THE AMERICAN ARCHITECT

VOL. CXIII WEDNESDAY, APRIL 3, 1918 NUMBER 2206

The Relation of the House to the Landscape

By HOWARD DWIGHT SMITH

Illustrated by examples of the work of John Russell Pope, Architect.

THAT characteristic in art and architecture usually alluded to as "atmosphere" is a somewhat intangible one. It is not susceptible of absolute analysis, yet it is possible to designate and describe salient features and details tending to create the so-called atmosphere which is carried with successful and distinctive creations. An artist may take a piece of canvas a few inches square, worth but a few pennies, and a quantity of pigments, oil and varnish of insignificant value. He produces a picture such as has recently changed hands for a money consideration of nearly half a million dollars. A man may take a piece of canvas and an amount of pigments, gilt or other media, and ruin all the materials besides losing the time expended in his efforts.

In the instance of the production of a great painting there is worked in with the layers of color and pigment that radium-like element which emanates atmosphere and breathes the personality of the artist. This is a self-perpetuating quality which apparently increases in volume and richness as the production ages. The patina acquired with age may have something to do with charm and value. It doubtless has, but the mellowing effects of time cannot always overcome inherent plainness.

In architecture the difference in money value of the media of expression over those used in painting makes the matter of study and experiment an important one. In the case of the painting the creation of a charming atmosphere enhances materials of insignificant original value. The spoiling of one painting represents but slight material loss. This of course cannot be said of architecture. In painting the materials of expression are pigments; in architecture they are wood and stone, and bricks and mortar, and slate and metals. So it is that proper and successful design takes into consideration everything which tends to increase charm and value, both from esthetic and practical points of view.

Setting and orientation, choice of materials, proportion of architectural masses and detail, character of detail and method of execution, choice of color, etc., all have their effect on the resultant entity. It is proposed to discuss here somewhat briefly the matter of setting and of the relation between the house and its immediately adjacent landscape. This discussion is prompted by interest in two sets of photographs reproduced in this issue of THE AMERICAN ARCHITECT, which show some recent work of John Russell Pope, and which adequately illustrate the points which might be brought out.

Too much importance cannot be placed upon the value of setting in architecture. Color defects, texture of materials and even minor faults in design of mass may be overcome by one method or another, but once a building is definitely located it can not be picked up bodily and shifted to a more advantageous position. It is true that a landscape can be completely transformed to suit the designer's tastes and ideas, and conditions favorable to existing architecture created thereby. But efficient designing consists first in taking advantage of every natural condition to help produce a successful result.

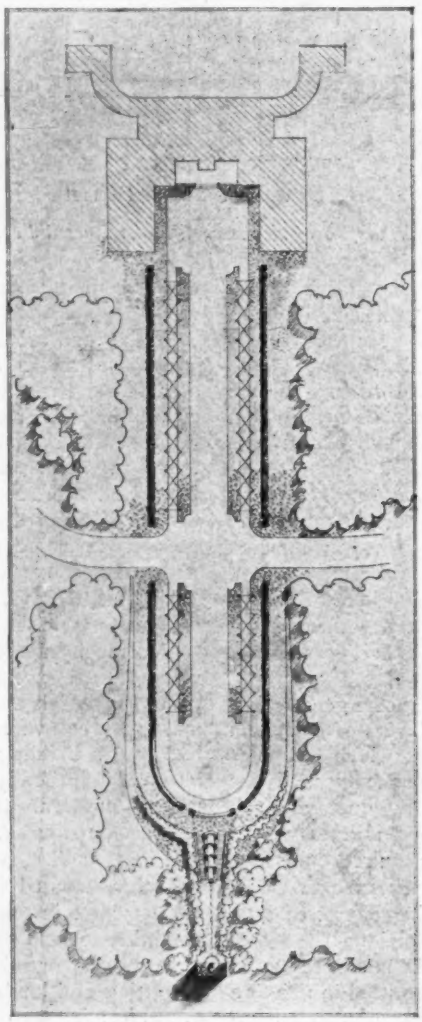
In country or suburban residence work the study of setting and landscape should be for the purpose of performing two functions. Landscape development adjacent to the house should enhance and support the architecture, that is to say, for the effect of the picture from without. It should be so designed and executed as to form vistas and pictures when viewed from within. Outlying features of landscape should perform the function of giving vistas and pictures from the house or from the grounds immediately adjacent to it.

It must be appreciated that, after all, the architect's function is not primarily to create archi-

tecture to be admired for its beauty alone or to be used as a basis for heaping compliments on his ability as an artist or designer. It is primarily to create a pleasant and convenient background for a home. This background can be as well formed by the judicious use of the elements of landscape design, lawns and paths, trees and shrubs and flowers as by tinted walls, studied hangings and choice furniture.

There is a certain idea of permanence given by the presence of well-ordered planting about buildings. A group of trees well located about a building will add a value which is hard to express in terms of money. In the case of large trees or groups of trees, a feeling of permanence and protection is given. In the case of shrubbery or formal planting an air of being cared for is given. One of the things which lends "atmosphere" and charm and character to a well-polished old piece of 18th century furniture is the fact that its high state of polish is abundant evidence of its having been cared for and loved.

A study of precedent shows the value placed upon setting and landscape by Italian, French and English designers. Villas, châteaux and manor houses have had their attendant gardens and parks. One is impressed with the Italian's genius for taking advantage of natural conditions of topography in his extensive schemes, and at the same time by the inadequacy of expression on paper of the real beauties of the executed work. We recall such intensely interesting places as the Villa D'Este at Tivoli, Villa Farnese at Caprarola and the Villa Lante at Bagnaia, and how utterly lacking in appeal the printed ground plans of these places have been for us. It is hard, for instance, to indicate in plan the artistic value of the four huge trees which shade the terrace immediately adjoining the twin pavilions at Bagnaia. One cannot help feeling that most of the design and forethought and mental energy of the Italian garden designers was expended on the site and not *en loge*. There is a certainty that natural conditions, slopes, levels, water power, etc., are utilized to the greatest advantage, by which the best effects can be obtained with the least expenditure of labor and money. It is this last feature which is of great importance in our work today, for we must realize that our labor facilities are not as unlimited as in times when villas were being developed in the Renaissance periods. The inspiration given by the great conceptions of former centuries must be tempered by the limitations of 20th century commercialism.



APPROACH TO THE HOUSE
ESTATE OF MIDDLETON S. BURRILL, JERICHO, L. I., N. Y.

In the past two decades the development of estates on Long Island has given us examples of work which in many ways are similar to the Italian villas, the French châteaux and the English estates. The popularity of that section of the island within easy reach of New York City and still far enough away to be sufficiently exclusive began with the taking over by one or two families of social note of sufficient tracts of land to give hunting facilities such as have been enjoyed by the owners of French and English estates. To this we may attribute the gradual colonization such as that in the Jericho section. The attraction of that class of people whose tastes are excellent, whose requirements are more or less aristocratic, and whose means are commensurate with both taste and requirements, has given to our artists and architects some very happy opportunities. They have proven themselves fortunately equal to these opportunities.

With the exception of some portions of the northern part of middle Long Island it cannot be said of it that the natural beauty of the countryside is unusually interesting. There is little water and

MAPLE ALLEY AND MAIN ENTRANCE

ESTATE OF MIDDLETON S. BURRILL, JERICHO, L. I.

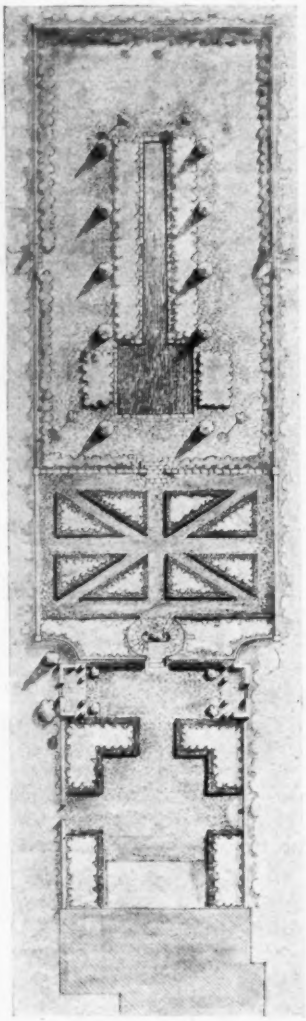
JOHN RUSSELL POPE, *ARCHITECT*

few hills, and of late years the woodlands have been lamentably depleted by clearings and by blights of various sorts.

The seventy-acre estate of Mrs. Arthur Scott Burden at Jericho consists of about equal proportions of meadow and woodland. As the idea of privacy was a prime consideration in the development of the property, the usual custom of placing the residence in a cleared portion was not followed. It so happens that the highest point of the property is just inside of the edge of the woodland section, which made the selection of the general location fairly definite. In recounting these facts we are not so much interested in the mere statement of them as facts, but we feel that if the problems met and solved are somewhat carefully defined and discusssed benefit may accrue in the meeting and solving of similar ones.

We recount here the problems of setting and orientation because the same problems are presented in nearly every case of country house work in one form or another. It is by meeting these problems squarely and by solving them properly that we go a long way toward creating a distinctive atmosphere about a place. The problem of setting is that of getting the building, in its main portion or mass, so located as to make it appear comfortably placed and in proper juxtaposition to natural phenomena. Its axes should also be placed so that they tie in or become a part of the surrounding natural features.

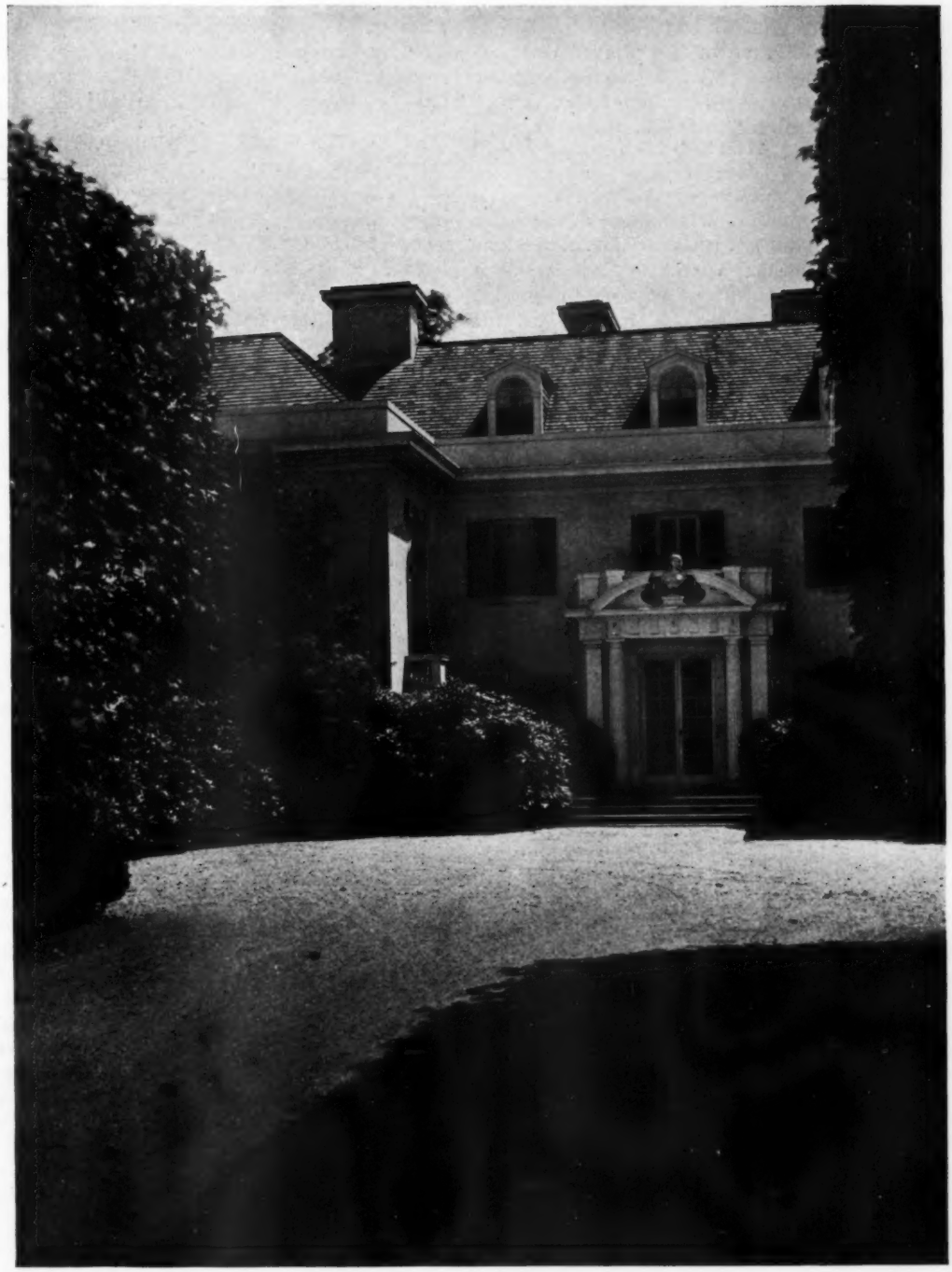
In the case of the Burden residence this was accomplished first by placing the long axis of the house on a line parallel with the edge of the woodland, making it possible to clear for a lawn in front with a screen of equal density through which desired vistas could be cut. Then the location of the house with reference to existing trees, apparently symmetrically disposed about its façade, gives a feeling of age and permanence which cannot be obtained in any other way. The theory upon which this feature is based is quite apparent. For instance, if a building is so placed with relation to two trees of similar size that they are symmetrically disposed about the main axis, say, there is always an attendant feeling that the trees have grown up in that relation to the architecture and the natural inference, either conscious or unconscious, that the building has been connected with the landscape for a long period of time. On the Burden estate the location of the house was also such that the space to be occupied by the gardens here illustrated would include an extensive section of the woodland which must necessarily have been cleared of trees which were either dead or in poor condition.



