THE ARCHITECTURAL RECORD

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SOME RECENT WORK OF KEM WEBER

I. J. C. Friedman Residence at Banning, California

The site of the J. C. Friedman residence, on the edge of a desert near Imperial Valley, presented to the architect the problem of protection against extreme heat, against the cold evenings of the rainy season and against winds.

It was decided to place the house in an old almond orchard and all trees possible were retained close to the house for shade, while other broad-leafed planting of a tropical character was added so as to increase humidity.

From extremes of weather two means of protection were adopted: (1) The provision of an unwalled space between the roofing and ceiling, and (2) thorough insulation of the ceiling itself.

An open space two and one-half feet deep between the ceilings of all rooms and the roof was allowed (see sketch on page 316) and a succession of wood louvers installed at the edge of this attic to create a maximum air circulation. In addition to this, the ceiling was insulated against heat and cold with a six-inch layer of sawdust, held down with building paper and wood strips. The tiered louver construction forms the basic motif of the architectural design.

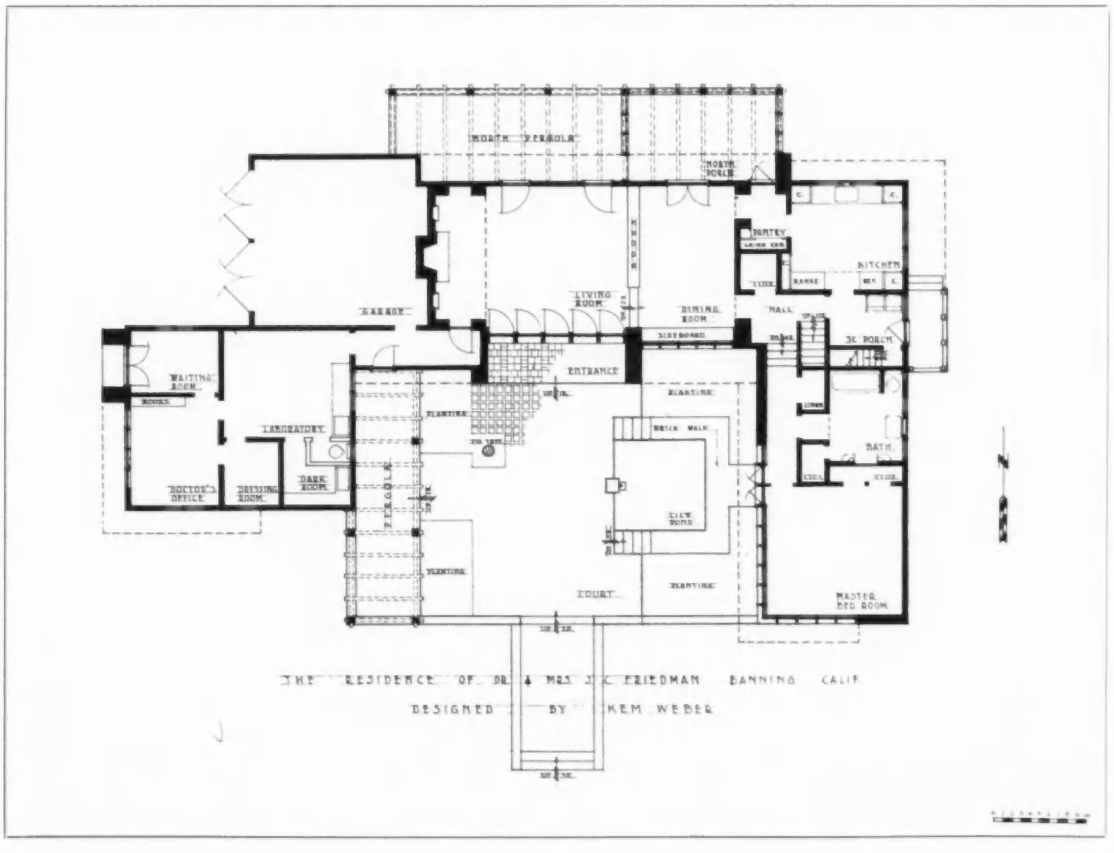
By placing the house around an open court, the maximum amount of outside wall surface, and, consequently, sufficient space for window ventilation, was secured. On the north, the side of the court which is most sheltered from the heat, are the living quarters. The master's suite is on the east and on the west are Dr. Friedman's offices. The angles joining these units are used for service; the garage is near the offices and the household service is placed between the living and sleeping sections.

Flat tile and stucco were used for the exterior, with California Redwood trim, part of the latter being used with a natural finish. The terrace floor was laid with local red baked clay tiles.

II. Dining Room at Kaufmann's, Pittsburgh

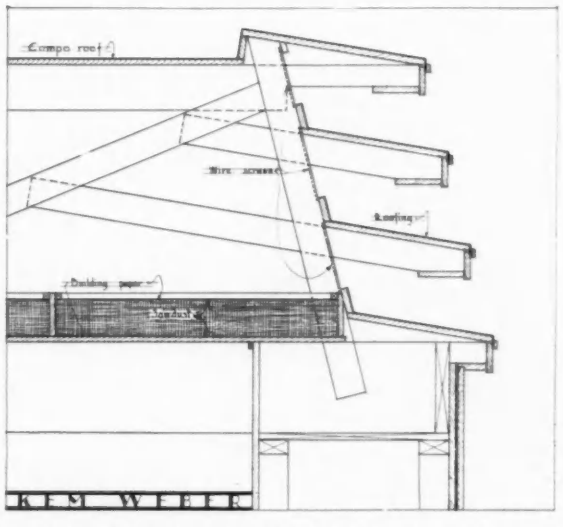
The kitchen is usually considered a place of which restaurant patrons prefer to be oblivious but in the Kaufmann dining room we find the major accent on the kitchen.

At the end of the central dining room axis, which begins at the entrance door and runs the length of the room, is the kitchen proper, entirely open to public view. It dominates the rear wall by its size and by the unique treatment of its open counter and its deep frieze composed of horizontal, frosted glass bands joined by wood strips.



By way of contrast the other three walls are covered with a series of plain vertical panels.

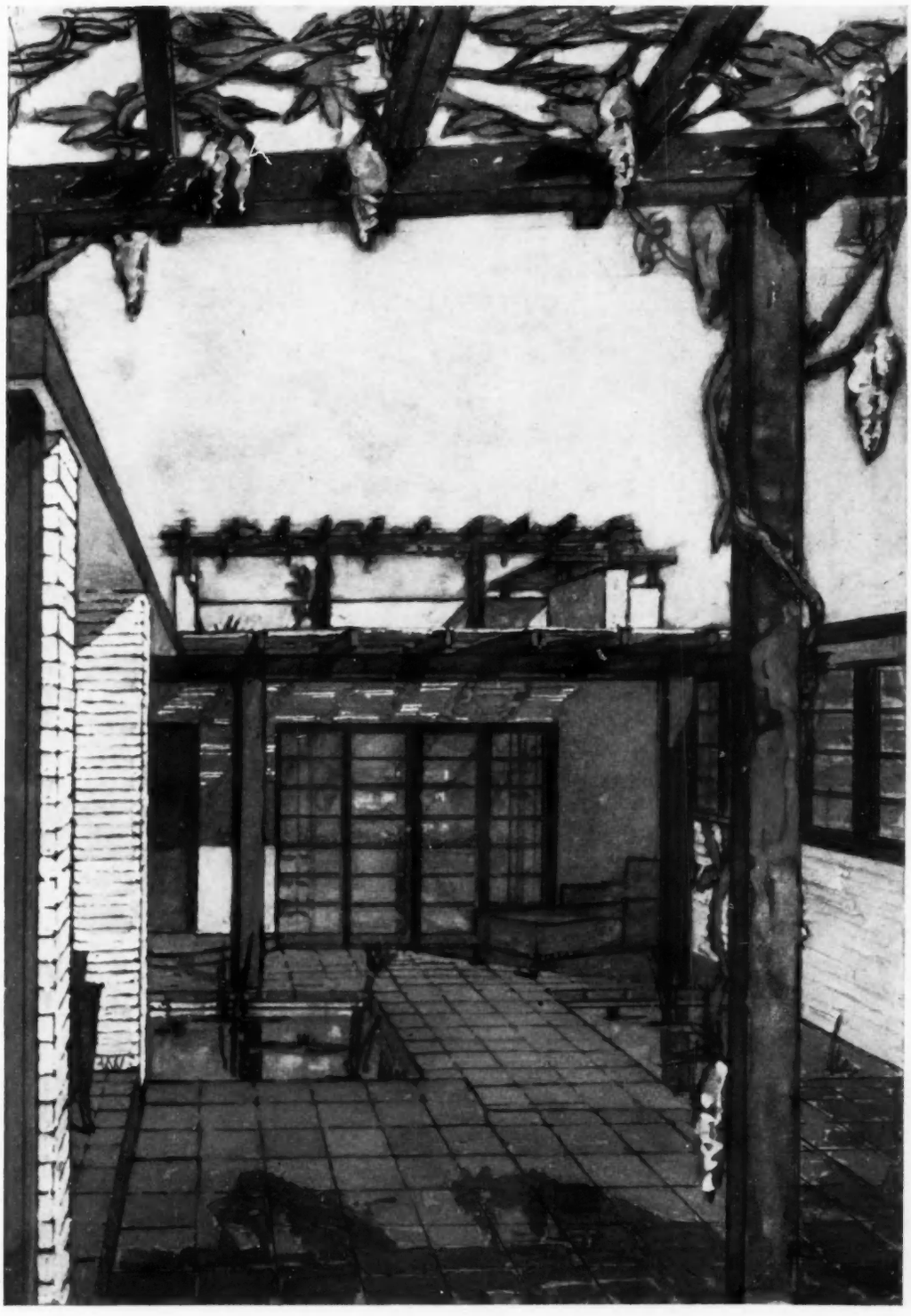
To emphasize the main axis, the middle section of the ceiling in the dining area is raised over a space the width of the kitchen and is decorated with panels the sizes of which are determined by the structural beams. Borders of sanded glass, furnishing an even flow of indirect light, surround the panels. This glass is supported by wood brackets and a second, narrower border of glass is placed above the lower one so as to eliminate glare on the ceiling and to accentuate the lighting effect.



DETAIL OF VENTILATED ROOF CONSTRUCTION

The kitchen is divided into (1) the kitchen proper, opening into the dining area to become an element of the decorative treatment, and (2) the necessary service units such as butcher shop, vegetable, dish-washing, and silver rooms. These parts are behind walls on either side of the kitchen and are easily accessible from it.

Around the kitchen is a service passage, the ceiling of which is lowered approximately three feet to allow ample ventila-

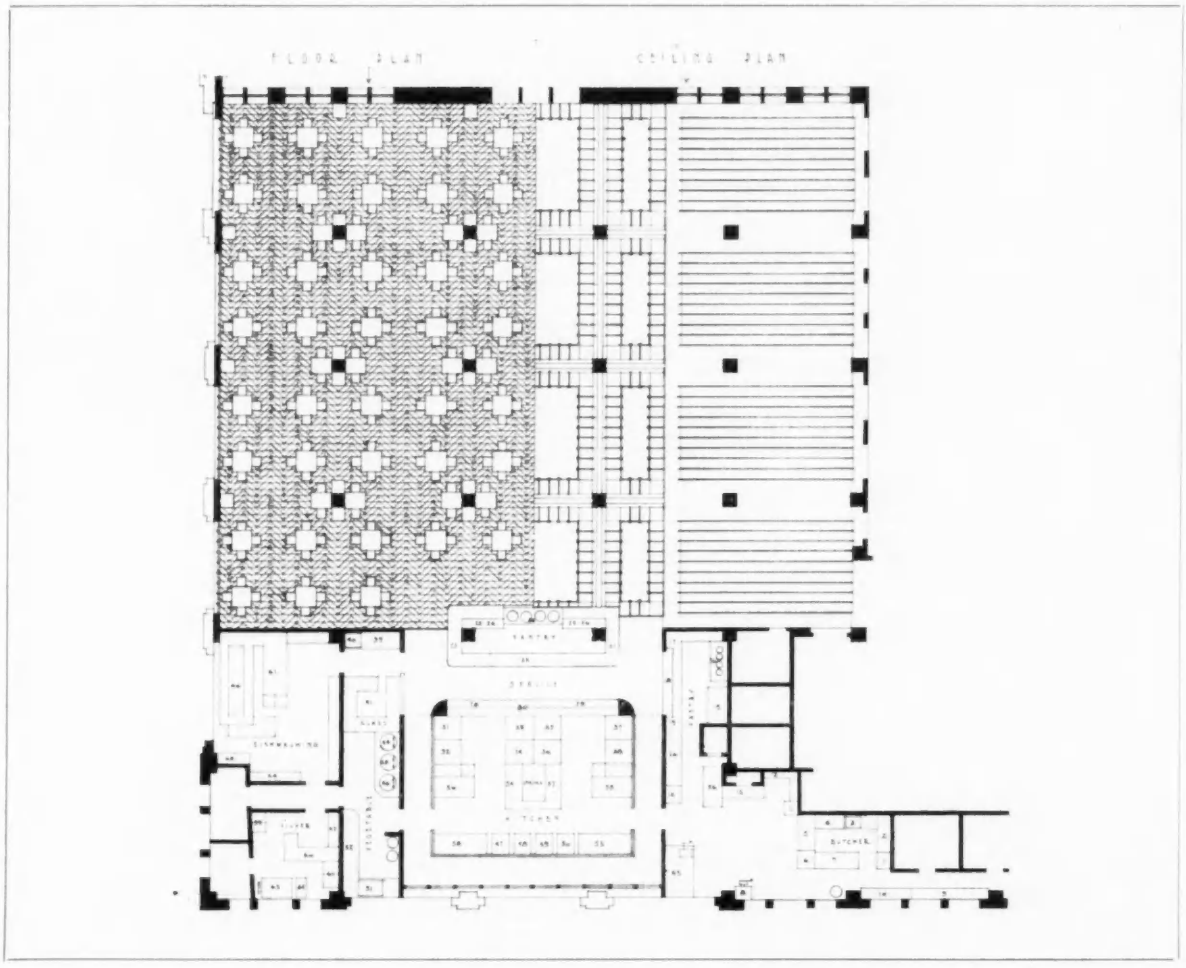


PORCH DETAIL

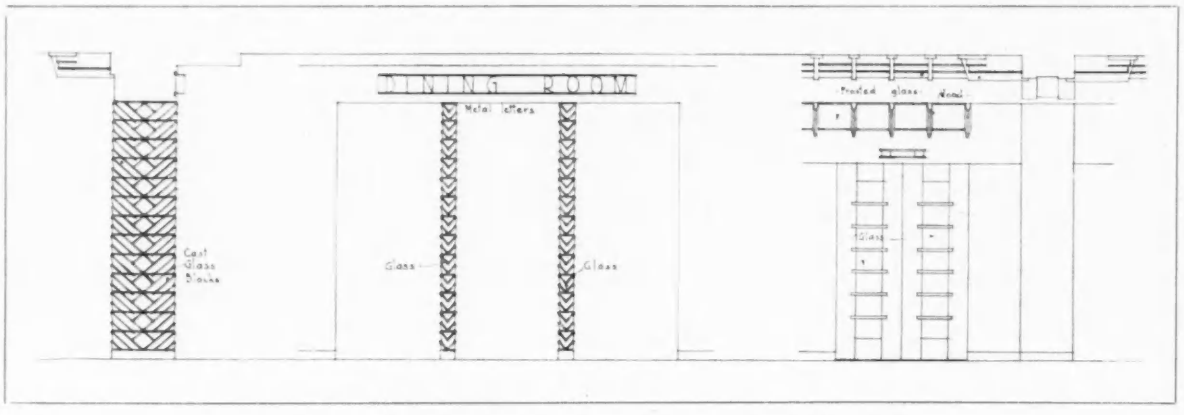
RESIDENCE OF DR. AND MRS. J. C. FRIEDMAN, BANNING, CALIFORNIA

KEM WEBER, DESIGNER

INTERIOR OF KAUFMANN'S DINING ROOM, PITTSBURGH, PA.
KEM WEBER, DESIGNER

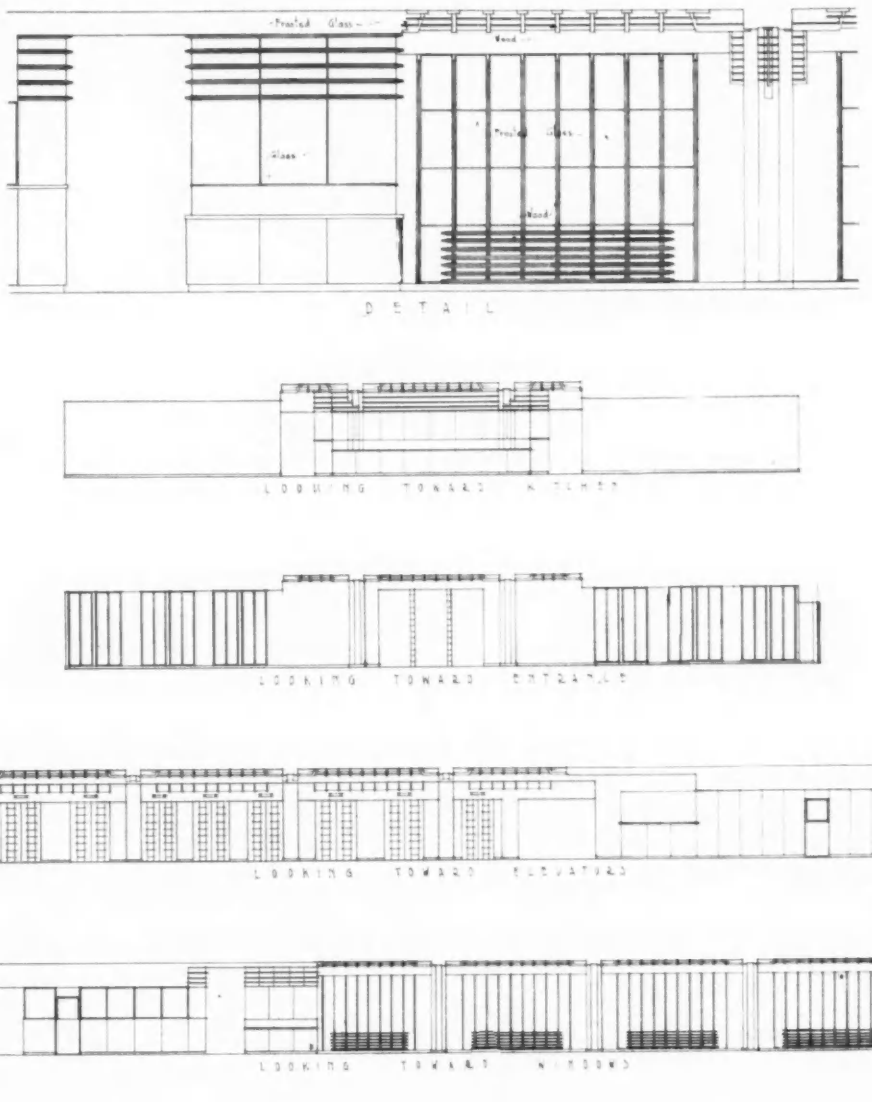


DRAWINGS OF FLOOR PLAN, CEILING PLAN AND KITCHEN ARRANGEMENT AT KAUFMANN'S



KAUFMANN'S DINING ROOM, PITTSBURGH, PA.

KEM WEBER, DESIGNER



KAUFMANN'S DINING ROOM, PITTSBURGH, PA.
KEM WEBER, DESIGNER

tion. This arrangement gives a direct air circulation to the cooking area.

In front of the kitchen is the pantry from which salads, coffee and cold dishes are served directly.

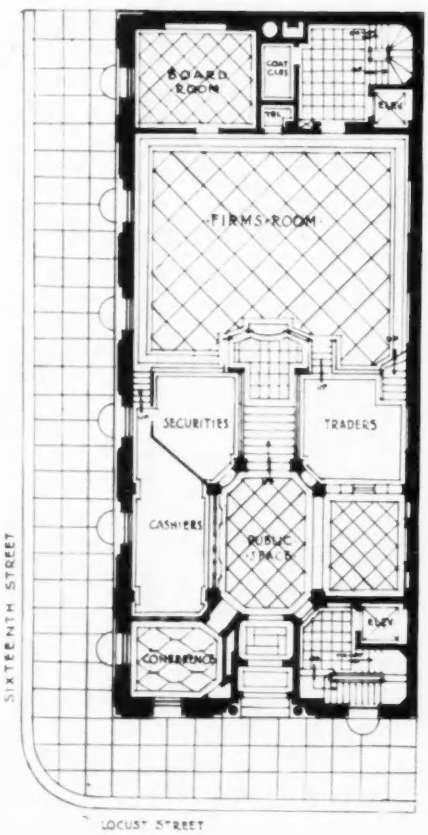
Plate glass is used for the upper part of the division wall between kitchen and passage in order to allow a plain view of both. The outer walls of the passage are treated in wood as are the walls of the dining room. For its entire length the rear wall is pierced with windows thus permitting a view from the inside of the activities of the kitchen.

PRIVATE BANKING HOUSE OF E. W. CLARK & CO. PHILADELPHIA, PENNSYLVANIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

THE VERY special requirements of the banking firm of E. W. Clark & Company of Philadelphia formed the key to the problem of planning their new office building.

It is the policy of the house that members of the firm supervise closely the various departments and also have personal contact with clients, therefore the position of the firm's room in the floor plan was one of primary importance. The solution arrived at was to devote the street floor to the banking service, the mezzanine to bond salesmen's space, and to place the firm's room on a level between these two floors. A wide, short stairway at the further end of the public banking room and opposite the main entrance forms the approach to the firm's space and is an attractive architectural feature of the interior (see pages 325 and 326). On either side of this stairway there is a room—one is used as a repository for securities, the other being devoted to the use of traders. With the exception of a stock room on the second floor, space on the two upper floors is occupied by the clerical force.



FIRST FLOOR PLAN

PRIVATE BANK OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

The building, which is of steel frame construction and fireproof, has an exterior facing of Pouillenany Rose stone. In the entrance vestibule the same stone is used for the walls, the floor being of Pouillenany Gray. The latter stone appears again in the wainscot and pilasters of the public banking floor.

In the firm's room the wainscot is of matched grain Koko wood, the walls above it being of gray acoustolith plaster. Railings and window grilles are of bronze and the tessellated floor is in two tones of green terrazzo. The ornamental part of the ceiling is accented with Chinese red and black on a silver background, and the same colors are used for the lighting fixtures.

The first-story windows on the Sixteenth Street side of the building are ornamented with cast lead panel heads.

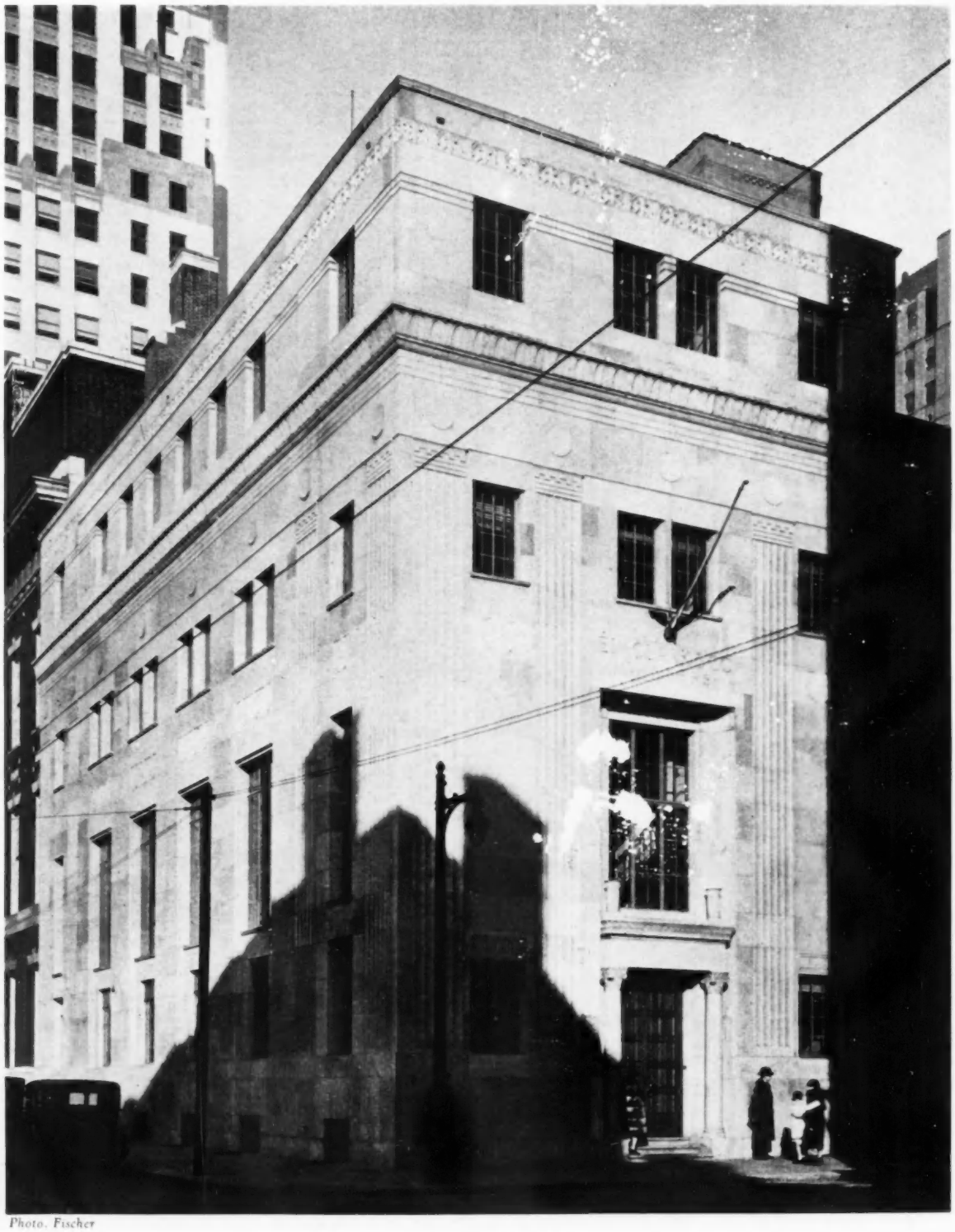


Photo. Fischer

GENERAL VIEW

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

Photo. Fischer

SIDE ELEVATION

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

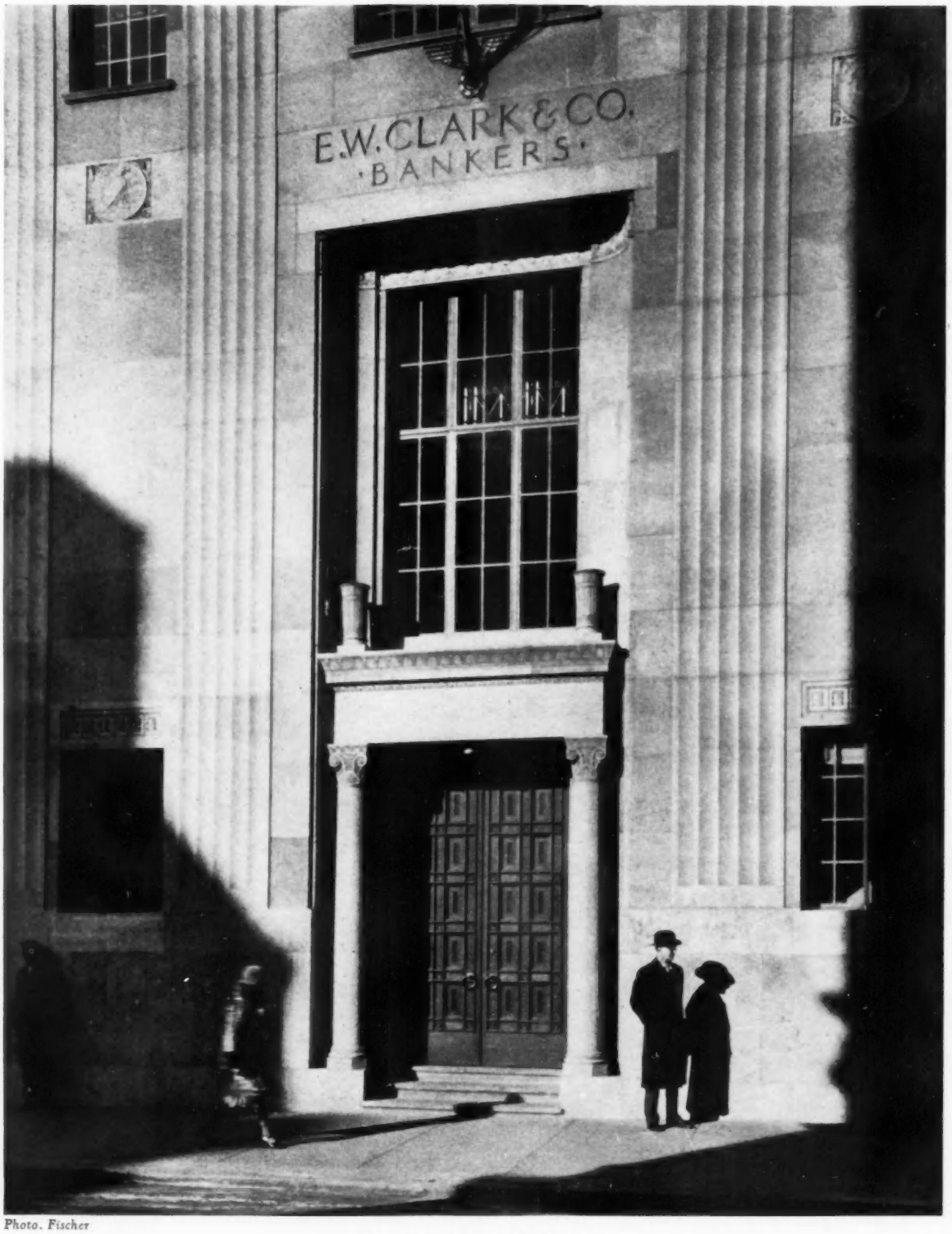


Photo. Fischer

MAIN ENTRANCE DOORWAY
PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA
ZANTZINGER, BORIE & MEDARY, ARCHITECTS

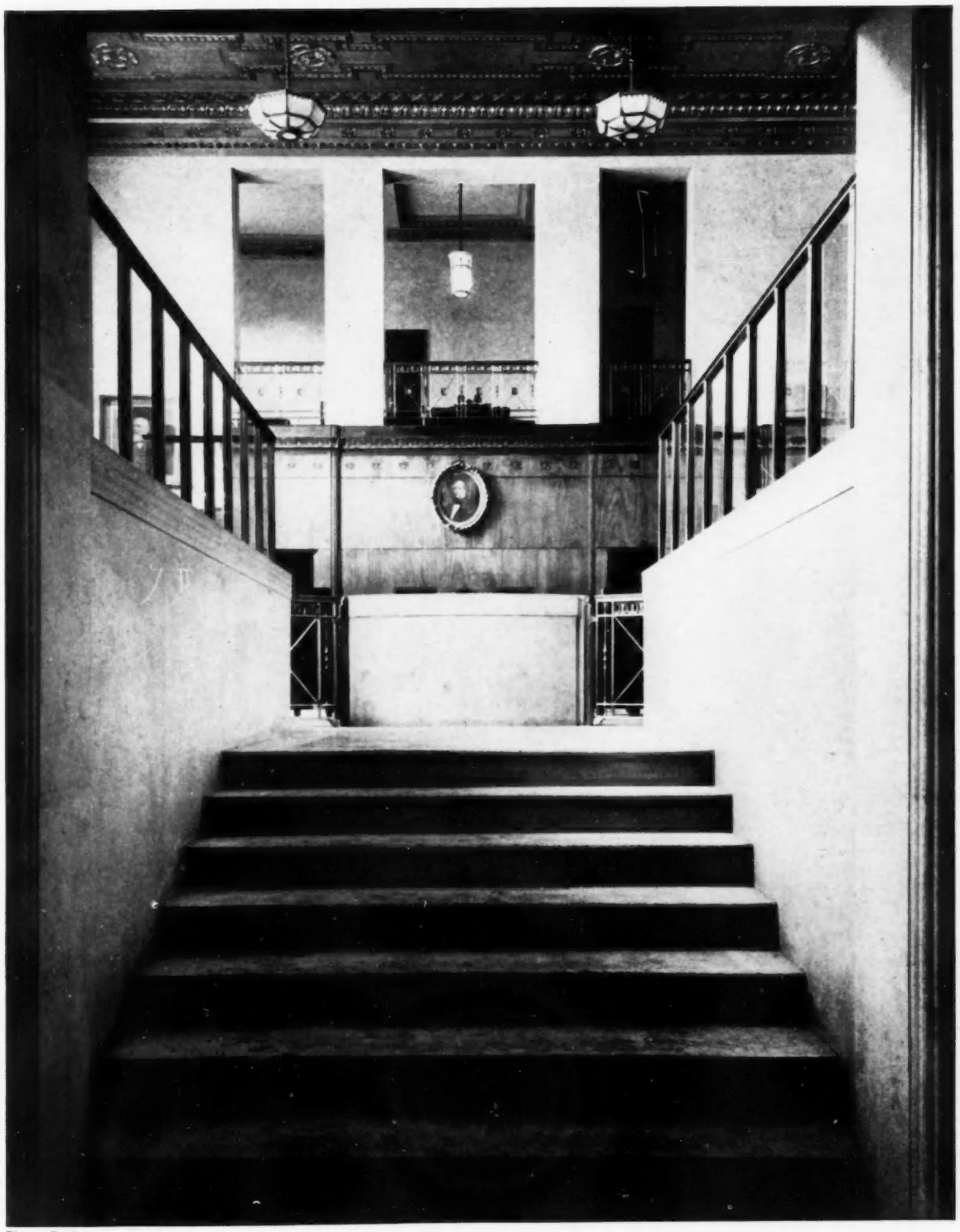


Photo. Fischer

APPROACH TO FIRM'S ROOM

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

Photo. Fischer

TRADERS' ROOM

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

Photo. Fischer

FIRM'S ROOM

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

Photo. Fischer

DETAIL, FIRM'S ROOM

PRIVATE BANKING HOUSE OF E. W. CLARK & CO., PHILADELPHIA

ZANTZINGER, BORIE & MEDARY, ARCHITECTS

TENDENCIES OF THE SCHOOL OF MODERN FRENCH ARCHITECTURE

BY MICHEL ROUX-SPITZ AND JEAN PORCHER

INTRODUCTION BY PAUL P. CRET

INTRODUCTION

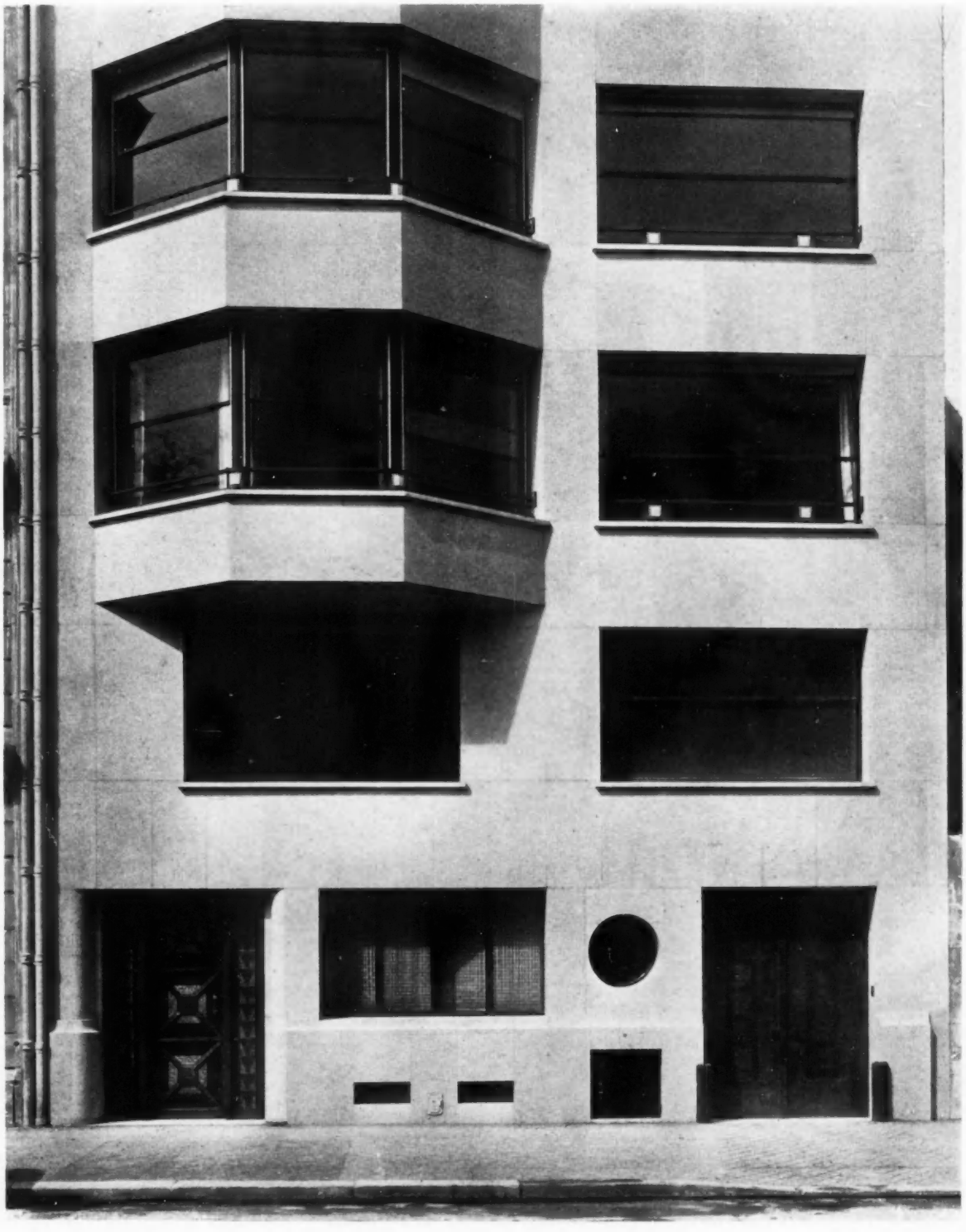
THE KEEN enthusiasm for "modern art" which has been manifested in the last five years in this country has awakened also an interest in the history of its growth in Europe. Side by side with those who are satisfied with enriching their libraries of "cribs," there are always a few who, knowing that the blossoming of a new system of ornamentation and a new outlook on what constitutes beauty are not created overnight, want to find out how they developed. It is to satisfy these that The Architectural Record requested Messrs. Roux-Spitz and Porcher to write of the modernist tendencies in France. The task would require greater length than that of a magazine article to attempt a clear statement of the aims of the leaders and their followers.

