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LOOKING THROUGH ARCH OF LOGGIA TOWARD TERMINAL FOUNTAIN—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE ARCHITECTVRAL RECORD

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DECEMBER, 1920

TURTLE BAY GARDENS

NEW YORK CITY

Edward C. Dean & William Lawrence Bottomley
Associate Architects

BY ARTHUR WILLIS COLTON

A COLLECTION of persons or families is neither suggestive nor progressive until it begins to be organic. It is not a society. We civilize each other in groups, but not in unrelated groups. Only as the separate persons or families begin to feel and be modified by each other does the social organism begin to stir, and only with this new life does the whole begin to show structure and design. There is no totality of effect, moral or aesthetic, out of a group of unrelated lives. They are chaotic like a heap of rocks, or monotonous like a stack of bricks, with hard, unblending surfaces; or like a checkerboard, or a sixteen square puzzle; or like the back yards of a New York City block.

The back yards of New York are staring examples of the unloveliness of the unblended, where the human race proclaims itself to the compassionate heavens as divided into little repellent segments of existence. Each pushes its claims up to the last inch of the allowable, and there erects a high board fence. The whole block's meagre space of possible sunlight, grass and garden is marked off in harsh little squares of mutual dislike, barren, neglected and discouraged, or littered with rubbish, or decorated with clothes lines for the family wash.

Our street fronts tell much the same story of an unsocialized attitude of mind. Each house front proclaims its greed. It grasps all the space allowed it and rejects all friendship with its neighbors. It either copies their aspects with dull in-

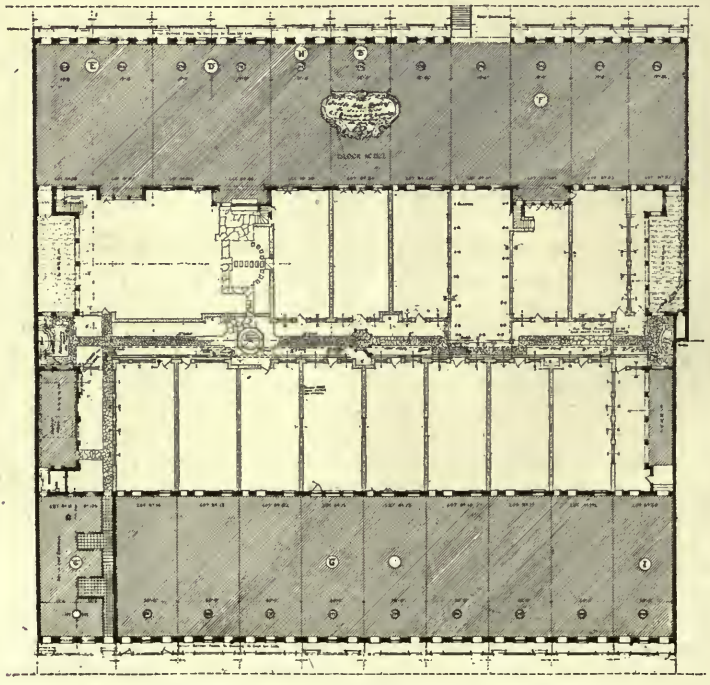
difference, or looks as if it had violently quarrelled with them, or did not know they existed. There is no give and take between them.

The street front is individualism on display; but the back yard is its seamy side; and the sun, moon and stars, continually looking down, with whatever amusement or indignation, know what an appalling thing it is. If a young star asks of an elder, "Why are back yards so stupid and ugly?" the elder replies, "They are stupid, because they express their owners' indifference and ignorance of each other; ugly, because they express a mutual distrust or dislike. Monotony is the child of indifference, and ugliness of distrust. These cities, my inquisitive and hopeful starling, consist of a great many people jammed into a very small space, who wish for the most part to have nothing to do with each other and each to be a law to himself. How unlike our spacious order and our radiant peace!"

Turtle Bay Gardens on East Forty-eighth Street is one of several efforts, and perhaps the most successful, to meet this superior criticism of the stars. Numbers 226 to 246 East Forty-ninth Street, and Numbers 227 to 249 East Forty-eight Street, were formerly a typical group of twenty houses owned by individuals. Such blocks and segments of blocks are too familiar for description. Either the old brownstone fronts repeat each other with dreary monotony, or (as in the kind of building that succeeded the brownstone era) each house on the street was designed without any relation to its neighbors. One house stood forward, the next was recessed, with different story heights, different scale, different widths. The brownstone fronts were tiresome, the later buildings restless and disquieting, and both were ugly.

This group has been remodelled and named Turtle Bay Gardens. It was found that the land thereabout had been called Turtle Bay Farm as far back as 1760, and that where the gardens now are (which were lately back yards) there ran, in the eighteenth century, a little stream called Turtle Bay Creek.

The façades on each street have been



BLOCK PLAN—TURTLE BAY GARDENS, NEW YORK CITY.
Edward C. Dean and William Lawrence Bottomley, Associate Architects.

LOOKING TOWARD WESTERN END OF GARDEN — TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE WILLOW FOUNTAIN—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

treated as a general composition, their color a warm limestone; the frames of their windows are painted black, the sashes a light cream color. The iron fences, and the gate posts with the turtles

WALL FOUNTAIN ON THE CENTRAL WALK—TURTLE BAY GARDENS, NEW YORK CITY.

worked into the design, are a bright blue-green. The entrance doors are the same color, but lighter in value.

The façades are simple and restrained, indeed rather austere and formal, the idea being to make as strong a contrast as possible with the gay, informal and picturesque treatment of the garden façades. For it is in the treatment of the backs that the interest chiefly lies.

The houses are back to back, and between them has been formed a large garden, 200 feet long by 100 wide, with a central path connecting all the individual gardens. These individual gardens are marked off by low brick walls, balustrades, low iron fences and gates; or in some instances they are thrown together. At each end are built loggias with terraces above, and rising behind the terraces a high wall pierced with grilled windows forms a decorative enclosing motive at each end of the garden, cuts off the views at either end down the block, and insures privacy. These walls are crowned with interesting pots of different designs, in which are planted small shrubs, ivies and flowering plants. An effort has been made to find variety in the different motives used, not only in these pots, but throughout the entire piece of work—in the fountains, color scheme arrangement of individual gardens, and in the placing of trees and plants and vines—and yet everywhere is felt the unity of the whole, the relation of the different parts. The general scheme is simple, but the detail is varied; and there is a wealth of it.

The paths are made of stone, laid irregularly, and with grass growing up between. The central path, extending from one end of the garden to the other, is well planted its entire length, and is finished off at either end by the wall formation spoken of before. This path ties all the parts of the garden together. It is common property of the owners. An arbor of stone columns covered with vines, around which is planted a circle of small crab-apple trees, forms the center motive, and a pergola with a fountain is built against the high terrace wall at one part.

One fountain, at the west end, is placed just back of a large alanthus tree. It is extremely simple, a dolphin spurting a jet into a small baroque bowl, which drips in turn into a basin flush with the ground. Above is an interesting treatment of great carved consoles, with an iron balustrade between pedestals and vases. The motives are treated so simply that they hardly can be called by their architectural names. The pedestals have no base, only a square mass of brickwork covered with stucco. There are no cap mouldings, only a rough stone cap. There

THE WESTERN FOUNTAIN AND ITS FLANKING TERRACES—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE LOGGIA ARCHES IN THE WEST END OF THE GARDEN HAVE THE DECORATIVE EFFECT OF A ROMAN AQUEDUCT—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE WILLOW FOUNTAIN—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

INTERIOR OF ONE OF THE LOGGIAS—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

INTERIOR OF ONE OF THE LOGGIAS LOOKING TOWARD VESTIBULE OF HOUSE—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

GARDEN FAÇADE OF FORTY-NINTH STREET HOMES FROM GARDEN WALK—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

FROG FOUNTAIN IN ONE OF THE PRIVATE GARDENS—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

SPANISH DETAILS OF THE GARDEN FAÇADE OF THE FORTY-NINTH STREET HOMES—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

DETAIL OF ONE OF THE FORTY-EIGHTH STREET HOUSES—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

DETAIL OF THE FORTY-EIGHTH STREET FAÇADE—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

is very little architectural detail—few mouldings, few cornices. The effect is like an old Italian or Spanish garden more than anything else. Yet it is not any special style. It is new in its style and teaching, but old in its effect.

Near the central path, toward one end, grows a fine willow, below which has been placed a fountain with the walk extending around it. It looks as if the willow had grown up over the fountain, instead of a new fountain placed under the willow.

At the northwest corner of the garden is a low, long pool with a jet of water at either end spurting out of a frog. Water cypress is growing in this pool and around the willow fountain. Note the interesting design on pages 474 and 486.

There is an abundance of pots standing in the garden on the low walls, on the loggias, on the steps leading up to the upper terraces. These pots are very decorative in connection with the garden. They give it a casual, a well used look. Some of them are plain red terra cotta, some marble; some have beautifully modeled garlands on them.

GARDEN FAÇADE OF HOUSES ON FORTY-NINTH STREET—TURTLE BAY GARDENS, NEW YORK CITY.

The treatment of the steps to the upper terraces is interesting. Steep, winding flights are built over arches springing like buttresses from the houses.

Very noticeable is the handsome foliage

GARDEN FAÇADE OF HOUSES ON FORTY-NINTH STREET—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

of the alanthus tree contrasted with the fine leaves of the willows and the heavy leaves of the polonia trees and gourd vines.

On this garden side the predominating color is apricot, a sort of rosy salmon pink —the color of the exterior walls of the loggias and terminal walls of the gardens —but some of the houses are painted a soft cerulean blue, others cream, buff and greyish moss green. The roofs are tile of a soft terra cotta color, varied with dark brown or almost black tiles, and a few of bright green. Both the foliage of summer and the bare branches and snow of winter are very fine against the brilliant and beautiful tones of the surrounding walls. The waterspouts to take the water from the roofs of the loggias are like gargoyles made of lead, with a curious spout almost like the bill of a duck coming out of a richly modeled rosette.

The fountain at the east end is a strong contrast to the simple dolphin fountain at the west end. Here the wall extends to the height of twenty or twenty-five feet. At the base is an interesting baroque basin with a jet of water falling into it from a large, grotesque mask. At a great height above is a flat relief of the sun rising above a rinceau, treated in a conventional way with rays and hung with bunches of

BALCONY AND STAIRS OVER A GARDEN DINING ROOM—TURTLE BAY GARDENS, NEW YORK CITY.

FORTY-EIGHTH STREET FAÇADE—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

A LONG BAROQUE FOUNTAIN WITH A JET OF WATER AT EITHER END—TURTLE BAY GARDENS, NEW YORK CITY.

Edward C. Dean and William Lawrence Bottomley, Associate Architects.

grapes and grape leaves. In front of this fountain, and partially screening it, is a lacelike wrought iron grille extending completely across the space between the two loggias. An interesting gate leads into the court in front of the fountain, and above at either side are two small grotesque figures of cupids with vases. These figures, though small, are very heavy in scale. The heads are large, the features heavy; altogether they are ugly, but charming in their place. They have a sort of dwarfish look, like cluricauns in an Irish hedgerow. The view across the face of the loggias, with its succession of simple round arches, gives almost the effect of a Roman aqueduct.

Many of the houses have wrought iron balconies overlooking the garden. One balcony particularly is interesting. It is long and wide. Supported on eight richly wrought brackets above are four light arches, above which are birds with dragons' heads. The color of the main structural lines of the iron work is black; the intermediate rods of the railings, the leaves and decorative volutes are a golden yellow, and there are a few minor accents of brilliant orange vermilion. This house with the balcony is a soft blue, and the middle awning above is Venetian red; the two side awnings a soft gold color with narrow borders of the same Venetian red.

In rearranging the interiors of the houses the service, delivery and kitchens were moved forward onto the street, with the dining rooms on the level of the garden at the rear. The principal living rooms are on the second floor at the rear. Some of the houses had another story added on the roof, containing a large liv-

GARDEN STAIRS AND VENETIAN LEADING —TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

LOGGIA AT REAR OF ONE OF THE FORTY-NINTH STREET HOMES—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE TERMINAL MOTIVE OF THE EASTERN END OF THE GARDEN—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

THE WILLOW FOUNTAIN—TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

A GARDEN FAÇADE — TURTLE BAY GARDENS, NEW YORK CITY. EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

DETAIL OF FORTY-NINTH STREET FAÇADE—
TURTLE BAY GARDENS, NEW YORK CITY.
EDWARD C. DEAN AND WILLIAM LAWRENCE BOTTOMLEY, ASSOCIATE ARCHITECTS.

ing room or studio, with arcades and loggias looking down on the garden.

The great advantages of the scheme are: First, the unobstructed sunlight and air; for rear yard extensions are barred under the terms of the covenant agreed to in perpetuity by the owners. Secondly, the advantage of community service for sidewalks, furnaces, laundry work, care of windows and gardens, etc. Thirdly, the redemption of the ugly back yards into a beautiful, all the year garden.