THE GARDEN
ESTATE OF ARTHUR SCOTT BURDEN, ESQ., JERICHO

The illustration of the entrance front of the Burden residence shows an interesting type of Georgian architecture, which has been influenced by the work of Robert and James Adam. The square forecourt, reached by the winding road through the woods is typically English. It is interesting to note in this connection, however, that there is a somewhat different idea as to scale in our work from that of the English prototypes. The dimensions of the forecourt are determined by the space in which a large automobile can be turned comfortably, a restriction with which the 18th century was not confronted.

On the lawn front of the house face all of the important rooms of the living portion. Intimacy between house and lawn is fostered by the closeness of the floor level to the grass and by the spaciousness of the windows. This extensive lawn gives freedom, openness and repose to the setting. The series of gardens is kept apart from the lawn and is located to the west of the residence. It is common practice in the development of these Long Island estates to save the garden work and prolong the actual execution of the work connected therewith over a period of years. This practice has been followed in the Burden estate, and even at the present time it is not considered that the work begun has been carried to the state of completion deemed possible in the original conception. This practice has its good



MAIN ENTRANCE TO MANOR HOUSE

ESTATE OF MIDDLETON S. BURRILL, JERICHO, L. I.

JOHN RUSSELL POPE, *ARCHITECT*

points. It gives additional opportunity for the study of details of the work with reference to the finished building and it also provides continued diversion and interest to the owner after the house is occupied.

The Burden gardens are on three levels, each of which is treated in a separate and distinct manner. The upper garden, that which is on the same level as the living floor, is very closely connected with the house. It is enclosed by walls of the same material as the house and is flanked at the outer corners by little garden loggias executed in the same character as the house. The living porch, which is of very light iron construction, sets into this garden and the flower beds enclose it at both ends. This garden consists of four angular beds edged with low box, in which are planted seasonal flowers, changed every few weeks as the season progresses. The space involved is small enough to permit of this constant changing without excessive work and claims the personal attention of *madame*.

The middle and lower level gardens are also entirely enclosed by walls, but of stone instead of brick and marble, as is the case in upper garden. Here the designer has striven to effect atmosphere by simulating the effect of age upon the materials used and by avoiding all attempt at formality and exactness. The middle level is laid out in a permanent rose garden. The feature of this garden is the double curved stair, with its simple delicate iron balustrade, which extends along the top of the retaining wall above. The careful selection of worn materials and the informality of the execution make it look a part of an old estate rather than the creation of the past few years.

The difference in level between the middle and lower gardens is not so great as to require a protecting balustrade. Access from one to the other is by a simple flight of worn flagstone steps. The lower garden is the most extensive in area and contains a very interesting feature in the form of a long, narrow pool with an enlarged square at the near end. The level and location of this pool is such as to allow it to be seen from the living porch on the upper level and to take its proper place in the vista from the house. The prototype of this pool is found among the old English casting pools, where from platforms conveniently built at the narrow end pleasure and practice at fly casting is indulged in. Pools of this sort are still found, but they are seldom used as were the originals. Instead, we find them filled with water plants and used solely for their decorative and sentimental value. Iris and other water growths border the Burden pool, and the absence of paths on the well-kept grass stretches adds to the simplicity of treatment. The newly planted slow-growing vines along the walls are trying their best to soften the necessarily strong lines of the enclosing walls. Egress to other parts of the estate is permitted through the two laterally located archways, which lead by informal paths to the tennis courts, children's playhouse, meadows, kennels, stables and coaching quarters.

The set of illustrations from the property of Middleton S. Burrill, Esq., shows only one portion of his large estate at Jericho. The estate itself enjoys the distinction of being the largest single-owned tract in the entire center section of Long Island. It has a frontage on the Jericho turnpike of nearly one mile, and extends northward with an almost equal front on the Glen Cove Highway, totaling an area of approximately a thousand acres.

The development of this estate is a very good example and amplification of the practice of gradually approaching in execution a fairly well defined original scheme. Each year some definite portion is developed or improved, not with any idea of ostentation, but with the idea of beautifying a gentleman's estate in a simple but dignified way. The house itself was built by Mr. Pope some twelve years ago. At that time the general scheme of location, setting and orientation, and the layout of roadways which wind through the fields and a portion of the woodlands, was determined. The house was located on one of the high portions of the property about midway between the two bordering highways in such a way as to command a view across meadows to the south and the adjoining landscape of the Hempstead Plains nearly to the Atlantic.

At the time the house was built the small area contained within the two projecting pavilions on the south was laid out in a pattern of gravel paths with closely cut low box borders, somewhat after the French fashion. At that time also the alley of trees to the north was laid out. This feature marks the entrance of the house and forms a most interesting feature contiguous to the house itself. The double row of specially cut and trained maples flanks the drive and shades the two paths which adjoin it. The idea of cut and shaped tree alleys is essentially French in origin, although we find numerous examples in later English landscape work. The English, however, have not used trees in tunnel fashion to cover paths nearly to the extent that the French have.

The lines of perspective given by the maple alley lead to the main entrance door as a focal point in the picture when viewed from the road as it turns in from the woodland, and from the steps and fountain basins of the "vista." The "vista" from the front entrance has long been planned, but has only recently been built. The function of this "vista" is to give a point of interest from the main entrance door, on a scale commensurate with the extent of

DETAIL AT ENTRANCE

ESTATE OF MIDDLETON S. BURRILL, JERICHO, L. I.

JOHN RUSSELL POPE, *ARCHITECT*

the estate itself. That portion of the woodland directly north of the manor house and at the end of the maple alley is the highest point of the property. The suggestion of access to this upper level portion is given by the double flight of steps. The center of interest, however, is the cedar niche at the end of the second alley on the upper level. This picture will be completed when an heroic statue is placed in the cedar niche prepared for it.

The steps and water basins at the entrance to the vista are executed in hard stucco and cement with a finish and texture studied to give the same effect as the old Italian water features. The details are of the somewhat coarse type of the Italian, bordering on the Rococo. The water basins are filled with slow-growing water plants, and the designer has taken ample advantage of the harmonizing and covering effect of rambler roses and honeysuckle to take up the discrepancies of slopes and levels at the sides of the steps and vista.

During the years through which the development of this estate has been going on there have been numerous small but interesting details worked out at various points of the property. The Jericho Turnpike entrance has been amplified, and a long, winding, informal pathway has been worked out whereby one may go through fields, meadows, gardens and woodlands from one side of the estate to the other without touching foot to any of the roads or drives.

Nature herself is an ever-ready helper to the designer in his work with landscape problems, and will add charm and interest and even the much desired characteristic generally alluded to as "atmosphere" if only given the proper opportunity and a well thought out scheme to work to.

FOUNTAIN, NAPLES, ITALY

Digest of Commercial and Financial News

Affecting the Practice of Architecture

Factors That Cause High Prices

THE Guaranty Trust Company of New York, in one of its weekly bulletins, discusses the factors that cause high prices. These things are set forth so logically as to impart a very clear idea of the matters that control present conditions. We read:

One of the most valuable results of this war promises to be a more general and better understanding of the fundamentals of economics and finance. The confusion, for instance, which seems to exist in many quarters as to the causes underlying the precipitate rise in commodity prices, and particularly that which erroneously attributes the present price level solely to the expansion of banking credit, will probably be dispelled. In the great laboratory which the world-wide war is affording for the testing of practically all such theories it will be established conclusively that there are *many* factors which contribute to the advance of prices, not the least of which is the well-known law of supply and demand.

Price movements, in fact, sum up in themselves the results of the bewildering and immensely complex interplay of all economic factors. The attempt to analyze the causes of price movements involves a study of all the various complex phenomena of our economic life. Since price changes result from many and diverse economic factors, it has come to be felt by many that any attempt to explain such changes solely from the standpoint of the increase or decrease in the circulating medium leaves out of consideration many other important factors. In the case of the increase of general prices during the present war, the most important of these factors are greatly increased demands, the disruption of distributing processes, a shortage of labor and the decrease in production of various products.

The increase in wholesale prices of 81 per cent and the increase in retail prices of 57 per cent for January, 1918, as compared with July, 1914, creates a serious problem in our economic life. In making readjustment to the new level of prices, various classes of people have been differently affected. During a period of falling prices, the debtor class and business men feel the burden of the change while the creditor and those with fixed incomes are benefited. During a period of increasing prices, the creditor and the fixed income class feel the burden, while the debtor class and business men are benefited.

From a history of world prices it would appear that our economic life is one of constant change and that the problem of a changing price level has ever been with us. The measure of this changing price level consists of index numbers which for many purposes may be considered as an imperfect test of change of price levels. Various systems of index numbers differ among themselves in measuring the changes in the price level. The following table shows the periods of world-wide changing price levels:

1789-1809	general	prices	increased	approximately	85%
1809-1849	"	"	decreased	"	60%
1849-1873	"	"	increased	"	34%
1873-1896	"	"	decreased	"	40%
1896-1914	"	"	increased	"	47%

A nation at war is an insistent buyer of commodities. At the outbreak of the European War, several such buyers entered our market. Their insistent buying power led to an intensification of the market demand. Industrial plants in laying plans for expansion to take care of war contracts went into the market bidding for capital in the form of building machinery, raw materials and also labor. In order to get this additional supply and to shift it from other lines of production, it was necessary to pay higher prices. Other industries, not working on war contracts, found that it was more difficult to retain their skilled labor and to get raw materials at usual prices, and as a result they were compelled to offer higher prices or reduce their output.

The outbreak of the war disrupted the normal distributive system, so that the supply of important commodities in the countries at war was restricted. The demands upon available shipping for troop movements combined with war losses further disrupted the machinery of distribution. A short-sighted failure to provide railroad transportation adequate to meet the increasing commercial and industrial needs of the country resulted in restricted

supplies and increased costs. This has greatly curtailed the shifting of many commodities from points of production to places of most insistent demand. As an example, the surplus of wheat at the end of the present season in Australia is estimated to be about 180,000,000 bushels. If shipping were available, the transfer of this supply to centers of demand would lower prices.

