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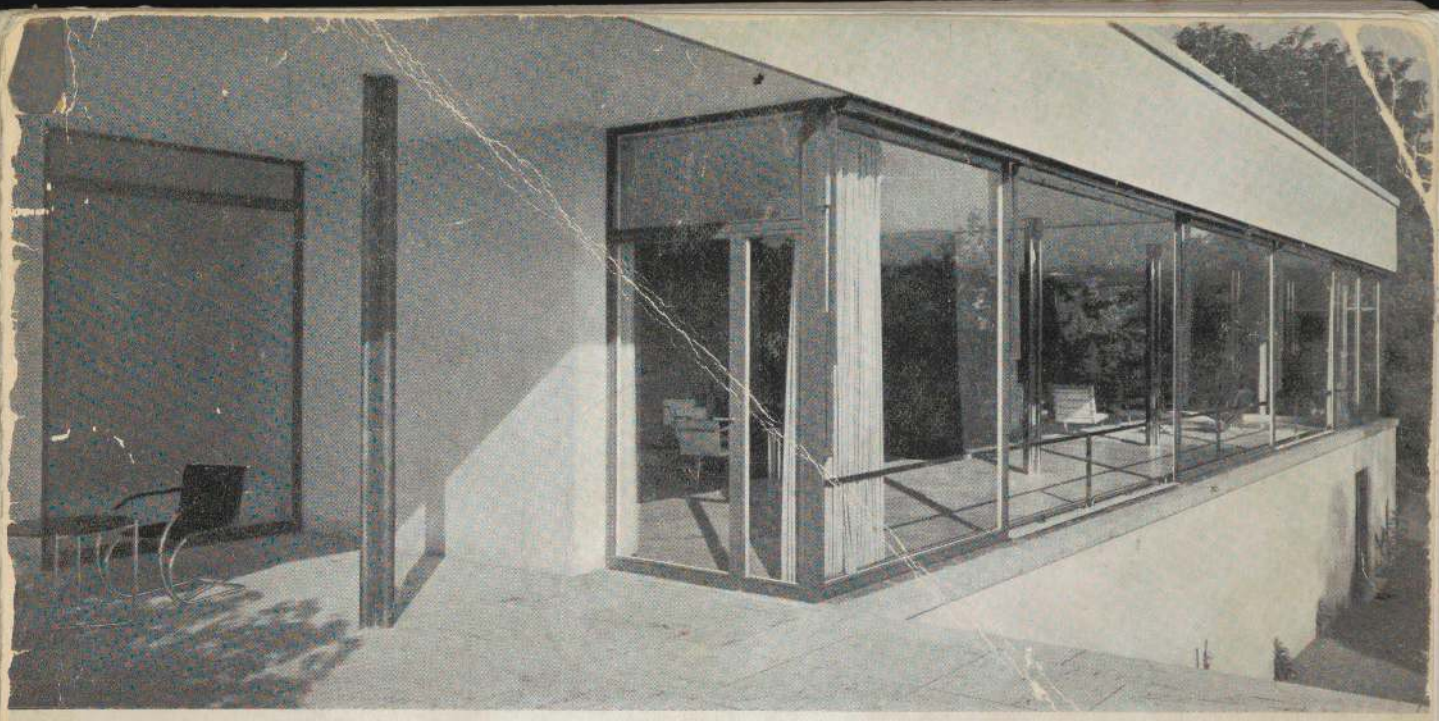

MODERN ARCHITECTURE

MUSEUM OF MODERN ART

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MODERN ARCHITECTURE

INTERNATIONAL EXHIBITION

NEW YORK FEB. 10 TO MARCH 23, 1932

MUSEUM OF MODERN ART

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FOREWORD

EXHIBITIONS AND ARCHITECTURE

COLUMBIAN EXPOSITION 1893

EXPOSITIONS and exhibitions have perhaps changed the character of American architecture of the last forty years more than any other factor. The Chicago Columbian Exposition of 1893 established that refined archaeological taste for antique colonnades which almost immediately became the official style for American public buildings. This Classical Revival was later accompanied by the revival of "good taste" in Colonial houses, Gothic college dormitories, Spanish country clubs and a dozen other varieties of evidence that our architects knew their history. Unfortunately this flood of revivalism not only brought to an end the robust bad taste of our late nineteenth century building but very nearly stifled the one genuinely important tradition in modern American architecture, the thread which passed from Richardson to Sullivan, from Sullivan to Frank Lloyd Wright. By 1922, thirty years after the Chicago Exposition, the American public was entirely persuaded that, however secondary to the European arts American painting or sculpture or music might be, in architecture we led the world. This feeling seems to have been based partially upon the ability of our architects to imitate past European styles more tastefully even than the Europeans themselves, and partially upon our technical proficiency whether in central heating, bathroom furniture or the rapid erection of skyscrapers. It was the skyscraper especially that confirmed our pride, for we had not yet come to realize that it was the engineer, perhaps more than the architect, who made our skyscrapers imposing.

Chicago Tribune COMPETITION 1922

Strangely enough it was in the field of skyscraper design that our complacency was to receive a severe jolt. In 1922 the competition for the Chicago Tribune Tower brought forth scores of projects from all over the world. Almost without exception the American designs were Renaissance or Roman or Gothic; most of the European projects proved equally derivative though several were genuinely modern and several others transitional or half-modern. A Gothic design by the New York architect Raymond Hood was given first prize by the *Tribune*. Saarinen, a Finnish architect, won the second prize. His project which was enthusiastically acclaimed by American architects was an agreeable eclectic compromise achieved by applying novel ornament upon an emphatically vertical façade which rose from a Neo-Classic ground story. By common consent a foreign architect had surpassed Americans in solving a peculiarly American problem. Saarinen's triumph might have been all the more embarassing had it been gener-

ally realized that his principles of design derived primarily from the neglected Sullivan, and that his new ornament was less original than that of Frank Lloyd Wright, since 1910 one of the chief inspirations of modern European architecture.

The exhibition which included Saarinen's project traveled throughout the country and did much to shake the confidence of American architects in the sufficiency of historical styles for modern purposes. The Paris Exposition of Decorative Arts in 1925 was even more disturbing. The United States was not represented in the Exposition because its exhibits were not sufficiently modern. We are still suffering from this backwardness—both commercially and architecturally. Only recently has the deluge of "modernistic" decoration from Vienna, Paris, Stockholm and Amsterdam begun to diminish, but not before our more advanced architects, already stimulated by Saarinen's success, had accepted the modernistic mode with enthusiasm and ornamented their buildings with zigzags and chevrons instead of Gothic crockets and Classical modelings. The modernistic style has become merely another way of decorating surfaces.

EXPOSITION OF DECORATIVE ARTS 1925

"MODERNISTIC"

As a result of these forty years of successive and simultaneous architectural fashions the avenues of our greatest cities, our architectural magazines and annual exhibitions are monuments to the capriciousness and uncertainty of our architecture.

CONFUSION

The present exhibition is an assertion that the confusion of the past forty years, or rather of the past century, may shortly come to an end. Ten years ago the Chicago Tribune competition brought forth almost as many different styles as there were projects. Since then the ideas of a number of progressive architects have converged to form a genuinely new style which is rapidly spreading throughout the world. Both in appearance and structure this style is peculiar to the twentieth century and is as fundamentally original as the Greek or Byzantine or Gothic. In the following pages Mr. Hitchcock and Mr. Johnson have outlined its history[1] and its extent. Because of its simultaneous development in several different countries and because of its world-wide distribution it has been called the International Style.