The rear windows in New York usually belong to the less important and less attractive rooms. The old, dark kitchens, blanketed by a high extension, opened into unhealthy, damp back yards, with clothes flapping, and ill-kept wooden fences. In Turtle Bay the same rooms are transformed into bright, low-studded dining rooms with wide leaded casements—perhaps with a bay window flooded with sun and filled with growing plants and looking out into charming, sunny gardens. It is only a matter of changing some plumbing pipes, putting in larger windows—a few brick walls and some planting.

This same idea is now being used in two or three similar developments in New York, near the East river on Fifty-seventh Street, in Sixty-sixth Street and in Greenwich Village. One can but hope that it will spread like an epidemic. It is not likely that many interiors of residence blocks will have the charm of Turtle Bay, where the architects have been lavish of invention, and the attraction is not only of general design, but arises from the quantity of varied and sensitive detail. Yet, if such a change should become general and the old back yard should vanish, the result would surely be a gain.

These are interests, of which each owner's share is increased by pooling. The economic saving is evident and familiar; but the aesthetic increment of the eye from one's window outlook is far greater still. The whole garden belongs to the windows of each of the twenty owners, and he most owns aesthetically this pleasant thing who can get most pleasure out of it. Even for an owner of good taste not much can be made of one back yard, but of twenty adjoining back yards can be made a Turtle Bay Gardens, when each owner has, visually speaking, surrendered a part and received back a beautified whole.

"Miller owns this farm, and Taylor that, but neither owns the landscape and horizon." Whether the quotation is from Emerson or Thoreau—and there lies only in my memory the impression that it is not accurately quoted—the notion is part of an argument that runs along with the whole philosophy of both of these, our American idealists, touching the free, unappropriated or common values of life. The usufruct of the eye is ideally socialized. Beautiful things suffer no wear and tear from our looking at them, nor lose any value to us if others see them too. The most personal and private possessions which the owners of Turtle Bay will enjoy in looking from their back windows are those for which they have not title deeds and which nevertheless are of all their possessions the most secure.

NORTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

THE VILLA PAZZI (*La Vacchia*), PIAN DE' GIVLLARI, NEAR FLORENCE, ITALY

By Harold Donaldson Eberlein

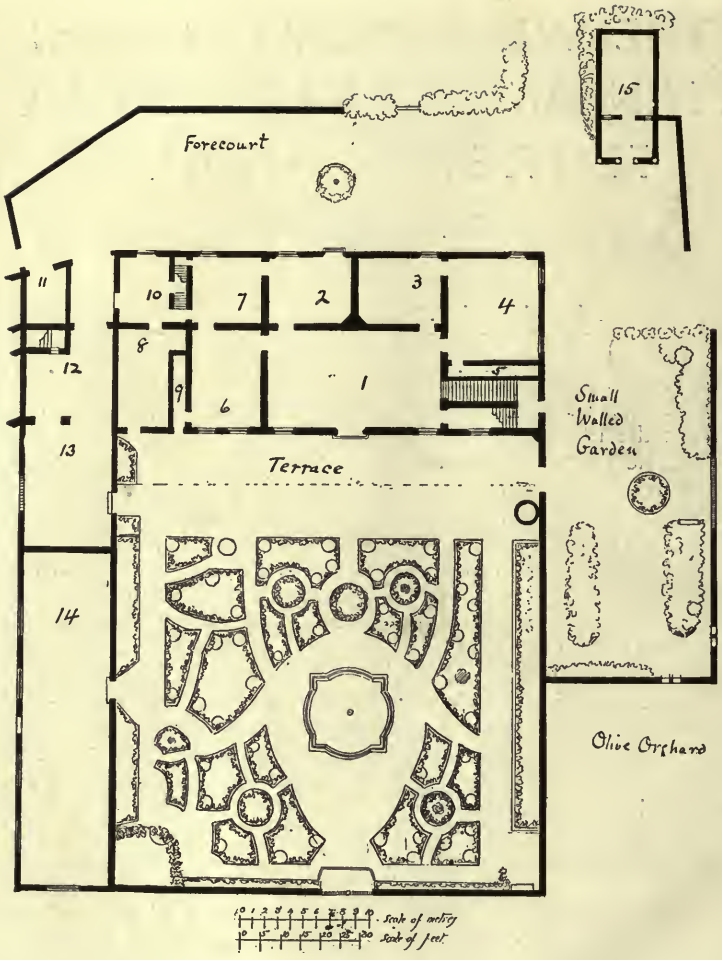
THE Villa Pazzi, on top of the hill just above Pian de' Giullari, dates back from the fifteenth, or possibly in part from the fourteenth, century and incorporated even then, so the records seem to indicate, an earlier structure. In the fifteenth century it belonged to one Bartolommeo di Giorgio. From his heirs it went to Francesco di Antonio, whose widow, Lucrezia, daughter of Tommaso Petrucci, came into actual possession of the villa in 1528, when she had already married a second husband, Michele Del Cittadino. From the Cittadini it went to the family of Della Vacchia, who attached their name to the estate and seem to have made sundry enlargements. In 1673 the Samminiati bought the villa, and in 1760 it was passed by marriage into the Pazzi family.

The walls are salmon pink, the shutters are light green, the muntins are white, and the window and door trims are fashioned in *pietra serena*. The exterior aspect of the villa is unique, owing to the multicolored majolica plates and platters set into the walls, affording spots of bright yellow, orange and green and deep blue. About a hundred years ago the then occupant conceived this novel method of augmenting color interest and promptly put his unusual fancies into execution.

The ceiling of the large living room or *salone grande* is beamed, but what appear to be coffers are in reality pats of red velvet edged with gold braid and tacked on to the boarding. The walls are hung with red brocatelle. In the music room the brick floor is painted with a parquetry pattern in yellow and brown. The landscape paper in several tones of grey was put on the walls somewhat more than a hundred years ago; at the same time the beamed ceiling was painted in several tones of grey, the lozenge-shaped coffers being indicated on a flat surface, and the mouldings were painted on the flat surfaces of dados and window reveals. The hangings are of old golden yellow brocade.

The little walled garden, to the east of the house and the large garden, is a modern addition, but so carefully patterned after old precedents that it fits perfectly into the general scheme. The walk along the south front in the large garden is paved with slabs of grey stone, as is also the little kitchen cortile. In the large garden south of the house the extensive use of orange and lemon trees in pots will be noted, and it is this feature which imparts much of the interest.

The illustrations are published by courtesy of Charles Eyre, Esq.



KEY TO GROUND FLOOR PLAN AND GARDEN PLOT OF THE VILLA PAZZI:

1. Salone or Great Hall.
2. Hall.
3. Study.
4. Music Room.
5. Cupboard for Coats, and Toilet.
6. Drawing Room.
7. Dining Room.
8. Pantry.
9. Bathroom and Toilet.
10. Kitchen.
11. Garage.
12. Shed.
13. Kitchen Courtyard.
14. Lemon House.
15. Chapel.

The buildings opening out beyond the garage are farm appurtenances and small rooms where the oil and wine are made. They do not form any essential part of the main villa, which is fully indicated on the accompanying plan.

NORTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

NORTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

HOUSE DOOR—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

DOOR IN LIVING ROOM—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

LIVING ROOM—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

DOOR TO MUSIC ROOM FROM LIVING ROOM — VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

MUSIC ROOM—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

MUSIC ROOM—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

MUSIC ROOM—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

SOUTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE. ITALY.

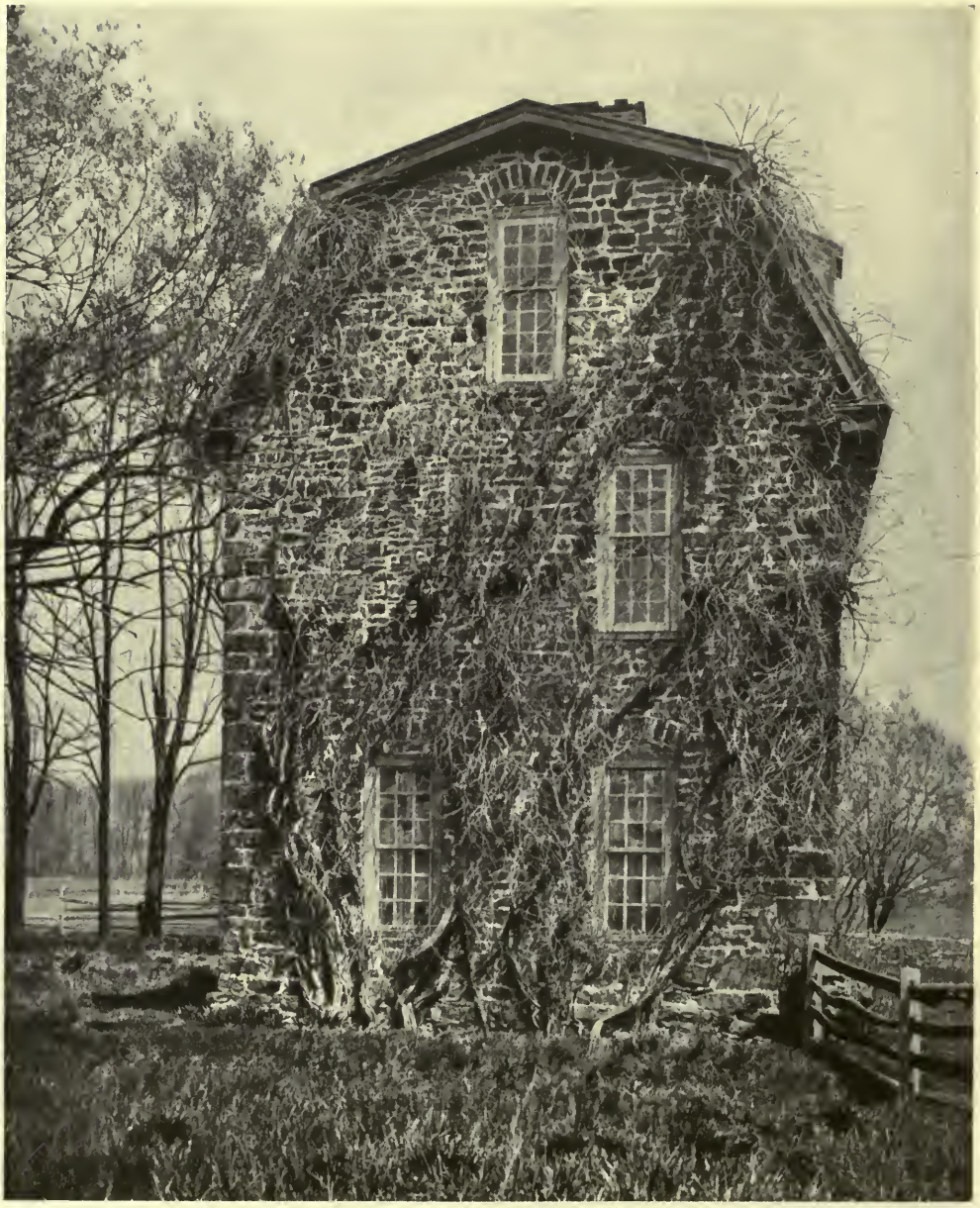
SOUTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

SOUTH FRONT—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

WALLED GARDEN—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

WALLED GARDEN—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.

KITCHEN CORTILE—VILLA PAZZI, PIAN DE' GIULLARI, NEAR FLORENCE, ITALY.



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

EARLY ARCHITECTURE OF PENNSYLVANIA

By
A. LAWRENCE KOCHER

With Photographs by Frank Cousins, J. Horace MacFarland and Others, and with Measured Drawings by the Author

PART I

THE story of the early architectural development in Pennsylvania has been but partly told. Various accounts have considered the wealth of architectural material in the vicinity of Philadelphia, but no one has recorded the examples or described the character of the architecture within the broad confines of the State. So rich is Philadelphia in noteworthy specimens that it may seem needless to comprehend a territory in which, because of a sparse and scattered population, a somewhat more humble array of Colonial monuments occur. And yet from the point of view of the present-day architect, it is the country that affords the greater inspiration for modern building. It is the small dwelling and the farmhouse, rather than the city residence or public building, that furnishes the most fruitful model to our designers. It is also to the humbler buildings that one must go in order to trace the traditional growth of an architecture. The individual examples may be of but slight importance, but, considered as a group, they take on a new significance, producing a background in the evolution of the more conscious architecture and completing the chain of development from the primitive to the developed form.

A feeling of hearty respect for the traditional architecture of our country was never more clearly in evidence than at the present time. We look with reverence upon the local styles that were evolved in colonial and early federal days, when buildings were conceived by local men and built with local materials. We recognize a rich heritage of such early buildings, which are only now being completely appraised. We are being continually surprised at the number and the quality of new specimens that are being brought to the light of publicity by the press and by exhibitions. The time has come when the older sections of our country should be made the subject of such a careful and thorough investigation as the Royal Commission on Historical Monuments made in England; and the inventory should be published as a service to the profession, and as an acknowledgment to our own people of the worth of ancestral architecture.