There has also been a decrease in the production of certain important commodities, particularly agricultural. For instance, thirty-cent cotton in part is due to decreased production, as indicated by the following figures for the United States:

1911	16,100,000	bales
1912	14,100,000	"
1913	14,600,000	"
1914	16,900,000	"
1915	12,000,000	"
1916	12,500,000	"
1917	12,300,000	"

Under normal conditions, two or three short-crop years in succession lead to a higher level of prices. It is a well accepted principle of economics that a decrease of 10 per cent or 20 per cent in the supply of a product is likely to lead to a much greater increase in price.

As a further illustration, it may be mentioned that the high wheat prices of the past year were caused by a short crop in the United States, which followed a practical failure of the Argentine wheat crop. The losses through the sinking of ships and inability to move the surplus crop of Australia further intensified the effect of the short crops in those two countries. It is questionable whether the price of wheat, due to limitations of supply, would have been forced to much higher levels if the allied Governments had not established a certain level of prices.

These four economic factors—intensification of demand, disruption in distribution, shortage of supplies of certain commodities and shortage of labor certainly must be considered as forces generating an increase in prices. This view has the support of Professor Nicholson, a staunch exponent of the quantity theory of money when he states, "It often happens that a rise of prices begins with a rise in demand for important commodities, the rise being accelerated by speculation. Such a rise, however, cannot be maintained or advanced beyond certain limits unless there is an increase in the currency required for cash payments."

In this country, the rise of prices was made possible by the fact that the demand was backed up by purchasing power. Other countries have sent us a net addition of over $1,000,000,000 gold which has been added to our monetary supply.

The increase in the price level, occasioned by the causes enumerated above, has necessitated more money to do the same volume of business, as judged by the amount of commodities. As an example of this, increased wages and increased value of inventories have made it necessary for business men to increase their working capital. In addition, we find that the volume of business has increased. During the period of the present war, according to the estimate of Professor Anderson, the volume of business has increased 30 per cent as measured by units of commodities. Railroads have carried increased quantity of merchandise. Pig iron production, a usual barometer of the volume of business, has increased from 30,722,000 tons in 1913 to 39.043,000 in 1916 and 38,195,000 in 1917.

And we should not overlook the fact that the increase in price has aided in the stimulation of American industry and augmented the total amount of production. In fact, under the conditions obtaining during the first three years of the war, the necessary expansion in industry could be secured only by a rise of prices and a concomitant increase in the volume of money.

THE AMERICAN ARCHITECT

Founded 1876

PUBLISHED EVERY WEDNESDAY BY

THE ARCHITECTURAL AND BUILDING PRESS, INC.

No. 243 West Thirty-ninth Street, New York

E. J. ROSENCRANS, PRESIDENT AND TREASURER
WILLARD C. HOWE, VICE-PRESIDENT

JAMES KNOX TAYLOR—WILLIAM H. CROCKER
Editors
ARTHUR T. NORTH, Engineering Editor

Subscriptions in the United States and Possessions, Mexico and Cuba, TEN DOLLARS. Other Countries, TWELVE DOLLARS
SINGLE COPIES (Regular Issue) 25 CENTS

CHICAGO OFFICE, Mallers Building
Page A. Robinson, Western Manager
ST. LOUIS OFFICE, Wright Building
CLEVELAND OFFICE, Guardian Building
SAN FRANCISCO OFFICE, 320 Market Street

Owned by United Publishers Corporation—H. M. Swetland, President; Charles G. Phillips, Vice-President; W. H. Taylor, Treasurer; A. C. Pearson, Secretary. Entered as second-class matter January 6, 1909, at the Post Office at New York, New York, under the Act of March 3, 1879.

VOL. CXIII APRIL 3, 1918 No. 2206

Selection in Education

OF all the students annually graduated from our schools of architecture, how many are there whom their instructors could honestly and conscientiously recommend as fitted by temperament and inclination to carry on the practice of the arduous and exacting profession of architecture? It is feared from past evidence that the percentage would be rather small than large. By "fitted" is meant that they would be better qualified for, and more efficient and successful in, that branch of industry than in some other.

The Government, in the formation of its new army, has recognized the necessity of taking this into account and has adopted the selective draft system, with a still further application of the system, it is understood, in the way of psychological study and examination of those who are to control that army in the capacity of officers.

Is there not at least a germ of thought in that idea? If selection is required in the production of the best fighting force, and a study of temperament necessary for the creation of the best officers in an organization that to a greater or less degree is temporary, how much more important must it be that an equal care be used in the selection of those who will form a permanent force; into whose hands is to be committed the control of the housing conditions of their fellow-men. Is it not the duty of everyone to do his utmost to see that only those who are fully equipped both by natural tendencies and training are intrusted with that great work?

That this is already being considered is evidenced by recent discussions on those lines in the Royal Institute of British Architects and by an article by a New York banker, published some weeks ago in the New York *Times*, advocating the incorporation into our educational systems of some method of ascertaining the natural trend of the student's ability prior to the time that a choice of life work becomes necessary.

What are the reasons that lead to the selection of architecture rather than some other calling? If they could be gathered and tabulated, the wonder would grow that this country possesses as competent a body of men in that profession as it does. In direct contact with the students of one of our foremost schools of architecture, the writer endeavored for two years to secure data on which to base an answer to the question, but with a minimum of success. The information which was obtained confirmed the opinion previously held, that in many instances the selection was not so much a choice as it was an accident. Very few of those with whom there was any discussion, even after they had progressed partly through their courses of study, had any but the dimmest ideas on the subject.

Parental and family influences were among the leading reasons. We all hear the remark: "Johnny was always so fond of drawing, so we are going to make an architect of him," regardless of the fact that there are comparatively few youngsters who do not love to exercise their imaginations with pencil and paper. Other reasons are the hope of easy gain, because the belief is general among the misinformed that an architect receives big fees for very little service. Again, it seems to be a clean, gentlemanly profession, easy to acquire and practice, and so on *ad infinitum*. Every reason under the sun, apparently, except what should be the real one.

Nor is it at all strange that this should be so. No child during his school days gives any real thought to what his responsibility will be in after years; those years seem so far in the future. The majority of students look forward to completing their early courses of study and then, if the family circumstances are such as to permit, they will go to college and then will be time enough to consider the subject of a profession. The fault, however, does not lie altogether with the student, for there are comparatively few parents who do not follow a similar line of reasoning. How many of us cannot, if we think back, remember our boyish ambitions—which were often very changeable, depending largely upon our reading—running toward being a sailor, an explorer, a cowboy, and on down to a park policeman. Of course, we outgrow these

fancies, but it is questionable whether or not the methods of choosing a lifework are much less haphazard.

This is all the more remarkable in the light of these days of efficiency and the conservation of energy. It would certainly seem that some more scientific means might be found that would give some basis, at least, for making a selection that would be more sure of success. If such means could be found we would have less square pegs in round holes, and *vice versa*.

We already have psychological physicians who study the temperament and tendencies of older persons. Why should not the same idea be introduced into our educational systems for the young? Not so much for the students themselves as for their teachers and parents. Such a study started in the intermediate grades, by which time most students have reached a stage of development that gives some indication of their natural tendencies, would give, by the time the higher grades were reached, a fair idea of each student's bent of mind, and the direction of his natural abilities. When this point is determined, suggestion and influence could be applied until the student would be guided into thoughtful consideration of the entire subject.

There would be an added advantage in such a course, in that it would allow a more individual education on lines that should be helpful in the student's future, and eliminate much of the stock or general work. Ready-to-wear education, like ready-to-wear clothing, serves its purpose to a degree, no doubt, but neither will be perfectly satisfactory. In after life much that is taught has to be so modified as to almost require relearning, and it is much easier to teach an old dog new tricks than to break him of those previously learned.

At first thought these ideas may seem Utopian and perhaps impossible of accomplishment. In their present crude form this may be true, but it is firmly believed that careful consideration will lead to the conclusion that there is in them a suggestion that will lead to the betterment of the profession.

Rehabilitate the Old Building

IN normal times the issuance of building permits is an accurate indication of the state of the building industry. The marked decrease in these permits during February, 1918, as compared with the corresponding month of last year, can be accounted for as a result of the unusual conditions which obtain to-day.

The figures unquestionably indicate that there is a great falling off in private building enterprises. The Government, however, is not required to conform to municipal regulations or procure permits to carry on building operations. At this time governmental building operations are located largely in communities and outlying districts, where permits are not required even for private work. But if the value of this unusual building activity on the part of the Government were added to the amount of the permits issued, the total would exceed the amount of last year's February building by more than 100 per cent.

Unfortunately this class of building is of such a character that but few crafts are employed, and being erected according to standard designs but few architects and engineers are required in producing the plans. There is, then, a slowing up in the production and use of certain materials and the employment of some craftsmen is restricted. To correct this condition is a problem that now confronts us.

Mr. Harry Gordon Selfridge, the American merchant who has built up a great department store in London, has stated several times that his business and profits have increased steadily since the outbreak of the war in 1914. The wage-workers are of equal or greater numbers, and of a different kind in respect to the large increase in women's employment. Wages have increased with the cost of living and the wages are being freely expended. The character of the goods sold has changed to a great extent, but the volume of trade and the profits increase.

It is reasonable to expect that the same conditions will obtain in America to some extent. As retail and wholesale merchandising expands more room will be required to carry on the business. As people benefit by increased wages they will seek better houses or apartments in which to live.

The erection of new buildings for private use must be limited by reason of increased cost of the commodity materials, such as brick, steel and lumber, and the scarcity of these materials because of their diversion to governmental uses.

In order to care for the expansion of business and the demand for better houses, it will be necessary to turn to existing buildings. Many of these are substantially built and of real value, but lack modern equipment and finish. To alter them to conform to present-day requirements will employ craftsmen now unemployed. Material producers now suffering for lack of business can again become busy.

Contractors who have specialized in alteration work have always found it to be a profitable business. For such work architects and engineers are usually paid increased commissions. New work will be limited in volume and, therefore, concentrated attention should be given at this time to the rehabilitation of existing buildings.

Criticism and Comment

The Editors, THE AMERICAN ARCHITECT:

THE writer is very much pleased with the two articles on "Daylighting the Factory," appearing in your February 20 and March 13 numbers. With the assistance of the United States Public Health Service, the Industrial Commission has made both natural and artificial lighting surveys in a considerable number of factories in this state with the end in view of designing an Industrial Lighting Code, which will set forth minimum requirements as to the natural and artificial lighting of factories, mills, and other work places. The formulation of this Code is well under way, but the writer has felt for some time that more intimate knowledge of natural and artificial lighting requirements and how to attain them is essential on the part of those responsible for designing most installations, namely, the architects, electrical contractors, etc. Even the illuminating engineers, as a class, have not given the question of natural lighting the consideration that it merits.

I think, therefore, that your series of articles is timely in arousing interest in the subject, and I hope you will see fit to extend the scope of the articles to treating, more in detail, the various methods of illuminating factories. In the case of natural lighting, for instance, it would be well to discuss the relative merits of side window lighting, flat overhead skylights, monitor skylights, and saw-tooth skylights and give recommendations as to which to use under different circumstances and instructions in design.

In the second article, appearing in the March 13 number, I was disappointed to note that the question of light ceilings and walls for improving natural light distribution was not discussed. Light finish is of very great importance with saw-tooth and monitor skylight construction and of almost equal importance in side window lighting.

Inasmuch as you discussed the value of facing exterior building walls, particularly court walls, with light colored brick or terra cotta, in your previous article, it seems rather inconsistent to disregard totally the question of light interiors. It would be my suggestion, therefore, that if you have not already planned to do so, you discuss the question of light interiors in subsequent articles.

INDUSTRIAL COMMISSION,
John A. Hoeveler, Illuminating Engineer.
Madison, Wisconsin.

[Some of the points mentioned by Mr. Hoeveler are to be discussed in future articles entitled "Night-lighting the Factory."]

