







# THE ARCHITECTURAL RECORD

AN ILLUSTRATED MONTHLY MAGAZINE OF ARCHITECTURE  
AND THE ALLIED ARTS AND CRAFTS.

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## INDEX TO VOLUME XLIX

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JANUARY—JUNE

1921

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PUBLISHED BY

THE ARCHITECTURAL RECORD CO.

115-119 WEST FORTIETH STREET, NEW YORK CITY

131 NORTH FRANKLIN ST., CHICAGO  
BESSEMER BUILDING, PITTSBURGH

1821 CHESTNUT ST., PHILADELPHIA  
114 FEDERAL STREET, BOSTON

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# Architectural Record

January 1921



Published in New York



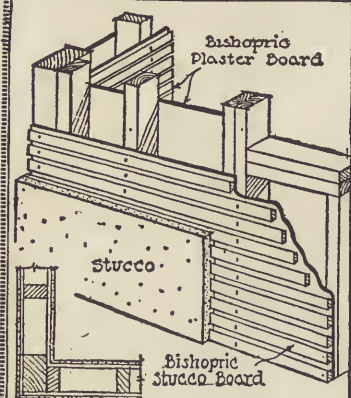
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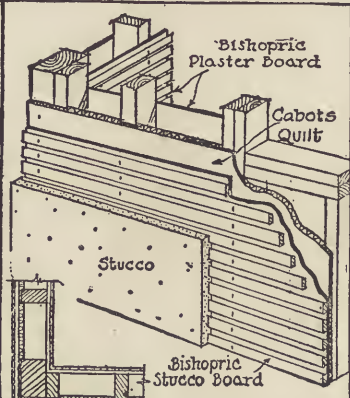
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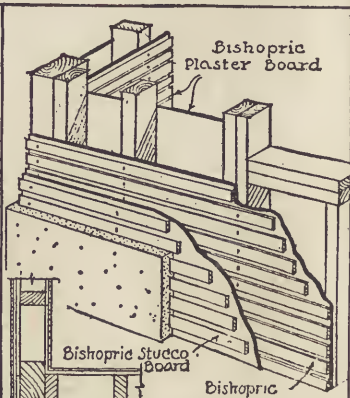
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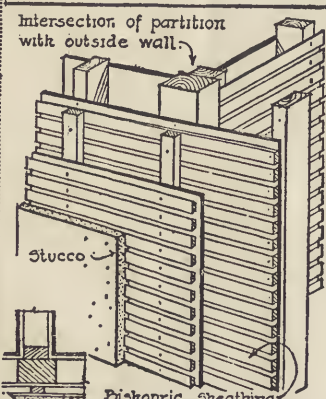
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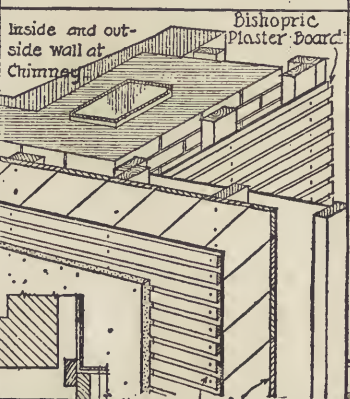
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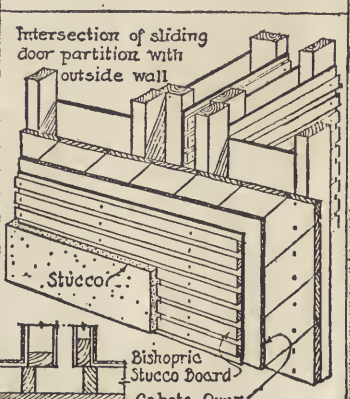
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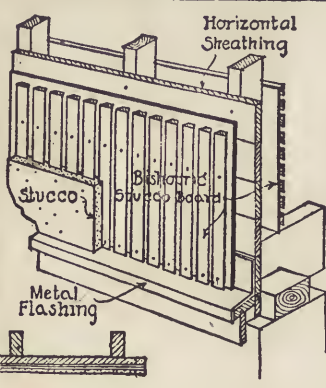
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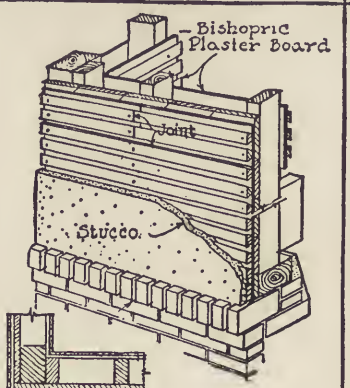
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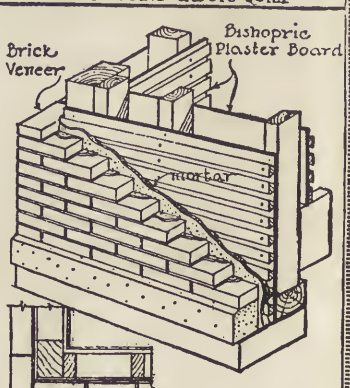
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# THE ARCHITECTURAL RECORD



Vol. XLIX. No. 1

JANUARY, 1921

Serial No. 268

Editor: MICHAEL A. MIKKELSEN

Contributing Editor: HERBERT CROLY

Business Manager: J. A. OAKLEY

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PUBLISHED MONTHLY BY  
THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. W. D. HADSELL, Vice-Pres. E. S. DODGE, Vice-Pres. J. W. FRANK, Sec'y-Treas.



THE ENTRANCE COURT, FROM THE SERVICE GATE—  
RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA NOVA,  
PA. MELLOR, MEIGS & HOWE, ARCHITECTS.



# THE ARCHITECTURAL RECORD

VOLUME XLIX

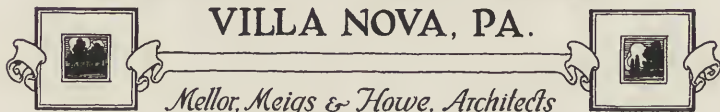


NUMBER I

JANUARY, 1921

## *The* RESIDENCE OF HEATLY C. DULLES, Esq.

VILLA NOVA, PA.



*Mellor, Meigs & Howe, Architects*

BY EDMUND B. GILCHRIST

**A** VERY low, sinuous and flowing outline enclosing a mass, sombre though warm in color, is my first impression of this house. From the lower road it stands upon a firm, long line of wall so generous, simple and sturdy in its purpose of retaining the scheme that were there little else of accomplishment the house would have that comfortable stability so much to be desired and so seldom had.

How often we see dry and loosely laid walls retaining terraces and garden arrangements immediately adjacent to the house—surely a very crumbling and unconvincing substructure to encounter at the base of a solid house mass. It is good to observe that the architects, alive to this

pitfall, have not only felt the wisdom of establishing a simple, solid surface of wall to carry their scheme and give telling value to the details of the building, but that they have strengthened the impression of stability with the appropriate use of buttresses. Beyond are the screen walls of the garden and connecting link 'twixt house and garage, sheltering all from the north and adding firmness and final conviction to a total scheme of good sense and real beauty.

It is not for us to say this style or manner of building is appropriate and that one is not. Nor is it for us to exclude from consideration manifestations in the field of art that fall without the limited realm which is closest to the heart and

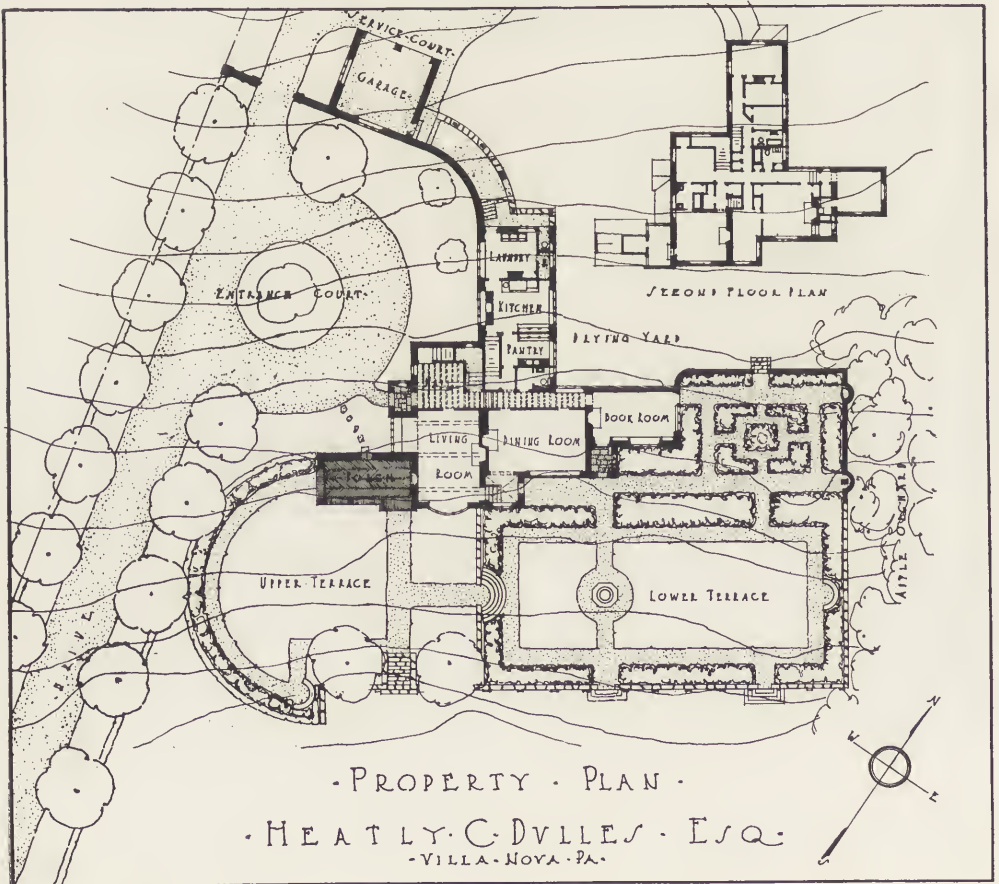
which we think to be our own. But it is for us to be quick to see the fruits of minds working with sincerity and enthusiasm, and I confess that I do not find a line in this building which does not possess these qualities in generous measure, refreshing indeed in days of mingled pedantry and doubtful originality.

The exterior is a direct reflection of the interior, and at no point is there any evidence of forcing the one to suit the other. In fact, what intimacy and charm has gathered round the garden front is simply an indication of what is taking place inside.

I have often thought how meaningless, in their effort to be quaint, are the exteriors of many of our houses. I think it is because one forgets that the chief excuse for a house is to shelter the life within it.

So soon as we conceive our design from the outside in, or view outside and inside as separate problems, then does architecture become the shallow thing it too often is. An architect of some eminence once told me that it was quite possible to clothe a given plan in any "style." Judging from the examples of his work, this has evidently been his guiding principle; but with what success I forbear to say. Beauty is not a quality that can be applied "on the side."

We hear it said without qualification that what our architecture lacks is color. Surely this is true enough if we observe that for the most part we seem able to do little better than waver between stupid and broadcast use of grey and the garish juxtaposition of broken colors. In this little house, however, we have color and





THE HOUSE FROM THE ENTRANCE DRIVE—  
RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA  
NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS.

surface quality playing a most important and satisfactory rôle. The rough stone walls have been pointed or almost completely hidden by a material evidently composed of cement, lime and a light neutral brown gravel. The surface is not for-

tages. With the exception of woods to the east and a very pleasant meadow and distant prospect to the south, the architects have had little within or without the bounds of the property to assist them, and much in the way of suburban mediocrity



THE HOUSE, FROM THE ENTRANCE COURT—RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA NOVA, PA.

biddingly rough and affected, nor is it without feeling and hard. It has been produced by using a rather crude tool in skilled and thoughtful hands. The inconspicuous metal casement windows and their plain oak frames, left without finish to gather the patine of time, are modest and beautifully subordinated to the wall surfaces.

The site offered little in natural advan-

around them and rubbing shoulders with their scheme. A rather fortuitous absence of seclusion will be overcome when the plan for the development of the property is carried out. Here, indeed, is a delightful opportunity for both architects and owner. With the most provident existence of finished levels and walls, there remains that most illusive and sensitive task of gardening and planting. If this



THE MAIN ENTRANCE — RESIDENCE OF  
HEATLY C. DULLES, ESQ., VILLA NOVA, PA.  
MELLOR, MEIGS & HOWE, ARCHITECTS.



THE PORCH, FROM THE ENTRANCE COURT—  
RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA  
NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS.



SOUTHWEST WINDOW OF LIVING ROOM—RESIDENCE OF HEATLY C. DULLES, ESQ.,  
VILLA NOVA, PA.

Mellor, Meigs & Howe, Architects.

be accomplished in the spirit and manner which has inspired the building, I shall have had restored my faith in the American mind to conceive, beyond a few admitted exceptions, anything of note in landscape architecture. How much of inspiration we are able to draw from the continent in our buildings, and how little in that endless field of activities beyond their walls.

Within, as without the house, there is evidence of the same eagerness for interest in a balanced informality of composition. As the plan will show, all the rooms are nicely distributed along the southern side of a narrow hall, whose axis is fortunately terminated in a wall niche across the garden. Each room is discovered in pleasant sequence and according to the privacy it should enjoy. This rather loose arrangement of plan is no simple task, and it is rarely indeed that we see it ac-

complished with such reason and evident meaning. The bookroom is properly found in the most private quarter of the house, giving onto a diminutive and secluded garden; the broad facing of modern tiles in the Flemish character surrounding the fireplace is a very conscientious piece of work and lovely in color; more lovely, I feel, than the circular tile medallions in the masonry above the garden wall niches.

To me the dining room is quite the *chef d'œuvre* and, barring a slight tendency toward too much movement in the plaster ceiling pattern and the unfortunate position of the impost in the large window, completely obstructing the horizontal plane of vision, it is one of the most satisfying rooms in this manner that I have seen short of England. It is unfortunate that a photograph cannot be had that will give adequately the impression of this



LIVING ROOM FIREPLACE—RESIDENCE OF  
HEATLY C. DULLES, ESQ., VILLA NOVA,  
PA. MELLOR, MEIGS & HOWE, ARCHITECTS.





DINING ROOM VESTIBULE—RESIDENCE OF  
HEATLY C. DULLES, ESQ., VILLA NOVA, PA.  
MELLOR, MEIGS & HOWE, ARCHITECTS.



LOOKING DOWN THE HALL TO THE BOOK ROOM—RESIDENCE OF  
HEATLY C. DULLES, ESQ., VILLA NOVA, PA.



FROM NORTHEAST WINDOW OF BOOK ROOM—RESIDENCE OF  
HEATLY C. DULLES, ESQ., VILLA NOVA, PA.



THE HOUSE, FROM THE APPLE ORCHARD—  
RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA  
NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS



THE HOUSE, FROM THE LOWER TERRACE—RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS.



THE HOUSE, FROM THE UPPER TERRACE—RESIDENCE OF HEATLY C. DULES, ESQ., VILLA NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS.



UPPER TERRACE, WITH PORCH AND SLEEPING PORCH  
—RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA  
NOVA, PA. MELLOR, MEIGS & HOWE, ARCHITECTS.

room. The view here given, looking into the corner of the dining room, showing the steps rising to the living room, is a beautifully imaginative composition in iron, oak and stone, and is only one of three such delightful little vestibules that persistently punctuate the plan and reoccur in most musical fashion.

How few rooms we see that are beautiful in themselves without furniture or decoration. Probably this is why so many of our rooms are difficult to furnish. And when we do provide the rooms, what an onslaught of this "Vogueishness" (I know of no other word for it) takes place. We are told that the walls would be better bare; or if we must hang pictures, then some puerile copy of an ancient still life that will take its proper place in the decorative scheme. No; I hope the time will soon be here when all this rubbish that is chiefly the label of the

decorator will take its place in kingdom come and the spaces in our homes now given over to shrine-like arrangements of one hooked rug, a barren table and a tall candlestick posed in exaggerated simplicity will be cleared for a little that is intimately ours, a little to reflect the best of our own endeavors and times and reveal to some extent our skill to create and do rather than to collect, restore and fake.

The rooms within this charming little country house would stand by themselves; they are interesting and lovely in proportion, arrangement and detail, and to the grounds without has been given that simple development of line and mass and form that alone can impart the feeling of completeness to a scheme; ample proof, indeed, that a skilled and dominant professional force has been working in conjunction with a very sympathetic and gracious client.



ENTRANCE TO DINING ROOM VESTIBULE—RESIDENCE OF HEATLY C. DULLES, ESQ., VILLA NOVA, PA.



ENTRANCE—VILLA FRULLINO,  
NEAR FLORENCE, ITALY.



# THE VILLA FRULLINO NEAR FLORENCE, ITALY



*By Harold Donaldson Eberlein*

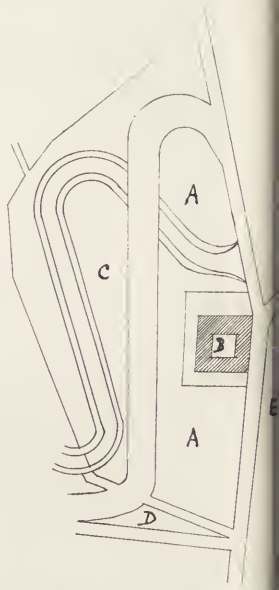
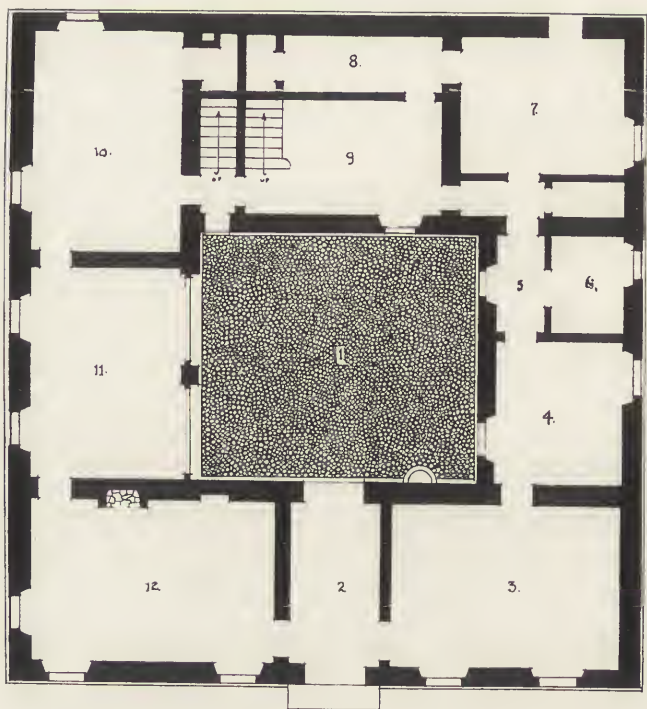
THE Villa Frullino, about half way between Florence and Fiesole, is characteristic of one of the types of the smaller Tuscan villas—so many of which were built in the neighborhood of Florence in the fifteenth century. As the plans show, the house is a rectangle in mass, built about a central *cortile*. The Tuscan villa of the fifteenth and sixteenth centuries was often the final result of a succession of earlier growths, the tower being usually the oldest portion.

The stuccoed walls of the Villa Frullino are covered with a dull reddish brown wash, and the shutters are painted a light green. With the exception of the glazed triple arcade on the first floor of the south front—just above the house door—which is a modernization, the villa presents virtually its original appearance.

The garden arrangements are exceedingly simple, but effective, the charm lying chiefly in the massing of foliage and in the incisive contour and placing of the cypress trees. The scheme is generally symmetrical, but not at all formal. Of course, the garden, in accordance with

Italian custom, is enclosed by a high wall. Within the villa the glazing of the loggia on the west side of the *cortile* is a recent addition. Barring this the *cortile* is quite unspoiled. The *sgraffito* decoration on the west wall of the *cortile*, above the arcading of the loggia, is in dull buff and brown. In the drawing-room the hood of the fireplace is a restoration. The floors are paved with brick and painted, generally a deep brownish red. In several of the rooms not shown the ceilings, instead of being vaulted, are of greater height and beamed, in some instances disclosing touches of colored decoration.

Just as the window trims outside are of the grey *pietra serena*, so also inside such features as door and window trims, the shell-headed niche in the drawing room (it was, in all probability, originally the dining room and the niche was meant for the lavabo) and the spiral-fluted and foliated corbels at the spring of the vaulting arches, of a pattern much employed by Brunelleschi, are all of the same stone, and afford some fascinating studies in well considered detail.



A, A. Garden of Villa Frullino  
C, D, E. Adjacent Properties

GARDEN PLAN AND PLAN OF GROUND FLOOR—VILLA FRULLINO, NEAR FLORENCE, ITALY.

Key to Rooms on Ground Floor of Villa Frullino: 1. Cortile Paved with Gravel, Open to Sky. 2. Entrance Hall. 3. Dining Room. 4. Breakfast Room. 5. Passage Way. 6. Pantry or Serving Room. 7. Kitchen. 8. Closet or Store Room. 9. Stair Hall. 10. Library or Study. 11. Loggia with Arcade Opening into Cortile. 12. Drawing Room.



SOUTHEAST FRONT—VILLA FRULINO, NEAR FLORENCE, ITALY.



NORTHEAST SIDE—VILLA FRULINO, NEAR FLORENCE, ITALY.



DRAWING ROOM—VILLA FRULINO, NEAR FLORENCE, ITALY.



DRAWING ROOM FIREPLACE—VILLA  
FRULLINO, NEAR FLORENCE, ITALY.



DRAWING ROOM DOOR — VILLA  
FRULLINO, NEAR FLORENCE, ITALY.



DOOR WITHIN LOGGIA — VILLA  
FRULLINO, NEAR FLORENCE, ITALY.





ARCADE IN CORTILE—VILLA FRULINO, NEAR FLORENCE, ITALY.



NORTHEAST SIDE OF CORTILE—VILLA  
FRULLINO, NEAR FLORENCE, ITALY.



WELL AND HOOD IN CORTILE—VILLA  
FRULLINO, NEAR FLORENCE, ITALY.



ST. DAVID'S CHURCH, RADNOR, PA.  
SHOWING WELSH CHARACTERISTICS.

# The EARLY ARCHITECTURE OF PENNSYLVANIA

By  
A. LAWRENCE KOCHER



*PART II ~ Photos by Frank Cousins, William Rau & Others*

**A**N analysis must be made of the nationalities composing the Pennsylvania colony in order better to understand the architectural development of this region. No part of colonial America was composed of more diverse national elements than was Pennsylvania. In no part of the colonies is there so interesting a demonstration of the influence of various peoples in the forming of an architectural style. In other localities the case is different. For instance, the Spanish in Florida, the Dutch in New York, and the English in New England present examples of unadulterated racial stock, which in time formed an architecture with clear racial characteristics. The population in Pennsylvania, however, was conglomerate. The Dutch, Swedes, English, Welsh, Scotch-Irish and Germans alike found a shelter and established a stronghold on the broad acres of the colony of William Penn. Out of so mixed a population it is to be expected that the resultant architecture would be colored and molded by the different national tendencies, or that there would be distinct and separate architectural manifestations within the colony.

The coming of the Dutch and Swedes preceded the founding of Pennsylvania. They had already settled in scattered groups on the lower Delaware River. The Swedes and Dutch were, however, in so small a proportion of the population that we can disregard them. No architectural effect can, with definite authority, be assigned to them unless it be the occasional

double "Dutch door" with the hospitable benches on either side, known familiarly as "the stoep."

The peoples of the British Isles came under Penn in 1681. The stream of immigration continued steadily until after thirty years the colony was, for the most part, a province of Englishmen. By 1710 the population in the thickly settled part of the colony was so thoroughly Anglo-Saxon that it could not be affected by the late coming of the vast hordes of Germans. The English possessed Philadelphia and the south eastern counties. The "hot-headed" Scotch-Irish, a frontier people forming a cordon of defense around the non-fighting Quakers, occupied the southern and western valleys. The Welsh chose the lonely banks of the Schuylkill and settled on the "Welsh Tract," comprising the townships of Haverford, Radnor and Lower Merion. The Germans, who became known as the "Pennsylvania Dutch," appeared in two waves of migration. The first, under the leadership of Pastorius, the schoolmaster, settled near Philadelphia and in 1683 founded Germantown, described as "a pretty, straggling village with substantial homes, roomy gardens and one long street bordered by blossoming peach trees." The second and main coming of Teutonic settlers occurred during the first half of the eighteenth century, and consisted mostly of religious sectaries from the Palatinate and Switzerland. The Germans were attracted to the heavily timbered sections in the central and north-

ern parts of the province. They reasoned, "where the wood grows heaviest the soil must be best."

The English held a decided advantage besides the advantage of numbers. They settled under the protecting arm of the British Government, which exerted a guiding influence over the progress of the colony. Even after the return of William Penn to England, the various governors, whether popular or unpopular, molded the policies and, indirectly, formed the taste of the province. The English, with a clear view of the future, knew that a stable empire could only be established with leadership. The Germans, on the other hand, not united as a single nation at home, appeared on the threshold of the new world, desiring land alone and not conquest.

These two nationalities were at first fairly distinct, and architecture of German derivation is found in one locality and English in another. In time there was brought about a blending of some of the two influences, but, in general, they continued separate and apart. Each produced

its own individual domestic dwellings and more pretentious structures, and each possessed certain peculiar features. The German style remained confined to small areas and was local, while the English soon became the adopted and characteristic style.

The line of demarcation between the two may be accounted for by the variance in their habits and thinking. The German trait was inclined to be clannish. The Germanic peoples were more or less amalgamated by religious bonds, and so sought their associates among their kind. They continued to speak the German language and evidenced a closer affiliation with the old world than with their fellow home-seekers, who were mostly Scotch-Irish.

This inclination toward clannishness by the Germans is clearly shown by such withdrawn and separate settlements as Ephrata, Lititz, Mannheim and Bethlehem. These places have retained a racial isolation, even up to the present day. Franklin complained to the Provincial Assembly in 1739 against the continuance of the speaking in German, which threat-



HANS HERR HOUSE, LANCASTER COUNTY, PA., 1719.



POWELL HOUSE, LANCASTER, PA.

ened to make of the settlement a German colony. In 1741 the German and Swiss Mennonites of Lancaster County were represented to the provincial government as being, "determined not to obey the lawful authority of the government—disposed to organize a government of their own."

This strong feeling of racial isolation on the part of the Germans, their local independence, and their feeling of self-sufficiency naturally led to an architectural product which had a characteristic local flavor. It became a thing apart, and not an amalgamated portion of the Pennsylvania style.

The well defined and separate architecture of German derivation is clearly stamped by racial attributes. The distinguishing features include the use of heavy stone and timber construction, the steep roof with rows of sloping dormers, small windows, the pent roof, and wooden hardware. There is a prevailing air of the medieval in the construction, the planning and the design. The existing examples unmistakably hark back to the Middle

Ages in Germany. The monastic halls of the religious communities at Ephrata, Lititz and Bethlehem might have been patterned after medieval buildings found in many a southern German town, such as Nürnberg and Mannheim. Even in habits and dress the "Brethren" of the Ephrata community, in early times, clung to customs of a previous century. The members wore a white habit with a hood resembling the dress of the Capuchins, their feet were shod with wooden sandals, they ate from wooden platters, drank from wooden cups and slept with their head supported on wood instead of pillows. Not having draught horses, the members themselves drew the plow.

It is of interest to note that the prevailing type of architecture of the cities and court circles of Germany in the seventeenth and eighteenth centuries was the Renaissance; while in the country districts and lesser towns the buildings erected were still Gothic in all but a few unimportant details. It is probable that the masses of German immigrants com-



HALF TIMBER HOUSE IN LANDIS VALLEY, LANCASTER COUNTY, PA.

ing to these parts of Pennsylvania were from rural sections where the older building methods had lingered on into modern times. For example, the austere outline of the "Brothers' House" at the community of Seventh Day Baptists at Ephrata, illustrated on page 40, recalls the aisled basilicas of Romanesque Germany. Except for the haphazard arrangement of windows, we could reasonably expect an interior with a lofty nave, lighted with clere-story windows, and provided with aisles beneath the sloping side roofs. The building, however, has no relation of interior to exterior. Here is an instance of erecting a building by recollection and imitation without an accompanying understanding of the association of form to use.

Beneath the side sloping roofs there are remnants of a still lower pent roof, of which the supporting blocks may be seen in place. The explanation of this auxiliary roof has already been made. Here, instead of protecting the clay chinking from the weather, the overhang proved a serviceable feature in shadowing the lower windows and in aiding the shedding

of water from the wooden walls and the foundation.

The irregular application of clapboarding on the side walls of "The Sisters' House" (page 39) is worth noting. This uneven exposure of siding is somewhat similar to the "shingle thatch" made popular by certain architects of country houses of the present time. But on these old walls there is a better showing of logic in the method of using material, because boards naturally are of different widths and, when economically cut to the shape of the log, would be tapered.

The Moravian Sisters' House at Bethlehem, dating from 1748, is almost equally exotic. The building is planned in the shape of an U. This arrangement creates the effect of a courtyard, into which, in the seventeenth century, the cattle and sheep were driven to shelter from the storm. The flanking buttresses are without their original meaning, for they do not sustain the thrust of vaults nor of cross arches. Their presence here constitutes an architectural vagary. This misapplication of a once serviceable feature is a part of the same hazy depend-



ence upon the past as was alluded to above.

The half timber buildings erected by the Germans in Pennsylvania are interesting examples of the same medievalism. The existence of standing specimens of an indigenous half timber architecture is of considerable importance and is not widely known.

In the half timber house the walls are formed of heavy shaped wood, framed together. The space between the members is filled with lath and plaster or with brick. The structural parts are strengthened by horizontal pieces and braced with sloping struts. The framework is left visible and presents a pleasing pattern—the wood contrasting with the background of plaster or brick. The chief value of this method of building is esthetic, in that it satisfies the eye as to the stability of the fabric. The timber chosen for these structures is usually oak. The parts are fitted together with mortises and tenons, and locked with wooden pins.

The Moravian School at Friedensburg, Pennsylvania, illustrated on page 37, is

an example of this manner of framing. The building has floors at two levels. The ends of the floor joists may be seen extending through the walls. The second floor, which was originally two large rooms, has a higher ceiling than the several rooms on the ground level. The irregular spacing of the bays determined the unbalanced arrangement of the windows. The infilling between the timbers is brick and has been stuccoed and white-washed. There is no attempt made at adornment, and, yet, the effect is one of pleasing picturesqueness and of honesty in construction.

The views on pages 33 and 35 show two houses which at one time stood in Lancaster. The Powell House, demolished a generation ago, stood on the corner of Middle and Lime streets. The other houses were also on Middle street. They were erected by English workmen and were to accommodate the troops of General Forbes after the fall of Fort Duquesne.

The half timber house reflects the age preceding the advent of the saw mill.



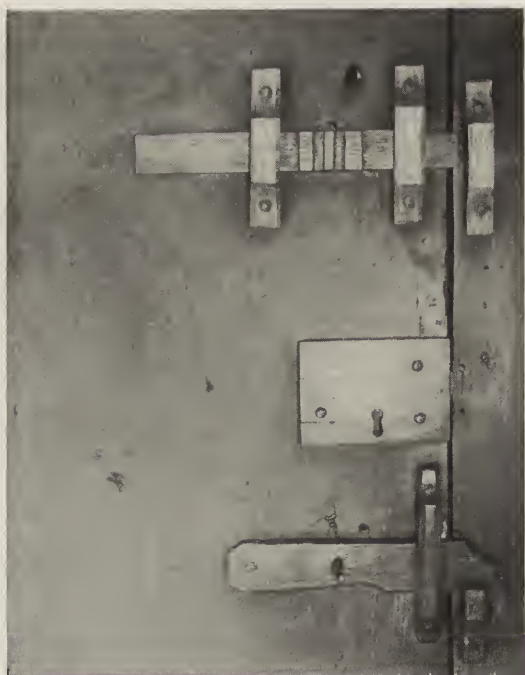
HOUSES FORMERLY STANDING ON EAST SIDE OF MIDDLE STREET, LANCASTER, PA., SHOWING HALF TIMBER CONSTRUCTION.



END VIEW—HANS HERR HOUSE,  
LANCASTER COUNTY, PA., 1719.



MORAVIAN SCHOOL, FRIEDENSBURG, PA. BUILT IN 1742.



WOODEN HARDWARE, MORAVIAN SCHOOL,  
FRIEDENSBURG, PA., 1742.



DE TURCK HOUSE, OLEY VALLEY, BERKS COUNTY, PA., 1767.



MENNONITE CHURCH, LANDISVILLE, PA., 1742.



THE SISTERS' HOUSE, EPHRATA, PA.

With the coming of the water and the wind driven saw, a new era of building opened up. Saw mills were known in America before they were established in England.\* Had the power mill for the rapid sawing of boards been delayed for a longer time, it is quite probable that the exposed and hand shaped construction would have been more firmly rooted in the colonies.

The Hans Herr House, built in 1719 near Lancaster, may be taken as a specimen of the "small dwelling" architecture of German origin. It is very well suited for study, because it has undergone no change since the staunch walls were reared, over two hundred years ago. The same Teutonic aspect, which was noted in the monastic settlement at Ephrata, is recognized here. The walls of brown sandstone are plastered and whitewashed. The roof is steep in pitch, resembling the "Brothers' House." The small windows, with primitive wooden shutters, are fitted

into frames of wood at the front and into stone enframements at the gable ends. The angles of the frames, both of wood and of stone, are mortised together. A chimney of large size, measuring over ten feet in width, divides the interior into two parts. After rising to the roof it contracts to a square to crown the saddle of the roof in the center. Dr. Schoepf, in his eighteenth century book, "Travels Through Pennsylvania," observed that "a house built by a German could, even at a distance, be readily distinguished from one erected by a Scotch, Irish, or Englishman. Had the house but one chimney and this in the middle, then it was a German's. . . . A house with a chimney at each gable end is recognized as having been erected by an Englishman."

The floor joists of the Herr House consist of round logs, grooved at the sides, and with narrow split boards fitted between and spaced so as to allow rye straw to be woven over and under the sticks. Beaten clay was then applied to the top of the straw, with a resulting floor of earth for each story.

The building is notable for its expres-

\*Saw mills were erected by the Dutch and Swedes before the arrival of William Penn in 1681. (American Encyclopedia.) The first saw mill was set up in England in 1767. Thomas Budd: Pennsylvania and New Jersey, p. 43.



THE BROTHERS' HOUSE, EPHRATA, PA.



THE SAAL AND SISTERS' HOUSE, EPHRATA, PA.



WINDOW OF THE SISTERS' HOUSE, EPHRATA, PA.



ANGLE OF THE CLOISTERS, EPHRATA, PA.

sion of German tradition, and because of its substantial, straightforward simplicity. There is a distinct charm in the ancient windows, which rise story above story in what would, presumably, be only a first floor and attic. The trait of

look elsewhere for the source of Pennsylvania colonial architecture.

It was almost entirely to the English subjects that the early architecture was due. The Quaker colony, from the beginning, had looked across the sea for guid-



DOORWAY OF THE SISTERS' HOUSE, EPHRATA, PA.

thriftiness and practicality is well expressed in this straining effort to put to use every available cubic foot of space.

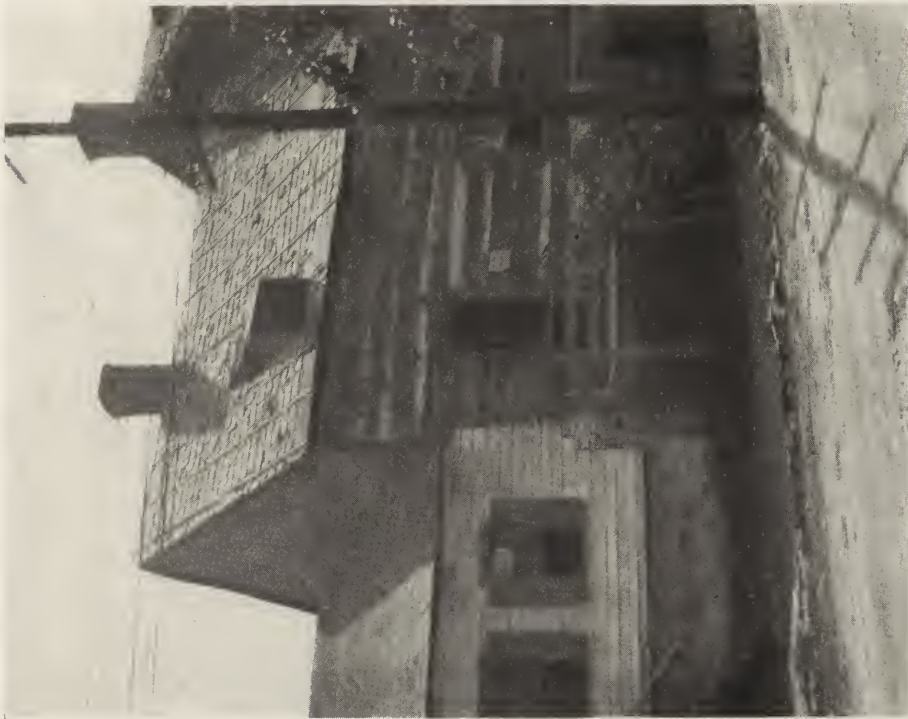
The strongly marked individuality of all of these German buildings, with their irregular fenestration, and the strangely foreign aspect of walls and roofs and dormers, is in almost no respects similar to what we are accustomed to speak of as "The Pennsylvania style." This is argument enough to convince one that we must

ance in customs, in dress, and in architecture. Philadelphia of the eighteenth century was not unlike a transplanted English city. Lesser towns, as well, were modeled after English villages. An English traveler in Pennsylvania in 1765 writes, "Most of the Houses bear an aspect of comfort and elegance, and in their Architecture much resemble the newer houses of London. At this I marvel not, since they tell me that the people of

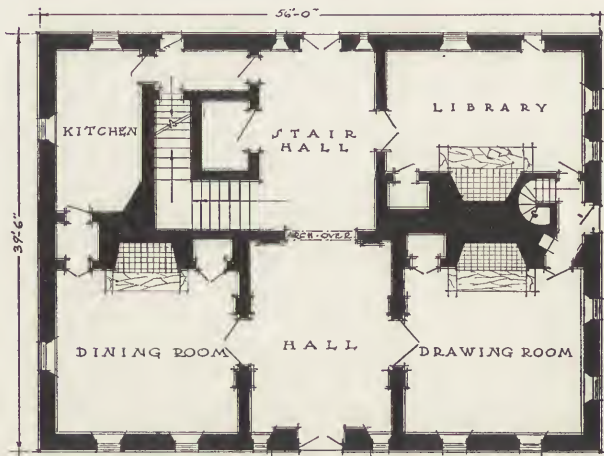




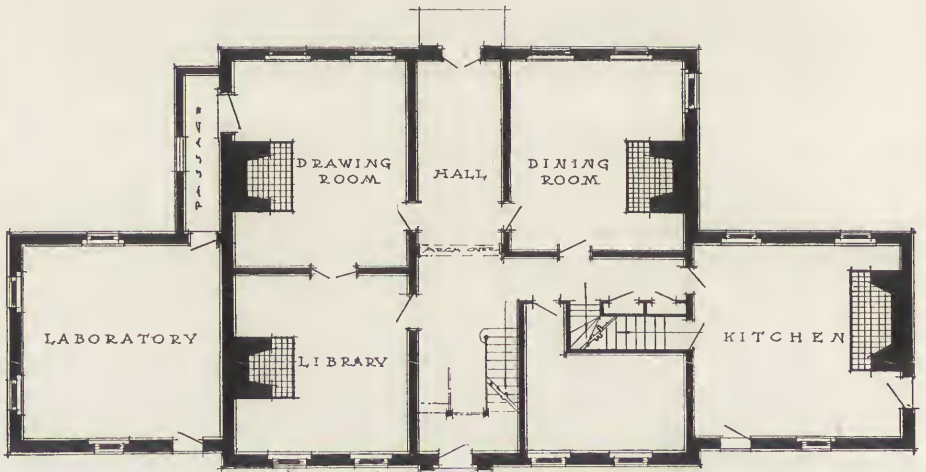
END VIEW OF COMMUNITY HOUSE, EPHRATA, PA.



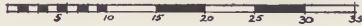
EARLY HOUSE IN YORK, PA., SHOWING CHARACTERISTIC  
GERMAN DORMER.

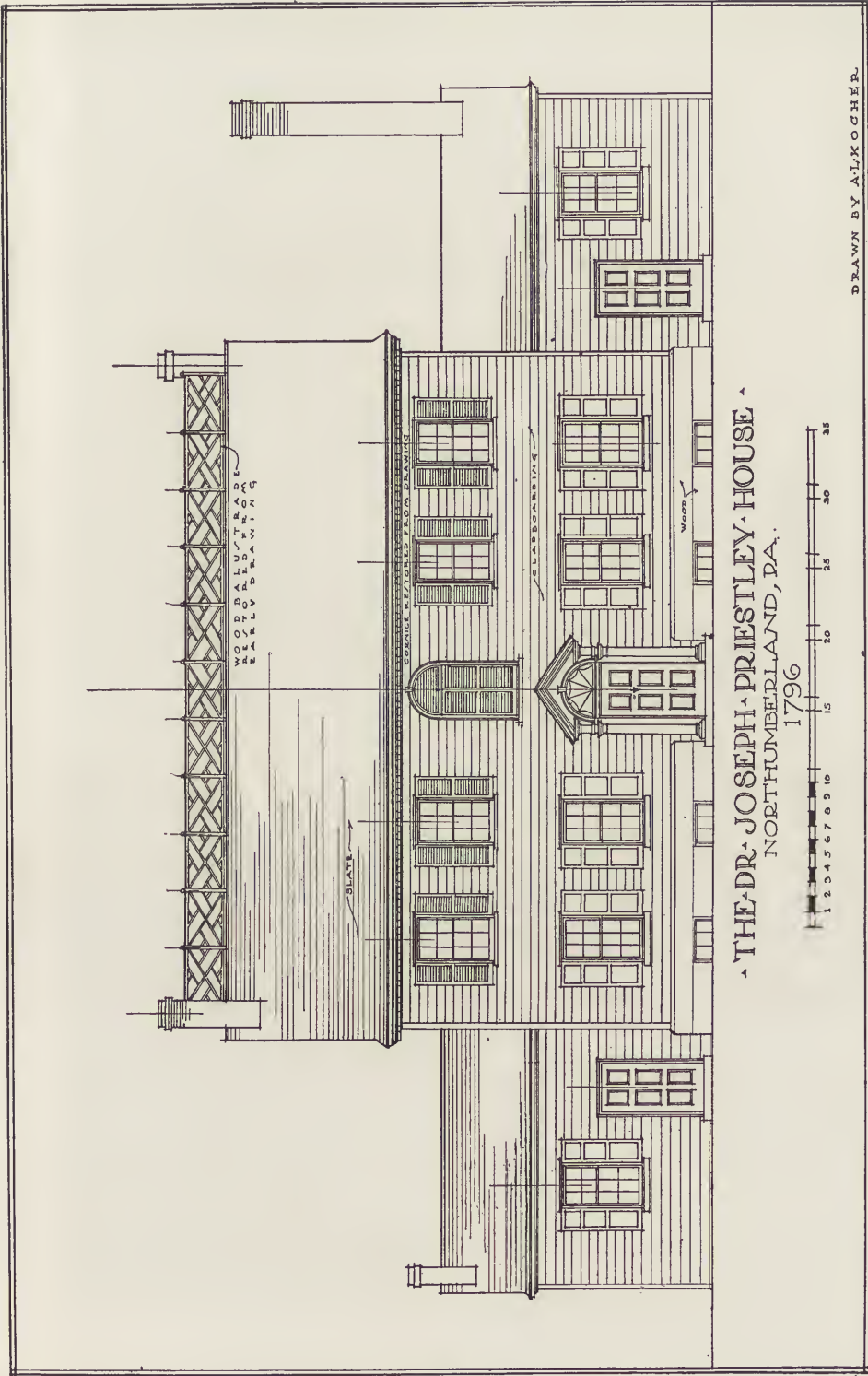


HOPE LODGE AT WHITEMARSH, PA  
1723 BUILT FOR SAMUEL MORRIS



J. PRIESTLEY HOUSE NORTHUMBERLAND, PA  
1796 BUILT FOR DR. JOSEPH PRIESTLEY





DRAWN BY ALKOCHEFF

THE DR. JOSEPH PRIESTLEY HOUSE  
 NORTHUMBERLAND, PA.  
 1796





STENTON, SHOWING ENGLISH GEORGIAN CHARACTERISTICS,  
WITH AN ACCOMPANYING SIMPLICITY ATTRIBUTED TO THE  
QUAKER FAITH OF ITS BUILDER, JAMES LOGAN.

Philadelphia, and, for the matter of that, of all the other towns in the Colonies as well, are so scrupulous to observe every London fashion that, whenever a lot of dressed dolls is sent out and displayed by the Tailors and Mercers, both men and women hasten to inspect them and have their clothing closely patterned thereafter."

While considering the predominating English character of the provincial architecture, it is interesting and appropriate to contemplate what deterring effect the presence of Quakers in the new world may have had on architecture and art. Their religion forbade them from making vain display in their dress or in their homes. Henry T. Tuckerman speaks of the Friends as a "class distinguished, indeed, for moral worth, but equally remarkable for the absence of a sense of the beautiful, and a firm repudiation of the artistic graces of life and the inspiration of sentiment, except that of a strictly religious kind." Many of the choicest examples of colonial architecture were erected by and for Quakers, and yet one can perceive a sentiment of straight-laced opposition among a portion of the faith. For illustration, an anecdote is handed down concerning a Friend, Joseph Richardson, who, in 1738, erected a dwelling in Attleborough, Pa. The house was large and somewhat costly and extravagant for its day. As the house was under construction he brought a friend to view it. The friend expressed no enthusiasm and was about to leave without saying anything, when Mr. Richardson ventured the remark: "Thee does not say what thee thinks about it," to which the friend replied: "All I have to say is, take thee care thee does not get to the bottom of thy purse before thee gets to the top of thy house."

Benjamin West is an instance of a Quaker whose artistic instincts were not stifled by the strict requirements of his faith. When he first indicated a talent

for painting it was a debated question among the Quakers whether he should be permitted to exercise his art. By good fortune it was decided that he possessed a God-given talent and he was allowed to practice his skill. Some one has pointed out that the world owes to the matter of fact rather than imaginative manner of the Quaker, the revolution in art made by West in his portrayal of modern battle scenes, when he refused to dress General Wolfe and the Indians as Roman soldiers.

While it cannot be denied that the churches of the Anglican faith and of the Lutherans have an unquestioned superiority with such excellent examples as Christ Church of Philadelphia, and the Trinity Lutheran Church of Lancaster, for which the Quakers have no counterpart in any of their meeting houses, yet there were various degrees of Quakerdom. Many a protest against luxury and gaiety remained unheeded among some of the Friends. For instance, objection was raised, early in the eighteenth century, against the use of fans and snuff-boxes "even in the meeting houses," "where they diverted women's minds from spiritual exercise." In 1726 certain erring female Friends were publicly warned against "the immodest fashion of hooped Petticoats" and "the imitations of them by stiffened or full Skirts which we take to be but a Branch springing from the same corrupt root of pride."

An attempt has been made to analyze the national elements present in the Pennsylvania colony. Attention has been called to the detached nature of the Teutonic peoples, who created an individual architecture which did not become woven into the completed fabric of the Pennsylvania style. The commanding importance of the contribution of the English has been pointed out. A full description of the separate buildings that are of Anglo-Saxon origin will be the subject of the next article.



STAIRWAY TO ROOF GARDEN—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO, TEXAS. GEORGE WILLIS, ARCHITECT.



*The San Antonio Golf Club*  
*San Antonio, Texas. Geo Willis, Architect*  
By  
*I. T. FRARY*

SOMEONE has said that there are two cities in the United States that have personality. The name of one had best remain unspoken lest contention be aroused; the other is San Antonio. A century of Spanish occupation left an indelible imprint upon this rare old city. As is usually the case, the distinctive features which set the city apart, in a class by itself, have until recently been accorded scant appreciation by its citizens and have been even regarded by some as handicaps to her commercial development. Happily this latter idea is giving away to a feeling of pride in the old structures which still remain as monuments of the city's picturesque past; and definite steps are being taken to safeguard them from the destruction with which they are being threatened by the city's rapid growth.

With so fine a source of architectural inspiration as San Antonio possesses in its group of Spanish missions and in its many smaller and simpler structures, one might expect that her architects would be quick to grasp the opportunity for producing a civic architecture that would reflect the old spirit and make the new city unique and individual. Unfortunately

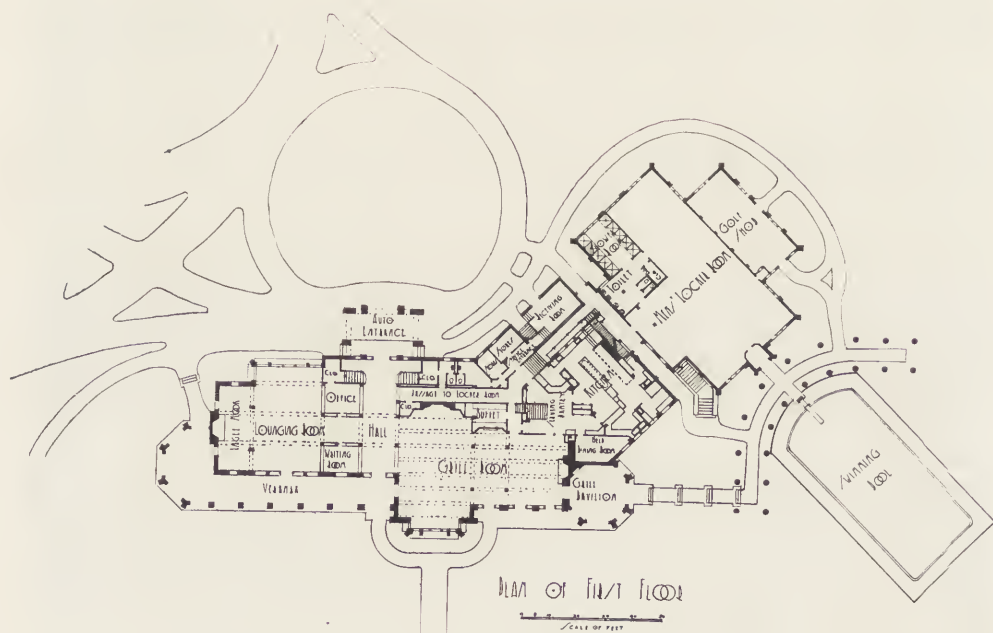
the obvious thought has not been grasped, and most of the modern buildings in the city are of the monotonous type that may be found in any growing community. A few men, however, have recognized the value of the old traditions and the adaptability of the Spanish style to climatic and other conditions existing in the city.

In designing the San Antonio Country Club, George Willis grasped these possibilities and adapted the Spanish mission type admirably to the requirements of his problem. A country club in a southern city would naturally suggest simplicity in both design and material. The stucco walls and the long, low lines so characteristic of the Spanish mission buildings are well suited to the location on a hill crest, while a rambling plan has the effect of corralling stray breezes. Compactness for economy of heating, which dominates so much of the planning in the north, is a negligible factor here, and Mr. Willis' design, although consistent in plan, indicates that he availed himself of the freedom which these conditions permitted and gave rein to his fancy and to his love for the picturesque.

As a result there is a diversity of



PLAN OF SECOND FLOOR



PLAN OF FIRST FLOOR

FLOOR PLANS—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO, TEXAS. GEORGE WILLIS, ARCHITECT.





VIEW FROM TERRACE—SAN ANTONIO  
COUNTRY CLUB, SAN ANTONIO, TEXAS.  
GEORGE WILLIS, ARCHITECT.



SERVICE WING AND LOCKER ROOM ANNEX  
—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO,  
TEXAS. GEORGE WILLIS, ARCHITECT.



SWIMMING POOL—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO, TEXAS. GEORGE WILLIS, ARCHITECT.



LOUNGING ROOM—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO, TEXAS.  
George Willis, Architect.



BALL ROOM—SAN ANTONIO COUNTRY CLUB, SAN ANTONIO, TEXAS.  
George Willis, Architect.

charm varying with every change of view. Seen from the golf links below the hill the building presents a simple, low lying composition of warm gray stucco and red tile, with masses of deep shadow under its overhanging eaves and arcaded veranda. As one approaches by auto the view is cut off largely by a heavy planting, which affords glimpses of stucco walls, touches of red tiled roof and openings made bright by window boxes well filled with flowers and vines. From the tennis court is seen a complex of swimming pool, pergola and inviting stairways against a rather bewildering background of gray walls, giving the general air of a stage setting which, when seen by daylight, makes one long for the evening shadows, well studied lighting effects and the music, brilliant costumes and drifting

groups of dancers and merry-makers.

The interior is quiet in color, relieved from monotony by the judicious use of gay cretonnes—a most comfortable atmosphere of harmony and of rest.

The Spanish architecture may not be in accord with the gray skies of the north; but under the brilliant sun of Texas the broad simple walls, the vigorous texture of tile roofs and the rich shadows of arcaded cloisters are wholly in tune. New England borrowed from old England, and the adaptation of the Georgian to its needs has developed the Colonial style that seems indigenous. The southwest, however, has different requirements, and buildings like the San Antonio Country Club are strong arguments in favor of the Spanish tradition in our semi-tropical climate.



VERANDA—SAN ANTONIO COUNTRY CLUB.

# TRAINING FOR THE PRACTICE of ARCHITECTURE



BY CHARLES H. MOORE

**I**N our modern methods of training for the practice of architecture, we are losing sight of the fact that architecture is an art, and not either a learned profession or an applied science; and that a proper equipment for the vocation of an architect cannot be obtained by any purely theoretic education on academic and scientific lines. Our new schools of architecture are proceeding on these lines to the exclusion of nearly every natural mode of training.

A glance at the history of architectural training in the past may help to clarify ideas which are now confused, and point the way to more fruitful methods of instruction than those which have lately come into vogue. It is a significant fact that what we all recognize as the great architecture of the world was produced before the advent of what we call the educated architect. To appreciate this fact, we have only to consider that in the great ages of architectural production—as the fifth century B. C., when in Greece the fine arts\* of antiquity reached their highest development—the architect was a practical craftsman, whatever else he may have been. Phidias, who directed the works on the Athenian Acropolis—and, if not himself the architect of the Parthenon, had, there appears every ground to believe, a considerable part in its design and construction—is said to have begun his career as a painter; and if the works of sculpture which

adorned that monument are correctly attributed to him, he was also a sculptor of supreme skill. What knowledge he had of letters or of the sciences of his day, we do not know; but with a background of building tradition, such as every architectural craftsman had, a working knowledge of his own language and an elementary acquaintance with geometry and statistics, would give all of such knowledge that his art required.

During the Middle Ages architectural design and construction were, as is well known, in the hands of guilds of building craftsmen. These bodies of men were organized under competent overseers, or master builders, who were themselves manual workers, though men of great intelligence, and often of highest artistic and intellectual capacity, as their works show. They thought on lines of current tradition and contemporary practice, but in free exercise of invention, which kept things moving, and produced the various mediaeval styles. Under this natural system a young man got his training by apprenticeship in the craft. He learned his art by putting his hand to such work as he could do under the master's guidance and the stimulating influence of quick-witted associates in the craft.

It was not until the sixteenth century that this system began to give place to the one which now prevails. The change has been gradual—following the general change of ideas that marked that epoch—and no complete divorce between theory and practice in the training of an architect was known until very recent times. It began with the advent of the amateur

\*By the term fine arts, I understand arts in which the idea of beauty dominates. Thus any art is fine art to the degree in which this idea prevails. In purely utilitarian building the idea of what we call practical utility governs. In architecture all utilities are controlled by the sense of beauty, as the architect conceives beauty.

architect of the Renaissance, and was nourished by the dilettante and academic spirit that followed. Our present system in Northern Europe and America owes its tangible beginning to the French *École des Beaux Arts*. This school, which had been established for sculpture and painting, introduced courses of instruction in architecture early in the last century. It is organized on academic lines, provides courses of lectures, prescribes exercises on paper, and awards diplomas which give their holders practically exclusive privileges of government patronage. For entrance the student must pass examinations in design, drawing, modeling, mathematics, and history. But something of the idea of craft apprenticeship is retained in the requirement that a student must pass a year in superintending the construction of buildings under a government architect. The system is autocratic, and the teaching is based on the principles of design of classic antiquity and the neo-classic Renaissance, but it allows great freedom in what is considered the adaptation of these principles to modern ideas and conditions.

In England there has never been any authoritative academic school of architecture, and something of the traditional craft apprenticeship survived until recent times. While it may be said that the modern professional architect arose in England in the persons of Jones and Wren, neither of these men had any academic training. Inigo Jones began as a craftsman in carpentry, and Sir Christopher Wren was, as is well known, a mathematician and professor of astronomy in the University of Oxford. Wren was not a practical draughtsman. He had no office like that of an architect of today, but gave most of his time to personal superintendence of the works, and made changes as the work proceeded. It is instructive to learn that the scheme of St. Paul's Cathedral was never embodied in any set of drawings.

In the more modern English system prescribed courses of study have been established, but these were at first subordinated to the work of an office under a practicing architect. Of late, with the

introduction of the use of steel and the growing demand for steel structures, the study of engineering science has been introduced, and is now being enormously increased. So that now a four years' course of studies, supplementary to the office work, is prescribed, leading up to examinations conducted by the Royal Institute of British Architects—the passing of which is now a condition of membership as a Fellow of the Institute. This is in striking contrast to anything before known, and it is safe to say that no architect of the great ages of architecture could have passed such examinations; while, on the other hand, it may be said that the men now furnished with academic diplomas have produced no architecture that will compare with that of former times. This is a fact that may well give pause to the advocates of the new methods of architectural training.

In America, until the rise of the present schools, the architect's training followed very nearly on the lines that had prevailed in England before the development of the system just described. The beginnings of the American academic system may be traced to an influence from the French *École des Beaux Arts*, together with that of the growth in the universities of courses in technical subjects, including architecture. When, in the sixties of last century, Mr. Richard Hunt returned from a course of training in France, he opened an *atelier* in New York, conducted on the *Beaux Arts* lines. Among the students of this school was Mr. William R. Ware, who, after completing his course with Hunt, and spending a short time in Europe, was appointed professor of architecture in the Boston Institute of Technology—where he organized, if I am not mistaken, the first professional school of architecture in America. Mr. Ware was a man of scientific bent, and he naturally emphasized the scientific side of the curriculum. But having also strong classical and academic predilections, he laid stress, in accordance with modern custom, on the study of the ancient orders; yet holding, at the same time, what is called the catholic idea, he endeavored to include

some attention to other styles—thus, from the start, committing the scheme to confusion. At about the same time technical instruction in architecture was introduced in some American universities, which has developed into the fully equipped professional schools now connected with a growing number of these institutions. It was natural that when once associated with the universities, the academic idea should gather force in these schools; and this, joined with the growing scientific spirit in all education, has brought about a fundamentally mistaken idea of training for the practice of architecture.

Before we get further committed to a wrong course, it behooves us to take account of these things, and to subject the new educational scheme to critical examination. Let us look for a moment summarily at this scheme, and consider some of its features and consequences a little in detail. The courses are substantially the same in all the schools, and consist of lectures on design, on the mathematics of construction, on perspective, on shades and shadows, on stereotomy, and on the history of architectural styles. The practical exercises are in mechanical drawing and designing, and in free-hand drawing, with some practice in modeling. A large amount of time is given to work with the ruling pen, and to elaborate shading of orthographic projections. It will be seen that, save for the free-hand drawing and modelling, the course is mainly theoretical, scientific, and mechanical.

This is no proper training for the practice of architecture—as the history of the art shows. We forget that no architect of the great ages of architectural design had any knowledge of the science of building in the modern sense. Design and construction in architecture are governed by tradition, imagination, artistic aptitude, and practical experience, more than by science, or by any such knowledge as the collegiate schools impart.

The trouble with the schools is, among other things, that by the incorporation in the educational schemes, of engineering science, of the kind required in the

modern use of iron, the calling of the architect is confused with that of the mechanical engineer.

In masonry construction, mechanical engineering has no proper part; for in architectural masonry, the eye has to be satisfied; and in order to satisfy the eye, more than the bare needs of stability are required in construction. In architecture these needs cannot, in fact, be exactly determined. To calculate stresses and strains in stone masonry, with mathematical precision, is both unnecessary and impossible. The architect's ability to secure stability comes primarily of that constructive sense which is the first natural qualification for the vocation of an architect. The requisite knowledge of the strength of materials and their proper forms and adjustments, is acquired by observation and experiment, not by scientific theory. The present school system ignores this, and provides no proper exercise of those constructive and artistic faculties on which the right practice of architecture depends. It should, indeed, be obvious that such exercise cannot, in the nature of things, be provided in academic and scientific schools.

As for the mechanical drawing of the schools, there is too much of it, and it is too much elaborated. The ruling pen is used, where the lead pencil would serve as well, and time is wasted on the shading of orthographic projections. This shading has no useful purpose. Modelling of solid form on such projections is a barbarism, because form can only be properly developed in perspective, and to cast shadows on them is unnecessary, for all dimensions are shown on the plans, elevations, and sections. Perspective drawing need not be much elaborated, though shadows may be usefully cast on them, in order to give correct suggestion of the look of things; but time spent in working up architect's perspective drawings into pictures is wasted.

The free-hand drawing differs in different schools, but in hardly any of them is it what it ought to be. The great use of drawing for students of architecture



lies in the quickening of the sense of form and proportion. In many of the schools of architecture drawing is taught on the lines of the modern schools of painting—the chief model being the nude human figure. The wisdom of this is very questionable. For the human body, under present conditions, is hardly ever normal; and to habituate the eye to its manifold imperfections is an injury to the artistic sense. On this account it would be better, I think, to confine the study of the human figure to casts and photographs from ancient sculptures—which supply all that is required. But among these there is need for discrimination in the choice of models. The quality of ancient sculptures is very unequal. In the older European schools, the least excellent examples were used as models, and the same models have been largely retained to the present time, both in Europe and America. They are the later Greek and Greco-Roman works, and have the artificial graces and extravagancies as well as the petty naturalisms of decadent art. These were the only antiques that were known when the older schools were started, and they suited the tastes of those times. The only ancient sculptures that are worthy of unqualified admiration are those of the Greek carvers of the fifth century B. C., by whom the human form was represented with perfection in its normal beauty and grandeur—as in the reliefs and pediment figures of the Parthenon. These are monumental and nobly ideal works, and have every quality to be desired in models for drawing. In them we have nature corrected by nature herself, and presented naturally with unexaggerated grace of posture and movement, in terms of the proper conventions of art.

The same discrimination ought to be exercised in choosing models for practice in drawing from foliate ornament, and that of the animal figure—whether natural or grotesque; and here the same principles of choice apply. The source of beauty in art is nature, which is expressive of the life that gives it being. This life is the first quality the expression of which should be sought. It will

be found, under whatever conventions, where men have worked with appreciation of the beauty of lines and surfaces in living things. To awaken and discipline the sense of this beauty, there is no means so good as that of drawing from nature itself—an exercise that ought to be constant in the training of an architect. Examples of the best that has been done, in foliate and animal carving, should be kept before the student, for these teach him how to grasp what in nature lends itself to effective ornamental treatment, and how the redundancies of natural things have to be simplified in art. The best foliate carving of the past—the best, because the most expressive of the vital principle of nature, subjected to the ordered rhythms and proper conventions of architectural ornament—is found in the French Gothic work of the twelfth century. Every school of architecture ought to be supplied with casts and photographs of this work.

The benefits of drawing are not limited to what concerns the carved ornamentation of buildings; they extend to everything that the architect has to do. The sense of proportion and all the amenities of the art are dependent on the training of mind and eye that drawing tends to give.

The historical courses of the schools contribute little to proper equipment for architectural practice. They naturally tend to create that promiscuous eclecticism which has been the bane of modern architecture. Students are bewildered by the multiplicity of styles, and get little exact knowledge of any style. The information supplied is mainly derived from books, and few books on the history and character of architectural styles are trustworthy.\*

Such, in brief outline, are the main features of the courses of study now offered in the professional schools of architecture. When a young man leaves such a school, and enters the office of an

\*I have discussed the use of books on this subject, in a paper on "The Study of Mediaeval Architecture," published in the "Journal of the Royal Institute of British Architects," 3d Series, Vol. XXIII, No. 3.

architect, he begins a routine of indoor work that allows little chance for either proper artistic training or for suitable contact with practical building operations, such as the old craftsman's experience gave. The office of an architect in large practice, today, is organized on the lines of a commercial establishment. A large corps of young men is here employed in mechanical draughting, which is uninspiring drudgery. The architect himself is largely occupied with specifications, contracts, and consultations with clients, together with matters of heating, lighting, ventilation, and plumbing, including many other matters of a kindred nature which, however useful, have nothing to do with architecture; and with which the architect ought not to be obliged to deal. The architect is an artist, and his art alone is his *métier*.

It may be worth while to consider for a moment what might, under existing conditions, be done in order to restore something of what has been lost, and to put the training for architecture again on normal lines. No great immediate change can, of course, be looked for; but as men reflect on these things, and come to see more clearly what architecture is, the need for a more natural and effective method will be felt. It will be seen that the scientific equipment necessary to the architect's calling is small, but that his artistic aptitudes and constructive faculties require the fullest development. Whatever contributes to his proficiency as an artist and a constructor must be his main preoccupation. As an artist he should be quick to perceive every possibility of design in proportions and dispositions of quantities, and in development of details, from largest things to smallest—including every quality of expression in the whole and in the parts—so that, whether simple or complex, the building shall be a harmonious unit. As a constructor he requires practical acquaintance with the manual processes of building, such as can be attained only by putting his hands to these processes. Therefore, besides the artistic culture that the habit of observation in drawing gives, every student of architecture ought

to be exercised in the building craft—even in bricklaying, in stone cutting, and in carpentry—as well as in superintendence of building. It should be obvious that this experience is necessary to competence; and to a man of constructive instincts it will be found delightful. A man who does not feel pleasure in such manual work is unfit to be an architect. Every process of design in architecture is governed by an imaginative sense of the material and manual means by which it is to be realized.

Some time for this manual work might at once be gained by lessening, if not wholly eliminating, the greater part of what now constitutes the main course of study. Mathematics, for instance, ought to be reduced in quantity, if not wholly omitted; for very little mathematics is required in the proper work of an architect. In place of mathematics, the student should be exercised experimentally in the principles of construction, and in critical analyses of structural systems. With unnecessary mathematics should go all that belongs to purely mechanical engineering, and all needless mechanical drawing—more particularly all shading of orthographic projections. Historical and archæological studies ought to be wholly stricken out, leaving it to the student himself to acquire any knowledge of these subjects that he may desire. Such knowledge must be gained, for the most part, by direct contact with the monuments. Where this is impracticable, photographs will supply information that will be reliable as far as it goes, but any complete understanding of a building requires examination on the spot. This does not mean that useful knowledge of the history and character of architectural styles can be gained only by exhaustive first-hand study; but it does mean that some contact with the buildings themselves is essential to such knowledge. It is important, however, to realize that successful practice of architecture calls for no particular knowledge of the history of styles. The great architects of ancient and mediæval times had no such knowledge. The common traditions of building—in the atmosphere of

which they worked—and their own inventive genius gave the best inspiration, and made their work their own in the proper sense. No good work can ever be produced when men undertake to build in any style of the past, save in so far as the principles of a given style are suited to their needs, and are made their own by rational understanding and assimilation.

In support of the new educational ideas, men speak of a need for meeting new conditions by new methods. But in architecture there are no new conditions, and therefore there is no call for new methods; though new forms may be evolved in the future, as in the past. The only materials suitable for architecture have been long established, and are the same now as in former times. The present use of iron and steel—which indeed requires new methods—comes of no needs of architecture. It is destructive of architecture if not kept apart from it. It comes of the passing excessive industrial and mechanical activities and commercial interests, that demand haste and cheapness in building for purely utilitarian ends. Utilitarian ends are good in their place, but they must not in building be confused with the ends of architecture—with which neither haste nor cheapness are compatible. In the present mixture of the two, the engineering of iron construction destroys the architecture, and the meretricious archi-

itecture spoils the good engineering. In the tall office building of New York, for example, the whole structure is a steel frame hidden by a façade of other materials, which is not any part of the structure but only a revetment affixed to it, and dependent on it. True architecture is impossible in such a contrivance. If the building must be a steel frame, let it be frankly shown for what it is. It cannot be a pleasant object to behold, but it will at least have the merit of veracity. Overlaid with foreign materials, simulating architectural forms proper to stone masonry, it is neither true architecture nor honest engineering.\*

If architecture be a fine art—an art in which the idea of beauty dominates design, according to the definition given in the footnote at the opening of this paper—it should be obvious that these steel structures are not architecture; for the idea of beauty does not enter into their formation; nor can architecture, in any proper sense, arise from any mendacious disguise of such structures by masking façades. These and all other departures from normal principles are fatal to architectural design. Before this noble art can again flourish, we must get back to conditions that will make it possible.

\*Whether disguised or not, it will not be enduring, for iron is quickly perishable on exposure to weather; and even if not exposed it is still liable to deterioration from molecular changes by which its strength is impaired. I have heard an engineer say that he looked for collapses among the new steel structures in the not distant future.



DETAIL OF LOUIS XVI. SHOPFRONT, FORMERLY AT NO. 3 QUAI BOURBON, PARIS. PRESENTED TO THE METROPOLITAN MUSEUM OF ART BY J. P. MORGAN.

# *A Louis XVI Shopfront*



*By Charles Over Cornelius*

HERE has recently been placed on exhibition at the Metropolitan Museum of Art, New York, the very interesting piece of French eighteenth century exterior woodwork illustrated herewith. It is a shopfront of oak, characteristic in design of the period of Louis XVI (1774-1793), which stood at No. 3 Quai Bourbon, Paris.

The weather-worn condition of the piece has necessitated a certain amount of restoration, in which work the measured drawing of César Daly<sup>1</sup> has been used as a guide. There has been no attempt to disguise the necessary restorations, which, indeed, have not in any way departed from the original form, and none of which is conjectural.

The basis of the design is an order of three Corinthian pilasters supporting an

<sup>1</sup>César Daly, *Motifs Historiques d'Architecture et de Sculpture d'Ornement*. Paris, 1870. Vol. II. Louis XVI—pl. 23.

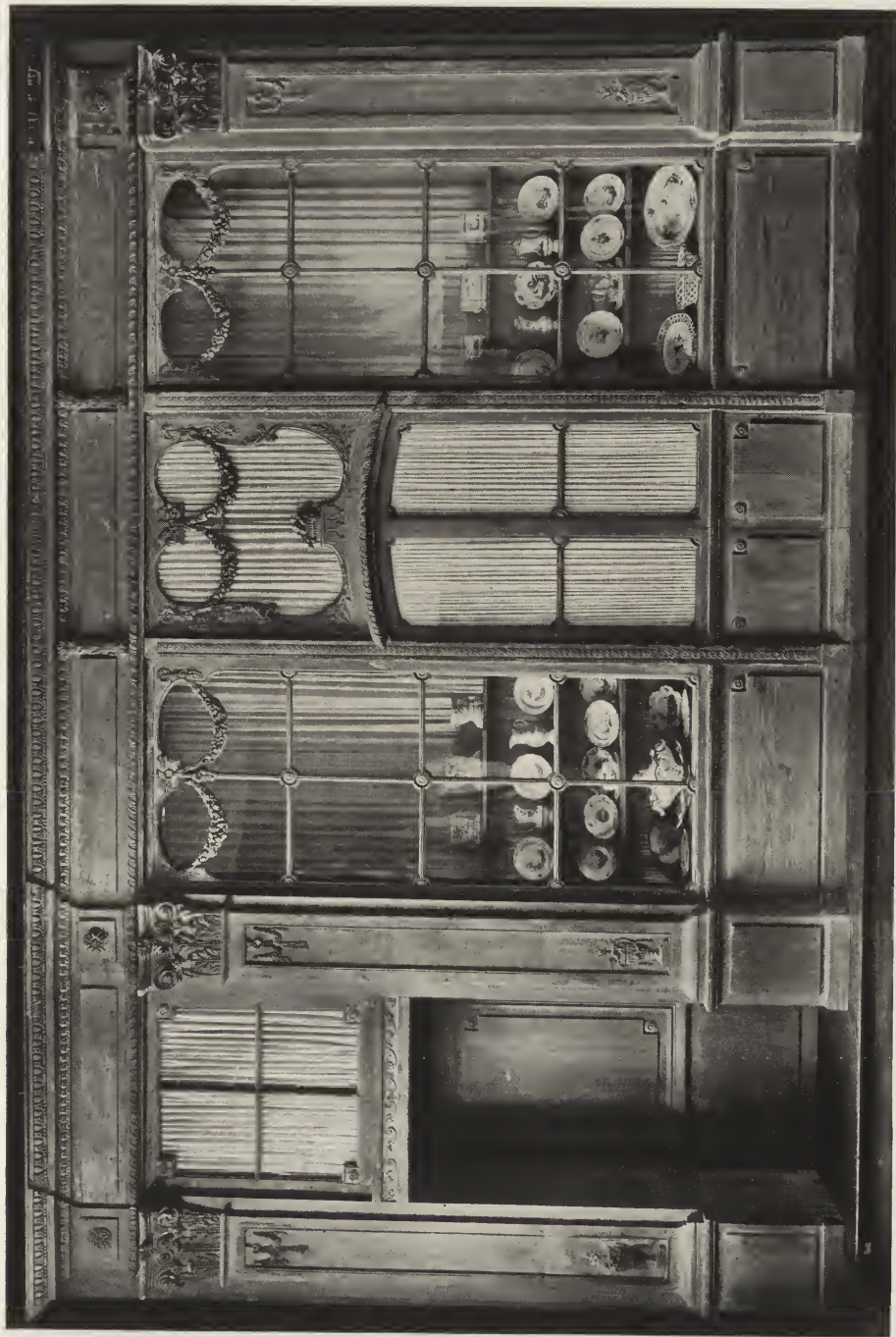
entablature. The door to the left, which gave into the dwelling portion of the building, is flanked by pilasters, while the larger remaining space is symmetrically treated with the doorway of the shop and the two show windows.

The piece shows to a remarkable degree the character and spirit of the period from which it dates, a period of small things done exquisitely, of humble things imbued with elegance. The lightness and grace inherent in the style are enhanced by their expression in wood rather than stone, while the scale is almost as fine as that of interior work.

An exterior of this sort is particularly rare by reason of its perishable nature and its exposed position. And it is of high value for the direct suggestion which it may hold for designers today.

The shopfront is a recent gift to the museum from J. P. Morgan.





LOUIS XVI. SHOP-FRONT, FORMERLY AT NO. 3 QUAI  
BOURBON, PARIS, PRESENTED TO THE METRO-  
POLITAN MUSEUM OF ART BY J. P. MORGAN.

## BUILDING MATERIAL PRICES IN 1921

*By Willford I. King, Ph.D.  
of the National Bureau of  
Economic Research, Inc.*

THE question uppermost in the mind of almost every business man today is: "Where are we headed? Is the present fall in values to continue until we reach the level of 1914 or will prices rebound sharply in the immediate future?"

It is needless to say that no one can answer this question with any certainty that he is right. Although it is true that every cause must produce its definite effect, yet, nevertheless, in a world in which thousands of causes are operating and each cause is constantly changing, it is not within the capacity of human beings to foresee much of what the future holds in store. True, there are a few events which are commonly predicted with considerable accuracy. No one is startled when the astronomer tells us exactly the time when the sun will rise tomorrow. We should instead be surprised if he failed to predict accurately even much more distant events, as for example, the occurrence of an eclipse. Astronomy, however, is the seer's paradise because only a few forces combine to produce the results studied in that field.

Most phases of human inquiry, however, offer far greater obstacles to the prophet's success. The meteorologist, in predicting the approach of a coming storm, is much more likely to err than is the astronomer in telling the time of occurrence of an eclipse. The meteorologist suffers the greater chance of error because he is compelled to work with the more complex set of causes. The economist is in the position of the meteorologist, except that he must deal with a group of forces even more intricate and involved. Seldom, therefore, is he able to forecast events except in a most tentative way. He can only pick out a few of the forces which commonly dominate the situation, study them, and then say that

if these forces continue to operate, and if other influences remain as usual in a subordinate position, the outcome will be as stated.

Some will feel that prediction, based upon such imperfect knowledge, is the height of folly. But is this true? Every business man, from the shoe cobbler to the greatest manager of the greatest industry, must have in mind a forecast of his own or he would not think it worth while to continue in business.

If prophecy is an essential to everyday business, it is not strange that there should be a demand for specialists in this field, for it seems reasonable to suppose that the man who makes it his business to study the causative forces and their effects is at least a little more likely correctly to forecast future events than is the man who must perforce devote nearly all of his time to other duties.

When, then, an economist has the temerity to discuss the business outlook, he does so, not on the premise that he can weigh and balance forces better than the man actively engaged in business, but only on the assumption that he has become more familiar with these forces because he has had more time to devote to their study. It is in this spirit that the following attempt is made to analyze existing conditions and to point out the results which are the normal outcome of the forces now at work.

The architect, estimator, or contractor, who wishes to forecast the future prices of building materials, has before him two distinct but related problems: First, what is the outlook for the price level in general? Second, will building material prices go along with the general trend or will they fall further, or begin to rise sooner? The logical procedure seems to be to deal with the larger problem first, and this procedure will be followed here.



The first prerequisite to an understanding of the price problem is to have in mind a clear cut mental picture of the distinction between an individual price and the general price level. In order to establish this concept, one can scarcely do better than to repeat the very apt simile used by Professor Irving Fisher to illustrate the phenomenon. He likens the price level to the level of the water in a lake. In the strictest sense, of course, such a thing as a lake level or a sea level can scarcely be said to exist, for, in practice, the surface of the water is nearly always more or less disturbed. Yet, nevertheless, even when this surface is wildly lashed by the wind, we still have no difficulty in forming a very definite mental concept of a position known as the lake level.

And we all realize that the variations in this level are very different in their nature from the waves caused by the wind. In the spring time, when the freshets occur, the lake level rises greatly, while, on the other hand, during a long-continued drought, it sinks to a much lower point; but neither the rise nor the fall has the remotest connection with the waves, which disturb the surface all the while.

Now the price level, like the lake level, is governed by a flow; but, in this instance, the flow is one of circulating medium rather than of water. The principal kinds of circulating mediums are money and bank deposits, the latter circulating by means of checks. When much water flows into the lake, the water level rises; when the volume of circulation increases, the price level likewise goes higher.

Now, if the lake is a very large one, a great inflow of water will raise the level but slightly. Similarly, if the amount of business transacted in a country is large, a given increase in the supply of money and bank deposits produces a smaller rise in the price level than would be brought about by a similar monetary increase in a country where little business is done. In a nation with business transactions as immense as those of the United States, an increase of even a billion dollars in the

circulating medium has only a moderate effect in raising the price level.

#### WHY PRICES ROSE.

During the period 1914 to 1920, the price level in this country more than doubled. What was the cause? The reason was partly that most of the European nations at the outset of the Great War abandoned the gold standard and substituted therefor a basis of paper or fiat money. This enabled them to use the gold formerly constituting a part of their circulation to buy supplies over here. This gold was not in itself sufficient in amount to greatly raise our price level. But every dollar of this gold could be used as reserves to support many dollars of bank deposits; hence, our total supply of circulating medium soon was increasing by leaps and bounds.

Still another reason, however, served to multiply greatly the volume of inflation. Congress twice amended our banking laws; first, by reducing the percentage of reserves required to be held against deposits; and, second, by requiring that reserves of national banks should consist only of deposits in Federal Reserve banks, in other words, a credit reserve was substituted for a money reserve, thus releasing the money for use in the circulation. More important by far, however, is the fact that both of these measures combined to make a dollar of real money serve as the basis of many more dollars of deposits than it could possibly do under the old laws. After the enactment of this legislation, therefore, the banks were enabled to expand their deposits enormously and, since this expansion meant great profits for the bankers, they of course did not fail to avail themselves of the opportunity presented. As a result of the expansion of loans and deposits, our supply of circulating medium was doubled and prices rose to a level approximately twice as high as that existing before the passage of the Federal Reserve Act.

It is, then, easy enough to see why prices thus rose, but why are they now falling? Most of the gold imported in 1915 is still here; the banking laws have not been amended to require an increase

in reserves; everything appears to remain just as at the close of 1919; and yet the price level has recently fallen off very sharply. Is there an explanation of this paradox?

#### WHY PRICES ARE FALLING.

To explain the cause of this recession in the general level of prices, one must consider a phase of the money problem not yet touched upon in this discussion—that is, the velocity with which money and deposits circulate. Money, in one respect, resembles a machine—the faster it moves, the more work it will do. When, therefore, the rapidity of circulation slackens, it is equivalent to a reduction in the volume of circulating medium; hence, the price level naturally tends to fall. Investigation seems to show that in times when business becomes dull, money and deposits circulate very slowly, and *vice versa*. How does this fact bear upon the present situation?

While the causes thereof are very incompletely understood, it is easily seen from charts of almost any business indicators, that prosperity goes in waves, the crests of which are normally three or four years apart, the intervening troughs representing periods of depression. These waves, however, are not very regular in shape, some being higher than others and the time intervals between them are unequally spaced. This irregularity makes it impossible to foretell future wave movements with the accuracy that would be possible if all the waves were symmetrical and of uniform height. However, a study of these waves does, nevertheless, reveal certain facts of moment. Let us, then, note some peculiarities of the cycle in recent years.

From 1914 to 1919 we had no marked business depression. The rise of the price level, under the influence of inflation, tended to carry even the least competent business men safely over the thin places in the financial ice. The number of failures, therefore, remained abnormally low during almost the entire period. The natural inference would be that the delayed weeding out process would probably begin with added strength when inflation ceased and that this might result in a de-

pression more severe than normal. This probability was pointed out by the present writer early in the spring of 1920.

At present, we are witnessing the normal culmination of the forces just mentioned. The depression has arrived. Failures are multiplying. The demand for bank loans has fallen off and the volume of deposits has contracted somewhat. With business dull and future prospects uncertain, the velocity of circulation has naturally slackened greatly. The price level has, therefore, fallen very sharply.

With this drop in the price level, everyone is familiar. The real question of the moment, however, is the outlook for the future. What is ahead? Are we well on the road to deflation and a permanent drop in the price level?

#### PRESENT "DEFLATION" NOT PERMANENT

To this last question, the answer is that there seems little reason to believe that there is any tendency whatever toward permanent deflation or that the downward price movement is to be long continued. Such a permanent decline might, however, be brought about by any one of the following three causes: first, the Federal Reserve Board might utilize the present opportunity to increase permanently its ratio of gold to deposits and circulation; second, Congress might amend the banking laws so that the national banks would be required to carry larger reserves against deposits; third, the European nations might call back gold to be used as a basis for the rehabilitation of their currency.

Congress appears at present to have no intention of increasing the reserve requirements of national banks. On the other hand, a movement of gold to Europe is quite likely to occur eventually, but it scarcely seems probable that it will assume very large proportions for several years to come. The Federal Reserve Board has made no statement of its policy, and hence it is folly to attempt to predict its actions. Since it is perhaps easier to follow the present course than to change, we shall assume tentatively that the Board will continue to strive, as it has during the past year, to maintain the legal re-

serve limit of 40 per cent. and nothing more. If such should be its policy, what is the most probable future course of the price level?

#### RECOVERY OF PRICES AFTER SOME MONTHS.

The indications are that the present decline is destined to continue for several months to come. The stock market has thus far shown no signs of recovery and it would be contrary to the history of most past cycles, if commodity prices were to rise materially until at least three or four months after the stock market reaches its lowest point. On the other hand, it is not probable that the decline in commodity prices will continue in the future with the same rapidity which has characterized the past few months. Already the prices of some commodities are rebounding forcefully, and others will probably do likewise as the weeks go by. However, there seems little reason to expect any marked rise in prices during the next six months. In general, if the cycle holds true to its usual form, 1921 will be a year of relatively low prices, while during 1922 the price level will presumably be climbing upward again, and the crest of a new wave should be reached about 1923. The fact that the 1919 wave was probably abnormally high makes it rather unlikely that the 1923 wave will attain as great an altitude as that reached in 1919-1920; indeed one need not be surprised should its summit prove to be very materially lower. But this is merely a probability—not a certainty. It is entirely possible that the next wave crest may bring prices fully as high as those prevailing in the early months of 1920; in fact, should the Federal Reserve Board decide to lower its reserve limit, prices might even rise far above any level that has yet been attained.

Such is the general outlook for the future course of the general price level. While specific dates have been suggested, the reader should keep the fact in mind that, as long as our knowledge of the business cycle is as limited as at present, these dates must be considered tentative and a considerable allowance must be made for error.

So much for the course of the prices

at wholesale of commodities in general. Are we justified in assuming that individual prices will all follow this same general trend?

On a previous page the price level was likened to the level of a lake. By analogy, a wave on the surface of the lake may be thought of as representing the price of an individual commodity. Evidently, a very high wave in one place must be compensated for by a depression at some other point much below the general level. Hence, at any particular price level, a high price for one commodity means a low price for some other. The reason for this is simple; namely, if a man spends his income for one article, he must economize on something else, and the resulting falling demand for this other article naturally lowers its price.

Since the money supply affects all commodities indiscriminately, there is a marked tendency for the prices of all articles to rise or fall to the same extent. But individual forces affect the supply and demand for different articles in different degrees, and hence, when the price level is doubled, some articles rise to more and others to less than twice their former height. Thus, we have waves on the price level just as on the surface of a lake. Since, however, most prices tend to fluctuate about a norm, there is observable a widespread tendency for prices which have departed far from the general level to return thereto. Thus, in the spring of 1920, clothing prices had risen much further than prices in general, and in recent months the declines in that field have been particularly violent.

#### SPECIAL INFLUENCES AFFECTING BUILDING MATERIAL PRICES.

Since the year 1914, the price rise has been relatively greater for building materials than for other commodities and the decline of the present year has not, thus far, been as severe in this as in many other fields. Under these circumstances, the natural inference is that a heavy fall in this group of prices is likely to occur before the present depression is ended. Two opposing forces, however, tend to hinder this downward movement: first, the shortage in the supply of resi-

dences; and second, the growing scarcity of timber. As regards the first, it may be said that the shortage of residences has probably been overestimated by most writers on the subject. New residences are needed primarily to accommodate our growing population, but, from 1914 to 1919, the diminution in immigration made our population grow more slowly than usual; hence we have not needed so many new houses. Furthermore, many barns, storebuildings, and the like, have been remodeled into houses, thus obviating the necessity of building completely new structures. It is not improbable, therefore, that much of our building deficit exists only on paper.

There are, nevertheless, certain forces which tend to prevent building materials from falling to the common level.

If the National Industrial Conference Board's reports are accurate, house rents have not risen to anything like the extent characterizing most other prices. They are, therefore, not likely to decline much and may even rise materially higher. In either instance, house building is likely to become relatively a more profitable industry than has been the case for the last few years. However, this opportunity is largely offset in certain states, like New York, by the enactment of rent laws which tend to make investment in residence property a hazardous undertaking.

Increasing scarcity in the national timber supply materially tends to make lumber prices rise more rapidly than the price level in general.

#### SOME FURTHER DECLINE OF BUILDING MATERIAL PRICES, FOLLOWED BY RECOVERY.

Were lumber the only building material this differential would be very great, but the continual increase in the substitution of steel, brick, stone, and concrete for wood makes this divergence

from the main trend slow rather than rapid.

In the presence of so many conflicting forces, it is impossible to predict with confidence the probable future course of the prices of building materials. If, however, no unusual circumstances arise, the prices of building materials should, like other prices in general, decline somewhat during the next few months and not ascend greatly before the end of 1921. It is possible that an active building campaign in 1921 may cause a rise early in that year, but the deadening influence of a business depression is so great that any large building program in 1921 seems hardly probable. The likelihood of 1922 being a year of active building is very much greater.

The fact has been often noted that the price of labor tends to follow irregularly the course of the prices of other commodities, though lagging a few months behind their general movements. There seems no especial reason for expecting in the present instance a departure from this normal sequence of events.

The statements just made describe the present price outlook as it appears to an economist. The whole line of reasoning may, indeed, be changed in the future by some unusual occurrence which brings to bear upon the price situation new and powerful forces. However, the market is only occasionally diverted from its normal course by extraordinary events. The chief obstacle to accurate forecasting is not in the danger of unforeseen cataclysms but in the incomplete state of human knowledge concerning past and present conditions. Until this situation has been remedied by many years of painstaking research by numerous statisticians, the economist can only predict future happenings in a much qualified way. Such is, then, necessarily the nature of the present attempt.

# The NEW PLANS for PARIS

By Jacques Gréber

THE city of Paris, in spite of enormous sacrifices during the war, in spite of the increase of its debt during five years of a general paralysis of its activities, did not hesitate to take up again immediately after the war its program of embellishment and development, interrupted in 1914.

A law passed during the war compels every municipality of France to make a plan of its lay-out, embellishment and extension. The main principle in the making of a good plan for a city is not to separate the questions relating to sanitation or utilities from those that are purely esthetic. Examples such as Paris, Vienna, Dresden, prove beyond doubt that civic beauty is a most important factor in urban life.

Upon consulting statistics as to the value of land in Paris before and after the carrying out of improvements with a view to embellishment, it is seen that the more radical such improvements are the greater is the return, the expenses incurred always resulting not in a burden for the city, but in increased prosperity. Paris owes its world-wide reputation as much to the beautiful harmony of the Champs Elysées as to the care with which the public departments have carried out the works of a utilitarian character.

The recent public competition for the improvement and embellishment of Paris was divided into four sections, corresponding to the various works the city of Paris has to carry out in order to meet the necessities of its development.

The first section of the competition covered the general plan of the entire Paris region, including questions relating to canals, the river port and railroad lines as well as to housing and the creation of parks in a wide radius around Paris, the Administration of the Department of the

Seine having realized that the actual limits of the department do not contain the entire agglomeration of the population of the capital.

The second section of the competition touched only upon the embellishment or improvement of the interior of the city of Paris, at present circumscribed by the toll boundaries: making new avenues, building new public monuments, such as a central station or other architectural project of interest to the city itself.

The third section looked to the improvement of the immense plots now occupied by the fortifications and the exterior military zone surrounding the fortifications; that is, in round figures, a belt twenty-five miles long by approximately 1350 feet wide. As this belt of fortifications has become useless for the defense of Paris, a special law has been passed for its transformation into parks, playgrounds, and houses for large families.

The fourth section of the competition comprised various projects which might be suggested for the embellishment or improvement of any part of the Greater Paris region. In this section a victory memorial could be suggested quite as well as a packing house or a sea harbor or a garden city.

The various winners in the four sections were:

- I. General Paris ensemble: 1, Mr. Jaussely; 2, Messrs. Agache, Auburtin, Parenty and Redont; 3, Messrs. Molinié, Nicod and Ponthier; 4, Messrs. Faure-Dujarric, Barrington and Chaurès; 5, Mr. Delthil.
- II. Interior improvement and embellishment of Paris: 1, Mr. Pelée de Saint-Maurice; 2, Messrs. Molinié, Nicod and Ponthier; 3, Messrs. Faure-Dujarric, Barrington and Chaurès.

III. Improvement of the fortifications: 1, Mr. Gréber; 2, Mr. Louis Boileau; 3, Mr. Lachenal.

IV. Miscellaneous projects: 1, Messrs. de Rutte, Sirvin, Peyret-Dorthail and Bassompierre-Sevrin.

The plan by Mr. Jaussely and his associates shows what Paris may become in the future if the vast projects contemplating a city of ten million inhabitants can be carried out: a city where the housing problem would be done away with, where sanitary and practical living places would be the rule, where even large merchant ships could dock in Paris, making of the city a world centre from every point of view. A system of roads, con-

siderably enlarged and widened, suggested by Mr. Jaussely, would enable Parisians to live as in America, largely in the country instead of being packed together, as at present, in the most congested and most unsanitary parts of the city. This wholesome ideal comes to us direct from England and America, and if it has been impossible to follow it until now, it is because the administration of the city has had to contend with difficulties in connection with roads, which can only be cleared up through the recent law pertaining to the extension of the city. Mr. Jaussely made his general plan of Paris in the same masterly fashion as he made the plans for the improvement and embellishment of



GENERAL PLAN OF PARIS, SHOWING THE ENCIRCLING LINE OF OLD FORTIFICATIONS.



SECTION NORD-OUEST



ABOVE: PARKS AND HIGH CLASS RESIDENCES; BELOW: WORKMEN'S HOUSES AND PLAYGROUNDS—ACCEPTED PLAN FOR IMPROVEMENT OF OLD FORTIFICATION SITES OF PARIS.

Jacques Gréber, Architect.

Barcelona, which he had charge of several years ago.

The successful candidate in the second section, Mr. Pelée de Saint-Maurice, made an extremely interesting plan for the interior of Paris, which may be described as a modern "Haussmannization" of the great city. The main characteristic of this study is the breaking up of the centre of congestion by the removal of the terminal stations now situated haphazardly in the interior of the city without being even connected with one another. Mr. Pelée de Saint-Maurice is enabled to push these railroad terminals toward the periphery of Paris by availing himself of the wide roads which it will be possible to build when improving the fortifications; this will give a perfect circular connection between the future terminal stations.

