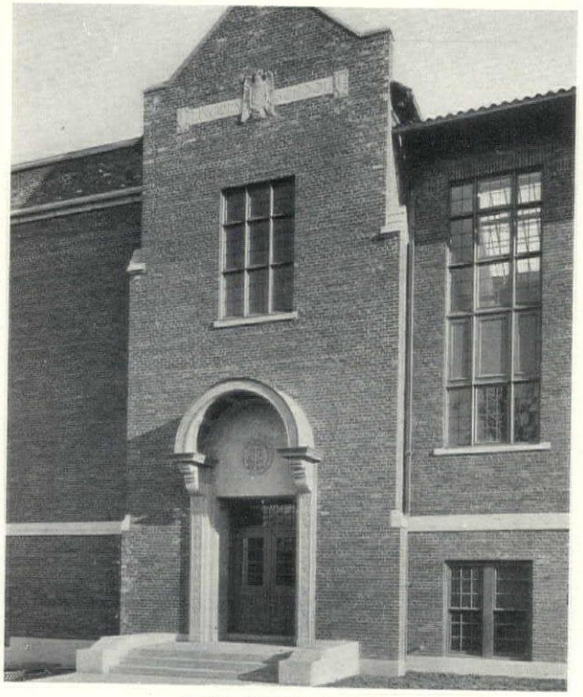
GENERAL VIEW

COST AND CONSTRUCTION DATA

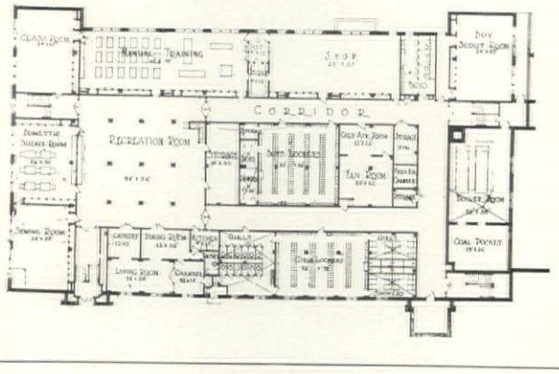
Completed October 1, 1925 at a cost of $409,667 or 37.7 cents per cubic foot, this school building has a capacity of 900 pupils, making a unit cost of about $455. The cost of the equipment installed was $24,136.

The exterior walls are of waterstruck brick, and the pitched roofs are of red Spanish tile, while the flat roofs are covered with tar and gravel composition.

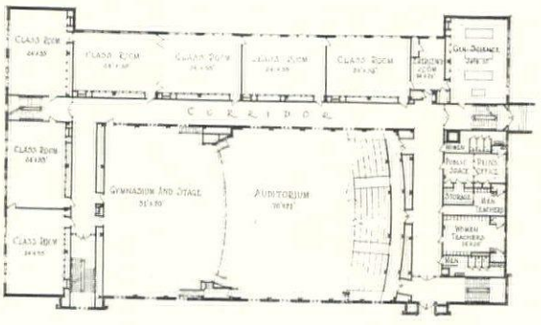
The interior is of fireproof construction as regards floors, corridors and stair towers.



MAIN ENTRANCE BAY



BASEMENT



FIRST FLOOR

LINCOLN JUNIOR HIGH SCHOOL, MALDEN, MASS.

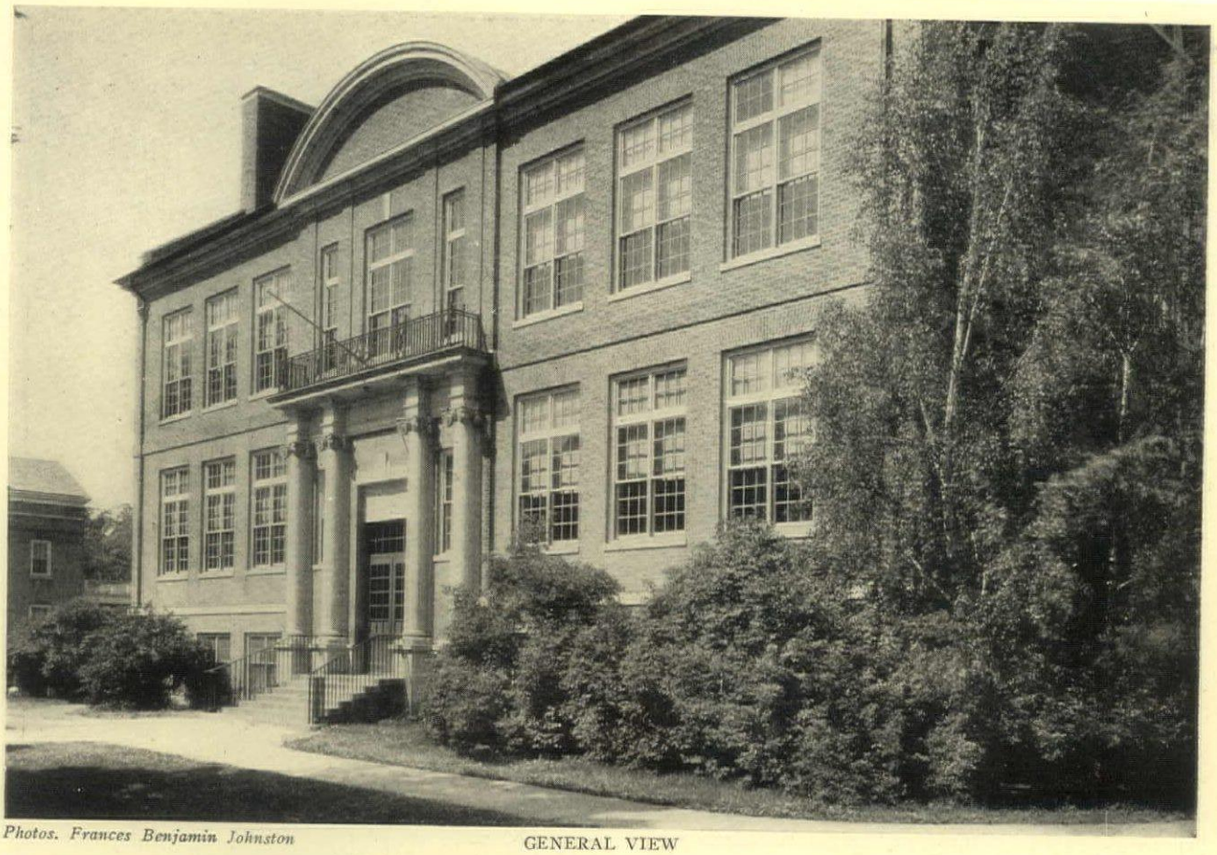
JAMES H. RITCHIE & ASSOCIATES, ARCHITECTS

The accommodations given here are not what were given by the architects,—some are higher, some lower. There are many ways of taking off accommodations in a junior high, and some of these returned by the architects were so obviously low, while others were obviously high, that it seemed fairer, if a comparison were made, to take them off on the same basis; namely, full quota for classrooms, half units for the industrial rooms, and double classroom unit for the gymnasiums. All these have cost the tax payers about the same per pupil, but in some cases the town has paid for a hall and in others for a school.

One has attempted to prove for the sake of the schools, for the sake of the tax payer, and for the sake of the community, that it is not architectural beauty, either within or without that caused the high cost of such schools as these, but the inclusion of costly space or equipment. There is nothing more vital in the life of the child than being surrounded by beauty. The Thaddeus Stevens school must leave its impress consciously or unconsciously on the children. Although the designer of a school building is somewhat hampered by the necessities of light, that is the architect's opportunity, and our many good buildings are sufficient evidence that the schools can be made fine examples of design. Not sufficient emphasis has been placed on the beauty desirable in the interior. Classrooms have been cursed by the necessary blackboards; one believes that a needless amount has been demanded everywhere; but surely in the junior high the recitation room, under the guidance of its teachers of English or of geography, might well be made a room that would be more like a charming home study or library than a classroom.

Editor's Note.—It is of little use for architects to practice economy in the preparation of their specifications and in their plans and elevations for school buildings if politicians are going to influence and control the selection of contractors; and too often it happens that contracts have been let on carefully planned and specified buildings for definite amounts of money and appropriations of sufficient amounts made by municipal governments, only to have costs tremendously increased during the progress of the work by so-called "extras" claimed by politically subsidized contractors. Often have thousands of dollars in pure graft been added to the costs of school buildings on the pretext of including extras, which are usually unjustly charged to the oversight of the architects. Graft-ridden communities can never expect to get the full value of money expended on schools and town halls.

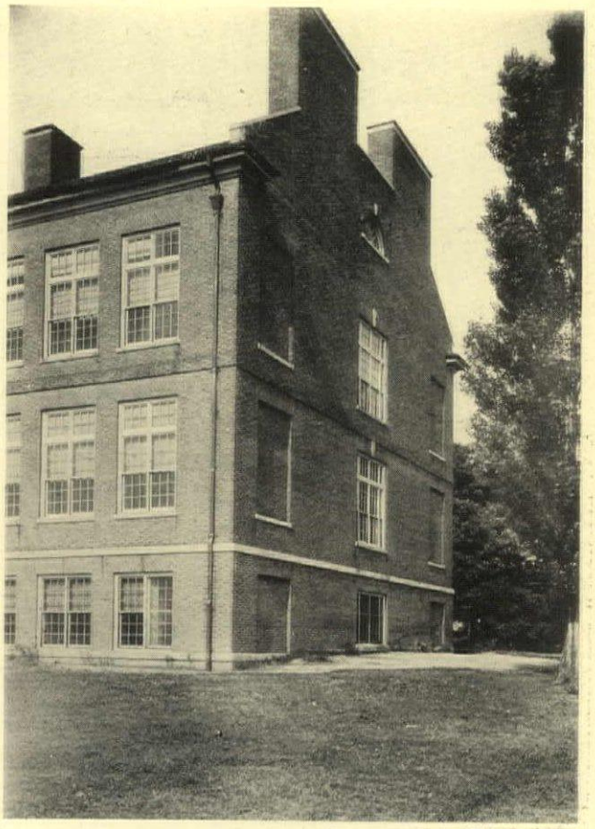
Brimmer School for Girls, Boston
R. Clipston Sturgis, Architects



Photos. Frances Benjamin Johnston

GENERAL VIEW

CORRIDOR ENTRANCE



WINGS TO BE ADDED

Plans on Back

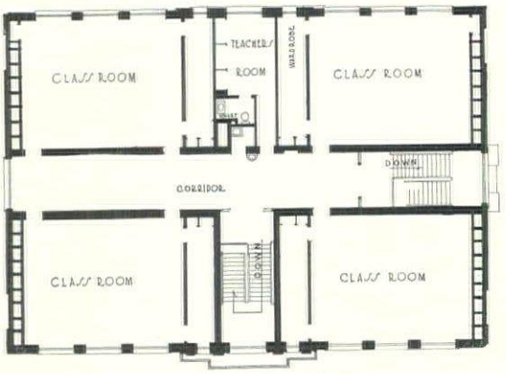
WASHINGTON GRADE SCHOOL, SOUTH MANCHESTER, CONN.

FRANK C. FARLEY, ARCHITECT; WILLIAM HARMON BEERS, ASSOCIATE ARCHITECT

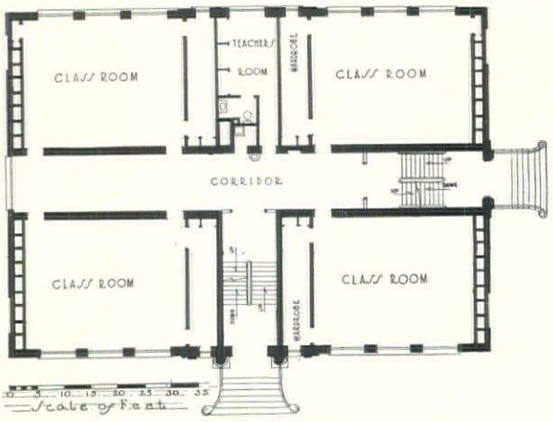
COST AND CONSTRUCTION DATA

Having a capacity of 360 pupils, kindergarten to eighth grade, this school was built in 1915 at a cost of about $55,000 or about 19 cents per cubic foot.

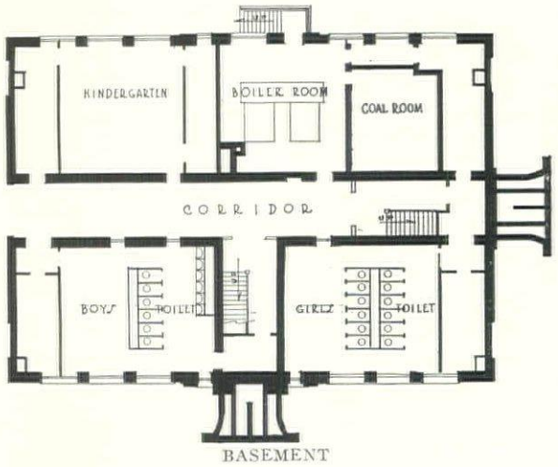
It is constructed of common brick with cast stone trim and slate roof. The floors are of reinforced concrete, and the roof structure consists of steel trusses and wood rafters.



SECOND FLOOR



FIRST FLOOR

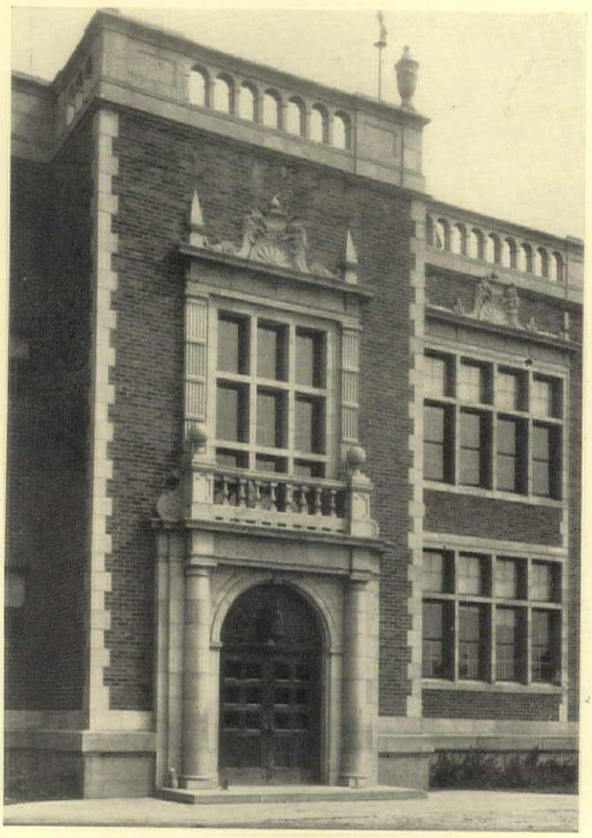


BASEMENT

PLANS, WASHINGTON GRADE SCHOOL, SOUTH MANCHESTER, CONN.
FRANK C. FARLEY, ARCHITECT; WILLIAM HARMON BEERS, ASSOCIATE ARCHITECT

Photos. Barrett Photo. Co.

GENERAL VIEW FROM THE WEST



SOUTH ENTRANCE

MAIN ENTRANCE

Plans on Back

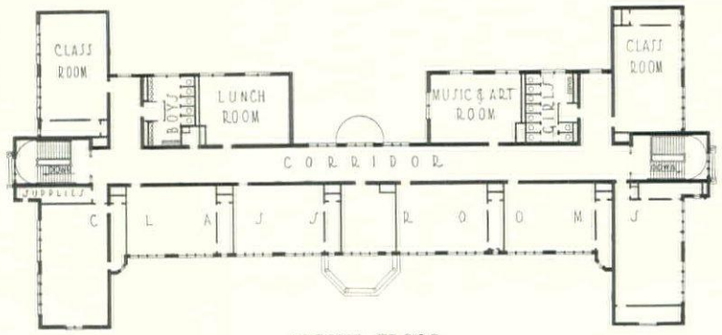
BOULEVARD SCHOOL, CLEVELAND HEIGHTS, OHIO

WARNER, McCORNACK & MITCHELL, ARCHITECTS

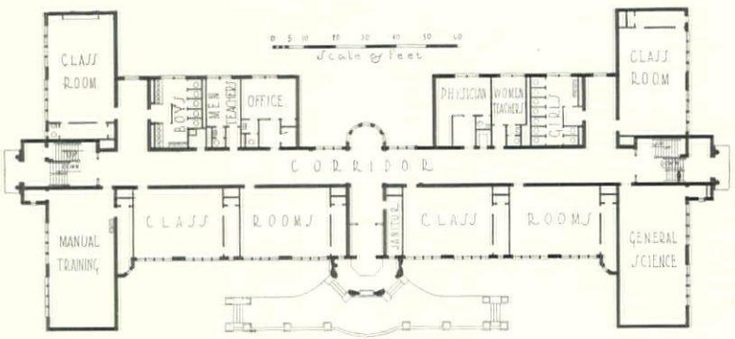
COST AND CONSTRUCTION DATA

Completed in 1924, this school was built to accommodate 570 pupils at a cost of $267,379, not including the heating plant, gymnasium or auditorium, which are in separate buildings nearby. The cubic foot cost of the main building was 56 cents.

The construction is fireproof, the exterior walls being of brick and stone with terra cotta trim. The roof is covered with a composition of tar and gravel.



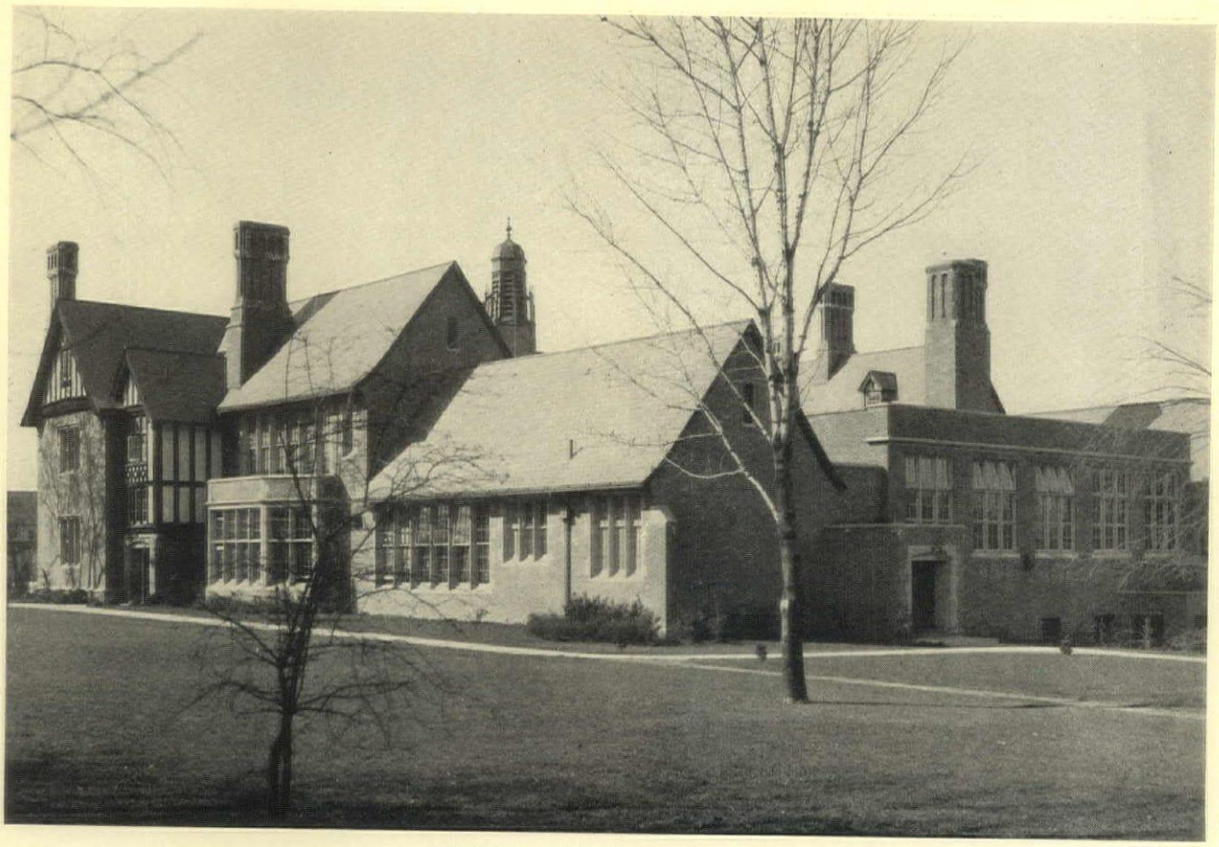
SECOND FLOOR



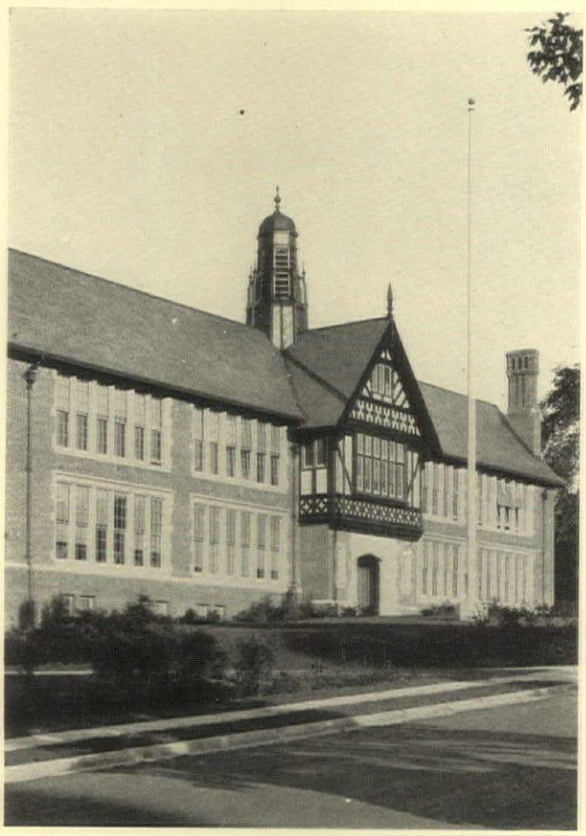
FIRST FLOOR

PLANS, BOULEVARD SCHOOL, CLEVELAND HEIGHTS, O.

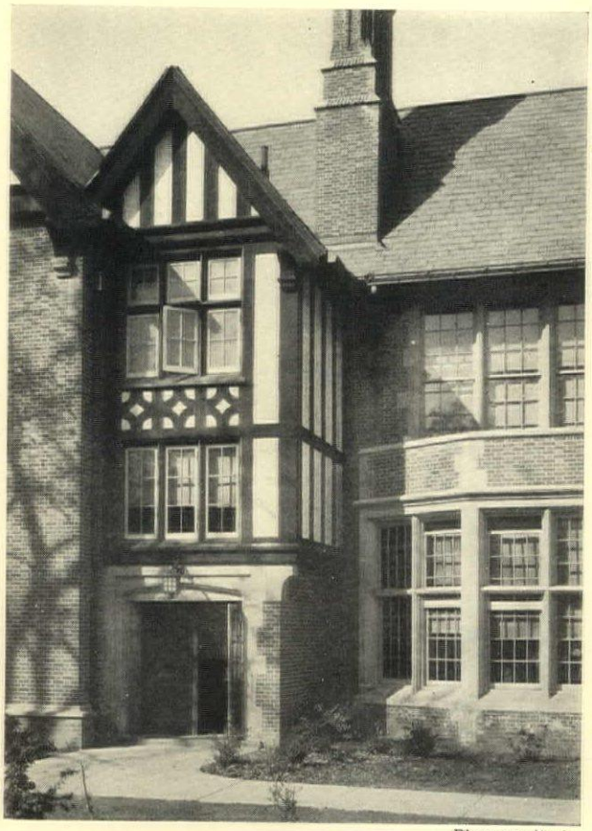
WARNER, McCORNACK & MITCHELL, ARCHITECTS



GENERAL VIEW, REAR ELEVATION



FRONT FACADE



SIDE ENTRANCE

Plans on Back

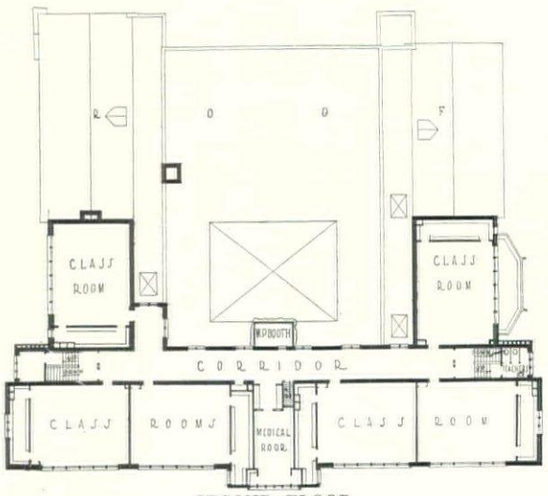
TUSCAN ROAD SCHOOL, MAPLEWOOD, N. J.

GUILBERT & BETELLE, ARCHITECTS

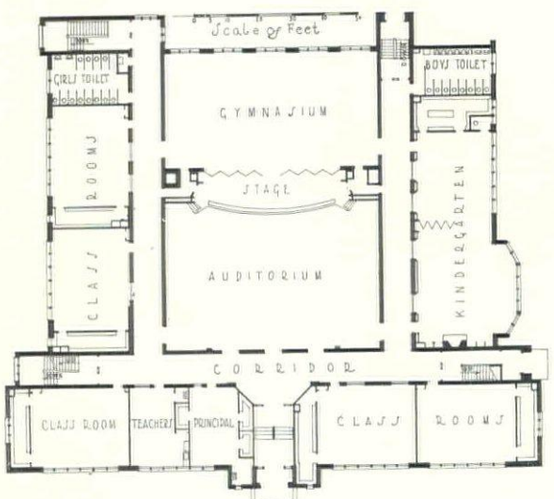
COST AND CONSTRUCTION DATA

Built to accommodate 660 pupils, this building cost $281,782 or 41.75 cents per cubic foot and was completed in 1925.

It is of slow-burning construction and has an exterior finish of brick with limestone trim. The sloping roofs are covered with slate, while the flat roofs have a pitch and slag composition covering.



SECOND FLOOR

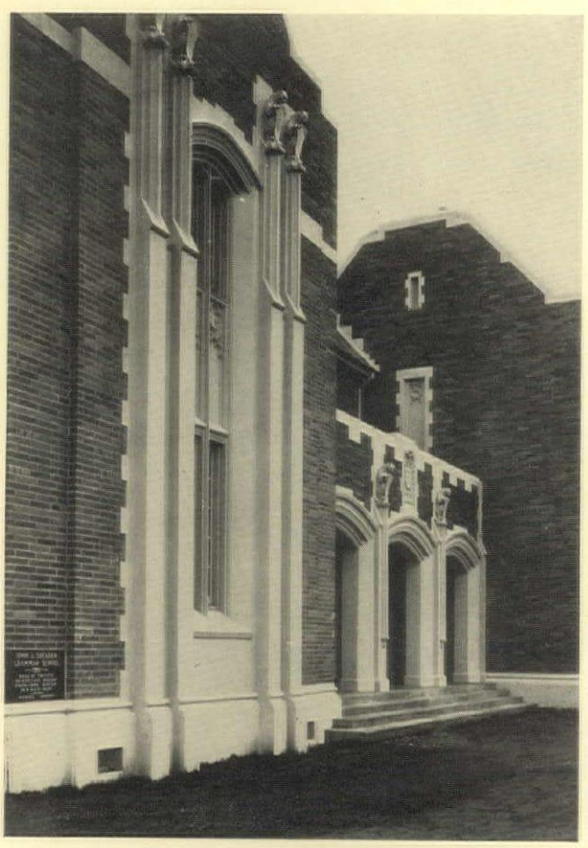


FIRST FLOOR

PLANS, TUSCAN ROAD SCHOOL, MAPLEWOOD, N. J.

GUILBERT & BETELLE, ARCHITECTS

GENERAL VIEW



DETAIL OF END BAY

CENTRAL PAVILION

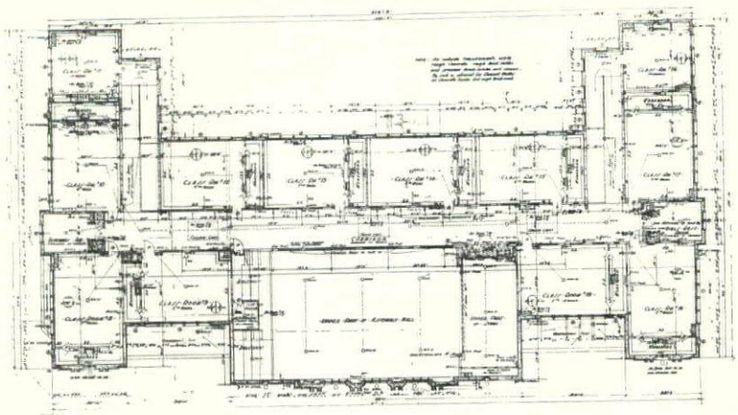
Plans on Back

JOHN L. SHEARER GRAMMAR SCHOOL, NAPA, CAL.
W. H. WEEKS, ARCHITECT

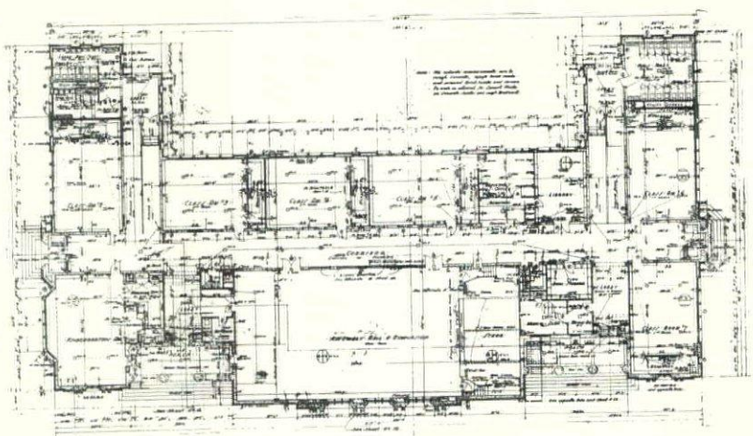
COST AND CONSTRUCTION DATA

This school was finished in 1923, being planned to accommodate 550 students at a total cost of $152,000 or 21.5 cents per cubic foot.

The construction is fireproof, the exterior being of pressed brick with terra cotta trim and slate roof.



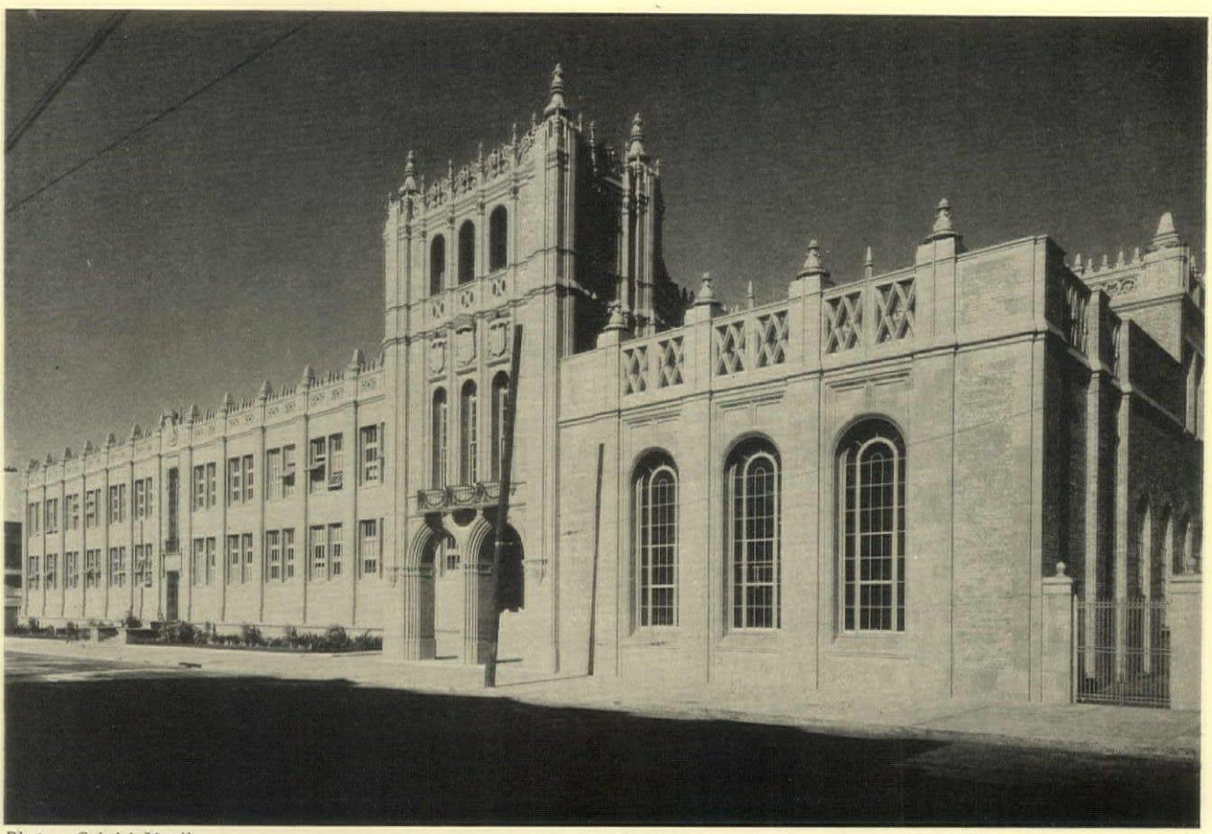
SECOND FLOOR



FIRST FLOOR

PLANS, JOHN L. SHEARER GRAMMAR SCHOOL, NAPA, CAL.

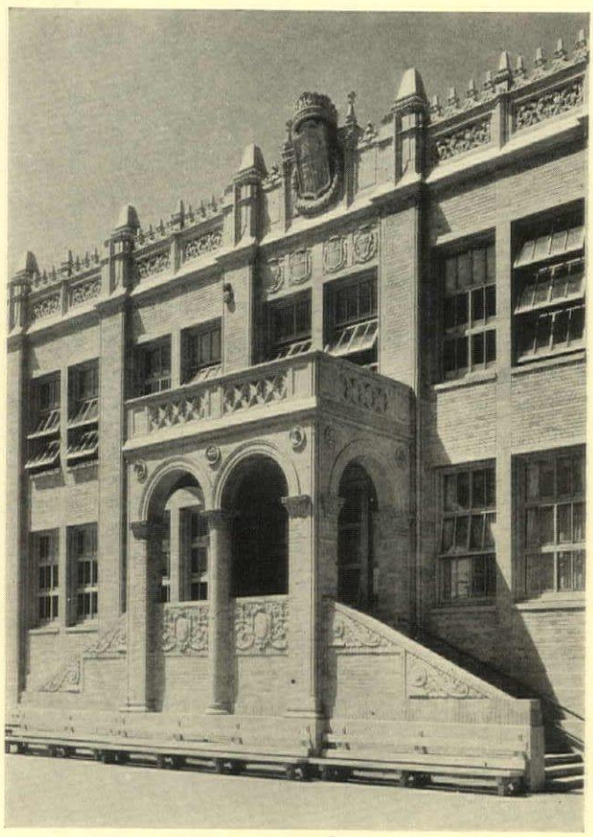
W. H. WEEKS, ARCHITECT



Photos. Gabriel Moulin

FRONT ELEVATION

YARD LOGGIA



YARD ENTRANCE

Plans on Back

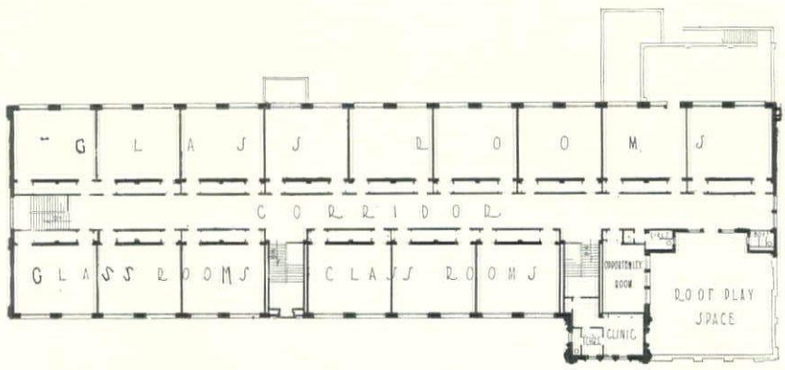
ALAMO SCHOOL, SAN FRANCISCO

J. R. MILLER & T. L. PFLUEGER, ARCHITECTS

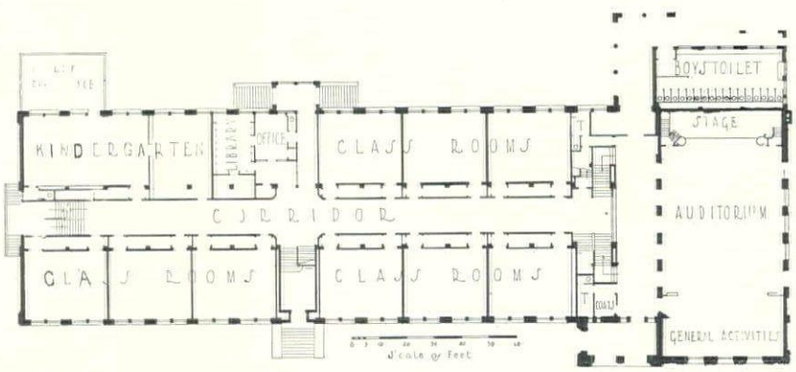
COST AND CONSTRUCTION DATA

This building was built to accommodate 1000 pupils and was completed in October, 1926 at a total cost of $371,661.51, making the cost per pupil $371.66. The equipment cost was $6,300, and the cubic foot cost of the building 38 cents. Owing to difficult physical conditions incident to this particular site and plan, these figures do not furnish a fair comparison with other similar work.

The construction is fireproof, being of concrete with steel frame, concrete floor and roof slabs, and stud partitions covered with metal lath and plastered, The exterior finish is brick and terra cotta, and the roof is covered with composition.



SECOND FLOOR



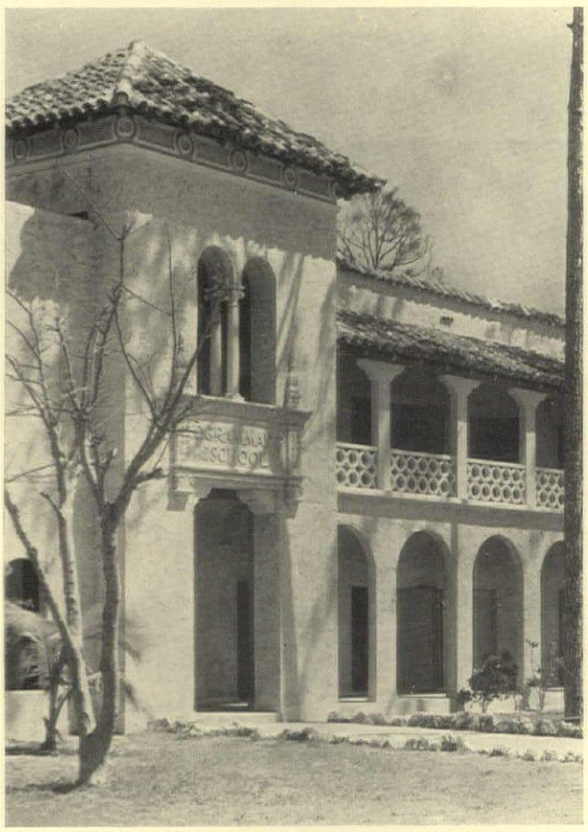
FIRST FLOOR

PLANS, ALAMO SCHOOL, SAN FRANCISCO

J. R. MILLER & T. L. PFLUEGER, ARCHITECTS

Photos. Richard B. Hoit

GENERAL VIEW



ENTRANCE DETAIL

SIDE ENTRANCE DETAIL

Plan on Back

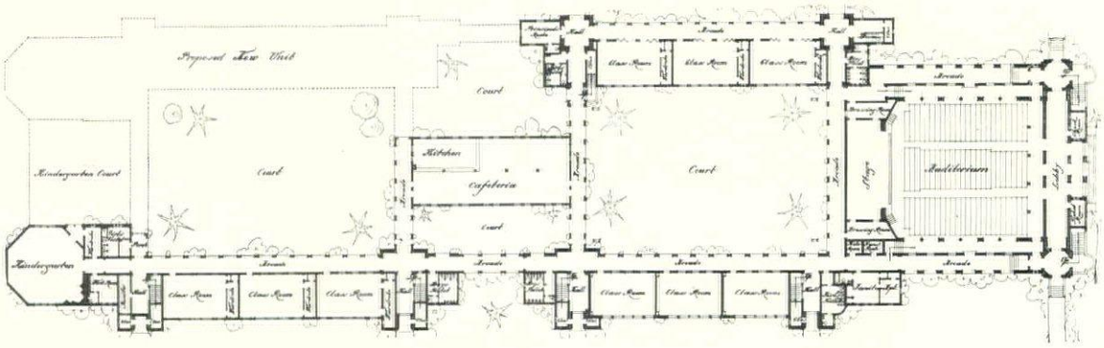
CORAL GABLES ELEMENTARY SCHOOL, CORAL GABLES, FLA.

KIEHNEL & ELLIOTT, ARCHITECTS

COST AND CONSTRUCTION DATA

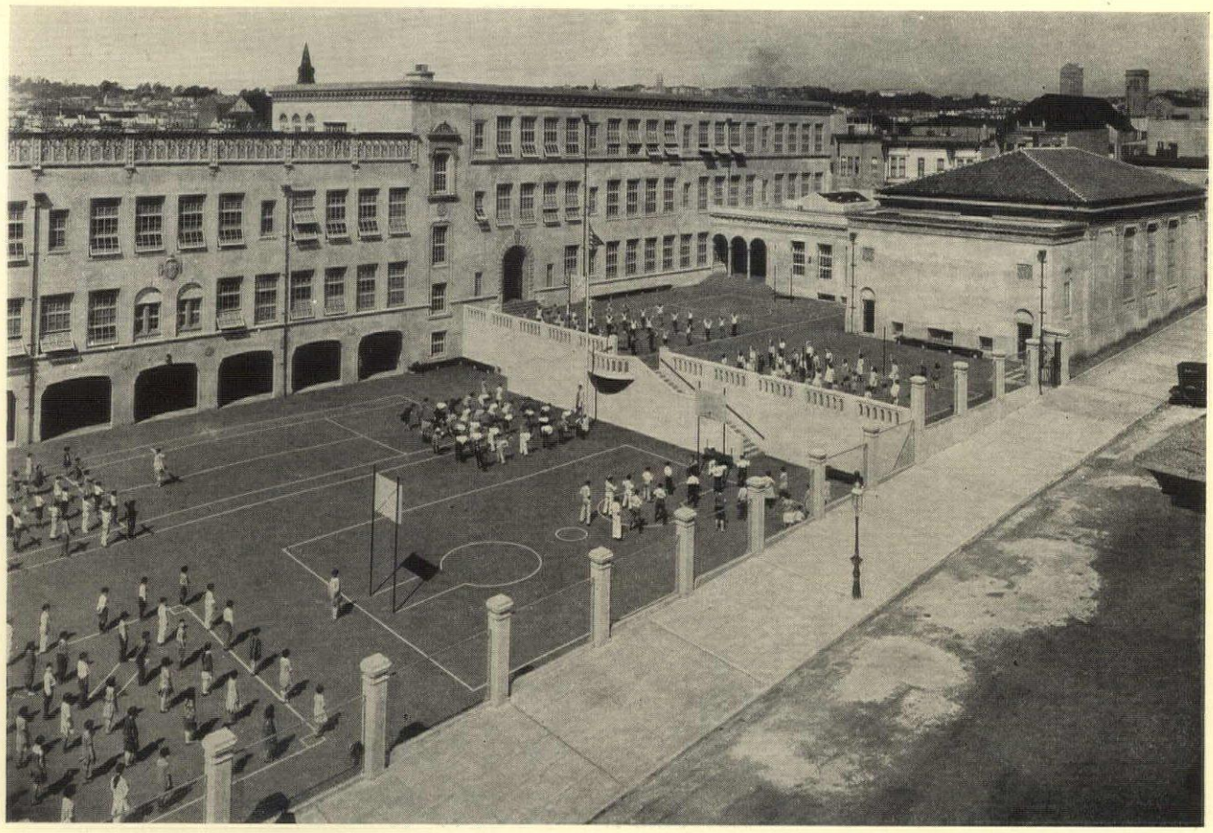
Completed in September, 1926 at a cost of 35 cents per cubic foot, this school accommodates 700 pupils. The total cost of the equipment was $22,000.

The walls are of masonry, and the roof is of wood construction covered with tile. The corridors on the first and second floors are of fireproof construction.

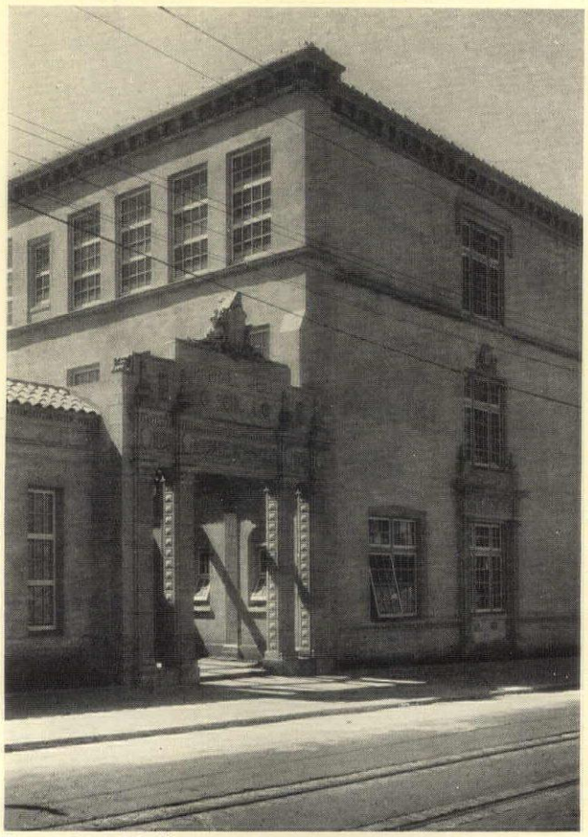


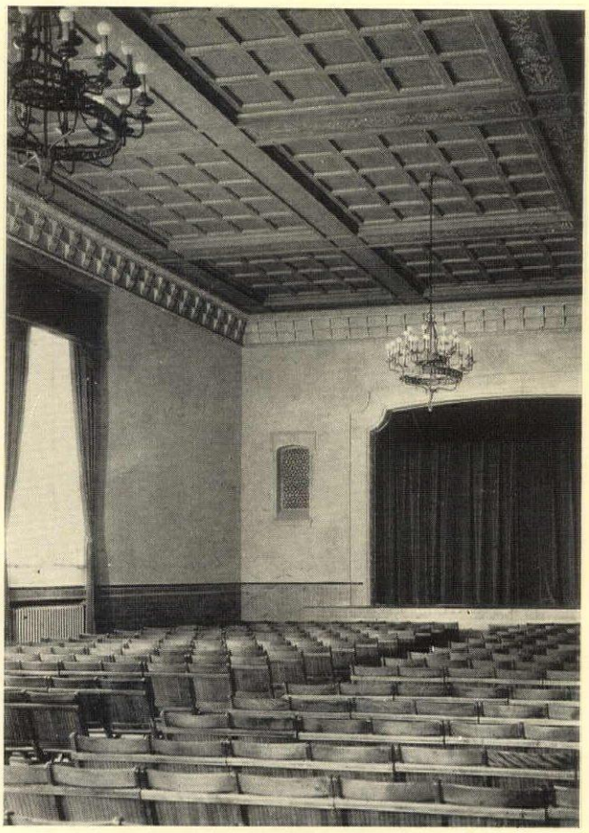
PLAN, CORAL GABLES ELEMENTARY SCHOOL, CORAL GABLES, FLA.