In the eighteenth century in Pennsylvania a style of architecture was developed which is distinguished for its individuality, its singular beauty, and its variety. It was favored by nature in the possession of an abundance of timber, clay and good building stone; and consequently a native architecture was created in which traditions were modified and frankly adapted to local conditions. "What is there in the United States," asks Mr. Ralph Adams Cram, "more charming as an expression of vital architecture than the dwellings and barns of the vicinity of Philadelphia? Frank and simple in form, the texture and stone are fine to a degree, while there is that wonderful quality of picturesqueness that is almost wholly absent from similar work in New England and the South. A spacious and noble dignity, high-bred and aloof, is characteristic of the latter; delicate and sensitive detail, the mark of the former; but of picturesqueness of composition and charm of texture and color there is almost nothing in either."

Pennsylvania was the most favored

and prosperous of all the American colonies. From the time William Penn with his band of English Quakers settled upon the Delaware in 1681 until after the Revolution, there was a continuous growth in material prosperity. It was the last of the colonies founded under the Stuarts and it consequently profited by the mistakes of the London Company in Virginia and of the Plymouth Company in Massachusetts. The settlement of Pennsylvania occurred when the most adaptable and, in many respects, the finest of English architecture under Queen Anne and the Georges was produced. The lateness of the age and the lessons of the neighboring colonies shortened, for Pennsylvania, the period of primitive beginnings, and almost immediately dwellings of respectable pretentiousness were raised on estates in eastern Pennsylvania.

In considering the development of the early architecture of Pennsylvania, there are three main divisions, three groups of facts to be dealt with: (1) the first attempts at building by the pioneers who by force of circumstances were impelled, for the most part, to create their motives; (2) the mature architecture introduced by English workmen, modified by original tendencies of the pioneer age; (3) the Federal Period, when, under conditions of self-government, both dwelling houses and public buildings took on a monumental and more purely classical character.

These three divisions are definite and clearly recognized. The first is of short duration, a time of pathetic groping in the dark, but important in giving a local turn to the developed architecture of the second phase. The second division includes all building efforts, possessing style, erected within the dates 1720 and 1800. Here is to be found all those buildings which are characterized as "Pennsylvania Colonial." Outside the group are peculiar and irregular tendencies, to be attributed to various racial attributes, which will be referred to in considering the racial elements of the style.

In the beginning it was difficult for the followers of William Penn to cultivate the arts and the soil at the same time. The circumstances under which the colonists found themselves were unnatural

A PENNSYLVANIA BARN, GRAEME PARK, MONTGOMERY COUNTY, PA. 1801.

Copyright photo by H. W. Fegley.

THE MOUNCE JONES HOUSE, BERKS COUNTY, PA. 1716.

and abnormal. While they were subduing the wilderness and laying the foundations of a government, it was not to be expected that they would erect buildings of so refined a nature as they were accustomed to in the old world. The arts would not flourish until after the conquest of brute nature had been achieved, an assured government established, and the growth of wealth and consequent leisure had produced the favorable conditions to foster the humanities.

Cut off from the main stream of the true and accepted architecture, the builders found it necessary to bring into being their own architectural vocabulary, or by recollection to reproduce the art of the mother country.

It is worthy of note that the building style as first established by the early Pennsylvania settlers bore only a slight resemblance to that of the countries from which it came. The men who had crossed the seas and changed their sky inevitably found their method of working modified. The strange conditions met in Pennsylvania, the changed manner of living, and the new materials that were available caused a reforming of their ideas of construction. Their houses and public buildings came to be unconscious expressions of the new conditions, colored by their new living; and the results at first could scarcely come under the exacting term "architecture."

Writers on architecture have generally disregarded this pioneer period in colonial America. And yet it was during the episode of struggle that original tendencies were brought to the surface, when the features of the regional style, which were to become so characteristic, were evolved. Had the home-seekers of Pennsylvania been spared the initial years of almost complete isolation, had there been no time when the necessity existed for creating shelters, however crude, then no distinctive architecture could have resulted. A transplanted European way of building would have followed, or methods of building commonly practised in the European countries, represented on this side of the Atlantic, would have been practised. In

either case local and evolved features would have been lacking.

The impress of the pioneer building upon later work is not found so much in specific details which persisted, as it is in the naïve character and provincial originality which resulted from the work done in an independent fashion and from the acquiring of a knowledge of the possibilities of certain materials, such as wood and stone and brick. Also, because of necessity, the craftsmen were forced to experiment. In this way they produced mutations of arrangement and design. Some features, however, did remain over from this pioneer time. The use of the pent-roof, known today as the Germantown hood, is an instance. This pent-roof was first used between the first and second story of the log-house, and was intended to protect the chinking of the log walls from being washed away by the beating rain. It is quite probable that this was a German device, as it is to be found on many buildings of the Germans. Postlewaite's Tavern, which is illustrated on the opposite page, had such a protecting roof. The building was erected near Lancaster in 1729 and is still in existence, although modified by the addition of clapboarding.

In the more permanent architecture which followed, this detail continued as an element of design, even though the walls of later architecture are of brick or stone. Residence work of today, especially in the vicinity of Philadelphia, has adopted the hood as a part of many a country and city dwelling.

It is not altogether fanciful to suppose that other features adopted in subsequent design and construction may have had a similar primitive beginning: such as the popular adoption of the roof with end gables, the occasional persistence of exposed ceiling beams, the simple rectangular outline of plan, and an almost general use of shutters. (Shutters very rarely appear in English design.)

These first essays in building, then, are not to be classed as architecture, for true architecture has its inception in beauty as well as usefulness. True architecture, however simple, breathes a charm or gives a pleasure. The first efforts failed to attain such standards. There was too much of the dire need of hasty and sure protection from the Indian and the weather to give play to the promptings of the artistic instinct. The first attempts at building were, therefore, of the undeveloped, necessitous sort. As in literature we have a time of story telling around the frontier camp-fire before works of literary art are composed, so also there exists a chapter of fundamental beginnings in building. Both are episodes in respective branches of art.

Almost the complete list of noteworthy colonial and early federal buildings in Pennsylvania are included within the years 1720 and 1820. That was a time of economic prosperity featured in an unexampled growth of commerce, in the opening of rich mines, in the development of fertile farm areas, and in the flourishing of industries. The growth of wealth gave rise to a well-to-do leisure class with cultivated tastes. The population had increased by leaps and bounds until the province, founded in a small way as a "holy experiment" and as a religious refuge, had outstripped the sister colonies of the North and South. In 1765 Pennsylvania boasted the greatest number of inhabitants. Philadelphia before the Revolution had become the greatest city in the country in population and importance, and we are told "no other city was so rich, so extravagant, so fashionable." "Travelers from distant lands," says MacMaster, "were most impressed by the fineness of the houses, the

ANGLE VIEW OF EARLY LOG HOUSE, SHOWING "CHINKING."

POSTLEWAITE'S TAVERN, NEAR LANCASTER, PA. EARLY USE OF PENT-ROOF. 1729.

goodness of the pavements and the filthiness of the carriage-ways." It became the custom of wealthy citizens of Philadelphia to build elaborate country-seats, such as Graeme Park, Mount Pleasant, Cliveden and Stenton, which, in excellence of design and splendor of setting, rivaled the contemporary estates in England. The English Georgian architecture of the eighteenth century contributed largely to the formation of the architecture of the colony; but it was modified, as we will note, by local peculiarities.

The British Isles were in the midst of a classical revival. The style initiated by Wren and Inigo Jones was being changed and refined by Italian influences. Hawksmoor, Gibbs, Kent, Campbell and the Adam Brothers were the architects of the century. Books of "The Orders" and "Handbooks of Architecture" were published by many of the men. It was a time when the art of building was being popularized in England, when a knowledge of architecture was deemed an essential in the education of a gentleman. Many of these handbooks found their way to the colonies and were generally used as a guide. The vogue of these books meant that any one with reasonably good taste could design a house and that, by following rules, his proportions would probably be pleasing. Carpenters and certain of the educated class alike are to be given the credit for the design of the buildings of that time.

A traveler in the colony in 1765, Nicholas Pickford, relates in his diary that he is amazed at "the goodness of the buildings in Philadelphia." "The gentlemen, so it seems, have for the most part some considerable aptitude in architectural matters. Indeed, by many of them it is held an essential part of a gentleman's education that he should know enough of Architecture to form thereof an intelligent judgment and, if it be necessary, to devise and direct such building as he may have occasion to engage in. . . . However, when I call to mind the understanding interest in Architecture shown by many of our gentry at home, and when I also consider how all the peoples of the Colonies, so far as I

have observed them, do hold straightly to the ways of the Mother Country, I can see why so much good Building hath been achieved."

One should not assume that the buildings of Pennsylvania were exact copies of these English works. The architecture thus inspired was adapted to new needs, and changes were freely made and details altered by the use of wood. Buildings were lengthened, stories added, a doorway or modified roof included to serve a use and to increase the pretentiousness of a structure. That originality was freely drawn upon is shown by the variety of buildings erected, no two of which have been found to be identical. On the other hand, that they are derived from a similar source is attested by the general resemblance that pervades their physical appearance. The isolation and the absence of architects trained in the old world tradition were in themselves virtues, for they contributed to the free interpretation of classic proportions.

The first evidence of an adopted style, regularly practised, does not seem certain to have occurred before 1720, when appeared the ornamented wood cornice, the studied and symmetrical disposition of the façade, the paneled interior walls and stairways. Columns, pilasters and entablatures were soon added to the builder's stock in trade. The rectangular plan with the central hall and with the kitchen projecting to the rear to form an "ell" was characteristic, although variations are met with, in which the entire floor arrangement is included in a block plan or with end projections. The hipped roof with low pitch was used on country residences about Philadelphia, where English traditions were always most closely adhered to. The gable-ended roof of the pioneer days continued on certain city residences and became an

THE BILLMEYER HOUSE, GERMANTOWN, PA., SHOWING USE OF PENT-ROOF. 1727.

HOPE LODGE, WHITE MARSH, PENNSYLVANIA. 1723.

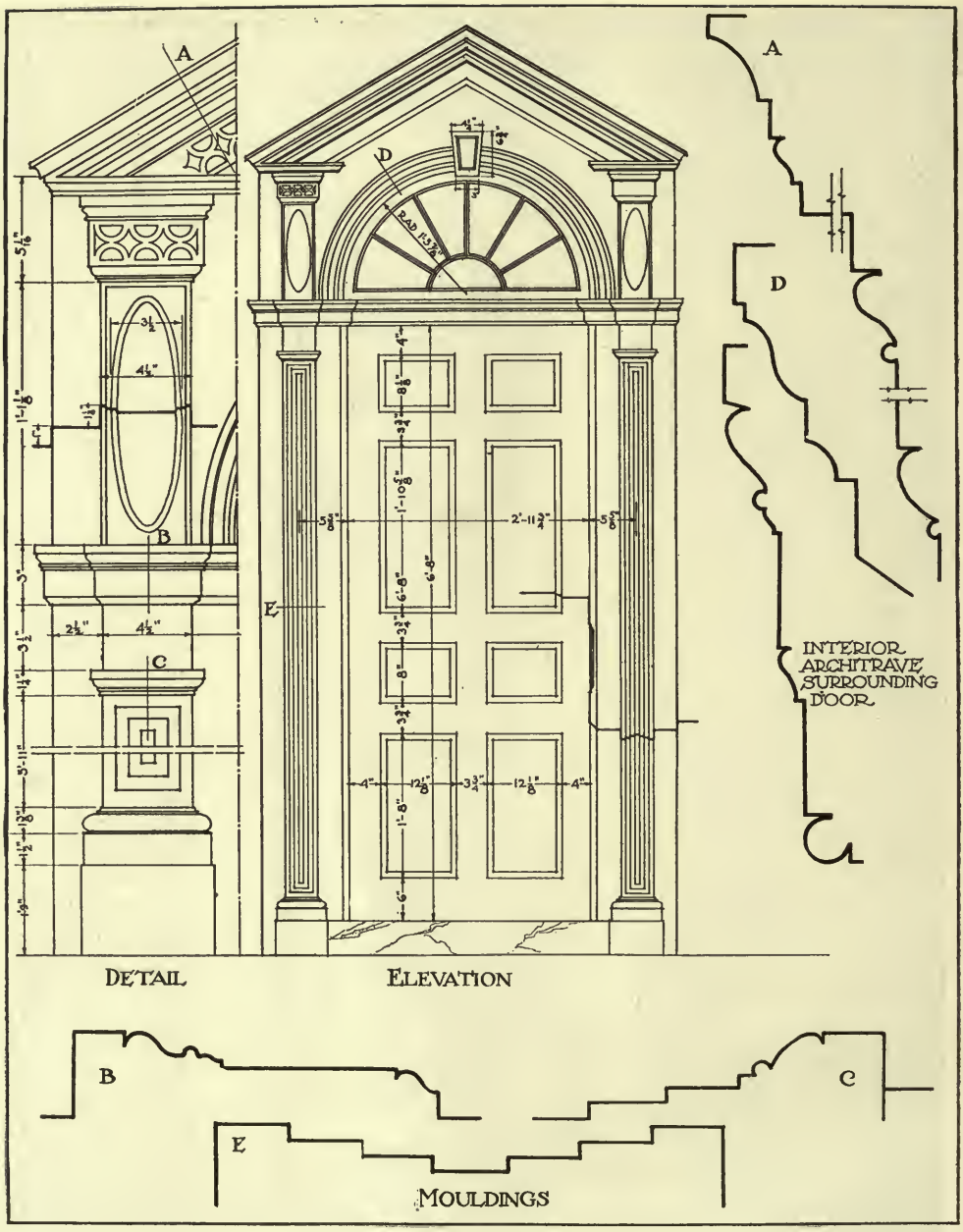
THE TOM MOORE HOUSE, NEAR CARLISLE, PA.