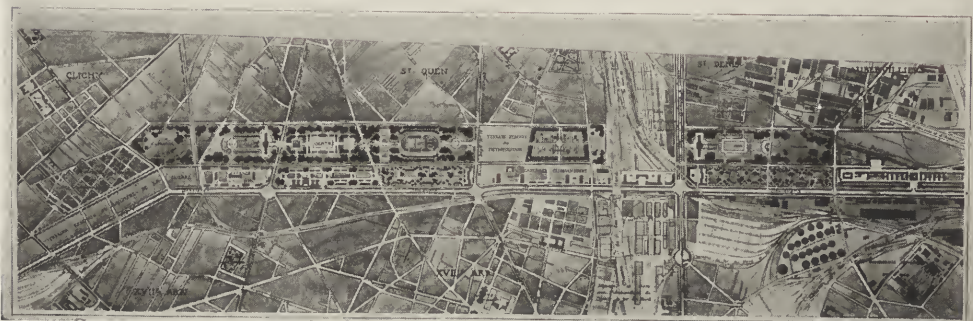
Of this plan, which is above all else a study of existing problems, we shall

merely say further that the author misses no opportunity to combine traffic improvements with the creation of perspectives or decorative points contributing to the beauty of public roads. His plan is a renewal of Haussmann's great program, which was carried out so wonderfully by Alphand. The same program is now repeated under peculiarly different circumstances, due to the development of rapid transportation and to that irresistible attraction which, in Paris as in New York, results in a congestion that is almost without remedy.

The third section (improvement of the fortification plots) covers work that will have to be executed without delay, inasmuch as it is the object of a special law; and it enables the city of Paris, without too large a burden of expense, to solve rapidly the housing problem and improve the sanitary conditions of the city.



SECTION OVEST



ABOVE: PARKS AND HIGH CLASS RESIDENCES; BELOW: WORKMEN'S HOUSES AND PLAYGROUNDS—ACCEPTED PLAN FOR IMPROVEMENT OF OLD FORTIFICATION SITES OF PARIS.

Jacques Gréber, Architect.

Mr. Gréber tried in his plan to solve the housing problem as advantageously as possible for the finances of the city of Paris without, however, obstructing the natural circulation of air resulting at present from extensive open spaces. These two requirements, which seem to conflict with each other, could only be met by planning houses in the form of garden cities and completely eliminating six or seven story buildings, which would have choked Paris with a high wall, preventing good ventilation. Mr. Gréber's plans show houses of several stories only on each side of the broad roads leading to the capital; these relatively high buildings have their narrow side in the direction of radiation of ventilation of Paris. In spite of this concession to hygiene, it is still possible to house nearly 100,000 people on the fortification lands; the remainder is used for the construction of recreation

centres (pools, gymnasiums, covered tennis courts, etc.) surrounded by parks for out-of-door games, to which are added municipal vegetable gardens, making it possible to have gardening schools for all the housekeepers residing in the neighborhood. Generous spaces are also reserved for agricultural exposition palaces, auditoriums, libraries, playrooms and other social welfare activities.

A wide boulevard with a varied outline enables the city to make of this outdoor belt an excellent distributor of traffic, which will relieve the central arteries of the city. Mr. Gréber incorporated in his study for Paris the best examples of modern city organization which he analyzed while preparing for the city of Philadelphia the plan of Fairmount Parkway, now being carried out. The city of Philadelphia found it possible to make a large opening in the very heart of the city so as to have





SECTION SVD-OVEST



SECTION SVD-EST

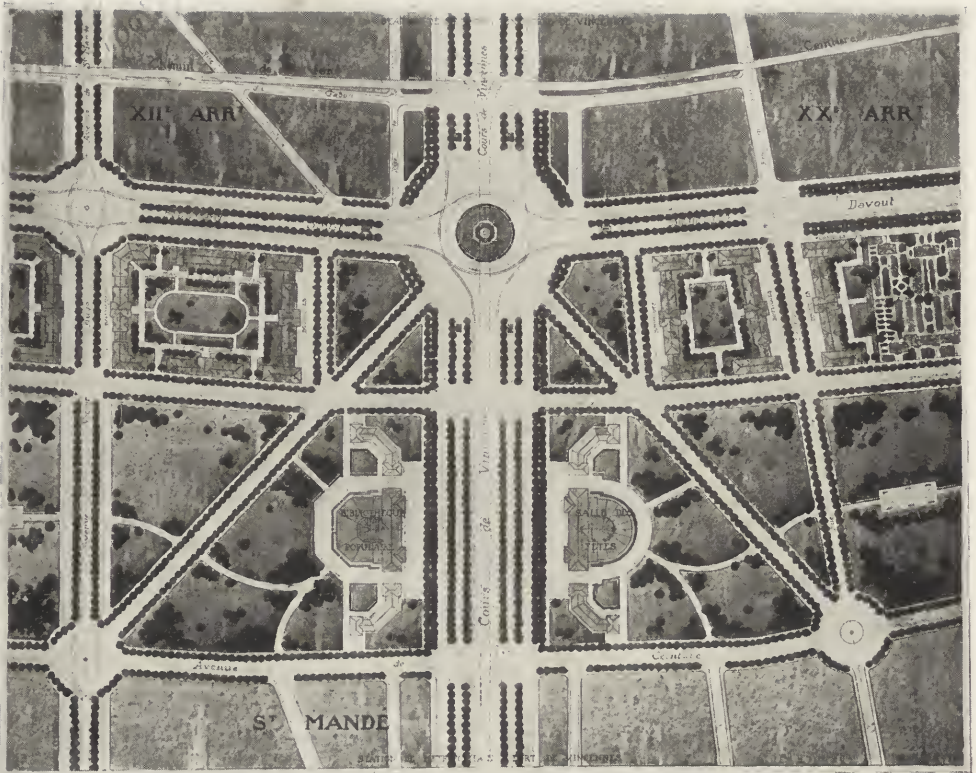
ABOVE: WORKMEN'S HOUSES AND PLAYGROUNDS; BELOW: SOUTH CANAL AND WEST WATER TERMINAL (INDUSTRIAL DISTRICT).



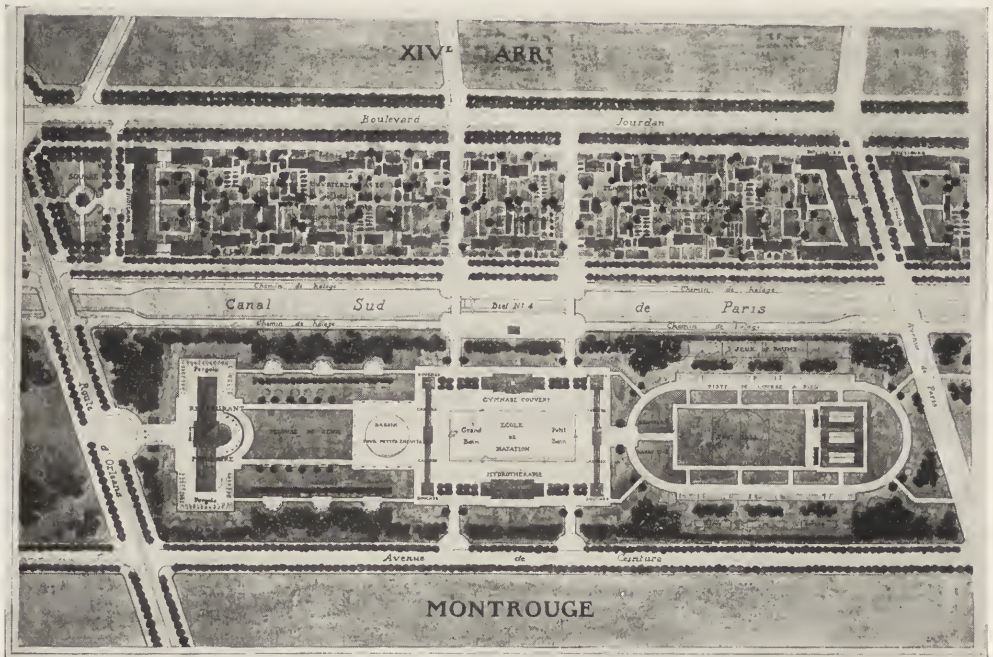
SECTION SVD



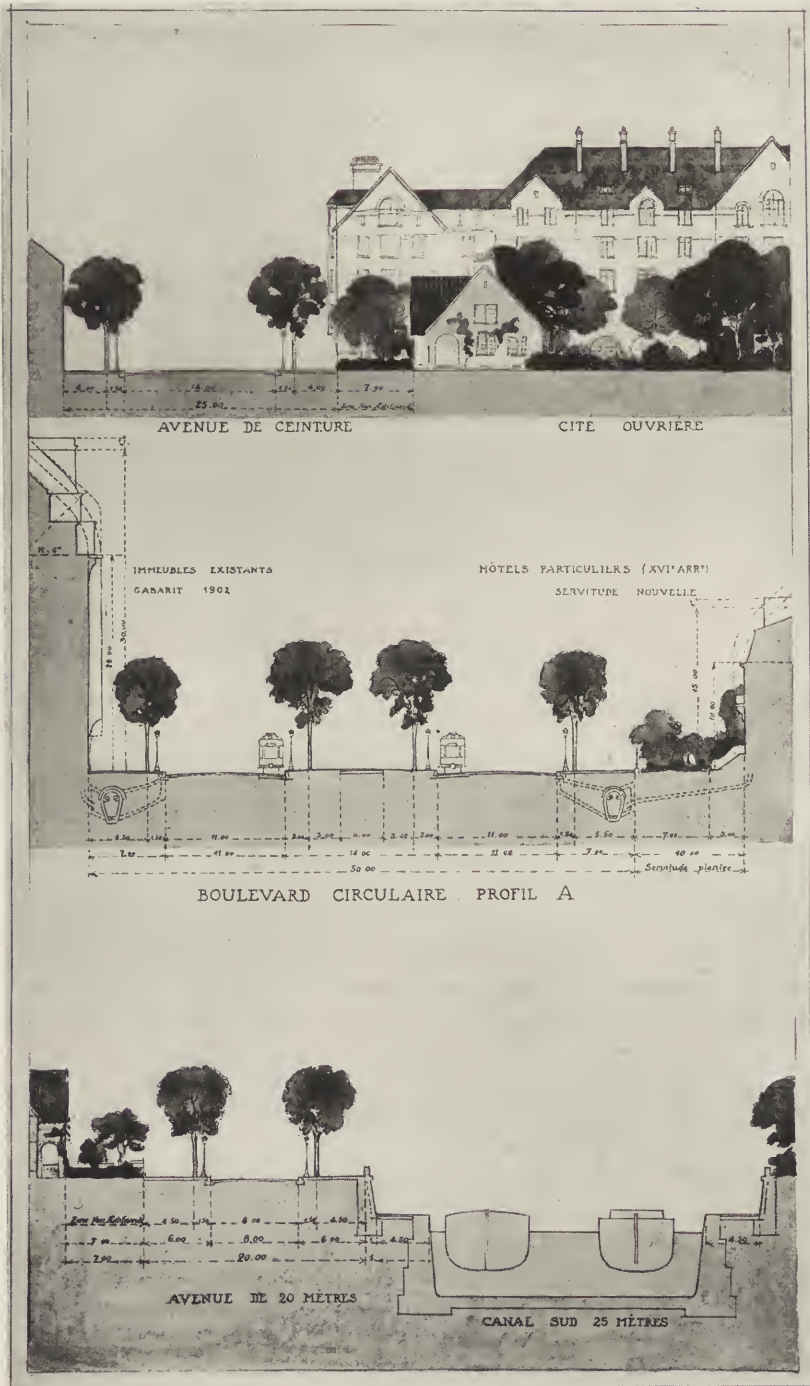
ABOVE: WORKMEN'S HOUSES AND PLAYGROUNDS; BELOW: SOUTH CANAL AND EAST WATER TERMINAL (INDUSTRIAL DISTRICT).



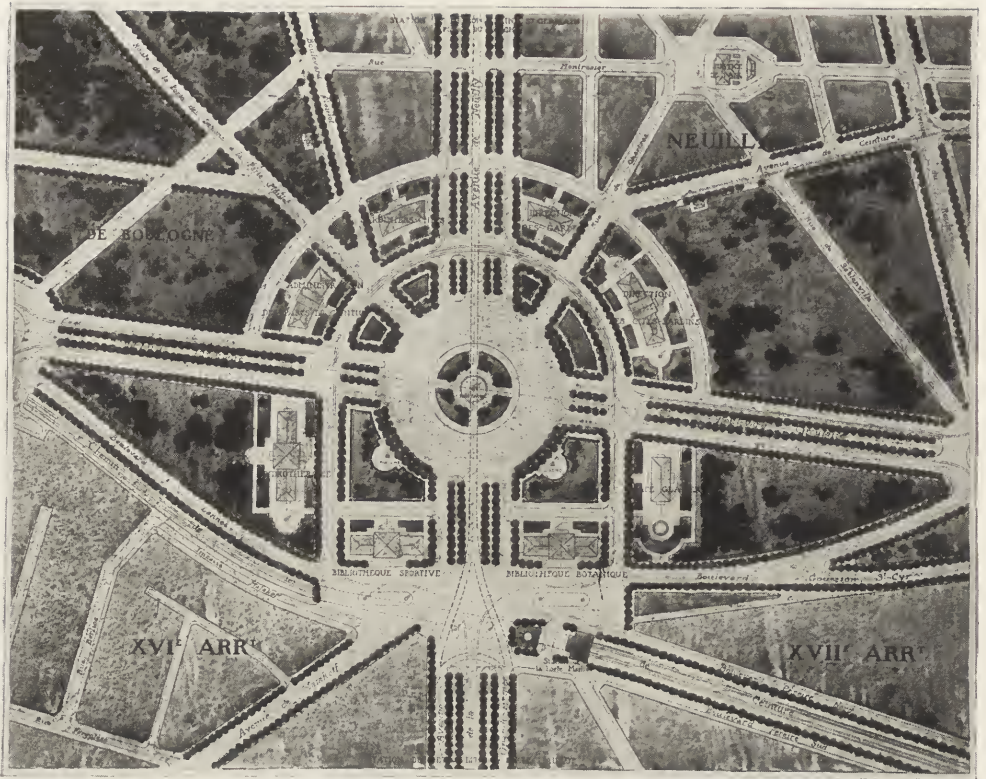
PORTE DE VINCENNES (EASTERN GATE OF PARIS).



TYPICAL HOUSING DEVELOPMENT: TENEMENTS, ON RADIATING THOROUGHFARES ONLY  
 HOUSES WITH GARDENS; ATHLETIC CENTER, PLAYGROUNDS, AND  
 RECREATION HALL.



TYPICAL BUILDING HEIGHTS—ACCEPTED PLAN FOR IMPROVING OLD FORTIFICATION SITES OF PARIS.  
 Jacques Gréber, Architect.



PORTE MAILLOT (WESTERN GATE OF PARIS)—ACCEPTED PLAN FOR IMPROVING OLD FORTIFICATION SITES OF PARIS.  
Jacques Gréber, Architect.

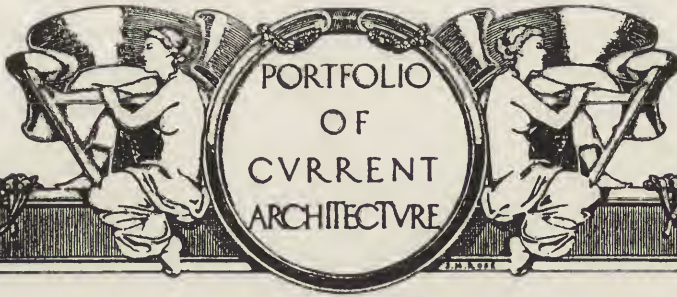
a large free space expanding into the splendid park of Fairmount, toward which the Philadelphia architects, Zantzinger, Borie, Trumbauer, P. Cret, Windrim and others are to erect public monuments which will make of this—the Champs Elysées of Philadelphia—a civic centre worthy in every way of the great metropolis of Pennsylvania.

Mr. Gréber found, while studying these two programs, that the two countries could very advantageously supplement the qualities of each; he gave evidence of this by bringing a little of the esthetics of Paris to the city of Philadelphia, and by adopting for the parks of the Parisian belt the great modern principles successfully applied to the improvement of the larger American cities.

In this connection, the project of the successful candidates in the fourth section of the Paris competition is very in-

teresting: a garden city for the Paris suburbs. Whoever knows America and is acquainted with the innumerable fine examples of garden cities recently created by American architects will not fail to see that Messrs. de Rutte, Sirvin, Peyret-Dorthail and Bassompierre-Sevrin have largely gone to American and English plans for their inspiration.

Another undeniable proof of the profitable co-operation which can be established between American and French architects lies in the fact that the Paris Ecole des Beaux-Arts is the alma mater of so many American artists of this generation. This is the reason why there is so much understanding between them and their French colleagues, and this Beaux-Arts teaching applied to programs that differ greatly implies an exchange of information between the two which is sure to have the happiest results.



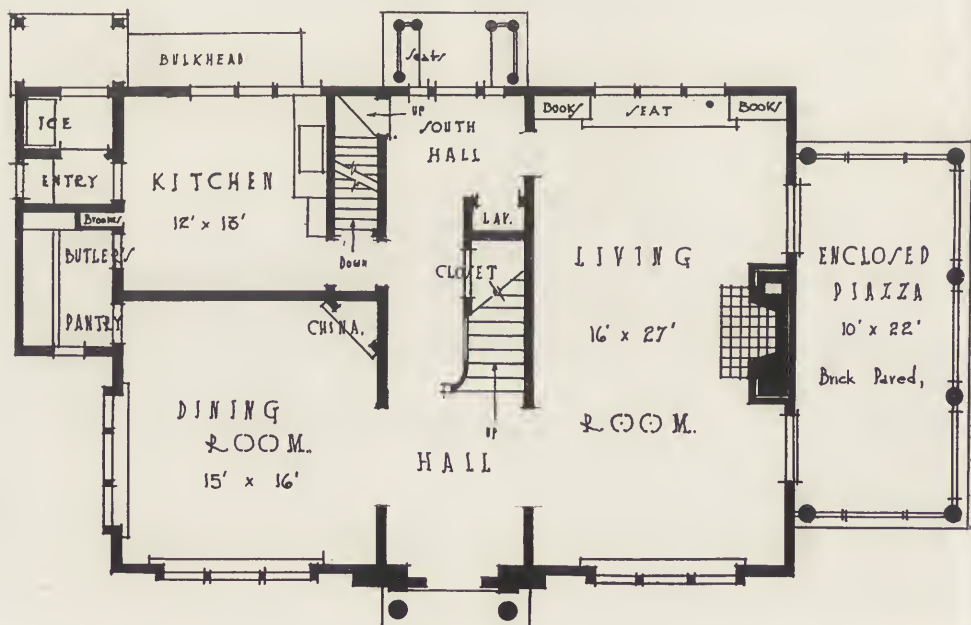
PORTFOLIO  
OF  
CURRENT  
ARCHITECTURE



SOUTH DOOR—RESIDENCE OF HERBERT S. DREW, ESQ., BELMONT, MASS. GRANDGENT & ELWELL, ARCHITECTS.



SOUTH FRONT—RESIDENCE OF HERBERT S. DREW, ESQ., BELMONT, MASS.  
Grandgent & Elwell, Architects.



• FIRST FLOOR PLAN •  
RESIDENCE OF HERBERT S. DREW, ESQ., BELMONT, MASS.  
Grandgent & Elwell, Architects.



MANTEL DETAIL—RESIDENCE OF HERBERT S. DREW, ESQ.,  
BELMONT, MASS.  
Grandgent & Elwell, Architects.



HALL DOORWAY—RESIDENCE OF HERBERT S. DREW, ESQ.,  
BELMONT, MASS.  
Grandgent & Elwell, Architects.

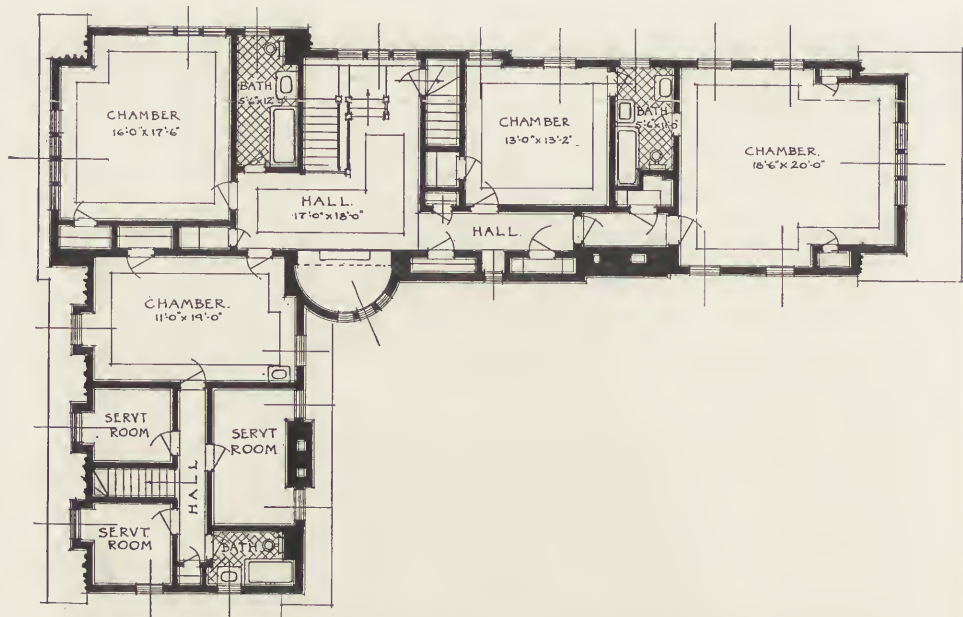


NORTH FRONT—RESIDENCE OF HERBERT S. DREW, ESQ., BELMONT, MASS. GRANDGENT & ELWELL, ARCHITECTS.

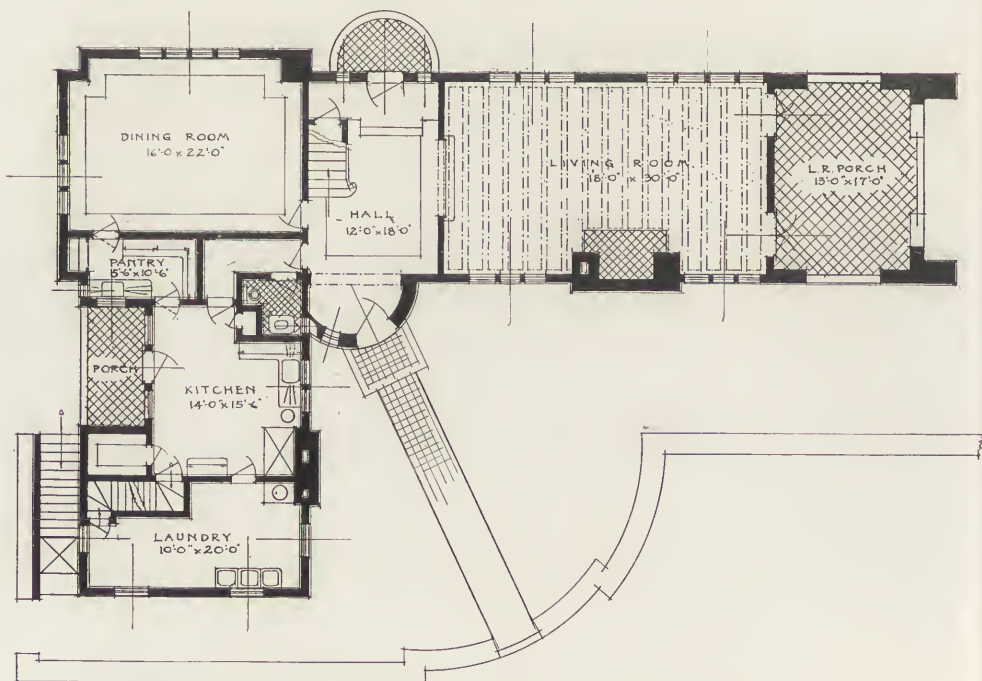




NORTH DOOR—RESIDENCE OF HERBERT S. DREW, ESQ., BELMONT, MASS. GRANDGENT & ELWELL, ARCHITECTS.



SECOND FLOOR PLAN—RESIDENCE OF JOHN R. HOYT, ESQ., GREAT NECK, L. I.  
Caretto & Forster, Architects.



FIRST FLOOR PLAN—RESIDENCE OF JOHN R. HOYT, ESQ., GREAT NECK, L. I.  
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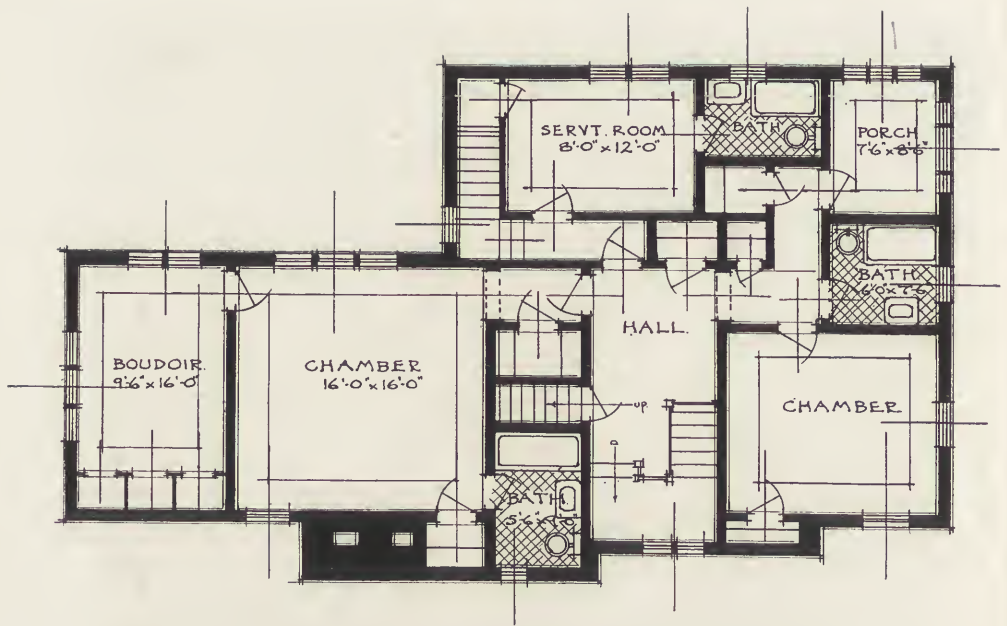
RESIDENCE OF JOHN R. HOYT, ESQ., GREAT  
NECK, L. I. CARETTO & FORSTER, ARCHITECTS.



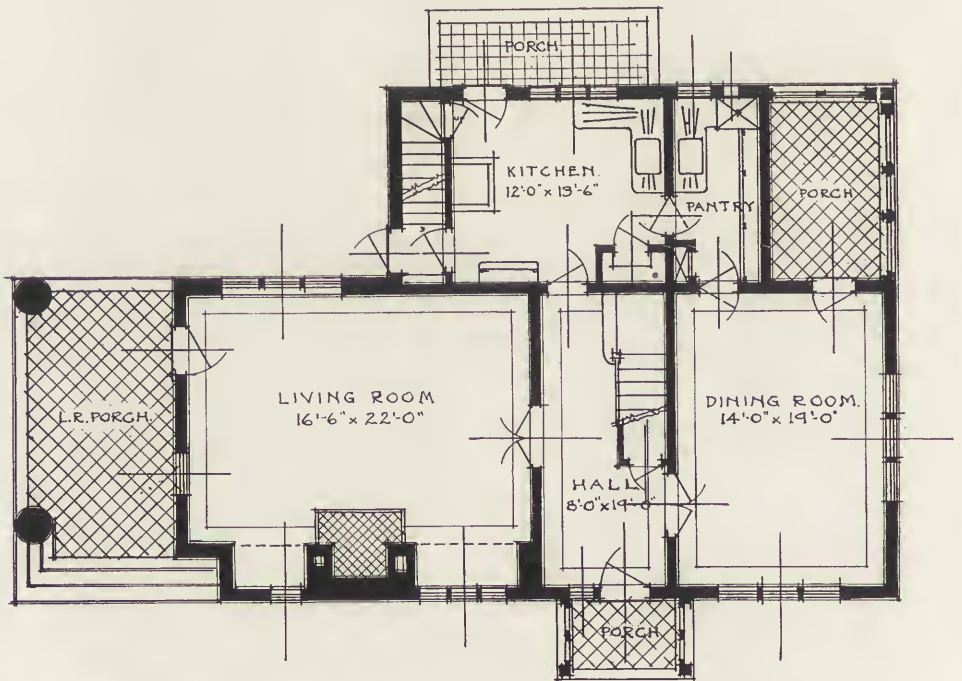
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NECK, L. I. CARETTO & FORSTER, ARCHITECTS.



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NECK, L. I. CARETTO & FORSTER, ARCHITECTS.



SECOND FLOOR PLAN—RESIDENCE OF MRS. C. O. BARING, HARTSDALE, N. Y.  
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N. Y. CARETTO & FORSTER, ARCHITECTS.





**The Old Stone  
Houses of  
Esopus.**

The three earliest centers of population in Colonial New York were the Island of Manhattan; the region around Fort Orange or Albany, called Rensselaerwyck; and "The Esopus," half

way between the other two, in what is now Ulster county.

The Indians had preceded the Dutch in picking out fertile lowlands for cultivation. At Esopus, which was their name for "a place of small rivers," they had used the firebrand to clear away the forest and then planted their maize and beans along the valleys of the streams that converged there.

The streams themselves were highways which led into the interior, highways of the fur trade—for the Dutch had established a trading post at Esopus early in the seventeenth century.

About the middle of the century some dis-

satisfied tenants of Rensselaerwyck came down the river to the "Great Soopis," and on the invitation of the Indians they settled among them.

The little colony lived in peace with their "barbarous" neighbors for several years, but the Indians obtained "fire water" from Fort Orange, and then under its influence they finally committed a murder and destroyed property. So the whites, in their defenceless condition, had a panic, and the upshot was that Governor Stuyvesant came up the river to their assistance with a company of soldiers.

The Governor made a careful study of the situation and then proceeded to act. He tells what he did about it in a report to the Dutch West India Company, which has the freshness and human interest of something written yesterday.

After some argument with them he persuaded the colonists to move their scattered habitations to one place, where they could live in safety, protected by a stockade, and the site for this new settlement he selected himself and then carefully planned its arrangement. While his troopers assisted the farmers in felling trees and driving the logs into the ground as staves for the defenses, he himself made a hurried trip up the river to hire carpenters at Fort Orange and buy a few hemlock planks for a guard house. This was in 1658; but there is still earlier evidence of a saw mill at Albany.

The site chosen for this palisaded village, named Wiltwyck, was an elevation with the land falling away sharply on three sides—the north, east and west. No buildings were allowed close to the stockade, hence four



KINGSTON, PRE-REVOLUTIONARY HOUSE ON PEARL STREET, WITH OLD SKYLIGHT.



THE OLD KINGSTON COFFEE HOUSE: A UNIQUE DOORHEAD.

streets followed the line of it just inside. Here was an instance of successful town planning in the seventeenth century—for the modern city of Kingston has indeed outgrown its ancient boundaries, but only on one side by spreading out toward the Hudson. Green street and North and East Front streets still contain the business center, yet they are practically on the outskirts.

The first few years of Wiltwyck's existence were eventful ones, because of a war with the Indians; and there was proof that these upriver troubles were fomented by the English, who wanted for their own purposes to keep the Dutch troops occupied as far away from Manhattan as possible. In 1664 the colony changed from Dutch to English rule, and the King of England carelessly turned the prize over as a gift to his ill-starred brother, who was Duke of York and Albany and Earl of Ulster.

The Wiltwyck of the seventeenth century, afterwards Kingston, was a town of thatched roofs, although tile might have taken its place on the more pretentious buildings. Yet, although thatch was in general use, it does not appear that the buildings erected were otherwise very primitive in their character.

In the Wiltwyck municipal budget for 1662, brick, tile, slate and wainscoting are mentioned among the articles in the bill of expenses for building the dominie's house. As boards were mentioned, too, the brick might have been used only for

chimney caps and oven lining; but in the court records of the year following there is mention of a debt for 2,000 brick. In the same year the defendant in a suit for wages by a mason claims that the latter "has still to plaster the walls."

One might have seen in Kingston the same quaint, chequered brick houses that were a common sight in old New York and Albany; but all the buildings of great antiquity that remain in the Esopus country are of stone, unless, perhaps there are some of wood.

Limestone was so abundant in this locality that probably the only expense of obtaining it was the carting. Hence, the houses were built to last through the ages—the old, stone houses of Esopus; but, as an old resident of Kingston said, "they are being torn down all the time, and business 'necessity' has worked more havoc than the British troops."

The last tragic event in Kingston's history was its burning by the British in 1777, shortly after the new republican state government had been organized there by a gathering of patriots. This happened four days after the defeat of Burgoyne at Saratoga, so the incendiaries had to flee as soon as their vindictive work was accomplished.

Everything was set fire to, but, of course, as the buildings were of stone, their walls were not destroyed, and most of them were afterwards rebuilt.



KINGSTON, NORTH END OF SENATE HOUSE, BUILT IN 1776.

Here the Upper Branch of the State Legislature was organized and held its meetings for a month.



REAR VIEW OF HOUSE ON HIGHWAY NEAR MARBLETOWN, WITH EARLY DORMER. LIKE OTHER LONG HOUSES, USUALLY HAVING THREE CHIMNEYS, ITS KITCHEN DOOR IS ON THE FRONT.

In spite of everything a number still remain, and it is almost surprising that, being of such simple design, they should have, apart from their historic value, so much character and interest.

The limestone used in their construction varies considerably in color. It is a blending of grays, in which a yellowish tone usually predominates, although "blue" limestone was used.

Speaking of the masonry, the frequent use of whitewash upon it (whitewash which is sometimes "colorwash," because ochre or other pigments have been added) may impress one as an unprincipled attempt to conceal the character of an object; but the effect is often good, and it has the sanction of tradition. Might not it have been applied for some practical purpose? I discovered that it was.

A country mason told me that the white-wash used for stone was of a different kind from the white-wash used for wood, for it had cement added; and the owner of an old house told me that it would last forever if the stonework were only kept pointed up. It was easy to see, as the stones of a wall were often rough and irregular and of many shapes and sizes, it was "a quicker and neater job" to splash the old-fashioned white lime mortar all over it. But the effect was even better when it was only loaded on in the hollows, and this was often done in old Ulster.

Besides the Dutch, large settlements were made by the Germans in the north of Ulster county during the reign of Queen Anne; and in the southern part a little later a number of English from Long Island came in and took ground along the Hudson. In the earliest-settled Esopus region, which included the Rondout and Wal-kill valleys, the Dutch predominated, with the French Huguenots coming next numerically, just as they did at Manhattan, but, oddly enough, what has come to be regarded as the Dutch Colonial type is hard to find in the Esopus region. The curved roof lines given by the overhang and the distinctive "Dutch" gambrel are lacking.



NEW PALTZ, OLD HOUSE ON MAIN STREET. THE OLDEST PART, ON THE LEFT, HAS AN EXTERIOR OVEN AND SLIDING WINDOWS.



KINGSTON, OLD HOUSE ON CROWN STREET. THE DORMERS AND DOORWAY ARE PROBABLY OF LATER DATE THAN THE HOUSE.

I saw but three gambrel roofs in Kingston and the Rondout valley. There may have been others, but those that I saw were on two-story structures, and only one of them could be called the Dutch type.

Nothing is really lacking, however, in the Esopus style of farmhouse, for it is quite distinctive, and there is a subtle curve in a roof that has stood two hundred years or so, for the ridge itself sags in the middle.

A rectangular structure of rough stonework, with the triangle at the gable end filled into save time and labor, with overlapping boards and sometimes a lean-to of the wide clapboards added, is, in itself, something that adds to the landscape; but the details are harmonious too. Everything was planned for comfort and use, yet it succeeds in being decorative.

The attempts to solve the problem of lighting the second story, which was nearly always in the roof, show the usual ingenuity of those early Dutch builders. A secondary gable in the middle in front was not uncommon; then there were sloping dormers, and gabled dormers as well. Some of the latter were large enough for two windows apiece. Windows, casement windows which opened on hinges, were popular in this region, and sometimes the hinges were at the top of the sash. There were also "sliding windows" which caught my attention in two places; they were square, small paned sashes, placed in line horizontally and were set in grooves, so that one could slide back upon

the other. Their low, broad effect, when used in the second story, as in an old frame structure in Stone Ridge, was remarkably quaint.

Still another experiment was that of laying an ordinary window, or what looked like one, on the slope of the roof to do duty as a skylight; and if a skylight could be made stormproof its advantages over a dormer are obvious. I saw several very old houses that had these skylights.

As for the doors, they are, or were, always horizontally divided, and had a combination door pull and knocker that was either imported from Holland or a good home imitation. The door hoods of Kingston are worthy of notice. The earliest hood was merely a continuation of the roof, like that on the Suydam house (250 years old) on "the good Esopus road" leading out of Kingston. The quaintest and best design is to be found on two buildings noted in Revolutionary days: the Kingston Coffee House and the Conrad Elmendorf Tavern. They have a Gothic look, these two; and their carving is evidently not the product of the jigsaw. Still, they might be relatively late work. The elaborate cornice on the Ulster county court-house, built in 1818, and one of the most important buildings, historically, in the state, was all carved by hand.

There is beautiful early-nineteenth century work in Kingston in striking contrast with the wilderness of frame architecture of later times; and instead of being



A WELL-PRESERVED OLD DUTCH BARN.

painted in the conventional white with green blinds, it is usually done in colors, which enables it to tone in with the older stone houses, whose historic interest is greater. Drab, with old ivory trim, is effective, and so is pearl color and gray.

The classic style continued in use in Ulster county until the middle of the last century—there are date stones to prove this—and perhaps the indifference to changing fashions, which this fact reveals, explains why Ulster county has so much tangible historic interest, something more than sites that have been marked with tablets.

In the Walkill valley, south of Kingston, is a very old French settlement, whose founders emigrated from Hurley, the second settlement in Ulster county, after Hurley was burned to the ground by the Indians in 1663.

New Paltz has a location of great scenic beauty, near Lake Mohonk; and down near the riverside, on Huguenot street, is a group of stone houses which were built early in the eighteenth century. There were originally about thirty of them, but now only five or six remain. One is a museum and contains many interesting relics.

All through this region, especially along the streams, or kills as they are called, are to be found quaint stone houses and occasional huge looking, wide-gabled, low-eaved barns, all of more or less real antiquity and worthy of their setting—the picturesque Shawangunks and foothills of the Catskills.

HELEN M. HASTINGS.

**The Bureau of Architecture of the Methodist Episcopal Church.** An interesting development of the times are the bureaus of architecture which church and civic and other national associations are establishing. The work of the architectural organizations of the Red Cross and kindred war activities is well known, and in the Record for March, April and May, 1919, will be found accounts of the admirable service of the Y. M. C. A. The latest addition to the series is the Bureau of Architecture of the Methodist Episcopal Church. This is, quoting the statement of the bureau, "under the joint control of the Board of Home Missions and Church Extension and the Board of Sunday Schools. It maintains a competent staff of technical men in Chicago and Philadelphia."

The bureau is to be commended for its statement of policy. It takes a most correct professional point of view of its relations to the local architect who is likely to be appointed for a particular church design. It leaves actual design and supervision of construction to him, aiming to aid and supplement him, not to supplant him. Its function is thus mainly advisory, and it aims to be a clearing house for information. It will undertake much needed research and study of the types and ideas of planning that express best the complex organism of the modern parish. Today most churches carry on a highly developed system of community activities—education, recreation, entertainment, cultural business—requiring a highly developed and efficient system of group planning. The bureau publishes the results of its studies in a series of monographs, the first one of which is in circulation. It is an excellent piece of make-up, well written and attractively illustrated. It deals with the general organization and administration of the local church of today, as expressed in an architectural plan.

The bureau further deserves great credit for emphasizing the artistic side of church design, even to furnishings and planting. This would seem to be a far-sighted step, except that here one doubt arises. That is, has the bureau been the least bit hasty in formally adopting Gothic as the "style" for the Methodist Episcopal Church? No doubt the bureau has pondered its decision well; but, if it has, it would do well to state the reasons for making this decision on a matter in which there is great disagreement among architects. There is an opinion which runs counter to the decision of the bureau. Gothic is a style to the superiority of which all bear testimony, but many of those who appreciate it most doubt whether it can be successfully cultivated here in the United States. Its mystic, subtle, mediæval spirit is almost impossible for the modern American personality; and, as a practical matter, its forms and details have almost no basis of reality in America. It is becoming clearer that architectural design is not an abstract, arbitrary invention on paper and out of books, but a more realistic process of founding motives and details of form upon fine models of buildings existing in the neighborhood. America has plenty of highly perfected models of her own tradition to serve the designer, furnishing ideal inspiration for the design of rural and small

neighborhood churches, and much more expressive, one would think, of the Methodist Church than Gothic could be. One recalls King's Chapel, Boston; St. Paul's, New York; the Baltimore Cathedral, and Bruton Parish Church, Virginia.

It is true, of course, that there are countless churches in America said to be "Gothic"; but all, except a few, are examples to be avoided rather than followed. The few are the work of a very small band of architects, notably Messrs. Cram, Goodhue, Day, Klauder, Newton, and Warren. Most of these men have been brought up in a carefully built-up Gothic atmosphere, much as children of wealthy people are brought up in French or English ways. Mr. Cram's own work proves this. He has borne testimony to the remarkable teaching of the late Professor Warren in Gothic forms, and it is fair to say that Professor Warren's students have done much to give Mr. Cram's work that ripeness and truthfulness of form and detail which is evident in the graduate school of Princeton.

I cannot follow this argument further but am reminded of the reply that Professor Warren gave me when I asked him in conversation what he thought of the design of the College of the City of New York, then just completed. "It looks like the work of extremely capable men speak-

ing in a language they were not familiar with," he said.

Thus, although several unusual men have at last succeeded in reproducing something of the spirit of Gothic in twentieth century America, all the countless rest have failed. Gothic is the most signal failure of all the American examples of foreign styles. The success of a few with it rests on the creation of an artificial atmosphere which is completely beyond the power of the average architect to supply. It would seem therefore as if the Bureau of Architecture of the Methodist Episcopal Church had two immense doubts in its plans for the future. The first is, what practical methods will it adopt to introduce the training and methods and spirit of men like Cram and Warren and Goodhue and Klauder at short notice into hundreds of architects' offices all over the country? This is the only way to success in the Gothic style, for which success the bureau is in a measure responsible when it formally urges the style upon its church. The second doubt is, may not the swiftly increasing strength of our own American style make, after twenty-five years more of progress, other styles seem strangely out of place in American neighborhoods?

JOHN TAYLOR BOYD, JR.

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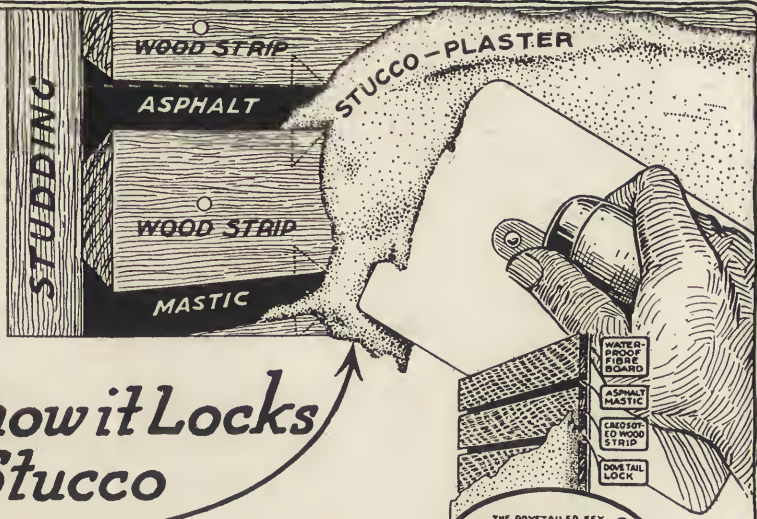
# ARCHITECTURAL RECORD

FEBRUARY 1921



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# THE ARCHITECTURAL RECORD



Vol. XLIX. No. 2

FEBRUARY, 1921

Serial No. 269

*Editor:* MICHAEL A. MIKKELSEN

*Contributing Editor:* HERBERT CROLY

*Business Manager:* J. A. OAKLEY

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*Yearly Subscription: United States, \$3.00; Foreign, \$4.00; Single Copies, 35 cents. Copyright, 1921, by The Architectural Record Co. All rights reserved. Member Audit Bureau of Circulation.*

PUBLISHED MONTHLY BY  
**THE ARCHITECTURAL RECORD COMPANY**

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. W. D. HADSELL, Vice-Pres. E. S. DODGE, Vice-Pres. J. W. FRANK, Sec'y-Treas.



MOORISH FOUNTAIN—RESIDENCE OF JULIAN  
ELTINGE, ESQ., LOS ANGELES, CAL. PIER-  
PONT AND WALTER S. DAVIS, ARCHITECTS.

# THE ARCHITECTURAL RECORD

VOLUME XLIX



NUMBER II

FEBRUARY, 1921

— The —  
RESIDENCE OF JULIAN ELTINGE, *Esq.*  
LOS ANGELES, CALIFORNIA  
PIERPONT AND WALTER S. DAVIS, ARCHITECTS



By ELMER GREY

HE who attempts to reach the main entrance gates of Mr. Julian Eltinge's house by automobile—at least the gates which were originally intended to be the main entrance gates—takes his life in his hands. Three persons only have so far attempted the feat and they were reckless drivers. When we visited this enchanting spot, we therefore left our car at the bottom of the hill and climbed the rest of the way on foot; and we could easily have imagined ourselves mounting to some mediaeval baron's home or to some impregnable fortress that had been so placed for defensive purposes.

It is not to be supposed from this that Mr. Eltinge himself is unapproachable,

or that the abode does not fit the man; for many genial persons have loved seclusion in their homes, and there were ample additional reasons for selecting the site on account of its remarkable views. Although situated in the midst of Los Angeles, in fact not more than ten minutes' ride from its very center, the views are such as to make it seem miles from any large city.

The approach to what was originally intended to be the main entrance gates leads up a street at a terrific grade. At its top it immediately drops again at an even more frightful angle; and it is down this latter dangerous descent that one would have to start were one to attempt to enter the grounds with a car. Soon

after starting, the driver would have to swerve, drop into what looks something like the dry moat of a castle, and then if he were still in equilibrium take a gambler's chance of running through the gates on the opposite side. Fortunately there is another entrance and a safer approach (albeit not so picturesque a one) on another street.

When one finally reaches the spot, however, one is amply repaid for the effort. The views are incomparable. I recently had sent me from abroad some colored postal cards showing views of the Italian lakes. They were taken through columned balconies looking out over shimmering bodies of water surrounded by little villages and further on by beautiful snow-capped mountains. The views from the Eltinge place remind me of those of the Italian lakes. By a fortunate arrangement of topography they comprise a beautiful inland lake, rolling hills beyond it with here and there little villas tucked away amongst them, and beyond those a range of mountains also frequently covered with snow.

Mr. Eltinge's garden largely commands these views and is distinctive and unusual in consequence. I once heard it said that a garden should never be placed where there is a fine view on account of the danger of the view and the garden competing. I do not think that is true. Some of the finest gardens in the world are at Ravello, where the outlook over Amalfi and the Mediterranean is wonderful, and both they and Mr. Eltinge's garden are refutations of any such theory. I think rather that a garden may be one of two different things. It may be either a place built around and dependent for its success upon flowers (in which case the aforesaid theory might somewhat hold) or it may be principally a place of observation, but adorned with greenery, etc., as an adjunct in order to make it beautiful. The Eltinge garden to a certain extent includes both of these types. One portion of the grounds from which the views are less inclusive is walled in by itself and is laid out in flower beds; another with finer views has few if any flowers but has been embellished in ways which make it very beautiful. This por-

tion lies several flights of steps below the other and the marked difference in elevation, and perhaps also a large octagonal fountain one passes on the way (situated amidst luxuriant arboreal growth), recalls similar effects in the Villa d'Este at Tivoli. Extending down the center of this lower garden is a long rectangular pool, beyond which is a vine-covered pergola backed up against one of the walls surrounding the grounds. At the opposite end is a raised terrace in the middle of which the aforesaid fountain is located, and back of this fountain is a beautiful fragment of sculpture rescued from the Court of Abundance at the San Francisco Fair.

The forecourt of the grounds is midway in elevation between the upper flower garden and the lower garden just described and commands the same fine views. It was originally intended, of course, for the reception of automobiles, but now since so few of Mr. Eltinge's guests have shown themselves to be daredevils, is no longer used for that purpose. It seems to me that in consequence it might well some day be converted into a very charming out-of-door sitting space, paved, and fitted up with chairs, tables, awnings, etc., in order to bring it more in keeping with its present altered purpose. This is merely a suggestion, however, for it is very good-looking and tells an interesting story as it is.

The style of the Eltinge house is the so-called "Spanish" now so much in vogue in Southern California. The outstanding features of the design are a centrally located tower over the entrance, a graceful recessed balcony in the upper portion of this tower, a long row of huge mediæval looking corbels at one side, a good-looking covered balcony at one end, and an arched porch at the other end. The plastered walls are of an interesting texture, the trowel marks showing slightly, and are colored an ivory white on the first story and a dull half-orange, half-red on the upper stories. There is much wrought iron work of good design. The situation of the house on the summit of a hill and the juxtaposition of the above main features combine to form an extremely interesting ensemble.



GARDEN FACADE -- RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL. PIERPONT AND WALTER S. DAVIS, ARCHITECTS.

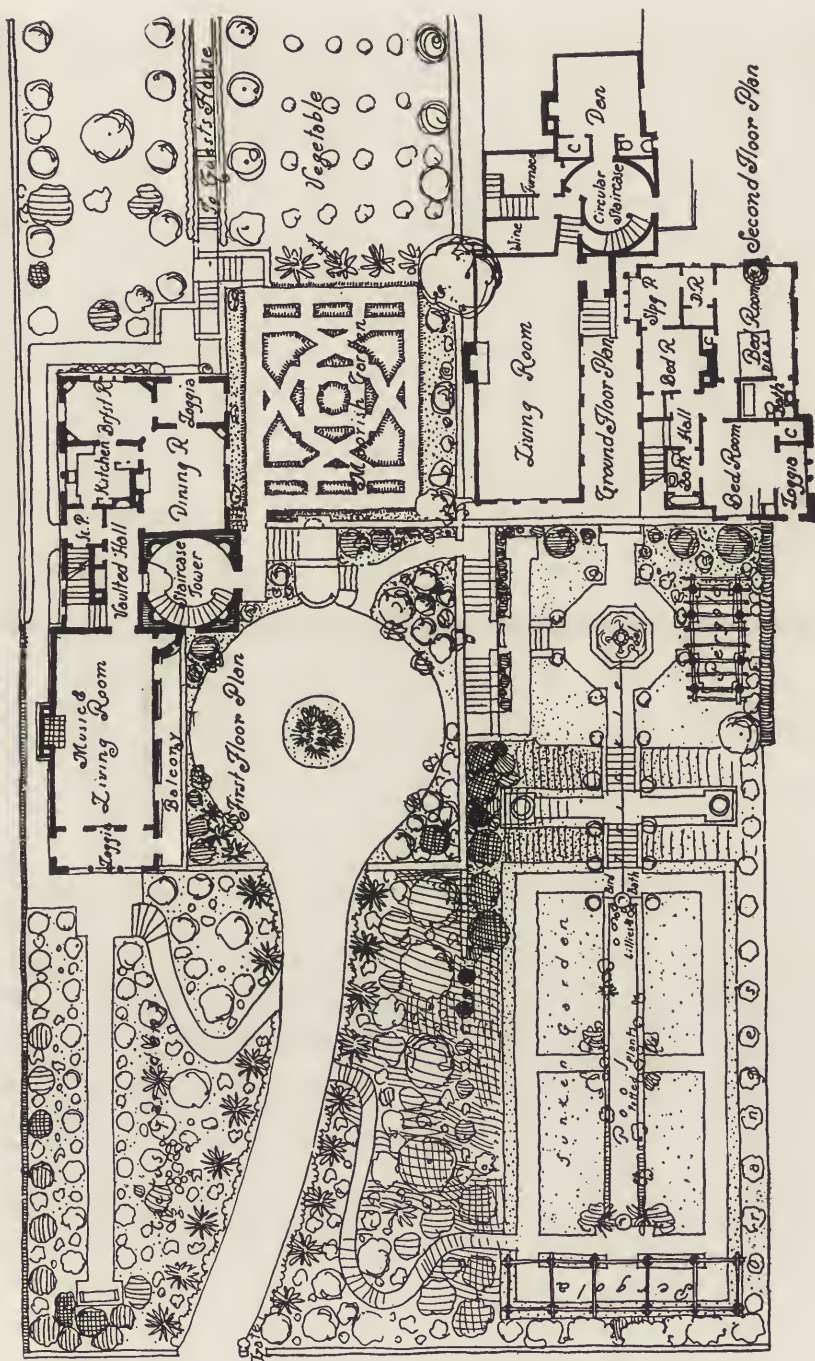
Right here perhaps a brief digression may be ventured. Myriads of houses presumably in this same Spanish style are now being built in Southern California in which certain ear-marks of the style are being copied from the more successful examples, but in which its spirit (the result of skilful design and careful handling of detail) is totally lacking. In several of the good examples certain departures in the way of color and texture were made, and made with success. In the poor imitations I refer to these departures were copied, but not with intelligence and good taste, and the result—well, plaster surfaces in which the trowel marks are emphasized out of all semblance to naturalness, walls tinted various shades of cold raw pink, and roofs covered with tile so widely differing in color that one striking example has been appropriately dubbed "the house with the snakeskin roof"—such eccentricities combined with very ordinary design and meaningless detail do not make good houses, and some day I hope more people than now will realize that fact. The same thing is happening as happened with the Mission style. The original Missions were and are, of course, beautiful, but many imitations which followed were so poor that the style soon fell into disrepute. And so with this Spanish style. Mr. Eltinge's house and many other fine examples will always be beautiful, but so many have followed which are not beautiful that already the general impression being created by them in Southern California is unpleasant. No other style seems quite so appropriate, and I doubt if any can quite fill its place; so perhaps the public will have to discriminate between the good and the poor, as it has had to do with the Colonial, the English and other types of architecture.

It has been suggested that the interior of the Eltinge house should be described by a woman, it being so distinctly a man's house. It could also be said, however, that a man's house might fairly be interpreted by a man. With that as an excuse, therefore, I shall proceed to describe it. One enters a circular hall which has a brick floor and a winding staircase running up on one side. The steps of the stairs are of brick and there

is a wrought iron handrail, which has been touched up with polychrome and gold here and there. At the top of the stairs is a lovely little wrought iron balcony, which overlooks the entrance door below, and from which Mr. Eltinge could welcome his guests if he chose without coming downstairs and before they mounted to the more intimate rooms above. Overhead is a domed ceiling entirely covered with mural paintings, which have been so treated as to appear about a thousand years old. The plastered walls have been done in such a way as to show the trowel marks slightly and have been colored a warm bluish gray to tone in with the ceiling. There is no great amount of light in the hall, not much being necessary; there are no pictures and their absence is not felt. There are four niches, in which have been placed well selected figures of bronze. Just enough light filters through the few narrow high windows properly to illumine the ceiling paintings and carry out the effect of a dim, misty, but attractive interior.

I should have stated that a considerable flight of steps leads from the level of the outer forecourt up to that of the entrance door. From there one mounts a full story's height in order to reach the level of a hall above from which several more steps lead down to the living room. The effect of these various flights of steps is to contribute greatly toward picturesqueness and the unusual. Some women might not like them—but this is not a woman's house!

The living room has a high, partially vaulted ceiling entirely covered with murals, also made to appear old. There is a large, high, good-looking stone mantel of Italian design on one side, a very lovely covered balcony at one end (with an outlook from it toward the lake and mountains), a very finely designed piano, also antiqued, a beautiful harp, some large well selected pieces of tapestry, and much equally well selected bric-a-brac, all of which looks as though it belonged where it stands. These latter things are not architecture, but architecture without some such properly combined adjuncts is a bald and lifeless thing; and many a house, good architecturally, has been rendered ineffective for a lack of them. The



PLAN OF HOUSE AND GARDENS—RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL. PIERPONT AND WALTER S. DAVIS, ARCHITECTS. CHARLES G. ADAMS, LANDSCAPE ARCHITECT.



MAIN ENTRANCE (TO STAIRCASE TOWER)  
—RESIDENCE OF JULIAN ELTINGE, ESQ.,  
LOS ANGELES, CAL. PIERPONT AND  
WALTER S. DAVIS, ARCHITECTS.





FOR COURT — RESIDENCE OF JULIAN  
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SOUTH APPROACH (TO DINING ROOM LOGGIA)—  
RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES,  
CAL. PIERPONT AND WALTER S. DAVIS, ARCHITECTS.



DINING ROOM LOGGIA FROM GARDEN—  
RESIDENCE OF JULIAN ELTINGE, ESQ.,  
LOS ANGELES, CAL. PIERPONT AND  
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ENTRANCE HALL AND STAIR — RESIDENCE OF  
JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
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MUSIC AND LIVING ROOM — RESIDENCE OF  
JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
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DINING ROOM—RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
Pierpont and Walter S. Davis, Architects.



BREAKFAST ROOM—RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
Pierpont and Walter S. Davis, Architects.



DEN—RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
Pierpont and Walter S. Davis, Architects.

success of the Eltinge house is in fact due not alone to its architecture but to a combination of influences all playing their part toward a beautiful whole. These were the choice of able architects, the discovery of a clever decorator, a Mr. Martin Syvertson, who had been working on the outside as a house painter but had been a mural decorator at the San Francisco Fair; a very capable landscape man, Mr. Charles Adams, and finally Mr. Eltinge himself, who has a natural aptitude for combining color and texture in ways which tell, and whose deft hand in this regard has left a pleasant wake everywhere throughout the house.

The dining room has very pronounced trowel marking on the wall—too pronounced it would have been had it not been redeemed with a very beautiful color which is a sort of green burnished gold, and with a delicately modeled frieze also finished in gold. There is a very lovely painted mantelpiece on one side in blue and yellow; the doors are of plain smooth boards colored to match the walls, and in place of knobs there are

very simple iron latches. The floors have been finished with the planer marks showing, but done with studied method in effective manner, and are stained dark. Opening off the dining room is a lovely little breakfast room.

The bedrooms are on the next floor and are three in number. Two of them might be considered small, but this is compensated for by the richness of their treatment. Mr. Eltinge's own room is of goodly size and has a bed of interesting Italian design done by the architects, which stands on a dais suggestive of the European throne-room. The rest of the furniture in the room is painted in polychrome and has been extremely well done. A bath room opens at one side, the floor consisting of irregularly shaped brown tile laid with wide joints. One of the guest rooms has a very charming covered balcony opening off from it (the tower balcony) from which the views over the lake and mountains may be enjoyed. All of the bedrooms have trowel marked plastered walls, but attention has been paid to having it appear natural and



BEDROOM WITH LOGGIA—RESIDENCE OF JULIAN ELTINGE, ESQ., LOS ANGELES, CAL.  
Pierpont and Walter S. Davis, Architects.

the coloring is exceptionally good. In the room with the balcony it is almost iridescent, while in Mr. Eltinge's own room the pattern of the brocade window hangings has been stencilled upon the walls in such a manner as to have it faintly appear in places and disappear in others in a most effective manner. In all these rooms the wall color does not extend to the ceiling, but has been terminated near it with an outline of different kinds suggestive of mediaevalism, one pattern being that of castellation and the others equally appropriate.

One very interesting room passed by in my description of the ground floor opens off the entrance hall. Mr. Eltinge calls it the "trick room." In a way it is appropriately named, for its walls are covered with photographs of famous actors and actresses with various personal inscriptions upon them which make it very interesting; a description of the house would not be complete without mention of it. It is comfortably furnished and plays the part of a man's smoking or retiring room.

Taking it altogether Mr. Eltinge's house is distinctly the home of an actor. Southern California has in the last few years become a mecca for moving picture people, and while Mr. Eltinge's reputation was made on the "legitimate," long before the "screen" became so popular, he has nevertheless made brief excursions into filmdom and so may be considered in that connection. Much money has been made out of the "pictures" and a good deal of it put into homes. His house is one of the few of these which are distinctly creditable. It has received much comment, not all of which I regret to say has been favorable; but I think this is because it has not been understood. It seems to me that an actor's home should be romantic and picturesque, and different from the homes of other men and women. Actors deal in their work with the romantic and picturesque, they must perforce become saturated with it; and it is appropriate and natural, therefore, that such spirit be reflected in their homes. Mr. Eltinge's house does express the romantic spirit in a beautiful manner.





VIEW FROM TERRACE OF DINING ROOM  
LOGGIA—RESIDENCE OF JULIAN ELTINGE,  
ESQ., LOS ANGELES, CAL. PIERPONT  
AND WALTER S. DAVIS, ARCHITECTS,



LANE DOWN TO VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.

## The VILLA CAPPONI at ARCETRI NEAR FLORENCE, ITALY



By HAROLD DONALDSON EBERLEIN

THE Villa Capponi, at Arcetri, near Florence, belonged at the beginning of the fifteenth century to Piero di Bartolommeo di Bonaccorsi. In 1572 Gino di Lodovico Capponi bought it and in the ownership of his heirs and descendants it continued until a comparatively recent date. It was during the long ownership of the powerful and wealthy Capponi family that the villa, by sundry enlargements and embellishments, assumed virtually its present condition.

The west front lies directly along a narrow road that plunges abruptly downhill into the valley. The three doors close together on this road front are the house door, the chapel door, and the stable door. The south, east and west sides of the house face into the gardens. As is the case with nearly all of these Tuscan villas, the coloring is an essential part of the charm. Here the walls are of a warm salmon tone, the shutters are light green, and the Capponi arms, enclosed within cartouches high on the walls of the tower, are in white and black. The door and window trims are wrought in the grey *pietra serena*.

The floors are of brick painted and varnished, save in the halls, which are paved with slabs of chequered black and white marble. The ceilings of the rooms are beamed and painted, and the halls are

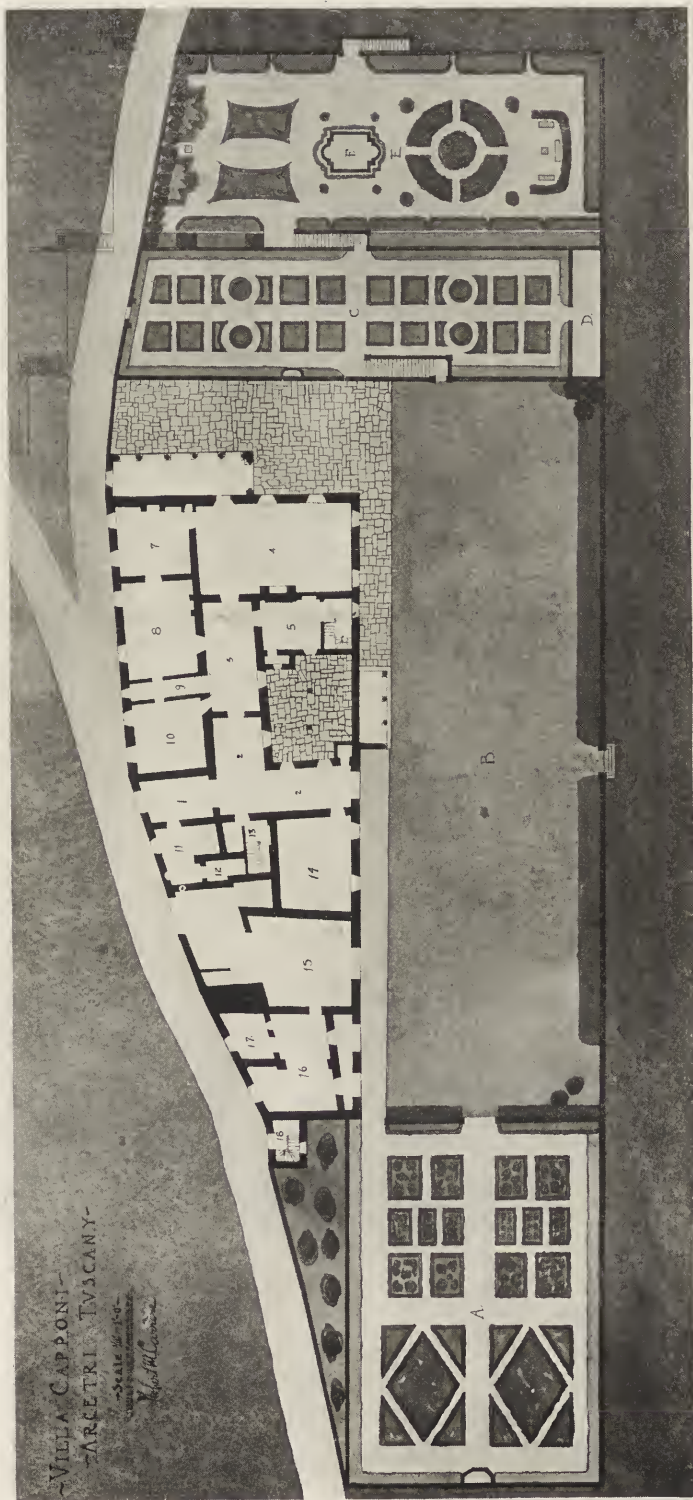
vaulted. In the dining-room, the cornice above the door, which appears in the illustration to be moulded, is merely a clever bit of painting on a flat surface in perspective in the characteristic Italian manner. The vaulting of the hall from the house door to the cross arm has painted coffering wrought on a flat surface in the same ingenious fashion.

There are three gardens, the upper, middle and lower. The upper garden is on the same level with the ground floor of the villa, and at the southern end of it is a box pleasaunce, the entrance to which is marked by rusticated stuccoed gate posts with wyverns atop. These posts and also the walls of all three gardens are of the same salmon color as the walls of the house. A flight of steps descends from the northern end of the upper garden to the middle garden, and another flight, after passing through a gateway, brings one from the middle to the lower garden. The window with a bulging grille, in the west wall of the middle garden, looks down upon the road many feet below. From the lower garden a short flight of steps goes down into the olive orchard.

The gardens are not at all lacking in a full and varied equipment of flowers, but their chief horticultural emphasis is derived from the effective arrangement and massing of foliage.



LANE UP TO VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



KEY TO PLAN OF VILLA CAPPONI.

- |                         |                          |                       |
|-------------------------|--------------------------|-----------------------|
| 1. Vestibule.           | 13. Servants' Staircase. | A. Box Pleasure.      |
| 2. Hall.                | 14. Servants' Hall.      | B. Lawn.              |
| 3. Inner Hall.          | 15. Coach House.         | C. Middle Garden.     |
| 4. Drawing Room.        | 16. Stable.              | D. Lemon House.       |
| 5. Kitchen.             | 17. Box Stalls.          | E. Lower Garden.      |
| 6. Servants' Staircase. | 18. Outside Staircase.   | F. Fountain and Pool. |
| 7. Morning Room.        |                          |                       |
| 8. Dining Room.         |                          |                       |
| 9. Staircase.           |                          |                       |
| 10. Library.            |                          |                       |
| 11. Chapel.             |                          |                       |
| 12. Sacristy.           |                          |                       |



CROSS ARM OF HALL—VILLA CAPPONI,  
AT ARCETRI, NEAR FLORENCE, ITALY.



HALLWAY, TOWARDS ENTRANCE—VILLA CAP-  
PONI, AT ARCETRI, NEAR FLORENCE, ITALY.



HALLWAY, FROM ENTRANCE—VILLA CAP-  
PONI, AT ARCETRI, NEAR FLORENCE, ITALY.





LIVING ROOM—VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



END OF LIVING ROOM—VILLA CAPPONI,  
AT ARCETRI, NEAR FLORENCE, ITALY.



FIREPLACE IN LIVING ROOM—VILLA CAP-  
PONI, AT ARCETRI, NEAR FLORENCE, ITALY.



DINING ROOM—VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



GARDEN FRONT, EAST—VILLA CAPPONI,  
AT ARCETRI, NEAR FLORENCE, ITALY.



GARDEN FRONT—VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



LOGGIA — VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



BOX PLEASANCE—VILLA CAPPONI,  
AT ARCETRI, NEAR FLORENCE, ITALY.





ENTRANCE TO BOX PLEAUNCE—VILLA CAP-  
PONI, AT ARCETRI, NEAR FLORENCE, ITALY.



MIDDLE GARDEN — VILLA CAPPONI,  
AT ARCETRI, NEAR FLORENCE, ITALY.



END WALL, MIDDLE GARDEN—VILLA CAP-  
PONI, AT ARCETRI, NEAR FLORENCE, ITALY.



LOWER GARDEN—VILLA CAPPONI, AT  
ARCETRI, NEAR FLORENCE, ITALY.



POSTERN GATE IN LOWER GARDEN—VILLA  
CAPPONI, AT ARCETRI, NEAR FLORENCE, ITALY.



WYCK HOUSE, GER-  
MANTOWN, PA. 1690.

*The*  
EARLY ARCHITECTURE of PENNSYLVANIA

PART III - WITH PHOTOS *by* FRANK COUSINS  
HORACE M<sup>AC</sup>FARLAND & OTHERS



By A. LAWRENCE KOCHER

**D**ID America contribute something to the practical knowledge of mankind before 1800? Did the new world merely receive new ideas and give nothing in exchange? In literature it gave but little: Benjamin Franklin in prose, Jonathan Edwards in theology, John Woolman in ecclesiastical literature, and Philip Freneau in poetry almost complete the list. In art, Benjamin West, Charles Wilson Peale, and Gilbert Stuart are counted as "The Primitives." European critics of literature and art questioned whether any good could come out of this new country, for it was the common belief in Europe that, as Irving humorously put it, "all animals degenerated in America and man among the number." Certainly the prospect of success was not encouraging to the artist of the day. Trumbull assured a friend that it would be better for him to dig potatoes or to make shoes than to paint pictures in America. Sidney Smith in 1819 disdainfully asked in the *Edinburgh Review*: "Who, in the four quarters of the globe, reads an American book, or goes to an American play, or looks at an American statue? What does the world owe to American physicians or surgeons? What new constellations have their astronomers discerned? Who drinks out of American glasses? Who eats from American plates? Who wears an American coat, or lies down to sleep in an American blanket?"

These taunting remarks may be true with regard to literature, painting, industry and sculpture, but a similarly adverse

judgment of early American architecture would be in error. In architecture alone were results achieved which, a hundred and fifty years later, are looked back upon with pride and emulation. In architecture alone were models created which have outlived the generation in which they were conceived, and that serve as an inspiration for an age other than their own. In America there was no exception to the assertion that architecture is the mother of the arts. The art of architecture had examples to its credit before literature had its classics or painting its recognized masters.

It is to be expected that building should lead the way in attaining distinction, for it arose from necessity. Architecture was evolved from the primal need for shelter and protection. It is, perhaps, the most materialistic of all the arts. Its very inception came from the meeting of material necessities, and in the various steps in its evolution it has the satisfaction of these for its object. Sculpture and painting and poetry are an aim in themselves, while architecture serves as a background and as an environment to the various forms of human society, and is an outgrowth of its spiritual and physical pursuits.

The value of our architectural heritage has been but recently recognized. With the rise and fall of various tendencies we have been blinded to the value of the results achieved in the years of our colonial beginnings. We have turned to the correct but unimaginative Greek revival and later to the vagaries of the Victorian period.

It was during this benighted era that James Fergusson, the historian of architecture, penned his disparaging judgment of the worth of American architecture. He said that "from the time of the earliest colonization of this country till after the termination of the war of 1812-14, there was hardly one single building erected in Northern America which is worthy of being mentioned as an example of Architectural Art." It was not until the late eighteenth century that a revised and truer valuation was placed upon our achievements.

In our admiration of colonial architecture, it is easy to deceive ourselves as to the relative importance of the monuments erected during the years in which, as Cooper said, "the nation was passing from the gristle to the bone." We have no world-names of master builders or architects secure in the sense in which the cathedral builders or the designers of the Greenwich Hospital or of the Banqueting Hall are secure. Rather, America has the results and not the names of country carpenters and masons who built up a style

which outlived its age by recognized merit and which brought forth men gifted with the recognition of the worth and appropriate use of materials and who understood the proprieties and the limitations of architectural design. To record the kinds of buildings in Pennsylvania during these years is the object of this paper.

There are in Pennsylvania three distinct kinds of buildings which have their origin in the eighteenth century. They are: (1) the farm house; (2) the city residence; (3) the manor house.

Of the Pennsylvania farm house, the Fisher dwelling, near Reading, may be considered typical. The Fisher house was erected during the last quarter of the eighteenth century. The outside walls are of stone, with gables at the lateral ends. There is a pedimented doorway at the center of the broad front and two regularly spaced windows on either side of the door opening. The windows have twenty-four lights on both the first and second floors. Panelled shutters are below, painted white in accordance with the custom dating from the time of the original erec-



Photo by A. W. Fegley.

THE FISHER FARM HOUSE, NEAR READING, PA.





THE MILL HOUSE, LANCASTER, PA. 1767.

tion; and louvered shutters are above, painted a shade of green resembling early spring foliage. The stone arch above the window openings deserves mention, because a similar form frequently occurs in houses throughout Pennsylvania. A flat arch is fashioned of cut stone, with the central key block of greater height than the adjoining stones. The cornice, which possesses a robustness in keeping with the rough stone walls, encircles the main portion of the dwelling. A modified and simpler form of cornice terminates the vertical walls of the wing that projects to the rear as an "ell." The gable roof, as exemplified in the Fisher house, was almost never used in English Georgian architecture. It is an indigenous feature that was probably suggested by the primitive log cabin. The enrichment of moldings of the cornice followed the membering of pediments on contemporary buildings, such as Port Royal in Frankford, Philadelphia, and Woodford in Fairmount Park.

The plan of the Fisher house is similar to the arrangement of the majority of the dwellings of this type within the

colony. It possesses a main rectangle which includes the house proper, and, in addition, the kitchen wing. The first floor plan of the large rectangle is divided into two parts by a spacious hallway. There are rooms on either side of the hall devoted to living and dining purposes.

The arrangement of plan in this case, as in the colonial house in general, was dictated by a desire to gain external effect. Isaac Ware, in his "Complete Body of Architecture" (1756) advises that it is "always best to accommodate the inner distribution of a house to the outer aspect when that can conveniently be done." The exact and checkerboard spacing of windows precluded the use of rooms of varying widths. The mediæval method of floor planning, on the other hand, placed rooms where they were wanted, with the result that they were of different sizes, commensurate with their use. In the mediæval house in Europe there was a total disregard of regularity of appearance. Convenience was the first consideration. The colonial builder seems to have first conceived the symmetrical outline and



HOUSE AT ALLPORT, PA.

then sought to gain the necessary accommodation within.

The simplicity of the Pennsylvania house had the advantage of being adapted to design by the layman. Due to its regularity and its slightly varying uniformity, rules were readily adopted to govern external ordnance. For instance, the height of the cornice was specified to be in proportion to the height of the building, and the size of the doorway in relation to the wall surface on which it was placed. The formulas were simple so that the builder or the amateur architect could readily see the applications and put them to use.

This same uncompromising simplicity of the colonial house was a disadvantage because it was so inflexible. While it was appropriate and thoroughly suited to the rugged life of the eighteenth century, it is not so well adapted to all of the involved requirements of our life today.

The Mill house, erected about 1767 in the environs of Lancaster, is almost an exact replica of the Fisher house, already mentioned. It differs in not having the cornice molding continue across the base

of the end gables, and here there is a less attractive use of stone work around the windows. The porch is an addition of recent times.

Houses similar to the foregoing were frequently erected in towns where the conditions of living were not congested: Germantown, Carlisle and Northumberland each had several specimens. Upsala, on the corner of Germantown Road and Upsala Street, is well-known. Here a greater effort to attain external effect is evident, with the elements of the design remaining the same. Upsala, begun in 1798 by Norton Johnson, attracts by its distinctive use of dressed and coursed ashlar at the front and random rubble stonework on the remaining walls. The tendency to give a greater importance to the front façade by means of a labored and fanciful treatment found expression in Hope Lodge through the use of Flemish bond on the front and stucco applied to brick at one end. It was a common practice in brickwork to use Flemish or English bond on the front and the common or running bond at the ends and



U P S A L A, GERMANTOWN, P A.  
BUILT BY NORTON JOHNSON, 1798.



HOUSE AT 6105 MAIN STREET, GERMANTOWN, PA.

rear. This over-emphasis of the main elevation has been attributed to the not very far-seeing practice of the day of erecting dwellings with a single drawing of the exterior planes, and that, naturally enough, of the frontal view. The other walls were not deemed of sufficient importance to receive cut stone or special bonds. The projecting porch of Upsala, sheltering the round-headed doorway, is a late addition, and appears exotic and not in full sympathy with the style and practices of the eighteenth century.

Wyck house, Germantown, shows closest affinities with the Pennsylvania farm house type. It is, in fact, an example most delectable in appearance, but of chance origin. The story of Wyck discloses a broken history. The oldest part was erected in 1690 by Hans Millan, while the added section dates from the first half of the following century. To William Strickland are attributed certain minor changes made in 1824, including the addition of the chimney at the gable end toward Main Street.

Built for a Welsh citizen of Germantown, it possesses attributes both excep-

tional and accidental. It would be to strain excessively and without warrant should we ascribe this house in a sentence to a definite phase of the Pennsylvania style. In the irregular spacing of the windows, the interrupted roof-line, the latticed walls there is delicacy and charm, if not evidence of studied forethought. It would be difficult to find in any region or in any country a more delightful and lovable or more habitable dwelling than this stuccoed stone house with its informal trellised walls contrasting with neatly panelled shutters and blinking panes of irregular surfaced glass.

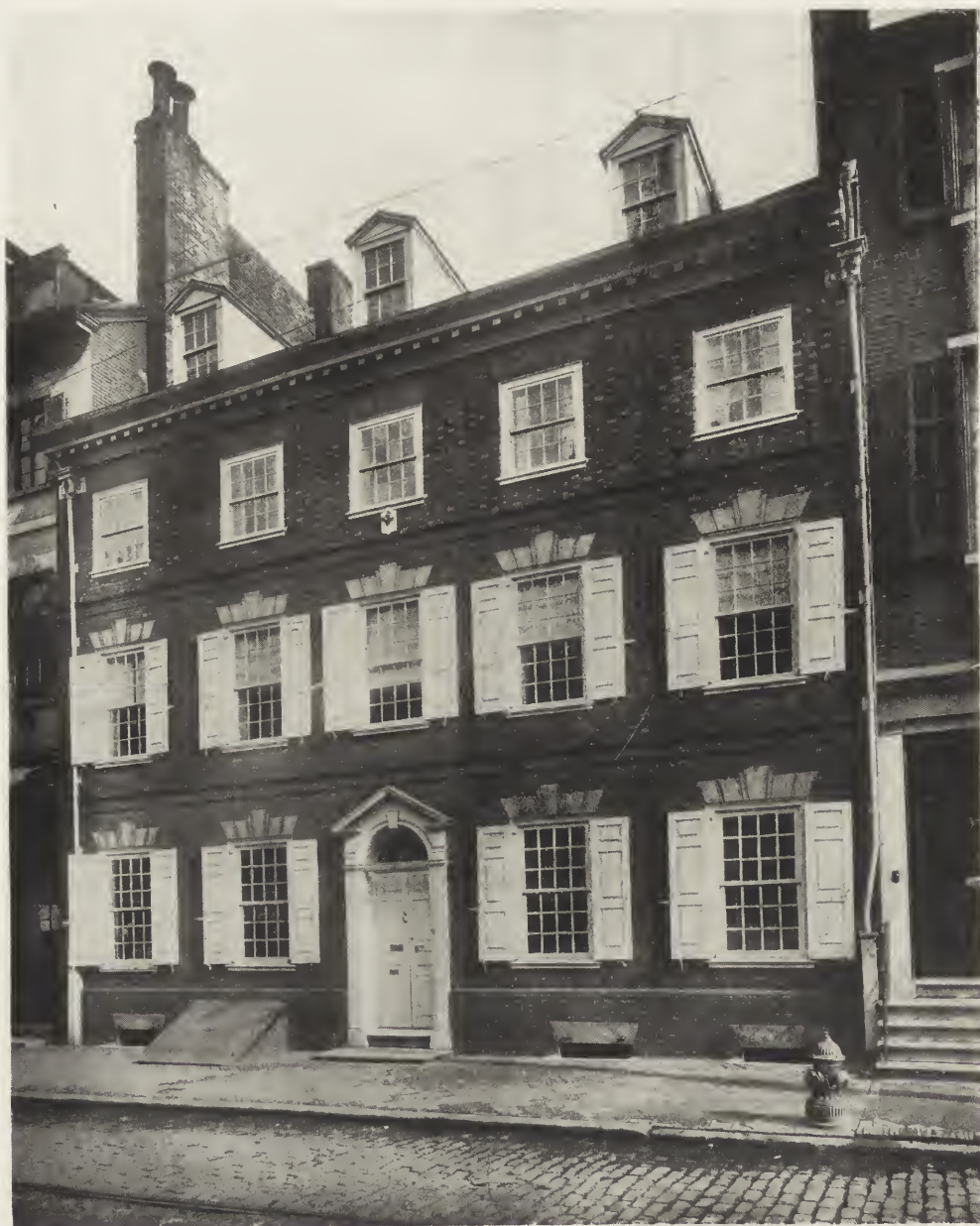
After all it is the exceptional specimen such as this which gives zest to architecture. It is the house which makes no pretense to attain the ambitious, but that owes its origin to the town carpenter, which arrests our attention and makes its lasting appeal.

There is at Allport another unusual and rambling house, full of homely picturesqueness—another instance of this varied style that is not to be classified with definiteness.

It would seem that in some instances



THE EPHRAIM BLAINE  
HOUSE, CARLISLE, PA. 1792-97.



THE MORRIS HOUSE,  
PHILADELPHIA, PA. 1786



PENNINGTON HOUSE, WATER AND  
RACE STREETS, PHILADELPHIA, PA.



FIREPLACE ON FIRST FLOOR—GOVERNOR KEITH'S MANSION, GRAEME PARK.

houses were built piecemeal; that is, a part would be erected at one date with the intention or practice of completing the construction at a later time. Many examples of this incomplete and one-sided façade are met with in Pennsylvania. The house at 6105 Main Street, Germantown, is a case in point. The Ephraim Blaine house, in Carlisle, also suggests such an intention. The evidence of an unwindowed wall on the apparently unfinished side strengthens this view.

The second form of dwelling characteristic of the domestic architecture of Pennsylvania is the city residence. Dwellings within the crowded confines of the city assumed an appearance in keeping with their situation on the city thoroughfares, where land values were high and where a greater housing capacity was a desirable feature. The Morris house, at 225 South Eighth Street, is representative of this second type. The Morris house

has three superposed stories, the lower two being similar in height, the upper considerably lower and with sash fitted with sixteen panes of glass instead of the twenty-four enframed in the sash of the lower stories. The almost exact square of the façade, which is forty feet, two inches in width and thirty-four feet, five inches in height, is given the effect of a greater breadth by the use of two horizontal bands between the two stories. The broad expanse of wall seems to need quoins to terminate the ends of the façade. A pleasing variegated texture and a heightened interest result from the Flemish bond of the brickwork with the dark headers and warm red stretchers. A clean-cut primness and dignity are added by the contrasting whiteness of wood and stone against the darker brick background.

It is just such a city house as this that Dr. S. Weir Mitchell describes in "Hugh





FRONT ELEVATION—GOVERNOR KEITH'S  
MANSION, GRAEME PARK. 1721-22.

Wynne:" "The house was of black and red brick, and double; that is, with two windows on each side of a white Doric doorway, having something portly about it. I use the word as Dr. Johnson defines it: a house of port, with a look of sufficiency, and, too, of ready hospitality."

The Pennington house on the corner of Race and Water Streets, Philadelphia, was formerly a city residence with the gable end designed in accord with the front. In this instance belt courses of stone were used instead of brick to define the separation of the floor levels. It is probable that such houses as this were commonly used to accommodate the business interests on the first floor while the upper stories provided living quarters.

The popularity of wrought iron stair rails during the last quarter of the eighteenth century was responsible for the setting back of the front plane of the building away from the property line. The white marble steps, which we associate with the scrubbing propensities of the Philadelphia housewife, were likewise an innovation of the times and

proved an effective accompaniment to the handiwork of the wrought iron craftsmen.

A third type of dwelling was designed for the well-to-do. The half century preceding the Revolution produced a group of wealthy and influential citizens who gave expression to their well-being and prosperity by erecting country residences of dignity and pretentiousness, about Philadelphia. They were usually of size and importance, comparable to the manor houses of the gentry in England. The conscious imitation of Georgian prototypes of the home country marks this phase of the Pennsylvania mode of building as less free and not so distinctly our own as the pleasing variants of the farm house.

Graeme Park, Horsham, was the earliest in point of time, being begun in 1721 by Sir William Keith, one time Lieutenant Governor of the province. It was also the most rugged and unassuming in external appearance. The absence of tangible evidence of design reflects either the pioneer epoch with its meagre-



PANELING—GOVERNOR KEITH'S MANSION, GRAEME PARK. 1721-22.



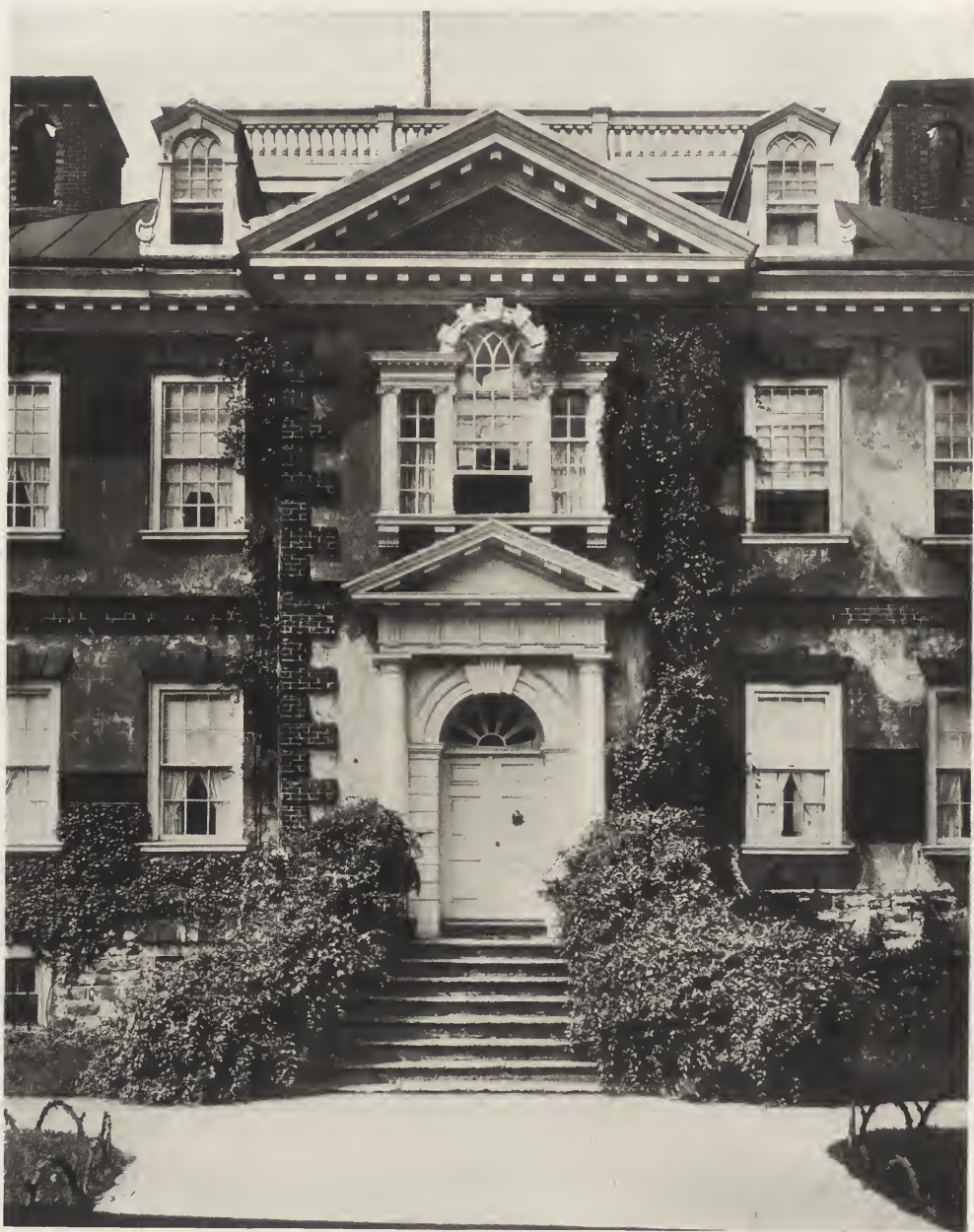
DETAIL SHOWING CORNICE AND STAIR HALL—MOUNT PLEASANT, FAIRMOUNT PARK,  
PHILADELPHIA, PA.

ness of architectural knowledge or the need of haste in raising the four walls. In contrast with the stern exterior, the inside of this house discloses an elaboration of woodwork distinctly surprising for the period. Here for the first time were panelled walls put to extensive use in this colony as a means of producing richness and dignity. The popularity of wainscot and panelled walls may be ascribed to the vogue for such work in England and to the abundance of pine forests which were cleared in making place for habitation. The wood panels of Graeme Park were relatively narrow, averaging twenty inches in width. The chair rail was not used here, but, instead, two rows of panels, a low one below and a lofty one above, fashioned for walls of importance, particularly on the side on which the fireplace occurred. The practice of panelling an entire room does not seem to have been favored in Pennsylvania.

The panels of Graeme Park are of the

flush type, with a very narrow molding kept within the face of the surrounding stiles. This differs from the contemporary English method of using a wide raised mold, which in some instances was as great as three inches. The wood carver had not yet found a place in this province in connection with house building. It was the carpenter who shaped these walls and devised the rather angular and somewhat bold treatment of mantels and pedimented doors.