KIEHNEL & ELLIOTT, ARCHITECTS



EAST ELEVATION SHOWING PLAYGROUNDS





Photos. Gabriel Moulin *Plans on Back*

MAIN ENTRANCE DETAIL INTERIOR OF AUDITORIUM

RAPHAEL WEILL SCHOOL, SAN FRANCISCO, CAL.

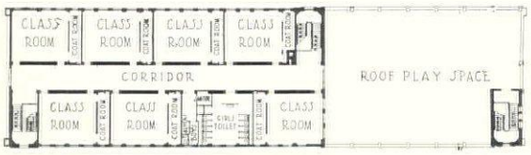
FREDERICK H. MEYER, ARCHITECT

COST AND CONSTRUCTION DATA

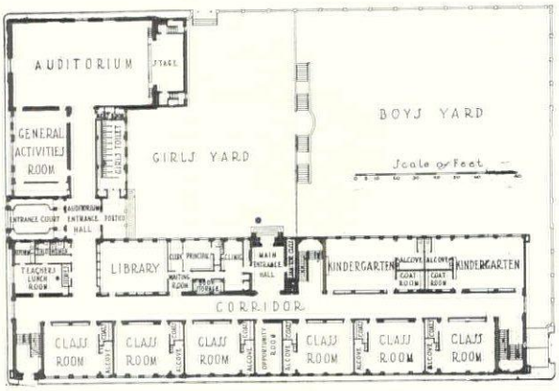
This school was completed in February, 1927 at a total cost of $358,990 and is planned for 1100 pupils, making the cost per pupil $326.35 and the cubic foot cost 35.9 cents.

The cost of equipment was $6,800 or $6.20 per pupil.

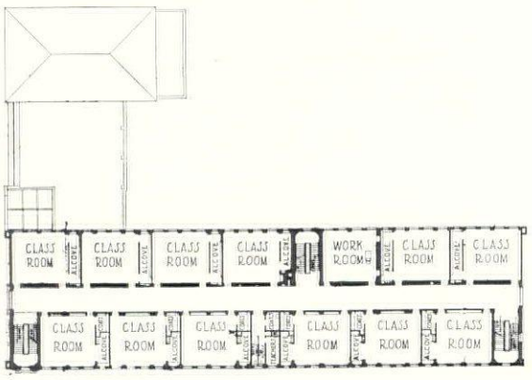
The building is of reinforced concrete construction with stud partitions. The stairs are of concrete and are enclosed in fireproof concrete towers. The interior trim is Oregon pine, stained brown.



THIRD FLOOR



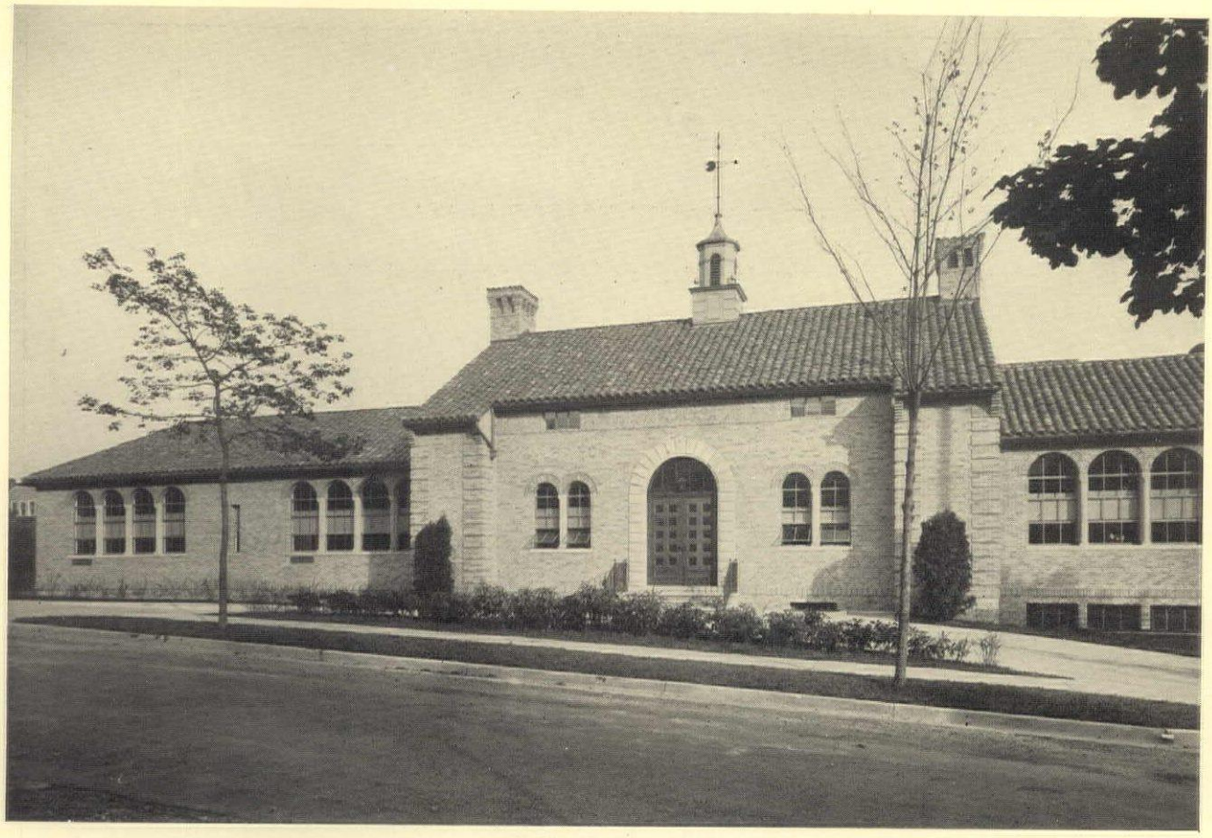
FIRST FLOOR



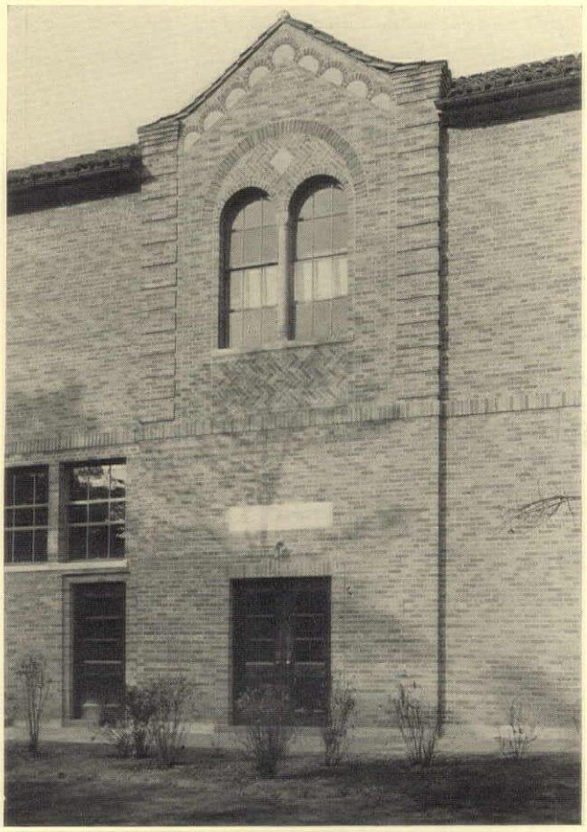
SECOND FLOOR

PLANS, RAPHAEL WEILL SCHOOL, SAN FRANCISCO

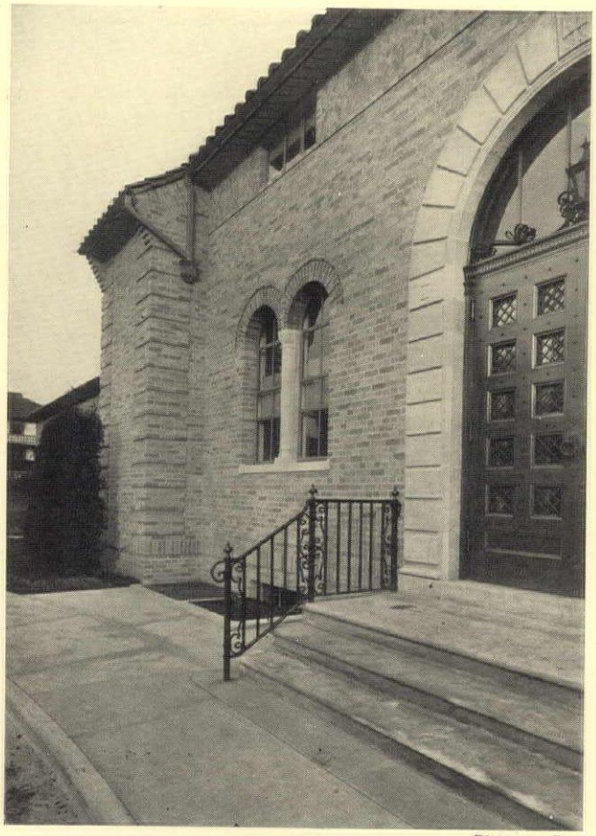
FREDERICK H. MEYER, ARCHITECT



FRONT ELEVATION



SIDE ENTRANCE



MAIN ENTRANCE

Photos. Drix Duryea

Plans on Back

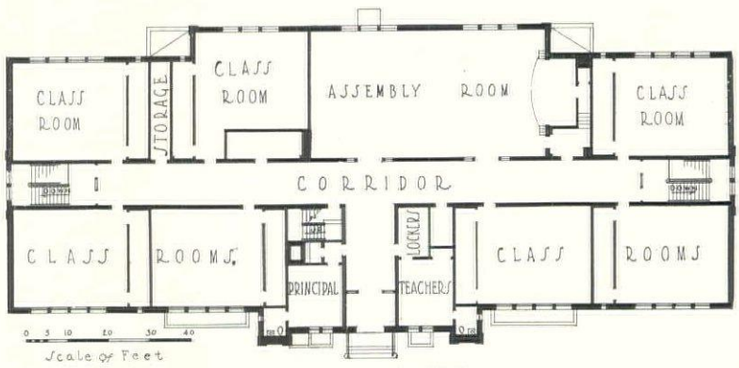
CENTRAL GRADE SCHOOL, GLEN RIDGE, N. J.

GOODWILLIE & MORAN, ARCHITECTS

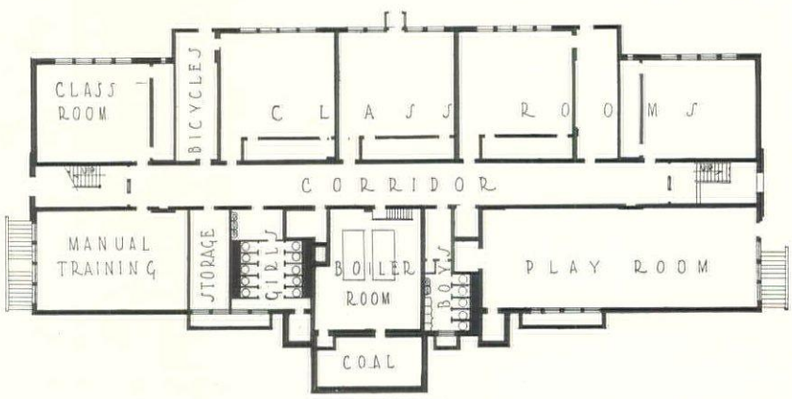
COST AND CONSTRUCTION DATA

At a total cost of $189,000 or 48 cents per cubic foot this school was completed in March, 1925. The number of pupils to be accommodated is 420, making a cost per pupil of $450.

The exterior walls are of brick and cinder concrete with tile backing. The floors are reinforced concrete, and the roof is formed of slow-burning timbers with metal lath and plaster underneath and mission tile on the upper side.



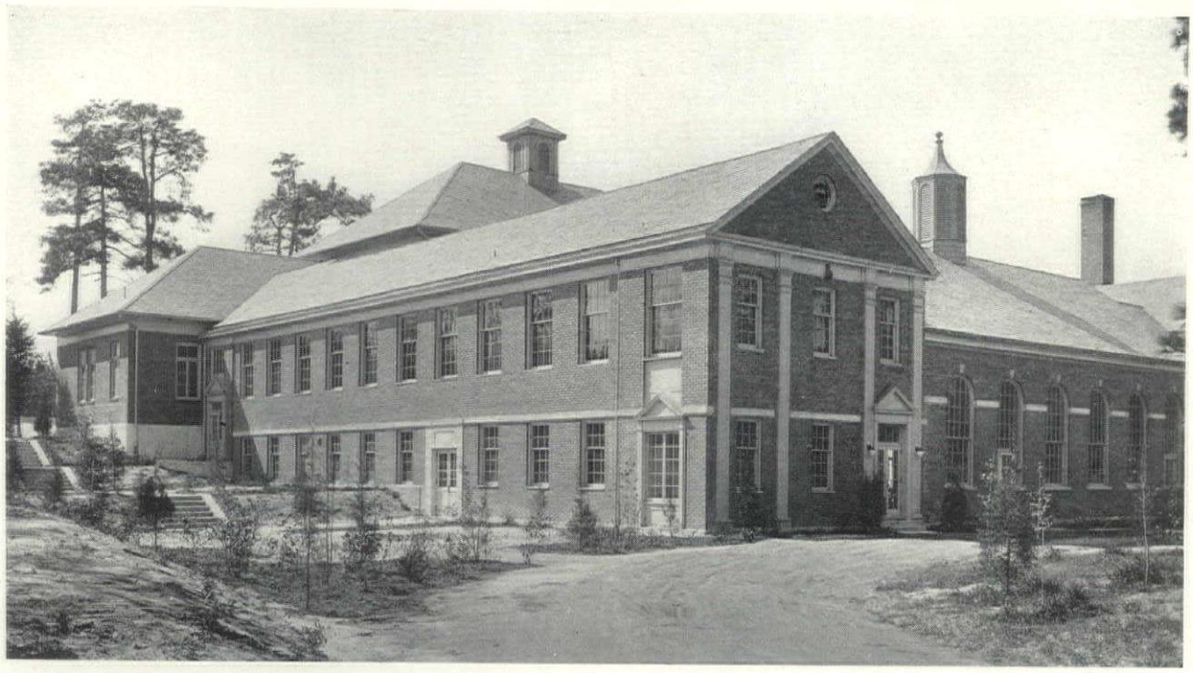
FIRST FLOOR



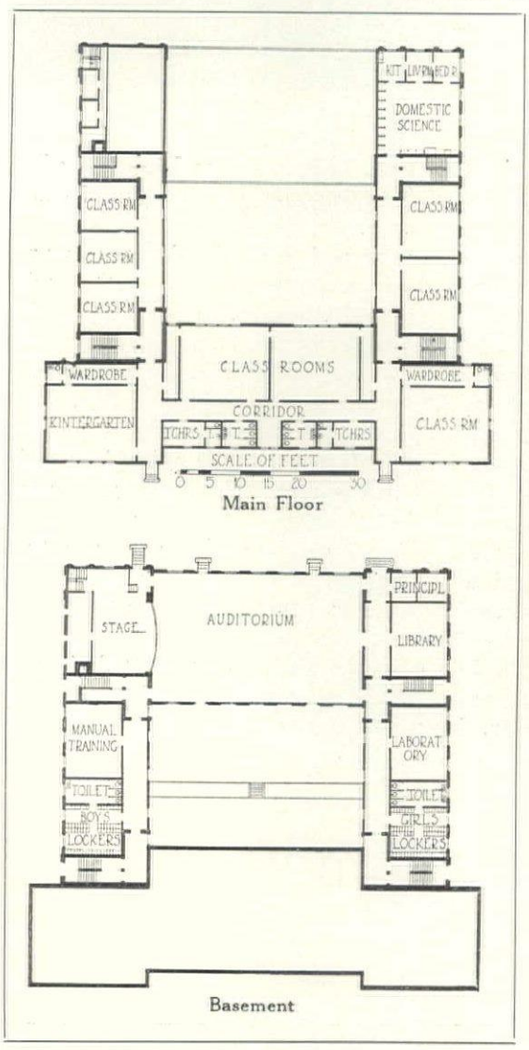
BASEMENT

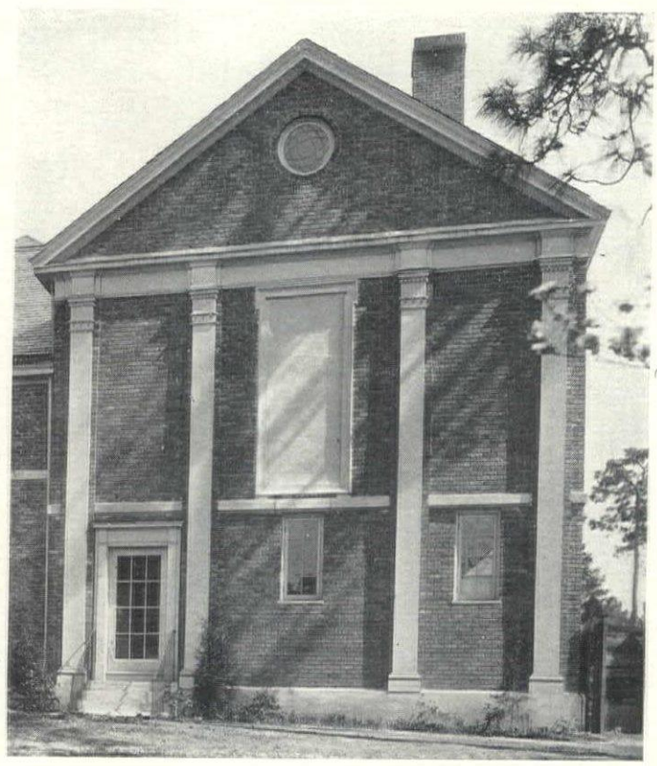
PLANS, CENTRAL GRADE SCHOOL, GLEN RIDGE, N. J.

GOODWILLIE & MORAN, ARCHITECTS



GENERAL VIEW FROM ENTRANCE DRIVE

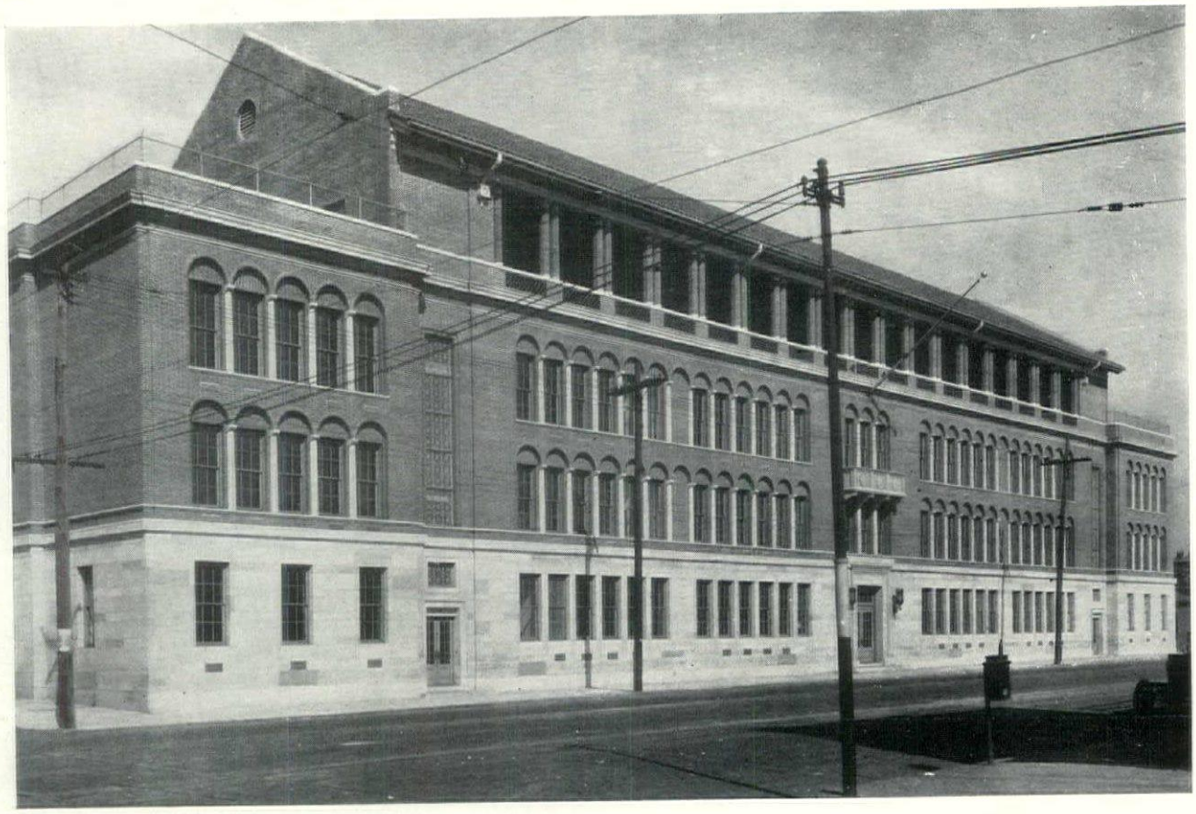




END BAY ON LOWER LEVEL

In an article on school houses of moderate size which appeared in THE ARCHITECTURAL FORUM for July, 1925 an illustration and plans of the upper part of this hillside school building were shown. This is the portion outlined in black in the basement plan. As the wings and auditorium are built on the lower grade, upper and lower approaches to the building are possible, and the principal entrances are on the ground level.

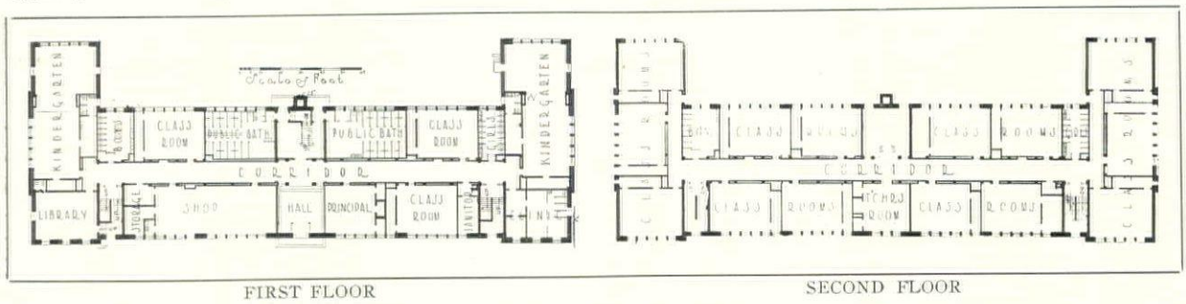
GRADE SCHOOL, SOUTHERN PINES, N. C.
AYMAR EMBURY II, ARCHITECT



FRONT ELEVATION

This building is an excellent example of the adaptation of southern European precedent to the purposes of modern American school architecture. The long rows of classroom windows across the facade of the building are treated with engaged limestone columns, as facing for the mullions, supporting false arches in the brickwork above the windows which gives the effect of galleries or loggias across the entire second and third stories, the windows being recessed somewhat to heighten this effect. The center portion of the building has a fourth story consisting of a large covered play space and two open-air classrooms. The play space is open at the front and rear, and the colonnades forming these openings add still further to the gallery effect. The wings at either end of the building have parapets with iron railings and are paved with wood blocks, forming two additional open-air roof playgrounds. The exterior walls of the first story are of Indiana limestone, the upper portions being finished in brick with considerable limestone trim. The southern European effect of the whole is completed by the sloping roof which is of terra cotta tile.

Ample classroom and recreational space is provided for 1400 pupils, the first three floors being devoted almost entirely to classrooms, while the play space is on the fourth floor as already said. Another unusual feature of the plan is that the two shower rooms on the first floor are public baths. The construction throughout is fireproof, the only wood used being window frames and the finished floors in classrooms and play spaces. The bearing walls are brick and interior columns reinforced concrete. The floors are reinforced concrete of the tin pan type finished with terrazzo in the corridors and toilets. Partitions are of terra cotta and gypsum tile. Work on this building was completed about March 1, 1924, and the total cost was $481,329 or about 37.1 cents per cubic foot. Figured on the basis of a 1400-pupil capacity, this makes a cost of about $344 per pupil.



FIRST FLOOR SECOND FLOOR

CHARLES CARROLL OF CARROLLTON SCHOOL, BALTIMORE

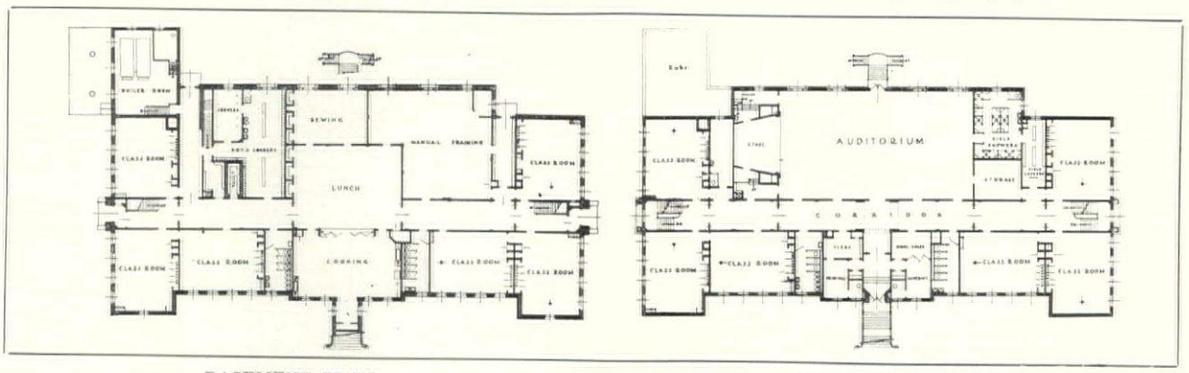
BUCKLER & FENHAGEN, ARCHITECTS

GENERAL VIEW

The Georgian Colonial type of architecture is particularly adaptable to modern school construction where great areas of classroom windows occur in connection with large blank wall spaces, the monotony of which must be relieved in such a way that they form a pleasing part of the whole. The school building illustrated herewith is a very good example of how this can be done, keeping the design in good taste without sacrificing any of the practical considerations of lighting and layout. The exterior treatment is carried out in red brick trimmed with limestone and has wrought iron railings and iron lamp posts at the front entrance steps.

The plans provide accommodation for 600 pupils, and provision is made for extensive future additions in the rear whenever it shall become necessary to expand. There is, in addition to the 17 standard classrooms, lunch rooms, rooms for sewing, cooking, manual training and a library, and a large combined gymnasium and auditorium with a seating capacity of nearly 700. There are also office suites for the superintendent and principal, including waiting rooms, private offices and toilets. The clinic is complete and well equipped, and there are ample locker and shower rooms, and toilet rooms on all floors. Although some of the classrooms are on the basement floor, these are all above natural ground level.

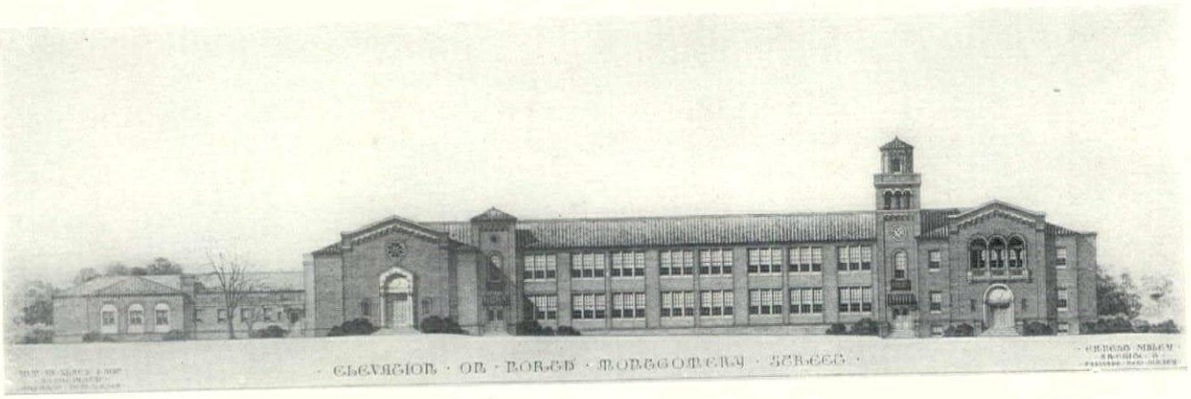
The boiler room, stairways, and corridors are all fireproof construction, and the roofs are of tar and gravel composition. The building was completed in October, 1927 at a cost of $230,000 or 36.6 cents per cubic foot. Had it been built with all floors and roof fireproof, the cubic foot cost would have been about 39.4 cents. Equipment costing $19,000 has been installed in the building. The cost of the school as it was built was about $383 per pupil.

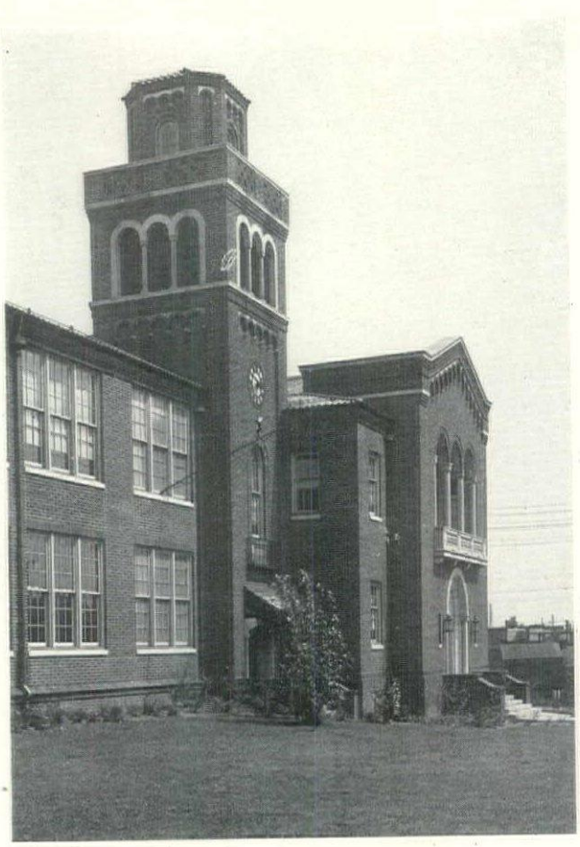


BASEMENT PLAN FIRST FLOOR PLAN

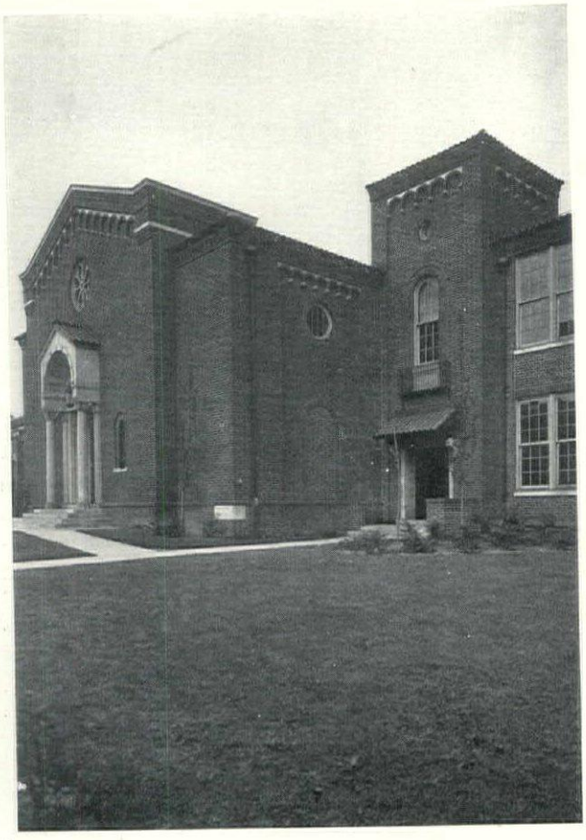
RICHMOND SCHOOL, DANVERS, MASS.

CHARLES G. LORING, ARCHITECT

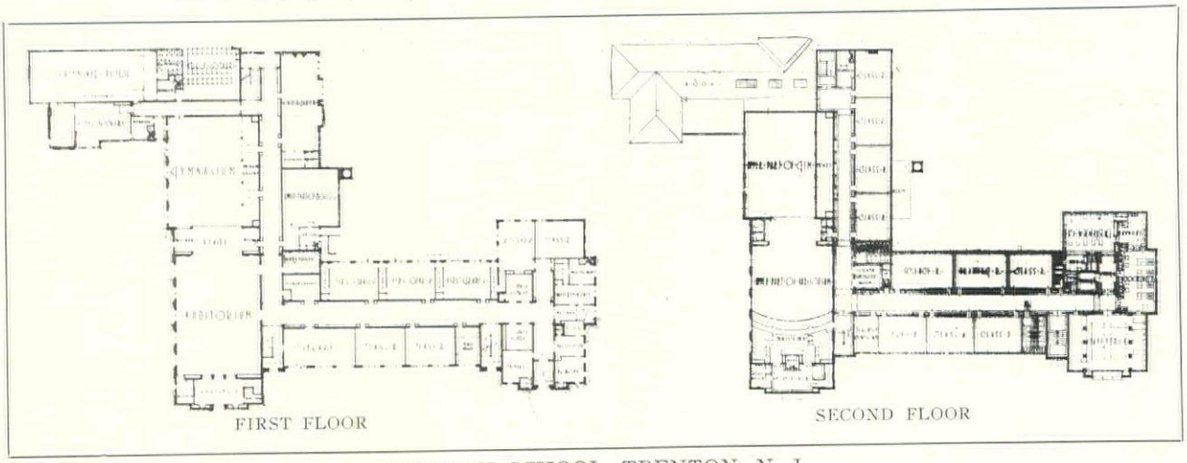




TOWER AND SIDE ENTRANCE



AUDITORIUM ENTRANCE



FIRST FLOOR

SECOND FLOOR

LINCOLN SCHOOL, TRENTON, N. J.

ERNEST SIBLEY & LAWRENCE C. LICHT, ARCHITECTS

SCHOOL GROWTH IN SOUTHERN CALIFORNIA

BY
JOHN C. AUSTIN
ARCHITECT

DURING the past ten years the population of southern California, and more particularly Los Angeles, has increased at such an unprecedented rate that one hesitates to tell of it, fearing that those who read or hear about it will consider it just that much "more southern California 'bunk.'" Yet the federal government, in preparing its annual estimates of the population of cities, usually omits Los Angeles on the ground that it is gaining so fast it is practically impossible to arrive at a fair estimate. Carefully compiled statistics actually show that the average daily attendance in Los Angeles schools of all grades was for 1920 to 1921, 160,278; 1924 to 1925, 274,263; 1926 to 1927, 329,538. These figures have been furnished by the Los Angeles Board of Education and are authentic. Therefore, they represent the actual growth of the school population, and are not a part of the propaganda often employed by real estate dealers to boost their business.

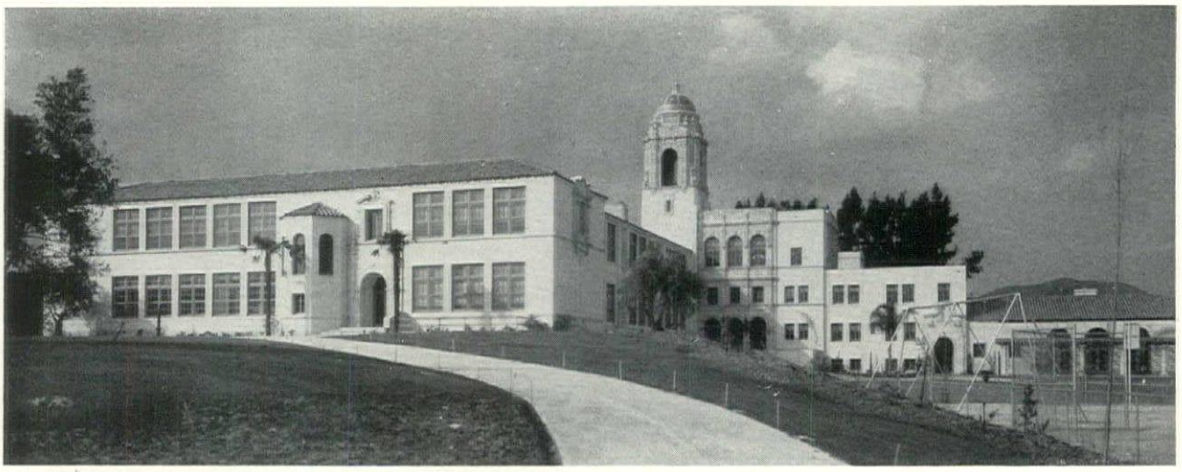
Money derived from bond issues can be used only for the purchase of land and the construction and equipment of buildings. No part of it can be diverted for maintenance and upkeep, the cost of which is met by direct taxation. The growth of the Los Angeles school system, as indicated here, is reflected in every school district in southern California in approximately the same proportion. The percentage of increase in daily average attendance in 1927 over 1926 was 8.6 per cent, the year beginning and ending in September. I have taken the average daily attendance as the measure of growth, rather than the enrollment, owing to the number of pupils who may, and usually do, drop out for various reasons. If the enrollment, purely as such, had been considered during the stated period, the actual increase was 9.75 per cent.

Anyone perusing this article need but compare the percentage of growth in his own district with that recorded here to enable him the better to appreciate the difficult and highly important problem now confronting Los Angeles and all of southern California. The $34,640,000, derived from the last bond issue, of June 3, 1924, was expended in this manner: $22,000,000 for buildings, and the remainder for sites and equipment.

Notwithstanding the trying experiences involved in her usual efforts to raise such large amounts of money at such frequent intervals, southern California has always insisted on employing substantial and fire-resisting construction. For instance, all corridors and stairways, auditoriums and boiler rooms have fireproof floors, walls and ceilings; exterior walls are of either brick or concrete. Classroom floors and partitions are generally of wood. This was the method of construction quite universally followed until recent ordinances enacted by the authorities made it compulsory for all buildings of more than two stories to be of fireproof construction throughout. This action, of course, met with the hearty endorsement of a majority of the architects, who believe it is but a forerunner of what will inevitably follow before long, namely, "that all schools, regardless of size or height, must be absolutely fireproof" to properly safeguard the lives of the children and their instructors. While only the city of Los Angeles is affected by such legislation, it is certain, in time, to exert a wholesome influence on adjacent communities, always ready and eager to copy the older and larger city. Most elementary schools are two-storied, some senior and junior highs three-storied. Therefore, larger sites must naturally be provided than in districts where buildings of greater height are permitted.

The work of qualified school architects has, in many cases at any rate, been recognized, and their services are coming to be more and more appreciated by the school-governing bodies, as they realize that a building with carefully studied, convenient and practical plan and a well designed exterior is by far the most economical kind to construct. They also recognize the fact that good and attractive schools draw new settlers to the districts in which they are located, and that in due course these people become permanent and substantial citizens.

There are included here some illustrations of an elementary school just completed at Beverly Hills, a very popular and rapidly growing community between Los Angeles and the ocean, and considered to be essentially a part of Los Angeles. This building, erected at a cost of $400,000 exclusive of site and equipment, is situated on a gently sloping knoll with an area of about 6.5 acres. It is contiguous to the grounds of a country club on two sides and borders on fine boulevards on the other two. The general plan is not only unusual, but quite unique, in my opinion, inasmuch as the arrangement separates the younger children from the older and provides each with independent toilet facilities and playgrounds. Special attention is directed to the peculiar requirements of the kindergarten, and first and second grades, in which the rooms were planned primarily to accommodate the equipment and were not considered to be part of a series of classrooms of stereotyped or standard form and size and wholly lacking in individuality. The auditorium seats 750 and has a fully equipped stage, 25 x 52 feet in size, that can be used for concerts, lectures, theatricals, etc., and also for community gatherings as well as for the usual school purposes. The manual training (Sloyd) department consists of a main workshop, rooms for glueing and finishing, lumber storage, tools and sheet metal work, and an instructors' office having full

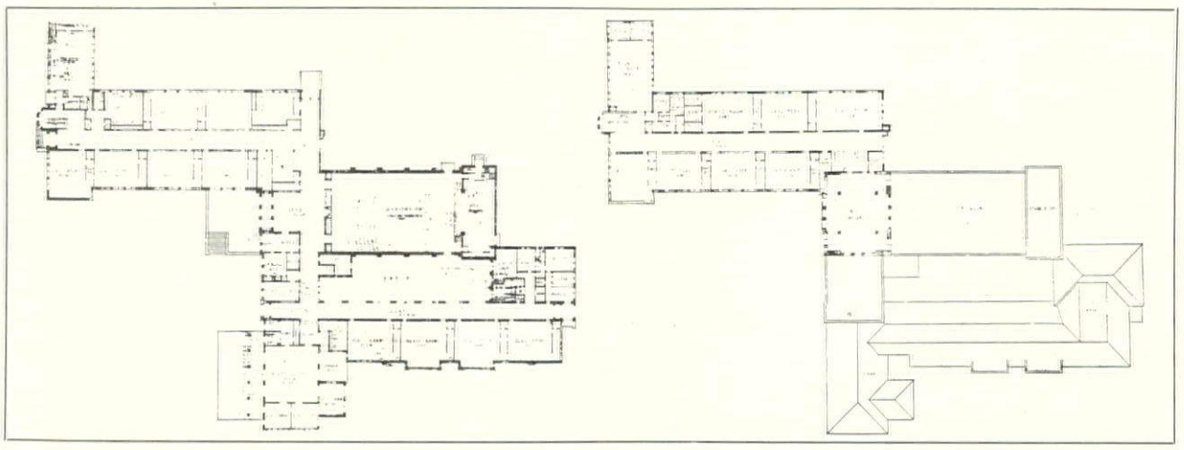


El Rodeo de las Aguas School, Beverly Hills, Cal.

command of the entire department. The domestic science department consists of a workroom, which is sub-divided into a number of small kitchens, special instruction room, locker room, and dining room, pantry and miniature kitchen. Sewing, fitting, work and supply rooms are essential parts of this department.

The grade classrooms from the third to the seventh are alike, but attention is directed to the convenience of coat rooms and supply closets in each and every one. Free textbooks are supplied by the state of California to the pupils of all public schools. Therefore, a special room for them is provided as near the center of the building as possible. The books are distributed to each classroom, and the teacher is held responsible for them. The administration department occupies the center of the building, and has full command of the main entrance and auditorium, also a good view of the boys' playground. The physical director's rooms are located on a mezzanine floor above the administration department, and are easily accessible to or from the first and second stories. The cafeteria will accommodate 300 and is situated in the basement which, owing to the contour of the ground, is not actually a basement, the floor being level with the finished grade on the east, and splendid light obtained by means of a generous area on the west. I have described this school in detail because it seems to be fairly typical of many erected in this district in recent years. Naturally, while every school cannot have such ideal surroundings, each department in such a school should be arranged to provide every practical convenience contained in this school, known as *"El Rodeo de las Aguas,"* Spanish, meaning "the gathering of the waters."

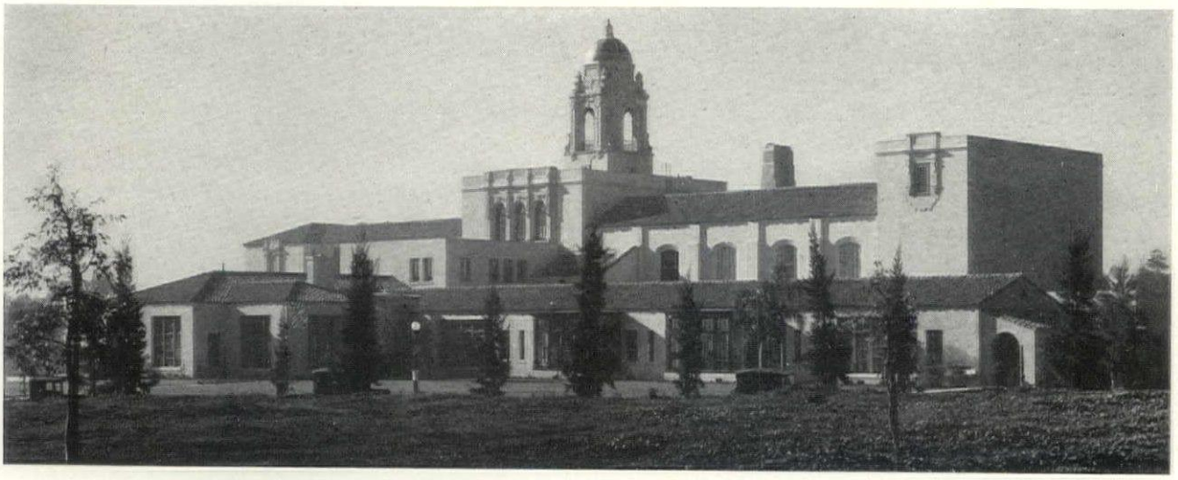
The heating and ventilating of California schools are not as much of a problem as they are in districts where extremes of temperature commonly prevail. Usually the auditorium and the chemistry department are equipped with plenum systems, all other parts being heated by direct steam and ventilated by leaving the windows open from one year's end to another. Every conceivable style of architecture can be found in our school buildings, but those types indigenous to the countries bordering the Mediterranean appear to be in better harmony with the historical background, foliage and climate of southern



First Floor Second Floor

Plans, El Rodeo de las Aguas School, Beverly Hills, Cal.

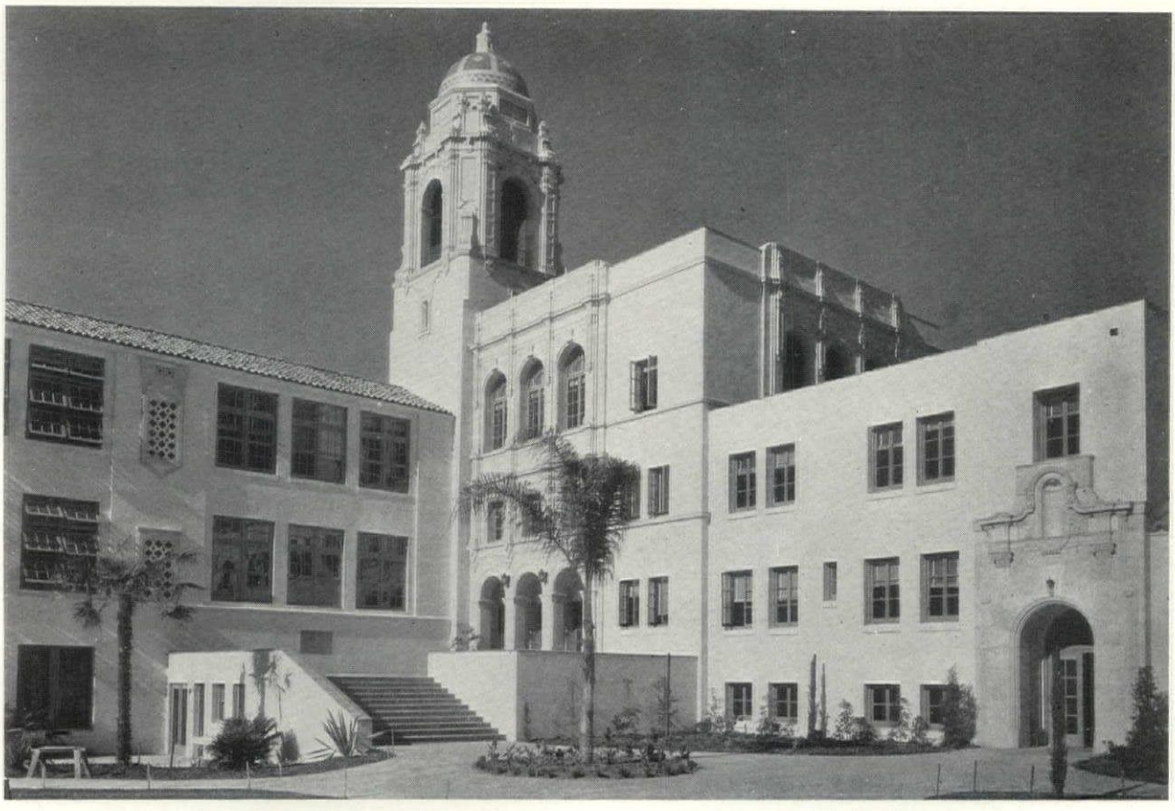
John C. Austin, Frederick M. Ashley, and W. Asa Hudson, Architects



El Rodeo de las Aguas School from the Northwest

California, though the Tudor and English Collegiate styles of architecture fit in with many of our picturesque sites and, intelligently handled, readily become a part of the landscape, just as though they had been dropped on the spot. Our costs of construction are very low compared with those of other districts, and for many obvious reasons. All of our building materials, excepting structural steel, are either manufactured or obtained within 50 miles of the building sites, thus enabling our boards of education to stretch their appropriations so as to produce the "most building for the least money" and thereby receive the approbation of the usually critical and sensitive public. It is no more than 15 or 20 years at most since the use of brick was generally adopted in the construction of our schools in lieu of wood, which is still employed, however, for classroom floors, partitions and roof framing in buildings of under three stories. In a few isolated cases reinforced concrete has been used for interior as well as for exterior walls and, at the present writing, it is common practice to make corridor floors and ceilings, stairways, boiler rooms and (occasionally only) auditoriums of concrete.