EXHIBITION OF MODERN ARCHITECTURE 1932

INTERNATIONAL STYLE

The aesthetic principles[2] of the International Style are based primarily upon

[1] See also *Modern Architecture: Romanticism and Reintegration* by Henry-Russell Hitchcock, Jr. New York: 1929.

[2] *The International Style: Architecture Since 1922* by Henry-Russell Hitchcock, Jr., and Philip Johnson. New York: 1932.

STRUCTURE

MATERIALS

PLANNING

the nature of modern materials and structure and upon modern requirements in planning. Slender steel posts and beams, and concrete reinforced by steel have made possible structures of skeleton-like strength and lightness. The external surfacing materials are of painted stucco or tile, or, in more expensive buildings, of aluminum or thin slabs of marble or granite and of glass both opaque and transparent. Planning, liberated from the necessity for symmetry so frequently required by tradition is, in the new style, flexibly dependent upon convenience.

These *technical* and *utilitarian* factors in the hands of designers who understand inherent aesthetic possibilities have resulted in an architecture comparable in integrity and even in beauty to the styles of the past. But just as the modern architect has had to adjust himself to modern problems of design and structure so the modern public in order to appreciate his achievements must make parallel adjustments to what seems new and strange.

PRINCIPLES:

VOLUME

First of all, the modern architect working in the new style conceives of his building not as a structure of brick or masonry with thick columns and supporting walls resting heavily upon the earth but rather as a skeleton enclosed by a thin light shell. He thinks in terms of *volume*—of space enclosed by planes or surfaces—as opposed to *mass* and solidity. This principle of volume leads him to make his walls seem thin flat surfaces by eliminating moldings and by making his windows and doors flush with the surface.

REGULARITY
FLEXIBILITY

Two other principles which are both utilitarian and aesthetic may be called *regularity* and *flexibility*. The architects of the Classical and Renaissance, and often of the Medieval periods, designed their façades and plans in terms of bilateral symmetry, that is of balanced masses on either side of a central axis. They also usually divided their façades horizontally in three parts: the bottom or base, the wall or middle section and the top or cornice. In the International Style these arbitrary conventions of symmetry and triple division are abandoned for a method of design which accepts, first, both vertical and horizontal repetition and, second, flexible asymmetry, for both are natural concomitants of modern building. The modern architect feels it unnecessary to add an elaborate ground floor and an elaborate crowning decoration to his skyscraper, or a gabled porch in the center and at either end of his school or library. He permits the horizontal floors of his skyscraper and the rows of windows in his school to repeat themselves boldly without artificial accents or terminations. And the resulting *regularity*, which may in itself be very handsome, is given accent by a door or ventilator, electric sign, stair tower, chimney, or fire escape, placed

asymmetrically as utility often demands, and the principle of *flexibility* permits. The Bauhaus at Dessau (p. 67) in the present exhibition is a clear illustration of these principles of design.

TECHNICAL PERFECTION

A fourth comprehensive principle is both positive and negative: positive quality or beauty in the International Style depends upon technically perfect use of materials whether metal, wood, glass or concrete; upon the fineness of proportions in units such as doors and windows and in the relationships between these units and the whole design. The negative or obverse aspect of this principle is the elimination of any kind of ornament or artificial pattern. This lack of ornament is one of the most difficult elements of the style for the layman to accept. Intrinsically there is no reason why ornament should not be used, but modern ornament, usually crass in design and machine-manufactured, would seem to mar rather than adorn the clean perfection of surface and proportion.

PROPORTIONS
COMPOSITION

LACK OF ORNAMENT

These principles are not as dogmatic as they must necessarily seem in so brief a discussion: on the contrary they have been derived from the evolution and intrinsic character of the architecture itself. A study of these principles in relation to most of the models and photographs in the present exhibition will enable the visitor to understand what is meant by the International Style and how it differs from the modernistic or half-modern decorative style, which with the persistence of the revived styles of the past, has added so much to the confusion of contemporary architecture.

ARCHITECTS:

In this exhibition the International Style is illustrated by the work of its leading exponents in Europe and in America. One very great architect, however, is included who is not intimately related to the Style although his early work was one of the Style's most important sources. Mr. Hitchcock explains how fundamental was Frank Lloyd Wright's influence upon the important Dutch architect J. J. P. Oud. The Germans, Gropius and Miës van der Rohe, also seem to have studied his work at some time in their careers. But Wright while he does not precisely disown these architectural nephews remains, what he has always been, a passionately independent genius whose career is a history of original discovery and contradiction. While he is much older than the other architects in the exhibition his role is not merely that of "pioneer ancestor." As the embodiment of the romantic principle of individualism, his work, complex and abundant, remains a challenge to the classical austerity of the style of his best younger contemporaries.

WRIGHT

HOOD

Another exception, Raymond Hood, is included because, of all the megalopoli-

tan architects, he seems the most straightforward as well as the most open to new ideas. It is true that his work in retrospect appears somewhat inconsistent, but he must be credited with having designed the finest skyscraper in the vertical style and, a year later, the finest New York skyscraper with a horizontal emphasis (which suggests the definite influence of the International Style). Time will shortly reveal whether his inclusion in the exhibition is a prophecy that a brilliant future awaits our commercial architecture or whether as in the past fifty years our best building will be designed by non-conformists and rebels.

GROPIUS
LE CORBUSIER
OUD
MIËS VAN DER ROHE

The four founders of the International Style are Gropius, Le Corbusier, Oud and Miës van der Rohe. It happens that one is a Parisian of Swiss birth, another a Dutchman, the other two Germans; but it would be very difficult to find in their work any national characteristics. For Le Corbusier is perhaps the greatest theorist, the most erudite and the boldest experimenter, Gropius the most sociologically minded, Miës van der Rohe the most luxurious and elegant, while Oud of Rotterdam possesses the most sensitive and disciplined taste. These four masters prove not only the internationalism of the Style but also, as Mr. Hitchcock makes clear, the wide personal variations possible within what may seem at first glance a restricted range of possibilities.

HOWE & LESCAZE

Among American architects are five others whose work is given special emphasis in the exhibition. The new skyscraper by Howe & Lescaze in Philadelphia is a monument to the persistence and artistic integrity of a firm which has only recently, after years of discouragement, persuaded clients, real estate brokers, and renting agents that the International Style may not be a commercial liability. Whether conservative New York will take Howe & Lescaze's housing project as seriously as it deserves remains to be seen.

NEUTRA

Principally because of his writing the Austrian-born Neutra is, among American architects, second only to Wright in his international reputation. His executed buildings permit him to rank as the leading modern architect of the West Coast.

BOWMAN BROTHERS

The Bowman Brothers of Chicago have as yet built very little but their thorough study of steel construction in relation to architecture, both technically and legally, may revolutionize certain phases of American architecture within the next few years. Their concern with structural probity and frankness has led them very naturally to work in the International Style.