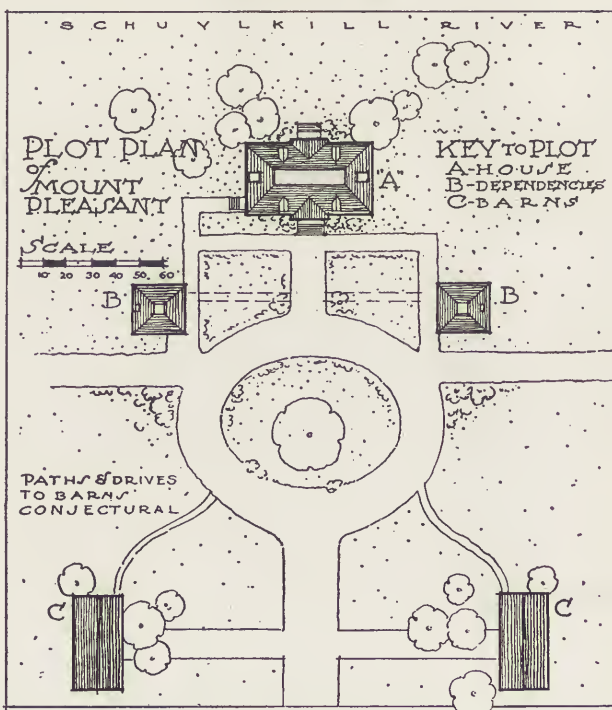
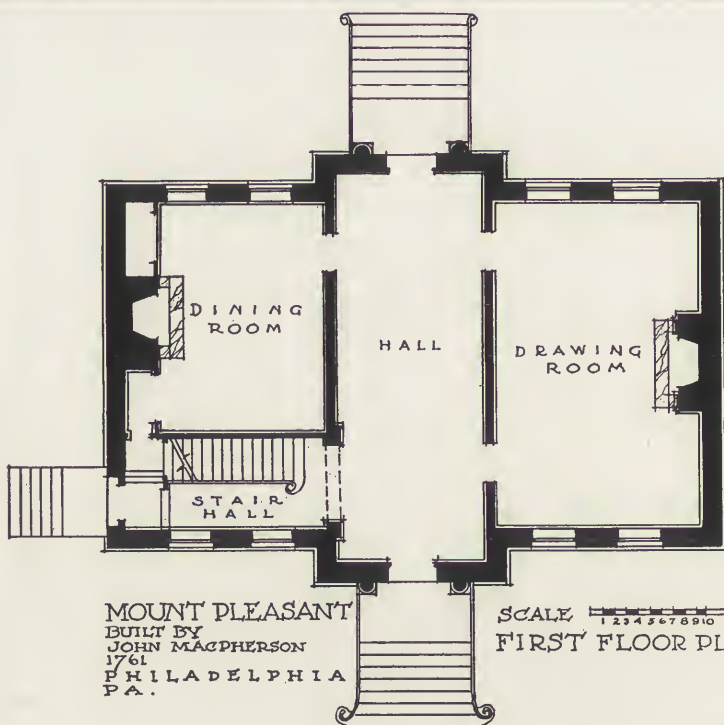
The characteristic form assumed by the third type is summed up in Mount Pleasant, built in 1761 for the merchant and shipowner, James MacPherson. The gable ended roof is here replaced by a hip roof of low pitch, which is surmounted by a balustrade of wood. The front façade is interrupted by a slightly projecting central pavilion crowned by a pediment, giving importance as well as adding dignity of mien to an otherwise regular and symmetrical treatment. The doorway is of ample size, with engaged

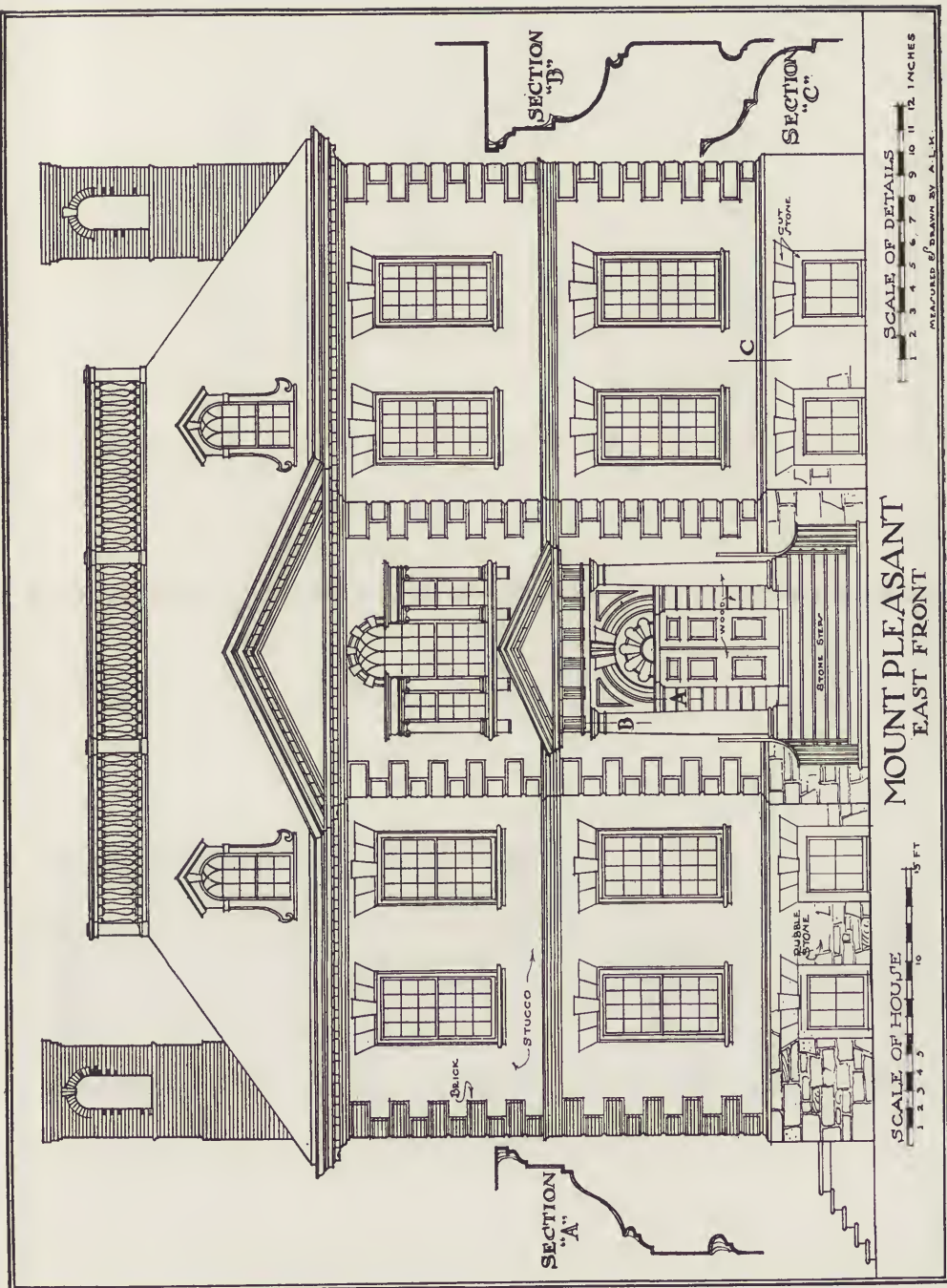


DETAIL OF FAÇADE—MOUNT PLEASANT,  
FAIRMOUNT PARK, PHILADELPHIA, PA. 1761.



MOUNT PLEASANT, FAIRMOUNT PARK, PHILADELPHIA, PA. BUILT BY JOHN MAC PHERSON, 1761.





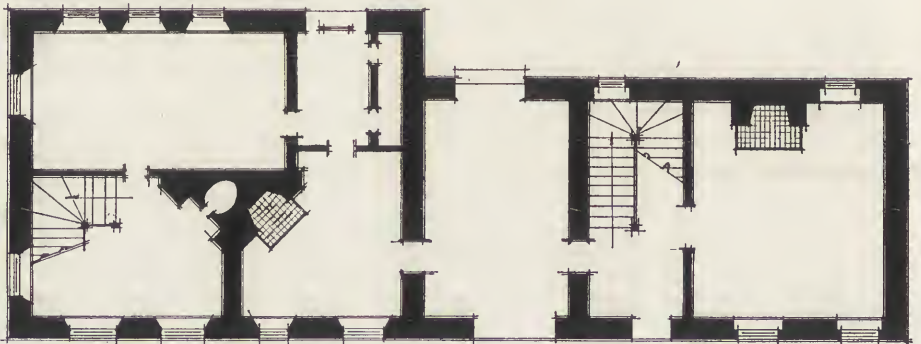
MOUNT PLEASANT  
EAST FRONT



FIRST FLOOR PLAN

SCALE 0 5 10 15 FT.

CLIVEDEN 1763  
GERMANTOWN, PA



FIRST FLOOR PLAN

WYCK  
GERMANTOWN, PA  
FIRST PART 1690





CLIVEDEN, GER-  
MANTOWN, PA. 1763.

Doric columns supporting a correctly proportioned Roman entablature and pediment. The Palladian window of the second story completes a composition which recalls the stair tower of the old State House in Philadelphia. It is probable that the grouping was suggested by the State House, which in date preceded Woodford, Mount Pleasant, and Port Royal, all of which used the feature. The State House Tower was begun in 1750, while the apparently imitative examples range from 1756 to 1762. The feature may also be traced to Georgian antecedents, such as the entrance to the Manor House at Rothwell, Northamptonshire, dating from 1720.

The emphasis given to the central bay, with the concentration of interest massed at the doorway, is a most commendable method in design. It is generally recognized as being more correct to mass or concentrate ornament at a doorway and window than to scatter it.

The formal turn given to the design of Mount Pleasant precluded the use of local stone and determined the adoption of brick combined with smooth surfaced stucco. No builders of any age have shown a finer feeling for the appropriate use of materials or have revealed in building a keener understanding of organic expression in construction than the colonial craftsmen. The local stone formation known as "trap rock" with its irregular surface and varied color was associated in their minds with simplicity of mass and regularity of ordnance, and therefore would be ill suited to this formal arrangement. Brick with its regular size and even surface was suited to the formal nature of this design. The skilful use of brick quoins is one of the most delightful parts of this most excellent mansion.

The grouping of the buildings at Mount Pleasant is exceptional. The main building, with its principal living rooms, is in the center, flanked on either side by a separate and lesser building housing the rooms devoted to service. This was a favorite device in England in the eighteenth century. Isaac Ware illustrates such an arrangement and sets forth in his third book the manner in which this kind

of group should be designed, stipulating that in a house of sixty-five foot frontage the wings should stand twenty-eight feet distant from the right and left, and thirteen feet forwards.

The block plan with detached, subordinate wings, or with the dwelling connected to the service buildings by means of a colonnade or low roof, never became firmly established in New England or the Central States as in the South. By the latter part of the eighteenth century the oblong plan, with the kitchen projecting to the rear, proved to be the most common form.

In regard to the internal arrangement of the main part of Mount Pleasant, the placing of rooms was unusual. A wide central hall, with wainscot and classically treated cornice, extends from the front to the back of the building, but, instead of the stairway being housed in the main hallway, a secondary stair hall projects to one side and occupies the southeast angle. The latter is separated from the main hall by a square-headed arch with fluted pilasters on each side supporting a heavy entablature.

The north end of the first floor is occupied by the drawing room, which is seventeen feet, ten inches wide and twenty-six feet, ten inches long. The dining room is in the southwest corner and is entered by a doorway from the main hall. The second floor is almost a duplicate of the first. Delicately detailed woodwork adorns the fireplace side, use being made of central mantels and adjoining cupboards. The great chamber of the second floor is of extreme beauty and refinement. Over the marble framed fireplace opening is a great wood panel, enriched at the angles and above by delicate carving, credited with having been brought from England, but more probably the work of local craftsmen.

Traditions pointing to panelled and carved wall decoration carried by the early merchant ships from England, are as ill founded as are the numerous accounts of "brick brought from abroad." Careful investigation indicates that there were in Pennsylvania skilled woodworkers of almost as great proficiency as the wood craftsmen of England of the late eight-

eenth century. Philadelphia was the chief "furniture city" of all the American colonies at the time of the Revolution. Furniture of the "period styles" was being made in Philadelphia of so refined a nature and in so close an accord with the traditions of the craft in London as to have passed for genuine specimens from the workshops of Chippendale, Shearer and Sheraton. It is only within the present decade that the true origin of these pieces has been placed by such men as Mr. Alfred Prime, of the Pennsylvania Museum in Philadelphia. The American origin of certain carved overmantels, long attributed to British workshops, is proved or at least made most probable by the evidence of the wood of which such mantels were made. With one or two exceptions they are of white pine. The white pine tree, so abundant in the domain of William Penn, was not imported into England until after 1700, and it is improbable that it would have developed to a sufficient size to have been put to the uses of panelling and carving.

Port Royal in Frankford, Philadelphia, Woodford in Fairmount Park, and Cliveden in Germantown are other representatives of the third type, but none of these has the adjacent buildings to form a forecourt. They possess minor variations, such as the gable roof of Cliveden, the molded belt course separating the first from the second story at Woodford, and, in addition, the adoption of brick and stone as the material of which the walls were built.

This brief summary of the prominent characteristics of the three readily recognized kinds of domestic dwellings in early Pennsylvania does not pretend completeness. The prevailing form rather than the exceptional example has been given attention.

The subsequent consideration of the mutations of detail, the evolved growth of forms, animated at first by environment and use and later altered by the more intimate contact with England, will add to a fuller understanding of the Pennsylvania style.



DATE STONE, HOUSE IN LANCASTER, PA. 1767.

PORTFOLIO  
OF  
CURRENT  
ARCHITECTURE



WELL HEAD—MELODY FARM, RESI-  
DENCE OF J. OGDEN ARMOUR, ESQ., LAKE  
FOREST, ILL. ARTHUR HEUN, ARCHITECT.



MAIN ENTRANCE GATES AND LODGE—MELODY FARM, RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARTHUR HEUN, ARCHITECT.



LOOKING ACROSS THE WATER GARDEN  
TOWARD THE ROSE GARDEN—MELODY FARM,  
RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE



THE WATER GARDEN, FROM TERRACE IN REAR OF HOUSE—MELODY FARM, RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARTHUR HEUN, ARCHITECT.



THE ROSE GARDEN—MELODY FARM, RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARTHUR HEUN, ARCHITECT.

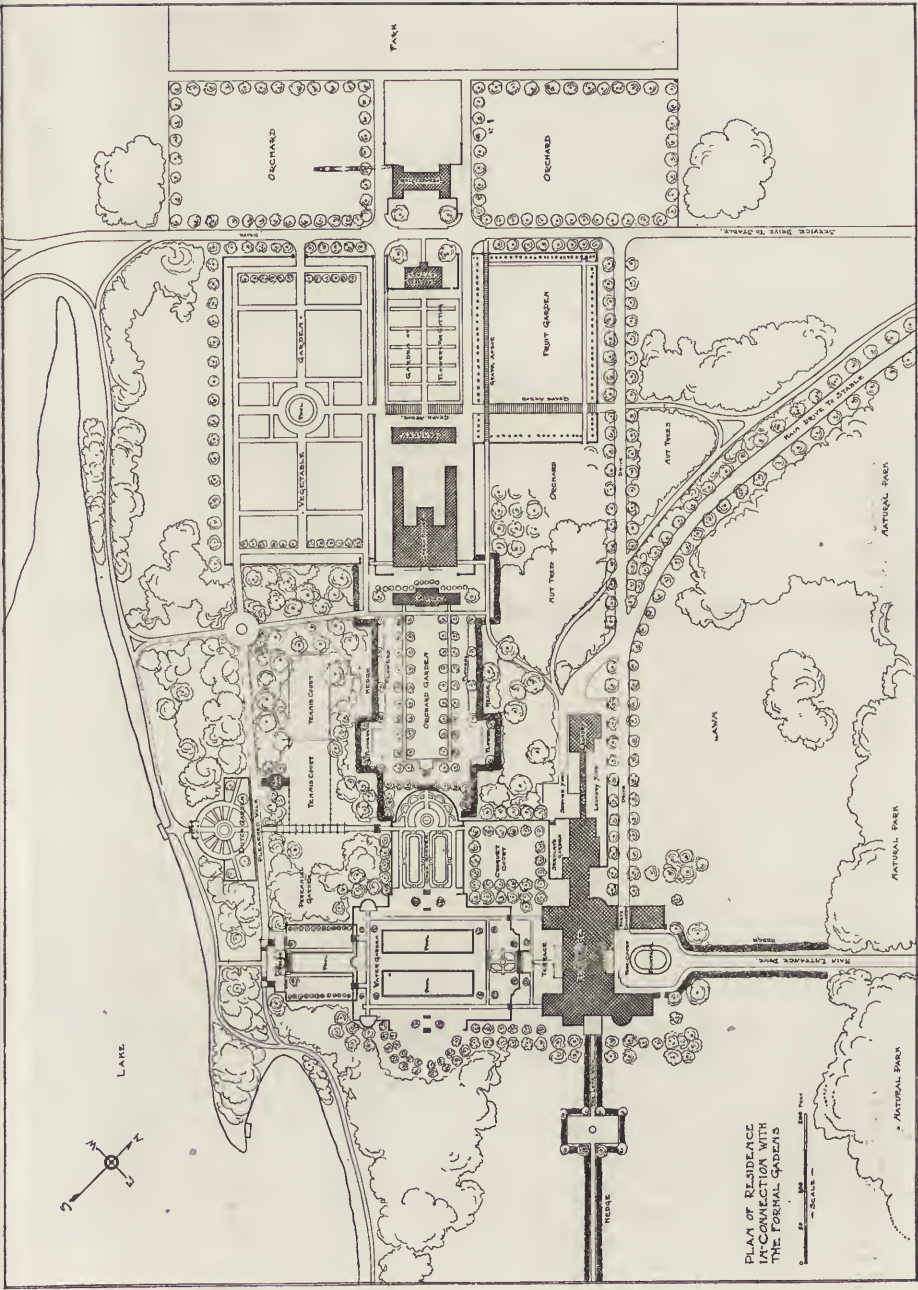




THE DUTCH GARDEN—MELODY FARM, RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARTHUR HEUN, ARCHITECT.



CHAUFFEUR'S AND COACHMAN'S QUARTERS, WITH STABLES AND GARAGE IN BACKGROUND—MELODY FARM, RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARTHUR HEUN, ARCHITECT.



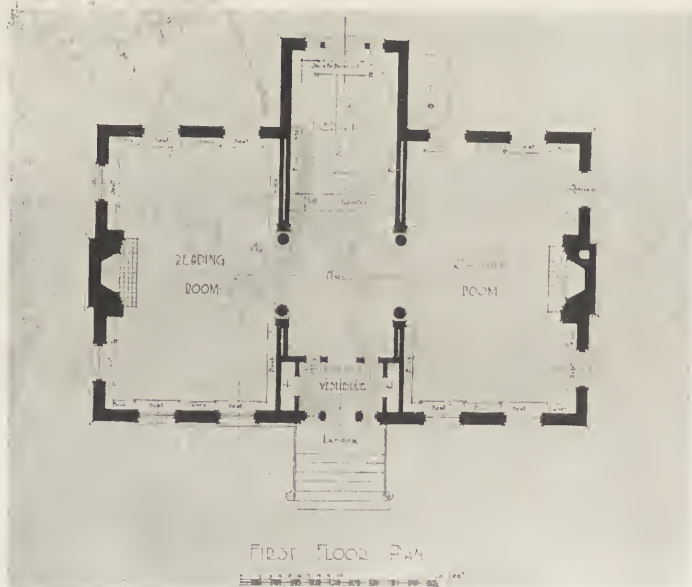
GARDEN PLAN—MELODY FARM. RESIDENCE OF J. OGDEN ARMOUR, ESQ., LAKE FOREST, ILL. ARCHITECT, ARTHUR HEUN, ARCHITECT.



CITY NATIONAL BANK, GALVESTON,  
TEXAS. WEARY & ALFORD, ARCHITECTS.  
(For Description, See Page 186.)



CITY NATIONAL BANK, GALVESTON,  
TEXAS. WEARY & ALFORD, ARCHITECTS.



EAST HADDAM LIBRARY, EAST HADDAM,  
CONN. ORR & DEL GRELLA, ARCHITECTS.



EAST HADDAM LIBRARY, EAST HADDAM,  
CONN. ORR & DEL GRELLA, ARCHITECTS.



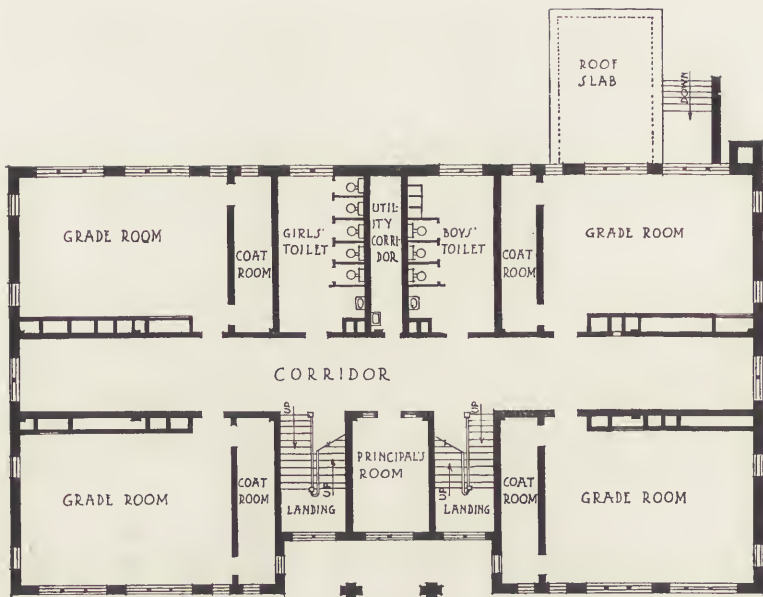
ENTRANCE TO THE CHEESEWRIGHT STUDIOS, OCCUPY-  
ING ONE OF A BLOCK OF THREE TUDOR SHOPS IN PASA-  
DENA, CAL. DESIGNED BY EDGAR CHEESEWRIGHT.



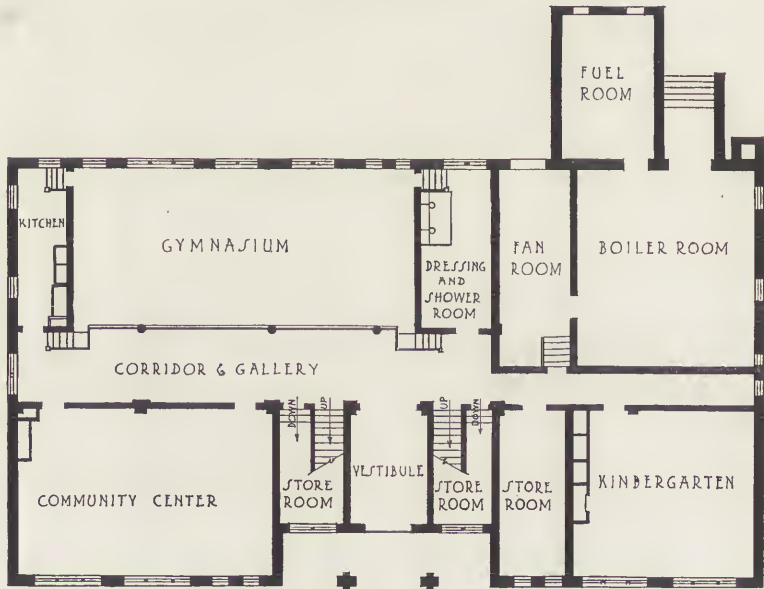


*Photo by Oscar Maurer*

A BLOCK OF THREE TUDOR SHOPS IN PASADENA,  
CAL. DESIGNED BY EDGAR CHESEBROUGH.  
(For Description See Page 189.)



SECOND FLOOR PLAN

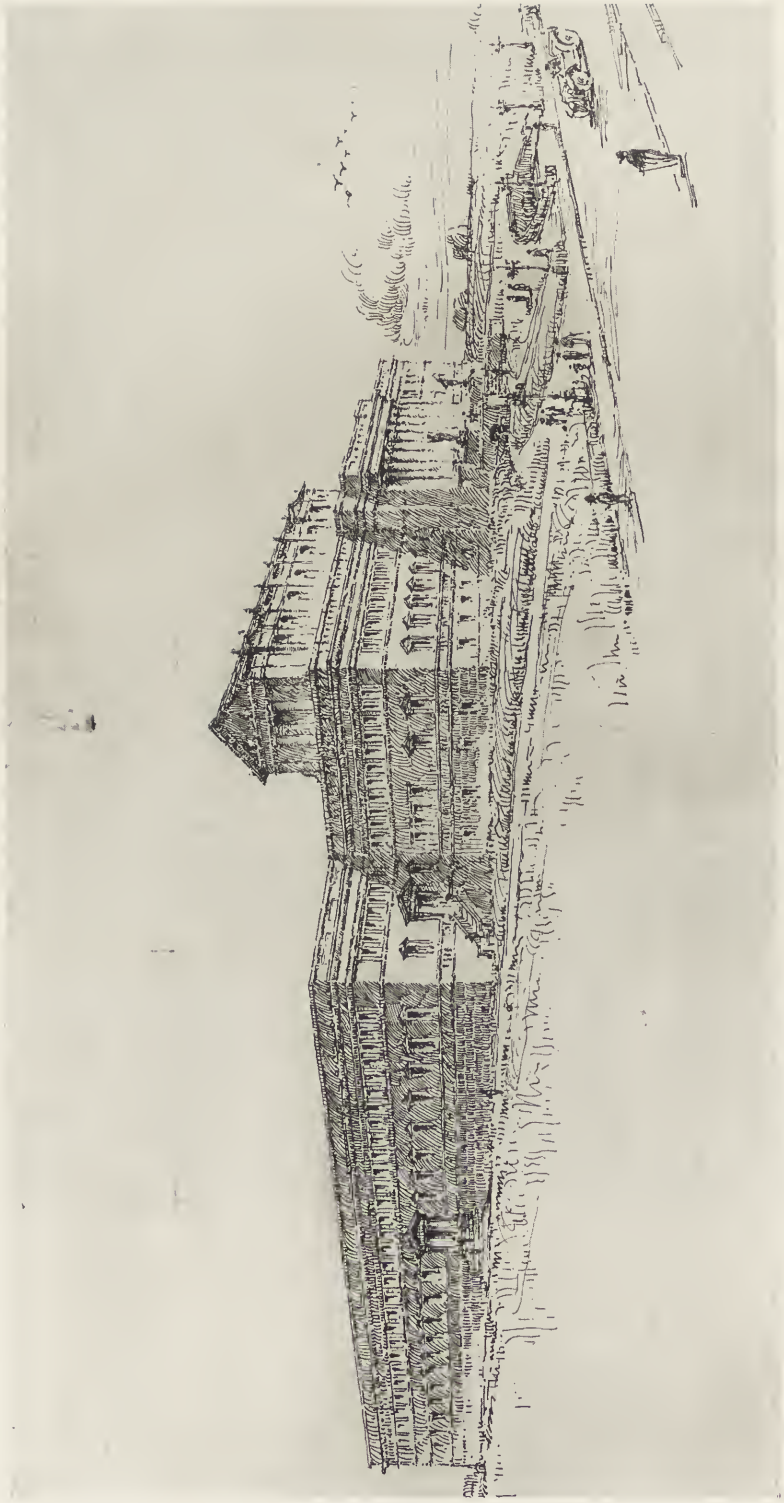


FIRST FLOOR PLAN

ROUND PRAIRIE GRADE SCHOOL, FORT DODGE,  
IOWA. DAMON & O'MEARA, ARCHITECTS.



ROUND PRAIRIE GRADE SCHOOL, FORT DODGE,  
IOWA. DAMON & O'MEARA, ARCHITECTS.



PERSPECTIVE—DESIGN FOR CAPITOL OF PORTO RICO. ADRIAN C. FINLAYSON, ARCHITECT.

# PORTO RICO'S NEW CAPITOL



By SYLVESTER BAXTER

THE new capitol for the insular territory of Porto Rico about to be erected at San Juan is fortunate in having a site admirably fitted by nature in relation to its urban environment, and the design by Mr. Adrian Finlayson, the architect of the Insular Government's interior department, does justice to the opportunity for a monumental building thus presented. Indeed, the site compares favorably with those of such state capitols as the Massachusetts State House at Boston and the Rhode Island State House at Providence, in its command of broad prospects on all sides, by land and by sea.

A territorial government in the United States has always been considered a rather small affair, having to do with a sparse and widely diffused population living under frontier conditions with limited administrative needs. But in Porto Rico we have to do with an ancient community which historically, in its possession of a European civilization, far outdates any portion of the Continental United States, being, with one exception, the first region settled by Europeans in the New World. Again, in proportion to area, Porto Rico is densely inhabited. The island has about seven-tenths the area of the State of Connecticut, and its population is almost equal to that of Connecticut. It has, therefore, a large volume of public business.

The several departments of the Insular Government have been housed, ever since the transfer from Spanish to American rule, in various buildings that belonged to the Spanish Government. But the growth of these departments has been such that the need of more room and better accommodations has long been felt. So when the Food Commission of Porto Rico, constituted by the Insular Government to meet the emergency of an isolated community whose sources of supply were endangered by the entrance of the United

States into the war, made its extraordinary record and turned into the public treasury something like \$600,000, representing the profits from its operations, and recommended that the money be devoted to the erection of a suitable capitol, the proposition was heartily endorsed, and the Legislature appropriated the money to that end.

Beside the profits in money handed over to the public treasury, the Insular Government also gained a valuable asset in the shape of a good office building. When the Food Commission had needed larger quarters for its considerable staff it purchased out of the profits on its transactions the Masonic Temple in San Juan at a cost of \$30,000. Since all customs duties are turned over to the Insular treasury by the Federal Government, Porto Rico also derived large revenues from the dutiable food supplies imported by the commission from foreign countries. Moreover, the saving in costs of food to the local public, through the prices that were kept down, amounted to several million dollars. This record is unique; no other food commission, Federal or State, can show anything like it. It would seem quite in order to commemorate the public-spirited war work that made possible this monumental edifice by a suitably inscribed tablet at the entrance.

The capitol will naturally be the cardinal feature of a notable civic center, several elements of which already exist. First let us glance at the topographical aspect of San Juan itself. The municipality comprises the city proper, or old San Juan, and two outlying sections, or districts—*barrios* they are called in Spanish. Old San Juan, together with the *barrio* called Puerto de Tierra (Gate of the World), occupies a long and narrow island that forms the northerly side of a large land-locked bay—the only natural harbor on the north side of Porto Rico. A long chain of old

Spanish fortifications, built at enormous cost and once correspondingly formidable, skirts the ocean side of the island, extending from El Morro, at the harbor entrance on the northwest, to Fort San Gerónimo at the easternmost point. The old city, which is very densely built, with narrow streets on a rectangular plan (the cross-streets running steeply up hill towards the ocean front), comes abruptly to an end with the Plaza de Colón, where stands a columnar monument to Columbus, crowned with a statue of the discoverer, who on his second voyage landed on the western shore of Borinquen, as Porto Rico was originally called. Locally the aboriginal designation is still in universal use as a name of endearment.

Close by, the chain of fortifications has its most conspicuous feature in the ancient Fort San Cristóbal—a work of noble aspect in its dominating mass with towering, irregular battlements. The Plaza de Colón, paved with broad flagstones, slopes southward; and at its lower side the Municipal Theatre faces it with an air of homely monumentality.

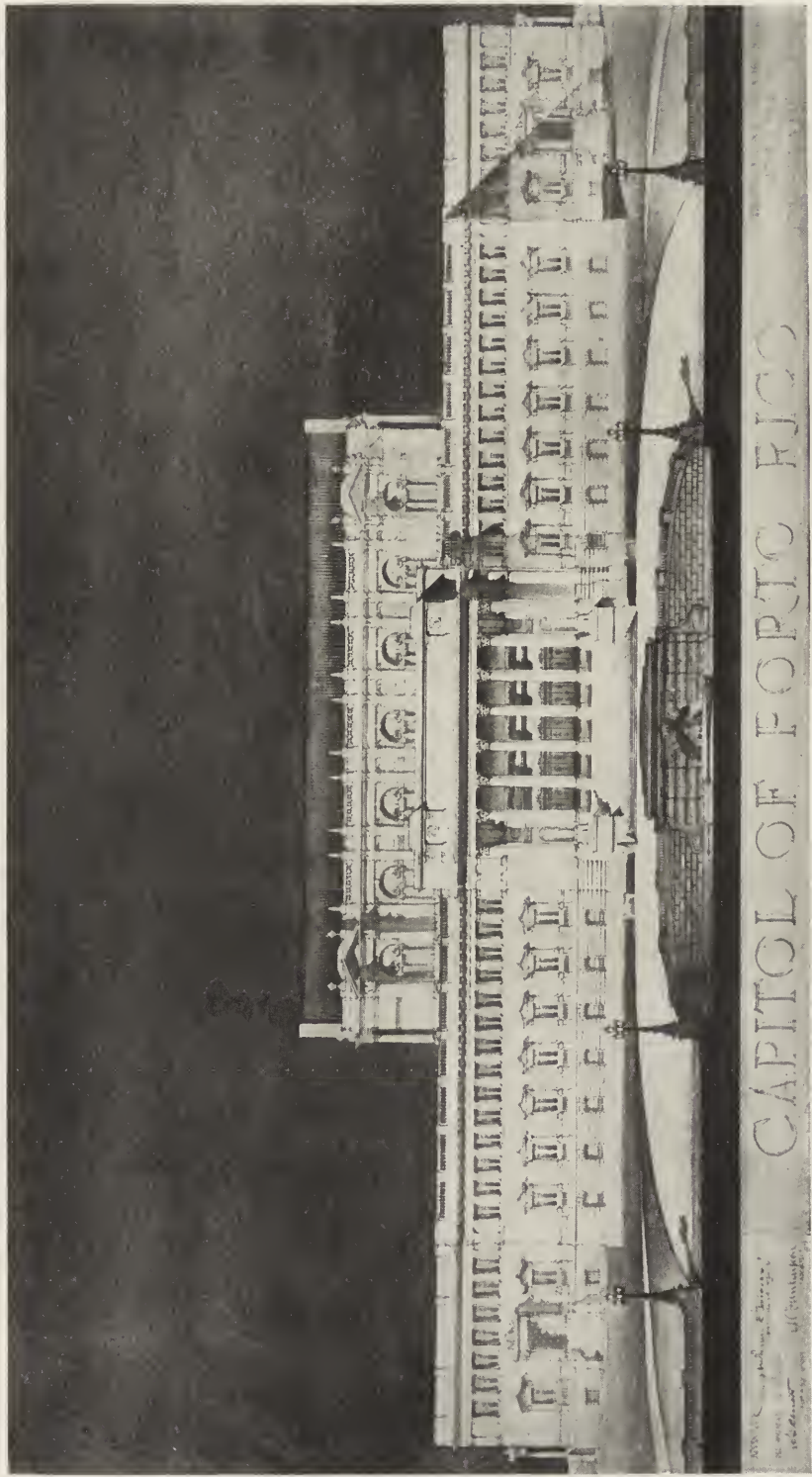
From this point runs the upper of the two broad, asphalt paved roadways of the important Paseo de Covadonga. The Paseo, with its broad open space between the two roadways, has possibilities that have yet only slightly been developed. It runs across the long field-like open space that formerly belonged to the military reservation occupied by the fortifications. The Paseo skirts the northerly side of the densely built industrial *barrio* of Puerta de Tierra. The upper road of the Paseo continues the narrow longitudinal street that begins at the Fortaleza, or Governor's palace. Some years since it was renamed Allen Street, in honor of the popular Governor Charles Allen, the first civil Governor of the island, but it is still known by its ancient name: Calle de Fortaleza. The lower roadway of the Paseo begins about a half mile farther to the westward in the embellished open space on the water-front, or La Marina, where stands the handsome Federal building in a slightly position overlooking the beautiful bay. Passing the terraced rear elevation of the Municipal Theatre and the monumental terminal station of the

important American Railroad that follows the coast line about two-thirds of the circumference of Porto Rico (notwithstanding the circumstance of having been designed in Paris for the French company that until recently owned the railroad, this station is by no means a felicitous example of modern French Renaissance), the lower road joins its mate just beyond the railroad station in the formal beginning of the Paseo.

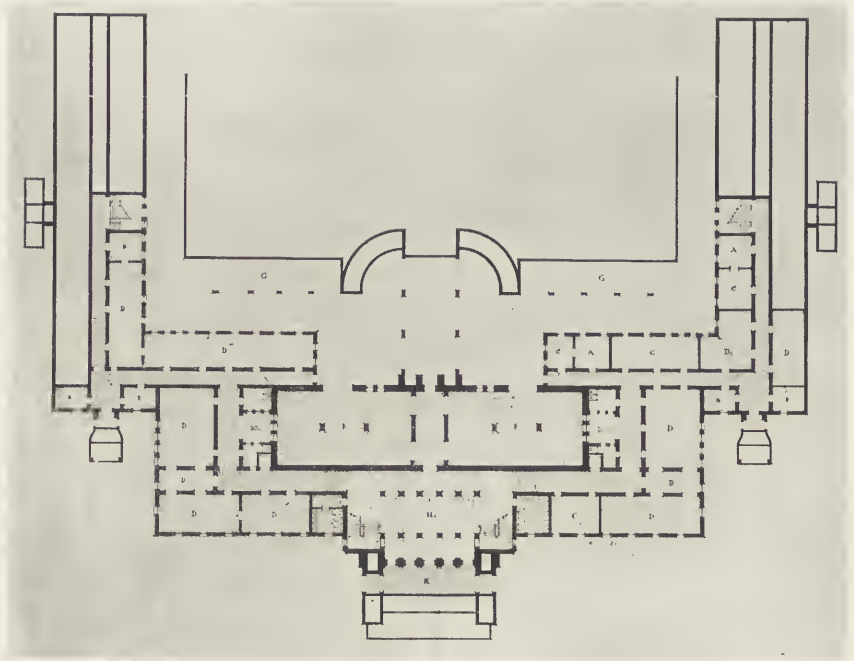
The first of the civic group aforementioned is the Municipal Theatre. Diagonally opposite is the recently built Porto Rico Casino, more successful than the railway station in its French Renaissance, and appropriately festive in design as it faces the Plaza de Colón. Opposite the Casino a fine school house stands between the two roadways, a handsome terraced garden in its rear. Beyond the schoolhouse, on the same side, is the old Masonic Temple which, since it was turned over by the Food Commission, has been devoted to the Insular Archives and other governmental offices.

Further on, on the opposite side of the upper road, is the stately building of the Young Men's Christian Association, between which and the Casino a space has been set aside for a building to be erected by the Ateneo de Puerto Rico, an admirable institution for the fostering of literature and the fine arts. Next to the Young Men's Christian Association is the Carnegie Library, established for the benefit of the entire island.

Here at the Library the Paseo in its formal beginning is marked by monumental gate-posts on either side of the upper road. An excellent opportunity for a landscape architect in the development of its mall-like extent has been long neglected, except in a few fragmentary improvements here and there, as in the exedra on the lower roadway called the Plaza de los Leones, the Place of the Lions, from the reproduction of Barye's lions that distinguish the design at that point. With the construction of the capitol it is to be hoped that a good planting scheme for the Paseo de Covadonga will be adopted and carried out. Such inviting factors as the main approach (indeed, at present the only approach) to San Juan



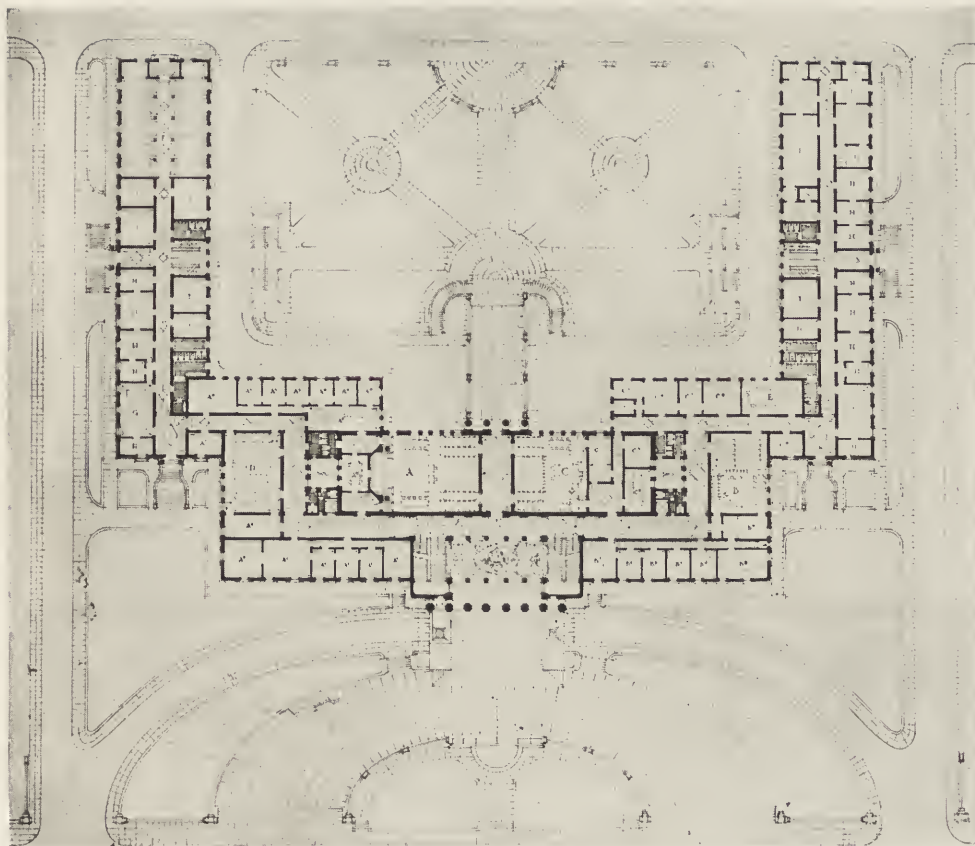
DESIGN BY ADRIAN C. FINLAYSON, ARCHITECT FOR THE  
INSULAR DEPARTMENT OF THE INTERIOR, PORTO RICO.



PLAN OF BASEMENT FLOOR—CAPITOL OF PORTO RICO.

- |   |                 |   |                   |
|---|-----------------|---|-------------------|
| A | Waiting Room.   | F | Storage Space.    |
| B | Private Office. | G | Parking Space.    |
| C | General Office. | H | Lobby             |
| D | Archives.       | K | Vehicle Entrance. |





PLAN OF FIRST FLOOR—CAPITOL OF PORTO RICO.

SUPREME COURT.

- |                                           |                                         |                                           |
|-------------------------------------------|-----------------------------------------|-------------------------------------------|
| A Court Room.                             | A <sup>5</sup> General Office.          | A <sup>10</sup> Robing Room.              |
| A <sup>1</sup> Attorney General's Office. | A <sup>6</sup> Lawyers' Waiting Room.   | A <sup>11</sup> Waiting Room and Library. |
| A <sup>2</sup> Marshall's Office.         | A <sup>7</sup> Archives.                | A <sup>12</sup> Consultation Room.        |
| A <sup>3</sup> Secretary's Office.        | A <sup>8</sup> Secretaries' Office.     |                                           |
| A <sup>4</sup> Property Clerk's Office.   | A <sup>9</sup> Judges' Private Offices. |                                           |

DISTRICT COURT, FIRST SECTION.

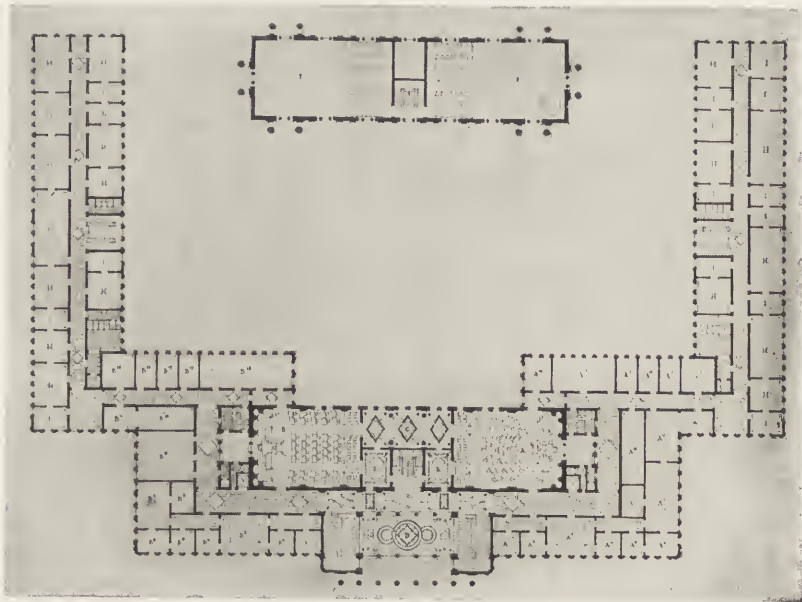
- |                                    |                                         |                                |
|------------------------------------|-----------------------------------------|--------------------------------|
| B Court Room.                      | B <sup>3</sup> Marshall's Office.       | B <sup>8</sup> Jury Room.      |
| B <sup>1</sup> General Office.     | B <sup>4</sup> Witnesses' Waiting Room. | B <sup>9</sup> Judge's Office. |
| B <sup>2</sup> Secretary's Office. | B <sup>6</sup> Lawyers' Waiting Room.   |                                |

OTHER ROOMS.

- |                    |                   |
|--------------------|-------------------|
| D Law Library.     | G Waiting Room.   |
| E Grand Jury Room. | H Private Office. |
| F Museum.          | I General Office. |

DISTRICT COURT, SECOND SECTION.

- |                                         |                                    |                                |
|-----------------------------------------|------------------------------------|--------------------------------|
| C Court Room.                           | C <sup>4</sup> Prisoners' Room.    | C <sup>8</sup> General Office. |
| C <sup>1</sup> Judge's Office.          | C <sup>5</sup> Marshall's Office.  | C <sup>9</sup> Archives.       |
| C <sup>2</sup> Jury Room.               | C <sup>6</sup> General Office.     |                                |
| C <sup>3</sup> Witnesses' Waiting Room. | C <sup>7</sup> Secretary's Office. |                                |



PLAN OF SECOND FLOOR—CAPITOL OF PORTO RICO.

SENATE.

- A Senate Chamber.
- A<sup>1</sup> Messengers.
- A<sup>2</sup> Sergeant-at-Arms.
- A<sup>3</sup> Office President of Senate.
- A<sup>4</sup> Stenographer.
- A<sup>5</sup> Stenographer.
- A<sup>6</sup> Secretary's Office.
- A<sup>7</sup> General Office.
- A<sup>8</sup> Bill Filing Room.
- A<sup>9</sup> General Archives.
- A<sup>10</sup> Office Bureau of Translations.
- A<sup>11</sup> Chief Bureau of Translations.
- A<sup>12</sup> Committee Room.
- A<sup>13</sup> Conference Room.
- A<sup>14</sup> Minority Room.

HOUSE OF REPRESENTATIVES.

- B Hall of Sessions.
- B<sup>1</sup> Messengers.
- B<sup>2</sup> Sergeant-at-Arms.
- B<sup>3</sup> Office President.
- B<sup>4</sup> Stenographer.
- B<sup>5</sup> Stenographer.
- B<sup>6</sup> Secretary's Office.
- B<sup>7</sup> General Office.
- B<sup>8</sup> Bill Filing Room.
- B<sup>9</sup> Conference Room.
- B<sup>10</sup> General Archives.
- B<sup>11</sup> Property Clerk's Office.
- B<sup>12</sup> Committee Room.
- B<sup>13</sup> Conference Room.

OTHER ROOMS.

- C Library
- D Foyer.
- E Lobbies.
- F Public Gallery.
- H General Offices.
- I Private Offices.

from the entire interior of the island, a tropical climate with a correspondingly luxuriant flora, and an environment of monumental architecture make the task exceptionally worth while. One has but to consider what has been done elsewhere to appreciate what may be realized here.

The extensive capitol grounds adjoin those of the Carnegie Library. From the long frontage on the Paseo they run back to the higher level of the projected new boulevard that will extend the line of the upper of the main longitudinal thoroughfares in the old city—now called the Calle de Salvador Bran, but still popularly known by its old name of San Francisco—from its present ending at the Plaza de Colón eastward close under the walls of Fort San Cristóbal, and along the bluffs of the ocean shore to the farther end of the island of San Juan, where ultimately it will cross by a new bridge to the Condado section of the *barrio* of Santurce, the great suburban residential district of the municipality.

As indicated in the front elevation and the perspective the main entrance of the capitol has a stately approach in the shape of a semicircular drive, with walks, enclosing an exedra with a fountain at the Paseo. On the boulevard side the two great wings flank a large quadrangular patio with an approach from the north

side. The main structure is devoted to the two legislative branches and also the Supreme and the local District court for the island. The wings are devoted to departmental offices.

Mr. Finlayson's admirable design, dignified, beautiful, and altogether meet for the purpose, speaks for itself, as depicted in the accompanying plans with front elevation and perspective. The material is reinforced concrete. A welcome departure from the conventional dome so much associated with our capitol buildings in the United States is the pavilion-like superstructure, or "monitor," as it might be called, which with the quality of conspicuousness served by the dome combines that of utility, which the dome seldom possesses. The dome, moreover, in countries whose antecedents are Spanish, is commonly more associated with ecclesiastical than with secular architecture. This pavilion is designed to carry the halls of the two legislative chambers, the Senate and House of Representatives, located in the second story, to an adequate height. In a wide setting of verdure, facing the blue of the smiling bay, the light gray of the walls will gleam almost white under the intense light of a tropical sun, while the red Spanish tiles of the pavilion roof will supply a sufficiently vivid completing accent.

# A SHORT BIBLIOGRAPHY AND ANALYSIS OF HOUSING



By JOHN TAYLOR BOYD, J<sup>r</sup>.

THE plan on which this combined bibliography and analysis was conceived should be kept in mind by the reader as he uses it. The bibliography aims to provide an architect with a short, compact introduction to the vast, complicated field of housing; while the analysis affords a bird's eye view of the subject, and also serves as a basis of classification for a filing system on housing. Both of them deal mainly with essentials. They are what is left after much elimination, in order to maintain perspective and clearness, and the reader should guard against too much further elimination, which might easily render his study superficial. The relation of town planning to housing is covered, but not fully, since town planning is so great a subject in itself that it would complicate the analysis if all of it were included.

## BIBLIOGRAPHY.

The literature of housing is new, somewhat fragmentary, and swiftly growing. Only four American books deal with the subject comprehensively. The rest of the publicity of American housing is in the form of magazine articles, pamphlets, and reports—a fluid, germinating field in which valuable products are constantly turned up. Nevertheless, in spite of its newness, this literature is approaching maturity, and the best of it is thoroughly sound. As a result, much priceless information is at hand concerning (a) fundamental principles of all the aspects of housing, (b) practical achievements in actual building projects, (c) a clear understanding of past failures and a knowledge of what problems are yet to be solved.

The chief obstacle to the progress of

sound housing in this country is the difficulty of its relationship to the public. Technical knowledge of design and construction is well advanced; but non-technical factors, such as the position of housing before the law, the financing of the building projects and the management of the projects after they are completed, are still much undetermined. The technical expert must be familiar at least with the principles of these non-technical elements if he is to co-operate successfully in his design. Especially must he appreciate the legal aspects of housing, for good housing must be carefully protected against the ruinous competition of bad housing. Also he should know the older forms of housing, in order to detect the sinister parentage of various schemes that may be urged as substitutes for newer and better standards.

To understand how far I have carried elimination in this bibliography, one may consult Miss Theodora Kimball's bibliography appended to Vol. II of the U. S. Housing Corporation's Report. Miss Kimball has made a discriminating choice of 250 writings from among a thousand references. Her work contains many references that refer only to war housing and also European authorities not of great value to Americans. It should be said, however, that while European experience is not so valuable to us in strictly technical matters, it is often helpful in stating general principles, particularly in non-technical factors.

## THE ANALYSIS.

The purposes of the analysis are similar to those of the bibliography to which it is so closely related. Like the bibliography, it might easily be swamped with detail—by developing further headings

and subheadings until it became confusing and of less practical value. How much further this detail could be carried will be seen in Vol. II of the U. S. Housing Corporation's Report, which contains many pages of classification on the subject of costs alone.

Nor have I followed logic strictly in excluding details. I have emphasized certain points where unsolved problems are met with, or where further progress is to be expected. For instance, nothing is more important than the plan of individual houses, and it is evident that further standardization and development may be expected here.

I had thought to add numbers to all the classifications of this analysis for use in filing writings under a decimal system of filing. But not everyone will use it for library filing, and those who do so use it may want to collect material in such detail that they will wish to develop and rearrange the classifications to suit their individual needs and their material. For library filing, therefore, the analysis is offered only as a suggestion.

## ANALYSIS OF HOUSING.

### NON-TECHNICAL FACTORS

#### I. *Bad Housing.*

- a. Slum areas.
  1. Characteristics.
    - (a) Poor design and construction of buildings.
    - (b) Overcrowding.
    - (c) Bad sanitation in design and maintenance.
  2. Causes.
    - (a) Absence of legal preventative system.
    - (b) Congestion and inflation of land values.
    - (c) Absence of town and city planning.
  - b. Types of undesirable dwellings.
    1. New York "old law" tenements.
    2. New England three-decker.
    3. Philadelphia block houses, old type.
    4. Conversions of other buildings.
    5. Insanitary rural dwellings.
  - c. Evils of bad housing. (Note: There are causes other than bad housing which are contributory to these evils.)
    1. Sanitary.
      - (a) Physical disease, epidemics, accidents, deterioration.
      - (b) Mental, nervous diseases and deterioration.
      - (c) Stunted growth of children.

- (d) High death rate.
2. Moral dangers.
  - (a) Causes.
    - (1) Overcrowding.
    - (2) No recreation or retiring space for adults.
    - (3) No playing space for children.
    - (4) Halls, toilets used by several families.
    - (5) Lodgers and boarding.
  - (b) Results.
    - (1) Increase in crime, delinquency, moral deterioration.
    - (2) Breeding of unrest.
    - (3) People who do not own their own homes are less apt to be of the highest type of citizen.
    - (4) Class distinctions.
3. Economic evils.
  - (a) Increase of labor unrest and social discontent.
  - (b) Inefficient and inferior work produced by badly housed labor.
  - (c) Increase of labor turnover.
    - (1) Among different classes of labor.
    - (2) Among young or unmarried men.
  - (d) Change in real estate values from investment to speculative.

#### II. *Prevention of Bad Housing Practices.*

- a. Popular organization.
  1. Co-operation of leading citizens, civic and professional organizations.
  2. Local Housing Betterment Associations.
    - (a) Organization.
    - (b) Policies.
    - (c) Publicity.
  3. National Housing Association.
    - (a) Organization.
    - (b) Policies.
    - (c) Publicity.
- b. Governmental organization. (The relation of government to housing in the United States has never been worked out. The items listed under this heading cover suggestions made by housing experts.)
  1. National.
    - (a) Legislation.
    - (b) Administrative clearing house for statistical information and standards.
  2. State.
    - (a) Legislation.
      - (1) Restrictive—Veiller Model Law.
      - (2) Constructive.
    - (b) Administrative.
      - (1) Supervision of local housing and town planning
      - (2) Clearing house similar to national agency.
  3. Local.
    - (a) Enforcing laws and ordinances.
    - (b) Making town plan.
    - (c) Forcing clearance of slum areas.
    - (d) Furnishing housing standards and information.

4. Policies in controversy.
  - (a) Extent of Government supervision.
  - (b) Uses of Government finance or credit systems.
  - (c) Excess condemnation.
  - (d) Principles of taxation.

III. Finance.

- a. Agencies undertaking housing schemes.
  1. Private investors and speculators.
  2. Semi-public housing corporations.
  3. Industrial corporations.
  4. Building and loan associations.
  5. Philanthropic societies.
- b. Sources of capital.
- c. Underwriting and legal protection.
  1. Surveys, statistics.
  2. Legal protection of capital investment, incorporation.
- d. Plant investment.
  1. "Raw" land.
  2. Improved land, site utilities.
  3. Houses.
  4. Other buildings.
  5. Playgrounds and recreation spaces.
- e. Proportion of expense in site utilities shared by community.
- f. Carrying charges.
  1. Credit, interest, mortgages, amortization.
  2. Depreciation, obsolescence.
  3. Taxes, insurance.
  4. Sinking fund or undivided profits.
  5. Management and maintenance. (See IV, below.)
- g. Per cent. of wages as basis of rental in different classes of labor.
- h. Financial relations with people housed.
  1. Methods of selling or renting homes.
  2. Plans of payment.
  3. Provision for meeting demand of wage-earner for "mobility of labor": i. e., allowing him to dispose of his holding without undue sacrifice if circumstances compel him to move.
- i. Costs.
  1. Construction and promotion costs.
  2. Maintenance.
- j. Per cent. of gross and net return.
- k. Indirect benefits.
  1. Increased prosperity and values in area benefited.
  2. Amelioration of evils noted under 1 above.

IV. Management.

- a. Organization and personnel.
  1. Training for management.
  2. Training for rent collectors, inspectors.
  3. Accounting. (See III, above.)
- b. Plans of management.
  1. Houses.
    - (a) Homes sold.
    - (b) Homes rented.
    - (c) Co-partnership plans—stockholding.
    - (d) Variations due to local conditions.
  2. Project as a whole.

- (a) Managed by company.
  - (b) Managed by tenants.
  - (c) Managed by tenant stockholders.
  - (d) Management plans of streets, roadways, sanitation, etc.
- c. Management policies.
    1. Co-operation with householders.
      - (a) Tenant regulations and co-operation.
      - (b) Rent records.
      - (c) Methods of rent and sale payments.
    2. Co-operation with community.
      - (a) With municipality.
      - (b) Community centre—recreation, gardens, etc.

TECHNICAL FACTORS.

I. Site Planning.

- a. Choice of site.
  1. Size.
  2. Topographical and geographical features.
  3. Relation to city plan—transportation.
  4. Economic factors.
- b. Classes of workers.
  1. Skilled.
  2. Unskilled.
  3. Young, unmarried workers; workers away from families.
  4. Women.
  5. Special classes.
- c. Buildings.
  1. Classes of dwellings.
    - (a) Detached, single-family house.
    - (b) Semi-detached, two-family house.
    - (c) Row or group houses.
    - (d) Flat houses—various types.
    - (e) Apartment houses.
  2. Other buildings.
    - (a) Community buildings, schools, churches, clubs, etc.
    - (b) Commercial.
- d. Arrangement of site plan.
  1. Placing of houses.
    - (a) Along streets.
    - (b) Grouped around courts, or parks, or greens.
    - (c) Setbacks, separation of lots, drying yards.
  2. Courts and public spaces.
    - (a) Interior service courts for groups of houses.
    - (b) Garden space on each lot, or allotment gardens.
    - (c) Parks and playground space—amount, location.
  3. Communications.
    - (a) Access to interior courts and spaces; to garages, alleys.
    - (b) Paths, easements.
  4. Transportation system.
    - (a) Roads, streets, sidewalks.
      - (1) Transportation streets—traffic avenues.
      - (2) Residence streets.
    - (b) Mechanical traffic system.

- (1) Railroads, car lines, water transportation.
- (2) Motor.
- (c) Marketing and freight.
- (d) Relation to town plan.
- 5. Site utilities. (See Engineering V., below.)
- 6. Community centers—situation, character, extent.
- 7. Design.
  - (a) Vistas, views, aesthetic factors.
  - (b) Sunlight, ventilation.
- 8. Costs. (See Finance III, above.)
- e. Planting.

II. *Design of dwellings.*

- a. Size.
    - 1. Number of rooms and conveniences for various classes of labor, without boarders.
    - 2. Same, with boarders.
  - b. Design of various types of houses.
    - 1. Town and village type.
      - (a) Plan.
        - 1. Arrangement.
          - (a) Relation to arrangement of lot.
          - (b) Entrances.
          - (c) Surveillance, circulation.
        - 1. Saving steps for housewife.
        - 2. Access to bathroom as private as possible.
          - (d) Separation of boarders' quarters from family.
          - (e) Cellar.
          - (f) Kitchen.
      - 2. City type.
        - (a) Same factors as town types.
        - (b) Per cent. of ground area built on and its relation to recreation space.
    - 1. Mechanical equipment.
    - 2. Service.
  - 2. Elevation and design.
    - (a) Design.
    - (b) Style and taste.
    - (c) Details.
      - (1) Exterior.
      - (2) Interior.
      - (3) Standardization.
  - 3. Mechanical equipment.
    - (a) Heating, plumbing, electrical, gas, fuel oil.
    - (b) Use of central power stations.
    - (c) Other details.
- c. Planting lot and garden.
- d. Costs. (See Finance III, and Management IV, above.)

III. *Engineering and Construction.*

- a. Organization.
  - 1. Town planning.
  - 2. Architecture.
  - 3. Engineering.
  - 4. Building and other construction.
  - 5. Management.
- b. Site utilities.
  - 1. Grading.

- 2. Roads, paths, sidewalks, street furniture.
- 3. Mechanical.
  - (a) Drainage, sewage, water supply.
  - (b) Heating, electricity, gas.
  - (c) Transportation.
- c. Mechanical equipment of houses. (See Dwellings I, above.)
- d. Construction methods.
  - 1. Organization.
  - 2. Large scale and manufacturing methods, standardization.
  - 3. Accounting.
- e. Materials, labor.
- f. Costs.
  - 1. First cost.
  - 2. Maintenance cost.

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*The Architectural Forum.*

Contains descriptions of actual building projects, and valuable special articles on design and construction.

*Architectural Review and Architecture.*

These two magazines resemble the Forum in treatment of housing. *Architecture* especially gives much space to articles on individual housing projects.

*American Architect.*

Emphasizes current news of housing design and publishes valuable special articles of technical interest.

*Journal of the American Institute of Architects.*

The Journal of the A. I. A. differs somewhat from the other magazines in its treatment of housing. It treats of the fundamental bases and relationships, rather than the more strictly technical side. It is indispensable to the architect.

*Landscape Architecture.*

Quarterly. Contains valuable information of town and city planning. It emphasizes particularly the trend of thought in this activity, which is still in a pioneer stage of progress. Its bibliographical references are particularly valuable.

*Publications of the Engineering Professions and of the Building Trades.*

One may find occasional information on housing in the pages of these magazines. They do not, however, take a keen, persistent interest in housing, and their treatment of the subject is apt to be cursory.

The more authoritative publications in the engineering field are:

Mechanical Engineering,  
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Engineering News-Record,  
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Among the magazines of the building trades and kindred interests are:

American Contractor,  
Record and Guide,  
Iron Age,  
Engineering and Contracting,  
American Builder,  
National Builder.

Among these are to be noted the publications dealing with cement and concrete construction, since for several years the concrete interests have followed with great zeal the development of a permanent low cost type of housing, wholly or partly of concrete construction. Such publications are:

Concrete,  
Concrete Age,  
Annual Proceedings American Concrete Institute.

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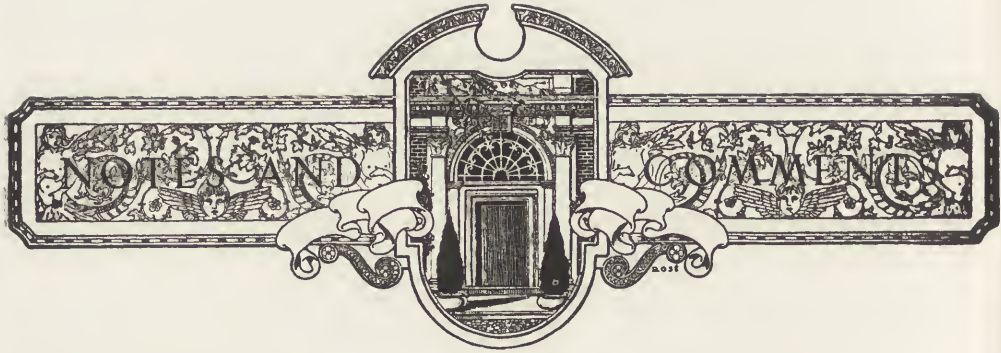
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*Architectural Record*, July and August, 1920.

Is It Advisable to Remodel Slum Tenements? By Andrew J. Thomas.

*Architectural Record*, November, 1920.

These last two articles deal with city housing in multi-family dwellings, one of the most important sides of housing.



### A Manufacturers' Exhibition

The fifth annual exhibition of industrial art, which is being held at the Metropolitan Museum of Art through January, reveals a noticeable improvement in the quality of the work displayed; and the improvement has a meaning which is not perhaps apparent on the surface. This exhibition, yearly gathered together, is not so much an end in itself as it is an index of work which has been carried on in the time intervening between the shows. It is directly the result of efforts on the part of the museum itself to offer its collections and its staff for the benefit of the manufacturer and the designer.

It is encouraging that many of the pieces shown are adaptations from the originals and not merely reproductions. This fact quickens our interest to distinguish which portion of the work holds museum inspiration. In some cases the designers have been the museum students, in some the craftsman, in others the chemist or other scientist whose experiments have produced a desired effect. The list of the sources would be a motley recital.

The exhibits, from designs and textiles for costumes to stained glass and mosaic panels, represent a wide range of the industrial arts. In viewing them a difference is felt between the machine manufactured articles and those into which craftsmanship has more largely entered. These two divisions of the industrial arts are shown together and little distinction between them is made, for the reason no doubt that a considerable amount of craftsmanship has entered into many of the machine made pieces, making the line hard to draw.

One weakness on the part of the designers is seen in such an exhibition as this; the designer, in selecting a model, frequently

does not choose the best examples of a type. If there are two Louis XV arm chairs, why does the designer choose the less fine of the two? No doubt he does so from a misconception of how a museum collection must be formed; many pieces must illustrate development of form and variations of type, all of which are not of equal artistic content.

It would be difficult to say which class of exhibitors has succeeded best in emulating the high quality seen in the older work. Metal-work and furniture would probably head the list, with stained glass and handloom textiles a close second. Many of the printed textiles do not stand comparison with contemporary European work.

Altogether, the group of objects gathered together points a direct moral to the use of museum collections by students and designers. Work executed from designs made from a study of good originals always shows a superiority to that studied from books or drawings alone, and it is this opportunity to study fine originals which is presented by the great museums.

CHARLES OVER CORNELIUS.

### The City National Bank of Galveston

An interesting example of the tendency, under present market conditions, to depart from tradition in the choice of building materials is seen in the new home of the City National Bank of Galveston, Texas.

The site of the building is a comparatively narrow "inside" lot, so that the architect's problem, as to the exterior, consisted of designing a façade only. This was treated as a recessed portico with a monumental Corinthian order. The material used is terra cotta having the effect of granite, the severity of which is relieved by the verde bronze of the door and window trim and

the two large vases which have been placed between the columns. The vases add an effective decorative note to the design and, in connection with the bas relief ornament on the podium, give to the front an air of distinction which sets it apart from stereotyped classic bank architecture. (For illustrations see pages 164 and 165.)

The plan is of the simplest—a rectangular room surmounted by an unbroken barrel vault; a mezzanine at the front occupied by a director's room, and another at the rear, over the vaults, providing space for bookkeepers' desks. The floor of the banking room is raised eight steps above the sidewalk; a precautionary measure, as the city is built upon an island that is but slightly above sea level and has suffered from inundations.

The struggle of Galveston to maintain itself against the elements is one of the dramatic episodes of its history. As a protection from the fierce tropical storms which drive in from the Gulf, a vast sea wall has been built and much of the residential district has been raised fifteen to twenty feet by pumping in sand from the neighboring marshes, but the business district still remains at the old level.

The interior of the bank is in keeping with the façade. The wainscoting and pilasters are of Botticino marble, the walls are in Caen stone effect, and the richly ornamented plaster ceiling is in tones of gray. The monotony of gray is relieved by the introduction of gold backgrounds in the ceiling medallions and by the gilded metal work of the tellers' cages, check desks, etc. The gold plating has a utilitarian purpose as well, for it protects the metal work against the action of salt water, with which the atmosphere of Galveston is saturated. Unfortunately only one of the chandeliers was in place when the photograph was taken. They will add materially to the attractiveness of the room.

I. T. FRARY.

**Fellowship  
Competition of  
the American  
Academy  
in Rome**

The American Academy in Rome announces its competitions for the Prizes of Rome in architecture, sculpture and painting, comprising the annual fellowship in architecture, of the value of \$1,000 a year for three years; the annual fellowship in sculpture, of the value of \$1,000 a year for three years, and the annual fellowship in painting, of the value of

\$1,000 a year for three years. The awards are made after competitions, which are open to all unmarried men, citizens of the United States, who comply with the regulations of the academy. Entries will be received until March 1. For detailed circular giving further particulars apply to C. Grant La Farge, secretary, American Academy in Rome, 101 Park avenue, New York City.

**Memorial  
Temple at  
Washington to  
the Men of  
'17 and '76**

Temple at Washington a joint monument to the men of '17 and '76. The men of 1917 have finished the task begun by the men of 1776, and have paid the debt incurred. The odd coincidence in numbers stands as the symbol of a real bond.

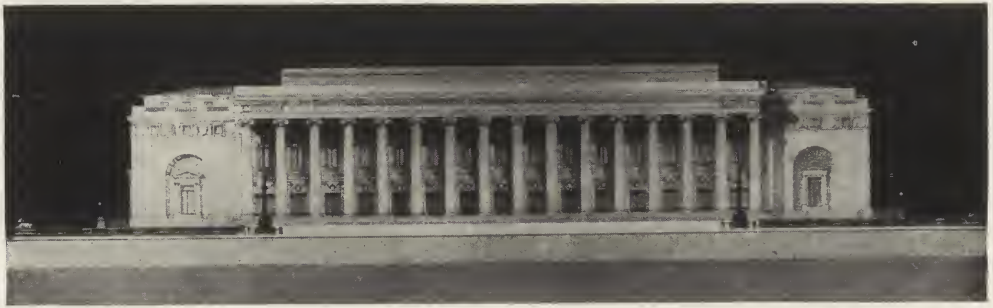
Washington borrowed of France the men and the money that saved the day for the freedom of the colonies. Wilson sent back to France the men and the money that saved the day for the freedom of the nations. We repaid Lafayette with Pershing.

The George Washington Memorial Association, which twenty years ago began raising funds to build an appropriate memorial to the first President, has \$350,000 in cash. Congress has donated an ideal site, the tract of land formerly occupied by the Pennsylvania Station and now covered in part by the temporary buildings of the War Department. It is almost the only desirable site remaining unoccupied in Washington. Several years ago a dozen of the foremost American architects submitted designs in a competition arranged by the memorial association. The Committee of Award selected from these a plan of impressive beauty, the work of Tracy & Swartwout, architects. Our entrance into the war interrupted the execution of the noble memorial.

The design calls for a majestic structure, 300 by 350 feet in length and depth, and of a sufficiently commanding height. The main auditorium will seat not fewer than 7,000 people; and, in addition, there will be many smaller halls and more than 100 reception rooms and offices.

There are to be rooms in the building for the perpetual use of certain patriotic societies, which can secure them by payment of \$25,000. It is understood that the

Of the many plans under way to erect monuments to the men who fought in the great war, perhaps the most imposing is that which would make of the George Washington Memorial



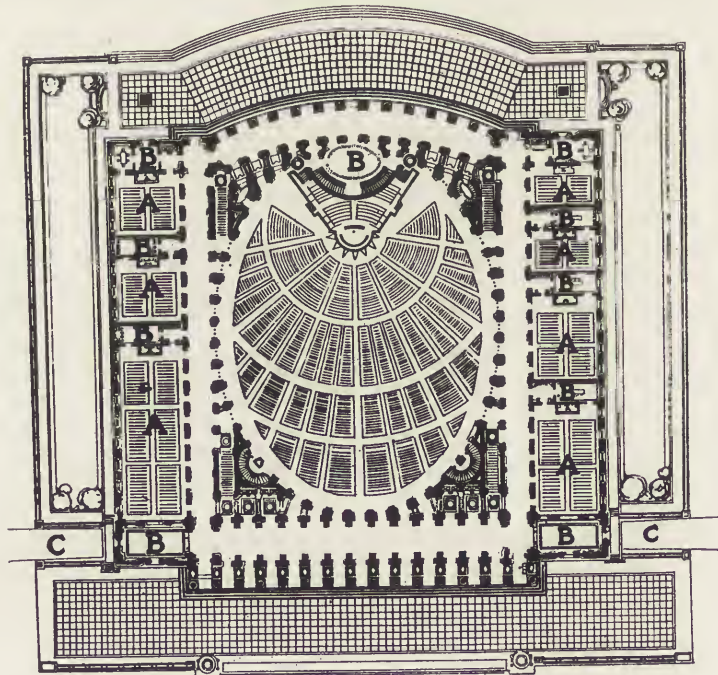
THE PROPOSED GEORGE WASHINGTON BUILDING, WASHINGTON, D. C.  
Tracy & Swartwout, Architects.

Society of Colonial Dames and one or two other associations already have raised the money which will give them a habitation in the city of Washington, with every possible "annexed" facility for the holding of their conventions.

One wing of the building is to be the children's tribute to George Washington. This will be used for everything pertaining to child welfare. Every child who contributes ten cents receives a button carrying the legend: "This pin means a brick in the Memorial Building." The name of each

child and of each donor of any amount will be entered on the records.

The auditorium, the main feature of the building, is to be a memorial to the signers of the Declaration of Independence. Reference has been made to other halls. These will hold from 600 to 2,500 people. In the banquet hall 600 people can be served at one time. Inaugural balls will have a proper setting in this building. The third and fourth floors will contain a museum and library for the care of precious relics, souvenirs and books on the art of war.



FLOOR PLAN, WITH AUDITORIUM SEATING 7,000 IN CENTER.  
(A) Assembly Rooms for Various National Organizations.  
(B) Reception Rooms. (C) Carriage Passage).

The George Washington Memorial Building is intended to meet the Father of his country's wishes that Congress and the people should promote "institutions for the general diffusion of knowledge." It is intended that the structure shall be the meeting place of all national and international conventions and all great public welfare gatherings. Nine-tenths of the conventions held in the city of Washington are in first measure educational in their intentions.

ROBERT H. MOULTON.

**A Block of Tudor Shops in Pasadena, California.**

Three Tudor shops set four feet back from the straight front of the other shops on the street, and having an English garden in the rear, mark a decided advance in business architecture in Pasadena. They look so much like the romantic little shop homes of old London that people pause to enjoy them, make up excuses to go inside, browse about with interest, and end in making purchases. The beauty and originality of these shops is due to their designer, Edgar Cheesewright, interior decorator and maker of fine furniture, who occupies one of the shops. They are of stucco, putty colored, and roofed with asbestos tile made to represent old English hand-broken slate. The windows are of leaded glass, as is also the upper half of the entrance doors. In the glass of the Cheesewright Studios is set the Cheesewright coat of arms. (For illustrations see pages 168 and 169.)

Wire-cut brick gives color to the base of the building, and square red tile is used for the four feet of pavement needed to set the shops back from the street front and give them perspective. The walls within are of rough plaster, smoky grey in color; and the rooms are informally arranged. Visitors may pass through them to the gardens at the rear and walk in the box-bordered paths, even pick the flowers in the formal beds. Articles shown in such shops seem to possess special distinction.

ELOISE ROORBACH.

**The Servantless House.**

Although the great war has precipitated the question and made imperative the demand for its solution, the ideal of the "servantless house" is something that we Americans have been steadily working toward for more than two

generations. And, while few of us yet suspect it, we had already, when the tragedy of 1914 broke upon us, advanced perhaps more than three-quarters of the way toward the goal. The progress that we have made may be estimated when we compare the average English house of today with the average American. The lamented Walter Weyl, writing in Harper's Magazine, found one of the significant signs of the times in the London of today in the multitudes of inconvenient dwellings "to be let" (and remaining tenantless on every hand) because of the impossibility of getting servants. Contrast such conditions with the dearth of houses of almost every sort that nowadays afflicts every American city!

The average English dwelling of today stands on about the same level as the average New England dwelling of 1820, so far as domestic convenience is concerned. In England it takes, as a rule, at least three servants to do the work of one in an American family. Even before 1850 the up-to-date "new house" in New England, both in town and country, had its hot-air furnace and its hot and cold running water, its bathroom and water-closet. In England only for a decade or so have "modern conveniences" been features of modern-built houses. Here in America, however, modern conveniences have steadily kept well abreast of the march of science and invention.

It is notable, however, that an eminent Englishman, H. G. Wells, who has predicted so many amazing things that have come to pass and who has consistently worked for all advance that makes for true democracy, has depicted, in no little detail, his ideal of the servantless house in his notable book, "Anticipations of the Reaction of Mechanical and Scientific Progress Upon Human Life and Thought," published in 1902.

With the progressive development of a genuine democracy he looks for a wide diffusion of prosperity and a corresponding growth of good taste in domestic environment. Mr. Wells pictures the England of that future as breaking continually into park and garden, and with everywhere a scattering of houses. "These will not as a rule, I should fancy, follow the fashion of the vulgar ready-built villas of the existing suburb, because the freedom people will be able to exercise in the choice of a site will rob the 'building-estate promoter' of his local advantage; in many

cases the houses may very probably be personal homes, built for themselves as much as the Tudor manor-houses were, and even, in some cases, as aesthetically right. Each district, I am inclined to think, will develop its own differences of type and style. . . . smart white gates and palings everywhere, good turf; . . . gardening districts all set with gables and roses, holly hedges and emerald lawns; pleasant homes among heathery moorlands and golf links, and river districts with gayly painted boathouses peeping from among the osiers. Then presently a gathering of houses closer together, and a promenade and a whiff of band and dresses, and then, perhaps, a little island of agriculture, hops, or strawberry gardens, fields of gay-plumed artichokes, white-painted orchard, or brightly neat poultry farm. Through the varied country the new wide roads will run, here cutting through a crest and there running like some colossal aqueduct across a valley, swarming always with a multitudinous traffic of bright, swift (and not necessarily ugly) mechanisms."

This picture is, in fact, to no little extent what Mr. Wells on his American visit, much to his gratification, found already realized in the metropolitan developments of much of the Greater Boston country as witnessed during a notable day's motor-car trip in company with the writer of these words.

Farther on Mr. Wells, picturing the home life and environment of the typical family of the new days, says: "Their *ménage*, which will consist of father, mother and children, will, I think, in all probability, be servantless.

"They will probably not keep a servant for two excellent reasons: because in the first place they will not want one, and in the second they will not get one if they do. A servant is necessary in the small, modern house, partly to supplement the deficiencies of the wife, but mainly to supplement the deficiencies of the house. She comes to cook and perform various skilled duties that the wife lacks either knowledge or training, or both, to perform regularly and expeditiously. Usually, it must be confessed, the servant in the small household fails to perform these skilled duties completely. But the great proportion of the servant's duties consists merely in drudgery that the stupidities of our present-day method of house construction entail, and which the more sanely constructed

house of the future will avoid. Consider, for instance, the wanton disregard of avoidable toil displayed in building houses with a service-basement without lifts! Then most dusting and sweeping would be quite avoidable if houses were wiselier done. It is the lack of proper warming appliances which necessitates a vast amount of coal carrying and dirt distribution, and it is this dirt mainly that has to be removed again. The house of the future will probably be warmed in its walls from some power-generating station. . . . The lack of sane methods of ventilation also enhances the general dirtiness and dustiness of the present-day home, and gas-lighting and the use of tarnishable metals, wherever possible, involve further labor. But air will enter the house of the future through proper tubes in the walls, which will warm it and capture its dust, and it will be spun out again by a simple mechanism. And by simple devices such sweeping as still remains necessary can be enormously lightened. The fact that in existing houses the skirting meets the floor at right angles makes sweeping about twice as troublesome as it will be when people have the sense and ability to round off the angle between wall and floor.

"So one great lump of the servant's toil will practically disappear. Two others are already disappearing. . . . Take now the bedroom work. The lack of ingenuity in sanitary fittings at present forbids the obvious convenience of hot and cold water supply to the bedroom, and there is a mighty fetching and carrying of water and slops to be got through daily. All that will cease. Every bedroom will have its own bath-dressing room, which any well-bred person will be intelligent and considerate enough to use and leave without the slightest disarrangement. This, so far as 'upstairs' goes, really leaves only bed-making to be done, and a bed does not take five minutes to make.

"Downstairs a vast amount of needless labor at present arises out of tableware. 'Washing up' consists of a tedious cleansing and wiping of each table-utensil in turn, whereas it should be possible to immerse all tableware in a suitable solvent for a few minutes and then run that off for the articles to dry.

"There remains the cooking. Today cooking, with its incidentals, is a very serious business—the coaling, the ashes, the horrible moments of heat, the hot, black things to handle, the silly, vague

recipes, the want of neat apparatus, and the want of intelligence to demand or use neat apparatus. One always imagines a cook working with crimsoned face and bare, blackened arms. But with a neat little range, heated by electricity and provided with thermometers, with absolutely controllable temperatures and proper heat screens, cooking might very easily be made a pleasant amusement for intelligent invalid ladies. Which reminds one, by the bye, as an added detail to our previous sketch of the scenery of the days to come, that there will be no chimneys at all to the house of the future of this type, except the flue for the kitchen smells. This will not only abolish the chimney stack, but make the roof a clean and pleasant addition to the garden space of the home. . . .

"The servants of the past and the only good servants of today are the children of servants or the children of the old labor base of the social pyramid, until recently a necessary and self-respecting element in the State. Machinery has smashed that base and scattered its fragments; the tradition of self-respecting inferiority is being utterly destroyed in the world. . . . Such servants as wealth will retain will be about as really loyal and servile as hotel waiters, and on the same terms. For the middling sort of people in the future maintaining a separate *ménage* there is nothing for it but the practically automatic house or flat, supplemented, of course, perhaps, by the restaurant or the hotel."

The reader will allow that it has been well worth while to quote at length Mr. Wells's remarkable utterance regarding our subject. To no little extent his ideals have been already realized on this side of the Atlantic. As to the remainder, we can see how rapid in these days is the process of realization—so rapid that practically his entire program, which when written seemed so visionary, appears to be reasonably certain of coming to pass in a comparatively near future—vastly nearer than at first can have seemed possible even to the author himself. Only as to the open fireplace—don't let us sacrifice that, with its cosiness, its poetry!

The servantless house, as it steadily perfects itself under the rapid march of modern improvement, will make work easy by means of its many and excellent automatic devices. An excellent illustration is that of the familiar dining-table device, in these days increasingly popular under the compulsion of the "servant-famine," known as

"Lazy Susan;" a turntable placed in the center of the table and slightly above the level, so that any person may easily turn it and bring to himself any desired dish or article placed upon it. It should be easily possible to multiply the facility with which the service of a meal is advanced through this device by similar step-saving contrivances: for example, in getting the dishes to and fro between the dining-room and the pantry or kitchen, perhaps somewhat after the manner of the cash-railway in a department store—incidentally averting much smashing of china.

Think of the enormous labor that has been saved for housewives by the electrical vacuum cleaner! In this connection may be noted a bit of hitherto unwritten history relating to this invention. It was at least thirty years ago that the writer's friend, Prof. Edward S. Morse, the eminent biologist and director of the Peabody Institute of Salem, told him about an interesting experiment that he and his accomplished secretary, Miss Margaret Brooks, had just been making at his home. They had rigged up a piece of garden hose in connection with some sort of extemporized contrivance for exhausting the air and had drawn up from the floor all the dust and particles of dirt lying about. They had thus demonstrated that rooms might easily and expeditiously be cleaned in that way. Nothing further was done about it; but had Professor Morse carried out the matter he might have anticipated a vacuum cleaner, perhaps greatly to his financial advantage.

The "Lazy Susan" idea on a large scale has been made use of in a recent invention—that, in these days of space-saving requirements in the construction of dwellings, may prove eventually of no little practical value when put in practice and demonstrated by experience. In fact, it applies to domestic requirements the same principle that was made use of in the device of a revolving stage, whereby it was made possible to change the scenes in a theatre without any waiting between the acts. The invention was described in the *Scientific American* a few months since, illustrated by photographic cuts from an actual example. In this way, simply by turning a rotary section of flooring a single large room may be made to serve as a whole apartment, convertible in succession into bedroom, living room, dining room and kitchen. The furnishings necessary to these diverse uses is thus brought into

use in a way that makes the room serve the purpose demanded, just as if it were permanently so planned, as one portion of a large apartment. A room fifteen feet square may thus be made to serve, without the least scrimping of space, all the domestic needs of either a single person or of a man and his wife with perhaps a small child. The elements that transform the room for its various uses are given the form of a cabinet mounted on a turntable and arranged something in the fashion of a revolving bookcase. This cabinet has four sections: one of these has a folding bed with a dresser beside it; again there is a complete kitchenette; next there is a bookcase and a writing desk. As the cabinet is revolved the various compartments come into service, so that the same room is available for sleeping, dressing, eating, cooking and living.

To accomplish these ends a large circular opening is cut in the floor near one corner of the room. In this space is mounted a frame with grooved rollers to accommodate the turntable readily revolving on a track that engages the rollers. A partition cuts off the room just in front of the revolving cabinet, and a door in this partition at one side of the cabinet opens into a bathroom. In the morning the bed is folded in the cabinet; a partial turn brings the dresser into service. One's toilette being completed, another turn brings the kitchenette into use with its complete outfit: an electric stove, a sink with ice-box below, and also various drawers for table and kitchen utensils. At one side an ironing-board may promptly be turned into service. Through the center of the cabinet runs a pipe that not only serves as an axis to steady it, but acts as a ventilator for the kitchenette, carrying off smoke and fumes. Running water comes to the sink through a pipe that, by means of a swivel connection, passes down through the center of the turntable. The kitchenette, being placed in the wall of the room, the rest of the space is available for dining and

other meals. A table, ordinarily serving as library table, has a leaf that may be drawn out for dining purposes; in case of guests the entire table may be cleared of books, etc., and brought into use. After breakfast or other meals another turn of the cabinet brings the bookcase and writing-desk into service, thus converting the room into a living room or library. This multiple-unit device for domestic purposes seems to be as applicable to a single-room bungalow plan for suburban or rural requirements as for city apartment house purposes. The great economy in space should amply outweigh the extra expense of the simple mechanism involved.

SYLVESTER BAXTER.

**American  
Architects  
to Exhibit  
at the  
Paris Salon.**

Through the courtesy of Monsieur Maurice Casenave, Director General of French Services in the United States, an invitation has been extended to the American Institute of Architects to make a comprehensive exhibition of American architecture at the Paris Salon, which opens in May, 1921. The drawings will be selected by the Committee on Foreign Building Co-operation of the Institute acting as a jury.

A charge of \$1.50 per square foot on drawings accepted will be made to cover cost of crating, storage, hanging, etc., the French Government paying the expenses of transportation to and from Paris. Insurance on exhibits can be arranged for by the committee from the time of their departure from New York until their return at the rate of \$1.50 per hundred dollars, if desired by exhibitors.

To allow sufficient time for transportation to France, the date for submission of exhibits has been set for February 14. Those desiring to exhibit should apply to Mr. Julian C. Levi, Secretary, 105 West 40th street, New York City, for entry slips which must accompany all drawings.



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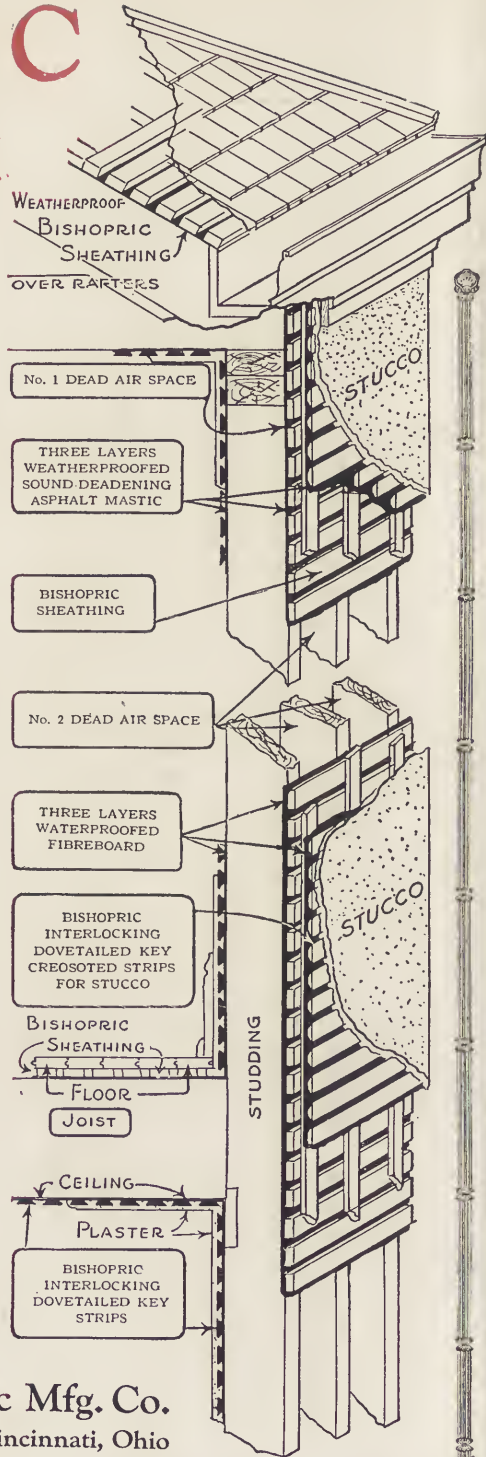


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# THE ARCHITECTURAL RECORD



Vol. XLIX. No. 3

MARCH, 1921

Serial No. 270

*Editor:* MICHAEL A. MIKKELSEN

*Contributing Editor:* HERBERT CROLY

*Business Manager:* J. A. OAKLEY

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*Yearly Subscription: United States, \$3.00; Foreign, \$4.00; Single Copies, 35 cents. Copyright, 1921, by The Architectural Record Co. All rights reserved. Member Audit Bureau of Circulation.*

PUBLISHED MONTHLY BY  
**THE ARCHITECTURAL RECORD COMPANY**

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres.    W. D. HADSELL, Vice-Pres.    E. S. DODGE, Vice-Pres.    J. W. FRANK, Sec'y-Treas.



CLOISTER—RESIDENCE OF WILLIAM R. COE, ESQ.,  
OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.

# THE ARCHITECTURAL RECORD

VOLUME XLIX



NUMBER III

MARCH, 1921

*The* RESIDENCE OF WILLIAM R. COE, *Esq.*

OYSTER BAY, L. I.

WALKER & GILLETTE, ARCHITECTS

*By*  
*John Taylor Boyd, Jr.*

TO create a large country residence in the historic English styles and make it seem part of an American landscape, is an achievement. So rarely is the feat accomplished—though often attempted—that it arouses interest apart from its merit as a work of art; one is curious to know by what process it was done.

As a work of art, this residence is unusual. It maintains the fine standards set by Walker & Gillette in other designs. Its long mass lies beautifully amid the slopes of the landscape, en-  
framed by tree tops and, in the foreground, by garden terraces and lawns. The surfaces and forms are broad, in beautiful color, with the sunlight playing over the whole, and the colors of the house vibrating in key with it. The site

is the flat top of a hill—one of a ridge which forms a long, low rampart a mile or two back from the shores of Long Island—a landscape of low, swelling knolls and valleys, of fields and woods and pastures, and, down towards the shores, wide tidal flats. All is of that peculiarly luxuriant green of Long Island which is as soft as the moist sea-air that causes it.

Such is the landscape around Oyster Bay, and on a day of clear sunshine the house stands out in low, irregular, bow-shaped proportions—whitish walls, tinged slightly golden here and there, and surmounted by long roofs of a clear, rich golden brown, their ridges melting into the dazzling blue sky. The masses of trees and lawns below it are enlivened by contrast of balustrade or seat

or curb of garden pool, clear white against the various greens.

The projecting gables and peaks of the house, particularly the three-sided court on the south, perfect in proportion and charming in detail, are wonderfully picturesque, yet without disturbing the harmony of the whole. Against the whitish wall, wood beams and details show russet brown, lighter and grayer than the roof; and the stone details of architecture are brought out by the play of big luminous shadows and crisp light and shade of belt courses, moldings and decorations. Arches of cloister and porch give depth and shadow to the white walls; and leaded windows reflect the sky, in a profounder blue, as of the sea.

It is all an effect of clear, strong color, harmonious in key and luminous in the light of the brilliant, slightly mellow Long Island sunlight. To the north the view is down, over the lower reaches of the landscape, to the waters of Long Island Sound, where the soft green islands and promontories lie in the brilliant blue waters, showing occasional streaks of white shores. Just such a splendid effect of color in the mellow sunlight of the sea did the architects create in the Rogers house at Southampton, Long Island, though there the colors were different—even richer, their key heightened, as became the setting right on the edge of the ocean beach, on top of the sand dunes, in a more vivid light and outdoor coloring.

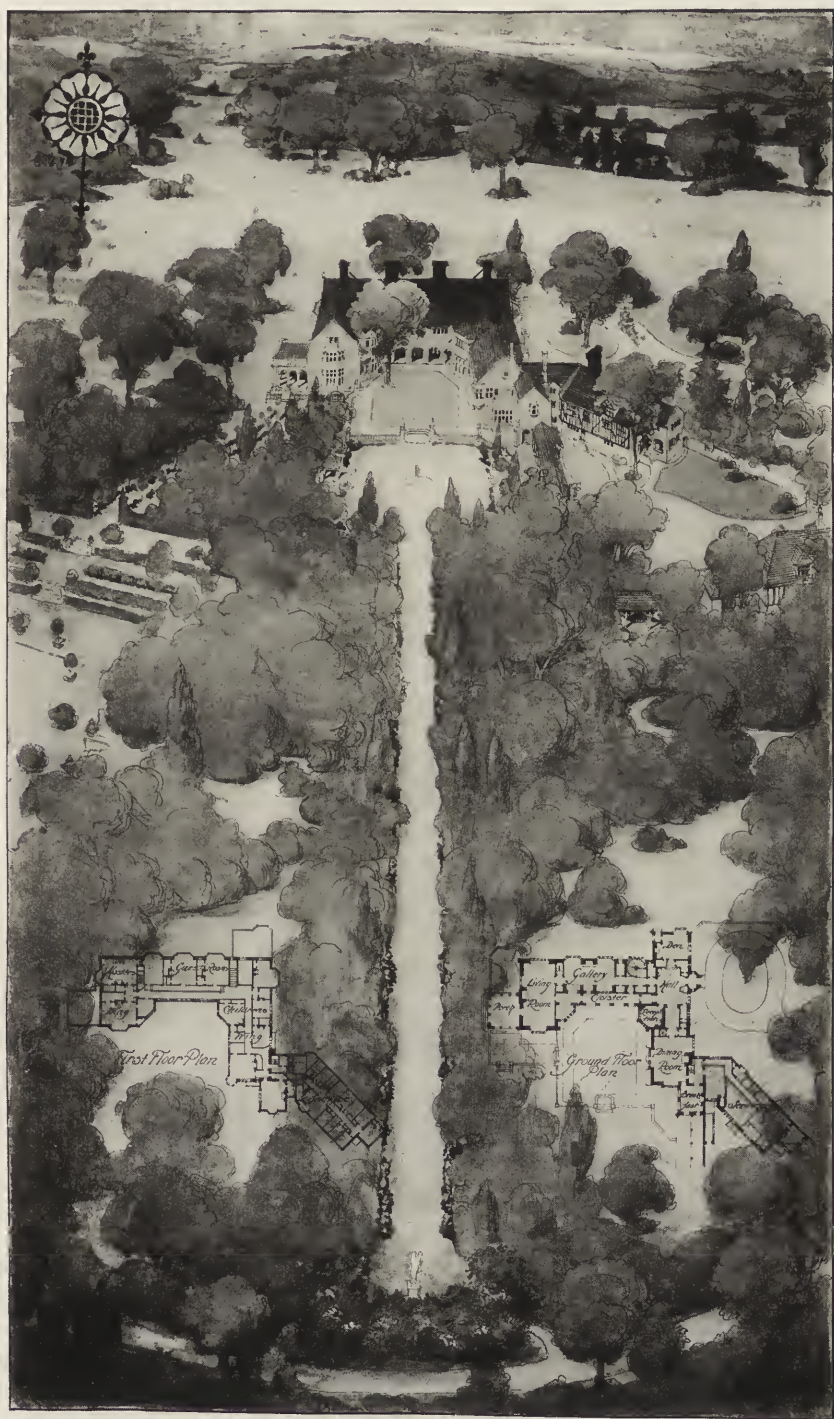
Through this effect of color chiefly, the English forms have been made to look real in an American setting. They have been subtly transformed—in some cases transfigured. In this process of design there has been simplification, emphasis, and heightening of contrast between broad wall surfaces and centers of interest. The delicate scale has been kept perfectly, and the details of the architecture have been refined, and often invested with greater purity of shape and outline, as in the case of the balustrade. Moldings have been cut with flatter and thinner profiles, all bulges or surplus of changing surfaces—that might be charming in England—carefully eliminated. In this way the north-

ern forms seem to acquire lightness and clearness and vividness—a more perfect beauty—which is native to an art created in brilliant sunshine, as in the art of Latin countries.