The Editors, THE AMERICAN ARCHITECT:

We have read with interest in the issues of THE AMERICAN ARCHITECT for February 20 and March 13 the papers on "Day Lighting the Factory." A maximum of daylight is quite essential in most all factories, but there may be a question whether window area is not at times increased to an irrational degree, especially in narrow buildings. In designing the fenestration of any industrial building, consideration should not only be given to the problem of daylight, but also the question of heat loss, especially in cold climates, because the heat loss takes place not only during the daytime but also during the night, as many factories are kept quite as warm at night as they are during the remainder of the twenty-four hours. In other words, the beneficial effects of ample daylight are only appreciated during fifty-four hours out of the week, while the expense of heating covers a period of 114 hours per week. With coal as expensive and as scarce as it has been during the past winter this question of heating and heat loss becomes a serious matter, and should be given due consideration in designing an industrial building. On the other hand, daylight illumination should not be reduced for the sake of saving in heat to a point where it interferes with the efficient operation of the plant, but there should be a rational balance between the amount of daylight necessary for efficient work and the heat loss resulting from such a condition.

In connection with this subject, you may be interested in perusing a pamphlet enclosed herewith on heat transmission through various types of sash, covering some tests which we made not long since, and on page 867 you will find curves exhibiting the

relative heat loss through several different styles of steel and wood sash. You will note that the heat loss through single glazed steel sash, for instance, is more than twice the heat loss through double glazed wood sash; this, of course, irrespective of any leaks around the perimeter of the sash. As a matter of possible interest we also enclose another pamphlet covering some other tests we have made on the question of roof insulation to ascertain what types of roof construction are necessary to prevent condensation on their under surfaces under certain conditions of temperatures and humidities.

P. F. SHELDON & SON.

Providence, R. I. By A. N. Sheldon.

(A discussion of the material referred to, and of the question arising in the foregoing, will be taken up in future articles in THE AMERICAN ARCHITECT.—The Editors, THE AMERICAN ARCHITECT.)

The Editors, THE AMERICAN ARCHITECT:

Your editorial in the March 13th issue of THE AMERICAN ARCHITECT suggesting certain changes in the details of construction used in Government building has been carefully read.

The writer has thoroughly discussed these very suggestions with certain officials of the Government, and has shown by reference to certain detail plans that the increased cost over the present method of construction would be considerably less than the saving in insurance, if said saving were to be capitalized at 6 per cent. While it is true the Government does not insure, we argue that it is permissible to figure on the above basis.

* * *

We understand that in practically every cantonment in the country openings have developed as wide as half an inch, and the construction department of the cantonment division has been considering seriously overcoating the exterior of all buildings with wire lath and cement plastering or the plastering of the interior of the building, leaving the exterior in its present condition.

Either one of the above schemes is going to prove an expensive makeshift, now that the buildings have already been completed, but they seem to be the only solution of the present difficulty. Of course, what errors have been made in the past are excusable because of the rapidity with which the work had to be detailed and executed, but most assuredly this experience should prove an object lesson for future construction. We believe that the department is fully awake to this fact and will adopt some method of construction similar to the suggestions outlined in your article.

CONSOLIDATED ENGINEERING COMPANY.
By Charles A. Cummings, Vice-President and General Manager.
Baltimore, Md.

Mr. Sidney Webb's Address Reviewed by Joseph C. Llewellyn, A. I. A., Illinois Chapter

Our readers are by this time familiar with the address delivered by Mr. Sidney Webb, F. R. I. B. A. The comments on this address presented by Mr. Joseph C. Llewellyn at the March meeting of the Illinois Chapter of the American Institute of Architects so admirably sum up its essential points that they are presented herewith in full.—The Editors, THE AMERICAN ARCHITECT.

EVERY architect should study carefully the paper by Mr. Sidney Webb, read before the R. I. B. A. and reprinted in the January number of the *Journal* of the A. I. A. The paper will repay careful reading because the writer in studying the organization and development of professional societies has done so as an outsider and hence is apt to be free from the bias or prejudice so often found in a criticism or study by the insider, who very often is the victim of a real or fancied grievance against his organization or some member of it.

The paper under discussion first takes up the development of the Institute, describes the changes in the character of the Institute in common with other professional organizations. They are:

First: The organization of professional societies originally as subject associations, organized because of a desire to study and to promote interest in some subject, and admitting to membership amateurs and those interested in kindred subjects, as well as professionals.

Second: The gradual change in character of the membership, by the amateurs dropping out, the membership becoming wholly professional; the increasing attention to the material advancement of the members, and the establishment of rules or codes of practice, regulation of fees and methods of charge, etc.

Third: The increasing tendency to exclusiveness, and, with but a few exceptions, limited service rendered by the professions.

The gradual change in the purpose or objective in professional societies is apparent to all who have been members of these societies for any length of time. From subject associations, educational in character, interested in the advancement and development of some particular subject, admitting amateurs and others interested in kindred subjects to membership, the associations become professional in character, and questions concerning material matters, such as codes of ethics, remuneration and profit to its members, conditions of entry, educational and otherwise, and a greater control of the members, have assumed a constantly increasing importance. The desire to control and to secure to the members of the profession within the organization all work in its particular line is marked, and the architectural societies are not exceptions to the rule. The beginning of legislation to license architects in this country, our own license law, while masked as a public safety and sanitary measure, had as one of its real purposes the ultimate reduction in the number of those who could use the name architect, all of which would result in benefit to the members of the organizations who were pushing the legislation. The law will stay and may be amended from time to time, but the question is whether eventually the law will not have to be changed so as to safeguard the public welfare in a broad way without any thought of the benefit which may accrue to a professional class. The tendency in our present organizations is toward greater exclusiveness. Recruits to the profession now are nearly all from recognized schools of architecture. An apprentice is rarely found now who in any way resembles the apprentice of the old-time office. Many of the best men in practice to-day were office trained, supplementing the work of office by study, travel and reading. The tendency in the Institute to-day is to demand more preparatory work and ultimately to demand that the evidence of that preparatory work shall be in the form of a college diploma, thus reducing still more the class from which recruits to the profession can be drawn; and while there will be many who have the genius and application to make good in the profession, the opportunity will fall to the one who has the means to pay for his education, and through the schools gain the preliminary training required.

While there is no argument against a thorough preparation for any line of occupation, there is certainly room for argument in opposition to any arbitrary regulation as to how the requisite education shall have been attained.

Mr. Webb in his study of professional organizations states that the professions, including architects, are drawn from about 10 per cent of the population because of the expense of preparation, which is beyond the means of the majority. The further fact that the clients of the professional classes, including architects, are likewise drawn from the 10 per cent opens up another phase of the matter which can be discussed later. That architects are not filling a proper measure in the everyday work of the world, and that they have not discovered the way to obtain a large share in that work for which they deem themselves peculiarly fitted, is evidenced by the general trend of the discussions in our societies and

in the professional journals. The cry, more often heard than any other, is for greater recognition of the architect.

This being the case, the conclusions drawn by Mr. Webb will at least give a groundwork for new discussion, and if the architects will read and discuss them carefully, some good may result and start them on the road to that recognition they crave.

Mr. Webb draws conclusions as follows:

First: As to control of any profession, the organizations within the profession should have the privilege of advising and suggesting condition of entries to membership in a profession or license to practise and should make suggestions as to the government of the profession, but they should not be allowed to govern or control completely. This is the function of the state.

Second: That professional organizations should interest themselves in what the government is doing in their own particular line of work, should not fail to criticize the government's action if need be, and should not hesitate to suggest to the government whatever may be of benefit to the public in the execution of any public work.

Third: That the profession should do all in its power to extend the limits of its usefulness and reach a far larger clientele.

His first conclusion has to do with the control of the profession and the part the state shall take in the control. While recognizing the rights of the organization to suggest matters pertaining to the government of the profession, such as conditions of entry, regulations governing practice, ethical codes, etc., he claims that the full control of all these matters cannot be left to the association, but must be modified and approved by the state in fairness to that element in the profession who are not members of the societies; in effect a check to any tendency on the part of organized societies so to frame conditions as to exclude other than their own members from practice.

Tendencies toward exclusiveness and monopoly which he suggests are evident in our own professional associations. Laws in the states licensing architects determine by examination or otherwise those who shall be permitted to call themselves architects. These examinations have been confined largely to matters having reference to questions of stability of construction, safeguarding public health, and the ability of the applicant to so plan as to care for these very necessary practical questions. To the one who can satisfactorily pass these examinations the title of architect is given and it is very much of a question whether or not the state should go any further in its control of the matter. To pass these examinations requires a certain general education, much above the average.

Mr. Webb's argument carries the suggestion that the state's first duty is to be fair and impartial in all matters of legislation affecting the people of the state. It is not to be supposed that the state should legislate in favor of any particular class or profession to such an extent as to practically bar the larger share of its people from the chance of proving their capacity to serve in what they would choose as their vocation.

The architectural organizations through their committees on architectural schools and education are striving to increase the educational qualifications for admission to such schools to the equivalent ultimately of a college degree (qualifications not yet approached as a prerequisite for admission to our highest architectural organizations), and they may exercise the privilege, as Mr. Webb suggests, of trying to incorporate in the state laws their desires as to what the educational qualifications for permission to enter examinations for them should be. Carried to its conclusion, the process will restrict the class from which future architects shall come to those with sufficient means to stay in college for four years and then take the technical course to prepare them for the profession. If the state through its Boards of Examiners adopts the suggestions, it will aid in creating a monopoly, as Mr. Webb suggests, and do the thing he invokes the aid of the state to prevent.

The second conclusion is that the professional bodies should interest themselves in all matters relating to public work in their line, and should not fail to criticize the action of the government or to offer suggestions, when by doing so they can render a service to the public. That the architects are interesting themselves more in this phase of the question than formerly is witnessed by several of the activities of the American Institute with respect to government building operation and also in the matter of city and town development. Whether the best way has been adopted in which to bring these matters to the attention of the authorities may be questioned. It may be that too often suggestions have been made and the adoption of their suggestions demanded as a right, clearly placing the government on the defensive and the architects open to the charge of seeking material advantage for themselves, rather than emphasizing the advantage of a recommended procedure to the general public. This is a matter to be worked out. That there is a growing disposition to take up public problems for the public benefit is clear, as the splendid articles on housing and kindred subjects in the *Journal* and other publications will show. There is no question but here is a field for the architects as an organization, nationally, and in our various communities. An opportunity for collective service, which should be

PLATE 116 LAWN ELEVATION

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 117 ENTRANCE TO MANOR HOUSE