As already said, all schools of more than two stories, hereafter erected in Los Angeles, must be



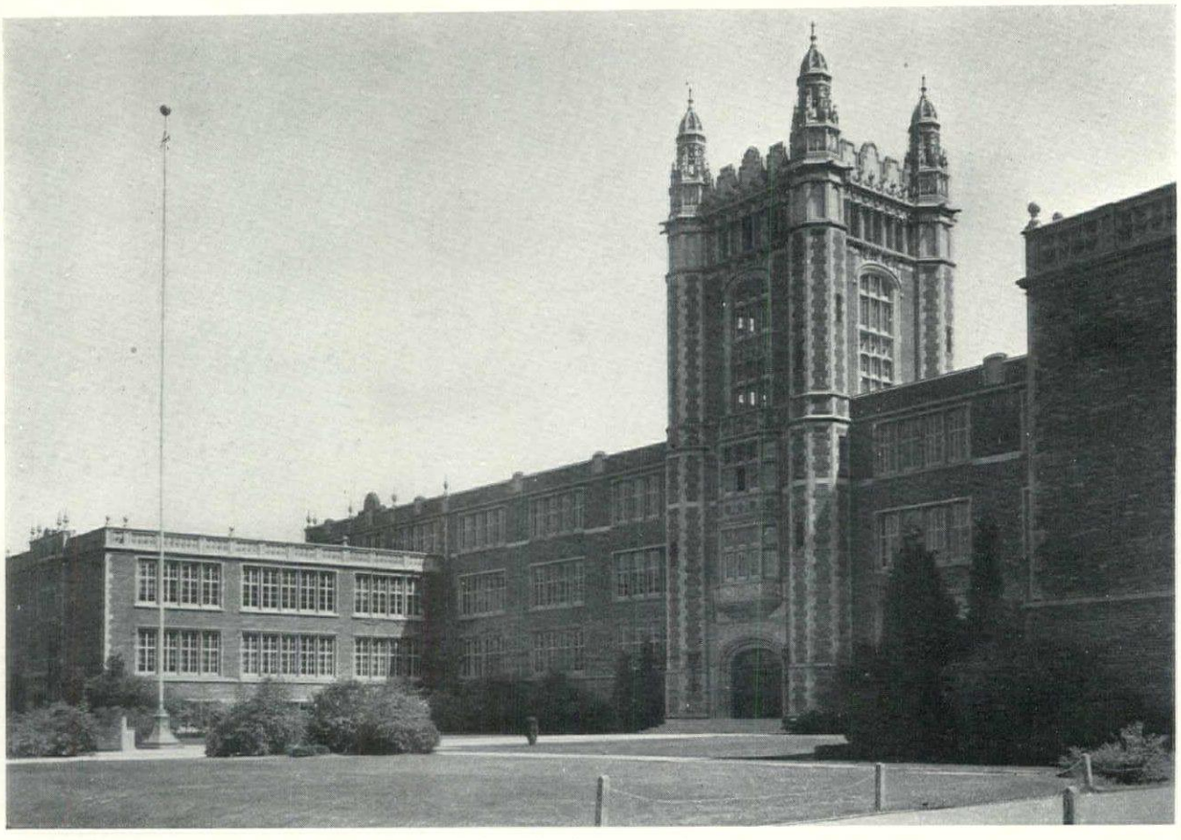
Main Entrance, El Rodeo de las Aguas School, Beverly Hills, Cal.
John C. Austin, Frederick M. Ashley, and W. Asa Hudson, Architects

fireproof throughout, in the sense that such construction is generally understood. Vast improvement has been made in the general planning of grade schools, and in the designing of their exteriors, to which, it is quite evident, much serious study and thoughtful consideration are being devoted. The combination of brick or terra cotta, with natural or artificial stone, the latter predominating, owing principally to its lower cost and the fact that there is no suitable stone in this vicinity except granite, has produced many creditable and attractive schools. These have served to stimulate public interest to such an extent that the people not only expect the standard to be maintained but even raised, whenever conditions should justify the indulgence in schools of higher æsthetic character and value. In fact the public is actually beginning to show signs of education, and seems to be better able to discriminate.

Because of the great size of the Los Angeles school district, much of which is sparsely settled, more schools are required in proportion to population than in a community more densely settled. In some sections the only way to solve the transportation problem has been to build more schools. Schools have had to be provided for large communities where, a few years before, there was only vacant land. The attendance at one school which opened with 100 children increased to 1668 in less than two years, rendering quick action in providing additional buildings imperative. Other similar instances could be cited, but this seems to be sufficient to convey a faint idea, at least, of the rapidity of school growth.

Again, in a district inhabited by people of the better class, it is possible, through larger returns yielded by the tax, to secure a school fully equipped to meet all requirements of that particular locality, while in less favored districts this is manifestly impossible. I have in mind a case in point. Some years ago I built a high school in Antelope Valley, about 75 or 80 miles from Los Angeles. This section, about equal in area to the state of Rhode Island, was sparsely settled by people, most of whom were practically compelled to live there because of the state of their health and finances. Many were situated at points so remote from the school that we found it necessary to provide dormitories to house those pupils who were unable to go back and forth in time for the sessions. So they would go home on Friday, returning on Sunday, and meanwhile find lodging in the dormitories. On the occasion of my visits there, after the school was completed and in operation, I was amazed to observe the hardy type of children in attendance, and the eagerness with which they tackled their studies. It was certainly a refreshing and unusual sight, considering the fact that most of them came from very poor homes.

In conclusion, I am so bold as to venture the statement that, all things considered, our schools compare favorably with the best in other parts of the country and, in many respects, even excel them.

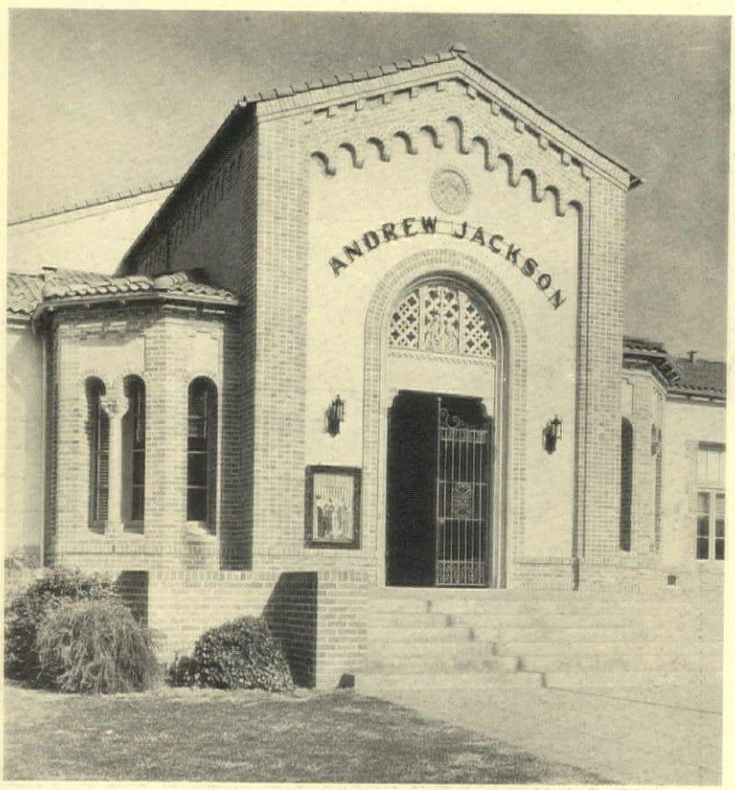


High School, Los Angeles
John C. Austin, Architect

GENERAL VIEW

Lying as it does in the midst of a broad fertile plain with the mountains for a background, there is a suggestion of northern Italy in the Romanesque treatment of this California school. The general proportions are low-lying and rambling, the main building being laid out in the form of a great L with a cloistered quadrangle in the angle having a large auditorium as its other enclosing wall. The building has been built in two sections at different times and is evidently planned for still further addition in the form of a wing on the right to balance the present wing on the left. Although the greater portion is only one story in height, the rear part of the wing on the left has been carried up a second story to make room for six additional classrooms. Besides having 18 classrooms, the plan provides ample toilet facilities as well as offices, library, auditorium and other rooms for general activities.

The exterior finish is of light colored stucco in combination with light colored variegated brick, used as trim, in which the Romanesque detail is worked out. This in combination with tile roofs gives a southern European effect which is particularly fitting.



Plans on Back

MAIN ENTRANCE

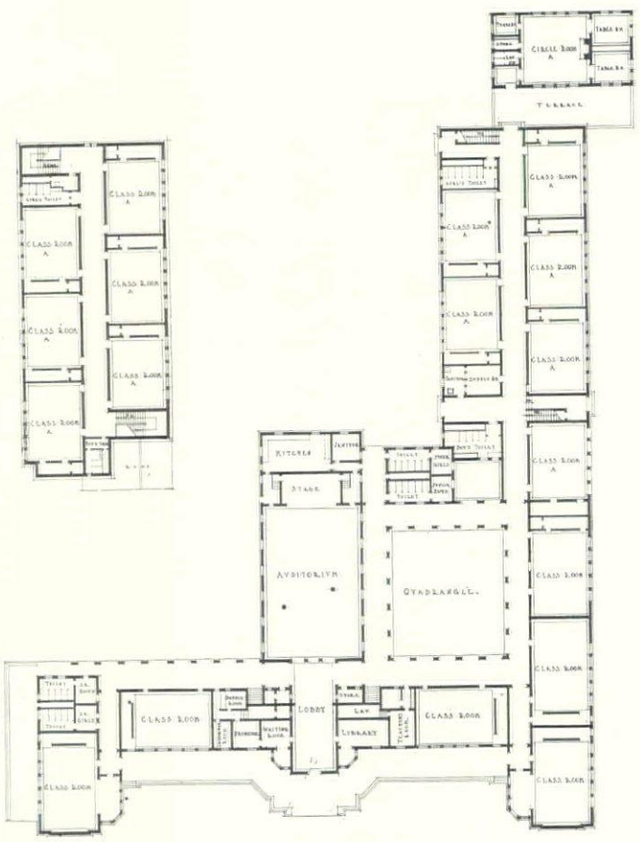
ANDREW JACKSON SCHOOL, PASADENA

MARSTON, VAN PELT & MAYBURY, ARCHITECTS

COST AND CONSTRUCTION DATA

As originally constructed in 1921, the cost of this school was $97,550. An addition was made in 1926 costing $59,670, which makes the total cost $157,220 or approximately 25 cents per cubic foot. It is planned to accommodate 570 pupils, making the cost per pupil about $276. The value of the equipment used in the building is $6,500.

The exterior walls are of brick and stucco; floor joists and partition studs are of wood with metal lath and plaster. The roof covering is tile.



FIRST AND SECOND FLOORS

PLANS, ANDREW JACKSON SCHOOL, PASADENA

MARSTON, VAN PELT & MAYBURY, ARHITECTS

GENERAL VIEW

DETAIL, ENTRANCE PORCH

ELEMENTARY SCHOOL, MASSAPEQUA, N. Y.

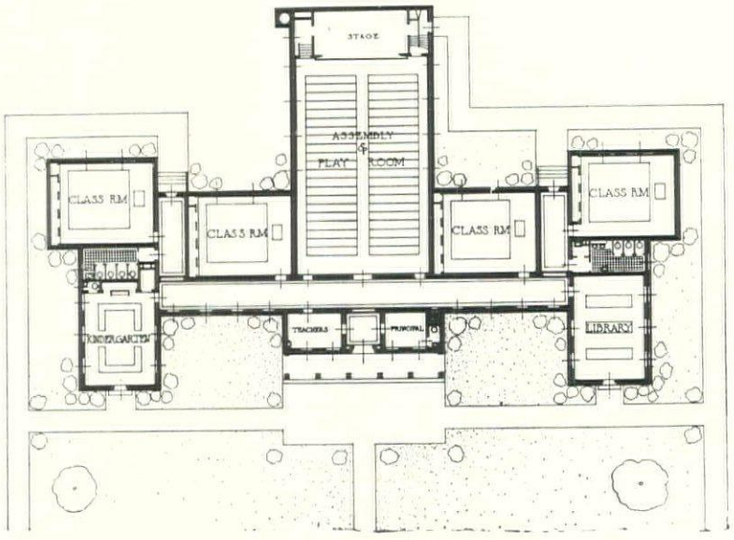
ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS

Plan on Back

COST AND CONSTRUCTION DATA

One hundred and seventy-five pupils may be accommodated in this one-story school building, which was erected in 1926 at a cost of $76,000 or 37 cents per cubic foot.

The exterior walls are of face brick, and the roof covering is slate.



FIRST FLOOR

PLAN, ELEMENTARY SCHOOL, MASSAPEQUA, N. Y.

ERNEST SIBLEY AND LAWRENCE C. LICHT, ARCHITECTS

GENERAL VIEW

ENTRANCE PORTICO

Plan on Back

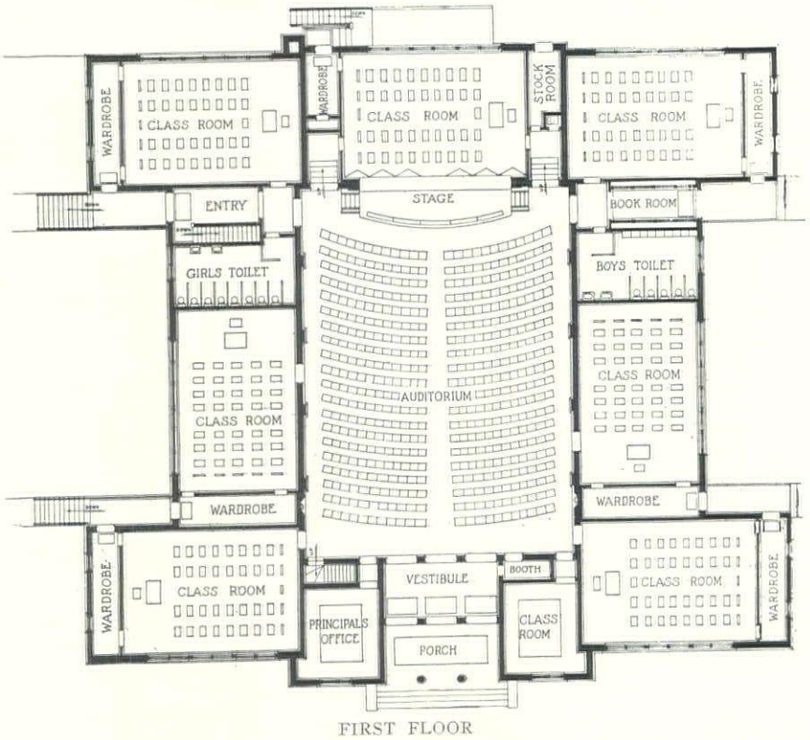
COMMODORE MACDONOUGH SCHOOL, ST. GEORGES, DEL.

GUILBERT & BETELLE, ARCHITECTS

COST AND CONSTRUCTION DATA

Completed in February, 1924 at a total cost of $105,198 or 34 cents per cubic foot, this school is designed for 300 pupils, making the cost per pupil $350.66.

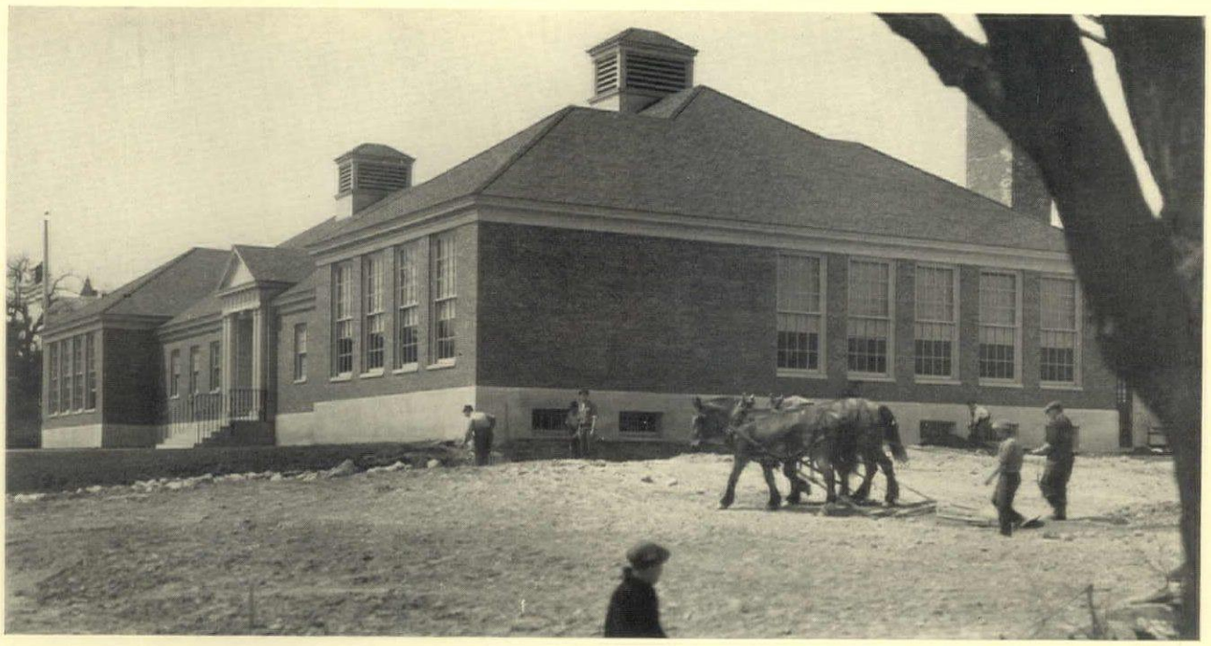
Although not completely fireproof, the building is of slow-burning construction with brick exterior and composition roof.



FIRST FLOOR

PLAN, COMMODORE MACDONOUGH SCHOOL, ST. GEORGES, DEL.

GUILBERT & BETELLE, ARCHITECTS



GENERAL VIEW

Built in the American Colonial style, the beauty of this school building lies in its simplicity, the general proportions, and the classical design of the Doric entrance portico. The treatment of the various roof areas is rather interesting, and the two ventilators surmounting the whole are in harmony with the general proportions of the building. The plan and utility of the layout are frankly expressed by the exterior treatment, there being no attempt to ornament in any way the large unbroken wall spaces occurring on the unlighted sides of the classrooms. The exterior finish is plain brick unornamented in any way except for the entrance, which is of white painted wood, with a graceful wrought iron railing for the steps.

The plan of the building is also very simple, consisting only of six classrooms, two toilets, a teachers' room and the necessary corridors and hall. The heating apparatus is located in the basement. The arrangement of wardrobes in the classrooms seems to be particularly successful.

Photos. Paul J. Weber

Plan on Back

MAIN ENTRANCE

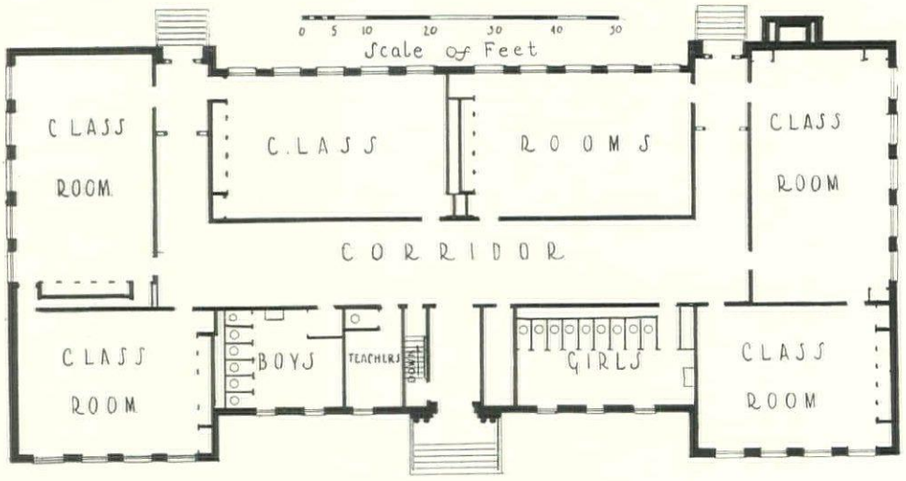
PACKARD STREET SCHOOL, HUDSON, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS

COST AND CONSTRUCTION DATA

Of the bungalow or one-story type, this school was completed in June, 1925, with a capacity of 210 pupils at a cost of $72,983 or 30.17 cents per cubic foot.

Exterior walls are of brick and hollow tile, and the floors, partitions, and roof are of wood construction.



FIRST FLOOR

PLAN, PACKARD STREET SCHOOL, HUDSON, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS

GENERAL VIEW

The principal interest in this bungalow type school, aside from the beauty of the general proportions, is centered in the classical entrance detail, and the graceful cupola which surmounts the roof at the center of the building. The entrance is particularly pleasing, being worked out as a modification of the Doric order in wood painted white, forming a pleasing contrast to the rest of the building which is of plain brick and practically unornamented. The basement course is also of contrasting color, being of white concrete, as are the front entrance steps, which are finished with an iron railing of pleasing design.

In plan the building is also exceedingly simple, being laid out in the form of an "H" and containing merely six classrooms, two toilet rooms and a room for the use of teachers. The boiler room and other mechanical equipment is located in the basement, leaving the entire space on the main floor free for school purposes. In plan and design this building is an admirable example of effective simplicity.

Photos. Paul J. Weber

Plan on Back

MAIN ENTRANCE

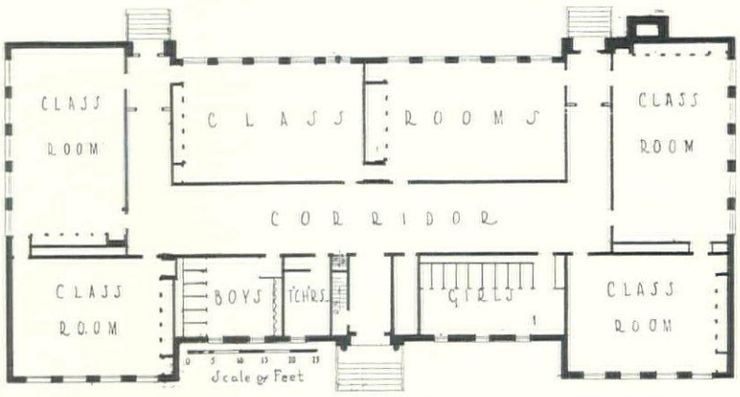
BROAD STREET SCHOOL, HUDSON, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS

COST AND CONSTRUCTION DATA

The total cost of this building, completed in June, 1925, was $74,346 and the cubic foot cost was 30.69 cents. Each of the six classrooms has a capacity of about 35 pupils, making a total of 210.

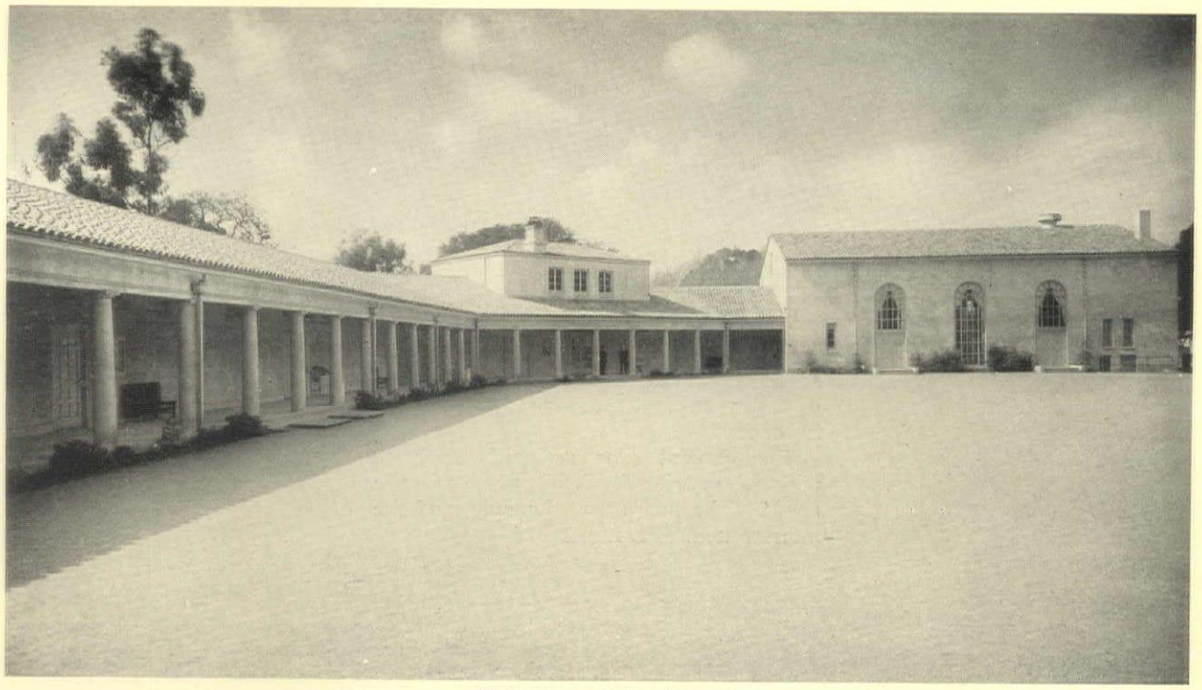
The exterior walls are of brick backed up with structural tile. The floors, partitions and roof are of wood construction.



FIRST FLOOR

PLAN, BROAD STREET SCHOOL, HUDSON, MASS.

JOSEPH D. LELAND & COMPANY, ARCHITECTS



VIEW FROM THE COURT

Photos. Gabriel Moulin

Plan on Back

GENERAL VIEW FROM THE HIGHROAD

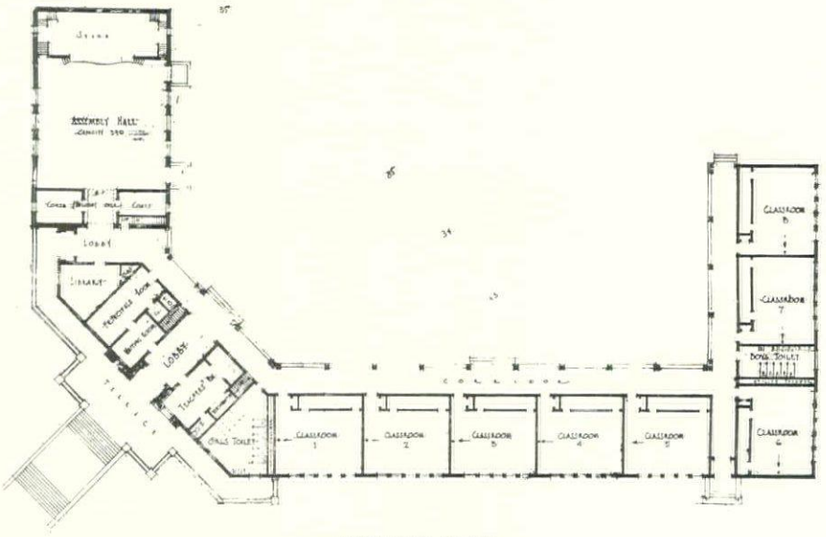
CENTRAL GRAMMAR SCHOOL, SAN MATEO, CAL.

JOHN J. DONOVAN & SYLVAIN SCHNAITTACHER, ARCHITECTS

COST AND CONSTRUCTION DATA

Costing approximately $88,000, this school was built in 1923 with a capacity of 360 pupils. Cost per cubic foot was 25 cents.

The general construction is concrete with an exterior finish of stucco and tile roofs. The floors are of maple, and the interior trim is Douglas fir.



GENERAL PLAN

PLAN, CENTRAL GRAMMAR SCHOOL, SAN MATEO, CAL.

JOHN J. DONOVAN & SYLVAIN SCHNAITTACHER, ARCHITECTS

GENERAL VIEW

Plan on Back

ENTRANCE PORTICO

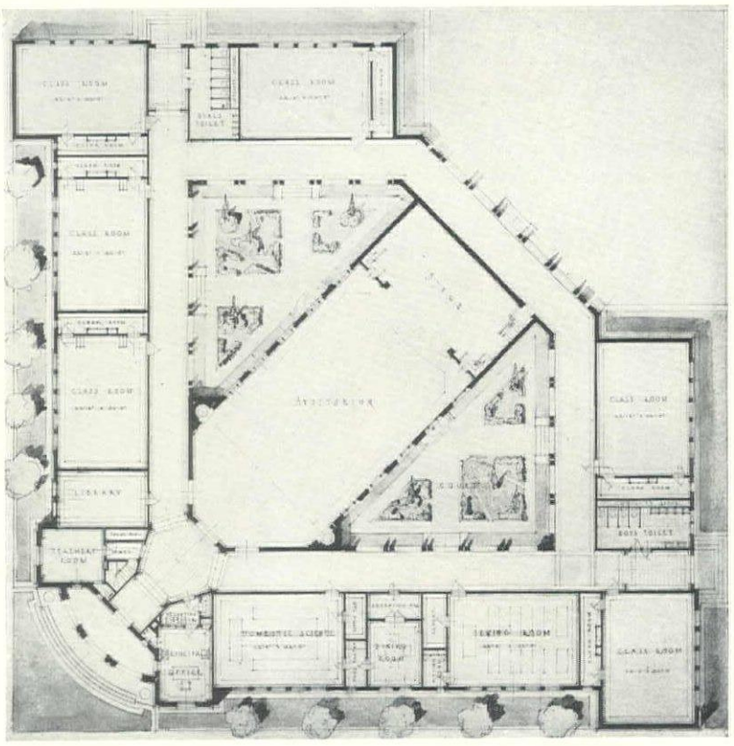
GRAMMAR SCHOOL, HOLLISTER, CAL.

W. H. WEEKS, ARCHITECT

COST AND CONSTRUCTION DATA

Constructed of pressed brick and artificial stone, with terra cotta tile roof, this one-story school building was completed in 1922 with a capacity of 225 pupils.

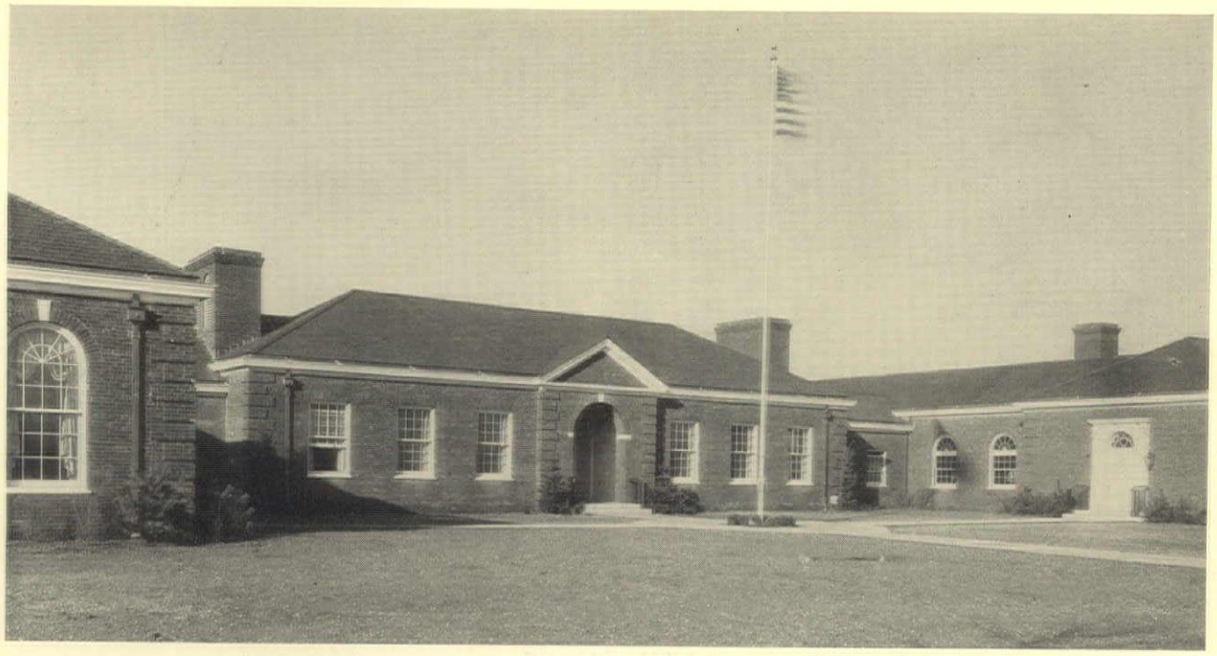
The total cost was about $100,000 or about 26 cents per cubic foot, making the cost per pupil $444.



GENERAL PLAN

GRAMMAR SCHOOL, HOLLISTER, CAL.

W. H. WEEKS, ARCHITECT

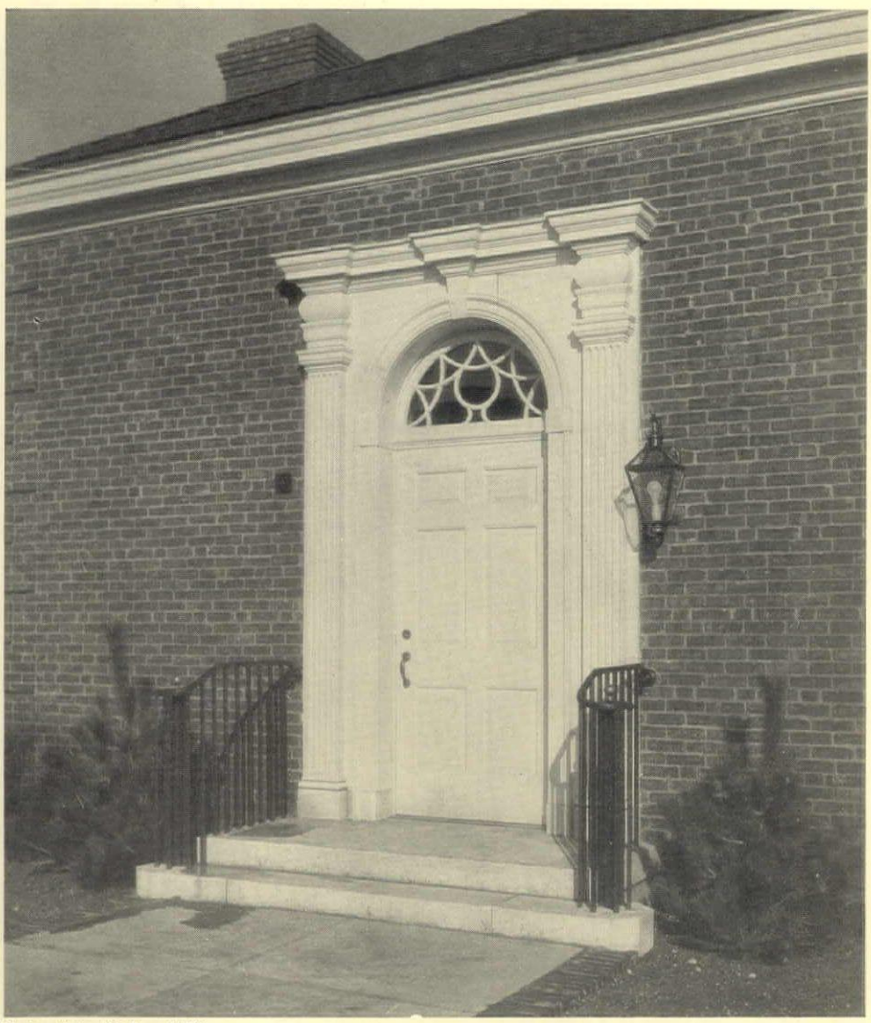


GENERAL VIEW

The simplicity of the Colonial design used here is very pleasing in a school of this type. Being all on one floor and designed for a capacity of 385 students, it necessarily covers considerable area and is laid out with two wings containing classrooms on either side of the central section in which are located the library, assembly room, teachers' and principal's rooms and some classrooms.

The exterior treatment is carried out in plain brick laid at the corners to give the effect of quoins. The main or central entrance consists of a rather plain brick arch with white stone keystone and impost blocks. The side entrances in either wing are somewhat more decorative, being of white woodwork in pleasing Colonial design. All the entrance steps have graceful iron railings.

The building was completed in 1926 and cost $152,000 or 37.5 cents per cubic foot. This makes the cost per pupil about $457, without counting the cost of the building's equipment.



Photos. John Wallace Gillies

ENTRANCE TO MUSIC ROOM

FRANKLIN SCHOOL, HEMPSTEAD, N. Y.

ERNEST SIBLEY & LAWRENCE C. LICHT, ARCHITECTS

THE ONE-STORY SCHOOLHOUSE

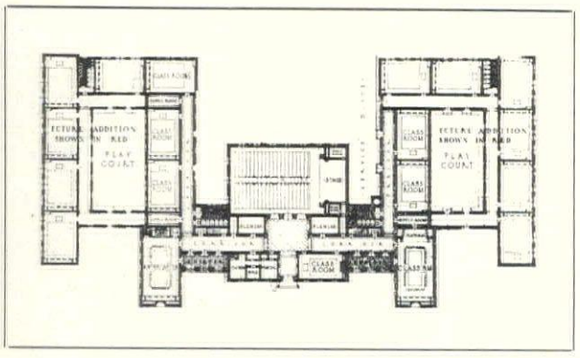
BY

MATLACK PRICE

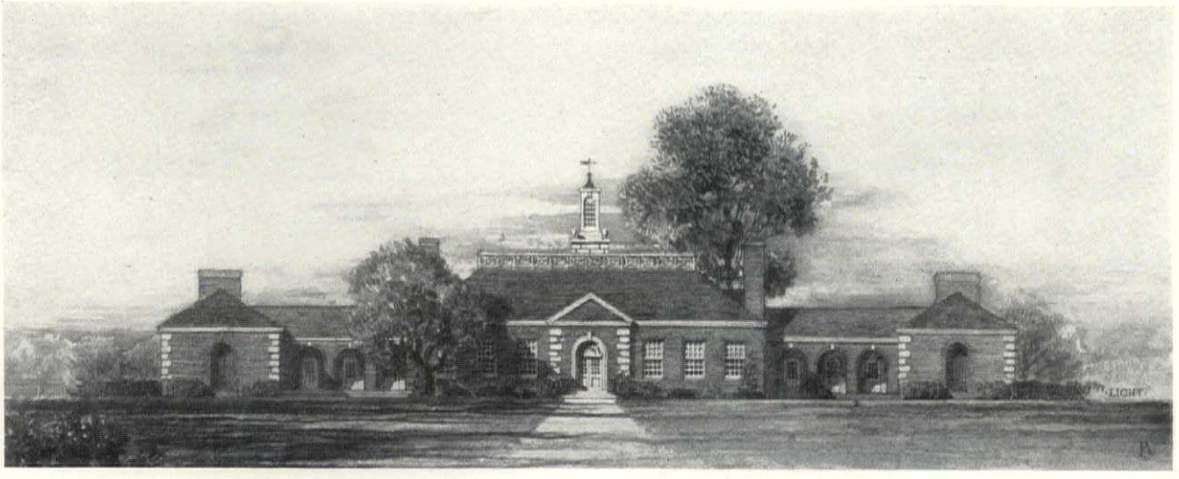
THERE is a growing feeling that the ideal elementary or primary school building for the suburban community is the one-story type, which is not only attractive in itself but attractive likewise in its relation to the residential character of its environment. For this reason, also, it can definitely be said that it adds to the character of a residential neighborhood rather than in any way detracting from it, and its low lines give something of a domestic quality that correlates the school with the home.

Recent school buildings in progressive communities have been designed in general character with the styles suggested by locality or precedent, and architects make every effort to create stylistic harmony throughout the entire school system of the community. The one-story primary school, thus, is designed as a building related to the larger school buildings, and a pleasing consistency is the result. This harmony in design has been carried out with excellent effect at Hempstead, New York, where the high school is a monumental building of Georgian Colonial design, and the Franklin and Fulton primary schools are of the one-story type, adapting the same stylistic manner. Generous shelters have been provided for these two buildings, giving ample protection to the pupils who arrive early and furnishing a play space for use in bad weather. Certain conditions which are part of the daily routine of the primary school have led architects to give their best attention to meeting these conditions with definitely intentioned plan features. Since play and physical training are essential parts of modern school procedure, even for very small children, the large corridor or lobby in front of the assembly room is an important element in the plan. And in the assembly room itself, which has an average seating capacity of 450, half the floor space is left open for play and for physical exercises. The portion provided with seats is designed to accommodate class groups in assembly.

School boards have found that definite advantages are secured through professional architectural guidance in this, as in any other school project, and that the architect can and will be glad to assist with the landscaping problem, and with such details as furniture, draperies and equipment, all of which should harmonize in character and color with the entire scheme. The details may seem unimportant, and yet if they are neglected or poorly done much of the result of the architect's skill and labor may be lost, or at least rendered far less effective than might otherwise be the case. The necessity for practicing economy is ever present with boards of education, and on this account they often hesitate to employ the architect's services on these supposedly unimportant details of the work. Any architect, however, who desires the complete and ultimate success of his building, is entitled to render such service, and would rather do so than discover, at the end, that the setting for the building or its furniture and its other equipment do not faithfully carry out his orig-

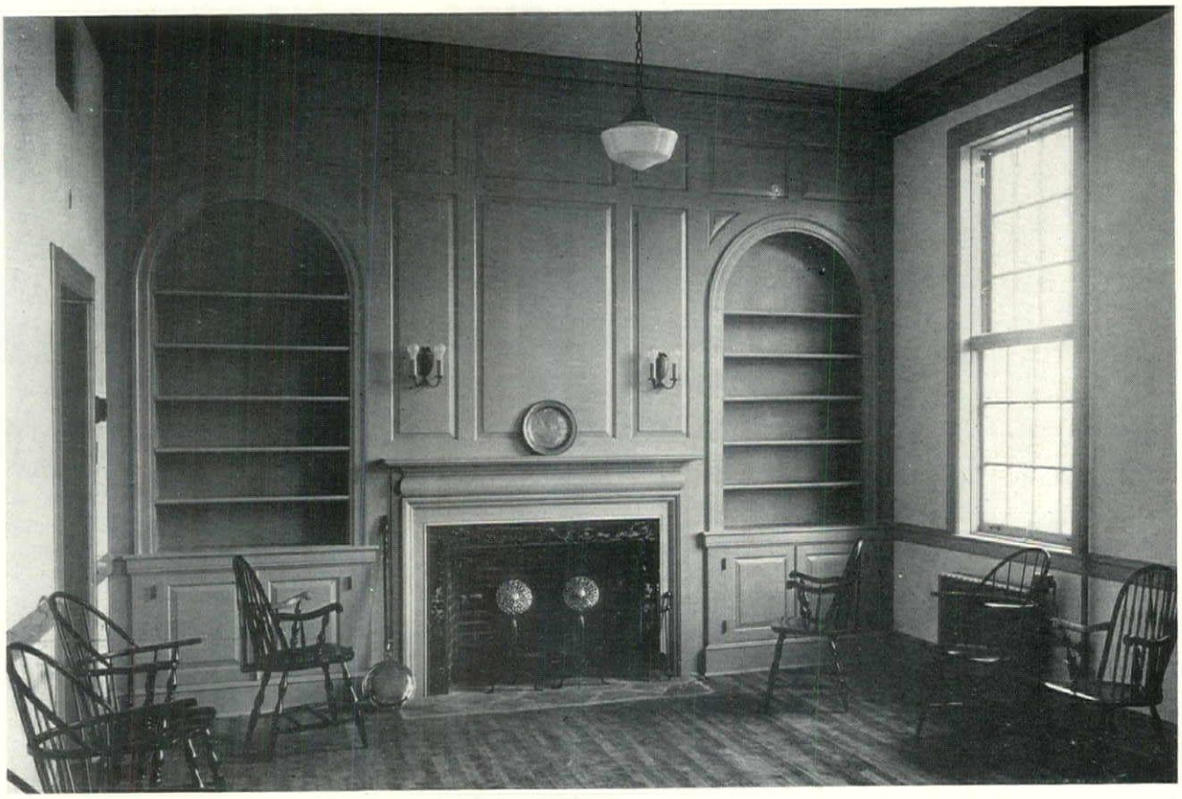


Main Floor Plan



Elementary School No. 4, Bergenfield, N. J.

Ernest Sibley and Lawrence C. Licht, Architects

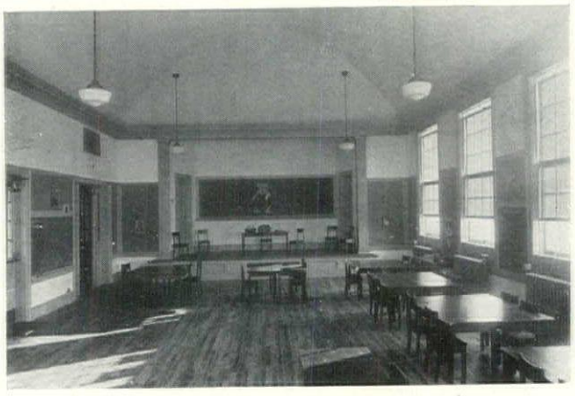


Library, Elementary School No. 4, Bergenfield, N. J.

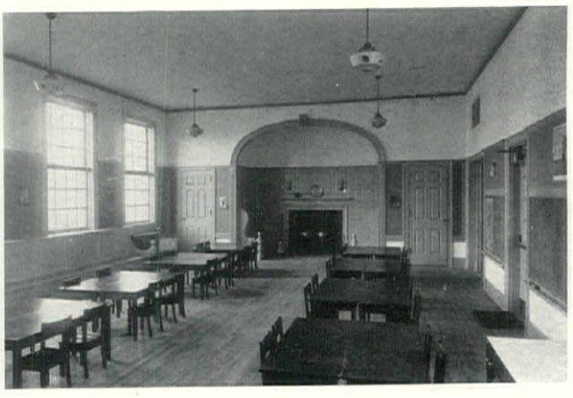
inal conception of the finished scheme. Among other features provided by the architect who equips as well as designs the school building are ventilated wardrobes at the rears of the classrooms, the doors of which open and close together. Above the blackboards are exhibition boards, covered with soft-toned burlap and planned to provide generous exhibition space. The music room is provided with a stage, with an entrance from the corridor, and this room proves a valuable adjunct to the school for classes in visual instructions, civics, theatricals and for Mothers' and Parent-Teachers' meetings.