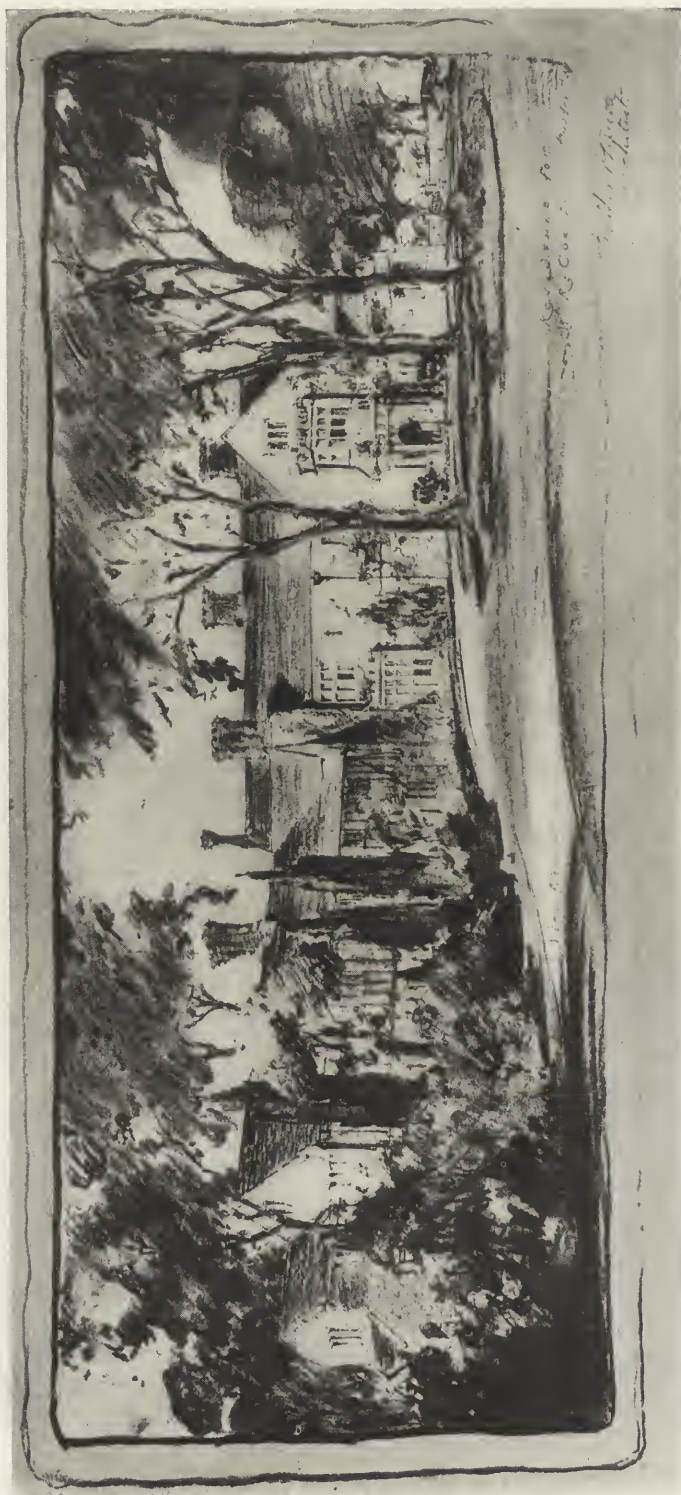
Such a transformation is the secret of much of Walker & Gillette's success in this house—that, and the organization which they employed to create it. It is well to remember the spirit they have shown wherever it is proposed to adapt motives of north European origin to American scenes. For wherever in such forms there occur those faults of English or Teutonic origin—complexity which obscures centers of interest, or heaviness, dourness, dull muddy colors; or that intellectual taint, sometimes noted, which causes art to be abstract or pedantic; or that spiritual twist which may render it sentimental, or naturalistic, or cold or harsh or even crude or barbarous—all such faults should be eliminated from the forms, and their shape and lines perfected, and they should be vivified with color to make them count in a brilliant sunshine. If all this can be done without losing the fine qualities of northern art—its romance, its mystic turn, its poetry and imagination, and its homely, domestic spirit—then indeed the success may be striking. It is not saying too much to speak thus of this work of Walker & Gillette.

Meeting with such an achievement, one may well ask: How did the architects go about this feat of making the forms of Elizabethan England seem real in Oyster Bay?

They performed the feat in the only way possible; namely, by working absolutely in the old way, as leaders of a group of craftsmen, skilled in design and workmanship, who knew the old forms so well that they were able to design freely in the spirit, but careless of the letter, and all cooperating in the design as set before them by the architects. Part of this organization already existed in the architects' office, notably an English designer who had absorbed his native forms from birth, been trained in them, and, equally important, who had worked long enough in this country to understand the subtle ways



PROPERTY PLAN—RESIDENCE OF WILLIAM R. COE, ESQ.,  
OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.



FROM ENTRANCE DRIVEWAY—AN EARLY STUDY FOR  
THE RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER  
BAY, L. I. WALKER & GILLETTE, ARCHITECTS.





FROM ENTRANCE DRIVEWAY—RESIDENCE  
OF WILLIAM R. COE, ESQ., OYSTER BAY,  
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ENTRANCE DOOR—RESIDENCE OF WIL-  
LIAM R. COE, ESQ., OYSTER BAY, L. I.  
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ENTRANCE DOORWAY—RESIDENCE OF  
WILLIAM R. COE, ESQ., OYSTER BAY,  
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DETAIL OF EAST ELEVATION, SHOWING ENTRANCE  
DOORWAY—RESIDENCE OF WILLIAM R. COE, ESQ.,  
OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.



NORTH ELEVATION - RESIDENCE OF  
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ENTRANCE HALL, TOWARD DINING ROOM—RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.



ENTRANCE HALL, TOWARD DINING ROOM—RESI-  
DENCE OF WILLIAM R. COE, ESQ., OYSTER  
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ENTRANCE HALL, LOOKING INTO GALLERY—  
RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER  
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ENTRANCE HALL—RESIDENCE OF WIL-  
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DINING ROOM DOOR OPENING INTO ENTRANCE HALL—RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.



DINING ROOM—RESIDENCE OF WIL-  
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DOORWAY IN GALLERY—RESIDENCE OF  
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WEST WALL OF GALLERY—RESIDENCE  
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GALLERY, LOOKING INTO WRITING ROOM—  
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DEN — RESIDENCE OF WILLIAM  
R. COE, ESQ., OYSTER BAY, L. I.  
WALKER & GILLETTE, ARCHITECTS.



VIEW FROM GARDEN—AN EARLY STUDY FOR THE RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.

in which they must be changed to meet American conditions of brighter light. Much of the work done by the contractors was also handicraft. Particularly was this true of the interior details of woodwork, even the plasterwork of walls in certain parts of the house, also the metal-work details, the hardware, the glass, and much of the finish and the painting. The fine stonework was laid under the direction of a Scotch foreman who gathered masons of Scotch and English birth to assist him. All of them were familiar with the medieval British stonework and easily understood the purposes of the architects. Nothing was spared to make a perfect whole and to give it the spirit of craftsmanship. Even the usual electrical details of switch plates and panel boxes are specially designed ornamental hardware, hand-wrought. Throughout the house at every turn is thus evident that final touch which brings perfection to art—the touch of the human hand. Such effort is really not extreme. It is the only way in which the art of medieval forms can be made real to us. For this medieval art was, as almost no other art, an art of craftsmanship, of charm, of quaintness, of personality. Take craftsmanship out of it and you have left only a corpse—unreal, exotic, a pedantic affectation.

However, such work as this is not solely craftsmanship. It must be done under a guiding hand, and in modern times the leadership of the architect is essential. He must supply the fundamental design, must maintain the coordination of the design among the various craftsmen who are working on it, and he must firmly insist upon the taste. He, too, must be bred in the atmosphere, not only of the art itself, but of the idea which it is to express. That is, he must know instinctively the letter and spirit of the great country house, and be steeped in the American 'type of the Anglo-Saxon manners of which it is the symbol. In this way, the house he creates is a durable, livable home of people of breeding, and not an effect of the theatre.

I have attempted thus to convey some-

thing of the spirit of the design before proceeding with a description of its characteristics. There is such a variety of detail, particularly in the interior, that only a few features of technical interest may be emphasized.

The scheme of the design may be seen from the plan. The house replaces an old one which had been destroyed by fire, and of which the gardens and landscape treatment had been well carried out. The house, therefore, was planned to fit the estate. This requirement of meeting particular conditions already existing on the site does not seem to have hampered the design; on the contrary, it afforded a fairly complete setting of planting which, in a new house, would have taken years to obtain. Sometimes, in fact, such a process may be of advantage, because to create in a landscape a masterpiece like this large country residence is a complicated task, and it is often more successful when arrived at by stages, in which experiment and elimination play a part.

The style of architecture of the exterior is a modified Elizabethan. The modifications are slight, and chiefly concern the methods described above. The north front, with its triple motive of gable and two-storied bay windows, is one of the best, and does not, as the photograph seems to show, have too much glass. In reality there is plenty of broad wall space to enframe these big windows. The east porch is particularly successful and it is one of the most difficult motives to incorporate in a design of this type. Its detail of arches, moldings, and sculptured sun dial deserve attention as a very striking instance of medieval forms modified to suit bright sunlight without losing their old spirit.

The stonework and the tile roof are remarkable. The stonework is all limestone, dressed white Indiana limestone for the architectural details, and a less regular stone for the walls. This wall stone is composed of odd, often discarded pieces, of all sorts of tooling, some weathered, some not, some very white, others of a faint gray yellow, which



SOUTH ELEVATION — RESIDENCE OF  
WILLIAM R. COE, ESQ., OYSTER BAY,  
L. I. WALKER & GILLETTE, ARCHITECTS.



EAST WALL OF COURT, LOOKING TOWARD DINING ROOM—RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.





LIVING ROOM GABLE, FROM GARDEN—RESIDENCE OF WILLIAM R. COE, ESQ., OYSTER BAY, L. I. WALKER & GILLETTE, ARCHITECTS.

causes the golden play or vibration of light over the surface. The stone was picked up in the dealers' yards around New York. It is laid in a fine variety of sizes, with joints also varied, many of them raked out, the rest left even with the face of the stone. The roof has flat tiles, about an inch thick, scored vertically for texture, and resembling shingles. Its warm, glowing brown color is obtained by a variety of shades, in which there are a few tiles of yellowish color, or light green, or bluish, and the rest are brown. The color of this roof is in large part responsible for the success of the whole, because it places a very rich, warm color between the brilliant color of walls and sky. Too often our roofs are dead and lifeless in color, and stifle the walls instead of crowning them.

One can only hint at the interest of the interior, with its wealth of detail, of odd spaces, motives, alcoves, and the like, too many to be shown here in photographs. How many of them there are may be guessed from a study of the first floor plan, where one will see that it is loosely composed of large chambers, not opening directly into one another, but separated by links. Each of these links is a point of interest itself and by its smallness emphasizes the spaciousness of the greater elements. This "looseness" is harmonized by a unity of light gray plaster walls and dark oak in most of the house. The decorations and the color are excellent, and they too evidence a cheerful arrangement of color in bright light.

A feature of interest is the variation of styles in the interior. In this it partakes of the spirit of historic English country houses which have been built gradually over the space of centuries, beginning with old feudal times. The entrance hall is Norman, as if it were

the remains of an old feudal keep; the bulk of the house is Elizabethan, as if the place had been extended and made more habitable later; and the dressing rooms and den are eighteenth century, as if they had been added in later and more formal days.

Of the larger rooms the dining room is as fine as any, in its big proportions, historic fireplace, and its splendid bay windows in shallow alcoves. The plasterwork has almost the texture of stone, and is only the "brown" coat with sanded finish particularly well executed. Its wood ceiling is perfect in design and in the profiling of the moldings, recalling the best of the old English Gothic churches, the smaller churches of Somerset, like Sherborne Abbey, St. John's at Yeovil and Bishop's Lydeard, that little masterpiece in stone, almost hidden in a charming glen on the road from Taunton north to the sea.

The consistency of all this variety and interest and color is astonishing. It has been carefully harmonized to the smallest detail, until it expresses a single consistent purpose. As an example, the hardware is carefully designed iron, hand hammered and tooled for the most part, and brass in the den, where an exquisite doorknob in the form of a horse's head is to be seen. Where the stonework appears too different in color from the plaster walls, or else too striking on the floors, it has been treated to harmonize it with the rest of the room. Thus great attention has been given to finish, in order to eliminate all trace of the machine, or of perfunctory, machine-like methods of workmanship.

Such, in brief, are the salient features of this latest work of Walker & Gillette's. They have recreated the old, in the old spirit of craftsmanship, yet adapting it to an American setting. In no other way could they have been successful.

# ST. MARY'S EPISCOPAL CHURCH

GOOD GROUND, L.I.

F.B. & A.WARE,

ARCHITECTS



By LEON V. SOLON

OCCASIONALLY it falls to the lot of those who travel the less frequented bypaths in Western Europe to happen upon some old building possessing an interest for which they are unprepared. Many such structures have escaped the literary recorders of shrines, owing to lack of pretension or of historic interest, or to independence of the architectural conventions. Yet some of these exercise a strong appeal; they endure as the perpetuation of spontaneous impulses of simple folk, revealing a passing phase of social evolution; they are the result of a contribution of the unlettered skill and toil whereby a former generation sought to dignify an exalted association or to create an enduring memorial glorifying a conviction.

Buildings that have arisen through such impulses possess a peculiar, austere form of moral beauty, sometimes almost unæsthetic in nature, which is rarely discernible in structures of greater architectural pretension and purity of stylistic expression; an architectonic quality is sensed which parallels a moral attribute of the builders. Aesthetic aspirations are secondary to an independent spiritual objective, and the impulse which actuated manual labor asserts itself prominently in the result achieved. Before such structures we feel ourselves in the presence of an active sentiment, intimately associated with humanity—an entirely different impression from that conveyed by works of far superior artistic importance.

St. Mary's Episcopal Church, which is here under analysis, belongs to the minor or more intimate class. Though it is impossible deliberately to reproduce the full effect of a compelling impulse that has left its impress on structural treatment in a past generation, there are nevertheless certain physical evidences which are

capable of duplication; these have been carefully observed by the architect of this modern church, who has been at pains to modify accordingly his manner of building and his manipulation of material, thereby imparting the general scenic idea.

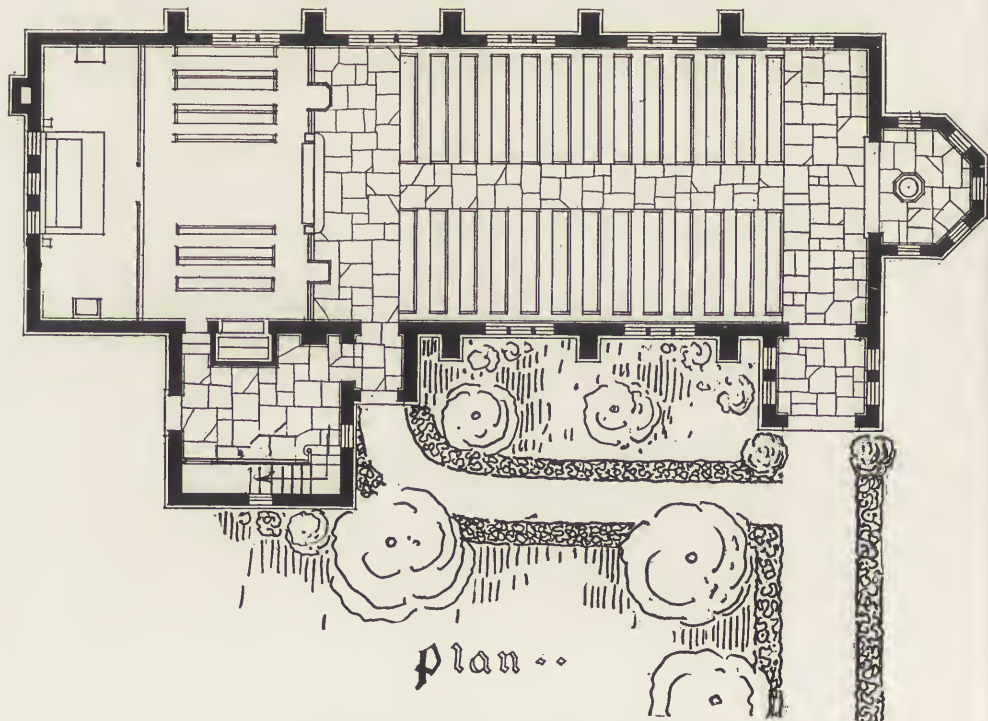
The extreme simplicity of this little church makes it appear to be for, and by, the villagers; with just sufficient ornateness in its ecclesiastical accessories to dignify its function. An appearance of ingenuous craftsmanship precludes any suggestion of standardized methods in construction. It is one of a type—fortunately rapidly increasing in number—where necessary limitations in expenditure have caused the designer to create interest apart from decoration, by developing the innate decorative possibilities latent in inexpensive material. For example, in many brick buildings of comparatively recent date bricks have been used which, judged by commercial standards, were unfit for a wall facing; these, when laid with a certain degree of freedom, an appropriate bonding to give unity to wide tone variation, and that color of mortar which gives the best effect in jointing, often give a result unattainable with a material technically superior. In the rough quality of the walls, apparently built of stone to hand in adjacent pastures, a character has been developed thoroughly in keeping with an unpretentious building. This new standard of scenic value in material gives great latitude to the architect in buildings where cost precludes extreme refinement in structural detail.

Whether this expedient originated through an appreciation of the great æsthetic values of texture and tone quality found in ancient buildings of minor pretension, is a moot point; perhaps it evolved in reaction from the stereotyped technique of the skilled workman, trained

to correct variation in any form; whose mechanical uniformity in execution was formerly accepted without question as the highest grade of service; or perhaps it may prove to be an emergency method, bridging the old standards of craftsmanship to the new. It has not, in any case, been confined to building methods only, but has influenced technique in wood, ceramics, and many of the minor arts accessory to architecture and its decoration.

The exterior design of St. Mary's Episcopal Church is of the greatest simplicity. The wall surface is of stucco, applied with studied irregularity, and the little buttresses are obviously decorative incidents, rather than structural necessities; they might have been almost doubled in width, to add a measure of conviction to their presence, or they might have been omitted without detriment to the elevation. The simple gray slate roof conforms to the general decorative scheme. A small square tower flanks the northeast angle,

decorated at the corners with gargoyles representing the symbols of the evangelists. The floor of the body of the church is made of medium sized flags of gray stone laid in random fashion, giving a valuable decorative interest, which the regulation uniformly sized flags would lack. The focal point of interest is naturally the chancel, centered on an interesting altar and reredos. The altar is built of English oak, paneled with polychrome moldings. The tester over the altar is also of English oak, painted in heraldic colors. The crucifix fills the center panel of the reredos; right and left are figures representing St. Mary, the patron saint, St. John, St. Stephen, St. James, St. Peter and St. Paul; both figures and crucifix are decorated with gold and color after the mediæval fashion. Four circular inlays with cruciform motifs relieve the plainness of the altar front. Two rather unfortunate iron bars protrude from the two top corners of the reredos, serving the double purpose of



ST. MARY'S EPISCOPAL CHURCH, GOOD GROUND, L. I.  
F. B. & A. Ware, Architects.



ST. MARY'S EPISCOPAL CHURCH, GOOD GROUND,  
L. I. F. B. & A. WARE, ARCHITECTS.



ALTAR AND REREDOS—ST. MARY'S EPISCOPAL CHURCH,  
GOOD GROUND, L. I. F. B. & A. WARE, ARCHITECTS.



LOOKING TOWARD CHANCEL—ST. MARY'S EPISCOPAL CHURCH, GOOD GROUND, L. I.  
F. B. & A. Ware, Architects.

curtain rods and candle brackets; the method of hanging the draperies, which causes them to appear too short, is equally open to criticism. The floor of the chancel is relieved with quaint handmade tiles. Mr. W. Anthony is responsible for the interior fixtures.

The nave windows are of the casement type; leaded glass is used, made to resemble that of the early glassmakers and varying in thickness, quality of color and degree of transparency; many accidents of fusion occur, which are the despair of the mechanical technician and the joy of the artist. The sanctuary windows represent St. Mary, St. Anne and St. Joseph. In pursuance of the mediæval custom and traditional practice of glass-painters of that age, Mr. Heinike has idealized the head of the founder's mother, to whose memory the church is dedicated; a likeness of her son in infancy has served for the head of the divine child.

A rood-screen, which is very necessary to the completeness of the ultimate effect, is now under preparation; without it, the massiveness of the roof rather overpowers the interior; the screen will add apparent height to the roof, to which a restrained illumination with color could not fail to be advantageous. It is to be hoped that such a feature will be included in the many schemes which the donor, Mrs. Charles Hardy, has under consideration for beautifying her gift.

The lighting fixtures, though extremely simple, have individual interest. A model of an ancient watchman's lantern illuminates the main entrance. An amusing device has been contrived for the lighting of the body of the church; from wrought-iron hoops, horn bowls are suspended, as they were in olden times when a wick floating in oil was the method of lighting; the wick, however, has retired here in favor of Mr. Edison's more con-



BAPTISMAL FONT—ST. MARY'S EPIS-  
COPAL CHURCH, GOOD GROUND, L. I.  
F. B. & A. WARE, ARCHITECTS.





LOOKING TOWARD BAPTISTERY—ST. MARY'S EPISCOPAL CHURCH, GOOD-GROUND, L. I.  
F. B. & A. Ware, Architects.

venient substitute. An object of interest has thus been developed with the simplest means, in place of the hackneyed parodies of primitive craftsmanship which so frequently offend us in such structures. A quaint little baptistery figures at the west end, in which a marble font of Renaissance character makes a piquant note—an anachronism of style, if such it be, but with unlimited precedent; its silhouette is

a charming incident in the vista down the aisle.

The church is well placed among a group of shapely trees; the unbroken meadow immediately surrounding the building makes one realize the degree to which the picturesqueness of many country churches is enhanced by their closely grouped and variously designed tombstones.



DOORWAY OF TRINITY LUTHERAN  
CHURCH, READING, PA., 1791.

# The EARLY ARCHITECTURE of PENNSYLVANIA

PART IV - WITH PHOTOS by FRANK COUSINS  
HORACE MACFARLAND & OTHERS



By A. LAWRENCE KOCHER

THE doorway, from the very nature of its function as an entrance, soon became for Pennsylvania the object of studied attention and careful design. The owner and the builder seem to have combined efforts to produce an effect which, if not rich, was at least expressive of the social standing of the householder. William Penn set an example in this respect, for in 1686 he wrote to his agent, James Harrison, concerning the house which was being erected for the founder at Pennsbury, "Pray don't let the front be common;" and when the result proved not to his liking, he ordered a new front door because the "present one is more ugly and low."

The doorway of the Pennsylvania style is noteworthy for its simplicity and reserve in design. It partakes of a Quakerish modesty—a primness and restraint—that reflects the well ordered and circumspect life of the eighteenth century. It is less ornate than the contemporary entrances of either Boston or Charleston, and not so ambitious. There is, in addition, a readily recognized generic appearance that is discovered upon carefully examining the large group of extant examples. It helped to make up the family likeness that pervaded the houses of Colonial Philadelphia, which we are told were "as much alike as the sea-gods' daughters." Not that there was only one accepted form, but that the few types which became popular were repeated so frequently as to imply unusual circumstances surrounding their origin and development.

There are two circumstances in particular that exerted an influence and that gave a distinctive character to the doorway of the central colony. The first of these was the presence of trade guilds that had a flourishing existence in Pennsyl-

vania and that bore a close relationship to the trade or art of building. The other significant incident or circumstance potent in the molding of the style was the early and regular acceptance of brick and stone, instead of wood, as the material for building.

The existence of builders' guilds or societies of skilled workmen in Pennsylvania is known, as is also their aim in banding together for mutual assistance and for the improvement of the crafts; but the effect which they had upon the architecture of the region has not heretofore been considered.

Pennsylvania was better supplied with skilled artisans than any of the sister colonies, largely because of the unusual circumstances under which the colony was founded. In sending forth the plea for followers to join him in his "Holy Experiment," William Penn particularized upon the need for "carpenters, masons and other mechanics—industrious spirits that are oppressed about a livelihood."\* The ship lists that follow vouch for the success of the call, for many artisans were included on the ship rosters. Frequently these artisans were classified as "redemptioners" who were bound for a period, often of years, to work out the worth of their passage into the new world.

The Irish—of whom so many migrated to Penn's colony that James Logan, the secretary of the founder, soon complained that "it looks as if the whole of Ireland is to send its inhabitants hither"—were largely of the skilled mechanic class. One of the causes which led to this eighteenth century emigration from Ireland to America was the prohibitory discrimination against the trades and manufactures

\*Pennsylvania Magazine of History. Vol. 9, p. 63.



ENTRANCE TO THE EPHRAIM  
BLAINE HOUSE, CARLISLE, PA.

of Ireland in favor of those of England.†

Organization frequently follows any gathering of workers who, with common interests, live together in numbers. Two organizations in particular held an important place in the early history of Pennsylvania. The first of these, known as "The Carpenters' Company of Philadelphia," was founded in 1724. The other was the "Company of Masons and Stone Cutters," the date of whose origin is not known with certainty. The Carpenters' Company, we are informed, composed a gild large enough and sufficiently prosperous to be patterned after "The Worshipful Company of Carpenters of London." In time it attained a considerable importance and erected a place for gathering known as "Carpenters' Hall."

An important result can be recognized as following the organization of the trade guilds, a result that was destined to alter the prevailing method of building and to change the manner of design. While the guilds tended to encourage a certain unity of interests as well as a conformity of aims and fellowship, they nevertheless inaugurated the age of specialization or division of labor within the colony. The gild made possible the special craftsman in various departments of trade activity, and under this system the individual workman was master of his own time and worked for himself alone. There resulted a period of pure craftsmanship, when the carpenter, the cabinetmaker, and others took a genuine creative pleasure in their work. The worker himself was the originator of his executed design, whether a doorway, a wrought iron balustrade or an article of furniture. There was no capitalistic employer, or even architect, to dictate the output of his shop. There was an integrity in the architectural art of the workman, because his art was unhampered by compulsion or restriction, and the result was the free expression of the pleasure taken in craftsmanship. It was the time when the best in Colonial architecture for the American colonies was produced; the highest point attained by American craftsmen.

Experience has taught us that no

†Hanna, Charles A. *The Scotch Irish*. Vol. 2, p. 15.

amount of knowledge in the science and art of building, nor a complete acquaintance with the architectural achievement of past ages, can compensate for an indifferent attitude of workmen in executing carefully conceived plans. Today the skill of the architect cannot take the place of the very necessary thinking on the part of the workman, his joy in creating, his proud interest in the welfare of his efforts, the freedom of mind and of hand which is the basis of the success of Colonial architecture.

It is important, in attempting a clear understanding of the Pennsylvania style, to bear in mind that these craftsmen were specialists in separate branches of the building trade. There was the master-carpenter, responsible for the arrangement of plan and for the general ordnance of elevations; and there were the specialists in workshops who created the individual features such as doorways; windows and mantels.

The attainment of the condition that amounted to a division of labor was not sudden but extended over the first half of the century. It was fully developed in Philadelphia before 1750 and continued in effect until the end of the century. In what ways can this division of the building forces be recognized? Briefly, by the fact that labor became a group and not a single man: that is, by the separation of the varied branches of the building trade—the mason, the rough carpenter, the skilled woodworker, the metal craftsman and the plasterer.

It has been said that the coming of the architect, who sprang into being at the end of the eighteenth century, was responsible for putting an end to this ideal society of craftsmen. It is more probable that his coming followed the decay of the guilds and that the decay was due to other causes. The end of the gild system was an inevitable result of the changed order of life that followed close upon the American Revolution. The broadened horizon after the Federation, the rise of the school of historical criticism, the growth of individualism, the greater hurry of life, and the expansion of command over the forces of nature, all



DOORWAY OF THE C. G. DON-  
NEL HOUSE, SUNBURY, PA., 1780.



DOORWAY OF SOLITUDE, PHILADEL-  
PHIA. BUILT BY JOHN PENN, 1785.

contributed materially to the new system of life. The architect's place was found ready for him.

With the passing of the craftsman, skilled workmanship disappeared. The architect became the important entity and

earlier work there is freshness, sincerity and virility. In the latter there is a prevalence of shams, a thinness of parts and a lack of vigor, as well as a use of inappropriate motives and a lack of integrity that must be associated with the epoch of



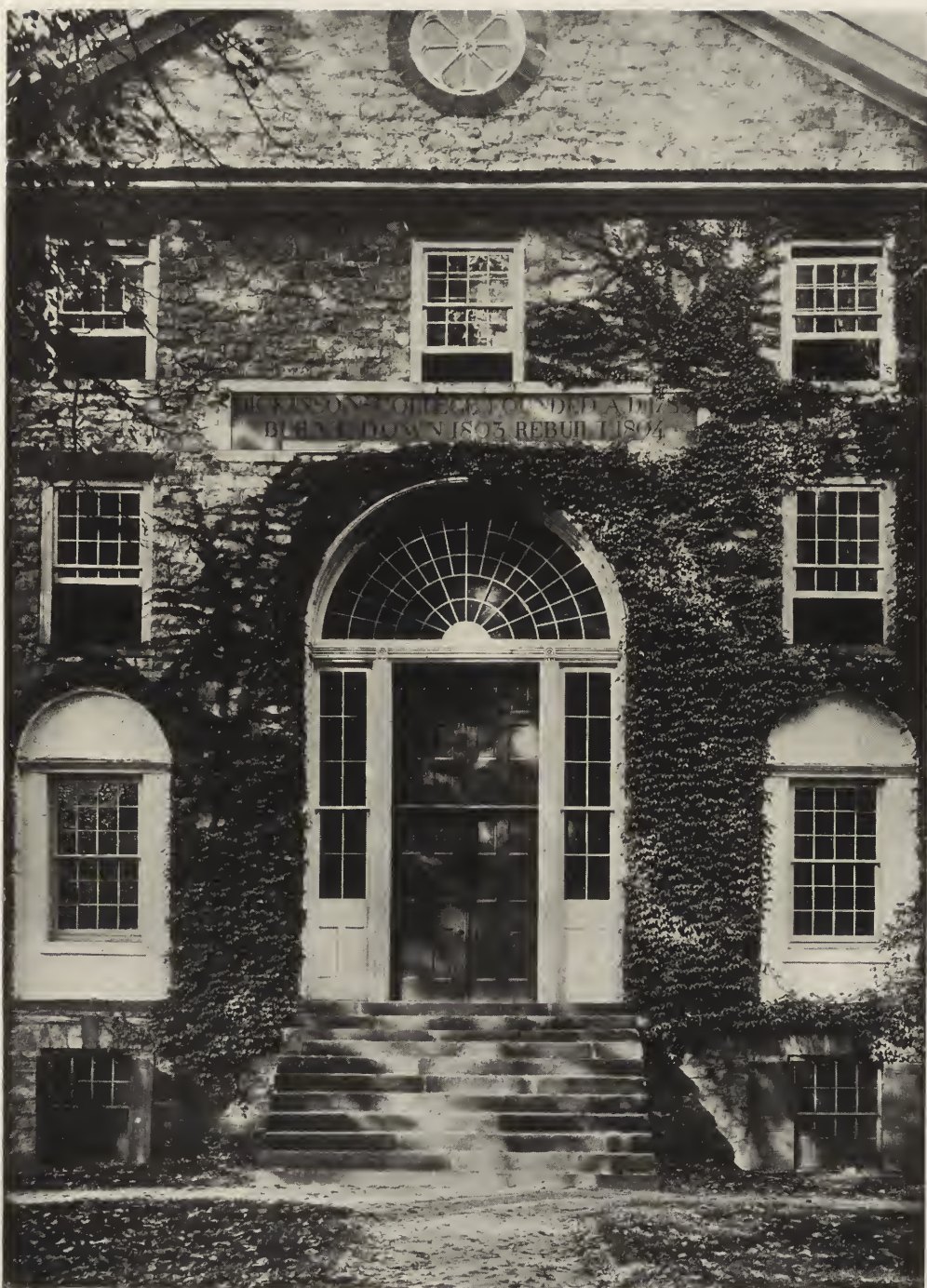
DOORWAY OF QUAKER MEETING HOUSE, BELLEFONTE, PA.

architecture a matter of scholarship. The architect filled the role of critic and designer, at whose commands the work was performed. Because the inspiration of original creation was lacking, the results proved cold and perfunctory. A comparison of a house built before the Revolution with one executed in the early nineteenth century will convincingly reveal the extent of the degeneration. In the

the Greek Revival. It is true that our record of the worth-while buildings dwindles with the passing away of the gilds.

Our adherence to the prevalent supposition that the early builders were complete masters of their trade, participating in the designing of buildings, the rearing of walls, and in the leisurely fashion of the times altering and rechanging the





MAIN ENTRANCE, DICKINSON COLLEGE, CARLISLE, PA. DESIGNED BY BENJAMIN H. LATROBE, 1804.

proportions of parts until a complete and satisfactory whole was attained, does not bear careful examination.

The doorways and windows, in general, cannot be said to have been designed and thought out by the builder for their rela-

Philadelphia is made known to us by the newspapers of the day, which frequently advertised their wares. The following item appeared in Benjamin Franklin's *Pennsylvania Gazette*, published in Philadelphia in 1741:



FRONT DOORWAY OF GOVERNOR KEITH MANSION, GRAEME PARK, 1722.

tion to surrounding masses; nor were their proportions the final result of careful study and needed correspondence to the height of walls and the sizes of adjoining parts. It was here that the influence of the separate craftsmen was evident; windows and doors were objects of design in themselves and were made in the workshops of the cities.

The presence of these workshops in

This is to give Notice, That John Boyd, of Philadelphia, carpenter (if health permits) will have a large Quantity of Door-Cases, Window-Cases with shutters and Sashes, fit for either Stone, Brick or Frame Houses; any Person may be Supplied with what Quantity he may have Occasion for, or some at present that is already finished, in Mar-

ket-Street, opposite the Sign of the Conestoga-Waggon, on reasonable Rates, by me,

JOHN BOYD.\*

The *American Weekly Mercury* of April, 1724, contained the following notice:

There is to be sold at Thomas

portions, and the correspondence in doorway designs indicate that little time was lost by the builder in deliberating over subtlety in the relation of areas, and that the shops played an important part in the supply of stock parts.

This would seem to put a new light on our understanding of how the carpen-



ENTRANCE OF HOUSE AT CHESTER SPRINGS, PA. BUILT BEFORE THE REVOLUTION.

Chalkley's Store, Sash-Windows ready painted, Glazed and Hung with Choicest Lines and Pullies just fit to put into Buildings.†

The similarity of glass sizes in existing buildings, the repetition of door pro-

ter-builder undertook his task. It is apparent, then, that the builder resorted to aids and shortcuts to bolster his architectural knowledge and to supplement his meagre drawings. We conclude that some buildings owe their success in proportions to a combination of chance and good taste in the selection of parts needed to be fitted together to complete the

\*The Pennsylvania Museum Bulletin, No. 65, 1920.

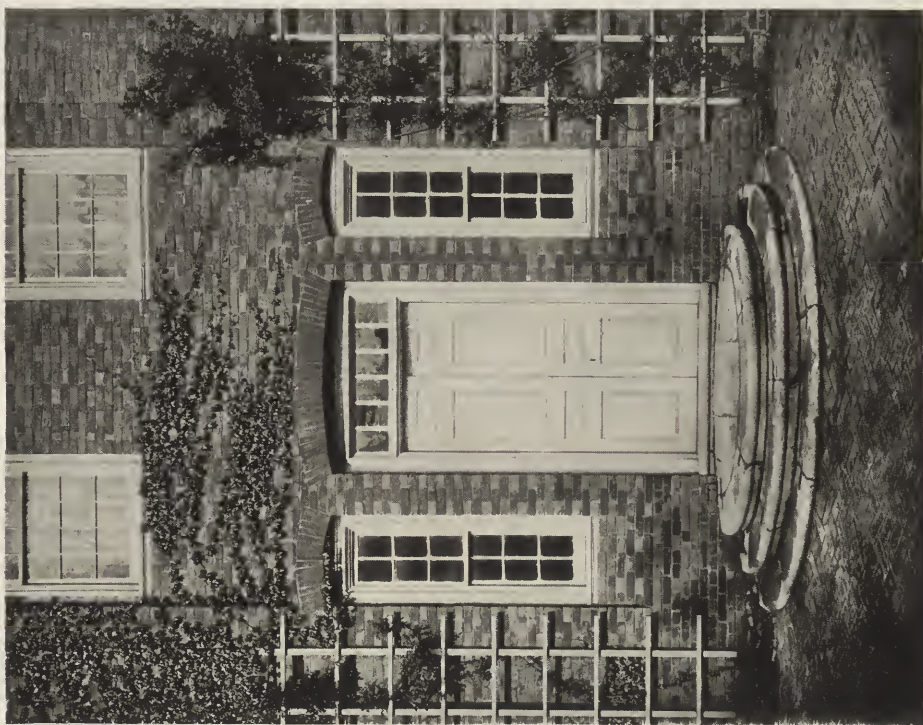
†The Pennsylvania Museum Bulletin, No. 66, October, 1920. P. 19. Article by Alfred Coxe Prime.





ENTRYWAY OF BELTZHOOVER HOUSE, CARLISLE, PA. EARLY NINETEENTH CENTURY.





MAIN ENTRANCE TO STENTON, PHILADELPHIA (18TH AND COURTLAND STREETS), 1728.



DOORWAY OF THE HARRIS HOUSE (WILLOW BANK), BELLEFONTE, PA., 1795.



DOORWAY AT 5933 MAIN STREET,  
GERMANTOWN, PHILADELPHIA.





THE ROXBOROUGH DOOR-  
WAY, PHILADELPHIA.

whole; and the subject of proportion was not an aim in itself but was partly cared for by the very simplicity of the programme.

The choice of brick or stone for building exerted a controlling influence in the design of the doorway in Pennsylvania. In the case of the house constructed of wood throughout, the doorway was a part of the entire design, while with the adoption of more permanent materials, the doorway was subordinated and became an accessory. To make clear this influence that material had upon the doorway, let us contrast the erection of the characteristic New England house of wood with one of masonry. The house of wood, for example, of Newburyport or Salem, would naturally be conceived and constructed in a different manner from one in which stone and brick walls were used. The house of wood was conceived as a complete whole, and the entire building was erected by the same individual. The doorway was made an intimate part of the design. The use of wood for walls led logically to the use of wood pilasters and a full-membered cornice in the treatment of the façade. The decorative possibilities of wood were stressed in the New England house, and by so doing a distinctive character was given to the style.

With the brick or stone house, the method was different. Here there was not so close a relation between the wooden doorway and the masonry walls. Doorways, windows and cornices were adjuncts to the design. In other words, they were added to the stone or brick shells and were made in ways that were appropriate to the material of which they were a part. They were also, as has been shown, frequently the conceptions of individuals other than the builder, and certainly not of the mason. Windows and doors were usually conceived as frames for solid openings, and, as such, assumed the form of a "slip-frame." Woodwork was used almost entirely in a functional way and was an integral part of the construction. An instance of this is the doorway of the Governor Keith Mansion at Graeme Park. Another example of the constructed opening treated with a subordinate border of woodwork to serve as

"finish," is the doorway at Chester Springs illustrated on page 241. The arched door opening appealed to the builders because of its appropriateness and safety. Its popularity was a direct consequence of the regular acceptance of stone and brick.

The elliptical arched doorway of the Harris house at Bellefonte is a case where construction and design are closely related, although the shape is unusual for Pennsylvania, where the semicircular arch was almost always found. This particular door, with the adjoining window, reveals an oddity in the fact that both door and window are false, having been built into the outside face of the wall and being a purely external treatment.

The simple doorway of Stenton with its low arch was suited to a brick wall, so it could not reasonably have been used with wood. The entrance at 5933 Main Street, Germantown, shown on page 246, is an admirable example of appropriateness of design to material; first in the simplicity of woodwork which enframes the opening, and secondly in the lightness of touch which we associate with the surface of stucco.

It was from these primary and functional forms that the more elaborate but never excessively ornate examples were evolved. The characteristic pilastered door with slight projection, of which the one known as "The Roxborough Door" in Philadelphia is an example, indicates the commendable desire to adorn construction with simple and restrained means. Here is the Pennsylvania door *par excellence*, one which from the frequency of its use is typical.

It is exceedingly interesting to trace the circumstances surrounding the development of architectural design in any single feature, as has been done in this account. The modification of design by the presence of special craftsmen, whose close attention confined to the doorway aided the high degree of perfection which the feature achieved, is of uncommon importance. Not less potent was the influence of the chosen materials. The classification of the readily recognized kinds of doorways will be the subject of the following article.

— The —  
**FURNITURE of WILLIAM SAVERY**



**BY WALTER A. DYER**

**T**HE fame of the English Georgian cabinetmakers has been so long and so firmly established with us that all too little attention has been paid to our native craftsmen. It is only within a very few years that the name of Duncan Phyfe has meant anything even to collectors, and he is about the only one today whose work has received definite recognition. Nevertheless, fine furniture was made in this country during the late eighteenth and early nineteenth centuries, and not all of it by slavish copyists of the English styles. Now and then a fine piece comes to light that is undeniably American and undeniably original in conception and beautiful in execution. There are the block-front desks and secretaries of Rhode Island, for example. It is a great pity that in so many cases the names of the makers have been irretrievably lost.

One name, however, has recently come to light—that of William Savery of Philadelphia. Fortunately his work is comparatively easy to identify, and in some cases still bears his pasted advertisement. He preceded Phyfe by a quarter century or more, and though his work is less exquisite than that of the best of the New York cabinetmakers, it is far and away ahead of most of the ornate productions of his time and city.

The first reference to Savery that I recall appears on page 110, volume 1, of the 1913 edition of Luke Vincent Lockwood's "Colonial Furniture in America." It is brief and worth quoting in full. "It is a surprise to many," he writes, "that beautiful pieces, such as these which are described and the dressing tables following, could have been made in this country. They were certainly the work of cabinetmakers of the first rank, and not only are such pieces found, but chests on chests,

desks, and tables with pie-crust edges of the same quality are to be found, all traceable to Philadelphia. Who the cabinetmaker was, or whether there was more than one, is not known, but a dressing table of this type has been found (illustrated) in which is pasted an advertisement of the maker, which reads as follows: 'William Savery, at the Sign of the Chair, near the market on Second



MAHOGANY HIGHBOY BY SAVERY, WITH TYPICAL CARVING. THE CARTOUCHE AND FINIALS HAVE DISAPPEARED. FOUND NEAR PHILADELPHIA.



MAHOGANY SECRETARY OR BOOK-CASE DESK OF SUPERB WORKMANSHIP, BY SAVERY. FOUND BY MR. PALMER IN CAMDEN, N. J.



MAHOGANY LOWBOY BY SAVERY. FOUND NEAR PHILADELPHIA.



MAHOGANY LOWBOY BY SAVERY. A COMPANION PIECE TO THE HIGHBOY ON THE PRECEDING PAGE. FROM THE CANFIELD ESTATE.



MAHOGANY HIGHBOY BY SAVERY, FROM THE ESTATE OF RICHARD CANFIELD. NOTE THE FINE CARVING OF THE CARTOUCHE.



TRIPOD STAND ATTRIBUTED TO SAVERY. FOUND NEAR PHILADELPHIA.

Street.' He, at least, was one of these cabinetmakers.

This last mentioned dressing table is the property of Mr. John J. Gilbert of Baltimore. The corners of the top are cut in the usual curves. The ends are recessed, with quarter-fluted columns inserted, and on the knees and center of the skirt are carved shells. The center drawer has the usual shell, but the streamers are more feathery than usual."

Certain other pieces illustrated and described in Mr. Lockwood's book are unquestionably the work of Savery, but it was not until Mr. George S. Palmer began his famous collection, now the property of the Metropolitan Museum of Art, New York, that connoisseurs began to observe a family resemblance in some of these pieces and at last to attribute them to the Philadelphia cabinetmaker.

Collectors and students of American furniture styles are indebted to Mr. R. T. Haines Halsey for the special study he has made of this subject for the museum. His findings were published in a bulletin which, I believe, is now out of print.

Most of the pieces in the Palmer collection which bore this family likeness were obtained in the vicinity of Philadelphia, but the identity of the maker remained a puzzle until William Savery's

label was discovered on a lowboy in the Manor House Museum at Van Cortlandt Park, New York. By a process of comparison, then, the identification of the rest of Savery's work became possible.

Mr. Halsey was able to learn a few facts regarding the Philadelphia cabinetmaker. He was a Quaker and his marriage to Mary Peters was recorded in 1746. He died in 1787 at the age of sixty-five. He held one or two minor offices and was active in the management of public charities. Mr. Alfred C. Prime has unearthed other facts which lead to the conclusion that Savery became a man of considerable means; in 1780 he was taxed on a property valuation of \$46,000. That his business was successful is evident.

Savery specialized, apparently, on the finer kinds of drawing room and dining room furniture, and his trade was probably with the well-to-do. Most of that which has been identified is of mahogany or fine Virginia walnut.

Where he learned his trade is not



PIE-CRUST TEA TABLE, ATTRIBUTED TO SAVERY. OBTAINED FROM THE LAWRENCE FAMILY OF PHILADELPHIA.

known, but it is evident that he had access, like Duncan Phyfe and Samuel McIntire, to the best books of English design of his period. Though his personal touch is always in evidence, his style shows strongly both the Chippendale and the French rococo influence. One can easily discover details evidently inspired by the designs of Chippendale, Manwaring and Langley. In general, Savery's work belongs to the Chippendale school.

While the family resemblance that I have mentioned can better be felt than described, Savery employed certain favorite motives and forms which aid in identifying his work. He nearly always made use of the cabriole leg with the ball-and-claw foot. Sometimes he ornamented these legs with a shell at the knee, or with rococo and acanthus motives. He employed quarter columns at his corners, either fluted or otherwise carved. The carving on the skirts of highboys and lowboys, and their shape in general, were Savery's inventions. He was fond of the intaglio shell with feathery foliations. At the tops of his highboys and secretaries he employed urn and flame finials with square, fluted bases; carved foliated scrolls on the pediment; a bust or pierced cartouche for the central ornament. In general the treatment of shells, rococo, and fretwork carving was peculiarly his own.

In criticizing Savery's work and comparing it with Phyfe's, for example, it must be remembered that he lived in the Chippendale era when the tendency to ornamentation was difficult to overcome. At first glance there is something to be wished for in this furniture. One feels that in some cases it would be better if part of the ornament were removed. The rococo and foliations of the applied carving are sometimes a bit overdone, in some instances having almost the cheap look of nineteenth century machine-made stuff.

On closer inspection, however, this feeling is likely to disappear. The hand carving is so beautifully executed and so well balanced, and the proportions of the whole



MAHOGANY HIGHBOY BY SAVERY, WITH CARVED BUST AND FINE FRETWORK AT THE TOP. THE ORIGINAL BRASS HANDLES HAVE BEEN REPLACED BY KNOBS.

are so nearly perfect that one can forgive apparent redundancy. The workmanship is superb—quite evidently that of a master craftsman. This is all the more remarkable in view of Savery's time and country. Compared with the best English work of the period, it would be difficult to find anything to surpass it save the finest productions of Chippendale himself.

It is to be hoped that patriotic American collectors will profit by Mr. Palmer's discoveries and unearth more of this Savery furniture, as they have begun to unearth that of Duncan Phyfe of the Sheraton period.



*The*  
**VILLA MADAMA ROME**

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*With Plan Restored by R. M. Kennedy  
from the Original Drawings*

*By Harold Donaldson Eberlein*

**PART I ~ *The Building & the Gardens***

**T**HE Villa Madama, just a little way outside the walls of Rome, is one of those buildings that might be called epochal because of the influences exerted by them upon both contemporary and subsequent architectural development. However, anyone expecting to find the Villa Madama a finished production of Renaissance art, or an architectural monument reverently maintained in a state of preservation, will be grievously disappointed. It is but a fragment of what it was intended to be and until recently, when the enthusiasm and intelligent efforts of a private owner intervened to

stay the ravages of time, it was at the mercy of the elements and rapidly falling into decay.

The Villa Madama has exercised a profound influence by virtue of what was actually achieved in its construction and in the making of its gardens. It has exercised a still more profound influence through the plans of what the building and gardens were intended to be when completed. Those plans, unfortunately, were never even half carried out. Not more than a third of the princely pile devised by Raphael for the main structure was brought to a state of partial

completion. The various stables, garden houses, and other subsidiary buildings were either never finished or, for the most part, as a matter of fact, never even begun. The garden plans fared no better in their fulfillment. What was actually accomplished in the way of garden making was but a scant moiety of the magnificently ambitious scheme the ablest designers of the time had contrived on paper, a scheme fully in accord with and taxing to its full capacity the daring spirit of reckless and lavish expenditure that dominated the fore part of the sixteenth century.

But though so small a portion of this gigantic project was ever realized, the plans for the villa and its environment of gardens, wherein were all manner of delights that fertile Renaissance invention could compass, were known, and shown, and talked of throughout the length and breadth of Italy, and other princely builders and their architects failed not to draw therefrom suggestions that they forthwith put into effect in the several undertakings of villa building or garden designing on which they then chanced to be embarked. Thus the unfulfilled plans for the Villa Madama provided a substantial stimulus in an age prolific in villa building.

Not later than the year of grace 1517, Giulio de' Medici, cousin to Giovanni de' Medici, who is better known to history as Pope Leo X, began to build the villa or, at least, to prepare the site. In 1513 Giulio had received a cardinal's hat and it was in order with the spirit of the day that he should build himself, not too far from the papal court, a residence befitting the dignity of a prince of the Church, Archbishop of Florence and Vice-Chancellor of the Holy See.

To design and execute a splendid villa agreeably to the exalted notions conceived by the Cardinal it was but natural that he should turn to the architect who then most filled the public eye and enjoyed the height of current renown. And that architect was Raphael d'Urbino. Before he died, in March, 1514, Bramante, his sponsor and devoted friend, had made special request that Raphael be appointed his suc-

cessor as chief architect of St. Peter's. Accordingly, by a papal brief dated August 1, 1514, Leo X designated Raphael to this extremely important post.

Raphael had already experienced the friendship, favor, and lavish patronage of Julius II and had redecorated for him with frescoes a series of *stanze* above the Appartamento Borgia in the Vatican. He had executed many frescoes and designed buildings for the Sienese financier and patron of the arts, Agostino Chigi. For Leo X, quite apart from his work as an architect in charge of St. Peter's, he had designed the cartoons for the "Acts of the Apostles" tapestries and had painted a portrait of the Pope with the Cardinals de' Rossi and de' Medici (Cardinal Giulio himself).

In working out the plans for Cardinal de' Medici's villa, Raphael doubtless drew freely upon his store of archæological knowledge, and in this respect the Villa Madama may be regarded in a certain sense as an important link between the villa traditions of ancient Rome and of Renaissance Italy. In addition to his notable pre-eminence in other attainments, Raphael was an antiquary of the highest rank. In 1515 Leo had appointed him inspector of excavations in Rome and in the region immediately round about the city. He was steeped in all the lore to be gained from an intimate acquaintance with the works of the Classic Age brought to light by digging and research, had a profound respect for them, and did not hesitate to make his own applications of what he thence derived. Nor by so doing did he surrender any of his own native force but rather intensified the individuality of his work.

In carrying out a large commission it was Raphael's wont to use the help of his ablest pupils, oftentimes entrusting them with wide discretionary powers and responsibilities of creation, he himself in such instances acting in little more than a supervisory capacity. Thus it was that Giovanni da Udine was invited to design many of the decorations of the Villa Madama. Owing to this method of intimate collaboration in which, amongst others, the brothers Battista and Antonio





FROM THE EASTERN CORNER—VILLA MADAMA, ROME.

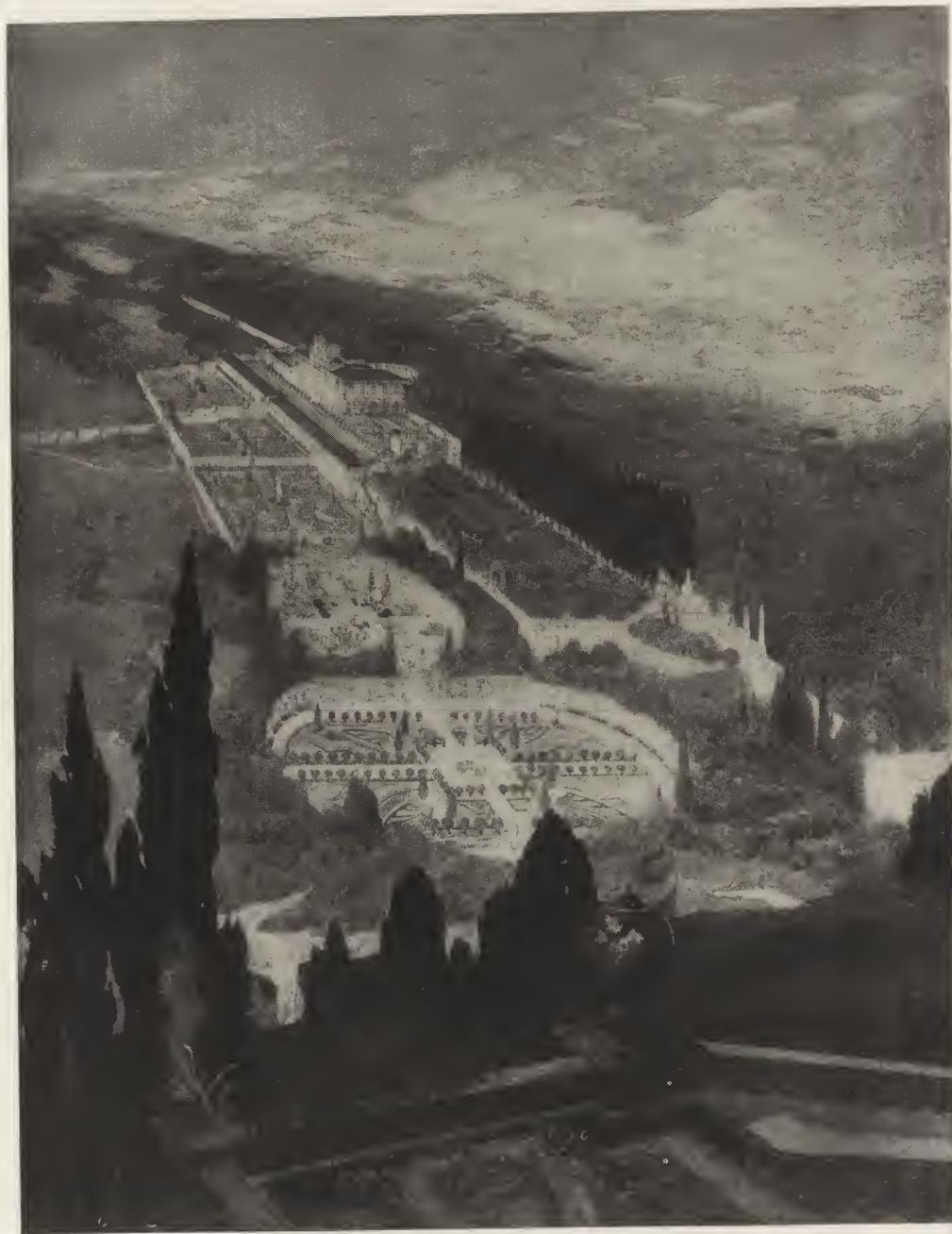
da Sangallo also participated, as evidenced by the various drawings left by them, it is sometimes exceedingly difficult to say with any degree of certainty just how much is to be attributed to each of the masters working under the leadership of Raphael.

The general design, however, on the evidence of an extant portion of the plan by Raphael's own hand, the distinct statement of Serlio, and the incidental testimony of sundry contemporaries, seems unquestionably attributable to Raphael, although Giulio Romano, his favorite pupil and heir, to whom fell the task of completion, after Raphael's death in 1520, is probably to be credited with the design of much of the detail.

Work on the building, so far as it was ever completed, seems to have been finished in 1521. In 1523, Cardinal Giulio was raised to the Papal Throne as Clement VII and appears to have been too much occupied thereafter, by affairs of state and thickening political troubles, to push forward the completion of his villa on Monte Mario, and it was allowed to remain as Giulio Romano had left it. In

1527, during the sack of Rome by the Constable de Bourbon, the villa was damaged by fire, the attempt at destruction being doubtless prompted by the well-known fact that it was part of the Pope's personal property. Fortunately, no very great havoc was wrought and the work of restoration, which was shortly afterward entrusted to Antonio da Sangallo, put the building in substantially its former condition. Subsequently the villa passed through sundry vicissitudes of ownership, none of which seems to have been much to its advantage until the advent of the present owner.

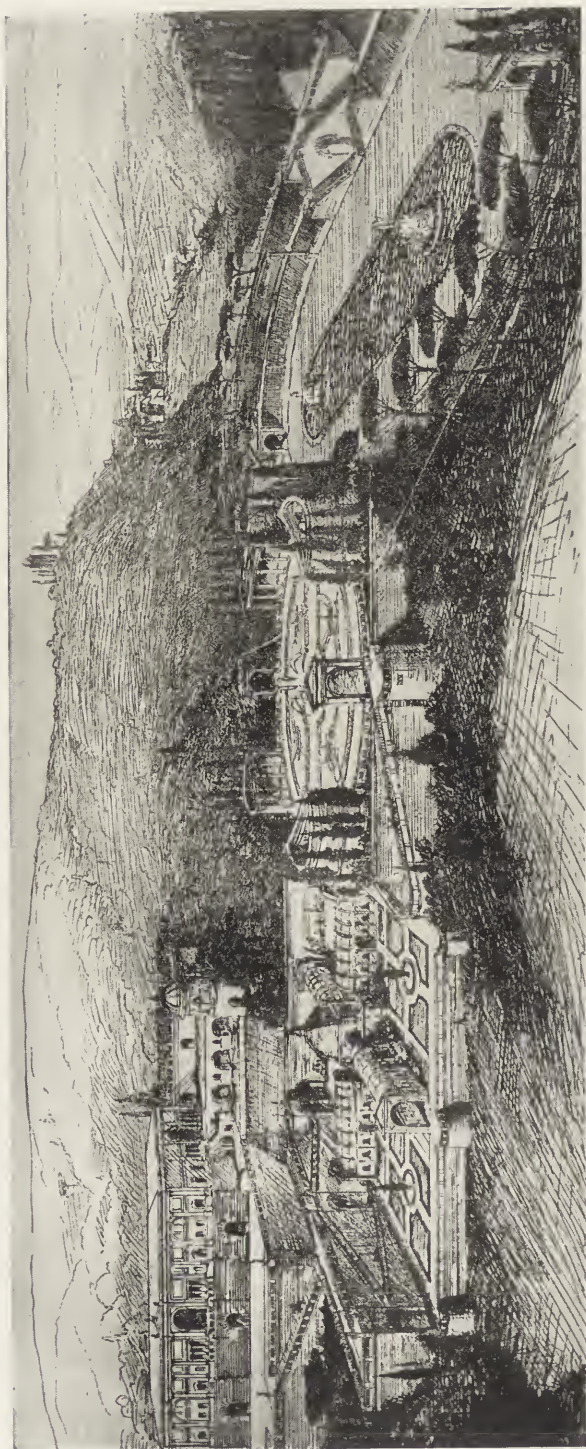
Hitherto the Villa Madama has been known chiefly by its loggia and the decorations in it wrought by Giovanni da Udine in fresco, in a delicate relief of *stucco duro*, and also partly in a combination of stucco modeling in higher relief along with color. Several of the accompanying illustrations show enough of this work to convey a fairly adequate impression of the whole composition, saving the actual diversity of color. But wonderful and inspiring as these decorations are, it is as a complete whole, buildings and gar-



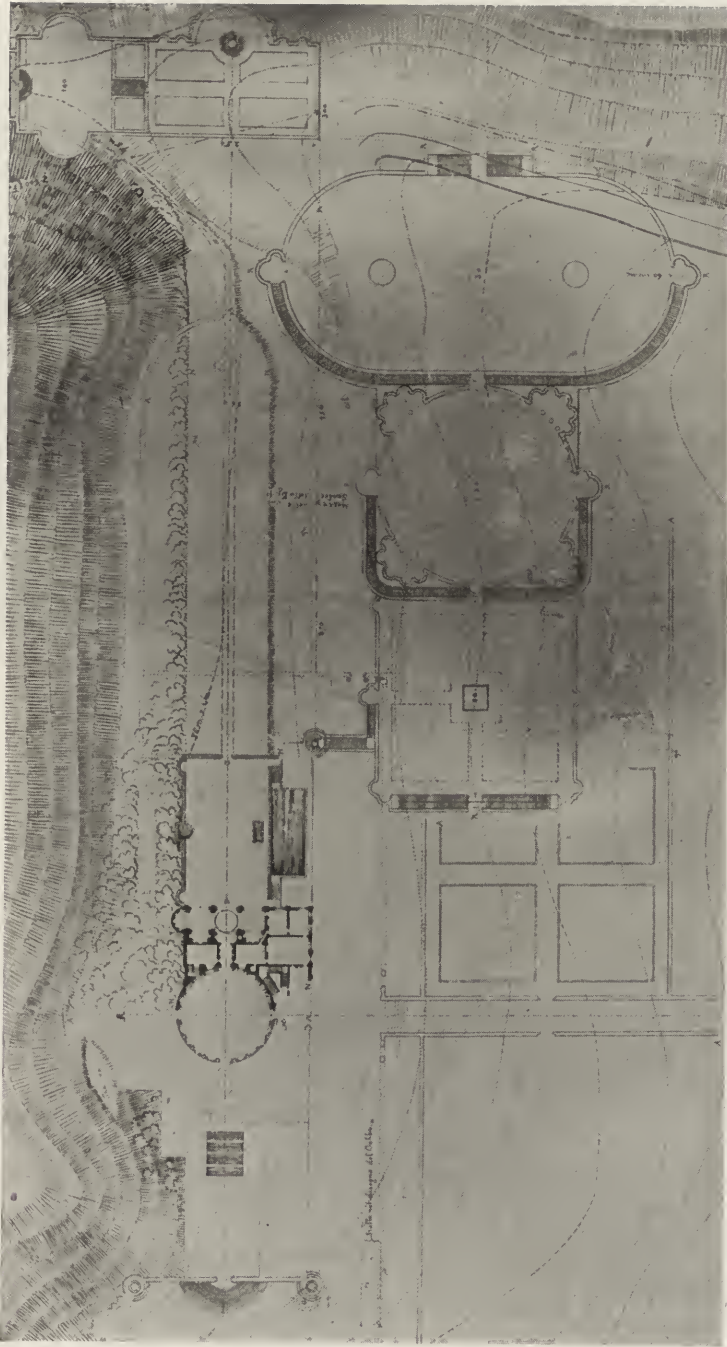
RESTORED PLAN IN PERSPECTIVE, ELABORATED FROM A  
COMPARISON OF THE ORIGINAL DRAWINGS. R. M. KENNEDY,  
FELLOW IN ARCHITECTURE, AMERICAN ACADEMY IN ROME, 1919.



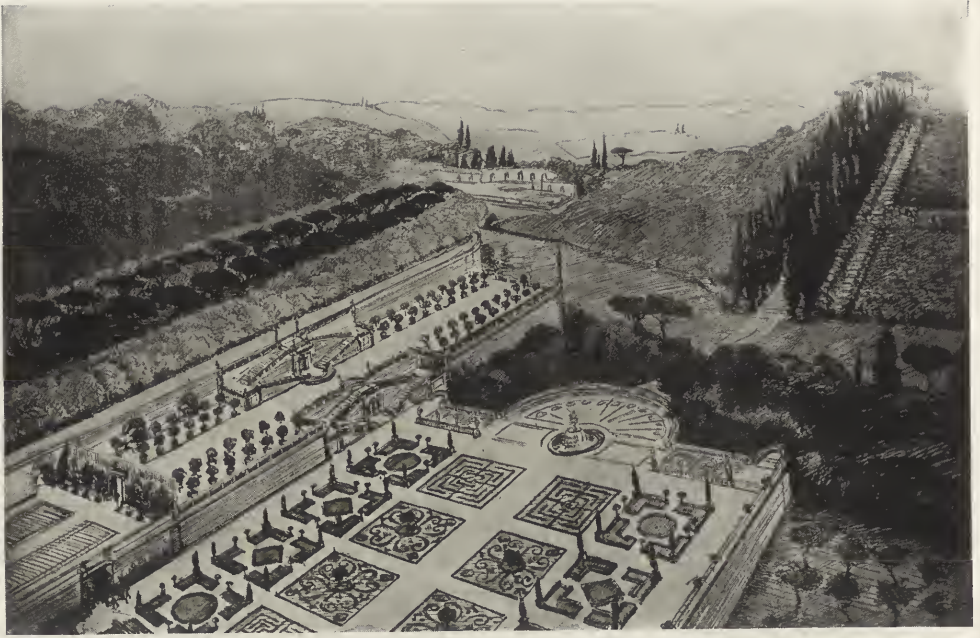
RESTORED PLAN, ELABORATED FROM A COMPARISON OF THE ORIGINAL DRAWINGS. R. M. KENNEDY, FELLOW IN ARCHITECTURE, AMERICAN ACADEMY IN ROME, 1919.



PERSPECTIVE BY RAPHAEL—  
VILLA MADAMA, ROME.



PLAN BY RAPHAEL—  
VILLA MADAMA, ROME,



ALTERNATIVE PERSPECTIVE PREPARED BY BATTISTA DA SANGALLO FOR RAPHAEL—  
VILLA MADAMA, ROME.

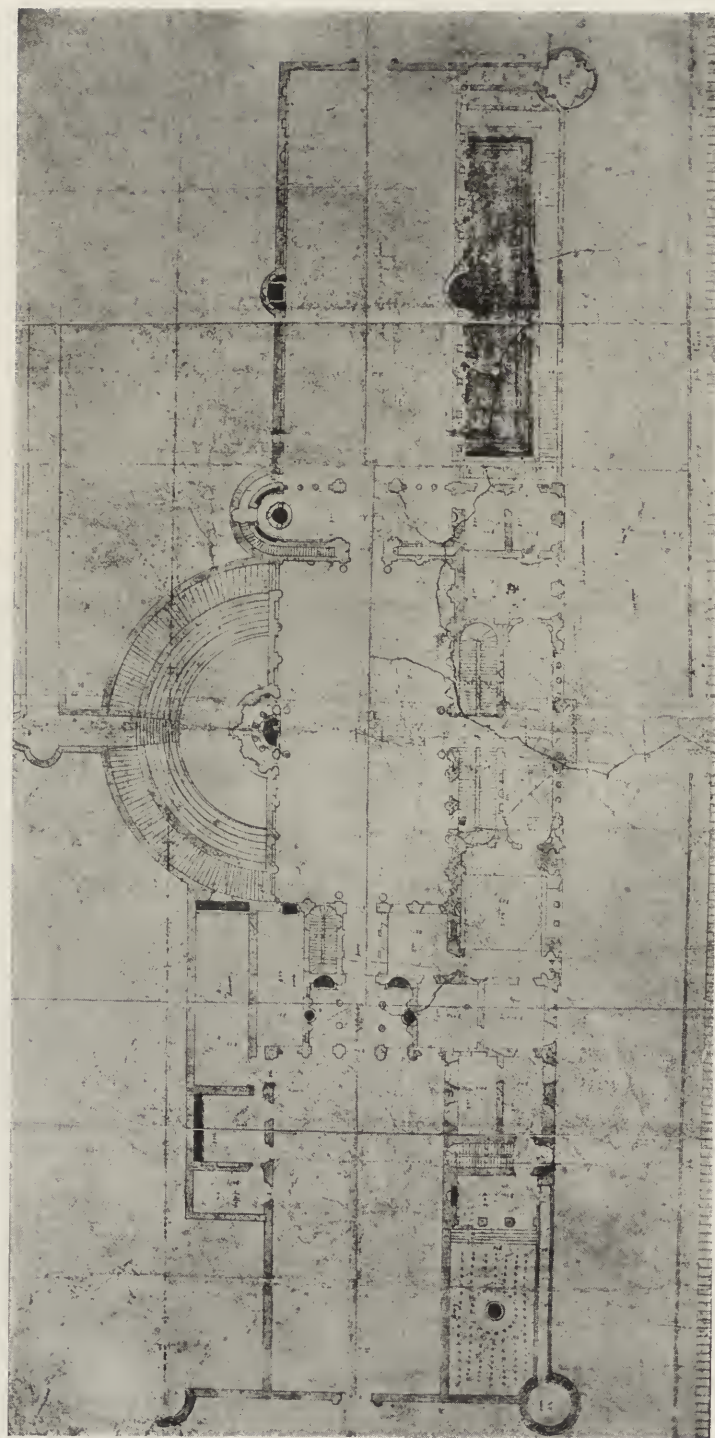
dens together, that the Villa Madama is of most significance to us.

It was devised at a time when men were beginning to think and to plan with an hitherto unwonted breadth of conception and bigness of scale, and in a manner that found its precedent only in the days of Imperial Rome. Indeed, as previously intimated, it is more likely that Raphael was not a little influenced in his determination of a princely scheme by what contemporary researches and his own experience as an inspector of excavations in Rome had taught him of villa building in the time of the Cæsars. Thus the Villa Madama, as a forerunner of the lavish magnificence bestowed by the nobility of Italy in creating country seats, in a notably lavish age, was really a strategic point in villa planning, and no one can hope thoroughly to understand the history of the Italian villa without a knowledge of the work of Raphael and his collaborators on the slopes of Monte Mario. The enterprise marked the early dawn of the Baroque period, a stage of Baroque development distinguished by noble breadth of scale and a symmetrical

balance of plan, but not yet exhibiting the vagaries and whimsical mannerisms that so often characterized the later manifestations of this marvellously prolific era. The treatment was gorgeous and yet restrained.

A detailed and intelligent study of the Villa Madama must start with the plans, some of which it is possible here to reproduce in fairly complete form. The first shown are two renderings by R. M. Kennedy, Fellow in Architecture at the American Academy in Rome, for 1919. Both the ground plan of the villa and its gardens, and also the plan in perspective, represent a careful and thorough collation of all the plans and sketches, and their alternatives, either in complete or fragmentary form, now to be found. From these sources Mr. Kennedy's plan and perspective have been reconstructed. Following these are portions of Raphael's plan and perspective, and then alternatives prepared for Raphael by Battista da Sangallo.

The plan reconstructed by Mr. Kennedy shows the structure of the villa (as designed) in dark color, with a cir-



ALTERNATIVE PLAN PREPARED BY BATTISTA DA SANGALLO FOR RAPHAEL—VILLA MADAMA, ROME.



NORTHEAST FRONT, WITH TWO  
BAYS OF LOGGIA, FROM THE  
GARDEN—VILLA MADAMA, ROME.





THE GARDEN FROM THE  
LOGGIA—VILLA MADAMA, ROME.



SECTION OF GARDEN WALL AND ELEPHANT FOUNTAIN—VILLA MADAMA, ROME.



PRESENT CONDITION OF THE CIRCULAR  
LAR CORTILE-VILLA MADAMA, ROME.



DETAIL OF FRIEZE AND CORNICE—VILLA MADAMA, ROME.

cular cortile in the center; a semi-circular theatre, for the open air performance of masques and comedies, hollowed out from the steep slope of the hill and entered by a passage from the cortile; a broad grass terrace on the level next below the villa; beneath this a long array of stables; again, below the stables, the orchards and kitchen gardens; to the northeast the gardens on the same level with the villa; beneath this, and facing toward the Ponte Molle, the triple-arched grotto and pool; stretching away to the northeast and southeast, a series of geometrically planned pleasure gardens—square, circular and elliptical—with appropriate buildings, colonnades, and arbors; and a bosage with paths and vistas on the steep slope. A comparison with the perspective plan sufficiently clear.

The alternative plans of Sangallo, which were never executed at all, show an oblong instead of a circular cortile, with a screen separating it from the large end of the hillside open air theatre. The

loggia and the *stanze* adjacent are virtually the same as in Raphael's plans and the garden plan is perhaps less varied, less broken with diversities the lie of the land invites, and more regularly geometrical.

The Raphael plan shows in heavy lines what part of the villa was actually built and its present condition corresponds fairly well therewith. An examination of the garden plan shows that it formed the basis of Mr. Kennedy's restoration. For the rest, the plans speak so fully for themselves that further detailed discussion seems hardly necessary.

It appears to have been originally intended to cover the exterior with stucco and then decorate the surface with bold geometrical patterns in color or in slight relief. The failure to carry out this part of the plan has left exposed to view some interesting details of construction, especially in the entablature. The retaining wall of the upper garden—broken by three arched niches, in one of which is the elephant fountain—deserves study.

# TWO COLONIAL INTERIORS from BEAUFORT, S. C.

*With Measured Drawings*



*By Verna Cook Salomonsky*

ALTHOUGH examples of excellent Colonial architecture are plentiful in South Carolina, accurate data pertaining to them are scarcely to be found. Especially is this true of Beaufort, which, although rather out of the way of modern travel, had in its time an important place in the life of this section. It was to such watering places as this that the well-to-do repaired for the summer months, and the spirit of sheer enjoyment which obtained there is strongly reflected in its architecture. One observes in the design a noticeable letting down of the barriers of formality. While the construction is substantial, there is a certain apparent crudeness in the execution of the carving and molded details. The paneling is apt to be handled in a haphazard fashion, the very debonair character of which adds a charm not to be found in the more nearly perfect sort.

More attention has perhaps been given to the details of the interior than to those of the exterior of the house, where the interest is concentrated on the entrance doorway. The accompanying drawings illustrate two interiors of widely different character, yet both showing the vitality and gaiety peculiar to this phase of early American architecture. The treatment of the end walls is typical—a fireplace, with a door on either side, and paneling worked out without regard for the other architectural features. These rooms are fairly lofty and give a decided

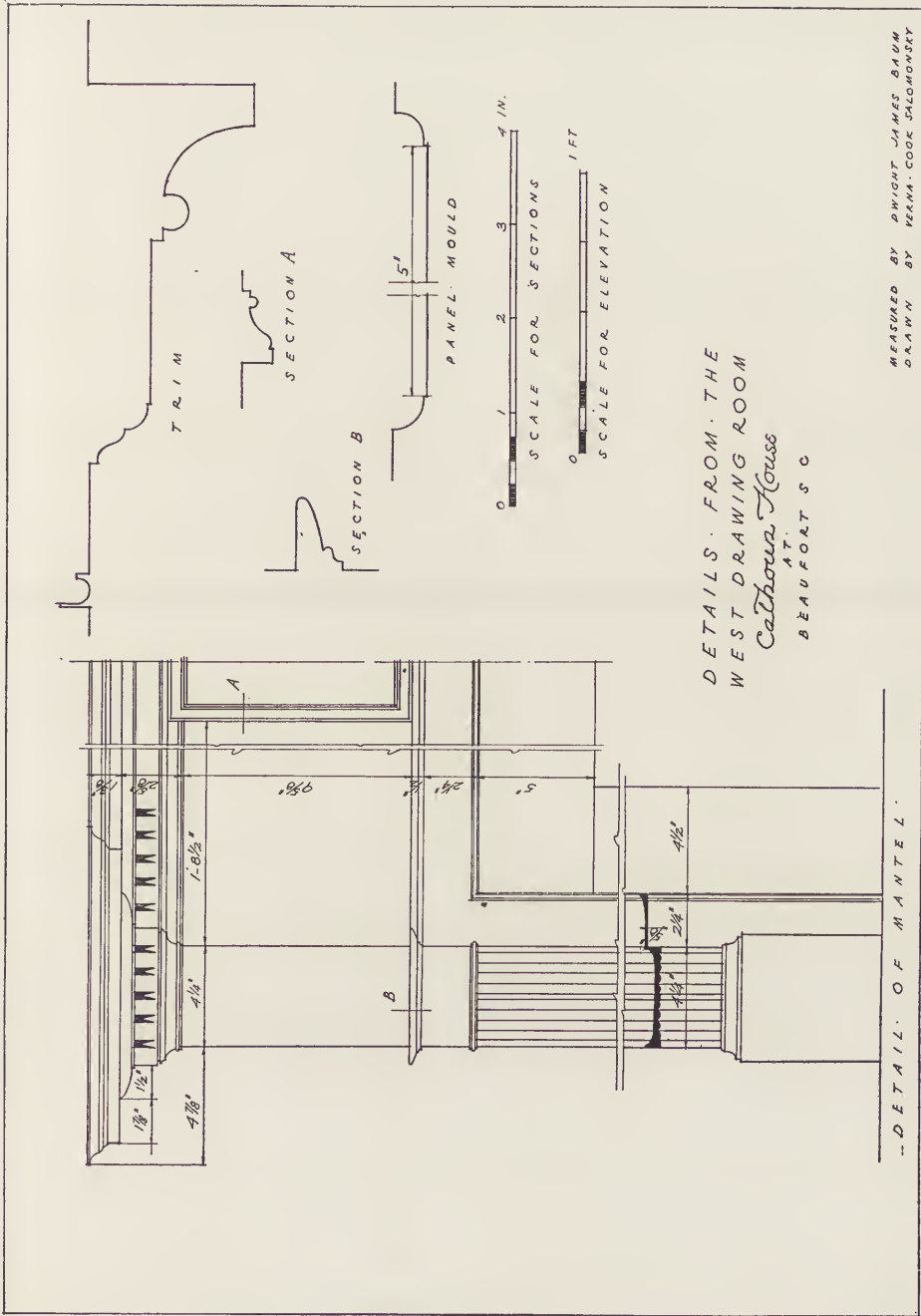
feeling of airiness. The proportions of the fire openings are generous and remind one that even so far south roaring fires were not unwelcome at the beginning and end of the summer season.

The room from the Calhoun house is quite suggestive of the contemporary work in New England. The simplicity and delicate scale of the moldings would indicate that its inspiration may have been derived from that locality. Then, too, the conventionalization of the dentil course decoration in the mantel shelf is not strictly in keeping with its classic prototype, recalling rather the more crude, unlettered versions of the early work in the northern colonies.

Typical of Georgian influence in the work of South Carolina is the room from the Onthank house, with its richly ornamented moldings imbued with classic feeling but treated in a most novel manner. In the mantel cornice the dentils are alternated with carved pine cones and topped with a dog-tooth ornament; also, the usual round beading has taken an oval form. Here the absence of the customary raised panels is noticeable; instead, a very slight reveal is given the panels by the use of a simple bead. The simplicity of the door is offset by a rich and unusually graceful brass latch.

While, for the most part, these interior details are based on time-honored examples, they are treated in a manner peculiar to South Carolina.

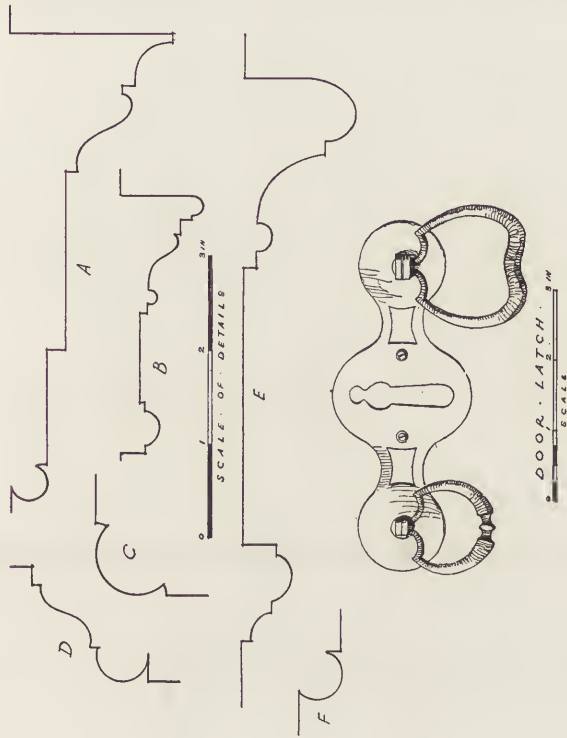
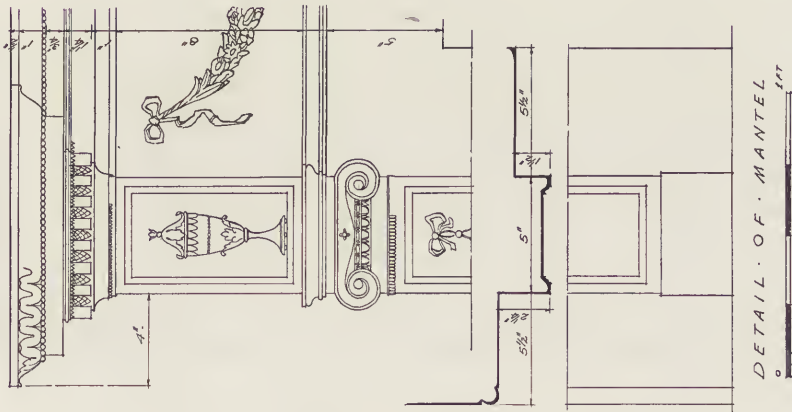




MEASURED BY DWIGHT JAMES BAUM  
DRAWN BY FERMA COOK SALOMONSKY







DETAILS OF  
DRAWING ROOM  
RESIDENCE of Mrs A. S. Onthank  
AT  
BEAUFORT, S. C.

MEASURED BY DWIGHT JAMES BAUM.  
DRAWN BY VERA COOK SALOMONSKY.

# THE GARDENS OF ROBERT GOELET, ESQ.

AT GLENMERE, CHESTER, N. Y.

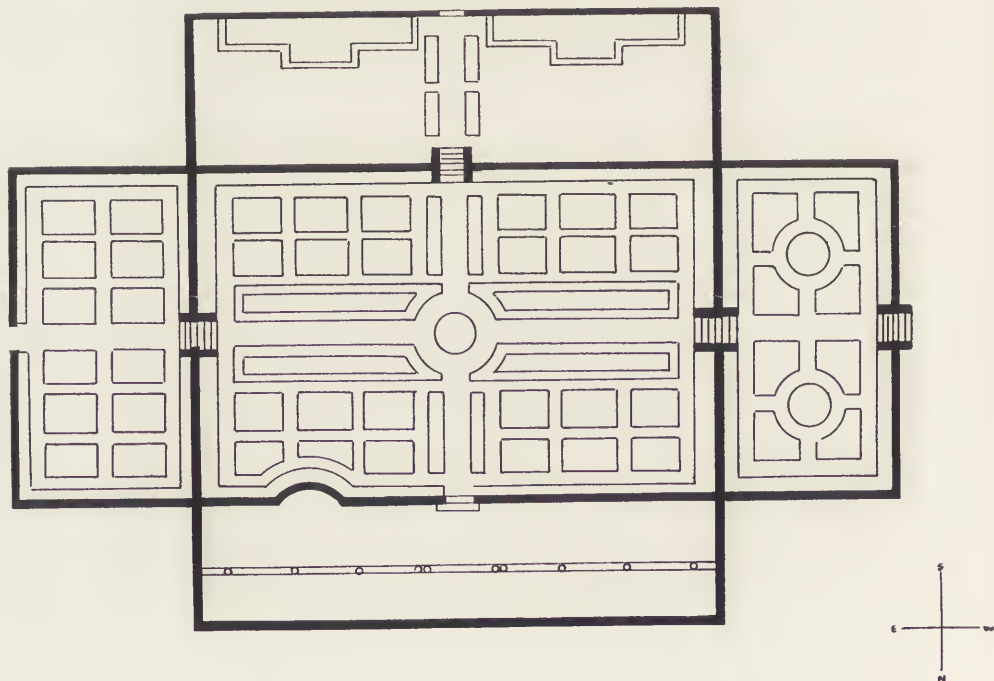
The house is on top of a hill with a wide outlook over a lake and the surrounding country, while the gardens are down below, in the sheltered lowland.

The walls of the gardens are a warm rose-pink, with piers, copings, balustrades and steps in limestone coloring. The warmth of tone of these accessories confirms the intimate homey feeling imparted by the planting and furnishings—tubs and urns, troughs and vases, figures and sculptured reliefs.

A shrubby-bordered path leads from the house through iron-work gates to a small balustraded upper terrace or garden with ornamental beds of low bedding plants. All the gardens are on different

levels, which, of course, adds much to their charm. The centre garden is rich in flower bloom, especially with phlox and lilies in August. The east garden has beds of low-spreading roses, with climbers upon the walls—a gracious, rambling rose garden without stiffness. Again there are the same charming gates as at the western entrance.

Along the whole northern length of the main garden is a raised grass terrace, partly covered with a pergola; on the south is another lawn garden with two wall pools and a path across its centre that leads straight from the pergola through the main garden to a tea-nook under a great spreading tree beyond.



PLAN OF THE GARDENS OF ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



STEPS TO UPPER GARDEN—THE GARDENS OF ROBERT  
GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.  
BEATRIX JONES FARRAND, LANDSCAPE ARCHITECT.



MAIN PATH—THE GARDENS OF ROBERT GOE-  
LETT, ESQ., AT GLENMERE, CHESTER, N. Y.



PATH IN MAIN GARDEN, IN AUGUST—THE GARDENS OF  
ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



LOWER ENTRANCE GATE AND ROSE GARDEN—THE GARDENS  
OF ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



WALL WITH OLD ENGLISH LEAD TROUGH—THE GARDENS  
OF ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



UNDER THE PERGOLA—THE GARDENS OF ROBERT  
GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.





FROM THE STEPS OF THE PERGOLA—THE GARDENS OF  
ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



WALL POOLS OF SOUTHERN GARDEN—THE GARDENS OF  
ROBERT GOELET, ESQ., AT GLENMERE, CHESTER, N. Y.



FROM SOUTHERN GARDEN TO TEA TABLE  
UNDER GREAT TREE—THE GARDENS OF ROB-  
ERT GOELET, AT GLENMERE, CHESTER, N. Y.

# THE PROSPECT FOR BUILDING

BY MICHAEL A. MIKKELSEN

ANY one who undertakes to construct a mental picture of the condition of the building industry must exclude so far as possible impressions derived from crowd psychology. It is a characteristic of the crowd that it forms exaggerated conclusions based upon a narrow complex of facts, blindly disregarding others. At present—early in February—the crowd-mind exaggerates the consequences of falling prices, and without looking for objective evidence concludes that building is practically at a standstill. If building is assumed to be nearly at a halt because of falling prices, the further assumption is readily accepted that it will not strike a brisker pace until the downward trend of prices has been checked.

But the facts are quite different. In the first place, prices are not a determining factor; they may be, and frequently are, offset by other considerations. In the second place, building is not practically at a standstill; on the contrary, it is relatively active. The capital represented by the contracts let in January of this year in the territory north of the Ohio and east of the Missouri, according to statistics compiled by the F. W. Dodge Co., has been exceeded in the same month only twice in the last ten years, namely, in 1920, when the wave of industrial expansion was at its crest, and in 1918, when government war work was at high tide.

## CONTRACTS LET IN JANUARY.

1921 .....	\$111,806,900
1920 .....	226,116,175
1919 .....	54,104,940
1918 .....	152,065,000
1917 .....	90,849,000
1916 .....	62,784,500
1915 .....	43,257,000
1914 .....	51,102,000
1913 .....	62,810,500
1912 .....	38,910,000
1911 .....	66,892,000

Despite fluctuations in the purchasing power of the dollar, this table effectually disposes of any assertion that the construction industry is hopelessly stagnant. Not only is it fairly active, but it is evidently being carried forward by an undercurrent of optimism, inasmuch as the January contracts lead the December contracts by more than \$11,000,000.

For those whose impressions are essentially reactions to crowd psychology there will be further surprises in the classified list of contracts awarded in January. The distribution of capital between public and private work is normal; all classes of buildings are well represented; there is a wholesome increase in the percentage of residential building, compared with January of last year, without any inordinate slump in the percentage of business buildings and industrial plants. The activity is properly balanced, indicating sound economic motives and conditions.

## CONTRACTS AWARDED IN JANUARY, 1921.

Classification	Number of Projects	Valuation	Per Cent.
Business Buildings .....	508	\$20,561,100	18
Educational Buildings ...	73	6,905,100	6
Hospitals and Institutions	31	4,778,000	4
Industrial Buildings .....	249	15,428,700	14
Military and Naval Buildings .....	12	1,427,400	1
Public Buildings .....	27	1,079,000	1
Public Works and Public Utilities .....	237	24,186,100	22
Religious and Memorial Buildings .....	56	2,261,000	2
Residential Buildings ...	1,575	30,756,200	28
Social and Recreational Buildings .....	70	4,423,500	4
Total .....	2,838	\$111,806,900	100

What is perhaps most instructive about the table is that nearly one-third of the capital is going into business and industrial buildings. It will not do to assume that this large investment is ill-considered. Those who make it had at least six months to think it over in a state of mind unprejudiced by the psychology of the feverish industrial activity which prevailed early in 1920.

Another outstanding fact is that 28 per cent of the capital is allocated to residential building, including private dwellings and apartment houses. In 1920 this class received only 22 per cent of the total. Evidently rents bear a more normal relation to the cost of improved real estate and to the cost of operation than they did last year.

The two classes, residential buildings and business buildings, are particularly interesting; it is in these that rental income is most often the sole motive for building. These absorbed 46 per cent of the capital.

Finally, it is to be observed that the total number of projects of all classes this January (2,838) is 71 per cent of the biggest January in ten years—that of 1920 (3,979). In one respect only is the January investment of this year small. It is small in proportion to the need for building—to the work contemplated but not undertaken.

What were the considerations which impelled a minority of prospective investors to take action in contravention of the psychology which induced the majority to refrain from action?

One consideration no doubt had to do with the cost of construction, which is composed of two nearly equal parts—the cost of labor and the cost of materials. Prices of the latter may come down further, but not enough to equal the loss of having to take second choice of labor. A vast deal of inefficiency and cost of labor is due to scarcity of trained teams or gangs. Team-work is not acquired in a week or a month, and a contractor makes every effort to keep at work a body of men who have grown used to each other's and to their employer's methods. He can make a low bid on a job for which his permanent "team" of men is available; if he has to employ a new team for a second building, his bid on the second building will have to be very considerably higher.

Furthermore, the cost of carrying va-

cant land or land inadequately improved is so burdensome as to impel owners either to build or to sell cheaply; cheap land offsets high construction cost. The concern of the investor is not with the past but with the future—to ascertain the total cost of a given piece of real estate when adequately improved and to estimate the prospect, on the one hand, of keeping up (by a sinking fund, if necessary) the capital value of his investment and, on the other, of earning a net income. If he demands a minimum net return of 5 per cent, he must look ahead twenty years; if 6 per cent, 16-2/3 years; if 10 per cent, 10 years. It is true that an investment in the common stock of a railway or industrial corporation is founded on the same principle, but the average investor in such securities merely accepts the judgment of others as expressed in stock market quotations. In reality he takes a bigger risk than the real estate investor who exercises his own judgment as to the future.

Among the questions upon which those investors who let contracts for new buildings in January exercised their judgment were these: (1) Is the present recession in prices temporary, in the sense that the high peak of prices a year ago was temporary? (2) In view of the need for capital throughout the world, is it likely that money enough can be spared for a volume of building so great as to break down rents in the next ten to twenty years? (3) If enough capital should be available, is the supply of land, labor and materials so ample as to preclude a prohibitive rise in real estate values, wages and building material prices?

No doubt prices and possibly gross rents will be lower in ten or twenty years than they are now, but so will taxes, wages and interest rates. Meanwhile, there will be growth of population, expansion of industry and a more intensive use of land. Net rents and real estate values can hardly fail to be higher—have a higher purchasing power.



**Own Your  
Own Home  
Expositions in  
Chicago and  
New York.**

Late in March there will be opened the annual Own Your Home Exposition in Chicago, lasting from March 26 to April 2; and this will be followed by the one in New York, from April 16 to 30. This year the organizers of these undertakings are planning them on a broader scale than ever before.