HOUSING

Many difficult architectural problems are touched upon in the exhibition—the private house, the school, apartment houses, both urban and suburban, the church, the factory, the department store, the club and (alumni please note) the

college dormitory. But more urgently than any of these is the problem of low-rent housing. Lewis Mumford's article is an admirable and challenging exposition of this subject, more vital in these days of superfluous population than ever before. The aerial photographs of "slums and super-slums" are instructive criticisms of contemporary city planning—or lack of planning. But of even more positive value is the model of a housing development (p. 199), by the German Haesler, one of the foremost European experts. In this project the economy, adaptability and beauty of the International Style are as clearly demonstrated as in the more costly kinds of building shown elsewhere in the exhibition.

MUMFORD'S ARTICLE

HAESLER

A. H. B., Jr.

HISTORICAL NOTE

NINETEENTH CENTURY ENGINEERING

In the 19th century, behind the obvious story of conflicting revivals, there are two histories of architecture. One is concerned with the developments in pure engineering which remained until after the Great War outside the field of architecture. Buildings like the Crystal Palace in London were seldom considered as having architectural significance any more than the metal and glass arcades of the period. Architecture and engineering were divorced.

NINETEENTH CENTURY FREE DESIGN

The other history beneath the general revivalism is that of conscious independent design. Experiment was continuous from the early century but the experimenters remained individualists. Each generation went its own way, breaking each time in a unique fashion with the current revivalism. There was little consecutive development.

AMERICA TO 1914

Henry Hobson Richardson, though he is often considered merely a reviver of the Romanesque, was one of the greatest of these individual experimenters of the second half century. His later buildings, almost entirely freed from archaeology, show a great originality of composition and an extraordinary freedom of fenestration particularly considering the continued use of traditional building methods. In John Wellborn Root and Louis Sullivan this tradition of freedom was continued. And in Sullivan's disciple, Frank Lloyd Wright, all ties with the past were finally broken. As early as the turn of the century Wright made his amazing innovations in the plan of the house, cutting out interior divisions, and extending the rooms into separate wings with many windows on each side. His fenestration was in bands, his composition frequently asymmetrical, foreshadowing much work of the next quarter century in Europe.

EUROPE TO 1900

At the same time Cuijpers in Holland, of Richardson's generation, was also experimenting along Medieval lines. Otto Wagner, a younger contemporary in Vienna, trained under Gottfried Semper in the Classical tradition, started a new sort of rationalism without Medieval ties. The Belgian Van de Velde, inspired by the English Arts and Crafts movement of Ruskin and Morris, was advancing along a line which emphasized at first honesty of structure and later a free linear ornament which came to be called *Art Nouveau*. Around 1900 this movement had spread throughout Europe. At the same time the remarkable steel and glass department stores, such as the Samaritaine in Paris by Frantz Jourdain and the Tietz store in Berlin brought tentatively and temporarily the achievements of engineering into close touch with architecture.

But it was a brief modernism. As the 20th century wore on the new phase had to come to terms with the better traditional architecture of the time, which had already been simplified and freed from crass imitation. So the successful modern architecture of 1910, represented by the Jugendstil in Germany, the Wiener Werkstätte group in Vienna, and Voysey and McIntosh in England, was less advanced than the outstanding work of 1900.

1910

The dominant current in architecture just before the War was in the hands of various national half-modern architects who perfected, much as had Schinkel in the early 19th century and Richardson in the later, a personal simplification of the Medieval or Classical traditions. Behrens and Bonatz in Germany, Berlage in Holland, Østberg and Tengbom in Sweden, are still practicing; but their best work falls in the years immediately before the War.

HALF-MODERN ARCHITECTURE

In this period, however, when the half-modern architects were at the helm, there were isolated and sporadic examples of more radical tendencies which are realized as particularly significant in retrospect. The industrial architecture of Peter Behrens, for instance, was remarkably free from the compromise with tradition which characterized his houses. Adolf Loos in Vienna, the opponent of the dominant leader Josef Hoffmann and his decorative architecture, was stripping his houses of all ornament and foreshadowing in his writings the functionalist attitude of twenty years later. In France the brothers Perret developed further the possibilities of ferroconcrete construction. But there was only one building which actually foreshadowed the line of advance architecture was to take after the War, a factory at Alfeld built in 1911–1914 by Walter Gropius, a student of Behrens.

RADICAL TENDENCIES BEFORE THE WAR

Before the War modern architecture was the creation of great individualists. Since the War an international style has grown up throughout Europe, not the invention of one genius but the coordinated result of many parallel experiments. Engineering was at last not only joined closely with architecture but made its basis. The Crystal Palace was, indeed, more of a direct ancestor of the new style than any one building of its time.

THE NEW STYLE

The development of a conscious style was involved at first with two movements in painting: Neoplasticism in Holland and Expressionism in Germany. Neoplasticism was an international movement founded in Holland and derived from Cubism. The painter, Mondriaan and the theorist, Theo van Doesburg, reduced composition to related rectangles and blocks, and color harmony to the three primary colors in relation to black and white. The most important architect

NEOPLASTICISM

Historical Note

connected with Neoplasticism was Oud, though at first Rietveld appeared at least his equal. Theo van Doesburg's sojourn at the Bauhaus in 1922 brought Neoplasticism to young German architects in general and to Gropius in particular. Walter Gropius, previous to this, had been strongly influenced by the post-War wave of Expressionism. In painting Expressionism had represented the revolt from Impressionism. In architecture it led to an exuberant reaction from the relative restraint of the work of 1910. Architects indulged in arbitrary curves, zig-zags and fantastic decoration, breaking down all formal discipline, traditional or structural. The phase is best exemplified in the work of Hans Poelzig, Otto Bartning and Erich Mendelsohn executed between the end of the War and 1924.

EXPRESSIONISM

There was no movement in France comparable to Neoplasticism or Expressionism in its influence on architecture, although Le Corbusier was for a time himself a painter associated with Ozenfant in the movement called Purism.

TOWARDS A NEW ARCHITECTURE

It was in Le Corbusier's *Vers une Architecture* that the advent of a new style was signalized in 1923. During the War years he had developed on the basis of Perret's use of ferroconcrete a new technic and a new aesthetic. More of an innovator than Oud, more consistent than Gropius, he displayed in his *Citrohan* model of 1919–22 the startling possibilities of an art of building as little related to the modern architecture before the War as to the styles of the further past. Miës van der Rohe was developing at the same time a parallel aesthetic less dependent on a particular system of construction.

DIE NEUE SACHLICHKEIT

Since 1922 the new style has not changed in its fundamentals. Based as it is on modern engineering and on modern provision for function, it went through stages where both these basic conditions were over-emphasized. This was especially true in Germany during the years which followed Expressionism when *Die Neue Sachlichkeit*, the new realism or new objectivity, encouraged a denial of the aesthetic elements in all the arts. The best work of the functionalists is, however, distinguished more in theory than in practice from the work of those who accept the new aesthetic possibilities of the art of architecture. The new style has spread to all parts of the world. Whether it will develop local substyles or change rapidly as the years go by, only the future can tell. In 1932 Miës, Le Corbusier, Oud, and Gropius who were the chief pioneers are still the leading modern architects.

P. J.

THE EXTENT OF MODERN ARCHITECTURE

THE architecture of the twentieth century to the superficial observer is no more consistent than that of the nineteenth. Yet in the most advanced work of the last decade there is a decided convergence. This converging tendency which contrasts so strongly with the chaos of the nineteenth century and the individualism of the last generation suggests the existence of an international style. Though many architects and critics question the desirability or even the possibility of style fixation, it is true that consciously or unconsciously a considerable number of architects throughout the world accept parallel technical and aesthetic disciplines.