A little specific information is more valuable than quantities of generalities, and architects and school boards alike will probably find considerable definite suggestion in the notes on a few primary school buildings illustrated in connection with this number.

Plate 80 illustrates the Franklin School. If it were possible to cite the source which inspired the design of this building, as well as some others also presented here, the old Colonial mansions and homesteads of Maryland and Virginia would come nearest to supplying the answer. Three characteristic features have been retained,—the main center building, its two end wings, and their connection by means of open shelters, as at Mt. Vernon. Only sufficient basement space was allowed to accommodate the oil burners, so that the building is but three steps above the ground. A large kindergarten provides work and play space for kindergarten and first grade children, and the music and visual instruction room, and the library, with book shelves and fireplace, are delight-

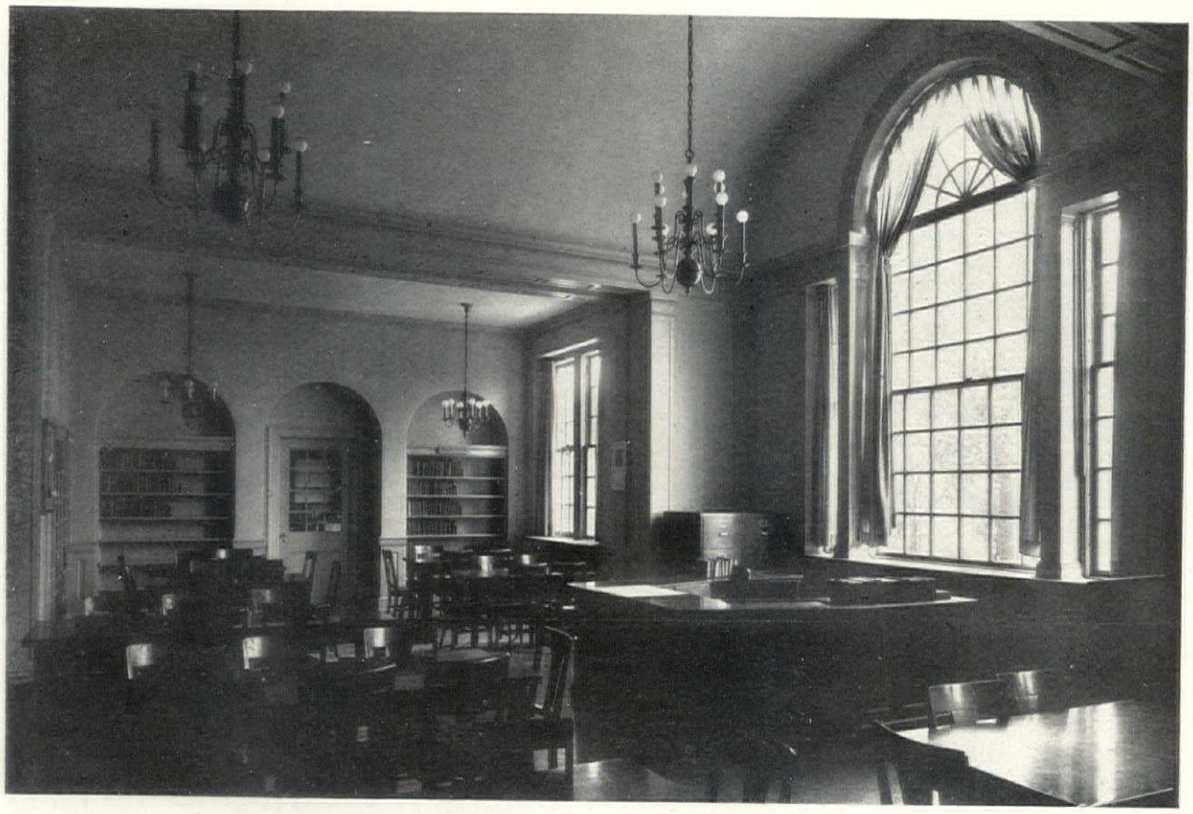


Music Room, Elementary School No. 4



Kindergarten, Elementary School No. 4

Ernest Sibley and Lawrence C. Licht, Architects

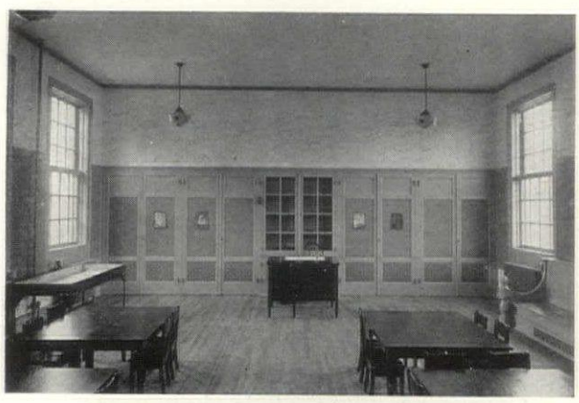


Library, Junior High School No. 3, Trenton, N. J.

ful innovations in this modern primary school. Little chairs and tables of Colonial design, a miniature piano, attractive hangings and accessories everywhere greet the eye, and so completely is the spirit of childhood expressed throughout that one experiences a feeling of surprise when an adult enters the picture. The building is planned for future extension, with possibly a two-story wing in the rear, if the growth of the community demands it, thus forming across the court a background for the beautiful, homelike facade of the little children's schoolhouse. The school just described cost, in the metropolitan district, about $130,000, which is probably 20 per cent or 30 per cent more than it would cost in the middle west and south. It is of fireproof construction, excepting the roof timbers, and has face brick on all sides. Due to the saving in heavy construction, floor slabs and the other structural necessities of larger buildings, the cost per pupil for similar construction is appreciably lower than in buildings of two or three stories.

Elementary School No. 4 at Bergenfield, New Jersey, is a building of a type similar to that just described. It was recently completed, and is planned, due to its site, for a different scheme of enlargement. Its unusual charm is evident in the accompanying reproduction of a water color drawing, but for a more adequate impression photographs (not yet available) of the finished building are essential. This school has been built at a cost of about $152,000.

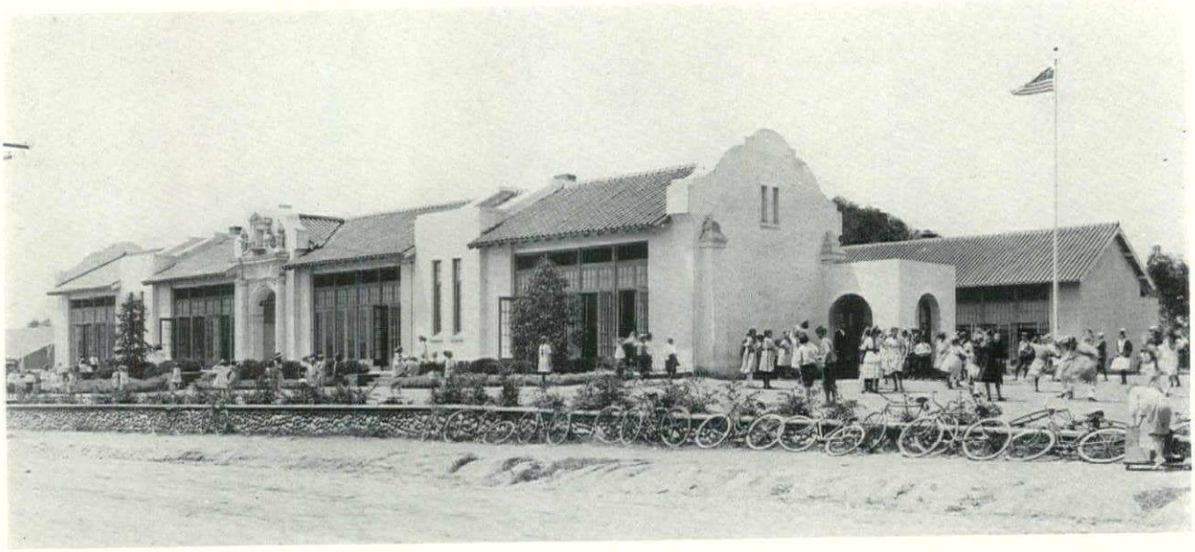
The Massapequa School. The variety of plan and design possible in schools of this same size and type,



Kindergarten Wardrobes, Elementary School No. 4

End of Library, Orange High School, Orange, N. J.

Ernest Sibley and Lawrence C. Licht, Architects

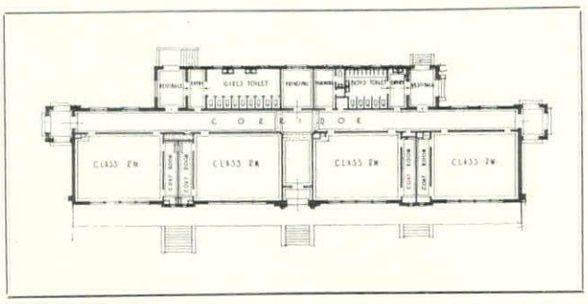


Grant Open Air Elementary School, San Diego

and serving the same general purpose of housing the primary grades, is indicated by the unusually quaint building, with its unique plan, developed for Massapequa, New York. (Plate 74.)

School for School District No. 1 and Owen D. Young, Van Hornesville, New York. When the village school at Van Hornesville, New York burned to the ground last year, Owen D. Young saw his opportunity to give to the school children of his home town a building that would give them more complete educational opportunities than are usually provided in a rural community. His love and appreciation of all that is native to Van Hornesville and its vicinity caused Mr. Young to decide not to import anything necessary to the building of the new school,—excepting his architects. Securing the choice of all the available building sites, he proceeded to engage local workmen exclusively, and one of the most interesting facts about the entire project has been that the youngest skilled workman on the work was 67 years of age and the oldest 83. They are master craftsmen of the old kind,—a type rapidly vanishing. Old walls dividing the Young, Van Horne and other nearby farms furnished the stone for the walls of the building, and these, when split ready to be laid, revealed a wonderful variety of sparkling color effects in red, black, lavender, rust and gray.

In addition to two regular classrooms which can be thrown together for community purposes, the building provides rooms for manual training, domestic science, teachers' room, and a library, which will also be the library for the village. Nor does the ultimate plan stop here, for it has been laid out with a view to indefinite enlargement, by a group scheme, and eventually it may comprise a district high school. The rooms at the rear of the building overlook a large playground, seen across the picturesque Otsquaga Creek, which is crossed by rustic bridges, which are a part of the landscaping scheme. It is an appropriately simple scheme, planned by Mortimer Merritt, landscape architect, and will provide a setting for the building which will form altogether a delightful picture. As the ground at the rear slopes rapidly away toward the bank of the creek, this natural grade allows for an entrance under the classrooms, and for a spacious room for the storage of playground apparatus during the long winter. Beautiful floors and woodwork are being put in place, and the building is equipped with the best and most modern of plumbing, heating and electrical systems, special provision being made so that all developments in radio, vitaphone and television may be enjoyed within the building. The furniture, which is to reproduce early American forms, is being made by a few veteran craftsmen.



Main Floor Plan

Grant Open Air Elementary School, San Diego
T. C. Kistner & Co., Architects

The present building overlooks the main highway between Cooperstown and Fort Plain, and has already attracted wide attention, not only on account of its beauty and the surprise of finding it in so small and unpretentious a community, but because the donor, Mr. Young, is a figure of national and international prominence. Born in the hills overlooking the village which his ancestors settled generations ago, Mr. Young now maintains his most frequented residence, "By the Side of the Road," in the village of Van Hornesville, which he has beautified.

THE PRIVATE SCHOOL

BY

CHARLES G. LORING, ARCHITECT

THE characteristic flavor of a private school may be derived from advanced educational theories or from the acute social desires of its organizers and clientele. These surprisingly diverse motives, even when they occur simultaneously, can be easily reconciled by the architect. An out-and-out educator looks upon the institution as an opportunity for research, for the introduction of new and better methods of developing the minds and characters of the young. The worldly-wise parent looks upon the private school as the matter-of-course means for the selection of the fittest human environment. Unlike as they are, the earnest believers in these two creeds have one common denominator,—the avoidance of mass production.

In designing public school houses, the architect is cribbed, cabined and confined. The building committee has only limited funds; the new structure must not cost more than so many cents per cubic foot, nor more than so many dollars per pupil. For economy in teaching force, the classrooms must hold the determined maximum which one teacher can put through the daily mill. Regulations prescribe the minimum breadth of corridors, the minimum number of toilet fixtures, the minimum area of windows, the minimum width of treads, and seldom are these basic limits exceeded. The inspiring challenge to the imaginative designer, after the skill and common sense of the planner and the builder in him have done their utmost, is to clothe the factory of education with a dignity and graciousness which will in some measure stimulate the pupils and their teachers and enhance the beauty of the community.

Private school buildings are the products of successful business ventures or the remorseless extraction of "loans" from parents, or of fine, fat endowment funds. Occasionally, when the wherewithal is not adequate for a permanent plant, an old house is remodeled or a frankly temporary and experimental structure is evolved. The latter is often somewhat akin to the small, one-teacher schools in the country or the "portable bungalows," the overflow makeshifts in congested cities. The Shady Hill group, designed by S. W. Mead, was built on a strictly limited budget and on the assumption that wooden roofs and walls of clapboards lined with plasterboard would last till new generations of parents had rolled up a fund for a more permanent type of construction. There are nine buildings in the little village, all one story in height. Four house the assembly hall with administrative offices and show rooms, the laboratory, the studio and the carpentry shop; the other five units each contain two classrooms, each with a supplementary small workroom connected by glazed double doors, and two toilet rooms. The classrooms have one long side to the south and one end with continuous windows so glazed that they may be completely opened, and additional windows on the north. The rooms have sufficient depth to allow the movable desks and chairs to be pushed back out of the direct sun. Simplicity, freedom, quiet and fresh air were the key words in the coöperative venture, jointly developed by parents, teachers and architect.

In private schools the classrooms have fewer

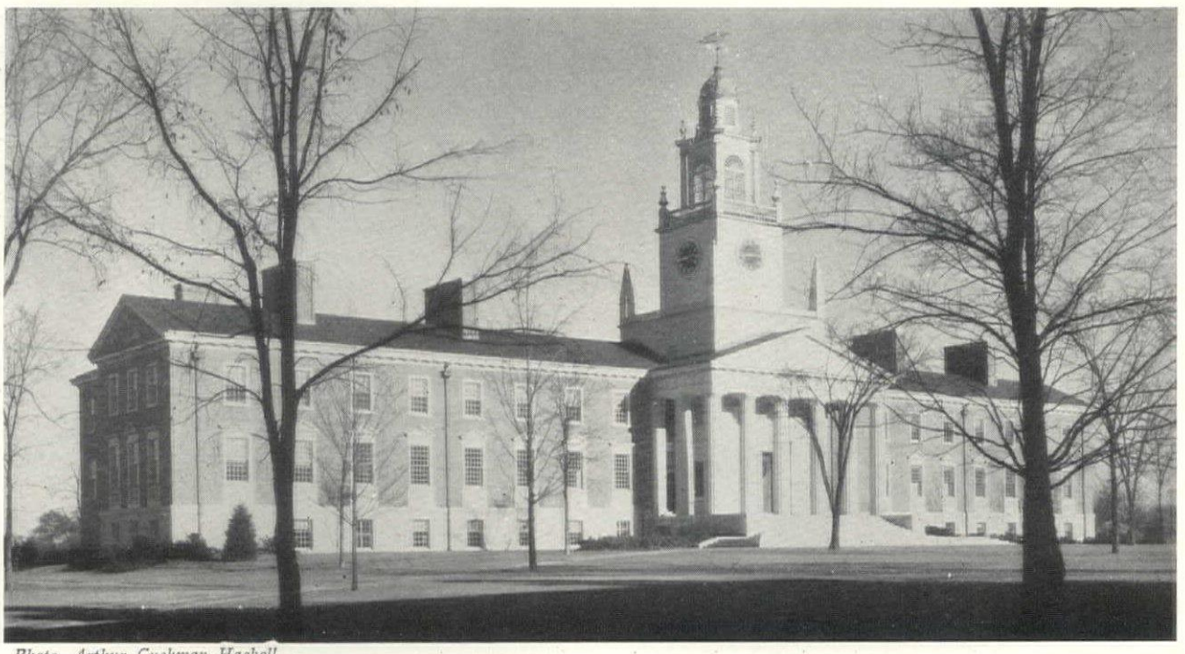


Photo. Arthur Cushman Haskell

Building at Phillips Academy, Andover, Mass.

Guy Lowell, Architect

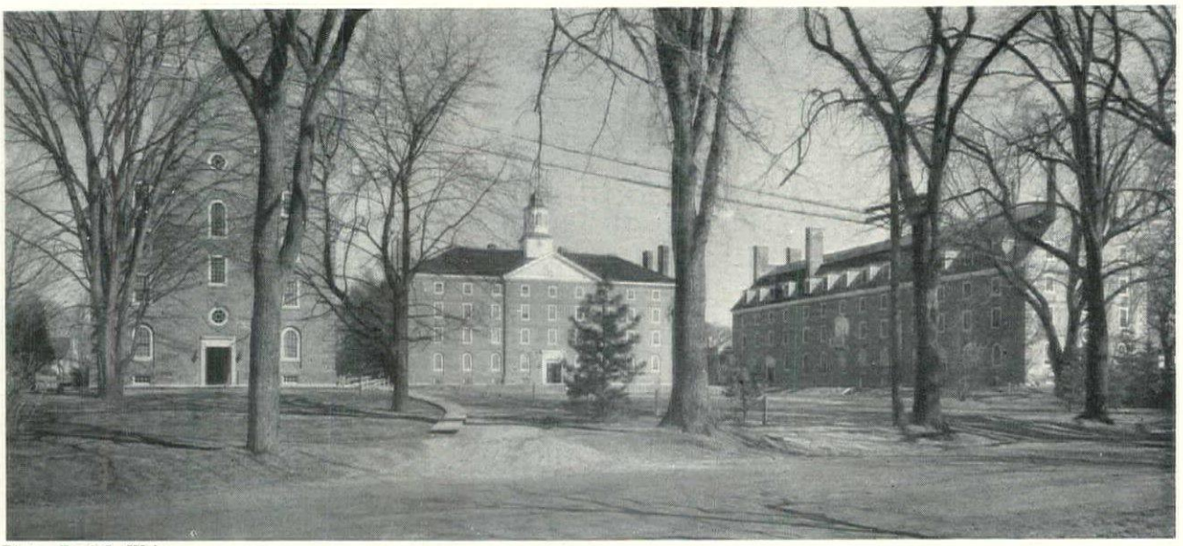


Photo. Paul J. Weber

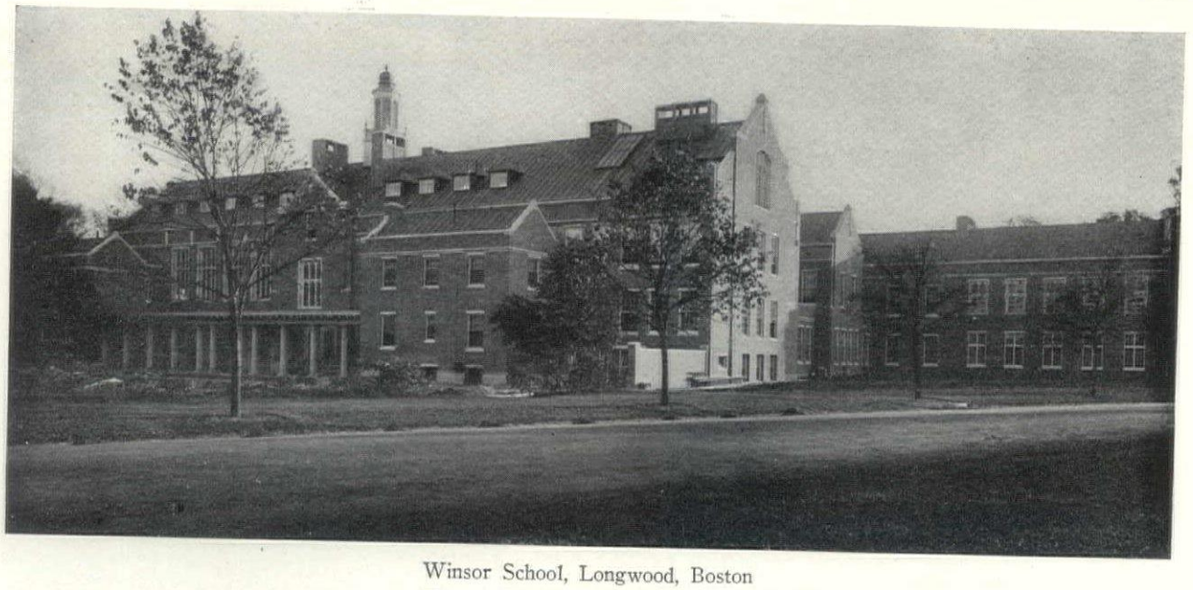
New Group of Buildings at Phillips Academy, Exeter, N. H.
Cram & Ferguson, Architects

pupils than in the public schools,— often no more than 20 for the upper grades and 15 for the lower, in place of the usual 35 or 42, but the rooms themselves may be no smaller. In fact for the younger pupils there is often a clear space left near the desk for group work, and for the older pupils for conferences and seminars. In municipal schools a fireplace is not considered a luxury in the kindergartens, and this attractive (and hygienic) feature is carried into the upper grade rooms in many private academies to relieve the austerities of blackboards and desks. Open-air classrooms, or at least classrooms which can be opened up on two or three sides, are sometimes introduced, though this feature is not in such vogue as formerly, the eccentricities of American winter climate tending to restrict their use. The introduction on a commercial basis of window glass which allows the passage of the sun's ultra-violet rays has appropriated for the average schoolroom one of the advantages of the open-air type. The rest room for day pupils is a definite feature, and it may sometimes be in the form of a loggia and sometimes as an adjunct to the lunch room.

In some states and localities the boards and inspectors who try to teach the teachers how to plan to the best advantage for the health of the pupils prescribe rules for ventilation, circulation and fenestration. Massachusetts, for instance, calls for windows with one-fifth the classroom floor area, two means of egress from each room, and fan ventilation. New Hampshire in her public schools allows window vetilation, but is dead set against windows placed behind the teacher and so shining in the faces of the pupils. Some other states don't meddle, and the architect who is more preoccupied with the design for a monumental or picturesque facade may cut down the window openings. A most romantic boarding school in Connecticut has as few and as small windows as a Surrey farm group, but the classrooms and sleeping quarters must pine in vain for a flood of good, outdoor light! Eye strain and murky interiors have more effect on the body and mind of both pupil and teacher than may be atoned for by the most fascinating craftsmanship and stage setting of the exterior of the school buildings. Indulging a beautiful fad is not a progressive step in education.

Much is demanded in the way of auxiliary units in a private school. Grade for grade, the rooms for drawing and for domestic arts, for manual training and for science, above all for luncheon and for recreation, are usually more cheery and more ample, while the library invites contemplation and browsing rather than suggesting only organized group research and the pursuit of original sources. Such effects are not due to the expenditure of more money on decoration than in the typical public school but frequently to the larger ground area, fewer stories and more rambling plan of the private academy and the avoidance of standardized floor heights. Commercial rooms are notably absent, but music cubicles take their places. Perhaps this summarizes the obvious differences between the expenditure of tax payers' money and the expenditure of donations. In the boarding school or the modern day school where the pupils spend the afternoon, the playrooms and the playgrounds are of particular importance. Yacht model building, printing the school paper, costume designing, wireless experimentation and general tinkering with mechanical gadgets or the crafts of enameling and metal work are all introduced as indoor sports, with the educational features well disguised in the fun of the thing. And whether for boys or girls, there must be space for these pursuits.

The Roxbury Latin School, designed by Perry, Shaw & Hepburn, is an excellent example of the suburban private school of the "country day" type. The grounds are ample to screen the building from the neighborhood and are well planted with trees and



Winsor School, Longwood, Boston
Office of R. Clipston Sturgis, Architects

shrubs and there are playgrounds for organized and for informal sports. Although there is a separate house for the masters, there are no "boarding" pupils and no need for non-scholastic buildings such as dormitories, an infirmary, or a chapel,—departments the planning of which is not specifically identified with schoolhouse design. The original program emphasized a desire for a friendly personality, even requiring fireplaces in all the classrooms, and the building has struck this note admirably. The plan is rambling and this allows a definite coördination into four departments: (1) administration, (2) academic, (3) lunch room wing, and (4) auditorium wing. This further allowed part or all of the building to be constructed at one time. The classrooms have all the same orientation, and their bay windows give to the rooms a sunny informality and to the exterior a charming individuality. The typical classrooms are about 29½ feet in length by 24½ feet wide and are intended for 25 pupils each. The clock tower not only suggests the time-honored tradition of the bell but serves as a semi-isolated stair well and as a centralized location for the ventilating fans. The Georgian style is closely enough allied to the early traditions of the state, and in its free use there are avoided many of the restrictions of Colonial.

One of the minor skirmishes still unsettled between warring groups of pedagogues on the public payrolls concerns the storage and supervision of pupils' outer wraps. Except in the kindergarten and the one-room school, the coat room, *per se*, has gone down in defeat, its floor area being too large and its visibility too low. For the lower grades, the wardrobe built into the classroom wall, with group doors, has the greater number of followers, for it is inexpensive, easy of control and may be well ventilated. For the upper grades, where the classes circulate from room to room, often subdividing and then coalescing again, the "home room" unit is not practical, and the majority of experts favor individual steel lockers, built into the main corridors or grouped in alcoves. On one thing both sides agree:—there must be supervision or security. Not so in the private school, at least in the smaller type; there, wardrobes may be ranged unlocked along the corridor walls, for the idea is to inculcate honesty. In quantity production this is a far more difficult undertaking! In plants which do not have separate locker buildings, the parking space for outside wraps must be generously supplemented by locker rooms, convenient to the gymnasium and to the athletic fields.

The assembly hall and the playroom or gymnasium (the name suits the ages of the pupils) vary in their mutations, but they may be grouped in three classifications: (1) Separate; where the expense is great, but the problem simple. (2) Combined in one; a none too satisfactory compromise and requiring much chair storage space and janitor service. (3) Articulated; that is with the two back to back, separated by folding partitions or heavy curtains, where, in theory, the auditorium seats may be used for spectators of games in the gym and where the gymnasium may be used to enlarge the stage enormously. The separate units are to be preferred, if the size of the school and the need for organized, competitive games justify the expense. After all, the treatment of an auditorium for proper acoustics and suitable decorations is incompatible with washable and rough-usage gymnasium walls and ceilings. A stage suitable for music and theatricals is a poor background for a basket ball goal, and the moving of chairs from storage, setting them up and then replacing them, is not a task which will be lightly undertaken for one evening's entertainment or one morning's address by the headmaster. The "articulated" hall and gym (each profession has its own trick vocabulary) was highly favored in the larger high schools a few years ago, but it has not been

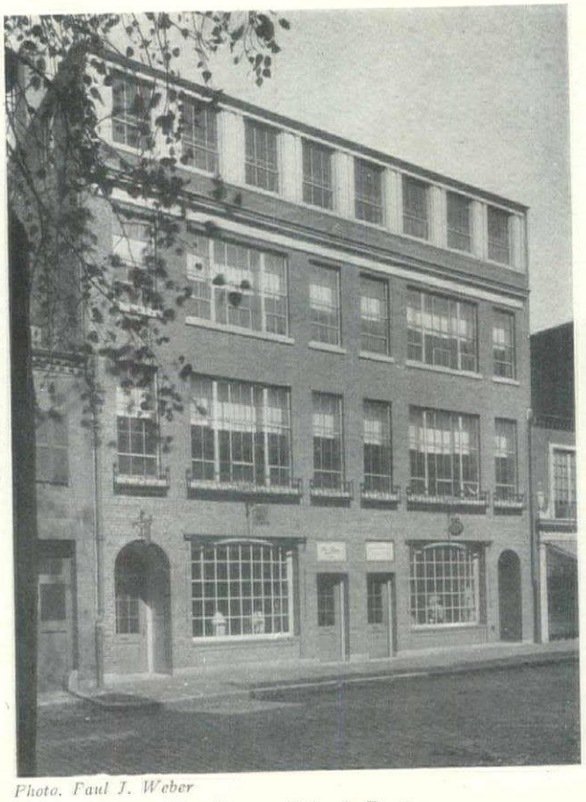


Photo. Paul J. Weber

The Beaver School, Boston

Charles G. Loring, Architect

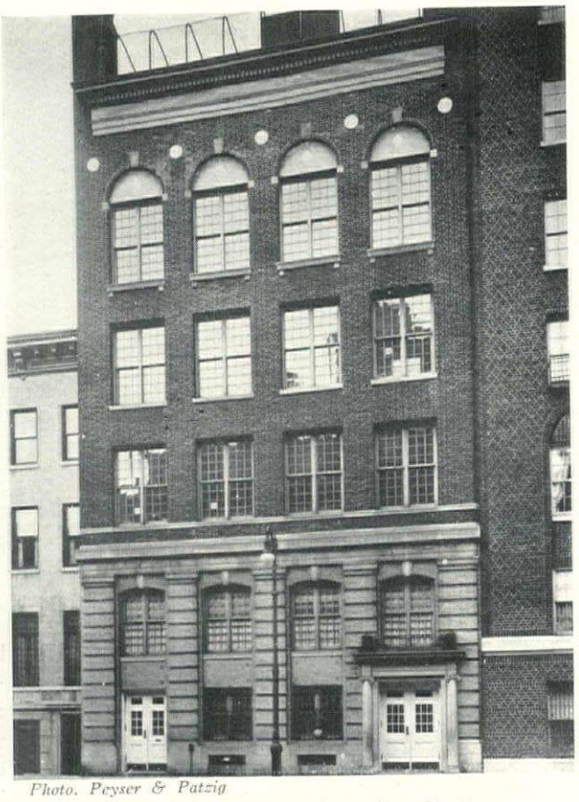


Photo. Peyser & Patzig

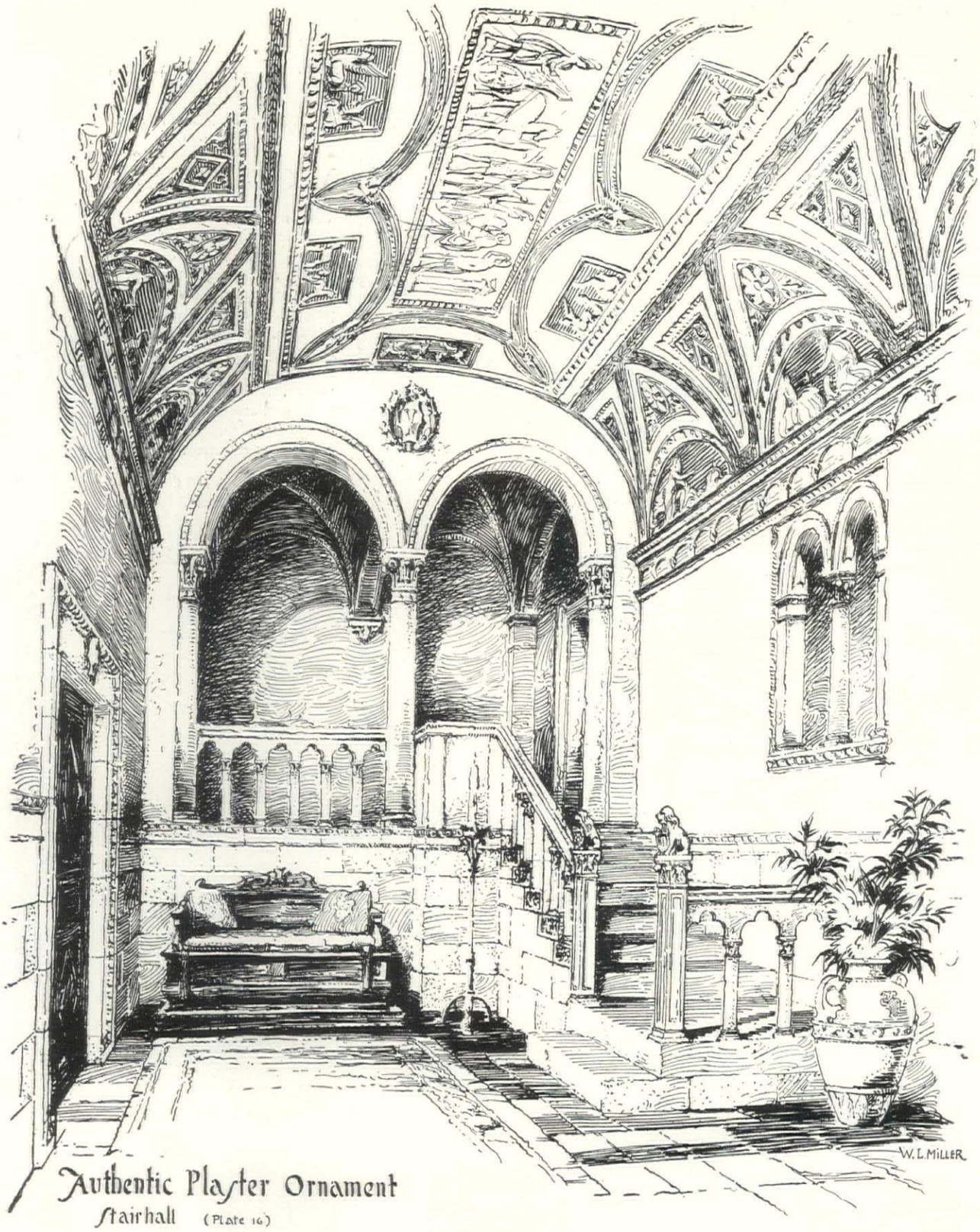
Buckley School for Boys, New York

Simpson & Rolston, Inc., Architects

introduced into the private schools where those with heavy enrollments have land enough and money enough to build separate structures for their athletics and for their assemblies. In some of the smaller boarding schools and in some of the larger day schools the auditoriums are adapted to religious services. In all cases it is well to have the hall so located that it is easily accessible to the pupils for general assemblies or class work and yet with independent doorways so that it may be used without interference with the rest of the plant.

The boarding school group of many buildings, set on the open hillside, or the suburban country day school, with its trees and grassy playgrounds, pictures the private academy at its best and overshadows the rural and small town public schools; but when the pay-as-you-enter institutions of learning come within the congested city limits, their personalities fade; land values restrict their facilities, and the teeming municipal high schools make a far grander show and often are better equipped. Playgrounds are driven to the roof, libraries and lunch rooms are cramped, and even the classrooms sometimes have a much smaller area of floor per pupil. The corner lot is much to be desired, and R. Clipston Sturgis' Brimmer School, with streets on three sides, presents an interpretation which is at once dignified, practical, expressive of its purpose, and economical.

Standardization of the rubber stamp ideal is out of the question in the designing of private schools. In size they may range from the kindergarten of one or two rooms to the long established boarding schools with collegiate plants including guest houses for visiting parents and fraternity houses for the boys. The theory of pedagogy on which they are based may lean toward "the development of the individual" and have no two classrooms shaped or decorated alike, or toward "the development of character" and have a military academy in gaunt barracks. The administration in one school will have all the teaching done in "home rooms" supplemented by a few laboratories and special units; another will have large "study rooms" with many small recitation rooms as well as the auxiliary units. And with the exterior treatment the funds and the fancies of the building committee are the only outside limitations on the architect. The Colonial style is a prime favorite in New England, where education has become almost a major industry, and in Virginia, where children are sent for a modified winter climate and a taste of Southern traditions. The Gothic, especially the domesticated British version, is popular with ecclesiastical schools, and its flexibility in fenestration is a great advantage. In Florida and California the Spanish is the correct thing, and in New Mexico some schools have been constructed after the old pueblos, truly American. With such freedom of action before him, the architect need only coördinate minds of educators, vision of parents, and inarticulate reactions of children with his own technical business and artistic experience in order to undertake the designing of a private schoolhouse!



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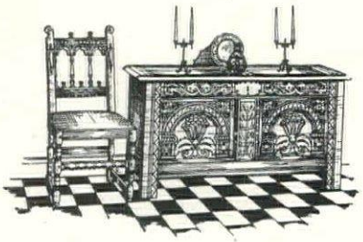

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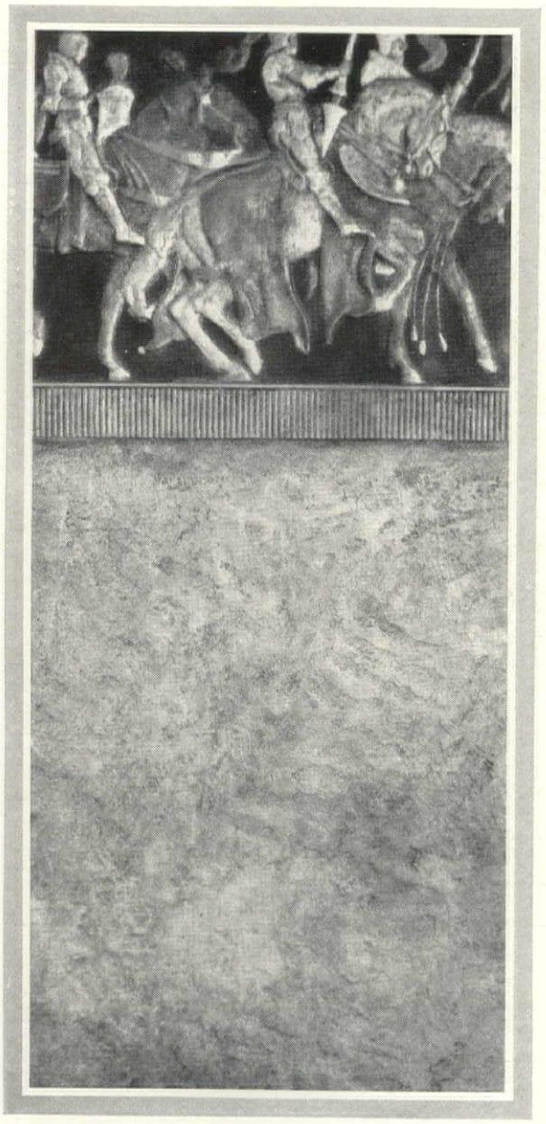

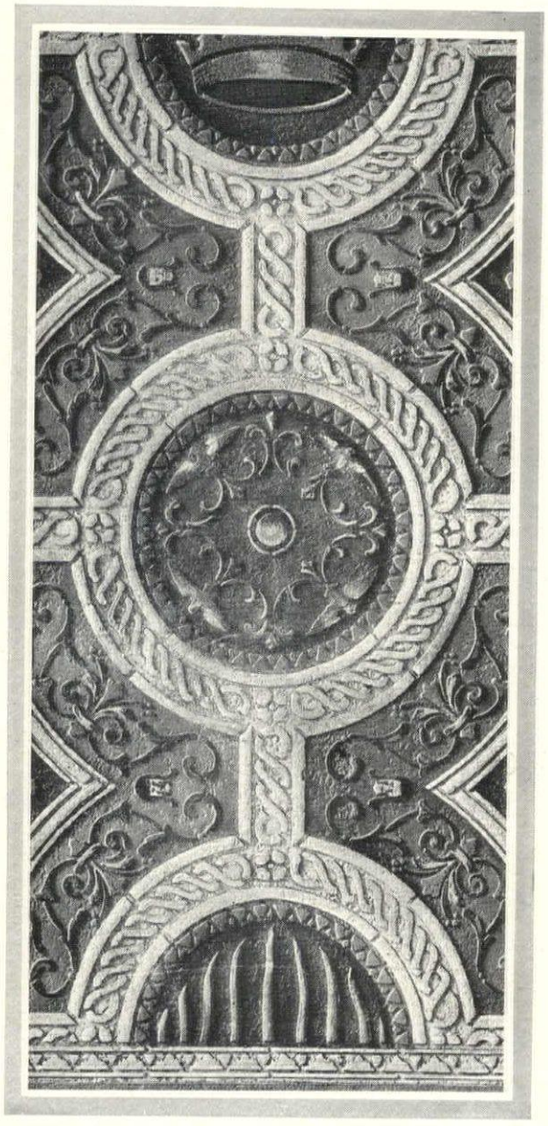

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It is the product of pioneer specialists in wall surfacing materials. Its quality is proved by the permanent satisfaction of users. For a better understanding of its unique possibilities, a "Treatise on Textured Walls" is yours for the asking.

UNITED STATES GYPSUM COMPANY, *Dept. 127* *General Offices:* 300 W. ADAMS ST., CHICAGO, ILL.

USG STANDARD BUILDING MATERIALS

TEXTONE

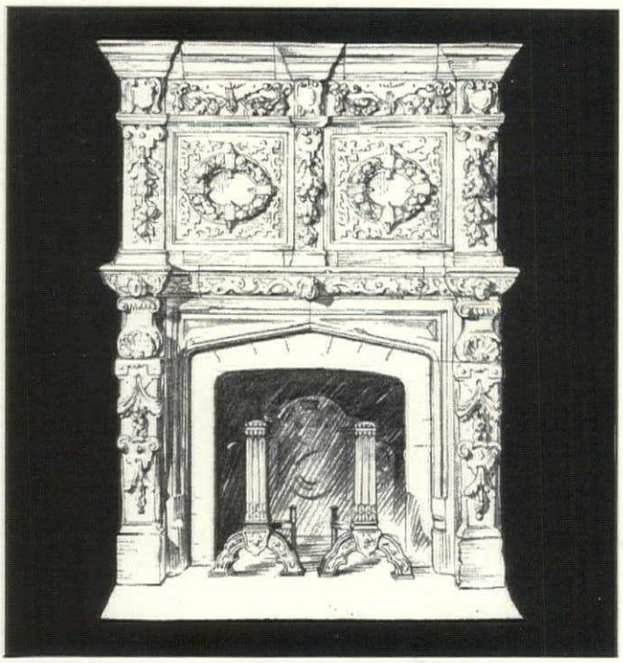
Reg. U. S. Pat. Off.

THE PLASTIC PAINT

Made by the United States Gypsum Company

CRETAN STONE *Mantels*

Cretan Stone Mantels are reproduced in our shops by artisans, seasoned in their work by long years of experience in stone artistry. Each mantel is the product of meticulous care and individual effort.



The "Focal Center" of a Room

In planning the architectural or decorative scheme of a room, the starting point or "focal center" should be the fireplace. Selection of a mantel, the period it represents, and the simplicity or intricacy of design are matters of the utmost importance.

Architects and decorators are offered material assistance by the new line of Cretan Stone Mantels being produced by this House. For this line embraces designs particularly adaptable to the purpose of carrying out period decorative motifs; or, on the other hand, for the proper execution of modernistic ideas. All selections as to ornamental and physical characteristics are based upon our close contact with this field, a field in which we have been actively engaged for the past one hundred years.

These mantels are made in Cretan Stone, a scientific product resulting from a formula perfected in our laboratories. The finished product is a beautiful stone, equal in every respect to natural Grecian and Roman stones. It is of extreme hardness yet decidedly light in weight.

Send for photographs of available designs or write us concerning your special requirements.

WM. H. JACKSON COMPANY

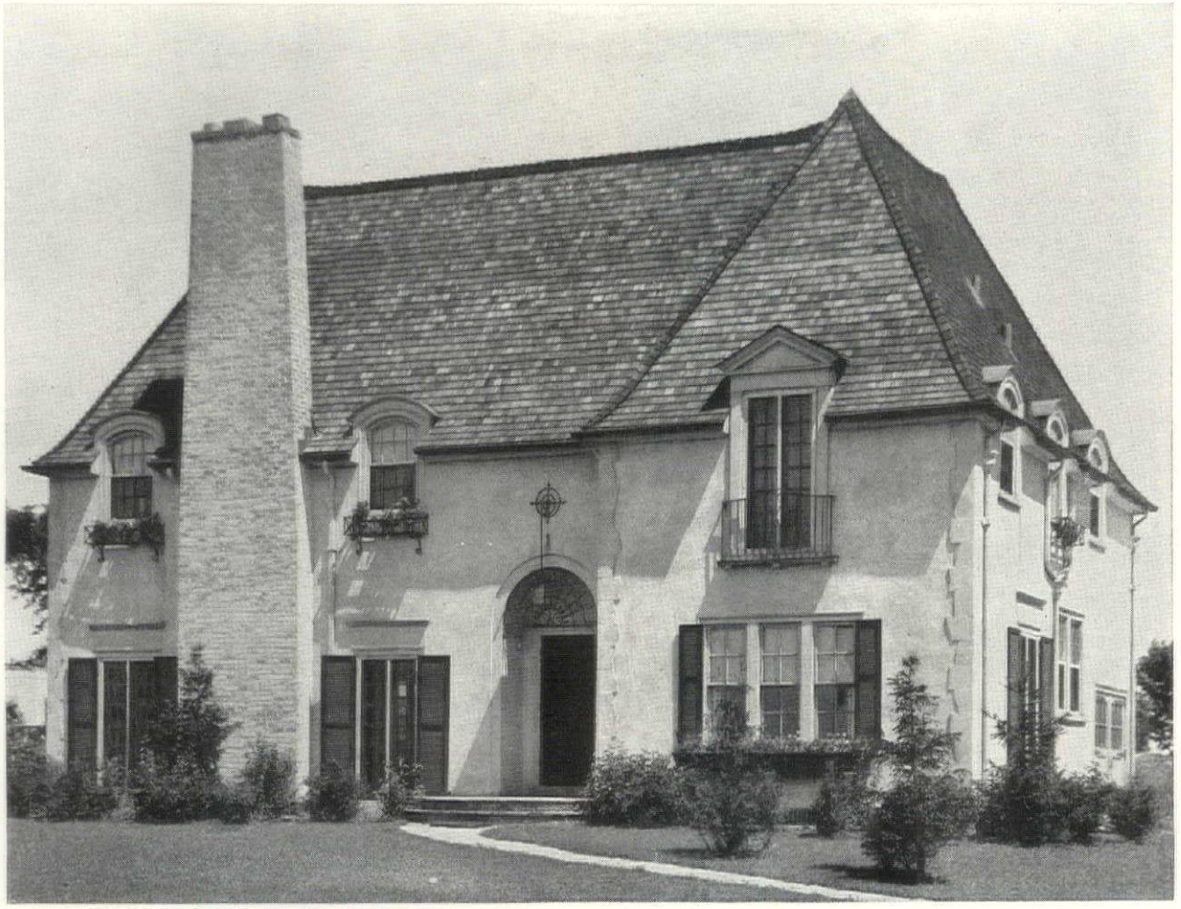
ESTABLISHED IN THE YEAR 1827

2 WEST 47 TH STREET NEW YORK

318 N. MICHIGAN AVE. CHICAGO

THE OLDEST HOUSE OF ITS KIND IN AMERICA

ORIENTAL has *Cancelled* "X, the *Unknown* Quantity"



THERE is no "unknown quantity" to deal with when you specify Oriental Stucco. Every ingredient (even to the color) comes mill-mixed-in. The proportions are scientifically correct, and do not vary.

There is no guesswork as to coloring—you select the tint you desire, then forget it. You can depend upon "results as specified."

Oriental Stucco is of uniformly excellent quality, which insures beauty and permanence. No finer quality of stucco is obtainable, at any price or from any source.

Yet you pay no premium price for Oriental. Indeed, it quite frequently costs less than ordinary stucco.

With every bag and every job of Oriental Stucco go the word and the reputation of USG, pioneer and world leading producer of plaster products. Specify Oriental, base-coat and all, and you've gone to headquarters for the finest they've got.

May we send full file-fitting data? Use the coupon.

UNITED STATES GYPSUM COMPANY
General Offices: Dept. 227, 300 West Adams Street, Chicago, Illinois

ORIENTAL USG STUCCO
Reg. U. S. Pat. Off.

EXTERIOR STUCCO

Made by the United States Gypsum Company

MAIL THIS TODAY!

Gentlemen:

Please forward "How to Obtain Period Textures in Oriental Stucco" and Specification 16.

Name.....