Any means of stimulating ownership in homes deserves support. The steady growth of tenantry in the United States and the reasons for it (see "Recent Developments of Housing Finance," *Architectural Record*, November and December, 1920), should convince anyone of the pressing need of patiently teaching the public how to invest safely in homes. The home ownership policy is largely a matter of protecting unsuspecting investors, untrained in building methods, from the unscrupulous—or at least unenlightened—operations of those who would seek to take advantage of their inexperience.

Hence the organizers of the expositions do well to emphasize the educational side of their program. Such expositions would be most successful, as well as most interesting, when they are as little commercial as possible. Exhibits of designs, of handicrafts, of interior furnishings, of methods and ways and appliances in building, and the proper use of materials—how not to build as well as how to build—all these are of true, durable value. Wherever things are sold directly, the promoters of the exposition should hold themselves responsible for seeing that the buyers obtain a fair product at a fair price. Particularly is it necessary to see that the irresponsible land speculator, who perhaps is the worst evil in the small building field, should be kept out.

For architects, the expositions this year have an especial value, because in them will

be shown the results of a competition in small house designs, open to all architects in the country. It is approved by the American Institute of Architects and is conducted by Henry K. Holsman, president of the Illinois Chapter. The prize plans will be sold, with compensation made to the designer for every reproduction.

This provision offers an excellent opportunity to architects, particularly the young architect, of entering the field of small houses. Architects of established practice can be of service as consultants; the opportunity is primarily for the young architect, on whom, after all, will devolve the chief burden of the design of small homes. A complete list of prize winners and those receiving honorary mention follows:

*Frame*

1st, Louis Justement; 2d, J. Ivan Dise and E. J. Maier; 3d, Edmund J. Jacques; 4th, Walter F. Bagner; Carl A. Rahse, Acz.

*Brick*

1st, Edgar and Vernon Salomonsky; 2d, John Barnard; 3d, Henry F. Stanton, and Charles Crombie; 4th, Ainslie M. Ballantyne.

*Stucco*

1st, Louis Justement; 2d, Amedo Loone; 3d, Montgomery and Nibecker; 4th, Theodore Vischer and James Burley.

*Frame*

Mention: John Floyd Yowell, Paul Hyde Harbach, James A. Parke, Robbins Louis Conn.

*Brick*

Mention: Johnson and Ford, Chauncey Hudson, Richard W. Powers, Isador Richmond.

*Stucco*

Mention: Alfred Cookman Cass, Edgar & Vernon Salomonsky, Richard W. Powers, L. Justement.

*Group Prizes*

4-Room, Richard W. Powers; 5-Room, John Floyd Yowell; 6-Room, J. Ivan Dise and E. J. Maier.

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# THE ARCHITECTURAL RECORD

*April ~ 1921*



*Published in New York*

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# THE ARCHITECTURAL RECORD



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APRIL, 1921

Serial No. 271

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*Contributing Editor:* HERBERT CROLY

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Yearly Subscription: United States, \$3.00; Foreign, \$4.00; Single Copies, 35 cents. Copyright, 1921, by The Architectural Record Co. All rights reserved. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY

THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. W. D. HADSELL, Vice-Pres. E. S. DODGE, Vice-Pres. J. W. FRANK, Sec'y-Treas.



DETAIL OF GARDEN FRONT—  
HOUSE AT GREENWICH, CONN.  
JOHN RUSSELL POPE, ARCHITECT.

# THE ARCHITECTURAL RECORD

VOLUME XLIX



NUMBER IV

APRIL, 1921

## A HOUSE AT GREENWICH, CONN.

JOHN RUSSELL POPE, ARCHITECT



By Russell F. Whitehead

**A** REMARKABLE advance in the standard of our domestic architecture which has taken place during the last decade or so may be largely attributed to the fascination an architect finds in solving the various problems pertaining to residences, combined with a growing interest and keener appreciation of beauty on the part of the layman. The possibility of direct interpretation of the client's taste and mode of social life is very definite in the country dwelling, and offers a greater opportunity for diversity of treatment than does any other type of building problem the architect is called

upon to solve. It is because of this close relation between the requirements and the completed structure that the average architect likes to devote far more time and effort than the financial compensation warrants, to the design and execution of a house which shall adequately express the owner's individuality.

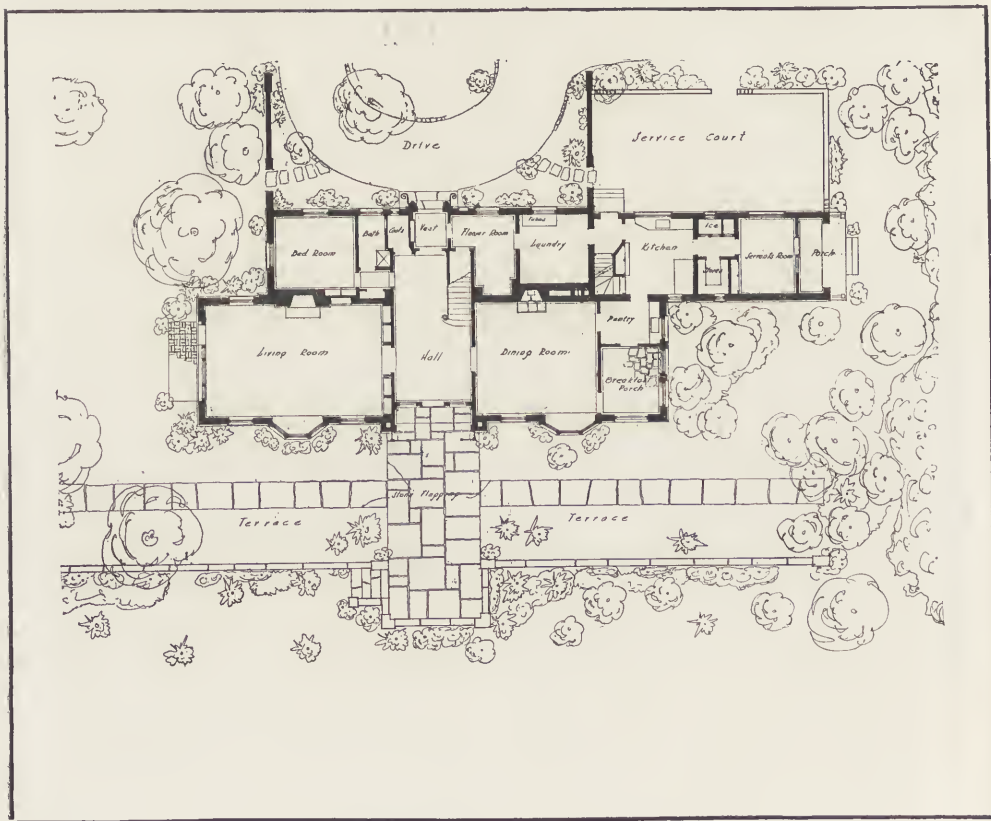
While it is an admitted fact that the design of country houses is steadily improving, the opportunity to observe this progress at first hand is seldom the privilege of the architect himself. The houses which are objects of delight for the trained man, as he searches the countryside to see what

his colleagues have contributed to the American Renaissance and to seek inspiration for himself, are so scattered and so remote from the highways that he is largely compelled to judge the work of his contemporaries from the illustrations in the current architectural press.

It is of particular interest, therefore, to note by the accompanying illustrations how John Russell Pope has interpreted the particular needs of his client in the house at Greenwich, Connecticut, and to appreciate, from the standpoint of architectural precedent, the versatility of treatment, that is possible in the work of any one architect. The June, 1911, number of *The Architectural Record* was devoted entirely to the recent works of John Russell Pope, architect. Therein it was pointed out that versatility was the most obvious characteristic of Mr. Pope's ac-

complishments. He has experimented in many different styles and sub-styles, and the range of his work is so considerable that one must hesitate to say that a particular house is unmistakably of his design. From the examples of Mr. Pope's work which have been illustrated in the architectural magazines, one may see how carefully the details of both exterior and interior have been made to conform with the period into which the house may be placed, while at the same time exhibiting a spirit of freedom and originality that makes his handling of the various styles notably distinctive.

The Greenwich house here illustrated is a free translation of some of the attractive English houses built in the later years of the Georgian period. The Georgian style is usually associated with formality—definitely prescribed modes of living



BLOCK PLAN—HOUSE AT GREENWICH, CONN.  
John Russell Pope, Architect.



ENTRANCE FRONT-HOUSE AT GREENWICH,  
CONN. JOHN RUSSELL POPE, ARCHITECT.



FORECOURT—HOUSE AT GREENWICH, CONN.  
JOHN RUSSELL POPE, ARCHITECT.



FRONT DOOR—HOUSE AT GREENWICH,  
CONN. JOHN RUSSELL POPE, ARCHITECT.

and of entertaining, worked out to the minutest detail. It is a style admirably suited to those who find the fullest expression of their personalities in the giving of staid and decorous functions. These considerations presuppose a formality in the disposition of entrance, windows and architectural embellishment to harmonize with high ceilings, spacious openings that afford broad vistas through

tere lines with an entire absence of modeled decoration and with the simplest and broadest color treatment. It is real simplicity, not mannered. The architect's thorough knowledge of the building materials he uses and his sympathetic understanding of suitable combinations with which pleasing effects may be obtained, are illustrated in this case by the selection of the brick. The walls are a mixture



GARDEN FRONT—HOUSE AT GREENWICH, CONN.  
John Russell Pope, Architect.

the house, and with elaborate paneled walls and ornamented ceilings. It is not the least of the indications of the architect's skill in this instance that he has been able to achieve successfully the translation of an English Georgian style into a house which adequately meets the requirements of people whose tastes could not be satisfied with anything but good architectural design, and who wished to live simply. They wanted a home in which to live day in and day out, rather than a "show place" in which to entertain. In consequence, this house has been evolved—perhaps more truly American Renaissance in spirit than Georgian, in the subtle changes which separate it from the chosen precedent.

The exterior is executed on almost aus-

of so-called "seconds" or discarded bricks, practically hand picked, from the run of several yards, with dark headers laid in Flemish bond, disposed in studied irregularity with little attempt to run them to a line. This procedure creates that delightful surface texture usually looked upon as a concomitant of age. To complement the brickwork, and to accentuate the entrance feature and cornice, stone has been used, selected with the same painstaking care to assure harmony in color and texture.

A distinctive note of character is given to the design by a judicious use of wrought iron. The lanterns at each side of the main entrance are unusually well disposed. Placed directly in front of the grill which protects the side windows, they





GARDEN TERRACE—HOUSE AT GREENWICH,  
CONN. JOHN RUSSELL POPE, ARCHITECT.



GATEWAY OF SERVICE COURT—HOUSE AT GREEN-  
WICH, CONN. JOHN RUSSELL POPE, ARCHITECT.



SLEEPING PORCH—HOUSE AT GREENWICH,  
CONN. JOHN RUSSELL POPE, ARCHITECT.

form part of the window composition. The simple yet essential iron rail at each side of the door also contributes its share to the inviting spirit of the entrance. No doubt this railing will be repeated eventually over the doorway to soften the

the dining room on the other. It is unusual in that a guest room and bath have been provided on the ground floor, immediately adjacent to the front door in the master's portion; and in the service wing the placing of the laundry on the



STAIR HALL—HOUSE AT GREENWICH, CONN.  
John Russell Pope, Architect.

somewhat harsh appearance of the central window. Wrought iron has also been informally and suitably used to accentuate the garden elevation, and to frame the sleeping balcony which opens off the northeast bed room.

The plan is of the central hall type, extending from the front to the rear of the house—a very spacious arrangement with the large living room on one side and

main floor, instead of in the basement, makes for sanitation and convenience. A room where flowers may be arranged is also provided where it is most serviceable—a room whose importance in the administration of a country house is too often overlooked.

The interiors, though not technically in accord with the exterior design, are not at variance with it to a marked degree.

Unlike the traditional Georgian rooms, the ceilings are only nine feet high on the first floor. Instead of spacious passages between rooms, single doors have been used. The fireplaces and mantels are reminiscent of the early American houses,

it is built and among the stately old trees which surround it. Grounds and house seem part and parcel of each other.

The work of an architect, similar in essentials to the other creative arts, in one important particular differs from the arts



VIEW FROM HALL INTO LIVING ROOM—HOUSE AT GREENWICH,  
CONN.

John Russell Pope, Architect.

and the treatment of the walls and ceilings suggests the same spirit rather than that of the elaborately paneled walls and ornamented ceilings of a Georgian house.

The great care given to the selection of the materials in order that they might not have a crude, new look, combines with the general outlines of the house to make it seem to belong on the knoll on which

of the painter, the sculptor and the writer, in that the expression of the architect's idea must be deputized, while the painter, the sculptor and the writer are able to work without intermediaries. The success of a building must rest largely upon the amount of sympathy and intelligent understanding which the architect is able to inspire in his collaborators. The most



LIVING ROOM MANTEL—HOUSE AT GREENWICH, CONN.  
John Russell Pope, Architect.

important and necessary of the men through whom an architect must work are the draughtsmen in his own office. Mr. Pope has surrounded himself with men who are loyal, sympathetic and capable, and he knows that they can be relied upon. He looks to them, not only to carry out his schemes, but also to advise about them and for actual criticism. They are artists themselves, sincerely anxious that their joint work may be as creditable as pos-

sible. No appreciation of successful work can be so pleasant as that of the men who have assisted toward its success.

Such a house as this recalls the phrase of Ruskin: "No architecture is so haughty as that which is simple; which refuses to address the eye, except in a few clear and forceful lines; and disdains either by the complexity or the attractiveness of its features to embarrass our investigation, or betray us into delight."



LIVING ROOM—HOUSE AT GREENWICH,  
CONN. JOHN RUSSELL POPE, ARCHITECT.



EASTERN HALF OF ARCHED PANEL OF "INFANCY" — MOSAIC, DESIGNED BY FREDERICK J. WILEY, IN FRONTAL COLONNADE OF THE DETROIT PUBLIC LIBRARY. CASS GILBERT, ARCHITECT.





DESIGN FOR THE DETROIT PUBLIC LIBRARY  
Cass Gilbert, Architect.

*The*  
**MOSAICS IN THE FRONTAL COLONNADE  
OF THE DETROIT PUBLIC LIBRARY**  



*By* William Francklyn Paris

**W**RITING in the sixteenth century, Vasari, who cannot be said not to have had the fullest opportunity for appraising the artistic value of mosaic, voices his surprise and regret that this most splendid and most permanent form of wall or ceiling ornament is neglected by both artists and governments. In his "Life of Titian" he makes this indictment of the artists and art patrons of his day: "In truth it is deplorable that mosaic, that art which is equally precious by reason of its beauty as by reason of the permanency of its materials, should not be more cultivated by artists and more encouraged by Princes."

The grievance of Vasari was no doubt justified, since mosaic had suffered a temporary eclipse from the fourteenth century until far into the sixteenth, and yet the Italy of Vasari's day was filled with pictorial mosaic dating back to the fourth

century, all in a perfect state of preservation.

Whether or not the influence of Vasari was felt by Pope Sixtus V, the truth remains that this pontiff in 1586 founded the mosaic factory in the Vatican, which persists to this day, and set to work a large corps of mosaicists in the decoration of the walls and ceiling of St. Peter's.

The reproach of Vasari is as true today as it was then, and the example of Garnier, who sought to bring mosaic back into favor by utilizing it in the decoration of the Paris Opéra, has only been very spasmodically followed.

In France the only notable modern mosaics are those in the Cathedral at Marseilles, the cupola of the Pantheon in Paris, the frieze of the Church of the Madeleine, the façade of the Sèvres factory, and the frieze of the Grand Palais,

designed and installed by Fournier in 1900.

There has been some attempt in Great Britain to utilize the splendid decorative value of mosaic, notably in St. Paul's and Westminster Cathedral, and also in Rome, where the American church has a mosaic decoration designed by Burne-Jones, and on which William Morris and Alma-Tadema both worked; but, generally speaking, mosaic is an orphan child knocking hopefully at many doors but being welcomed at few.

In view of this general abandonment in all parts of the civilized world of one of the most effective forms of exterior adornment, it is perhaps a hopeful sign to see a great architect like Cass Gilbert breaking a lance in its favor and so successfully proving his point as he has done in the decoration of the Detroit Public Library.

Mr. Gilbert, having a façade consisting of seven arches to decorate in a building designed to endure perhaps for centuries, has wisely resorted to mosaic as the one medium wherewith to obtain not only permanency but also a high decorative effect requisite in an architectural ensemble consisting for the most part of white marble.

To the great advantage of the population of Detroit and those visitors who may come to view the Detroit Public Library, Mr. Gilbert has been given such authority over the execution of this noble architectural pile that he is in every sense of the word the *maitre de l'oeuvre*, and as such has been in a position to dictate the nature and character of the decorations entering into the making of the finished library.

Too often the work of decorating our public buildings is an after-thought coming long after the completion of the edifice and made possible by appropriations granted several years apart. This has caused different artists to bring together elements that frequently would not mix. Mr. Gilbert, however, has designed the Public Library at Detroit down to the last detail, and no anomaly is to be feared through the application of a form of ornament composed and imagined by another mind than his. This insures a homogeneous ensemble, and nowhere is the blending of architecture and decoration so

happy as in the mosaic ornamentation of the apses of the frontal colonnade of the library.

This work was given by Mr. Gilbert into the keeping of Frederick J. Wiley, known for his decorative work in the New Haven Railroad station at New Haven, the Woolworth building in New York, and the Fine Arts building at Oberlin College.

Mr. Wiley has chosen as a subject for the decoration of the seven arches Shakespeare's Seven Ages. The mosaic is executed of *grès flambé*, which is to say that the tesserae are of enameled baked clay and not of glass. This new form of mosaic composition is a product of the Pe-wabic Pottery, conducted by Mary Chase Stratton and Horace James Caulkins in Detroit.

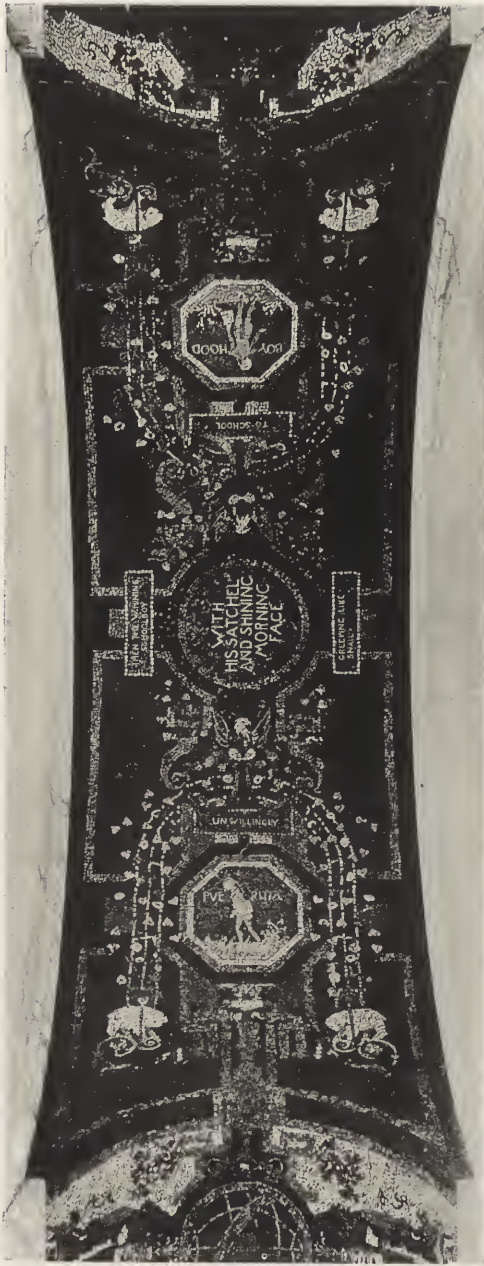
Needless to say the spirit of the decoration is in keeping with that of the general building and is inspired by the best examples of Italian Renaissance. Each arch is divided into four irregular panels, symmetrically connected with garlands and ornamental motifs, while one circular and two octagonal cartouches are set in between the four panels. Each arch portrays one of the Seven Ages, and the appropriate quotation from Shakespeare is lettered in the apex of the arch.

Mr. Wiley has been very happy in the treatment of his theme, and this will contribute not a little to the success of the decoration as a mosaic. It is not enough to assemble a quantity of multi-colored cubes into a design—too many have done it and in so doing have added nothing to the vogue and appreciation of mosaic as a medium of artistic expression. Mr. Wiley, by the rhythm of his design, the balance of every motif introduced, not only with the corresponding motif opposite, but with the scale of the loggia itself, has obtained a harmonious and yet brilliant effect that will do much in convincing architects of the value of pictorial mosaic decoration.

All seven mosaics have now been installed and the effect of the entire decoration may be judged. A great feeling of delicacy emanates from the work, together with a strong sensation that the finest tracery, the most fragile line, is yet fixed for



WESTERN HALF OF PANEL OF "INFANCY"—MOSAIC, DESIGNED BY FREDERICK J. WILEY, IN FRONTAL COLONNADE OF THE DETROIT PUBLIC LIBRARY. CASS GILBERT, ARCHITECT.



MOSAIC DECORATION OF SECOND AND THIRD ARCHES OF COLONNADE OF THE DETROIT PUBLIC LIBRARY.



TWO OF SHAKESPEARE'S SEVEN AGES POR-  
TRAYED IN MOSAIC, IN FRONTAL COLONNADE  
OF THE DETROIT PUBLIC LIBRARY.

all time in imperishable material. The shades blend gradually, yet all the sharpness of outline, requisite in a mosaic as in a tapestry, is retained. Here are sapphire tints that will never fade, and soft yellows that will not turn into browns. The stone of the façade, the masonry of the arch, will grow mellow with age and acquire that "patine" that time gives to cathedrals and marble palaces, but the enamel of the mosaic is impermeable and whatever dust accumulates thereon may be washed off and leave the Seven Ages as resplendent in color as when originally installed.

Only the other day, in 1909, a fourth century mosaic was unearthed in the Basilica of Aquila, erected about 320. It pictures the Old Testament story of Jonah and the whale and the colors are as distinct and vivid as if the work had been done yesterday. What triumph won over the all-destroying power of Time! Have we not mosaic to thank for having brought down to us the outline and coloring of an ancient Greek painting? The Battle of Arbela mosaic, found in 1830, in the House of the Faun in Pompeii is undoubtedly a reproduction in stone of an earlier work of art painted on canvas or wood and long since destroyed. It is a battle scene in which are shown fifteen horsemen, twenty-six warriors on foot and a chariot bearing a figure said by archeologists to be that of Darius.

Think of recovering a mosaic mentioned by Pliny in his "Historia Naturalis": the famous Doves of the Capitol, found in Hadrian's Villa near Tivoli. Undoubtedly, if not the original mosaic executed at Pergamos, it is at least a copy of this famed piece.

The churches of Rome contain many examples of mosaics dating back to the Christian era, and the mosaics of Ravenna are a thousand years old. Cimabue used mosaic to ornament the apse of the Cathedral at Pisa, and his pupil Giotto used it to good advantage in decorating the Basilica in the Vatican. The walls and ceilings of St. Peter's are rich with them.

Why is it that, with such living lessons as the mosaics in Santa Sophia, Constantinople, St. Vitale in Ravenna, St. John Lateran and Santa Maria Maggiore in Rome, St. Mark in Venice, and those in

the Church of Monreale in Sicily, this form of mural decoration should have suffered practical banishment?

The answer may be found in the fact that, beginning with the seventeenth century, the mosaicists of the time applied themselves to the impossible task of reproducing paintings. The mosaics of St. Peter's do not fulfill the true aim of monumental wall decoration, because there is apparent in them a desire to imitate as closely as possible the finish of oil or fresco painting. In art it can be laid down as an axiom that the material dominates the treatment. There are effects obtainable with a brush that cannot be rendered on a loom or with assembled cubes of glass or enameled clay. Conversely, there are effects, and splendid and glorious they are, that mosaic, and mosaic alone, can produce. The domes and spandrels of St. Mark and the Capella Palatina hold spaces of changing lights and glorious mysteries of shadow that bring out the glow of mosaic as a flat surface would not. The apse is the ideal position for the setting of mosaic, as here the illumination is all from below. Even on flat surfaces, however, mosaic, treated as mosaic and not as a "stunt" to imitate fresco, has a decorative value that architects have not begun to realize.

It may well be also that architects have been turned from their purpose of utilizing mosaic by the consideration of time and the difficulty to find competent technicians. The tradition is that it took one hundred and thirty-three artists ten years to do the mosaic in the Church of Monreale. It is also recorded that, nearer the present day, mosaicists were engaged more or less intermittently from 1863 to 1892 in installing the mosaic in the dome of St. Paul's Cathedral, London. This decoration, which is placed within eight spandrels, represents the Four Evangelists, designed by Watts, and the Four Apostles, designed by Alfred Stevens. The apse, sanctuary bay and choir are also decorated with mosaic, and the ensemble constitutes the most pretentious and most important use of pictorial mosaic of the present day.

No doubt it is quicker and easier to decorate the inside of an arch, or any wall



VAULTED MOSAIC DECORATION IN FRONTAL COLONNADE OF THE DETROIT PUBLIC LIBRARY. THE STYLE IS ITALIAN RENAISSANCE.

surface whatever, with fresco than with mosaic; but should this consideration sway the artist who plans a lasting monument, and should not the advantages be weighed as well as the difficulties? That it does not take forever to install a mosaic is demonstrated by what Mr. Gilbert and Mr. Wiley have done in Detroit. Each of the seven panels measures fourteen feet in length by four feet, five in breadth. The work was begun in the Fall of 1919 and finished in November, 1920. The actual time occupied in the execution of the work, i. e., the assembling of the tesserae, their manufacture, the setting in place, in fact all the manual labor involved, was less than seven months.

The technique employed is interesting enough to deserve description.

The first process, naturally, is the mixture and composition and subsequent baking of the clay and its enameling. There is a departure from the processes utilized in the mosaic works of the Vatican or those employed by the Salviati establishment in Venice, and, until its disappearance, by the Imperial Manufacture of Mosaic at St. Petersburg.

The tesserae manufactured in the Minton Pottery for certain figures in the mosaic of the South Kensington Museum, London, come nearer to the product manufactured by the Pewabic Pottery and utilized in the Detroit Public Library mosaic. The frequent reproach addressed to mosaics made of glass tesserae is that they sparkle excessively and that, instead of reproducing high lights, they present a glare when the mosaic is looked at from a certain angle. The best opinion demands that tesserae made of opaque material should be used for the high lights, and the transparent pieces reserved for the shadows.

The degree of baking cannot be stated in calories as it depends on the size of the kiln or furnace. The maximum degree of heat can be obtained in a kiln muffle ten feet by ten feet in one hour which would take one hundred hours to obtain in a kiln twenty feet in diameter. In certain potteries there still persists a tradition regarding the time element, and in these medieval kitchens they point with pride to a red or green which has taken forty

hours to develop. Nor would it be possible to convince these primitive ceramists that the same result could be obtained in forty minutes in a test kiln.

The substance out of which the Pewabic tesserae are made is clay body, both with and without sand or "grog." The tesserae come out of the kiln in three states—unglazed, bright glazed and matt glazed. The coloring is obtained by metallic oxides, carbonates and sulphides; but there are different degrees of oxidation, and copper, for example, will yield not only three primitive colors—yellow, red and blue—but also mixed shades, like orange, green and violet. The metals chiefly employed are gold, silver, copper, manganese, lead, tin, antimony, cobalt, chromium and iron. Carmine, purple and rose colors are obtained by gold; yellow is produced by silver, lead and antimony; blue by cobalt; red by copper; brown by manganese; black by iron; green by copper and chromium, and orange by lead.

The material comes out of the kiln in long sticks or ribbons of various widths, which are then broken up into small cubes about three-eighths of an inch square.

As for the assembling of the tesserae into the finished mosaic, there have been two methods, the one consisting in assembling the small cubes face down over a tracing of the design prepared with glue, and the other by setting them one by one "*in situ*." This last, because it offered so many difficulties, has been practically discarded. The second process, as used in the St. Petersburg *ateliers*, consists in setting the mosaic within a frame about one-half inch deep. In this frame a white surface of plaster is laid out, upon which the composition is sketched piece by piece, it being thus determined with precision just where each tessera is to lie. The plaster, which yields softly to the knife, is cut carefully away, and just as carefully is each square ground, filed and fitted into its proper cell. This is a very slow process, and the Last Supper, made for the St. Isaac Cathedral in St. Petersburg, measuring eighteen feet in length and engaging the labor of five different artists, took four years to finish. The weight of such a work is so great that the enclosing



framework requires the utmost strength and solidity. A mosaic sent to the Paris Exposition of 1867 from the Russian Imperial Mosaic Factory weighed no less than seven tons. When the last of two or three hundred thousand tesserae entering into the composition, as the mosaic of the Last Supper, is in place the whole picture is turned on its face and the plaster cut away from the back. The roots or fangs of the cubes being thus laid bare, Roman or Portland cement is run over the whole surface. A solid back being thus put to the picture, the work is ready for its final installation. During its execution it has been in the nature of an easel picture, and upon being completed it is built into an architectural structure and assumes a monumental character.

The method employed in the Detroit Library mosaics, however, is far in advance of this antiquated procedure. Here the tesserae are glued face up on a working drawing so that the work may be seen and corrected and changes made as it progresses. It is not uncommon for the design to be pasted five or six times before the desired result is obtained. When the mosaic is finished, a second paper is glued on the face and the first paper is sponged off.

The cement into which the mosaic is finally imbedded also plays an important rôle, since upon its durability depends the life of the mosaic itself. The early mosaics were all set in lime cement, which means that the mosaicists of the time had to set the tesserae into a quick-setting substance, rendering correction of shading or design almost impossible. It was not until 1528 that Muziano di Brescia thought to set the tesserae in oil cement, which did not harden for two or three days. Since the sixteenth century practically all pictorial mosaic has been done upon a foundation of oil cement.

As to the number of colors available, it is only necessary to recall that the ateliers

of the Vatican boast twenty-eight thousand gradations. This profusion of shades, however, is not at all necessary to the decorative success of a mosaic; and it is due to the fidelity with which the Vatican mosaicists reproduced every tint and nuance of a fresco or oil original that the mosaics of the Pontifical ateliers owe their ill repute as monumental decorations.

The rôle of mosaic as mural adornment has been much better understood by the French painter and decorator, Louis Edouard Fournier, who designed the frieze for the façade of the Grand Palais in Paris, and who used three tones only against a uniform background of red.

Any attempt to reproduce light and shade, or the delicate chiaroscuro of a canvas, must be doomed to inglorious failure when the medium to be used is mosaic. One of the great qualities of the Detroit Library mosaic is that while it throws off light from the surface quite as forcibly as a fresco, it does not reflect light as when tesserae of burnished surface shine like a multitude of small looking glasses.

The ateliers of St. Petersburg are no more, and the South Kensington shops are closed. In a small way mosaic is being manufactured at the Sèvres factory near Paris and in the Vatican factory in Rome. Here in this country we have few opportunities for utilizing the work of mosaicists. At first, artists in this medium were imported from Italy. Some, in fact, continue their calling here and there whenever the occasion arises or the opportunity presents itself. The Detroit Public Library mosaics, however, were set for the most part by young American girls who have engaged in this work not as if practicing a trade but in the spirit of artists following a career. Under the direction of Mr. Wiley and the supervision of Mrs. Stratton they have achieved a masterpiece.



DOORWAY—WYCK HOUSE,  
GERMANTOWN, 1690.

# The EARLY ARCHITECTURE of PENNSYLVANIA

PART V - WITH PHOTOS by FRANK COUSINS  
HORACE MACFARLAND & OTHERS



By A. LAWRENCE KOCHER

**A** CLASSIFICATION of the doorway may be made on the basis of form or by a grouping of periods. An arrangement into periods would appear to be unprofitable because, at best, the divisions must be arbitrary, since the colony of Penn was not entirely settled at one time and the "peculiar turn" assumed by the style in one locality at a given time did not hold true in another region. On the other hand, by the division into forms we can recognize the organic growth of a feature from the rude beginnings of the first home-builders to the graceful and polished types of the late eighteenth century. We may thus observe the development which at first followed the lines of utility and later swung in the direction of adornment.

The changes which crept into the architectural style are most readily perceived in the physical aspect of the doorway, so that in this single feature we see mirrored the gradual transformation of the architectural style. It will be found that the examples described belong to a period that may be almost included within a single century—a flourishing age in which domestic architecture attained a fine and native expression in spite of bonds of kinship that linked the new world to the old.

Among the motives for which the early craftsmen evinced a special preference may be mentioned the simple framed doorway, the pent-roof hood, the shell-shaped over-door, the pediment surmounting an arched opening with supporting pilasters and the flat entablature upheld by attached supports.

The doorway in its simplest terms consisted of a framed opening with no "trim" except the molds of the doorcase which were set in the thickness of a stone or brick wall. It was the earliest in point of time and the most consistent in con-

struction. Wyck, in Germantown, has such an entry. Here the absence of any studied attempt at adornment indicates plainly enough that utility was a first consideration. There is no ambitious striving after pretense or display. The austere simplicity recalls the pioneer era with the prevailing need of protection and seclusion. Possibly because of the restraint of outward form the doorway presents the appearance of a side-door or one with a subordinate purpose.

The space above the door was deemed essential to lighting the hall and was at first treated with four panes or "quarrels" of glass. Occasionally the place of these panes was filled by "bulls-eyes" of heavy greenish glass. The double or "Dutch" door is believed to be a legacy left by the Dutch settlers on the Delaware. It operated with the upper part swinging independent of the lower and was a cherished and fondly praised device. "Quaint it was," writes Townsend Ward, referring to the ingenious feature, "quaint it was, but how appropriate for a single-minded, hearty people, among whom no depredation was ever known until there came among them the evil days of single doors and locks and bolts. . . . While the lower half of the door was closed no quadruped could enter the dwelling house, but the refreshing air of heaven could, and the rest that it afforded a leisure-loving people was most agreeable."

Another entry, in vogue early in the century, differs from Wyck in having a hood overhead for shelter and adjacent seats for convenience. The porch-doorway of the Johnson house is an instance of the step in advance. In the Johnson example the characteristic pent-roof is made to break boldly forward and assume the shape of an unsupported pediment. A

shelter as well as an air of importance is effected by the arrangement. The overhanging pediment, here illustrated, produces upon the mind an impending sense of heaviness and insecurity. The effect appears the less happy on account

for a resting place and point of vantage in viewing the "passers-by." The pent-roof porch was a part of the social system of the Pennsylvania forefathers and revives the days of precise manners and picturesque dress, when everybody



MAIN ENTRANCE—JOHNSON HOUSE, 6306 GERMANTOWN ROAD, GERMANTOWN, SHOWING CHARACTERISTIC HOOD AND "STOEP."

of an absence of height to the porch, which in early days was elevated several feet above the street pavement and was approached by steps. There is, withal, a "homely" and open-armed, hospitable quality which compensates in a measure for the untrained and unsophisticated air of the grouping.

The seats flanking the entrance were familiarly termed the "stoep." They af-

knew everybody else; when stiffened petticoats, quilted hoods, knee-breeches and powdered wigs were the fashion of the day. "Philadelphia," says Watson in his "Annals," "had a porch to every house door, where it was universally common for the inhabitants to make their occasional sitting beneath their pent-houses.

'Our fathers knew the value of a screen From sultry sun or patt'ring rain.'

"Such an easy access to the residents as they afforded made the families much more social than now, and gave also a ready chance to strangers to see the faces of our pretty ladies."

The peat-roof pediment was destined

ter protection of the entrance. The hood above was not supported by brackets and it is obvious that none were intended. This is rather curious, since the shell-over-door, prevalent in England in the time of Queen Anne and the early



DOORWAY—WASHINGTON'S HEADQUARTERS, VALLEY FORGE, 1742-52.

to undergo a change, for from it was developed the graceful, shell-shaped door-hood, as on the building familiarly known as "Washington's Headquarters" at Valley Forge. This constitutes one of the most charming arrangements to be found in all of Pennsylvania. It will be noted that the door proper has not been altered from the two preceding examples, but that attention was being centered upon the bet-

ter protection of the entrance. The hood above was not supported by brackets and it is obvious that the idea was not brought from overseas, but emanated from the pent-roof hood.

The cove-shaped, under side of the hood is plain and finished with plaster. If modeled plaster had been used within the cove and if carved wooden brackets had been adopted to uphold the over-

hang, the result would have been without purpose and out of character with the rough stone setting.

Wood-carving, in point of fact, was not favored in the treatment of exterior details in Pennsylvania. There was none

ear molds and diminutive triglyphs planted upon a frieze which is not separated from the architrave by the usual taenia. The molded members are decidedly lighter, greater in number and more pleasing in scale than heretofore.



DOORWAY IN QUAKERTOWN, PA.

of the delicate ornamentation in America which gave distinction to the Georgian doorways of the British Isles. Such ornament as was used was "carpenter-made," often lacked grace and buoyancy, and resulted in an austere and, at times, a provincial aspect.

With the doorway at Quakertown we enter on a variation in design which consisted of a pediment surmounting a framed door, simply "trimmed" with dog-

Doorways with pediments placed over pilasters or engaged columns constitute another group in frequent use during the eighteenth century. The example at 5011 Main Street, Germantown, may be considered typical. This was a generally approved composition and one that is most often associated with the Pennsylvania style. By being oft repeated with minor variations, a degree of perfection and refinement was discovered which was not

approached by the more classical doorways of formal mansions and manor-houses patterned after familiar British models. The delicacy of moldings, the scantiness of projection and the chisel ornament are in proper keeping with the

reveal. The original purpose of the projection to serve as a shelter has gradually lapsed into a mere excuse for adornment, "although surely not even the strictest utilitarian, with such an example before him, would think that this degeneration



ENTRANCE AT 5011 MAIN STREET, GERMANTOWN.

nature and limitations of wood. In the many repetitions of this form there is a systematic regularity and a strict adherence to established practice which demonstrates a dependence upon handbooks used in the craft-shops and the current practice of builders who imitated the success of a neighbor.

It is interesting to note how the boldly projecting hood of the earlier years has changed by slow degrees to one of scant

of purpose was without its advantages."

The doorway at 402 Wood Street, Philadelphia, in which engaged columns appear in place of pilasters, is to be added to this same group. Columns when used on the exterior seem always to have been attached to the wall. The porch-doorway with free-standing columns, so much used elsewhere, is here strangely absent and convinces one of the deliberate choosing of motives without reveal.

The flat over-door placed above an arch is another well-known type. This treatment is illustrated by the doorway at York. Finely-fluted, attached columns are placed beneath an architrave which is paneled and crowned by a thin molded

the use of delicately wrought lead bars, and the result was praiseworthy because light flowing lines were favored which were in keeping with the refined spirit of the work of the late eighteenth century.

There are in Germantown a surprising



DOORWAY AT 402 WOOD STREET, PHILADELPHIA.

cornice. Many of these moldings have undercutting and sharp arrises to produce a crispness of shadow. The heavily framed door panels contrast unpleasantly with the surrounding woodwork. An effective part of the design consists of the lead patterning of the fan-light with its graceful rosettes, husks and swinging pendants. On account of the growing influence of the brothers Adam, the wood muntins were to be partly superseded by

number of specimens with the unbroken entablature flanked by columns that are almost detached. The doorway of the Wister House coincides with the York doorway and has an added attraction achieved by the enriched band at the base of the cornice, and the chisel cutting beneath the frieze and on the arch moldings. With this arrangement, the column extends above the crown of the arch so that a greater height is effected—perhaps



a necessary accompaniment to the increased ceiling heights of the times. To the group should be added the chaste entrance at 6105 Main Street.

We perceive that the general trend of design was on new and very different

as practiced in England during the eighteenth century. This particular example makes use of the Roman Doric order with an entablature set back between the columns and the triglyphs spaced as if by rule. The aspect of so



MAIN ENTRANCE AT 123 MARKET STREET, YORK, PA.

lines. With the growing knowledge of Georgian prototypes the character of the doorway was becoming more elegant, more scholarly.

The Bensell doorway on High Street, Germantown, marks the advancing trend in Pennsylvania design. It is the Georgian or Roman phase and is characterized by a close adherence to classical exemplars. There is a correctness in proportion and detail which follows the style

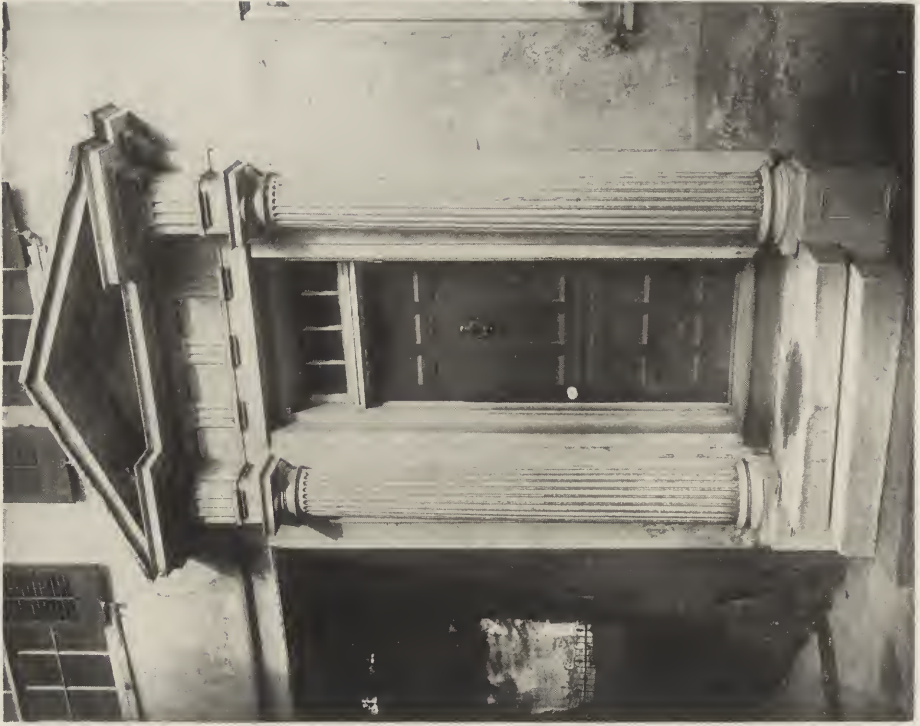
academical a design is rather incongruous on an informal dwelling, for it lacks the freedom and spirit of its setting. It would appear more at home on a semi-public building and a certain kind of formal residence. We can readily appreciate that the orders in themselves are heavy and entailed with formulæ expressed in terms of stone. To relate these orders to domestic architecture or even to churches or town halls requires some-



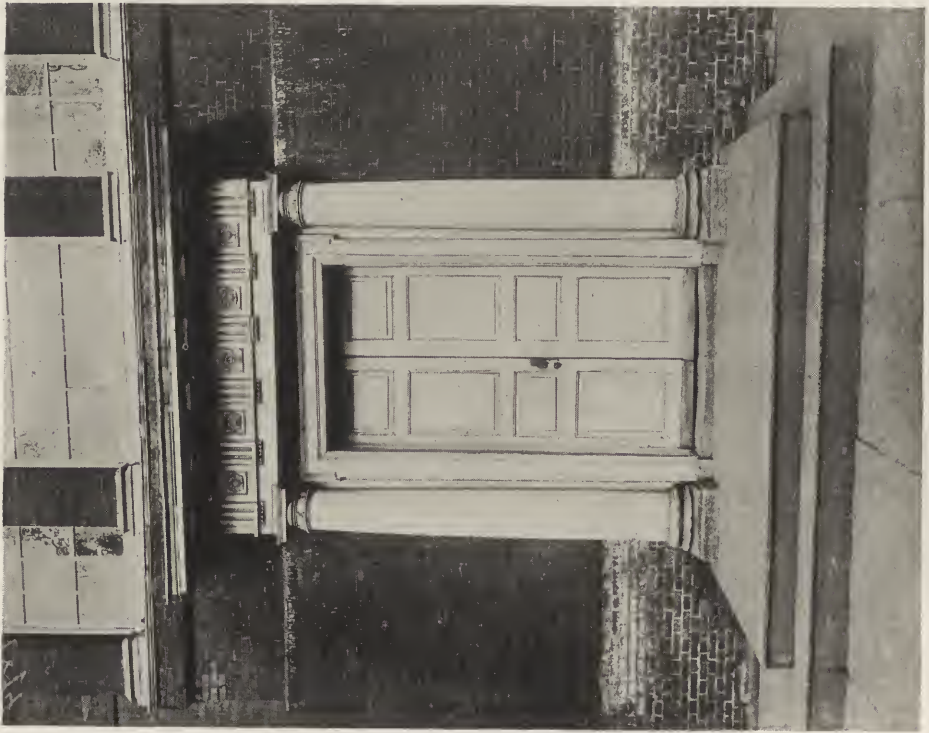
MAIN ENTRANCE—WISTER  
HOUSE, GERMANTOWN, 1744.



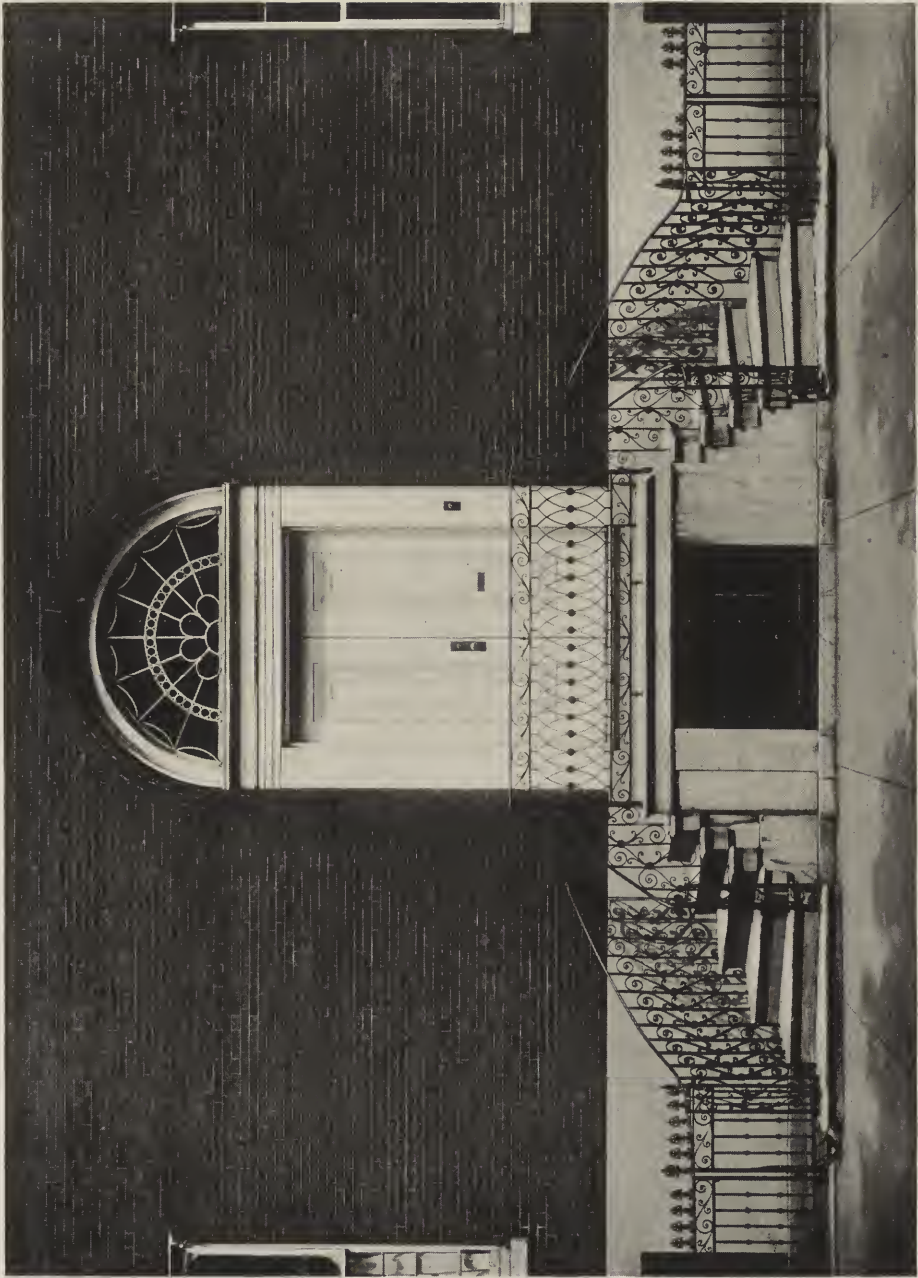
MAIN ENTRANCE AT 6105  
MAIN STREET, GERMANTOWN



RENSELL DOORWAY, HIGH  
STREET, GERMANTOWN



MAIN ENTRANCE—STATE HOUSE  
TOWER, PHILADELPHIA, 1752.



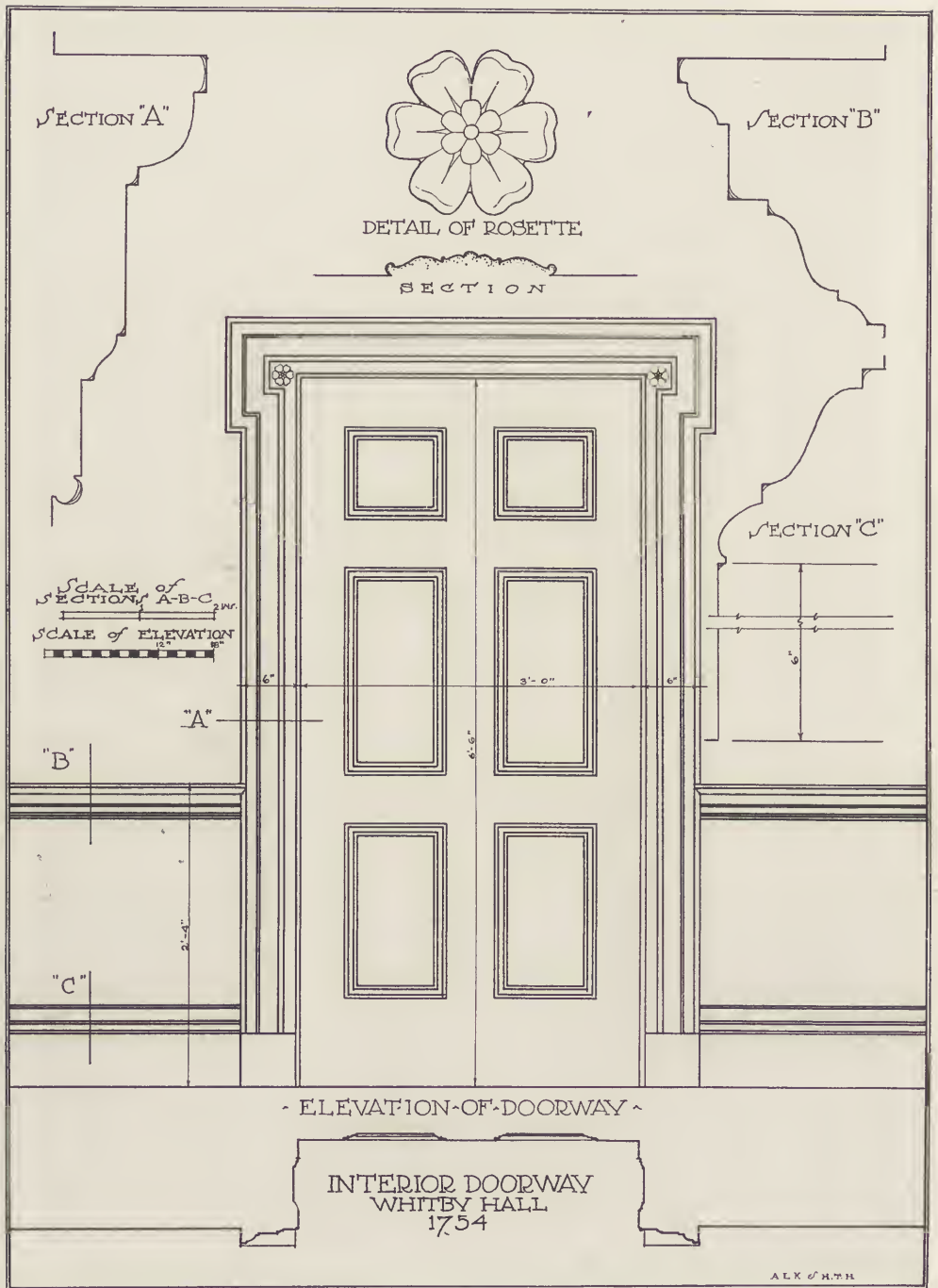
DOORWAY AT EIGHTH AND SPRUCE STREETS,  
PHILADELPHIA. EARLY NINETEENTH CENTURY.



DOORWAY ON FRONT  
STREET, HARRISBURG, PA.



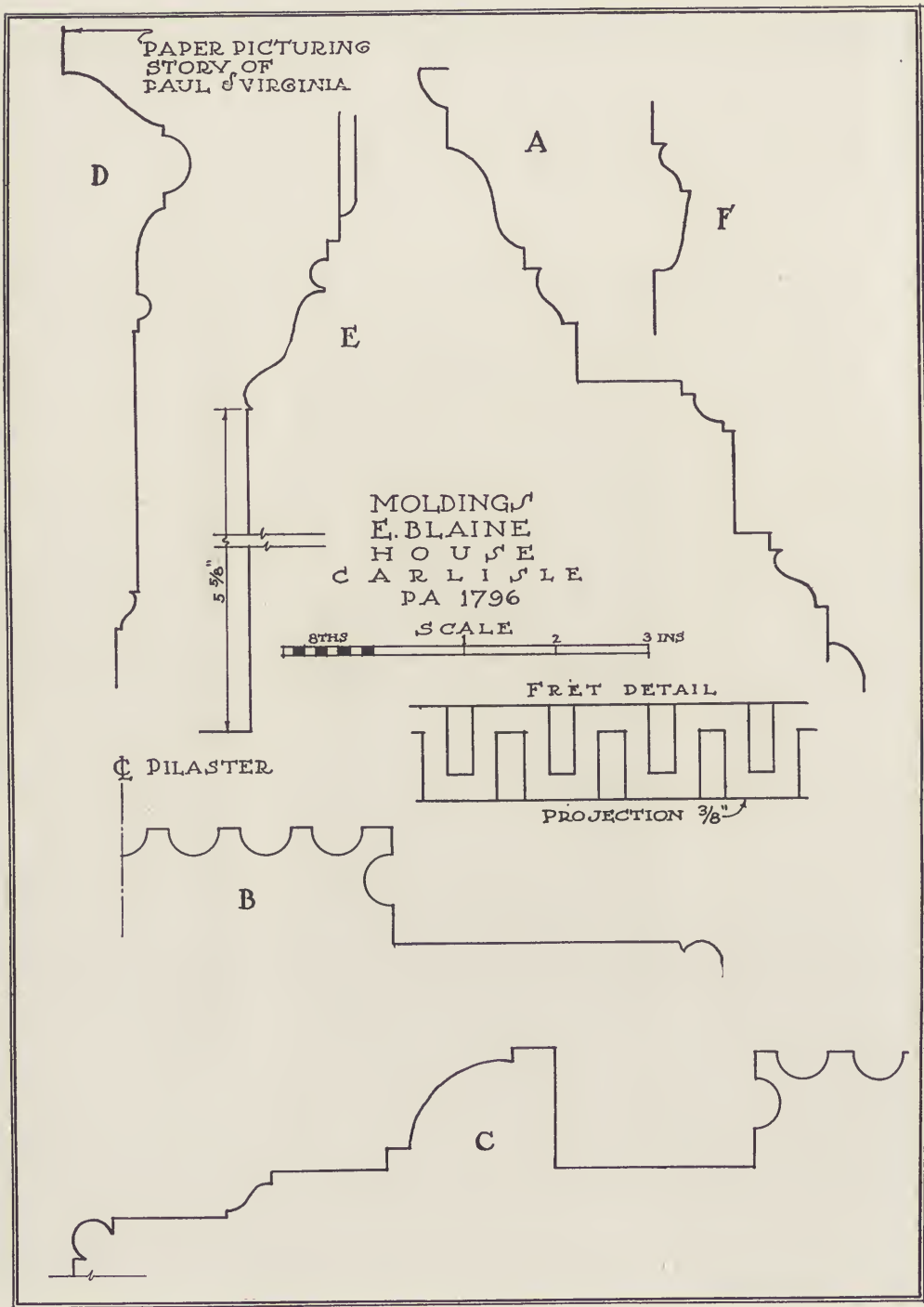
DOORWAY IN HALL—HOPE  
LODGE, WHITE MARSH, PA. 1723.

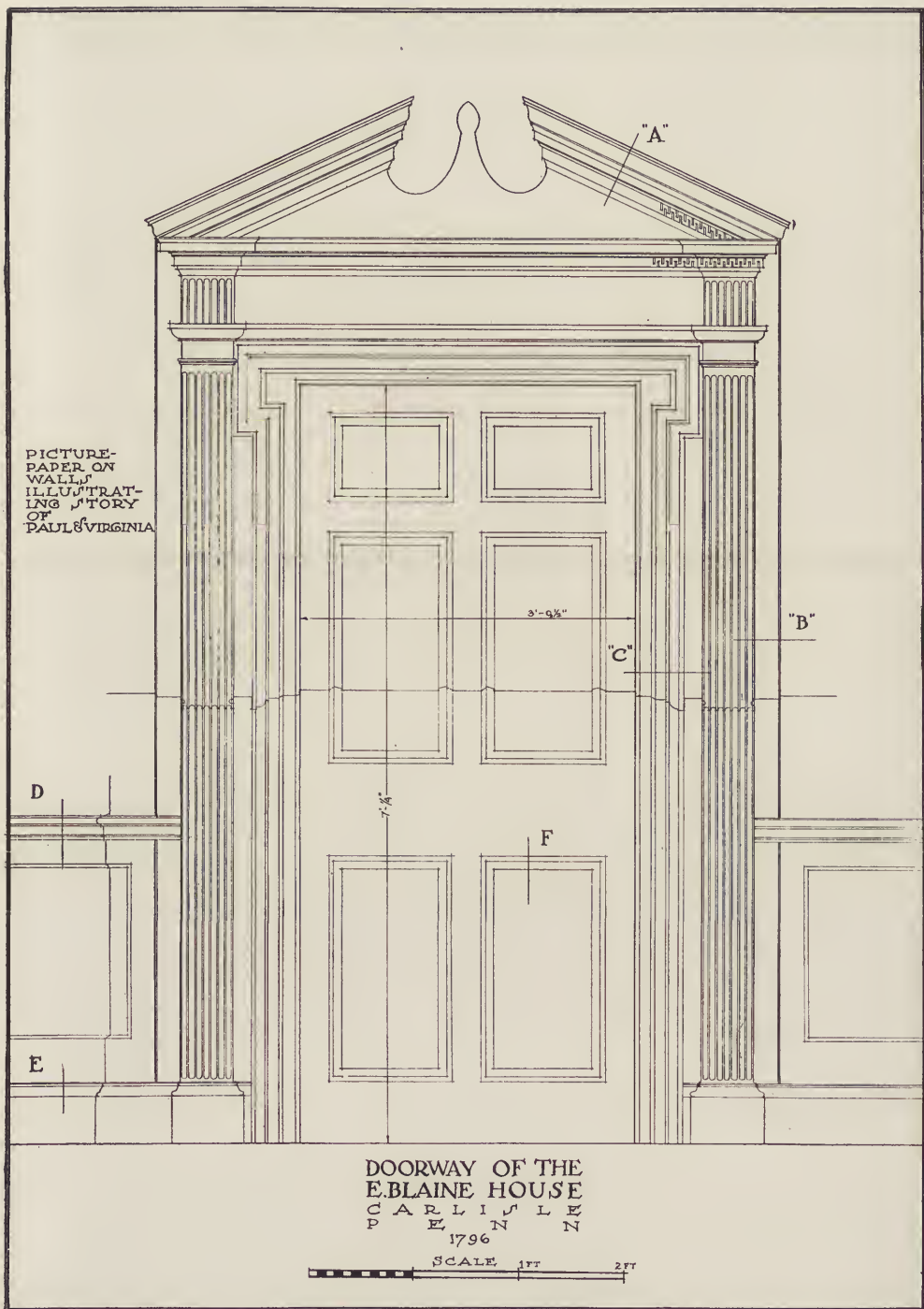






INTERIOR DOORWAY—WHITBY  
HALL, PHILADELPHIA, 1754.







INTERIOR DOORWAY—EPHRAIM  
BLAINE HOUSE, CARLISLE, PA., 1796.



INTERIOR DOOR, FROM PHILADELPHIA,  
NOW IN THE COLLECTION OF THE MET-  
ROPOLITAN MUSEUM OF ART, SHOW-  
ING INFLUENCE OF THE ADAM STYLE.

thing besides mere attention to details.

More appropriate is the entry-way in the tower of the Old State House in Philadelphia, which demands the very dignity that this style produces.

No date can be set for the ending of one phase of architectural invention and the advent of another. There is an appreciable impoverishment of design after the dawn of the nineteenth century, with here and there an outstanding exception to the rule.

The doorway on the corner of Eighth and Spruce Streets, Philadelphia, comes to us from Greek Revival times. This fashion was not without its appeal. What a dignified mien this doorway presents with its ample field of brickwork on either side! How easily this effect could have been marred by a closer spacing of windows. The Harrisburg example is contemporaneous and is a tribute to the good taste that lingered on into the new century.

The interior doorway naturally presents fewer modifications than we have found to be the case with the exterior. Its treatment was more a part of the disposition of the room and was often an integral part of wainscoting, paneling and cornice. This unity is most noticeable in early work when the cabinet-maker's task included the adornment as well as the construction of inner walls. The hall doorway of Hope Lodge illustrates this early handling. In the Ephraim Blaine House in Carlisle, we find even at a late date (1796) an elaboration of interior doors that shows the continuance of carpenter-made interiors in remote, inland districts. As mantels and other woodwork became the product of special craftsmen, both the mantel and the doorway contracted to an insignificant size and importance.

The door opening at Whitby Hall is typical of the middle of the century and is simply but effectively framed by a molded architrave. The influence of the Adam brothers is found in a growing delicacy and refinement of parts and decoration, particularly in the use that

was made of composition ornament applied to the frieze and moldings. An interesting example of this type is shown in the Philadelphia specimen now in the collection of the Metropolitan Museum.

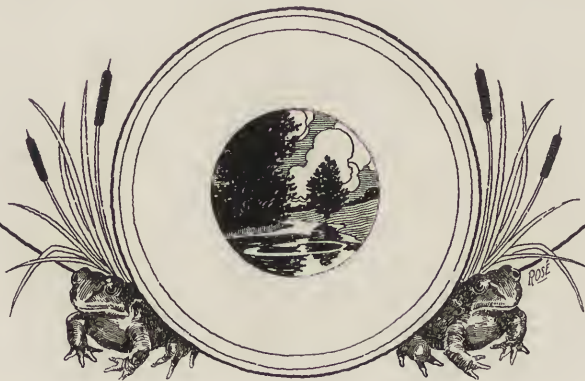
The paneling of doors changed but slightly with the mutations of doorway arrangement. Doors with two panels in width and three in height were most common. The raised panel bordered by a narrow mold was adopted in almost all instances, and conformed in height with the paneling on the door jambs. Some doors were treated with a solid back, which was built up of two or three thicknesses of wood and held together with square-headed nails. The double doors differed from the single form in having a wider rail where the upper and lower parts meet. The thickness of doors varied from approximately one and three-quarter inches to two and one-quarter inches.

For more than a century, the doorway played an important role in the history of the domestic architecture of Pennsylvania. It must not be expected that within so short a time a continuous and unbroken succession of forms could be brought to light. Architecture is too closely allied to various utilitarian needs of man, to his changes of fancy, and is too much a part of the prevailing social and industrial system to offer a complete catalogue of ordered progress. Our interest has been focused upon the specimens which were an inseparable part of the Pennsylvania style—such examples as may be chosen to represent the kinds of design within this particular field. The doorway has mirrored the changes of architectural fashion and the modifications of taste which occurred within the century.

Arising from the praiseworthy attempts of the pioneers, and later succeeded by the free interpretations of classical designs, the style was finally brought to its conclusion in the more orderly architecture inspired by the English versions of Palladio and Vignola, and in the cold and uninspiring Greek monuments.

# Water in the Garden

— A —  
Portfolio of Photographs  
by Antoinette Perrett





POOL ON LOWER TERRACE AT "ARDEN HOUSE," THE MOUNTAIN RESIDENCE OF MRS. E. H. HARRIMAN, ARDEN, N. J., WITH THREE FIGURES BY HER SON-IN-LAW, CHARLES CARY RUMSEY, THE SCULPTOR.





WILLOW POND MADE BY J. J. LEVISON, LAND-SCAPE FORESTER, ON THE ESTATE OF GEORGE J. WHELAN, ESQ., OLD WESTBURY, L. I. THE POND IS IN FULL VIEW OF THE HOUSE.



RIVER VIEW FROM THE DINING ROOM AT  
"BRICK HOUSE," THE SUMMER HOME OF  
ANDREW V. STOUT, ESQ., RED BANK, N. J.



POOL WITH TWO FROGS IN GARDEN AT  
"AVALON," THE COUNTRY ESTATE OF ROB-  
ERT S. BREWSTER, ESQ., MT. KISCO,  
N. Y. DELANO & ALDRICH, ARCHITECTS.



POND AT END OF WOODED LAWN ON THE  
ESTATE OF CORNELIUS BLISS, JR., ESQ.  
J. J. LEVISON, LANDSCAPE FORESTER.



UPPER BASIN IN THE GARDEN OF HERBERT STRAUS, ESQ., RED BANK, N. J. MARTHA BROOKES HUTCHESON, LANDSCAPE ARCHITECT, F. BURRALL HOFFMAN, JR., ARCHITECT.

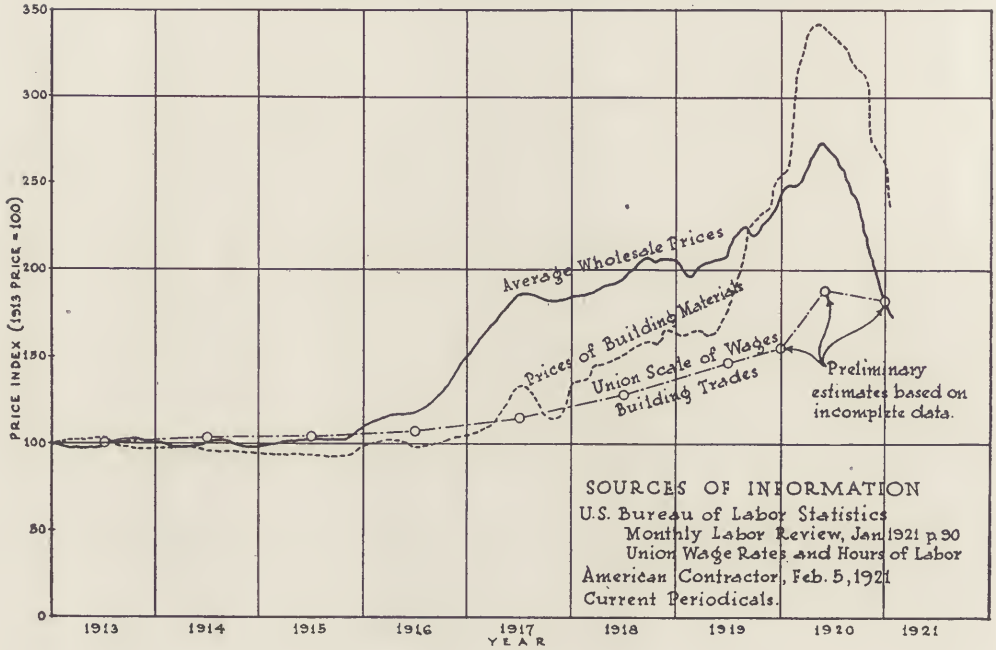


POOL WITH OLD TERRA-COTTA VASE IN  
ROSE GARDEN OF MRS. STEPHEN J.  
LEONARD, EASTHAMPTON, L. I. CHARLES  
N. LOWRIE, LANDSCAPE ARCHITECT.



ROUND LILY POOL IN WEST HUDSON  
PARK, KEARNY, N. J. CHARLES  
N. LOWRIE, LANDSCAPE ARCHITECT.

RELATIVE CHANGES SINCE 1913 IN THE  
PRICES OF  
LABOR, BUILDING MATERIALS, AND OTHER COMMODITIES AT WHOLESALE





# — THE BUILDING PROSPECT —

*A Study of the Major Economic Factors  
Bearing on Present & Future Costs, Future  
Income and the Demand for Buildings*

By

WILLFORD I. KING, Ph.D.

## *PART I — Building Costs —*

THE man who invests his money in a building has on his hands a different proposition from that of one who buys sugar, steel or shares in a corporation. Purchases of the latter class can, as a rule, be converted into cash whenever one desires, but a building cannot be disposed of at a reasonable price on short notice. An investment in a building resembles more the purchase of some long-time bond for which there is only a very inactive market. Before risking his funds in a purchase of this type, it behooves the investor, therefore, to consider carefully all the possibilities of the situation, for it may be difficult to "switch" investments in case he changes his mind.

The different factors that logically determine the wisdom or folly of entering into a building contract may be grouped under three heads, as follows:

1. What would it cost to build today?
2. What changes in costs may be expected in the future?
3. What net returns will the building yield after it is finished?

The profitableness of any construction enterprise evidently lies in the excess of returns over costs, and this statement applies just as much to a residence or other edifice which one is building for one's own use as to a structure which is intended for sale or lease to others. The only difference is that, in figuring returns on a building utilized by the owner, it is necessary to estimate the rental value, and this, of course, is a less accurate process than that of recording actual amounts received. Nevertheless, it is only by making such estimates that one can gain any inkling of whether it is more profitable to build for one's own use or to lease a building from some other person.

Despite the fact that all builders alike

must keep in mind the principles just mentioned, it is nevertheless a fact that, in certain respects, builders of different types must use different figures in making their calculations. One class of builders, for example, build with the idea of selling promptly; another class expect to retain their buildings as more or less permanent investments. The first group may be likened to the traders on the stock market who buy for a "turn." The second group, on the other hand, resemble "long-pull" operators in securities, who hope to profit by excess of dividends over interest charges and by long-time swings in the market. The short-term operators do not care whether stocks are high or low, but they like an active market. Similarly, the builder who expects to sell his house by the time it is completed cares relatively little whether building costs are high or low if the market is active enough to make it probable that he can dispose of his building promptly at a good margin of profit. It is not to him a matter of great moment whether the man to whom he sells makes a good or poor investment, as long as the deal has been closed and everything has been placed upon a basis of contracts in dollars and cents with which as security the builder may proceed to further construction.

There is, it is true, always the danger present in a falling market that he will be caught with unsold buildings on hand, and thus sustain a heavy loss; but if his sales are consummated rapidly enough and his margins of profit are sufficiently large, he may be willing to run the risk of such a contingency and continue to build even when costs are far above normal.

For the man who engages in building as a long-time investment, however, it is

rarely wise to begin construction except when the expense of building is near bottom. Temporary fluctuations in the prices of building materials and labor may affect very greatly indeed the total costs of construction, but the total income from the building will be practically the same whether it is built when costs are at the top or at the bottom of the wave. It is a commonplace that the time for the long-pull investor to buy stocks is when the market is at the bottom of a cycle trough; it is just as true that the time to erect buildings for investment purposes is when material and labor costs are at the bottom of the wave.

The gain in profit from building at such a time is even greater than is indicated by the nominal differences in the prices of labor and materials. When the market is slow, the buyer normally has a wide range in the choice of materials and he is likely to receive unusually good service from the railways and from dealers. In dull times, also, since there is much unemployment the laborers are more anxious to retain their jobs; hence, they are likely to do more work in the same number of hours than when work can be had for the asking. Furthermore, when business is slack, interest rates tend to be lower than when industry is booming; hence, loans can be negotiated to better advantage. Everything militates, therefore, in favor of the man who starts his residence, his office building or his factory during the trough of the cycle, and every man who begins such an undertaking when the cycle wave is nearing its crest does so only at risk of heavy loss. In the latter period, the canny investor can well afford to keep his money in a reliable bank and simply bide his time. He may be assured that any shrinkage in current income due to the low return received on his money during such periods will be a mere bagatelle compared to the loss which he will incur by investing when costs are at the top rather than at the bottom.

If, then, the right time to build depends primarily upon the existing stage of the business cycle, it is to the interest of every prospective builder to study with care

all the available indicators in order to determine as closely as possible what phase the cycle is in at the given date. He is likely to benefit far more by such a study than by reading the abundant advice so freely given by many of the space writers in the financial pages of current periodicals, for if he depends upon these sources for guidance, he too frequently finds himself lost in a maze of contradictory ideas.

The average daily newspaper will show that there is a criminal combination of builders, labor unions and material manufacturers, which is holding up prices artificially and thus preventing the building of the houses absolutely needed to shelter the growing population. Stiff prison sentences for all the conspirators are advised as appropriate remedial measures.

A paper devoted to the interests of contractors will, on the other hand, show the absolute innocence of men engaged in this line of business and will point out that they are wholly at the mercy of the labor unions and of the material makers, who pretend that the war is still on and continue to hold their products at ridiculous prices. The inference is that both these classes of "profiteers" cannot be condemned too vigorously by the public who are suffering from lack of housing.

On turning to the columns of a labor union sheet, however, one discovers that employers are engaged in a conspiracy to rob the workers of all that they have gained by years of striving; that only recently have laborers in the building trade even approached a decent "standard of living" and that they have no intention of allowing themselves to be thrust back into poverty.

An organ devoted to the interests of the manufacturers of building materials will explain the impossibility of reducing prices further, showing that already the selling figures have fallen below costs of production and that the failure of builders to continue construction work is little short of criminal, for it is bringing ruin upon the whole construction industry.

The fact is that this game of "passing the buck," while partly based on honest beliefs, is not conducive to clear thinking on the part of any of the persons engaged

therein. Its success all depends upon the widespread prevalence of two pernicious fallacies: first, the idea that there exists a certain "fair" or "just" price which represents the "intrinsic" worth of an article or service; second, that values are, or at least ought to be, based upon costs of production.

The idea of a "fair" price has haunted the minds of would-be reformers ever since the days of Ancient Greece and thousands of earnest thinkers have sought to obtain a definition therefor which might be applied in the regulation of prices by governmental authority. Unfortunately, twenty centuries of diligent effort have as yet failed to produce the desired formula. As in the case of the medieval alchemists, the searchers always seem to be on the verge of success, only to be halted at last by some apparently trivial but nevertheless insuperable obstacle. Nothing daunted, however, by past failures, our administrators vigorously re-attacked the problem during the recent war. The chief spur to their activities was the success attained by State commissions in the regulation of rates charged by monopolies, such as railways and public utilities. The attempt was made to carry over this same method into the field of articles produced under competitive conditions. Prices of all sorts were fixed with great alacrity and with surprising results in many instances. Sugar soon developed a remarkable scarcity; the coal shortage became so acute that factories were compelled to close; and the wheat price fixed by the Government, while it failed in its fundamental purpose of stimulating production, was highly efficacious in adding to the Treasury deficit.

The attempt to set fair prices, therefore, produced decided effects of many kinds, but the one result which we unfortunately look for in vain is the development of any rule by which a court or commission can determine when the price in a competitive market is "fair." They can turn back to the prices of yesterday, but why are such prices better criteria than the prices of today? What gauge, then, shall we use by which to measure fairness?

Economists have long since given up the attempt and have classed the searcher for the definition of a "fair" price along with the man who spends his energies in building perpetual motion machines. The innate feeling of the average citizen is, however, that the "fair" price is a very definite thing. A little inquiry concerning his views will soon show that "fair" prices for the things he buys are always lower than those existing, while "fair" prices for the products which he sells are usually materially higher than the current market rates.

The man who thinks carefully and possesses a sense of humor is likely to see the ridiculous side of this individualistic view of the matter. He will explain carefully that "fair" prices must be based upon costs of production. In so doing, he brings forth the other fallacy, not so ancient as that of a "fair" price, but even more widespread in its acceptance. This fallacy has been blown to pieces a thousand times, but our writers on "practical" economics and finance inevitably gather up the fragments and piece them together into a new idol, which they worship with undiminished fidelity. This false god has the unique distinction of numbering among its devotees pseudo-scientists of the most widely divergent schools of thought, ranging from ultra-conservative captains of industry to fire-eating followers of Karl Marx. It is an unfortunate fact, however, that as long as this form of worship is continued, there is no hope whatever of developing any clear comprehension of the true laws of price.

Like most fallacies, this one is based upon certain degree of truth. Cost of production is undoubtedly a very decided factor in determining price, but it acts in a manner much different from that so commonly ascribed to it. It is easy enough to see that the present price of cotton or sugar is distinctly below what it costs many of the producers to put the commodity on the market. The price is evidently fixed by the existing supply and demand, and costs have been important in this connection only in so far as they affect the opinions of prospective purchasers or sellers as to probable future production and hence future market sup-

plies. The fact cannot be emphasized too strongly that actual competitive market prices are directly determined entirely by present supplies and needs and by what people think is going to happen, and never by records of what has happened.

The cotton farmers tell us that the present crop cost them thirty cents a pound to grow. Suppose that, on the cost of production basis, a "fair" price commission fixed the price at thirty-five cents in order to allow of a reasonable margin of profit. Their decree might be enforced, but where could the buyers be found? It is only at fifteen cents that there are purchasers enough to take the crop off the market. To fix the price at thirty-five cents would merely mean that a very large fraction of the crop would remain unsold. The weakness of the cost of production theory, therefore, lies in the fact that it will not work in practice.

The sane prospective builder is, then, the man who clears his brain of all such discarded theories as those of "fair" prices, whether based on cost of production or otherwise; who ceases to make himself ridiculous by preaching to his neighbors about the prices that they *ought* to charge or pay, and who accepts prices as they exist, and determines to study them with a view of using the knowledge thus gained to his own advantage. His policy will be to buy when and where he can get things cheapest and to sell when and where he can obtain the best prices for his products. He will expect others to follow the same course and will therefore cease to worry about imaginary "profiteering." Any other course necessarily bespeaks either ignorance or pure cant.

Since, then, it is existing and prospective prices under conditions as they are, and not as some one thinks they ought to be, with which the sensible business man is concerned, the logical procedure is evidently to study the facts in order to determine upon a sound course of action. In a later chapter we hope to consider the outlook for building returns. In this article, we can only deal with present and prospective construction costs.

As every one admits, these costs, while they have fallen sharply, are still very high as compared to pre-war times. The

question at issue, however, is whether or not present values are destined to undergo a heavy decline or whether, because of the existing tremendous currency inflation and the building shortage, which, according to most authorities, is very considerable, normal values have increased to the point where material and labor prices are at present located.

In the absence of an exhaustive statistical study dealing with all the factors involved, it is impossible to answer definitely the question suggested. It is, however, possible to compare a few of the figures along this line, and by so doing it is not impossible that we may be able to increase the accuracy of our judgment in this regard.

The United States Bureau of Labor Statistics, in its *Monthly Labor Review*, presents by far the best index of average wholesale prices that is available. It also gives at the same time a comparable index of the price of building materials. This index has been criticised on the ground that it represents too few commodities, but, on the whole, its trend is probably fairly representative. The same Bureau also publishes an annual bulletin showing the changes in union rates of wages in numerous trades, including those in the construction industry.

Mr. E. J. Brunner, associate editor of the *American Contractor*, has recently presented in that magazine some valuable studies of the course of prices of materials used in construction, and in the February 5th issue of the *American Contractor*, there appears an interesting comparison by Gerhardt F. Meyne of both material and labor prices at Chicago for the years since 1906.

A glance at the accompanying chart makes it evident that, while the break in material prices has been great, nevertheless the index is not yet as low as that representing commodities in general. The fall in the general index during the last few months has been startling. There are reasons for believing that the most radical part of this decline is past, but, as was pointed out in the January issue of this magazine, it is improbable that the bottom of the trough will be reached for several weeks or months yet. Material prices

are governed by the same forces that control the market in general; hence, it is scarcely likely that the downward movement has run its course. It is possible, indeed, that the decline in this field may bring the index down to that of the wholesale average. On the other hand, it may happen that an exceptional demand for buildings will prevent the decline during this cycle from becoming comparable with what has occurred in the case of most other commodities. Wages apparently rose much less than other prices, and hence are less likely to fall greatly, especially since the monopolistic power of the unions is a stabilizing force of such strength that it may succeed in maintaining wage rates at a relatively high level.

The extent of the further decline in construction costs which may be expected is problematical, but there is relatively little doubt that the movement in the immediate future will be downward, or at least stationary, rather than in an upward direction. Under these circumstances, the man who is intending to build for investment, need not exercise undue haste because of fear lest he miss the favorable market. On the other hand, there is a

possibility of delaying too long, for it is not unlikely that prices will reach bottom at a date not later than the coming autumn and that 1922 may be a year of distinctly rising values. The builder who waits, therefore, for costs to decline to pre-war levels may easily meet with disappointment.

The points that should be kept in mind are that prices are still on their way down into a very deep trough and that the bottom has not yet been quite reached; that the next wave is almost certain to follow within the next two years, but that no way has yet been devised for telling whether it is to be high or low; and that, under the existing status of our banking and monetary system, there is no probability that the normal price level will soon readjust itself to anything like the pre-war basis. If such a readjustment is accomplished at all, it is likely to be the work of a decade rather than that of a year or two. The builder who takes into consideration these fundamental factors bearing on costs should be in a position to make better use of his resources than is he who bases his actions wholly upon conditions prevailing at the moment.



DETAIL OF FIREPLACE IN GIULIO ROMANO ROOM — VILLA MADAMA, ROME.

The  
VILLA MADAMA ROME

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*With Plan Restored by R. M. Kennedy  
from the Original Drawings*

*By Harold Donaldson Eberlein*

PART II ~ *The Interior*

WITHIN the villa there is no need to discuss the Giovanni da Udine decorations of the loggia, as they have had so much attention elsewhere (*v. Architectural Record*, December, 1919); but some note should be made of the Giulio Romano frescoes in the large room called by his name. The deep frieze is rich in color and abounding in a wealth of graceful design with winged figures, *putti*, and exuberant festoons of fruit and flowers. The treatment of the coved ceiling is not less rich in conception, but is in marked and pleasing contrast by reason of its more severely restrained and rather Pompeian character. The marble fireplace in this room is interesting more for its scale (a man can stand upright within the opening) and for its whimsical oddity than for any inherent grace of design.

In the smaller room, next but one to the Giulio Romano room, the fireplace, though heavy in scale, is possessed of no little beauty and refinement. The frieze in this room also presents a delightful bit of vigorous and lively Renaissance design, full of inspiration. These rooms and their decorations are less important, in a way, than the Giovanni da Udine loggia, but they possess very substantial merit and should not be overlooked.

One feels crushed by the prodigious scale of the Villa Madama; the overpowering sense of magnitude is so appalling. Nor does this impression of overwhelming size lessen after repeated visits. One can only marvel at the men who dared to plan so boldly and regret that the great work was never finished. It is inspiring as it stands. What would it be if it had been completed?

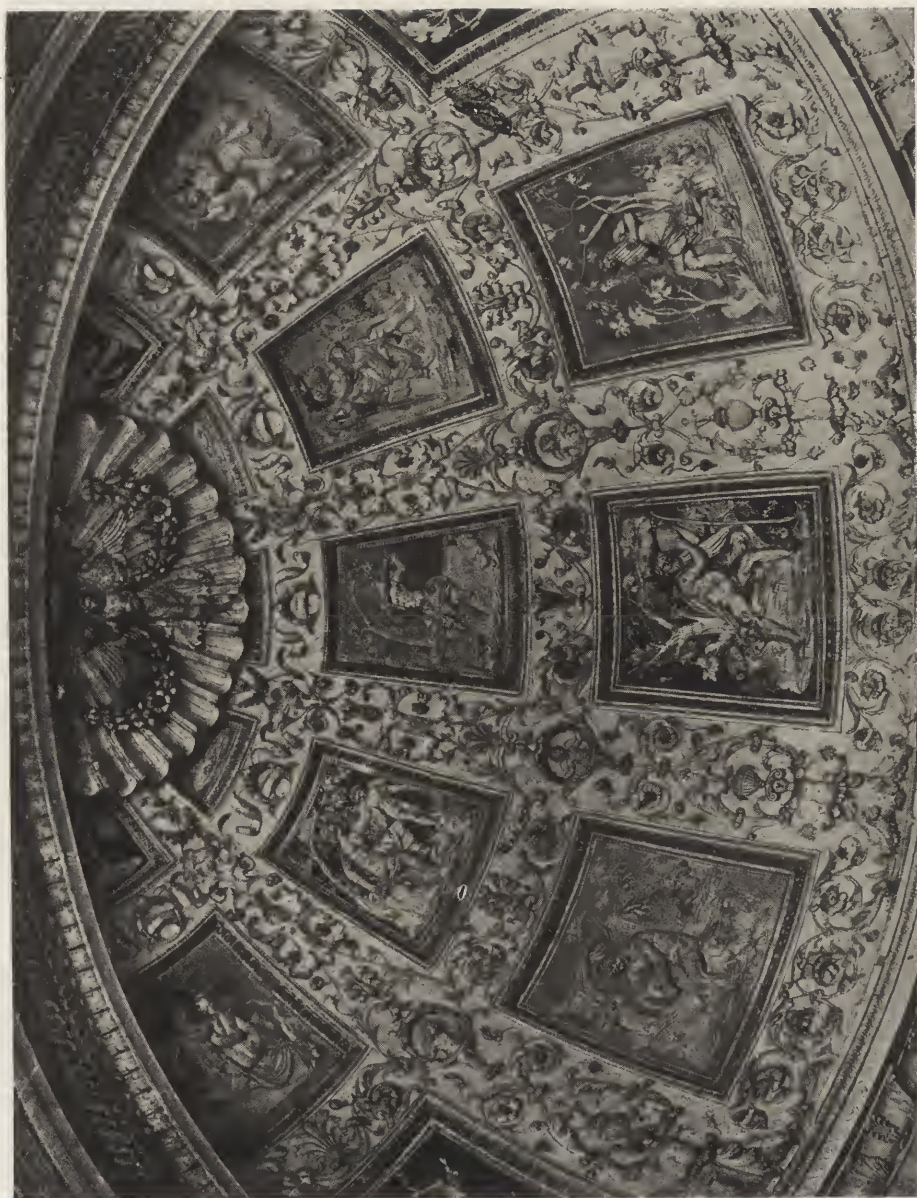


DETAIL OF STUCCO DURO DECORATION BY GIOVANNI  
DA UDINE IN LOGGIA—VILLA MADAMA, ROME.





GENERAL VIEW OF LOGGIA  
—VILLA MADAMA, ROME.



DETAIL OF GIOVANNI DA UDINE'S  
VAULT DECORATION IN LOGGIA—  
VILLA MADAMA, ROME.



DETAIL OF GIOVANNI DA UDINE'S VAULT DECORATION IN LOGGIA-VILLA MADAMA, ROME.



GIULLO ROMANO ROOM—  
VILLA MADAMA, ROME. •



DETAIL OF FRESCOED FRIEZE BY GIULIO ROMANO — VILLA MADAMA, ROME.



DETAIL OF CEILING FRESCO BY GIULIO ROMANO—VILLA MADAMA, ROME.



DETAIL OF CEILING FRESCO BY GIULIO ROMANO—VILLA MADAMA, ROME.



SMALL ROOM WITH MARBLE FIREPLACE AND  
FRESCOED FRIEZE—VILLA MADAMA, ROME.





SECTION OF FRESCOED FRIEZE AND paneled WOOD  
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# A BIBLIOGRAPHY OF SCHOOLHOUSE ARCHITECTURE

By

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THE following bibliography of works on American schoolhouse architecture has been prepared with the idea of indicating the sources which an architect would find of the greatest value and interest. Since much of the material consists in actual documents, plans, elevations, etc., the field of magazine publication has been carefully gone over, and the result is an index to periodical literature as well as a bibliography in the ordinary sense of the word.

Since a school building is primarily a working unit designed to house definite activities, all works on school management, curriculum and relation of school to community, although not directly architectural, have been included, as it is obviously important that a clear idea of the functions to be provided for precede the design of the means to accomplish them. Reference has also been made to school surveys and building programs for the sake of representing this modern preliminary to building, although the interest of any one of them is evidently purely local. It is significant of the newer and better conception of the school as a social institution that a "social survey" of the location is considered in connection with a building program.

Of nothing is it more true than of education that ideals, conditions and requirements are in a continual state of evolution. It follows, then, that books on school building, like the buildings themselves, become "out of date" somewhat rapidly. On this account no works, however authoritative and complete at the time of their publication, have been included which are not of value in the present "state of the art."

The present is a period of post-war reconstruction from an educational as well as every other point of view; and the effect is quite as definitely to be seen in

the changing standards of curriculum, which include re-education, vocational subjects, military training to a greater extent than before, continuation and night schools, and in general an enlarged school-plant, especially in extension and community use.

There are parallel changes in construction and design, notably the restriction to one- and two-story buildings, the increasing use of open-air schools and open-air features in plan, etc., which indicate that the present is a well defined period in school building. One of its most excellent features is the increasing realization of the responsibility of the school in relation to civic design as a whole, its landscape embellishment, etc., its treatment, in a word, not only as a mechanical plant but as a public monument.

The field covered by the bibliography is definitely that of the American public school; no attempt has been made to include the interesting problem of the private school, so special and individual as to put it outside this field, nor the college and university, institutions of higher and technical education, which are evidently in a category apart. Public schools in Hawaii and the Philippines, even were they of sufficient importance architecturally, seem really foreign and not American, though school systems, under U. S. commissioners, give promise of much interesting architectural development in the future.

The division of the subject has been made according to the heads under which it seems naturally to fall and has been divided to facilitate reference to any particular phase of the subject. It is hoped that it will provide a useful survey of this most interesting department of American architecture, one which quite corresponds to the importance of what is perhaps the most democratic of American institutions.

I.—RURAL SCHOOLS.

BARKER, CREIGHTON, M. D. *Small Country Schoolhouse.* (In *Architectural Record*, Feb., 1911.)

Data on light, ventilation, medical standards, etc.

CHALLMAN, S. A. *Desirable Rural Schoolhouses.* (In *Kentucky High School Quarterly*, April, 1917.)

*The Rural School Plant for Rural Teachers and School Boards, Extension Bureaus, Etc.* (Milwaukee, Wis., Bruce Pub. Co., 1917.)

An able discussion by the Commissioner of School Buildings for Minnesota.

*Standard Rural Schoolhouses.* (In *Kentucky High School Quarterly*, Jan., 1917.)

Gives four standard plans for rural schools used in the construction of new schools in Minnesota.

CUMMINS, R. A. *Small Items of Great Significance in the Building and Equipping of Schools.* (In *American School Board Journal*, Feb., 1919.)

Discusses, first, items pertaining to rural schools; second, items of importance to all schools and, third, items pertaining to consolidated rural and city schools.

DRESSLAR, FLETCHER B. *Rural Schoolhouses and Grounds.* (U. S. Bureau of Education, Bulletin No. 12, 1914. Washington, D. C., Government Printing Office.)

An exceptionally full treatment of the adaptation of schools to community needs. Detailed specifications, many plans and photos of models of schools, including a particularly noteworthy school at Coconut Grove, Fla. Teacher housing is carefully considered. Still the most exhaustive and authoritative work on the subject.

ENGELHARDT, N. L., and STRAYER, G. D. *Score Card for Rural Schools and Bulletin of Standards.* (Teachers College, Columbia University, N. Y.)

A tabulated score for the evaluation of the school plant.

FINNEY, R. L., and SCHAFFER, A. L. *Administration of Village and Consolidated Schools.* (Macmillan, 1920.)

"Rural schools as they are and the progress in school design likely to occur in the near future." A masterly exposition of the latest conception of

this important phase of democratic education, particularly good in statement of "new attitude" toward physical education of pupils; incidental chapters on technical equipment; less an architectural work than a stimulating summary of modern conditions, which make it, however, a valuable book for the library of an architect.

JENKINS, W. H. *Model Rural Schoolhouse and Garden.* (In *Craftsman*, May, 1911.)

The interesting model school and school garden constructed for demonstration on the Cornell campus.

MICHIGAN DEPARTMENT OF PUBLIC INSTRUCTION. *Rural Schoolhouses, Building Plans, Requirements, Suggestions, Illustrations.* (Lansing, Mich., 1917.)

MISSOURI. *Commission to the Louisiana Purchase Exposition, Plans and Specifications of a Model Rural Schoolhouse.* (St. Louis, Press of Buxton and Skinner, illus., 1904.)

The admirable model schoolhouse, winner of the L. P. E. gold medal.

MINNESOTA, DEPARTMENT OF EDUCATION. *Rural School Buildings.* (Design No. 1-4 of the Minnesota standard school plan. Minneapolis, Minn., 1916.)

*New School Buildings: Plans of One-room School Buildings in Minnesota.*

RAPEER, L. W. *The Consolidated Rural School Building.* (The American School Board Journal, Milwaukee, Wis., Bulletin for American Childhood, No. 2, 1919.)