APARTMENT BUILDING FACING LUXEMBOURG GARDENS, PARIS
MICHEL ROUX-SPITZ, ARCHITECT

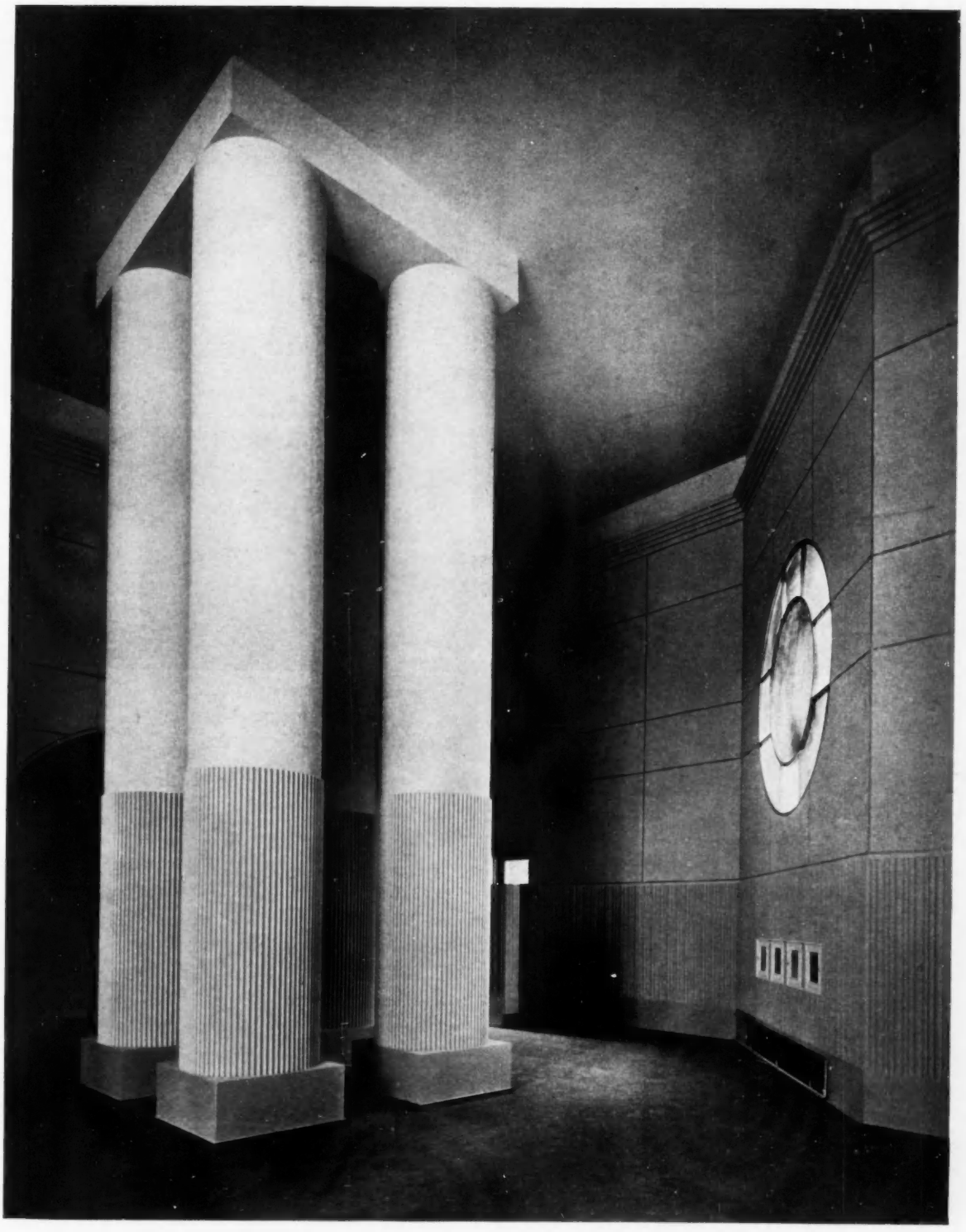
As could be expected, there are, among these leaders, differences of point of view on fundamental principles which may seem bewildering. Where some, for instance, proscribe all decoration and claim that beauty is to be reached through the unadorned path of mathematics and logic—a beauty which has been described by a philosopher as "la splendeur du vrai," others will pay heed to a want as old as humanity, and make larger appeals to the collaboration of the sculptor and the painter to enhance the combination of volumes and surfaces devised by the architect.

The authors of the paper are themselves in the forefront of the Modernists. Being in the thick of the fight, it would be unreasonable to expect of them Jovian impartiality in their review of the various leaders, or in their comments on what is not modern according to their light. Men of strong faith are inclined to believe that outside their small fold all sheep are black.

Looking more dispassionately at the various schools, we may the more fairly appraise their contribution to the common cause. We see at play two types of minds which have been in conflict since there has been an Architecture; one, fond of logic, of order, giving precedence to the planning and general disposition of the buildings over their decorative treatment, coming



DETAIL OF FRONT FAÇADE
BUILDING NEAR LUXEMBOURG GARDENS, PARIS
MICHEL ROUX-SPITZ, ARCHITECT

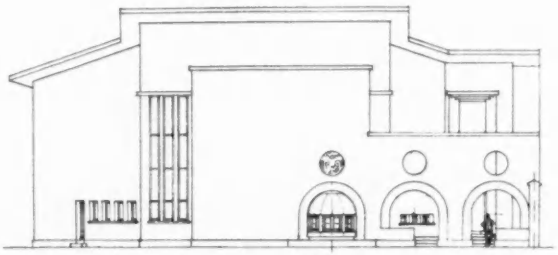


HALL
A PRIVATE RESIDENCE IN BOULOGNE-SUR-SEINE, FRANCE
PATOUT, ARCHITECT

ENTRANCE DETAIL

A PRIVATE RESIDENCE IN BOULOGNE-SUR-SEINE, FRANCE

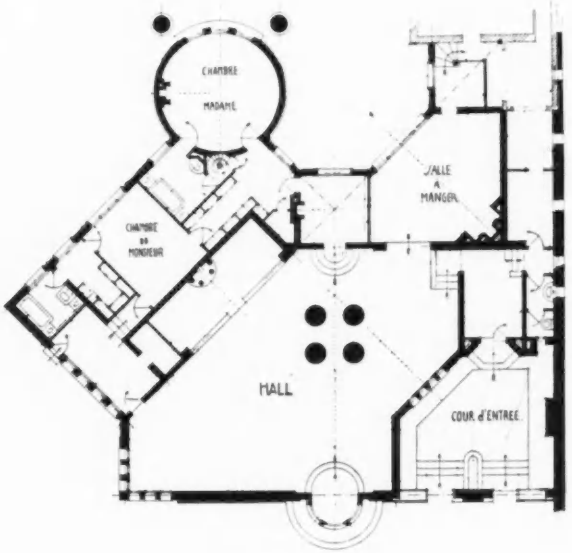
PATOUT, ARCHITECT



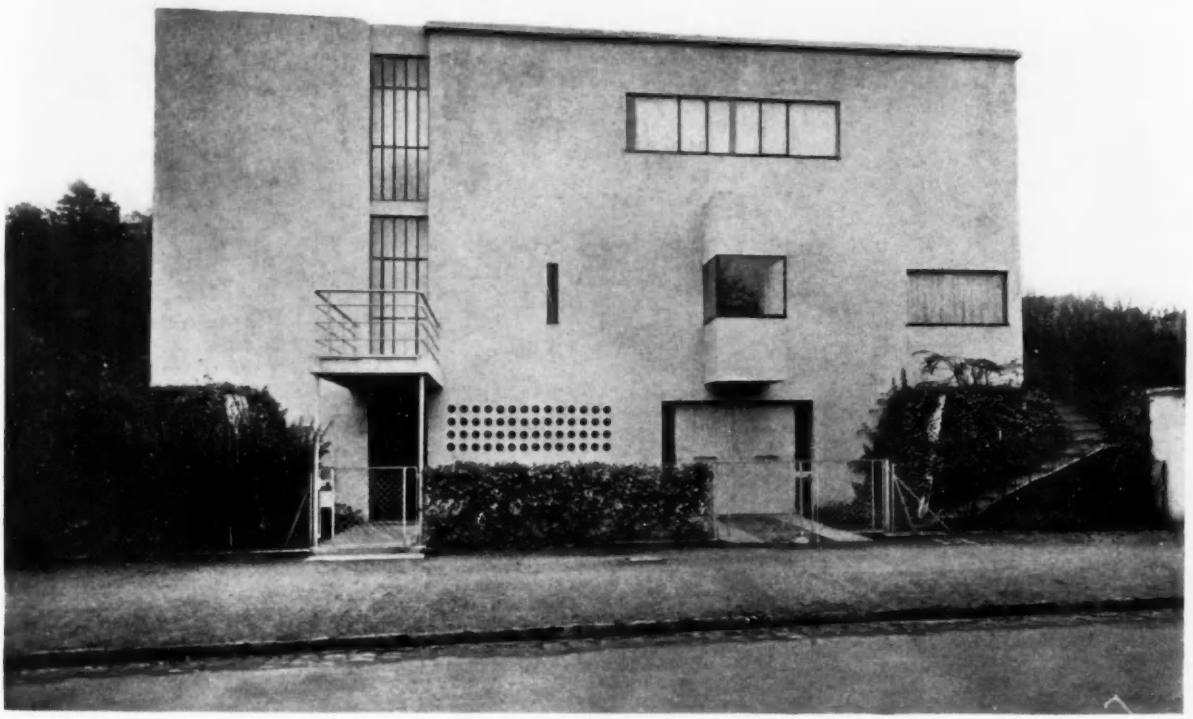
ELEVATION

even to distrust decoration which is too often used to conceal weakness of design. It is men of this type who create buildings really modern, that is, answering the needs of contemporary life through appropriate planning, the use of modern constructive systems and modern materials.

The other type is too sensitive to the beauty of form, to the charm of decoration, of color, of craftsmanship, not to be tempted



FLOOR PLAN



FRONT FAÇADE
A VILLA IN VAUCRESSON, FRANCE
LE CORBUSIER, ARCHITECT

to consider these means of embellishment an end in themselves. To these we are indebted for the blossoming of a new vocabulary of ornament; for the revival of the crafts as witnessed in furniture, metal work and ceramics. It may be that they are not far from this academic art they profess to despise. This, however, is another story.

The long and disinterested effort of both has borne fruit. To the critics of not long ago who denied that there was such a thing as "Modern Art," they have answered like Diogenes to the arguments of Zeno denying movement—"They have moved."

THE ARCHITECT composes, constructs, decorates. Of these three essential operations he may possibly attach more importance to one to the detriment of the others, according as his temperament or taste (or those of his generation) tend to make him interest himself more in the plan, or in the materials used and method of using them, or in the design of the façade; his work may be none the less fine on that account.

If it is not proper to brand as "ugly" a modern building—a factory or skyscraper, for instance—because of its lack of ornament, neither ought one to condemn, on the strength of some abstract principle, decorative façades which may be unrelated to the building and have no other purpose but to please. Do they succeed in pleasing? If they do, that is sufficient justification for their existence. In such a case, more than in anything else, it is success that counts.

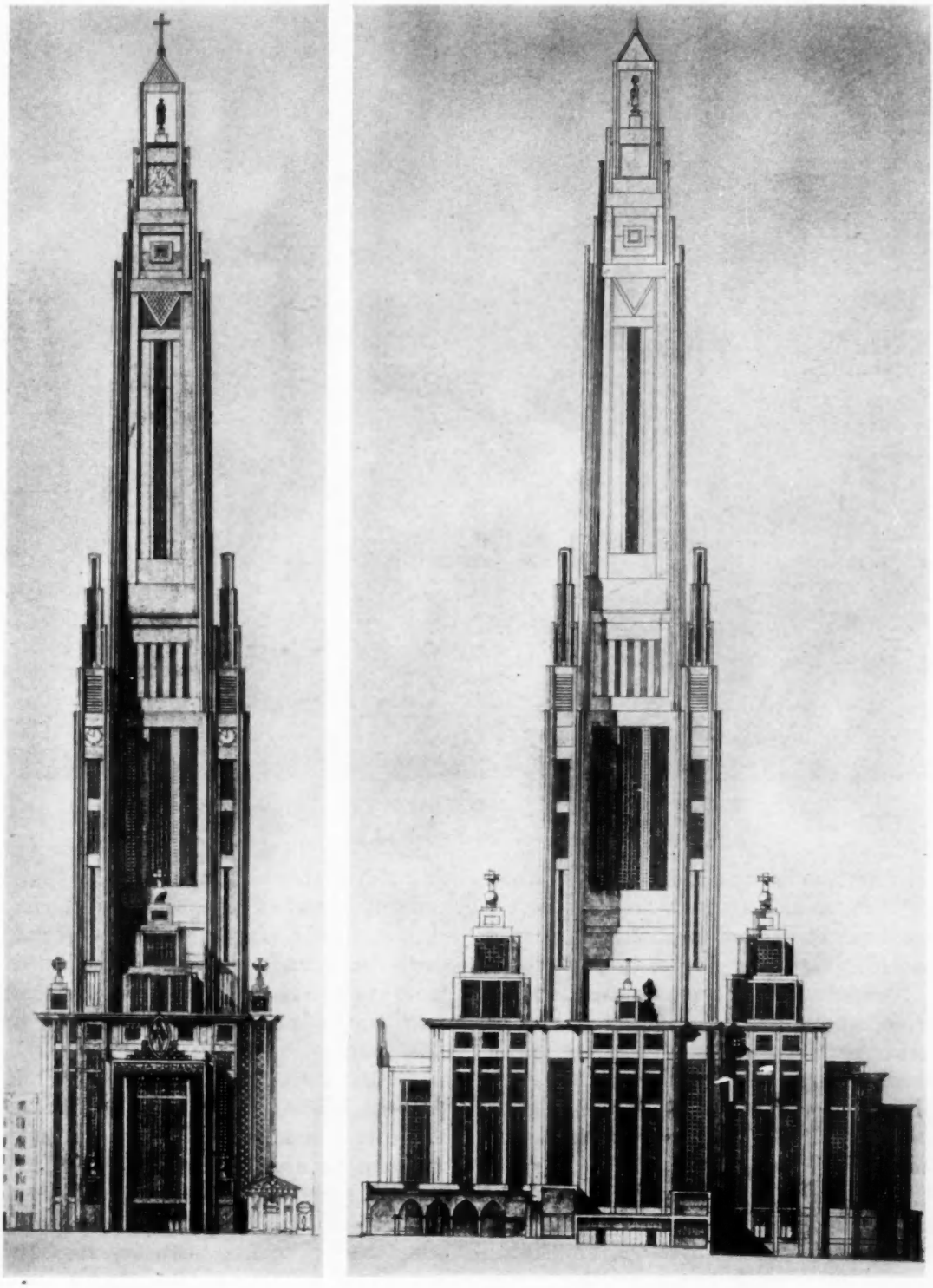
Success is necessary, and the difficulty about the architecture of façades is that it cannot dispense with genius, or at least, with creative imagination. Otherwise it

would live merely on tradition, using with more or less success forms designed during periods of creative genius, which have fallen by degrees (for such is the rule) to the rank of mere formulae; or perhaps, which amounts to the same thing, it would be dominated by the spirit of system, the architect contenting himself either with acting contrary to custom or by enunciating his theories in writing and in speech.

All academic architecture of recent times, in which study of façade ranks of first importance, is founded on imitation. Intelligent and correct imitation it may be, but original genius is entirely lacking. Nothing could be colder than those severe displays of columns, of pediments, of trophies, of garlands, of massed pompous *motifs* diligently learned, diligently used again and again. Perhaps it is unjust to reproach academic architects for putting the study of the façade before anything else. After all, they have the right to do so. The serious point about it is that they get into the habit of seeing nothing but the drawing in a building, and a drawing which gets easier and easier, a mere collection of stereotyped forms. Academic architecture spells the school of least effort. And, behind the façade, it matters not what is built!

DETAIL OF INTERIOR
A VILLA IN VAUCRESSON, FRANCE
LE CORBUSIER, ARCHITECT

The spirit of system, which has recently made its appearance in France, has found there its most remarkable exponent in Le Corbusier (who, by the way, is a Swiss) who has been followed by other architects, among whom is Lurçat. In principle, his architecture and that of his followers is opposed to the imitation of traditional forms; it claims to be founded solely on utility. Architecture, he says, is not intended solely to please the eye, but especially to be of service, and it should only draw inspiration from life. Beauty will then come to it naturally and abundantly. These reasonable ideas Le Corbusier has defended with energy and talent in a series of volumes. But of modern man and modern life he has an exaggerated opinion. According to him, the one thing characteristic of our times is—the Machine. The machine is free from all attachment to a useless past, is the perfect expression of modern man; it is practical, exactly fitted to its rôle, always there. Nothing unnecessary in its construction exists, since it was made to fill a certain well-defined function. Solely because of that, its shape is free from all artifice and is beautiful. This unintentional beauty, truly machine-like, all strength and simplicity, a natural creation of our times—this is "modern" beauty. But how does the machine get its qualities, this beauty? It is chiefly the result of selection—pitiless



FRONT ELEVATION SIDE ELEVATION

ARCHITECTS' DRAWING FOR BASILICA TO JEANNE D'ARC, PARIS

A. & G. PERRET, ARCHITECTS

SWIMMING POOL, BUTTE AUX CAILLES, PARIS
BONNIER, ARCHITECT

selection which strips it of all non-essentials. This, then, is the model to copy—even as an engineer constructs, from certain precise formulae, the device used in flying from New York to Paris, or the printing machine, so should the architect be able to construct the contrivance "to dwell in."

Let us try to define this function—"to dwell in." Everything lies in this definition, and here we find absolute tyranny. "Modern" life is not so simple as the functions of a machine and if one bears in mind that there are excellent machines for manufacturing night-caps as well as for driving at the rate of a hundred miles an hour, one finds it hard to visualize what Le Corbusier means by "a machine to dwell in." He wanted to show it to us, so he created, in accordance with his theories, a certain type of house. But one cannot agree that this is, as he claims, the house-type. Le Corbusier's architecture belongs to a system. As in the case of the architecture of tradition, it leads to the pursuit of arbitrary form and a formula. It is the contrary of, and no more realist than, academicism. Whether he wishes to or not, he is impelled to design façades or ornaments to correspond with his ideal of "modern" form.

The systematic builder may use methods the reverse of his predecessors in a still simpler way. Instead of curves, he may have straight lines; in place of masses more or less elegantly rounded—cubes; he may multiply unnecessarily the angles, corner windows, details not plumb, and substitute

CHURCH OF STE. THÉRÈSE AT MONTMAGNY, SEINE-ET-OISE, FRANCE
A. & G. PERRET, ARCHITECTS

wherever possible the vertical for the horizontal. And these new forms he will name "modern." Say, for instance, he builds a shop. Since custom has decreed hitherto that shop windows be wide areas fronting on the street and the wares exhibited be separated from the public only by huge sheets of plate glass, his shop front must consist of solid walls broken only by a narrow slit for a show window!

But the Russians at the Paris Exposition of 1925 went a step further. They introduced an oblique staircase, a roof open to sun and rain, and shops higher on one side than the other, so that one had to bend double or raise himself on tiptoe in order to see the goods exposed for sale. Since their like had never been seen before, they were considered the last word in "Modern."

In France we have not yet come to that. Everything tends to show that, in spite of the regret felt by a few, it will be a long time before we reach that stage. For each day we realize more fully that the future of our architecture is neither in superficial academicism nor in the naïve and all-theoretical cult of the "modern." Especially is this apparent in the attentive study of composition and in the feeling for the constructional side which since the Middle Ages have made for the value and glory of French architecture. Even when it was dominated by foreign taste, traditional tendencies were not lost. Colbert reproached Cavaliere Bernini for not having sufficiently studied the plan of the Louvre when it was

submitted to him, and for attaching too much importance to the purely decorative features of the palace to the detriment of its accommodation. Later, in 1741, Soufflot, the future architect of the church of Sainte Geneviève (now the Panthéon) read to the Lyons Academy a note on Gothic architecture full of praise for the constructive science and talent for composition displayed in the masterpieces of Rheims and of Notre-Dame. Both these men, without mentioning others, upheld a tradition which was revived later by Viollet-le-Duc and our great rationalist school exemplified by such names as Auburtin, Bonnier, Plumet.

In our times this tradition is represented by two groups, disciples of two masters possessed of intellect and talent, who differ widely in their views; one being, so to speak, the incarnation of the Art of Design, the other of Constructional Science.

Two schools have been formed and architects such as Expert, Hennequet, Lecoeur, Marrast, Patout, Selmersheim and others rally and ally themselves to one or the other according to their tendencies and the differences in personal temperament.

One of these groups is dominated by the work of Tony Garnier, which is entirely guided by one idea. This idea is that architecture, a social work, is a public service in the same class as the Post Office or the Department of Roads and Bridges; it is for the people and by the people. Only large enterprises for the public good interest him —garden cities, hospitals, schools, stadiums—he has never done anything else but these. Little attention is paid to form, or rather, the plan (first concern of Tony Garnier) takes precedence over it. In composition he has no rival in skill.

This explains his predilection for large plans, difficult problems which serve to stimulate his ingenuity and which he amuses himself in solving. Plan to him means everything and the material employed counts hardly at all. Concrete, masonry, brick, stone, marble, iron are the same to him. The idea of economizing on material never even enters his head. His client is a city administration and one too much an adept at socialist financing to pay much heed to waste.

By way of contrast, it is strict attention to economy which distinguishes Auguste Perret. Perret is the best constructive architect in France today. He has made himself champion of ferro-concrete which he handles in a masterly way. With this material—invaluable but lacking in decorative quality—he has created monuments as original and varied as the Théâtre des Champs Elysées, the Tour d'Orientation at Grenoble, the church at Raincy or the proposed basilica to Jeanne d'Arc in Paris.

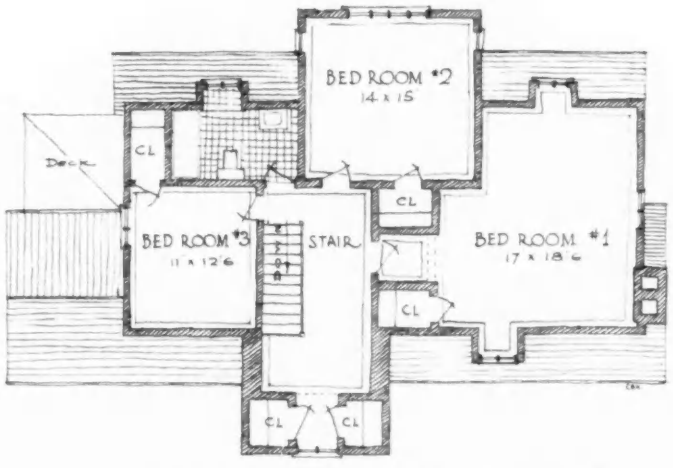
Tony Garnier's interest, then, lies solely in the plan, Perret's in the skeleton. From his sojourn at the French Academy in Rome, Tony Garnier has retained a taste for the monumental, in evidence of which he always introduces the *Thermes de Caracalla* in his designs. We find nothing like that in Perret's work. The design of the latter arises naturally from his construction. Everything he designs is sincere to such a degree that he generally refuses to allow ornamentation to be applied on the concrete, which therefore remains unadorned (this is also due to economy). For him, the essential study is that of calculation of thrusts and resistances. Nothing unessential—that is his rule. If, however, one desires to draw inspiration from the machine, insofar as essential quality is concerned, this is the best way. But Perret's method shows no trace of arbitrary definition of form.

The talents of these two architects complement each other. One can only wish for a union of the tendencies they represent—both so rich in promise. For if imitation of traditional forms continues, then only the study of plan and constructive science, which demand constant improvement on the part of the architect, can prevent him from abandoning himself to peaceful and dangerous ease.

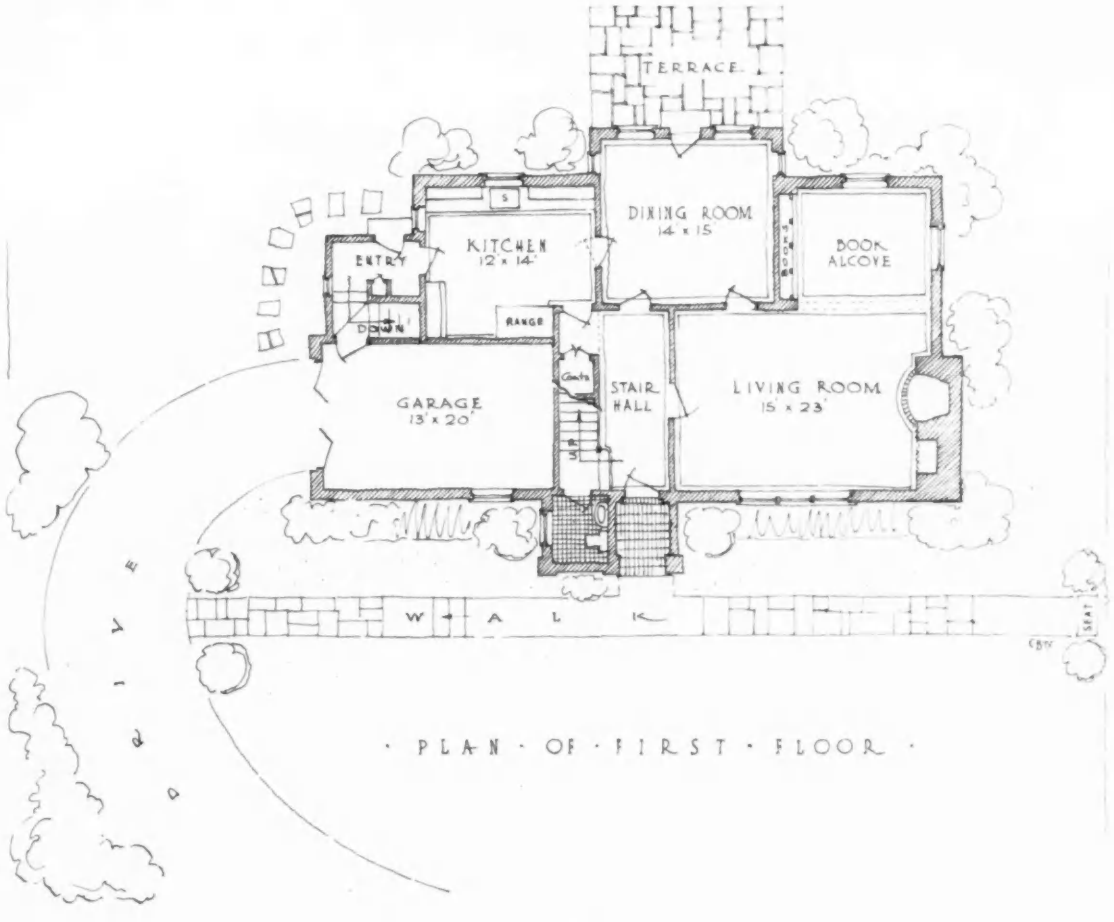
PORTFOLIO
OF
CURRENT ARCHITECTURE

Residence of Cvd Gaskell, Esq., Portland, Oregon
HAROLD W. DOTY, ARCHITECT

Featuring
THE SMALL HOUSE



PLAN · OF · SECOND · FLOOR



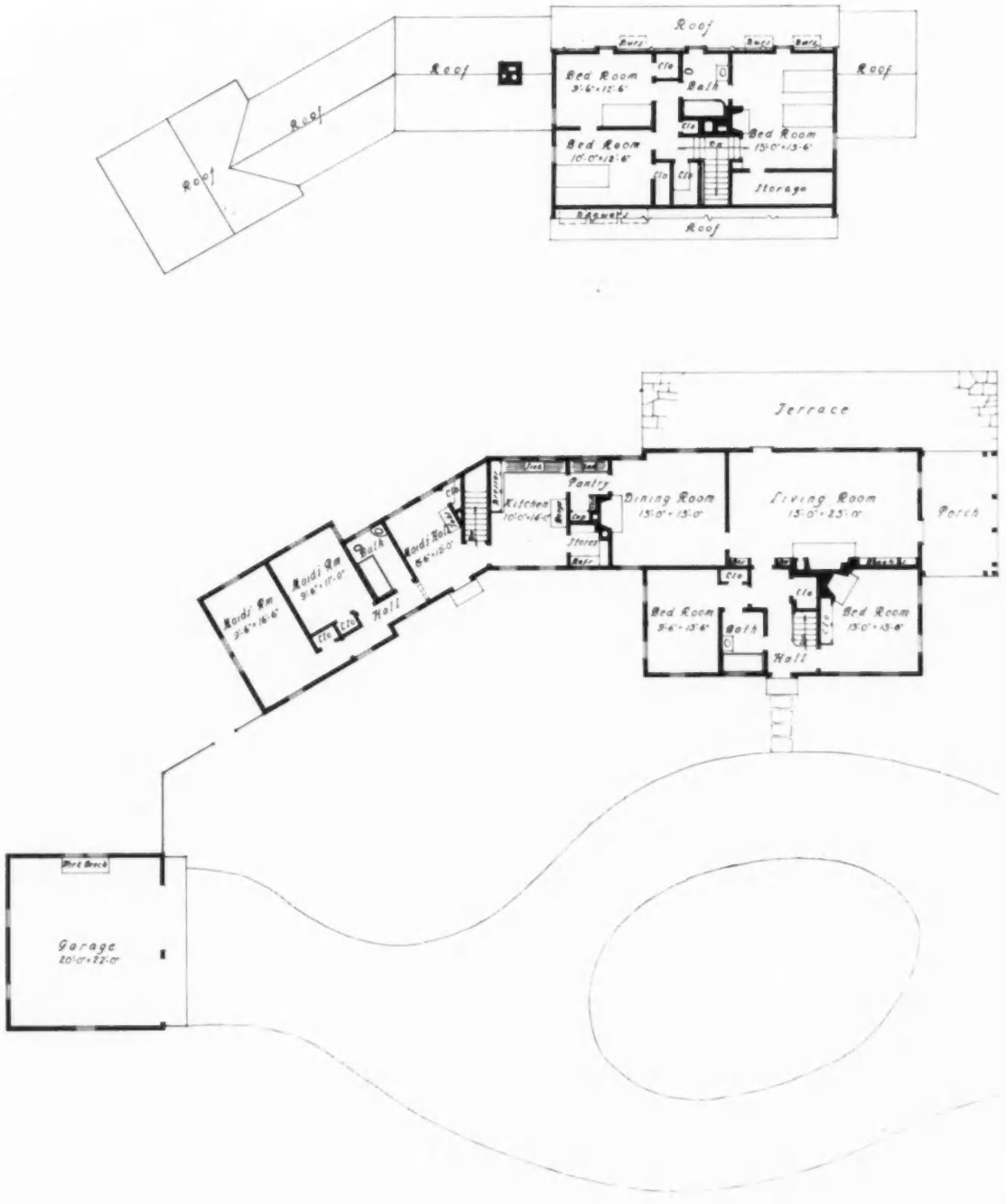
· PLAN · OF · FIRST · FLOOR ·

Residence of Cyd Gaskell, Esq., Portland, Oregon
HAROLD W. DOTY, ARCHITECT

Entrance Front

Photo. Louis H. Dreyer

Service Entrance
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT
HALLAM L. MOVIUS, LANDSCAPE ARCHITECT



Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT

The Terrace on River Side of House

Photo. Louis H. Dreyer

Living Room
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT

Photo. Louis H. Dreyer

View of House From the River
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT
HALLAM L. MOVIUS, LANDSCAPE ARCHITECT

Photo. Louis H. Dreyer

Entrance Doorway
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT

Photo. Louis H. Dreyer

Bedroom Fireplace
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT

Photo. Louis H. Dreyer

Dining Room
Residence of Constantine Hutchins, Esq., Needham, Mass.
CHARLES S. KEEFE, ARCHITECT

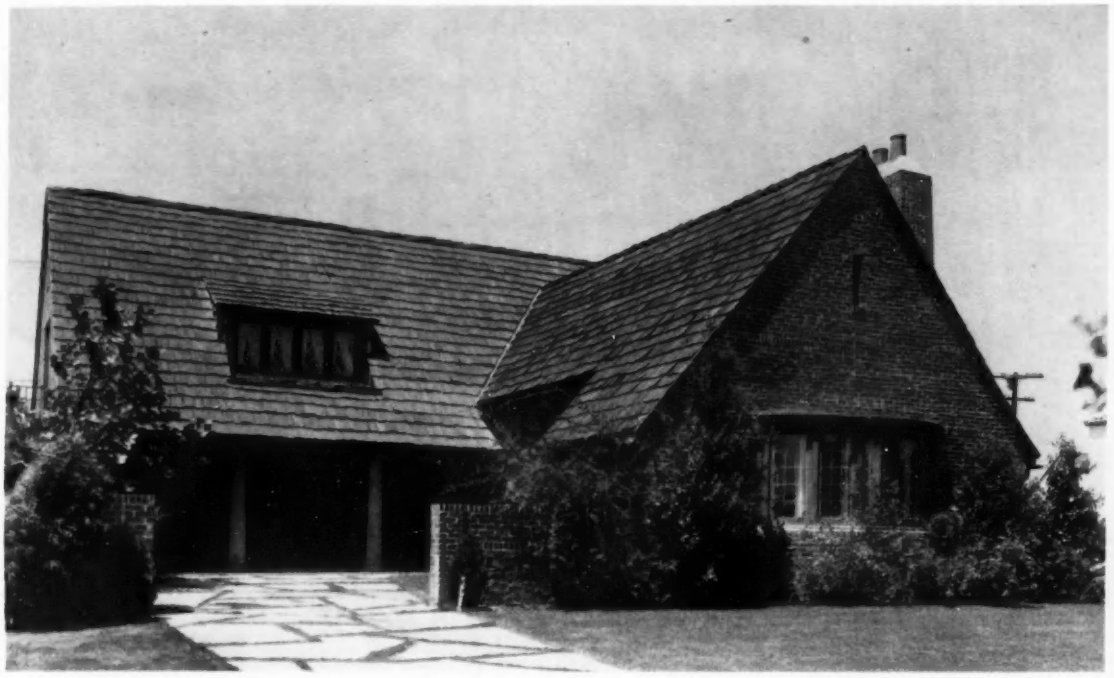


Photo. Matt Studio:

Residence of Gordon J. Hatert, Esq., Beverly Hills, California
MARSHALL P. WILKINSON, ARCHITECT

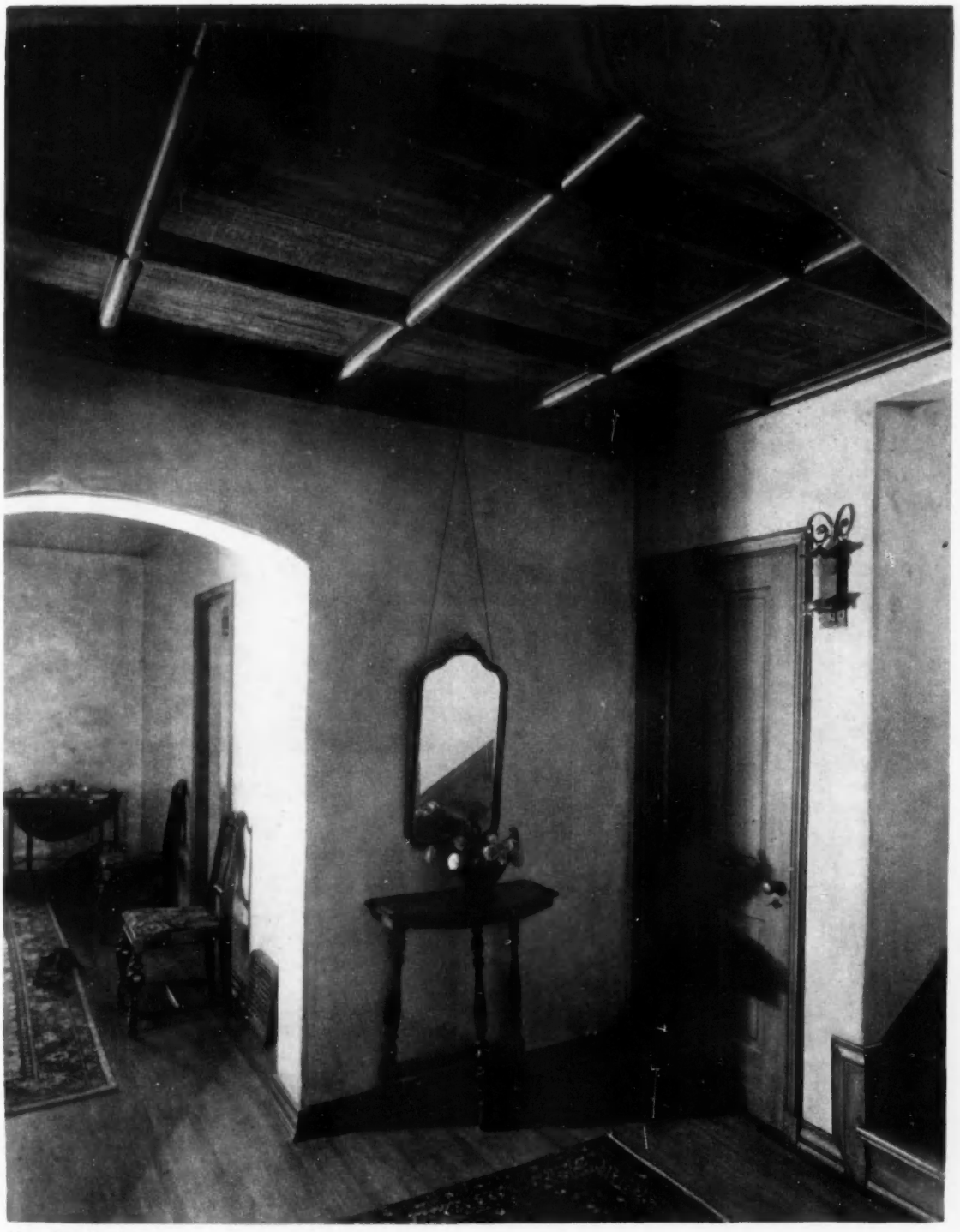
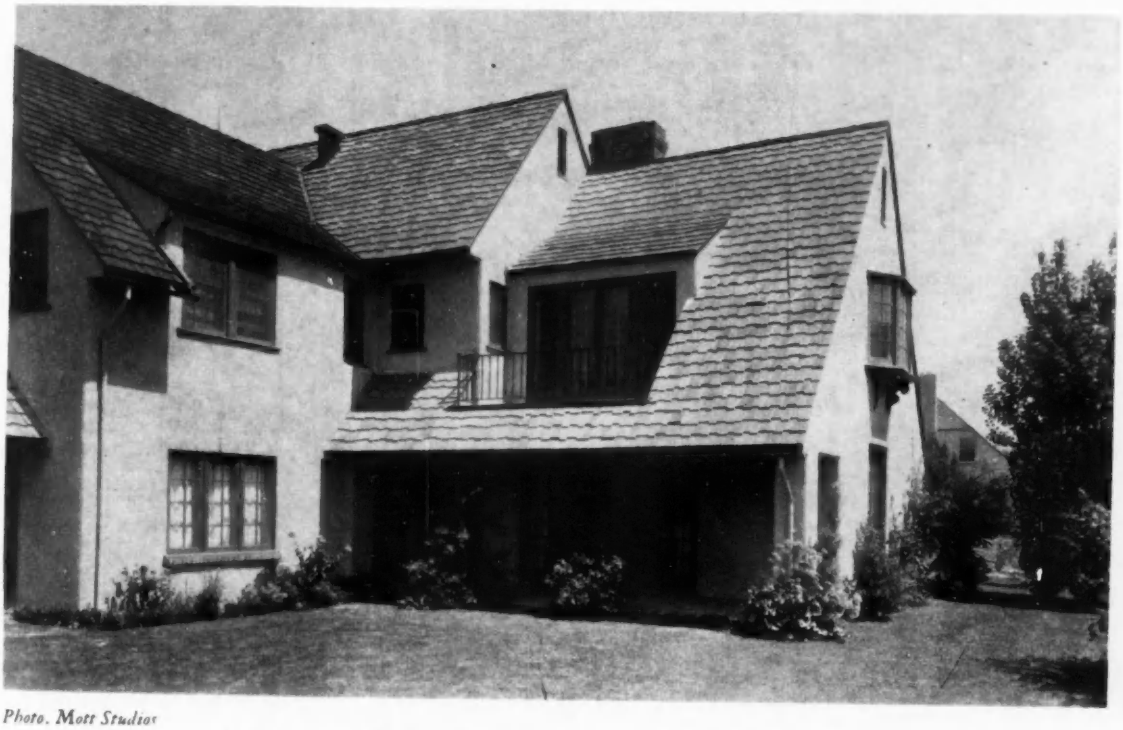


Photo. Mott Studios

Entrance Hall
Residence of Gordon J. Hatert, Esq., Beverly Hills, California
MARSHALL P. WILKINSON, ARCHITECT



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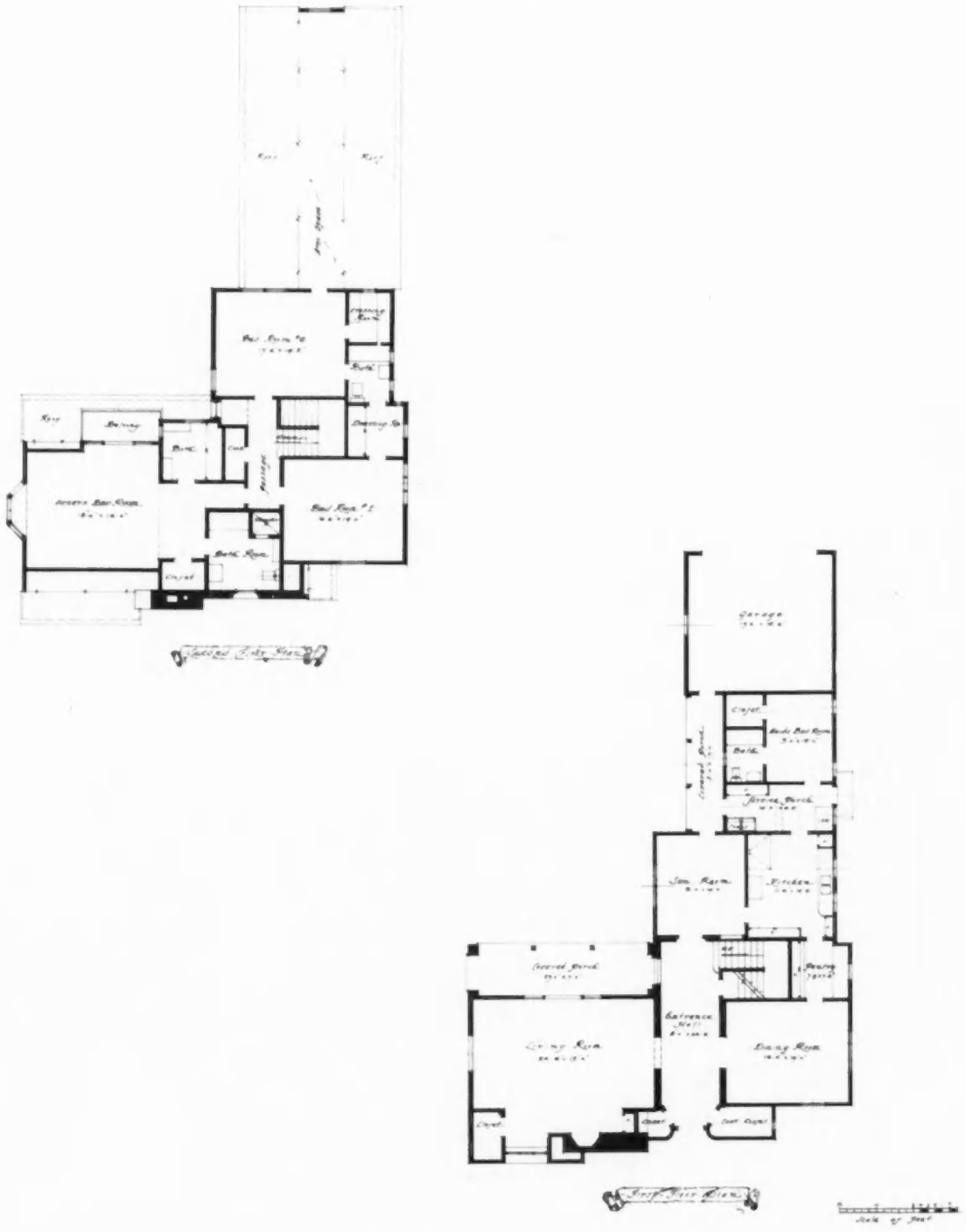
Residence of Walter Eseman, Esq., Beverly Hills, California
MARSHALL P. WILKINSON, ARCHITECT



Residence of Walter Eseman, Esq., Beverly Hills, California
MARSHALL P. WILKINSON, ARCHITECT

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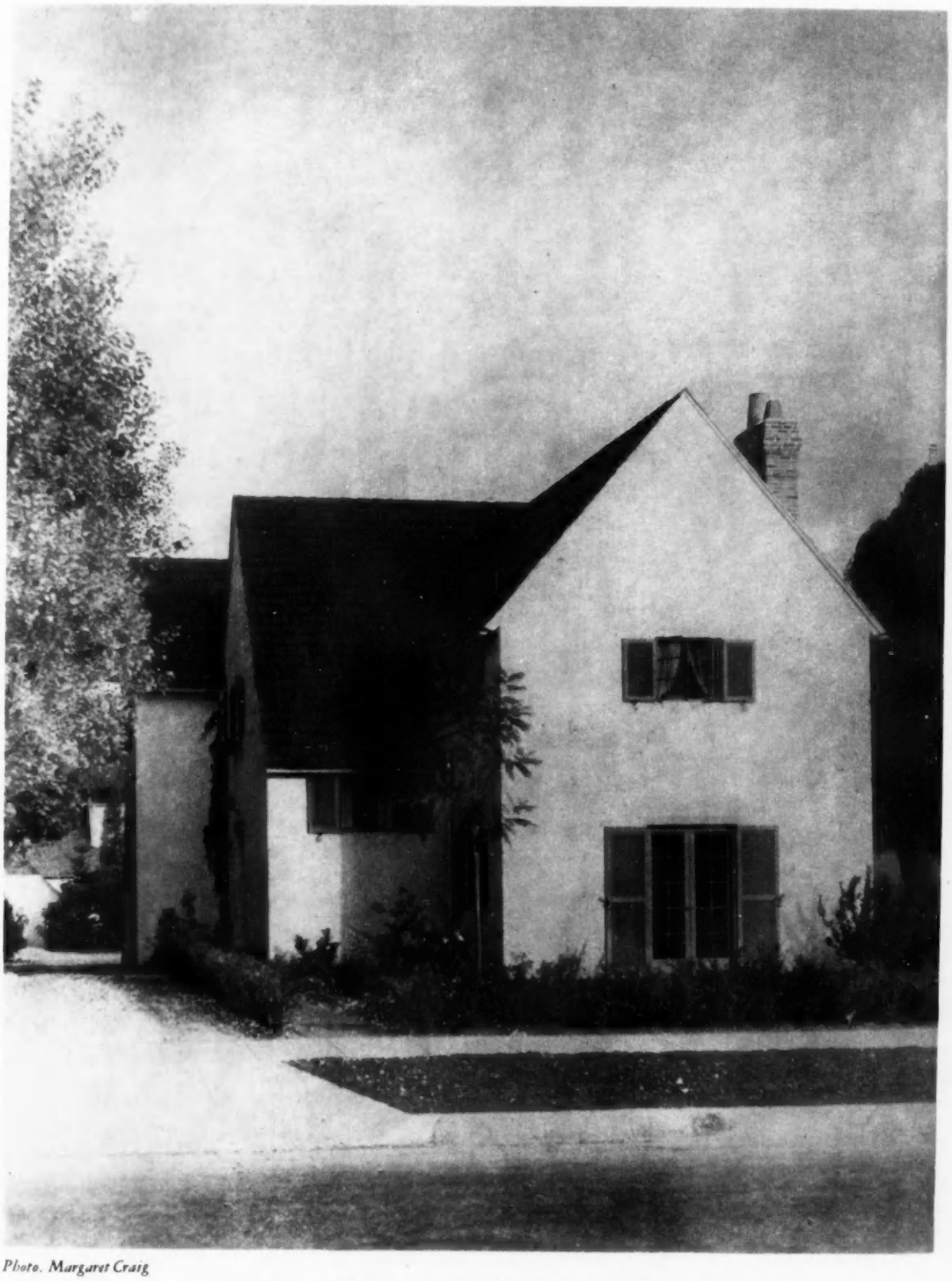
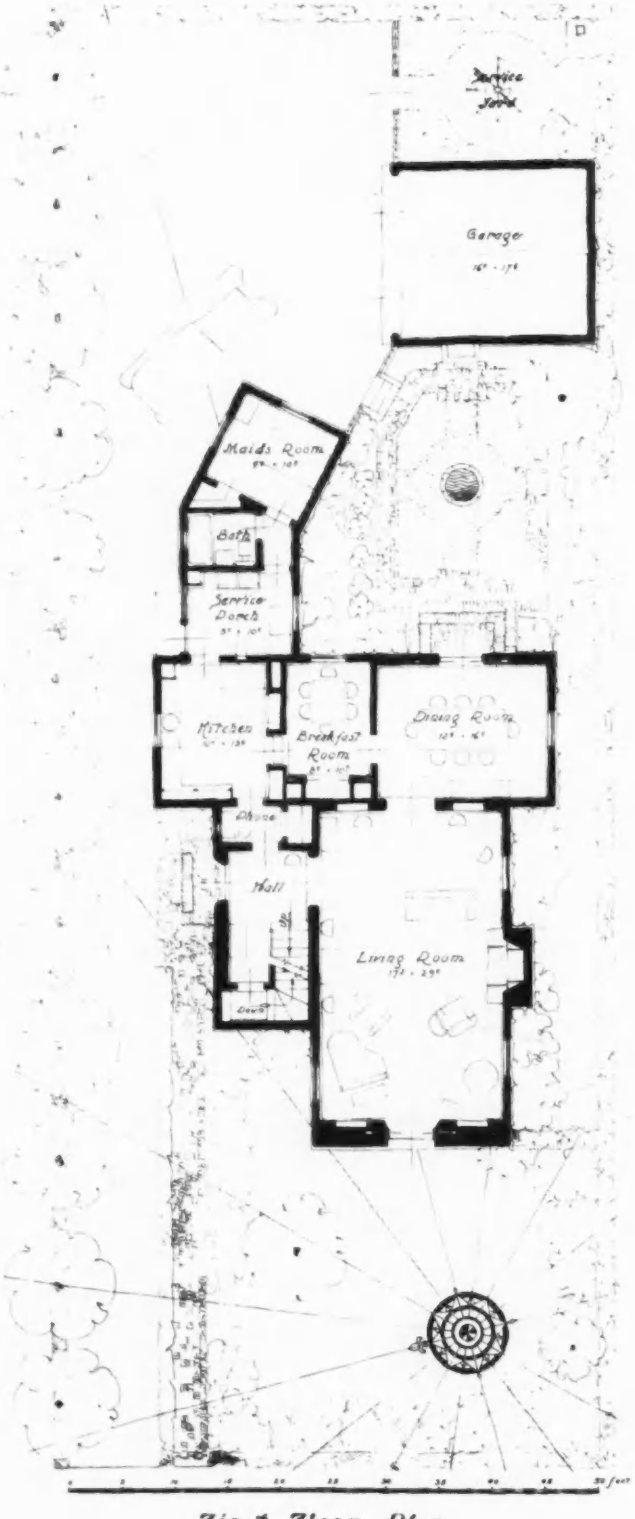


Photo. Margaret Craig

Residence of B. Y. Taft, Esq., Hollywood, California
A. C. ZIMMERMAN, ARCHITECT

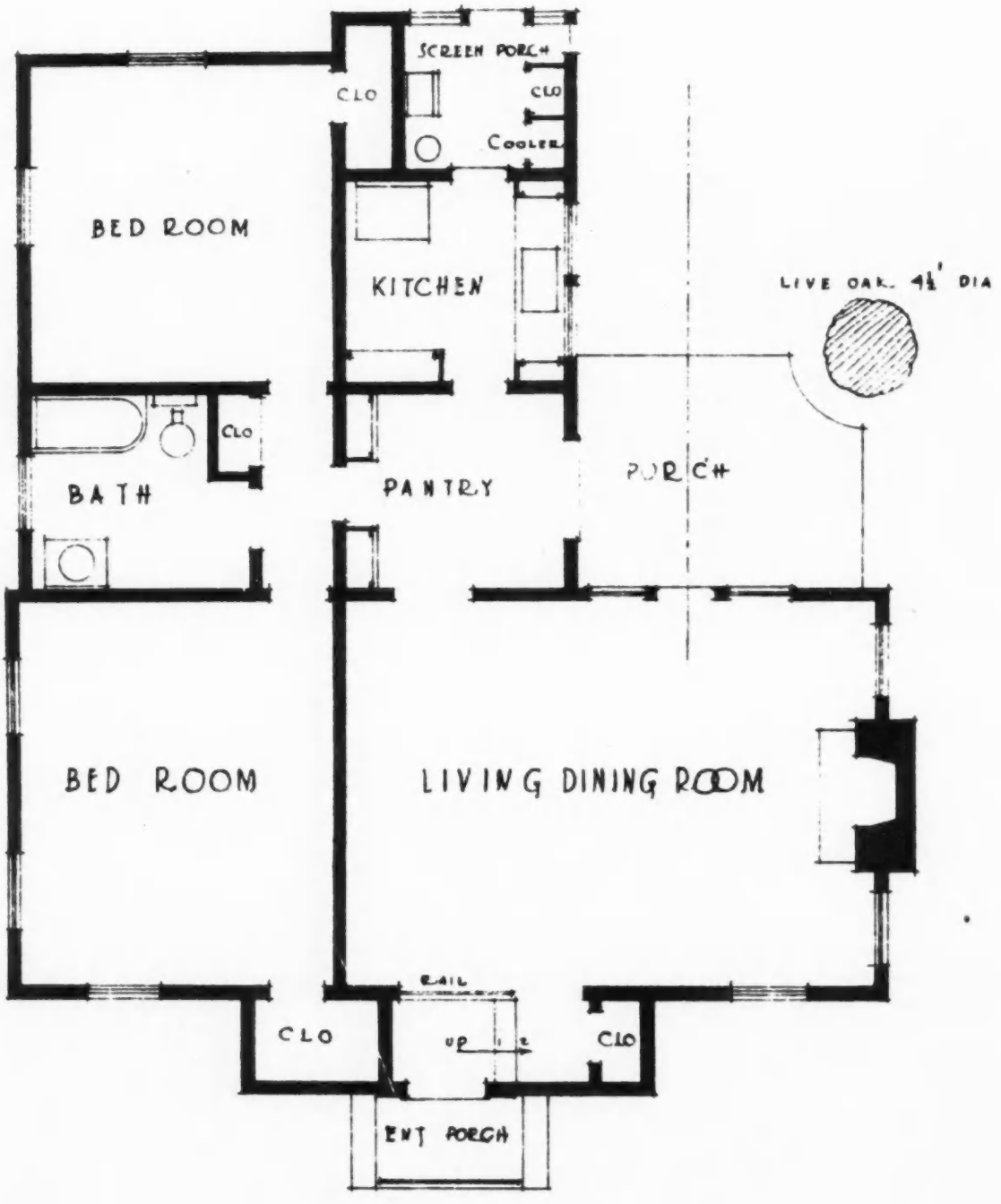


First Floor Plan

Second Floor Plan

Residence of B. Y. Taft, Esq., Hollywood, California
A. C. ZIMMERMAN, ARCHITECT

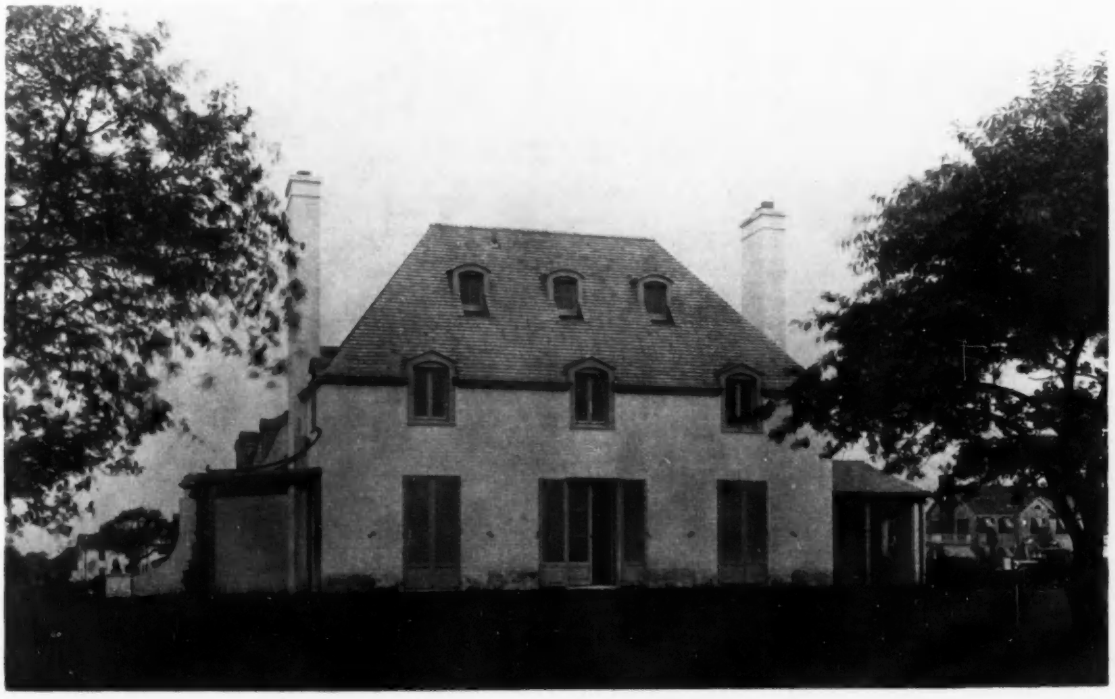
Residence of Mrs. M. P. McMurray, Pasadena, California
DONALD D. MC MURRAY, ARCHITECT



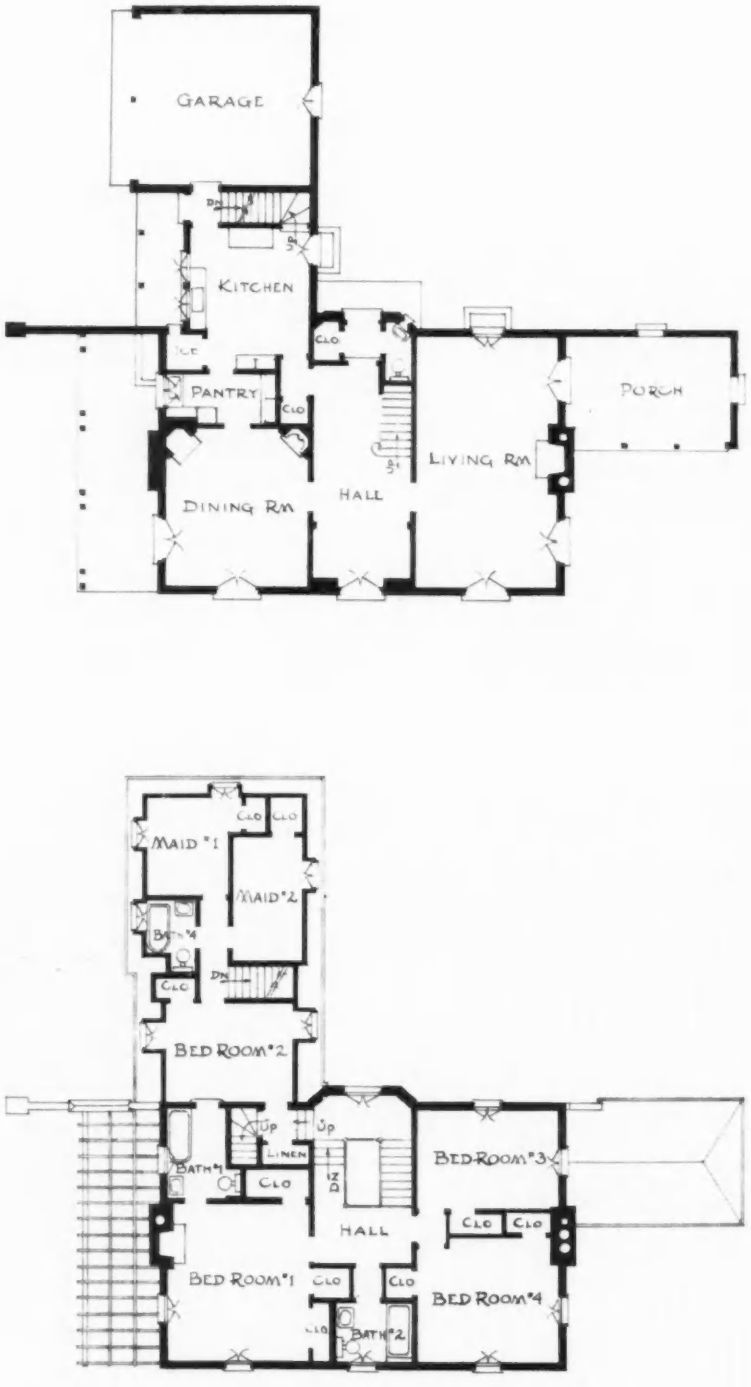
FLOOR PLAN

SCALE FOUR FEET

Residence of Mrs. M. P. McMurray, Pasadena, California
DONALD D. MC MURRAY, ARCHITECT

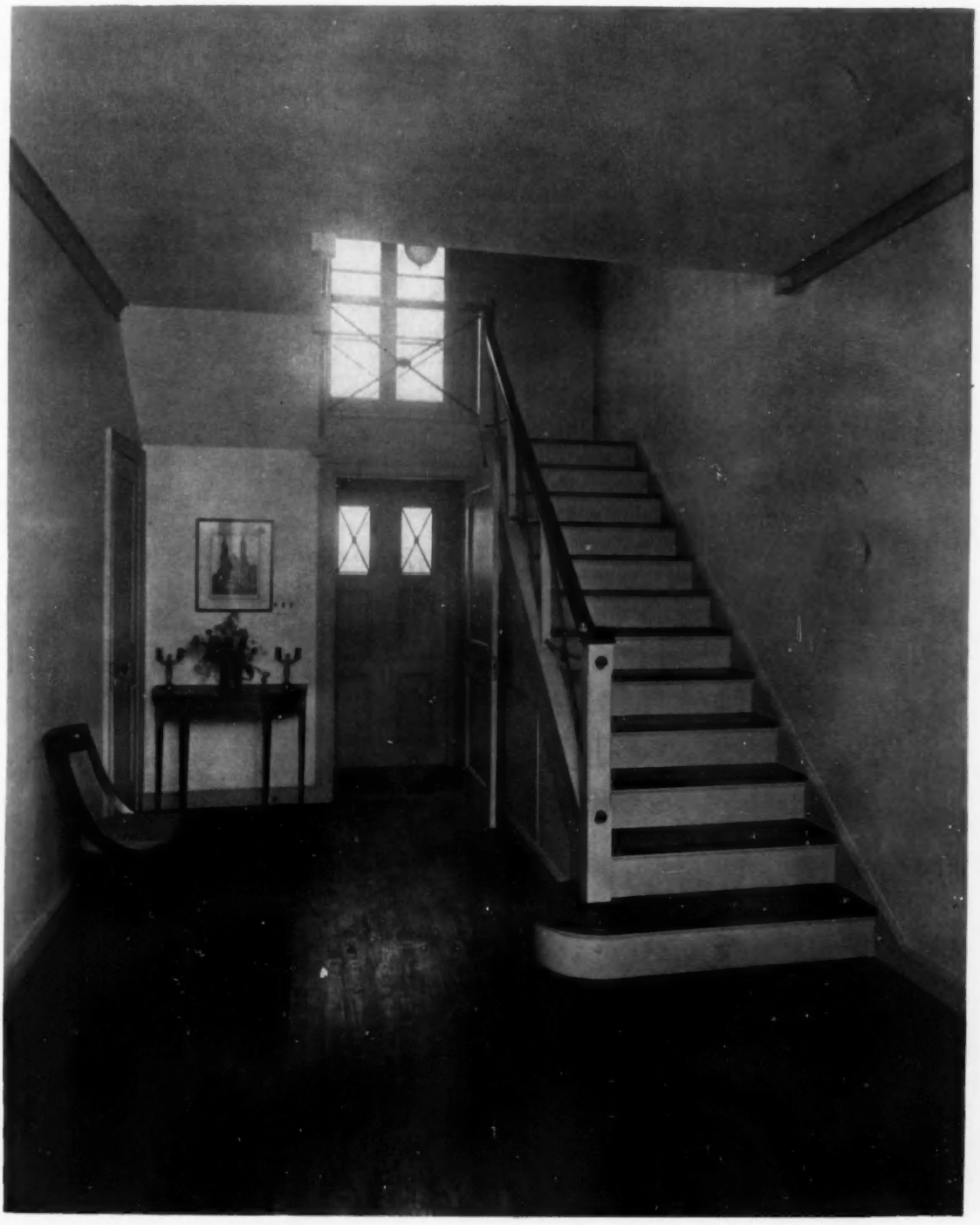


A Residence at Hewlett Harbor, Long Island, N. Y.
ALFRED EASTON POOR, ARCHITECT



A Residence at Hewlett Harbor, Long Island, N. Y.
ALFRED EASTON POOR, ARCHITECT

Entrance Doorway
A Residence at Hewlett Harbor, Long Island, N. Y.
ALFRED EASTON POOR, ARCHITECT



A Residence at Hewlett Harbor, Long Island, N. Y.
ALFRED EASTON POOR, ARCHITECT

Photo. Nyholm

RESIDENCE OF MRS. GEORGE W. BOSTWICK, MONTCLAIR, N. J.