THE WRIGHT HOUSE, WRIGHT'S FERRY, PA.

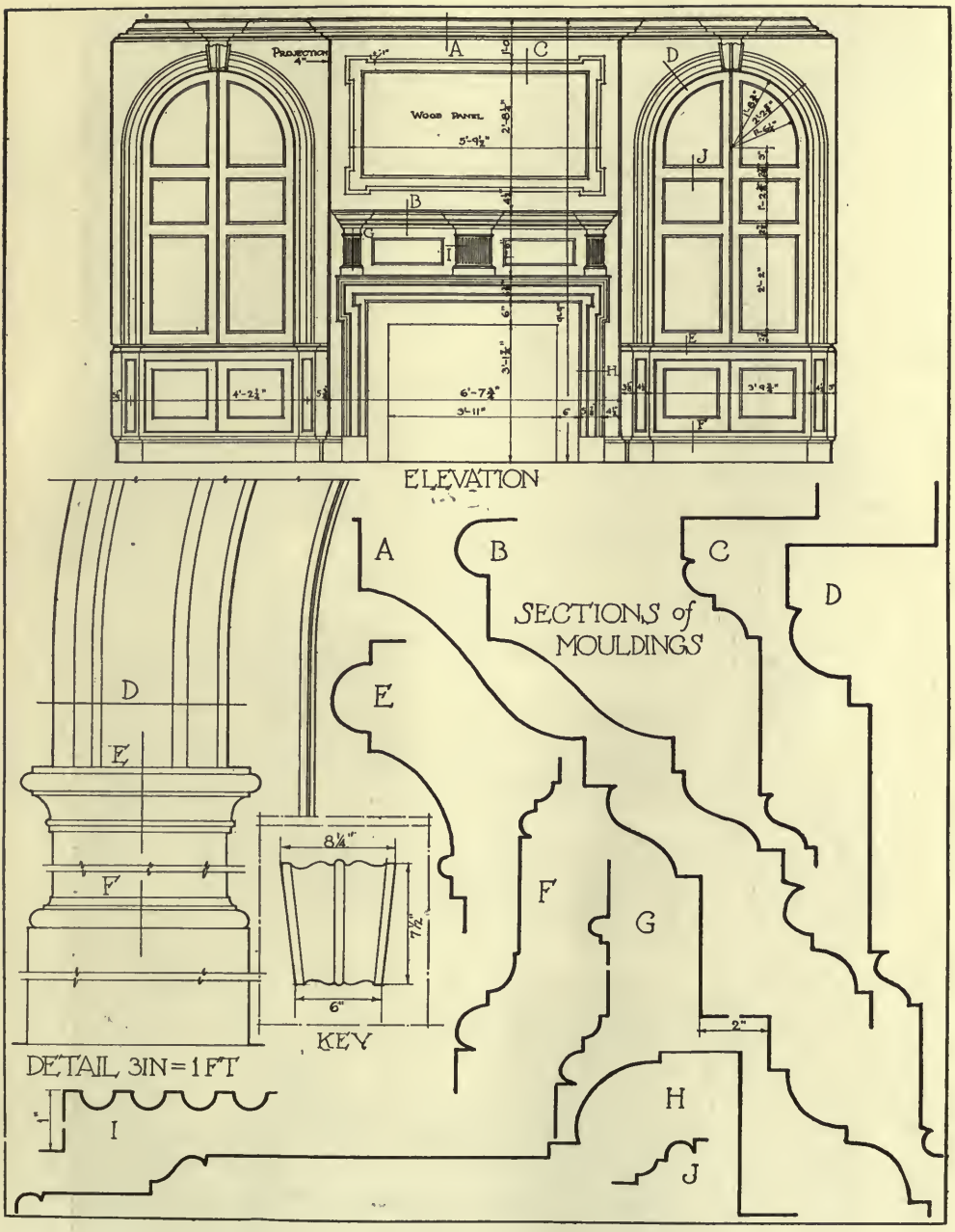
THE JOHN BARTRAM HOUSE,
PHILADELPHIA, PA. 1731.

MACLAY MANSION,
HARRISBURG, PA. 1790

DOORWAY OF R. CURTIN
HOUSE, BELLEFONTE, PA.



DOORWAY OF R. CURTIN HOUSE, BELLEFONTE, PA., 1804. MEASURED AND DRAWN BY A. L. KOCHER, ASSISTED BY LIEUT. E. C. SEIBERT.

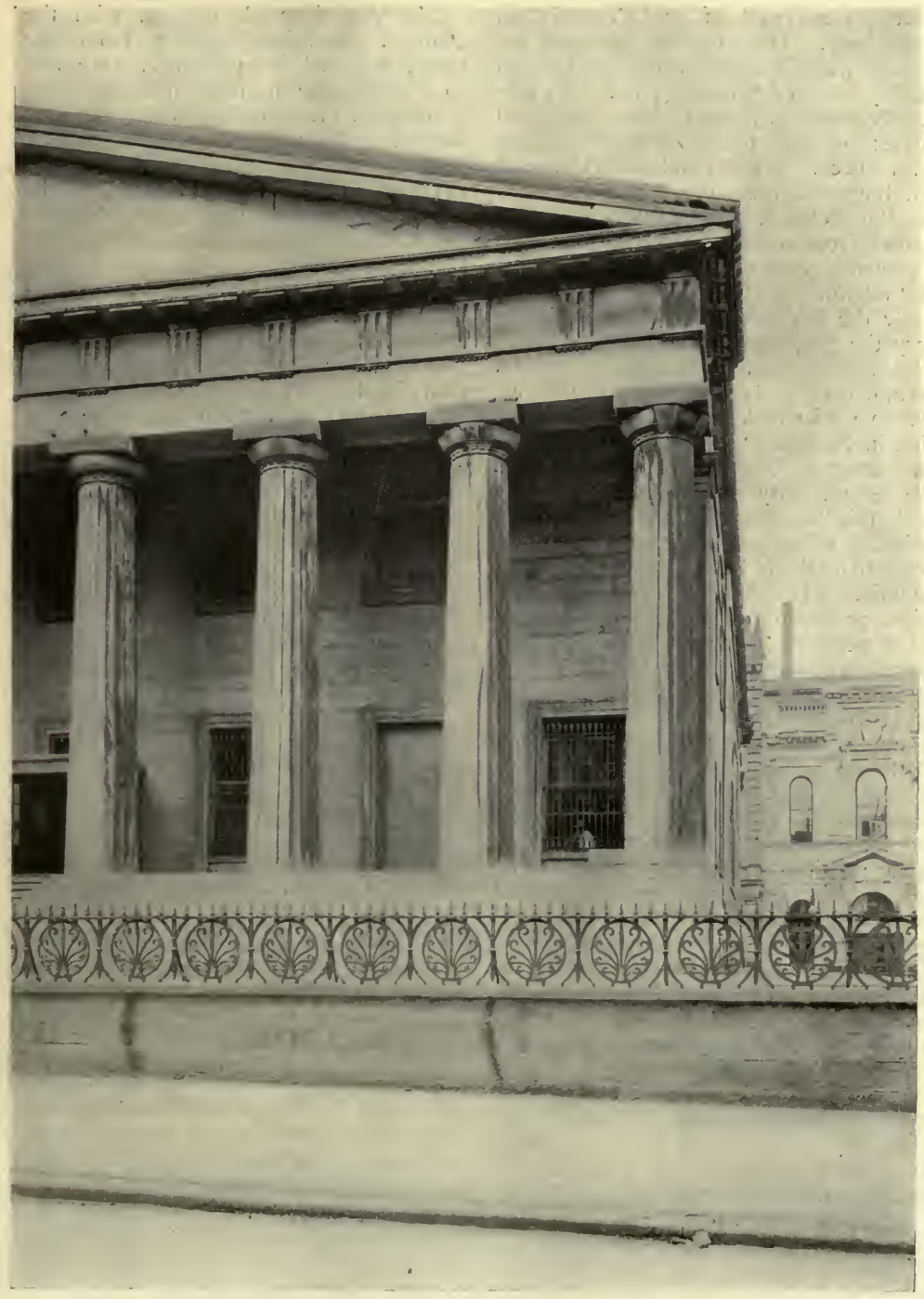


MANTEL AND WALL TREATMENT—LINDEN HALL TAVERN, LINDEN HALL, PA. BUILT ABOUT 1800. MEASURED AND DRAWN BY A. L. KOCHER.

THE WOODLANDS,
PHILADELPHIA, PA. 1770.

DETAIL OF PEDIMENT—THE WOODLANDS, PHILADELPHIA, PA. 1770-72.

LOUDON, NEAR WAYNE JUNCTION, PA. BUILT BY THOMAS ARMAT, 1801.



BANK OF THE UNITED STATES (CUSTOM HOUSE), PHILADELPHIA. BUILT 1819-27 FROM DESIGN OF BENJAMIN LATROBE.

ever present part of the Pennsylvania farmhouse. The rare use of wood for outside walls in a region that had been so thickly forested is noteworthy. The materials commonly used were brick and stone; the two were sometimes combined with stucco. Records and the evidence of buildings indicate a preference for brick in Philadelphia, where clay-pits were known from an early date; and there was a prevailing use of stone in the outlying and inland districts.

By the middle of the eighteenth century the projecting central bay or pavilion, crowned by a pediment, appears on certain country houses of eastern Pennsylvania, of which Mount Pleasant Mansion in Fairmount Park may be taken as an example. The Palladian window on the second story is frequently combined with this treatment and is probably an imitation of a similar arrangement made popular by the old State House of Philadelphia. The pilastered doorway with slight projection and usually surmounted by a pedimented hood appears so frequently as to be the rule. In certain rare instances, and then only in late examples, the two-story porch was featured: for example, the Woodlands in Fairmount Park and Louden in Germantown.

Skill in craftsmanship advances with the century. The growing excellence of moulded and carved woodwork reflects a fuller architectural knowledge—a knowledge developed in shops of special craftsmen in Philadelphia and influenced by models brought from England.

The ingenuity of the builders of the eighteenth century was largely concentrated on the dwelling house. It was necessarily so in a new land, where shelter was the prime requisite. Several churches and public buildings of the first importance were erected. The design of these buildings partakes of the domestic, perhaps because of the better understanding of this phase of the builder's art.

The American Revolution, with the changed conditions arising from the newly attained independence, gave rise to what became in effect an architectural revolution. It would seem that the new nation, in the midst of new problems of large scope, felt the need of giving expression to the new national life. The revision in attitude was not sudden, but gradual, and did not show tangible form until about 1800.

The changed order in architectural matters in the first half of the nineteenth century is clearly a reflection of the national ideas of the times. A realization of federal power, an independence from British ideas, a reaction against provincialism, a desire to compete with the European in dignity and importance—all these things were unconsciously expressed in the changed works. Buildings assume a new importance by becoming more monumental, design becomes literally classical, the humbler building materials are discarded for cut and carefully finished stone. The art of building passed from the craftsman and fell into the hands of the trained architect.

In Pennsylvania, Benjamin Latrobe was the leader in the new era. He began with the erection of the Bank of Pennsylvania in Philadelphia in 1799, in which he made use of the free-standing Greek Ionic order in an open portico. He later adopted the pure Greek in the Bank of the United States, in the same city, modeled after the Parthenon with eight Doric columns. It remained for his pupils and followers, Robert Mills, William Strickland and Thomas U. Walter, to carry the new movement to a full triumph with the original design for the Harrisburg Capitol, the Philadelphia Mint and the Merchants' Exchange. In certain districts the old ways lingered, but only for a short time. The Greek Revival became paramount.

The HOUSING SITUATION AND THE WAY OUT

By

LAWRENCE VEILLER

Secretary of the National Housing Association

FROM every part of the country there comes the cry of no houses for the people to live in. How great the shortage of homes really is no one knows. It has been estimated at from one million to three million.

Serious as the shortage undoubtedly is, there are no cities where the people are shelterless. One sees nobody sleeping in the streets or parks, and so few cities where people are living in tents, that where this situation exists it is a matter of widespread comment.

What has happened is that families have doubled up so that two homes now grow where one grew before.

Even in this respect the country is without authentic or accurate information. No one knows to what extent this practice exists. And yet the facts are ascertainable without great difficulty or expense, for every city possesses a police force and a health department, and a census of such double occupancy could quickly be taken.

Moreover, a paramount obligation rests on the health authorities of every city in the country to know the facts in this regard, as overcrowding holds a menace to the health of the country.

While sanitarians and scientists have been slow to admit any direct causal relation between bad housing conditions and disease generally, it has been scientifically demonstrated and is now accepted doctrine that between room-overcrowding and certain "contact infections" there is a very clearly established and direct causal relationship.

The epidemics of influenza and infantile paralysis which but a few years since swept this country and left in their trail death and misery are, I hope, not so remote as to be entirely forgotten.