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

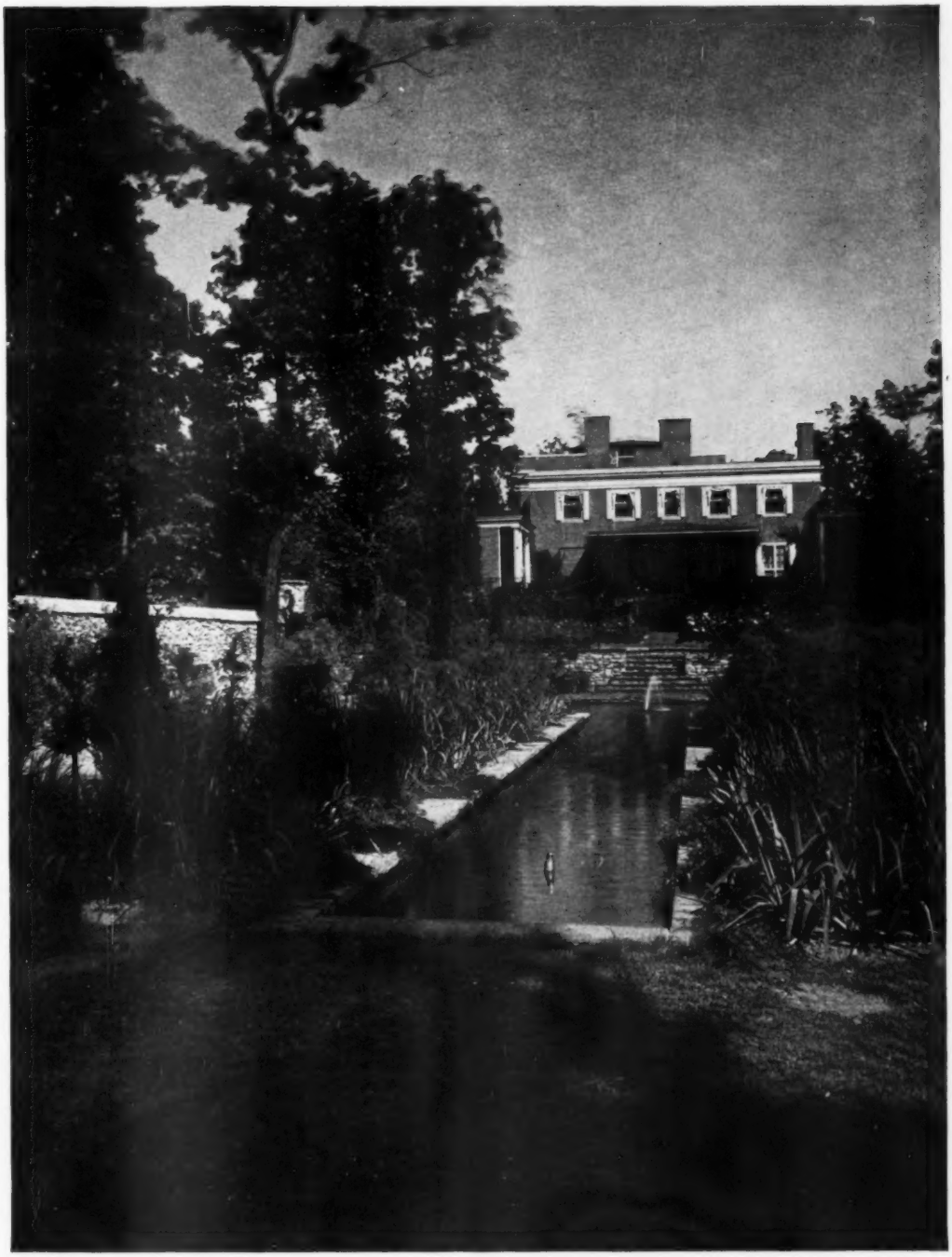


PLATE 118 THE GARDENS

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 119 MIDDLE AND LOWER GARDENS

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 120 WALLS OF LOWER GARDEN

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 121 ARCHES IN THE LOWER GARDEN WALLS

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

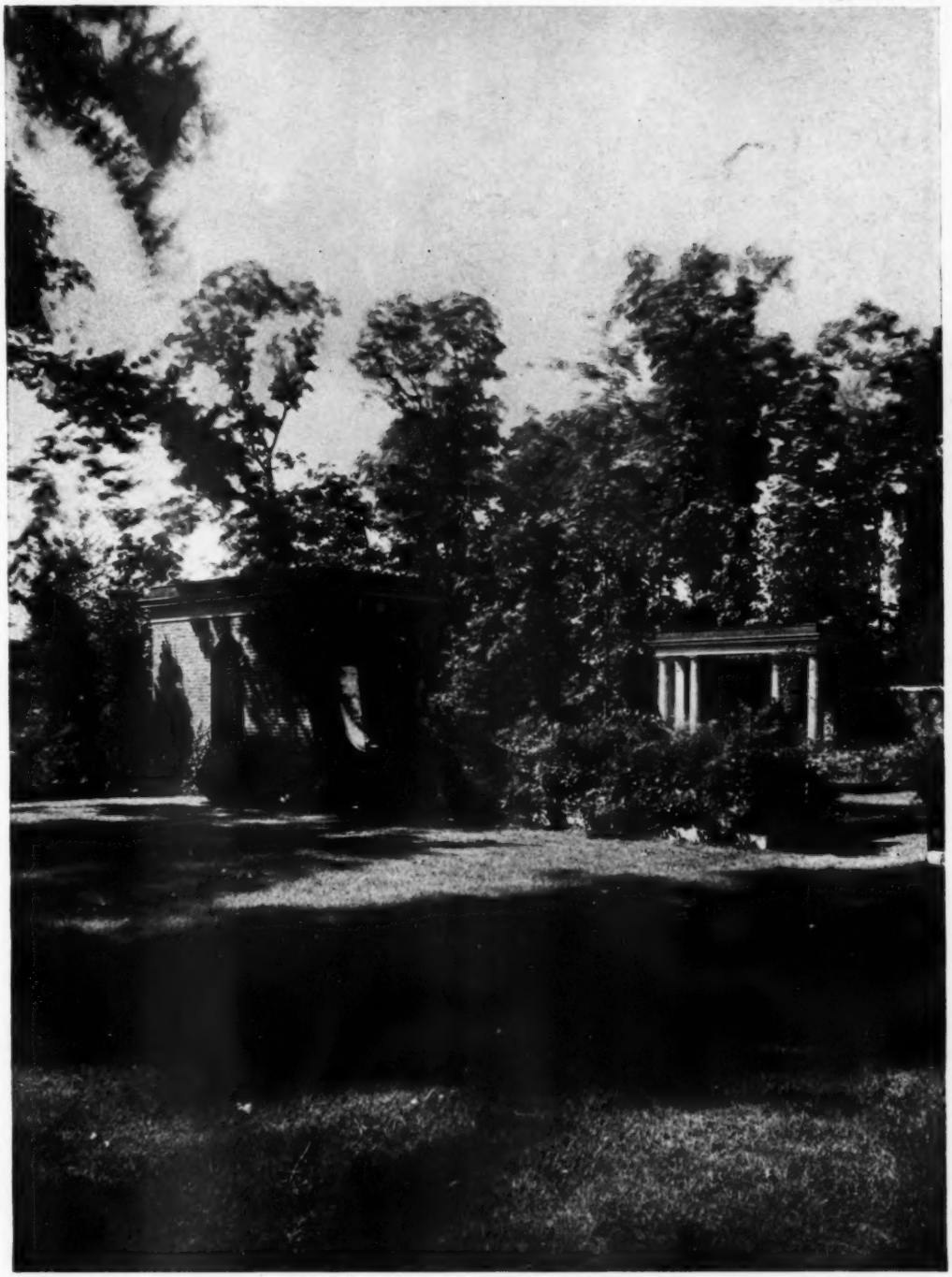


PLATE 122 UPPER GARDEN AND LOGGIAS FROM THE LAWN

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 123 UPPER GARDEN LOGGIA AND STEPS TO MIDDLE GARDEN

ESTATE OF MRS. ARTHUR SCOTT BURDEN, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

PLATE 124 DETAIL OF POOLS AND STEPS

ESTATE OF MIDDLETON S. BURRILL, JERICHO, L. I., N. Y.

JOHN RUSSELL POPE, *ARCHITECT*

taken advantage of, not necessarily in the hope of immediate reward, but to demonstrate the architect's interest in the public welfare. The reward will follow if the suggestions of the architect prove to be feasible and of value.

The third suggestion, that architects should bring their services to a larger clientele, is in line with, but of broader scope, than the second. It strikes at the root of the oft-heard complaint of lack of recognition by the public at large of the architectural profession and its worth. It is a debatable question whether the profession is not getting about all the recognition it deserves. If the architects are drawn from but 10 per cent of the population and their clients are included in this 10 per cent also, if architects from choice withdraw from and decline to serve the 90 per cent and cater to the well-to-do 10 per cent, as they practically do, they cannot wonder that the meaning of the word architect and the service he is supposed to render is not more generally known and the profession is not receiving the attention it should have.

The fact is, the architect, as a rule, has not been willing to turn attention to what he calls the smaller work any longer than is necessary to get started in larger work. He has catered to the 10 per cent from choice. The excuse with regard to this work is lack of remuneration; at the same time every architect who has developed his own business can trace some of his largest and best work back to the little unremunerative things that were well done in his earlier days. The well-to-do 10 per cent is recruited in part from the 90 per cent, and the small work may in the long run prove to have been the forerunner of things worth while.

So, too, with our interest in public matters—such as town planning, civic improvements, etc. The question until lately centered largely around a civic center generally treated in a more or less monumental way. The question of housing has received attention by the architects, not so much because of interest in the individual house as because of the new towns which have been specially planned and treated in a wholesale way and so appeal to the imagination and also to the financial ideas of the architect. This phase of the housing question is specially interesting just now on account of the large demand for workmen's houses to accommodate the new munition and shipbuilding plants being erected by the Government.

Mr. Webb suggests the architects should serve a larger share of the 90 per cent, not necessarily by building whole new towns, but in established communities and in their individual as well as communal capacity. He realizes that the service should be paid for, and he suggests the community pay for it, but the essential thing to do is to show the individual and community that the profession can render a service which has a value for them. Once do so and the rest will follow.

It is of course rank heresy to suggest that some broad general lessons might be taken from the commercial processes of the country. Of course, the architect cannot advertise as a business house advertises. He cannot even put his name on a building he is erecting or print a card in a professional journal whose readers would be especially interested in his work. Our organizations are governed by the thought and technique of a generation ago, Mr. Webb suggests, and our own code of ethics frowns upon any methods which may smack of commercialism. Our professional code does not say we cannot develop other means of accomplishing the same thing the commercial people do, that is, keep constantly in mind the need of acquainting the whole public with the quality and value of the thing we sell (for after all the architect is selling his service). And we should be able, by exercising a part of that fine capacity for doing things about which we hear so much, to find a way in which to make the value of the architect's work known which is professional and within the provisions of the code. If we cannot—then change the code.

Nor is there anything in our code which denies an architect the privilege of interesting himself in his community and in all questions which have to do with its development as a proper place in which to live, or of making any constructive suggestions which will work to that end, even in the absence of a contract specifying a fee. Nor is there anything in our regulation which demands that the discussion in our meetings shall so often develop into a complaint because our genius is not recognized by everybody. It is time that we cease taking ourselves so seriously and turn our attention to finding out in how many directions our work can be made of use to a larger public; forget ourselves in thinking of the things we are striving to do.

Mr. Webb in his paper rightly emphasizes the opportunity which lies in this broader service and the duty of the architect to do all he can to establish a wider field of usefulness. He has put his thoughts in logical form and has given us something to think about. Every architect should read his paper carefully and study it, as stated at the beginning of this notice.

Illinois Chapter, A. I. A.

Monthly Meeting and Dinner

THE monthly meeting and dinner of the Illinois Chapter of the American Institute of Architects was held March 12.

N. Max Dunning, president of the Chapter, read a letter received from the secretary of the American Institute of Architects announcing the withdrawal by the Board of Directors of the charter of the Indiana Chapter, and the assignment of the territory of that Chapter and its five remaining members to the Illinois Chapter. The names of the members remaining in the Indiana Chapter until its termination are: Ennis R. Austin, Oscar D. Bohlen, Herbert W. Foltz, Herbert L. Bass and E. Hill Turnock. The first three mentioned are Fellows of the A. I. A.

Elmer C. Jensen, a director of the Institute, was requested to inform the meeting of the circumstances leading to the withdrawal of the Indiana charter. He stated that it was a combination of circumstances which had reduced the effectiveness of the Indiana Chapter to a point where it was considered best to attach its remaining membership to a stronger chapter until such time as the Indiana Chapter might be revived to good effect and again assume its identity as a separate chapter. Peter B. Wight offered the comment that under such circumstances it was quite appropriate that membership of the Indiana Chapter should come into the Illinois Chapter, because the latter had fathered the former, and he recalled the circumstances under which the Indiana Chapter was organized and the assistance to that effect rendered by the Illinois Chapter.

Mr. Jensen, in reply to a question brought up as to the resolution passed by the Chicago Chapter, for consideration by directors of the Institute, indorsing the signing of buildings under construction, stated that the pressure of business before the directors' meeting was so great, that this resolution having reached them toward the end of the conference, it was not definitely acted on, but was referred to the next convention for action by the Institute as a whole.

Mr. Dunning called the attention of the meeting to an article printed in the January number of the *Journal* of the Institute, entitled "Wake Up! Architects of America!" which he considered of such interest that, with the consent of the members, he wished to read it to the meeting, the reading to be followed by a commentary on the article written by Joseph C. Llewellyn. (Mr. Llewellyn's comment will be found on another page in this issue.)