CLIFFORD C. WENDEHACK, ARCHITECT

Photo. Nyholm

RESIDENCE OF MRS. GEORGE W. BOSTWICK, MONTCLAIR, N. J.

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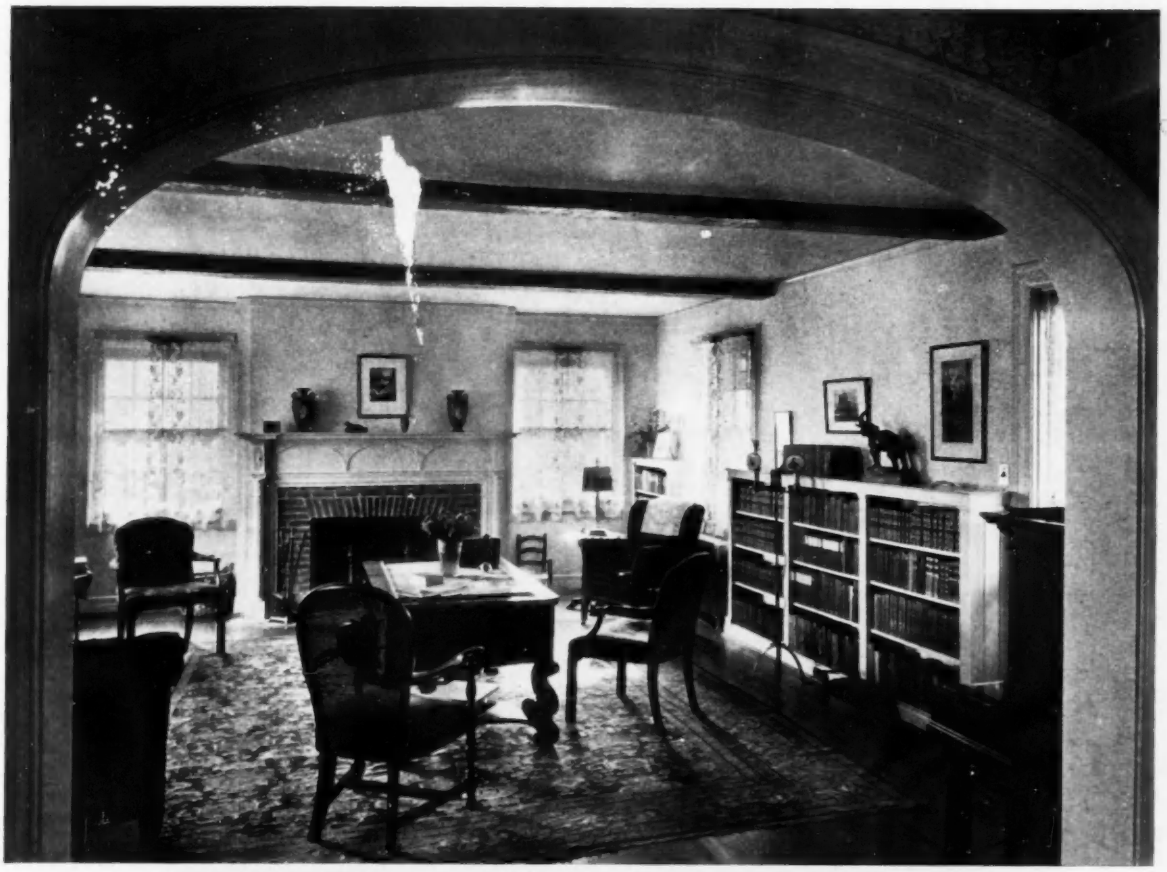
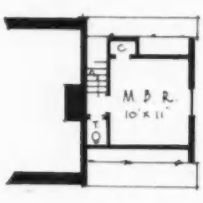


Photo. Nyholm

RESIDENCE OF MRS. GEORGE W. BOSTWICK, MONTCLAIR, N. J.

CLIFFORD C. WENDEHACK, ARCHITECT

Photo. Gillies, Inc.



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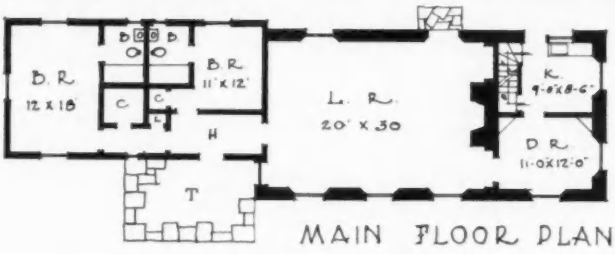
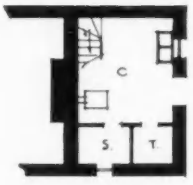


MAIN FLOOR PLAN



CELLAR

RESIDENCE OF ARTHUR OSBORNE, ESQ., DARIEN, CONN.

LEWIS E. WELSH, ARCHITECT

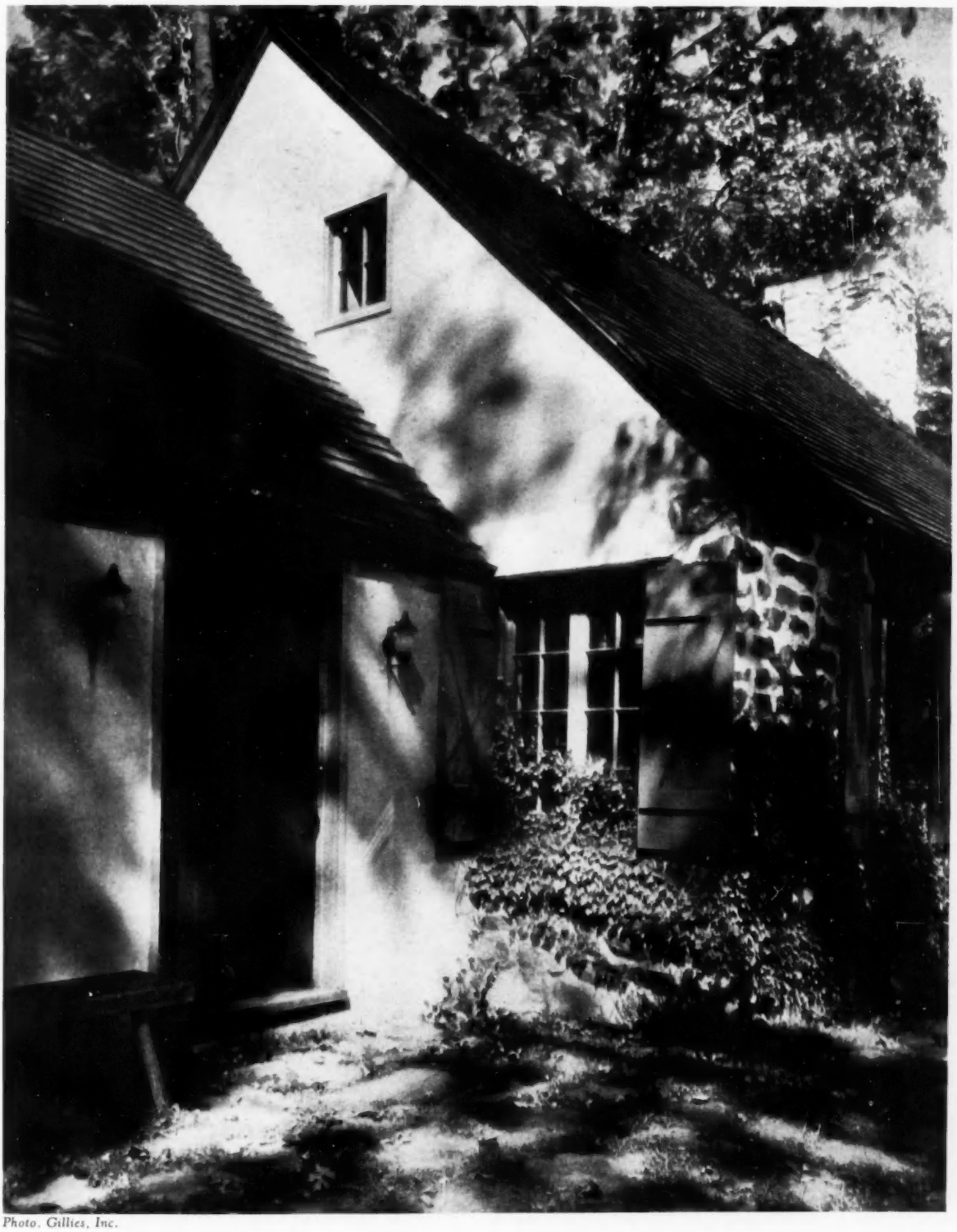


Photo. Gillies, Inc.

RESIDENCE OF ARTHUR OSBORNE, ESQ., DARIEN, CONN.
LEWIS E. WELSH, ARCHITECT

Photo: Gillies, Inc.

RESIDENCE OF ARTHUR OSBORNE, ESQ., DARIEN, CONN.

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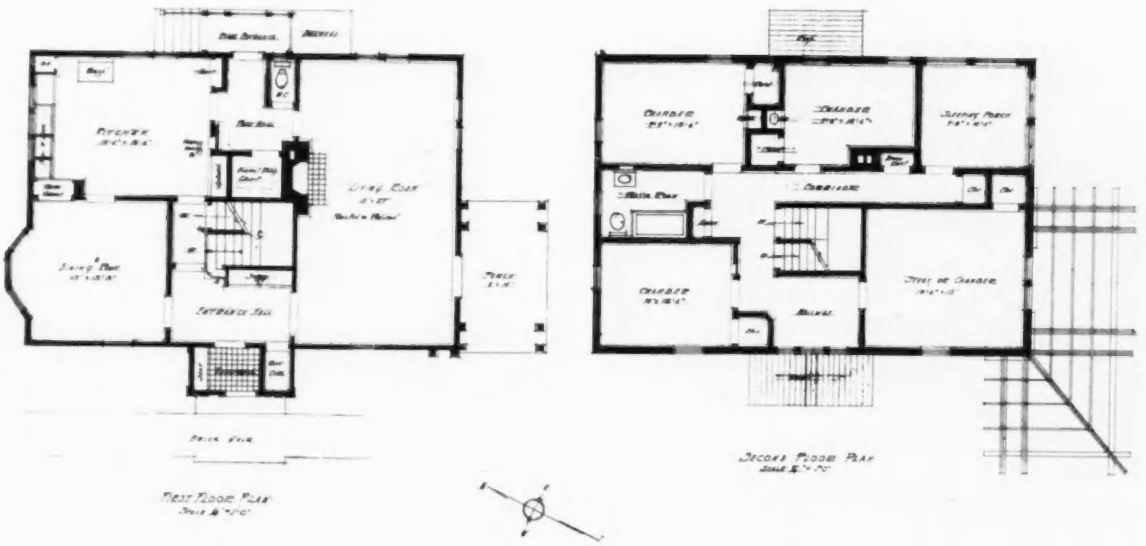
RESIDENCE OF ARTHUR OSBORNE, ESQ., DARIEN, CONN.

LEWIS E. WELSH, ARCHITECT

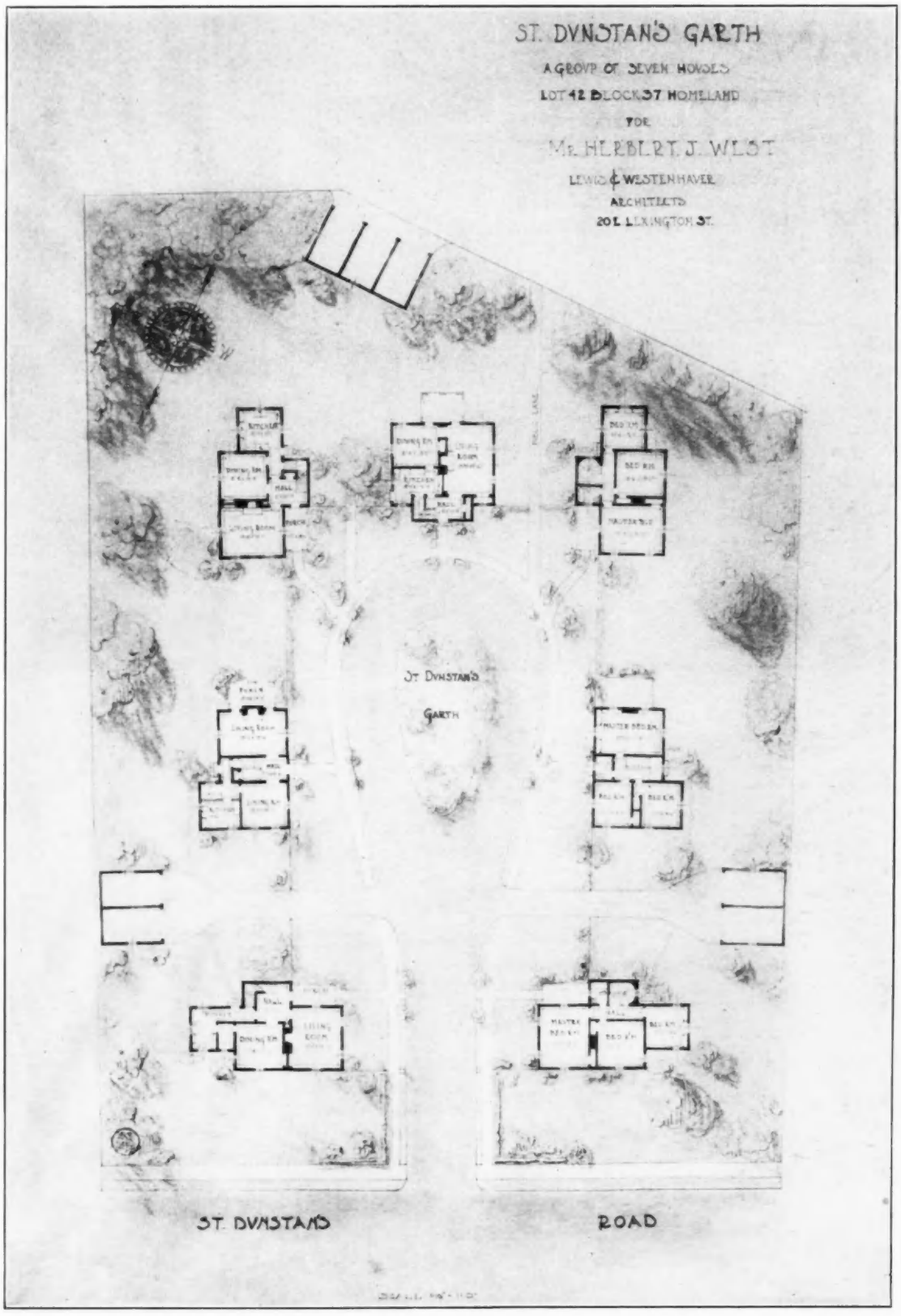
Photo. Geo. H. Davis

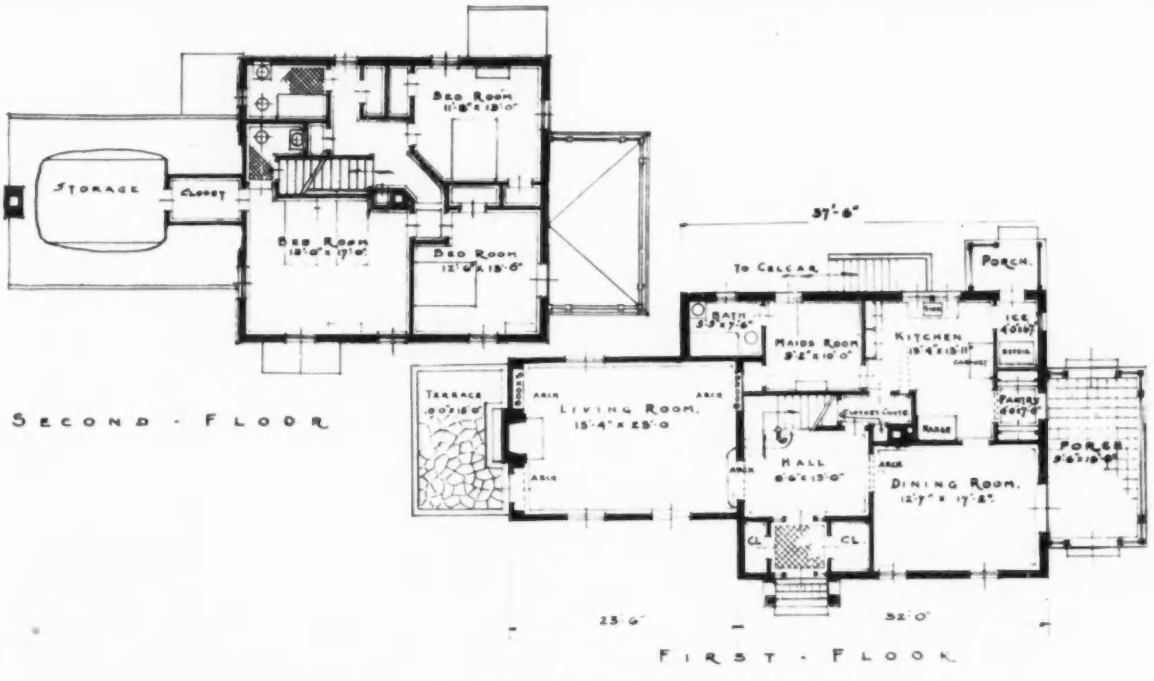


RESIDENCE OF PROF. JOHN M. BREWER, EAST CAMBRIDGE, MASS.

BLACKALL & ELWELL, ARCHITECTS

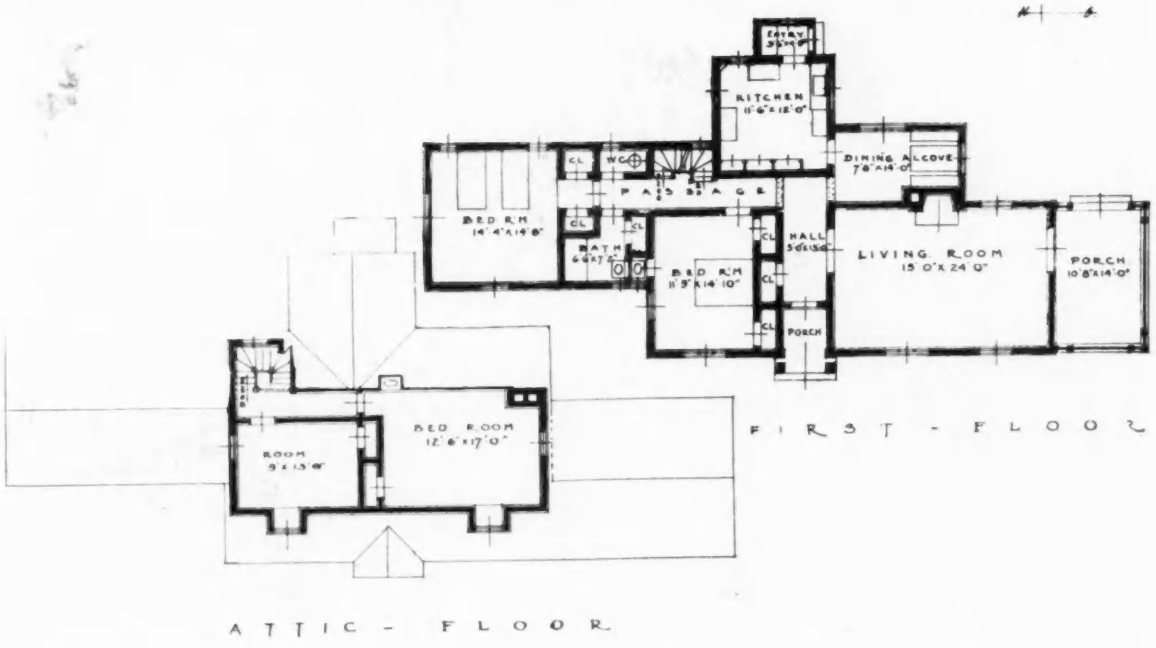
ST. DUNSTAN'S GARTH, HOMELAND, BALTIMORE, MD.
LEWIS & WESTENHAVER, ARCHITECTS


ST. DUNSTAN'S GARTH
A GROUP OF SEVEN HOUSES
LOT 42 BLOCK 37 HOMELAND
FOR
MR. HERBERT J. WEST
LEWIS & WESTENHAVER
ARCHITECTS
201 LEXINGTON ST.
ST. DUNSTAN'S
GARTH
ST. DUNSTAN'S
ROAD



RESIDENCE OF H. A. MATTHEWS, ESQ., TENAFLY, N. J.

G. V. HARVEY, ARCHITECT



RESIDENCE OF MRS. H. M. VALENTINE, TENAFLY, N. J.

G. V. HARVEY, ARCHITECT

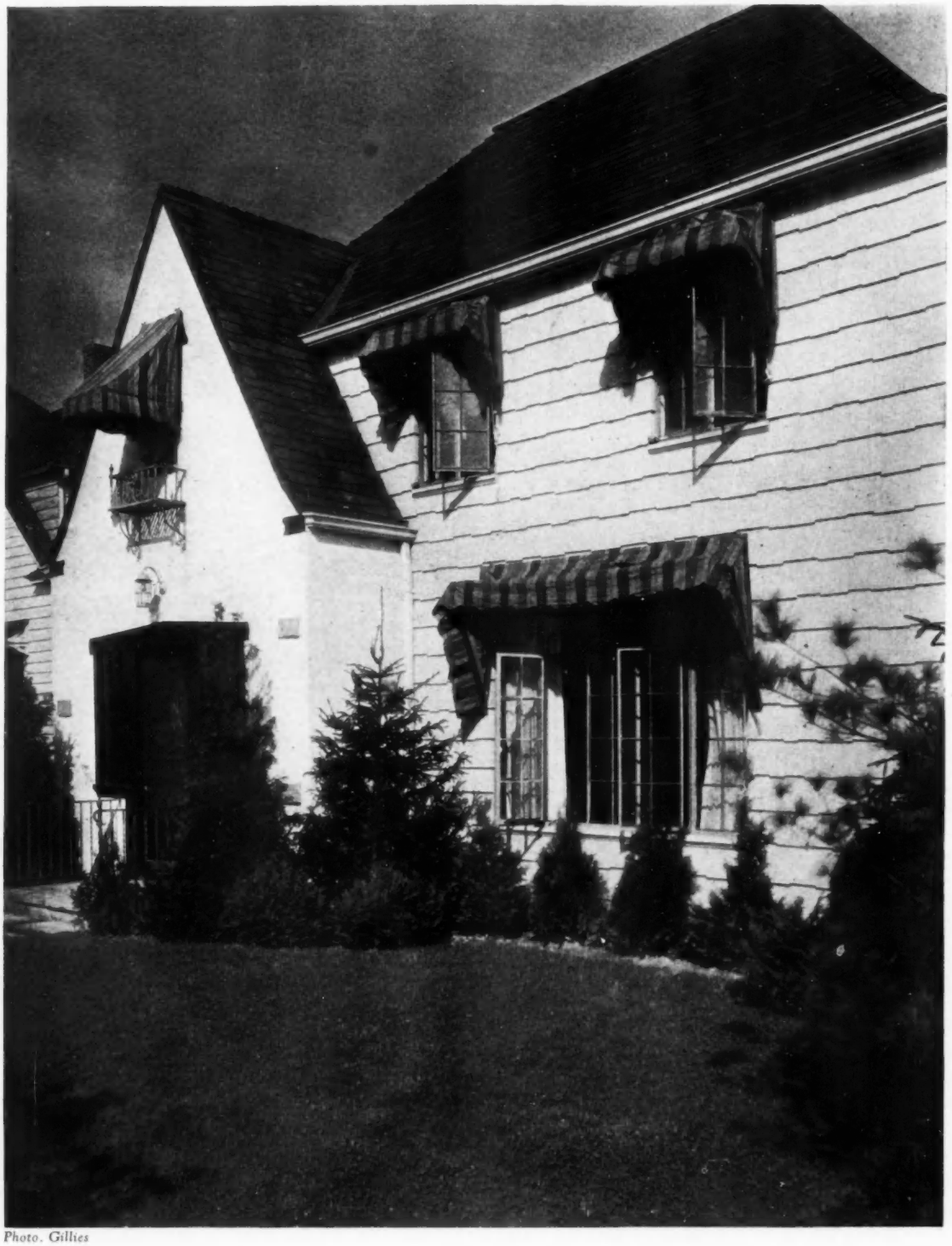


Photo. Gillies

ENTRANCE ELEVATION
RESIDENCE OF C. W. YEAGER, ESQ.,
SHAKER HEIGHTS, OHIO

Photo. Gilhes

ENTRANCE ELEVATION
RESIDENCE OF W. E. GOODMAN, ESQ.,
LAKEWOOD, OHIO

RESIDENCE OF J. A. KIEWEL, ESQ., PARMA, OHIO
GEORGE M. KAUFMANN, ARCHITECT

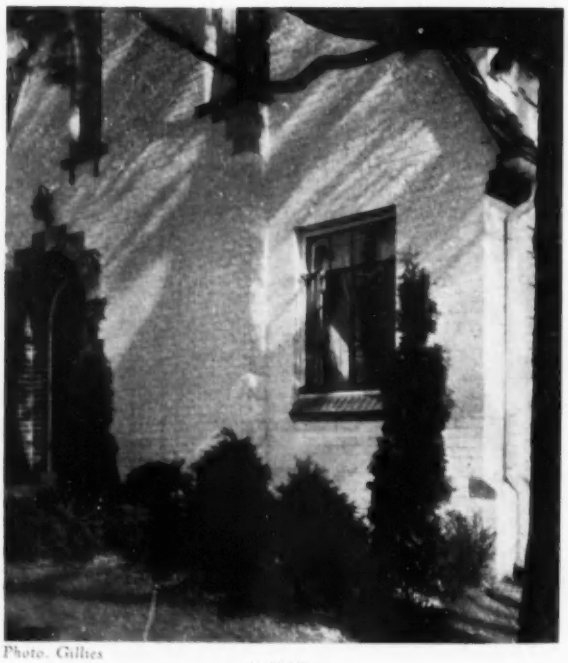


Photo. Gillies

DETAIL
RESIDENCE OF W. E. GOODMAN, ESQ.,
LAKEWOOD, OHIO

WINDOW DETAIL
RESIDENCE OF CLIFFORD COX, ESQ.,
LAKEWOOD, OHIO

ROBERT MILLS, 1781-1855

AMERICA'S FIRST NATIVE ARCHITECT

BY H. M. PIERCE GALLAGHER

INTRODUCTION BY FISKE KIMBALL

INTRODUCTION

As our first native-born architect regularly trained for the profession, Robert Mills is worthy of the interest of his colleagues today, and of the long and loving years of study which the author of the following papers has given to his career. Harrison, Hoban, Thornton, Hadfield and Latrobe were English born; L'Enfant, Hallet, Mangin and Godefroi were Frenchmen; Jefferson and Bulfinch were gentlemen, self-trained in architecture.

Born in Charleston in 1781, Mills placed himself successively under the best masters then in this country: Hoban, architect of the White House, who had learned buildings and drawing in the Dublin Society of Arts; Jefferson, with his great architectural library and five years of observation in Paris; Latrobe, Surveyor of the Public Buildings of the United States, the pupil of Cockerell and Smeaton. They represented three phases of architectural progression in style: the Palladian, the Roman, and the Greek; in practice, the builder-architect, the amateur and the professional.

From honest Hoban, who on occasion contracted for buildings as well as designed them, he acquired the rudiments of construction, and of draughtsmanship and rendering. From Jefferson, who took him into his family in 1803, he derived a compelling impulse to the classic, and a recommendation to Latrobe, whom Jefferson had encouraged and placed in a position of authority. It was Latrobe, the first man to succeed in establishing himself in the United States in architectural practice as we understand it today, who placed on Mills the deepest impress. To him Mills owed not only his knowledge of Greek forms, but his principles of professional practice, and his scientific, engineering skill.

From his first youthful competitive design for South Carolina College in 1802 until his death on Capitol Hill in 1855, Mills was engaged in constant and varied practice of his profession in Carolina, in Philadelphia, in Baltimore and in Washington. More than fifty important works were of his design, a great number still surviving. They included houses, churches, college buildings, prisons, hospitals, bridges, monuments, government buildings of all sorts. The old State Capitol at Harrisburg, the Patent Office and old Post Office in Washington, the Treasury with its superb colonnade, were among them. Mills created in America the auditorium type of evangelical church, in the Congregational Church in Charleston, the Monumental Church in Richmond, and the First Baptist ("Round Top") in Philadelphia. It is by his monuments, however, that Mills chiefly lives. The great Washington column in Baltimore, first of the colossal Greek Doric type, preceded the Wellington columns in London and Dublin, and inaugurated a line which reaches to our own day in the Monument to the Prison Ship Martyrs and the Perry Memorial on Lake Erie. The vast obelisk in Washington, long the highest of human structures, was his conception, in which the simplicity and grandeur of the forms are matched with the character of the subject.

In a day when Greece was, to the modern world, a new discovery, there was no questioning of the validity of its forms,

which furnished the language of Robert Mills. We find his words a little stereotyped, a little arid but very sober, very competent, very dignified—contributing to that austere tradition that forms the basis of the simplicity even of our modern style.

EARLY TRAINING

Robert Mills states in a footnote to his *Statistics of South Carolina* that he was the "first native born American to enter the study of architecture in the United States." It was at a time when public libraries were rare, while private works on architectural themes were a still greater rarity. No Ecole des Beaux-Arts existed on the young, untutored continent to nurture his crude professional beginnings, though, as he himself points out, his "studies were pursued under the celebrated Latrobe, to whose talent and taste this country is so much indebted." He also was a pupil of the great Smeaton.

ROBERT MILLS, ARCHITECT, 1781-1855
Copied from a miniature by St. Memin through the courtesy of Mrs. S. Z. Evans

While it may be possible to mention others who traversed a similar professional path with greater brilliancy of origination, it is certain that it was largely through Mills' unswerving adherence to classic forms that we were guided along lines of simple dignity into the creation of what might be termed an American school of architecture. He kept to the tried and true, the efficient, often with the citizens of Washington against him; he held as an architectural principle "that beauty is founded upon order and that convenience and utility are constituent parts." Or, as our modern architects put it, form must follow function.

Mills' autobiographical sketch repeatedly refers with touching appreciation to Thomas Jefferson, who gave him his start in life and to whose library he had the advantage of access. Here he found "some few works of eminent Roman architects, principally Palladio, but no Grecian writers." He writes of this period:

"Mr. Jefferson was an amateur and a great admirer of Architecture, and was most gratified to find an American turning his attention to its study, and he gave me every encouragement in the pursuit of this profession.

"During this period Europe also, which for centuries had adopted the Roman and mixed style, began to emerge from its prejudices, and the light which had been thrown upon Greek Architecture by the works of such men as Stuart, caused it to be early established in the place; since then it has been universally approved throughout civilized Europe; and in our own country we find the simple and chaste style of the Grecian buildings generally adopted."

In modern times, when we are becoming more sensitive as a nation and are uncover-

ing landmarks and documents of history, should we not endeavor to comprehend these early builders of our country according to their respective merits? It would be a small task to prove that Mills' name belongs in the forefront among Greek revivalists of America. He himself, appreciating his position, speaks of "the mite" he contributed in this pioneer undertaking, as against "the many and great difficulties which those who may succeed me in the profession will never be subject to."

In his later years he writes: "Books are necessary for the student, but the author has made it a rule never to consult books when ready to design a building. His considerations are: First, the object of the building; second, the means appropriated for its construction; third, the situation it is to occupy."

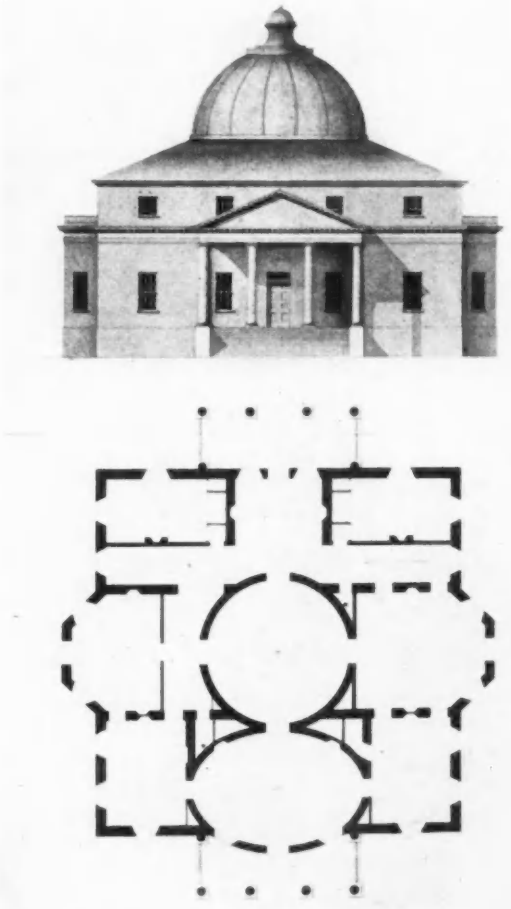
But before entering upon a discussion of his works it might be well to note briefly his own feeling about architecture. He says, "It is perhaps the most difficult, important and interesting of all branches of study, when it is intended to form the ground work of practice. There is no other profession that embraces so wide a field of research and practical operation, and the student, after going through the usual collegiate course, will then find himself only just on the threshold of the temple of Architecture; for besides having an intimate acquaintance with the different styles of building—ancient and modern—and a thorough knowledge of the five orders, which necessarily demands an acquaintance with drawing—he must study the infinite detail which makes up the endless variety of parts, constituting the higher class of structures. There is not a mechanic artist—from the laborer who executes the foundation to the highest artisan who decorates the interior—but he should acquire such knowledge as would enable him to give direction, etc., and judge whether the work executed is done in a proper manner. There is scarcely a science but is embraced in a greater or less degree in this profession: Mathematics, Natural Philosophy, Chemistry, Botany, Geology, Natural History, Jurisprudence, Theology even. In short, to be an accomplished *artist* and mechanic; and there is not, in the whole range of liberal professions, a more fascinating study than that of architecture, even when it is considered in the light of study only."