Are we so foolish as to think these will not return? Were they to return now, they would find in the conditions of crowded occupancy of homes that exists all over the country a fertile field for their rapid development.

It is a real menace which confronts the country. Those health officers who sit supinely by and do nothing about it have a heavy burden on their souls. The U. S. Public Health Service should be alert and sound a call of warning to the health officers of the country, but no sound comes from Washington. Has the sleeping sickness of officialdom swept over them?

The situation holds a menace to the social order as well. Promiscuity is bound to result in lax relationships, in loosely held marital ties. The Health Officer of the City of Cleveland has stated recently that the returns of the first six months of the current year (and these are incomplete) show in his city alone an increase of 50 per cent. in illegitimate births, which he ascribes to the promiscuous living conditions that exist, caused by the shortage of houses.

The shortage of homes is having a serious effect upon industry. Plant extension is crippled, the development of new industries is discouraged, and the difficulties of living engendered by dwelling in crowded quarters is being reflected in the shop. How far the bad temper resulting from this is responsible for the industrial discontent and low productivity now so manifest, it is difficult to say. That it is an important factor there is no gainsaying.

The effect of the house shortage that is most felt by the public is undoubtedly the economic one. For to that cause the public attributes the increase of rents which is so general throughout the land.

This situation which exists in all parts of the United States is due chiefly to the fact that since the war the building of dwelling houses has almost ceased. As a matter of fact, for several years before our entry into the war, production of dwellings had greatly diminished.

As illustrative, one may cite the fact that though it is stated that there were 1,040,000 marriages in the United States in 1919, there were only 70,000 new dwellings completed and only 20,000 the year before. Generally, for each marriage that takes place a new dwelling is wanted.

The chief reason why the production of dwellings has ceased, as every one knows, is that they cost so much to build and that therefore there was no market for them — they were beyond the purchasing power of those for whose occupancy they were intended.

In this respect the United States is in no sense peculiar. The situation is a universal one. Practically every country is similarly situated. From the Antipodes to far portions of Africa and Asia as well as throughout all Europe a similar situation exists.

The methods adopted of meeting this situation in the United States are radically different from the methods adopted throughout Europe. There, where government housing and government-aided housing have been in practical operation for many years, the natural thing to do has been to place chief reliance upon the Government in the present difficult circumstances and new government-housing schemes have been and are being elaborated. In most European countries the private builder in the housing field is as extinct as the dodo. The economic consequences of such methods, as exemplified by England's imposing on her taxpayers a *loss* of one hundred million dollars ($100,000,000) every year for a period of 60 years, we have pointed out in a previous article.*

The method of handling the situation in America thus far has been a *laissez faire* policy; a policy of "watchful waiting" for prices to come down, for conditions to right themselves. The country has had before it so terrifying an object lesson of what government operation has meant through the operation by the Government of the nation's railway system, at the colossal loss of over thirty-eight million dollars ($38,000,000) a *month,* that it has much preferred to do nothing and to suffer the consequences of crowded living for a while longer rather than embark on so economically unsound and hazardous a project as government housing.

There are two radically different conceptions of government. One, which we may perhaps best describe as the German one, looks to the State as the source of all power, and conceives it to be the duty of the State paternally to take care of its citizens, to provide them a living.

The other conception of government is that which we have hitherto liked to describe as the American one, and which holds *that* country governs best which governs least. It is postulated upon the theory that man progresses best when he stands on his own feet and gets what life has to offer for him through his own industry, intelligence, thrift and ability.

This may be old-fashioned doctrine, but we hold fast to it. We believe that democracy is better than socialism.

While we thus say that men should stand on their own feet, the situation is different when we see a man, walking on the seashore, sink into a quicksand; we do not then conceive it to be helpful to shout out to him that he should stand on his own feet—instead we summon the neighbors, rush to his aid and with planks pry him out.

Is not the country as a whole in that situation so far as housing is concerned? And if the country *has* sunk into a quicksand, how can it get out unaided, and who is to help it out?

*See Architectural Record, November, 1920

The chief cause for the cessation of house building, as we have already pointed out, is the high cost of building. The three basic factors that enter into that cost are money, materials and labor.

Up to the present the attention of the country has been concentrated almost solely on methods of cheapening the cost of money; of making investment in house-building attractive once more to capital. Laws have been proposed, and in some States enacted, exempting such investments from mortgage and income taxes; others have exempted all new dwellings constructed in the next three years from local taxes for a fifteen-year period; while still other proposals have sought to compel by law insurance companies, banks and trust companies to invest a certain proportion of their funds in dwelling house mortgages.

Little or no consideration has thus far been given to the equally important factors in the high cost of building, namely, materials and labor.

I venture to say that were unlimited funds, even at comparatively low rates of interest, made immediately available for house construction, few houses would be built.

For, not only is the cost of building materials prohibitive at the present time, and that in the face of a minimum demand for them, but all intelligent observers agree that with the increased demand for materials that will come when building operations start up again, building material prices will begin to skyrocket.

The moment one begins to take up either stabilizing or reducing the cost of building materials, one is at once confronted with two factors in the situation which seem to be controlling. These are coal and transportation. If the manufacturer of burnt-clay products has to pay exorbitant prices for fuel, can there be any doubt that these prices will be reflected in the cost of his product?

If a specific building operation is held up for months, eating its head off in interest-carrying charges, because it is waiting for a carload of sash or nails or doors or something else essential to the operation, is there any doubt what effect such delays will have on the ultimate cost of the operation? If freight rates and demurrage charges on building materials are unduly discriminatory, is there any doubt what the effect will be on the cost of building?

We leave out of consideration those corrupt practices, conspiracies in restraint of trade, to keep up prices of materials and stifle competition that have been disclosed by the recent legislative investigations in New York.

And what of labor? If unlimited funds should be made available for house building, if prices of materials should be reduced or stabilized, would the construction of dwellings be resumed, unless labor's attitude could be made clear?

No intelligent person will invest his money in house building so long as this uncertainty exists. A house estimated to cost $6,000 may actually cost $8,000 before it is finished if labor starts the practice of "snowballing"—rolling up prices through successive strikes—or protracts the time of construction through a policy of "ca' canny," or restriction of output. If American bricklayers should follow the example of their English brethren and limit each man's daily output to 300 bricks a day instead of 750 bricks (the pre-war output in England; 1,200 to 1,500 in America) the cost of construction would be increased 25 per cent.

Is there any doubt that the country, as to housing, is in the quicksands up to its armpits?

What forces are there strong enough to pull the country out? We have tried a *laissez faire* policy for the past two years and the country has sunk in deeper and deeper.

Reluctantly I am forced to the conclusion that there is no help for it but to invoke the assistance of the Government. No other agency is powerful enough to grapple with the situation. For it means fixing and stabilizing, for a given period at least, the prices of building materials and building labor, as well as coal; and the control and the direction of transportation.

Not until that is done can we expect investment funds to return to dwelling construction. And when that is done, without probably the necessity of any

special tax exemption, capital will once more seek these channels of investment. For the need of the country is great and industry is vitally affected by the present situation. With the uncertainty of cost of construction removed and prices stabilized, there is no reason why the country should not be restored to the pre-war basis, and the construction of dwellings be resumed once more by the initiative of private enterprise.

I do not wish to be misunderstood. I am not advocating either government housing or government-aided housing. I believe both to be unwise and undesirable.

What I am advocating is that the Federal Government should take hold of the housing situation; should realize that the country is in a quicksand as to housing, and that it must be helped out.

Repugnant as the creation of additional governmental bureaus is, I fear there is no help for it, and that a new bureau must be created in some one of the great government departments, charged with the sole duty of grappling with this situation. No one of the existing departments of the Government seems especially fitted for it. Perhaps the new Department of Welfare, which President-elect Harding is pledged to create, might be a suitable place for it. No question affecting the public welfare could more profitably occupy its attention.

Irrespective of where such a bureau may be located or how it may be constituted, the task which confronts it is to sit down with the producers of those building materials that enter into the construction of dwellings and make agreements that will fix the price and produce the supply of such materials needed by the country, if the shortage of dwellings is to be caught up with in a reasonable time.

This is no easy task. There must be a recognition on the part of the Government that these business men are not only entitled to a fair profit, but must be given sufficient incentive and insured against loss, if they are to produce the materials that the country needs.

Nor can any such arrangement be expected unless the Government can similarly stabilize the labor cost of these manufactured products. No manufacturer could make such agreements otherwise.

That this is not at all impossible to accomplish is borne out by the example of England. In that country the Government said to the makers of brick, we will guarantee to use so many million brick if you will produce them at such and such prices. The manufacturers of brick agreed, and seven hundred and fifty million (750,000,000) brick were thus produced, at a saving of 50 per cent. over what they would have cost the country by the usual method. A similar course was followed with many other articles that enter into the construction of buildings. That is what we propose should be done in America.

In similar fashion we would have the Government sit down with Labor and make similar agreements for the labor cost of handling such materials in the erection of the dwellings that the country needs. And here, too, of course, the terms would have to be fair and offer attractive returns to the worker.

Much could be accomplished by such a government bureau through persuasion and fair dealing and an appeal to patriotism, but undoubtedly it would have to be armed with the power of compulsion, to be employed where persuasion failed.

It would, moreover, have to be equipped for the difficult task of untangling transportation snarls, and seeing to it that after materials were produced they could be got where they were needed without undue delay or expense.

While such a bureau should be a temporary one, it would probably take it several years to complete the services to the country for which it was created. That such services can be rendered only through federal action must be obvious upon the slightest consideration. Involving as they do the control and direction of transportation, to deal adequately with the situation transcends the ability of the State or the City. The country is still in the quicksand.

DISPLAY ROOM OF THE ELLER MOTOR COMPANY CLEVELAND, OHIO

Designed & Decorated by Philip Lindsley Small, Architect

IN Cleveland, Ohio, may be seen a new automobile display room of very unusual merit. It belongs to the Eller Motor Company, and both the architectural design and the design of decoration is the work of Philip Lindsley Small. The quality of the work seems to bear out a statement made in a recent article in the Architectural Record by Mr. John Taylor Boyd, Jr., to the effect that a room, in which the architecture, the furnishings and the embellishments are the creation of a single designer, is apt to be a better achievement than a room in which the treatment of these several elements are intrusted to different designers.

The scheme of arrangement was worked out on the idea that there are three general divisions to the business transacted in such an establishment, namely, the display of the automobile, the intimate routine business of the officers and salesmen, and the place where the salesman and the prospective buyer confer. The showroom proper is entered through a vestibule of paneled oak and leaded glass doors. It is long, high-ceiled and flooded with light from plate-glass windows which reach from floor to ceiling. At the rear is an arcade, in which are placed long oak tables, richly covered chairs, telephones and writing materials. Here the public and the salesmen meet to transact business. In the wall behind each arch of the arcade are groups of leaded glass casement windows and doors leading to the various offices occupied by the salesmen and officers of the company. The spirit and atmosphere of this general scheme hark back to certain medieval market places.

In the rear of the offices, and almost as large as the showroom itself, is the general office, extending to the public space along the side street. This space connects the showroom in front with the service station in the rear and gives access to the parts department, service foreman, cashier and general office.

The color scheme of the showroom is soft and warm, accented by rich color in tapestries and in the upholstery of chairs, by the old rose and gold worked into the wrought iron stairway, ceiling clusters, and wall lights, and by pongee silk hangings at all windows and doors. The effect is very charming and restful to the eye, and serves as an admirable background and foil to the polished bodies of the automobiles on display.

The treatment is a noteworthy departure in display room design.

ENTRANCE VESTIBULE — DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

MAIN SHOW ROOM, LOOKING WEST—DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

LAMPS AND RAILING ARE IN ANTIQUE WROUGHT IRON —DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

STAIRWAY TO UPPER SHOW ROOMS AND OFFICES — DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

ARCADE, SHOWING ENTRANCES TO OFFICES—DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

ARCADE, LOOKING EAST TOWARD STAIRS — DISPLAY ROOM OF THE ELLER MOTOR COMPANY, CLEVELAND, OHIO. PHILIP LINDSLEY SMALL, ARCHITECT.

RECENT DEVELOPMENTS IN HOUSING FINANCE

By JOHN TAYLOR BOYD, JR.

— PART II —

THE preceding article described those fundamental relations between buyer and seller which underlie the deed of sale. The neglect of the human factor is the weakness of most older practices in housing finance. Because it has not understood the conditions of modern society—what impels people to rent instead of own their homes—housing finance has failed to cope with the extraordinary growth of tenantry in the United States in the last thirty years. Today the majority of Americans are renters.

This failure is disastrous, and one may think that it makes housing finance the weakest link in housing. However, the rapid progress in other fields of housing; the splendid standards which have been established in the design of the individual home; in group neighborhood and community planning; in building construction; in operation and management—all this enterprise offers hope of a corresponding improvement in finance.