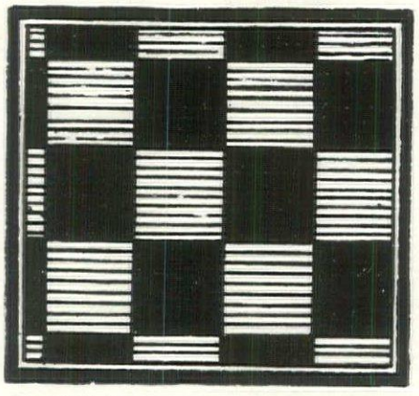
Address.....

UNITED STATES GYPSUM COMPANY
Dept. 227, 300 W. Adams Street
Chicago, Illinois

32 YEARS BEFORE THE SINK

THE letter-carrier brought a curious little package to the office of Joseph Wild & Co.

Inside we found what seemed to be an ordinary piece of linoleum. It looked practically new. The colors were bright and clear. The linoleum was elastic and pliable. The pattern, too, looked perfect. Ah—there was a letter from one of our dealers. That would explain it. "This piece of linoleum which we are sending you," the dealer wrote, "saw service for 32 years in front of a kitchen sink. It is still in such good condition that we felt you would like to see it."



Atlantic Marble—No. 2107—One of the latest patterns in Wild's Linoleum. Especially for porch, sun parlor or breakfast room. In 4 color combinations.

32 years service! And in front of a kitchen sink! Whythat is the hardest possible kind of service any linoleum could get! The pattern was still perfect. The colors were remarkably bright and clear. The linoleum was elastic and pliable. In fact it was apparently as good as ever and capable of many additional years of service.

It is just such extraordinary durability that years ago caused dealers everywhere to adopt the slogan "Wild's for Wear."

The Wild's Linoleum you see today is every bit as durable. And the entire Wild's Linoleum line has been enriched by the addition of many new patterns. May we send you a style booklet showing these designs in full color?—Joseph Wild & Co., 230 Fifth Ave., New York, sole selling agents for American Linoleum Co.

DURABLE SANITARY Wild's LINOLEUM WARRANTED ELASTIC

TRADE MARK

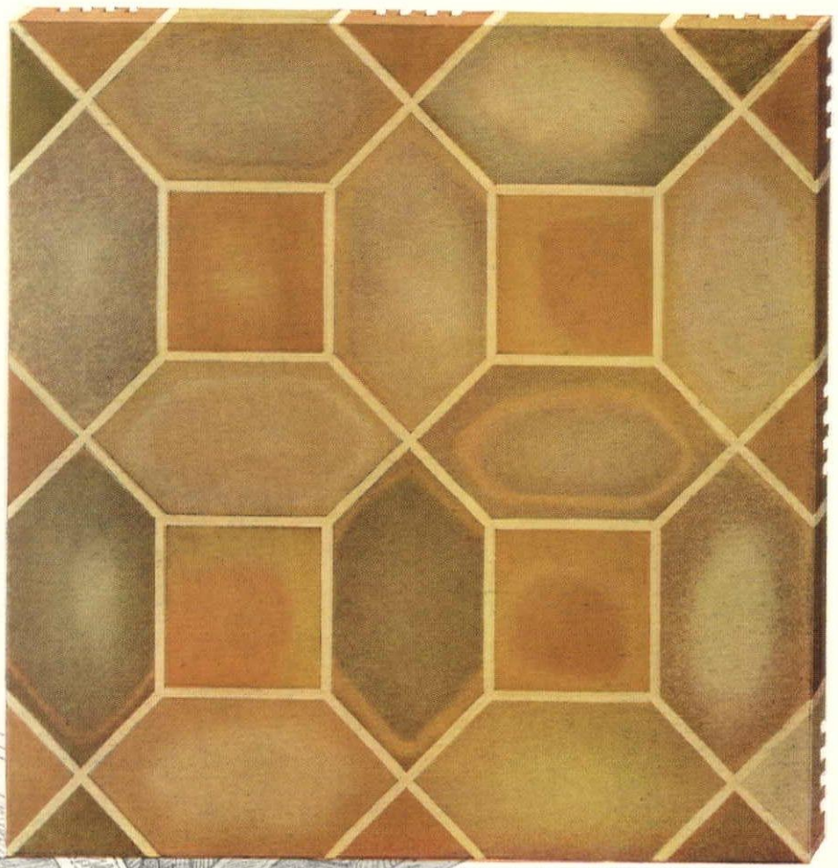
THE ORIGINAL AMERICAN LINOLEUM

THE economy and colorful beauty of Romany Quarry Tiles originally recommend their use on the walls, floors and stairs of schools. But their extreme durability—their "boy-proofness" under extreme conditions—their unfading attractiveness—their cleanliness—pile economy upon economy through years of this most difficult service.

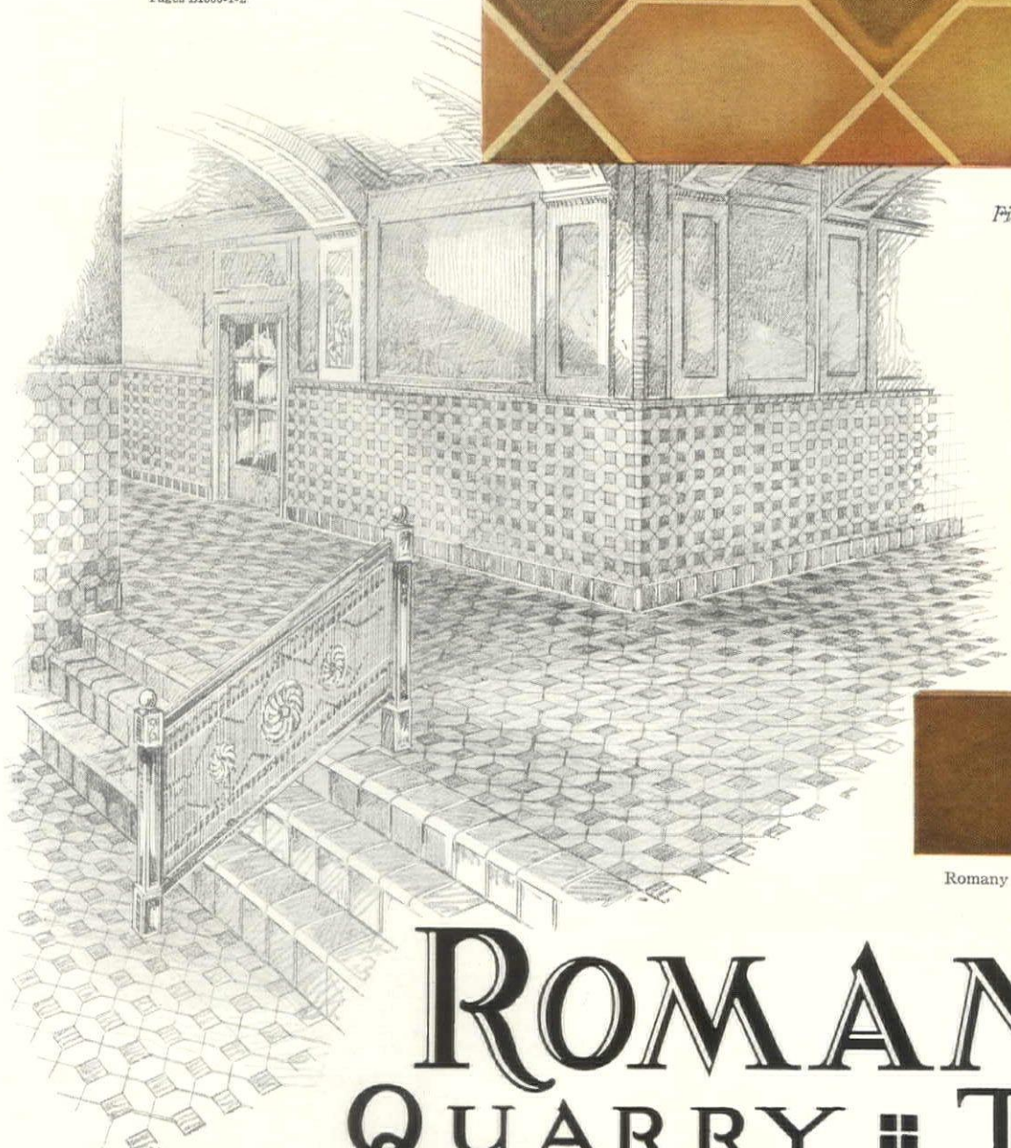
UNITED STATES QUARRY TILE CO.
Parkersburg, West Virginia
Member, Associated Tile Manufacturers

These are Romany Rainbow Tiles reproduced direct from the original. The colors in any shipment range from russet through the tans to a delicate green and when laid present a medley of golden shades.

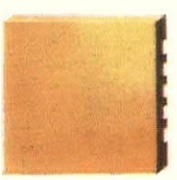
SEE OUR CATALOGUE IN SWEETS
Pages B1500-1-2



Field Pattern No. 1541



Romany Grey



Romany Rainbow

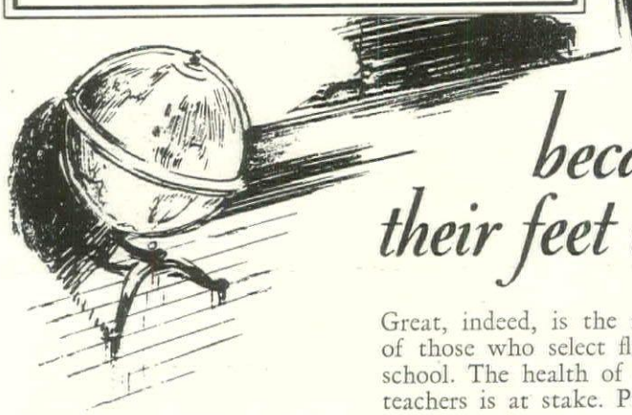
Romany Brown

Romany Red

ROMANY QUARRY TILES
are an American product

ROMANY QUARRY ▪ TILES

Their health records are good - - - year in & year out



because the floor beneath their feet is warm, dry, resilient, clean

Great, indeed, is the responsibility of those who select flooring for a school. The health of children and teachers is at stake. Public moneys must be well spent.

What flooring material meets these vital requisites? Hundreds of schoolboards have found the answer in Northern Hard Maple.

Northern Hard Maple is warm and dry. It provides a cushioning effect beneath the feet. Reduces fatigue. Cuts down absences due to sickness.

This unique flooring material, moreover, is remarkably tough-fibred and tight-grained. Will not sliver, splinter, or develop ridges when subjected to the pounding and friction of youthful feet. Maple actually outwears stone!

And because of its permanent smoothness, Northern Hard Maple is the easiest of all flooring materials to keep clean — offers no open lodging places for germ-laden dust and dirt.

Here, then, is the one flooring material that combines health with ultimate economy — providing, at the same time, easy installation and firm anchorage for desks.

Maple Floors in Color

By a scientific process recently developed, hard Maple Flooring is now made to take a variety of beautiful, lasting color finishes — opening up entirely new possibilities for attractive decorative effects. Standard finishes made only by The Marietta Paint & Color Co., Marietta, Ohio, as follows:

EARLY AMERICAN, SPANISH BROWN, AUTUMN BROWN, SILVER GRAY, DOVE GRAY, ROYAL BLUE, PASTEL GREEN, ORCHID, SEAL BLACK, NATURAL

Write for *free* booklet, "The New Color Enchantment in Hard Maple Floors."

Let our Service and Research Department assist you with your flooring problems. Write us.

Floor *with* Maple

Guaranteed Floorings

The letters **MFMA** on Maple, Beech or Birch flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

MAPLE FLOORING MANUFACTURERS ASSN.
1764 McCormick Building
Chicago

Let Remington Rand Fit Equipment to Your Needs

REMINGTON Rand equipment embraces every need of your office. All the years of experience of all the affiliated companies of this great organization go into the office devices and systems that Remington Rand brings to you.

But you get far more than equipment when you call on Remington Rand. You get equipment fitted to your needs, by a company capable of assuming responsibility and guaranteeing results. One hundred and ten trained research engineers, fifteen thousand skilled workers in twenty-eight factories, four thousand sales representatives, are back of every responsibility the Remington Rand man assumes.

Remington Rand service is available in your city, as near as your telephone. Remington Rand Business Service Inc., 374 Broadway, New York.

Library Bureau Filing and Indexing Service is an extremely important part of Remington Rand's contribution to business. Years of experience, in thousands of businesses of every description, are back of the work of every Library Bureau Service worker.

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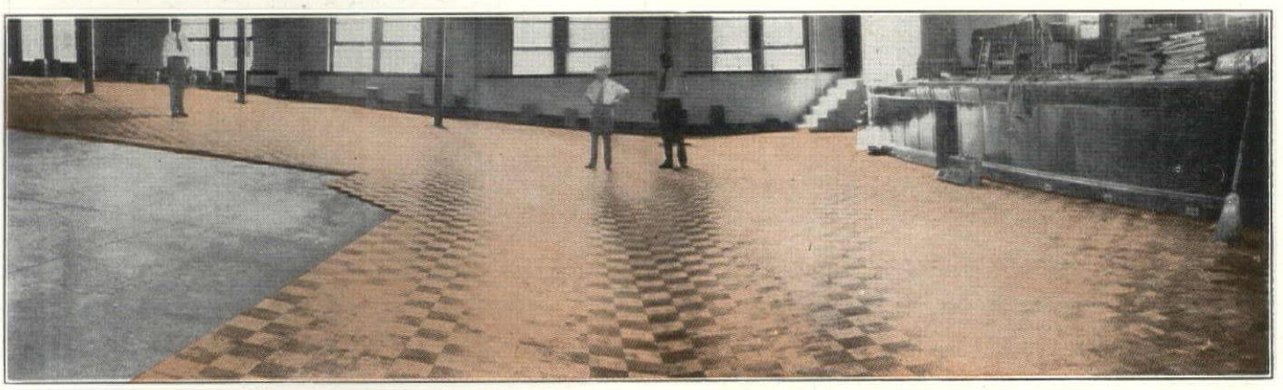
LIBRARY BUREAU

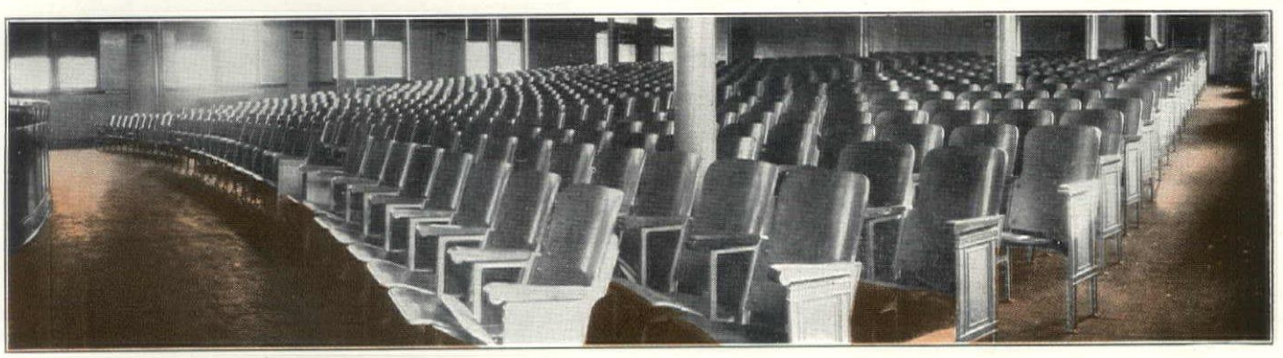
Bruce FabriCELLized blocks are laid in the Normal High School, Normal, Tennessee

Low cost floors for schools—more durable—quiet

Oak Blocks (FabriCELLized) cost much less, laid and finished, than the more usual strip flooring. They are laid in mastic (Barrett XC) directly over cement, without nails, saving the material and labor cost of screeds, floor fasteners, cinder fill, and subfloor. Also save at least 2½ inches in height per story, with resultant economy in structural cost. This total combined saving often exceeds the entire cost of the block floor. Three sizes: 6¾", 9" and 11¼" squares, in all standard grades.



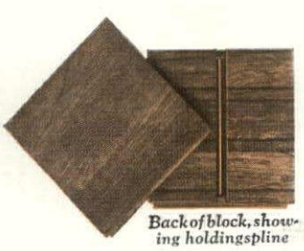
Each block is a complete unit, three or more oak strips, splined together. Each block is BruCELLized, a marvelous chemical process developed in the Bruce laboratories, which prevents shrinking or swelling, and increases durability. As a result, the floor will remain firm and level, and as the mastic is sound-deadening, is more quiet than any other permanent floor covering. Low cost, lowest maintenance, together with distinctive beauty, are now possible in school floors for rooms of any area.



The holding power of mastic is such that ¾-inch screws, entering the wood only, secure the seats firmly. In remodeling, over old worn floors, Bruce FabriCELLized blocks are also laid in mastic, without nails.

FabriCELLized Flooring Blocks

BruCELLized



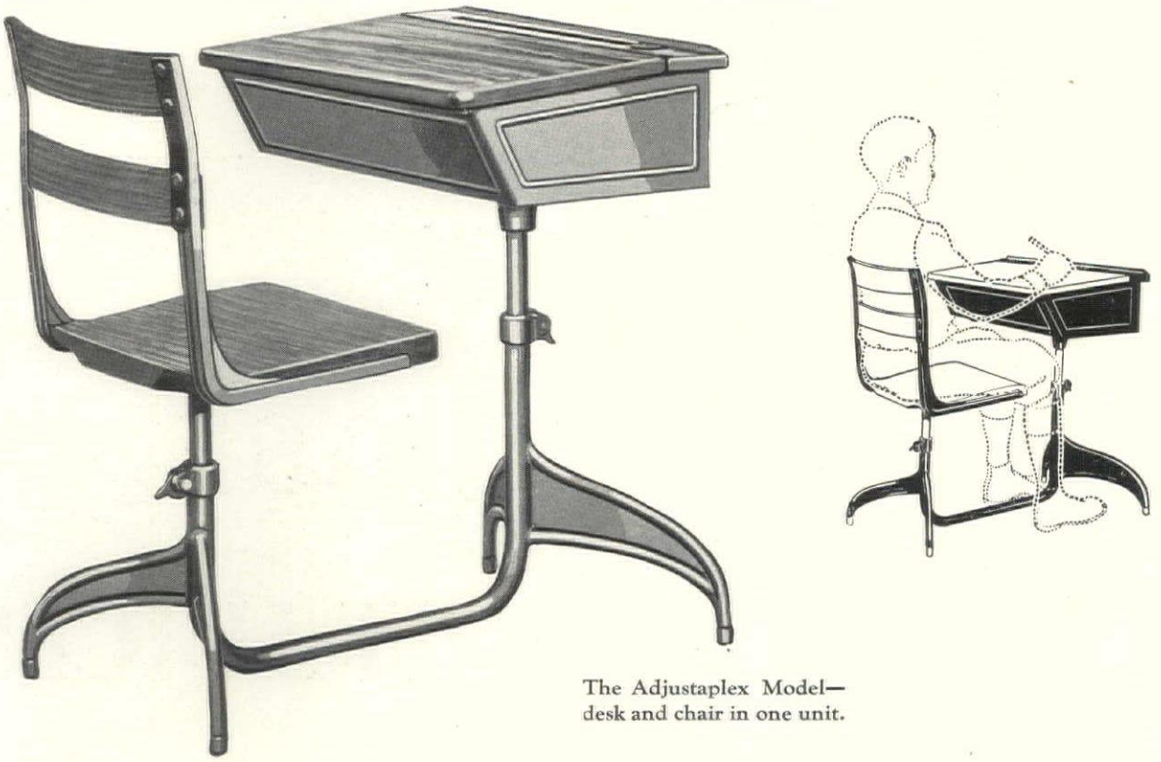
Back of block, showing holding spline

The FabriCELLized block floor is insect proof; moisture proof. Easier to lay, scrape, and sand. Will not change in size, and takes a superior finish. For full technical information, write

E. L. Bruce Co.

MEMPHIS, TENNESSEE

The largest manufacturers of oak flooring in the world



The Adjustaplex Model—
desk and chair in one unit.

Kundtz Eclipse Perfected School Furniture

Healthful, Sanitary and More Durable

IN the design of Kundtz Eclipse school furniture, Kundtz engineers have first given consideration to the comfort of the growing children in school. Equipment has been produced that helps the children maintain correct posture, and that keeps their little bodies at ease. This means much both as to their health and to their ability to concentrate on the lesson at hand.

A BRAND NEW FINISH

All Kundtz Eclipse desks and chairs are now finished with a newly developed crystal enamel, baked onto the metal. The properties of this finish make the metal support highly resistant to the scuffing of active little feet. Kundtz Crystal Finish is smooth, dustproof and easy to keep clean.

From the standpoint of appearance, Kundtz Crystal Finish blends harmoniously with the walnut lacquered desk tops and seats. The desk top itself is finished with a hard tough lacquer that keeps its newness in spite of sharp pencil points, dropped rulers, or ink stains.

A complete description or models with recommendations as to the style best suited for the specific installation, will be forwarded to architects interested in equipment for new school buildings.

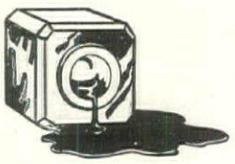
The Theodor Kundtz Company

ECLIPSE

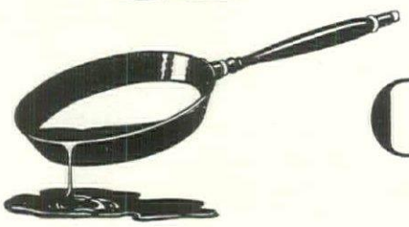
SCHOOL FURNITURE

CLEVELAND, OHIO

DIRT



INK



GREASE

FRUIT JUICES

can't spot these new *soil-proof* linoleums

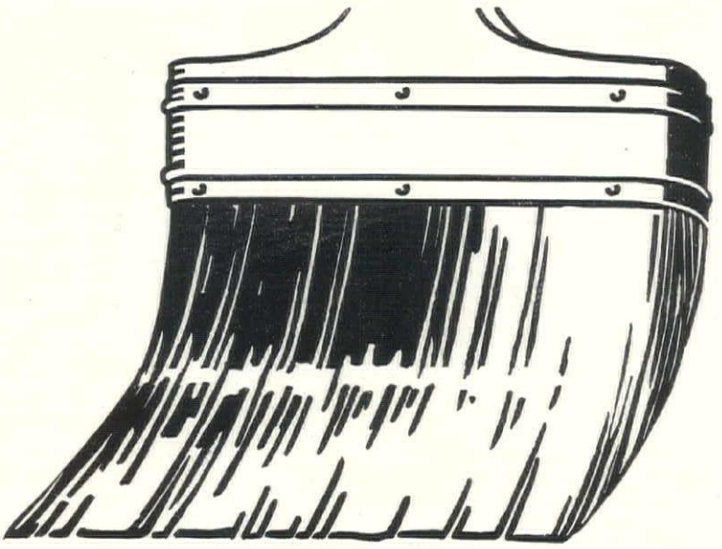
So remarkable a development as the *Sealex Process* of soil-proofing linoleum has very naturally aroused widespread interest among all those concerned with floors. Architects, general contractors and business executives who have seen this improved linoleum regard it as a tremendous advance in linoleum manufacture.

Originated by Congoleum-Nairn Inc., the *Sealex Process* has the effect of *penetrating and sealing* the tiny pores of the linoleum so that dirt cannot grind into it. Grease and liquids can be readily removed without leaving a spot or stain. This process also increases the durability and flexibility of *Gold Seal* Linoleums.

Gold Seal Linoleums made by the *Sealex Process* are ideally suited for hospitals, business offices, restaurants, schools, private residences. The soil-proofness of these floors and their ease of cleaning open the way to maintenance economies which business men are sure to welcome.

CONGOLEUM-NAIRN INC., Philadelphia, New York, Boston, Chicago, Kansas City, San Francisco, Atlanta, Minneapolis, Dallas, New Orleans, Pittsburgh, Rio de Janeiro.

GOLD SEAL LINOLEUMS



VALENTINE'S
FOUR-HOUR
FLOOR VARNISH

Dries ready for use or second coating in 3 to 5 hours. Provides a tough, hard-wearing surface. Works easily. Flows freely. Is exceedingly pale in color and more resistant to water and soap than the ordinary floor varnish.

TWO NEW Speed VARNISHES

Speed is the word these days and Valentine sets the pace with two new quality-varnishes which dry hard in four hours! Valuable time is saved in finishing floors and woodwork! Clients are surprised and grateful that rush jobs can be completed in such short order! Floors and trim varnished in the morning, ready for use by afternoon! Two coats in a single day! Less than half the usual time.

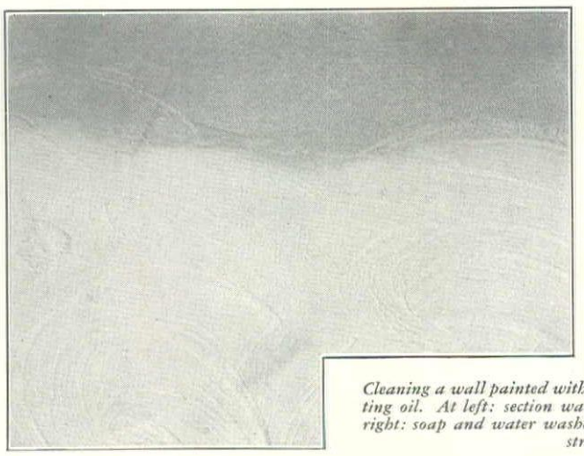
Faster and cheaper than shellac—when you consider that two coats of Valentine Four-Hour Varnish is equivalent in "body" to 3 or 4 coats of shellac.

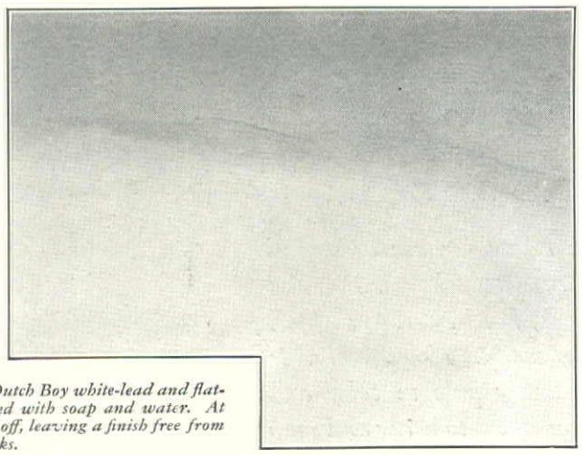
And these Valentine quality varnishes far excel shellac in beauty and durability.

VALENTINE'S
FOUR-HOUR
INTERIOR VARNISH

A very full-bodied elastic varnish for interior trim and cabinet work. Dries to a tough, hard surface in 3 to 5 hours. It is pale, free-flowing, with the ideal brushing and filling qualities of the finest interior varnish.

VALENTINE & COMPANY
386 Fourth Avenue, N. Y. C.
Chicago
2500 Prairie Ave.
Boston
49 Purchase St.
Pacific Coast, W. P. Fuller & Co.





Cleaning a wall painted with Dutch Boy white-lead and flatting oil. At left: section washed with soap and water. At right: soap and water washed off, leaving a finish free from streaks.

THIS INTERIOR FLAT FINISH IS

WASHABLE

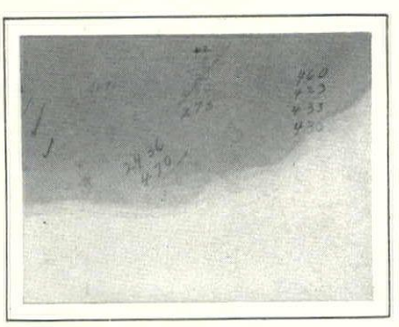
throughout long life

White-lead and flatting oil give a paint that* stays *washable . . . that can be safely cleaned again and again because nothing in it becomes soluble in water

A VERY desirable quality in a flat paint is that it be washable. Important, too, is "How long does it *remain* washable?" Can it be safely cleaned with soap and water not only a few months after it is applied, but a year, or two years, or longer?

Washability is one of the outstanding characteristics of paint made with Dutch Boy white-lead and flatting oil. Here is a flat paint that will withstand many washings . . . that stays washable throughout its long life.

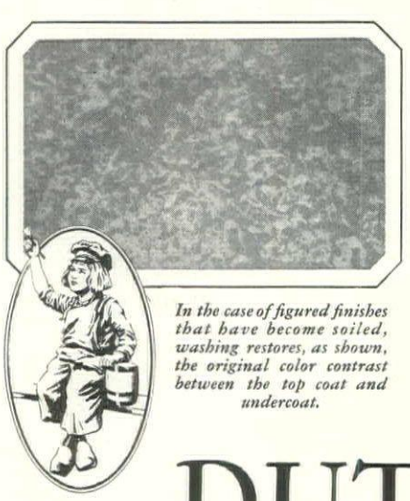
There are very definite reasons for the extreme washability of this paint. Its vehicle, flatting oil, binds the pigment particles together strongly. Its pigment, white-lead, undergoes no chemical change under ordinary conditions indoors . . . it is insoluble in water and stays so. Therefore, it does not wash off and leave streaks on the wall or woodwork.



You see here how pencil marks can be removed from a white-lead and flatting oil finish by washing it. This paint remains washable throughout its long life.

No brushmarks—no laps

Furthermore, with Dutch Boy white-lead and flatting oil you can count on an interior finish unspoiled by brushmarks, laps and joints. This flat paint possesses to an unusual extent the ability to level itself out. Thus it gives a smooth, even finish free from brushmarks. At the same time, it "sets up" slowly. It remains workable on the wall long enough to permit the joining of one painted surface to another without laps or joints showing.



In the case of figured finishes that have become soiled, washing restores, as shown, the original color contrast between the top coat and undercoat.

Color, design, finish

Being mixed to order specially for each job, this pure all-lead paint is extremely adaptable. You can obtain the exact tints required to express fully your color ideas. You can get both flat and "eggshell" finishes. And if figuration is desired, you have access to the crumpled roll and sponge mottle effects, not to mention blended finishes—the Tiffany, for example.

If you wish further information about these finishes, let us send you a booklet which describes them—"Decorative Possibilities of Paint." We shall also be glad to send a complete specification book which gives formulas for all work, coat and finishes. Address nearest branch.

NATIONAL LEAD COMPANY

New York, 111 Broadway . Boston, 800 Albany Street . Buffalo, 116 Oak Street . Chicago, 900 West 18th Street . Cincinnati, 659 Freeman Avenue . Cleveland, 820 West Superior Avenue St. Louis, 722 Chestnut Street . San Francisco, 235 Montgomery Street . Pittsburgh, National Lead & Oil Co. of Pa., 316 Fourth Avenue . Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street

DUTCH BOY WHITE-LEAD FLATTING OIL

The Belvedere Hotel at Baltimore, Md.

" and just as fine *inside* – *painted with Barreled Sunlight*

THE Belvedere Hotel at Baltimore is widely known to architects for its majestic beauty of design. And the interior fully measures up to the exterior. Appointments and decorations are thoroughly modern.

Barreled Sunlight was chosen for painting the side walls throughout —and in the bathrooms for ceilings as well.

In this choice the Belvedere agrees with scores of other fine hotels.

* *

Barreled Sunlight Gloss gives a rich enamel finish with a depth peculiar to itself. Containing no varnish, it flows with remarkable freedom, whether applied by brush or spray. It has unusual opacity—and its surface is so satin-smooth it can't hold dirt embedded. *Washes like tile.* When used in the pure white, Barreled Sunlight is guaranteed to remain white longer than any gloss paint or enamel, domestic or foreign, applied under the same conditions.

Barreled Sunlight Flat produces a surface extremely handsome and uniform.

Barreled Sunlight Semi-Gloss strikes a happy balance between the Gloss and Flat.

Sold in large drums and in cans. Where more than one coat is required, use Barreled Sunlight Undercoat first.

See our complete catalog in Sweet's Architectural or Engineering Catalog. Note coupon below.

U. S. Gutta Percha Paint Co., 3-C Dudley Street, Providence, R. I. Branches: New York, Chicago, San Francisco. Distributors in all principal cities.

White or Easily Tinted

By simply mixing colors in oil with Barreled Sunlight white, the painter on the job can easily obtain any desired shade. In quantities of five gallons or over we tint to order at the factory, without extra charge. For tinting small quantities our dealers carry handy tubes of Barreled Sunlight Tinting Colors.

U. S. GUTTA PERCHA PAINT CO.
3-C Dudley Street, Providence, R. I.

Please send me your booklet "Information for Architects," and a panel painted with Barreled Sunlight. I am interested in the finish checked here—

Gloss ( ) Semi-Gloss ( ) Flat ( )

Name.....

Street.....

City..... State.....

PEE GEE
Color Selectors

Each Selector (one for exteriors and one for interiors) by a simple turn of the dial brings to view 15 attractive color schemes. They solve the problem of color harmony. Selectors will be sent upon request.

To help your client Select *the* Color

STARTING with the roof and going down to the foundation line—you must have a harmonious color combination or the entire effect may be spoiled. The same is true of the interior—colors must not "clash"—they must not "jar".

Selecting complementary colors has been reduced to a simple science with Pee Gee Color Selectors (one for exteriors, one for interiors—both pocket size).

Helping your client Select the Color becomes a most pleasant task and it now requires but a few moments—all of the assembling and grouping of colors has been done for you in advance.

Good paint is an economy—it pays for itself many times over in the additional service it renders and the protection it affords.

There are other manufacturers who make good paint—there are none who make any better than that which bears the Pee Gee trademark. It has earned its reputation in the past sixty years.

PEASLEE-GAULBERT COMPANY
Incorporated
LOUISVILLE

Pee Gee Mastic Paint

For home exteriors. Retains its luster long after inferior paints have gone dead. Economical because of its great covering capacity and unusual durability.

Pee Gee China Enamel

With charming effect Pee Gee China Enamel Gloss White is used on doors, stairways, pillars, wainscoting, and all interior or exterior woodwork. It gives a smooth hard, brilliant finish that does not yellow with age. Also made in various tints and eggshell finish.

Pee Gee Flatkoatt

Beautifies the walls and ceilings of the home. Made in a rich range of shades to match any decorative scheme. Durable and sanitary, this oil paint dries with a flat, smooth, velvety finish. Various decorative effects are easily produced. Easily and quickly cleaned.

BATCHELDER TILES

MADE IN U. S. A.

LOBBY PLAZA HOTEL, SAN ANTONIO, TEXAS. ATLEE B. AYRES, ROBERT M. AYRES, ARCHITECTS

THIS tile installation offers many contrasting variations of color, glaze, and texture, from full glazed units of repeat to unglazed pavers. Variations are desirable, but harmony is essential. The products of our factory are bound together by a common factor. PATINA GLAZES harmonize with our unglazed PAVERS of solid body color, also with our CRINKLE MOSAICS and MOTTLED FINISH tiles. All of these may be combined effectively in a single project. These tiles are made in many shapes, sizes and patterns. Our catalogs offer many suggestions.

The following catalogs are available to architects only: Pavements, Mantels, Fountains, Bathrooms, General Catalog of Figure Tiles and Borders, etc.

BATCHELDER-WILSON COMPANY

LOS ANGELES
2633 ARTESIAN ST.

CHICAGO
38 SO. DEARBORN ST.

NEW YORK
101 PARK AVE.

13

Selected List of Manufacturers' Publications

FOR THE SERVICE OF ARCHITECTS, ENGINEERS, DECORATORS, AND CONTRACTORS

The publications listed in these columns are the most important of those issued by leading manufacturers identified with the building industry. They may be had without charge, unless otherwise noted, by applying on your business stationery to *The Architectural Forum*, 383 Madison Ave., New York, or the manufacturer direct, in which case kindly mention this publication.

ACOUSTICS

R. Guastavino Co., 40 Court St., Boston.
Akoustolith Plaster. Brochure, 6 pp., 10 x 12½ ins. Important data on a valuable material.

U. S. Gypsum Co., 205 W. Monroe St., Chicago, Ill.
A Scientific Solution of an Old Architectural Problem. Folder 6 pp., 8½ x 11 ins. Describes Sabinite Acoustical Plaster.

ASH HOISTS—ELECTRIC AND HAND POWER

Gillis & Geohegan, 535 West Broadway, New York, N. Y.
General Catalog. 8½ x 11 ins. 20 pp. Fully illustrated. Contains specifications in two forms (with manufacturers' name and without). Detail ¼ in. scale for each telescopic model and special material-handling section.
G. & G. Telescopic Hoist. Brochure, 24 pp., 8½ x 11 ins. Illustrated. Electric and hand power models; watertight sidewalk doors; automatic opening, closing, and locking devices.

BASEMENT WINDOWS

Genfire Steel Company, Youngstown, Ohio.
Architectural Details. Booklet, 62 pp., 8½ x 11 ins. Details on steel windows.

Truscon Steel Co., Youngstown, Ohio.
Truscon Copper-Steel Basement Windows. Booklet, 8 pp., 8½ x 11 ins. Illustrated with installation details. Specifications and construction details.

BATHROOM FITTINGS

A. P. W. Paper Co., Albany, N. Y.
Onliwon for Fine Buildings. Folder, 8 pp., 2¾ x 6 ins. Illustrated. Deals with toilet paper fittings of metal and porcelain.
Architects' File Card. 8½ x 11 ins. Illustrated. Filing card on toilet paper and paper towel cabinets.
A Towel Built for Its Job. Booklet, 8 pp., 4¼ x 9⅝ ins. Illustrated. Paper Towel System and Cabinets.
Cabinets and Fixtures. Booklet, 31 pp., 5¾ x 4¾ ins. Illustrated. Catalog and price list of fixtures and cabinets.

BRICK

American Face Brick Association, 1751 Peoples Life Building, Chicago, Ill.
Brickwork in Italy. 298 pages, size 7½ x 10½ ins., an attractive and useful volume on the history and use of brick in Italy from ancient to modern times, profusely illustrated with 69 line drawings, 300 half-tones, and 20 colored plates with a map of modern and XII century Italy. Bound in linen, will be sent postpaid upon receipt of $6.00. Half Morocco, $7.00.
Industrial Buildings and Housing. Bound Volume, 112 pp. 8½ x 11 ins. Profusely illustrated. Deals with the planning of factories and employes' housing in detail. Suggestions are given for interior arrangements, including restaurants and rest rooms. Price, $2.00.

Common Brick Mfrs. Assn. of America, 2134 Guarantee Title Bldg., Cleveland.
Brick; How to Build and Estimate. Brochure, 96 pp., 8½ x 11 ins. Illustrated. Complete data on use of brick.
The Heart of the Home. Booklet, 24 pp., 8½ x 11 ins. Illustrated. Price 25 cents. Deals with construction of fireplaces and chimneys.
Skintled Brickwork. Brochure, 15 pp., 8½ x 11 ins. Illustrated. Tells how to secure interesting effects with common brick.
Building Economy. Monthly magazine, 22 pp., 8½ x 11 ins. Illustrated. $1 per year, 10 cents a copy. For architects, builders and contractors.

BUILDING, STEEL PRODUCTS FOR

Truscon Steel Company, Youngstown, Ohio.
Truscon Data Book. Catalog. 3½ x 6 in. 128 pp. Illustrated. Contains complete information with illustrations on Truscon reinforcing steel, steel windows, metal lath, standard buildings, concrete inserts, steel joists, pressed stamping and chemical products.

CEMENT

Carney Company, The, Mankato, Minn.
What Twelve Men Said About Carney. Booklet. 8½ x 11 ins. Illustrated. Opinions of well-known architects and builders of Carney Cement used for mortar.

Cement Gun Company, Inc., Allentown, Pa.
Gunite Bulletins. Sheet 6 x 9 ins. Illustrated. Bulletins on adaptability of "Gunite," a sand and cement product, to construction work.

Kosmos Portland Cement Company, Louisville, Ky.
Kosmortar for Enduring Masonry. Folder, 6 pp., 3½ x 6½ ins. Data on strength and working qualities of Kosmortar.
Kosmortar, the Mortar for Cold Weather. Folder, 4 pp., 3⅜ x 6½ ins. Tells why Kosmortar should be used in cold weather.

Lawrence Cement Co., New York, Boston and Philadelphia.
Dragon Super Cement. Booklet, 20 pp., 8½ x 11 ins. Illustrated. Data on a valuable waterproof material.

Louisville Cement Co., 315 Guthrie St., Louisville, Ky.
BRIXMENT for Perfect Mortar. Self-filing handbook, 8½ x 11 ins. 16 pp. Illustrated. Contains complete technical description of BRIXMENT for brick, tile and stone masonry, specifications, data and tests.

CEMENT—Continued

Pennsylvania-Dixie Cement Corp'n, 131 East 46th St., New York.
Celluloid Computing Scale for Concrete and Lumber, 4⅝ x 2½ ins. Useful for securing accurate computations of aggregates and cement; also for measuring lumber of different sizes.

CONCRETE BUILDING MATERIALS

Celite Products Co., 1320 South Hope St., Los Angeles.
Better Concrete; Engineering Service Bulletin X-325. Booklet, 10 pp., 8½ x 11 ins. Illustrated. On use of Celite to secure workability in concrete, to prevent segregation and to secure water-tightness.
Economic Value of Admixtures. Booklet, 32 pp., 6⅛ x 9⅛ ins. Reprint of papers by J. C. Pearson and Frank A. Hitchcock before 1924 American Concrete Institute.

Concrete Surface Corporation, 342 Madison Ave., New York.
Bonding Surfaces on Concrete. Booklet, 12 pp., 8 x 11 ins. Illustrated. Deals with an important detail of building.

Dovetail Anchor Slot Co., 149 West Ohio St., Chicago.
Dovetail Masonry Anchoring System. Folder, 4 pp., 8½ x 11 ins. Illustrated. Data on a system of anchoring masonry to concrete.

National Building Units Corporation, 1600 Arch St., Philadelphia.
Durability and Utility of Straub Cinder Building Blocks. Brochure, 14 pp., 8 x 11 ins. Report on this material by Pittsburgh Testing Laboratories.
Sound Absorption of Cinder Concrete Building Units. Booklet, 8 pp., 8 x 11 ins. Illustrated. Results of tests of absorption and transmission of sound through Straub building blocks.
Philadelphia. Cinder Concrete Building Units. Brochure, 36 pp., 8¼ x 10¾ ins. Illustrated. Full data on an important building material.

Kosmos Portland Cement Company, Louisville, Ky.
High Early Strength Concrete, Using Standard Cosmos Portland Cement. Folder, 1 p., 8½ x 11 ins. Complete data on securing high strength concrete in short time.

CONCRETE COLORINGS

The Master Builders Co., 7016 Euclid Ave., Cleveland.
Color Mix, Colored Hardened Concrete Floors (Integral). Brochure. 16 pp. 8½ x 11 ins. Illustrated. Data on coloring for floors.
Dychrome. Concrete Surface Hardener in Colors. Folder. 4 pp. 8 x 11 ins. Illustrated. Data on a new treatment.

CONSTRUCTION, FIREPROOF

Master Builders Co., Cleveland, Ohio.
Color Mix. Booklet, 18 pp., 8½ x 11 ins. Illustrated. Valuable data on concrete hardener, waterproofer and dustproofer in permanent colors.

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
Standard Fire Proofing Bulletin 171. 8½ x 11 ins. 32 pp. Illustrated. A treatise on fireproof floor construction.

Northwestern Expanded Metal Co., 1234 Old Colony Building, Chicago, Ill.
Northwestern Expanded Metal Products. Booklet. 8½ x 10¾ ins. 16 pp. Fully illustrated, and describes different products of this company, such as Kno-burn metal lath, 20th Century Corrugated. Plaster-Sava and Longspan lath channels, etc.
A. I. A. Sample Book. Bound volume, 8½ x 11 ins., contains actual samples of several materials and complete data regarding their use.

DAMPPROOFING

Philip Carey Co., Lockland, Cincinnati, Ohio.
Architects' Specifications for Carey Built-Up Roofing. Booklet. 8 x 10¾ ins. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
Carey Built-Up Roofing for Modern School Buildings. Booklet. 8 x 10¾ ins. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.

Genfire Steel Company, Youngstown, Ohio.
Waterproofing Handbook. Booklet. 8½ x 11 ins. 72 pp. Illustrated. Thoroughly covers subject of waterproofing concrete, wood and steel preservatives, dusting and hardening concrete floors and accelerating the setting of concrete. Free distribution.

The Master Builders Co., 7016 Euclid Ave., Cleveland.
Waterproofing and Dampproofing Specification Manual. Booklet. 18 pp., 8½ x 11 ins. Deals with methods and materials used.
Waterproofing and Dampproofing. File. 36 pp. Complete descriptions and detailed specifications for materials used in building and concrete.

Sonneborn Sons, Inc., L., 116 Fifth Ave., New York.
Specification Sheet, 8½ x 11 ins. Descriptions and specifications of compounds for dampproofing interior and exterior surfaces.

The Vortex Mfg. Co., Cleveland, Ohio.
Par-Lock Specification "Forms A and B" for dampproofing and plaster key over concrete and masonry surfaces.
Par-Lock Specification "Form J" for dampproofing tile wall surfaces that are to be plastered.
Par-Lock Dampproofing. Specification Forms C, F, I and J. Sheets 8½ x 11 ins. Data on gun-applied asphalt dampproofing for floors and walls.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 71*

DOORS AND TRIM, METAL

The American Brass Company, Waterbury, Conn.
Anaconda Architectural Bronze Extruded Shapes. Brochure, 180 pp., 8½ x 11 ins., illustrating and describing more than 2,000 standard bronze shapes of cornices, jamb casings, mouldings, etc.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Fire-Doors and Hardware. Booklet. 8½ x 11 ins. 64 pp. Illustrated. Describes entire line of tin-clad and corrugated fire doors, complete with automatic closers, track hangers and all the latest equipment—all approved and labeled by Underwriters' Laboratories.

DUMBWAITERS

Sedgwick Machine Works, 151 West 15th St., New York.
Catalog and Service Sheets. Standard specifications, plans and prices for various types, etc. 4¼ x 8¼ ins. 60 pp. Illustrated.
Catalog and pamphlets, 8½ x 11 ins. Illustrated. Valuable data on dumbwaiters.

ELECTRICAL EQUIPMENT

Frank Adam Electric Company, St. Louis, Mo.
Catalog No. 35—1925. Panelboards—Steel Cabinets. 7¾ x 10½ ins. 64 pp. Illustrates and describes sectionally built panelboards, an important line of steel cabinets and the fittings which go with them.

Benjamin Electric Mfg. Co., 120 So. Sarigamore St., Chicago.
Reference Wall Chart, 22 x 28½ ins. "Enables one to select at a glance the right type of reflector or other lighting equipment.
Benjamin-Starrett Panelboards and Steel Cabinets. Booklet, 80 pp. 8½ x 10½ ins. Full data on these details for light and power.
Benjamin-Starrett Panelboards for Light and Power. Booklet, 80 pp., 8½ x 11 ins. Illustrated. Full data on company's line of panelboards, steel cabinets, etc.

General Electric Co., Schenectady, N. Y.
"Electrical Specification Data for Architects. Brochure, 36 pp., 8 x 10½ ins. Illustrated. Data regarding G. E. wiring materials and their use.
"The House of a Hundred Comforts." Booklet, 40 pp., 8 x 10½ ins. Illustrated. Dwells on importance of adequate wiring.

Pick & Company, Albert, 208 West Randolph St., Chicago, Ill.
School Cafeterias. Booklet. 9 x 6 ins. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.