Among the public buildings created by Mills we may list the following:

1. Rutledge Hall, University of South Carolina, Columbia, South Carolina.
2. Rotunda Annex, Library of University of Virginia, Charlottesville, Virginia.
3. Two wings to Independence Hall, Philadelphia.
4. Washington Hall, Philadelphia.
5. Insane Asylum, Columbia, South Carolina.
6. The Old Capitol Building, Harrisburg, Pennsylvania.
7. The "Fireproof" Building, Charleston, South Carolina (The Record Building).
8. The Treasury Building, Washington.
9. The Old Post Office, Washington.
10. The Patent Office, Washington.
11. Additions to the United States Capitol, Washington.
12. Court Houses: Camden, South Carolina; Savannah, Georgia; Richmond, Virginia; Alexandria, Virginia; New London, Connecticut; Marlboro, South Carolina; Baltimore, Maryland; Memphis, Tennessee.
14. Prisons: Burlington, New Jersey.
15. Marine Hospitals: Charleston, South Carolina; New Orleans, Louisiana; St. Louis, Missouri; Natchez, Mississippi; Napoleon, Arkansas; Paducah, Kentucky; Cleveland, Ohio; Wheeling, West Virginia.

FIRST COMMISSIONS

Green's *History of the Buildings of the University of South Carolina* (1801), mentions Mills and Clark as "undertakers" jointly competing for and winning the premium of three hundred dollars for the first college building "which should not exceed the appropriation of fifty thousand dollars." The requirements handed in to the "artists" allowed two pupils to a room and one room each to the three professors. These, with two lecture rooms, a chapel, library, and laboratory, constituted forty-eight rooms. Each room was required to be 16 x 24 feet, open to north and south, with two windows (thought necessary to the comfort and health of the students). The building was of brick and placed within a campus of twenty-five acres. Because of insufficient funds it was not ready to be opened until 1805, although with its two wings—East and West Rutledge—it came well within the appropriation stipulated.



DRAWINGS FOR A REBUILDING OF SHADWELL
"T. JEFFERSON, ARCH'T. R. MILLS, DEL'T, 1803"
Courtesy of Clara Amory Coolidge

In presenting the prize to the architects, the Board of Awards "recommends Mr. Mills and Mr. Clark for the taste, ingenuity and variety of their design, which offered fine specimens of American talent." Though the production of such youthful talent must, indeed, have been inchoate in form and substance!

So much for Mills' precocious first attempt at public building, which we must believe was not only his first submitted design but was also the work that proved to him his vocation. There exists no plan of Rutledge Hall (named in honor of South Carolina's son, the Chief Justice of the United States), but the college stood until 1855, when, the very year of Mills' death, it was destroyed by fire. Its loss to architecture was not great, though it had been found adequate for its intended purpose and had also been a stepping stone for Mills. It was a milestone as well, for the designing of it caused him to realize his need of travel in order to discover what others had done and were doing. His decision to travel was momentous since it first brought him into contact with Mr. Jefferson who gave him letters of introduction to Bulfinch and others in the eastern cities. And never, surely, have fields yielded more plentiful harvests in shorter time than those this young man covered by stage coach or on horseback.

During his travels he wrote of "having access everywhere, making drawings of all the principal buildings, and finding the time to be not far distant when our country would appreciate the art and encourage the artist." Such optimism was

soon to be justified in his own case, for after his return to Washington he was fortunate enough to find brief employment with the Irish architect Hoban, under whom he had studied in Charleston and who was then engaged upon the White House. During this time they also worked on the north wing of the Capitol, then well started upon the vicissitudes of its architectural career. Shortly thereafter he found himself at Monticello where he remained about two years under the "encouragement" of the President of the United States.

As some misconception respecting the importance of Mills' work at Monticello has crept into several of the sketches concerning him, such as Dunlap's in *Arts and Designs* (Vol. 11, p. 375), and of Montgomery Schuyler's in The Architectural Record (Vol. 30 (1911)—p. 73), it might be well to give the result of careful investigation in regard to this matter.

To begin with a quotation from Mills' own pen in his *Progress of Architecture in Virginia*—"I had been pursuing my studies in the office of the architect of the President's house." Here he confesses first of all to his own *student work*, and second, he makes it known that another, and undoubtedly a more experienced architect was in control. Now as there is documentary evidence that the earlier Monticello house was built before Mills was born*, as 1781 is uniformly given as the date of his birth, and as there is equally trustworthy proof that the remodelling of the house was started in 1796—when Mills was but fifteen years old—and its plans and elevations complete before Mills was introduced to Jefferson, the question would seem to be answered chronologically. Presumably the privileges extended to him were gestures of friendly encouragement made by Mr. Jefferson to the American youth in whom the former evidenced an interest and to whom he stood in the light of patron.

Thomas Jefferson, Architect, by Fiske Kimball.

The library building of the University of Virginia is the only instance of a signed plan of Mills being carried out during his sojourn at Monticello. This building, inconspicuous architecturally, was remodelled by Mills shortly before his death, thus tying together the beginning and the end of an eventful career, and performing a final service to his greatest benefactor.

In a letter to Mills from Richmond, April 9, 1822, a memorandum is made of "cast iron capitals, columns and pilasters" (Tower of the Winds design) having been sent to the University. A letter is also found from Spooner, superintendent of the University, dated August 8, 1853. This refers to "drab colored tiles" being received by him.

Mills' real professional life began in 1803, when his services were engaged in the engineering problems of the Chesapeake and Delaware Canal. He worked under Latrobe to whom Jefferson had introduced him, with the recommendation that he accept the opportunities offered to him by this distinguished architect and engineer. Soon afterwards Mills was stationed at Wilmington and Philadelphia and within a short period this constructive work was advanced almost entirely under the supervision of the younger man.

Latrobe was placed in charge of public offices at Washington, and it was while undergoing the manifold trials incident to this pioneer work that Mills seems to have won his spurs. For Latrobe, having created a design for the bank of Philadelphia (1807), made him superintendent of construction. On the first page of Mills' memoirs, quite oblivious of his previous attempts in architecture, he comments: "The Bank of Philadelphia, a modern Gothic structure, the design of Mr. Latrobe, was a work of the most intricate and difficult character in design to execute [owing to] the novel forms of the arches in the center hall, all of which were built of solid masonry and made fireproof." It was this

building that afforded Mills his first practical experience in architecture, just as the construction of the "C and D Canal" presented his first opportunity to prove himself in the science of engineering, which he had studied in South Carolina.

Mills remained in Latrobe's office until 1808 when, in view of the fact that he was about to be married, he determined to establish himself independently, hoping for greater remuneration. With this in mind he turned to his first friend, Mr. Jefferson, for advice, receiving from him the following response:

Washington, June 23, 1808.

Dear Sir:

"I have duly received your two favors of the 13th and the 16th. In the former you mention your design of now offering yourself for business in Philadelphia as an architect. This you may certainly do with confidence, after so many years devoted to the theory and practise of the art—and under the best direction in the United States, as far as I am a judge. I may safely affirm that the various excellent drawings which I have seen of yours, which prove you to be familiar with the principles of the art; and the years you have been a principal aid of Mr. Latrobe, must have given you satisfactory experience in the practical part. But when, in compliance with your request that I look abroad among my acquaintances in Philadelphia for one who could be useful to you, I find them to consist of Literati and officers of government, no one of whom will probably ever have occasion for services in your line. I have, therefore, thought it better that you should show this letter whenever and to whomsoever you may have occasion, as it contains my testimony of the grounds on which you may justly claim employ——I salute you with esteem and attachment."

THOMAS JEFFERSON.

TO MR. ROBERT MILLS

The Pennsylvania Historical Society has data showing a design for a textile mill, but no plans. Also plans and an elevation dated 1809, for Washington Hall, Philadelphia, which was prepared for the "Pennsylvania Benevolent Society." The report of this society reads:

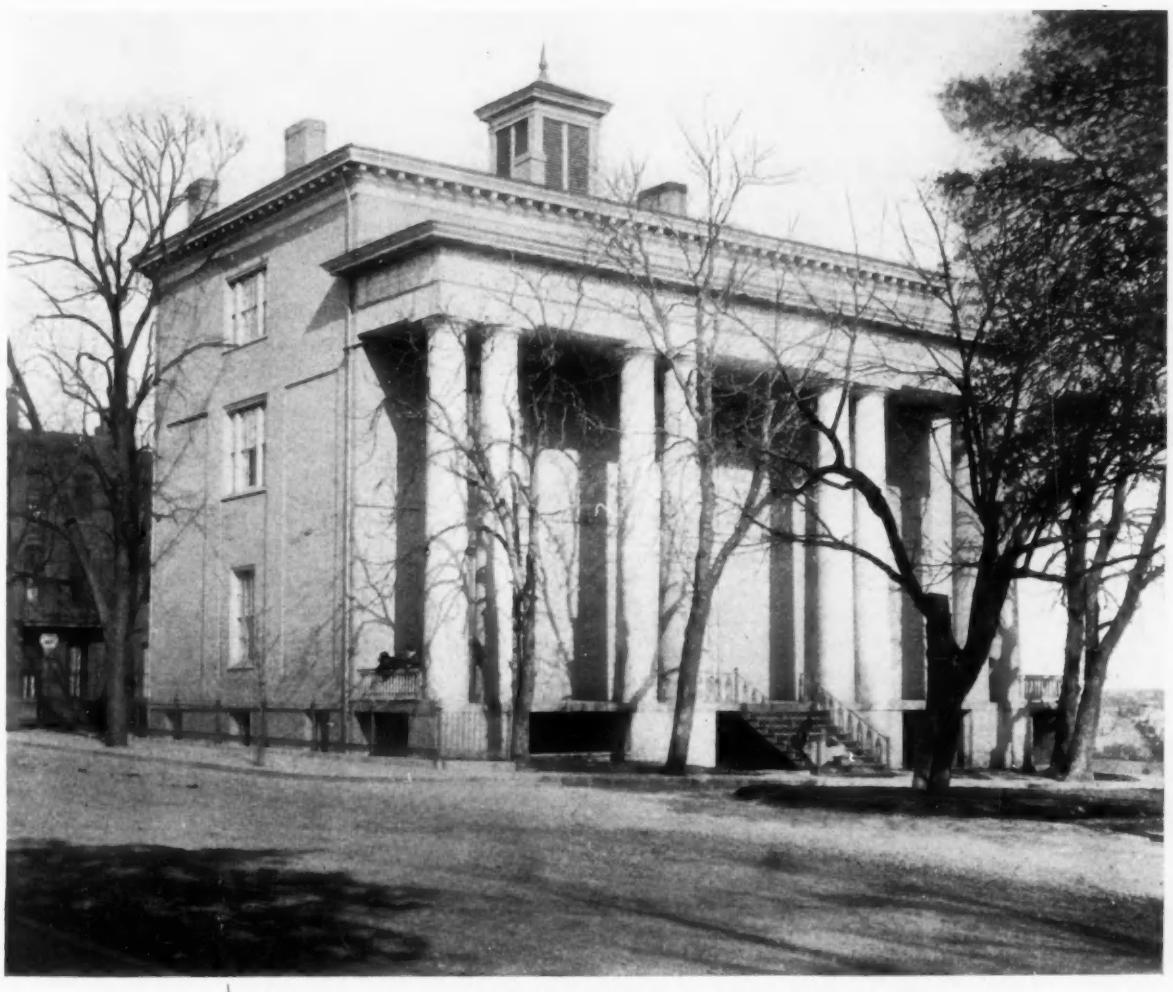
"Determining upon a building, the society advertised for plans, and received from different artists a great variety of drawings; no less than ten separate designs came from Robert Mills, upon each of which he seemed to have bestowed much care and labor. And after elaborate consideration and comparison the committee made a choice of one." This building had a double purpose: that of a benevolent institution, and memorial to Washington, a statue of whom occupied a niche in the front elevation. The windows are a redeeming feature in proportion and detail but the general composition of the structure will scarcely bear professional searchlight.

The grand salon, 69 x 120 feet, is Mills' first employment of the oval form, which is used at the entrance front of this room, thus leaving the space—18 x 20 feet—at either side respectively for a committee room and stair well.*

Probably the building which effectively brought Mills to public notice was what he calls "the wing buildings for offices to State House, known as *Independence Hall*." They were built to connect the City Hall on one side and Congress Hall on the other, with the more important and even then much revered structure. It seems fair to presume that it was through correspondence of Jefferson with Charles Wilson Peale that Mills gained this contract less than a year after his professional debut.

Under date of June 3, 1809, Peale wrote of the Fine Arts Building by Dorsey (which has been incorrectly ascribed to both Latrobe and Mills) and which Peale as

*George Strickland, the engraver of the illustration mentioned above who made views of Washington and Philadelphia buildings, must not be confounded with his brother William, the architect, six years the junior of Mills.

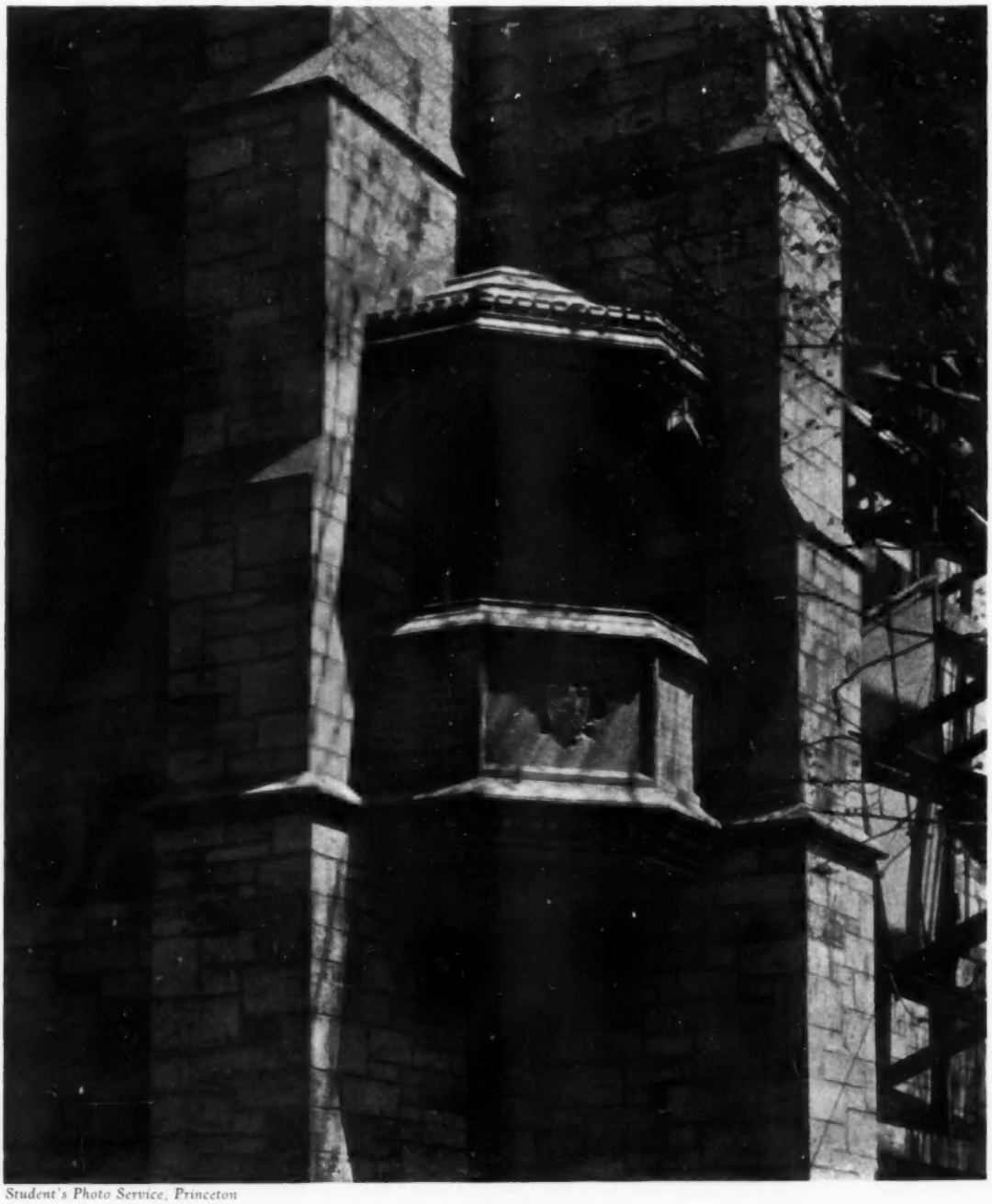


HOUSE OF JEFFERSON DAVIS, RICHMOND, VA.
(Originally built for Dr. John Brockenborough)
ROBERT MILLS, ARCHITECT

its director was about to enlarge. "Mr. Robert Mills has given me a plan and estimates which meet very nearly with my ideas." As the projected wings to Independence Hall were intended to safeguard the museum and galleries of which Peale was likewise director, as well as public records, it seems rational to suppose that whether or not Mills had any part in the design of the former building, it was through Peale's influence that this more important work was thrown into his hands.

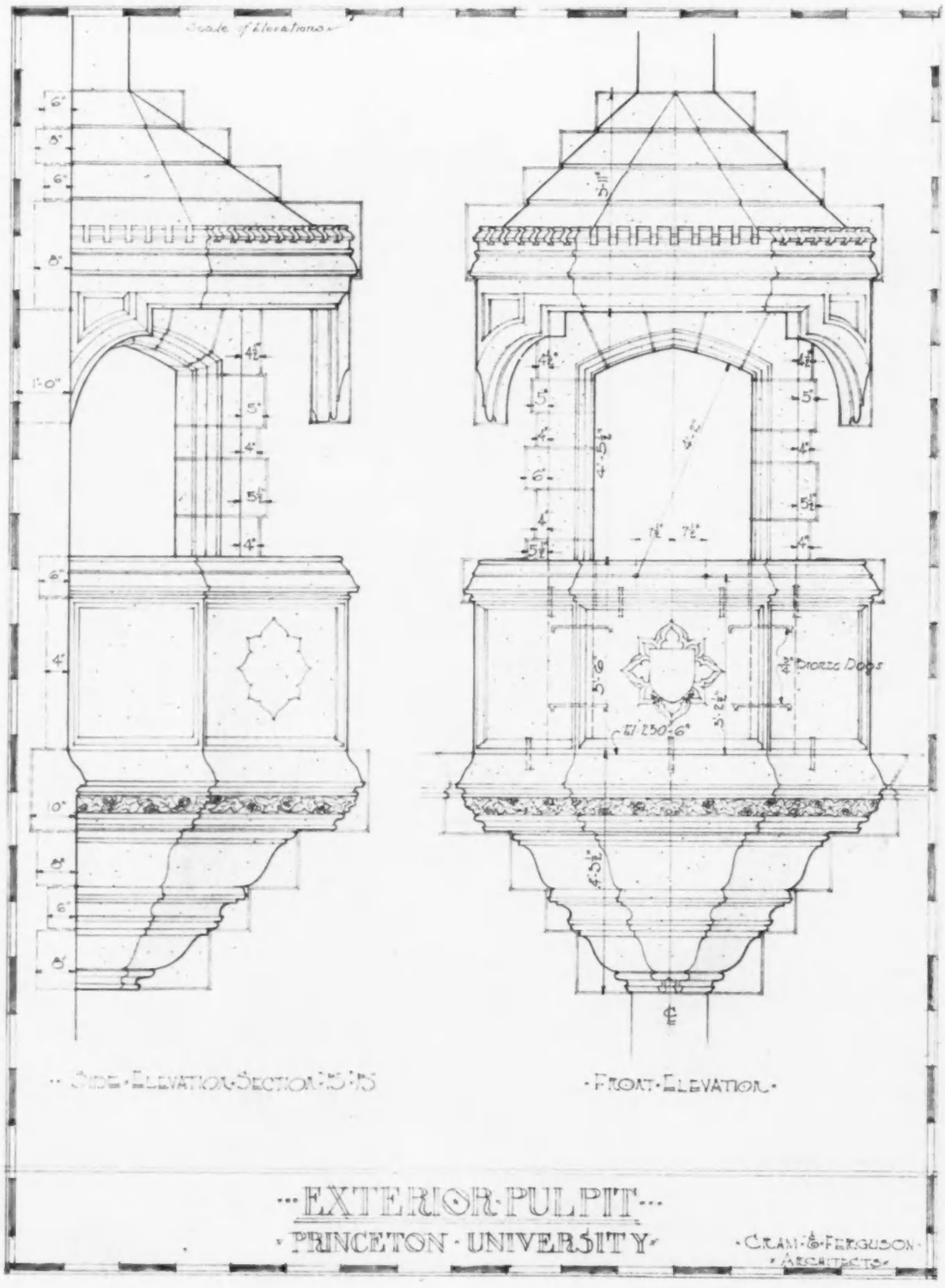
(To be continued in the May Issue)

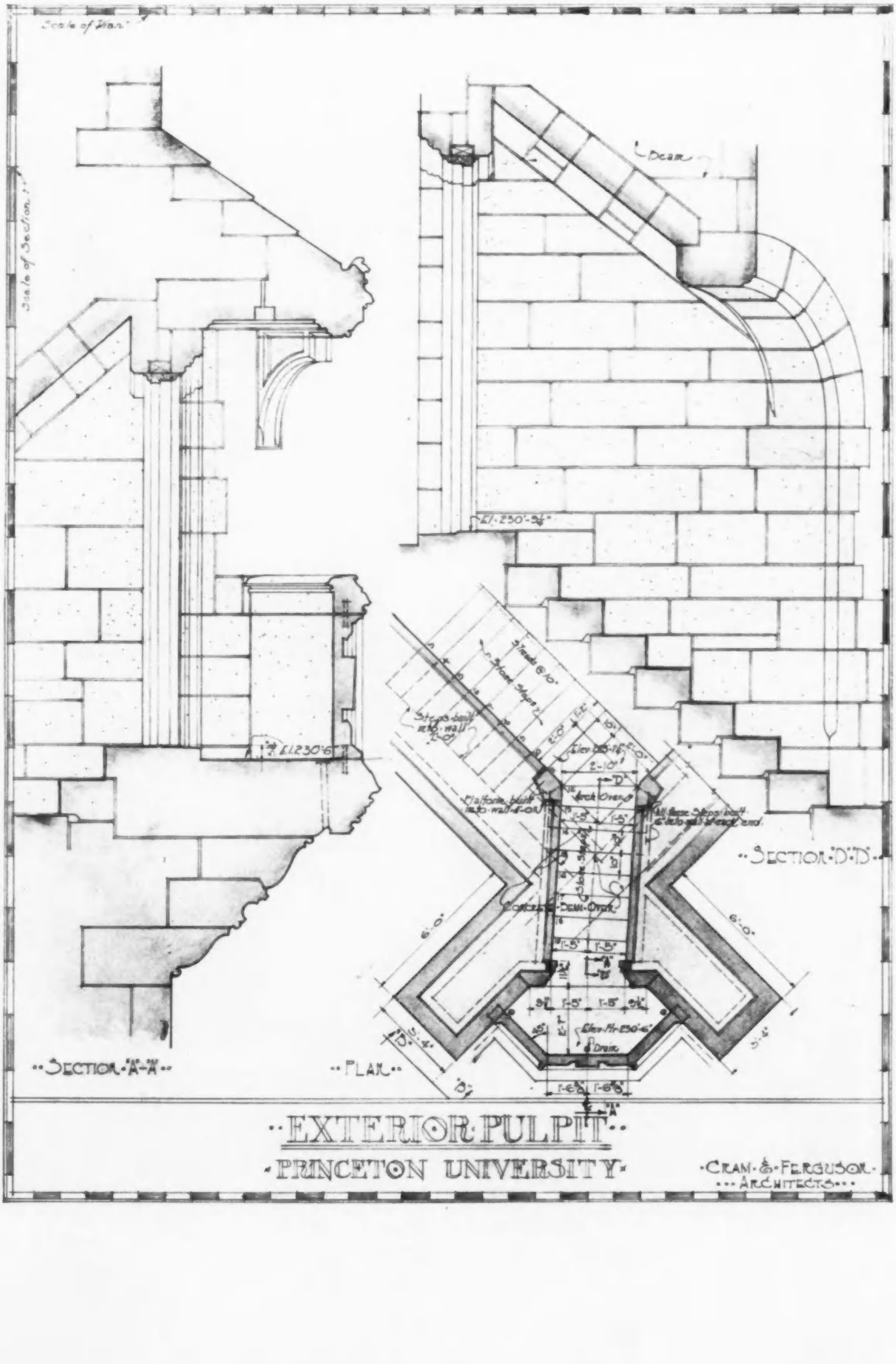
WORKING DRAWINGS

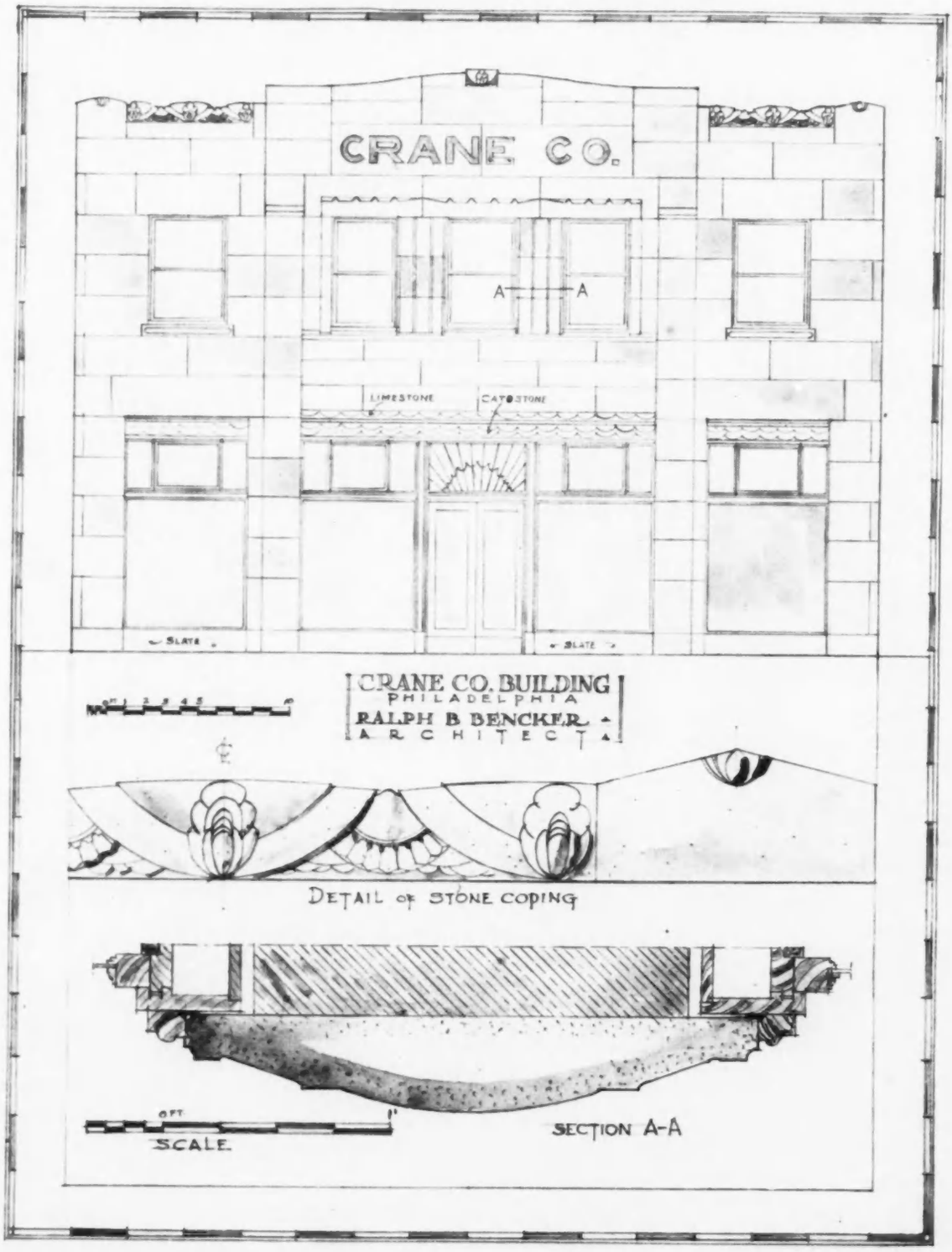


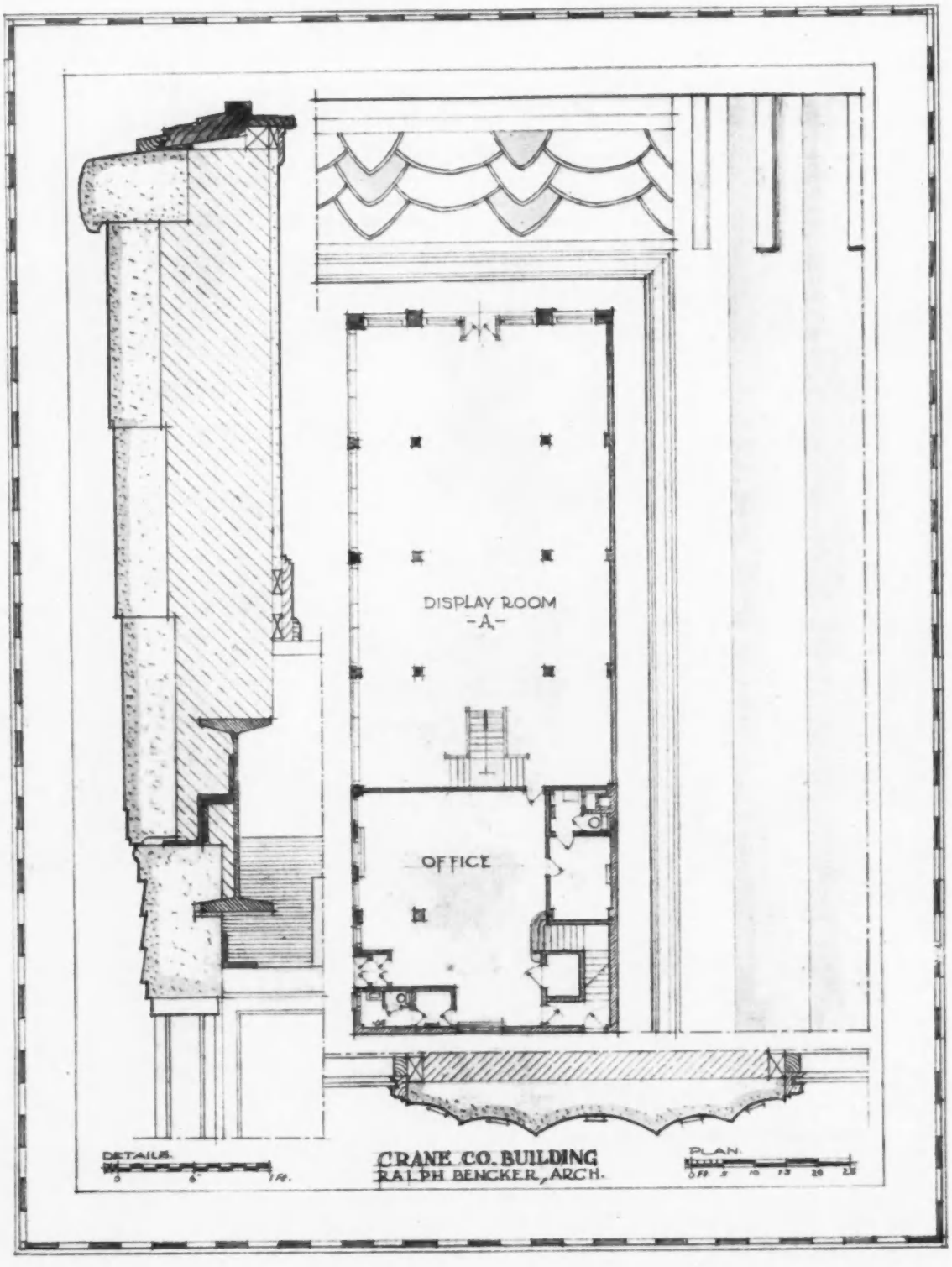
Student's Photo Service, Princeton

OUTSIDE PULPIT, PRINCETON CHAPEL
PRINCETON UNIVERSITY, NEW JERSEY
CRAM & FERGUSON, ARCHITECTS

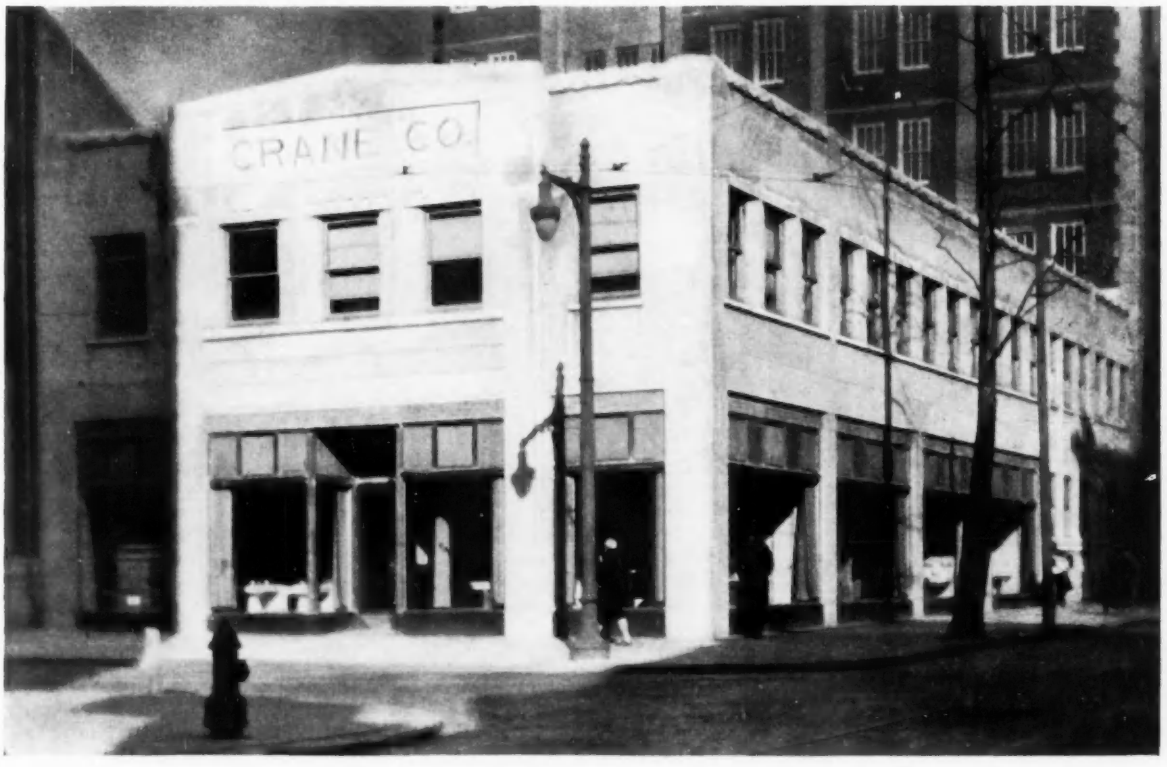

Scale of Elevations
Side Elevation Section
Front Elevation
EXTERIOR PULPIT
PRINCETON UNIVERSITY
CRAM & FERGUSON
ARCHITECTS


SECTION "A"-"A"
PLAN
SECTION "D"-"D"
EXTERIOR PULPIT
PRINCETON UNIVERSITY
CRAM & FERGUSON
ARCHITECTS


CRANE CO.
A
A
LIMESTONE
CAT STONE
SLATE
SLATE
CRANE CO. BUILDING
PHILADELPHIA
RALPH B BENCKER
ARCHITECT
DETAIL of STONE COPING
SCALE
SECTION A-A


DISPLAY ROOM
-A-
OFFICE
DETAILS.
CRANE CO. BUILDING
RALPH BENCKER, ARCH.
PLAN.