Major Biggs of the Canadian Army was introduced and spoke on various phases of the war that had come within his experience or observation. He indicated to the architects present one way in which they might be of service to the cause by encouraging the enlistment of men engaged in the building trades, sacrificing their own interests to whatever extent might be involved in the withdrawal of these men from building operations. He said that a good many artisans in certain of the building trades, such as masonry, were of British birth, and perhaps still of British citizenship, and had learned their trades in Canada or the old country, and that those who were still British citizens should be encouraged to avoid claiming exemption or holding back in any way from the army service of their country.

Major Biggs also answered, so far as possible, questions put to him about such matters as sanitation at the front and in the camps, and the handling of these features for large bodies of men under war conditions. His replies indicated the utmost possible care on these points, and a noticeable deterioration in the morale of the troops wherever such care and safeguards were allowed to slacken.

Incorporated in the minutes of the last meeting was a list of names suggested by the president of the Illinois Society of Architects and the president of the Illinois Chapter, A. I. I., and ratified by the two societies, as architects qualified to serve as members of the examining board for licensed architects. Referring to this, Mr. Dunning read the following letter received from Francis W. Shepardson, director of the Department of Registration and Education at Springfield, Ill.

March 8th, 1918.

"Acknowledging a letter of March 6th signed by yourself and Mr. Stafford Fox Thomas, I write to thank you for your courteous co-operation in suggesting the names of desirable gentlemen for membership on the Examining Committee for architects connected with the Department of Registration and Education. The letter forcibly reminded me of a saying which runs something like this: 'How happy I could be with either were t'other dear charmer away.' In other words, I find it difficult to make a choice from among those whom you nominated.

"Being desirous of selecting two gentlemen from down State in addition to the choice of a member of the faculty of the University of Illinois required by law, it seems eminently fitting that the other two places should be given to Chicago. I hope that in taking the two men after a most careful study from the brief biographical notes which you were so kind as to send, I have not gone far astray from my hope to have a committee of the very highest type.

"The committee for the remainder of the year 1918 will

be composed of the following individuals: Emery S. Hall, Chicago; George C. Nimmons, Chicago; Herbert Hewitt, Peoria; Prof. James M. White, Urbana, and Henry Helmle, Springfield."

Mr. Jensen brought before the meeting the matter involving the co-operation of Chicago architects in the development of the North Michigan Boulevard Link. About two months ago the North Central Business District Association, comprising about 400 business men and property owners in the section affected by this development, invited a number of representative architects to a luncheon.

A committee of architects was formed, which shortly afterward reported to the North Central Business District Association their willingness to co-operate in producing a plan for the development of the North Michigan Boulevard Link, and suggesting that the association raise a sufficient sum to pay the cost of an office room and the other necessary expenses of carrying out this work, the architects' own services being given without compensation. This was promptly done, and the work is under way. Mr. Jensen felt that the Illinois Chapter as an organization should be fully informed in the matter and co-operate in any way it can, and a motion offered by him to that effect was adopted.

Current News

The City of the Sun

Cities built in circles instead of squares, to overcome the evils of congestion, due to lack of proper sanitation and orientation, is the extraordinary, and apparently practicable, idea of Peter Roveda, of Milan, Italy, and New York City. His scheme has been called the "City of the Sun," not only because of its shape and the radial lines of its lot subdivision, but because it would, it is claimed, actually admit more sunlight and air than now falls to the share of the average crowded city block.

The principal distinctive features of the scheme may be described as the changing of the city block from the conventional rectangle to a square, within which are inscribed circular, concentric roadways—one or two, as the case may be—cut by diagonal streets from corner to corner of the block, meeting at a central plaza, civic center, school, or other community building.

There are three modes of lot subdivision for providing for varying degrees of density of population. The first consists of one circular street, divided into twenty-eight radial lots, appropriate for the single houses of the higher type of residential district; the second providing for division of the one street into forty radial lots, adaptable to abutting two-story double houses, accommodating eighty families, and the third providing for two concentric streets and eighty lots, built up with four-family houses, accommodating 320 families.

There are certain features of this plan which could probably not be utilized in its practical development, but in general it commends itself to the consideration of housing reformers and city planners.

War Schedule of Paint Shades

To conserve tin plate and linseed oil, sixty-eight shades of paints and varnishes have been dropped by manufacturers, working in harmony with the Commercial Economy Board of the Council of National Defense, and by July 1 the range of colors will be restricted to thirty-two for the period of the war. The following maximum number of shades and colors is adopted for paints and varnishes for various purposes: House paint, 32; flat paint, 10; enamels, 8; floor paint, 8; porch paint, 6; roof and barn paint, 2; shingle stains, 12; carriage paint, 8; oil stains, 8; varnish stains, 8; penetrating or spirit stains, 10; oil colors, 30. The number of containers has also been reduced by dropping the following sizes: Half-gallon cans throughout the entire line of paints and varnishes; all cans smaller than half-pint throughout the entire line of paints and varnishes; pint cans in house paints, flat paints, floor paints, porch paints and enamels; all cans smaller than gallons in barn and roof paint and shingle stain; all cans smaller than pints in all clear varnishes and varnish removers; all 2 and 3 pound cans in the entire line.

The "Take a Roomer" Campaign

The "Take a Roomer" campaign, which is being so enthusiastically furthered by the United States Chamber of Commerce, while inspired by the most worthy motives, is in reality fraught with insidious evils, according to a report of the National Housing Association. For a number of years this association has been engaged in the uphill fight against the lodger evil, and this new movement, even as a

means of meeting the shortage in housing accommodations, is to be deplored.

Room overcrowding is the one housing evil which is most difficult of regulation, and, while some communities have succeeded in controlling it to a greater or less degree, in general it may be said that it eludes control more successfully than any other.

Particularly when given the aspect of a patriotic service, this condition bids fair to develop into a serious menace before its evils will be sufficiently recognized to make preventive measures possible.

In this connection George Gove, executive secretary of the Bridgeport Chamber of Commerce, is quoted as saying:

"After two years of wrestling with this and every other municipal, social, and industrial problem which the war has brought, this community recognizes that expedients do not suffice; that problems must be understood to be solved and that the solution must rest upon a solid foundation. Physical and social ills outside the factory and in the home are reflected in the factory in production."

Competition for Capitol

Plans are in course of preparation for a competition to be held in Phoenix, Ariz., as a result of which designs will be selected for the erection of an addition to the capitol. The contest is to be conducted by the Commission of State Institutions, and will be open to architects throughout the country. The sum of $125,000 has been appropriated for the building.

In addition to the fact that the present capitol is greatly overcrowded, it is stated that there exists in Arizona an oversupply of men skilled in building trades, and it is therefore desired to get work quickly under way to assist in taking up the slack in the labor situation.

New Code of Lighting School Buildings

The Illuminating Engineering Society announces the revision of its Code of Lighting School Buildings, matter for which is now being placed in type.

While this Code is intended primarily as an aid in formulating legislation relating to the lighting of school buildings, it is also intended as a guide for school authorities, in their individual efforts to improve lighting conditions.

Book Review

OUT-OF-DOOR THEATERS. By Frank A. Waugh. Full cloth, 140 pages, size 6 x 9 inches, illustrated, price $2.50 net. Boston: Richard G. Badger.

Among the most satisfactory indications of our national development is the increasing tendency toward the life out-of-doors. Those who are old enough to compare the daily life of the average man and woman to-day, with that of those not more than two decades ago, will find that many indoor recreations so generally pursued then are now abandoned to the aged and infirm, and the entire family will seek, in one way or another, the recreations that take them out into the open. A sound mind in a sound body contributes very largely to the making of a healthy and rational people.

The student of manners and customs will find, as will he who delves into the annals of painting, sculpture and literature, that there is a wavelike rise and fall in the histories of all these things. Following inception there will be periods of indifferent performance, a sudden ascent to high perfection, and a drop to decadence, followed by a renaissance. The out-of-doors theater shares these features. Its origin in early Greece and Rome, where the climate made its high perfection possible, was followed by the long period when these bank-side galleries became almost unknown.

We find in Mr. Waugh's book an interesting account of the new birth of out-of-door theaters in Shakespeare's day, and can trace through his pages its gradual development in this country.

There are three chapters in the book, each subdivided into numerous parts. These chapters treat of the Question of Use, Problems of Design, and Selected Examples.

Between the covers of the book there is presented a large amount of information on a subject of gradually increasing interest to architects. The work is fully illustrated.

In the concluding chapter on Selected Examples, the reader will learn, perhaps with some surprise, of the very large number of out-of-door theaters that have thus far been built in this country. The fascination of a performance given out-of-doors, with the natural surroundings by competent people, has a charm that must be experienced to be thoroughly appreciated. As an adjunct to Stadia at our colleges and as a part of our town planning developments, their construction cannot be too strongly urged.

Industrial Information

A Special Yale Lock

The Yale Lock No. 738, manufactured by the Yale & Towne Mfg. Co., 9 East Fortieth Street, New York City, has some features worthy of special consideration. It is especially adapted for office door use, but the same type is made in cylinder rim and cylinder mortise night latches. This lock has no dead bolt, but operates with a latch-bolt, supplemented with an automatic slide.

When the door is open the latch-bolt and the automatic slide, immediately behind it, extend ½ inch from the face of the lock. When the door closes the latch-bolt and automatic slide recede into the case and the latch-bolt is released to a double throw with an extension of 13/16 inch. The automatic slide extends to the face of the strike plate only and when in this position releases a mechanism which falls into position immediately back of the latch-bolt, thus dogging it against any possibility of being moved by end pressure by unauthorized persons. When the latch-bolt is extended it projects into the striker 13/16 inch, of which ⅜ inch is 1 x 13/16 inch in section, which is the actual lock of the the door and corresponds to a dead bolt of the same dimensions.

This feature of having a 13/16 inch throw of the latch-bolt, automatically making it a dead bolt when the door is closed, is a feature originated and patented by the Yale & Towne Manufacturing Company, and has not been accomplished by any other manufacturer of locks.

The night work (which is the rendering operative or inoperative of the outside knob) is accomplished as in other cylinder locks by stop-work in the face of the lock. In this lock, when the stop-work is set to make the outside knob inoperative, the unlocking stop cannot be moved until the door is opened, the inside knob turned and the latch-bolt fully retracted into the case. This feature makes it impossible for a burglar to operate the unlocking stop with an L-shaped tool, as has been done in several cases with the ordinary stop-work.

Should it be desirable to lock the outside knob, push in the locking stop in the usual manner and the automatic dead-lock behind the unlocking step registers and it is necessary to turn the inside knob and push in the unlocking stop before the outside knob can be unlocked. This is a feature of Yale locks only.

In this lock the latch-bolt serves a dead bolt also and eliminates that second bolt. When the door is closed the latch-bolt is dead-locked so it cannot be pushed back into the case by the end pressure exerted by a thin metal strip. The unlocking stop cannot be operated by a burglar and it can only be operated when the door is open and the latch-bolt withdrawn into the case by turning the inside knob. These features make this lock burglar-proof. The lock is strongly and substantially built and the mechanism works with the same sureness that distinguishes all types of Yale locks.

Vault Lights

The vault lights manufactured and installed by Davis, Carpenter & Company, Inc., 216 East Forty-first Street, New York, have the necessary features of being substantial, water-tight, and with no metal exposed underneath to cause condensation. The glass does not contain any manganese, and is separated from the concrete by a metal ring and shock-absorbing compound. The panels are made of reinforced concrete and broken glass can be replaced without chipping the concrete, an important and economical feature. These lights are installed in many of the most important projects in New York City.

They also make a water-tight, flush hinge and handle, sidewalk door and frame, which has all of the desirable features of such articles. These doors are made of vault light construction with non-slip frames or plain checkered plates.

Closet and Wardrobe Doors

The Richards Wilcox Company, Aurora, Ill., in its house organ, *Doorways,* for February, publishes a very useful article on Improved Closet and Wardrobe Doors. This is a subject which should be of interest to architects, particularly since it is treated in an extremely practical manner and amply illustrated in plan.