Signal Engineering & Mfg. Co., 154 W. 14th St., New York.
Signal Call Code System. Booklet, 16 pp., 8½ x 10 ins. Illustrated. Important telephone accessories.
Fire Alarm Systems,—Bulletin A-35. 12 pp., 8½ x 9½ ins. Illustrated. Data on fire alarm equipment.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
Electric Power for Buildings. Brochure, 14 pp., 8½ x 11 ins. Illustrated. A publication important to architects and engineers.
Variable-Voltage Central Systems as applied to Electric Elevators. Booklet, 13 pp., 8½ x 11 ins. Illustrated. Deals with an important detail of elevator mechanism.
Modern Electrical Equipment for Buildings. Booklet, 8½ x 11 ins. Illustrated. Lists many useful appliances.
Electrical Equipment for Heating and Ventilating Systems. Booklet, 24 pp., 8½ x 11 ins. Illustrated. This is "Motor Application Circular 7379."
Westinghouse Panelboards and Cabinets (Catalog 42-A). Booklet, 32 pp., 8½ x 11 ins. Illustrated. Important data on these details of equipment.
Beauty; Power; Silence; Westinghouse Fans (Dealer Catalog 45). Brochure, 16 pp., 8½ x 11 ins. Illustrated. Valuable information on fans and their uses.
Electric Range Book for Architects (A. I. A. Standard Classification 31 G-4). Booklet, 24 pp., 8½ x 11 ins. Illustrated. Cooking apparatus for buildings of various types.
Westinghouse Commercial Cooking Equipment (Catalog 280). Booklet, 32 pp., 8½ x 11 ins. Illustrated. Equipment for cooking on a large scale.
Electric Appliances (Catalog 44-A). 32 pp., 8½ x 11 ins. Deals with accessories for home use.

ELEVATORS

Otis Elevator Company, 260 Eleventh Ave., New York, N. Y.
Otis Push Button Controlled Elevators. Descrive leaflets. 8½ x 11 ins. Illustrated. Full details of machines, motors and controllers for these types.
Otis Geared and Gearless Traction. Elevators of All Types. Descriptive leaflets. 8½ x 11 ins. Illustrated. Full details of machines, motors and controllers for these types.
Escalators. Booklet. 8½ x 11 ins. 22 pp. Illustrated. Describes use of escalators in subways, department stores, theaters and industrial buildings. Also includes elevators and dock elevators.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Elevators. Booklet. 8½ x 11 ins. 24 pp. Illustrated. Describes complete line of "Ideal" elevator door hardware and checking devices, also automatic safety devices.

Sedgwick Machine Works, 151 West 15th St., New York, N. Y.
Catalog and descriptive pamphlets, 4¼ x 8¼ ins. 70 pp. Illustrated. Descriptive pamphlets on hand power freight elevators, sidewalk elevators, automobile elevators, etc.
Catalog and pamphlets. 8½ x 11 ins. Illustrated. Important data on different types of elevators.

Concrete Engineering Co., Omaha, Nebr.
"Handbook of Fireproof Construction." Booklet, 53 pp., 8½ x 11 ins. Valuable work on methods of fireproofing.

FIREPROOFING—See also Construction, Fireproof

Genfire Steel Company, Youngstown, Ohio.
Fireproofing Handbook, 8½ x 11 ins. 64 pp. Illustrated. Gives methods of construction, specifications, data on Herringbone metal lath, steel tile, Trussit solid partitions, steel, lumber, self-centering formless concrete construction.

North Western Expanded Metal Co., 407 South Dearborn St., Chicago.
A. I. A. Sample Book. Bound volume, 8½ x 11 ins. Contains actual samples of several materials and complete data regarding their use.

FLOOR HARDENERS (CHEMICAL)

Master Builders Co., Cleveland, Ohio.
Concrete Floor Treatment. File, 50 pp. Data on Securing hardened dustproof concrete.
Concrete Floor Treaments—Specification Manual. Booklet, 23 pp. 8½ x 11 ins. Illustrated. Valuable work on an important subject.

Sonneborn Sons, Inc., L., 116 Fifth Ave., New oYrk, N. Y.
Lapidolith, the liquid chemical hardener. Complete sets of specifications for every building type in which concrete floors are used, with descriptions and results of tests.

FLOORS—STRUCTURAL

Truscon Steel Co., Youngstown, Ohio.
Truscon Locktyle. Booklet. 8½ x 11 ins. 8 pp. Illustrations of material and showing methods of application.
Truscon Floretyle Construction. Booklet. 8½ x 11 ins. 16 pp. Illustrations of actual jobs under construction. Lists of properties and information on proper construction. Proper method of handling and tables of safe loads.

FLOORING

Armstrong Cork & Insulation Co., Pittsburgh, Pa.
Armstrong's Cork Tile Floors. Booklet. 7¾ x 10½ ins. 30 pp. An illustrated work on cork flooring.
Linotile for Home Floors. Brochure. 7½ x 10½ ins. 27 pp. and colored enclosures of floor installations.

Armstrong Cork Co. (Linoleum Division), Lancaster, Pa.
Armstrong's Linoleum Floors. Catalog. 8½ x 11 ins. 40 pp. Color plates. A technical treatise on linoleum, including table of gauges and weights and specifications for installing linoleum floors.
Armstrong's Linoleum Pattern Book, 1927. Catalog. 3½ x 6 in. 272 pp. Color Plates. Reproduction in color of all patterns of linoleum and cork carpet in the Armstrong line.
Quality Sample Book. 3½ x 5¾ in. Showing all gauges and thicknesses in the Armstrong line of linoleums.
Linoleum Layer's Handbook. 5 x 7 in. 32 pp. Instructions for linoleum layers and others interested in learning most satisfactory methods of laying and taking care of linoleum.
Enduring Floors of Good Taste. Booklet. 6 x 9 ins. 48 pp. Illustrated in color. Explains use of linoleum for offices, stores, etc., with reproductions in color of suitable patterns, also specifications and instructions for laying.

Barber Asphalt Co., Philadelphia.
Specifications for Applying Genasco Asphalt Mastic. Booklet 8 x 10½ ins. Directions for using Asphalt Mastic for flooring.

Blabon Company, Geo. W., Nicetown, Philadelphia, Pa.
Planning the Color Schemes for Your Home. Brochure illustrated in color; 36 pp., 7½ x 10½ ins. Gives excellent suggestions for use of color in flooring for houses and apartments.
Handy Quality Sample Folder of Linoleums. Gives actual samples of "Battleship Linoleum," cork carpet, "Feltex," etc.
Blabon's Linoleum. Booklet illustrated in color; 128 pp., 3½ x 8½ ins. Gives patterns of a large number of linoleums.
Blabon's Plain Linoleum and Cork Carpet. Gives quality samples, 3 x 6 ins. of various types of floor coverings.

Bonded Floors Company, Inc., 1421 Chestnut St., Philadelphia, Pa.
A series of booklets, with full color inserts showing standard colors and designs. Each booklet describes a resilient floor material as follows:
Battleship Linoleum. Explains the advantages and uses of this durable, economical material.
Marble-ized (Cork Composition) Tile. Complete information on cork-composition marble-ized tile and many artistic effects obtainable with it.
Treadlite (Cork Composition) Tile. Shows a variety of colors and patterns of this adaptable cork composition flooring.
Natural Cork Tile. Description and color plates of this superquiet, resilient floor.
Practical working specifications for installing battleship linoleum, cork composition tile and cork tile.

Carter Bloxonend Flooring Co., Keith & Perry Bldg., Kansas City, Mo.
Bloxonend Flooring. Booklet. 3¼ x 6¼ ins. 20 pp. Illustrated. Describes uses and adaptability of Bloxonend Flooring to concrete, wood or steel construction, and advantages over loose wood blocks.
File Folder. 9⅜ x 11¾ ins. For use in connection with A. I. A. system of filing. Contains detailed information on Bloxonend Flooring in condensed, loose-leaf form for specification writer and drafting room. Literature embodied in folder includes standard Specification Sheet covering the use of Bloxonend in general industrial service and Supplementary Specification Sheet No. 1, which gives detailed description and explanation of an approved method for installing Bloxonend in gymnasiums, armories, drill rooms and similar locations where maximum resiliency is required.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 72*

FLOORING—Continued

Albert Grauer & Co., 1408 Seventeenth St., Detroit, Mich.
Grauer-Watkins Red Asphalt Flooring. Folder, 4 pp., 8½ x 11 ins. Data on a valuable form of flooring.

U. S. Gypsum Co., Chicago.
Pyrobar Floor Tile. Folder. 8½ x 11 ins. Illustrated. Data on building floors of hollow tile and tables on floor loading.

United States Quarry Tile Co., Parkersburg, W. Va.
Quarry Tiles for Floors. Booklet, 119 pp., 8½ x 11 ins. Illustrated. General catalog. Details of patterns and trim for floors.
Art Portfolio of Floor Designs. 9¼ x 12¼ ins. Illustrated in colors. Patterns of quarry tiles for floors.

U. S. Rubber Co., 1790 Broadway, New York.
Period Adaptations for Modern Floors. Brochure. 8 x 11 ins. 60 pp. Richly illustrated. A valuable work on the use of rubber tile for flooring in interiors of different historic styles.

Zenitherm Co., Inc., 390 Frelinghuysen Avenue, Newark, N. J.
Zenitherm Floors. Booklet, 14 pp., 8½ x 11 ins. Illustrated. Floors for interior and semi-interior use.
Contractors' Handbook. Brochure, 10 pp., 4½ x 6 ins. Complete data for using Zenitherm.

FURNITURE

American Seating Co., 14 E. Jackson Blvd., Chicago, Ill.
Ars Ecclesiastica Booklet. 6 x 9 in. 48 pp. Illustrations of church fitments in carved wood.
Theatre Chairs. Booklet. 6 x 9 in. 48 pp. Illustrations of theater chairs.

Kensington Mfg. Company, Showrooms, 41 West 45th St., New York.
Illustrated booklet indicative of the scope, character and decorative quality of Kensington furniture, with plan of co-operation with architects, sent on request.
Photographs and full description of hand-made furniture in all the period styles, furnished in response to a specific inquiry.

Kittinger Co., 1893 Elmwood Ave., Buffalo, N. Y.
Kittinger Club & Hotel Furniture. Booklet. 20 pp. 6¼ x 9½ ins. Illustrated. Deals with fine line of furniture for hotels, clubs, institutions, schools, etc.
Kittinger Club and Hotel Furniture. Booklet. 20 pp. 6 x 9 ins. Illustrated. Data on furniture for hotels and clubs.

McKinney Mfg. Co., Pittsburgh.
Forethought Furniture Plans. Sheets, 6¼ x 9 ins., drawn to ¼-inch scale. An ingenious device for determining furniture arrangement.

White Door Bed Company, The, 130 North Wells St., Chicago, Ill.
Booklet. 8½ x 11 in. 20 pp. Illustrated. Describes and illustrates the use of "White" Door Bed and other space-saving devices.

GARAGES

Ramp Buildings Corporation, 21 East 40th St., New York.
Building Garages for Profitable Operation. Booklet. 8½ x 11 ins. 16 pp. Illustrated. Discusses the need for modern mid-city parking garages, and describes the d'Humy Motoramp system of design, on the basis of its superior space economy and features of operating convenience. Gives cost analyses of garages of different sizes, and calculates probable earnings.
Garage Design Data. Series of informal bulletins issued in loose-leaf form, with monthly supplements.

GLASS CONSTRUCTION

Adamson Flat Glass Co., Clarksburg, W. Va.
Quality and Dependability. Folder, 2 pp., 8½ x 11 ins. Illustrated. Data in the company's product.

Libbey-Owens Sheet Glass Co., Toledo, Ohio.
Flat Glass. Brochure, 11 pp., 5⅛ x7⅝ ins. Illustrated. History of manufacture of flat, clear, sheet glass.

Mississippi Wire Glass Co., 220 Fifth Ave., New York.
Mississippi Wire Glass. Catalog. 3⅞ x 8½ ins. 32 pp. Illustrated. Covers the complete line.

HARDWARE

P. & F. Corbin, New Britain, Conn.
Early English and Colonial Hardware. Brochure, 8½ x 11 ins. An important illustrated work on this type of hardware.
Locks and Builders' Hardware. Bound Volume, 486 pp., 8½ x 11 ins. An exhaustive, splendidly prepared volume.
Brochure, 61 plates, 8½ x 11 ins. Illustrated. Locks and builders' hardware as presented in 22nd edition of Sweet's.

Cutler Mail Chute Company, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. 4 x 9¼ in. 8 pp. Illustrated.

McKinney Mfg. Co., Pittsburgh.
Forged Iron by McKinney. Booklet, 6 x 9 ins. Illustrated. Deals with an excellent line of builders' hardware.
Forged Lanterns by McKinney. Brochure, 6 x 9 ins. Illustrated. Describes a fine assortment of lanterns for various uses.

Richard-Wilcox Mfg. Co., Aurora, Ill.
Distinctive Garage Door Hardware. Booklet. 8½ x 11 ins. 65 pp. Illustrated. Complete information accompanied by data and illustrations on different kinds of garage door hardware.

Russell & Erwin Mfg. Co., New Britain, Conn.
Hardware for the Home. Booklet, 24 pp., 3½ x 6 ins. Deals with residence hardware.
Door Closer Booklet. Brochure, 16 pp., 3½ x 6 ins. Data on a valuable detail. Garage Hardware Booklet, 12 pp., 3½ x 6 ins. Hardware intended for garage use.
Famous Homes of New England. Series of folders on old homes and hardware in style of each.

HEATING EQUIPMENT

American Blower Co., 6004 Russell St., Detroit.
Heating and Ventilating Utilities. A binder containing a large number of valuable publications, each 8½ x 11 ins., on these important subjects.

HEATING EQUIPMENT—Continued

American Radiator Company, The, 40 West 40th St., N. Y. C.
Ideal Type "A" Heat Machine. Catalog 7¾ x 10½ ins. 32 pp. Illustrated in 4 colors. A brochure of high-efficiency heating apparatus for residences and commercial buildings.
Ideal Water Tube Boilers. Catalog 7¾ x 10⅝. 32 pp. Illustrated in 4 colors. Data on a complete line of Heating Boilers of the Water Tube type.
Ideal Smokeless Boilers. Catalog 7¾ x 10½ ins. 32 pp. Illustrated in 4 colors. Fully explains a boiler free from the objection of causing smoke.
Ideal Boilers for Oil Burning. Catalog 5½ x8½ in. 36 pp. Illustrated in 4 colors. Describing a line of Heating Boilers especially adapted to use with Oil Burners.
Corto—The Radiator Classic. Brochure 5½ x 8½ in. 16 pp. Illustrated. A brochure on a space-saving radiator of beauty and high efficiency.
Ideal Arcola Radiator Warmth.Brochure 6¼ x 9¼. Illustrated. Describes a central all-on-one-floor heating plant with radiators for small residences, stores, and offices.

James B. Clow & Sons, 534 S. Franklin St., Chicago.
Clow Gasteam Vented Heating System. Brochure, 24 pp., 8½ x 11 ins. Illustrated. Deals with a valuable form of heating equipment for using gas.

C. A. Dunham Company, 450 East Ohio St., Chicago, Ill.
Dunham Radiator Trap. Bulletin 101, 8 x 11 in. 12 pp. Illustrated. Explains working of this detail of heating apparatus.
Dunham Packless Radiator Valves. Bulletin 104. 8 x 11 in. 8 pp. Illustrated. A valuable brochure on valves.
Dunham Return Heating System. Bulletin 109, 8 x 11 ins. Illustrated. Covers the use of heating apparatus of this kind.
Dunham. Vacuum Heating System. Bulletin 110. 8 x 11 ins. 12 pp. Illustrated.
The Dunham Differential Vacuum Heating System. Bulletin 114. Brochure, 8 pp., 8 x 11 ins. Illustrated. Deals with heating for small buildings.
The Dunham Differential Vacuum Heating System. Bulletin 115. Brochure, 12 pp., 8 x 11 ins. Illustrated. Deals with heating for large buildings.

Excelso Products Corporation, 119 Clinton St., Buffalo, N. Y.
Excelso Water Heater. Booklet. 12 pp. 3 x 6 in. Illustrated. Describing the new Excelso method of generating domestic hot water in connection with heating boilers. (Firepot Coil eliminated.)

The Fulton Sylphon Company, Knoxville, Tenn.
Sylphon Temperature Regulators. Illustrated brochures, 8½ x 11 ins., dealing with general architectural and industrial applications; also specifically with applications of special instruments.
Sylphon Heating Specialties. Catalog No. 200, 192 pp., 3½ x 6¾ ins. Important data on heating.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.
Vapor Heat Bulletin 21. 8½ x 11 ins. 32 pp. Illustrated. Contains new and original data on Vapor Heating. Rules for computing radiation, pipe sizes, radiator tappings. Steam table showing temperature of steam and vapor at various pressures, also description of Illinois Vapor Specialties.

S. T. Johnson Co., Oakland, Calif.
Bulletin No. 4A. Brochure, 8 pp., 8½ x 11 ins. Illustrated. Data on different kinds of oil-burning apparatus.
Bulletin No. 31. Brochure, 8 pp., 8½ x 11 ins. Illustrated. Deals with Johnson Rotary Burner With Full Automatic Control.

Kewanee Boiler Co., Kewanee, Ill.
Kewanee on the Job. Catalog. 8½ x 11 ins. 80 pp. Illustrated. Showing installations of Kewanee boilers, water heaters, radiators, etc.
Catalog No. 78, 6 x 9 ins. Illustrated. Describes Kewanee Firebox Boilers with specifications and setting plans.
Catalog No. 79. 6 x 9 ins. Illustrated. Describes Kewanee power boilers and smokeless tubular boilers with specifications.

May Oil Burner Corp., Baltimore.
Adventures in Comfort. Booklet, 24 pp., 6 x 9 ins. Illustrated. Non-technical data on oil as fuel.
Taking the Quest out of the Question. Brochure, 16 pp., 6 x 9 ins. Illustrated. For home owners interested in oil as fuel.

Milwaukee Valve Co., Milwaukee.
MILVACO Vacuum & Vapor Heating System. Nine 4-p. bulletins, 8½ x 11 ins. Illustrated. Important data on heating.
MILVACO Vacuum & Vapor Heating Specialties. Nine 4-p. bulletins, 8½ x 11 ins. Illustrated. Deal with a valuable line of specialties used in heating.

Modine Mfg. Company, Racine, Wis.
Thermodine Unit Heater. Brochure, 24 pp., 8½ x 11 ins. Illustrated. Apparatus for industrial heating and drying.
Thermodine Cabinet Heater. Booklet, 12 pp., 8½ x 11 ins. Illustrated. Cabinet heaters to buildings of different kinds.

Nash Engineering Company, South Norwalk, Conn.
No. 37. Devoted to Jennings Hytor Return Line Vacuum Heating Pumps, electrically driven, and supplied in standard sizes up to 300,000 square feet equivalent direct radiation.
No. 16. Dealing with Jennings Hytor Air Line Heating Pumps.
No. 17. Describing Jennings Hytor Condensation Pumps, sizes up to 70,000 square feet equivalent direct radiation.
No. 25. Illustrating Jennings Return Line Vacuum Heating Pumps. Size M, for equivalent direct radiation up to 5,000 square feet.

National Radiator Corporation, Johnstown, Pa.
Aero Radiators; Beauty and Worth. Catalog 34. Booklet 6 x 9 ins., 20 pp., describing and illustrating radiators and accessories.

Petroleum Heat & Power Co., 511 Fifth Avenue, New York.
Heating Homes the Modern Way. Booklet, 8½ x 11¾ ins. Illustrated. Data on the Petro Burner.
Residence Oil Burning Equipment. Brochure, 6 pp., 8½ x 11 ins. Illustrated. Data regarding Petro Burner in a bulletin approved by Investigating Committee of Architects and Engineers.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 74*

HEATING EQUIPMENT—Continued

Petro Mechanical Oil Burner & Air Register. Booklet, 23 pp., 8½ x 11 ins. Illustrated. Data on industrial installations of Petro Burners.

Present Accepted Practice in Domestic Oil Burners. Folder, 4 pp., 8½ x 11 ins. Illustrated. A reprint from Heating and Ventilating Magazine.

W. S. Ray Mfg. Co., Inc., San Francisco.

Ray Rotary Burners. Booklet. 16 pp. 8 x 10½ ins. Complete data on the Ray Rotary Low Pressure Burner.

Trane Co., The, La Crosse, Wis.

Bulletin 14. 16 pp. 8½ x 10⅝ ins. Covers the complete line of Trane Heating Specialties, including Trane Bellows Traps, and Trane Bellows Packless Valves.

Bulletin 20. 24 pp. 8½ x 10⅝ ins. Explains in detail the operation and construction of Trane Condensation. Vacuum, Booster, Circulating, and similar pumps.

HOSPITAL EQUIPMENT

The Frink Co., Inc., 24th St. and Tenth Ave., New York City.

Catalog 426. 7 x 10 ins. 16 pp. A booklet illustrated with photographs and drawings, showing the types of light for use in hospitals, as operating table reflectors, linolite and multilite concentrators, ward reflectors, bed lights and microscopic reflectors, giving sizes and dimensions, explaining their particular fitness for special uses.

The International Nickel Company, 67 Wall St., New York, N. Y.

Hospital Applications of Monel Metal. Booklet. 8½ x 11½ ins. 16 pp. Illustrated. Gives types of equipment in which Monel Metal is used, reasons for its adoption, with sources of such equipment.

The Kny-Scheerer Corporation of America, 119 Seventh Ave., New York.

Hospital Equipment, 16th Edition. 7¼ x 10½ ins. 232 pp. Illustrated. Complete description of Hospital and Surgical Furniture, Hospital Appliances including Operating Tables, Cabinets, Sterilizers for Water, Dressing and Instruments, also Hydrotherapeutic Apparatus.

Surgical Sundries. Second Editions. Booklet. 7⅜ x 10½ ins. 48 pp. Illustrated. A complete line of glassware, enamelware, rubber goods, restraint apparatus, instrument sterilizers, sputum cups, wheel chairs and sick room comforts.

Electro Medical. 25th Edition. Booklet. 7¼ x 10½ ins. 160 pp. Illustrated. A complete line of Albee Bone Sets. Apparatus for AC and DC Cystoscopes, Heat Magnets, Vibrators, Compressors, Electric Light Baths, High Frequency Apparatus and X-Ray Apparatus and Accessories.

The Pick-Barth Companies, Chicago and New York.

Some Thoughts About Hospital Food Service Equipment. Booklet, 21 pp., 7½ x 9¼ ins. Valuable data on an important subject.

Wilmot Castle Company, Rochester, N. Y.

Sterilizer Equipment for Hospitals. Book, 76 pp., 8½ x 11 ins. Illustrated. Gives important and complete data on sterilization of utensils and water, information on dressings, etc.

Sterilizer Specifications. Brochure, 12 pp., 8½ x 11 ins. Practical specifications for use of architects and contractors.

Architects' Data Sheets. Booklet, 16 pp., 8½ x 11 ins. Illustrated. Information on piping, venting, valving and wiring for hospital sterilizer installations.

Hospital Sterilizing Technique. Five booklets. 8 to 16 pp. 6 x 9 ins. Illustrated. Deals specifically with sterilizing instruments, dressings, utensils, water, and rubber gloves.

HOTEL EQUIPMENT

Pick & Company, Albert, 208 West Randolph St., Chicago, Ill.

Some Thoughts on Furnishing a Hotel. Booklet. 7½ x 9 ins. Data on complete outfitting of hotels.

INCINERATORS

Kerner Incinerator Company, 715 E. Water St., Milwaukee, Wis.

Incinerators (Chimney-fed). Catalog No. 15 (Architect and Builders' Edition). Size 8½ x 11 ins. 16 pp. Illustrated. Describes principles and design of Kernerator Chimney-fed Incinerators for residences, apartments, hospitals, schools, apartment hotels, clubs and other buildings. Shows all standard models and gives general information and working data.

Sanitary Elimination of Household Waste, booklet, 4 x 9 ins. 16 pp. Illustrated. Gives complete information on the Kernerator for residences.

Garbage and Waste Disposal for Apartment Buildings, folder, 8½ x 11 ins. 8 pp. Illustrated. Describes principle and design of Kernerator-Chimney-fed Incinerator for apartments and gives list of buildings where it has been installed.

Sanitary Disposal of Waste in Hospitals. Booklet. 4 x 9 ins. 12 pp. Illustrated. Shows how this necessary part of hospital service is taken care of with the Kernerator. Gives list of hospitals where installed.

INSULATING LUMBER

Mason Fibre Co., 111 West Washington St., Chicago, Ill.

Booklet, 12 pp., 8½ x 11 ins. Illustrated. Gives complete specifications for use of insulating lumber and details of construction involving its use.

INSULATION

Armstrong Cork & Insulation Co., Pittsburgh, Pa.

The Insulation of Roofs with Armstrong's Corkboard. Booklet. Illustrated. 7½ x 10½ ins. 32 pp. Discusses means of insulating roofs of manufacturing or commercial structures.

Insulation of Roofs to Prevent Condensation. Illustrated booklet. 7½ x 10½ ins. 36 pp. Gives full data on valuable line of roof insulation.

Filing Folder for Pipe Covering Data. Made in accordance with A. I. A. rules.

"The Cork Lined House Makes a Comfortable Home." 5 x 7 in. 32 pp. Illustrated.

Armstrong's Corkboard. Insulation for Walls and Roofs of Buildings. Booklet, 66 pp., 9½ x 11¾ ins. Illustrates and describes use of insulation for structural purposes.

INSULATION—Continued

Cabot, Inc., Samuel, Boston, Mass.

Cabot's Insulating Quilt. Booklet. 7½ x 10½ ins. 24 pp. Illustrated. Deals with a valuable type of insulation.

Celite Products Co., 1320 South Hope St., Los Angeles.

The Insulation of Boilers. Booklet, 8 pp., 8½ x 11 ins. Illustrated. On insulating boiler walls, breechings, and stacks to reduce amount of radiation.

Heat Insulating Specifications and Blue Prints. Booklet, 20 pp., 8½ x 11 ins. Illustrated. On approved types of insulation.

Philip Carey Co., The, Cincinnati, Ohio.

Carey Asbestos and Magnesia Products. Catalog. 6 x 9 ins. 72 pp. Illustrated.

Celotex Company, The, 645 N. Michigan Ave., Chicago, Ill.

The Hidden Comfort of Costly Homes. Booklet. 8½ x 11 ins. Celotex Specifications. Booklet. 8½ x 11 ins.

JOISTS

Bates Expanded Steel Truss Co., East Chicago, Ind.

Catalog No. 4. Booklet, 32 pp., 8½ x 11 ins. Illustrated. Gives details of truss construction with loading tables and specifications.

Truscon Steel Co., Youngstown, Ohio.

Truscon Steel Joists. Booklet. 8½ x 11 ins. 16 pp. Illustrated with typical buildings and showing details of construction. Tables of sizes and safe loads.

Truscon Steel Joist Buildings. Illustrated 32-page brochure attractively illustrated, showing types of buildings equipped with Truscon Steel Joist.

Strip Steel Joist Construction. 14-page booklet, with illustrations. Reprint of paper presented to Building Officials' Conference, Madison, Wis., 1925, by J. J. Calvin, Secretary, Strip Steel Joist Association.

KITCHEN EQUIPMENT

The International Nickel Company, 67 Wall St., New York, N. Y.

Hotels, Restaurants and Cafeteria Applications of Monel Metal. Booklet. 8½ x 11 ins. 32 pp. Illustrated. Gives types of equipment in which Monel Metal is used, with service data and sources of equipment.

McDougall Company, Frankfort, Ind.

Kitchens for Homes and Apartments. Booklet, 32 pp., 8½ x 11 ins. Illustrated. Views and plans of conveniently equipped kitchens.

File Folder. Service sheets and specifications useful in preparing kitchen layouts.

Domestic Science Kitchen Units. Brochure, 8 pp., 8½ x 11 ins. Illustrated. Deals with flexible line of kitchen equipment.

Pick & Company, Albert, 208 W. Randolph St., Chicago, Ill.

School Cafeteria. Portfolio. 17 x 11 ins. 44 pp. Illustrated. An exhaustive study of the problems of school feeding, with copious illustrations and blue prints. Very valuable to the architect.

School Cafeterias. Booklet. 9 x 6 ins. Illustrated. The design and equipment of school cafeterias with photographs of installation and plans for standardized outfits.

LABORATORY EQUIPMENT

Alberene Stone Co., 153 West 23rd Street, New York City.

Booklet 8¾ x 11¼ ins., 26 pp. Stone for laboratory equipment, shower partitions, stair treads, etc.

Duriron Company, Dayton, Ohio.

Duriron Acid, Alkali and Rust-proof Drain Pipe and Fittings. Booklet, 8½ x 11 ins., 20 pp. Full details regarding a valuable form of piping.

LANTERNS

Todhunter, Arthur, 119 E. 57th St., New York.

Hand Wrought Lanterns. Booklet, 5¼ x 6¼ ins. 20 pp. Illustrated in Black and White. With price list. Lanterns appropriate for exterior and interior use, designed from old models and meeting the requirements of modern lighting.

LATH, METAL AND REINFORCING

Genfire Steel Company, Youngstown, Ohio.

Herringbone Metal Lath Handbook. 8½ x 11 ins. 32 pp. Illustrated. Standard specifications for Cement Stucco on Herringbone. Rigid Metal Lath and interior plastering.

Milwaukee Corrugating Co., Milwaukee, Wis.

The Milcor Manual. Booklet, 8½ x 11 ins. 64 pp. Illustrated. Covers Milcor methods and materials, metal lath, corner beads, steel domes, channels, etc.

National Steel Fabric Co., Pittsburgh.

Better Walls for Better Homes. Brochure. 16 pp. 7¾ x 10¾ ins. Illustrated. Metal lath, particularly for residences.

Steeltex for Floors. Booklet. 24 pp. 8½ x 11 ins. Illustrated. Combined reinforcing and form for concrete or gypsum floors and roofs.

Steeltex Data Sheet No. 1. Folder. 8 pp. 8½ x 11 ins. Illustrated. Steeltex for floors on steel joists with round top chords.

Steeltex Data Sheet No. 2. Folder. 8 pp. 8½ x 11 ins. Illustrated. Steeltex for floors on steel joists with flat top flanges.

Steeltex Data Sheet No. 3. Folder. 8 pp. 8½ x 11 ins. Illustrated. Steeltex for folders on wood joists.

Northwestern Expanded Metal Co., 1234 Old Colony Building, Chicago, Ill.

Northwestern Expanded Metal Products. Booklet, 8½ x 10¾ ins., 20 pp. Fully illustrated, and describes different products of this company, such as Kno-burn metal lath, 20th Century Corrugated. Plasta-saver and longspan lath channels, etc.

Longspan ¾-inch Rib Lath. Folder 4 pp., 8½ x 11 ins. Illustrated. Deals with a new type of V-rit expanded metal.

A. I. A. Sample Book. Bound volume, 8½ x 11 ins. Contains actual samples of several materials and complete data regarding their use.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 76*

LATH, METAL AND REINFORCING—Continued

Truscon Steel Company, Youngstown, Ohio.
Truscon 1-A Metal Lath. 12-page booklet, 8½ x 11 ins., beautifully printed, with illustrations of details of lath and method of application.
Truscon ¾-inch Hy-Rib for Roofs, Floors and Walls. Booklet, ½ x 11 ins., illustrating Truscon ¾-inch Hy-Rib as used in industrial buildings. Plates of typical construction. Progressive steps of construction. Specification and load tables.

LAUNDRY CHUTES

The Pfaudler Company, 217 Cutler Building, Rochester, N. Y.
Pfaudler Glass-Lined Steel Laundry Chutes. Booklet, 5⅛ x 7⅜ ins. 16 pp. Illustrated. A beautifully printed brochure describing in detail with architects' specifications THE PFAUDLER GLASS LINED STEEL LAUNDRY CHUTES. Contains views of installations and list of representative examples.

LAUNDRY MACHINERY

American Laundry Machinery Co., Norwood Station, Cincinnati, Ohio.
Functions of the Hotel and Hospital Laundry. Brochure, 8 pp., 8½ x 11 ins. Valuable data regarding an important subject.

LIBRARY EQUIPMENT

Art Metal Construction Co., Jamestown, N. Y.
Planning the Library for Protection and Service. Brochure, 52 pp. 8½ x 11 ins. Illustrated. Deals with library fittings of different kinds.
Library Bureau Division, Remington Rand, N. Tonawanda, N. Y. Like Stepping into a Story Book. Booklet. 24 pp. 9 x 12 ins. Deals with equipment of Los Angeles Public Library.

LIGHTING EQUIPMENT

The Frink Co., Inc., 24th St. and 10th Ave., New York City.
Catalog 415, 8½ x 11 ins. 46 pp. Photographs and scaled cross-sections. Specialized bank lighting, screen and partition reflectors, double and single desk reflectors and Polaralite Signs.
Gleason-Tiebout Glass Co. (Celestialite Division), 200 Fifth Avenue, New York.
Next to Daylight Brochure, 19 pp., 4 x 8½ ins. Illustrated. Deals with a valuable type of lighting fixture.
Celestialite Circular No. 40. Folder, 4 pp., 3½ x 6 ins. "What Nature does to the Sun, Celestialite does to the Mazda lamp."
Attractive Units in Celestialite. Folder, 12 pp., 3¼ x 6½ ins. Illustrates Decoratd Celestialite Units.
It Has Been Imitated. Folder, 4 pp., 10 x 13 ins. Data on an important detail of lighting equipment.
Smyser-Royer Co., 1700 Walnut Street, Philadelphia.
Catalog "J" on Exterior Lighting Fixtures. Brochure, illustrated, giving data on over 300 designs of standards, lanterns and brackets of bronze or cast iron.

MAIL CHUTES

Cutler Mail Chute Company, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. 4 x 9¼ ins. 8 pp. Illustrated.

MANTELS

Arthur Todhunter, 119 E. 57th St., New York, N. Y.
Georgian Mantels. New Booklet. 24 pp., 5¼ x 6¼ ins. A fully illustrated brochure on eighteenth century mantels. Folders give prices of mantels and illustrations and prices of fireplace equipment.

MARBLE

The Georgia Marble Company, Tate, Ga. New York Office, 1328 Broadway.
Why Georgia Marble is Better. Booklet. 3⅜ x 6 ins. Gives analysis, physical qualities, comparison of absorption with granite, opinions of authorities, etc.
Convincing Proof. 3⅜ x 6 in. 8 pp. Classified list of buildings and memorials in which Georgia Marble has been used, with names of Architects and Sculptors.

METALS

The International Nickel Company, 67 Wall St., New York, N. Y.
The Choice of a Metal. Booklet, 6¼ x 3 ins. 166 pp. Illustrated. Monel Metal—its qualities, use and commercial forms, briefly described.

MILL WORK—See also Wood

Curtis Companies Service Bureau, Clinton, Iowa.
Architectural Interior and Exterior Woodwork. Standardized Book. 9 x 11½ ins. 240 pp. Illustrated. This is an Architects' Edition of the complete catalog of Curtis Woodwork, as designed by Trowbridge & Ackerman. Contains many color plates.
Better Built Homes. Vols. XV-XVIII incl. Booklet. 9 x 12 ins. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects for the Curtis Companies.
Curtis Details. Booklet, 19½ x 23½ ins. 20 pp. Illustrated Complete details of all items of Curtis woodwork, for the use of architects.
Hartmann-Sanders Company, 2155 Elston Ave., Chicago, Ill.
Column Catalog, 7½ x 10 in. 48 pp. Illustrated. Contains prices on columns 6 to 36 ins. diameter, various designs and illustrations of columns and installations.
The Pergola Catalog. 7½ x 10 ins. 64 pp. Illustrated. Contains illustrations of pergola lattices, garden furniture in wood and cement, garden accessories.
Roddis Lumber and Veneer Co., Marshfield, Wis.
Roddis Doors. Brochure, 24 pp., 5¼ x 8½ ins. Illustrated price list of doors for various types of buildings.
Roddis Doors, Catalog G. Booklet, 183 pp., 8½ x 11 ins. Completely covers the subject of doors for interior use.
Roddis Doors for Hospitals. Brochure, 15 pp., 8½ x 11 ins. Illustrated work on hospital doors.
Roddis Doors for Hotels. Brochure, 15 pp., 8½ x 11 ins. Illustrated work on doors for hotel and apartment buildings.

MORTAR COLORS

Clinton Metallic Paint Co., Clinton, N. Y.
Clinton Mortar Colors. Folder. 8½ x 11 ins. 4 pp. Illustrated in color, gives full information concerning Clinton Mortar Colors with specific instructions for using them.
Color Card. 6½ x 3¼ ins. Illustrates in color the ten shades in which Clinton Mortar Colors are manufactured.
Something new in Stucco. Folder, 3½ x 6 ins. An interesting folder on the use of coloring matter for stucco-coated walls.

ORNAMENTAL PLASTER

Jacobson & Co., 241 East 44th St., New York.
A book of Old English Designs. Brochure. 47 plates. 12 x 9 ins. Deals with a fine line of decorative plaster work.
Architectural and Decorative Ornaments. Cloth bound volume. 183 plates. 9 x 12 ins. 18 plates. Price, $3.00 A general catalog of fine plaster ornaments.
Geometrical ceilings. Booklet. 23 plates. 7 x 9 ins. Are important work on decorative plaster ceilings.

PAINTS, STAINS, VARNISHES AND WOOD FINISHES

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Creosote Stains. Booklet. 4 x 8½ ins. 16 pp. Illustrated.
National Lead Company, 111 Broadway, New York, N. Y.
Handy Book on Painting. Book, 5½ x 3¼ in. 100 pp. Gives directions and formulae for painting various surfaces of wood, plaster, metals, etc., both interior and exterior.
Red Lead in Paste Form. Booklet, 6¼ x 3½ in. 16 pp. Illustrated. Directions and formulae for painting metals.
Came Lead. Booklet, 8¾ x 6 in. 12 pp. Illustrated. Describes various styles of lead cames.
Cinch Anchoring Specialties. Booklet. 6 x 3½ ins. 20 pp. Illustrated. Describes complete line of expansion bolts.
Pratt & Lambert, Inc., Buffalo, N. Y.
Specification Manual for Paint, Varnishing and Enameling. Booklet, 38 pp., 7½ x 10⅝ ins. Complete specifications for painting, varnishing and enameling interior and exterior wood, plaster, and metal work.
Sherwin-Williams Company, 601 Canal Rd., Cleveland, Ohio.
Painting Concrete and Stucco Surfaces. Bulletin No. 1. 8½ x 11 ins. 8 pp. Illustrated. A complete treatise with complete specifications on the subject of Painting of Concrete and Stucco Surfaces. Color chips of paint shown in bulletin.
Enamel Finish for Interior and Exterior Surfaces. Bulletin No. 2, 8½ x 11 ins. 12 pp. Illustrated. Thorough discussion, including complete specifications for securing the most satisfactory enamel finish on interior and exterior walls and trim. Painting and Decorating of Interior Walls. Bulletin No. 3. 8½ x 11 ins. 20 pp. Illustrated. An excellent reference book on Flat Wall Finish, including texture effects, which are taking the country by storm. Every architect should have one on file.
Protective Paints for Metal Surfaces. Bulletin No. 4. 8½ x 11 in. 12 pp. Illustrated. A highly technical subject treated in a simple, understandable manner.
Sonneborn Sons, Inc., L., Dept. 4, 116 Fifth Ave., New York. Paint Specifications. Booklet, 8½ x 10¾ ins. 4 pp.
U. S. Gutta Percha Paint Co., Providence, R. I.
Barreled Sunlight. Booklet, 8½ x 11 in. Data on "Barreled Sunlight" with specifications for its use.
Valentine & Co., 456 Fourth Ave., New York.
How to Use Valspar. Illustrated booklet, 32 pp., 3¾ x 8 ins. Deals with domestic uses for Valspar.
How to Keep Your House Young. Illustrated brochure, 23 pp., 7 x 8½ ins. A useful work on the upkeep of residences.
Zapon Co., The, 247 Park Ave., New York City.
Zapon Architectural Specifications. Booklet, 28 pp., 8½ x 11 ins. Describes odorless brushing and spraying lacquers and lacquer enamels.

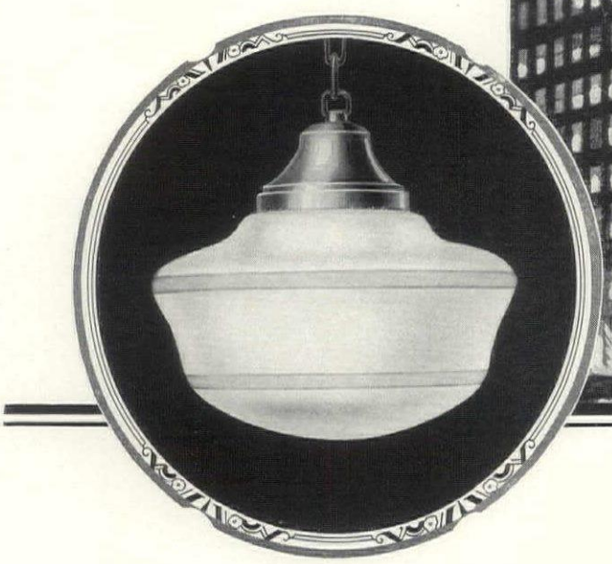
PAPER

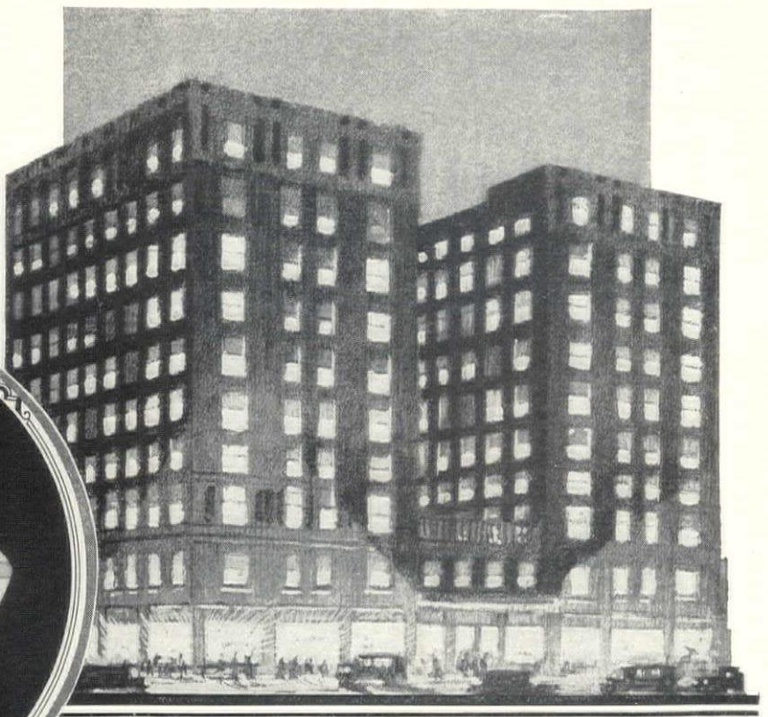
A. P. W. Paper Co., Albany, N .Y.
"Here's a Towel Built for Its Job." Folder, 8 pp., 4 x 9 ins. Deals with "Onliwon" paper towels.

PARTITIONS

Circle A Products Corporation, New Castle, Ind.
Circle A Partitions Sectional and Movable. Brochure. Illustrated. 8½ x 11¼ ins. 32 pp. Full data regarding an important line of partitions, along with Erection Instructions for partitions of three different types.
Hauserman Company, E. F., Cleveland, Ohio.
Hollow Steel Standard Partitions. Various folders, 8½ x 11 ins. Illustrated. Give full data on different types of steel partitions, together with details, elevations and specifications.
Improved Office Partition Company, 25 Grand St., Elmhurst, L. I.
Telesco Partition. Catalog. 8¼ x 11 ins. 14 pp. Illustrated. Shows typical offices laid out with Telesco partitions, cuts of finished partition units in various woods. Gives specifications and cuts of buildings using Telesco.
Detailed Instructions for erecting Telesco Partitions. Booklet. 24 pp. 8½ x 11 ins. Illustrated. Complete instructions, with cuts and drawings, showing how easily Telesco Partition can be erected.
Richards-Wilcox Mfg. Co., Aurora, Ill.
Partitions. Booklet. 7 x 10 ins. 32 pp. Illustrated. Describes complete line of track and hangers for all styles of sliding parallel, accordion and flush door partitions.
U. S. Gypsum Co., Chicago.
Pyrobar Partition and Furring Tile. Booklet. 8½ x 11 ins. 24 pp. Illustrated. Describes use and advantages of hollow tile for inner partitions.

The Shadow Chasers





Hotel Lowry, St. Paul, Minn., Lambert Bassindale, Architect. Equipped with Monax Globes furnished by the Minnesota Chandelier Company. Monax Globe No. 5295 D-56 with Brown tracings, used in the Hotel Lowry.

Ideal for Hotel Lighting

"LIGHT—plenty of it, but well diffused and free from glare and sharp shadow," specified the architect of the new Lowry Hotel, St. Paul, Minnesota. And so Monax Globes were installed.

Guests of the new hotel found it ample, yet restful to the most sensitive eyes. Reaching far into remote corners, destroying shadows and chasing gloom, Monax Light illuminated corridors and rooms with its golden flood. Yet so perfect was the diffusion, that harsh glare was entirely absent.

Monax Globes are ideal for hotel lighting because they are practical as well as artistic and efficient. They collect no dust and are easily cleaned. They are economical of wattage because they absorb so little light.

Architects and building managers are urged to avail themselves of counsel in designing and installing lighting systems offered by the Macbeth Illuminating Engineers. There is no charge for the service. Macbeth-Evans Glass Company, Department J, Charleroi, Pa.

MONAX GLOBES
for Better Lighting

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 78*

PIPE

American Brass Company, Waterbury, Conn.
Bulletin B-1. Brass Pipe for Water Service. 8½ x 11 ins. 28 pp. Illustrated. Gives schedule of weights and sizes (I.P.S.) of seamless brass and copper pipe, shows typical installations of brass pipe, and gives general discussion of the corrosive effect of water on iron, steel and brass pipe.

American Rolling Mill Company, Middletown, Ohio.
How ARMCO Dredging Products Cut Costs. Booklet, 16 pp., 6 x 9 ins. Data on dredging pipe.

Clow & Sons, James B., 534 S. Franklin St., Chicago, Ill.
Catalog "A." 4 x 16½ ins. 700 pp. Illustrated. Shows a full line of steam, gas and water works supplies.

Cohoes Rolling Mill Company, Cohoes, N. Y.
Cohoes Pipe Handbook. Booklet, 40 pp., 5 x 7½ ins. Data on wrought iron pipe.

Duriron Company, Inc., Dayton, Ohio.
Duriro Acid, Alkali, Rust-proof Drain Pipe and Fillings. Booklet, 20 pp., 8½ x 11 ins., Illustrated. Important data on a valuable line of pipe.

National Tube Co., Frick Building, Pittsburgh, Pa.
"National" Bulletin No. 2. Corrosion of Hot Water Pipe, 8½ x 11 ins. 24 pp. Illustrated. In this bulletin is summed up the most important research dealing with hot water systems. The text matter consists of seven investigations by authorities on this subject.
"National" Bulletin No. 3. The Protection of Pipe Against Internal Corrosion, 8½ x 11 ins. 20 pp. Illustrated. Discusses various causes of corrosion, and details are given of the deactivating and deaerating systems for eliminating or retarding corrosion in hot water supply lines.
"National" Bulletin No. 25. "National" Pipe in Large Buildings. 8½ x 11 ins. 88 pp. This bulletin contains 254 illustrations of prominent buildings of all types, containing "National" Pipe, and considerable engineering data of value to architects, engineers, etc.
Modern Welded Pipe. Book of 88 pp. 8½ x 11 ins., profusely illustrated with halftone and line engravings of the important operations in the manufacture of pipe.

PLASTER

Best Bros. Keene's Cement Co., Medicine Lodge, Kans.
Information Book. Brochure, 24 pp., 5 x 9 ins. Lists grades of plaster manufactured; gives specifications and uses for plaster.
Plasterers' Handbook. Booklet, 16 pp., 3½ x 5½ ins. A small manual for use of plasterers.
Interior Walls Everlasting. Brochure, 20 pp., 6¼ x 9¼ ins. Illustrated. Describes origin of Keene's Cement and views of buildings in which it is used.