THE CRANE COMPANY BUILDING
PHILADELPHIA



The Crane Company Building, by Ralph B. Bencker, architect, combines functions of salesroom, exhibition and district offices. The building is faced with Indiana limestone, trimmed with Cato stone. The display and salesroom occupies two-thirds of the first floor with offices at rear and on second floor.

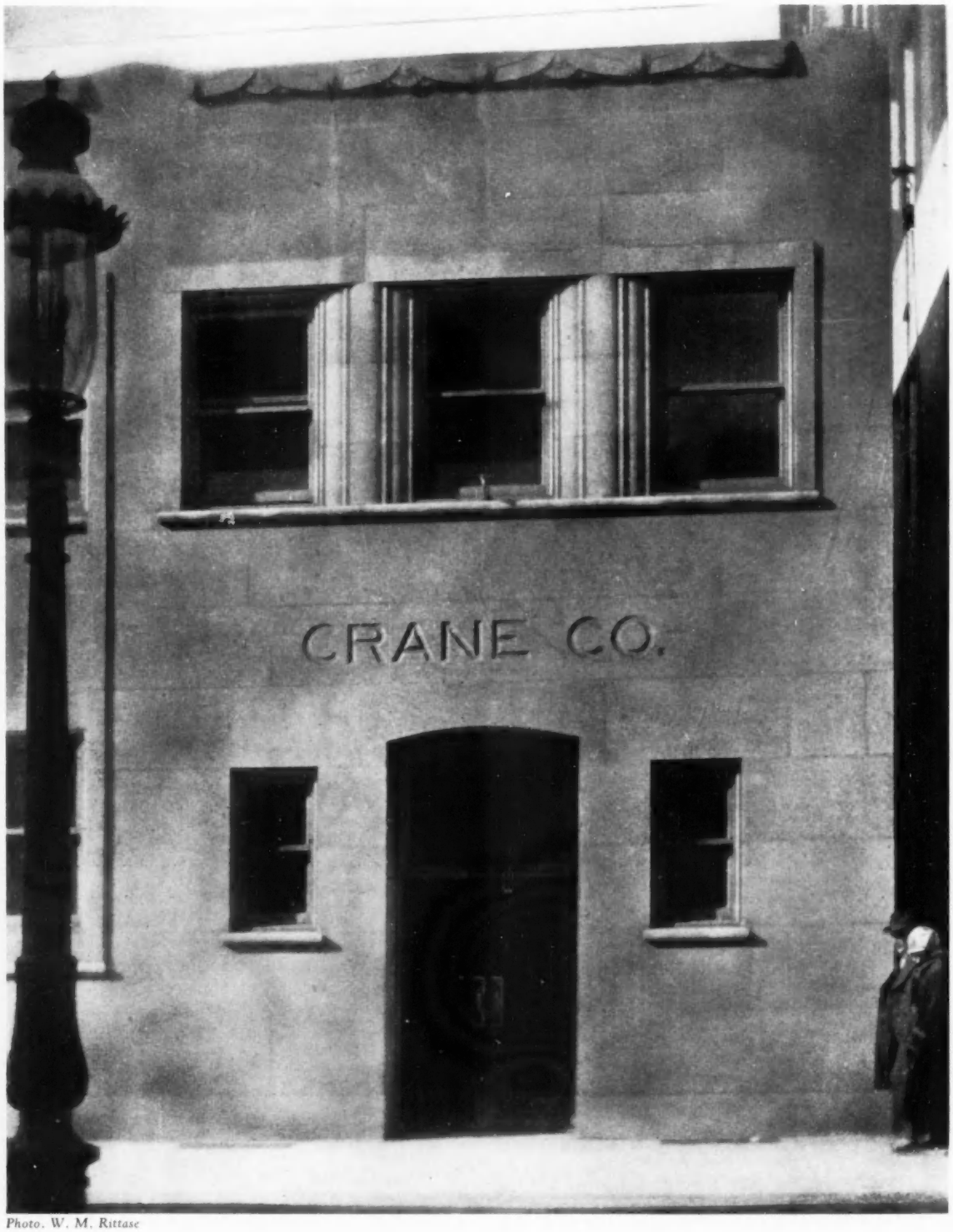


Photo. W. M. Rittase

ENTRANCE DETAIL
THE CRANE COMPANY BUILDING, PHILADELPHIA, PA.
RALPH B. BENCKER, ARCHITECT

TECHNICAL NEWS
AND
RESEARCH

Photo, Mott Studios

DOOR DETAIL
RESIDENCE OF R. W. SPICE, LOS ANGELES, CALIFORNIA
R. W. SPICE, ARCHITECT

Featuring
THE SMALL HOUSE

Previous studies of Building Types include: Swimming Pools, Storage Garages, Apartment Houses.

Future issues will include analyses of the following: Airports, Store Buildings, Kitchen Planning (Hotel, Club and Restaurant) and Soundproofing the Hospital.

EFFECT OF STYLE ON COST

By Robert L. Davison in collaboration with Alfred E. Poor, Architect, and H. Reynolds, General Contractor

Five variations in the architectural treatment of a dwelling of moderate size are shown on pages 404 and 405. The design by Alfred E. Poor, Architect, (Fig. 1, page 404) is of a constructed house which received Honorable Mention in a recent House Beautiful Competition. The contractor for the house has estimated the total cost of each of the variations from the original design and has aided in the determination of cost for individual items such as dormers, special window trim, stock moldings and round-headed windows as compared with square openings. No attempt is made to pass judgment on the relative artistic merit of the alternate designs. They are given for the sole purpose of indicating the cost factors which enter into various types of architecture.

Before the war a client's house was generally built in the type or style to which he aspired, in accordance with his personal taste and maximum needs, while now he is quite often influenced by the probable sales value of the house—in other words, by sound business principles. There is also an increasing tendency to move frequently. The client for the class of residence on which a "resale" valuation is placed, generally decides how much he will spend before the house is designed. This price limitation is partly a question of income but often, when his income is ample, the price limit is based on the residence cost level for the neighborhood in which he decides to live.

In addition to a cost limit the client will have quite definite ideas as to plan, size of his establishment and equipment. It is here that the cost and plan requirements will influence the type of architecture selected and it is for the architect to give final decision on the size that is possible within the price limit as well as the style.

In the case of the small house when the house cubage is definitely a limited one, the simpler styles will be found most economic and satisfactory.

Where the owner has not been kept fully informed of actual building costs during the process of drawing up sketches, it frequently proves necessary to cut the heart out of a house after the bids have been received, in a vain attempt to reach the price limit.

Should the owner insist on a Norman or one of the other expensive styles, the house may be satisfactorily built and kept within the budget by designing a building that is "Norman in spirit" yet utilizing new and less expensive methods of wall construction, as indicated by the sketch of the Norman style with "Stone Tile" or double concrete exterior wall. To keep the cost down it may be necessary to simplify wall construction and interior details.

When once the attempt to duplicate period construction has been abandoned, the architect will find that quite satisfactory results can be obtained at a considerable saving in cost, by using standard or simplified details and in avoiding detail merely for "effect."

The emphasis on cost factors should not be interpreted as a recommendation that the cheapest be built. Each client and each site is an individual problem and should be considered as such. The price limitation imposed by the owner should be regarded by the architect as a definite restriction. It is an obligation of the architect to deal with the client in a businesslike manner, informing him of the total cost with fair accuracy and making clear the variation in building costs when different styles are considered.

COST VARIATIONS DUE TO WALL CONSTRUCTION

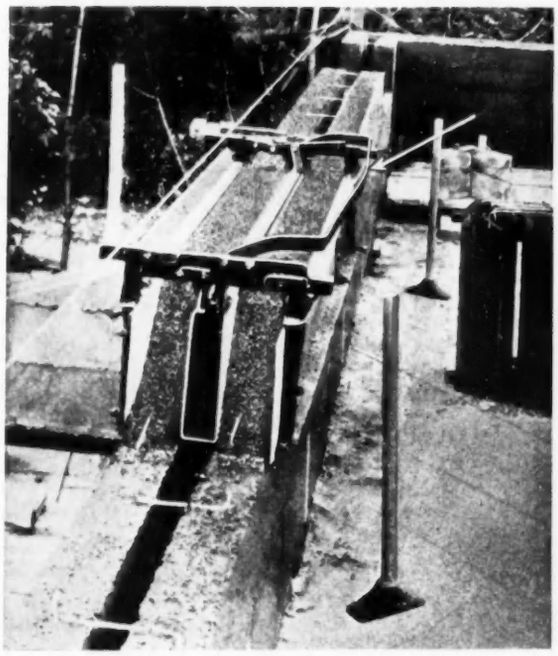
On page 406 will be found an analysis of various methods for constructing walls for residences. These costs are for the New York district and are based on Union Labor conditions. Although these costs vary greatly in different parts of the country, they may suggest a form of cost analysis for rough estimating which the architect may adapt to local conditions. While the square foot method of estimating costs indicates variation of over 100 per cent, the variation in the total cost of building, due to wall construction, may not exceed five to eight per cent of the total in the residence illustrated.

COST VARIATIONS DUE TO DETAILS

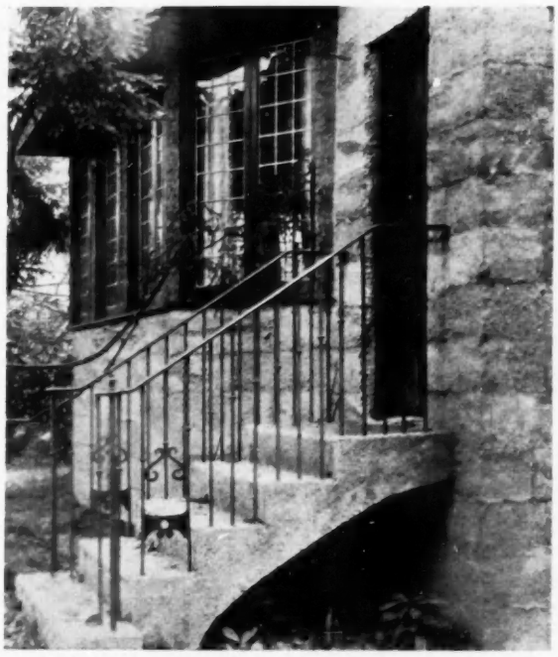
A cost analysis of the various types shown indicates that the major factor in price variation is not so much the type of material used or manner of construction as it is the relative cost of *special details* and *equipment*.

1. Window Trim and Blinds. In the house as built (Fig. 1) the French windows, shutters and trim were of special design and cost $126 for material, labor and painting. In the colonial design (Fig. 6) the sash, blinds and trim would cost $45. If the blinds in the colonial design were omitted, there would be a saving of $16 which would reduce the window cost to $29.

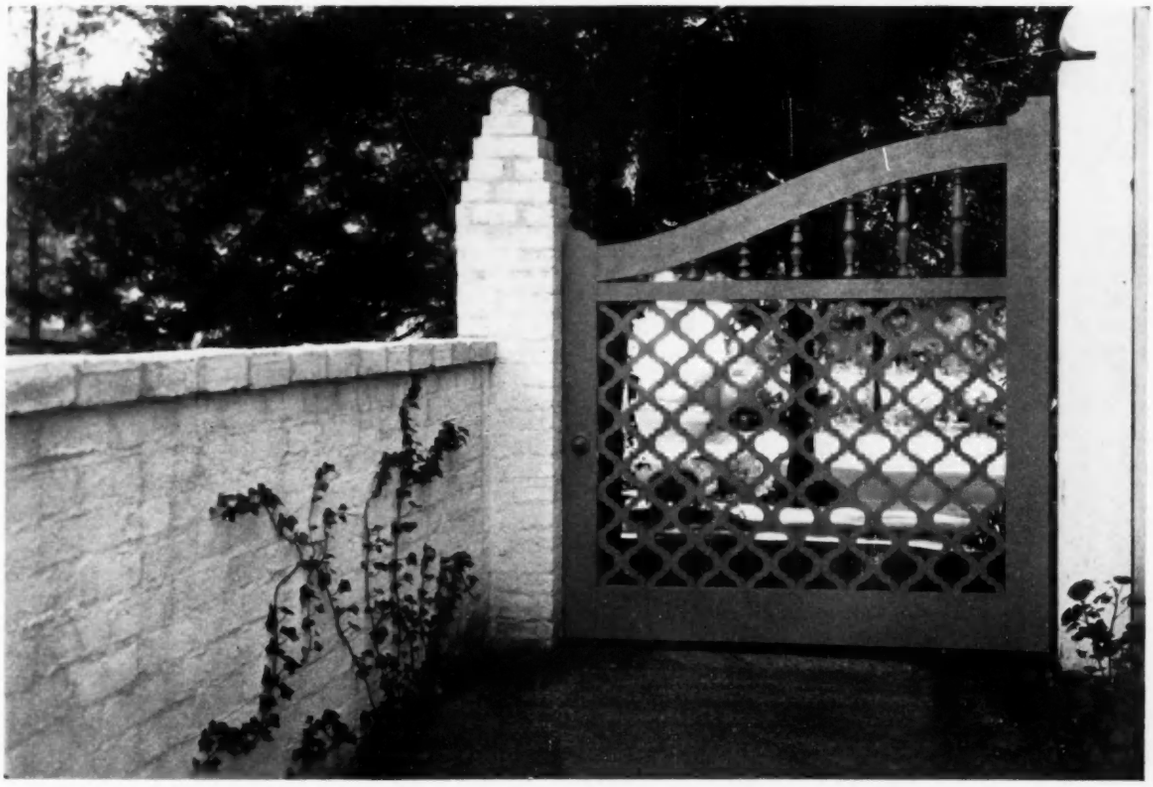
2. Dormer Windows. It costs just as much in the better class of residential work to build a house with the roof starting from a side wall four



METHOD OF CASTING DOUBLE CONCRETE WALL, VAN GUILDER SYSTEM



DOUBLE CONCRETE WALL LEFT NATURAL, VAN GUILDER SYSTEM



STONE TILE WALL WITH BRUSH CEMENT FINISH

RESIDENCE OF R. W. SPICE, ESQ., LOS ANGELES, CALIFORNIA

R. W. SPICE, ARCHITECT

FIG. 1. FRENCH FARMHOUSE TYPE (Cost $32,000)
ALFRED E. POOR, ARCHITECT
(Further details are shown on pages 365-369)

The special exterior and interior trim, ironwork, brick construction, dormers breaking cornice line and deep French windows with shutters are factors which determined the high cost of the above house.

The following five sketches show variations in treatment in which simplification of details and construction lower the total building cost. The same plan is assumed in each scheme.

FIG. 2. ENGLISH COTTAGE TYPE (Cost $30,000). Stucco on frame for first story with shingles above.

The $2,000 saving with this type as compared with the house as built is partly due to wood construction, with stucco and shingle walls. The major saving is due to the use of standard sash and window frames and the elimination of the brick porch wall.

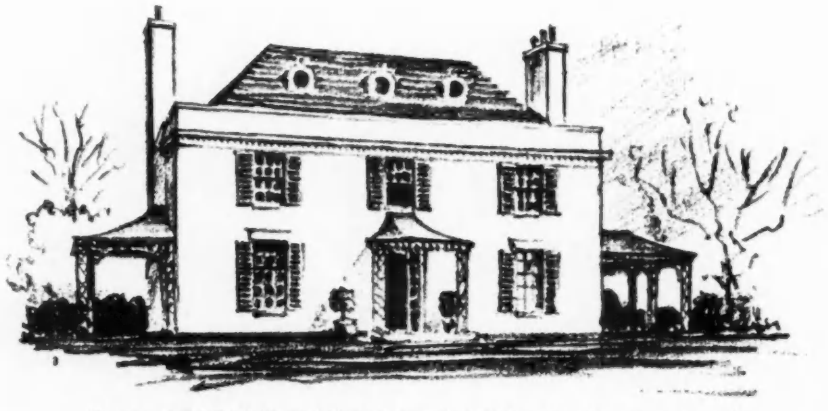


FIG. 3. REGENCY PERIOD (Cost $29,000). Double concrete wall with stucco on frame.

The elimination of main dormers simplified the roof which with the frame and stucco exterior further reduces the cost.

Drawings by Alfred E. Poor

SKETCHES ILLUSTRATING EFFECT OF STYLE ON COST

This house is built of wet mixed concrete units 8″ thick with 3½″ x 12″ face. The saving as compared with the house as built would be approximately $4,000. The reduced cost is partly due to the economical wall construction but the principal savings are effected by simplified roof and porch construction and the elimination of main gables and simplification of detail.

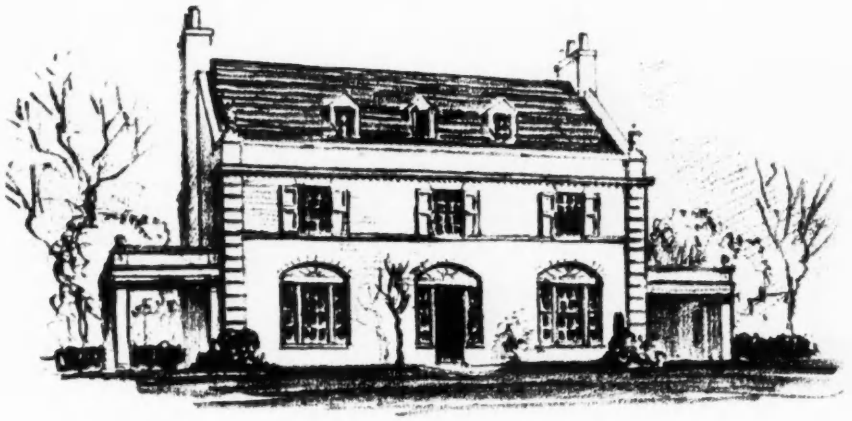


FIG. 4. ENGLISH GEORGIAN TYPE (Cost $28,000). Stone tile exterior walls whitewashed.

The savings on this type are due to less expensive wall and roof construction and to low cost details in windows, shutters and cornice, such as batten shutters and almost total elimination of jamb casings and moldings. Concrete is untouched as it comes from molds or forms.

FIG. 5. FRENCH FARMHOUSE TYPE (Cost $26,000). Van Guilder or similar method of construction.

The saving due to siding in place of brick veneer is approximately $1,100. The major part of the economy is effected by simplified roof framing, elimination of main dormers, substitution of double hung for French windows and the use of standard details and customary construction.

Note. This house, lowest in cost, has full ceiling height for second floor and increased floor area in attic.

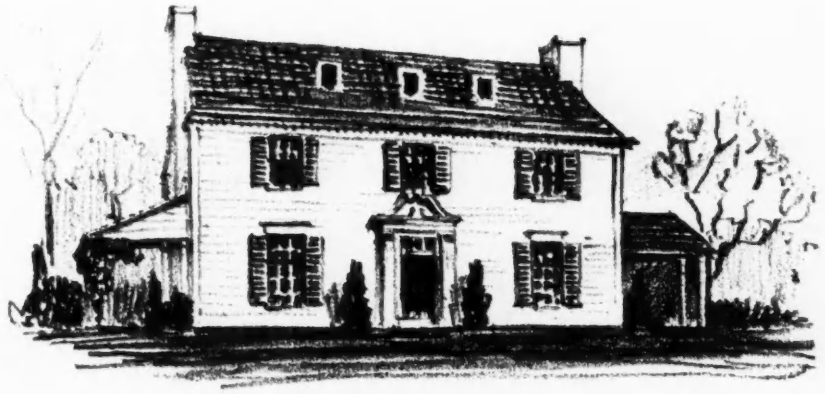


FIG. 6. COLONIAL TYPE (Cost $24,000). Wood frame and clapboards.

Drawings by Alfred E. Poor

SKETCHES ILLUSTRATING EFFECT OF STYLE ON COST

COST PER SQUARE FOOT OF WALL IN RESIDENTIAL CONSTRUCTION

New York City District See Notes On Opposite Page.

Wall Construction or Stud	2"x4" Wood Stud				Steel Stud			8" Brick	Block:-Clay or Cinder Concrete		Concrete Wall	
Exterior Finish Sheathing or Wall Lath or Wall Board	Wood S'dg Fiber Board Fiber Board	Shingle Wood Wood Lath	Stucco Paper Backed Reinforcing Mesh Metal Lath	4" Brick Veneer Wood Wood Lath	Stucco *a Paper Backed Reinforcing Mesh Plaster Board	4" Brick Veneer *a Plaster Board Plaster Board	Stucco *a Reinforcing Mesh 3" Cork Reinforcing Mesh	Brick None Furred & Lath	Stucco *c 8" Clay Tile 8" Cinder Tile Furred & Lath	Natural *d ½-8½ Stone Tile Furred & Lath	Stucco 8" Solid Furred & Lath	Natural *e Double 4" No Lath
PAINT OR WATERPROOFING (a) Material	.02	.00½	–	Waterproofing .02	.	.02	–	.02	–	–	–	–
(b) Labor	.07	.01½	–	.04	–	.04	–	.04	–	–	–	–
SIDING, SHINGLES OR STUCCO (a) Material	.10	.11	.07	Brick Veneer .18	.07	.18	.07	–	.07	No Stucco	.05	No Stucco
(b) Labor	.08	.07	.13	.31	.13	.31	.13	–	.13	No Stucco	.08	No Stucco
SHEATHING & PAPER, REINFORCING MESH OR ALL BOARD (a) Material	.05	.05	.04	.05	.05	.05	Wire Lath .04 Cork .27 *	–	–	–	–	–
(b) Labor	.03	.03	.02	.03	.03	.02	Wire Lath .02 Cork .03 *	–	–	–	–	–
STUD OR WALL (a) Material	.04½	.04½	.04½	.04½	.20½	.20½	Steel .18 *	Brick .34	.24	.24	.16	.16
(b) Labor	.03½	.03½	.03½	.03½	.02½	.02½	.08 *	.52	.10	.10	.22	.18
INTERIOR LATH OR WALL BOARD (a) Material	.04	.02	.03	.02	.04	.04	.03	.02	.02	.02	.02	.02
(b) Labor	.02	.03	.02	.03	.02	.03	.02	.03	.03	.03	.03	.03
PLASTER (a) Material	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
(b) Labor	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
BASE BOARD & TRIM (Includes Paint) (a) Material	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
(b) Labor	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
SCAFFOLDING AND OVERHEAD ON EQUIPMENT	.01	.01	.01	.02	.01	.02	.02	.02	.02	.02	.02	.02
FURRING Material & Labor	–	–	–	–	–	–	–	.03	.03	.03	.03	.03
Total	$ .64	$ .56	$ .54	$ .92	$ .72	$ 1.08	$ .97	$ 1.16	$ .78	$ .58	$ .75	.58
	If Painted .07		Wood Sheath. .08			If Furring	Is Omitted	.08	.08	.08		.08
		.63	.62					1.08	70	50		.50
Heat Loss B.T.U. per hr. or $ per 10 years (See Note ‡)	127 To 157	.227	.257	.216	.326	.262	.08	.209	Furred .184 Not Furred .273	Furred .215 Not Furred .348	.246	Furred .19 Not Furred .288
Type Of Sheathing & Plaster Base	½" Fiber Board	Wood	Wood Sheathing	Wood	½" Plaster Board	½" Plaster Board .123 To .133 Fiber Board	3" Cork	Wood	Wood	Wood	Wood	

FLOOR COSTS

Finish Floor Sub Floor Ceiling	Oak 1"×6" Wood Lath & Plaster	Oak 1"×6" No Plaster	Oak None Beams Wall Bd	¼" Battleship Linoleum 1"×6" & 1"×3" Wood Lath & Plaster	¼" Battleship Linoleum 1"×6" & 1"×3" Wall Board	None (Attic) None (Attic) None (Attic) Lath & Plaster
Finishing, Sanding, Wax or Varnish Material & Labor	$.08	$.08	$.08	Battleship Linoleum & Deadening .35	Battleship Linoleum & Deadening .35	None
Finish Floor Material ($\frac{7}{8}$"×2$\frac{5}{8}$" Select Oak)	.14	14	14	1"×3" T&G. Pine .08	1"×3" T&G. Pine .08	None
Labor	.08	.08	.08	.06	.06	None
Subfloor Material	.05	05	Fiber Board .05	05	Fiber Board .05	None
Labor	03	03	.02	.03	.02	None
Floor or Ceiling Joists Material	057	057	.057	.057	.057	.035
Labor	.033	.033	.033	033	.033	.025
Ceiling, Lath Material	.02	None	None	.02	None	.02
Labor	.03	None	None	.03	None	.03
Ceiling Plaster Material	.03	None	None	.03	None	.03
Labor	.07	None	None	.07	None	.07
Stain, Exposed Beams Material	-	-	.01	-	-	-
Labor	-	-	.02	-	-	-
Total	.61	.46	.48	.80	.65	.21

NOTES ON BUILDING COSTS

(See table above and on opposite page)

These costs have been based on experience in better class residence work in the New York suburban district. Prices vary considerably in different parts of the country. In the costs given, framing lumber has been figured at $42.50 per M; brick at $20 per M.; brick labor, $40 per M. for 8" brick wall and $45 per M. for 4" veneer; mortar at 6 cents per sq. ft. for 8" wall and 4 cents per sq. ft. for veneer. Plaster figured three coats ¾" thick with either putty or sand finish; cement stucco, three coats with a moderately rough finish; predipped shingles, 24", sawed at $40 per M., laid 10" to weather with a final coat of stain after being applied.

If "Stone Tile" or double wall construction is used without stucco finish, special attention must be given to locate doors and windows so that stock lengths (or standard divisions of full sizes) may be used. This type of construction requires close relation of construction to architectural effect.

a. Steel Frame House Corp., subsidiary of McClintic-Marshall Corp., Pittsburgh, Pa.
b. Corkanstele Bldg. Const., Junius H. Stone Corp., New York City.
c. Stone Tile Corp., offices in most cities.
d. Van Guilder System, Concrete Building, Inc., New York City.

The B.t.u. conduction factors are from the 1929 Year Book of the American Society of Heating and Ventilating Engineers. The conversion of these B.t.u. factors into heat loss was prepared through the courtesy of Mr. McMillan and Mr. Rack of Johns-Manville Corporation. The basis for this conversion is as follows:

Cost of heat loss per square foot of surface figured on basis of ten years of 210 days with 16 hours per day heat with the average temperature outdoors for New York City from October 1 to May 1 of 36° and with an average indoor temperature of 68° making a difference of 32°. The calorific value of coal is taken at 13,000 B.t.u.'s per pound and the efficiency of the heating system taken at 60% coal at $14.50 per ton.

210x16x10 = 33,600 hours
13,000x.60 = 7,800 B.t.u.'s per pound
33,600x32 = 1,075,000 B.t.u.'s loss per square foot for 10 years.

$$\frac{1{,}075{,}000}{7{,}800\text{x}2{,}000} = .0689$$ tons of coal per square foot for 10 years.

With coal at $14.50 per ton this will equal $1.00 heating cost per 1 sq. ft. of surface over a period of 10 years, for a wall having a conduction of 1 B.t.u. per hr. per sq. ft.

The assumption that 1 B.t.u. = $1.00 is of value in making a rough estimate as to whether an insulating material is worth its cost. For example, if an insulation adds $.05 to cost and saves .10 to .15 B.t.u. (that is, $.10 to $.15) it is a profitable investment while if its cost is equal to its insulating value there would be no saving.

But there may be special reasons why it is needed, aside from the prevention of loss of heat, such as prevention of condensation, combined acoustical and insulation use or combined structural and insulation use.

COST PER SQUARE FOOT OF WALL IN RESIDENTIAL CONSTRUCTION

New York City District See Notes On Opposite Page.

Wall Construction or Stud	2"x4" Wood Stud				Steel Stud			8" Brick	Block:-Clay or Cinder Concrete		Concrete Wall	
Exterior Finish Sheathing or Wall Lath or Wall Board	Wood Sdg Fiber Board Fiber Board	Shingle Wood Wood Lath	Stucco Paper Backed Reinforcing Mesh Metal Lath	4" Brick Veneer Wood Wood Lath	Stucco *a Paper Backed Reinforcing Mesh Plaster Board	4" Brick Veneer *a Plaster Board Plaster Board	Stucco *b Reinforcing Mesh 3" Cork Reinforcing Mesh	Brick None Furred & Lath	Stucco *c 8" Clay Tile 8" Cinder Tile Furred & Lath	Natural *d Stone 8"-8"-12" Tile Furred & Lath	Stucco 8" Solid Furred & Lath	Natural *e Double 4" No Lath
PAINT or WATERPROOFING (a) Material	.02	.00½	–	Waterproofing .02	–	.02	–	.02	–	–	–	–
(b) Labor	.07	.01½	–	.04	–	.04	–	.04	–	–	–	–
SIDING, SHINGLES OR STUCCO (a) Material	.10	.11	.07	Brick Veneer .18	.07	.18	.07	–	.07	No Stucco	.05	No Stucco
(b) Labor	.08	.07	.13	.31	.13	.31	.13	–	.13	No Stucco	.08	No Stucco
SHEATHING & PAPER, REINFORCING MESH OR LATH BOARD (a) Material	.05	.05	.04	.05	.05	.05	Wire Lath .04 Cork .27 *	–	–	–	–	–
(b) Labor	.03	.03	.02	.03	.03	.02	Wire Lath .02 Cork .03 *	–	–	–	–	–
STUD OR WALL (a) Material	.04½	.04½	.04½	.04½	.20½	.20½	Steel .18 *	Brick .34	.24	.24	.16	.16
(b) Labor	.03½	.03½	.03½	.03½	.02½	.02½	.08 *	.52	.10	.10	.22	.18
INTERIOR LATH OR WALL BOARD (a) Material	.04	.02	.03	.02	.04	.04	.03	.02	.02	.02	.02	.02
(b) Labor	.02	.03	.02	.03	.02	.03	.02	.03	.03	.03	.03	.03
PLASTER (a) Material	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
(b) Labor	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
BASE BOARD & TRIM (Includes Paint) (a) Material	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
(b) Labor	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
SCAFFOLDING AND OVERHEAD ON EQUIPMENT	.01	.01	.01	.02	.01	.02	.02	.02	.02	.02	.02	.02
FURRING Material & Labor	–	–	–	–	–	–	–	.03	.03	.03	.03	.03
Total	$ .64	$ .56	$ .54	$ .92	$ .72	$ 1.08	$ .97	$ 1.16	$ .78	$ .58	$ .75	.58
	If Painted .07		Wood Sheath. .08			If Furring Is Omitted		.08	.08	.08		.08
		.63	.62					1.08	70	50		.50
Heat Loss B.T.U. per hr. (See Note #) or $ per 10 years	127 To 157	.227	.237	.216	.326	.262	.08	.209	Furred .184 Not Furred .273	Furred .215 Not Furred .348	.246	Furred .19 Not Furred .288
Type Of Sheathing & Plaster Base	½" Fiber Board	Wood	Wood Sheathing	Wood	½" Plaster Board	⅜" Plaster Board .123 To .193 Fiber Board	3" Cork	Wood	Wood	Wood	Wood	

FLOOR COSTS

Finish Floor / Sub Floor / Ceiling	Oak 1"×6" Wood Lath & Plaster	Oak 1"×6" No Plaster	Oak None Beams Wall Bd	¼" Battleship Linoleum 1"×6" & 1"×5" Wood Lath & Plaster	¼" Battleship Linoleum 1"×6" & 1"×3" Wall Board	None (Attic) None (Attic) None (Attic) Lath & Plaster
FINISHING, SANDING, WAX OR VARNISH Material & Labor	$.08	$.08	$.08	Battleship Linoleum & Deadening .35	Battleship Linoleum & Deadening .35	None
FINISH FLOOR Material ($\frac{7}{8}$"×2$\frac{5}{8}$" Select Oak)	.14	14	14	1"×3" T&G Pine .08	1"×3" T&G Pine .08	None
Labor	.08	.08	.08	.06	.06	None
SUBFLOOR Material	.05	05	Fiber Board .05	05	Fiber Board .05	None
Labor	03	03	.02	.03	.02	None
FLOOR OR CEILING JOISTS Material	057	057	.057	.057	.057	.035
Labor	.033	033	.033	033	.033	.025
CEILING LATH Material	.02	None	None	.02	None	.02
Labor	.03	None	None	.03	None	.03
CEILING PLASTER Material	.03	None	None	.03	None	.03
Labor	.07	None	None	.07	None	.07
STAIN, EXPOSED BEAMS Material	-	-	.01	-	-	-
Labor	-	-	.02	-	-	-
Total	.61	46	.48	.90	.65	.21

NOTES ON BUILDING COSTS

(See table above and on opposite page)

These costs have been based on experience in better class residence work in the New York suburban district. Prices vary considerably in different parts of the country. In the costs given, framing lumber has been figured at $42.50 per M; brick at $20 per M.; brick labor, $40 per M. for 8" brick wall and $45 per M. for 4" veneer; mortar at 6 cents per sq. ft. for 8" wall and 4 cents per sq. ft. for veneer. Plaster figured three coats ¾" thick with either putty or sand finish; cement stucco, three coats with a moderately rough finish; pre-dipped shingles, 24", sawed at $40 per M., laid 10" to weather with a final coat of stain after being applied.

If "Stone Tile" or double wall construction is used without stucco finish, special attention must be given to locate doors and windows so that stock lengths (or standard divisions of full sizes) may be used. This type of construction requires close relation of construction to architectural effect.

a. Steel Frame House Corp., subsidiary of McClintic-Marshall Corp., Pittsburgh, Pa.
b. Corkanstele Bldg. Const., Junius H. Stone Corp., New York City.
c. Stone Tile Corp., offices in most cities.
d. Van Guilder System, Concrete Building, Inc., New York City.

The B.t.u. conduction factors are from the 1929 Year Book of the American Society of Heating and Ventilating Engineers. The conversion of these B.t.u. factors into heat loss was prepared through the courtesy of Mr. McMillan and Mr. Rack of Johns-Manville Corporation. The basis for this conversion is as follows:

Cost of heat loss per square foot of surface figured on basis of ten years of 210 days with 16 hours per day heat with the average temperature outdoors for New York City from October 1 to May 1 of 36° and with an average indoor temperature of 68° making a difference of 32°. The calorific value of coal is taken at 13,000 B.t.u.'s per pound and the efficiency of the heating system taken at 60% coal at $14.50 per ton.