GERMANY

Of the countries in which modern architecture was first developed, Germany has today the greatest amount of consciously advanced building. The leaders of pre-War architecture such as Peter Behrens, Hans Poelzig, and Bruno Paul are now working in the style initiated by their juniors, Walter Gropius and Miës van der Rohe. Erich Mendelsohn, Otto Bartning and the other Expressionists, whose extravagant fantasies dominated the scene just after the War, are restraining their work in conformity with the new way of building. The extreme functionalists, like Hannes Meyer, Hans Witwer and Arthur Korn, who form a distinct group, are divergent in theory but differ little in practice. In all parts of Germany there are working good architects who have never been either Expressionists, or extreme functionalists. Among the soundest are Schneider in Hamburg, Scharoun in Breslau, Vorhölzer in Munich, Luckhardt & Anker in Berlin, and the prolific housing expert, Otto Haesler, in Celle near Hanover.

HOLLAND

In Holland the half-modern school of Amsterdam with its fantastic and elaborate brickwork is still dominant. Among those of the group who are freeing their work from these mannerisms are Wijdeveld and Dudok, the city architect of Hilversum. But the best post-War architecture is in Rotterdam where Oud is city architect. Although the work of Rietveld in Utrecht ranks second only to Oud, Brinkman & Van der Vlugt, Ravesteijn and Van Eesteren further established Rotterdam as the center of the modern movement. Duiker in Amsterdam is also a technical innovator of importance.

FRANCE

The importance of Le Corbusier's work alone gives France a place with Holland and Germany in the leadership of modern architecture. André Lurçat is, after Le Corbusier, the most significant modern architect. Of the architects who are gradually freeing themselves from the tradition of the Ecole des Beaux Arts,

Roux Spitz is the best. Badovici, the editor of *L'Architecture Vivante*, has built one interesting house and Moreux several. Men primarily decorators, such as Djo Bourgeois and Chareau, who works in collaboration with Bijvoet of Amsterdam, have tried their hand at modern building.

As is to be expected in so cosmopolitan a city as Paris, most of the modern architects, including Le Corbusier, are not French born. The Belgian Mallet-Stevens, the best known and the poorest, the American Paul Nelson, the Armenian Guevrekian and the Pole Elkouken are among this group. French engineers, particularly Freyssinet of Limousin & Cie., have done industrial work with ferroconcrete that may be ranked as architecture.

AMERICA

In America there is Frank Lloyd Wright who stands alone. Those men such as Barry Byrne, Chase McArthur and Wright's son Lloyd Wright, who follow most directly in his footsteps are no more worthy exemplars of modernism than the metropolitan architects of the East. The latter have borrowed the tricks of design and ornament of the Paris Exposition of 1925 without any real conception of what modern architecture may be. Except for Raymond Hood and George Howe, few established architects have attempted modern design with any real understanding and sympathy. The magnificent factories of Albert Kahn in Detroit, like the Starrett-Lehigh Building in New York, are an exception. William Lescaze, Frederic Kiesler and Richard J. Neutra are the best among the foreign born, foreign trained modern architects now practicing in America. R. M. Schindler in California, although trained in Europe, belongs rather with the group of Wright's followers.

Of the younger men just beginning to build whose training and background are exclusively American there are, in addition to the Bowman Brothers, George Daub, Norman Rice, Richard Wood, John Moore, Percival Goodman, Lyman Paine and Stott & Holden in New York; Howard Fisher, George Keck and Harry Dubin in Chicago. Those who have received their training chiefly in the offices of the leading modern architects of Europe include Alfred Clauss, Oscar Stonorov, Albert Frey, Walter Baermann, Alfred Kastner, Lönberg-Holm and William Muschenheim. Hamilton Beatty in Madison, Wisconsin, a pupil of Le Corbusier, has built several houses. From the designs of Clauss & Daub the Standard Oil Company of Ohio are building forty stations. Thompson and Churchill deserve mention for their technical ingenuity. A. Lawrence Kocher, editor of the *Architectural Record*, has built with Frey an experimental aluminum house. Buckminster Fuller, the inventor of the Dymaxion House, has interested

the general public with his radical approach to the problem of the house. Other young men throughout the country, whose potentialities cannot yet be estimated, are doing fresh and interesting work in interiors and remodelling.

SWITZERLAND

Modern architecture since the War has not been limited to these four countries. Switzerland, Czechoslovakia and Belgium have fewer original architects but considerable work of interest. In Switzerland the Zürich functionalists are the leaders. Steiger, Werner Moser and Max Ernst Haefeli of Zürich, together with Hans Schmidt of Basle, form a definite group with which the critic Giedion is closely affiliated. Outside the group there are Steger & Egender, and Kellermüller and Hofmann, both of Zürich, and Carl Weidemeyer of Ascona. Of the older generation Professor Karl Moser has, like Peter Behrens, been ready to follow the younger radicals.

CZECHOSLOVAKIA

In Czechoslovakia, Brno is as much a center for post-War modern architecture as Rotterdam in Holland or Zürich in Switzerland. Financial prosperity since the War has provided the newer architects with unusual opportunity to build, and the reaction to the decorative Austrian style dominant before the War has given impetus to the introduction of a more modern style. The general standard of the work is relatively low but that of Otto Eisler, Bohuslav Fuchs, Josef Kranz and Jan Visek may be compared with the best Swiss work.

BELGIUM

In Belgium the leading modern architects are Victor Bourgeois, H. L. De Koninck, Eggerickx and Francken. Henry van de Velde of the older generation as head of the Ecole Superieur des Arts Décoratifs at Brussels is developing a group of promising younger men. Even the best Belgian work is, however, inferior to that of Switzerland and Czechoslovakia.

SCANDINAVIA

In Scandinavian countries the best work is done in Stockholm in Sweden, and Åbo in Finland. The younger group in Sweden includes Gunnar Asplund, Sven Markelius, Eskil Sundahl and Uno Åhren, all of Stockholm, and Friberger of Göteberg. The best younger Finnish architects are Alvar Aalto and Erik Bryggman. In Norway and Denmark the half-modern architecture of before the War retains more force than in Sweden and Finland.

RUSSIA

The opportunities in Russia are enormous and have drawn thither many of the young architects of Germany. As yet the modern buildings built in Russia are inferior technically. Of the impressive industrial work, the most successful is the Technical Institute of thirty-three units at Lefortovo near Moscow. Barkhin, Ginsburg, the brothers Vyesnine and Velikovski may be mentioned as of particular consequence.

ITALY
SPAIN
ENGLAND
JAPAN

In Italy, Spain, England and Japan really modern architecture has only begun to appear. Sartoris, Terragni, Figini and Pollini in Italy have built but little. Mercadal, Sert, Labayen & Aizpurua in Spain have had more considerable opportunities. Emberton, Etchells, Connell and Tait have done the most thoroughgoing modern work in England. In Japan the publication of books and magazines has propagandized modern architecture. Yamada and Ueno are the best known younger architects.

P. J. AND H.-R. H., JR.

PHOTOGRAPHS IN THE EXHIBITION ILLUSTRATING THE EXTENT OF MODERN ARCHITECTURE

AUSTRIA

Lois Welzenbacher: Apartment House, Innsbruck. 1930.