PLUMBING EQUIPMENT

C. F. Church Mfg. Co., Holyoke, Mass.
Catalog S. W.-3. Booklet, 95 pp., 7¾ x 10½ ins. Illustrated. Data on Sani-White and Sani-Black toilet seats.

Clow & Sons, James B., 534 S. Franklin St., Chicago, Ill.
Catalog "M." 9¼ x 12 ins. 184 pp. Illustrated. Shows complete line of plumbing fixtures for Schools, Railroads and Industrial Plants.

Crane Company, 836 S. Michigan Ave., Chicago, Ill.
Plumbing Suggestions for Home Builders. Catalog. 3 x 6 ins. 80 pp. Illustrated.
Plumbing Suggestions for Industrial Plants. Catalog. 4 x 6½ ins. 34 pp. Illustrated.
Planning the Small Bathroom. Booklet. 5 x 8 ins. Discusses planning bathrooms of small dimensions.

Duriron Company, Dayton, Ohio.
Duriron Acid, Alkali and Rust-Proof Drain Pipe and Fittings. Booklet, 8½ x 11 ins., 20 pp. Full details regarding a valuable form of piping.

Eljer Company, Ford City, Pa.
Complete Catalog. 3¾ x 6¾ ins. 104 pp. Illustrated. Describes fully the complete Eljer line of standardized vitreous china plumbing fixtures, with diagrams, weights and measurements.

Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill.
Watrous Patent Flush Valves, Duojet Water Closets, Liquid Soap Fixtures, etc. 8½ x 11 ins., 136 pp., loose-leaf catalog, showing roughing-in measurements, etc.

Maddock's Sons Company, Thomas, Trenton, N. J.
Catalog "K." 10⅞ x 7⅞ ins. 242 pp. Illustrated. Complete data on vitreous china plumbing fixtures with brief history of Sanitary Pottery.

Speakman Company, Wilmington, Del.
Speakman Showers and Fixtures. Catalog. 4½ x 7½ ins. 250 pp. Illustrated. Catalog of Modern Showers and Brass Plumbing Fixtures, with drawings showing layouts, measurements, etc.
Toned Up in Ten Minutes. Booklet. 7½ x 10½ ins. 16 pp. Illustrated. Modern Showers and Washups for Industrial Plants, showing the sanitary method of washing in running water.

PUMPS

Chicago Pump Company, 2300 Wolfram St., Chicago, Ill.
The Correct Pump to Use. Portfolio containing handy data. Individual bulletins, 8½ x 11 ins., on bilge, sewage, condensation, circulating, house, boiler feed and fire pumps.

Kewanee Private Utilities Co., 442 Franklin St. Kewanee, Ill.
Bulletin E. 7¾ x 10¼ ins. 32 pp. Illustrated. Catalog. Complete descriptions, with all necessary data, on Standard Service Pumps, Indian Brand Pneumatic Tanks, and Complete Water Systems, as installed by Kewanee Private Utilities Co.

RAMPS

Ramp Buildings Corporation, 21 East 40th St., New York.
Building Garages for Profitable Operation. Booklet. 8½ x 11 ins. 16 pp. Illustrated. Discusses the need for modern mid-city parking garages, and describes the d'Humy Motoramp system of design, on the basis of its superior space economy and features of operating convenience. Gives cost analyses of garages of different sizes, and calculates probable earnings.
Garage Design Data. Series of informal bulletins issued in loose-leaf form, with monthly supplements.

The Trane Co., LaCrosse, Wis.
Trane Small Centrifugal Pumps. Booklet. 3¾ x 8 ins. 16 pp. Complete data on an important type of pump.

REFRIGERATION

The Fulton Syphon Company, Knoxville, Tenn.
Temperature Control of Refrigeration Systems. Booklet, 8 pp., 8½ x 11 ins. Illustrated. Deals with cold storage, chilling of water, etc.

REFRIGERATORS

Lorillard Refrigerator Company, Kingston, N. Y.
Lorillard Refrigerators, for hotels, restaurants, hospitals and clubs. Brochure, 43 pp. 8 x 10 ins. Illustrated. Data on fine line of refrigerators.

REINFORCED CONCRETE—See also Construction, Concrete

Genfire Steel Company, Youngstown, Ohio.
Self-Centering Handbook. 8½ x 11 ins. 36 pp. Illustrated. Methods and specifications on reinforced concrete floors, roofs and floors with a combined form and reinforced material.

Truscon Steel Company, Youngstown, Ohio.
Shearing Stresses in Reinforced Concrete Beams. Booklet. 8½ x 11 ins. 12 pp.

North Western Expanded Metal Company, Chicago, Ill.
Designing Data. Book. 6 x 9 ins. 96 pp. Illustrated. Covers the use of Econo Expanded Metal for various types of reinforced concrete construction.
Longspan ¾-inch Rib Lath. Folder 4 pp., 8½ x 11 ins. Illustrated. Deals with a new type of V-rit expanded metal.

ROOFING

Barber Asphalt Co., Philadelphia, Pa.
Specifications, Genasco Standard Trinidad Lake Asphalt Built-up Roofing. Booklet. 8 x 10½ ins. Gives specifications for use of several valuable roofing and waterproofing materials.

The Barrett Company, 40 Rector St., New York City.
Architects' and Engineers' Built-up Roofing Reference Series; Volume IV Roof Drainage System. Brochure. 63 pp. 8½ x 11¼ ins. Gives complete data and specifications for many details of roofing.

Philip Carey Co., Lockland, Cincinnati, Ohio.
Architects Specifications for Carey Built-up Roofing. Booklet. 8 x 10¾ ins. 24 pp. Illustrated. Complete data to aid in specifying the different types of built-up roofing to suit the kind of roof construction to be covered.
Carey Built-up Roofing for Modern School Buildings. Booklet. 8 x 10¾ ins. 32 pp. Illustrated. A study of school buildings of a number of different kinds and the roofing materials adapted for each.

Heinz Roofing Tile Co., 1750 Champa St., Denver.
Plymouth-Shingle Tile with Sprocket Hips. Leaflet, 8½ x 11 ins. Illustrated. Shows use of English shingle tile with special hips.
Italian Promenade Floor Tile. Folder, 2 pp., 8 ½ x 11 ins. Illustrated. Floor tiling adapted from that of Davanzati Palace.
Mission Tile. Leaflet, 8½ x 11 ins. Illustrated. Tile such as are used in Italy and southern California.
Georgian Tile. Leaflet, 8½ x 11 ins. Illustrated. Tiling as used in old English and French farmhouses.

Ludowici-Celadon Company, 104 So. Michigan Ave., Chicago, Ill.
"Ancient" Tapered Mission Tiles. Leaflet. 8½ x 11 ins. 4 pp. Illustrated. For architects who desire something out of the ordinary, this leaflet has been prepared. Describes briefly the "Ancient" Tapered Mission Tiles, hand-made with full corners and designed to be applied with irregular exposures.

Milwaukee Corrugating Co., Milwaukee, Wis.
The Milcor Architectural Sheet Metal Guide. Booklet. 8½ x 11 ins. 64 pp. Illustrated. Gives valuable technical sheet metal data.

U. S. Gypsum Co., Chicago.
Pyrobar Roof Construction. Booklet. 8 x 11 ins. 48 pp. Illustrated. Gives valuable data on the use of tile in roof construction.
Sheetrock Pyrofill Roof Construction. Folder. 8½ x 11 ins. Illustrated. Covers use of roof surfacing which is poured in place.

SASH CHAIN

Smith & Egge Mfg. Co., The, Bridgeport, Conn.
Chain Catalog. 6 x 8½ ins. 24 pp. Illustrated. Covers complete line of chains.

SEWAGE DISPOSAL

Kewanee Private Utilities, 442 Franklin St., Kewanee, Ill.
Specification Sheets. 7¾ x 10¼ ins. 40 pp. Illustrated. Detailed drawings and specifications covering water supply and sewage disposal systems.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 80*

SCREENS

American Brass Co., The., Waterbury, Conn.
Facts for Architects About Screening. Illustrated folder, 9½ x 11¾ ins., giving actual samples of metal screen cloth and data on fly screens and screen doors.

Athey Company, 6015 West 65th St., Chicago, Ill.
The Athey Perennial Window Shade. An accordion pleated window shade, made from translucent Herringbone woven Coutil cloth, which raises from the bottom and lowers from the top. It eliminates awnings, affords ventilation, can be dry-cleaned and will wear indefinitely.

The Higgin Manufacturing Co., Newport, Ky.
Your Home Screened the Higgin Way. Booklet. 8½ x 11½ ins. 13 pp. Illustrated in colors. Complete description of Higgin Screens, designed to meet every need.

SHELVING-STEEL

David Lupton's Sons Company, Philadelphia, Pa.
Lupton Steel Shelving. Catalog D. Illustrated brochure, 40 pp., 8⅝ x 11 ins. Deals with steel cabinets, shelving, racks, doors, partitions, etc.

SKYLIGHTS

Albert Grauer & Co., 1408 Seventeenth St., Detroit, Mich.
Grauer Wire Glass Skylights. Folder, 4 pp., 8½ x 11 ins. Illustrated. Data on an important line of wire glass lights.
The Effectiveness of Sidewalk Lights. Folder, 4 pp., 8½ x 11 ins. Illustrated. Sidewalk or vault lights.
Let in the Light—The Light That's Free. Folder, 4 pp., 8½ x 11 ins. Illustrated. Data on securing good lighting.

SOUND DEADENER

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Deadening Quilt. Brochure, 7½ x 10½ ins., 28 pp. Illustrated. Gives complete data regarding a well-known protection against sound.

STAIRWAYS

Woodbridge Ornamental Iron Co., 1515 Altgeld St., Chicago.
Presteel Tested for Strength—stairways, catalog, 92 pp., 8½ x 11 ins. Illustrated. Important data on stairways.

STEEL PRODUCTS FOR BUILDING

Genfire Steel Company, Youngstown, Ohio.
Herringbone Metal Lath Handbook. 8½ x 11 ins. 32 pp. Illustrated. Standard specifications for Cement Stucco on Herringbone.
Rigid Metal Lath and interior plastering.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
The Arc Welding of Structural Steel. Brochure, 32 pp., 8½ x 11 ins. Illustrated. Deals with an important structural process.

STONE, BUILDING

Indiana Limestone Company, Bedford, Ind.
Volume 3, Series A-3. Standard Specifications for Cut Indiana Limestone work, 8½ x 11 ins. 56 pp. Containing specifications and supplementary data relating to the best methods of specifying and using this stone for all building purposes.
Vol. 1. Series B. Indiana Limestone Library. 6 x 9 ins. 36 pp. Illustrated. Giving general information regarding Indiana Limestone, its physical characteristics, etc.
Vol. 4. Series B. Booklet. New Edition. 8½ x 11 ins. 64 pp. Illustrated. Indiana Limestone as used in Banks.
Volume 5. Series B. Indiana Limestone Library. Portfolio. 11⅛ x 8¾ ins. Illustrated. Describes and illustrates the use of stone for small houses with floor plans of each.
Volume 6, Series B—Indiana Limestone School and College Buildings. 8½ x 11 ins., 80 pages, illustrated.
Volume 12, Series B—Distinctive Homes of Indiana Limestons. 8½ x 11 ins., 48 pages, illustrated.
Old Gothic Random Ashlar. 8½ x 11 ins., 16 pages, Illustrated.

STORE FRONTS

Brasco Manufacturing Co., 5025-35 South Wabash Avenue, Chicago. Ill.
Catalog No. 31. Series 500. All-Copper Construction. Illustrated brochure. 20 pp. 8½ x 11 ins. Deals with store fronts of a high class.
Brasco Copper Store Fronts. Catalog No. 32. Series 202.
Brasco Standard Construction. Illustrated brochure. 16 pp. 8½ x 11 ins. Complete data on an important type of building.
Detail Sheets. Set of seven sheets; printed on tracing paper, showing full sized details and suggestions for store front designing, enclosed in envelope suitable for filing. Folds to 8½ x 11 ins.
Davis Solid Architectural Bronze Sash. Set of five sheets, printed on tracing paper, giving full sized details and suggestions for designing of special bronze store front construction, enclosed in envelope suitable for filing. Folds to 8½ x 11 ins.

STORE FRONTS—Continued

The Kawneer Company, Niles, Mich.
Store Front Suggestions. Booklet, 96 pp., 6 x 8½ ins. Illustrated. Shows different types of Kawneer Solid Copper Store Fronts.
Catalog K. 1927 Edition. Booklet, 32 pp., 8½ x 11 ins. Illustrated. Details of Kawneer Copper Store Fronts.
Detail Sheets for Use in Tracing. Full-sized details on sheets 17 x 22 ins.

Modern Bronze Store Front Co., Chicago Heights, Ill.
Introducing Extruded Bronze Store Front Construction. Folder, 4 pp., 8½ x 11 ins. Illustrated. Contains full sized details of metal store fronts.

Zouri Drawn Metals Company, Chicago Heights, Ill.
Zouri Safety Key-Set Store Front Construction. Catalog. 8½ x 10½ ins. 60 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.
International Store Front Construction. Catalog. 8½ x 10 ins. 70 pp. Illustrated. Complete information with detailed sheets and installation instructions convenient for architects' files.

SWIMMING POOL EQUIPMENT & STERILIZATION

R. U. V. Company, Inc., 383 Madison Ave., New York City.
Water Sterilization by Means of Ultra Violet Rays. Booklet. 8½ x 11 ins. 16 pp. Full data on a system of purifying water.
Swimming Pool Sterilization. Booklet. 8½ x 11 ins. 24 pp. Describes a method of purifying water in bathing pools.

TERRA COTTA

National Terra Cotta Society, 19 West 44th St., New York, N. Y.
Standard Specifications for the Manufacture, Furnishing and Setting of Terra Cotta. Brochure. 8½ x 11 ins. 12 pp. Complete Specification, Glossary of Terms Relating to Terra Cotta and Short Form Specification for incorporating in Architects' Specification.
Color in Architecture. Revised Edition. Permanently bound volume, 9⅛ x 12¼ ins., containing a treatise upon the basic principles of color in architectural design, illustrating early European and modern American examples. Excellent illustrations in color.
Present Day Schools. 8½ x 11 ins. 32 pp. Illustrating 42 examples of school architecture with article upon school building design by James O. Betelle, A. I. A.
Better Banks. 8½ x 11 ins. 32 pp. Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, Architect.

TILE, HOLLOW

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
Standard Wall Construction Bulletin 174. 8½ x 11 ins. 32 pp. Illustrated. A treatise on the subject of hollow tile wall construction.
Standard Fireproofing Bulletin 171. 8½ x 11 ins. 32 pp. Illustrated. A treatise on the subject of hollow tile as used for floors, girder, column and beam covering and similar construction.
Natco Double Shell Load Bearing Tile Bulletin. 8½ x 11 ins. 6 pp. Illustrated.
Natco Uninbacker Tile Bulletin. 8½ x 11 ins. 4 pp. Illustrated.
Natco Header Backer Tile Bulletin. 8½ x 11 ins. 4 pp. Illustrated.
Natcoflor Bulletin. 8½ x 11 ins. 6 pp. Illustrated.
Natco Face Tile for the Up-to-Date. Farm Bulletin. 8½ x 11 ins.

TILES

Kraftile Company, 55 New Montgomery St., San Francisco.
High Fired Faience Tile. Booklet. 32 pp. 8½ x 11 ins. Illustrated. Presents a fine line of tiles for different purposes.

Unites States Quarry Tile Co., Parkersburg, W. Va.
Quarry Tiles for Floors. Booklet, 119 pp., 8½ x 11 ins. Illustrated. General catalog. Details of patterns and trim for floors.
Art Portfolio of Floor Designs. 9¼ x 12¼ ins. Illustrated in colors. Patterns of quarry tiles for floors.

VALVES

Crane Co., 836 S. Michigan Ave., Chicago, Ill.
No. 51. General Catalog. Illustrated. Describes the complete line of the Crane Co.

C. A. Dunham Co., 450 East Ohio St., Chicago.
The Dunham Packless Radiator Valve Brochure, 12 pp., 8 x 11 ins. Illustrated. Data on an important type of valve.

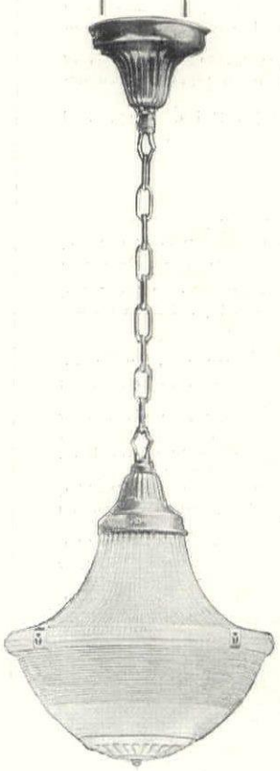
Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.
Catalog. 8½ x 11 ins. 88 pp. Illustrated.

Jenkins Bros., 80 White St., New York.
The Valve Behind a Good Heating System. Booklet. 4½ x 7¼ ins. 16 pp. Color plates. Description of Jenkins Radiator Valves for steam and hot water, and brass valves used as boiler connections.
Jenkins Valves for Plumbing Service. Booklet. 4½ x 7¼ ins. 16 pp. Illustrated. Description of Jenkins Brass Globe, Angle Check and Gate Valves commonly used in home plumbing, and Iron Body Valves used for larger plumbing installations.

PLANNED LIGHTING

for

SCHOOLS



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ADEQUATE artificial lighting must always be available in modern school building for day time as well as for night time use. Natural light fails too often to be relied upon as the only source of illumination.

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Engineering recommendations to meet the *specific requirements* of any school will be made by the Holophane Engineering Department without obligation.

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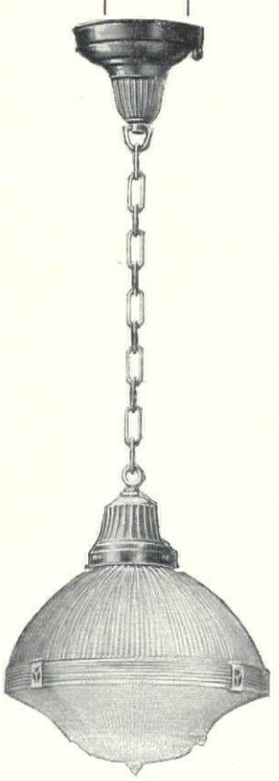
In the Holophane "Light and Vision" Institute, now open at 342 Madison Avenue, New York, the principles of correct lighting are demonstrable. Architects and engineers are cordially invited to call.



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REFRACTOR—
the direct lighting unit that gives more light on the work.

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SELECTED LIST OF MANUFACTURERS' PUBLICATIONS—*Continued from page 82*

VENETIAN BLINDS

Burlington Venetian Blind Co., Burlington, Vt.
Venetian Blinds. Booklet. 7 x 10 ins., 24 pp. Illustrated. Describes the "Burlington" Venetian blinds, method of operation, advantages of installation to obtain perfect control of light in the room.

VENTILATION

American Blower Co., Detroit, Mich.
American H. S. Fans. Brochure, 28 pp., 8½ x 11 ins. Data on an important line of blowers.

Duriron Company, Dayton, Ohio.
Acid-proof Exhaust Fans. Folder. 8 x 10½ ins. 8 pp. Data regarding fans for ventilation of laboratory fume hoods.
Specification Form for Acid-proof Exhaust Fans. Folder, 8 x 10½ ins.

Globe Ventilator Company, 205 River St., Troy, N. Y.
Globe Ventilators Catalog. 6 x 9 ins. 32 pp. Illustrated profusely. Catalog gives complete data on "Globe" ventilators as to sizes, dimensions, gauges of material and table of capacities. It illustrates many different types of buildings on which "Globe" ventilators are in successful service, showing their adaptability to meet varying requirements.

Van Zile Ventilating Corporation, 155 East 42nd St., New York, N. Y.
The Ventadoor Booklet. 6½ x 3½ ins. 16 pp. Illustrated. Describes and illustrates the use of the Ventadoor for Hotels, Clubs, Offices, etc.

WATERPROOFING

Carey Company, The Philip, Lockland, Cincinnati, Ohio.
Waterproofing Specification Book. 8½ x 11 ins. 52 pp.

Genfire Steel Company, Youngstown, Ohio.
Waterproofing Handbook. Booklet. 8½ x 11 ins. 72 pp. Illustrated. Thoroughly covers subject of waterproofing concrete, wood and steel preservatives, dustproofing and hardening concrete floors, and accelerating the setting of concrete. Free distribution.

Master Builders Company, Cleveland, Ohio.
Waterproofing and Dampproofing and Allied Products. Sheets in loose index file, 9 x 12 in. Valuable data on different types of materials for protection against dampness.
Waterproofing and Dampproofing File, 36 pp. Complete descriptions and detailed specifications for materials used in building with concrete.

Sommers & Co., Ltd., 342 Madison Ave., New York City.
"Permantile Liquid Waterproofing" for making concrete and cement mortar permanently impervious to water. Also circulars on floor treatments and cement colors. Complete data and specifications. Sent upon request to architects using business stationery. Circular size, 8½ x 11 ins.

Sonneborn Sons, Inc., L., 116 Fifth Ave., New York, N. Y.
Pamphlet. 3¾ x 8¼ ins. 8 pp. Explanation of waterproofing principles. Specifications for waterproofing walls, floors, swimming pools and treatment of concrete, stucco and mortar.

Toch Brothers, 110 East 42d St., New York City.
Specifications for Dampproofing, Waterproofing, Enameling and Technical Painting. Complete and authoritative directions for use of an important line of materials.

The Vortex Mfg. Co., 1978 West 77th St., Cleveland, Ohio.
Par-Lock Specification "Form D" for waterproofing surfaces to be finished with Portland cement or tile.
Par-Lock Specification "Forms E and G" membrane waterproofing of basements, tunnels, swimming pools, tanks to resist hydrostatic pressure.
Par-Lock Waterproofing. Specification Forms D, E. F and G. Sheets, 8½ x 11 ins. Data on combinations of gun-applied asphalt and cotton or felt membrane, built up to suit requirements.
Par-Lock Method of Bonding Plaster to Structural Surfaces. Folder, 6 pp., 8½ x 11 ins. Official Bulletin of Approved Products,—Investigating Committees of Architects and Engineers.

WEATHER STRIPS

Athey Company, 6035 West 65th St., Chicago.
The Only Weatherstrip with a Cloth to Metal Contact. Booklet, 16 pp., 8½ x 11 ins. Illustrated. Data on an important type of weather stripping.

The Higgin Manufacturing Co., Newport, Ky.
Higgin All-Metal Weather Strips. Booklet. 6 x 9 ins. 21 pp. Illustrated in colors. Describes various types of Higgin Weather Strips for sealing windows and doors against cold and dust.

WINDOWS

The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Silver Windows. In casement and weight-hung types and in drop-down transom type. Portfolio, 12 pp., 9 x 11½ ins. Illustrated, and with demonstrator.

David Lupton's Sons Company, Philadelphia, Pa.
Lupton Pivoted Sash. Catalog 12-A. Booklet, 48 pp., 8⅝ x 11 ins. Illustrates and describes windows suitable for manufacturing buildings.

WINDOWS, CASEMENT

Crittall Casement Window Co., 10951 Hearn Ave., Detroit, Mich.
Catalog No. 22. 9 x 12 ins. 76 pp. Illustrated. Photographs of actual work accompanied by scale details for casements and composite steel windows for banks, office buildings, hospitals and residences.

WINDOWS, CASEMENT—Continued

Genfire Steel Company, Youngstown, Ohio.
G. F. Steel Standard Casement Windows. Booklet, 16 pp., 8½ x 11 ins. Data and architectural details of casements.

Hope & Sons, Henry, 103 Park Ave., New York, N. Y.
Catalog. 12¼ x 18½ ins. 30 pp. Illustrated. Full size details of outward and inward opening casements.

The Kawneer Company, Niles, Mich.
Kawneer Solid Nickel Silver Windows. In casement and weight-hung types and in drop-down transom type. Portfolio, 12 pp., 9 x 11½ ins. Illustrated, and with demonstrator.

David Lupton's Sons Company, Philadelphia, Pa.
Lupton Casement of CopperSteel. Catalog C-122. Booklet, 16 pp., 8⅝ x 11 ins. Illustrated brochure on casements, particularly for residences.

Richards-Wilcox Mfg. Co., Aurora, Ill.
Casement Window Hardware. Booklet, 24 pp., 8½ x 11 ins. Illustrated. Shows typical installations, detail drawings, construction details, blue-prints if desired. Describes AIR-way Multifold Window Hardware.

Truscon Steel Co., Youngstown, Ohio.
Truscon Steel Casements. Booklet. 8½ x 11 ins. 24 pp. Handsomely printed with illustrations of houses equipped with Truscon Casement Windows. Illustrations of various units and combinations. Specifications, types and sizes and details of construction.
Architectural Details. Booklet. 8½ x 11 ins. 16 pp. Tables of specifications and typical details of different types of construction.
List of Parts for Assembly. Booklet. 8½ x 11 ins. 16 pp. Full lists of parts for different units.

WINDOWS, STEEL AND BRONZE

David Lupton's Sons Company, Philadelphia, Pa.
A Rain-shed and Ventilator of Glass and Steel. Pamphlet, 4 pp., 8⅝ x 11 ins. Deals with Pond Continuous Sash. Sawtooth Roofs, etc.
How Windows Can Make Better Homes. Booklet. 3⅞ x 7 ins. 12 pp. An attractive and helpful illustrated publication on use of steel casements for domestic buildings.

Truscon Steel Company, Youngstown, Ohio.
Truscon Mechanical Operators for Steel Windows. Brochure. 8½ x 11 ins. 65 pp. Complete description of various kinds of installations with drawings of details.
Drafting Room Standards. Book. 8½ x 11 ins. 120 pages of mechanical drawings showing drafting room standards, specifications and construction details of Truscon Steel Windows, Steel Lintels, Steel Doors and Mechanical Operators.
Daylighting and Ventilating Power Houses. 32 pp. Booklet. 8½ x 11 ins. Illustrating the economical application of Truscon Windows in modern power house design.
Truscon Solid Steel Double-Hung Windows. 24 pp. Booklet. 8½ x 11 ins. Containing illustrations of buildings using this type of window. Designs and drawings of mechanical details.
Truscon Donovan Awning Type Steel Windows. 12 pp. Booklet. 8½ x 11 ins. Illustrating typical installation and giving construction details.

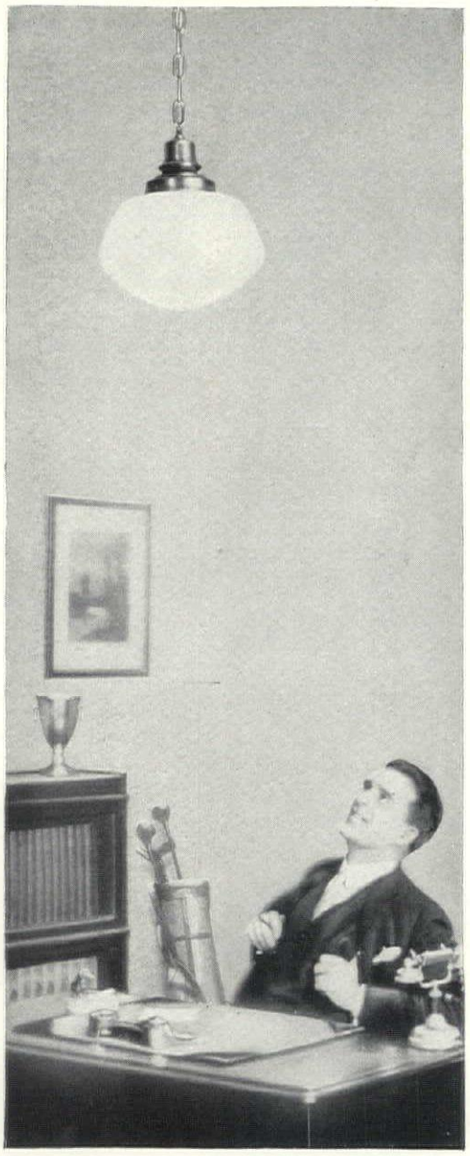
WOOD—See also Millwork

American Walnut Mfrs. Association, 618 So. Michigan Blvd., Chicago, Ill.
American Walnut. Booklet. 7 x 9 ins. 45 pp. Illustrated. A very useful and interesting little book on the use of Walnut in Fine Furniture with illustrations of pieces by the most notable furniture makers from the time of the Renaissance down to the present.
"American Walnut for Interior Woodwork and Paneling." 7 x 9 ins. Pages illustrated. Discusses interior woodwork, giving costs, specifications of a specimen room, the different figures in Walnut wood, Walnut floors, finishes, comparative tests of physical properties and the advantages of American Walnut for woodwork.

Curtis Companies Service Bureau, Clinton, Iowa.
Better Built Homes. Vols. XV-XVIII, inc. Booklet. 9 x 12 ins. 40 pp. Illustrated. Designs for houses of five to eight rooms, respectively, in several authentic types, by Trowbridge & Ackerman, architects, for the Curtis Companies.

Long-Bell Lumber Co., Kansas City, Mo.
The Perfect Floor. Booklet. 5¼ x 7¾ ins. 16 pp. Illustrated. Valuable for the data given on the use of wood for floors.
Saving Home Construction Costs. Booklet, 4½ x 7½ ins. 24 pp. Discusses economy and value in domestic building.
Experiences in Home Building. Booklet. 6 x 9 ins. 16 pp. Records the testimony of a number of builders and contractors as to the value of certain materials.
The Post Everlasting. Booklet. 8 x 11 ins. 32 pp. Illustrated. Describes the production of posts and their use in various ways.

West Coast Lumber Trade Extension Bureau, Seattle, Wash.
"Durable Douglas Fir; America's Permanent Lumber Supply." Booklet, 32 pp., 7 x 11 ins. Illustrated. Complete data on this valuable wood.
"Douglas Fir Wall Hanger." Metal-bound hanger, 31 x 32 ins. An attractive advertisement for Douglas fir.
"Where to Use Douglas Fir in Your Farm." Brochure, 32 pp., 6 x 9 ins. Data on use of this wood for farm buildings.

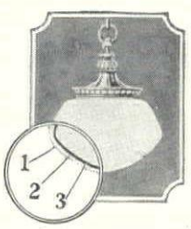


Your instinct will tell you to select CELESTIALITE

WALK into any building using CELESTIALITE. Then go to a place not using CELESTIALITE and notice the very great difference. Compare the soft white rays of CELESTIALITE with any other light. Talk with those using CELESTIALITE and note their opinion. Observe how long they are able to work under CELESTIALITE without incurring eye-strain or brain fatigue. Notice the enhanced attractiveness of the furnishings—then look up at CELESTIALITE itself. It won't hurt your eyes even if you look directly at it. Its three individual layers diffuse and soften the rays so perfectly that the most sensitive eye is not offended.

You'll like CELESTIALITE—like everything about it—*instinctively*—because it's Next-to-Daylight and human eyes love daylight best. The owner will like it, too. He will like its lines, its rays, its rugged strength—and he will appreciate how easily it's cleaned.

Mail coupon for free CELESTIALITE catalog, A.I.A. file and fragment showing three layer construction. Gleason-Tiebout Glass Co., Celestialite Division, 200 Fifth Avenue, New York City.



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Series 61 Casement Stay

OPERATED with only one hand and in the most natural and easy manner imaginable. There is no need to lean out of the window at any time and there are no holes to find, no screws to tighten, no tension to adjust.

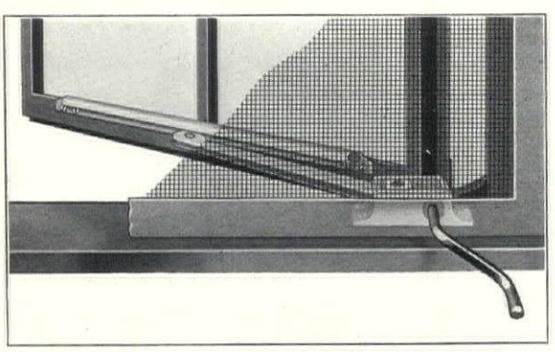
Releasing the finger-piece instantly *locks* the casement in any position automatically and positively so that even a high wind cannot budge the sash.

Win-Dor Series 61 Stays absolutely do away with rattling, banging casements, prevent glass from being broken, eliminate repairs, maintenance and owner liability.

They combine the best features of other types of stays and add several entirely new ones. Yet they cost no more than older types. Recently they have been improved in appearance, material and ease of operation. They come in rust-proof steel with brass channel (on sash) or in all-brass, all standard hardware finishes.

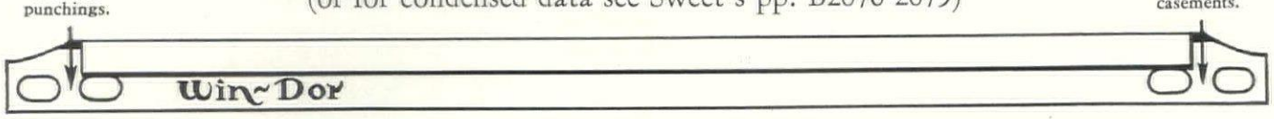
Series 25 Thru-Screen Operator

For casements used with inside screens, this handsome crank-style geared operator should be substituted for the stay. Series 25 Operator controls the casement *through* the screen which need not be opened at all. It works with exceptional ease and speed, four turns being sufficient for 90° opening. Locks automatically and positively in any position. Working parts are bronze which cannot corrode in damp, salt-air climates. *Channel same dimensions and punchings as the stay channel above. Price very reasonable!*



Especially suited to steel casements, Series 61 Stays and Series 25 Operators are applicable to nearly every make. Fenestra and Truscon casements are all standard punched for ready attachment. Readily supplied by most other manufacturers to your specification. Available for wood casements from leading builders' hardware dealers.

Write for new catalog showing full line of improved devices
(or for condensed data see Sweet's pp. B2076-2079)



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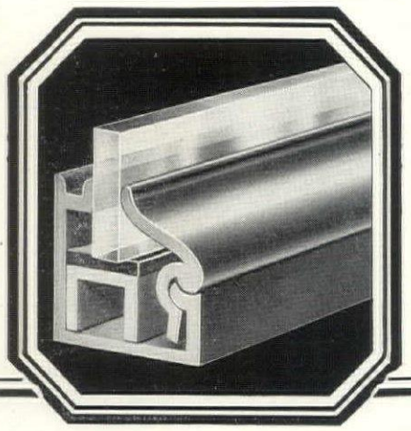
OF DAVIS SOLID BRONZE

In keeping with the artistic details that lend character to the modern business building, hotel or department store, is the handsome framing of bronze that enriches the shop windows.

For the first time there is now available a completely unified system of heavy solid bronze store front construction that anticipates in its unique design, every requirement for perfect service.

Davis sash and bars are built around the distinctive patented fulcrum principle that affords the utmost safety to the plate. The strength of solid bronze assures a life beyond even that of the building. Installation is made simple—every factor an added value—yet all at moderate cost within easy reach.



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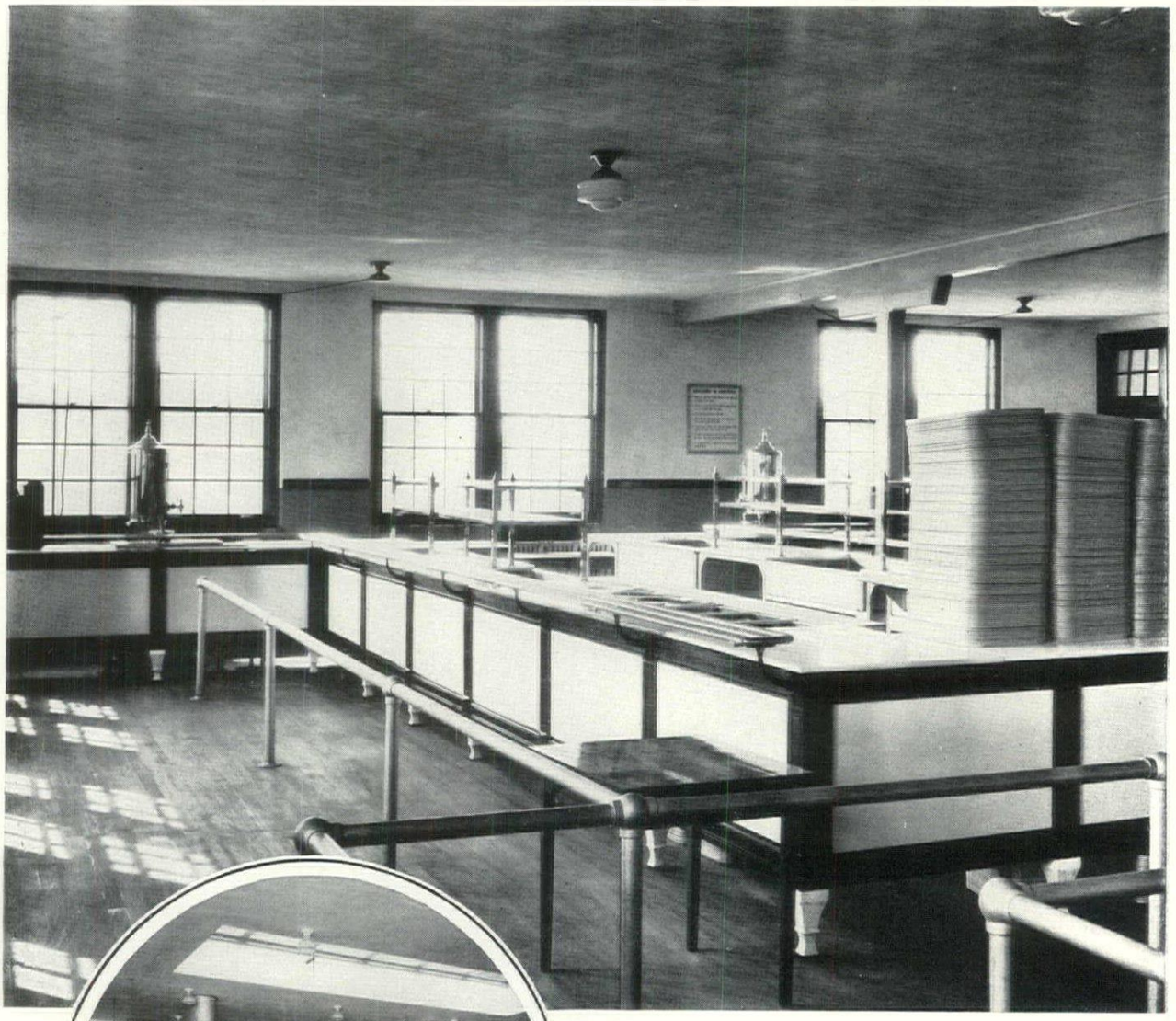
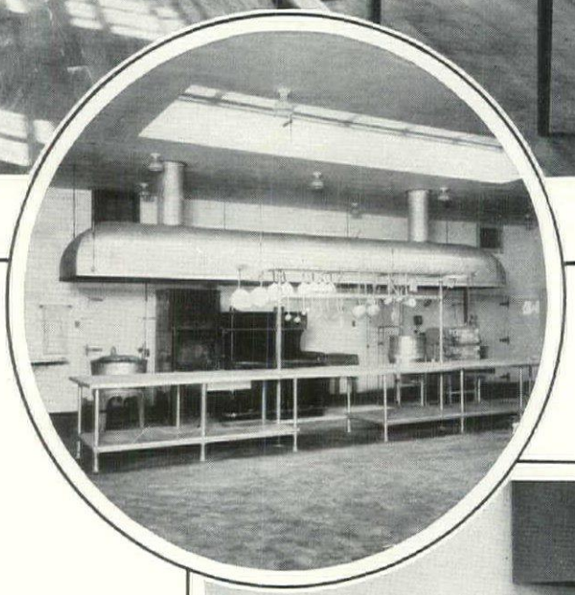
DAVIS

—SOLID— *Architectural* BRONZE

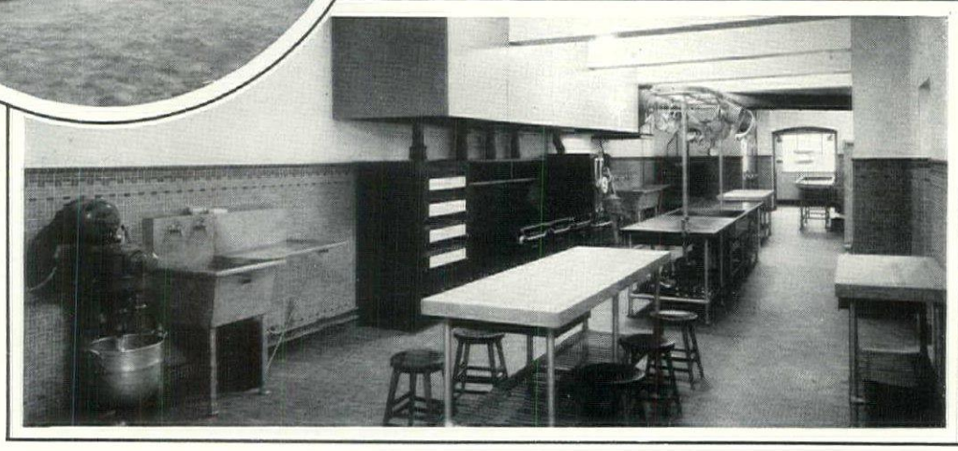
STORE FRONT CONSTRUCTION



A Van Cafeteria in John Gorrie Junior High School,

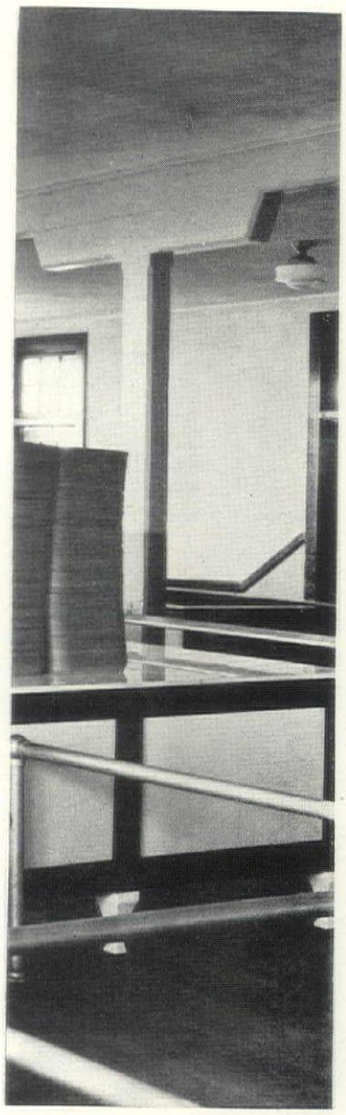


WELL-COOKED *food served in attractive surroundings is the right of every student in every school—and a fundamental principle of modern education.*



ABOVE, *Van Kitchen of the Nazareth Academy, La Grange, Ill.* Right, *the marvelously efficient kitchen of the Wilson Junior High School, Erie, Pa.—a noteworthy Van installation.*

VA



Jacksonville, Fla.

Every School Needs a Van Cafeteria

EDUCATORS AGREE that the school cafeteria is a vital factor in present-day education. Every school must meet the problem of feeding students—whether it is grade school, high, "prep" or college, in rural communities as well as larger cities.

Though the problems confronting the Architect differ with each school, the equipment remains the same. Van Equipment is the national preference, because of its economy (Van Equipment is economical the day it is installed and every day thereafter); for durability (Van Equipment withstands use and abuse); and for dependability (day-after-day, year-after-year service without replacements). And Van Equipment is scaled to meet any budget—indeed, the smaller the appropriation, the greater the need for safeguarding it with a Van Cafeteria.

The Engineers in our organization will gladly discuss your plans with you. Their knowledge is authoritative and up-to-date. To confer with them implies no obligation—we ask no consideration of Van Equipment other than its merit.

PICK-BARTH *Engineers can tell you just the amount of floor space required per student; the ratio of cafeteria space to student enrollment; the most suitable location in the building; the type of service best suited to the school; the best seating arrangement; etc. This is their daily work. Their knowledge and advice are part of* PICK-BARTH *service to you.*

THE ALBERT PICK-BARTH COMPANIES

ALBERT PICK & COMPANY
208-224 W. Randolph St.
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32 Cooper Square
NEW YORK

The JOHN VAN RANGE CO., Cincinnati, Ohio
Manufacturing Division

N EQUIPMENT FOR ECONOMY ∴ DEPENDABILITY ∴ LONG LIFE

THESE WINDOWS MAKE BETTER HOMES

RECENT YEARS have seen a great increase in the use of steel casement windows for homes, and it is interesting to note that this increase has come during a period of quite general improvement in residence architecture.

The slender lines and gracefully proportioned small panes of the steel casement fit in so well with the simple charm which characterizes present-day design that this type of window is now accepted for every style of home.

An eastern home in which Lupton Steel Casements were a wise investment at . . . $380
Haugaard & Burnham, *Archs.*

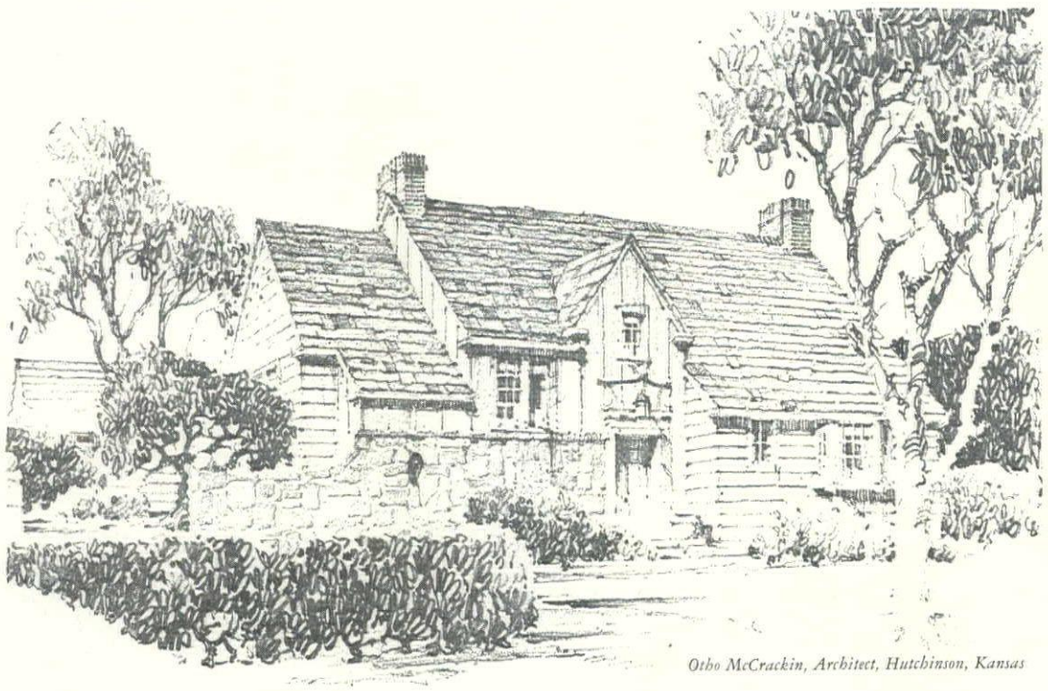
Lupton Residence Casements, in particular, are widely specified by architects because these windows offer, in addition to conventional steel casement beauty, many other practical advantages. Made of heavy one-piece copper-steel sections, butt welded at the corners, Lupton Casements have the strength and rigidity to retain their alignment and weather-tightness throughout years of use. Smooth operation, good hardware and standard tapping to receive many convenient accessories are other features of Lupton Casements which have found universal favor with home designers.