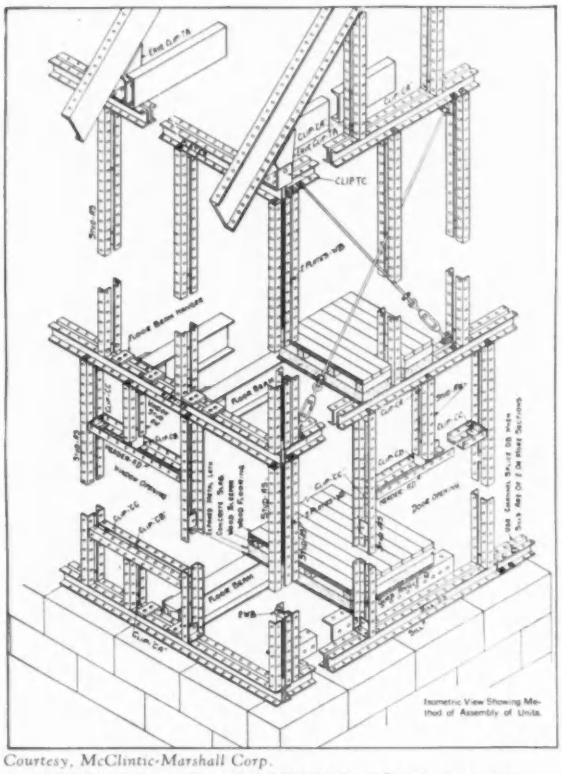
210×16×10 = 33,600 hours
13,000×.60 = 7,800 B.t.u.'s per pound
33,600×32 = 1,075,000 B.t.u.'s loss per square foot for 10 years.

$$\frac{1{,}075{,}000}{7{,}800\times 2{,}000} = .0689 \text{ tons of coal per square foot for 10 years.}$$

With coal at $14.50 per ton this will equal $1.00 heating cost per 1 sq. ft. of surface over a period of 10 years, for a wall having a conduction of 1 B.t.u. per hr. per sq. ft.

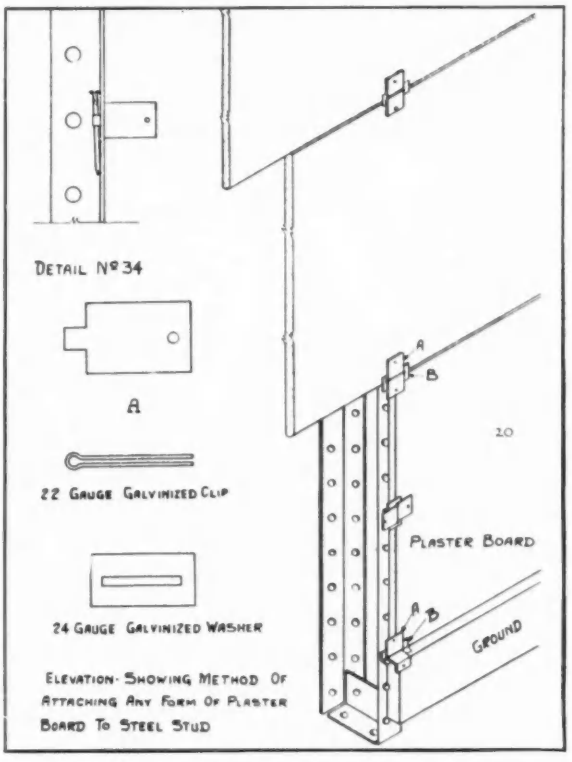
The assumption that 1 B.t.u. = $1.00 is of value in making a rough estimate as to whether an insulating material is worth its cost. For example, if an insulation adds $.05 to cost and saves .10 to .15 B.t.u. (that is, $.10 to $.15) it is a profitable investment while if its cost is equal to its insulating value there would be no saving.

But there may be special reasons why it is needed, aside from the prevention of loss of heat, such as prevention of condensation, combined acoustical and insulation use or combined structural and insulation use.

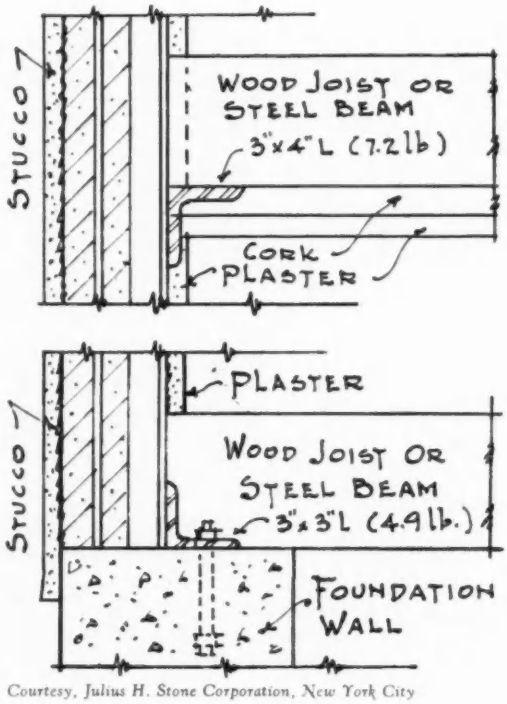


Courtesy, McClintic-Marshall Corp.

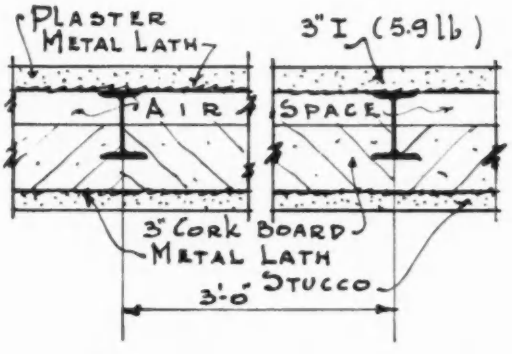
STEEL FRAME ADAPTABLE TO VARIOUS DESIGNS



METHOD OF ATTACHING EXTERIOR AND INTERIOR WALL BOARD TO STEEL FRAME



Courtesy, Julius H. Stone Corporation, New York City



WALL DETAIL

Corkanstele Wall Construction having insulation value of .08 B.t.u. per sq. ft. per hour as compared with .45 B.t.u. if cork is not used. See page 406 for other insulating values.

or five feet above the floor as it would cost if the rafters started from ceiling height. While there is a slight saving in material and labor in the lower wall there is the added cost of labor for framing and installing plaster backing. This being true, the entire cost of the dormer should be charged against architectural effect. Dormers are often essential but they should be recognized as an added expense and may be eliminated when total price has to be greatly restricted.

3. Costly Details Due to Style. Certain styles of architecture require heavily molded casings, circle-sawed head casings and other details the cost of which may be from two to five times the cost of standard trim.

The additional labor and materials required for exterior brick chimneys may exceed the estimate for an interior flue by from one and one-half to two times. Brick enclosed porches, garden walls and terraces greatly increase the cost of a building.

POSSIBLE SAVINGS

1. Detail Drawings or Specifications. The architect should either prepare complete scale detail drawings to submit to the contractor when a bid is called for or he should fully describe the details in the specifications if he desires to obtain the benefit of any savings from simplified details. The experienced contractor generally makes a very liberal allowance in his estimate to cover the "probable details" when the architect specifies "details to follow." The submission of photographs of a model is often a factor in obtaining a low bid because of the clearer understanding of the project that is made possible by such photographs.

2. Local Materials. The architect can effect considerable saving for his client by studying prices of local materials. In many localities bank run gravel is considerably cheaper than crushed rock and entirely satisfactory for residence work. Brick, lumber and cement handled in the district are often cheaper than products from a distant city.

3. Stock Moldings and Casings. All so-called stock molds and casing details as shown in manufacturers' catalogues are not carried in all localities and, as a matter of fact, many of the stock molding sections are poor in contour. If the local yards do not carry suitable standard details, the architect should design his own full-size molds and, providing he keeps them simple, the cost will be but slightly greater than the special run of stock sections.

4. Building Codes. Most Building Codes are over-restrictive at some points. When not working under a city code the architect might well ignore such code customs as 12″ concrete foundation walls, 4″ cast iron vent pipe, lead bends and wiped joints, etc. The Department of Commerce Bulletins on "Recommended Minimum Requirements for Small Dwellings Construction," "Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings" and "Recommended Minimum Requirements for Masonry Wall Construction" cover a great many points where economies may be effected without injury to the quality of the building.

A PROCESS KITCHEN

One of the by-products of the training school for house servants, conducted under the direction of Mrs. Dorcas Boardman, is a kitchen so arranged that needless steps have been reduced to a minimum and efficiency in kitchen operation has been materially increased. While the study has been applied to the house of moderate and large size where servants are employed, the principles of planning are also applicable to the small servantless house.

The principle of arranging equipment in a Dorcas Boardman kitchen is that of a shoemaker's bench with each tool in a definite place where it may be reached with a minimum of effort.

Experience in the actual operation of hundreds of kitchens, extending over a period of fourteen years, has led to the following definite conclusions:

Size of Kitchen. A kitchen is understood to be a place where real meals are cooked, not merely a place where breakfasts may be prepared or cocktails shaken. The minimum size for a kitchen where a maid is employed should be 7′ x 14′.

An 8′ x 16′ kitchen will be found to be the minimum size for a family with an income of $10,000 to $20,000 who do some entertaining. Above the $20,000 a year income group, for families that do considerable entertaining, a kitchen 10′ x 20′ is generally found to be adequate and efficient.

Pantry. Although the pantry is often condemned on the ground of requiring extra steps, it nevertheless has an important function in the larger house. Where servants are employed, the pantry should serve as a place to wash silver and china, for storage of china, glassware and linens and for the preparation of salads and desserts.

The segregation of *processes* eliminates confusion in the kitchen. If the house is to have but one servant, the pantry space may be incorporated in one end of the kitchen with a soft metal sink for washing china and with special provision for storage of china, silver and linen.

Service Wagon. The service wagon is efficient, but efficiency does not always go hand in hand with

Photo. Kenneth Clark

A DORCAS BOARDMAN KITCHEN
HOME OF MRS. HENRY G. BARTOL, NEW YORK CITY

a corresponding refinement of living. It is undesirable where servants are employed, but for the woman who does her own work it should be used. In a study made at Columbia University by Irene Dunne, it was found that the use of a tea wagon reduced the walking distance required in handling six cups, six saucers and six plates from table to sink and, after washing, to the cupboard, from 130 feet to 47 feet per meal or from 26 miles to 9 miles a year.

Refrigerator. The ice box is often located in an entry or near a door so as to be convenient for the ice-man. This is poor planning, for while the ice-man may make four trips a week the cook may use the ice box a thousand times during the week.

Stove. Too often the stove is placed in a corner with complete isolation from the utensils and staples generally required. The architect might well take his cue from the soda fountain luncheonette or quick lunch counter where all equipment and food are within reach of the stove. The quick lunch artist gets a certain thrill out of his work that would be entirely lacking if he had to hunt around at one end of the room for a pan, go to the entry for an egg, and the pantry for bread.

Sinks. The sink should not be located under a window. A person washing dishes does not have time to look out and the space above the sink can be used to much better advantage for dish mop, strainer and other utensils connected with this process. In addition, a window at the side will give better light and ventilation without a draft.

Lighting. It is impossible to do work in the kitchen with a center light above, without casting a distracting shadow. Not only should the lights be arranged so as not to cast a shadow, but a very generous amount of light, with good reflectors, should be provided so as to make the work as easy and cheerful as possible. Generally speaking, lights should be placed (1) directly above the sink, (2) in front of the stove and (3) over the work table. At least two convenient outlets should be placed adjacent to the work table.

NOTES AND COMMENTS

PROBLEMS OF PRESENT DAY ARCHITECTURAL PRACTICE

AN ARCHITECT said the other day that the practice of the profession was becoming more difficult and less attractive each year. The instance particularly cited was the invariable discrepancy between his clients' demands for accommodations and their stated limits of expenditure, a discrepancy that usually was of a two-to-one variety.

Architects generally will echo his sentiments, at least so far as this mentioned phase of practice is concerned, for clients are merely a cross-section of the public which always has a latent hope that it may be able somehow to get two tens for a five. It is the get-rich-quick spirit or hope of the times; and the enlarged list of comforts that have taken on the hue of necessities, together with the increased cost of building, naturally encourages a client thus to bargain with his architect.

The fact that the architect isn't selling him a building, but is merely quoting prices as established by the building industry, isn't always kept quite clearly in mind, perhaps, by the client.

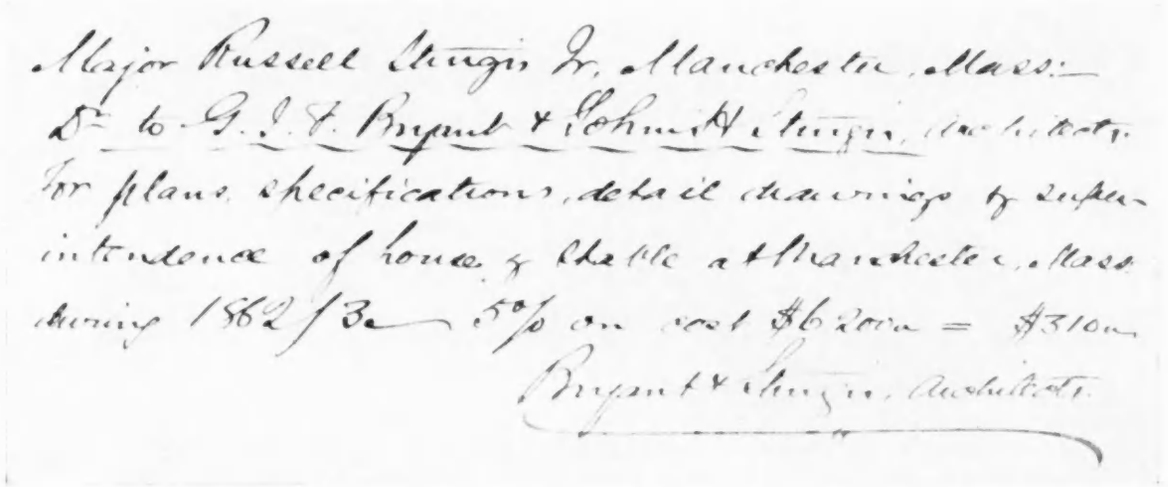
If in this and other ways the practice of architecture is getting less attractive it is certainly true that it is getting more complex. The old days are strikingly suggested by a bill for services recently found by Mr. R. Clipston Sturgis covering full architectural services on a country house and stable built in 1862 for his father. The house was of some fifteen rooms, well finished, with covered verandah and with all the amenities of the times. The times however demanded practically no plumbing! The bill is below in its original form:

A glance at drawings of that period is illuminating, but it requires a rather intensive effort of the imagination to picture the conditions that permitted construction of such a house and stable for such a sum and still more to understand how plans, specifications and supervision could ever have been produced for $310.00 regardless of any element of remaining profit over and above expenses, and probably there was a profit or personal service fee involved, due to a large part of the work being done by the architects themselves. Today the same type of house and stable would cost at least $35,000 to $40,000 and full service with a reasonable profit could not be rendered for less than 8 to 10 per cent, making the fee about ten times that of the earlier period. The plumbing in such an establishment today would cost more than half of the entire original cost of the two buildings.

Probably this house was built by a carpenter builder frequently employed by the architects at a price arrived at, to a considerable extent, through description of results desired, without accurate competitive estimates or the documents such estimates would require. Most of the constructional problems were probably settled by the contractor on the job, in occasional conference with the architect. There were no building laws, zoning laws, or plumbing laws. All processes were those of the carpenter's thumb, a rule adequate for the times.

INADEQUATE CONTRACT SYSTEM

In those days the organized efforts of the profession were in their infancy. The American Institute of Architects was only five years old. The im-


Major Russell Sturgis Jr. Manchester, Mass:
Dr to G. J. F. Bryant & Schmidt Sturgis, Architects.
For plans, specifications, detail drawings & superintendence of house & stable at Manchester, Mass.
during 1862 & 3 — 5% on cost $6200 = $310.00
Bryant & Sturgis, Architects.

FROM THE ORIGINAL BILL FOR ARCHITECTURAL SERVICES RENDERED IN 1862

agination of the writer is stirred to its depths at the thought of the freedom of those days from the demands of committee work. No one worried about the standardization of contract forms. A letter of acceptance to a well known contractor, familiar with the architect's customary requirements, was sufficient protection in those days. For that matter, it still is. We aren't permitted, however, as a general rule today, to let contracts on that basis. We are continually forced to deal with contractor organizations with which we are unfamiliar, depending upon reference to others for information concerning their personnel and methods on which to advise our clients as to whether they are desirable organizations to employ. And too frequently owners will insist on employing them, if they are the low bidders, even if evidence of their ability and responsibility is seriously lacking or negative.

In public work this is practically always true, for the low bidder plus a bond is customarily considered "a responsible bidder" by public authorities. The low bidder who is unable to secure a bond is as scarce as the proverbial hen's tooth. The reason for this, in spite of the fact that many low bidders are notoriously bad risks, is due to various underlying conditions. Keen competition between Surety Companies, leading to unsound underwriting practices by some, is one reason. Politically favored agents through whom bonds are awarded is another. Such an agent could hardly expect to continue in favor if he refused too often a bond to a low bidder who was satisfactory to, if not actually favored by, the administration.

Other reasons merely financial develop, in the field of private contracts, a keen interest in the low bidder and a predisposition to accept him with almost any inherent risks, if his price is favorable.

Thus in both private and public work the firm foundations of character and trained ability are frequently eliminated and building operations are based on the quicksand of a low bidder of doubtful stability or even of known instability. And having rejected the dependable element of responsible personalities we are forced to seek the uncertain protection of carefully drawn phrases of contract documents, reinforced with bonds and lien laws, and other complicated procedures.

There is a subtle irony in the fact that all these protective measures tend to protect and secure in his business the irresponsible contractor against whom they are intended to operate. This is quite natural and finds its parallel in many other fields. The whole field of insurance tends to make safe the assumption of risks that might otherwise be disastrous, but in the main insurance aims to protect one against a range of natural calamities beyond our control rather than against voluntarily assumed risks.

Fireproof houses, in the absolute meaning of the words, are not economically practicable, although they may be some day, and insurance protects us against loss due to the constantly present hazards of fire, wind, and earthquake.

Fire resistance in construction is a relative term and the risk of fire cannot be avoided. Fire insurance, therefore, tends to foster only in a very minor degree the inflammable construction against which it offers protection. This is not the case with those measures devised to protect one against voluntarily assumed hazards.

In the building industry any contract involves the owner in the hazards of the possible death or incapacity of the contractor, or his failure due to causes apart from the particular contract involved. These hazards made natural the occasional insistence upon personal guarantors and these gave way, not so very long ago, to incorporated Surety Companies doing business at first on competitive rates but now largely standardized with fixed rates based upon the contract price and resulting from accumulated experience of the average hazard of the business.

With personal guarantors, the degree and character of the sureties were determined by the circumstances of each contract in which they were used. With Surety Company Bonds the premium is a customary percentage of the contract and the cost is thus standard, regardless of the character of the contractor involved.

FALSE EQUALITY OF CONTRACTORS

If an owner requires a bond he pays just as much for it—for the soundest contractor as for the weakest. The price of the bond is 1½% of the contract price. The difference between the low bidder and the next bidder is frequently much more than 1½%. Since the bond guarantees performance, why worry about any of the deficiencies of the low bidder, as to skill, capital, dependability? Require a bond and let the Surety Company worry.

The fact that the bond does not guarantee performance but merely guarantees against financial loss due to failure to perform is not realized by the average owner. Hence the bond gives him a distinct sense of security in accepting a proposal which otherwise would be deemed hazardous. It thus becomes an asset to the less responsible contractors which permits them to bid on a false equality with more responsible contractors. Undoubtedly, if an incompetent contractor fails, the owner is better off if he has a bond which is enforceable than if he has no bond. Whether he is as well off as he would have been with a competent contractor at a higher price

is quite another matter, worthy of careful consideration but more clearly viewed by hindsight than by inexperienced foresight.

The fact that the tendency of this system is to bolster up the business of the incompetent at the expense of the competent, with a resultant lowering of average standards, is a subject that concerns the practice of architects and the business of contractors as well as the interests of building owners. It is therefore worthy of careful study by all of them.

LIEN LAWS

Lien laws bring about a similar condition, perhaps even more marked. No two lien laws are identical, but they aim, in a general way, at the same result, namely, to make the owner of improved property assure to labor and material men payment for work done and materials used in such improvements if the contractor who ordered such labor and materials fails to make payment therefor. The brief statement of this purpose sounds perfectly reasonable, but as soon as one endeavors to put the provisions into definite language one becomes entangled in countless complications.

Such laws are commonly called Mechanics Lien Laws, and originally they were created solely in the interest of the mechanic, but today they have been broadened to cover also the man who furnishes material. And in these days of organized labor the mechanic is protected in the larger communities by his organization and has no real interest in his lien rights. In outlying smaller communities the right to lien, however, is still of value to him.

When lien laws are so framed as to give practical protection to the material man, what is the result? This—he can safely extend credit to any purchaser of material regardless of integrity or financial condition, because the law makes the owner of the property responsible for the payment of the bill. This has long been the case in public work, with the result that bidders of inadequate financial resources have as good credit with the material men as the most substantial contractor in the city. One material man has stated that he would sell material to anyone on a public contract because the right to make claims and recover under the bond required on all public work relieved him of the necessity of exercising any discretion in matters of credit.

It is not strange that in their own selfish interests material men desire a general lien law governing private work that will extend the safeguards now enjoyed in public work to all other operations.

What would be the result of such a lien on the mortgage business, especially second mortgages needed subsequent to the commencement of the work? How much inconvenience and expense is it proper to impose on everybody to protect a few in a minority of cases? Is it wise to enact laws that tend to relieve a certain element of the community of the necessity of exercising any element of business prudence in dealing with customers? Is it wise to protect by laws, the operation of the least competent members of a group at the expense of the more competent?

Of course these are not, in so many words, the aims of such laws, but when they are found to be the results thereof there is good reason for the business or industry involved to take account of stock. This must be done on a broad basis, with the coöperation of all the elements involved. Doubtless in each problem the interest of some elements will be more vital than that of others, but any relief afforded them must take into consideration possible resulting hardship to the others. Too frequently this consideration is lacking in proposed legislation, as prepared by some one element intent solely on its own protection.

These particular items are mentioned merely as typical of the complicated problems facing the building industry and therefore facing the practising architect, and demanding of him and his profession a fair share in the effort required for their proper solution.

WILLIAM STANLEY PARKER

ARCHITECTURAL TENDENCIES

Architectural criticism of the next generation will probably characterize the present period of architecture as one of definite revolt. Since various "schools" of thought have arisen it would seem to be worth while that The Architectural Record should attempt to give its readers some idea of the trends in architecture as interpreted by recognized architects and critics. The first of a series of articles appears in this number of The Record with "Tendencies of the School of Modern French Architecture" by Michel Roux-Spitz and Jean Porcher. Other writers contributing to the discussion in this and later issues include Fiske Kimball, Paul Cret, Le Corbusier, Lewis Mumford, Walter Gropius, Eric Mendelsohn and Walter Pach.

THE ARCHITECT'S LIBRARY

BOOK REVIEWS

FRANK LLOYD WRIGHT AND THE NEW PIONEERS

HITCHCOCK, HENRY-RUSSELL

Frank Lloyd Wright. Collection "Les Maîtres de l'Architecture Contemporaine." Editions "Cahiers d'Art." Paris, 1928.

THIS monograph on Frank Lloyd Wright has the honor of being the first of a series on the masters of contemporary architecture; and, as everyone knows who is familiar with the history of modern architecture in America and Europe, the honor is well-deserved. The writer, however, is not a Frenchman, but an American, Mr. Henry-Russell Hitchcock —a fact which possibly testifies to the unfamiliarity of the French with Mr. Wright's work, since his influence in France has been negligible, and his method and point of view are foreign both to the official architecture of the past and to that of the contemporary classicists of the machine.

Mr. Hitchcock's introduction occupies only four pages of this monograph, the rest consisting chiefly of photographs of Mr. Wright's buildings, together with a few obscurely reproduced plans; yet in these four pages Mr. Hitchcock manages to raise, by statement or implication, many of the important issues that must be faced in modern architecture. I find myself a little puzzled by Mr. Hitchcock's summary of Mr. Wright's career, for the critic's admiration is so thoroughly counterbalanced by his disapproval of the central motives in Mr. Wright's work that one is driven to conclude that either Mr. Wright is not the great master Mr. Hitchcock says he is, or the critic's feelings do not square with his abstract principles.

Let us try to clear up this confusion. To begin at the beginning, Mr. Hitchcock places Mr. Wright at the head of the movement which is represented by Berlage in Holland and by Hoffmann in Austria. This manner of placing Mr. Wright puts him definitely with the past generation, and it serves to bring out Mr. Hitchcock's underlying thesis of a cleavage in form between the generation of Wright and the generation of Le Corbusier and Oud, but it ignores the fact that America has gone through a different architectural and social development from Europe, and that the contemporaries of Berlage and Hoffmann, architecturally speaking, are Richardson and Sullivan. The worship of industrialism, which has become the keynote of the modern movement in Europe today, belongs to an earlier generation in America, that which actually built the grain elevators and the primitive skyscrapers of Chicago. There is, of course, a difference in technical methods between a stone construction like the Monadnock Building and a house by Le Corbusier but the philosophy and method of approach are exactly the same.

This limitation of architectural design to its technical elements was native in America; but it was none the less thoroughgoing; and the buildings that it produced are still, in their rigorous line and bold mass, among the best we can show: if they lack much that architecture can give, everything they do possess is a clean gain. When Mr. Hitchcock observes that Mr. Wright has learned less from the "lesson of Ford" than the European has, he neglects the fact that the Chicago of Mr. Wright's youth was wholly conceived in the image of Ford; business success and mechanical efficiency were the only factors that entered into the architectural problem; and Mr. Wright's development, instead of being toward the goal of the "building-machine" had this conception, rather, as a starting point.

Had the Chicago architects of the 'eighties been as intellectually conscious as Le Corbusier, and had they had an intelligent public, ready to apply in the home the successes they could boast of in the office building, there would have been dwelling houses which reflected all the virtues that the "new pioneers" seek to enthrone. The victory of the new pioneers in Chicago was incomplete, partly because of their failure to organize their gains, and partly because, in the hands of Sullivan and Wright, their architecture began to go through a natural and inevitable process of development. With his fundamental education as an engineer, and with that solid acquaintance with utilitarian necessities which the very being of Chicago gives, to a philosopher like Dewey or to a poet like Sandburg quite as much as to the business man or industrialist, Mr. Wright took the next step. This step consisted in the modification of mechanical forms in harmony with the regional environment and with human desires and feelings.

Here is the point where Mr. Hitchcock's admiration suddenly wilts. He sees in Mr. Wright's use of ornament partly the pressure of rich clients, partly the "bad influence" of Sullivan, and partly Mr. Wright's own concern for the picturesque. Instead of becoming harder and harder in line, starker and starker, bleaker and bleaker, Mr. Wright's art became more rich and warm. In the Imperial Hotel in Tokyo Mr. Wright—forced to design for a people with habits of work other than those of the West—even embraced handicraft and permitted the building to take on the complicated forms of craftsmanship, the result being a monument far less European and mechanical than the painful sub-European specimens

of architecture which the native architects scatter over the East. There is more ornament in the Imperial Hotel, 1916, or the Millard Residence in Pasadena, 1923, than in the Willett's House, 1901. If Mr. Hitchcock is right, this phase of Mr. Wright's development is an unfortunate atavism; and it makes more and more pronounced the breach between his work and that which will be produced during the coming generation.

That is one view of the case, but my own belief is just the opposite of this. The glorification of the machine by people who are just becoming acquainted with its possibilities and are learning to use it is "modern" in Europe today precisely because it is forty years behind our American experience. While for Europe the lesson of Ford is increasing standardization and mass-production, because few of the economies in design so introduced have been practised there, for us the lesson of Ford which he learned at a price that would have bankrupted an ordinary manufacturer is the pathetic insufficiency of our old-fashioned industrial design, with its contempt for problems of pure form and its disregard for other human interests than efficiency. If this be true, Mr. Wright is not the forerunner of Le Corbusier but, in a real sense, his successor. He has passed that painful step in learning when one is conscious of one's movements and one's instruments, and has reached that period in pure mechanical design when he can play with it; in short, the engineer has given way to the artist, and despite a hundred efforts to prove either that the engineer *is* the artist, or that engineering is the only possible type of art in the modern world, Mr. Wright's work exists as a living refutation of this notion. He had achieved Cubism in architecture before the Cubists; and he has gone on to an integral architecture which creates its own forms with—not for—the machine.

Mr. Hitchcock's aesthetic and social philosophy keep him, I think, from recognizing this as a valid development; hence his disparagement of Mr. Wright's art at the very moment he is seeking to praise it. For me, on the contrary, Mr. Wright's architectural development justifies itself; and not the less so, certainly, because I am more interested in humanity and its needs and desires than I am in the abstract perfection of the machine, or in the pragmatic justification of Spengler's historical dogmas.

In failing to grasp the inevitability of this humanization of the machine, this addition of feeling to form, or of poetry to mathematics as we become more and more the master of it, Mr. Hitchcock has, it seems to me, lost the central clue in Mr. Wright's career. This becomes apparent in the final apostrophe, in which he compares him with Wren and repeats the phrase so true of Wren in the city of London: "si monumentum requiris circumspice." The comparison does not hold at any point; but it falls down chiefly on the mere historical detail that one cannot find Wright's work by looking around one in Chicago; on the contrary, one must search and pry and go on long motor rides, only to find, as in the Midway Gardens—built but fifteen years ago—that vandals have already ruined the building. Up to recently Mr. Wright had built no skyscrapers, and with all the vast volume of industrial and semi-industrial building he has had little to do. His architecture is not in the current of the present regime any more than Walt Whitman's writings were in the current of the Gilded Age: hence his value is not that he has dominated the scene and made it over in his image, but that he has kept the way open for a type of architecture which can come into existence only in a much more humanized and socially adept generation than our own.

Mr. Wright's art is prophetic: it does not simply conform and adjust itself to existing conditions; it reacts and makes demands, demands that the builder of speculative houses or rent-barracks has no intention of complying with. Success under present conditions demands unhesitating conformity on the part of the engineer to the terms laid down by the banker and investor; the result is sometimes good design and economy, and quite as often it is poor design and deformity and inadequacy to perform the function that the building is supposed to perform. This is not the milieu in which good architecture can become the rule, and if modern architecture flourishes in Europe and lags here, it is because the Europeans have far better conditions under which to work, as a result of the socialized activity of European municipalities, with their comprehensive and financially unremunerative housing programs.

The truth is that Mr. Wright's capital qualities alienate him both from the architects who do not acknowledge a handicap in conforming to the present demands and from the society that ignores the higher values of life if they happen to conflict with the principle of a quick turnover and a maximum profit. Chief among these qualities is Mr. Wright's sense of the natural environment; and here again, I think, Mr. Hitchcock's principles keep him from grasping Mr. Wright's significance. Mr. Hitchcock refers to the "absurdity and the provincialism of the term prairie architecture" to characterize Mr. Wright's early Chicago work. On the contrary, the phrase is not absurd but accurate. Mr. Wright is, definitely, our greatest regional architect; his Chicago houses *are* prairie houses, as his Pasadena houses are "mediterranean" ones, to harmonize with that climate and milieu. Even machines, as some of our new pioneers forget, differ in design according

to the region they are used in: steamers designed for tropical trade have larger ventilating units than the usual North Atlantic liners, and automobiles in England are designed for low power because of the relatively easy contours of the country. The essential form of architecture is of course largely conditioned by the method of construction; but this again is not independent of regional qualifications—as the use of the concrete form instead of the steel frame in Chicago testifies.

Now, these qualities were largely ignored by the older classical architecture, with its concern for a single method of construction and a single mode of design. Wherever a building was placed or whatever its purpose, the problem of the architect was to make it resemble, as far as possible, a Greek or Roman temple. The neo-classicists of the machine have revamped this formula, but the spirit behind it is the same; the chief difference being that the archetypal form is no longer a temple but a factory, and the principal offense against taste consists, not in the use of free or "barbarous" ornament but in the use of any ornament at all, however integral, however intimately a part of the design and necessary for its completion. Mr. Wright's great virtue consists in the fact that he uses to the full modern methods of construction and boldly invents new forms without losing his great sense of tact—the tact of the artist with his materials, of the lover of nature with the earth, and of a man with other men. Hence the importance of the garden which surrounds and completes almost all of his buildings: it is a true symbol of his entire work—the picture of life, warm, earthy, insurgent, breaking in waves of foliage over the stony masses of the building, and showing the power and logic of the form at the very moment of departing from it and counterbalancing it. This is an art which cannot be contained in a narrow classical formula; and if the new pioneers have as yet no place for it in their philosophy, so much the worse for their philosophy. Mr. Wright's architecture is an early witness of what may generally come to happen when our regional cultures absorb the lesson of the machine without losing their roots or renouncing all those elements which give landscapes and men their individualities. The formula which would exclude such a manifestation belongs as little to the future as the five orders.

LEWIS MUMFORD

LIST OF NEW BOOKS ON ARCHITECTURE AND THE ALLIED ARTS

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ARCHITECTURE

CHICAGO ARCHITECTURAL EXHIBITION LEAGUE

Yearbook and catalogue of the forty-first exhibition. Chicago: 1928. 159 p. illus., plates. f°. $2.00. 720.62

Exhibition held in the East Galleries, Art Institute of Chicago, May 19 to June 7, 1928.

"In this yearbook you will find reproduced selected renderings and photographs of Residential, Ecclesiastical, Educational and Commercial work—both of architecture and the allied arts, all of which are expressive of the present development of American civilization." —Foreword.

Similar in format to the Architectural League of New York Yearbook.

FERRARI, GIULIO.

La terracotta e pavimenti in laterizio nell'arte italiana; quattrocento motivi in buona parte inediti in duecentosessanta tavole; introduzione di Corrado Ricci (testo italiano e inglese). Milano: U. Hoepli, 1928. lv, 289 p. incl. plates (part col'd.). f°. (Collezione artistica Hoepli.) 200 lire. 721

Bibliography, p. liii-lv.

The text, both in Italian and English, sketches the history of the use of terra cotta in Italian architecture and sculpture from Etruscan and Roman examples down through the Byzantine, Romanesque Gothic, Renaissance and Baroque periods. Illustrated with 260 plates.

GOODSPEED, EDGAR JOHNSON.

The University of Chicago chapel, a guide. Chicago: University of Chicago Press, 1928. xi, 66 p. front., illus., 7 plates. 8°. $1.00. 726.41

This chapel was the last design of Bertram Grosvenor Goodhue.

LUKOMSKI, GEORGII KRESKENT.

Andrea Palladio. Préface de Louis Dimier. Paris: A. Vincent & Cie, 1927. 120 p. front. (port.), 132 plates. 8°. (Les grands architectes.) 90 fr. 724.15

Bibliography, p. 107-114.

LUKOMSKI, GEORGII KRESKENT.