BELGIUM

H. L. de Koninck: Lenglet House, Uccle, near Brussels. 1926.

CZECHOSLOVAKIA

Otto Eisler: House for Two Brothers, Brno. 1931.

Bohuslav Fuchs: Students' Clubhouse, Brno. 1931.

Ludvik Kysela: Bata Store, Prague. 1929.

ENGLAND

Amyas Connell: House in Amersham, Buckinghamshire. 1931.

Joseph Emberton: Royal Corinthian Yacht Club, Burnham-on-Crouch. 1931.

FINLAND

Alvar Aalto: Turun Sanomat Building, Åbo. 1930.

FRANCE

Gabriel Guevrekian: Villa Heim, Neuilly-sur-Seine. 1928.

André Lurçat: Froriep de Salis House, Boulogne-sur-Seine. 1927.

André Lurçat: Hotel Nord-Sud, Calvi, Corsica. 1931.

FRANCE (continued)

Rob Mallet-Stevens: de Noailles Villa, Hyères. 1925.

Paul Nelson: Pharmacy, Paris. 1931.

GERMANY

Otto Haesler: Old People's Home, Kassel. 1931.

Luckhardt & Anker: Row of Houses, Berlin. 1929.

Ernst May & Associates: Friedrich Ebert School, Frankfort-on-Main. 1931.

Erich Mendelsohn: Schocken Department Store, Chemnitz. 1928–30.

Erich Mendelsohn: House of the Architect, Berlin. 1930.

Hans Scharoun: "Wohnheim," Breslau. 1930.

Karl Schneider: Kunstverein, Hamburg. 1930.

HOLLAND

Brinkman & Van der Vlugt: Van Nelle Factory, Rotterdam. 1928–30.

W. J. Duiker: Open Air School, Amsterdam. 1931.

G. Rietveld: House at Utrecht. 1924.

ITALY

L. Figini & G. Pollini: Electrical House at the Monza Exposition. 1930.

JAPAN

Isaburo Ueno: Star Bar, Kioto. 1931.

Mamoru Yamada: Electrical Laboratory, Tokio. 1930.

SPAIN

Labayen & Aizpurua: Club House, San Sebastian. 1930.

SWEDEN

Sven Markelius & Uno Åhren: Students' Clubhouse, Stockholm. 1930.

Eskil Sundahl: Workers' Houses, near Stockholm. 1930.

SWITZERLAND

Artaria & Schmidt: Residence for Professional Women, Basle. 1930.

Max Ernst Haefeli: Apartment House, Zürich. 1929.

Carl Weidemeyer: House on Lago Maggiore. 1929.

U. S. S. R.

Nicolaiev & Fissenko: Electro-Physical Laboratory, Lefortovo, Moscow. 1927.

Nicolaiev & Fissenko: Electro-Technical Institute, Lefortovo, Moscow. 1927.

U. S. A.

Clauss & Daub: Filling Station for the Standard Oil Co. of Ohio, Cleveland, Ohio. 1931.

R. G. & W. M. Cory: Starrett Lehigh Building, 11th Avenue at 26th Street, New York. 1931.

Frederic Kiesler: Film Guild Cinema, 8th Street, New York.

Kocher & Frey: Harrison House, Syosset, Long Island. 1931.

Thompson & Churchill: Office Building at Lexington Avenue and 57th Street, New York. 1931.

Tucker & Howell, Oscar Stonorov, Associate: Biological Laboratory of the Highland Museum, Highlands, N. C. 1931.

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*Individual bibliographies are included in the sections devoted to the separate architects.

FRANK LLOYD WRIGHT

TAKING shape in the noble realm of Ideas as Architecture today to make machine-age increment, that is to say, to make our machine power and our millions democratically beneficent, is one great new Integrity—a sense of the within as reality—and four limitless new resources:

The first new resource is a super-material. Glass.
The second new resource is a new standard means. Tenuity.
The third new resource is a new sense of the Nature of Materials.
The fourth new resource is Pattern as Natural.

All five together create new grasp on building and are demanding new significance as architecture in this twentieth century. All five resources are not only bases for Modern Architecture in this century, but are altogether, no less, a lesson to be learned by Modern Life itself.

F. L. W.*

WRIGHT'S ACHIEVEMENT

In the history of modern architecture and in the history of American civilization Wright has a place apart. He created by an imaginative analysis at once intellectual and instinctive most of the aesthetic resources developed by the modern architects of Europe since the War. Yet he is not merely the forerunner of what has now become a new international style. Fundamentally he remains an individualist, the latest major representative of that particularly American view of the world which shone forth in Emerson, in Melville, and in Whitman. John Robinson addressing the Pilgrim Fathers as they left Leiden established the chord of American affirmation: "The Lord has more Truth and Light yet to break forth out of his Holy Word." For Wright that Holy Word is the book of Man and of Nature. For him no architectural creed even of his own fashioning has breadth enough for the architectural possibilities yet to burst forth.

The passage is quoted from Wright's latest writing. Granting the impossibility of assigning fixed values to his sonorous vocabulary, it seems to express more broadly, more optimistically, and even perhaps more clearly the frame in which modern architecture as an art should continue to exist, than does any

* This quotation is from *An Autobiography: Frank Lloyd Wright* to be published by Longmans, Green & Company. The publishers kindly made the proofs of this important book available to aid the preparation of this catalogue.

other current creed. For architecture to Wright is not a discipline—as he knew already in 1894 when he refused to let Burnham send him to the Ecole des Beaux Arts—it is an expansion. Hence the discontinuity of his career indicates no wavering nor yet the absence of definite sense of style. It has been rather the exploration of a realm into which he came with no architectural background and no leader but his rebellious master, Sullivan. This realm today is as broad as the potentialities of the twentieth century itself. Wright could build the city of the future with tall towers of metal and glass all within the confines of Manhattan Island or he could equip with tents of canvas a new race of civilized nomads.

Architecture in the last decade has found itself again in a restricted field of possibilities after a century or more of aimless wandering. These possibilities, it is practical and comfortable to believe, will be realized as much in the intelligent organization of capitalistic social chaos as in the gradual liberalization of communist state rigidity. But any premises for the future imply the establishment of disciplines for all human activities. The architect more than other artists must work out his problems socially and not merely as a pure individual among individuals within a transcendental frame. Architecture, it may be, will henceforth be only exceptionally either an art or the expression of genius. Yet architecture remains potentially something more than a subordinate technic of industrial civilization like automobile construction.

Perhaps Wright also could work on those limited functionalist terms. Perhaps the parallel acceptance of aesthetic restrictions which distinguishes the younger modern architects from those of Wright's generation, is in large part arbitrary and unnecessary. Yet those who have aspired to emulate Wright in all the breadth and license of his undaunted genius have never achieved more than a pathetic parody of his work, while those who have purified and solidified their interpretation of his doctrine, seeking more consonance with the second quarter of the twentieth century and less with the romantic absolutes of Man and Nature, have attained throughout the world a real integration of style. Nor has the price they have paid for the acceptance of general and developing aesthetic principles been exorbitant.

WRIGHT'S PLACE

It is too soon yet to know if there be a single new architect in Europe the sum of whose productions will place him in the first rank when the modern architecture we know today has become an accepted historical epoch. But there is already no question that Wright is one of the great architects of all time. As an American architect he completed the development of a national art initiated by

Richardson. As a modern architect he first saw all the revision and replacement of traditional concepts which alone could bring a new architecture generally into being.