Now, although the technical details of the sale plan are important, they will not suffice of themselves. Here again we have an important truth, and it cannot be emphasized too strongly. The essential is the soundness of the houseowner's investment in his home. If a product is to be sold at any time in a long course of years it should be a durable product; its value should be safeguarded in every possible way; and, it should have a good, steady market. If you advise a man to invest most, or all, of his savings in a home—perhaps going into debt for it—and he asks you what will be the selling value of the house five, ten, thirty years from now, what can you tell him? Can you assure him, honestly, that real estate is habitually financed on a secure, long term basis; that the neighborhood values are protected from sudden depreciation caused by entrance of factories or other types of buildings; that reckless speculation causing cycles of shortage and over-production of houses is unknown? Questions such as these, I fear, would embarrass the boldest real estate salesman.

It seems idle to expect to establish good standards of housing finance unless real estate be placed on a time investment basis and, as much as possible, taken out of the market of trading and over-speculation, which so discredit it now. To some people this may seem like asking too much. We are so accustomed to current real estate practices in small house financing that we do not realize that better methods are possible. The success of the older building and loan associations was due to their integrity, and the new finance corporations are operating precisely because they can in a measure overcome these financial weaknesses of temporary value and insecurity. It should be realized that real estate speculation is left over from the pioneer period of development of the United States, in which initiative and risk were essential in order to establish towns and make them grow. But now that we are settling down to more permanent communities we need to plan our financing on a permanent basis. Housing experts are complaining of the increasing failure of real estate mortgages to compete with the "gilt-edged" securities in Wall Street. But I am inclined to think that the competition of such securities may, in the long run, be a benefit; that for unsound practices in real estate finance there is no cure like the threatened competition of the stocks and bonds of the Pennsylvania Railroad.

Of course, in the matter of quick and

profitable sale, stock market securities always will have certain advantages over real estate. So, also, may real estate have values peculiar to itself. But, without pursuing this point further, one may conservatively assert that housing finance should rest on a secure, long-term investment basis as far as possible.

In attaining this object of placing home owning on an enduring financial basis, three essentials must be sought for, as mentioned above. One is the value of the home as an individual product; the second is its value as a part of a fine, permanent neighborhood, and the third is a fair market, reasonably stabilized against the ruinous effects of "booms." By these means the house, considered as a financial asset, will be safeguarded against influences which threaten quick depreciation of its value.

Proceeding to these three kinds of safeguards, the first concerns architecture and building construction. In order to gain enduring value in a house it should be designed after high standards of planning, appearance, operation and economy. Standards of house design have made great progress in recent years, particularly since the war, and architects with any knowledge of housing know what they are. The point here to note in relation to finance is that these standards are rapidly improving. This, in business terms, means that houses tend to become obsolete more rapidly than formerly. They lose value unless they are designed in the most up-to-date way and, if possible, with some imagination as to what progress will cause people to expect of a house in ten or twenty years.

The types of houses which seemed efficient, economical and liveable thirty years ago are no longer so today. Older houses, even if they have been kept in perfect repair, do not bring so much money when sold as formerly, because their type does not attract. There have been great strides in planning. Around New York, for instance, it has been remarked that architectural design, however crude, has real estate value in the small house market. Those little houses which can boast of even a draughtsman's touch on roof or porch or entrance bring more than those which show no attempt at artistic proportions.

Construction, as well as architecture, deserves a brief word. People learned with automobiles that first cost is not the whole cost, and they are beginning to learn this truth in respect to houses. Mounting costs of construction, the costs of repairs which mean expensive hand labor, the fact that, even in first cost, temporary construction in recent years has been approaching permanent construction—these facts are gradually forcing us toward fire-resisting construction, which is also permanent construction, requiring little or no repair. There is no better illustration of this principle than the action of the United States Bureau of Internal Revenue, which allows a "life" of twenty-five years on frame buildings in figuring real estate items in income tax returns. This means that, for a frame house costing $10,000, $400 should be set aside each year to cover repairs and obsolescence.

But a house, no matter how well designed and soundly built, has no great financial value in itself, if the neighborhood values are not sound and permanent. This is perhaps the greatest obstacle in financing housing today. In many towns and cities the home owner still has no protection against those sudden shiftings of business and industrial centres, characteristic of American communities, that are so disastrous to real estate, particularly to small house values.

In order to safeguard property values in a neighborhood, private restrictions are not sufficient in most cases. Zoning alone can cope with this evil, and it is good to see it spreading to other cities since New York City adopted this principle in the law of 1916, as the only sure way to protect the real estate market from chaos. Even so, zoning is only one of the safeguards which may be thrown around the neighborhood, and I may only mention "supporting" values of comprehensive planning, such as efficient street and transportation systems; correct placing of factory and commercial centers, parks, playgrounds, schools, churches, etc.; together with some mitigation of reckless land speculation which fixes excessive capital costs on real estate, and, finally, some

means of discouraging real estate booms —those causes of fluctuation in value. All these safeguards will protect neighborhoods against rapid depreciation and obsolescence, and will go far to eliminate all but legitimate risk in home ownership.

All this discussion of fundamental principles of value in housing is intended to bring out the truth that, if the policy of owning homes is to be approved as an American tradition, it involves the counter obligation to provide every reasonable safeguard for the property. The home should be a durable asset. Technically, this means that housing should be taken out of the speculative and trading class and placed on a long-time investment basis. Depreciation and obsolescence should be calculated over thirty-five years. Then the home will have a financial as well as a social value; whereas now its value is mostly social. People may then buy their homes with a reasonable assurance that they can enjoy them while they occupy them, and, should circumstances force them to sell, in so doing they will not face the loss of their little fortunes. Such is the fundamental need of housing finance, and it remains to describe how the new housing finance corporations meet the need.

It is easy to see that, in this respect, the new corporations have great advantages over older speculative schemes. Working on a large scale, they can finance each operation easily. As the money comes back in payments on one small house, it flows out again to start another dwelling. This circulation of capital is called the principle of the "revolving fund," and all the companies make much of this feature. More will be said of it later; but here let it suffice to point out that this turnover offers economy over ordinary methods, because, as Mr. John Ihlder, the housing expert, explains, the small builder's capital is usually tied up from five to eight years in each house—which is an expensive delay. Besides, the corporations can finance the resale of properties when necessary. But, important as such economies may be, perhaps the chief merit of this new scheme of financing is that it offers the home buyer greater and more secure value in those essentials of neighborhood, permanence, proper location of house, type of house itself, and a more stabilized real estate market.

The credit of the finance corporations is of the best, backed as they are by the most responsible business interests, and organized by the local Board of Trade or Chamber of Commerce. They obtain capital on the best terms and have the best business advice. The welfare of the whole community is concerned, a factor which makes for stability, breadth of view and sound business policy.

Promotion costs—that item which appears so large on the books of most new undertakings—are low. Support of business interests and of the local press is freely given. By such means the stock is subscribed, as a rule on some plan of apportionment. Factories usually take up the majority of the shares, and often a small proportion goes to commercial and professional interests. For example, in Dallas, Texas, two hundred citizens underwrote the stock. Stock is paid for in instalments, a typical instance being the Housing Corporation of Flint, Michigan, which stipulated that 20 per cent be paid upon organization of the company, 40 per cent. on call, but not less than thirty days thereafter, and the remaining 40 per cent. not less than sixty days after the second instalment, and then not until bills for labor and material required it. It is easy to see that, on such a basis of credit, money can be obtained on the most favorable terms. The dividend rate is limited at or about 5 per cent.

The form of organization need only be mentioned. It is the familiar stock corporation, incorporated under the laws of the state, with officers and board of directors. Nearly all the corporations issue common stock only. Usually a very able executive is secured to take charge of the active management.

At this point in the description of these corporations, a great variation of methods is to be noted. The differences concern principally the scope of the enterprise. Two main classes are found: One, purely financial, finances the building and the sale of houses; while the other, in addition to financing, undertakes some, or all, of the other operations of housing, those of land subdivision (even community plan-

ning in a few cases) and the design and construction of houses. In each class there is a variety of types, which vary chiefly according to local conditions and local needs, and also according to the ambition of their organizers. It will be sufficient to point out some of the significant characteristics of each class as well as some of their defects.

Even a third type may be mentioned. This is the Janesville, Wisconsin, Corporation, which does construction mainly and places finance almost entirely in the hands of a local building and loan association.

Concerning the purely financial organizations, the best of them effectively apply principles of modern finance in housing. Compared with the other type, they have the merit of not attempting to cover too wide a field. Housing finance on a large scale is a task in itself, and building operations are quite another kind of enterprise. To combine the two in a large scale organization is not easy. We hear much of the economies of operation on a large scale, but not so much of the losses incurred on a large scale through wrong policy, mistakes, inexperience or inefficient personnel. Such weaknesses may develop in a newly organized corporation, and it may be said that large scale operation is better arrived at through a process of growth rather than through creation. In some cases, this difficulty of combining too many functions in an unwieldy enterprise is avoided by having separate corporations—one for financing, and one for design and construction.

The danger of the purely financial corporation is that it may not be able to control the housing product on which it loans money. Unless it is firm in withholding loans from properties that do not meet the highest standards in design and construction and in permanent neighborhood values, this type of corporation cannot insure to home buyers the soundest possible security. In a community where housing standards are low and obsolete, builders and real estate interests will be apt to resist efforts at improvement. In this case the management will have need of much initiative, backbone and tact if it is to secure low cost and soundly financed houses. Among the executives of a finance corporation should be experts in construction and design of houses and in community planning—men who understand the history of the steady progress in small house design and who are able to imagine what value present housing standards will have twenty years from now. The usual form of real estate appraisal considers existing values chiefly and takes too little account of depreciation and obsolescence.

Regarding variations of this type of company—the purely financial type—it may perform all of the operations of finance or else it may supplement existing institutions where these are functioning effectively. In this way it may effect much economy in reducing the cost of what are known as "service charges." Under the head of service charges come a multitude of premiums for loan or mortgages, fees to surveyors or to lawyers for titles, deeds, contracts, title guarantees, etc., a long list of small items which add up to a surprising total. This economy was one of the reasons for the growth of the building and loan system, and is said to total about 10 per cent. of the cost of a house in many cases. The Pennsylvania State Chamber of Commerce report mentions service charges as from 1 to 6 per cent. on sums advanced to buyers. The workings of the Cleveland Homes Co. throw added light on this factor. "A real estate dealer of average means finds, after a comparatively few transactions, that most of his capital is tied up for a long period so that he is compelled to mark up the price asked for each house in order to cover his carrying charges and financing cost." This bears out Mr. Ihlder's statement above. The Cleveland Homes Company "discounts" mortgages. It also buys homes for an owner, obtaining a 10 per cent. discount. In these transactions, after charging the normal 3 per cent. for making the sale and the customary commission for placing fire insurance; it saves for the buyer about $400 on a $3,000 deal. The commission is retained by the company to pay operating expenses and capital charges, including a 6 per cent. dividend, and any surplus is distributed to purchasers as a deferred dividend. The Cleveland Homes Company uses mortgages to obtain collateral

trust notes bearing interest, which are sold through the usual channels, thus making its capital liquid.

This last is one illustration of the operation of the "revolving fund," mentioned above. In a sense, what nearly all these companies do is to finance that part of the undertaking which is usually covered by second mortgages. Indeed, for this reason, these finance companies are sometimes known as "second mortgage corporations." Particularly under the present abnormal building costs, loaning interests and investors fear to take up second mortgages on new construction. Under the mortgage system, the second mortgage represents the peak value of real estate, which, in a building built today, may be wiped out in a few years as costs descend. This risk the finance corporations assume. Of the rest of the capital about 60 per cent. comes from outside sources in the form of first mortgage loans or notes, from savings banks, loaning institutions, investors or by transactions with building and loan associations; and 10 per cent. is the first payment made by the home buyer. Here a further saving is possible, chiefly for two reasons. The company, by forcing high standards of security on its housing, can borrow more favorably; and it can get loans in bulk, either on its credit, or as mortgages placed on a group of houses, thus saving overhead costs. As Mr. Lee J. Frankel, vice-president of the Metropolitan Life Insurace Co., of N. Y. City, well says: "The cost of placing many small loans cuts into the interest rate." Some companies, in addition to these loaning and selling functions, finance builders, and here, by judicious purchasing of building materials, they may greatly cheapen construction costs.

Such is the character of the companies which confine themselves to finance. But they do not promise such efficiency as those—particularly when organized separately—which do both financing and manufacturing of housing. There are a large number of this latter type all over the country, and a most successful group is operating in Michigan, notably in the towns of Flint and Pontiac.

This part of Michigan is the region of the motor industries, like the huge General Motors Corporation, the expansion of which, after the war, added to the entrance of other automobile industries into the district, precipitating a particularly acute housing shortage. The companies organized in this region had the benefit of the example and experience of several extensive housing developments, previously created—the splendid industrial housing community of the General Motors, and the villages of the U. S. Government war housing.