For this home, nicely adapted from French design, the Lupton Windows listed at only . . . $423
Peabody, Wilson & Brown, *Archs.*

Lupton Catalogue C-217 covers all these points in detail. May we send a copy for your files?

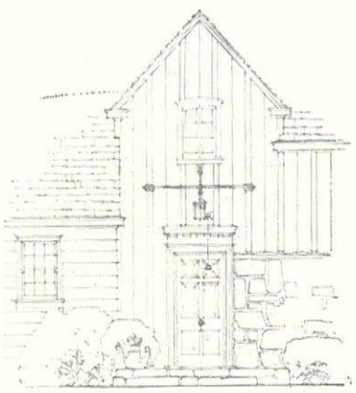
DAVID LUPTON'S SONS CO. *2207 E. Allegheny Avenue, Philadelphia*

Lupton STEEL Windows



Otho McCrackin, Architect, Hutchinson, Kansas

This design developed unusual application of West Coast woods



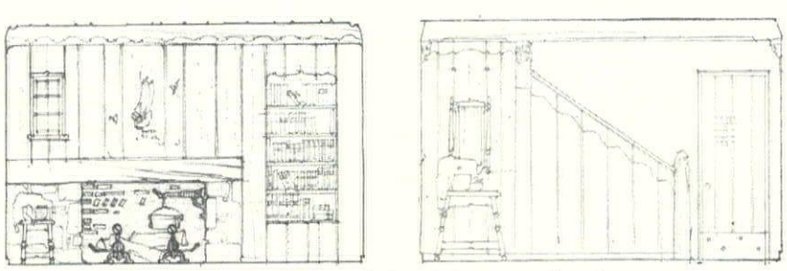
Douglas Fir vertical siding at front entrance is sand-etched and stained weather gray.

J. LISTER HOLMES, A. I. A., professional adviser in the West Coast Woods Architectural Competition, of which this design won first prize, states: "This design is unquestionably in good wood character."

In approaching the West Coast woods competition, the exploitation of Douglas Fir, West Coast Hemlock, Sitka Spruce and Western Red Cedar was an intent. However, other purposes of almost equal value were in mind . . . . to stimulate better character in home design with freedom from standardization and stultified methods . . . that familiarity with wood construction and interesting modes of developing the beauties of these various woods would be made the subject of intensive study.

The American Architect, commenting editorially on the competition, states: "The entire competition in all its aspects seems to have been very much worth while."

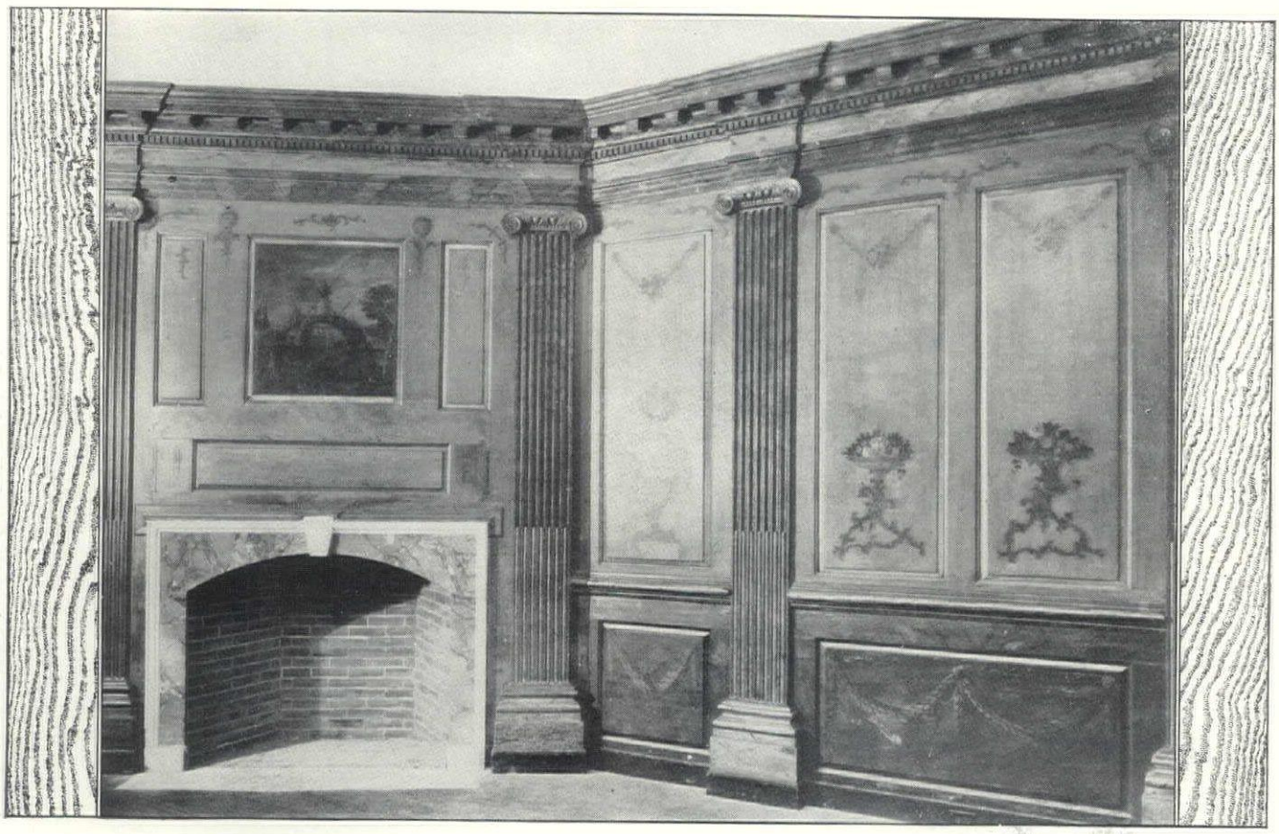
The above, and other prize winning designs, together with a number of the other interesting examples submitted, have been made up into a brochure especially prepared for the architect. We will be glad to send you a copy of this without charge. *Address* West Coast Lumber Bureau, 12B Mt. Hood Building, Longview, Washington.



The interior has a studied and charming informality given by the varied wood boarding at the end of the living room with its sand-etched design over the fireplace and scalloped beams.

Durable **Douglas Fir**
America's Permanent Lumber Supply

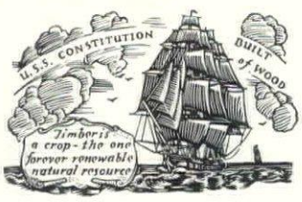
Other West Coast Woods
Sitka Spruce - West Coast Hemlock - Western Red Cedar



FRIENDLINESS

The charming hospitality of Colonial days is reflected in this all-wood room at the Metropolitan

FEW finer examples of classic simplicity of design in wood can be found than the charming XVIIIth Century room from "Marmion," the celebrated Virginia estate of George Lewis, Esq., General Washington's Chief of Staff. As admirably expressed in the above photograph, wood of all materials best lends itself to the creative genius of the architect.



Can human brain conceive more subtle nuance of design than found in nature's own graining? Man's friendship with wood dates back to the dawn of unremembered time. Warm and friendly to the touch, wood presents a depth of tone and harmony of color, making possible the achievement of effects impossible with any other materials.

The delightful room depicted above was selected by the Metropolitan Museum of Art to be displayed in the American Wing. Framing each door and window are fluted pilasters, Ionic capitals, and an entablature of architrave, frieze, and cornice, treated with dentils and modillons, which give it dignity. Two spacious cupboards are cleverly concealed within the panelled walls which extend unbroken from floor to ceilings.

There's plenty of good lumber today... and for posterity... just as in the days when "Marmion" was designed.

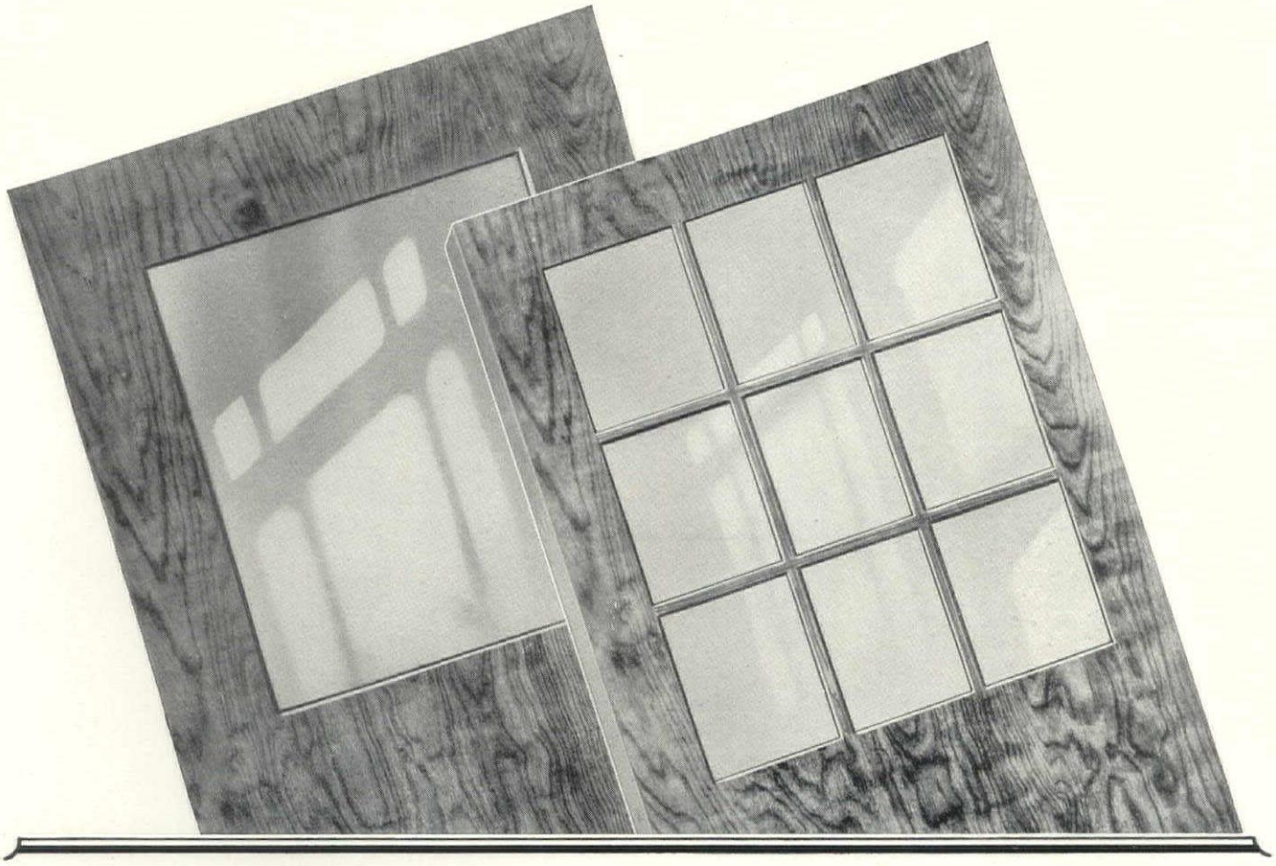
NATIONAL

LUMBER

MANUFACTURERS ASSOCIATION

WASHINGTON, D. C.

AMERICAN STANDARD LUMBER FROM AMERICA'S BEST MILLS



Accepted Everywhere as the Finest

FOR many years Roddis has been famed for doors that are guaranteed against warping, shrinking, swelling and peeling. Cores of softwood strips, welded together with waterproof glue, are covered with crossband and surface veneers. The resultant five layers of wood offer maximum resistance to the passage of noise and flame.

In schools the country over Roddis Doors are known for their high quality and completely satisfactory service. They are carried in stock in a variety of surface veneers. Special veneers are furnished when desired. Numbers or letters may be inlaid in the doors. When solid doors are used, observation openings of any size or shape may be had.

For more than a quarter century, Roddis Doors have meant the finest obtainable in permanence, soundproof qualities and resistance to fire. Yet their cost is reasonable.

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MARSHFIELD, WISCONSIN
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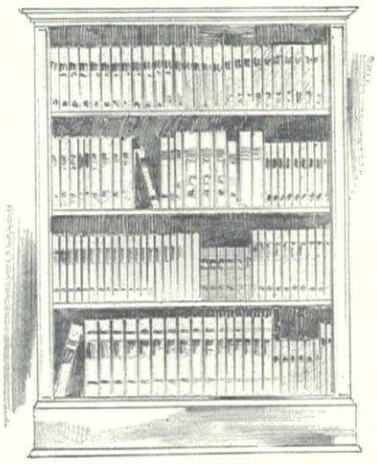
Made by the World's Largest Producer of

FLUSH AND FRENCH DOORS

Reproduction from a painting made on the estate of Charles M. Schwab, Loretto, Pa., by Frank Swift Chase



Curtis Architectural Furniture

Its three-fold possibilities for the architect in residential work

WHAT opportunities has the architect in the average house or apartment of achieving distinctive architectural effects?

So often his work virtually stops with the exterior. If a good facade is produced, with perhaps an interesting entrance, the architect is dismissed. The rest is in the hands of the interior decorator, who is too often only a graduate painter or paper-hanger. His stock in trade is trick wall finishes or bizarre color schemes.

Isn't the architect worth his fee on the interior details of the house, too? Can't he carry out the architectural character of his design on the interior, too?

Many architects do. And without unreasonable expense to their clients, on even the most inexpensive work.

Curtis Cabinetwork enables them to do it.

Here is furniture—permanent furniture—of architectural character and its possibilities for the architect are threefold.

First, it is designed to become a part of the house itself—integral factors in its very construction. Therefore it has a dignity and importance that movable furniture does not possess.

Second, such architectural furniture is of decorative value. It is a part of the furnishings of the interior. The corner cupboard, mantel or bookcase strikes the keynote of the decorative scheme. Is not the architect the proper authority for governing the interior furnishings of his work?

And finally the architect has a personal interest in architectural furniture as the *most visible* expression on the interior of his work. Strip the average house of its rugs, hangings and furniture and what is there to *see?* Architecture unadorned!

Obviously, the living room with open bookshelves, the dining room with corner cupboards or the kitchen with well proportioned cabinets makes the most favorable impression. Since the average house or apartment is delivered—sold or rented—when empty, the value of permanent furniture as a sales or rental feature cannot be overlooked.

Curtis Cabinetwork includes a large number of excellent designs of architectural furniture that are available to every architect east of the Rockies. They were detailed expressly for manufacture by Curtis, in the office of Frederick Lee Ackerman, architect, New York City, and submitted by him for criticism to a score of the leading architects of the country.

They are designed to meet the needs of most residential work in several styles. They are produced in standard woods and sizes and are sold—through Curtis dealers—at amazingly low prices.

Complete information on the line will be gladly supplied. Write

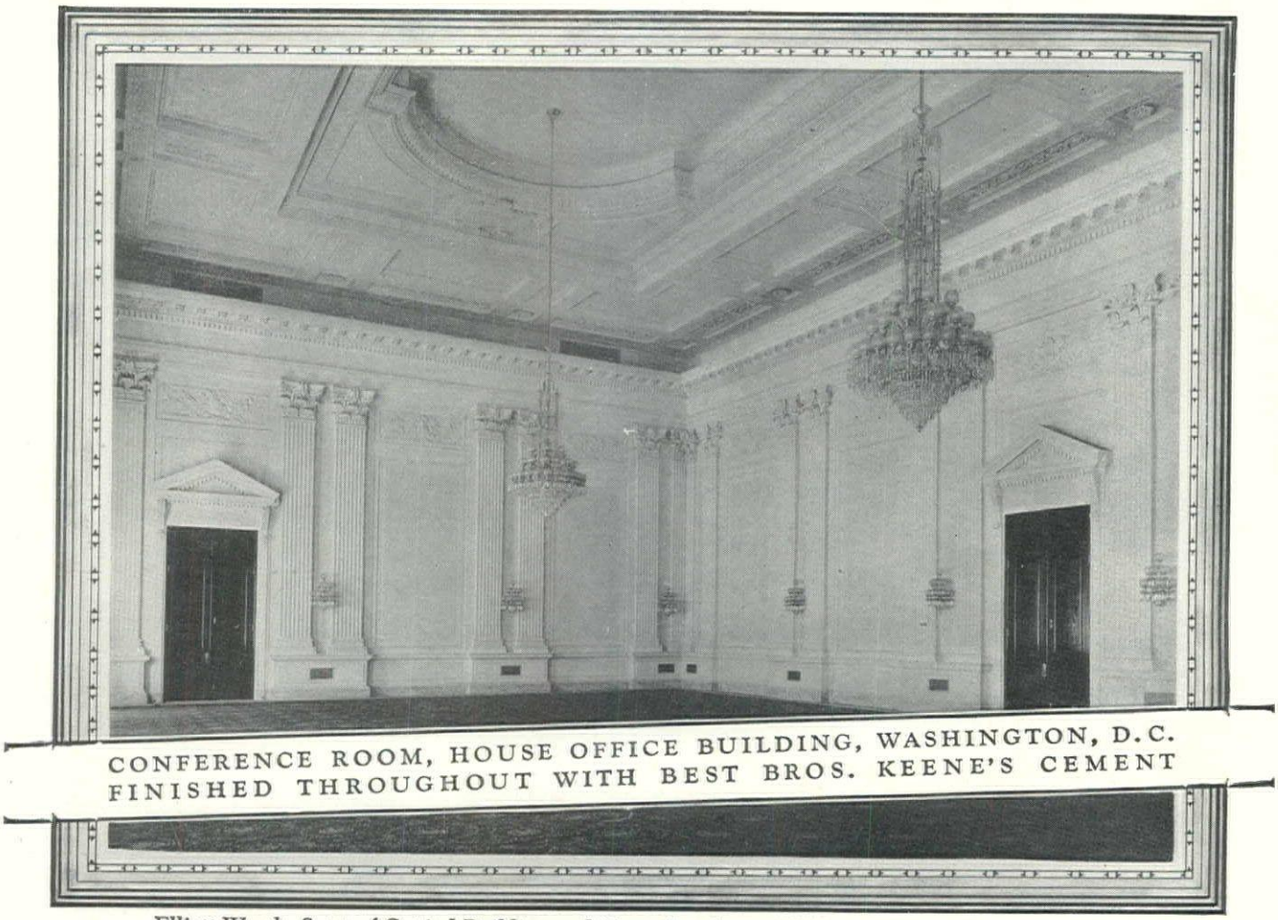
The Curtis Companies Service Bureau
843 Curtis Building, Clinton, Iowa

Representing

Curtis Bros. & Co., Clinton, Iowa; Curtis, Towle & Paine Co., Lincoln, Nebraska; Curtis, Towle & Paine Co., Topeka, Kansas; Curtis Door & Sash Co., Chicago, Illinois; Curtis Detroit Co., Detroit, Michigan; Curtis-Yale-Holland Co., Minneapolis, Minnesota; Curtis & Yale Co., Wausau, Wisconsin; Curtis Sash & Door Co., Sioux City, Iowa.

Curtis Companies Incorporated, Clinton, Iowa
Curtis Woodwork Inc., Display Rooms and Sales Office, Room 201, 9 E. 41st Street, New York City

1866 CURTIS WOODWORK



CONFERENCE ROOM, HOUSE OFFICE BUILDING, WASHINGTON, D.C.
FINISHED THROUGHOUT WITH BEST BROS. KEENE'S CEMENT

Elliott Woods, Supt. of Capitol Building and Grounds—Carrere & Hastings, Consulting Architects

Sound-proof Walls of Stately Beauty

THE Conference Room in the House of Representatives Office Building, Washington, D. C., offers one among many examples of the beauty and utility of walls made with BEST BROS. Keene's Cement. This room of stately beauty has excellent acoustic properties. Its walls, largely because of the cement used, are sound-proof.

More and more attention is now being given by architects, plasterers and contractors to the study of acoustics and sound-proofing. In this work they are finding a real aid in BEST BROS. Keene's Cement. Tests prove conclusively that this gypsum cement absorbs sound waves. We can cite many jobs where it has been a valuable factor in obtaining proper acoustics.

For 39 years BEST BROS. Keene's Cement has been accepted as the standard. It is the pioneer Keene's Cement of America . . . made by an independent company that specializes on this one product. It is your assurance of tough, durable walls . . . beautiful walls . . . walls that win the lasting approval of those who *design* them, those who *build* them, those who *pay* for them!

Write for Further Information . . . We shall be glad to promptly send you literature more fully explaining the merits of BEST BROS. Keene's Cement and facilities for its production.

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GEORGIA MARBLE

FEDERAL RESERVE BANK, DETROIT, MICH., BRANCH OF CHICAGO FEDERAL RESERVE BANK
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

ANOTHER FEDERAL RESERVE BANK

This is the third Federal Reserve Bank to be built of Georgia Marble,—the others are at Cleveland and Atlanta.

Bankers were among the first to recognize the advantage of having distinctive buildings. That Georgia Marble is a popular choice is evidenced by the many banks throughout the country built of this material. A book, "Examples of Bank Work in Georgia Marble," will be sent on request.

THE GEORGIA MARBLE COMPANY · TATE · GEORGIA

New York, 1328 Broadway Atlanta, 511 Bona Allen Bldg. Chicago, 456 Monadnock Bldg.

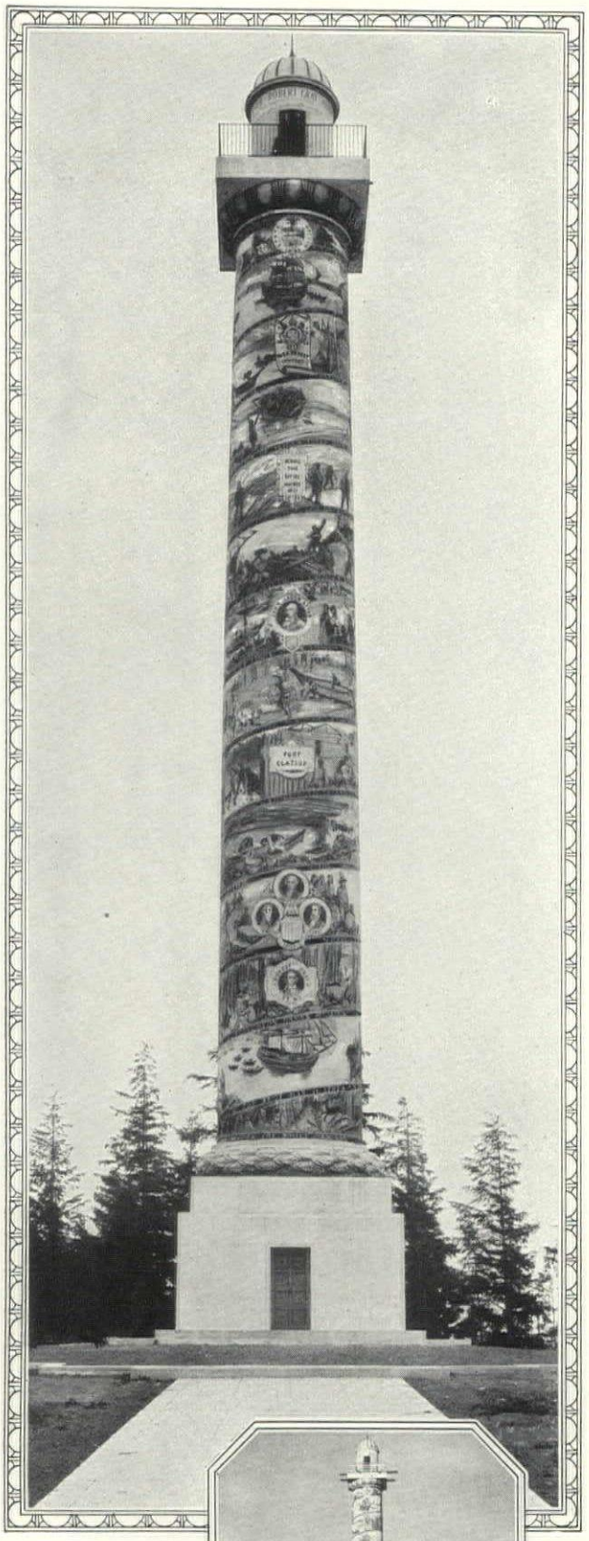


Illustration at right shows sgraffito work partially completed.

An Unusual Monument

Built of Concrete

HIGH on the hill overlooking Astoria, Oregon, and the mouth of the Columbia River stands this exceptional shaft, erected as a memorial to John Jacob Astor, Lewis and Clark and other pioneers who founded our Pacific Northwest.

It is 123 feet high and 15 feet in diameter, constructed of reinforced concrete. An interior spiral stairway leads to the lantern balcony. On the surface of the shaft is a 10-foot spiral band with a sgraffito pictorial depicting historical scenes of the district.

The ornamental and colorful effects of the sgraffito process were attained by first superimposing several thin layers of concrete of different tints upon the surface of the shaft, then cutting through to the correct depth to complete the design in the desired colorings. Thus a striking relief effect in permanent colorings was achieved.

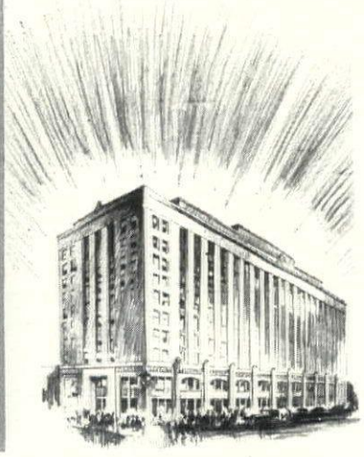
The monument was designed by Electus Litchfield of New York and was built by A. Guthrie and Company of Portland under the supervision of engineers of the Great Northern Railway Company.

PORTLAND CEMENT ASSOCIATION
CHICAGO

PORTLAND CEMENT
CONCRETE
for permanence

THE NEW RENAISSANCE IN METAL WORKING

The main lobby of the Chattanooga Savings and Trust Company, Chattanooga, Tenn. R. H. Hunt Co., Architects. Here Art Metal — counter screen, railings, gates, check desks and waste baskets — has fitted in gracefully with the architect's design.



EQUIPMENT EXPERIENCE —HELPFUL IN PLANS —ACCURATE IN EXECUTION

That's why the architects of this million-dollar building chose Art Metal as best qualified to meet these highly specialized equipment needs

YOUR experience in design—Art Metal's experience in execution—that's the best combination to produce special metal equipment for practical uses. With Art Metal, there is no fumbling—no wasted effort. The job is properly understood and properly executed. The beauty of your conception lives in metal.

Highly specialized banking room needs . . . Take, for example, the banking room of this new million-dollar building. Here Art Metal was chosen because Art Metal was best qualified to give the design concrete expression.

Ability from years of equipment experience . . . Such ability comes only from years of equipment experience—years of filling the special needs of banks and public buildings. Art Metal craftsmanship has become finished through thirty-nine years of careful workmanship.

Helpful consultation—free . . . This experience is ready for any job—small or large. Art Metal facilities can handle the most diversified specifications. More than this, Art Metal service is ready to co-operate with you in every way. An experienced representative will be glad to consult with you on bank equipment or other metal work. This carries no obligation. Please write. The Art Metal Construction Company, Jamestown, N. Y.

Art Metal

JAMESTOWN ~ NEW YORK

BRONZE AND STEEL INTERIOR EQUIPMENT FOR BANKS, LIBRARIES AND PUBLIC BUILDINGS···HOLLOW METAL DOORS AND TRIM

REVIEWS OF MANUFACTURERS' PUBLICATIONS

BEST BROS. KEENE'S CEMENT CO., Medicine Lodge, Kans. "Interior Walls Everlasting." Securing textures.

Much of the charm of the interiors of Italian and Spanish buildings,—and buildings of certain other styles,—lies in the facing of their walls with stone or with other materials which suggest that sense of strength and stability which is always valued, though it is not analyzed or even understood. Many American house owners and probably many architects might deprecate use of stone for the interiors of domestic buildings on the score of its coldness or lack of what we suppose to be "domestic character." This useful little brochure, however, brings to attention a material which would seem to possess all of stone's desirable characteristics of color and texture without any of the qualities which might render its use objectionable, and many illustrations of interiors of quite a variety of kinds suggest the warmth and atmosphere of comfortable living which may easily be had by following the teachings which the booklet lays down.

MODERN BRONZE STORE FRONT CO., Chicago Heights, Ill. "Introducing Extruded Bronze Construction."

That the standard of good taste in things architectural is continually advancing is proved by study of illustrations of the shop fronts which are being installed everywhere. Even in small towns enterprising merchants are demanding fronts of a far better type than were common a few years ago, and large cities and their suburbs abound in excellent shop fronts, designed in many instances by widely known architects, which rival when they do not equal in excellence anything which the past has to offer. This brochure, which should be had by any architect interested or likely to be interested in the subject, illustrates a few of the many metal sections which this firm of metal workers is prepared to furnish, not only illustrating the sections but giving full-sized details of side jamb sections, corner bar sections, panel mouldings, and other details which enter into the designing and construction of shop facades and store fronts.

NATIONAL ASSN. ORNAMENTAL IRON AND BRONZE MFRS., Cincinnati. "Ornamental Iron, Bronze & Wire."

Of all the accessories which aid so powerfully in making buildings beautiful and attractive there are not many which play a more important part than metalwork in such forms as interior vestibules, grilles about elevators, windows and doors, the railings often used at windows, balustrades of stairways, etc. Such uses of metalwork are by no means confined to large and monumental structures, such as public buildings, banks, theaters, etc., for metal is quite as often used in buildings of smaller sizes, such as residences, and often in residences which are of no great extent. This valuable booklet suggests many uses for metalwork by illustrating much that has been done already. It deals with work large and small, simple as well as ornate, in buildings of varying degrees of importance, the work of architects well known and not so well known. The brochure suggests the vast extent of the resources back of this large association.

GEORGE W. BLABON CO., Philadelphia. "Blabon's Linoleum." Data on its use. An excellent type of floor covering.

Designers for firms manufacturing many materials for the construction of buildings and for furnishing their interiors have succeeded in bringing the output of a number of firms to a high standard. In few lines of effort have manufacturers been as successful as have the makers of different materials intended for floor coverings, this being amply proved by examination of the catalogs, booklets, brochures, etc., which they issue. This particular publication proves just this. It deals with the excellent line of linoleums manufactured by a firm well known in its field, and it illustrates,—in color as well as in black and white,—the beautiful patterns and colors in which linoleum is to be had. A great advance has indeed been made by the manufacturers of floor coverings, and it is a long step from the supplying of such a material as linoleum was some years ago to the making of such wares as are brought in this brochure to the attention of architects and decorators.

INDIANA LIMESTONE COMPANY, Bedford, Ind. "Indiana Limestone for Schools and College Buildings."

Unless it be marble, there is probably no building material which would be preferred by most builders to stone. There is no type of architecture which has not been developed in stone or of which stone does not form an important part. This well presented brochure, one of quite a number issued by this large concern, deals with the use of limestone for school and collegiate structures. It is replete with half-tone illustrations of such buildings in all parts of America, the work of many widely known architects, illustrations which suggest anew the high standard to which American architecture has attained, and which prove the large extent to which stone is being used in buildings which usually, because of their sizes, cost and prominent locations, are of great importance. Many of the illustrations are of interiors, showing the use of stone for facing walls or for screens and other minor structures used within such buildings.

DAVID LUPTON'S SONS CO., Philadelphia, "Lupton Casements of Steel." Valuable data on their use.

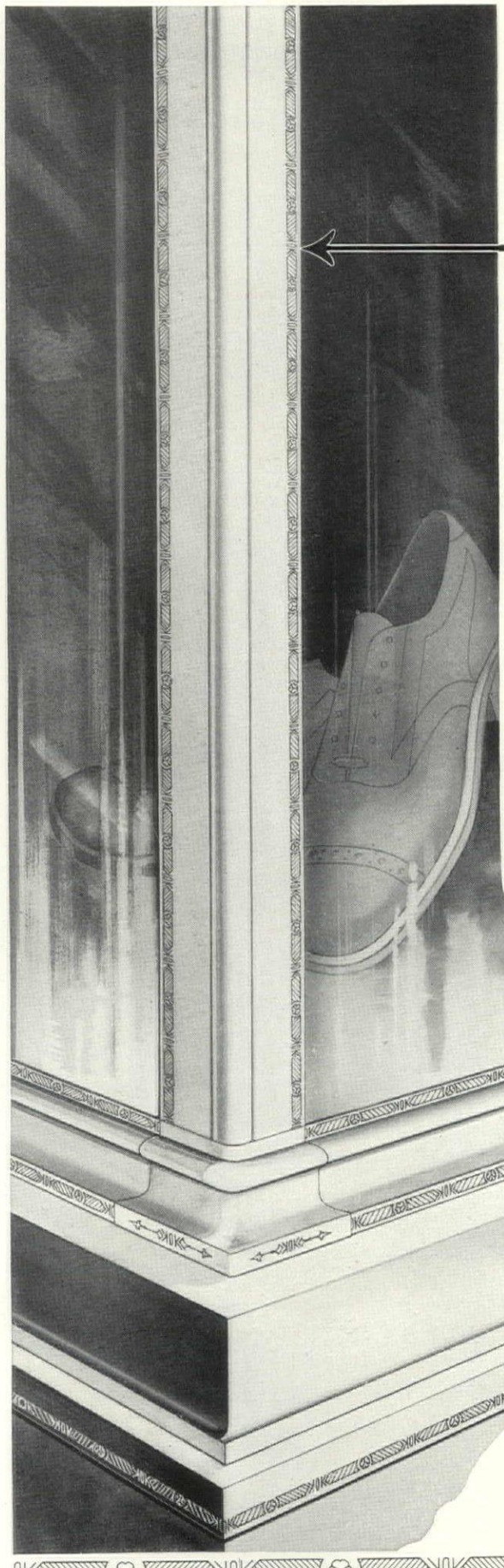
Designers well know the value of casements in giving architectural expression to buildings, and particularly to buildings of residential types. The somewhat higher cost which must be paid for casements than for windows of certain other kinds is fully made up for by the the heightened architectural character which they impart to a structure and also by several very practical considerations which sometimes weight heavily in the minds of clients to whom architectural character is a matter of somewhat minor importance. This brochure deals with the excellent line of metal casements manufactured by the well known Lupton firm, casements of considerable variety in the way of design and of all sizes, together with the hardware and other fittings which aid so greatly in rendering casements attractive. Designers and draftsmen will welcome the "details of installation," which give practical help in designing buildings.

GEORGIA MARBLE COMPANY, Tate, Ga. "The Cleveland Museum of Art Building." Design and construction.

Use of marble, that most sumptuous and luxurious of building materials, suggests Greece in the age of Pericles. Its use is highly appropriate for a structure of a purely Classic type, and the use of marble seems to be particularly fitting when the building in question happens to be planned as a museum of art. This is suggested by a folder issued by the Georgia Marble Company and dealing with the Cleveland Museum of Art, of which Hubbell & Benes are the architects. One illustration shows the severely beautiful main façade, the entrance emphasized by four columns of the Ionic order, while on another page there are shown the details of the columns and their capitals, and details also of the other parts which enter into the making of an exterior so beautiful. Another folder, also issued by the Georgia Marble Company, gives illustrations and details of the Clarence Buckingham Memorial Fountain, Chicago.

RUSSELL & ERWIN MFG. CO., New Britain, Conn. "Famous New England Homes." Interesting folders.

The use of hardware patterned after that used upon the doors and windows of early American buildings is likely to be stimulated by study of the buildings themselves. This large firm of hardware manufacturers, therefore, issues a series of quite a number of little folders illustrating the old New England buildings and the hardware appropriate for such structures as well as for buildings of certain other types. The series includes folders presenting illustrations and little sketches of such buildings of historical interest as the "Old Witches' House" and the "Seven Gables" in Salem; the "Wayside Inn" at Sudbury; Whittier's birthplace at Haverhill, and that of Nathan Hale at Coventry, Conn.; and the famous Hancock house, Paul Revere's house, and the "Old South Meeting House" in Boston. The designs of hardware illustrate an excellent assortment of fittings in a wide variety of types, designed with the excellent taste for which the Russell & Erwin Mfg. Co. is widely known.



The new improved Kawneer Store Fronts are identified by this design

THIS YEAR The Kawneer Company offers a new improved store front—more beautiful in design—more powerful in its sales appeal—and identified for your protection.

NEW members of construction such as—

NEW BULKHEADS
NEW TRANSOM BARS (Plain or enriched)
SOLID NICKEL-SILVER AND BRONZE DOORS
APPROPRIATE BRONZE SPINDLES
PROFILED SHAFTS
ORNAMENTAL GRILLES—

and other features of interest can be fabricated into distinctive store front creations to conform with architects' designs.

"Modern Store Fronts for Better Display" is a handbook on store fronts. If interested, mail coupon with your letterhead.

THE **Kawneer** COMPANY

2420 FRONT STREET, NILES, MICHIGAN

Without obligation please send the handbook, "Modern Store Fronts for Better Display."

Name_____

Address_____

City_____

REVIEWS OF MANUFACTURERS' PUBLICATIONS

ATLAS PORTLAND CEMENT COMPANY, New York. "Atlas White for Producing Ornamental Cast Work."

Builders and even architects do not always realize how easily many details, particularly in the way of exterior trim, may be cast of concrete. This booklet is a study into this use of concrete, and it dwells upon the importance in mixing concrete of using Atlas White Portland Cement. As with all kinds of concrete work, it is necessary to use a mould to hold the concrete until it hardens into durable form. Occasionally it is possible, especially in large work, to make the mould directly in the same way that forms are made for concrete buildings; in other instances it is necessary, particularly when the work has a great deal of fine detail, to make first a complete model of the work which is to be reproduced, then to make a mould from this model, and then to cast the permanent work in the mould. The brochure describes the making and use of different kinds of moulds, and it gives considerable useful information regarding mixing, casting and curing concrete, hastening set.

BATCHELDER-WILSON CO., Los Angeles. "Batchelder Tiles; A Catalog of Mantel Designs." Built of Tile Sections.

Because of their richness of color as well as of design, tiles are particularly valuable for use about fireplaces or for facing chimney breasts, this richness adding architectural emphasis to a chimneypiece, which should always dominate the room of which it is a part. This brochure or booklet illustrates what in the broadest sense are called tile, for it shows and describes a large assortment of actual mantels and chimneypieces built up of tile, though not of tile in the usual flat and square or hexagonal form. The booklet shows, for example, several fine mantels in the Italian style, the requisite pilasters, capitals, corbels and carefully designed and scaled cornices and other mouldings worked out in color and relief and possessed of all the dignity and grace they could possibly have worked out in stone, and having in addition the advantages of color. In addition to illustrating and describing tile mantels and chimneypieces of quite a variety and tiles appropriate for building fireplaces and laying their hearths, the brochure illustrates the proper method of constructing a fireplace and chimney to insure their satisfactory use, a detail of much interest to designers.

THE DAVEY TREE EXPERT COMPANY, Kent, O. "Saving the Dying Trees in Central Park," New York.

Only by unceasing care and vigilance can the beauty of the public parks in a large city be preserved. The splendor of Boston's park systems is the result not only of the rare skill and taste which created them but also of intelligent care taken with their maintenance and administration. Wholly different is the case in New York, where the park system has long been a sort of happy hunting ground for politicians, the results being plainly and painfully evident. The president of the Davey Tree Expert Company said that fine old trees were dying as a result of neglect, and that most of them could be saved. Park Commissioner Gallatin admitted that they were dying, but claimed they were being poisoned by noxious gases in the air. Trees, he said in effect, could not live in New York. A New York newspaper,—*The Herald Tribune*,—editorially suggested that Mr. Davey be allowed to prove his assertion. "Go ahead," said Mr. Gallatin. "We will," said Mr. Davey. "As a civic proposition, we will do it without cost to the city." One hundred dying trees were selected for the demonstration. Meantime, exhaustive chemical tests were made of the air at the expense of the Davey Company. They showed conclusively that there are no poisonous gases of sufficient concentration to be considered. This disposed of the theory that exhausts from auto motors and belching chimney tops made it impossible for trees to live in the heart of New York. Illustrations in this brochure show these trees before and after they were saved by Davey tree surgeons. They show that trees can live in New York or any other congested city,—that most of the trees in Central Park can yet be saved if city officials will but do what should be done.

SANDUSKY CEMENT COMPANY, Cleveland. "Medusa White Portland Cement, Plain and Waterproofed."

The wide and increasing popularity of Italian and Spanish types of domestic architecture has given a strong impetus to the use of stucco, cast stone and a number of other materials of which cement forms an important ingredient. This well produced brochure or booklet possesses for architects an interest which might be said to be two-fold, first on the score of design, and then by reason of its bearing on the matter of actual construction. Its pages are replete with views of residences large and small, country clubs and rural hotels, all buildings in which excellence of design plays an important part, the views proving the success with which stucco in one form or another is being used. Part of the booklet as already said has to do with actual construction, showing as it does the different surfaces or finishes to which stucco may be worked, and giving specifications and directions for its use in buildings of different kinds. The booklet is valuable to many departments of an office.

THE REPUBLIC BRASS COMPANY, Cleveland. "Model Bathroom Studies Presented by Republic Brass Company."

Those who have followed the constantly improving standards of domestic building and decoration in America during the last decade or more have frequently noted the almost complete lack of architectural character which even the costliest bathroom installations have presented. Necessary details of plumbing,—their designs as well as their manufacture,—have of course reached a point of excellence which seems to be almost perfection, but apparently most architects and all builders have been obsessed with the idea that absolute cleanliness, which of course must obtain in a bathroom, could be had only by use of entirely white tiling, which of course made the creating of really beautiful bathrooms difficult if not impossible. This valuable brochure, available to any architect on request, is a revelation as to what a bathroom may easily be made. Illustrations in color show interiors with walls of properly finished plaster or of tiling in strikingly rich and beautiful color combinations, their floors treated to be in architectural agreement, while floor plans from blue prints, which accompany each set of color illustrations, show arrangements skillfully planned.

EDWIN F. GUTH CO., St. Louis. "Lighting and Equipment Since 1902." Architectural Catalog No. 19.

There are several reasons why lighting fixtures are of the first importance from the point of view of an architect or an interior decorator. The very positions which they are likely to occupy in a room,—hanging at its center from the ceiling or fixed to important walls,—draw attention to them, and when they are illuminated and thus become sources of light they of course become the focus of attention. All this renders them so important that to select lighting fixtures wisely or unwisely may mean the making or the marring of an interior's architectural excellence. In this brochure, issued to commemorate the firm's 25th anniversary, the Edwin F. Guth Co. illustrates, describes and lists the extremely broad and varied line of lighting fixtures which it carries, fixtures appropriate for structures of many widely different kinds,—hotels, theaters, churches, public buildings of all sorts, and residences small or large. To meet the demands of conditions so varied there are offered lighting fixtures which are of different degrees of elaboration and appropriate for use with widely differing architectural styles, suspended from ceilings or fixed to walls, and not restricted wholly to interior used, for many of the illustrations show installed fixtures applied to the exteriors of buildings or used at the entrances to public structures or in the grounds of country estates. While devoted primarily to lighting fixtures, part of the brochure is used to illustrate certain other details made by the firm,—cooling fans which form parts of lighting fixtures, and the bronze grilles or railings used in banks and business offices. Suggesting, as it does, the designs of many details, the brochure has high value for architects and decorators and their designers.

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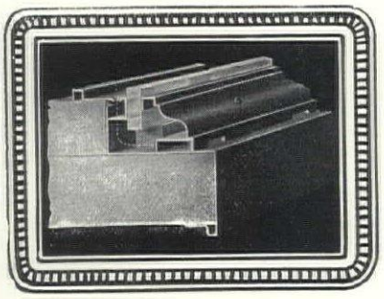

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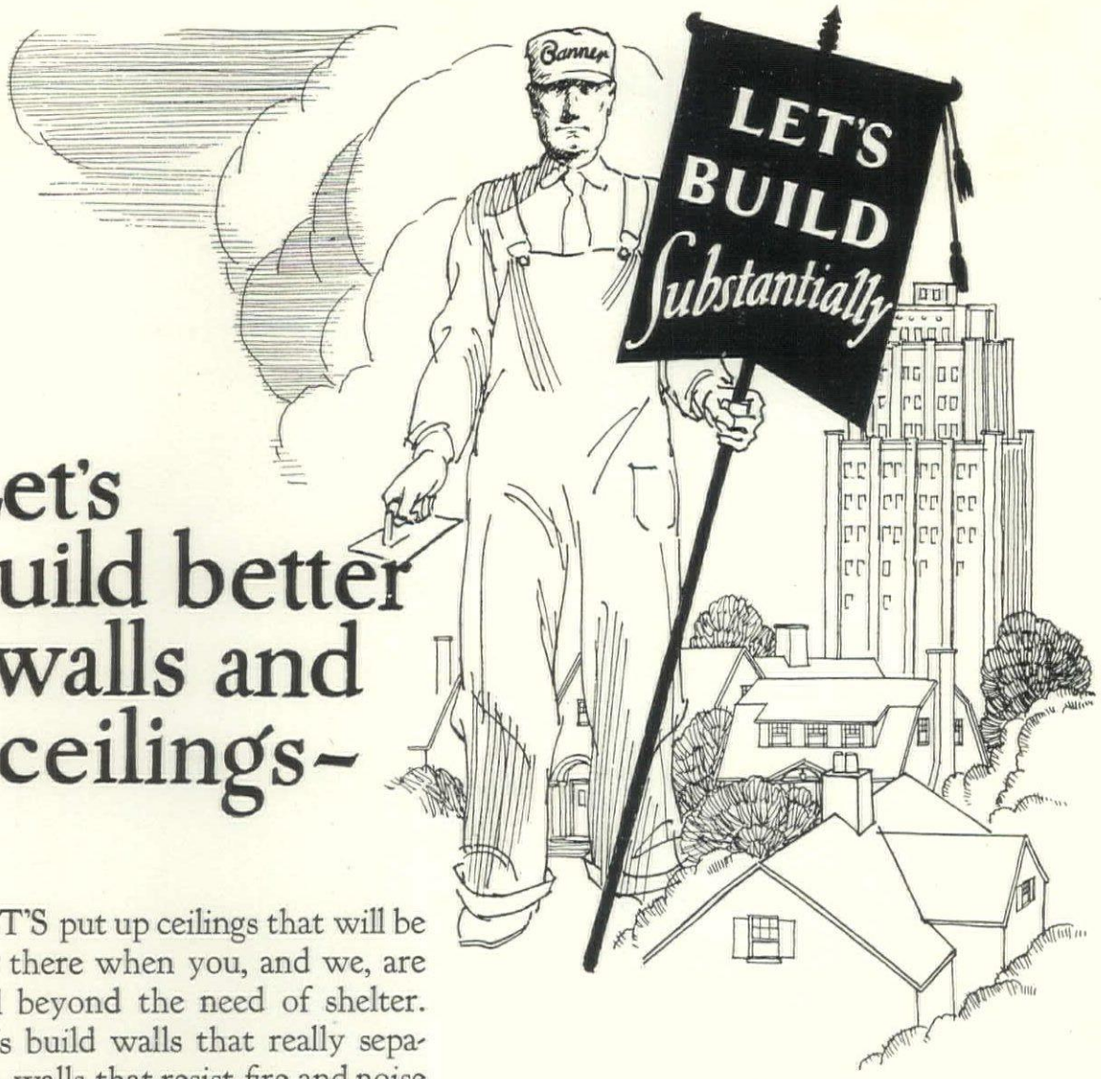

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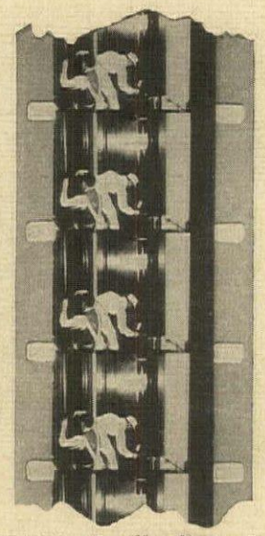

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