EARLY YEARS

Wright was born in Richland Center, Wisconsin, his father a Baptist clergyman from Connecticut more interested in music than in preaching, his mother the daughter of a Welsh Unitarian, early settled in the rich farm lands of Wisconsin. During Wright's childhood his father served a pastorate in Weymouth, Massachusetts, until he rebelled against the Baptist creed and returned to Wisconsin a Unitarian.

Such slight influence as the East had on Wright's youth was through his mother who found in the educational toys and the reproductions of old masters available in Boston the means to stir her son's sense of form and color. His education, begun with the early experiences of his grandfather's Wisconsin farm, was effectively continued and completed in Wisconsin. But Madison was not the same as the grandfather's farm. It was the state capital and the seat of a university. The surroundings were at once purely Middle Western and authentically intellectual. Madison was very different from the crude metropolitan yearnings of Chicago in the Brown Decades.

There was no architectural school at the University of Wisconsin. Wright, therefore, although it had been his intention to become an architect, studied engineering. He also obtained practical experience working on buildings of the University under Conover the Dean of the Engineering School. Ruskin's *Seven Lamps* read even before his professional education began, and the books of Viollet-le-Duc gave intellectual and archaeological support to the unconventional line his formal education was taking. Never having studied in the American architectural schools of the eighties, there was much he never had to unlearn. Yet even the most absurd conventional discipline of imitation could hardly have dimmed a youth so nurtured in a tradition of emotion and rebellion. His education advanced on either side of architecture, below it in the field of construction and above it in the field of aesthetic theory. The middle plane of artistic actuality he had from the first to fill in alone. Indeed in that mid-Western town, where the one pretentious monument, the dome of the Capitol, came tumbling down because of shoddy construction, architecture hardly existed except as it grew new and fresh in Wright's imagination.

In 1897, when he left the University of Wisconsin, he went enthusiastically to Chicago. There he obtained work in the office of J. L. Silsbee, the architect of

All Souls' Church in Chicago of which Wright's mother's brother was pastor. That Fall he made the plans for his first building, the Hillside School built for his aunts in Richland Center the next spring. In that same spring Wright entered the offices of Adler and Sullivan then the best place in the world to learn architecture not as tradition but as actuality. He immediately achieved a position of importance as a designer and arranged a five-year contract which made it possible for him to build himself a house in Oak Park in the Fall of 1889. Sullivan, the *lieber Meister* as he still calls him, was very busy in these years with the series of commercial constructions leading up to the Auditorium Building finished in 1894. He was not interested in houses and it fell therefore to Wright to do all the domestic work which came to the firm, including Sullivan's own summer house at River Springs in 1891.

SULLIVAN'S OFFICE

By the time Wright broke with Adler and Sullivan and set up for himself in 1894 he had built over fifteen houses. Of these the Winslow House built in 1893 is typical and preferred by Wright to the others. The broad band of ornament under the eaves, the relatively large windows, the continuous band of window and ornament above the solid masonry wall, reaching to the second story window sill mark the house as Wright's. There was nowhere in the world at the time any precedent for the general effect which he attained. "Prairie Architecture," as it was to be known, sprang suddenly into being at the hands of a man trained in engineering and aesthetic theory and blissfully ignorant of all architecture except that of Sullivan.

EARLY HOUSES

Public and bankers were chary of accepting even so much of novelty and innovation. But there were many clients in the vicinity of Chicago in the nineties ready to encourage experiment even if loans were hard to obtain. As Wright's success as a domestic architect increased his innovations grew more radical and extensive while the specific influence of Sullivan rapidly diminished. By 1900 Wright had accomplished something of as much consequence in the history of the dwelling as the architects of the fifteenth century who turned the defensive castle into the residential mansion. He had completely reorganized and reformulated the theory of the individual house of moderate size and cost. In part this reorganization was motivated by aesthetic experimentation—"the sense of the within as reality." Yet more important was the new analysis of the house, not perhaps as a *machine à habiter*, but as an instrument for the new possibilities of expansive modern life. Room flowed into room, in the plan, and the supports were increasingly isolated as the windows ceased to be mere holes in the wall

PRAIRIE ARCHITECTURE

and were grouped together in long rows. The strong horizontals of the projecting eaves and of the second floor window sill were emphasized; but through the weft of lines parallel to the earth, verticals indicated the main lines of support. Interior and exterior flowed into one another to create an abstract design in space relationships. The integrity with which various materials were used and the functional plasticity of the parts provided the chief decoration. There was still some ornament but it was inconspicuous and subordinated to the scale of the whole.

But there are many legitimate objections to these houses. The rooms by reaction from the loftiness of those of the mid-century were unduly low, the windows although extended horizontally were rather narrow and so shaded by the broad eaves that the interiors, for all the appearance of the plans, were rather dark. The discipline of symmetrical composition still retained sufficient prestige in Wright's mind to confuse some of the plans and to reduce the effectiveness of many elevations.

ROBIE HOUSE

Wright's greatest achievement thus far was this "Prairie Architecture" which had come into existence by 1900 and which reached its climax in the Robie House of 1908 (page 51), and the architect's own first house at Taliesin. Several of the finest of Wright's houses, the Thomas House in Oak Park, the Evans House in Longwood, Ill., and the Ross House at Lake Delavan, Wisconsin, were completed in 1904. Various materials, wood, stucco, masonry and poured concrete are used with equal success and varied expressiveness. In 1907, the year before the Robie House, the Heath House in Buffalo was a fine example of his work in brick, while the smaller Roberts House in River Forest, Illinois (page 52), represents a maximum of openness and horizontality achieved with wood and stucco. The Coonley House of 1908 Wright himself particularly prefers. The fashion in which house and garden are intimately tied together compares with that achieved in his own first house built at Taliesin in 1911. But the symmetry of the design and the large areas of painted decoration on the upper wall surfaces are less authentic and integral than the rambling functionalism and the native stone walls of Taliesin.

COONLEY HOUSE

LARKIN BUILDING

In the first decade of the century Wright built other things beside houses. The Administration Building for the Larkin Soap Factory built in 1904 in Buffalo represented one of the earliest attempts to raise industrial building to the level of architecture (page 49). Both in its construction and in its sense of interior and exterior form it differed from his residence work as much as it did

in scale. It indicated well his extraordinary ability to approach each new problem with an absolutely fresh mind. Again in the Unity Temple Church in Oak Park of the next year a new problem and different economic conditions led to an entirely exceptional result. The plain walls of poured concrete, the projecting slab roof and the system of interior support were effectively combined. But the windows were unnecessarily small and the detail between them unsuited in character and scale to the design as a whole. The result was undoubtedly rather gloomy.

EUROPEAN REPUTATION

The Wasmuth publications of Wright's work in 1910 and 1911 for which Kuno Francke and Werner Hegeman were chiefly responsible made Wright's work more familiar to Europeans than to his own compatriots. In the next decade his international influence was at its height and those young architects of Europe who were destined to become the leaders in creating a new style after the War then learned directly or indirectly the open planning, the free plastic composition, the grouped fenestration, and the horizontality of Wright's "Prairie Architecture."