Reprint of short but valuable article in American School Board Journal.

RURAL SCHOOL EQUIPMENT. (In *Teaching*, Jan. 15, 1916.)

Contains articles on the modern rural schoolhouse and its outside and inside equipment with especial reference to use of school as community center.

SCHOOLHOUSE FOR THE RURAL DISTRICTS. *Diagrams, Plans.* (In *Building Age*, Aug., 1917.)

Two classrooms with space for 64 pupils; details of construction.

WILLIS, B. F. *The Ideal Rural School Building.* (In *American School Board Journal*, June, 1916.)

The ideas of "the leader of the movement for better schools in the Keystone state."

II.—ELEMENTARY AND GRADE SCHOOLS.

ARCHITECTURAL FORUM. (School Number, April, 1917.)

Contains: Winnetka, Ill., Skokie school; Perkins, Fellows & Hamilton, architects. Rockville Center, L. I., school; Blanchard & Bro., architects. North Easton, Mass., grade school; Baker & Parker, architects. Cincinnati, O., Lafayette school; Barker & Woodward, architects.

BELMONT, MASS. *Kendal School, Views and Plans.* (In *American Architect*, Jan. 31, 1917.)

BERKELEY, CAL. *John Muir School Group*; J. W. Plachek, Architect. (In *Architect and Engineer, Cal.*, Sept., 1918.)

BETELLE, JAMES O., A. I. A. *New School Buildings in the State of Delaware: Illustrated by the Work of Guilbert & Betelle, Architects for the Delaware School Auxiliary Assn. for the Administration of the Dupont Fund for School Buildings.* (In *American Architect*, June 16, 1920.) Part I.

"Most important school building program ever undertaken by any state," on basis of survey and standards by experts Strayer and others of Teachers College. Especially interesting on rural and colored school problems and in variety and adaptability of types evolved for community use. Typical plans of consolidated and other schools and charming adaptations of Colonial to modern requirements.

Part II. (In *American Architect*, June 23, 1920.)

Plans of grade schools and consideration of the "teacherage" problem, i. e., housing of teachers in isolated districts.

BRUCE, W. G., compiler. *Grade School Buildings.* (Bruce Pub. Co., Milwaukee, Wis., 1914.)

254 pages of plans and details of school buildings from files of American School Board Journal. A representative selection of work up to that time. "Simple and substantial," is the author's ideal.

CARDIFF, CAL. *Cullen School*; J. S. Sirbert, Architect. (In *American Architect*, Jan. 8, 1919.)

Typical example of the prevailing one-story California type.

CHALLMAN, S. A. *Standard Features of Grade School Buildings.* (In Na-

tional School Building Journal, August, 1919, pp. 34-36, 89-90.)

CINCINNATI, O. *Hoffman Public School*; S. Hannaford & Sons, Architects. Plans and elev. (In *Architectural Record*, Jan., 1919.)

Very interesting asymmetrical design for an unusually complete plant, comprising open loggia for outdoor classes, school gardens, etc.

COLUSA, CAL. *Grammar School*; W. H. Weeks, Architect. (In *Western Architect*, Aug., 1918.)

EAST ORANGE, N. J. *Elmwood School*; Guilbert & Betelle, Architects. (In *American Architect*, June 16, 1920.)

HAYS, W. C. *One-Story and Open-Air School in California.* (In *Western Architect*, June, 1918.)

Contains: Garfield Intermediate, Berkeley; Chrystal school-district school, Suisan; Emerson school; Oakland Azuca school; Marengo school, Alhambra.

HAYS, W. C. *Recent Distinctive School-houses in California.* Part I. (In *Architectural Forum*, Nov., 1918.)

Contains: Frances Willard Intermediate School, Berkeley; L. P. Hobart and C. H. Cheney, architects. Interesting as having exclusive open-air circulation.

Part III. (In *Architectural Forum*, Jan., 1919.)

Contains: Lake View school, Oakland; Julia Morgan, architect. Group plan, with the open one-story characteristics of this type, play shelters and other interesting local features. Incidentally interesting as the work of a woman designer of several distinguished Western schools.

HIGHLAND PARK, ILL. *Grammar School*; Holmes & Flinn, architects. (In *Western Architect*, Feb., 1918.)

Expressive use of sculpture in elevation.

ITTNER, W. B. *The Intermediate School.* (In *American School Board Journal*, Aug., 1919.)

Contains architectural plans, etc., for the intermediate school at Buffalo, N. Y.

JACKSON, MICH. *West Intermediate School*; L. H. Field, Jr., architect. (In *Architecture*, Jan., 1920.)

Exceptionally full provision for vocational, arts and crafts, commercial and domestic science subjects, and for physical education, with swimming pool, gymnasium, etc.

- KOOSE, L. V. *Space Provisions in the Floor Plans of Modern Elementary School Buildings.* (In *Elementary School Journal*, Sept., 1919.)
- LOS ANGELES, CAL. *Grammar School*; Allison & Allison, architects. (In *American Architect*, Aug. 14, 1918.)  
*Grammar School*, La Canada District. (In *American Architect*, Aug. 14, 1918.)
- MODERN SCHOOLHOUSES. Part II. *Illustrating and Describing Recent Examples of Schoolhouse Design Executed in the U. S.* (In *American Architect*, N. Y., 1915.)  
Articles and illustrations of schools by leading architects: with Part I, published in 1910, it forms a very complete résumé of school building up to 1915.
- MORROW, IRVING F. *The Work of John Reid, Jr., A. I. A.* (In *Architect and Engineer*, Cal., Feb., 1920.)  
Contains: Hillcrest Primary School. Fairmount School; interesting treatment of brick and plaster. Monroe Grammar School; notable elevation, two stories in brick, and an exceptionally fine school playground. Twin Peaks Primary School. Park Presidio School; open corridor two-story type. A synopsis of one of the representative Western designer's work. "Best of the recent work in California, individual rather than standardized in type."
- MOST NOTABLE BUILDINGS OF OREGON. (In *Architect and Engineer*, Cal., Mar., 1919.)  
Couch School; F. A. Narramore, architect.
- NEWARK, N. J. *Cleveland School.* (In *Brickbuilder*, Apr., 1913.)  
*Ridge School.* (In *Brickbuilder*, Sept., 1913.)
- OAKLAND, CAL. *Santa Fe Elementary School*; J. J. Donovan, architect. (In *Western Architect*, Mar., 1918.)  
Interesting example of the open type with "arcaded" playground as well as open corridors and cloister court.  
*McChesney Elementary School*; J. J. Donovan, architect. (In *Western Architect*, Mar., 1918.)
- PITTSBURGH ARCHITECTURAL CLUB. *11th Annual Yearbook. Schoolhouses.* 1916.  
Plans, front, plans.
- PLAINFIELD, N. J. *Evergreen Avenue Grammar School*; Wilder & White, architects. (In *Architectural Forum*, Apr., 1920.)
- SAN JUAN, PORTO RICO. *Grade School at Santurce*; A. C. Finlayson, architect. (In *Architectural Forum*, Jan., 1919.)  
Interesting in its similarity to the California type.
- PORTLAND, ORE. *Fernwood Grammar School*; Lawrence & Holford, architects. (In *Architectural Record*, Feb., 1918.)
- SCHOOL BUILDINGS IN NEW YORK CITY. (In *School and Society*, June 3, 1916.)
- SCHOOLS OF CALIFORNIA. (In *Western Architect*, June, 1918.)  
Glendora School. No hallways or stairs, all rooms being entered from arcaded loggia. Interesting Palladian elevation.
- SNYDER, C. B. J., HAMLIN, A. D. F., and others. *Modern Schoolhouses.* Being a series of authoritative articles on planning, sanitation, heating and ventilation. 145 pages of recent schoolhouses. (Sweetland Pub. Co., N. Y.)  
Still a standard book and a valuable survey of work up to the date of publication.
- ST. JOSEPH, MO. *Whittier School*; Eckel & Aldrich, architects. (In *Architectural Forum*, June, 1920.)
- TOLEDO, O. *Walbridge School*; E. M. Gee, architect. (In *American Architect*, Apr. 24, 1918.)  
*Garfield School*; E. M. Gee, architect. (In *American Architect*, Apr. 24, 1918.)
- WASHINGTON, D. C. *H. D. Cooke School.* (In *Brickbuilder*, Nov., 1909.)
- WHEELWRIGHT, E. M. *School Architecture.* A general treatise for the use of architects and others. Rogers & Manson, Boston, Mass., 1901.  
Necessarily out of date, but remains one of the best written of the treatises on the subject, particularly strong on the treatment of the plan and its monumental qualities. Illustrated by many of Mr. Wheelwright's own schoolhouses, done while city architect for Boston, which are among the best in Massachusetts and consequently in the country.
- WIGHT, PETER B. *Public School Architecture in Chicago.* Illus. (In *Architectural Record*, June, 1910.)

WIGHT, PETER B. *Two Schools in California*. (In *Western Architect*, Mar., 1918.)

Glendora Grammar School.  
III. HIGH SCHOOLS.

ARCHITECTURAL FORUM. April, 1917.  
Schoolhouse number.

Contains: Detroit Northern High, Malcolmson and Higginbotham, Exeter. Tuck High School, Cram, Goodhue and Ferguson. Framingham High School, C. M. Baker.

Many plates of important schools with brief descriptions of buildings.

BRUCE, W. G. *High School Buildings*. (American School Board Journal, Milwaukee, Wis.)

An illustrated work by the editor of the School Board Journal.

CAMDEN, N. J. *High School Building*. P. A. Davis, architect. (In *American Architect*, July 3, 1918.)

CORDOVA, TENN. *High School*; Jones & Furbinger, architects. (In *American Architect*, Aug. 14, 1918.)

CROLY, H. *The Work of Kilham & Hopkins, Architects*. Illus. (In *Architectural Record*, Feb., 1912.)

DRESSLAR, F. B. *American Schoolhouses*. (U. S. Bureau of Education Bulletin, No. 5, 1910. Washington, D. C., Govt. Printing Office.)

An exhaustive treatise by the consulting schoolhouse expert for California and Alabama. It is especially strong on hygiene and allied subjects, but is quite complete on all details of plan and construction and is perhaps the best résumé of the subject up to the time of its publication. Very full of representative illustrations of the work of Snyder, Ittner and other schoolhouse experts. "DeWitt Clinton High School, C. B. J. Snyder, architect, is probably the finest high school in America." Foresees larger functions of school now already exemplified in contemporary work. Excellent critical analyses of the Soldan, Sumner and other high schools. A superb work.

DURANGO, CAL. *High School*; C. E. Thomas, architect. (In *American Architect*, Apr., 1920.)

One of the interesting recent Western schools. Contains theatre and other provisions for extension of use in community.

HAYS, W. H. *Recent Distinctive Schoolhouses in California*. Part III. (In *Architectural Forum*, Jan., 1919.)

Contains: Merced Union High School, a remarkable group plan on a very irregular site. Palo Alto Union High School, one of the most interesting and important examples in the country, particularly so in elevation.

JOHNSTON, C. G. *The Modern High School*. (Scribner's, 1920.)

One of the most recent and complete expositions of the subject. Written more particularly from the administrative point of view, but gives an excellent idea of the nature of the activities to be provided for in building.

LUCY, TENN. *High School*; Jones & Furbringer, architects. (In *American Architect*, Jan. 8, 1919.)

A modern school of the one-story type.

MAYNARD, MASS. *High School*; C. R. Greco, architect. (In *American Architect*, Mar. 20, 1918.)

MERCED UNION HIGH SCHOOL; Allison & Allison, architects. (In *American Architect*, Jan. 23, 1918.)

MIKKELSEN, M. A. *Edward Lee McClain High School*, Greenfield, Ohio, and *Central High School*, Washington, D. C. (In *Architectural Record*, Nov., 1917.)

Descriptive and critical accounts of these fine modern schools, of which the Washington school, by W. B. Ittner, has an especially complete plant, including an armory, rifle range, etc., among other unusual features.

MODERN HIGH SCHOOL BUILDING. Illus. (In *American City*, Feb., 1917.)

MORRISTOWN, N. J. *High School*; Betelle & Guilbert, architects. (In *American Architect*, June 23, 1920.)

Elevations, plan and details of one of the classics in high school design. The plan, in particular, is quite the last word in modern equipment, including hospital and dental clinic, greenhouses, unusually full manual and domestic science arrangements, moving picture equipment, etc.

NEW YORK CITY. *Stuyvesant High School*. Illus. plan. (In *Architecture*, Jan., 1908.)

*Washington Irving High School*. (In *Architecture and Building*, May, 1913.)

PERKINS, H. H. *High School Planning*. Illus. (In *American School Board Journal*, Oct., 1917.)

The article is illustrated by four examples of high school buildings from

- the work of Perkins, Fellows and Hamilton, of Chicago.
- PITTSBURGH, PA. *Schenley High School*. (In *American Architect*, Feb. 7, 1917.)
- PHILADELPHIA, PA. *High School Building*, Girard College; J. T. Windrim, architect. (In *American Architect*, Apr. 24, 1918.)
- PORT CHESTER, N. Y. *High School*; W. L. Bottomley, architect. (In *Architectural Forum*, Nov., 1919.)  
Elevation in "Adam" style.
- SANTA BARBARA, CAL. *Proposed New High School*. (In *American Architect*, Sept. 19, 1917.)
- SANTA FE, N. M. *Lena High School*; Rapp & Hendrickson, architects. (In *Architectural Forum*, Nov., 1919.)
- SCHOOLS OF CALIFORNIA. Contains: *Santa Monica High School*; Allison & Allison, architects. (In *Western Architect*, June, 1918.)  
One of the most interesting and beautiful of modern schools. In addition to a complete plant in the latest sense of the word, the athletic equipment is very ample, with tennis courts, two gymnasias beside the track and field locker provisions. The elevations, very rich and full of detail, are creative adaptations of the brick styles of North Italy.
- SHORT HILLS, N. J. *High School*; Guilbert & Betelle, architects. (In *American Architect*, June 16, 1920.)
- SNYDER, C. B. J. and HAMLIN, A. D. F. *School Architecture*. (See under *Grade Schools*.)
- SOUTHAMPTON, L. I. *High School*, W. L. Bottomley. (In *Architectural Record*, Feb., 1918.)
- ST. LOUIS BUILDINGS. Illus. (In *Architectural Record*, Feb., 1908.)
- SAN FRANCISCO, CAL. *Girls' High School*. Illus. (In *Brickbuilder*, Oct., 1912.)
- SPRINGFIELD, MASS. *High School*; W. B. Ittner, architect. (In *Western Architect*, Nov., 1919.)
- TOWNLEY, S. D. *The Palo Alto High School*; Allison & Allison, architects. (In *Western Architect*, Feb., 1919.)  
One of the most important of the schools of the "California" type, a large group plan and genuinely original and effective elevation, especially interesting in its adaptation of style. With the Santa Monica High perhaps the two most representative Western schools.
- WATSONVILLE, CAL. *High School*; W. H. Weeks, architect. (In *Western Architect*, June, 1918.)  
An interesting elevation in stucco, attempting not wholly without success a decoration inspired from the Moorish.
- WHEELWRIGHT, E. M. *School Architecture*. (See under *Grade Schools*.)
- WICKES, W. K. *New Building of the Syracuse High School*. (In *School Review*, June, 1903.)
- WIGHT, PETER B. *Two Schools in California*. (In *Western Architect*, June, 1918.)  
The Santa Monica High School; Allison & Allison, architects. One of the most interesting and beautiful of modern schools. In addition to a complete plant in the latest sense of the word, the athletic equipment is exceptionally ample, with tennis courts, two gymnasias and track and field locker provisions. The elevations, very full and rich, are creative adaptations of the brick styles of North Italy.
- WHARTON, G. W. *High School Architecture in the State of New York*. (In *School Review*, June, 1903.)
- IV. SPECIAL TYPES OF SCHOOL.
- ALBANY, N. Y. *New York State Normal School*. Illus. plans. (In *Brickbuilder*, Jan., 1910.)
- AYRES, M., *Open Air Schools*. Double-day, Page Co.  
An excellent recent work especially concerned with the hygienic and physical features of this modern development.
- BALTIMORE, MD. *Maryland School for the Blind*. Illus. plans. (In *Brickbuilder*, Dec., 1913.)
- BETELLE, JAMES O. *New School Buildings in the State of Delaware*. (In *American Architect*, June 16, 1920.)  
Part I.  
Contains: Edward Russ Memorial Dormitory, State Normal School, Upper Montclair, N. J., Guilbert and Betelle, architects. See also under *Elementary Schools*.
- BOURNE, RANDOLPH. *Gary Schools*. (Houghton Mifflin, 1916.)  
A description of the much discussed "Gary System" and indications for the intensive use of the school plant in the community.
- BOSTON, MASS. *High School of Com-*

- merce; C. H. Walker and Kilham & Hopkins, architects. (In Architectural Forum, Apr., 1917.)
- BROOKLYN, N. Y. *Training School for Young Girls*; Ludlow & Peabody, architects. (In American Architect, May 28, 1919.)
- CALIFORNIA. Department of Public Instruction, Sacramento, Cal., *Schoolhouse for \$500—Outdoor Schoolhouse for Fresno, Cal.* Illus.
- CALL & SCHAFER. *Laboratory Manual of Agriculture*.  
Appendix contains instructions for equipment of agricultural departments.
- CHICAGO SCHOOLS. *Portable Schoolhouses in Chicago*. Illus. diags. (In Building Age, May, 1915.)
- CLEVELAND, O. *Cleveland Technical High School*; F. S. Barnum, architect. (In School Board Journal, Apr., 1913.)
- CONSOLIDATED SCHOOLS. (In American Architect, June, 1920.)
- CRONE, F. L. *School Buildings and Grounds in the Philippines*. (In National Education Association Proceedings, 1915.)
- DORCHESTER, MASS. *St. Gregory's Parochial School*. (In American Architect, Mar. 20, 1908.)
- ELLING, GEO., *Scarboro-on-Hudson School*. (In American Architect.)
- FRESNO, CAL. *State Normal School*; G. B. McDougall, architect. (In American Architect, July 30 and Oct. 15, 1919.)  
Plan around an effective cloister, admirable domestic science equipment with cafeteria, etc.  
*State Normal School*. (In Western Architect, Feb., 1919.)
- GORDON, WM. *The Consolidated High School*. (In American School Board Journal, Mar., 1918.)  
Attractively illustrated.
- HAYS, W. C. *Recent Distinctive Schoolhouses in California*. Part I. (In Architectural Forum, Nov., 1918.)  
Contains: Oakland, Cal., Technical High School; J. J. Donovan, architect. Ingenious plan of grouped schools on very irregular lot and well planned athletic field, particularly interesting in plan.  
*Recent Distinctive Schoolhouses in California*. Part II. (In Architectural Forum, Dec., 1918.)  
Contains: Oakland, Cal., Luz School of Industrial Training; an institution for all fields of industrial education and for household and domestic arts. San Jose, Cal., California State Normal School, State Bureau of Arch. (V. de Maris, architect.) Santa Barbara Normal School; winner of A. I. A. medal for architecture; very interesting in plan and with an original and very decorative elevation.
- HAYS, W. C. *One-Story and Open-Air Schools in California*. (In Architectural Forum, April, 1917.)  
Polytechnic Elementary High School; Myron Hunt and Elmer Gray, architects.
- HUGHES, H. F. *Elastic Schoolhouses*. (In American City, Jan., 1918.)  
School plant units in Fresno, Cal., described with illustrations. "We see bookcases which grow with the library and in Fresno, Cal., the same plan is being used with building schoolhouses."
- HUMBOLDT, CAL. *Humboldt State Normal School*; G. B. McDougall, architect. (In Western Architect, Feb., 1919.)
- ITTNER, W. B. *The Intermediate School*. (In American School Board Journal, Aug., 1919.)  
Contains architectural plans, etc., for the intermediate school at Buffalo, N. Y.
- KOOSE, L. V. *Space Provision in the Floor Plans of Modern Elementary School Buildings*. (In Elementary School Journal, Sept., 1918.)
- LAKEVILLE, ILL. *School Chapel and Gymnasium*, Allendale Farm, Ill.; L. Buck, architect. (In Western Architect, June, 1919.)  
Illustrations of portions of this new social communal institution.
- LOS ANGELES, CAL. *State Normal School*; Allison & Allison, architects. (In Architectural Forum, Apr., 1917.)  
Large group plan, almost collegiate in effect.
- MCCOLL, J. R. *Heating and Ventilating the Portable Schoolhouse*. Illus. diags., plans. (In Metal Work, Mar. 23, 1917, and in American Society of Heating and Ventilating Engineers, Proceedings, 1915.)
- NEWARK, N. J. *Central Commercial and*



- Manual Training High School.* Illus. plans. (In *Architecture and Building*, Nov., 1912, and *Brickbuilder*, Aug., 1912.)
- Normal School.* Illus. plans. (In *Architecture and Building*, Sept., 1913, and *Brickbuilder*, July, 1913.)
- Essex County Parental School.* (In *Architecture*, Sept., 1917.)
- NEW BRITAIN, CONN. *Prevocational School, Plans.* (In *Manual Training Magazine*, May, 1915.)
- OBERHOLTZER, E. E. *Tulsa Unit School System.* (In *American Journal of Education*, Dec., 1916.)
- PAROCHIAL SCHOOLS BY MAGINNIS, WALSH & SULLIVAN. (In *Architectural Forum*, June, 1920.)  
Contains: Our Lady of Lourdes, Jamaica Plain; St. Mary's Parochial School; Winchester, Mass., Parochial School.
- PERRY, C. A. *Social Center Features in New Elementary School Architecture.* With plans of 16 "socialized" schools. Russell Sage Foundation, N. Y.  
With Dresslar's work the two standards on the new school architecture.
- PICHEL, IRVING. *Stage Construction for Small Theatres.* (In *Theater Arts Magazine*, Jan., 1920.)  
"Up-to-date, indispensable for architects of communal buildings."
- PORTABLE SCHOOLHOUSES. "*Getting a Schoolhouse in Twenty-four Hours.*" Illus. (In *Craftsman*, Oct., 1916.)  
An emergency solution for overflow of children in cities and in inaccessible country districts, not a very practical one owing to difficulty in heating nor a very architectural one.
- RAPEER, L. W. *The Consolidated Rural School Building.* (Reprinted from *American School Board Journal*, June, 1919, and appearing as chapter in "The Consolidated Rural School," to be published by C. Scribner's Sons, N. Y.)  
*The One-Story Rural Consolidated Building.* (In *American School Board Journal*, Sept., 1919.)  
Gives some of the principal advantages and special features of one-story consolidated schools.
- ROSENBERG, G. R. L., JR. *Philadelphia Adopts the One-Story Building Policy.* (In *Architectural Record*, Sept., 1916.)
- SALT LAKE CITY. *Technical High School;* Connon & Fetzner, architects. (In *Architectural Forum*, Apr., 1917.)
- SAN DIEGO, CAL. *Francis W. Parker Open-Air School.* Views and plan. (In *Architectural Record*, Jan., 1915.)  
One of the earliest examples of this now successful type of school.
- SANTA FE, N. M. *New Mexico School for Deaf and Dumb;* Rapp & Hendrickson, architects. (In *Architectural Review*, Feb., 1918.)
- SCARBORO - ON - HUDSON. W. Bosworth, architect. (In *American Architect*, Apr. 2, 1919.)  
Private school built for Frank Vanderlip, with many interesting and novel features for education de luxe.  
*Private School for Frank Vanderlip.* (In *Architectural Forum*, Sept., 1919.)  
Many attractive views of this exceptional school.
- SCHOOLS FOR THE BLIND AND DEAF (U. S. Bureau of Education, Washington, D. C., Govt. Printing Office.)  
Official "Bulletin" on the special features of these schools, a virtual treatise on the subject.
- SCHOOL FOR SUB-NORMAL CHILDREN. (In *Architect and Engineer*, Cal., Feb., 1920.)  
In article on work of John Reid.
- SPRINGFIELD, MASS. *Parochial School of Our Lady of Hope;* J. W. Donahoe, architect. (In *American Architect*, May 21, 1919.)
- STUDYING OUT OF DOORS. *An Open-Air School that Furnishes a New Idea in Education.* (In *Craftsman*, Sept., 1916.)
- STURGIS, R. C., Watertown, Mass. *Perkins Institution for the Blind and Mass. School for the Blind.* (In *Brickbuilder*, Apr., 1914.)  
Perhaps the finest architecturally of such institutions.
- TRENTON, N. J. *School of Industrial Arts.* Illus. plans. (In *Brickbuilder*, July, 1911.)
- TUBBS, E. V. *Part Time Plan in the Centralia High School.* (In *School Review*, Univ. of Chicago Press, Feb., 1918.)

- Description of system whereby students alternate in school and shop for correlation of industrial and academic education.
- URBANA, ILL. *Education Building, Univ. of Illinois.* (In *Western Architect*, May, 1919.)
- U. S. FEDERAL BOARD for Vocational Education, Buildings and Equipment for Schools and Classes in Trade and Industrial Subjects. (Washington, November, 1918. Govt. Printing Office, 1918. Illus. plans. Bulletin No. 20, Trade and Industrial Series, No. 4.)  
One of the government Education Bureau's careful treatises, with full illustrations. The best single work on the architectural and mechanical sides of vocational education.
- VAN PELT, J. V. *Architecture of Open-Air Schools.* (In *Heating and Ventilating Magazine*, Sept., 1913.)
- WORK OF CALIFORNIA STATE ARCHITECT B. J. CAHILL. (In *Architect and Engineer*, Cal., Sept., 1918.)  
Contains: Santa Barbara Normal School, Fresno Normal, Humboldt Normal.
- WORK OF JULIA MORGAN. (In *Architect and Engineer*, Cal., Nov., 1918.)  
Contains: Marysville School, Miss Burke's private school.
- V.—CONSTRUCTION, HEAT, VENTILATION, ETC.
- ALT, H. L. *The Heating and Ventilating of Grouped School Buildings.* (In *American School Board Journal*, Apr., 1917.)  
*Mechanical Equipment of School Buildings.* (Milwaukee: Bruce Pub. Co., 1916. Illus.)
- AYRES, M. *A Century of Progress in Schoolhouse Construction.* (In *American School Board Journal*, June, July, August, Sept., 1917.)
- AYRES, L. P. *Fire Protection in Public Schools.* Russell Sage Foundation, N. Y.
- AYRES, M., and WILLIAMS, J. F. *Healthful Schools: How to Build, Equip, Maintain Them.* Houghton, Mifflin, 1918.  
The best recent work on the subject, similar to Dresslar's work with more material.
- BALDWIN, E. C. *Terminology of School Building Construction and Repairs.* (In *American School Board Journal*, July, 1915.)  
"The first comprehensive, and, we think, workable plan for classifying school buildings."—Editor's Note.
- BALDWIN, WILLIAM JAMES. *The Ventilation of the Schoolroom.* (The author, 107 W. 17th St., N. Y.)  
Author an expert consulting engineer.
- BASS, F. *Experiment in School Ventilation with Reduced Air Supply Through Individual Ducts.* Illus. (In *American Soc. Heating and Ventilating Eng. Proceedings*, 1913.)
- BETELLE, J. O. *Assembly Halls.* (In *American School Board Journal*, Apr., 1916.)  
Discusses the betterment of assembly halls in general appearance, seating accommodations, stage arrangements, acoustics and other important elements.
- BETELLE, J. O. *Architectural Styles as Applied to School Buildings.* (In *American School Board Journal*, Apr., 1919.)
- BRUCE PUBLISHING CO., Milwaukee, Wis. *Checking Schedule for Projected School Buildings.*  
"Of practical use to architects in planning and specifying details of school buildings."
- BURRAGE, S., and BAILEY, H. T. *School Sanitation and Decoration.* A practical study of health and beauty in their relations to the public schools. (Boston: Heath.)
- CASELL, J. D. *Heating, Ventilating and Electrical Equipment of Philadelphia Public School Buildings.* Illus. (In *Am. Soc. of Heating and Ventilating Eng. Proceedings*, 1917.)
- CHALLMAN, S. A. *A State Program of Schoolhouse Hygiene.* (In *American School Hygiene Association, Proceedings*, 1915.)
- CODE OF LIGHTING SCHOOL BUILDINGS. Illus. (General Science Quarterly, Jan., 1919.)  
Report by committee on school lighting of the Illuminating Eng. Soc.
- COOPER, F. I. *Economies Gained in Standardizing Schoolhouse Plans.* (In *American School Board Journal*, Aug., 1919.)  
*Planning the School Against the*

- Fire Hazard.* (In *Better Schools*, Dec., 1915.)  
Suggests means, especially by State legislation, to insure safety of school children.
- Report of the Committee of Standardization of Schoolhouse Planning and Construction.* (In Nat. Ed. Assn. Proceedings, 1917.)
- Schoolhouses and the Fire Hazard.* (In Nat. Ed. Assn. Proceedings, 1916.)
- Standardization of Schoolhouse Planning.* Parts I and II. (In *American Architect*, Aug. 21, 28, 1918.)
- Authoritative articles by the chairman of the Nat. Ed. Association committee on standards.
- DRESSLAR, F. B. *American Schoolhouses.* (See *Elementary Schools*, ref. on hygiene, p. 107.)
- School Hygiene.* The Macmillan Co. "A valuable book on the furniture, facilities and equipment of a modern school plant and their care and upkeep."
- DONOVAN, J. J. *Odds and Ends About the Building of Schools.* (In *American School Board Journal*, Apr., 1920.)
- DUNN, J. W. *Daylight and Ventilation Problems, Notes on Requirements of School Lighting, for Nat. Comm. for Prevention of Blindness.* (In *Architect and Engineer*, Cal., Feb., 1918.)
- ENGELHARDT, N. L., and STRAYER, G. D. *Score Card for City School Buildings and Bulletin of Standards.* Teachers College, Columbia Univ., N. Y.
- A tabulated scheme for the evaluation of the school plant.
- EXPERIMENTAL PLAN of the New York State Commission on Ventilation in School 51, New York City. Illus. diags. (In *Heating and Ventilating Magazine*, June, 1917.)
- FIRE PROTECTION AND THE SCHOOLS; PLANS. (In *Architectural Record*, Apr., 1916.)
- FIRE PROTECTION. Illustrations from the Chicago, California, Mission group plan at Tulsa, and other one-story or similar types of construction. (In *American Architect*, Mar. 10, 1920.)
- FOUR-ROOM HOLLOW TILE SCHOOLHOUSE. Diags., plans. (In *Building Age*, June, 1917.)
- GERHARD, W. P. *Sanitation of Public Buildings.* (Wiley & Sons, N. Y.)
- HEATING AND VENTILATING for Schools, Based on the New Ventilating Ideas. Diags., plans. (In *Heating and Ventilating Magazine*, June, 1914.)
- ILLUMINATING ENGINEERING SOCIETY, *Code of Lighting School Buildings.* (N. Y., 1918.)
- ITTNER, W. B. *The Cost of School Buildings.* (In *American School Board Journal*, Aug., 1915.)
- School Buildings and the War and Standardization of School Buildings.* (In *American School Board Journal*, Sept., 1917.)
- Prepared for the Nat. Ed. Assn. from an exceptionally wide acquaintance with school building in widely separated sections of the country.
- Standardization of School Buildings.* (In *National Education Association Proceedings*, 1917.)
- JOHNSTON, W. W. *Safe Construction of School Buildings.* Illus. (In *American School Board Journal*, Apr., 1917.)
- "The fundamental principles that govern the safe construction of school buildings."
- JUDD, C. H. *Educational Specifications for School Buildings.* (In *National Education Association Proceedings*, 1919.)
- KEELER, F. J. *Standards of School Architecture and Schoolhouse Construction.* (In *National Education Association Proceedings*, 1917.)
- KILHAM, W. H. *Hygienic Construction of Schoolhouses from an Architect's Viewpoint.* (In *Journal of Education*, Sept., 1913.)
- KILHAM, WALTER H. *The Modern Schoolhouse.* (In *The Brickbuilder*.) I. The Classroom (Jan., 1915). II. Corridors and Stairways (Feb., 1915). III. Wardrobes, Toilets and Special Rooms (Mar., 1915). IV. Exposure and Plan (Apr., 1915). V. Cost and Cubage (May, 1915). VI. Special Features (June, 1915).
- KIMBALL, D. C. *Ventilation of School Buildings.* (In *American School Board Journal*, Jan., 1915.)

- LEWIS, S. R. *School Building, Heating and Ventilation*. Illus. diags. (In *Heating and Ventilating Mag.*, Aug., Sept., 1918.)
- LOCKHART, G. L. *Public Schools, Their Construction, Heating, Ventilation, Sanitation, Lighting and Equipment*. (H. W. Kingston Co., St. Paul, Minn., 1918.)  
One of the most recent and full treatments of this subject.
- MECHANICAL EQUIPMENT OF WASHINGTON SCHOOL, Bayonne, N. J. D. G. Anderson, architect. (In *American Architect*, Jan. 1, 1919.)  
Typical equipment of one of the most complete modern high schools. The illumination has been particularly carefully studied.
- MECHANICAL REQUIREMENTS of a Modern High School Building. Schenley High School, Pittsburgh. Illus. (In *Heating and Ventilating Mag.*, Mar., 1917.)
- METAL WORK MAGAZINE. *Heating and Ventilating a Schoolhouse*. (In *Metal Work*, Nov. 13, 1914.)
- NEWARK, N. J. *Heating and Ventilating Equipment of the Newark Normal School*. Illus. plans. (In *Architecture and Building*, Sept., 1913; *Brick-builder*, July, 1913.)
- PITTSBURGH, PA. *Watt School. Independent Air Ducts in School Work; Mechanical Equipment of the Watt School, Pittsburgh*. Diags., plans. (In *Heating and Ventilating Mag.*, April, 1914.)
- RAPEER, L. W. *The Case Against Unilateral Lighting*. (In *American School Board Journal*, July, 1918.)  
The author differs from the usually accepted practice and advocates a classroom lighted on three sides.  
*The Classroom of Rural and Village Schools*. (In *School and Home Education*, April, 1917.)  
Deals with classroom construction, equipment, color, and all incidental details of drainage of basement, etc.
- RAPEER, L. W. *Sanitary Architecture for the Rural School*. (In *Educator-Journal*, July, 1917.)  
*Standardizing, Lighting and Ventilation in Public Schools*. (In *Journal of Education*, Nov. 9, 1916.)
- REPORT ON CODE OF LIGHTING. *School Buildings*. Diags., plans. (In *Illuminating Engineering Society Transactions*, April, 1918.)
- SALT LAKE CITY SCHOOL SURVEY. (Board of Education, Salt Lake City.)  
Interesting "school survey" and valuable chapter on lighting.
- SCHOOL ARCHITECTURE. *Beauty, Economy, Convenience, Safety*. (Southern Pine Association, New Orleans, La., 1917.)  
A piece of "special pleading" in favor of wood construction for schoolhouses.
- STANDARDS AND RULES. (Dept. of Administration, Teachers College, New York.)  
A standardization of schools by Engelhardt and Strayer, inventors of the "score card" for the evaluation of school plants.
- STANDARD SCHOOLHOUSE EQUIPMENT. (In *American Architect*, April 30 and May 7, 1919.)
- STANDARDIZATION OF SCHOOLHOUSE. *Design and Construction*. (In *School and Society*, Oct. 14, 1916.)
- SNYDER, C. B. J. *After the Architect*. (In *National Education Assn. Proceedings*, 1916.)  
*Planning School Buildings for Safety*. (In *American City*, July, 1916.)  
*Standardization of Schoolhouse Design*. (In *American Architect*, Nov. 6, 13, 20, 1918.)
- SNYDER & HAMLIN. *School Architecture*. (See under Grade Schools.)
- SQUIRES, F. *New Development of the Hollow Square in Schoolhouse Planning*. Illus. plans. (In *Architecture and Building*.)
- VI. SITE, GROUNDS, GARDENS, ETC.
- DAVIS, K. C. *School and Home Gardens*. (Lippincott, Publisher.)  
A practical book on this increasingly important adjunct to the school plant.
- DRESSLAR, F. B. *Schoolhouses and Grounds*. (See under High Schools.)  
*Some Problems to be Considered in the Selection of Sites for School Buildings*. (In *National Education Association Proceedings*, 1915.)
- FRANCIS, J. H. *School Garden Army*. (U. S. Bureau of Education, Bulletin

- Nb. 26, 1919. Washington, D. C. Govt. Printing Office.)
- GRESS, J. W. *The Landscape Development of School Grounds.* (In American City, January, 1916.)
- MANNING, W. H. *Directions for Surveying and Arranging Home and School Grounds.*
- NEW YORK STATE EDUCATIONAL DEPARTMENT, *Div. of School Buildings and Grounds.* (Bulletin and Annual Report, 1915. Pub. by the University of the State of New York.)
- A full report on the buildings of the State and an excellent consideration on the subject in general, many illustrations and diagrams, some in color on school decoration, etc.
- PARSONS, SAMUEL. *Landscape Surroundings for Academic Buildings.* (In American Architect, Oct. 20, 1915.)
- RECENT DISTINCTIVE SCHOOLHOUSES OF CALIFORNIA. (In Architectural Forum, Dec., 1918.) Part III.
- Contains illustrations of the Palo Alto High School with one of the most complete athletic plants, grounds, etc., of any school in the country.
- SCHOOLS OF CALIFORNIA. (In Western Architect, June, 1918.)
- Contains illustrations of Santa Monica High School with notably interesting layout of grounds and athletic plant.
- WOODLAND, CAL. *Primary School;* W. H. Weeks, Architect. (In Western Architect, Aug., 1918.)
- The Spanish patio type, one story, open circulation from arcades.
- VII. REPORTS, BUILDING PROGRAMS, PERIODICALS.
- AMERICAN SCHOOL BOARD JOURNAL.
- A magazine of school building and allied subjects. While the illustrations are not chosen with the discrimination of the regular architectural magazines, the field is covered more fully, the files constituting the most complete available source of documentation on the subject of current school building.
- AYERS, L. P., & AYERS, M. *School Buildings and Equipment, Cleveland, Ohio.* (The Survey Committee of the Cleveland Foundation, 1916. Illus., Cleveland Foundation Publication Co., No. 1.)
- ENGLEHARDT, N. L. *A School Building Program for Cities.* New York City. Teachers College, Columbia Univ., 1918. Diags. (Teachers College Contribution to Education, No. 96.)
- HARBACH, F. M., & HART, H. *Constructive Survey of Milwaukee School Building and Ten Year Building Program.*
- One of the most thorough of "school surveys."
- HOOD, W. R. *State Laws Relating to Education.* (U. S. Bureau of Education, Govt. Printing Office, Washington, D. C.)
- A compilation of the different State laws.
- NATIONAL EDUCATION ASSOCIATION.
- Publishes frequent bulletins in their "Proceedings," on matters of educational interest, including school architecture and building.
- NEW YORK EVENING POST. Edition of Saturday.
- Publishes an excellent educational page, one of the most available sources of news as to educational movements, including building projects.
- NEW YORK STATE EDUCATIONAL DEPARTMENT. *Div. of School Buildings and Grounds.*
- Reports are limited, naturally, to New York State, but are of general value, the report of 1917 being particularly useful.
- OAKLAND SCHOOL BUILDING SURVEY. (In American School Board Journal, April, 1913.)
- The first comprehensive study of problems of school architecture for important cities by expert commission of specialists in education, engineering, sociology and architecture. Contains interesting conclusions here summarized by experts and plans and details of Oakland schools by Donovan, Reid, Mullgardt, and others, which are among the best in the West.
- STRAYER, ENGELHARDT and HART. *School Building Program for Omaha.* Board of Education, Omaha, Neb.
- One of the most carefully prepared of such surveys.
- School Survey of Butte.* Board of Education, Butte, Mont.
- School Survey of Brookline.* Board of Education, Brookline, Mass.
- School Survey of Denver.* Board of Education, Denver, Col.
- School Survey of Milwaukee.* Board of Education, Milwaukee, Wis.
- School Survey of Minneapolis.* Board of Education, Minneapolis, Minn.

*School Survey of Omaha.* Board of Education, Omaha, Neb.

*School Survey of Paterson.* Board of Education, Paterson, N. J.

*School Survey of Portland.* Board of Education, Portland, Ore.

*School Survey of Salt Lake City.* Board of Education, Salt Lake City, Utah.

The making of a "school survey" is a necessary preliminary to undertaking a modern school building program of any importance. Any one of the above would be a fit accession to an architectural library not only for its intrinsic interest but as an example of the manner in which the architectural program is established.

U. S. BUREAU OF EDUCATION. (Dept. of the Interior, Washington, D. C., Govt. Printing Office.)

Issues frequent valuable "bulletins," many virtually illustrated treatises, on all phases of education and school architecture throughout the country, including a monthly "Record," or bibliography of current literature on education and allied topics.

#### VIII. WORKS ON EDUCATION AFFECTING SCHOOL DESIGN.

BENNET, H. E. *School Efficiency.* (Ginn & Co., 1917.)

The efficient functioning of the school plant and its dependence upon an adequate equipment.

BLACKALL, C. F. *Architecture After the War.* (In *American Architect*, June 5, 1918.)

War and school planning tend to increase the importance of vocational, military, re-education and more practical subjects, and to make less difference in boys' and girls' curricula.

BLOOMFIELD, M. *Vocational Guidance of Youth.* (Houghton, Mifflin Co.)

BONSER, F. G. *Implications for Education from Experiments in Industry.* (In *Teachers College Record*, Jan., 1920.)

*New Status of Practical Arts in Education.* (In *Teachers College Record*, Jan., 1920.)

BUTLER, N. M. *Education After the War.* (In *Teachers College Record*, Jan., 1919.)

CHALLMAN, S. A. *The Adaptation of the High School Buildings to the School Organization.* (In *American School Board Journal*, Jan., 1918.)

"A revision of data prepared for the School Administration Dept. of the Nat. Ed. Assn. It is the first study of the general problem and of great value."

COHEN, H. L. *Americanization by Classroom Practice.* (In *Teachers College Record*, Sept., 1919.)

CUBBERLEY, E. P. *Public School Administration.* (Houghton, Mifflin, ch. xxiv, "Auxiliary Educational Agencies.")

Points out the use of "connection" libraries and museums with schools.

DEWEY, J., AND DEWEY, E. R. *Schools of Tomorrow.* (E. P. Dutton.)

"Shows how to organize school work on self-activity, social participation theory."

DEAN, A. D. *Our Schools in War-time and After.* (In *Teachers College Record*, Jan., 1919.)

ELIOT, CHARLES W. *Full Utilization of a Public School Plant.* (In *Nat. Ed. Assn. Proceedings*, 1903.)

FRETWELL, E. K. *Education for Leadership; Training Citizens through Recreation.* (In *Teachers College Record*, Sept., 1919.)

GILLETTE, J. M. *Vocational Education.* (American Book Co.)

Not architectural, but a general consideration of subject having many architectural implications.

HADDON, R. W. *Schoolhouses Planned with Reference to the Newer Educational Activities, Plans.* (In *Architectural Record*, Dec., 1914.)

LLEWELLYN, J. C. *The Building Question with Relation to Schools.* (In *American School Board Journal*, March, 1918.)

The problems before school boards in relation to school building programs and the war.

LUCY, J. V. *Motion Pictures as an Educational Agency.* (In *Teachers College Record*, Sept., 1919.)

PATON, N. S. *Present Day Tendencies of School Architecture.* (In *National Education Assn. Proceedings*, 1911.)

PERRY, C. A. *The School as a Social Center.* (Macmillan Co.)

*Wider Use of School Plant.* (N. Y. Survey Associates, Inc. Russell Sage Foundation.)

Reports on practices in many cities on extension of school activities, chs. vi and x on playgrounds.

RE-EDUCATION OF SAILORS AND SOLDIERS.  
(In *American Architect*, Jan. 22, 1919.)

*What the Employers of America Can Do for the Disabled Soldier and Sailor.* (Federal Board for Vocational Education, Washington, D. C. Govt. Printing Office.)

ROORBACH, E. J. *Practical School Sys-*

*tem of Los Angeles.* Illus. (In *Craftsman*, Sept., 1912.)

ROBBINS, C. L. *The School as a Social Center.* (Allyn and Bacon.)

WEEKS, A. D. *Education of Tomorrow.* (Sturgis and Walton, N. Y.)

WILSON, MARGARET. *The Schoolhouse as a Community Center.* (American Civic Association, Washington, D. C.)

## WAR BOOKS OF THE CATHEDRALS

BY BARR FERREE

### PART IX.

THE period of the German war would seem to have been, of all modern times, the least available for the production of expensive books on the cathedrals of France. Very great credit is, therefore, due to the Abbé V. Hardy<sup>1</sup> and the patriotic supporters who made his book possible—this handsome monograph on the cathedral of Lisieux. It is a book of true worth, presenting at greater length than has hitherto been done the history and description of the cathedral of Lisieux, being printed in handsome type on fine paper, enriched with a vast collection of illustrations and offering a most welcome and valuable iconography of the cathedral in every aspect. The author is vicar of the cathedral and is thoroughly familiar with it. It has obviously long been to him the object of special love and veneration, and this splendid book is the fruit of many years of study and research.

The history of the cathedral of Lisieux is not richly documented; texts relating to its building are scanty; but the epochs of its building are clearly manifest, and its general chronology offers, therefore, few difficulties. It is a church of abounding interest and great charm, and, like many churches of its period in Normandy, appeals by reason of its architectural qualities, its sturdy structure, its good proportions, its admirable architectural orna-

ment; but of sculptural enrichment, as shown in other cathedrals, it offers scarcely anything. It is a very good example of what may be accomplished through architecture alone by competent medieval builders. It is a church that should be better known than it is, for apart from its own great interest, Lisieux is a most interesting city, with many quaint old houses, and is quite accessible to English and American travelers. No one will regret a day or two spent there, for it contains much of real interest. Not the least of the cathedral's claims to consideration is the fact that it has not been touched by the German shells.

The Abbé Hardy opens his book with a brief general survey and a rapid sketch of the previous historians of the cathedral. His first chapter is an outline study of the Romanesque building that preceded the present church, and he then plunges into his main topic, the Gothic cathedral, which he treats descriptively. Naturally, as he moves down the centuries, the historical details are more numerous, as references survive in contemporary writings. His lucid descriptions leave nothing to be desired, for every available source of information or comment is made use of, and the whole story of the cathedral presented as it has been given by no other authority. Two chapters by other hands are included—one on the chapel of Notre Dame, or Lady Chapel as the English would call it, by M. V. Lahaye; the other on the

<sup>1</sup>Abbé V. Hardy: *La Cathédrale St. Pierre de Lisieux.* Paris.  
*teux,* Paris.

glass of the cathedral by M. Etienne Deville.

The chapel of Notre Dame has an interest quite apart from its relation to the cathedral; for it was built at the cost of the notorious Pierre Cauchon, who was bishop of Lisieux from 1432 to 1442, and who achieved immortality for himself by the leading part he took in the condemnation of Jeanne d'Arc. The chapel is one of the most beautiful parts of the cathedral, with large traceried windows above richly paneled walls. Bishop Cauchon was buried here, but his tomb was destroyed some time between 1754 and 1783; a drawing of the slab is preserved in the Bibliothèque Nationale at Paris. It is possible, says M. Lahaye, that his ashes still remain below the pavement. Bishop de Condorcet was buried in the same tomb in 1783. This was opened and the body thrown out in the Revolution in 1793; but it is not known whether the violators discovered the remains of Bishop Cauchon.

Other chapters of the book discuss the age of the cathedral, its anecdotic history, the pictures, including a plan, and the dependencies of the cathedral. The author concludes with reprinting some interesting documents, and adds a very full bibliography.

Large illustrated books often make their chief appeal by their illustrations. Ample as are the illustrations in this book—they number more than two hundred—it would be a mistake to judge it by them alone. The text is of the utmost value, and displays on every page testimony of extended research. A word or two more on the illustrations. They are of the most varied origin, consisting of photographs by professionals and amateurs, reproductions of lithographs, engravings, water colors and wood cuts, and many drawings. The latter are chiefly by artists of Lisieux or of Normandy, and many of them are by heroes wounded in the war. The whole constitutes a magnificent collection of the utmost interest, reflecting great credit not only on the artists themselves, but on the author for the thoughtful care with which he has gathered such a rich and splendid series for his great book. It is well entitled to rank among the great monographs of French churches.

Of the *Recherches sur Chartres* by Charles Challine,<sup>2</sup> six copies are known in manuscript. One is in the Bibliothèque Municipale of Chartres. Charles Challine was born at Chartres in 1596, and died in 1678. None of the manuscripts is in the handwriting of the author, the oldest dating from the episcopate of Bishop Godet des Marais (1692-1710). The original manuscript appears to have been utterly lost. The book was never completed by the author.

The *Recherches* have long been known as a veritable storehouse of information on the city of Chartres. It is quite different from the nearly contemporary *Histoire du diocèse et de la ville de Chartres* by Souchet, which took the whole diocese for a theme, while Challine limited himself to the city. The topic was ample enough, for the printed version is a book of more than five hundred pages, a handsome volume brought out by the local archeological society, the Société Archéologique d'Eure-et-Loir. The present editor has, he tells us, followed his text very carefully, and while not overburdening his pages with notes has added them where necessary.

The inquirer, searching for details in the history of the city of Chartres, will find in these pages almost everything—nearly a hundred being devoted to the pagan era of Chartres, including a lengthy discussion on the Druids. The Christian period opens with a discussion of the famous Virgin of Chartres, whose shrine is still maintained in the cathedral; and is followed by an extended description of the cathedral, with chapters and notes on the most varied topics concerned with it. Other sections are concerned with the bishops of Chartres, the Church of Chartres—in effect a continuation of the history of the cathedral; and the whole is concluded with a section on the Counts and Dukes of Chartres. This bare outline, however, quite fails to reveal the very miscellaneous contents of the book, and the hosts of curious matters of which it treats. It is a book that may appeal more to the archeologist than to the stu-

<sup>2</sup>Charles Challine: *Recherches sur Chartres*. Transcrites et annotées par un arrière-neveu (Roger Durand) de l'auteur. Chartres: Société Archéologique d'Eure-et-Loir.



dent of architecture, but the latter cannot afford to overlook it. The editor has inserted a number of illustrations that add greatly to the elucidation of the text. Its publication during the German war was a fine patriotic effort on the part of the Société Archéologique at Chartres.

Of the cathedrals of Antibes, Grasse and Vence almost nothing exists in English, and comparatively little in French. David MacGibbon, in *The Architecture of Provence and the Riviera*, published in 1888, made reference to all three churches, and gave some illustrations of them. If Miss Clara Louise Wells, in her *Arrondissement of Grasse*,<sup>3</sup> be not the next historian, she certainly is the next English writer to discuss them, perhaps the only English writer to attempt a serious history and description of them. Of the cathedrals of Antibes and Grasse, indeed, she says little enough; neither are interesting churches, and that at Antibes, as the reviewer found with some pain, is hardly worth the trouble of a visit, nor would one visit Grasse for its cathedral. But it is creditable that an English writer should prepare a book in which these churches are treated, even though briefly. More space is given to the cathedral of Vence, which is rather adequately treated. It is a town seldom visited, and offering little to the visitor. The cathedral is a strange mixture of buildings and rebuildings, of little real interest; still, a book which gives somewhat extended treatment to it deserves a welcome. The table of contents concludes with an interesting note: "Since the printers only understand French, and have often been required for war service, any errors that may be remarked are surely excusable." They are; yet the book is remarkably free from typographical errors. Miss Wells gives much space to Roman inscriptions, many of which are reproduced, and which seem to have interested her greatly.

The *Guide-Express à la Cathédrale de Toul* by G. Clanché<sup>4</sup> is a brief guide book to an interesting French cathedral hardly known in America before the war. It was

obviously prepared for war use, that is for the use of troops located at Toul. The author has published several important studies on Toul cathedral, and announces the preparation of a *Mono-graphie*, which will be awaited with interest. The present book is a sufficiently ample guide to the cathedral, and is well illustrated.

*The Department of Gironde*<sup>5</sup> by M. J. A. Brutails and Paul Courteault is a mere outline sketch, intended, primarily, for French school children, but translated for English and American guests and friends. It hardly can be considered as elementary in plan or scope; it is actually a useful handbook to this great French Department. Two cathedrals, those of Bordeaux and Bazas, are referred to. The former is barely more than mentioned; but that of Bazas, of which English and Americans know very little, meets with more extended treatment. An excellent little book of general information, well worth reading.

The cathedral of Viviers is another cathedral almost unknown to the general traveler, notwithstanding the fact that its walls rise high above the river Rhône. M. Bourg's<sup>6</sup> little book, therefore, has quite some elements of novelty. Although brief, it is of special value as almost the only one of this interesting little church. It is offered as an extract from a larger *Historie de Viviers*, now in preparation.

It is perhaps hardly just to include *The Romantic Roussillon*,<sup>7</sup> by Isabel Savory, in a review of monographs on French cathedrals. It is an account of travel in remote corners of the Pyrenees very interesting as such, and treating of a little known region. Two cathedrals are referred to, those of Perpignan and Elne. Little enough is said of either church, and Elne, in particular, seemed to invite the author's antipathy, for no good reason. The illustrations in this book, from drawings by M. Landseer MacKenzie, are

<sup>5</sup>J. A. Brutails and Paul Courteault: *A Short History of the Department of Gironde from the origins to 1789*. Bordeaux.

<sup>6</sup>Joseph Bourg: *Viviers: ses Monuments et son histoire*. Viviers.

<sup>7</sup>Isabel Savory: *The Romantic Roussillon in the French Pyrénées*. New York.

<sup>3</sup>Clara Louise Wells: *The Arrondissement of Grasse in the Department of the Alpes Maritimes, France*. Valence.

<sup>4</sup>Clanché: *Guide-Express à la Cathédrale de Toul*. Nancy.

extremely good, and are beautifully reproduced.

A considerable literature is concerned with the cathedral of Autun. The latest contribution by M. Victor Terret: *La Cathédrale S. Lazare d'Autun*,<sup>8</sup> is a brief but substantial historical and archeological study by a very competent writer. The book, which is a thin pamphlet, gives a very good account and history of the cathedral. It is published without illustrations.

The cathedral of St. Pons is a church of very slight interest, although it is the object of a commendable loving regard by a group of local writers. The latest is the Abbé M. Granier, who has published an interesting but brief review of the bishopric.<sup>9</sup> Founded in 1318 and suppressed in 1790, the diocese had, for France, a comparatively brief existence of six hundred years only. The Abbé Granier gives a list of the bishops, with notes, and summarizes admirably the whole history of the diocese in very brief space.

The period of the war has brought out a number of brief guide books to various

French cathedral cities, chiefly in the interest of the foreign troops. The interest of these little books is rather in the occasion of their publication than in the information they contain. One of the best relates to Senlis, and is by C. Meillac,<sup>10</sup> an excellent little book with good illustrations. Very competent, also, is the guide to Vienne,<sup>11</sup> published by the Société des Amis de Vienne, with small but good illustrations. A guide to Le Mans<sup>12</sup> is a rather summary production. Of different interest is *Fleur de Cathédrale*, by the Abbé F. Dubail,<sup>13</sup> a play presented for the first time in the Psallette of the cathedral at a reunion of former pupils. A new guide to Besançon<sup>14</sup> may also be mentioned; and a description of the astronomical clock<sup>15</sup> in the cathedral, a little war book in English. In English also, is a short guide to Dijon,<sup>16</sup> conveniently arranged in dictionary fashion.

<sup>10</sup>C. Meillac: *Senlis*. Paris.

<sup>11</sup>Vienne et ses Environs. *Guide Illustré du Touriste*. Vienne.

<sup>12</sup>Itinéraire des Voyageurs à travers Le Mans. *Le Mans Guide et ses Environs*. Le Mans.

<sup>13</sup>Abbé F. Dubail: *Fleur de Cathédrale*. Le Mans.

<sup>14</sup>Besançon et ses environs. *Petit Guide Indicateur*. Besançon.

<sup>15</sup>War 1914-1916. *Astronomical Clock of St. John's Cathedral*. Besançon. *Explanatory Notice*. Besançon.

<sup>16</sup>Eveline Warner Brainerd: *Dijon: A short guide in English*.

<sup>8</sup>Victor Terret: *La Cathédrale St. Lazare d'Autun*. Autun.

<sup>9</sup>Abbé M. Granier: *L'Eveché de St. Pons a l'occasion du sixième centenaire de son érection*. 1318-1918. Montpellier.



**Is Steel-Frame Construction Capable of Architectural Treatment?**

I have read Mr. Charles H. Moore's article on "Training for the Practise of Architecture," which appeared in the January Architectural Record, with great interest. It is an

article which might well be read with profit by any one connected with the architectural profession in any way whatsoever. However, the Architectural Record is also read by a great many laymen who are likely to accept *ex cathedra* everything written therein, and therefore I feel called upon to take exception to certain opinions expressed by Mr. Moore. The following clauses quoted from his article, I am afraid, cannot help but cause glee among those construction companies who are so rapidly encroaching on the work of architects as practised in the old dignified way:

"In support of the new educational ideas, men speak of a need for meeting new conditions by new methods. But in architecture there are no new conditions, and therefore there is no call for new methods; though new forms may be evolved in the future, as in the past. The only materials suitable for architecture have long been established, and are the same now as in former times. The present use of iron and steel—which indeed requires new methods—comes of no needs of architecture. It is destructive of architecture if not kept apart from it."

If I have drawn the proper conclusions from Mr. Moore's article, briefly put, only architecture that is based on masonry principles is good. The application of this would limit the architect's field to buildings of moderate size and built contrary to modern economic needs. This expression, published in an architectural journal, only tends to confirm the impression already held by the general public that the architect is an ex-

pensive luxury. If the architect must design only buildings where art supersedes utility, and he is lucky enough to get a sufficient amount of work of this class to make it worth while keeping an office, it is questionable how long he could afford to keep it up.

Mr. Moore claims the present use of steel and iron comes of no needs of architecture. There is no reason why it should. It is not architecture which has determined the use of these materials, but modern economic conditions; and if architecture is to live and flourish, it must obey and conform to modern economic needs. Architecture has inherited forms based on materials used by previous civilizations. Must architecture therefore neglect so important a product of this age as steel? Mr. Moore admits new forms may be evolved in the future as in the past, but if steel is divorced from architecture, what agency is going to evolve these forms? Shall the entire designs of buildings containing steel be left to structural engineers or contractors? The steel skeleton must be clothed in some way, for protection if for no other reason, and surely no one is better qualified to do this acceptably and according to the canons of good taste than a well trained architect.

Mr. Moore says, "If the building must be a steel frame, let it frankly be shown for what it is." This is all very well, but buildings are not constructed primarily as exponents of truthful construction but for shelter. The structure must be enclosed in some way, and if the constructive forms are not actually revealed, they can at least be suggested in the enclosing shell. After all there is no great difference between Gothic principles and the present systems of steel construction. In both cases the principal weights of the structure are carried on points. For lateral forces the advantages are all in the favor of steel.

It is quite possible that architecture has not yet thoroughly utilized the great possibilities of steel. It is more than likely that there will be developments of which this age does not dream, but to gain these ends the materials must be used, experiment after experiment must be made until the best possible use is made of the material without sacrificing any of the true principles of architecture. Steel is here to stay. Modern economic needs demand it. Money, time and space are too valuable to neglect it, particularly in our crowded cities. If new forms of architecture result from an intelligent use of the material, it will be the imagination and the resource of the architect that will attain this end.

HAROLD LAWSON.

The exceptions taken in Mr. Lawson's communication (written in an entirely good spirit) to what I have said in your January issue, on training for the practice of architecture, are based on what appear to me mistaken economic grounds, and not on those considerations of excellence in design and construction which should be the sole concern of the architect. Mr. Lawson thinks that modern economic conditions make the use of what are called modern methods and materials imperative, saying that "if architecture is to live and flourish it must obey and conform to modern economic needs." But if it be true, as he rightly affirms, that "it is not architecture that has determined the use of these materials," it should be obvious that they are not suited to its needs; and to imagine that architecture can live and flourish on unsuitable materials seems to me a mistake. Only mechanical engineering can live and

flourish on the modern economic methods of building; and should these methods ultimately prevail, the vocation of the architect would be superseded by that of the engineer. But I do not think this is likely to happen. The architectural faculties of man are not going to be swallowed up in a deluge of utilitarian materialism, however things may look for the moment. Sooner or later it cannot fail to be seen that what are just now called economic methods do not make for good economics. These methods are essentially cheap and ephemeral. For duration, no modern engineering works are likely to last long in comparison with the masonry constructions of the past. There are stone bridges in Europe, some two thousand years old, that are still perfectly sound and serviceable.

I need not discuss Mr. Lawson's minor points, but I may add that he is mistaken in supposing that the application of masonry principles "would limit the architect's field to buildings of moderate size." It has not done so in the past. Hardly any building constructed on the modern lines encloses so many cubic feet of space as Amiens Cathedral—built of stone eight hundred years ago.

CHARLES H. MOORE.

#### A CORRECTION

There appeared in the February number of the Architectural Record two exterior views of The Cheesewright Studios, with a description in which the writer gave me credit for the designing of the building. As a matter of fact all credit is due Mr. Kenneth Gordon, of J. H. Woodworth & Son, who was sole author of the design. Please give this publicity in the Record.

EDGAR J. CHEESEWRIGHT.

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The  
ARCHITECTURAL  
RECORD  
MAY 1921



PUBLISHED IN NEW YORK



Architect and Owner—Russell F. Barker, 1120 Farmington Ave., West Hartford, Conn.  
 Contractor—The Bent-Bartlett Co., 43 Ann St., Hartford, Conn.  
 Bishopric Medium Weight Creosote Stucco Base used on exterior.

## WHEN BUILDING THAT "DREAM HOME" PROFIT BY "EXPERIENCE"

- 1—Skill or practical wisdom gained by personal knowledge, feeling or action; as, a means of experience
- 2—The sum total of conscious events which compose an individual life. Thus Webster defines the word "EXPERIENCE."



Res.—Mrs. Wm. B. Green, 133 Steele Road, W. Hartford, Conn.  
 Architect—Russell E. Barker, 43 Ann St., Hartford, Conn.  
 Gen'l Cont.—W. A. Wilcox, 327 Trumbull St., Hartford, Conn.  
 Stucco Contractor—Peter Leone  
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# THE ARCHITECTURAL RECORD



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Vol. XLIX. No. 5

MAY, 1921

Serial No. 272

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Yearly Subscription: United States, \$3.00; Foreign, \$4.00; Single Copies, 35 cents. Copyright, 1921, by The Architectural Record Co. All rights reserved. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY

THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. W. D. HADSELL, Vice-Pres. E. S. DODGE, Vice-Pres. J. W. FRANK, Sec'y-Treas.



ENTRANCE TO LADIES' ROOM—FIFTH AVENUE GUARANTY  
BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



# THE ARCHITECTURAL RECORD

VOLUME XLIX



NUMBER V

MAY, 1921



## THE FIFTH AVENUE GUARANTY BUILDING

NEW YORK

CROSS & CROSS, ARCHITECTS  
*for ALTERATIONS & ADDITIONS*

BY

JOHN TAYLOR BOYD, JR.



THE new quarters of the Guaranty Trust Company's Fifth Avenue Office, at Forty-fourth Street, New York, are an interesting variation of the typical banking plan. The architects, Cross & Cross, have planned them to serve the needs of a metropolitan shopping district, and, in so doing, have effected a noteworthy alteration of a building in itself distinctive as a work of Stanford White. The remodeled building is expressive of the most recent development in the tradition of American bank architecture, a tradition now firmly established, although it is scarcely twenty-five years old.

The modern conception of a bank, as everyone knows, is that of a monumental structure of perfected design in opulent

materials, and the center of interest is the imposing banking hall, where the public comes to transact most of its business with the bank. There is, however, a conflict of opinion in the matter of how this conception should be realized. Some artists who are not architects hold that bank architecture is too bookish, that it follows the formula of the Greek temple, which is not a suitable home for a twentieth century business organization. That instances of such formalism are found is indeed true, but they are not the rule. Many of our finest banks are not in any sense Greek temples. Whatever Greek forms they display are chiefly motives of detail, which cannot be condemned until "modern" forms develop to supplant them. But it is a long process of art to



requires the services of large banks. But there is another cause of rapid growth. The metropolitan banks have been taking on new functions, and are today complex business organizations with many departments, each a fair-sized busi-

Nevertheless, the great banking hall remains the fundamental feature of the bank. Except for changes in detail, the modification occurs principally in the space for clerical offices. Where formerly the bank found a mezzanine floor



FORTY-FOURTH STREET ENTRANCE—FIFTH AVENUE GUARANTY BUILDING, NEW YORK.

ness in itself. The personnel numbers hundreds of clerks working under the direction of a large staff of officers and executives, and morale is cultivated, as in a regiment, partly through clubs, athletics, entertainments and other recreational activities. Stores and lunch rooms are added, and a newspaper is published.

All this expansion in the functions of a bank appears reflected in its architecture.

opening off the banking room sufficient, now it requires additional floors of offices. In the Fifth Avenue Guaranty Building the basement, first, mezzanine and second floors are occupied by the bank, and the top floor is given up to lunch rooms, kitchen service, clubrooms, a small store where goods, chiefly household supplies, are sold at cost to employes. The rooms of secondary archi-



FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS  
& CROSS, ARCHITECTS FOR ALTERATIONS AND ADDITIONS.



FIFTH AVENUE ENTRANCE—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



MAIN AXIS OF BANKING ROOM—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



BANKING ROOM, LOOKING TOWARD LADIES' ROOM (OPPOSITE FORTY-FOURTH STREET ENTRANCE)—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



GALLERY AROUND COURT IN BANKING ROOM  
—FIFTH AVENUE GUARANTY BUILDING, NEW  
YORK. CROSS & CROSS, ARCHITECTS.





LADIES' ROOM—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



REAR END OF BANKING ROOM, MAIN AXIS—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.

tectural interest remain, as always: the president's room and the directors' rooms. On the main banking floor a variation is noted, due chiefly to the location of the bank in a shopping district; the public space is exceptionally commodious. A broad aisle follows the axis of the Fifth Avenue entrance and another crosses it from the Forty-fourth Street entrance. The latter aisle leads to the section of the bank given over to women, and the unusual provisions for their convenience make this the characteristic feature of the bank. It is almost a small bank in itself, with its own open space, its tellers and a separate elevator down to the vaults and the coupon booths adjacent. There is included also a complete retiring suite, notably a fine room of paneled oak walls, in a light finish and furnished in excellent taste. This section is very near the Forty-fourth Street entrance, which can be used as an automobile entrance.

The building, it must be remembered, is an alteration. An architect knows that

it is not easy to change a building which has been carefully designed for one organization and make it fit another. None of the rooms on the ground floor of Sherry's was large enough to offer space for a banking hall. The difficulty was solved by tearing out the bottom story of an interior light court which began at the fourth floor level of the building. This operation allowed a two-story hall to be developed in the center of the bank, providing the needed spaciousness and height and daylight. This court was then developed like the galleried courts of the early Italian Renaissance palaces. With such a hall, one does not notice the lower effect of the banking spaces. As a further aid in overcoming the low effect, the Roman Doric columns encasing the structural supports have no entablature above them, and instead carry a very light, delicately detailed, plaster beam. The beams, not being deep, do not obstruct either the light or the view. In a few cases where the bottom flanges of the steel girders came a few inches below the ceiling, the



FORTY-FOURTH STREET ENTRANCE—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



PRESIDENT'S OFFICE—FIFTH AVENUE GUARANTY BUILDING, NEW YORK. CROSS & CROSS, ARCHITECTS.



beams were allowed to run into the capitals of the columns, but the effect is hardly noticed. Altogether, the difficult problems of alteration have been most successfully solved.

The effect of spaciousness is apparent, not only in the architecture, but in the ample floor area that is given over to public circulation. In planning banks there is often too small provision for future growth, and in this particular case the result shows foresight, because the ample space allowed is already coming into use. Other details to be noted are the lightness of the grilles or "cages"; the use of Hauteville marble and of Euville stone from France, which harmonizes with it; and the Tennessee marble for floors. The ceiling and upper decorations are plaster work, except for the marble columns and balustrade of the open gallery. The design of the interior is excellent, with an effect of lightness of color and fine surfaces, although the gallery around the court may be thought too fine in scale and too thin in relief for the architecture below it.

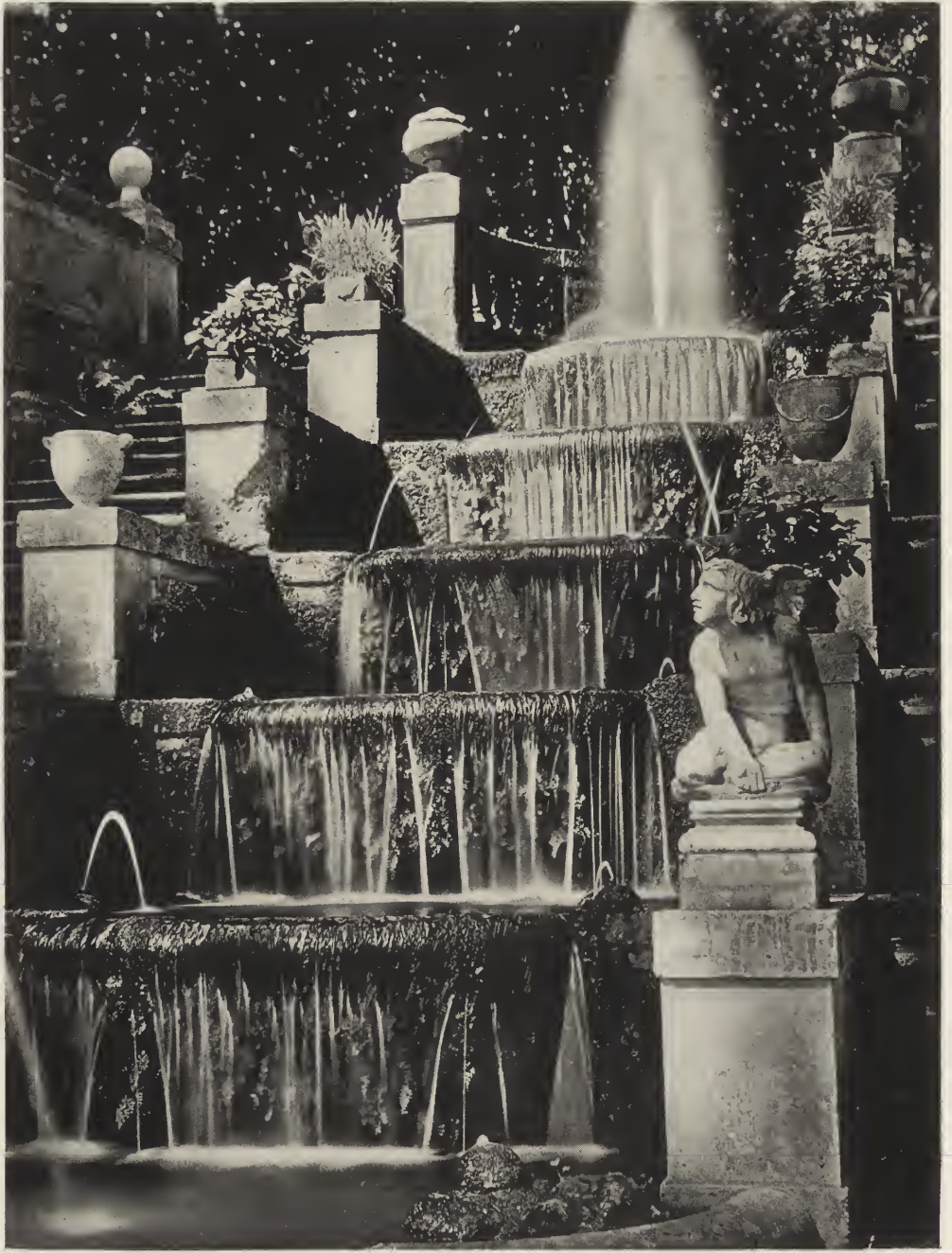
At the rear of the bank are separate elevators for the use of the personnel in going to the clerical floor above and to the recreation and lunch room floor on the top of the building.

The basement is of technical interest. It contains the largest bank vault among private banks in the world, entered through two compartments with barred doors and surrounded by a great number of coupon booths. On the second floor the chief architectural feature is the president's room, located on the Fifth Avenue front, well designed on early American lines, with white paneled walls and ma-

hogany furniture. The upper floors of the building are rented as business offices.

This finishes the description of the interior in its main features and a word remains for the alterations to the exterior. The original building which Louis Sherry had occupied was increased on both Fifth Avenue and Forty-fourth Street, with benefit to the mass of the building, particularly in view of the addition of a top story. A new cornice crowns the whole. The rest of the building was left almost unchanged, except for important alterations on the ground floor. There every other column of the ordonnance was taken out, and large round-arched windows—more typical of a bank—were inserted. This change has improved the building, since it provides a more solid base. Then two entrance doorways were installed, one on each front, in carved granite, with bronze doors. The bronze doors are perhaps the finest details in the bank, with splendidly modeled relief. The relief is real, and derives much character from the play of sunlight on it, in contrast with the extreme flatness of similar doors whose pattern seems not to be modeled at all but merely incised. The granite work of the doorways shows the skilful undercutting now possible with improved tooling methods on such hard stone, although the ornament is not so fine as the doors. The Forty-fourth Street entrance seems too delicate in scale, both for granite and the rest of the exterior.

Altogether, the difficult task of alteration has been carried out, both inside and outside, in a manner which maintains the splendid standards of our banking architecture.



VILLA CORSINI,  
CASCADE, ROME.



*The*  
**VILLA CORSINI CASCADE**  
**ROME**



*By R. H. Wilcox*

**T**HE Villa Corsini, in Rome, is located on the Vicolo Corsini, in the western quarter of the city. The grounds have no present connection with the palace and are now used as a botanical garden. Permission to visit it can be obtained from the *Direttore* of the Royal Institute and Orto Botanico di Roma, via Panisperna 89-B, in case admittance is refused at the entrance gate.

The one remaining feature of this once beautifully designed garden is the cascade, with its succession of stone basins

flanked by steps leading to an upper terrace and grotto. This construction is on the slope at the end of the central walk, forming the main axis with the garden façade of the palace. As is true in most of the Italian gardens, the importance of a vista has been realized and its emphasis brought about by the architectural feature herein described.

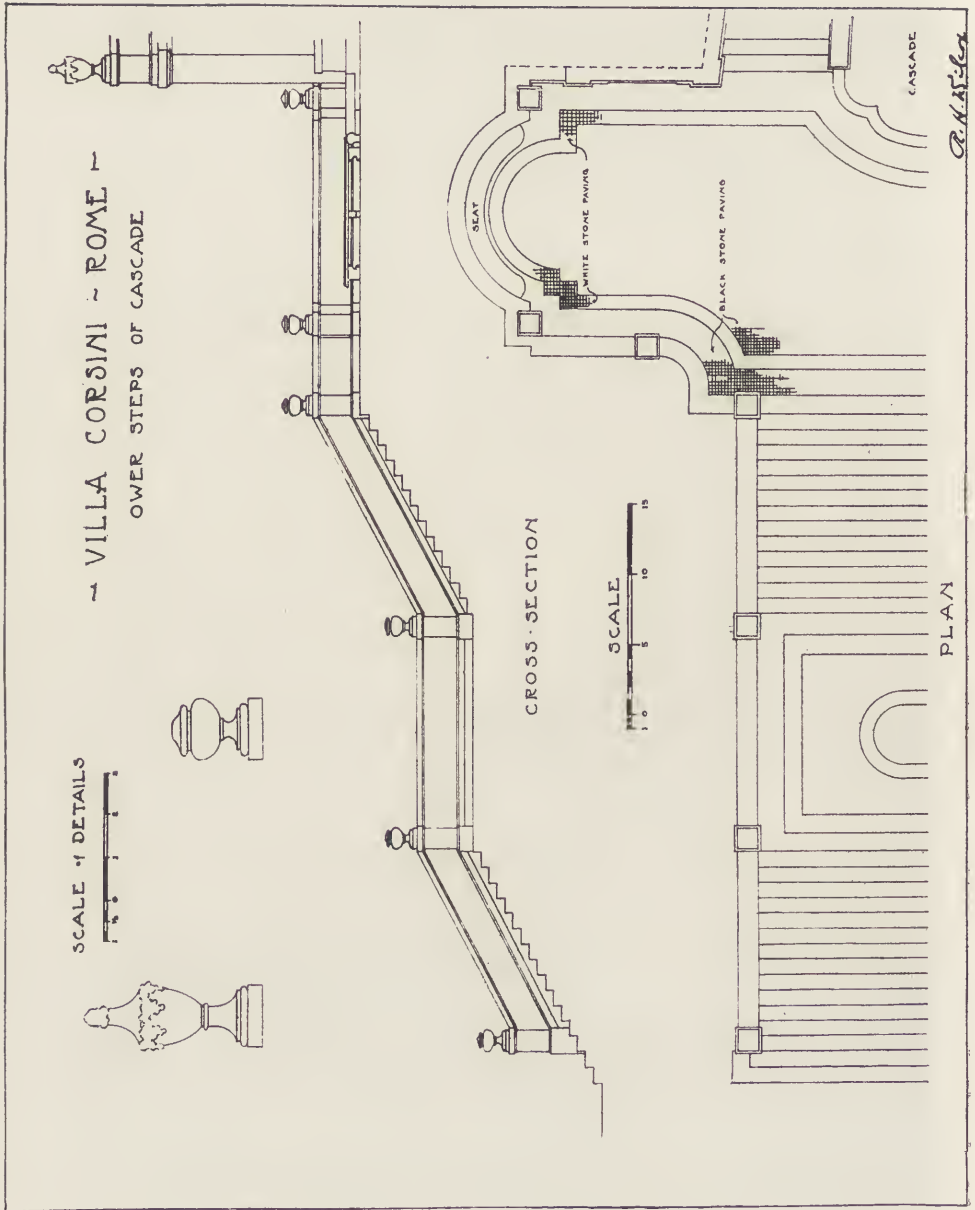
The material used in construction is stone and stucco over brick. The paving on the terraces is for the most part made up of small stone blocks with some vari-







VILLA CORSINI  
CASCADE, ROME.



ance of color to aid the design. The wall surfaces were kept very plain, with but little decoration, placing the emphasis on mass and not detail. By reference to the accompanying sketches, it will be seen that there are a number of deviations from symmetry and rectangularity, which is also true and equally interesting in the plans of many other Italian villas. The converging of the lines of the upper steps is an obvious intention on the part of the designer, not in order to adapt the scheme to practical limitations, but to create greater interest in the succession of water basins and, at the same time, lend distance to the vista. In this case, the accomplishment of the false perspective is successful, in that many observers fail to detect it on the ground.

The chief reasons for the introduction of water cascades into the design of Italian gardens is to bring the beauty of moving and still water within the boundaries of the estate, and to provide through evaporation a lower atmospheric temperature, so essential to comfort during the hot summer months. There is also a psychological suggestion of coolness, which should not be overlooked. The basins, in this case, have been designed large enough to allow a quantity of water to be retained, counting on separate pools in the sense that they have depth and repose necessary for the

growth of water plants, and expanse sufficient for reflection and deep shadow. The water traveling from one basin down to another affords the active water display, supplemented in turn by a number of spouts which throw the water in a series of arcs from each basin to the next higher one. The sparkle and sound coming from this water in motion contributes materially to the delight and interest of the observer.

Much of the charm of this cascade may rightfully be attributed to the immediate vegetation. The location of the trees, with their dense enframing foliage, mark and emphasize the boundaries of the vista, serve as a partial canopy, and introduce a great amount of interest in the texture of its varied foliage. The smaller undergrowth assists in tying this piece of architecture to the ground. The overhanging vines are of such character as to serve not only as decoration but to bring about that proper balance between nature and man-made construction so necessary to good composition.

The greater number of cascades in Italian gardens are built on a much grander scale and are more elaborate in design. But, in contrast, the size and simplicity of the Villa Corsini cascade seem to the writer to be of consequent importance and worthy of careful study.



THE FRONT ENTRY, WITH MISS ANNIE BONNEY, OF SCITUATE, A MAYFLOWER DESCENDANT, DRESSED AS A PILGRIM MAIDEN—THE ALDEN HOUSE, DUXBURY, MASS.



## THE ALDEN HOUSE AT DUXBURY, MASS.



By

Sylvester Baxter

THE only existing house that was the home of one of the Pilgrims of the Mayflower is the Alden homestead at Duxbury. As such it is the most important of the historic buildings of the Old Colony—the designation by which the land of the Pilgrims, the former colony of Plymouth (comprising the existing three Massachusetts counties of Plymouth, Bristol, Barnstable, and a small portion of Norfolk) is familiarly differentiated from the Colony of Massachusetts Bay. As an admirable specimen of dwelling-construction in the early colonial period, as well as for the interest attaching to its association with two of the most celebrated of the Mayflower's passengers, it will repay the visits to the second oldest of the Plymouth Colony towns which thousands of twentieth-century Pilgrims will make in this tercentennial period.

It is commonly called the "John Alden House." But this is not wholly correct. John Alden lived here, and so did his wife Priscilla, in their later years; he, and probably she, died here. But they lived with their son Jonathan, their oldest, who built the house in 1653. And most remarkably, from then till now, it has been owned by Aldens—handed down from father to son until it was bought by John T. Alden of St. Louis; from him it was purchased by Charles L. Alden of Boston, by whom it was recently transferred to its present owners, the Alden kindred of America.

All the Pilgrims, and their fellow colonists, the other forefathers, as they who came over to Plymouth in the first three ships were called, did not long remain in Plymouth. The will to migrate made itself felt at a very early day. Better lands, more room to spread out, soon attracted them to other places; the spirit of unrest that has steadily opened up the

whole continent and made the spirit of the Pilgrims the most potent force in our New World democracy. So it was that in 1627—only seven years after the landing and three years before Boston was founded—the Aldens left Plymouth to settle in Duxbury, near by, with seven others.

The house is typical of its class. With its sensibly plain exterior, its rectangular plan, its big central chimney, it reproduced in terms of wood the brick or stone house of the prosperous English yeoman or farmer. In its size, its look of dignity, its spacious rooms, its evidences of old-fashioned comfort, it tells of the conditions of affluence to which the leading members of the colony must have risen not many years after enduring the privations and struggles for existence that marked the start of their New World life. The Aldens, probably in common with the greater number of the forefathers in general, quite naturally took rank as the gentry of the colony, standing materially higher in the social scale than would have been their lot had they stayed at home; enjoying in their new environment, as they must have, the respect, deference, privileges and opportunities commonly accorded to first-comers in a newly settled land. The appearance of their home and its continued possession in the family speak of this quite convincingly. Other Alden homes, built in early days, tell a like story. In Little Compton, Rhode Island, whither one of the Aldens went to settle before the seventeenth century had passed, going with other families from the adjacent Plymouth Colony, the writer has had the pleasure of visiting a fascinating example of this fact.

The house, both without and within, probably looks today much as it did when built. Since shingled exteriors came af-

ter those of clapboard in Colonial construction, probably the house was originally clapboarded. The present condition and aspect of the house are due to its last individual owner, who, acting in behalf of the Alden kindred, devoted himself to the task as a labor of love, giving it most painstaking attention. Mr. Alden says that he has not "restored" it in the common acceptance of the term, for there were no wornout elements to be reproduced. There has been no necessity for anything of the sort, for the house remained in extraordinarily good condition; like the usual run of old New England houses of its class and its day it was admirably built of substantial and lasting materials, and kept in repair by its owners from the beginning to this day. Hence depreciation has been slight. One of the best of expert examiners went through it thoroughly; he reported that he could not find the least evidence of decay or wearing out, saying he knew of no reason why it should not stand in good shape for at least 200 years to come.

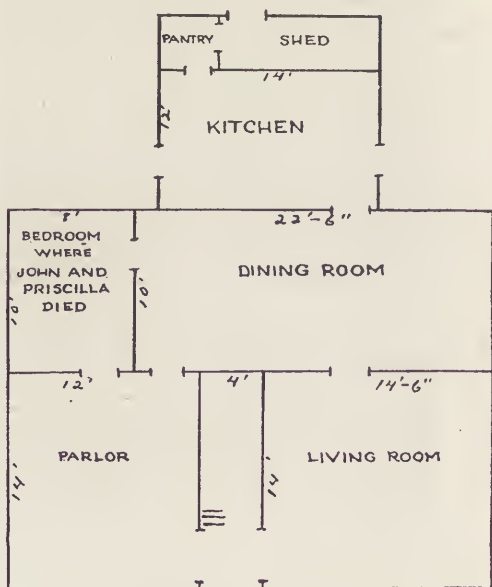
No attempt was made by Mr. Alden to make the house represent, in its interior, what it probably looked like in its first year. In wall-paper, furnishing, and various other things, it frankly shows itself in the fashion an old house would naturally assume under continual inhabitation by well-to-do persons, their standards of taste and comfort adapting themselves to their wants as the years passed; persons going out into the world and bringing back tokens of their travels in the shape of choice China, attractive furniture and the best sort of wall-paper of their day. So all that was needed to do to the house was to preserve the old-time aspect of things, make needful repairs, select appropriate wall-papers of suitably old-fashioned designs, and choose the sort of old furniture that characterized former days.

Mr. Alden had the fortune to obtain the help of an excellent carpenter trained in the traditions of the New England school that ruled when mechanics did first-class jobs because they took just pride in their work. This man added to the house only one feature that it did not

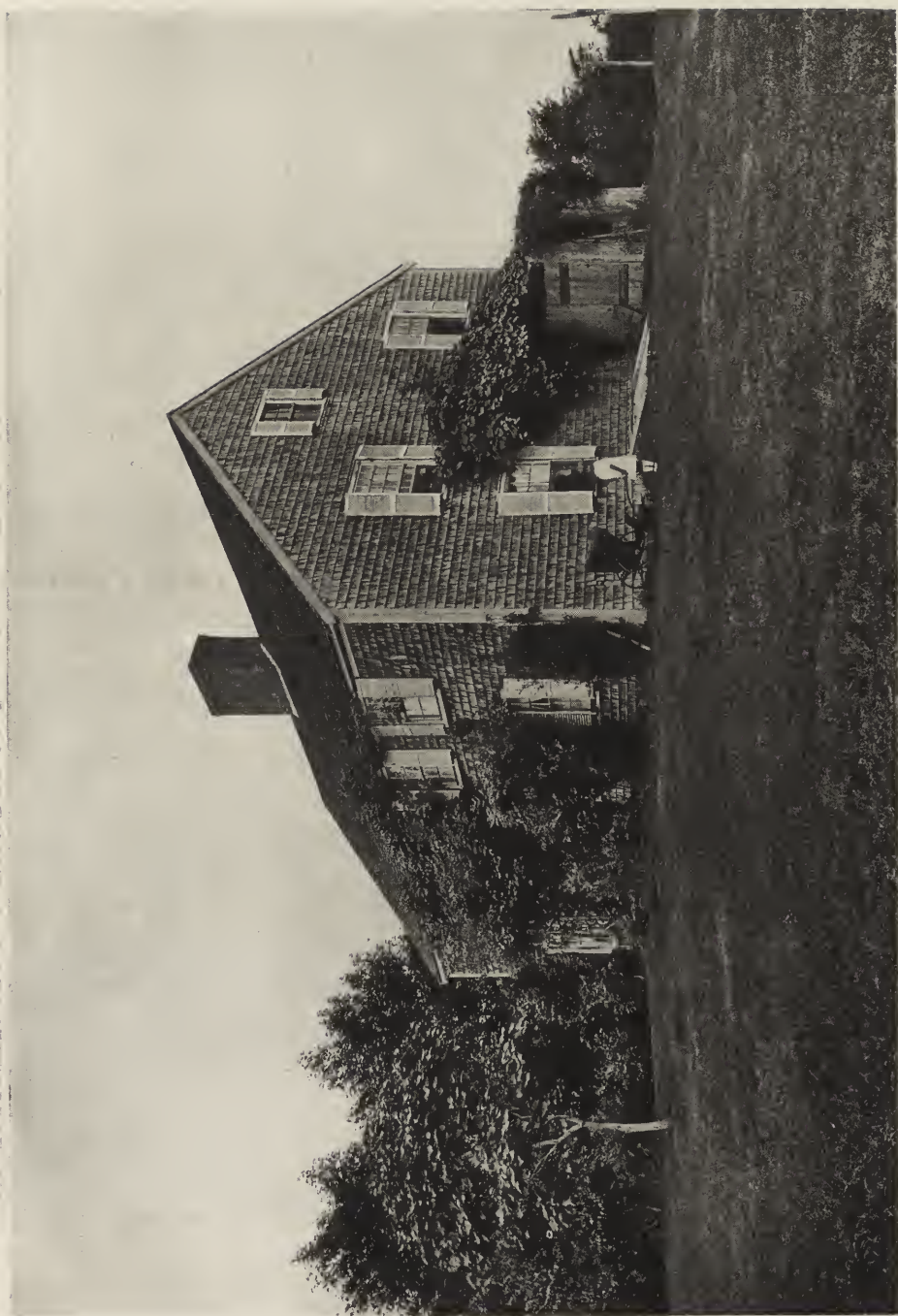
have as it stood. The pantry was too dark, so it was desirable to light it from the outside. So, just as Mr. Alden directed the change to be made—in such a way that nobody would suspect any alteration, using nothing new, whether board, shingle or nail—an old window of just the kind wanted was installed.

A striking token of the unsettled conditions of the young colony in the days when the house was built—wars with the Indians, dangers of invasion, witchcraft, and perhaps forebodings as to possible oppressions and persecutions of the sort that sent the Pilgrims across the Atlantic—lies in certain secret passages and hidden stairs whose existence would never be suspected. It doubtless seemed a wise precaution to provide opportunities for concealment and escape should an emergency arise.

When a place or a building is associated with notable happenings or distinguished personalities legends and myths are apt to arise. In Verona there is the house of Juliet; on Boston Common tourists are taken to see the bench where Howells' "Lemuel Barker" sat; perhaps by this time even the home of "Bromfield Corey" has been located. But



FIRST FLOOR PLAN—THE ALDEN HOUSE, DUXBURY, MASS.



*Photos by Burr E. Church*

THE ALDEN HOUSE, DUXBURY, MASS.  
BUILT BY JONATHAN ALDEN IN 1653.



CUPBOARD IN THE LIVING ROOM—  
THE ALDEN HOUSE, DUXBURY, MASS.





LIVING ROOM—THE ALDEN HOUSE, DUXBURY, MASS.

a better sanction exists for showing the small bedchamber opening out of the living-room as the scene of John Alden's death. The original home of John Alden and Priscilla in Duxbury stood on a knoll not far from the house of their oldest son, both houses standing on land sold to John Alden by Experience Mitchell, who as a forefather came on the *Anne*, one of the three first ships, including the *Mayflower*, and was an ancestor of the many Mitchells who lived and in numbers yet live in Plymouth Colony and thence spread over New England. Quite naturally, this small chamber, being on the ground floor and convenient to get about from, warmed from the living-room with its great open fire of blazing logs, would be just the place for an old man. There is also excellent testimony for this assumption: Mr. Charles L. Alden was told by an aged man, whose grandfather had told him, that the death of John Al-

den in 1687 took place in that room. There was a gap of only 29 years between John Alden's death and the birth of that man's grandfather. Hence the information may easily have come from a contemporary of John Alden who had first-hand knowledge of the fact.

Most attractive features of the house are the fittings and furniture, selected and installed with scrupulous care so as to enhance the old-time aspect of the rooms, so quiet and dignified in their excellent design, by expressing the well-being of a typical family of the upper middle class in the early days. These rooms illustrate in a notable degree the social history of the Pilgrims and their descendants, indicating the deserved prosperity that the colony soon rose to: comfortable living served by a plain domestic beauty conspicuously higher than what later periods had to show before modernity had entered upon its esthetic phases.



DINING ROOM—THE ALDEN HOUSE, DUXBURY, MASS.

The collection of old-time furniture that gives the various rooms their perfect aspect of colonial interiors is of uncommon quality. Both in character and arrangement this feature also is due to the man who brought the house into such prime condition. Mr. Alden has long been an enthusiastic collector of antiques; so, beside the fine examples owned by the Alden kindred and permanently installed in the house, there are representative loans from his own rich collection. That part of it now in the Alden house has been estimated to represent a value of at least fourteen thousand dollars.

In arranging the different rooms, the intention has been to give the effect of a home that from the first has been inhabited by successive generations of the same family. The characteristic furnishings of each room thus appear to represent the best of what a continuing family of well-to-do people have accumulated

in the course of the three and a half centuries during which they have lived there. Nowhere in these rooms is there any of the effect of what may be called the inanimate self-consciousness that belongs to things merely placed on show. There is nothing of the ostentatious in the effect produced; nothing of the superfluous or excessive. Many of these things belonged to different generations of the Aldens and are therefore of particular interest. But much the greater part simply represents the best craftsmanship known by the ten successive generations of the family that has always owned the house.

A remarkable thing about the Aldens of America is the fact that John Alden appears to have been the only man of his family name that ever crossed the ocean to settle in the New World. Hence the American Aldens are essentially a generic unit. The most competent authorities have declared that no person in America



PARLOR, WITH DOORWAY (AT THE LEFT) TO BEDROOM WHERE JOHN AND PRISCILLA ALDEN DIED, AND DOORWAY TO KITCHEN—THE ALDEN HOUSE, DUXBURY, MASS.