Under successful management, housing of this type is apt to be the best. There are not only the economies of large scale construction to be had, but also the important saving in community planning, land subdivision and site engineering in the shape of streets, paths, sewers, water, gas, etc. A peculiar local advantage of this type occurs in La Crosse, Wisconsin, where difficult land contours require much grading, which is cheapest done on a large scale. This is an interesting illustration of how local conditions affect the character of the enterprise. There is apt to be an advantage in having the company furnish a lot, for, as the Massachusetts Homestead Commission states in an annual report, "It is estimated that 70 per cent. of workmen who buy building lots never buy a home." The cause assigned for this startling fact is that the lots sold are either too high, or unsuitable, or in a poor neighborhood. The workman naturally is not able to judge these factors when he buys his land. The companies usually make a careful survey of the community, quietly place options on favorable tracts of land without letting their purpose be known. They prefer to build in groups in different parts of the community. Those familiar with housing operations know that, in construction alone, a saving of 15 per cent. to 30 per cent. or more is possible on such a large scale; and when we add this economy to the saving in the financing, we begin to see what the introduction of manufacturing—or production—ideas into housing may mean.

Thus, in general terms, runs the account of the two types of corporations—those which are purely financial, and those which cover more of the many fields of

housing. Each has its value in certain conditions; but in any case, no matter what the form of the enterprise, it will fall short of its object unless it makes sure that the product it finances is not only as cheap as possible, but is a sound investment.

It remains to consider the technical details of the transaction between the finance corporation and the individual buyer—the person who, after all is said, is the central figure in housing finance.

These technical details are those of the sale plans. Almost all the corporations follow the method of taking payments in instalments, which has long been the custom in financing small houses. This is done in a variety of ways; but here again classification is difficult or else misleading. For I am forced to conclude that one type which is found in a number of cases is so superior to the rest that it is reasonable to consider it the best type; while the rest are either defective or are prevented by unusual local conditions from attaining it. In a word, that type is the best which deals with the buyer in the simplest, most direct, and most responsible way. This principle above all others should be found in a sale plan. To tie the buyer up in a system of payments on first and second mortgages, or on notes, or several little debts owed both to the finance corporation and to other agents, sales-talk of technical refinements like amortization, discounts, etc.; transferring mortgages to a bank or investor, or to a third party, to whom, if the home buyer is forced to suspend payments temporarily through a disaster like death or disability, the finance corporation must refer him—all this may be clear enough to an accountant, but I confess that it often puzzles me and makes me sympathize with the poor home buyer, who, untrained in finance, faces the tangle for the first time. Such complication and such expertizing of what can be made a simple transaction seems to show a want of imagination in realizing the human factor. Accordingly, I prefer those plans which sum up all these technical intricacies in one phrase like "10 per cent. down, 10 per cent. a year until paid for," or "10 per cent. down, 1 per cent. a month thereafter." These are the methods of the Kenosha, Wisconsin, and of the Janesville, Wisconsin, companies and of some others. In this plan the purchaser deals only with the company specializing in one kind of business, and comes to put his confidence in it. He is not confused by being referred to a third party for a mortgage or loan. In its turn the company is thereby made more responsible toward him. The plan of payments is simple, and the buyer—and particularly his women folk, who are not to be ignored—knows at any moment the exact status of the transaction.

But the chief merit of this simple plan is that it best meets that indispensable requirement of re-sale if the homeowner is compelled by circumstances to move. The buyer can then be easily assisted to take back whatever equity is reasonably his in the transaction without friction or misunderstanding; whereas he might feel upset and suspicious of being cheated if compelled to untangle his equity and his obligations from a series of notes and mortgages that were held by different parties.

One point deserves mention here. Some companies find it desirable to retain an option on the property in case of resale. This prevents the property from passing into undesirable hands, especially of those loan and real estate sharks who prey on small investors.

Thus also, from the viewpoint of both company and buyer, it would seem an economy to sum up all the transactions with the individual home buyer thus in one simple scheme of payments made to the finance corporation solely; and to leave to the company the business of borrowing, from outside sources, in lump sums at a low interest rate all loan or mortgage money. The only exception to this rule would seem to be those cases where the company co-operates with the local building and loan associations. The loan associations have a complex scheme of payments, but it is one well established in local customs and everyone comes to understand it.

The above describes the general feature of the simple instalment scheme, but there are other details which should be

understood. From the viewpoint of the welfare of the buyer authorities agree that it is best for him to pay up his debt as rapidly as he can without shouldering too great a payment. This is a most important point. Many payment schemes include in their "10 per cent. down, 1 per cent. a month" formula only the purchase cost of the house. Thus they overlook important items of depreciation, obsolescence, taxes, life and fire insurance, coal, electricity, that mount up to a figure, which, I have calculated, may in some cases be one-third of a normal rental (4 per cent., with a rental established to return 12 per cent. gross on the investment). This may make the burden on the buyer too high. The burden, housing experts agree, should not exceed 25 per cent. of a family income, or, as stated, "one week's wages in each month spent for shelter." Some authorities declare that 20 per cent. is a maximum. But if we assume 25 per cent. as reasonable, this means that, under a "1 per cent. a month" scheme, a house costing $3,500 should not be bought by a family with less than $35 a week steady income or a little less than $2,000 a year. Then in the amount in the family budget available for shelter, $420 a year, only about $300 or less is really available for payments to the corporation. Disregarding interest due the company on the loan and taking $300 as the annual payment to the company—which is what deferred payment amounts to—and disregarding, also, amortization, on flat payments the debt would be extinguished in about ten years and six months. It should be remarked that the City and Suburban Homes Co., of New York City, follows like methods.

Stated in more detail and more accurately, I submit the following taken from the Janesville, Wisconsin, Corporation, which seems to me one of the best:

Transaction with Purchaser.

Cost of house	$3,000.00
Added 10% safety margin	300.00
Cost of lot, improved	600.00
Total cost	$3,900.00
Deposit on purchase, 10%	$390.00
First mortgage, 60%	2,340.00
Second mortgage, 30%	1,170.00
Total sale transaction	$3,900.00

Interest on 1st mortgage at 6%	$140.40
Interest on 2d mortgage at 7%	81.90
Taxes, water rates, insurance	70.00
Depreciation and repairs	39.00
Total yearly cost	$331.00
Monthly cost	$27.60
Monthly charge	39.00
Difference to be applied on 2d mortgage	11.40

At the end of first year, providing no additional payments have been made on the second mortgage, the situation will be as follows:

First mortgage	$2,340.00
Second mortgage	1,032.00

This plan assumes a weekly wage of $39.00. It is clear that such a plan has the merit of being simple and easily grasped. It will be noted that the items "monthly cost" and "difference to be applied on 2nd mortgage" are misleading, for they vary with each payment. However, I would suggest another form which might be still simpler. Following out the principles outlined above, namely, of centering all the homeowner's dealings with the finance corporations and eliminating other parties in the transaction, I would dispense with the mortgage form. Then the buyers deal directly with the finance corporation, which is in a better position than the homebuyer to negotiate collectively the individual mortgage loans, or else to obtain in other ways adequate financing by dealing direct with the loaning interests, thus making the business a better "banking proposition." The finance corporation would then transact the dealings with the individual homebuyer by a sale contract, under the terms of which the finance corporation would retain title to the property until the last payment for it was made, after which the title would pass to the homeowner. Obsolescence should be introduced at a figure of 1½ per cent. on a twenty-year basis, meaning that a house will, at the end of that period, very likely be worth 30 per cent. less than it is now because its design has become antiquated. The specific form of sale plan would then be calculated for a family income of $39 per week:

Transaction with Purchaser.	
Cost of house	$3,000.00
Added 10% safety margin	300.00
Cost of lot, improved	600.00
Total cost	$3,900.00
Deposit on purchase, 10%	$390.00
Debt to be paid off	3,510.00
Total sale transaction	$3,900.00
Interest at 6% and repayment of principal	$300.50
Taxes, water rates, life and fire insurance	70.00
Depreciation and repairs at 1%	39.00
Obsolescence at 1½%	58.50
Total yearly cost	$468.00
Monthly charge	39.00

Under this scheme the debt will be paid up in about 20 years. This is too long a period, a dozen years being better. There are three ways of reducing the time factor, viz.—increasing initial payment demanded of homebuyer, and lowering the cost of the house either by cheapening cost of construction and finance or by reducing its size. The 10 per cent. "safety margin" is a service charge of the finance corporation for the financing operation which, after paying expenses, may be returned to the buyer as a dividend. In this figuring the reader may have noted that the cost of house and the wage necessary to pay for it are high. Nevertheless the cost is only 10 per cent. a year, which is a normal rental figure. The reader will perceive that this suggested form of financing and sale plan is a simplification of the methods of some of the companies like the Cleveland Homes Co.

Certain further points of interest in this sale plan deserve notice. As to the initial payment, though this is usually 10 per cent., it is sometimes 20 per cent. as in the case of the La Porte, Indiana, Housing Corporation, while some companies do not require it at all. This latter practice is not considered ideal, because an initial payment, besides helping the company, is an index of a man's thrift, his good faith, and it provides him with a small reserve. There is no reason, however, why a buyer, if willing, should not make a larger payment, nor why he should not anticipate his regular payments. Incidentally, he should also be permitted to postpone his payments or reduce them temporarily if he meets with financial troubles, due to disability, sickness or death in family, rapid succession of births, etc. It will be seen that during the first three or four years, the payments go principally for paying interest to the company on the loan and not much is left for amortization. After that amortization sets in with accelerating rapidity as the principal of the loan is paid off. Hence the advantage of larger initial payments and heavier instalment payments during the first two years, when they can be made without hardship. It will be seen that all this mathematical relationship of home buyer's family budget to the sale price of his home—his wage scale, his sinking fund to cover charges on his property, his payments to the company, the charges for interest, discounts and amortization, cost of financing and cost and type of housing —all forms an intricate cycle of relationships and variables which requires nice judgment and accurate calculation to make it workable in practice. It shows how, since the war, abnormal building costs have created an excessive value for that specific variable which has made the equation almost insolvable. It demonstrates further—if such demonstration be needed — how absolutely necessary are sound principles of finance, together with rigid cutting of costs in every department of housing through large scale operation.

Two further points are to be noted. One is the practice adopted by some corporations of handling a second mortgage or its equivalent only, and then, when that is paid off, leaving the home buyer with a note or first mortgage on his hands. I believe it is well understood that standards of thrift advise us that, while it is good finance for a business to operate on borrowed capital, it is not the best practice for an individual. The old-fashioned precept of keep out of debt still holds true as ever. The other factor is insurance. Wherever possible the expense of both life and fire insurance should be included in the sinking fund payments, particularly in such a way that the death or disability of the owner does not involve the family in the loss of the roof over their heads. This practice is the rule in a few companies.

All these considerations serve to bring out the need of centering all legitimate costs in the simplest possible sale scheme, not rigid either, but with enough flexibility in it to meet conditions as they arise. The company should be direct and frank with the buyer. The home buyer should be patiently instructed not to overlook the important costs of depreciation, obsolescence, taxes, insurance, water rates, etc., and other items which enter into the cost of his home besides those covered in his payments to the financial corporation. Otherwise, in ignoring these he may assume an obligation which is too great for his income. He should be encouraged to adjust his burden of payments to the other items in the family budget.

In this way he can buy a home and pay for it in about nine to a dozen years, depending on costs of housing in the locality and on the standards of living as reflected in design of the house. Then—here are the two most vital factors of all—if efficient large scale operation be attained, the annual payments will be no higher (they may even be lower) than rentals of housing built under small scale, inefficient methods; and, further, if the proper financial safeguards are thrown around the properties, the owners may feel that their homes have a financial as well as a social value. Either they can dispose of them at need with little or no loss, or, if they hold them, they own them after, so to speak, paying rent for some ten or twelve years. In a permanent, properly protected neighborhood the house will always have a good value both socially and financially, each factor enhancing the other.

By such methods this splendid system of Board of Trade sponsored finance corporations is designed to enable homeowning once more to compete with renting in the United States. One should not suppose that renting has any advantage over homeowning but a financial one. That advantage will in large measure disappear if sound methods are applied to housing finance. Then, with homeowning equal once more to renting on the financial side, we may trust to the superior social value of homeowning in all but exceptional cases to influence our people to become once again a nation of home owners.

THE WORKS OF AN ENGLISH CRITIC

By CHARLES OVER CORNELIUS

THE contributions of the English critic, Lawrence Weaver, to current architectural bibliography imply that the subject of architecture interests him first of all as an expression of a primitive instinct, whose development, to use his own words, takes its place in the larger history of social growth. This interest, which in its breadth must contain many detailed subdivisions, is, in general, twofold, and in its sane balance and keen insight holds much to refresh and inspire. Trained as an architect, with opportunities for intimate acquaintance with the best examples of the past, particularly in his own country, Mr. Weaver confesses a respect for traditions in architecture and a knowledge of English traditions which afford the surest bases for present criticism and judgment. At the same time his constructive impulse is directed toward the continued improvement of domestic architecture through an adjustment between modern social conditions and established methods in building, both of which tend to leave their mark upon the houses of today.

The concentration of attention primarily upon domestic architecture and the related arts, together with the limitation of this attention to English work of the past and present, renders his study of particular usefulness to housebuilders today when the influence of English domestic art in American architecture and household decoration is paramount and finds a natural setting in the midst of the Anglo-Saxon traditions of this country.

In his archæological studies Mr. Weaver has given to the public certain facts with regard to sixteenth and seventeenth century building, whose importance is not wholly archæological nor abstract. To him we owe the republication of "The First and Chief Grounds of Architecture," by John Shute,* which was the first book on architecture published in England.