MIDWAY GARDENS

In the next decade Wright for various reasons found less work to do. Midway Gardens in Chicago, brought to conclusion only to be ruined by the War and Prohibition, opened a new period in his work. The elaborate abstract sculptural and painted decoration of this resort, and the complicated interplay of planes patterned and unpatterned foreshadowed the fantastic extravaganzas of the post-War period in Holland and Germany. It represented an expansion of Wright's architecture in a decorative direction which had been repressed since his early work with Sullivan. Unfortunately this elaboration, coming at a time when the newer architects in Europe were discovering those virtues of extreme simplicity which Wright had always known, served to obscure to the young the value of the more fundamental innovations of the previous period.

IMPERIAL HOTEL, TOKYO

The most important work of the war years, the Imperial Hotel in Tokyo, was a technical triumph. The floating cantilevered construction survived without damage the earthquake of 1923 and established Wright's claim to rank as a scientific builder with the best American engineers. The intoxication of a foreign land, the presence of trained craftsmen and the relative lack of machines led to an ornamentation richer if less varied than that of the Midway Gardens. The free development of the plan, the ingenuity in assimilating Japanese traditions and working in an alien tongue with alien helpers make up perhaps for the lack of that restraint and straightforwardness of design which marked the best of Wright's earlier houses.

Yet in the Barnsdall House at Hollywood completed on his return to America in 1920, the California climate reinforced the Japanese intoxication. The house, begun in 1917, was built without his supervision and never quite as he intended. The heaviness of the design induced by the battered walls and the exuberance of the inappropriate ornament indicate that the phase begun with Midway Gardens still continued.

Frank Lloyd Wright

More successful in every way were the houses built in the next few years in California in which the concrete block shell with reinforced joints was introduced. The Millard House of 1921 was the first and the best of these (page 53). Wright, planner par excellence before the War, now became preeminently an innovator in construction. His development of the concrete block system was contemporary with the preoccupation of the younger architects in Europe with concrete skeleton construction. The methods were very different and so were the results. Yet at the same time there were important similarities. Both in California and in Europe the roof terrace replaced the sloping roof and the projecting cornice disappeared. Wall planes were emphasized and the conventional features of domestic architecture were all modified beyond recognition. The chief differences were two: the importance given the window, and the treatment of the wall. Wright working in a land overflowing with light developed the window less than did the new architects of northern Europe who were inspired in part by his own earlier work in the North. Moreover the walls of the Europeans were mere screens protecting the interior. The supports were internal and isolated. Wright's walls were supporting, threaded through with reinforcement, thick, and divided into definite units. Therefore he continued quite logically to design in mass rather than in volume.

MILLARD HOUSE

Since the concrete block period followed closely upon the decorative phase, the early houses in this material were richly ornamented. The moulds had patterns which permitted machine duplication of ornament. Thus the fascination of balancing diapered planes against unornamented planes which already appeared in the Coonley House before the War could be freely indulged. In the succeeding years when the young architects of America were again becoming aware of non-traditional design after a decade of subservience to archaeological gods the gospel of Wright and the gospel of Le Corbusier appeared antinomian over the iota of ornament. The Europeans with their plain stucco appeared ascetic; the American with his diapered blocks appeared sybaritic.

Events have proved the antithesis at least partially false. The Europeans still

Frank Lloyd Wright

avoiding pattern have come to make more use of color, and to prefer surfaces of marble or at least of brick or tile to the cold but quickly lost perfection of smooth white stucco. Wright in his latest concrete block house, the Jones House in Tulsa of 1931, has made his walls of alternate unornamented vertical strips of glass and concrete blocks (page 54). He has also introduced in the second story the characteristic horizontal windows of the maligned foreigners. The piers are still massive in appearance; for they are real piers not a mere protective screen.

JONES HOUSE

But to Wright this sort of incidental plasticity still seems an essential where to the Europeans it seems rather to confuse the unified plastic of the whole. The deep reveals not only channel the exterior surface, they also reduce the light in the interior. The ornament is reduced to a minimum and the plan is regularly geometrical yet asymmetrical. The whole design represents the consistent application of a single new type of construction in which the walls are fifty per cent windows—a high proportion even in European buildings of which one wall is entirely glass. No leading architect of Europe would build quite such a house, yet few could fail to accept its relevance in the new world of form.

During the last decade Wright has found himself again in the field of the dwelling house. Unwilling like certain of his European contemporaries to accept a discipline established by his juniors, he has nevertheless advanced parallel with them. But the distance between him and even Le Corbusier, whose influence he particularly distrusts, grows ever less. There is far more community of feeling between the de Mandrot Villa (page 88) and the Jones House of 1931 (page 54) than between Le Corbusier's *Citrohan* model and the Millard House of 1921 (page 53).

SKYSCRAPER PROJECTS

Since his return from Japan Wright has in several projects experimented with steel construction and the skyscraper. He and the Europeans have come at the same time to realize the advantages of tenuous supports, and the desirability of maximum window areas in urban building. As early as 1894 a project of Wright's (page 48) indicated the way as surely as did Frantz Jourdain's Samaritaine Department Store in Paris. Wright's post-War designs have been more radical technically if less restrained in decoration. The skyscraper project of the early 20's, beneath its exuberantly ornamented surface of copper sheeting, is as radical as Miës van der Rohe's schemes of the same years. Both surpass technically and aesthetically any designs submitted in the Tribune Tower competition of 1922 except perhaps the very sketchy suggestion of Max Taut. The apartment house for St. Mark's-in-the-Bouwerie of 1929 carried cantilevering to extremes at that

time rarely proposed in Europe. The plan, suggesting the early post-War work of the German expressionists was based on an ill-chosen scheme of triangles. The walls, however, were entirely of glass and ornament had all but disappeared. Comparison with Gropius's Bauhaus of 1926 (page 67) and with Le Corbusier's Centrosoyus is inevitable. Yet there is certainly no influence either way. *Frank Lloyd Wright*

There is an essential and insuperable difference between Wright and those architects throughout the world who work consciously or unconsciously in a single international style. At the bottom they are classicists and he a romantic. The influences which surrounded his youth in the seventies and eighties in the isolation of Madison, Wisconsin, were far different in every way from even the provincial calm of Purmerend or La Chaux-de-Fond. Behind Wright was only Sullivan. In his early years architecture had no existence until he created it. Behind the young Europeans were Berlage, Wagner, Behrens, Perret, Hoffmann, Van de Velde, Loos, and above all Wright himself. If his buildings were not at hand, there was nevertheless the monograph of his work which few then knew in America. Instead of the feeble dome of the Madison Capitol there was Hagia Sophia itself at the end of a journey briefer than Wright's from Weymouth. And not only Hagia Sophia but all the varied wealth of the past down through the architecture of Schinkel, Labrouste, and Cuijpers in the previous century. WRIGHT'S INDIVIDUALISM

But now conditions are changed. No young architect anywhere grows up in quite the isolation of Wright's youth. American architecture need not develop entirely in the footsteps of her great individual genius. A larger and a newer world calls. The day of the lone pioneer is past, the advance may be on a more general front at last. Throughout the world there are others beside Wright to lead the way toward the future.

HENRY-RUSSELL HITCHCOCK, JR.