LARGE CHAMBER IN SECOND STORY—THE ALDEN HOUSE, DUXBURY, MASS.



ANOTHER VIEW OF LARGE CHAMBER IN SECOND STORY—THE ALDEN HOUSE, DUXBURY, MASS.

who rightfully bears the name by virtue of paternity has yet been found who is not a direct descendant of John Alden. The same holds true of the Alden blood that flows along female lines. The family would, therefore, seem to be an appropriate subject for investigation by students of eugenics.

As to the personality of John Alden and that of Priscilla Mullins, who became his wife, little is actually known. The atmosphere of poetry with which Longfellow has surrounded them has set them apart from their fellow Pilgrims. Yet there is little to indicate that there was anything at all more romantic about John and Priscilla than about any others of the company beyond the circumstance that they were both youthful and became lovers in their new life as pioneers. The celebrated episodes that give color to their story appear to be apocryphal. John Alden was a young cooper when he joined the Mayflower company at Southampton, perhaps impelled by the adventurous spirit of youth. Possibly he found a lucrative field for his trade in the New World. So his fortune may have been built on barrels!

Ten Alden names stand in the latest edition of "Who's Who." Two are women, one of whom bears the name by marriage. Their callings are as follows: lawyers, two; one of them also a lecturer; university professor, one; geologist, one; educator, one; four are authors, journalists, editors. Then, also there are hundreds of Aldens who have achieved prominence in the business world.

The Alden most eminent in letters was the late Henry M. Alden, originally a Congregational minister; becoming the

editor of Harper's Magazine, he was the man who did the most to form its distinctive character. He was one of the greatest American magazine editors, peculiarly beloved among his contributors. He wrote two celebrated books, ethical and philosophical in nature: "God in His World" and "A Study of Death."

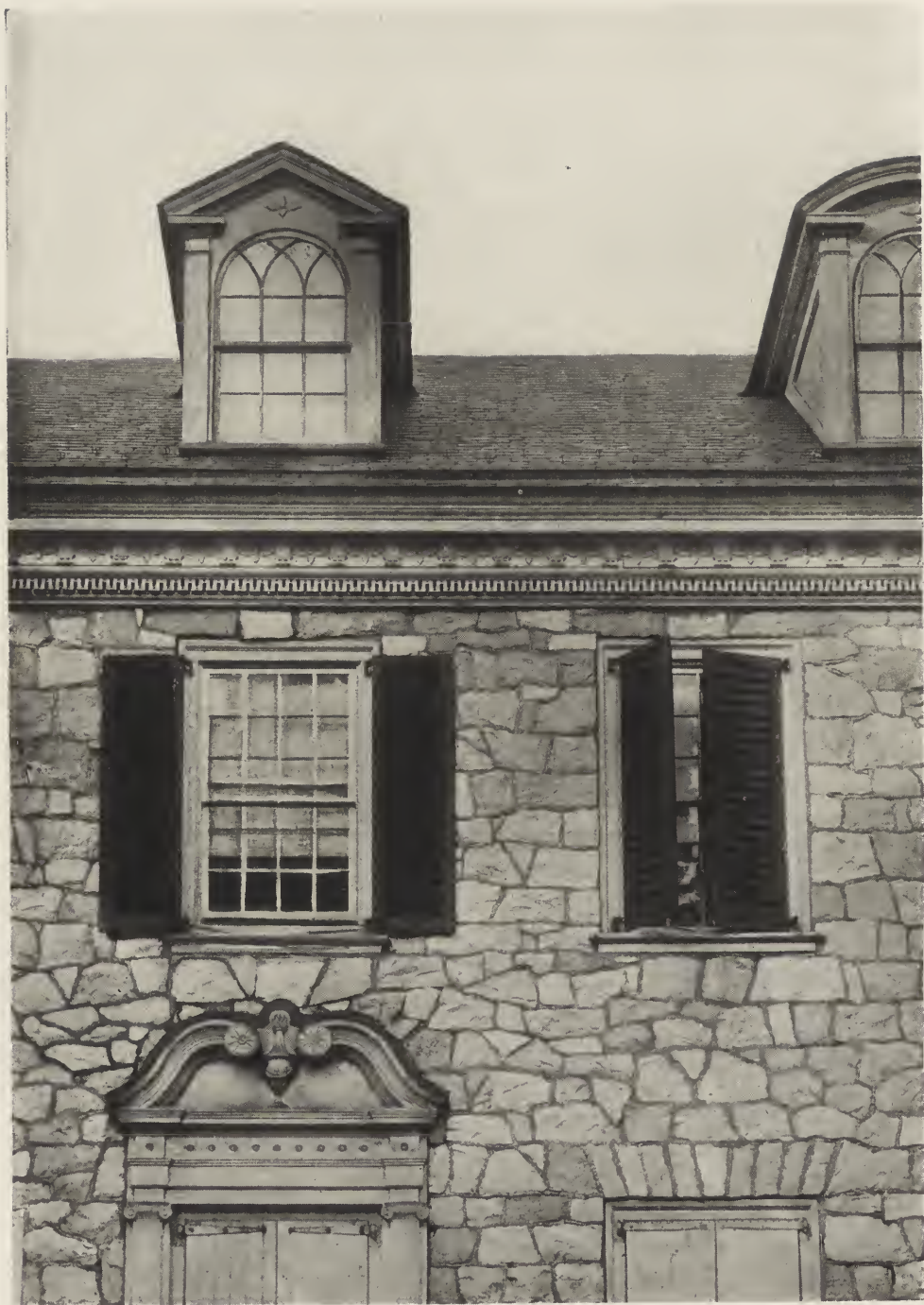
John Berry Alden of New York, editor, author and publisher, is another man of fine and generous nature, quietly helpful to others in various ways; the American pioneer in the publication of cheap editions of high-class works.

The late W. L. Alden (William Livingstone) was an author loved by boys because of his delightful adventure tales; he was also a journalist, prominent as an editorial writer for New York newspapers.

John Alden is another prominent journalist and writer of newspaper verse; his newspaper life dates back more than 40 years, spent on the editorial staff of the Brooklyn Eagle. He stands high as a "newspaper poet." During more than sixteen years he has written about 5,000 poems, appearing daily in the Eagle; their outlook upon the bright side of life harmonizes with the circumstance that their author founded, more than 24 years ago, the International Sunshine Society.

Raymond Macdonald Alden, professor at Leland Stanford, Jr., University is a poet, dramatist, and writer of short stories; he has also written able books on literary subjects.

This list by no means exhausts the subject, for the Alden name has long been numerous prominent in law, medicine and other professions.



CORNICE DETAIL—WILLIAM MACLAY  
MANSION, HARRISBURG, PA., 1790.

# The EARLY ARCHITECTURE of PENNSYLVANIA

## PART VI - CORNICES



By A LAWRENCE KOCHER

IN the fourth of the *Ten Books on Architecture* written by Vitruvius, it is set down that the cornice is the "ornament" of a building. It is known technically as the crowning member of an entablature—the projecting set of molds at the top of a wall. Its purpose is twofold: to throw off the rain water from the roof beyond the face of the building, and to add a touch of attractiveness to the roof edge. Its origin is to be found in the projection formed by the meeting of roof rafters and ceiling beams. In this sense it was at first structural, but like so many other devices of construction the original purpose was forgotten and it soon lapsed into a decorative feature alone.

The classical cornice of the Greeks and the Romans offered the prototype for Renaissance architecture and proved the inspiration for most modern cornices. It consisted of three parts; first, the uppermost crown molding; second, the broadly projecting square-edged member which serves as a drip and casts a wide expanse of shadow (one of the most important decorative effects of a cornice); and, third, the group of moldings supporting the shelf-like overhang, known as the bed-molds. The cross section of a classical cornice is not unlike the section of a Roman Doric capital. In fact, in each of the parts reveal a similarity of function. Both are transitional features and both terminate the upward rise of a wall or of a support. Because, in either case, the parts which compose them are frankly and simply chosen shapes that serve definite ends, they became fixed and regular and what may almost be termed standardized. They lent themselves to few variations other than enrichment of surfaces.

The size of the Greek cornice was de-

termined by the height and the nature of the order that accompanied it. In the Italian Renaissance times a new idea was introduced, in that the cornice was generally proportioned to the height of the wall; and it was known as the *cornicione*. This came about through the frequent instances of walls in which no order was employed. In this way the wall cornice may be said to have been borrowed from the order, and it has always retained the classical turn of molds which its original use prescribed. As a crowning feature of a wall, the cornice may or may not include the frieze and the lower part of the entablature, the architrave. With the Italian palaces, such as the Riccardi, the Strozzi and the Pitti, these parts are dispensed with. In some cases, even where orders are included, as in the admirable Library of St. Mark's, in Venice, the uppermost entablature is greatly enlarged from its traditional proportion to conform to the total height of the building and not to the order of the second story.

It would be preposterous to attempt to link the cornice of Colonial America to these heroic endeavors of the first rank which come from classical antiquity and Renaissance times, were it not for a certain high achievement of our early builders in this direction, a well-merited prominence which gives distinction to the Colonial style. The American craftsmen continued the precepts of tradition, but in addition they reshaped the orders, varied the treatment of moldings and altered the conventional relations which exist, or are thought to exist, between the parts or the whole of an order. These modifications were based on reason and common sense, and were made to suit the materials at hand and the strange circumstances of an isolated land.

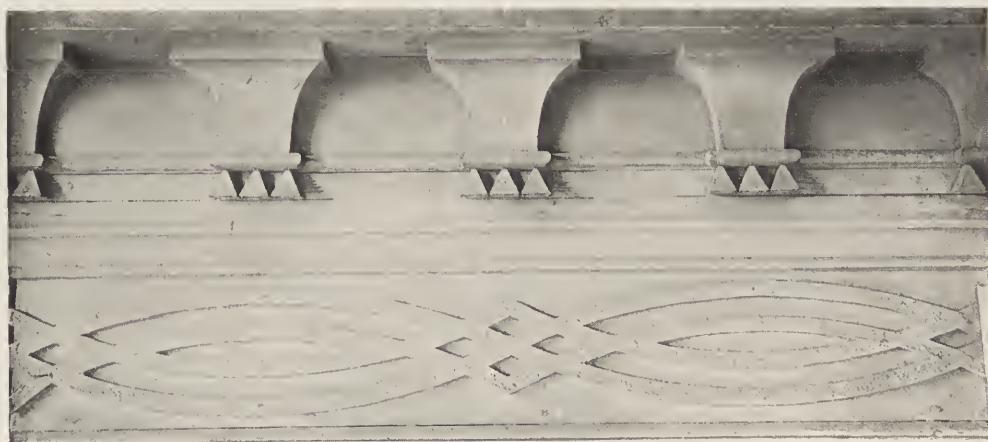
Mr. John T. Boyd, in discussing Colonial moldings says: "No artists in the world have better used wood out of doors than Americans. Our early craftsmen developed a series of wood forms that are thoroughly functional, an organic expression of the construction in the simplest, most direct way. They also modeled them to make the most of sunlight. In the North the hard, cold light brings out every form and line of detail with uncomfortable distinctness. This fact led the old craftsmen-carpenters to make their details very simple and delicate and fine in scale, using rounder moldings to soften the edges, avoiding a machine-like appearance; while to the South, where the light is warmer, mellower and vibrating with color, it does not accent edges, hence the craftsmen used heavier and bolder detail, with rich decoration in the luminous shadows." This sympathetic and thoughtful variation of moldings, this ready shaping of parts, the better to produce a play of light and shade, was made possible by the choice of wood as the material from which cornices and other exterior trim were formed. The cornices were essentially wood in construction and in design, not a construction borrowed from stone or metal.

It was not only the influence of materials that was potent in giving form to the cornice; even more, it was the abnormal

and preternatural conditions surrounding the building craft, the primal isolation, and the absence of tangible guides to show the way, that left a stamp of individualism upon the local style.

The early joiners were forced by the urge of circumstances and by a woefully insufficient building knowledge to devise new ways of construction. These ways were kept within certain bounds so that a distinct and unified style resulted, yet the builders carefully avoided any exact repetition of design or of molding. It was in the variety and in the individuality of handling that we discover virility, originality of flavor, charm and unflinching appropriateness.

Viollet-le-Duc has pointed out that all worth-while achievement in architecture has been produced under similar separated and detached conditions. "If a varied and precise acquaintance with precedent in all preceding styles of architecture," he says, "was an advantage to the architect in enabling him to see how others have proceeded before him, it is sometimes a serious embarrassment to him. It is apt to encumber his imagination with a thousand forms, all, it may be, excellent in themselves, but in any combination mutually detrimental; and, not being able to apply them to his purpose without change, he is forced to such compromises that his design must inevit-



CORNICE DETAIL OF CHURCH (NOW DEMOLISHED), YORK, PA. IN OFFICE OF MR. R. DEMPWOLF.





CORNICE DETAIL, ROXBOROUGH, PHILADELPHIA.

ably lose character. I am far from lamenting that we have this extensive knowledge of precedent, but that it is so difficult for the architect to prevent this knowledge from becoming his master. The more extensive and exact his archeological information, and the more sensitive his artistic instinct is to the beautiful features of preceding styles, the more self denial, firmness and strength of mind are required to enable him to subordinate this information and sensitiveness to his better judgment."

The cornice commonly adopted in Pennsylvania was but rarely accompanied by the frieze and architrave. It consisted of the simple cymatium mold, surmounting a square projecting corona, which, in turn, was upheld by bold architectural bed-moldings. A necessary attraction was contributed by subtlety of contour and by a rhythmical contrast of pleasing curve and flat-faced surfaces. The cornice of Wyck is selected as char-

acteristic of the earlier type. Here the cornice is in its simplest terms. There is nothing pompous and finikin in the treatment, nor is there conscious striving for effect; there is rather a modesty and an unerring good taste.

In some cornices the bed-molds were omitted and in their place was substituted a large cove of plaster separated from the wall of brick or plaster or stone by an astragal. Hope Lodge illustrates such a treatment. With the cornice of the Letitia Penn house in Fairmount Park, a cove of wood occurs instead of plaster. This sort of cornice would seem to be particularly appropriate when in conjunction with walls of stucco, but there is an undeniable charm in the contrast of materials as appears at Hope Lodge.

A restraint and an unchanging uniformity prevails in the treatment of crown molds which, in general, were seen beneath the bright light of the sun, while the supporting moldings in shadow were



CORNICE OF THE HETHERINGTON  
HOUSE, MILTON, PA., 1803.



CORNICE AND DORMER — HOPE  
LODGE, WHITEMARSH, PA., 1723.



CORNICE DETAIL—WEST WING OF THE  
PENNSYLVANIA HOSPITAL, PHILADELPHIA.

constantly varied and appear to have been the subject of repeated experiment. A variety was attained by ornamentation consisting of the Greek fret in all of its interpretations, gouge and chisel decoration, and by a limited carving in wood.

The cornice of the William Maclay mansion on Front street, Harrisburg, is a most successful example, showing freshness of concept and boldness of outline well suited to the rough-faced ashlar wall. The supports of the overhang have concave sides that are an effective variation of the bracket. They fulfill the function of the bracket in a direct and original fashion. It was the prevalent custom of the eighteenth century artisans to depart from traditional forms and to seek new arrangements, as was done here. Ruskin has well said "that great art . . . does not say the same thing over and over again; that the

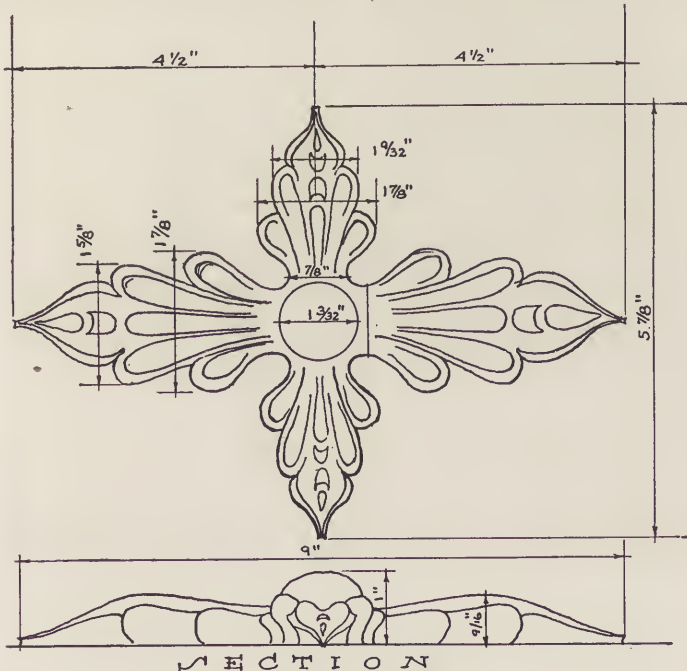


CORNICE ORNAMENT—MACLAY MANSION, HARRISBURG, PA.

merit of architectural as of every other art, consists in its saying new and different things . . . and that we may, without offending any laws of good taste, require of an architect, as we do of a novelist, that he should be not only correct, but entertaining." Variety is the spice of architecture as of life, but only when variety is seasoned with reason and good taste, or when coupled with mind

acting properly upon materials. The successful monuments of these craftsmen are proof enough of the soundness of their judgment. That they were not unmindful of classical models is evidenced by a close adherence to the antique in instances where correctness was deemed a necessity. No one would find fault with this particular cornice on account of the contour of its moldings, nor with the propriety of using the wedge shaped guttæ as a means of decoration.

The quatrefoil ornaments are simply shaped with gouge and cutting knife and were probably carpenter made. Their rudeness would scarcely permit them to



SECTION  
CORNICE ORNAMENT  
MACLAY MANSION HARRISBURG, PA.

be classified as examples of the art of the wood carver. The evidence of gouge work is of very great interest, as it marks an early stage in the development of decoration in the Colonies.

The cornice of the Withington house,

tion of the dentil course. The diminutive frieze is scribed and modeled with the oval spider web motif and has overlapping curves which give a satisfactory continuity and serve to bind the entire design together. The same character of



DORMER FROM HANDBOOK PUBLISHED IN PHILADELPHIA IN 1805.

at 136 Queen Street, Northumberland, holds an interest for us in that here again attempts were made in carving. In this example the enrichment appears on the base of the crown molds in the form of twisted rope and small triangular wood blocks, as well as beneath the over-hanging cornice where there is a band of lace-like ornament occupying the usual loca-

tion of the dentil course. The diminutive frieze is scribed and modeled with the oval spider web motif and has overlapping curves which give a satisfactory continuity and serve to bind the entire design together. The same character of

The foregoing examples appear on farmhouses and lesser dwellings and are all more or less domestic in quality. A more formal cornice was demanded for

such buildings as the old State House in Philadelphia, the Pennsylvania Hospital of the same city, and for the strictly Georgian mansions. The Corinthian cornice, with modillions or brackets, was well suited to such formal usages. The

Independence Hall stands as the most pleasingly proportioned cornice of this class.

We turn to the dormer as a feature which is closely akin to the cornice and the doorway. All parts of the external



CORNICE AND DORMER, LANCASTER, PA.

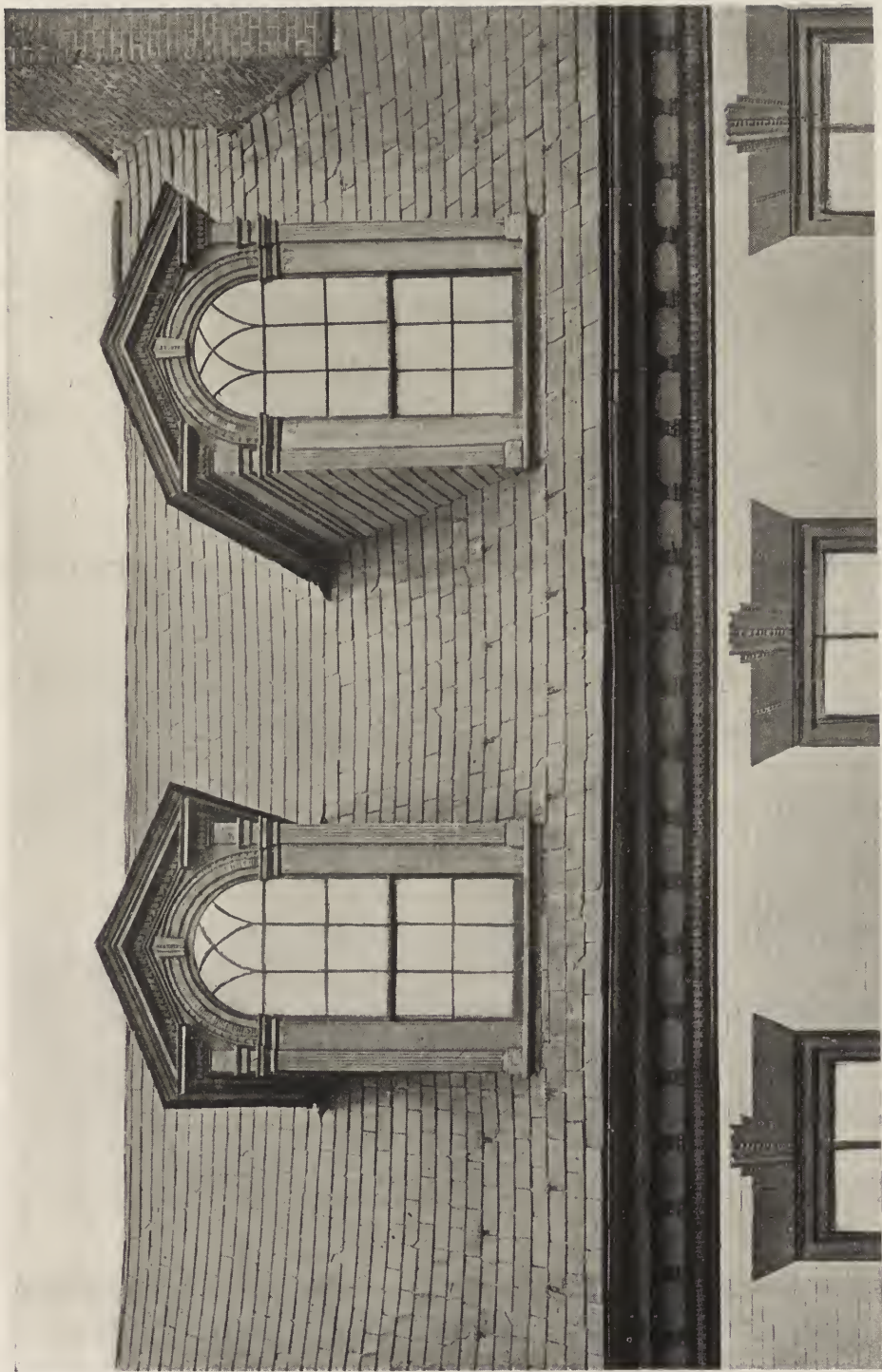
need for brackets was felt because the buildings were larger in size and on account of the increased scale of the component parts. With the greater height of cornice, the ornamented bands would not appear to advantage and, besides, the time-honored Corinthian cornice discloses a fine dignity and formality which we connect in our minds with state houses and town halls. The north façade of

design are, in fact, of one piece, having a likeness in shape and ornament. One could reasonably suppose that if any part of the Colonial house were to receive sparing attention it would be the dormer, for it was of an utilitarian nature and it frequently is proved to have been an afterthought. The wide variety of dormer forms and the uniformly attractive results would belie such a supposition.

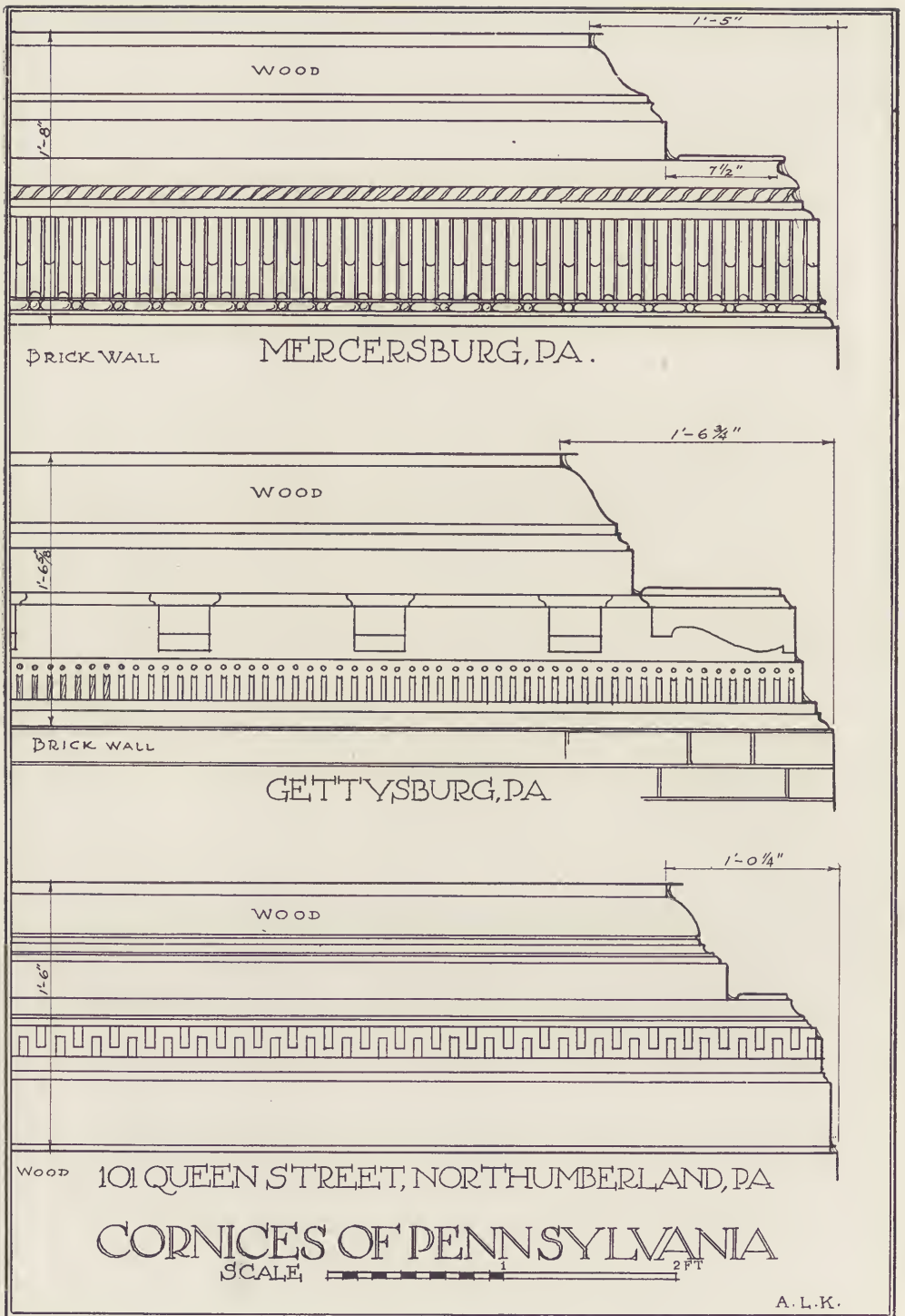


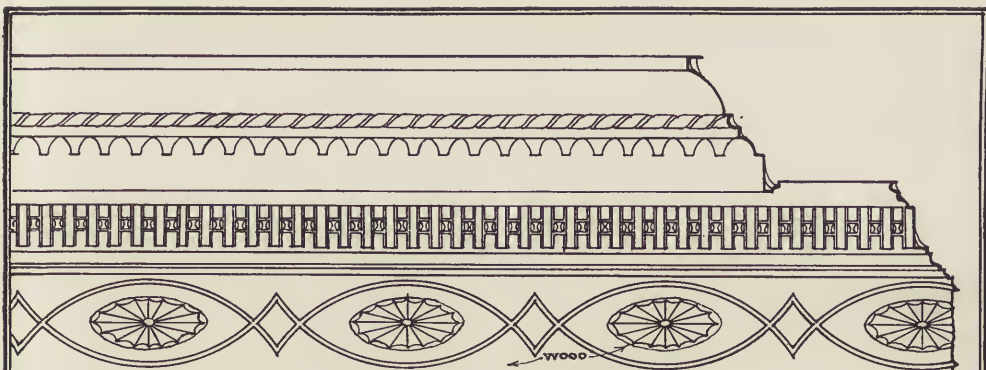
DORMER DETAIL, YORK, PA. PHOTO  
BY COURTESY OF R. DEMPWOLF.





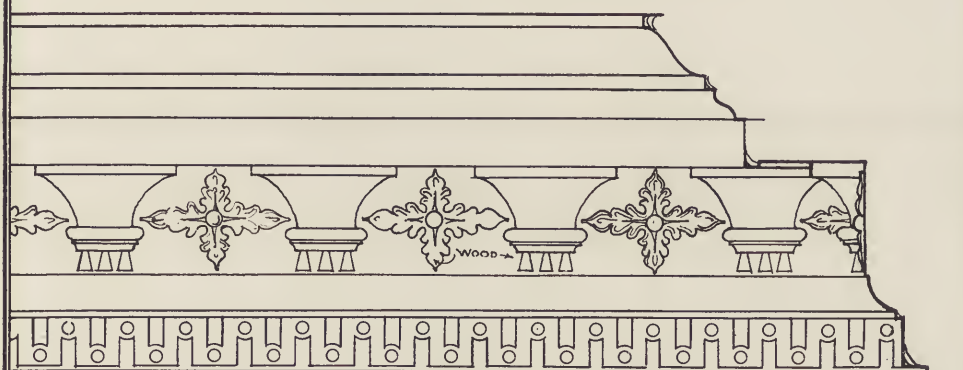
CORNICE AND DORMERS,  
LANCASTER, P.A.





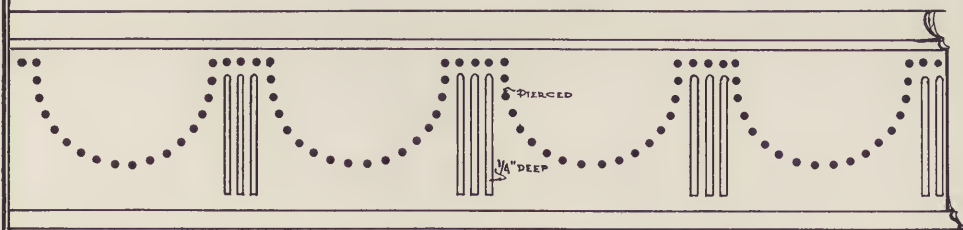
BRICK

136 QUEEN STREET,  
NORTHUMBERLAND, PENN.



STONE

MACLAY MANSION,  
HARRISBURG, PENN.



WOOD

CORNER KING & QUEEN STS.,  
NORTHUMBERLAND, PENN.

CORNICES OF PENNSYLVANIA  
SCALE:  1 FT

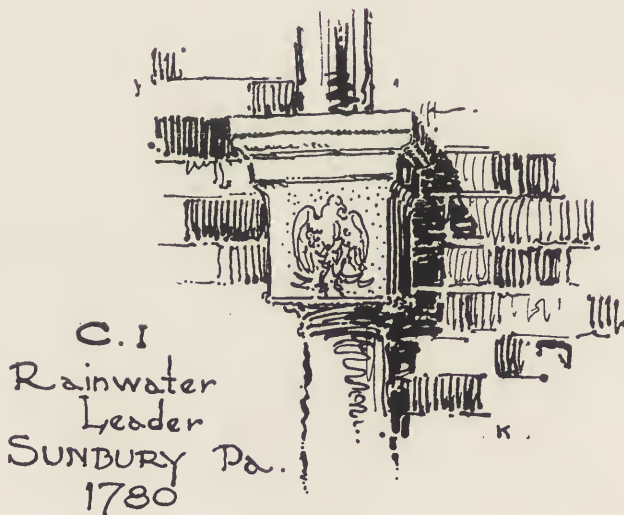
A. L. K.

The typical dormer of the central colony is arch-headed, the arch being fitted within the sloping planes of the pointed roof. A treatise on architecture published in Philadelphia\* sets forth certain regulations to govern the design of the dormer. It stipulates that "if fluting or dentils are to be used for dormers, they should be larger in their proportions than in common work, and the pitch of the pediment should be rather steeper than in frontispieces (doorways) as the height will take off something from the pitch." The specimens of the simpler square windowed dormer are found on Stenton and the Morris house of Philadelphia. Grumblethorpe, in Germantown, adopted the segmental curved head with adjoining pilasters. Choice was made of the so-called Gothic sash with the circular part above for the Stocker house at 402 Front Street, Philadelphia, and for the Chew mansion in Germantown.

Our architectural heritage finds no

freer expression than in the cornice of the eighteenth century in America; in no single instance of embodying thought in woodwork do we discover more of diversity, or more of the virility of a living and growing architecture, than in this single feature. Time has been more considerate of the roof edge than elsewhere, thanks to the inaccessible location and to the thoroughness of craftsmanship of the pioneer woodworkers. There is scarcely a city or town in the commonwealth of Pennsylvania with a history dating back to the Revolution that does not offer at least one and perhaps several examples of the wood cornice that will delight by the grace of its proportions and the originality of its execution. At the present time, when the lure of the past and when our regard for the architectural attainments of our country were never in higher favor, the architect and draftsman could not do better than to study the fascinating and fruitful field of Pennsylvania for models to guide and to inspire.

\*The Young Carpenter's Assistant, or A System of Architecture Adapted to the Style of Building in the United States. By Owen Biddle, Philadelphia, 1805.



# *Sculpture in the Garden*

— A —  
*Portfolio of Photographs*  
*by Antoinette Perrett*





FIGURE BY RICHARD H. RECCHIO—  
GARDENS OF GARDINER MARTIN LANE,  
ESQ., MANCHESTER-BY-THE-SEA, MASS.



FIGURE BY CHARLES CARY RUM-  
SEY - GARDENS OF PAYNE  
WHITNEY, ESQ., MANHASSET, L. I.



FIGURE BY CHARLES CARY RUM-  
SEY-GARDENS OF JOHN T.  
PRATT, ESQ., GLEN COVE, L. I.





BRONZE FIGURE OF YOUNG GIRL BY  
CHARLES CARY RUMSEY—GARDENS OF  
JOHN T. PRATT, ESQ., GLEN COVE, L. I.



FIGURE BY JOHN GREGORY IN  
STUDIO GARDEN OF MRS. PAYNE  
WHITNEY, AT MANHASSET, L. I.



POOL, WITH RELIEF BY MAHONRI YOUNG, IN CHIMNEY PIECE—COUNTRY HOME OF CHARLES CARY RUMSEY, ESQ., WHEATLEY HILLS, L. I.



GROUP BY JAMES EARLE FRASER  
FOR GALLERIED COURT AT ARDEN  
HOUSE, THE HOME OF MRS. E.  
H. HARRIMAN AT ARDEN, N. Y.

# — THE BUILDING PROSPECT —

*A Study of the Major Economic Factors  
Bearing on Present & Future Costs, Future  
Income and the Demand for Buildings*

By

WILLFORD I. KING, Ph.D.

## PART II ~ RENTS & VALUES

THE problem of determining upon the best time for building has lost none of its interest since the last article of this series appeared. Building material prices have, as predicted, continued their descent, and the steepness of the decline does not forecast an upturn for several months to come. Interest rates are on the down grade and the recent survey made by the Fidelity and Deposit Company of Maryland shows that labor conditions have become materially more favorable to the employers in nearly all sections of the United States. The opportunities for building with profit are, then, distinctly improving from the standpoint of construction costs.

But satisfactory cost conditions are not alone sufficient to insure profit. It is essential that the outlook for a satisfactory income from the enterprise shall also be auspicious; in other words, the altitude and probable trend of rents in the future is a question of the first moment.

Strangely enough, however, much less attention has been given to this phase of the problem than to the cost side. Most architects and contractors are experts in estimating costs, but many of them have only the haziest of ideas as to the relationship existing between the net income and the real value of a piece of property. Even the most successful builders are too frequently guided rather by general impressions than by any precisely reasoned analysis of the facts or laws involved. Intuition developed through long experience is often a most satisfactory basis for success in business, but it rarely can be depended upon either as a foundation for generalizations or as a guide to public policy.

A good illustration of this fact is found

in the bill introduced recently in the New York legislature at the request of the Real Estate Investors of New York, Inc. According to the newspaper account, "it is provided that the actual value of the property shall be the basis on which rent is fixed."

This same idea was evidently in the mind of a prominent business man who recently wrote an article in which he contended that because a certain group of stocks which he had studied yielded on the average twelve per cent. on the market price, therefore rents should be so regulated as to produce a like return on the value of the real estate.

These instances both indicate that the public is still clinging tenaciously to two ancient fallacies: first, that there is an "ought-to-be" rate of rent, which should be established by law; and second, that this rate should be based upon the cost of production. The hopelessness of trying to determine a "fair" price was brought out in the last chapter. The idea of using costs or selling values as a basis for the legal fixation of rents is clearly a case of circular reasoning arising from lack of knowledge of the interrelationship of value and rent. Once it is clearly understood that value must necessarily be itself merely a reflector of rent, the absurdity of such a proposition becomes evident.

Could the public be made not only to understand vaguely but really to comprehend thoroughly the true connection between rent and value such "isms" as the Single Tax would lose most of their strength and the general plane of discussion concerning realty problems would be greatly elevated. Because of the urgent necessity of clarifying public thinking in

this regard, it seems worth while at this point to set forth in some detail the basic principles involved.

We may well begin by considering why the suggestion of basing rents upon costs of construction is not sound in principle. One of the first obstacles to the success of this mode of procedure is found in the fact that rents are paid as much for the use and location of the site as for the shelter which the building affords. Were rents based upon construction costs alone, the land, having no cost of production, could evidently be allowed no return whatsoever.

In order to avoid this difficulty, the sponsors of this course of action will presumably propose to use the price for which the land last sold as a basis for rent fixing. This plan, however, leads at once to new pitfalls for, after a period of rising prices, such as we experienced not long since, the land rent, as determined by this method, would vary inversely with the length of time which had elapsed since the last transfer.

The obvious way to avoid this difficulty is to base all rents upon present assessed values, but this is merely shifting the difficulty to the shoulders of the assessors. How are they to fix the values? It will be explained that this is easy—they can observe the sales that are occurring and use those as a basis of valuation. But why is the land selling at its present price? Here we reach the end of the chain of evasions and it is necessary to face the facts. There can be only one answer. The land has value simply because of the prospect that it will yield valuable services, and the prices of these services are known as rents.

If, then, it is impossible to escape the conclusion that selling values are themselves based upon rents, it is evidently absurd to base rents upon selling values. Such a policy resembles that of the gunner who timed the firing of the noon gun by his watch, which in turn was synchronized with the jeweler's clock, who set his clock by the gun fired at noon.

It is, then, impossible to overemphasize the fact that values are based upon prospective future rents and not rents upon

values. This truth applies not only to the land but also to the building as well. It often thrusts itself painfully upon the investor who has erected an expensive structure which is found to be unsuited to its location. The building yields only a fraction of the rent expected and the fact that it has cost a large sum of money to build absolutely fails to call forth a buyer who will pay anything like enough to cover the cost of construction.

Another man who learns to his sorrow that costs do not determine values is the owner of a stately mansion located in the path of a slowly advancing business or manufacturing district, the smoke from which casts a heavy pall over the entire section of the city. As the wealthy residents desert the neighborhood, demand for elegant homes disappears, rents shrink to absurdly low figures, and fine mansions are a drug on the market and sell at figures representing but a small fraction of what it would cost to reproduce them. Were rents based upon costs of construction, such evidently could not be the case.

It is clear, then, that a shrinking demand for a given type of housing may cause a fall in rents and selling prices, even when building costs are unchanged. A proposition complementary to the one just demonstrated can also be established, namely, that increases in construction costs are not necessarily followed soon by corresponding increases in rents. During the period 1914 to 1920, for instance, rentals did not rise in anything like the proportion that construction costs did. In a country like pre-war France, having a stationary population fairly completely housed in dwellings of a durable character, an immense rise in the cost of materials would, for a long time, have practically no effect on either the supply of or the demand for houses, and hence the average rental rate would not be appreciably affected. Values of dwellings might tend to rise somewhat more noticeably than the rents, for long-headed individuals would foresee the day when, owing to the forces of deterioration and the demands for more modern structures, satisfactory dwellings would be scarce, and hence rents would become high; and the demand

of such far-seeing individuals would tend to raise the present market price. However, persons of this type are so few and the prospects of higher rents are so distant that the effect, even on the *values* of buildings, would presumably be but slight.

It is important, then, that the fact should always be kept firmly in mind that building costs affect the values of buildings already constructed in one way only; namely, building values cannot go much above the cost of producing other similar buildings, because such an excess of value over costs will immediately lead to the construction of new buildings, and this increase in supply will lower rents and hence lower the values of the old buildings. There is, however, as previously pointed out, nothing whatever to hinder building values from remaining for long periods of time far below the cost of replacing the buildings. Laws fixing rents below the competitive level naturally bring about this situation. Such legislation, unless offset by bonuses paid to builders, is certain to result in a housing shortage increasing in severity as population grows.

We have been emphasizing the fundamental importance of remembering that real estate values must always depend upon rents, while rents cannot depend upon real estate values. This general principle, however, while true, is far from being definite enough to answer many of the questions arising in connection with the problem. Some of the most obvious queries are: If values depend upon rents, what is the relationship between them? Is one a simple multiple of the other?

The latter question must evidently be answered by a decided negative. The rent of Iowa farms, for example, commonly amounts to but two or three per cent. of the current price of the land. Does this mean that money in Iowa loans for a similar rate? By no means. It may, at the same time, be worth six to ten per cent. This circumstance has given rise to some peculiar problems in regard to farm accounting. If, on a farmer's books, his business is charged with six per cent. of the value of his investment, the high value of the land often makes the interest allowance so high that the farmer apparently

makes nothing whatsoever by his farming operations. When such a state of affairs is found to be widespread, one is forced to conclude that the failure is in the accounting system rather than in the mode of conducting farming operations. As a matter of fact, the error arises from charging interest on the investment rather than rent on the property used. This error has its origin in the faulty assumption that the ratio of real estate rents to real estate values is approximately equal to current interest rates.

That such a relationship occasionally holds true, no one can deny, but such instances must be regarded rather as the exception than as the rule.

The value of a vacant city lot, if dependent upon its present rental, would probably be zero and yet, in fact, it may sell for many thousands of dollars. Evidently the relationship of value to rent cannot always be explained by such an ultra simple formula.

At this point, it may be well to state the somewhat startling but nevertheless easily demonstrated proposition that values depend wholly upon beliefs and expectations and never upon facts. The only way that facts have a bearing upon values is that our anticipations are based upon the events that have actually happened and facts as they exist. A building is destined to burn tomorrow. It is worth none the less today, for no one knows that the fire is going to occur. It is because values are based upon beliefs and feelings that they change so rapidly. Sugar is as sweet today as a year ago; neither its supply nor its costs of production have changed radically; nevertheless, its value has diminished by over two-thirds. The thing that has changed is the opinions of planters, traders, refiners, and consumers concerning the probable future changes in supply and demand. If, then, we are to study values, whether of sugar or of real estate, we must study men's minds.

The only way to accomplish this end and to gain even a half way insight into the origin of realty values is to **make use** of mathematics. Lest the reader who has long eschewed this dreadful science turn aside at this point in despair, it may

be well to explain that the important principles involved may be elucidated with relative ease.

Most business men have in mind a distinct concept of what money is worth to them. Jones, for example, believes he can make eight per cent. on an additional investment. He, therefore, considers a dollar today worth \$1.08 a year hence. At the end of a year, he thinks he could invest the \$1.08 and have eight per cent. profit on his new investment by the end of the second year. Evidently, he would then have  $\$1.08 \times \$1.08$ , or  $(\$1.08)^2$  or \$1.1664. Similarly, at the end of three years, the dollar of today would be worth  $(\$1.08)^3$ , at the end of four years  $(\$1.08)^4$ , etc.

Now let us reverse this process. To Jones, a dollar today is evidently worth a dollar; but the present worth of a dollar received a year from now would only be

$\frac{\$1.00}{(\$1.08)}$ , or \$0.926; a dollar two years

hence would today be worth but  $\frac{\$1.00}{(\$1.08)^2}$

or \$0.857; a dollar due three years from

date would now be valued at  $\frac{\$1.00}{(\$1.08)^3}$ ,

or \$0.794, etc. Evidently, as a dollar gets further away into the future, its present worth grows rapidly smaller in Jones's mind.

From the facts just stated, it follows that if Jones has a piece of realty which he expects to rent for \$1,000 net every year he will today value this year's rent at \$1,000, next year's at \$926, the third year's at \$857, and the fourth year's at \$794. Evidently, when his subjective interest rate is as high as eight per cent., the estimated present value of a rent payment diminishes very rapidly indeed as it fades into the future. Were his subjective interest rate only four per cent., the diminution of values due to delay in the time of payment, would be much less marked.

It can be easily proved by a process which it is not necessary to present here that if Jones added together the \$1,000, the \$926, the \$857, the \$794, and all the

other sums which he would obtain by such a discounting process continued to infinity, he would arrive at exactly \$12,500. But we obtain this same sum if we divide \$1,000 by 0.08.

If Jones invested or loaned the \$12,500 at 8 per cent. he would receive therefore \$1,000 each year indefinitely into the future. It is evident, then, that in Jones's mind the real estate is worth exactly \$12,500.

But Smith has a different view about the same piece of property. He believes that, since construction costs are high and immigrants are coming at a very rapid rate, rents must go up sharply. He reasons that the rent this year will be \$1,000, next year, \$1,200, the third year, \$1,400, the fourth, \$1,600, and so on. If money is worth 8 per cent. to him also, the present worth of a year's rent paid now is \$1,000, of next year's rent

$\frac{\$1,200}{(\$1.08)}$  or \$1,111, of the third year's

rent  $\frac{\$1,400}{(\$1.08)^2}$  or \$1,200, of the fourth

year's rent  $\frac{\$1,600}{(\$1.08)^3}$  or \$1,270, and so

on. He would figure the first four years' rent at \$4,581 against Jones's estimate of \$3,577 for the same period, or an excess or \$1,004. This differential would be very greatly increased if the process were continued by including the estimates of the present worths for the more distant years.

As a matter of fact, according to Smith's mode of reckoning, the value of the property is \$46,250,\* an amount nearly four times as great as what Jones believes it to be worth.

But Brown is less optimistic. He sees ahead a declining price level and stronger and stronger tendencies to force down rents by legislative act. To his mind,

\* The formula is  
 Let R = Present net rent.  
 A = Annual anticipated increase in rent.  
 i = Subjective interest rate of person interested in property.  
 V = His estimate of present worth of property.  
 Then  $V = \frac{R}{i} + \frac{A}{i^2}$



each future year may see the rent one-tenth less than it was in the year immediately preceding; in other words, he expects the figures to run about as follows: \$1,000, \$900, \$810, 729, etc. Furthermore, he may figure that money is to him worth 10 per cent. According to such calculations, the rents of the next four years would today have a value to him

$$\text{of } \$1,000 + \frac{\$900}{(\$1.10)} + \frac{\$810}{(\$1.10)^2} + \frac{\$729}{(\$1.10)^3} \text{ or } \$1,000 + \$818 + \$669 + \$548.$$

It can be shown mathematically† that if Brown's beliefs are correct, the property is worth only \$5,500.

For almost any kind of belief concerning the course which the rent will follow in the future, it is possible to derive a formula and, by its aid, to compute the value of the property, and from the instances just stated, it is easy to see that an apparently small divergence in views as to the future outlook leads to radical differences in the valuation placed upon the property at the present time.

It goes without saying that few indeed of the prospective buyers or sellers estimate the value of a piece of property on the mathematical basis here set forth, but all approximate it in some rough and ready fashion. The average man's ideas concerning prevailing interest rates are usually rather definite and each one has firm convictions that rents are going to rise or fall. With these figures in mind, the first step each normally takes is to divide the current rent rate by his subjective interest rate in order to arrive at a basic estimate of value. To this preliminary figure, each one will add or subtract some more or less arbitrary amount which he believes represents future prospects. In this way, those interested in the property arrive at subjective values approximating more or less closely those

which might be calculated more exactly by the method described.

Granted, then, that, by some such process, each of a dozen men has come to some definite conclusion concerning what a piece of real estate is worth, how do these opinions react upon each other to establish a definite market price at which the property is likely to be bought or sold? The answer to this question is best given by presenting a brief table, showing the manner of determining the approximate market price of a group of *exactly similar* properties. The method here shown most closely approximates the truth in a market in which prospective buyers and sellers are congregated and where open bidding is the rule. However, it is also reasonably typical in those instances in which all parties are familiar with the general situation and are looking for the best bargain available.

HOW SUBJECTIVE VALUES ARE TRANSFORMED INTO MARKET PRICES.

Prospective Purchaser.		Prospective Seller.	
Name	Highest Limit He Will Pay.	Name	Lowest Price He Will Take.
Smith	\$46,250	Brown	\$5,500
Clark	30,000	Cross	6,000
Davis	25,000	Green	7,000
Baker	20,000	White	9,000
Barry	18,000	Dix	10,000
Atkins	*12,500	Jones	*12,500
Avery	10,000	Evans	13,000
Adams	8,000	Ellis	14,000
Bliss	7,500	Fox	18,000
Camp	7,000	Ford	19,000

If, in the particular market outlined, in which all houses are exactly alike, each prospective seller has but one house to sell, and each prospective purchaser desires to buy only one house, and if there is a sufficient amount of bargaining, the result will be that Brown, Cross, Green, White, Dix and Jones will be able to dispose of their houses and Smith, Clark, Davis, Baker, Barry and Atkins will each secure a residence. It is probable that all the houses will be sold at prices close to \$12,500, since this is the point at which the market is said to clear—in other words, the one point at which demand and supply are exactly equal.

It must not be inferred that Brown will actually receive a lower price than Jones or that Smith will pay more than Atkins. Of course, they will not make their thoughts public, and hence, if good bar-

† Let  $f$  = fraction of decrease in rent expected annually.

Let other letters represent the same concepts as in the preceding formula.

$$\text{Then } V = \frac{R(1+i)}{f+i}$$

gainers, they will sell or buy on the same terms as their neighbors who have different subjective values. Again, assuming that competition is keen, it is probable that Avery, Adams, Bliss and Camp will fail to secure a house while Evans, Ellis, Fox and Ford will not be able to sell.

The table given shows how the subjective values, even though they exist only in men's minds, fix the prices at which properties actually change hands. It does not, however, necessarily follow that, because the market value represents a sort of composite view of the future outlook, it is an accurate gauge of the present worth of the future income of the property. In a boom time, for example, a sort of contagious optimism leads both buyers and sellers to picture the future in too rosy terms, with the result that market values soar far above the bounds dictated by calm reason. On the other hand, rents may advance much faster than the majority of interested persons expect.

In the imaginary situation discussed above, for example, it may be that Smith's prognostications are correct. If so, the man who buys property at the market price is destined to secure a large margin of profit if he holds it for a few years. On the other hand, if Brown's opinions should prove to be accurate, those purchasing at the market price are likely to incur very heavy loss. Possibilities of profit from investments or speculation require, therefore, an ability to guess future prospects more accurately than can the majority of the persons dealing in the market.

Since correct anticipations of the future course of rents mean so much to investors it is worth while to study briefly the present outlook for building rents.

The accompanying chart shows that the rise in rents since 1913 has been trivial as compared to the increase in wholesale prices during the same period; hence, it is improbable that they will fall in any such striking manner as the latter have already done. Rent rates are fixed so largely by custom and contract that changes tend in general to follow rather than to accompany those in the wholesale market. We need not be sur-

prised, therefore, if rents are somewhat lower during the next year, but, in view of the apparent housing shortage and the huge volume of immigration, it seems improbable that they will fall to any considerable extent.

In New York, the legal restrictions placed upon rent have tended to discourage investors from entering the building field. Such a force naturally tends to create a housing shortage and keeps rents high. On the other hand, the exemption of new houses from taxation is a stimulus to building, which tends to make rents lower.

The two most potent forces affecting the outlook for rents are the existing building shortage and the probable trend of the price level. There seems no reason to doubt that construction work during the last four years has failed to keep pace with the growth of population. Until this shortage is remedied, it will exert a powerful resistance against any decline in the rent level. However, if deflation is to force all prices back to pre-war levels, rents must eventually follow in similar fashion. Under these circumstances, the builder must needs reap his profits quickly if at all. If he builds at present costs and fails to sell soon, he is almost certain to lose money.

But all this is on the assumption that prices are to drift steadily downward. As was shown in the *Architectural Record* for January, this assumption is probably contrary to fact. The monetary legislation which made for inflation is still part of the statutes; business men are as anxious as ever for profits; business is certain to boom again; and there is every probability that the price level will once more rise sharply. Even when we consider the effect of the outflow of gold to Europe which is likely to occur in time, there seems little prospect of the price level going much lower than at present for a number of years to come, and just now, the indices of rent and wholesale prices are not far apart, if the figures presented by either the National Industrial Conference Board or the United States Bureau of Labor Statistics are to be trusted.

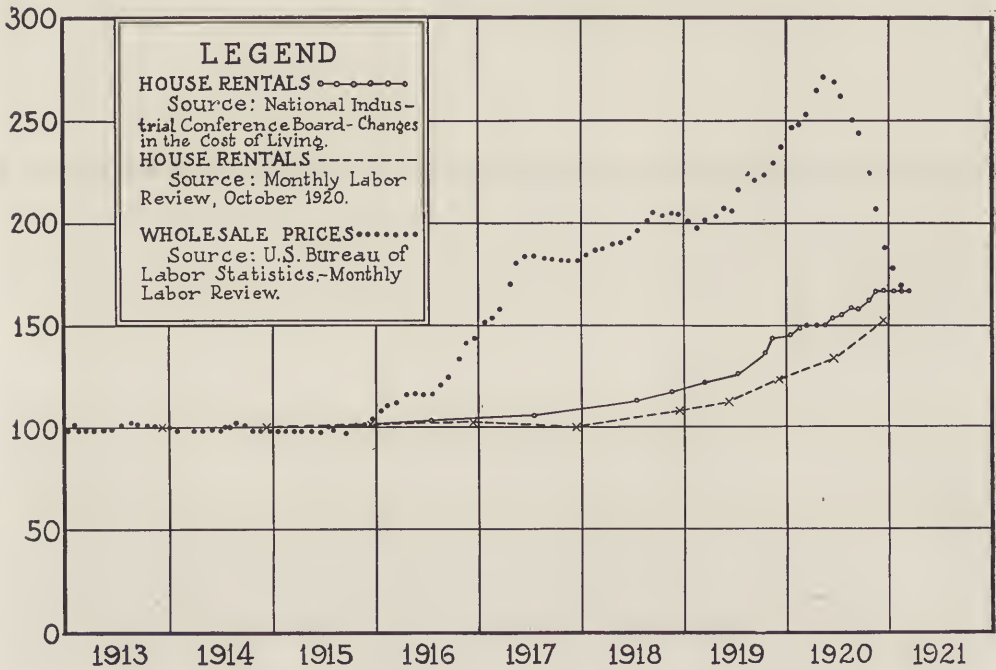
If events pursue their normal course

it seems then that the builder may figure on rentals averaging as high as at present during the greater part of the next decade. This, of course, does not mean that rents in some districts, may not decline greatly or that those in more favored regions may not shoot up rapidly—in short, generalizations cannot be used by architects or contractors as a substitute for a careful study of local conditions.

On the whole, therefore, the rent outlook is satisfactory, and as soon as building costs come down to a level that

promises reasonable profits on the basis of the present rent, there appears to be no reason for further postponement of building operations, especially since the beginning of a period of abundant credit at moderate prices seems to be foreshadowed by the action of one of New York's largest financial institutions in publicly advertising at six per cent. unlimited funds for building.

The present indications, therefore, are that the safety period for building enterprises lies not far ahead.



RELATIVE HOUSE RENTALS  
and  
RELATIVE PRICES OF COMMODITIES AT WHOLESALE  
in the  
UNITED STATES



ONE OF THE EXECUTIVE OFFICES—NEW YORK  
QUEBRACHO EXTRACT COMPANY, NEW YORK  
CITY. BENJAMIN WISTAR MORRIS, ARCHITECT.

PORTFOLIO  
OF  
CURRENT  
ARCHITECTURE



DIRECTORS' ROOM—NEW YORK  
QUEBRACHO EXTRACT COMPANY,  
NEW YORK CITY. BENJAMIN  
WISTAR MORRIS, ARCHITECT.



ONE OF THE EXECUTIVE OFFICES— AMERICAN DYEWOOD COMPANY, NEW YORK CITY. BENJAMIN WISTAR MORRIS, ARCHITECT.



EXECUTIVE OFFICES—NEW YORK QUEBRACHO  
EXTRACT COMPANY, NEW YORK CITY.  
BENJAMIN WISTAR MORRIS, ARCHITECT.

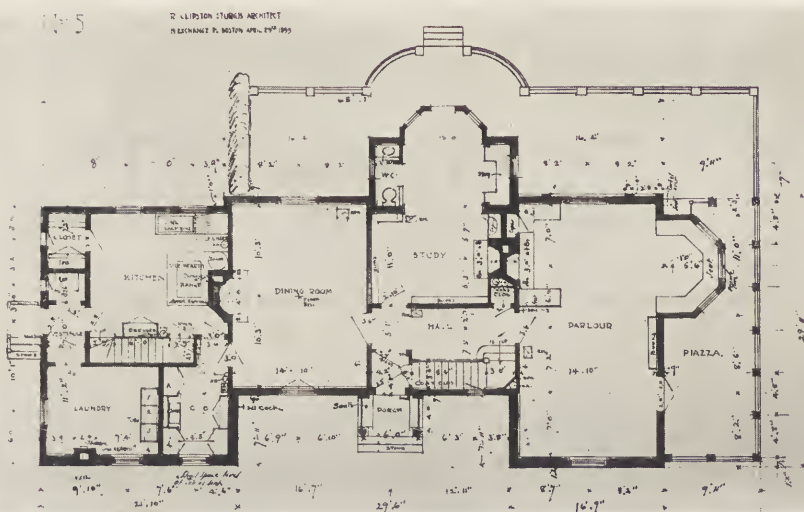
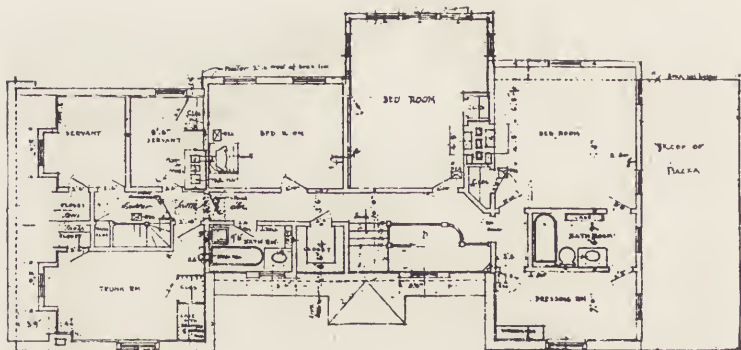


FRONT VIEW—MASTER'S HOUSE AT GROTON,  
MASS. R. CLIPSTON STURGIS, ARCHITECT.

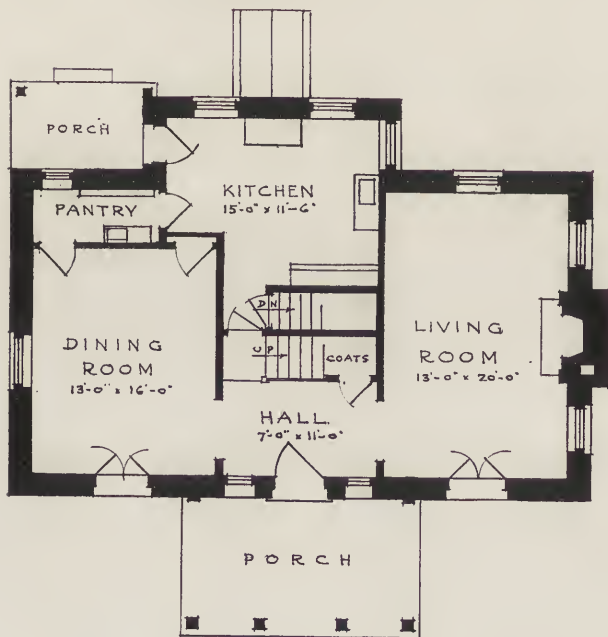
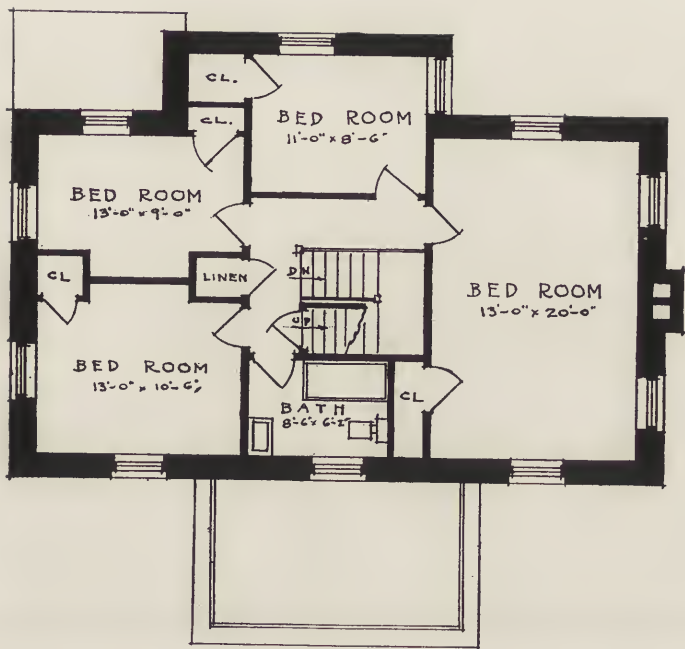




REAR VIEW—MASTER'S HOUSE AT GROTON,  
MASS. R. CLIPSTON STURGIS, ARCHITECT.



FIRST AND SECOND FLOOR PLANS—  
 MASTER'S HOUSE AT GROTON, MASS.  
 R. CLIPSTON STURGIS, ARCHITECT.



FIRST AND SECOND FLOOR PLANS—  
HOUSE AT ARONIMINK, PA. EDWARD  
F. HOFFMAN, JR., ARCHITECT.



REAR VIEW—HOUSE AT ARONIMINK, PA.  
Edward F. Hoffman, Jr., Architect.



FRONT VIEW—HOUSE AT ARONIMINK, PA.  
Edward F. Hoffman, Jr., Architect.



STAIR—HOUSE AT ARONIMINK, PA.  
EDWARD F. HOFFMAN, JR., ARCHITECT.



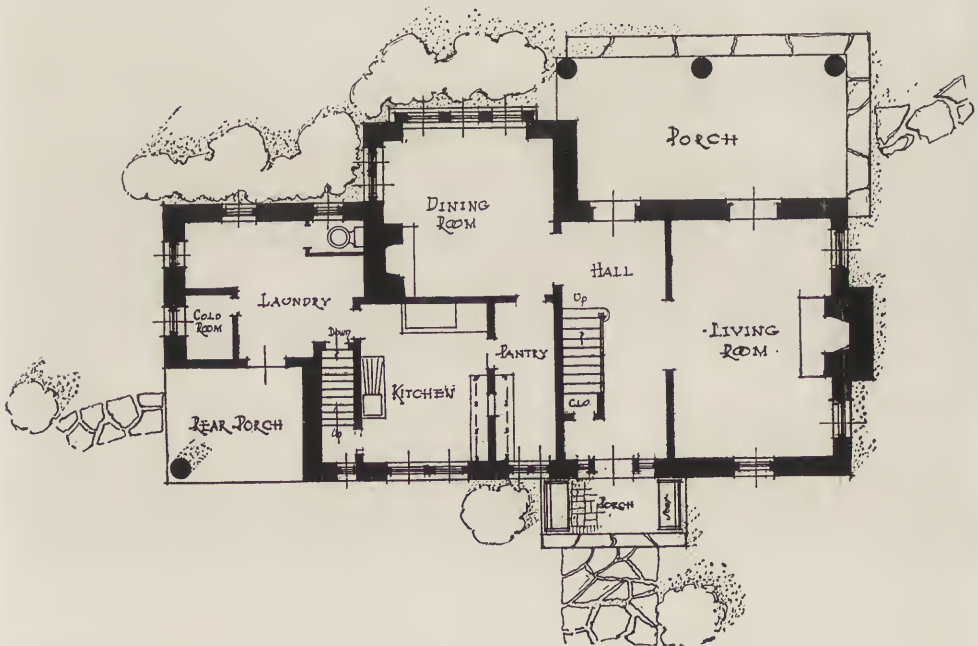
NORTH FRONT—RESIDENCE OF MRS. JOSHUA L. SMITH, GERMANTOWN, PHILADELPHIA.  
Duhring, Okie & Ziegler, Architects.



WEST FRONT—RESIDENCE OF MRS. JOSHUA L. SMITH, GERMANTOWN, PHILADELPHIA.  
Duhring, Okie & Ziegler, Architects.



SOUTH FRONT—RESIDENCE OF MRS. JOSHUA L. SMITH, GERMANTOWN, PHILADELPHIA.  
 Duhring, Okie & Ziegler, Architects.



FIRST FLOOR PLAN—RESIDENCE OF MRS. JOSHUA L. SMITH, GERMANTOWN, PHILADELPHIA.  
 Duhring, Okie & Ziegler, Architects.



HALL AND STAIR—RESIDENCE OF MRS. JOSHUA  
L. SMITH, GERMANTOWN, PHILADELPHIA.  
DUHRING, OKIE & ZIEGLER, ARCHITECTS.





DINING ROOM—RESIDENCE OF MRS. JOSHUA  
L. SMITH, GERMANTOWN, PHILADELPHIA.  
DUHRING, OKIE & ZIEGLER, ARCHITECTS.

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# ECONOMIES IN DESIGN AND CONSTRUCTION

BY C. C. NATHAN

*[Ordinarily the work of the construction department of an architectural office begins where the work of the design department ends. Its chief customary function is to carry out the design—to write specifications, let contracts and oversee the job. In the present economic conditions, however, the work of the construction department begins before the building is designed. The design department and the construction department pool their resources to overcome prohibitive construction costs. The former makes a local investigation of the supply and prices of materials and of the supply and wages of labor; the latter thereupon creates a design adapted to the combination of materials and labor which happens to be most economical. If the bids are found to be needlessly high, either because the contractors cannot buy advantageously on credit or because they demand too much for "overhead," the construction department may suggest that it be allowed to buy for cash on behalf of the owner or that it be allowed to carry out the job, wholly or in part, without contractors. This very intimate collaboration between design departments and construction departments accounts in some measure for the fair volume of construction now under way, and is of importance also because it makes for progress in design. Mr. Nathan's article describes the newer functions of the construction department of a well-organized architectural office—that of William Lawrence Bottomley and Arthur Paul Hess.—Editor.]*

UNDER the pressure of high cost of building construction, the architect is forced to pay greater attention than ever to the construction department of his office. Briefly, the aims of this department are: (1) to obtain reliable estimates and information as to lowest prices; (2) to save expense in design by advising as to the most economical construction; and (3) to eliminate commissions, profits, etc., on the actual construction itself.

To accomplish these objects, it is evident that an efficient, experienced organization is required. It must combine a knowledge of both architecture and general contracting. The contracting side covers principally the drawing of the contracts, estimating, buying and superintendence of construction. Records, particularly statistics of costs of labor and materials, are of course essential. This organization works in intimate cooperation with the design department throughout the progress of the design of a particular building, beginning with the very first inception of the work and continuing until the structure is completed and delivered to the owner.

In the beginning of the design—the steps leading to the preparation of

sketches—the function of the construction department is largely advisory. The design is studied from every point of view, estimates of cost are furnished for different combinations of materials and labor and methods of construction. This service is invaluable to designers, provided the construction men understand the aims of the designers enough to aid them in carrying out their ideas.

The advantage of basing a design on exact information of costs over the older practice of seeking information from sources more or less irresponsible, is evident. Examples of this may be cited. In one operation we found that local labor conditions made the use of concrete blocks more economical for small house construction, although thirty miles away concrete was cheaper. Often economy is possible when wood construction is used. Wood floor construction should be compared with fireproof construction, and roofing should be studied in the same manner. In interior finish, where possible, windows and interior doors are made of stock design and sizes. In one case we were able to avail ourselves of a large stock of doors and windows which a mill disposed of to us at less than the market price. Designs are made to meet

such conditions. For example, kitchens are laid out to accommodate stock sizes of dressers, and construction details are drawn to fit stock doors and windows.

An item of importance is insurance rates, which enter into our computations of cost; and still another factor is maintenance. Sometimes we find a more expensive construction or material to be really cheaper, because it is nearly permanent, carries low insurance, and costs little to maintain over a period of years. By such means, before the 1/4-inch scale drawings are completed, the owner has a proper and accurate knowledge of the type of building which his appropriation will allow him to build.

When the design has been completed and the specifications prepared, a list of the quantities is made covering all the items in the building. Estimates based on these quantities are obtained from contractors and material dealers. Our knowledge of current costs permit us to check all estimates received, by making comparisons with our figures. A tabulation of all proposals is then made, somewhat as follows:

	Lowest Bid	Our Estimate
Excavation . . . . .	\$5000	\$4000
Masonry, inc. foundations, etc. . . . .	26000	22000
Carpentry, inc. labor and rough lumber . . .	16000	14000
Mill work . . . . .	6000	6000
Totals . . . . .	\$53,000	\$46,000

This detailed study permits us to buy the various items advantageously. Take, for instance, the discrepancy between our own figures and those of our contractors on an item such as excavation. We can have the excavator bring his quantity sheets into our office for comparison with our estimates. In this way we can discover whether our drawings have been misinterpreted, whether any errors have been made, whether the unit prices are proper, whether something is included which is not desired, or whether something has been omitted altogether; we either convince the contractor that his figure is higher than it should be or we

discover that our allowance is not large enough. We have seldom compared estimates with contractors in this manner without making a saving for our clients.

If we are convinced that the contractors are asking much higher prices than they should, we recommend to the owner that he do the work with our own field organization. For instance, in the masonry items of the above table there is a difference of \$4,000 in favor of our own estimate, and we discover it is because the contractor figures \$60 per thousand for brick instead of \$50 per thousand. If our knowledge of existing prices convinces us that a man can profitably do the job for \$50 per thousand we do not hesitate to recommend having the work done by the owner under the direction of our superintendent.

All the branches of the structure are handled for purchasing in this manner, the contracts being closed in the proper sequence and at such times as are appropriate. The forms of contracts are thoroughly investigated and are drawn so as to cover the usual building construction requirements as well as the unusual ones created by handling the work in our office.

Our contracts are studied in order to embody in them terms which bind our drawings and specifications; and it is stipulated that each contractor agrees to co-operate with the other contractors engaged on the job. This secures harmony between all parties and expedites the work.

Before commencing the actual construction, a time schedule is prepared showing the dates of completion of the various portions of the building, thus establishing the dates of delivery of materials and of completion of the various contracts. Such co-ordination makes the trades dovetail into one another so that no delays occur.

A superintendent from our own organization is placed in the field in charge of the operation as the owner's representative. Usually, he employs no labor except a small force to keep the building free from rubbish and the walks and the other parts of the premises clean. How-

ever, sometimes a part of the work is carried out on direct payroll, in which case the superintendent undertakes it; and when this occurs he is furnished with such additional assistance for time-keeping, accounting, etc., as is necessary.

Supervision and follow-up work from the architect's office is indispensable. In the first place, the time schedule is constantly consulted to make sure that it is being followed. Delays are foreseen as far as possible and avoided. In this connection the routing of materials is traced. Our experience has been that costly delays are avoided by keeping in touch with the manufacturers of materials to make sure that there are no delays in the shops. Transportation, also, is a factor, because much telephoning and telegraphing is necessary to prevent shipments from becoming "lost" in transit.

As a final step in the construction process, surveys are made when a building approaches completion; and the little details coming to the surface—the uncompleted items—are noted and the contractors advised, so that this trying period of a job is passed as amicably as possible for all concerned. It is a time when the owner is impatient to take possession, or when threatened loss of rentals because the building cannot be occupied is apt to be serious.

I have thus described the chief advantages which such a construction department renders to the architect, and through him, to his client. As a result of its operation, reliable information about costs are available from the very inception of the design. The design is implied and made more economical without sacrificing good architecture.

Its great advantage, however, is on the side of lower costs. The building operation, always so complicated, becomes more direct, and this is a real saving. Commissions and intermediate profits, particularly those of the general contractor, are much reduced or eliminated altogether. When the architect deals directly with the various trades—and does

it capably—everybody is better satisfied with the arrangement. The vexing problem of credits is made easier. Dealings on behalf of the owner are direct with sub-contractors and with material dealers and manufacturers. The material men consider the owner a good credit risk and they are glad to give him the benefit of cash and trade discounts which otherwise would not revert to his benefit.

With such a system the architect, without departing from his true function as designer and without prejudicing his professional status, may attain a fuller control over the fundamental problem of costs than is possible when he depends exclusively on contractors.

This service is entirely optional with clients, but its success after two years of operation now seems assured. The charges for the service are made at cost, with a small commission for profit. The following comparison made recently on the construction of a mausoleum designed in marble, granite and bronze will show in a concrete way the saving to the owner:

Cost of building complete as estimated by a reliable contractor.....	\$32,000
Contractor's profit, 15%.....	4,800
	<hr/>
	\$36,800
Architect's commission, 10%.....	3,680
	<hr/>
Total .....	\$40,480

Cost of subletting all contracts separately, including excavation, concrete foundations and brick work and setting marble and granite, bronze work and glass, field supervision, compensation insurance, charges of the estimating and construction departments, including overhead charges .....	\$30,000
Architect's commission, 12%..	3,600
	<hr/>
	33,600
	<hr/>
	\$6,880

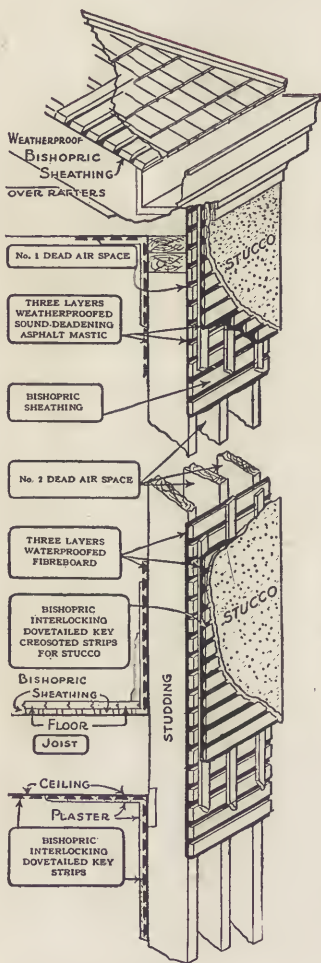
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# THE ARCHITECTURAL RECORD



Vol. XLIX. No. 6

JUNE, 1921

Serial No. 273

Editor: MICHAEL A. MIKKELSEN

Contributing Editor: HERBERT CROLY

Business Manager: J. A. OAKLEY

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Yearly Subscription: United States, \$3.00; Foreign, \$4.00; Single Copies, 35 cents. Copyright, 1921, by The Architectural Record Co. All rights reserved. Member Audit Bureau of Circulation.

PUBLISHED MONTHLY BY  
THE ARCHITECTURAL RECORD COMPANY

115-119 WEST FORTIETH STREET, NEW YORK

T. S. MORGAN, Pres. W. D. HADSELL, Vice-Pres. E. S. DODGE, Vice-Pres. J. W. FRANK, Sec'y-Treas.



SHOW WINDOW, 618 FIFTH AVENUE, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



# THE ARCHITECTURAL RECORD

VOLUME XLIX



NUMBER VI

JUNE, 1921

*The  
Newer Fifth Avenue  
Retail Shop Fronts*

*An American Contribution to Modern Art*

*By John Taylor Boyd, Jr.*

THE small shop front is gaining a place for itself in American architecture. By perfecting its type the architect has made an important advance in the broad field of small modern commercial architecture, which has hitherto resisted efforts to improve it.

The huge industrial cities which the nineteenth century has bequeathed to us have not been favorable settings for architecture. Ugly, chaotic through too swift growth, disorganized and too confused to be understood, they have not yet acquired a definite architectural form. Before they can have a characteristic architecture they must first perfect their social structure and develop a background of tradition established in familiar cus-

toms and manners. What the modern city needs is a comprehensive social ideal. Such an ideal can only take practical shape in city planning. For this reason, city architecture in its highest development means city planning.

Besides the fact of chaotic growth another obstacle impedes the proper organization of a city—one not generally realized. This is, that Anglo-Saxons, like other peoples of North European origin, are essentially a small town people. Throughout their history up to the nineteenth century they have had slight experience in cities; even their largest centers, as, for example, London, are overgrown towns or collections of towns. Because of this rural environment our whole civil-

ization—customs, manners, ways of thinking, our culture, our legal and social organization—expresses a town-and-country ideal. Modern industrialism came to us in the nineteenth century and drew us into cities, where we dwell amid a complexity and confusion never before known. Is it strange that we find difficulty in making the change?

We may think that this difficulty is world wide, but indeed it is confined to ourselves and to the other two most highly industrialized nations—Britain and Germany. The Latins are much better off. We have nothing to correspond with the splendid city tradition of the Latin races. The Latins have always been a people accustomed to dwell in cities. Even in ancient times they perfected a society adapted to city needs, and elevated the conception of city life into one of the magnificent ideals of the human race. Compare London and Liverpool and Berlin and Hamburg and New York and Chicago—those congested, formless growths whose only satisfactory districts are, as one might expect, small town parts, the suburbs and residence districts—compare these with that brilliant procession of cities of the Latin tradition: Athens, Imperial Rome, Constantinople of the Eastern Empire, Venice, and, in the Renaissance, Florence, Genoa, Rome and Venice again, and, today, Paris. What a splendid tradition! If one eliminated all that the Latin city has contributed to civilization—in social organization, law, government, science, the humanities, manners, letters, art—what would be left? There is much in the world that is fine which is not comprised in the small town society of the Anglo-Saxons.

Hence there is a vital need that we Americans appreciate the Latin tradition of city life. It will hardly do for us to ignore it, thinking that it no longer suits the times. The opposite is true, because never did its clear perception appear so necessary as in the present confusion of the industrial city. In Paris the Latin ideals are as vital as ever. Although the most devastating war in her history is just over, Paris sees that the Haussmann city plan of the Third Empire no longer

meets conditions and she is studying her plan anew, and including in her city area the district around Paris in a comprehensive scheme which for vastness of scale and in thoroughness of conception surpasses anything ever before attempted. She is able to do this because all her citizens grasp clearly the Latin city ideal and know its social and economic value.

City planning seems far afield from the subject of shop fronts, yet its place in city architecture should be understood in order to appreciate a new development in city architecture. Shop fronts become more significant, I think, if we realize that just such modest features are most suited to American designs with their small town traditions. Our architects easily grasp the intimate domestic scale of the shop front, and they instinctively invest its design with a free, bold originality, a directness, a vividness—a native twang—that they do not always attain in more grandiose structures. Because of this the shop front becomes a characteristic American feature. It is a real contribution on the part of the American architect to modern art.

In creating this conception, the architect begins at the bottom of city architecture, while before he has worked chiefly at the top. Hitherto the more grandiose buildings have held his attention, and more recently city planning. In this vaster field he has sought inspiration in the Latin ideal as he has sensed it in the architecture and in the city planning of old Rome and of modern Paris. Paris has contributed to his training in the fine teachings of the Ecole des Beaux Arts, for the French system of flexible planning—which is but the eternal principles of architecture applied to modern conditions—lies at the basis of all modern planning. Other peoples may have brought certain types of structures to a higher point of specialization, but the French furnished the key to the process. Here, again, is but another illustration of the value of the Latin city tradition in the twentieth century.

However, French teaching cannot do everything in architecture. It cannot teach Americans architectural style.



SHOE SHOP, 543 FIFTH AVENUE, NEW YORK. CARRÈRE & HASTINGS, ARCHITECTS.

Style they must learn for themselves, starting with small beginnings like these small store fronts. This type of work comes naturally to them, and hence it is not altogether surprising that, in the space of only ten years, they have been able to give it a more distinctive character—a raciness—than is found in their other buildings, excepting always, of course, the town and country types. The oldest of these designs illustrated herewith are scarce ten years old, and most of them have been completed since the war. The development is entirely a new one.

In yet another way these shop fronts are significant. They give the best answer to that vice of the modern art world—the desire to create a wholly new set of style forms which have no connection with anything in the past. These fronts prove that one need not break with the past in order to have a modern art. They are alive with the modern spirit, yet they have not discarded tradition. They are not copies, and the best of them are so original that they cannot even be called adaptations. Tradition appears in their perfection of proportion in minor motives and details, and even these motives are invested with a freshness which transforms them. In other words, these designs draw upon tradition as a vocabulary of forms, the very richness and familiarity of which serves all the better to express new ideas. "Hitch your wagon to a star," said Emerson, and critics saw that it was precisely the familiar speech of the Yankee barnyard which made the phrase so expressive. They realized that Emerson was evolving a true American style. And, in the same way, these shop fronts possess style, though, of course, their elements are urban—not rustic.

I refer to the extreme modernist theory of art because I fear we shall hear much about it. There are signs that American architecture is threatened with a depreciation in taste. Attempts are being made to introduce modern German forms into American architecture. This occurred before the war, and since the war the effort is being renewed. A notable instance was the preliminary design for the Iowa State Capitol, in which "moderne bau-

formen" were mingled with neo-Greek details. And in the winning design for the Masonic Hall at Portland, Oregon, they dominate the elevations entirely, although the terms of the competition stipulated that only forms of American origin were allowed. Surely no early American buildings of our town-and-country types show forms such as these, nor does our developing city architecture, such as the store fronts, have any resemblance to them; they are distinctly German in origin.

Let it be hoped that American architecture will suffer no more raids like this. These are severe words, but they should be used of attempts to break completely with the past. If the aim is to avoid convention one may observe that modernized art drops into convention much more than does traditional art. This is because it has such a weak vocabulary. Its designers are forced to repeat its few forms and colors indefinitely until they lose all meaning. Hence, in modernist architecture there is a tiresome repetition of verticals, of blank unfinished warehouse-like walls and crude, unproportioned openings. Besides, modernist art is at best an art of two dimensions. It produces little that is effective in three dimensions, because here, again, its vocabulary is not sufficient to carry it into solid geometry. So far it is chiefly intellectual paper design.

But the final argument against breaking with the past is, in my opinion, to be found in the best modern architecture of Germany itself. Its most successful examples, like the noted department store of Wertheim in Berlin, are strongly reminiscent of medieval tradition. Its exterior walls, verticals, roofs, proportions, the splendid interior of the long two-storied rug room with tall, Gothic-like windows along one side—what are these but a modern version of the old German medieval style of Nüremberg, Rottenburg, and the old Rhenish towns? Modern German housing is designed in the same spirit, and is also inspired by modern British housing, which, in turn, expresses the old medieval English tradition. In brief, the whole modernist move-



NO. 548 FIFTH AVENUE, NEW YORK.  
CARRÈRE & HASTINGS, ARCHITECTS.



MILLINERY SHOP, 8 WEST FIFTY-SEVENTH STREET,  
NEW YORK. KENNETH M. MURCHISON, ARCHITECT.



SHOP FRONT, 8 EAST FORTY-FIFTH STREET,  
NEW YORK. WALKER & GILLETTE, ARCHITECTS.



JEWELRY SHOP, 398 FIFTH AVENUE, NEW YORK. BUCHMAN & FOX, ARCHITECTS.





JEWELRY SHOP, 574 FIFTH AVENUE, NEW YORK. AUGUSTUS N. ALLEN, ARCHITECT.

ment in Germany may be described this way: after a short period of wild and unsuccessful experimentation it sought once more the path of tradition and thereupon became sounder and saner. The net result was to change from the pseudo-Renaissance style of the German Empire to the old native German tradition, which it interprets flexibly in the spirit of the times. Viewed in this light the German revolution in architecture had a certain justification.

If we realize that modern German architecture is not so modernist as it is alleged to be, we are less likely to throw over our own native styles for the German forms. Whether we admire the German architecture or not, at least it is not ours, and it is suited neither to American society nor to our natural conditions. We should be glad that our own architects have solved American problems of architecture in their own fashion.

All these broader aspects of the place of store fronts in modern city architecture serve to establish the importance of the shop fronts and make their significance clearer.

Taken simply by itself, the shop front is a device of modern salesmanship. The small shop is primarily a personal matter, and only the decisive personality of its proprietor enables it to compete with big organizations. Excellence of wares is not enough for this. A merchant must invest his shop with a distinctive personality if he is to maintain his place on Fifth Avenue—paying high ground rent, be it remarked—and if from a little plot of ground, twenty-five feet or twenty feet by one hundred, he is to draw customers from a whole continent. Fifth Avenue is one of the half dozen streets of the world. A part of the world seems to stream through it, and worldliness, magnificence, luxury and fashion and city life are its very essence. The shops partake of this spirit, exist because of it, and contribute to it, and Fifth Avenue merchants compete successfully with thousands of shops in New York and in other cities.

The Fifth Avenue shop expresses perfectly the idea of salesmanship—to arrest

the passerby, to attract, to arouse his curiosity and his needs, and to persuade him to enter. And yet how artistically, in what perfect taste, does it solicit. There is none of that vulgar, tawdry insistence in blank plateglass, gilt lettering, crude forms and gaudy colors which seem to be the rule of shops the world over. Why are the hundreds of thousands of small shops of the world so alike? And why are they so commonplace?

It is really curious how recently shopkeepers have paid attention to stylish appearance. Ten years ago, as I have noted, none of these shops existed, and New York shops were not greatly distinctive. It was the Parisians who seem to have inspired the new ideal. Who does not recall the fascinating displays of wares in the little shops of France? No matter what kind of a shop it may be, whether for ladies' wear or for groceries, good taste dictates the arrangement, because the French know that art is art whether revealed in a pattern of silks or jewels or one of hams. One always remembers the charcuteries found everywhere in Paris, whose windows hold an alluring array of jellied meats, beautifully colored preserves in shapely bottles, and handsomely labelled tins and countless dainties, all arranged in perfect taste. To compare the charcuterie with a New York delicatessen store would be a desecration.

Window display is well understood among the French, and in the last ten years it has spread widely in this country. Besides designing their windows, the French conceived the idea of providing a frame or setting of architecture for the show window, and then they developed the inside arrangement and design of the shop itself to a high degree of taste. A few of these Paris shops became famous, particularly those on the Grand Boulevard, near the Place de L'Opera and the Place Vendome and along the Rue de Rivoli. Chief among these are the luxury shops of the Rue de la Paix, whose taste and smartness and fashionable clientele—drawn from the whole world—mark perhaps the greatest heights which the small retail shop has ever reached.



NOS. 618 AND 620 FIFTH AVENUE, NEW YORK. McKIM, MEAD & WHITE, ARCHITECTS.



JEWELRY SHOP, 634 FIFTH AVENUE, NEW YORK.  
George Provot, Architect.

New York proprietors emulated their Paris rivals when, about ten years ago, upper Fifth Avenue became the fashionable retail center of New York. The first improvement came in window display, then in the interiors, and last of all in the design of the shop front. Even today the number of distinctive shop fronts in New York is small, if one excludes the many fine shops which occupy space in ground floors of large buildings, whose windows are a part of a large scheme of architecture and which have therefore no individual character of their own. There are scarce more than a score of distinctive shop fronts in New York today, most of them on Fifth Avenue. To these may be added a small group in Boston, where, in the district of the Common, along Boylston and Tremont Streets, a number of interesting shops were established about fifteen years ago; a few shops

on Chestnut Street, Philadelphia, and a few on lower Charles Street, Baltimore. The number is so far not large, and if one included the slightly older group of Paris shops I believe that one would be troubled to find as many as a hundred shops in the whole world whose standard equals these herewith illustrated.

This New York group is the chief element in the fine architectural appearance of Fifth Avenue. It is the only factor which gives the avenue a consistency of architecture, and a consistent architectural scale and style. Unfortunately, Fifth Avenue suffers from the doctrine of eclecticism which was embraced by our older generation of architects, and, notwithstanding its many fine buildings, harmonized by the use of limestone and marble and bronze details, Fifth Avenue is not a beautiful street. Its units are not harmonious. Eclecticism may have ap-



DOORWAY—JEWELRY SHOP, 634 FIFTH AVENUE,  
NEW YORK. GEORGE PROVOT, ARCHITECT.



SHOE SHOP, 718 FIFTH AVENUE, NEW YORK. A. D. SEYMOUR, JR., ARCHITECT.



LADIES' UNDERWEAR SHOP, 543 FIFTH AVENUE,  
NEW YORK. HORACE GINSBERG, ARCHITECT.



HOSIERY SHOP, 586 FIFTH AVENUE, NEW YORK.  
GEORGE & HENRY BOEHM, ARCHITECTS.





TWO ART SHOPS, 680 FIFTH AVENUE, NEW YORK. W. W. BOSWORTH, ARCHITECT.



JEWELRY SHOP, FIFTH AVENUE AND  
FORTY-EIGHTH STREET, NEW YORK.  
CARRÈRE & HASTINGS, ARCHITECTS.



JEWELLERS' BUILDING, FIFTH AVENUE  
AND FORTY-EIGHTH STREET, NEW YORK.  
CARRÈRE & HASTINGS, ARCHITECTS.



FUR SHOP, 670 FIFTH AVENUE, NEW YORK.  
HENRY OTIS CHAPMAN, ARCHITECT.



ART SHOP, 12 EAST FIFTY-SEVENTH STREET,  
NEW YORK. CARRÈRE & HASTINGS, ARCHITECTS.



ART SHOP, 16 EAST FIFTY-SIXTH STREET, NEW YORK. TROWBRIDGE & ACKERMAN, ARCHITECTS.



MEN'S FURNISHINGS SHOP, 572  
FIFTH AVENUE, NEW YORK.  
AUGUSTUS N. ALLEN, ARCHITECT.



NO. 377 FIFTH AVENUE, NEW YORK.  
SEVERANCE & VAN ALLEN, ARCHITECTS.





RESTAURANT, 377 FIFTH AVENUE, NEW YORK.  
SEVERANCE & VAN ALLEN, ARCHITECTS.



SHOP FOR LADIES' WEAR, 448 FIFTH AVENUE, NEW YORK. HARRY ALLAN JACOBS, ARCHITECT.

peared reasonable in the design of isolated country houses, where the houses were placed so far apart that they could not be compared with one another, and no disharmony resulted through using various styles. Even in the cities, where a generation ago good buildings were rare and could therefore not be seen together, an architect could hardly take neighboring structures into account in a new design because these were almost certain to be bad. Eclecticism in such conditions had no very evil effects. But now the situation is different. Some American streets, like Fifth Avenue, are filling up with fine buildings and the lack of unity of styles between units creates ugly street walls. Such a practice will never produce a fine city architecture. Beauty of neighborhood cannot exist under eclecticism. Like many another theory, eclecticism is subject to the law of diminishing returns. One of the virtues of these new shop fronts is that they break definitely with eclecticism, in that they tend to make Fifth Avenue, as far as they can, an architectural whole.

Having thus covered the chief points of interest of the shop fronts, a brief notice will suffice for individual examples. In all the variety of motives, two types appear. One portrays the older idea of making the front all glass, and of squeezing all possible space out of it for window display. The other concentrates attention on a more limited window space and heightens the desired strong effect of enframing the picture made by the show window with a decisive architectural setting. The latter idea has the advantage of making the whole shop more distinctive and of yielding a better appearance in the upper part of the building by providing a well-defined architectural base.

Lately, however, attempts have been made to combine the two conceptions by a new method of planning. In this method, the fronts are recessed or splayed back from the building line, thus creating a small corridor or vestibule which is used for show window space. Many ingenious arrangements of plan of this type are seen in the shops of upper Broadway,

but, unfortunately, they are most crudely designed in bare sheets of plate glass and have no architectural distinction. It remained for the Avedon shop to develop the idea to the full. On the front of this shop the windows are small enough to leave plenty of wall space for enframing and also for the good appearance of the whole building. A short passage, about six feet long and containing two wall windows at each side, leads from the street into a circular vestibule, some twelve feet in diameter, where six more windows radiate from this center. Then one enters from this vestibule into the shop itself. By this device the architect provides ten show windows in a space about twenty feet square, all of them opening off the street and allowing the passerby to view the displays of goods undisturbed by the sidewalk throng. The vestibule and windows of the Avedon shop are kept lighted through the evening, and so continue to function after the shop is closed. Each window is carefully designed with an architectural background in plaster, imitating Caen stone, well shaped in plan, some windows containing small niches for plants. This shop, just completed at the time of writing, is the highest development of the shop front so far as plan is concerned on Fifth Avenue.

The other fronts speak for themselves. All are original, although a number clearly reveal the Parisian heritage of the Rue de la Paix. One, the shop on Forty-fifth Street, is a charming, yet vigorous, exponent of the medieval spirit and shows the small town flavor of the English shop front, of which a number of fine examples exist in England. It is the only shop using wood in this series, except one, "La Camille," which is designed in light oak, following some of the shops of Paris.