In his paper on the building accounts of the fifty-one city churches designed by Sir Christopher Wren† there is much material of interest to students of Georgian architecture. The accounts present a running commentary upon the great architect's business and building methods, which constitute the basis of much of our present system of contracts and accounting in building work. The details of materials, quantities and cost, of plumbers' and decorators' work, and the employment of engineers and surveyors present a picture of the labor conditions in London just after the great fire.

This archæological work, avowedly a recreation, is but a small part of Mr. Weaver's activity. His interest in the art of the past is that of the student of evolution who desires primarily to interpret the present. In his discussions and critical appreciation of modern country houses‡ he emphasizes the importance of retaining the traditions of building which have gone before. In the smaller English cottages,§ built for occupancy by persons of moderate means, he finds a surprising persistence of tradition and an expression in building of the impulse which animates the folk art of nations. The problem of cottage building resolves itself into the question of what to omit without falling below the standard of efficiency. At the same time the beauty which these inexpensive buildings possess results from the skill of their designers rather than the money spent upon their construction.

The repair and enlargement of small country houses, one chapter of "Small Country Houses of Today," have been treated more at length in a second volume,¶ in which are described and criticized nearly forty cottages dating from

*_The First and Chief Grounds of Architecture,_ by John Shute, 1563. Fac-simile Edition limited to 1,000 copies.

†_The Complete Building Accounts of the City Churches (Parochial)_, Designed by Sir Christopher Wren. Archaeologia, Volume 66, pp. 1 to 60.

‡_Small Country Houses of Today,_ edited by Lawrence Weaver, London, 1910, Country Life Press. _The House and Its Equipment,_ by Lawrence Weaver.

§_Country Life Book of Cottages,_ by Lawrence Weaver, 1913.

¶_Small Country Houses, Their Repair and Enlargement,_ by Lawrence Weaver, 1915.

the fifteenth through the nineteenth century, all of which have been enlarged and made suitable for twentieth century usage. In this discussion are emphasized the desirability of retaining all work executed before good tradition broke down in Victorianism, the employment of native material and the importance of doing the minimum rather than the maximum amount of repair.

The splendid monograph on Mr. Lutyens' work* is one of the best known of the recent works on living architects. Rich in illustration, both photographic views and line drawings, this impressive volume has had a marked influence upon American country house architecture by reason of its popularity both in architectural offices and private libraries. It emphasizes Mr. Weaver's thesis that architecture "needs to be brought back into the current of normal, intelligent thought," since the "driving power for good building must come from an enlightened public opinion."

The subject of garden art comes largely into the Lutyens' monograph and is reechoed in the volume done in conjunction with Miss Jekyll.† The volume on English lead work‡ also devotes much space to garden sculpture and architectural embellishment. This volume gives opportunity for the expression of a personal interest and stands next to the monograph upon Mr. Lutyens' work in importance as a unique contribution to architectural literature. For practical architectural accessories, as well as decorative garden ornaments, his plea for the fitness of lead should help to revive its employment after its nineteenth century fall from popularity.

In 1915, when the world war was well under way, the timely volume on memorial art was published.§ The development of English memorial art is traced in a short introductory text, and the remainder of the book is given over to a consideration of the many personal memorials which form so striking and interesting a feature in English country churches and great cathedrals.

While the subjects covered by a list of Mr. Weaver's books seem diversified, it is evident that a pervading and intense love and knowledge of architecture embraces them all. Where the special subjects of complementary work are taken up, the essential relation between the mistress and the handmaid is never lost. The many charming and beautiful decorative details scattered throughout England deserve to be recorded and described quite aside from the inspiration which such publication holds for those on this side of the sea who cannot visit them. The work of the leaders of modern English building will fail to have its full influence upon contemporary architecture unless it is spread before all who are interested in learning of it. And this double work it is which Mr. Weaver has undertaken, thoroughly equipped for the task and filled with an enthusiasm for all that is beautiful in English building, which is both convincing and contagious.

*_Houses and Gardens_ by E. L. Lutyens, by Lawrence Weaver, London.

†_Gardens for Small Country Houses,_ by Gertrude Jekyll and Lawrence Weaver.

‡_English Lead Work, Its Art and History._ by Lawrence Weaver, London, 1909. Some English Architectural Lead Work, by Lawrence Weaver. 7, 8, 9, 10 and 12.

§_Memorials and Monuments,_ by Lawrence Weaver, Scribner's, 1915.

The AMERICAN CHICLE COMPANY'S FACTORY LONG ISLAND CITY, N.Y

Ballinger & Perrot, Architects

IS architectural design of any practical value in factory buildings? The traditional answer of the majority of manufacturers may be read in the wonderful ugliness of industrial districts. On this question, however, as on many another, recent experience has brought about a reversal of opinion. During and since the war manufacturers have been obliged to give serious study to the causes of labor turnover, and it has been discovered that the building is a separate and distinct problem of design in an industrial plant.

The function of the building is not merely to house machinery and industrial processes, but also to enable the operating force to carry on its work with the least possible physical discomfort and mental hazard. The architect is a specialist in building design, and in the majority of the newer industrial plants the practical value of his specialty has been recognized.

This assertion is made on the strength of figures supplied by the Statistical Department of the F. W. Dodge Company for the great manufacturing area north of the Ohio and west of the Missouri, which show that of 5,447 industrial plants begun in the first ten months of the current year, 2,786 were designed in collaboration with architects. Incidentally these figures give some idea of the tremendous industrial expansion which has been taking place. The 5,447 plants contain a floor space of 119,353,500 square feet.

Most of the newer factories are of reinforced concrete. Partly for this reason, and partly because the architect's collaboration on industrial plants in considerable numbers is so recent a development, factory design, from the point of view of art, is as tentative as office building design was, say, twenty years ago. However, it will undoubtedly make rapid progress, helped by the notable advance in artistic treatment of concrete surfaces achieved in the last few years.

The American Chicle Company's Building, in Long Island City, may perhaps be instanced as typical of the stage of progress reached in factory design in concrete. It is effective in mass and line, and an air of dignity has been imparted to a structure of impressive size. On the other hand, the decorative details, particularly the color insets, are inferior in merit; and in any event do not exemplify the special decorative possibilities inherent in concrete.

The building covers a city square, and is 200 feet wide by 600 feet long, with an interior court 40 feet by 380. The front elevation is five stories high, the remaining elevations being four stories high. The fifth story is provided solely for the accommodation of the employees. It contains separate dining rooms for men and women, a kitchen and rest rooms. On the main roof, at each side of the building, is a wire enclosure for recreation. There is also a dispensary, with waiting rooms, an operating room, nurses' quarters and rest rooms.

The structure, together with the equipment, was designed by Ballinger & Perrot, architects and engineers. The exterior walls, including the spandrels, are of reinforced concrete. Flat slab construction was employed in the floors. Bays were arranged with a view to economy of construction, in units 20 feet by 20. About thirteen acres of floor space is available. No expansion joints were employed in the structure.

The courtyard, which floods the interior of the building with light, carries

AMERICAN CHICLE COMPANY'S FACTORY, LONG ISLAND CITY, N. Y. BALLINGER & PERROT (NOW THE BALLINGER COMPANY), ARCHITECTS AND ENGINEERS.

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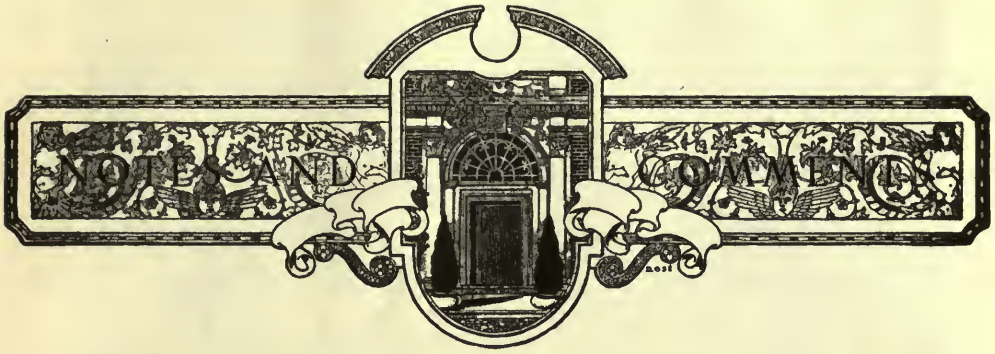
two tracks entering through the rear of the first story. All freight is loaded and unloaded in the courtyard, relieving the neighborhood of the unsightly litter of freight platforms. About sixteen cars can be handled at one time. Incoming raw materials are taken to the top story by elevators or automatic conveyers. The raw chicle is stored on the roof, where it can be sprayed at regular intervals to keep it moist. The routing of the processes and the movement of the materials enable automatic gravity conveyors to perform a large share of the work usually done by hand or by elevators.

The air inside the plant is purified by washing and is held at constant temperature and humidity throughout the year.

The coal bunker above the boiler room has gates spaced at regular intervals along the bottom of the bunker. Underneath the bunker a coal weigh-larry travels the length of the boiler room, feeding all the boilers. The weigh-larry is equipped with automatic scales, which weigh the coal furnished to each boiler and deliver a ticket to the operator, so that record can be kept of the cost of the coal consumed by each boiler.

The tower shelters the huge tanks needed by the plant. An automatic sprinkler system is supplied from a 50,000 gallon gravity tank enclosed in the tower. There is a fire pump having a capacity of 1,000 gallons a minute in the power house, taking connection from the street water main. The fire protection scheme is completed by a system of standpipes and fire hose in stair towers at the corners of the building.

It is a measure of the skill of the designers that the water tower, the fire-stair towers, the smokestack and the freight platforms have been so disposed and treated as to improve the appearance of the building, the water tower becoming the central and most interesting feature of the design.



A Motion Picture Theatre in a Unique Setting

The environment of the Winema Theatre is probably as nearly unique as any setting that is likely to appear upon its own motion picture screen. It is in a lumber town in a primeval mountain forest of redwoods, in Humboldt County, Cal. The town of Scotia, with its lumber mills, stores, dwellings, schools, churches and other buildings, is owned by the Pacific Lumber Company, and the theatre has been built by the company for its employes, the name "Winema" being derived from a local Indian legend.

The theatre, dedicated in November, was arranged for by the late Chauncey W. Penoyer, president of the company. It is operated by a joint committee from three organizations of employees—the Scotia Hospital Association, the Scotia Club and the Scotia Volunteeer Fire Department. After paying the company a small interest on the investment and depreciation charges, the committee divides the net profits among the three associations. The theatre was designed by Alfred Henry Jacobs, architect, of San Francisco.

It is built entirely of redwood, even the foundations being of this material. The structure is 130 feet long by 58 feet wide, and seats 600. It is entered through a vestibule which leads to a foyer giving access to the auditorium. Off the foyer are retiring rooms for men and women. The auditorium averages 40 feet in height. The proscenium arch opening is 22 by 32 feet. The auditorium is lighted by fixtures constructed of wood and cloth and suspended from the roof trusses. Wooden brackets illuminate the side walls.

A note of interest is added to the interior by the coupling of the main roof trusses. These, designed on the hammer beam pattern, are similar to those used in early English Gothic churches. The trusses rest on coupled columns, or rather posts, each 10 by 10 inches and approximately 25 feet long. Redwood studding is used in the construction of the interior walls between trusses, and the studs are bridged in a decorative manner. Sheathing forms the upper wall surfaces.

A wainscot below, of board and batten, serves to conceal the indirect radiation and at the same time gives a practicable wall against which to place seats.

The projection room is raised above the floor of the auditorium so that the center of the projecting cone is normal to the center of the picture screen. The "throw" is 90 feet.

The floor of the auditorium is a true bowl. There are two side aisles, a center bank of seats, and the eight exits make it possible to empty the house in a very short time.

The building is heated by a system of direct-indirect radiation. The air enters from the outside near the ground and passes over concealed radiators behind the wainscot, discharging by gravity into the auditorium, and thence rising and escaping by means of ventilators placed in dormers on the roof.

The entrance vestibule is supported by eight redwood trunks approximately two feet in diameter and with the bark intact. The long 10 by 10-inch posts supporting the roof trusses are recalled on the exterior, where the wall treatment is a combination of board and batten, with lap siding, all rough from the saw. Artificial color is wholly absent, both in the interior and on the exterior—the redwood having been given an oiled natural finish.

A. L. BLACK.

WINEMA THEATRE, SCOTIA, HUMBOLDT COUNTY, CAL.
Alfred Henry Jacobs, Architect

SIDE VIEW—WINEMA THEATRE, SCOTIA, HUMBOLDT COUNTY, CAL.
Alfred Henry Jacobs, Architect.

AUDITORIUM—WINEMA THEATRE, SCOTIA, HUMBOLDT COUNTY, CAL.
Alfred Henry Jacobs, Architect.

FOYER—WINEMA THEATRE, SCOTIA, HUMBOLDT COUNTY, CAL.
Alfred Henry Jacobs, Architect.

DETAIL OF AUDITORIUM—WINEMA THEATRE, SCOTIA, HUMBOLDT COUNTY, CAL. ALFRED HENRY JACOBS, ARCHITECT.