Boston Varnish Company's Wood Finishing Specifications

The Boston Varnish Company, which maintains offices in Boston, Chicago, and San Francisco, has issued an unusually attractive booklet, containing a large number of photographic illustrations of California buildings in which their products have been used, together with specifications for wood finishing and white enameling. Some facts as to the causes of inferior wood finishing, a classification of finishes, and of the proper varnishes and enamels are also given.

The photographic reproduction is very good; it presents California architecture in some of its most interesting phases, while at the same time showing the excellent use which has been made of "Kyanize" products. Varied types of buildings have been illustrated—residential, educational, ecclesiastical; there are hospitals, lodge and apartment buildings, and industrial buildings as well.

In the foreword it is stated that this book is the result of many requests for plain, practical specifications for varnishing and enameling, and as such it should find a welcome place in the files of the profession.

Nairn's Linoleums

W. & J. Sloane, Fifth Avenue and Forty-seventh Street, New York City, who are the sole distributing agents for Nairn's linoleums, have issued a booklet illustrating that product. A wide variety of patterns are shown, all of which exhibit evidences of real craftsmanship and excellent quality of design.

The different types of linoleum shown are: the straight line inlaid, the carpet inlaid, and the printed linoleums. The color reproduction is very good, while the range of designs shown should answer a multiplicity of requirements.

Electrical Surveys

In plants where electrical equipment is used to any great extent, the instruments now available for making regular surveys, or tests, should be very welcome. These tests serve the double purpose of insuring the efficient loading of equipment, and the discovery of conditions which should receive the attention of the maintenance department, thus obviating the necessity of shut-downs for repairs.

The Esterline Company of Indianapolis, Ind., manufactures portable graphic instruments for this purpose. These instruments are reported to be thoroughly reliable, and have the further advantages of being light, compact and portable. They are self-contained and do not require auxiliary apparatus or circuits for their operation; they have nine chart speeds, and can be adjusted to the speed of the circuit in which they are operating; their accuracy is great, and the original records are in ink and do not admit of human modifications or errors.

These instruments can be employed to detect a great many kinds of flaws in electrical appliances. In large organizations, where even maintenance and highest efficiency must be obtained, they should be most useful.

New "Southern Beauty" Catalog

The Cahill Iron Works of Chattanooga, Tenn., has issued a new catalog (catalog H) of their "Southern Beauty" enameled ware. This catalog is the largest and most complete of any which this company has ever issued.

A large number of new designs, particularly of bath tubs, has been added to their already extensive stock, so that this line of plumbing fixtures, it is claimed, is complete in all respects. The catalog is attractively assembled, with cuts of fully installed specimen bathrooms, as well as of the various single fixtures.

Roughing-in measurements are not shown in this book, but the company states in its introduction that a booklet, giving the roughing-in measurements of all fixtures illustrated, will be furnished upon request.

Trussed Concrete Steel Company Changes Name

Truscon Steel Company has been decided upon as the new name for the Trussed Concrete Steel Company of Youngstown, Ohio. Aside from this simplification in name there has been no change in this company, in organization or management. The constant widening of their fields of manufacture has made it advisable to change to a name without the limitations implied by the old title. The Truscon Steel Company manufactures a great many steel products which have no relation to concrete.

Department of Architectural Engineering

A New Type of Construction for Low-cost Housing

By William E. Groben

THE war has given prominence to industrial housing it did not formerly possess. Despite the emergency measures undertaken by the national government, industrial corporations and private capital, the difficulties presented by the problem have not been entirely solved. The housing situation in the United States still remains an important and vital factor in our war-time industrial production, demanding the highest scientific consideration and treatment.

It is useless to encourage industries to expand, to place war orders with our manufacturing plants, shipyards, etc., while leaving the housing of our workmen to take care of itself in some unforeseen manner. Our ability to increase production in our industries is dependent upon our ability to house the workmen properly. The present lack of sanitary houses to provide necessary accommodations for additional workmen is resulting in dangerous overcrowding, excessive labor turnover, and is hampering the progress of war work in practically all industrial centers.

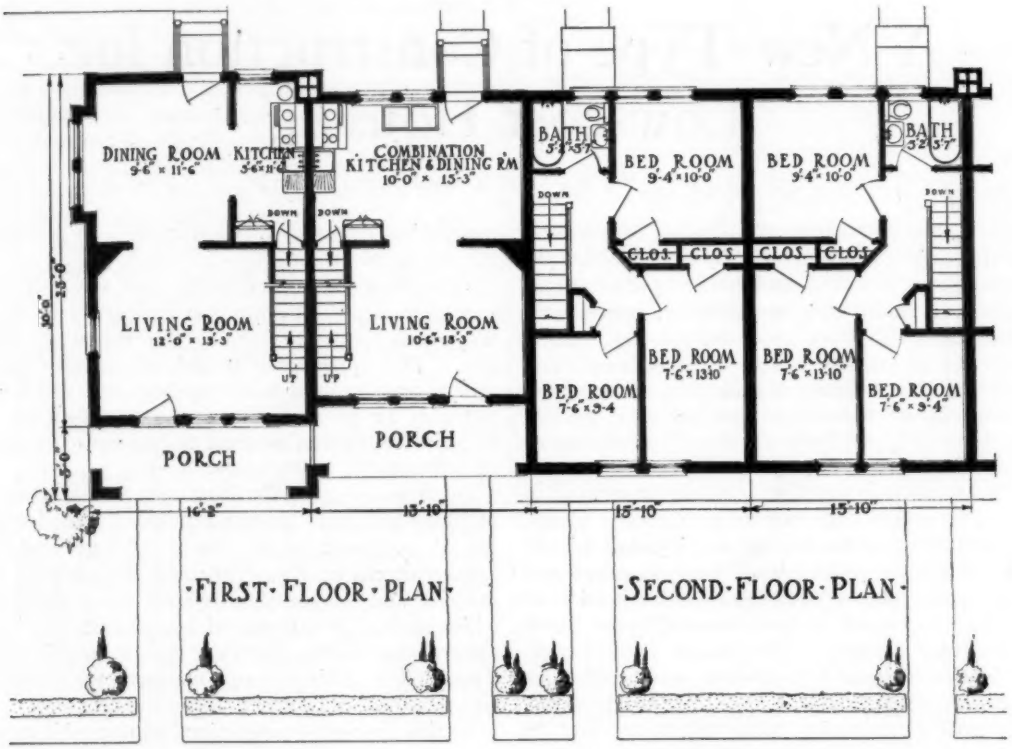
Our town-planning experts, our architects and our engineers are devoting every energy to devise ways and means to remedy this menacing situation. Their purpose is to provide sanitary homes which may be built with rapidity, and which will not only be permanent but also fire-resisting, instead of continuing to erect temporary make-shifts of inflammable construction.

In order to meet the high cost and scarcity of building materials, principally brick and lumber, Mr. E. G. Perrot, of the firm of Ballinger and Perrot, architects, of New York and Philadelphia, has devised and perfected a system of construction which makes the erection of large numbers of permanent and durable houses in record-breaking time a possibility. This type of construction is styled the concrete stud and cement stucco construction.

In this type of construction, reinforced concrete

WORKING MEN'S HOMES
BALLINGER & PERROT, *ARCHITECTS AND ENGINEERS*

is substituted for masonry walls; not, however, of the poured monolithic system customarily used heretofore, nor the pre-cast concrete method, but by applying the concrete either by hand or by means of the cement gun. Concrete is particularly adaptable to this form of construction because it is permanent, fire-resisting, sanitary and waterproof; and when used in the large scale operations contemplated at the present time, it makes for maximum economy by employing labor saving machinery and re-using



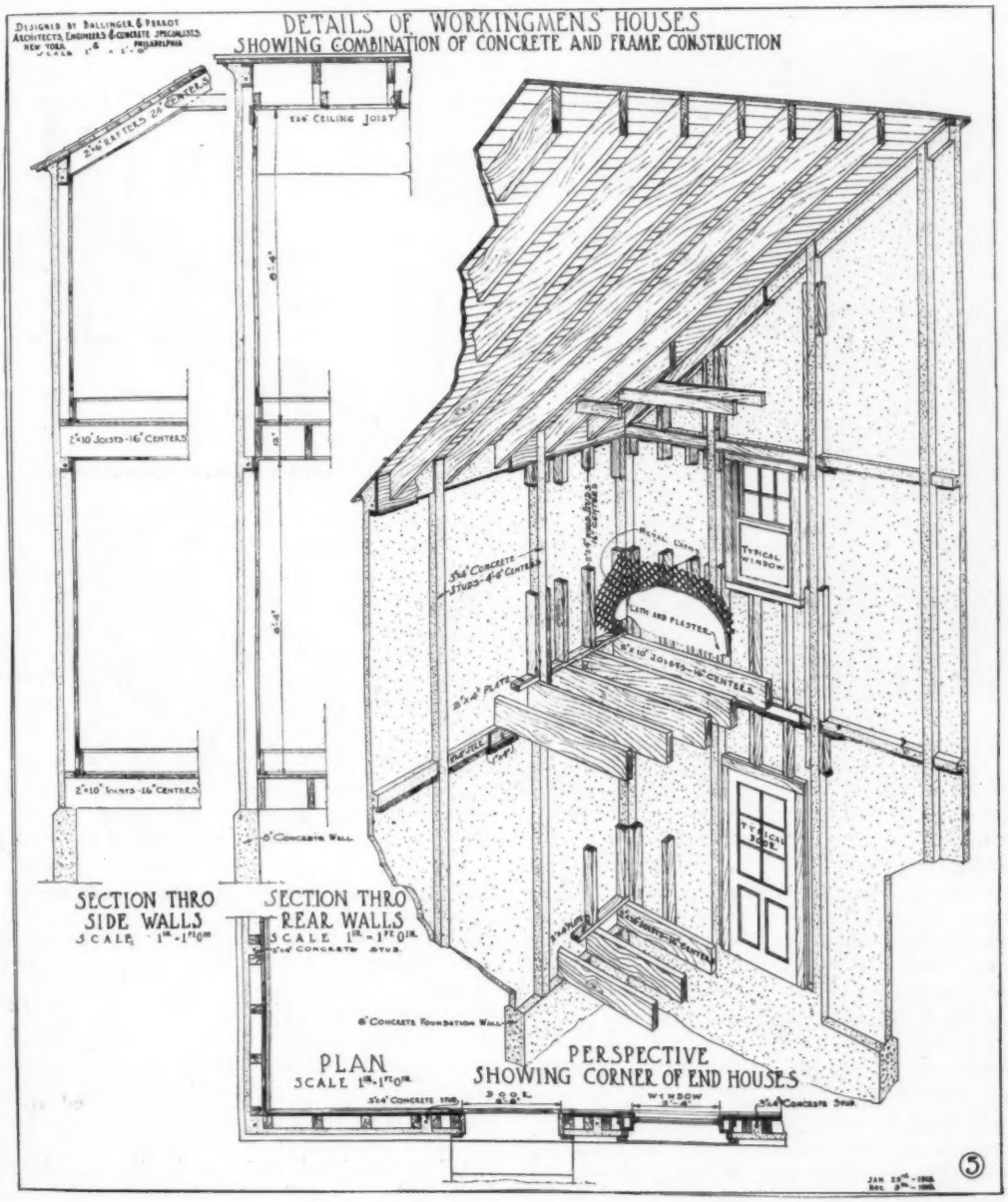
equipment. Furthermore, concrete is generally a more nearly local building material than any other, and its use not only materially assists in relieving the already overtaxed transportation facilities of our country but also eliminates the delays in construction due to embargoes and irregular shipments.

On account of the heavy demands by the national government in connection with its war program, nearly all the available lumber is absorbed as fast as it arrives. Private building activities using lumber have practically ceased. According to statistics computed for Boston, citing it as only one case indicative of the situation generally, the total quantity received in 1917 was less than that of any of the preceding three or four years by about seventy-five million feet. This reduction is not so much due to a falling off in the demand, owing to the advanced prices, as it is to the inability to supply it. Difficulties of transportation, unusually severe weather, all aggravate the situation to such an extent that it is imperative to obtain relief by adopting a form of construction in which the use of lumber is reduced to a minimum.