One of the most masterly designs of all is the shoe shop of Alexander, designed by Carrère & Hastings. Its fascinating interest, its perfection of proportion and of scale, its exquisite details and harmonious color—in form reminiscent of Italy—make it as beautiful a building as exists on the Avenue. The jeweler's building at Fifth Avenue and Forty-



JEWELRY SHOP, 630 FIFTH AVENUE, NEW YORK. STARRETT & VAN VLECK, ARCHITECTS.

eighth Street is another Carrère & Hastings triumph, which I have included on account of its beauty, though it is larger than the small retail type, which alone is considered here. These two buildings were erected shortly before the war.

But the masterpiece of all are the two fronts at Nos. 618 and 620 Fifth Avenue, designed by McKim, Mead & White. From every point of view here is the most perfect expression of the small city shop in New York. Original to the point of daring, striking in contrast of black and white, a perfect type of city shop scale, it is alive with the modern spirit—a Chicagoan could admire it, yet withal its proportions are so pure, so harmonious, so graceful, its details so exquisite that an Athenian would find it beautiful. Here is the proof that architecture may be vividly modern in spirit without sacrificing the classic ideal of perfect form. I believe that no more important contribution has been made to modern art by American artists than this building.

McKim, Mead & White have established in this design the value of tradition in modern art beyond all doubt. Its tradition is in the spirit, not the letter, because the most extreme modernist could scarcely discover conventional form in it. A microscope on the photograph would show historic traces of capital and base on the verticals, something familiar in the cornice and in the delicate terra cotta border enclosing the black marble slabs—that is all.

As far as modernism is concerned, there is even humor in the color scheme of the building. Black and white is the maximum value contrast, the very motive which, a few years ago, found favor in the modernist school. At the time this store was built an eminent modernist designer in Vienna attracted attention by a daring use of black and white. Yet here are New York classicists doing the same thing, very carefully, of course, for they harmonize it ever so slightly by design—making the black predominate over the white, and not allowing any black area to become too large—and by finish of detail; the white is cream, and the black marble is toned down with a dull rubbed

finish until it looks more like black slate than like coal. Decidedly in this building McKim, Mead & White have put the modernists in a hole.

This store front has added interest if it be compared with the older stores of the firm, for example, Gorham's on Fifth Avenue. Gorham's at the time it was built was considered one of the best examples of the genius of McKim, and was the model for many another commercial building. But when compared with the newer work it shows how far shop architecture has advanced in the ten years between the building of the two. Gorham's is an adaptation of the early Italian palace front to the American shop, and the result is certainly not the most successful of McKim's achievements. There seems to be a slight disharmony of scale between the base, top and middle parts of the building, and it lacks the characteristic scale of the city shop as architects have since established it. One may read the story of the progress in the Gorham building and in the new furrier's shop next to it on Fifth Avenue, the latter a splendid symbol of city shop scale.

Thus the perfecting of the city shop scale is another remarkable triumph which McKim, Mead & White have achieved in the 618-620 Fifth Avenue Building. In this, as in other respects, it is superior to the older Gorham's. With such an example to follow, the shopping streets of American cities bid fair to emerge from their ugly chaos and become worthy standards of city architecture. Zoning laws can aid the work by establishing height restrictions and thus prevent an ugly skyline from ruining the aspect of a city street. Such help is all that architects need in order to perfect this, their new achievement in solving the hitherto unsolvable problem of city architecture. They are creating a beautiful commercial architecture in these small shops, in all ways typical of the modern city and of modern times, yet still maintaining the classic tradition of perfect form. Despite our town-and-country traditions we are at last beginning to sense the spirit of the city.



FIG. 3. VARICK STREET SIDE OF HOUSE AT 51 CHARLTON STREET, NEW YORK, REMODELED BY FRANCIS Y. JOANNES, ARCHITECT. FIRST FLOOR HAS STORE AND APARTMENT OF TWO ROOMS AND BATH; SECOND FLOOR, APARTMENT OF FIVE ROOMS AND BATH; THIRD FLOOR, STUDIO, WITH FOUR ROOMS AND BATH.

## TENDENCIES IN APARTMENT HOUSE DESIGN



### *Part I. Examples of Remodeling*

BY

FRANK CHOUTEAU BROWN

THE progress of the race and of the individual is only to be observed or traced by means of occasional balance sheets struck to obtain variations from direct curves, or to disclose new and unanticipated changes occurring in relation to other contemporaneous events. These variations once realized, it is then easily possible to chart their divergencies, and thus re-establish the curve of progress for the future. By these means is it also possible for the individual to discover what particular value these recent disturbances or changes may have for his own particular problems, or business prospects.

It was with such thought in mind that these investigations into the present situation of apartment house development the country over were undertaken—for it is, of course, a foregone conclusion that the many changes, economic, industrial, financial, the country has undergone since its advent into the great war, must have some reaction, of whatever kind, on this popular type of building, that would exercise an influence for good or ill upon its future development. These influences it is most important for the architect to understand. It is equally important that the investor should study and comprehend them—and, nowadays, it is not too much to assume that the public, which has so largely to “pay the piper” in all these experiments, is also vitally concerned.

What follows in this and succeeding articles will, therefore, be selected to apply to one and all of these individuals named. What intensely concerns one, should concern all, sooner or later—the more especially if the arising interest in “cooperative apartments” should amount

to anything of importance in the years soon to come.

Every endeavor has been made to draw information, and the material for illustrations, from all parts of the country alike, not with any idea that it would be possible fully or even adequately to cover the special divergencies arising in any one particular locality—but rather in the endeavor thus exactly to illustrate the particular local types found in different sections, so that all could benefit and judge whether these local types contained anything of applicable interest to their own localities. With that thought in mind both publishers and writer would appreciate hearing immediately from any individual or locality where it is believed that there has been evolved any particularly novel or individual local contribution to the subject. Such suggestions will be welcomed and made use of in the later articles in the series here under way.

An exhaustive treatment can not be undertaken—in the illustrations at least. Already it has been found that they contain a notable tendency to revert to particular types. Therefore, in a mere effort at economy of paper and space, the endeavor will be made to deal with representative examples only—representative as to type plan, elevation, and locality, as well. It is further obvious that, as yet, too small an amount of time has elapsed since the American apartment plan was first intentionally attempted (in connection with our existing industrial and economic difficulties) to show, in many ways, other than a mere hint as to the next logical and progressive step to be made.

Outside of a few groups of notable exceptions—later to be taken up in detail—

the "apartment house problem," for the present, principally concerns us only insofar as it affects our larger "middle classes," a rather overlooked and forgotten part of our population, that has nevertheless to live—and find habitation—somehow and where.

As to the poorly paid unskilled laborer, no attempt, with but rare exception, is made by either parental government authority or by the individual, to provide housing of low cost for him and his family. The problem is too difficult and too obviously barren of resultant income to appeal to the speculative builder as a profitable business venture. So far, our governmental control—whether city, state or national—has been confined to restrictive legislation, intended to ameliorate living conditions for the very poor, but as a matter of practical fact, causing their position to become only the more onerous.

Many of these "tenement house laws" are so inclusively worded as to apply to almost all types of apartment dwellings, and consequently they have hampered, although they have not arrested, the building of new, or the alteration of old, dwellings to meet the living conditions and needs of the better classes of tenants.

It is with attempts made along the line of altering old dwellings into apartments of informal and less expensive type for middle class tenants that this article is particularly concerned. Such alterations are, for the moment, the only available means of quickly and inexpensively increasing the housing capacity of our more crowded cities.

The larger American city provides but two directions of possible progress—the building up of unimproved property (this almost always means upon the city's outer perimeter); or the improving of existing built-upon property according to standards of greater efficiency or capacity.

As to the former, unimproved property in desirable sections of our large cities is scarce—and is growing steadily more and more costly. It is therefore only available, when obtainable at all, for

the more costly and expensive forms of housing development.

When we turn to the second alternative, it means that, in the demolition of existing buildings to obtain sites for new structures, we are almost always demolishing structures that are already living quarters—of sorts—and far too often the new buildings erected on these sites are commercial rather than residential—thus failing utterly to help in the immediate problem of providing more housing, with which we are primarily concerned. If apartment houses entirely of new construction are placed upon these sites, we may improve or increase their housing capacity, but we are certainly increasing and raising their rental costs, so as to make them available only to a far better paying class of tenants. Meanwhile the old dwellers upon this property have been forced to find for themselves habitations probably even more congested and less desirable than before.

In this emergency—and failing the construction of newly built accommodations capable of meeting the demand for low rentals—family after family has been forced to turn for relief to the suburb or country, or to the older built sections of the city in which they dwell. And in the latter direction, at least, the result nearly always takes the form of a more or less informal or "made over" type of living apartment.

Every large North American city possesses certain "downtown" sections that were at one time fashionable but, from one cause or another, have now outlived their original usefulness for private dwellings, and so are now to be found in some one of the several stages of the down grade of premises—boarding house, office, small trade or factory, to tenement.

All our cities possess old sections crowded with houses of this type, in many cases dwellings of once proud dignity and beauty—and such structures can, by the exercise of some ingenuity and taste, be made over into most interesting dwellings or apartments, as has long been recognized and proved by our artists in Greenwich Village, around Washington Square, on Beacon Hill, or





FIG. 2. DOORWAY OF HOUSE AT 39 CHARLTON STREET, NEW YORK, REMODELED BY FRANCIS Y. JOANNES AND MAXWELL HYDE, ARCHITECTS.



FIG. 1. REMODELED HOUSES AT 47 TO 51 CHARLTON STREET, NEW YORK.  
Francis Y. Joannes and Maxwell Hyde, Architects.

in the quaint little side streets and "places" that alternate with more important thoroughfares in Philadelphia and St. Louis. And it is a comparatively recent discovery that we have the ability, by making over these old dwellings by some slight alterations into apartments of informal type to house quickly and comfortably several families where only one may have been housed before. Incidentally, it also must be recognized that, in several of the instances illustrated herewith, the process has actually consisted of housing, perhaps, three or four families where a dozen or fifteen had formerly lived.

The type especially to be considered now is rather the sort of apartment that may be made from part of an older dwelling of the kind that now cumberes so much side-street property in our larger cities, or is found in a neighborhood lying adjacent to some newly devel-

oping business section. The old-dwelling property remaining after the current of fashion has moved away, may be still good in its kind—indeed, so far as construction and workmanship are concerned, it is very likely to be better than the newer and more fashionable dwelling that has supplanted it. Too good to pull down, it is yet, in its present state, suitable only for use as a rooming or boarding house—a purpose that is little likely to prove lucrative to the owner, or conducive to maintaining the dignity and repair of the habitation itself, or of the neighborhood of which it performs still remains a part. Its abandonment to that purpose is, truly, but the first step of a rapid descent to uses more shady and less reputable, undesirable to the owner the more particularly in that it means a permanent and certain eventual lessening of his property value.

But to what other purpose does it



FIG. 4. HOUSE AT VANDAM STREET, NEW YORK, REMODELED BY FRANCIS Y. JOANNES AND MAXWELL HYDE, ARCHITECTS.

stand available? Here is, perhaps, the key to a new opportunity. Generally such a structure is in a convenient "down-town" neighborhood, near the business district, and conveniently adjacent to the theatres and restaurants of the city. This makes it naturally desirable for "bachelor" purposes—for writers, business men, artists, actors and musicians, provided only they may be interested, attracted and held by a reasonable rental, and the convenient arrangement of whatever material already exists to work with.

A knowledge of the successful treatments of this sort already in existence will, if better and more widely spread, be of some little help and assistance elsewhere in meeting this imminent housing shortage. It will further, if cherished

and developed, be helpful in many cities to uphold the values of property at present abandoned too early to decay, and so be of helpful tendency in maintaining the civic pride and usefulness of our American communities, across the entire continent. It is a valuable and easy panacea for the great and prevailing disease from which so many of our American cities are doomed to suffer—the "growing pains" inseparable from their too rapid and undirected growth.

Let us therefore suppose, as typical cases, a house on some side street in down-town New York (Fig. 1), or a smaller structure in one of Philadelphia's or St. Louis' alleys—possibly still more conveniently "down-town"! It may often happen that the exterior is already at-

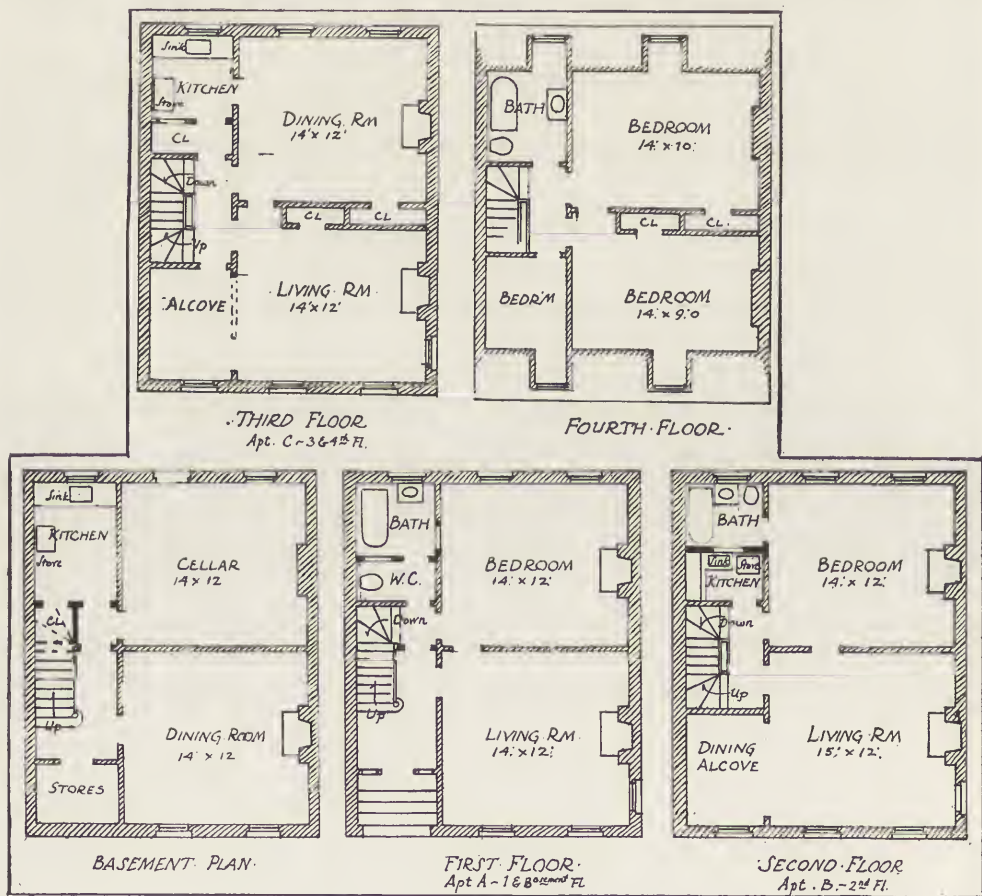
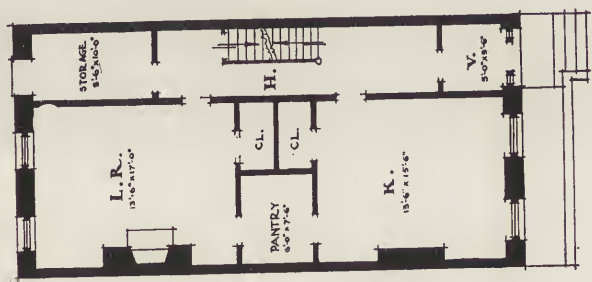
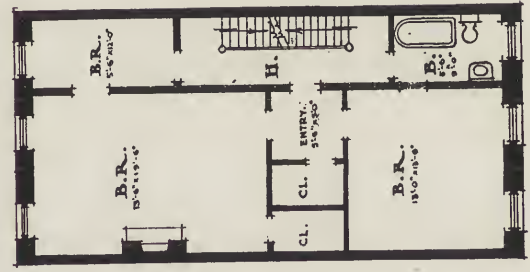


FIG. 5. PLANS OF ALTERATIONS TO OLD HOME ON BEACON HILL, BOSTON.  
Frank A. Bourne, Architect.

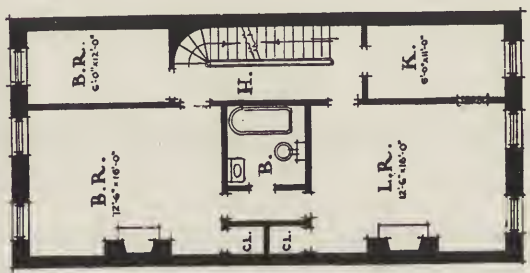


FIRST FLOOR PLAN  
• DUPLEX APARTMENT •

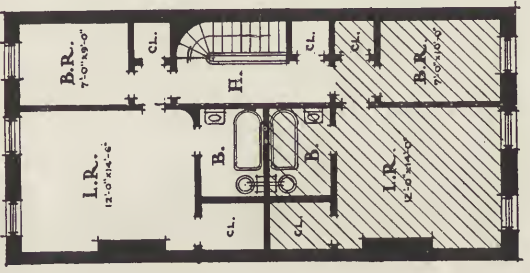
• SCALE • •



SECOND FLOOR PLAN



THIRD FLOOR PLAN  
• FROM KEEPING APARTMENT •



FOURTH FLOOR PLAN  
• FROM KEEPING APARTMENT •

FIG. 6. PLANS OF ALTERATIONS TO HOUSES AT 74, 78 AND 82 MACDOUGAL STREET, NEW YORK CITY. FRANCIS Y. JOANNES AND MAXWELL HYDE, ARCHITECTS.



FIG. 7. ALTERATIONS TO STORES AND TENEMENTS AT 170 BLEECKER STREET, NEW YORK. FRANCIS Y. JOANNES AND MAXWELL HYDE, ARCHITECTS.

tractive, perhaps Colonial (Fig. 2), in the simplicity of its brick façade, so that little or nothing needs to be done with that. We may then direct our attention almost solely to the interior and its arrangement. In the case of some New York examples, we are, of course, likely to be less fortunate, for there many of the areas open to this sort of improvement are an arid architectural waste of dull brown-stone "fronts"—and Heaven only knows what "backs"—with little of interest or allure to the artist or individual of taste to whom the owners of this type of property have found it most profitable to appeal.

So we shall find in New York, or other of our over-crowded American cities, that an effort has been made to modernize these old façades by some simple means—either by merely sloughing off most of the misdirected "ornament" with which the original front has so long been over-burdened—or by resurfacing with plaster or brick veneer, to endeavor at once to simplify and improve its appearance, so that it will appeal to its new class of occupants without delay. Of course, in particular instances, we shall find that the potential value of the property or its neighborhood will even warrant the extravagance of entirely rebuilding the front upon the street—but, after all, in the greater majority of instances, this particular type of development is only undertaken as a temporary stop-gap to fill in some transition period when the use of a district is changing from residential to business purposes, and the growth of the latter demand is likely to be too slow for the owners to sit calmly by, watching their property meanwhile depreciate in value and income, without attempting to do something about it. So the problem is almost always one of obtaining the greatest result with the least possible amount of actual expenditure; of retaining and making use of as much as possible of the old structure with the minimum allowable amount of change or repair—and so is it always necessary only to undertake such alterations in the plan as the arrangement of the house originally makes most easily possible. This would seem to be likely

to make every solution different from every other, and so it would be were it not for the fact that the older city houses of the periods generally affected were curiously alike in plan and arrangement (Figs. 5 and 6) and consequently it is possible to show certain "type arrangements" as the most obvious general bases for the better development of property of this type and kind.

It is, of course, necessary for the owner first to determine whether he is to attempt to obtain one or two suites upon each floor; whether the demands of the neighborhood make it desirable to place a store upon the first floor (Fig. 3) and to what common purposes it is necessary to adapt the basement. If the apartments are very restricted in area it is perhaps necessary to provide storage spaces for all occupants in the cellar. In most neighborhoods it is neither necessary nor desirable to make janitor's quarters in the basement, for one man is more likely to take care of a number of these buildings, thus making unnecessary a resident janitor. Space for heater and coal have to be allotted, of course, even though it may be as restricted as the cellar space in the basement in Fig. 5. Sometimes the first floor, even if not made into a regular store, is adapted to semi-business purposes—by a doctor, dentist, decorator or milliner, for instance—without going to the considerable expense of lowering the floor. This is generally necessary in the case of its being deemed advisable to make the first story into a store, because most of these houses were built with a stepped approach at the entrance, with the main floor line from two to five feet above the street level. A change in the first floor also restricts the use of the space beneath, because of lowered head room in the cellar, and some stores besides require a stair to the cellar and make considerable use of the cellar area in the building for their own purposes. The staircase to the upper floors is always an awkward problem in an alteration of this type, taking away valuable store window frontage and restricting the entrance to the living suites at one and the same time; while, of course, it is sometimes considered deterrent to

the values of the residential portions of the building to have a store upon the first floor.

In some sections of New York the rehabilitation of old property to meet this new use has been carried out by means of the "basement entrance" (Figs. 8 and 10) that has been a more or less fashion-

either in width or depth—some upon the original arrangement of partitions and staircase. Certain typical plans herewith reproduced illustrate the usual arrangements. As a whole the utmost of condensation and compromise is found in the kitchens and dining portions of these apartments—the two often being crowded



FIG. 8. DWELLINGS REMODELED INTO APARTMENTS AT 180 TO 188 SULLIVAN STREET, NEW YORK.

Francis Y. Joannes, Architect.

able treatment in the new portion of that city, and is generally assumed at least to imply a fairly modern and up-to-date building. Its use leaves a first floor entirely unrestricted as to frontage by the necessity of retaining the front door and generally adds another small rentable suite in the front of the basement, while retaining sufficient space for heater and general purposes in the rear portion of the old basement story.

The arrangements of the upper floors vary only in minor details once the matter of two or one suites to the floor has been finally settled. Some of these minor variations are dependent upon the wider or narrower dimensions of the house—

into one small space (Fig 5) or the living room being also used for dining purposes (Fig. 5), and the kitchen sometimes being combined with the bath (Fig. 5), a rather less desirable and less sanitary arrangement! Of course, the storage facilities in the kitchen are always extremely rudimentary and simple, it being the general expectation that the occupants will oftenest "dine out," the kitchen being used, if at all, only for breakfast or luncheon.

The living room, too, is often made to serve the dual purpose of living and sleeping room, although we have hardly in the East yet attained to the frank abandon of the Western Coast, with the elabo-



rate disappearing beds and closet arrangements that seem to be common there in this type of apartment. In these western cities, however, the extra emphasis placed upon the outdoor life locates these small "telescoped" apartments generally in the suburbs, with rural rather than urban surroundings, and the plan ar-

and basement floors, of four rooms and bath, a smaller apartment of four rooms on the second floor, and another of three rooms and bath upon the top story (much in the manner of the plans shown for a different group in Fig. 6) will easily appeal to intelligent and appreciative tenants of the class that now most needs to



FIG. 9. LIVING ROOM IN APARTMENT AT 188 SULLIVAN STREET, NEW YORK.  
Francis Y. Joannes, Architect.

range-ment therefore attains to greater variation of detail.

In New York City itself it happens that a great deal of the property coming within the class now being discussed still remains in the hands of the estates that control not only many individual dwellings, but those also that are owned in groups of adjacent structures often extending for an entire block in length. This makes the rejuvenation of such property all the more easy. Such attractive old houses as those in Charlton Street (Fig. 1), for instance, with their very beautiful and gracious doorways (Fig. 2), when altered over to provide three apartments, one including the first

find inexpensive and good homes. This is at least one fortuitous circumstance that will have much to do with the restoration to favor of some of the older portions of our eastern cities. A family possessing even some pretensions to an old-fashioned gentility could hardly object to living over a store in so attractive a building as the one on the corner of Charlton and Varick Streets (Fig. 3). The first floor of this rather wide building contains besides the store, a two-room apartment and bath, a five-room and bath apartment on the second floor, and the top floor contains a studio, four rooms and bath.

A New York dwelling of another type,

hardly as good in original design and location, but yet available to alteration along precisely similar lines, appears in Fig. 4, one of a group of houses in Vandam Street, the previous condition of which, before restoration, is sufficiently indicated in what can be seen of the next façade, at the left of the picture. New light sash and shutters, with cleaning and painting down the front, is about the necessary extent of the exterior treatment, although the new shutters yet notably fail of the fine beauty of detail, scale and proportion of the old examples still left on the house shown in Fig. 2.

The set of plans of the alterations to the interior arrangement of an old house on the side of Beacon Hill, in Boston, illustrates how few the changes that are sometimes necessary in carrying out a modification such as this. In the instance selected for illustration the dwelling was originally of quite the same aspect as those last shown, being only one story higher. The basement and first floor make over into a three-room, kitchen and bath apartment; the second floor into another of two rooms and conveniences, and the third and fourth (an attic in the sloping roof) into another "duplex" dwelling of five rooms, bath and kitchenette. This particular dwelling happened to have side light in the rooms, and be of greater width (23 feet) than many of its kind. It is used here to illustrate how few changes may be necessary to adapt such a house to its new purpose, as may be seen by noticing how few are the partitions where their indication is in solid black, the remainder of the plan being left as it was before, untouched except for the necessary repairs of painting and papering of walls.

These changes that were made are substantially only those required to divide the old pantry on the first floor into a bath; the bathroom upon the second floor into a bath and kitchenette (this type of kitchenette is now unlawful in Boston—outside light and a minimum width of eight feet in the lesser dimension of the room being requirements), the division of the same space upon the floor above into a kitchen and closet and a small change

necessary to separate and make private the basement stairs.

The various changes possible in the older type of residence-tenement to rejuvenate it into a better class of property under the conditions that exist in New York City may be shown as well as may be by reference to the alterations just completed in one particular district by Mr. Francis Y. Joannes and his associates. In a group of five houses on Sullivan Street and eleven on Macdougall Street he has, by slight variations in existing partitions and a transfer of the entrance from the old first floor to the basement, along with a general freshening of the property within and without, made such inexpensive improvements as will well be repaid by the increase in rental return, and the less rapid future depreciation of the property by the better class of tenants that it will henceforward attract.

The floor plans for the houses on both streets are practically identical (Fig. 6), only varying as the entrances and staircases vary from the right to left side of the plans, as the old houses were grouped into pairs. The first and basement floors were made into a duplex five-room and bath apartment, the second floor into four rooms and bath and the top story into two two-room and bath apartments, an arrangement excellently calculated to accord with the gradual lessening in rental value accompanying the necessity to climb to the upper stories usual in New York City. In connection with this improvement, certain changes were also made in 170 Bleecker Street (Fig. 7), an old-law tenement on the corner, securing two, three and four room apartments and baths, but the plan, having interest only because of the individual requirements of the problem presented by the old arrangement of the building has not sufficient or illustrative general value to justify its reproduction here.

The exteriors of the Sullivan Street houses are shown in Fig. 8, extending from the Bleecker Street tenement on the corner, the principal structural change being a variation in the treatment of the basement entrance, while the extent to



FIG. 10. ALTERATIONS TO HOUSES AT 74 TO 94 MACDOUGAL STREET, NEW YORK. FRANCIS Y. JOANNES AND MAXWELL HYDE, ARCHITECTS.

which the mere repainting, papering, and refurnishing of the well-proportioned interiors along the simplest and least expensive lines has been successful is indicated by the single view of a room in No. 188 illustrated in Fig. 9.

The more extensive exterior changes that were necessary in reclaiming the row of houses on Macdougall Street are perhaps sufficiently obvious as they appear in Fig. 10, although in this case a much more drastic cleaning up of the premises than may at first glance be apparent was accomplished in the general repair of the block. The mere removal of the old clumsy stone stoops and first floor entrances accomplished wonders, the opening up of the areas in connection with the change to the basement entrances did still more, as may perhaps rather vaguely still be discerned in the old house left at the end of the row, chiefly distinguishable as the place where the fresh paint stops.

Such changes as are shown in the typical examples illustrated in this article may be made in any old house, in any city where the type built between party walls may be found. With the exception of the expense attendant upon the necessary addition of new plumbing—and very probably heating, as well—the cost of the changes, if ingeniously undertaken, need not be great. The appeal of the resulting apartments, provided only they are situated in a favoring locality, convenient and accessible, is certain to ensure desirable tenants at a figure considerably over the return that may have been obtained before—and with the absolute assurance of a considerably less yearly bill for maintenance and repair. They *do* require the annoyance of dealing with more tenants, making more leases, and the expense of heating and janitor service—all of which must be figured into the rentals for the new apartments that are to be obtained. This is the sort of development that is constantly taking place in our larger and more crowded cities, and

it is the sort that—because of its very modesty and unarchitectural character—is too seldom given the dignity of presentation and publication. It is, at the same time, exactly the sort of improvement that we can alone depend upon to meet the immediate situation as to housing that confronts us now—and that will continue to confront us, in our principal cities—for at least the next four or five years to come; and it is that immediacy of application to our local problems that must justify the space taken in its presentation here.

No other means for immediately meeting the demand for new housing accommodations is possible within our larger centers of population. No large building projects of this sort by private capital can be completed within several years. When completed they will—under existing conditions of labor and transportation—still be so expensive that they will do nothing to provide housing for the large middle class of Americans who are already those most in need of assistance. No practical aid is to be expected from our much-being-discussed parental government assistance—whether national state or city.

We have still to go through the preliminary several years of discussion. Such schemes, when they eventuate, will present all the political difficulties that we have already found to surround governmental control or handling of our industries—and we shall then have also to face precisely the same criticism that is now being brought forward to dispossess the government from the operation of our expensively-built shipping, the unfairness of expecting individuals to compete with the government despite the obviously uneconomical results of all our ventures of governmental administration along these or other lines within the still comparatively recent and remembered past.

PORTFOLIO  
OF  
CURRENT  
ARCHITECTURE



ENTRANCE FRONT—"LITTLE OR-  
CHARD FARM," WHITE PLAINS, N.  
Y. FRANK J. FORSTER, ARCHITECT.



ENTRANCE GATES—"LITTLE OR-  
CHARD FARM," WHITE PLAINS, N.  
Y. FRANK J. FORSTER, ARCHITECT.



GENERAL VIEW—"LITTLE OR-  
CHARD FARM," WHITE PLAINS, N.  
Y. FRANK J. FORSTER, ARCHITECT.



ENTRANCE DOOR—"LITTLE ORCHARD FARM," WHITE PLAINS, N. Y.  
Frank J. Forster, Architect.

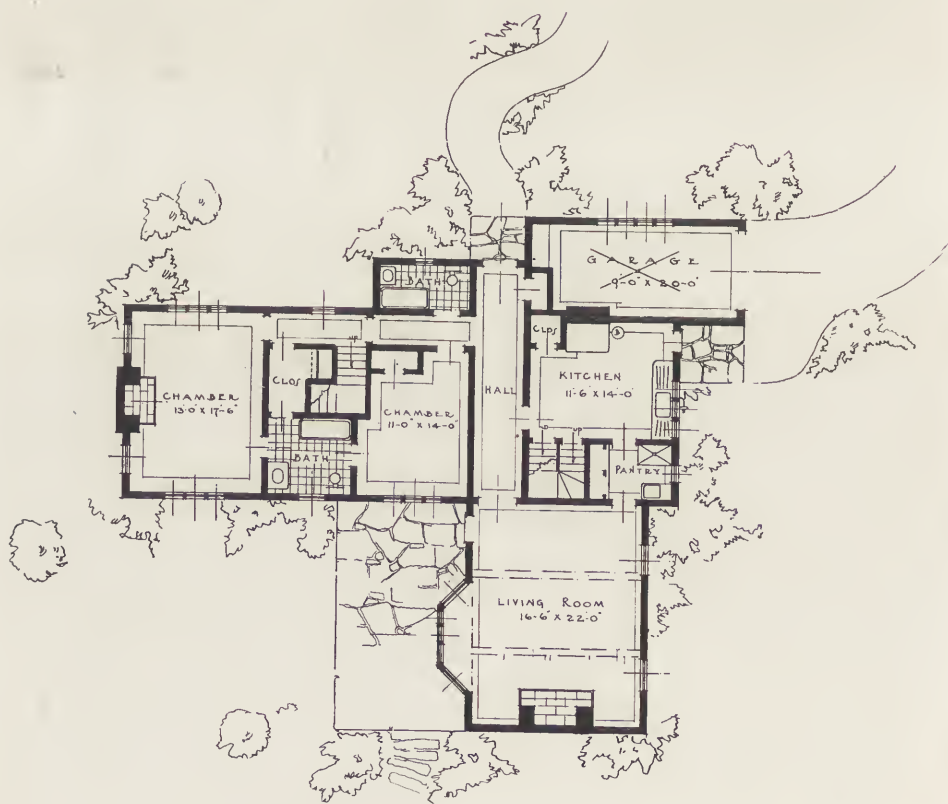
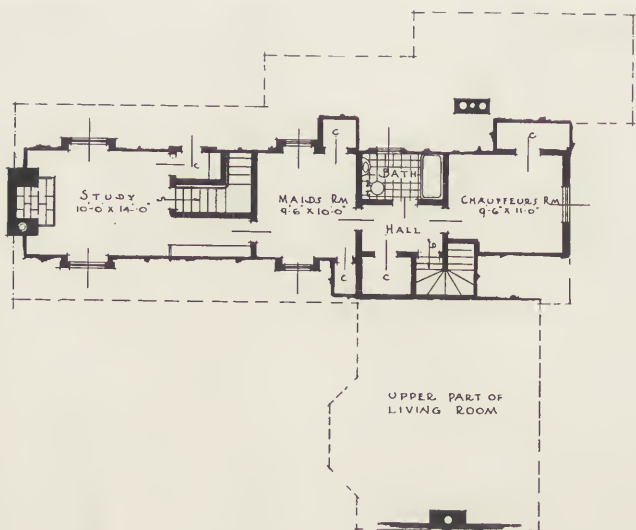


LIVING ROOM WING—"LITTLE ORCHARD FARM," WHITE PLAINS, N. Y.  
Frank J. Forster, Architect.





GARDEN FRONT—"LITTLE OR-  
CHARD FARM," WHITE PLAINS, N.  
Y. FRANK J. FORSTER, ARCHITECT.



FLOOR PLANS—"LITTLE OR-  
CHARD FARM," WHITE PLAINS, N.  
Y. FRANK J. FORSTER, ARCHITECT.



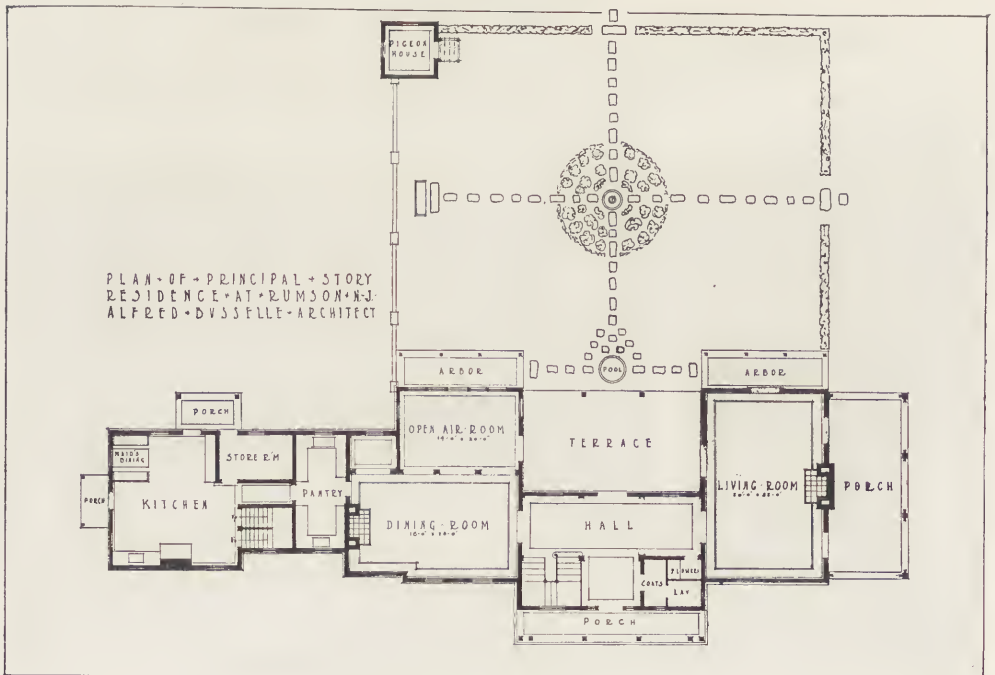
DINING ROOM—"LITTLE ORCHARD FARM," WHITE PLAINS, N. Y.  
Frank J. Forster, Architect.



BED ROOM—"LITTLE ORCHARD FARM," WHITE PLAINS, N. Y.  
Frank J. Forster, Architect.



RESIDENCE AT RUMSON, N. J.  
Alfred Busselle, Architect.



RESIDENCE AT RUMSON, N. J.  
Alfred Busselle, Architect.



COTTAGE AT RUMSON, N. J.  
ALFRED BUSSELLE, ARCHITECT.

## - THE BUILDING PROSPECT -

*A Study of the Major Economic Factors  
Bearing on Present & Future Costs, Future  
Income and the Demand for Buildings*

By

WILLFORD I. KING, Ph.D.

### *Part III - The Demand for Buildings*

FOR more than a year both daily papers and magazines have devoted much of their space to the subject of the housing shortage. The New York legislature recently declared the situation to be abnormal and passed laws intended to check the rising tide of rents. The courts have held that the legislature was justified in using its police power for this purpose because an emergency actually existed. The public has worked itself into a state of mind in which it is ready to endorse almost any measure which promises relief, no matter how chimerical the scheme may be.

But the existence of popular furore shows nothing about the real facts of the case. Public sentiment is swayed by the emotions more than by reason, and is notably fickle. Other evidence, then, is necessary before the existence of any real housing shortage can be established.

But even should it be established that construction is in arrears, is this fact of any moment to the prospective builder? In the previous chapters of this article it has been shown that existing building costs and the probable course of rents in the future are the two considerations upon which the advisability of building must be based. If this is true, it follows that a building shortage is a matter of consequence only in so far as it affects one or both of the factors just mentioned. Does it really influence either of them in any way?

To this question, the answer must be that it actually has an important bearing upon both of these factors. If the supply of buildings is below normal, it follows that there is every probability that an effort will soon be made to eliminate the de-

ficit. A procedure of this sort must needs cause a considerable demand for both materials and labor, and such a demand will tend to stop the decline in the prices of these articles, even if it does not lead to a new advance. If a real building shortage exists, it tends therefore to make building activity revive at an earlier date than would normally be the case and to maintain construction costs at a relatively high level for a considerable period in the future.

Furthermore, a building shortage of any considerable size is not likely to be entirely remedied for several years to come, and during this interval its effect will be to keep rents somewhat higher than they would be were the building supply normal. Such a force may even prevent rents from accompanying other prices in their movement down into the cycle trough. Since values are merely reflections of anticipated rents, any force, like a building shortage, which tends to keep up rentals, necessarily makes selling values higher.

According to the principles just stated, it is obvious that the existence or non-existence of a building shortage is a matter of importance to every builder and to many architects. It is, then, worth while to try to ascertain the facts in the case. The first step in this direction is to arrive at an acceptable definition of the term "shortage." How is such a phenomenon to be measured?

Some may contend that a shortage exists whenever people do not have the housing facilities which they desire. If this is true, the shortage is likely to be extremely long lived, for one can scarcely imagine a condition in which any ap-

proach is made to satiating the desire for more or, at least, for better housing. The present denizen of a hovel may desire nothing less than a palace, and certainly only the small minority are at present housed in anything like the style which accords with their wants. Furthermore, endless construction work would be necessary to meet even the most modest requirements of the schools, the government, the railways, and the public utilities. There are a million miles of American highways which every automobilist sees the desirability of improving. Evidently, if we judge by the desires of the people, the building shortage is tremendous, always has been, and is likely to so continue for centuries to come.

Some would say, however, that needs rather than desires are the real criteria which must guide us in determining whether or not a shortage actually exists. As a matter of fact, such a change in standard only increases the difficulty of measuring the shortage. If compared to wants, we know that the shortage approaches infinity; when based on needs, we cannot arrive at any definite conclusion. Every person's wants commonly appear to him to be necessities, while to others they seem but matters of trivial moment. A common laborer who has ten children may feel that he needs a large dwelling surrounded by spacious grounds in which his children may grow up in health and vigor and have their taste for the beautiful developed. The housing reformer is likely, however, to believe that he has liberally allowed for this working family's needs when he has arranged that they shall be housed in a seven-room tenement, fairly well supplied with light and air. The difference in the two views may represent a cost of at least a hundred thousand dollars. Who is to judge as to which estimate really represents needs rather than desires?

The only thing that we can be sure of is that, according to the judgment of almost any sane person, the country has always needed far better buildings than it has ever had. There is no probability that any of us will live to see the time when needs are filled. By this criterion,

just as in the case of desires, there must always be a great shortage.

But when people speak of a building shortage they are not referring to a permanent condition; they are thinking of something unusual. Evidently, then, they must have in mind some other standard of comparison. They will probably tell you that what they mean is that the supply is less than the demand.

Such a condition of affairs can exist only under unusual circumstances. In a free market, the price always adjusts itself almost immediately to the point where demand and supply are exactly equal. Only in cases where prices are fixed by law or contract can demand actually outrun supply, for it is only in such instances that the price cannot adjust itself to bring about the normal equilibrium. Such cases may, however, exist. For example, the fixing of the rent for a certain type of house at \$50 per month may put an absolute stop to the construction of houses of this class. Under these circumstances there might easily be three persons desiring to lease each house offered for rent. The situation would be analogous to that applying to the sugar market during the recent war when a family could obtain only two pounds of sugar per month even though they were willing to pay thrice the legal price of ten cents per pound.

It is impossible to measure any excess of demand over supply which may exist. It is, however, feasible to make another comparison which seems to have a significant bearing on the possible existence of a building shortage; namely, the relationship of the amount of building taking place during the last few years to the normal volume of construction.

The most obvious procedure is to measure the value per capita of the buildings that have been constructed in recent years. In making this computation, it seems logical to include only private building, for most of the construction for the Federal Government added nothing to the supply of buildings required to meet the ordinary business and residential needs of the country. It is obvious also that it is absolutely essential to eliminate that gain in

the nominal value of construction representing merely the rise in the general price level, for the building requirements of the nation are measured in terms of physical units rather than in value. This last mentioned purpose is easily accomplished, with a reasonable degree of accuracy, by dividing in every instance the value of construction during the year by a price index representing the changes in the average of building costs for the corresponding period.

At first thought, the logical method of finding out whether the amount of building is above or below normal would seem to be to ascertain the changes which have taken place in the per capita volume of construction. A little reflection, however, soon convince one that this method is fallacious. The chief reason for erecting buildings is not that the people may be better housed. As a matter of fact, although the quality of residence has distinctly improved during the last century, it is probably true that the average city family today occupies materially less space than did the average household of a hundred years ago. The typical business man of the present time has a much

more convenient but not a more spacious office than his great-grandfather had. The cost of factory buildings per man employed is doubtless somewhat greater than in the early days of the nineteenth century.

But, after all, the increase during a hundred years in the per capita building supply has not been at all startling. This means that buildings have been mainly constructed for one reason only—to meet the needs of the new members added to our population. A million new families need, among other types of construction, not only a million houses in which to live, but also new railway facilities to carry their produce to market and bring them supplies, new trolleys to take them to and from their business, new buildings in which to work, new factories to turn out the products which they consume, and new barns to shelter the animals which help to feed them. Such, apparently, are the needs that are responsible for the bulk of the new building, and it seems reasonably certain that, if the population of the country were stationary, there would be no building problem of great moment.

A ROUGH ESTIMATE OF THE TOTAL AMOUNT OF PRIVATE BUILDING CONSTRUCTION IN THE CONTINENTAL UNITED STATES AND ITS RELATION TO THE NORMAL VOLUME

A	B	C	D	E	F	G	H	I	J
Year	Money Cost of Buildings <sup>a</sup> in Millions	Index of Construction Costs <sup>b</sup>	Cost of Buildings at Prices of 1913 (Millions) B ÷ C	Improvements Demanded by Existing Population <sup>c</sup> (Millions)	Improvements for Additional Population (Millions) D - E	Increase in Population (Thousands)	Construction per Person Added to Population (Prices of 1913) F ÷ G	Normal Construction in Millions at Prices of 1913	For All Purposes, E × I
								For Addition to Population, 1,306 × G	
1909	\$3,320	.936	\$3,545	\$904	\$2,641	1,431	\$1,847	\$1,870	\$2,774
1910	3,106	.965	3,218	922	2,296	1,859	1,233	2,430	3,352
1911	2,974	.965	3,080	938	2,142	1,582	1,355	2,069	3,007
1912	3,171	.985	3,219	953	2,266	1,527	1,484	1,994	2,947
1913	2,870	1.000	2,870	973	1,897	1,940	978	2,537	3,510
1914	2,620	.977	2,681	992	1,689	1,916	881	2,504	3,496
1915	2,692	.987	2,725	1,004	1,721	1,234	1,395	1,612	2,616
1916	3,427	1.115	3,073	1,017	2,056	1,294	1,589	1,692	2,709
1917	2,443	1.333	1,832	1,030	802	1,337	600	1,748	2,778
1918	1,460	1.449	1,008	1,042	— 34	1,123	— 31	1,469	2,511
1919	4,350	1.649	2,635	1,048	1,587	665	2,385	869	1,917
1920	4,750	2.319	2,051	1,066	985	1,800	547	2,351	3,417
Total					\$20,048	17,708	\$1,132	\$23,145	.....

Estimated Building Shortage in Millions at Prices of 1913 = \$23,145 - \$20,048 = \$3,097.  
 Estimated Building Shortage in Millions at Prices of April, 1921 = \$3,097 × 1.94<sup>d</sup> = \$6,000.

(a). Estimated on the basis of the building permits in the leading cities and the F. W. Dodge Company reports of contracts let.  
 (b) An average of the prices of building labor, building materials, and metals, the weights used being, in the order named, 3, 2 and 1. Data from

reports of United States Bureau of Labor Statistics.  
 (c). Assumed to be \$10 per capita per annum at prices of 1913.  
 (d). Rough estimate of price index of building costs for April, 1921.



Since, then, we build primarily because our population grows, it follows that the correct method of ascertaining whether or not the volume of building in any year has been above or below normal is to compare it with the increase in population rather than with the total number of inhabitants. The accompanying table represents an effort to eliminate all but the essential factors in order to arrive at the truth in this connection.

Column D shows that the construction work of 1919 and 1920 was not record breaking (as the figures in Column B apparently indicate), but merely appeared to be large because it was measured in terms of cheap dollars. When the fictitious gain due to price inflation has been eliminated, it is made clear that the last four years have shown, instead, an abnormally low record for private building construction. Column E represents a rather arbitrary allowance of \$10 per annum per capita to cover the improvements in buildings due not to the growth in population but to the advance in civilization. This may be either an over or under allowance, but moderate changes in this column will not greatly affect the final conclusions. Column G shows how irregular has been the increase in the number of inhabitants during the decade, the variations being due to changes in immigration and, in the last two years, to the effect of influenza upon the death rate.

A study of Column H leads to the conclusion that, in the years preceding 1917, the average construction per person added to the population was about \$1,306. If this average is multiplied by the increases in population for the respective years, we arrive at the figures entered in Column I, which show the amount of building that would have been constructed to meet the needs of population growth had the customary rate been adhered to. It is, of course, true that the period when the building actually occurs is likely to lag behind the date of the accessions to the population; hence little significance can be attached to the relation between the quantities and the particular years with which they are connected, but the general

tendency is probably portrayed with considerable accuracy.

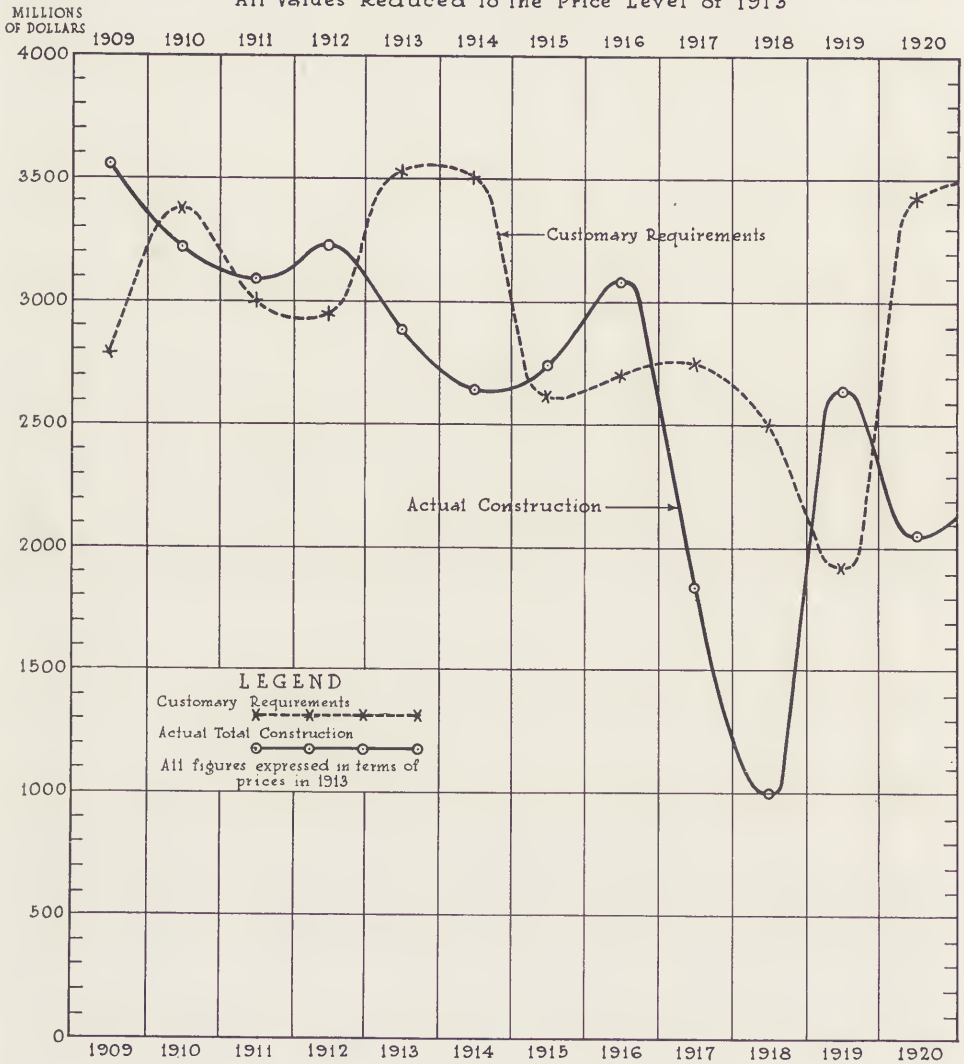
Column J combines the quantities in Columns E and I, and thus shows the total customary building requirements of the nation. In the accompanying graph, this quantity representing usual demand is compared with the actual amount of construction which has taken place. The total excess of the customary requirements over the cost of all buildings erected is apparently about three billions of dollars when measured at the price level of 1913, or about six billions of dollars at the current costs of construction. This shortage, which represents a quantity somewhat greater than the full building program of a normal year, is considerably less than the estimate of some students of the situation, but they have apparently failed to consider two facts; first, that building is primarily necessary because of additions to the population; and second, that during the five years following 1914 the increase in population was unusually small.

The six billion dollar building shortage is apparently all a result of the war and the currency policies growing out of it. In 1917 and 1918, the building energies of the nation were mainly absorbed in making munition works, camps, and ships. The abnormal demands for these war purposes pushed the prices of building materials well above the average price level, while rents, being largely controlled by custom and contract, utterly failed to keep pace. Under such circumstances, building for private needs became an unprofitable enterprise.

Since residence rents have been less flexible than business rents, the greatest shortage has accumulated in that field. Old apartments have been divided, new houses have been reduced in size, and families have doubled up, and in this way the existing residences have sufficed to house the population. It may be that people will become accustomed to their cramped quarters and that part or all of the shortage will never be made up. It seems more likely, however, that the old standards of demand will to a considerable degree reassert themselves. The

# THE ESTIMATED ACTUAL VOLUME OF PRIVATE BUILDING AS COMPARED TO THE CUSTOMARY REQUIREMENTS OF THE PEOPLE OF THE CONTINENTAL UNITED STATES

All Values Reduced to the Price Level of 1913



constant agitation in connection with the housing issue indicates that it is improbable that equilibrium has been reached on the new standard.

If the above premises are correct, there is reason to expect that the demand for building construction will remain strong for several years to come and that this demand is likely to hold the prices of both materials and labor at levels relatively high as compared to that of average prices. Though, as forecast in the earlier chapters, the price of materials is still declining, and though this decline is likely to proceed somewhat further, it seems probable, considering the stage of the business cycle, that the downward movement of building costs will come to a halt before the end of 1921.

On the other hand, unless the customs of the people have changed, the residence shortage will probably prevent any marked decline in rents for several years to come. During periods of unemployment, labor is noticeably more efficient. All the fundamental conditions except the status of the loan market are, therefore, apparently becoming favorable to

the builder. Even in the case of the money market there has already been a noticeable fall in rates, and it will be surprising if loans for building purposes do not become easier to obtain and if interest rates thereon do not decline somewhat further before the trough of the present economic cycle has passed.

It is, of course, impossible to foresee what the future may bring forth, but the forces now at work seem to show that the latter part of 1921 and the early part of 1922 will be a period offering unusual chances of profit to the builder who is in a position to push his work at that time. The real building boom is more likely to occur later, for the rush usually comes after the period of maximum opportunity for gain has passed. However, the man who follows the crowd and waits until the experience of everyone about him proves that gain is certain, usually finds to his surprise that he secures only experience as his reward. In the building field, as in many other phases of life's activity, it is distinctly better to be too early than too late.



WINDOW OF "WYCK,"  
GERMANTOWN, 1690.

# The EARLY ARCHITECTURE of PENNSYLVANIA

## PART VII - WINDOWS AND SHUTTERS



By A. LAWRENCE KOCHER

A FINELY textured stone or brick wall with a graceful and correct cornice and a successfully conceived doorway will avail but little in domestic architecture without the aid of well proportioned window openings. Much of the individuality as well as the enduring attraction of the Pennsylvania style can be traced to the unaffected charm of the window design accented by the accompanying white and green shutters. The simplicity of the building contour together with the balanced symmetry of mass contributed to make a restrained and rectangular type of sash a necessity.

The relatively late date of the Pennsylvania colony precluded the general use of casement windows, although the sliding and hinged sash were not unknown in either the English or German settlements. Pastorius built a house in Philadelphia before he laid out the site of Germantown in 1685. The windows of this modest habitation he describes as "casements"—which for want of glass were set with oiled paper. The log-cabins which preceded the substantial and more permanent dwellings were, as a rule, fitted with windows consisting of single frames placed in grooves so that they could be opened by sliding to the side. Both of these forms were soon supplanted by the more practical double sash, a device which permitted ample ventilation when open and which did not occupy undue space.

There are problems in design definitely associated with the double sash window. In the first place, it is more difficult to treat successfully than the mullioned form because it must be approximately alike in height and width at each floor level; the mullioned aperture can be of varied dimensions and with a glass size higher or lower, as the case may be, without

doing injury to appearances. In addition, the former type of opening made a systematic regularity of spacing imperative, while the latter called for an informal and more haphazard arrangement. With the double sash the shape of openings and of glass must be alike on all parts of the exterior, and the proportion of voids should be made to accord with the building outline.

The similarity of window sizes in the many extant examples of eighteenth century buildings would encourage us to infer that rules were followed with regard to determining window shapes. Isaac Ware in his "Complete Body of Architecture" (1756) specifies that the height of windows should be "twice the breadth." An exception is cited in the case of the attic story. "As rooms are lower in the chamber floor than in that below, the windows should be lower; therefore, instead of twice the breadth for height, the best measure for these is the diagonal, which is once and a half the breadth." "This," he adds "is what the builders express by the name of a diagonal window." It is of interest to note that a literal observance of this formula was made on the façade of the city residence of John Reynolds at 225 South Eighth Street, Philadelphia, better known as "The Morris House."

Windows were deemed a means of attaining an external effect and only in a secondary sense was their purpose to admit light where needed. The medieval method of planning houses with windows where wanted had passed away. Balance and regularity was the keynote of the new order. A writer, touching upon the appearance of the early architecture of the province, speaks of the houses as tiresome and as monotonous of mien as the squares of a checker board. In time the

outward semblance of the dwellings underwent a change. The character of the architecture was altered with the increase of prosperity that ensued from the successful farming and trading ventures of the colonists. In the cities and thickly settled districts along the rivers and post-roads, a more carefully considered and more formal type of house with Palladian windows appeared. This motive, once adopted, occurs with increasing regularity until the end of the century. The Palladian window is pretentious and, says a writer of the times, "of a kind calculated for shew, and very pompous in its nature; and when executed with judgment, of extreme elegance." A noteworthy specimen has already been referred to on the second story of Mount Pleasant Mansion in Fairmount Park, Philadelphia. Similar in form, but differing in the character of its constituent parts, is the splendid example, illustrated in this issue, from Woodlands, in the same city. Christ Church, Philadelphia, offers

a larger use of the motive, mounted on a stone base and enframed between brick pilasters. This particular window compares very favorably with the best fenestration of the Georgian Period in England.

The guiding influence of hand-book regulation is not entirely clear when a study is made of the proportions and disposition of this variety of window. Let us examine a favorite source of information for the period. Ware states that "Venetian (Palladian) windows take their proportions from the middle aperture, whose height should always be twice and one-half its breadth. Being divided into three parts, sometimes one of those three parts is found convenient for the side openings; but where a considerable body of light is wanted, two must be given to the breadths of the side apertures. It is a common practice and a common error to make the side openings one-half of the middle; and this is attended with great inconvenience in dividing the sash



DETAIL OF WINDOWS, 514 SOUTH WATER STREET, PHILADELPHIA.



WINDOW OF CHEW MAN-  
SION, GERMANTOWN, 1763.

squares; the principal light should be divided into three parts, for the square and the side lights should be either one or two of those parts; but where a very large Venetian window is required, another proportion, different from these, may take place: let the middle void be divided into five parts, two of which give to each of the sides, and the squares will be all equal."\*

This window in the central colony invariably discloses an observance of the rule that "the height of the middle aperture should be twice and one-half its breadth." However, the mode of dividing the side lights, in Pennsylvania, reveals a departure coming under what Isaac Ware terms "the common practice and common error," for the majority of existing specimens have a side width that approximates one-half of the central aperture. This is the case with Mount Pleasant, Port Royal, the Old State House, and Woodlands. Woodford alone has followed the quoted requirement. The illustration on page 535 is from the hand book of Owen Biddle, published in Philadelphia in 1805 and is likewise in conformity with the theory of Ware.

It would seem that the chief items of importance are that the side lights should be composed of units of glass that are similar to the size of the central panes and that the height of the entablature should be equal to the height of one or two panes so that the sashes in the side windows will range with the middle one.

Window casings in stone and brick walls of dwellings are most often molded at the outer edge; each side was shaped from a solid piece of oak or other hard wood, pegged together with wood pins. This is a system of fastening that warded off decay. The outer face of the frame was placed almost flush with the external surface of the wall, or approximately one inch. This produces a wide inside window sill within the thickness of the masonry walls. The inner window jambs and soffits are most often paneled and somewhat similar to the treatment illustrated for the William Maclay House in

Harrisburg, page 530. There is some sacrifice of external appearance with this arrangement in that the slight reveal produces a flat and unsubstantial effect. An act was passed by the English Parliament in 1709 which specified that no door or window frames were to be set nearer to the outside face of the wall than four inches. Such a practice was next to impossible in the Colonies because the frame served as the support for the shutters. It was necessary that the casing be almost flush with the outside face of the building to enable the shutters, attached to the frame, to swing out and against the wall.

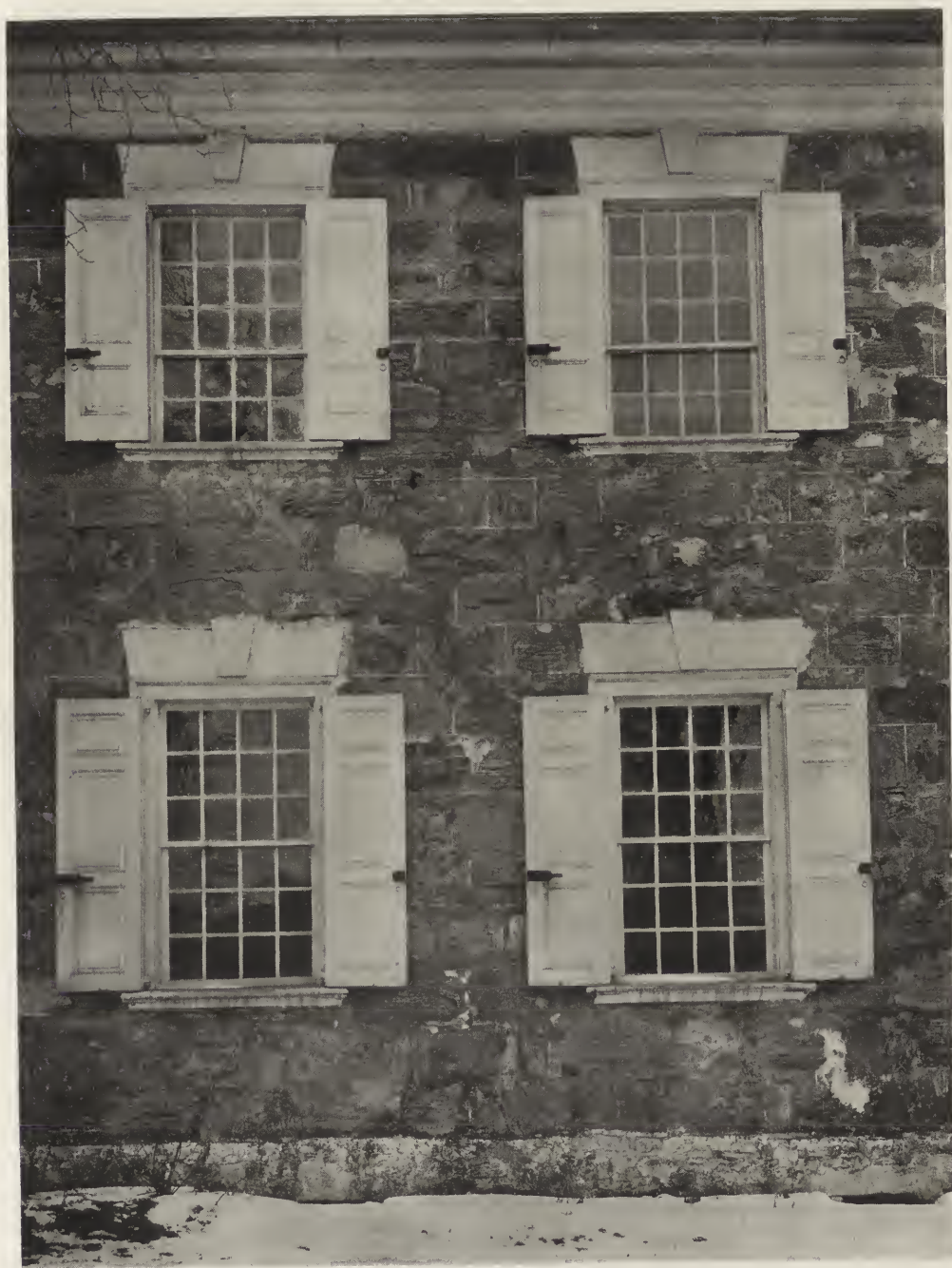
A variety of ways was followed to span window openings in masonry walls. In some cases the heavy frame itself was entrusted with the burden of stone or brick above. In other instances a flat arch of separate stones was resorted to as in the beautiful window from the Chew Mansion, Germantown. Lintels of single stones, sufficiently long to span the opening, were of common occurrence and very satisfactory. The stone lintels were invariably placed so that the cleavage seams run vertically, on account of the greater strength in this position. In some places there are lintels of wood whose face is cut in imitation of stone blocks. The segmental brick arch was used above the basement and first story windows and doors of Stenton, Philadelphia. The thoroughgoing manner in which walls were constructed is evidenced by the rare occurrence of cracks above window voids.

Window glass was a luxury during the early years of Pennsylvania history. In its place, oiled paper and skins of animals were of frequent occurrence and filled the double duty of admitting light and excluding the severe weather. The use of oiled paper as a substitute for glass does not seem to have ended before 1815.

The manufacture of glass in Pennsylvania was attempted from the very founding of the colony. William Penn, in an account of his settlement, written for the Free Society of Tradesmen in 1683, refers to the glass houses, "conveniently posted for water carriage." These initial endeavors proved unsuccess-

\* Isaac Ware, "Complete Body of Architecture." Bk. 4, pp. 467.





WINDOWS OF FARM-  
HOUSE NEAR READING, PA.

cessful, perhaps because of the technical difficulties involved in the process of kiln burning and glass blowing.

There are several circumstances which encouraged the production of glass here. The chief encouragement arose from the presence of an abundance of suitable nat-

the glass industry of the province. William Stiegel was a native of Mannheim, Germany, who migrated to Pennsylvania in 1757 with "good recommendations and a great deal of money." He was of an ambitious turn of mind; for, upon an estate of seven hundred and fourteen acres



WINDOW OF THE DE TURCK HOUSE, NEAR FRIEDENSBURG, 1767.  
Characteristic "Pennsylvania Dutch" Ornament on Panels.

ural materials in many parts of the province. There was, in addition, a general demand for window glass. Glass trinkets were in demand as a medium of currency in trade with the Indians. When Melchior Mühlenberg set out into the wilderness to gain converts and to encourage industry, he was equipped with a goodly supply of "glass trifles." Pendent glass was also much favored for the adornment of candlesticks and oil lamps.

The name of William Stiegel (known as Barron) lends an air of romance to

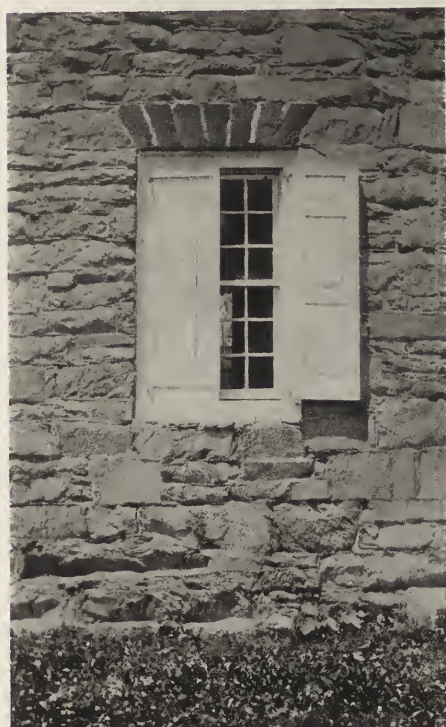
in Lancaster County, he laid out the town of Manheim, and established extensive glass works. He imported glass workers from the Old World and began the production of window panes and made a varied assortment of glassware. Here he lived in an extravagant style; having built a magnificent mansion, with an elaborate scheme of rooms, embellished with wainscoting, cornices and tapestried walls, he surrounded himself with a retinue of servants and drove a "coach and four."



PALLADIAN WINDOW, YORK DISTRICT.



WINDOW, FRONT STREET, HARRISBURG, PA.



WINDOW DETAIL OF "PEACE CHURCH,"  
SHIREMANSTOWN, PA.



WINDOW FROM DWELLING IN QUAKERTOWN, PA.

CHARACTERISTIC WINDOWS OF THE MIDDLE COLONY

From his early correspondence, we conclude that he must have attained an assuring degree of success, for he writes a friend that his glass works alone brought him five thousand pounds a year. The number of new ventures that he entered

An idea of its cost can be gleaned from the appraisal of the personal property of Samuel Wallis, November 20th, 1798. Mention is made of "72 panes of window glass at eight pence; 500 bull's eyes at three pence each." The bull's



WINDOW OF CHAMBERLIN HOUSE, MILTON, PA.

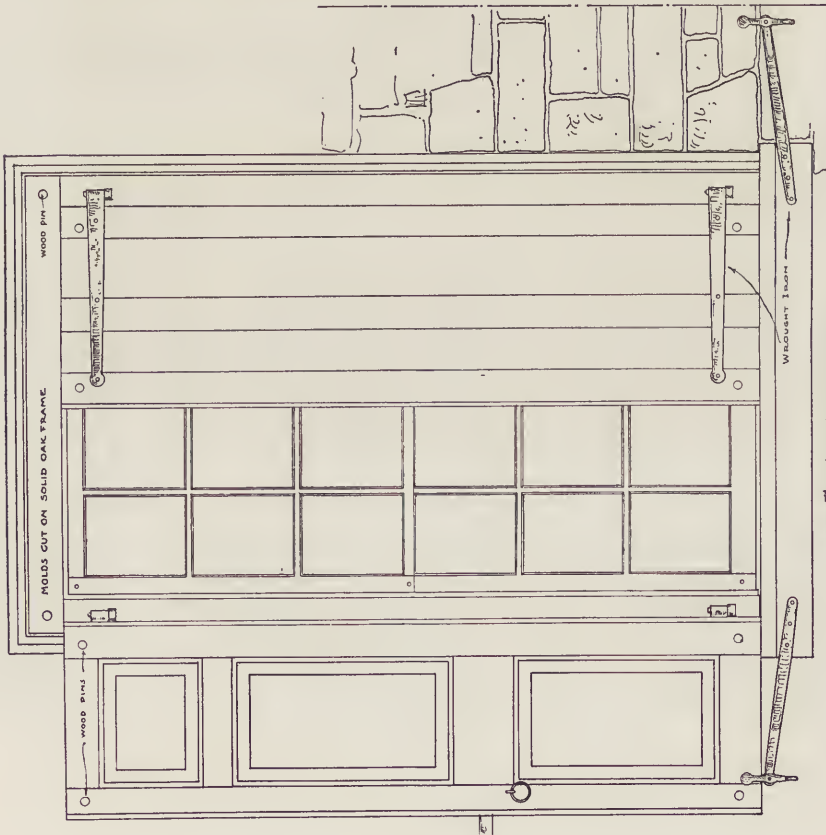
upon were his undoing and he was forced to close his glass factory in 1774.

The first successful attempt to establish an industry for the manufacture of window glass in the Pittsburgh district occurred in 1795. This was the forerunner of the important glass trade that has continued until the present day.

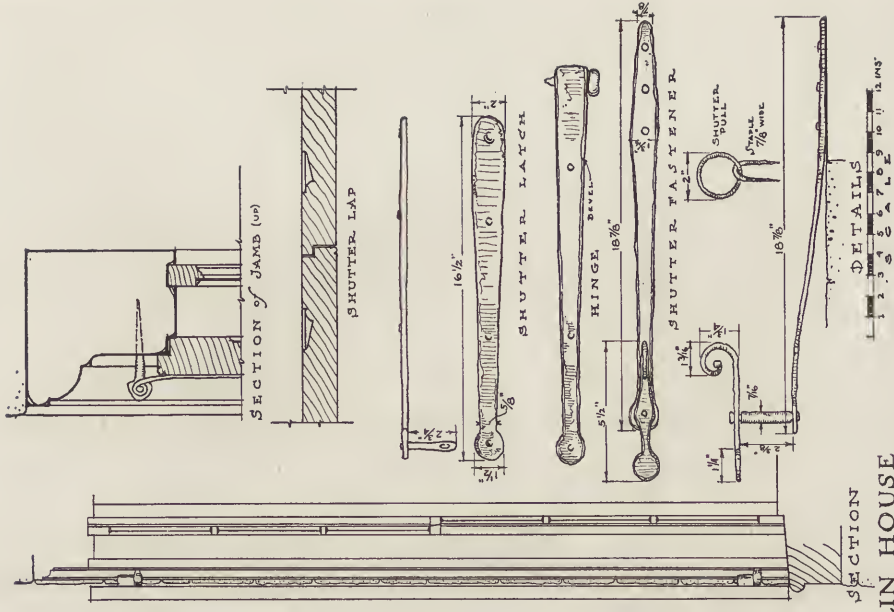
The price of glass declined toward the end of the century, following upon the growing success of local manufacture.

eyes were heavy panes of glass, approximately 7 inches by 7 inches square, and varying from  $\frac{3}{16}$  of an inch in thickness at the edge to  $\frac{3}{4}$  of an inch in the middle. The variation in thickness was due to the whirling of the molten material before casting. This also accounts for the cylindrical rings upon the surface. The glass was a pale green color, and, although very clear, it magnified slightly.

Certain parts of the early common-

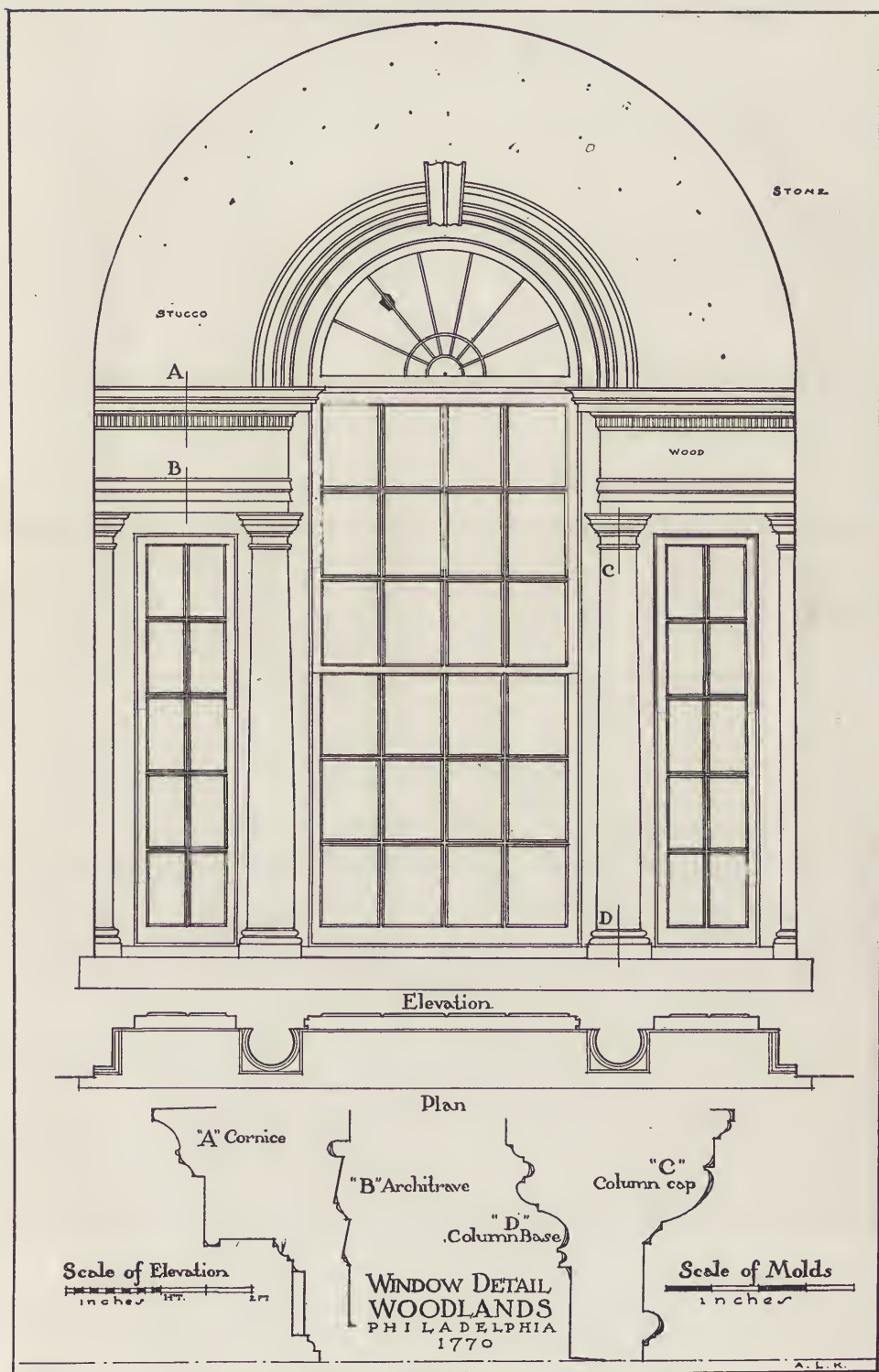


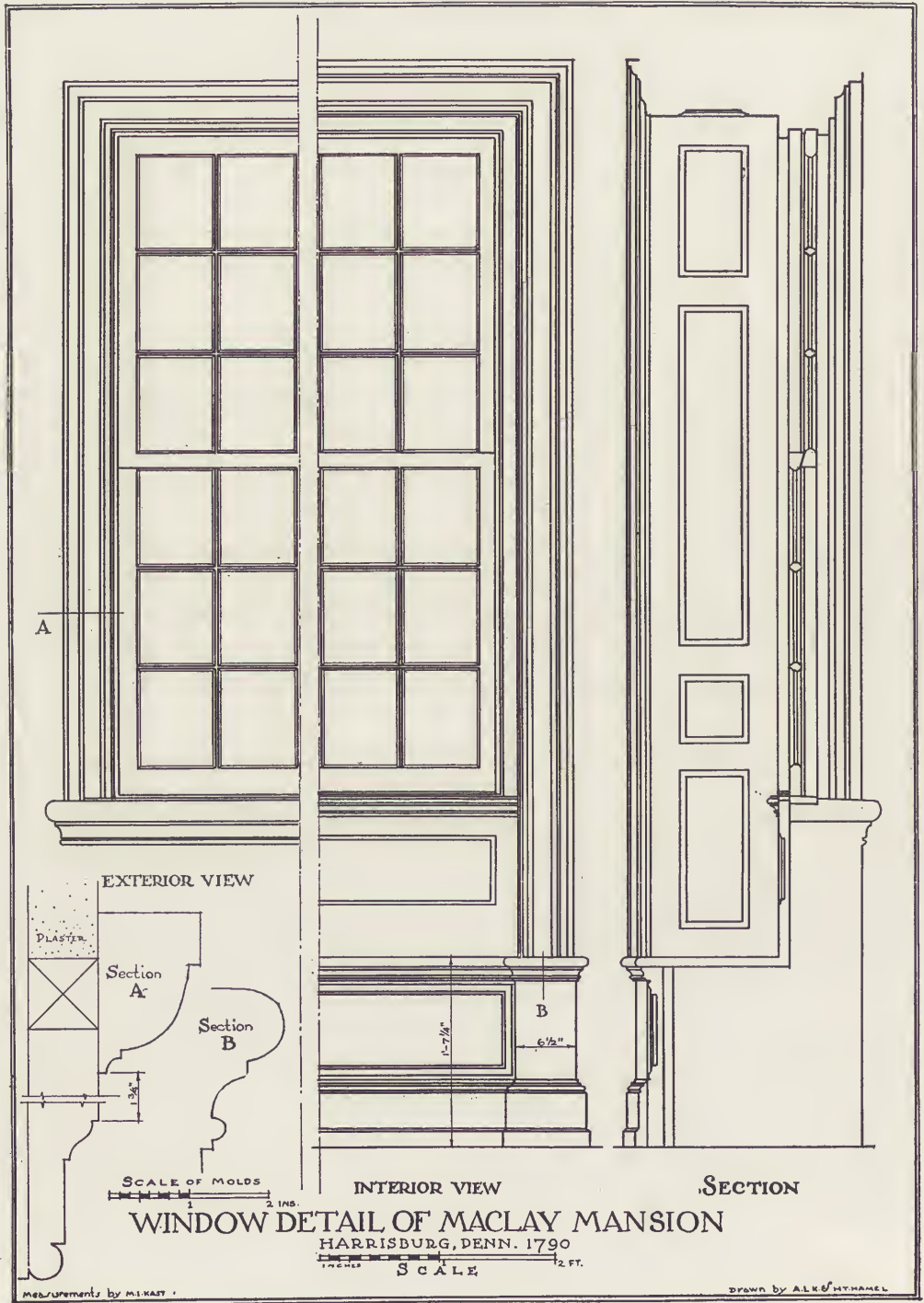
ELEVATION  
 WINDOW OF CHAMBERLIN HOUSE  
 Milton, Pennsylvania.



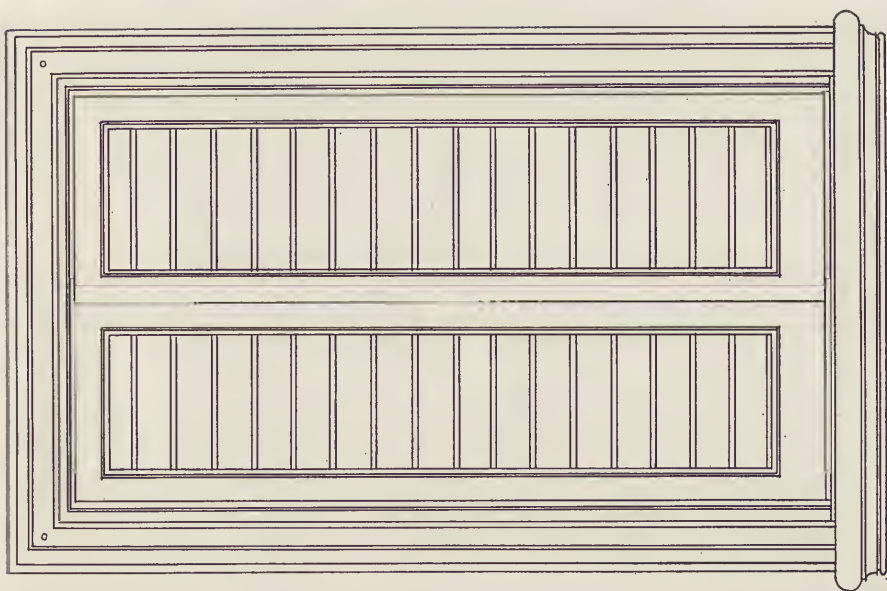


DETAIL OF PALLADIAN WINDOWS, "WOODLANDS," FAIRMOUNT PARK, PHILADELPHIA, 1770.









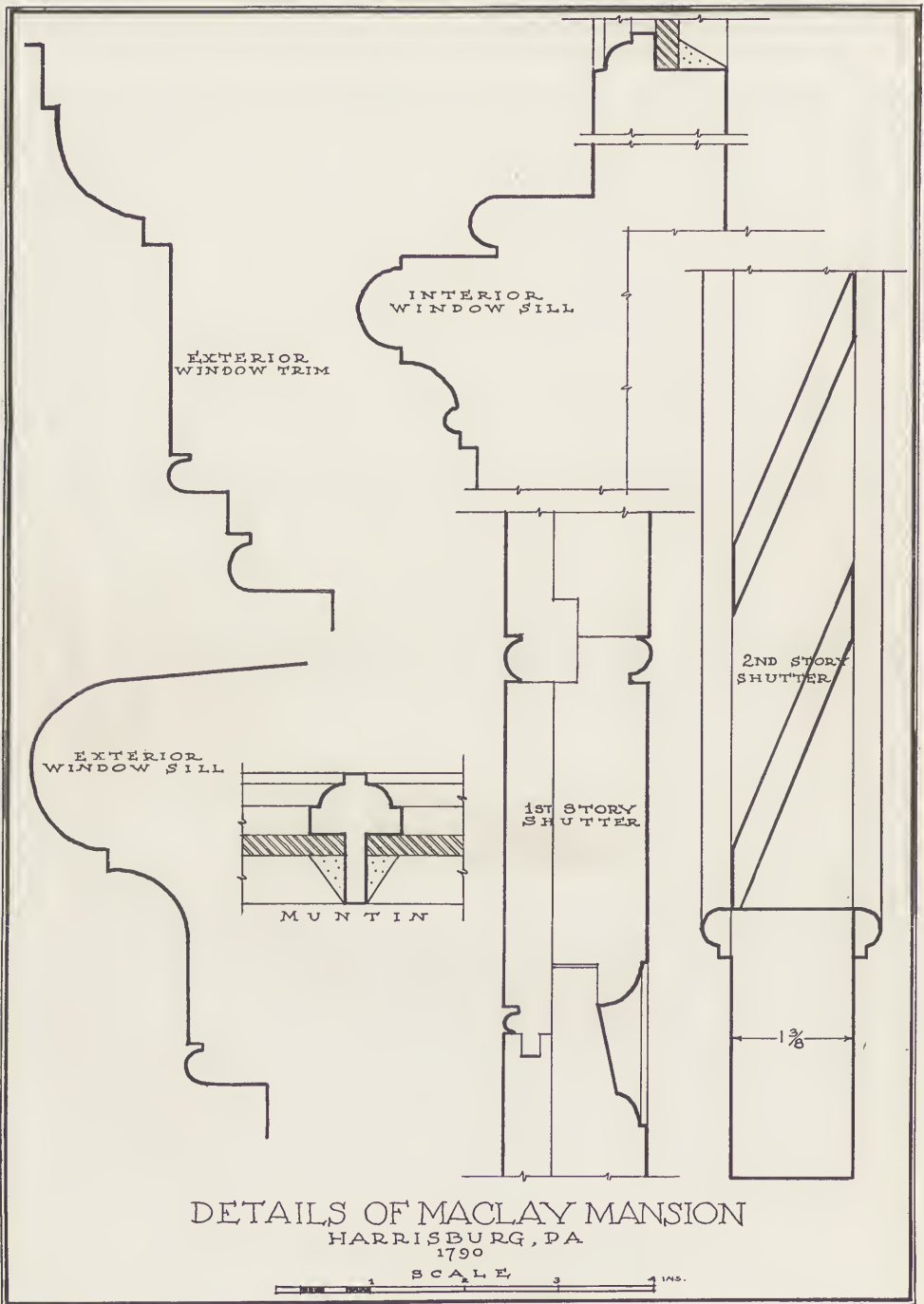
SECOND STORY  
HARRISBURG, PA.  
1796



FIRST STORY

WINDOW DETAILS OF THE MACLAY MANSION HARRISBURG, PA.  
1796

DRAWN BY A. L. C. S.  
from Measurements  
by M. H. S. P. Architect  
1880



wealth imposed a window tax proportioned to the number of window lights that a house possessed. Tunison Coryell, in his autobiography, relates that during the year 1803, while living near the Susquehanna River, the assessor would count the panes of glass and accordingly figure the tax. Certain frugal housewives, upon hearing of his approach, would hurriedly remove the glass and substitute oiled paper in its stead until after the returns were made.

This means of raising revenue was probably inherited from Europe, where it continued until a late date. The window tax of England was not abolished until 1851.

The earliest glass of the colony was of small size and set in metal frames with lead muntins. No examples of this form remain. The first wood sash were considered heavy and clumsy in appearance and met with some opposition. The large panes, six by eight and eight by ten inches in size, were especially the objects of ridicule. When Governor John Penn set an example among the first home-builders by adopting the relatively large panes, his sister-in-law chided him in the following verse:

Happy the man in such a treasure,  
Whose greatest panes afford him pleasure;  
Stoics (who need not fear the devil)  
Maintain that pain is not an evil;  
They boast a negative at best,  
But he with panes is really blest.

The first double sashes were mounted in grooved frames and operated without weights. The windows were intended to be kept open at different heights by means of sash-pins. The mansion of Governor Keith at Graeme Park, built in 1721-22, was, perhaps, the first house to be equipped with weighted windows. Thomas Chalkley, in 1724, advertised the sale of "Windows Ready Painted, Glazed and Hung with Choicest Lines and Pullies," at his store in Philadelphia. The windows of the time were so made that only the lower half was hung, while the upper part could be removed entirely when necessary.

Shutters were objects of adornment as

well as of utility. They served to protect the dwelling against invasion by the unwelcome Indian or the undesirable white. The painted woodwork of shutters, backed by the warm red of brick or the variegated texture of stone or stucco, was a distinguished element of adornment. Remove the shutters from the colonial house and you subtract a chief source of delight that the rugged fabric affords. In no country was the shutter so important a part of domestic architecture as in America. It was but rarely used in England or France and it was never commonplace in Sweden, Holland or Germany. Certainly the development here was independent of the mother countries, for it resulted from stern necessity. More unmistakably than with any other architectural feature, it reflects the progress of pioneer American civilization from the frontier log cabin to the stately mansion era that followed the Revolution. When the pioneer home-seeker pushed westward, his home was his castle (without figure of speech) for it was necessary to protect it by heavy doors and strongly barred windows. Shutters of oak, two and one-half inches thick, were not uncommon. They were built either with a solid piece of timber or were fashioned with battens on both sides. When the Indian peril had vanished the heavy shutter was gradually replaced by the lighter form.

The shutter, as we know it, comes from the end of a development. Its effectiveness is not a part of its fortifying purpose so much as it consists of the fact that a contrasting note of color is introduced. The shutter appears to best advantage when in close relation with white marble sills and keystones and light cornice and door trim. The varied shades with which shutters were painted added an air of gaiety and harmonized well with the colors of the stone or brick. There was a tradition, closely followed, which stipulated that the upper shutters should be louvered and painted a shade of green, while the lower ones were to be solid and painted white. The blue-green color which we so much admire to-day is believed by some to have been the gift of



PALLADIAN WINDOW, CHRIST  
CHURCH, PHILADELPHIA, 1727-35.

time. In other words, it is thought to have been originally a brilliant oxide of copper or Paris green—which was the only cheap green available at the time—and that weathering altered the shade to a more pleasant hue.

The shutter became, in time, a feature of almost standard design and construction. When closed it fits snugly within the oak window frame, exposing the plain, board-like surface; relieved alone by the heavy iron hinges and fasteners. When opened, the paneling of the inner side is pleasantly revealed. As a rule, three panels—two large and one small—divide this face. The proportion of the large panels approximates, by chance, the ratio of the window opening. No earnest attempt seems to have been made to arrange the rail between the two large panels so as to continue the line of the meeting rail of the window. The exceptional cases where this was done resulted from the placing of nine panes of glass above and six below. The window from Quakertown has this division.

The shuttered window of the De Turk House is unique with its two panels and decoration consisting of painted tulips and bell-flowers. It recalls the Pennsylvania Dutch painted chest and the local slip-pottery and peasant furniture.

The oldest windows have muntins as wide as an inch and a quarter, but later the bar becomes thinner until it approaches the smallest dimension that is compatible with reasonable strength—a width of scarcely three-quarters of an inch.

The necessary fittings for the adjustment and operation of windows and shutters were the objects of the local blacksmith's special skill. The straightforward methods that characterized the solving of construction problems were applied to the making of the window hardware. Primarily utilitarian, they were also beautiful. In the simple hammered hinges and the graceful shutter fasteners there was no conscious striving after effect and the iron was wrought with a proper regard for the proprieties and limitations of materials.



DRAWING OF VENETIAN (PALLADIAN) WINDOW FROM  
 "THE YOUNG CARPENTERS' ASSISTANT," BY OWEN  
 BIDDLE, PUBLISHED IN PHILADELPHIA, 1805.

# ARCHITECTS REQUESTED TO TRAIN EX-SERVICE MEN =

By J. W. JEFFERIS

THE Federal Board for Vocational Education is engaged in training disabled ex-service men for the profession of architecture in the principal schools and colleges of America. About forty of these men are enrolled as students in educational institutions of New York City. The article which follows sets forth the conditions under which architects may obtain the services of apprentices. For further details, address Mr. Uel W. Lamkin, Director, Federal Board for Vocational Education, 200 New Jersey Avenue, Washington, D. C. Architects located in New York City should address inquiries regarding the availability of trainees for apprentices to Mr. Wm. J. F. MacMillan, Supervisor of Building and Allied Trades, Penn Terminal Building, 370 Seventh Avenue, New York, N. Y., telephone Longacre 6240.

The problem undertaken by the Federal Board for Vocational Education—that of furnishing vocational training to approximately 75,000 ex-service men who have been handicapped by disabilities received or aggravated during the war—cannot be solved satisfactorily without the co-operation of the business and professional men of the country; and special appeal is made for co-operation on the part of architects.

The Board now has available men of practical education and experience in architecture, not only in New York City, where nearly forty men are enrolled as students, but in every State of the Union. Architects may secure the services of these men as apprentices without pay until their value to employers is satisfac-

toryly established, when they receive \$12 and up a week, according to their ability.

In addition to vocational training at such institutions as Columbia, Pratt and Hefley, many now available for service in the offices of architects have had practical training and experience in estimating, drafting and other departments of the building trade, so that their status is by no means that of beginners, but of second juniors.

In June, three Federal Board trainees will complete the regular course in architecture at Columbia University. One of these men will avail himself of the special working privileges offered by the New York School of Fine and Applied Arts to study architecture in the Louvre, Musée des Arts Decoratifs, Musée Carnavalet, the Palaces at Versailles and Fontainebleau, and for visiting private collections in Paris, as well as many of the famous chateaux of France.

In addition to the trainees who are studying architecture at Columbia, Hefley and Pratt, about fifteen are in the East Side Y. M. C. A. Employing architects need have no fear that the vocational handicaps of these men will in any degree unfit them for the profession of architecture, as care is always taken to place men in such positions as they can fill to the highest advantage of themselves and of their employers.

In his recent message to Congress, President Harding summons the nation to a generous co-operation in the work of rehabilitating disabled soldiers. To this appeal the architects of the country will undoubtedly respond with prompt magnanimity.







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