Vignole (Jacopo Barozzi de Vignola). Préface de André Maurel. Paris: A. Vincent & Cie, 1927. 91 p. front. (port.), 122 plates. 8°. (Les grands architectes.) 90 fr. 724.15

Bibliography, p. 83-86.

Biographical and critical studies of these two Italian architects. The illustrations are clear reproductions from original drawings, earlier editions, photographs.

MACARTNEY, MERVYN EDMUND.

Standard details. London: Architectural Press, 1928. 25 pl. f°. 5s. 729

Large folio measured drawings of English architectural details, including staircases, doorways, panelling, brickwork, fireplaces and mantelpieces.

PAN AMERICAN UNION.

Program and rules of the competition for the selection of an architect for the Monumental Lighthouse which the nations of the world will erect in the Dominican Republic to the memory of Christopher Columbus. Prepared by Albert Kelsey, F.A.I.A., technical adviser. Washington, D. C.: Pan American Union, 1928. 72 p. illus., ports., plans. f°. 721

This publication is not sold but is issued gratuitously to all architects and others who intend to participate in the competition. The text contains a history of the project and details of the problem.

PUGIN, AUGUSTUS CHARLES.

Gothic ornaments, selected from various ancient buildings in England and France, exhibiting numerous specimens of every description of decorative detail, from the XIth to the beginning of the XVIth centuries. Cleveland, O. C. W. Kuehny, 1927. vii p., 92 plates. front. (port.). new and rev. ed. sq. 4°. $7.50. 729

The first edition, without letterpress, was published in 1831. The halftones of this reprint have lost much of the distinctness of the original lithographs. The plates are rearranged and the volume is provided with a subject index.

SCHWEIZERISCHER INGENIEUR-UND-ARCHITEKTEN VEREIN.

Das Buergerhaus in der Schweiz. Zürich und Leipzig: Orell Fuessli Verlag, 1928. 20 marks per vol. 728

Band 19. Kanton Thurgau.

Band 20. Kanton Freiburg.

Title page and introduction in both German and French. A series of volumes on local Swiss architecture, well illustrated by plans, measured drawings and photographs. It has an index of personal and geographic names.

SEXTON, RANDOLPH WILLIAMS.

American commercial buildings of today; skyscraper office buildings, banks, private business buildings, stores and shops. Foreword by Ralph T. Walker, A.I.A. New York: Architectural Book Pub. Co., 1928. 309 p. front., illus. f°. $10.00. 725.2

A slight preliminary text is followed by a group of plans and photographs of exteriors and of interior details.

SIEBRECHT, BRUEDER, architects, Hanover, Germany.

Brueder Siebrecht, mit einer Einleitung von Dr. Max Osborn. Berlin: F. E. Hüebsch Verlag, G. m. b. H., 1928. xii, 39 p. illus. (incl. plans.) 4°. (Neue Werkkunst.) 12 marks. 724.93

Contemporary German work, including domestic, ecclesiastical and industrial buildings with their details.

TIPPING, HENRY AVRAY.

English homes. London: Offices of Country Life, 1928. lxiv, 333 p. front., illus. f°. 63s. 728

Period IV—vol. II. The work of Sir John Vanbrugh and his school, 1699-1736. By H. A. Tipping and Christopher Hussey.

American edition published by Scribner at $25.00.

A welcome addition to a valuable series dealing with English architecture and interiors.

ALLIED ARTS

AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS—NEW YORK CHAPTER.

Yearbook and catalogue of their fifth annual exhibition; supplemented by sculpture and garden furniture from the Arden Studio. New York: Arden Gallery, 1928. 3 p. front., 19 plates. f°. 50 cents. 710

Contains list of members and a series of plates illustrating current work.

Book of antiques, 1928. London: Arts and Crafts Pub. Co., Ltd., 1928. 143 p. illus., plates. 4°. 5s. 740

Edited by Horace Shipp.

Short articles, with illustrations, on furniture, rugs, ceramics and textiles. Directory section has both an alphabetical and classified list of London dealers in antiques.

BUSCH, RUDOLF.

Deutsches Chorgestuehl in sechs Jahrhunderten. Hildesheim: A. Lax, 1928. ix, 70 p. illus., 76 plates. 4°. 30 marks. 729.9

Bibliography, p. viii-ix.

Chronological history of the German choir stall, arranged by periods. Clear halftone plates illustrate the various types of stalls and their details.

GERSTENBERG, KURT.

Hans Multscher. Leipzig: Insel-Verlag, 1928. 265 p. front., illus. 4°. (Deutsche Meister.) 18 marks. 734

A monograph on this Gothic sculptor of the Swabian school, with about 175 illustrations.

GUPTILL, ARTHUR L.

Drawing with pen and ink, and a word concerning the brush. Introduction by Franklin Booth. New York: The Pencil Points Press, Inc , 1928. xii,

431 p. front. (col'd), illus. 4°. $8.50. 741

A comprehensive textbook on line technique which includes several chapters dealing with architectural rendering. Very fully illustrated, chiefly by examples of contemporary work.

HOLLOWAY, EDWARD STRATTON.

American furniture and decoration, colonial and federal; with 200 illustrations. Philadelphia & London, J. B. Lippincott Company, 1928. 191 p. front., illus., 140 plates. 8°. $5.00. 749

"The aim has been to supply at a moderate cost a convenient book for use; to furnish the reader with a full equipment for a knowledge and understanding of American furniture, the appropriate interior and its decoration; to place before him a large body of illustrations carefully selected, reproduced with a special clearness and of a size showing construction and ornament." Preface.

HOLT, ROSA BELLE.

Rugs, oriental and occidental, antique and modern; a handbook for ready reference. New and revised edition, with 33 full-page illustrations, 12 in full color, and other drawings in the text, and a map of the Orient. Chicago: A. C. McClurg & Co., 1927. 2 l., 15-208 p. front., illus., plates. 4°. $7.50. 745

History and technique of rug weaving in various countries, including a discussion of inscriptions, symbols and the geographical distribution of the art.

LEITCH, GORDON B.

Chinese rugs; with illustrations collected by the author. New York: Dodd, Mead & Company, 1928. xii, 171 p. front., illus., plates. 8°. $4.00. 745

Bibliography, p. 165.

Various aspects of Chinese rugs and the rug industry, including a consideration of weaving, dyeing, design and symbolism.

MICHALSKI, ERNST.

Balthasar Permoser. Frankfurt am Main: Iris-Verlag, 1927. 29 p. 100 pl. on 50 l. 4°. (Meister der Plastik.) 8 marks. 735

An amplification of Hans Beschorners Permoserstudien.

Contains bibliography.

Monograph on this Bavarian sculptor and his work, in the extreme baroque manner.

NUTTING, WALLACE.

Furniture treasury (mostly of American origin); all periods of American furniture with some foreign examples in America; also American hardware and household utensils. 5000 illustrations with descriptions on the same page. Framingham, Mass.; Old America company, 1928. 2 vol. 4°. $25.00. 749

The plates, which illustrate some 3000 hitherto unpublished examples, mainly from private collections, are arranged by furniture types; and the dates covered are from the very early to the end of the empire period.

PACH, WALTER.

Ananias; or, The false artist. New York and London: Harper & Brothers, 1928 xxii, 281 p. front., plates. 8°. $4.00. 701

A critic's view of true art and false, with a revaluation of many painters and sculptors from an intensely personal standpoint.

PITCHER, SIDNEY A.

Ancient stained glass in Gloucestershire churches. Gloucester: The author. 59 p. 62 plates. 8°. 5s. 729.8

Reprint from the transactions of the Bristol and Gloucestershire Archaeological Society volume 57.

A record of local glass, arranged alphabetically by place name.

RINALDIS, ALDO DE.

Naples angevine; traduction française de Maxime Formont. Paris: Editions Nilsson, 1927. 162 p. incl. plates. front. 4°. (Les trésors d'art d'Italie.) 40 fr. 709.457

A detailed study of the art and architecture of Naples during the years 1266-1442. Well illustrated.

SONN, ALBERT H.

Early American wrought iron; with three hundred and twenty plates from drawings by the author. New York: C. Scribner's Sons, 1928. 3 vol. f°. $35.00. 739

Bibliography, v. 3, p. 243-244.

At once a history and an appreciation of this colonial art, drawn from a wide knowledge of existing examples. All the drawings have descriptive notes; and include examples of door accessories, balconies, grilles, all forms of outside hardware and of household equipment. Minutely indexed by subject.

VENTURI, ADOLFO.

Michelangelo; translated by Joan Redfern. London: F. Warne & Co. Ltd., 1928. 105, ccxcvi p. incl. plates. 4°. 31s. 6d. 759.5

Printed in Italy.

A critical biography by an Italian authority, illustrated by 296 excellent collotype plates.

WALPOLE SOCIETY.

Sixteenth volume of the Society, 1927-1928. Oxford: Printed for the Walpole Society by John Johnson at the University Press, 1928. viii, 93 p. 22 plates. f°. Subscription 21s. 705.5

Issued only to subscribers.

Contents:

James, M. R. and E. W. Tristram. Medieval wall-paintings at Christ Church, Oxford.

Toynbee, Paget. Horace Walpole's journals of visits to country seats.

Oppé, A. P. A Roman sketch-book by Alexander Cozens.

The Walpole Society, founded in 1911 with the object of promoting the study of the history of British art, has issued an annual volume since 1912. These volumes contain studies on various aspects of English painting, sculpture, individual buildings, textiles, etc.

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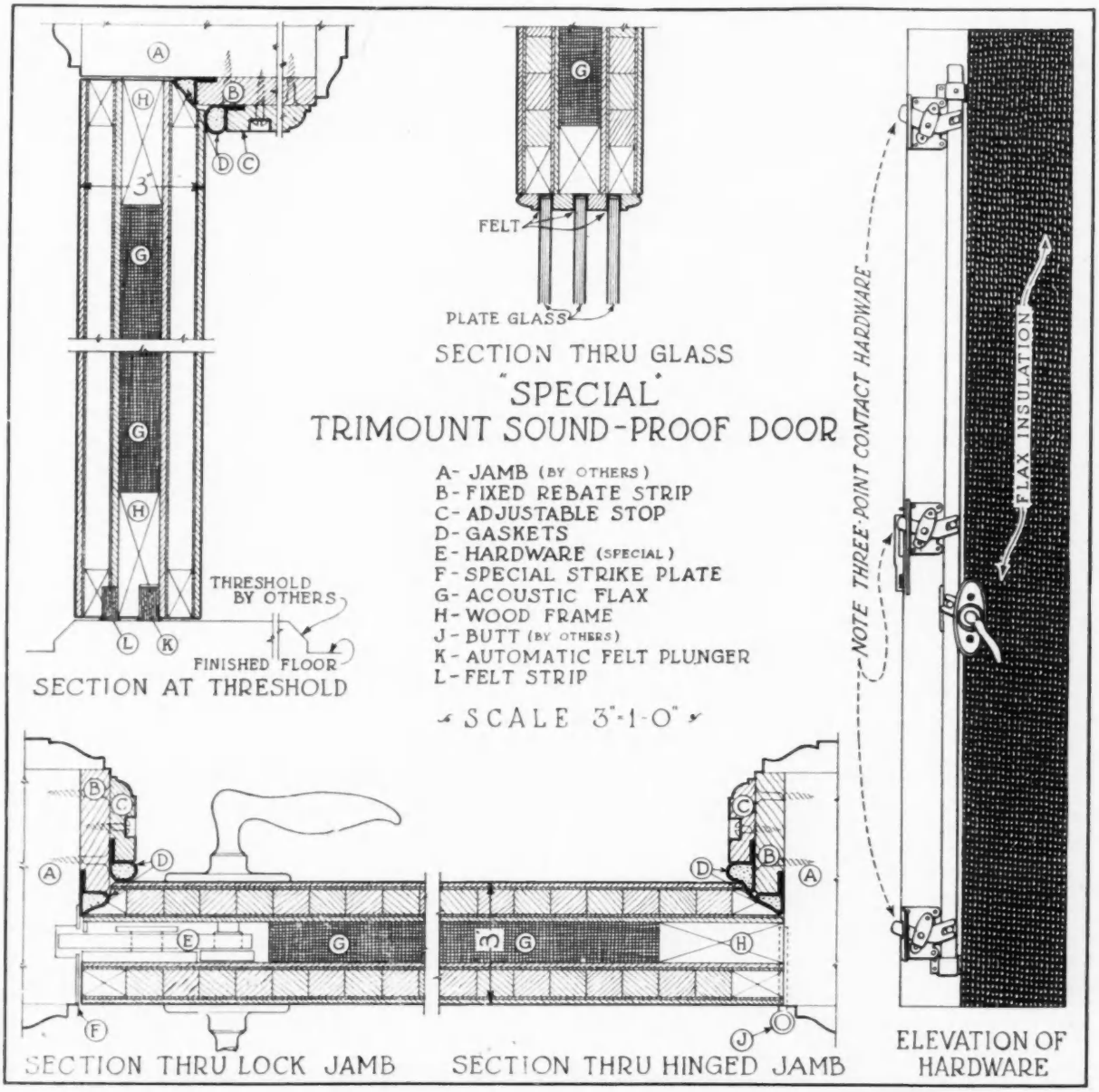

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NOTES IN BRIEF

CALENDAR OF EVENTS

I. General Announcements

March 11 through Spring	Exhibition of the New York Chapter of the American Society of Landscape Architects. Arden Gallery, New York City.
April 3-18	Exhibition of watercolors and drawings of André Leconte. Michigan University, Ann Arbor.
April 15-27	Architectural and Allied Arts Exposition. (Architectural League of N. Y.) Grand Central Palace, New York.
April 17-May 11	"Own Your Home" Exposition, indoor and outdoor, Chicago.
April 23-25	Producer's Council. Annual Meeting in conjunction with
April 23-25	American Inst. of Archs. Annual Meeting, Washington, D. C.
May 30	National Commemoration of Major Pierre L'Enfant and William Thornton, by Federal and state organizations devoted to architecture.
June 13-15	International Hospital Congress. Exhibition of plans and models of modern American hospitals. Atlantic City.
June 19-23	International Management Institute. Paris.
Sept. 12-19	International Housing and Town Planning Congress. Rome.
Oct. 29-Nov. 7	World Engineering Congress. Tokio, Japan.
Nov. 7-22	Excursion and inspection tours throughout the Japanese Empire, in connection with the World Engineering Congress.

II. Competitions

April 1	Columbus Memorial Lighthouse Competition drawings must be in Madrid, Spain.
April 1	A. W. Brown Travelling Scholarship Competition. Drawings to be delivered. Programmes mailed March 1st. Wm. Dewey Foster, 25 West 45th Street, New York City.
April 6	George G. Booth Travelling Fellowship in Architecture. Annual Competition held for two weeks. Professor Emil Lorch, University of Michigan, Ann Arbor.

A REVISED BUILDING CODE

For several months, the eyes of the architectural world and the building fraternity have been focused on the revision of the New York City Building Code in which The Merchants' Association of New York, at the request of Mayor Walker, and in coöperation with other City authorities, has undertaken the leadership.

While it is too early yet to state any definite conclusions reached by the committee having this work in charge, the tentative process of revision has gone far enough so that it is possible to state the general tendencies of the undertaking. According to the present outlook, there is to be liberalization—liberalization in the matter of materials. But there is also indicated a tightening up in the matter of inspection and a disposition to place a greater responsibility on the shoulders of the engineers and architects who will plan and construct New York's future buildings.

It appears to be the unanimous opinion among those taking part in the revision, that in the future greater emphasis should be placed on good architecture and designing than was the case in the past, and that adequate steps should be taken to see that the plans of the architects and engineers are actually hammered and rivetted into the buildings.

The general committee which is doing this work is headed by John Lowry, chairman of the Committee on Building Laws and Regulations of The Merchants' Association, and head of the construction firm of John Lowry, Inc. At the outset this committee reached two decisions. The first was that any new code written for the City of New York should have in it a greater degree of elasticity than is evident in the present code. In other words, it was felt that the new code should concern itself chiefly with statements of general policies and principles, permitting the elaboration of those principles and their execution to be provided for in a set of rules and regulations which would be subject to change by some competent authority. The second decision was to draw to the preparation of the new code the best engineering, architectural and building talent available in New York City.

It has been no small part of the task of Mr. Lowry's committee to draw about it one hundred highly skilled technical men who now constitute six sub-committees, each of which has had assigned to it a special division of the new code. The members of these sub-committees are giving their time gratis. At least one-fourth of them are well known architects.

It is possible to state at this time the lines which the discussions relating to liberalization in the use of materials are taking. Months ago the best engineering and architectural opinion in the country reached the conclusion that an increase in the stresses permissible on structural steel work from 16,000 to 18,000 pounds was desirable. It can be taken for granted that the new code when completed will contain a section making this change. It has also been suggested that there should be provisions for the use of alloy and high carbon steels.

The sub-committee on Steel is also giving thought to the subject of welding. There is no intention of forcing the substitution of welding for rivetting as a

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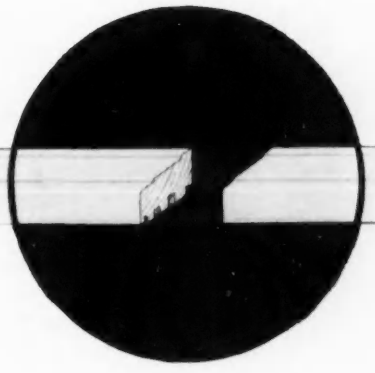

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means of joining columns and girders, but it is felt that the science of welding has now reached a point where recognition of it should be made in the new code. It is therefore suggested that a section should be adopted, which might read as follows:

"With the specific approval of the Bureau of Buildings, welding may be used for particular operations under rigid inspection and specification as to method and procedure."

Another liberalization that is being considered is the use of bolts instead of rivets in both columns and splices.

It is proposed to reduce the requirements for wind bracing. Under the present law the average load for winds is thirty pounds per square foot over the whole building. A suggestion being considered by the committee is to make a graduated scale. Buildings below 100 feet in height, the height of which is less than two and one-half times their width would be exempt from wind bracing. In the case of buildings above 100 feet in height or buildings the height of which is more than two and one-half times their width, wind bracing would be on the basis of twenty pounds pressure per square foot. All of the members of the sub-committee have felt that this was adequate, although the general committee has not passed on it.

It has been suggested that rëinforced concrete work might have two standards applied and that the requirements for work done under ordinary methods of supervision should be somewhat more severe than for that done under exceptionally good supervision. In other words, the members of the committee feel that if the standards of supervision are made high enough it might be safe to increase the loads and stresses permissible in concrete construction.

The substitution of a new formula for concrete mixings has also been suggested. Recent researches in concrete have shown very plainly that the strength of the product is dependent on the water-cement ratio rather than on the fixed proportions of sand, cement and aggregate. The committee is considering the acknowledgment of this fact in the new code, recognizing, however, that if this is done, proper steps must be taken to secure the thoroughness of the mixing process.

In the matter of plumbing, consideration is being given to the advisability of doing some research work in the matter of vent lines. The present code will not permit a vent from a pipe within less than twenty feet of any window. This feature of the code is proving an embarrassment in the erection of modern setback buildings. It has become a question for determination after a careful study whether this twenty foot requirement is a necessity or not.

The members of the committee seem to be pretty much in agreement that, if there is to be liberalization along the lines suggested, it must be accompanied by a general tightening up of the supervisory work connected with the erection of buildings. At the present time inspection is in the hands of the plan examiners in the Department of Buildings and of the building inspectors in the same Department. Many members of the committee feel that responsibility for the proper erection of buildings should also be thrown on the men who design these buildings. Several years ago a structural safety bill was introduced in the New York State Legislature. This bill is being studied with a view to incorporating some of its provisions in the new code.

The personnel of the sub-committees working on the new code seems to be an adequate guarantee of the efficiency of that document when it is completed. The sub-committee on Administration and Scope has as its chairman Robert D. Kohn of Kohn & Butler, architects. The sub-committee on Execution of Work is headed by Henry C. Turner, president of the Turner Construction Company. Clyde R. Place, a consulting engineer, is chairman of the sub-committee on Mechanical and Sanitary Equipment.

R. H. Shreve of Shreve & Lamb, architects, is the chairman of the sub-committee on Materials, Loads and Stresses.

The sub-committee on Fire Resistive Construction has as its chairman Francis Y. Joannes, architect. The sub-committee on Means of Egress and Special Occupancies is headed by Theodore I. Coe, who is connected with the firm of Carrère & Hastings.

NOTES ON CONTRIBUTORS

Michel Roux-Spitz, French architect, editor of "L'Architecte." His Monument to the Defense of the Suez Canal, in which he collaborated with Raymond Delamarre, sculptor, is among his best known work.

Jean Porcher, art critic, librarian of the Bibliothèque Nationale, France.

William Stanley Parker, architect of Boston, associated with R. Clipston Sturgis; formerly Secretary of the A.I.A.; Vice-Chairman, Committee of Contracts; President, Boston Building Congress.

Lewis Mumford, art critic; authority on City Planning; author of "Sticks and Stones," "Architecture."

Paul Philippe Cret, architect and Professor of Design. Associated with Zantzinger, Borie & Medary on the Indianapolis Public Library and the Detroit Institute of Arts.

PROFESSIONAL ANNOUNCEMENTS

	Page*
Architects' Announcements	87
Notes in Brief	164, 166
Construction Statistics	168
The Construction Prospect	170
Recent Trade Publications	176

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A NEW REVIEW OF THE CONSTRUCTION PROSPECT

An address by Thomas S. Holden, Vice-President in Charge of Statistical Division, F. W. Dodge Corporation, before the New York Chapter of the American Statistical Association, March 14, 1929. The general topic of the meeting was a reappraisal of business prospects in the light of statistical records since January 1. This paper was in practically complete agreement with the views of statistical authorities who presented other phases of current business conditions.

AN APPRAISAL of current prospects for construction must necessarily involve consideration of several important general questions, which may be answered only by taking a long-range view of developments in the past ten years.

THE TEN-YEAR TREND

The first question is: What has been the nature of the secular trend of construction volume during these ten years?

Recapitulating briefly, annual construction expenditures in the entire country, estimated to include all work within the price range of the recorded Dodge contract statistics, averaged $3,183,000,000 during the early post-war boom and depression period of 1919 through 1921; between 1921 and 1925, annual expenditures increased rapidly and continuously, with an average annual increment of about $888,000,000, reaching a total of $6,622,000,000 in 1925. Since 1925, the Dodge estimates have shown quite moderate increases; they have not been continuous, since the year 1927 declined from the previous year; the three-year increment from 1925 to 1928 was $440,000,000, or just about half the average annual increment of the previous five-year expansion period. In other words, the rate of increase since 1925 has been roughly one-sixth the rate for the 1921-1925 period.

Hence, it seems perfectly proper to say that the period of rapid expansion came to a fairly definite end in 1925. Since a very moderate growth-rate has persisted through four years and appears likely to continue through another year, it is also safe to say that the accelerating force which produced the five-year expansion program has spent itself, at least for the time being.

Five years ago most of us considered this accelerating force to consist principally if not entirely of the abnormal demand created by the building shortage. This view was proved to be incorrect. The shortage was practically caught up with by the end of 1924. Construction volume did not decline in the following year, but increased very considerably. It has not yet dropped below the 1925 total and it seems unlikely that it ever will. With the perspective we can now get on those years of expansion, it is easy to see that a force much stronger than shortage-demand was operating, the creative force of expanding wealth, evolution of industrial processes, and advances in living standards conditioned by increasing prosperity widely distributed. For verification of this conception of the growth period we have only to look at the statistics of construction activity, motor-car production, production volumes of other industries included in or related to these two, annual consumption of electric energy, and various statistics showing the growth of investment funds which furnished the financial background against which the large-scale expansion program was effected.

It has seemed helpful in making this analysis to reduce the figures to the somewhat theoretical basis of per capita construction expenditures, which should include along with the Dodge estimates an adequate allowance for low-cost new and alteration work below the minimum values of the contract records. These estimates of per capita construction expenditures are as follows: for the year 1919, $36.73; steady increase, except for 1921, to $74.39 in 1925; decrease to $71.30 in 1927; increase to $72.56 in 1928.

If the post-war period had been in fact, merely a "post-war construction boom" as it is occasionally referred to even at this late date, it looks as if there should have been in evidence at some time in the past four years some tendency for construction expenditures to drop very appreciably below $70 per capita, which is itself larger than the per capita expenditures of any year previous to 1925. Is it not highly probable that the people of this country have become so accustomed to spending for building and engineering work something more than $70 per capita each year that nothing short of some economic catastrophe is likely to persuade them to cut their construction expenditures below that figure?

In short, it appears that the secular trend of construction activity during the past ten years has followed the course of an S-curve. If this is correct, then the year 1925 marks the beginning of a new period of gradual growth and of stable volume as compared with the rapidly increasing volumes of the expansion period. As for future growth in construction volume, continuous population increases would call for a moderately rising secular trend hereafter; further advances in prosperity and living standards might also conceivably result in increased per capita expenditures.

EVIDENCES OF STABILITY

The second important question is: What evidences of stability in construction volume during the past few

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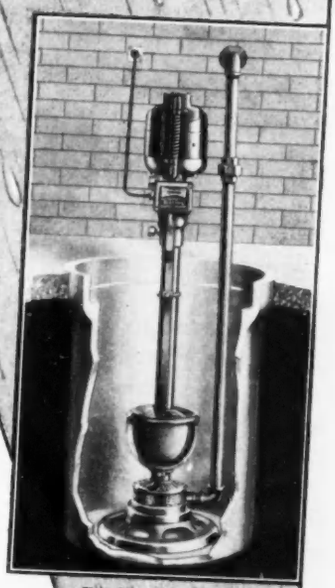
when it RAINS and RAINS and RAINS



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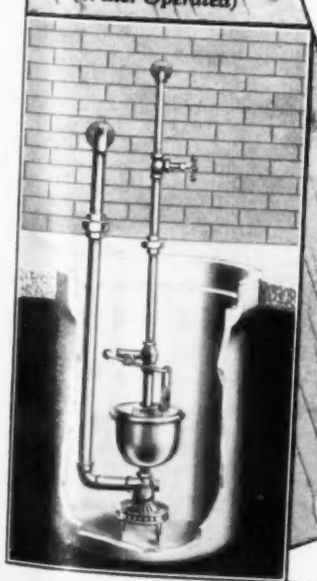

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(*Continued from page 170*)

years support the view that activity is not likely to drop appreciably below 1925 levels hereafter?

Briefly, the construction industry has weathered some fairly severe storms in the past four years, without general disaster or real depression. We have only to recall the collapse of the Florida boom, the failure of two real-estate bond houses, continuous declines since 1925 in building volume in some important sections of the country, and the general recession that took place in 1927 and was followed by a substantial recovery in 1928. During all these years savings-bank deposits and assets of building and loan associations have continued to increase, life-insurance companies have had continuously increasing funds for mortgage loans on city property. There have been many improvements in first-mortgage bond financing, all tending toward stabilizing this important field of building credit. In the latest development of the general investment market, investors' preference for stock issues, construction financing has not fallen behind.

A very important stabilizing factor today is the absence of any necessity for drastic price revisions. Extreme price fluctuations have contributed very largely to the severities of depressions in past years. Since January 1925 construction cost indices have had a range of 5 points. The indices referred to are based on 1926 as 100. If the indices of the 1919-1921 period are put on the same base, we see a rise in the building costs index from 80 to 129 between April 1919 and April 1920, followed by seventeen months of decline to 85 in September 1921. It is only necessary to recall the persistent discussion of prices and building costs at that time to realize what an important factor this was in delaying the necessary readjustment. In fact, price adjustment was the most important factor in that depression as it affected building. There was no question of adjusting building supply to building demand, because the need for building was persistent all through the period of depression.

WHAT ABOUT THE BUSINESS CYCLE?

The third important question is: Is the short-term business cycle still operative? In view of many optimistic statements by business leaders to the effect that the business cycle is a thing of the past, this question is a pertinent one.

While it is quite true that we have not had any repetition of the disaster of 1920-21, there seems to be ample evidence of cyclical movements in the recent past, and considerable reason to believe that they will continue; modified, perhaps as to severity and duration. Even during the expansion period there were short periods of recession. There was a definite general recession in building in the year 1927. Some sections of the country have had continuous declines since 1925, notably the Southeastern and the Pacific Coast States. Taking the country as a whole there has been a definite cyclical movement in building volume. The recession in 1927 was moderate, and an additional offsetting factor was evident in the continuous increase of civil engineering work. Within the recent period of relative stabilization there have been numerous conflicting trends and changing emphasis on different sections of construction market activity.

An illustration and an explanation may be appropriate regarding one phase of the record. Building permit totals have shown a continuous decline from 1925 to date, in the face of increases shown in the contract records. These differences are only partly explained by the fact that the contract records include civil engineering work along with building. Due to the practically universal custom of undervaluation that prevails in the recording of permits, changes in trend toward large and expensive projects are apt to be concealed in these records. There has been a trend toward large expensive building projects in the past few years. On the other hand, we must conclude that the persistent decline in permit totals reflects among other things a decline in volume of small new projects below the minimum values of the contract records. However, even in the permit records there is an offsetting factor in the increases shown in alteration work in recent years, reflecting the movement toward modernization of existing buildings. If we attempt to estimate all building, making some reasonable allowance for low-cost new buildings and alterations, we should have to figure a continuous decline for such projects, which would result in figures showing a somewhat slower growth-rate than the contract records indicate. Speculative residential work seems to have reached a peak in 1925. Since then it has been declining. But there has been a steady increase in dwellings built individually by owners, and an increase in the higher priced dwellings. While residential building continues to represent the largest single class of work in the construction total, the needs for such work today are such that careful watch must be kept to maintain a balance between supply and demand.

The emphasis of demand today is on construction work that fills community needs, such as public works and utilities. This class of work increased at a much slower rate than building did during the expansion period; it has continued to increase without interruption up to the present year; and the country's needs in this respect are far from being filled. In addition to the real demand for increased public works to meet specific needs, we have some assurance of continuation of this class of work in the realization by Government and State officials of the importance of letting public works contracts to offset declines in private construction work.

Last year was a year of recovery after the recession of 1927, a recovery rather definitely forecast by increased volumes of new corporate and municipal bond issues in 1927. Since the middle of 1928 construction volume has been showing the effect of last year's reduced volumes of bond issues and higher interest rates. In recent months the decline in residential building volume has been considerable, sufficient to show very reduced construction totals in spite of sizeable increases in contracts for commercial and industrial buildings.

Now, decline in residential building volume is apt to be the first indication of a declining phase of the cycle.

(*Continued on page 174*)

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(*Continued from page 172*)

This class of work usually falls off before non-residential building and civil engineering work, and it is not unusual in the beginning of a downward phase of the cycle to see residential building decreasing while non-residential work, particularly large structures, continues to increase. Residential building contracts were less in dollar volume during the first two months of this year than in the corresponding period of any of the past four years, though the new residential floor space contracted for this January and February was greater than in the first two months of 1925; non-residential building contracts have been greater in dollar volume and in floor space contracted for than in any previous year; contracts for public works and utilities this year have been greater than in any previous year except 1928. The decline in residential contracts has been quite general as to types of buildings (dwellings, two-family houses, apartments, hotels) and as to territories. In large areas of the central west, weather conditions have been unusually severe, but this has scarcely been true on the eastern seaboard or in the south; weather conditions are insufficient to account for the decline. More important governing factors have been the declines in bond issues, increased interest rates, and diversion of speculative funds into stock market activity.

CURRENT RECESSION FOR ADJUSTMENT OF DEMAND AND SUPPLY

Perhaps more important still is the fact that residential building increased in 1928 and is due for some setback in order to effect an adjustment between supply and demand. For, one of the advances toward stabilization that has been made is the effort toward more careful and more frequent adjustment of the building program to building needs. Readjustment of building demand to supply has been going on here and there ever since 1925. For example, of the fifty largest cities in the country, 18 had peak volumes of construction in 1925; 10 reached their peaks in 1926; 13 in 1927; and only 9 in 1928. This does not look like any nation-wide construction boom last year. In this connection it is worth reviewing the latest survey of the real estate market reported by the National Association of Real Estate Boards as of January 1.

Rents on single family dwellings were reported as stationary in 55 per cent of the reporting cities; upward in 9 per cent; downward in 36 per cent. Rents on two-family houses were reported stationary in 54 per cent of the cities; upward in 6 per cent; downward in 40 per cent. Apartment rents were reported stationary in 68 per cent of the cities; upward in 16 per cent; downward in 16 per cent. In general residential rents seem to be moving lower rather than upward. The supply of single-family dwellings was reported as normal in 65 per cent of the cities; 20 per cent of them reported shortage; 15 per cent reported overbuilt. In apartments 56 per cent reported a normal supply; 24 per cent reported shortage; 20 per cent reported overbuilt. In general this report does not show conditions to have changed appreciably since June, 1928, or enough change since December, 1927, to warrant any grave apprehensions as to continuance of residential building at fairly satisfactory rates. A significant point, however, is the fact that a large proportion of the cities of 500,000 and up report overbuilding of dwellings and apartments.

In spite of the chaos that has prevailed in general money and investment markets, 48 per cent of the cities reported the supply of capital seeking investment in real estate loans as being in excess of the demand; 36 per cent reported an equilibrium between demand and supply and only 16 per cent reported desirable loans in excess of the supply of capital. Interest rates were reported steady by 74 per cent of the cities; 20 per cent reported falling rates and only 6 per cent reported rising rates.

Apparently, the decline in residential building volume is due more to an adjustment between demand and supply than to any other one influence. This class of building is the one that bears closest watching in the coming months.

It is rather to be expected that residential building volume will run low during the first half of this year, with a possibility of an upward turn later in the year. Non-residential building seems likely to reverse this procedure, continuing at high levels for some months to come, and possibly tapering off toward the end of the year. It now seems unlikely that building volume as a whole will equal the volume of 1928, but that the year will be one of recession similar to 1927. My guess is that its total volume may be a little better than that of 1927.

With regard to public works and utilities the prospect is not entirely clear, though we can say that this class of work ought to increase, and that its increase would go a long way toward offsetting the probable decline in building. There is an accumulation of planned work of this class that has been deferred; increased contract-letting may be influenced by Government officials. While municipal bond issues have not been increasing sufficiently to indicate increased construction activity in this class of work, it seems possible that the special session of Congress may be persuaded to appropriate money for needed Federal projects that have not yet been taken care of. In spite of some unfavorable indications, the likelihood of increase in this class of work seems rather stronger than any likelihood of decrease.

In conclusion, it should be said that, while a building decline in the early months of this year was to be expected, the February contract record was rather lower than anyone anticipated. Unfortunately, the preliminary March figures now available are insufficient to throw any additional light on the situation. While it is the duty of the statistician to avoid undue alarm over some new development that may be largely accidental, it is also necessary to avoid undue complacency and unwarranted assurance that prosperity or stability will last for indefinite periods. Recent declines must be taken as a warning signal that the trend of contract-letting, so significant a factor in the progress of general business, should be carefully watched either for confirmation or revision of the present analysis.

THOMAS S. HOLL