It is confidently felt that the concrete stud and cement stucco construction is without exception the cheapest and best method to be employed for the quick erection of industrial houses at any time and particularly during the present shortage of labor and material. It requires the fewest laborers, the shortest time for erection, less concrete per house, and, having hollow walls, produces a drier house than obtained by any other form of masonry construction. It is likewise adaptable to base hospitals, barracks, one-story factories, etc. In factory buildings, where no interior finish is required, the interior wall surfaces may be metal-lathed and concreted in the same manner as described for the exterior.

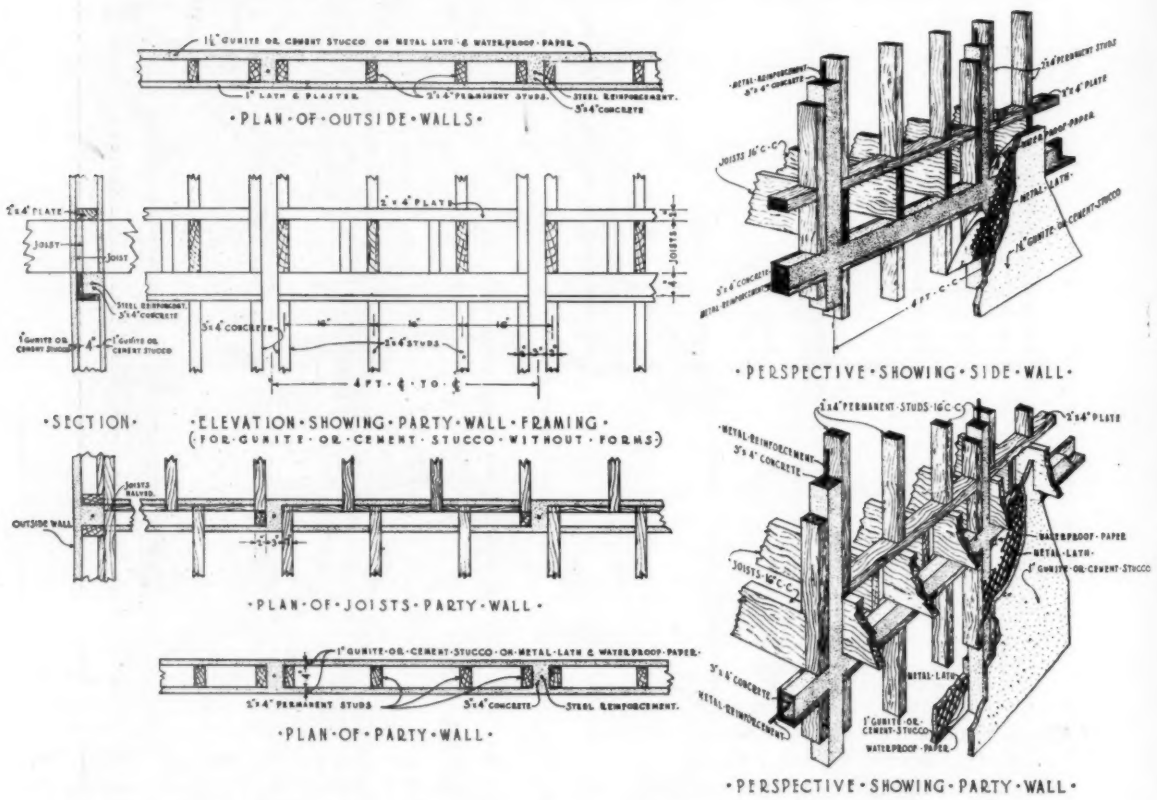
After the cellar has been excavated a stone or concrete foundation wall is built. In the latter case the

concrete is poured from a traveling mixer, with loader, into wood forms made in panels so as to be easily removable. The first-floor wood joists are then set in place on the foundation wall. On these a wood frame, consisting of studs, joists and ratters, is erected in the usual manner of building the skeleton of a frame house. Every fourth stud is doubled, allowing a three-inch by four-inch space between, which is filled with concrete to form a concrete stud. At the second floor and roof levels, a ledger board, with bottom attached, is placed over the studs and so arranged that, when filled with concrete, they form beams, which, with the vertical concrete studs, make a homogeneous concrete frame. The concrete studs when completed are continuous from foundation to roof. On top of the lower ledger board the second-floor joists are set, then the second-story studs, and so on. When this frame is



completed, including the party wall, and the roof is on, heavy waterproof paper is nailed to the outside of the exterior wall studs, leaving the space between the doubled studs open to receive the concrete. Over the waterproof paper the metal lath, or concrete reinforcement, is stretched. The concrete studs are reinforced with steel rods fastened to the metal lath. The ledger boards have a bottom wood piece or form, so that when filled with concrete they act as beams to carry the floor joists and roof rafters. The wood studs act in the dual capacity of supporting the cement stucco while it is being applied and as furring strips in the finished building.

Everything is now ready to apply a 1½ in. to 2 in. thick concrete coating to the exterior by means of the cement gun, filling the space between the doubled studs to form the continuous vertical concrete stud. If, for any reason, the cement-gun is not available, the continuous vertical studs and ledger boards can be poured with concrete and the exterior metal lath coated with 1:2 cement mortar by hand. The concrete is 33 per cent denser than ordinary poured concrete and about twice as strong. Color effects may be obtained by adding mortar stain to the concrete while it is being mixed. No further treatment of the exterior wall surface is needed. The rapidity with which this type of house may be erected is dependent only upon the number of cement-guns put into simultaneous operation or, if the work is done by hand, the number of workmen employed at any one time. Particular attention is called to several of the chief points in favor of this construction, which are: First, after the framework of any number of houses is once erected, the cement can be applied without any interruption, in contradistinction to the usual procedure of stuccoing a part of the work, then shifting the laborers and their materials to another portion while the first is being completed, and then having to shift them back again. Second, the numerous cracks so com-



mon to all other forms of concrete construction are entirely eliminated in this process, because the vertical concrete studs carry all the load so that there is no shrinkage or settlement to contend with in this monolithic structure. Party walls merely have a skim coat of white plaster applied to the cement for a finish, which makes a saving on this wall alone of at least eight cents per square foot over the usual plastered surface. Either of these two latter methods of construction compete very favorably with frame, especially now when wood is expensive and difficult to obtain.

The fundamental idea involved is to produce a cheap, semi-fireproof house, i. e., one which may be built with the same rapidity and cost as an all wood structure. If it is desired to increase the fire-resisting qualities of the building, metal lath, instead of wood lath, may be used on interior surfaces which are to be plastered.

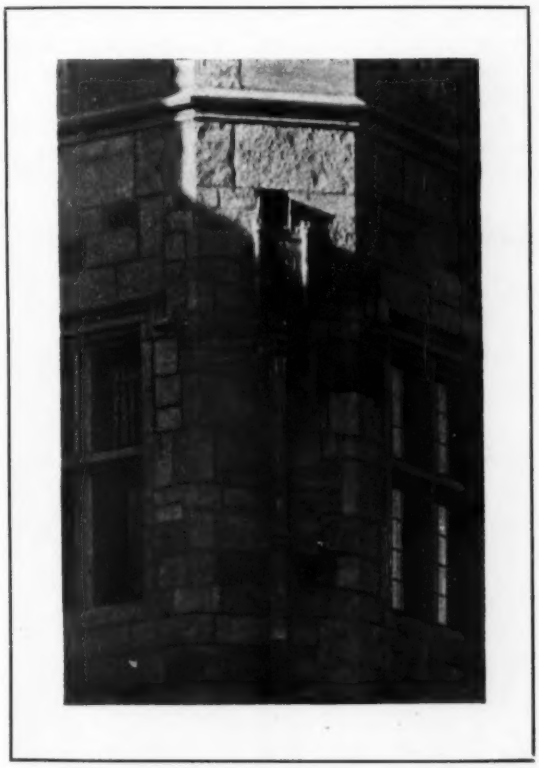
The roof, whether flat or pitched, lends itself very readily to concrete construction. The concrete may be applied in the same manner as herein described for the vertical walls, but the expensiveness of the concrete roof construction necessary to carry the roof itself makes it prohibitive for the type of building in which low cost is a prime essential. For the pitched roof there are numerous other good, economical and easily obtainable fire-resisting materials upon the market, including asbestos and asphalted-felt shingles, slate, so-called "ready" and built-up roofings of felt, tar and gravel.

No other form of construction, to my knowledge, can produce a house of such low first cost, at the same time possessing the fire-resisting qualities inherent in the conventional house built with exterior party walls of brick, as the concrete-enveloped wood-framed concrete stud and cement stucco house. The essential differences in this type of building are in the wall construction, which, in all other forms of masonry walls, must be completed before the floors, roof and interior partitions can be built, and which must be furred on the inside face to make an air space between the exterior wall proper and the plaster, in order to obtain a dry wall.

By standardizing the style of the houses and applying efficient methods in their erection, a row of ten two-story houses, as shown in the illustration, can be completed ready for occupancy in three weeks from the time the cellars are dug. If erected in groups, any number of rows can be built at the same time, the rapidity of the work depending only upon the number of cement guns put into simultaneous operation. When it is considered that a house can be completely concreted in two and one-half days the possibilities in rapidity of construction by this process are apparent.

Lead-Coated Copper Work

A REALLY fine piece of work which pleases and satisfies must be the work of the master mind which designs and the handiwork of a true craftsman. To duplicate the old and time-toned hand-wrought lead work, which adds such charm to the old buildings of England, modern methods have been used. The difference is in the method of fabrication and material used.



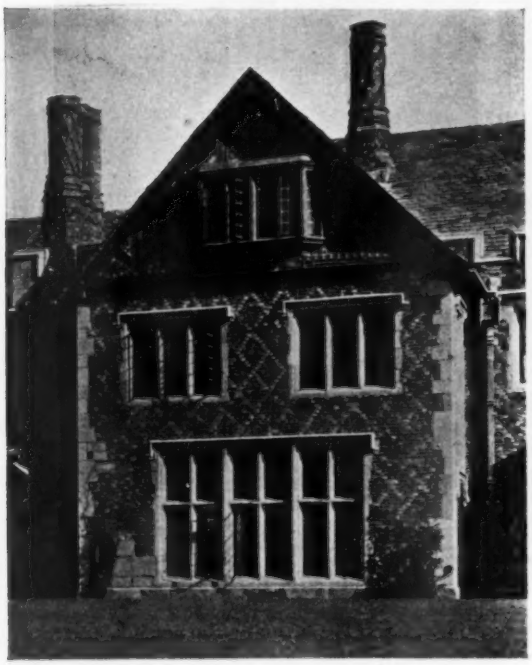
RESIDENCE OF MR. STUART DUNCAN, NEWPORT
JOHN RUSSELL POPE, *ARCHITECT*

The old lead work was beaten and shaped into form by hand, each ornament or part showing the individual impress of the craftsman. The new method is based on using copper, coated with lead. The design is first modeled in clay in which the effect of hand work is secured because it is hand work. From the clay model a plaster mold is made, serving as the model for the soft metal matrix and die used to press the copper into form. A 16-ounce soft sheet copper is used, and after the parts are jointed and assembled the work is washed with acid and water to remove all oil or grease from the surface. The article is then dipped into melted lead,

which unites with the copper and makes a permanent lead coating. The surface of this coating, although it follows the irregularities of the clay model, is smooth, and as the melted lead runs before set by cooling, it gathers in ridges like paint similarly used.

To overcome this deadly smoothness and to "age" the work, it is placed in an oven heated to a sufficient temperature to soften the lead. This causes the ridges, due to dipping, to disappear by finding their fluid level, and the work is then sharply jarred, with the effect that the surface is agitated into irregularities, and so cooled. The desired age color is then given to the lead surface and it is covered with a coat of crude oil.

A special detail of the main feature can be made without excessive cost and each object have its individual design as in the ancient work. The work here illustrated is installed in the residence of Mr. Stuart Duncan at Newport as designed and supervised by John Russell Pope, architect, and fabricated by Miller & Doing.



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DETAIL IN GARDENS OF VILLA BORGHESE, ROME, ITALY