Frank Lloyd Wright

THE MODEL IN THE EXHIBITION: PROJECT FOR HOUSE ON THE MESA, DENVER, COLORADO. 1932 (p. 55)

In this, his latest house project, Wright combines the results of his technical experimentation of the years since the War with the magnificent horizontal articulation of his early Prairie houses. The House on the Mesa sums up a lifetime of experience with the designing of American houses and converges with the line of development of the modern house in Europe. No European architect has been bolder in the use of cantilevering in domestic architecture or more drastic in the introduction of whole walls of glass. The concrete block shell system is combined with the cantilevered slab roof on isolated supports to produce an architecture as weightless and non-massive as that of Le Corbusier. But in the extremely extended articulation of the plan by which the house ceases to be one unit and becomes instead a group of three—for service, for living and for sleeping—Wright continues the line of his early developments and reacts sharply against the classical centralization and unification which has dominated most of the best modern house designs in Europe. The house becomes in itself a community and its scale, like that of the Coonley house before the War, is hardly that of the single dwelling in the traditional sense.

The use of ornament is restricted on this house to a few accents of pierced blocks. But the three dimensional design is very rich, not to say complicated. The variations of level, the emphasis upon the suspension of the glass walls of the living room, the independence of the cantilevered roofs, the different degrees of extension of the separate units lead to a multiplication of lines and planes. Yet the whole is firmly tied together by the long corridor and solid wall which protects the whole complex on one side. Beside the classical formalism of the houses of Oud, Le Corbusier and Miës van der Rohe (pp. 109, 87, 126) this latest house of Wright's is a striking aesthetic statement of romantic expansiveness.

H.-R. H., Jr.

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Wright has written extensively for the *Architectural Record* and other magazines in America, in Europe and in Japan.

Das Werk in Switzerland, among many other foreign journals, has devoted an entire number to his work. (May, 1925.)

FRANK LLOYD WRIGHT—CHRONOLOGY OF LIFE

1869	Born in Richland Center, Wis.
1872	His father took Baptist pastorate in Weymouth, Mass.
ca. 1880	His family settled in Madison, Wis.
1885–87	Studied engineering at the University of Wisconsin. Received actual building experience under Dean Conover.
1887–88	Worked under J. S. Silsbee, architect of his uncle's church. Built Hillside Home School at Spring Green for his aunts.
1888–94	Assistant in the office of Adler & Sullivan in charge of all domestic work.
1888	Built first house in Oak Park.
1894	Established himself as independent architect.
1895–1911	Period of "Prairie Houses."
1906	Trip to Japan.
1909	Invited to prepare complete portfolio for Wasmuth Publishing House in Berlin.
1910	Trip to Germany and Italy.
1914	Tragedy at Taliesin.
1916–20	At work in Tokyo on Imperial Hotel.
1920–	Period of technical experiments: Concrete Block System; Projects in Steel and Glass.
1923	Imperial Hotel survives Tokyo earthquake.
1923–27	Domestic difficulties and travel.
1927	Return to work in the Southwest.
1929	Kahn Lectures at Princeton University.
1930–31	Lectures in New York and elsewhere.
1931	Went to Rio de Janeiro as one of three judges in a competition for the Columbus Memorial Lighthouse.

FRANK LLOYD WRIGHT—LIST OF WORK

The model prepared for the Exhibition represents the project for a house on the Mesa, Denver, Colorado.

* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1887–1888	Hillside Home School, Spring Green, Wis.
1888	House of the Architect, Oak Park, Ill. McHarg House, Buena Park, Chicago, Ill.
1891	Louis Sullivan's Summer Residence, Ocean Springs, Ill. Charnley House, Ocean Springs, Ill. Walter Gale House, Oak Park, Ill. Thomas N. Gale House, Oak Park, Ill. Thomas N. Gale House, II, Oak Park, Ill. Municipal Boathouse, Madison, Wis.
1892–1893	Winslow House and Stable, River Forest, Ill.
1892	Harlan House, Chicago, Ill. Charnley House, Goethe Street, Chicago, Ill. Louis Sullivan House, Lake Avenue, Chicago, Ill. Blossom House, Chicago, Ill.
1893	Williams House, River Forest, Ill.
1894	Moore House, Forest Avenue, Oak Park, Ill. Woolley House, Oak Park, Ill. †[Project for Office Building.]
1895	Husser House, Buena Park, Chicago, Ill. Spencer House, Lake Delavan, Wis. Water-tower at Hillside Home School, Spring Green, Wis.

Frank Lloyd Wright

1896
Francis Apartments, Forestville Ave. and 32nd St., Chicago, Ill.
Moore Stable, Oak Park, Ill.
Heller House, Woodlawn Ave., Chicago, Ill.
Lexington Terraces, Chicago, Ill.

1897
Francisco Terrace, Chicago, Ill.
Warren S. Furbeck House, Oak Park, Ill.
Bagley House, Hinsdale, Ill.
Three houses of different materials in the E. C. Waller sub-division, River Forest, Ill.

1898
Luxfer Prism design, patents and installations.
Atelier of the Architect, Oak Park, Ill.
George Furbeck House, Euclid Ave., Oak Park, Ill.
Wallis House, Lake Delavan, Wis.
Wallis House, II, Lake Delavan, Wis.

1899
Sutton House, McCook, Neb.
Dana House, Studio and Stables, Springfield, Ill.
Booth Cottage, Glencoe, Ill.

1900
Bradley House, Kankakee, Ill.
Hickox House, Kankakee, Ill.
E. C. Waller Gateway, Stable and Gardener's Cottage, River Forest, Ill.
Stephen Foster House, South Chicago, Ill.
Jessie W. Adams House, Longwood, Ill.
Two Cottages at Lake Delavan, Ill.
W. H. Freeman House, Hinsdale, Ill.
[Project for summer colony at Como Orchard.]
Fourteen Cottages at Como Orchard. Unsupervised.

1901
Fred B. Jones House and Gate Lodge, Lake Delavan, Wis.
Central Clubhouse at Como Orchard. Unsupervised.
Heurtley House, Oak Park, Ill.
Ward W. Willits House, Gardener's Cottage and Garage, Highland Park, Ill.

1902	Charles Ross House, Lake Delavan, Wis.	*Frank*
	Glasner House, Glencoe, Ill.	*Lloyd*
	Booth House, Highland Park, Ill. (Destroyed.)	*Wright*
	Cheney House, Oak Park, Ill.	
	Brown's Book Store, Fine Arts Bldg., Chicago, Ill.	
	F. M. Smith House, Oak Park, Ill.	
	Pitkin Lodge, on an island near Sault-Ste-Marie, Ontario, Canada	
1903	Hillside Home School, II, Spring Green, Wis.	
	Mary Adams House, Highland Park, Ill.	
	River Forest Tennis Club, River Forest, Ill.	
1904	Porter House, Hillside, Wis.	
	Little House, Peoria, Ill.	
	Gilpin Cottage, Oak Park, Ill.	
	George E. Gerts Cottage, Birch Brook, Mich.	
	Walter Gerts Cottage, Birch Brook, Mich.	
	Grace Fuller Workmen's Cottage, Glencoe, Ill.	
	Thomas House, Oak Park, Ill.	
	Hardy House, Racine, Wis.	
	Pettit Memorial Chapel, Belvedere, Ill.	
	Westcott House, Springfield, Ohio.	
	Fountain, Lake Street, Oak Park, Ill.	
	Barton House, Buffalo, N. Y.	
	Darwin D. Martin House, Stable, Gardener's Cottage, Greenhouse and Garden, Buffalo, N. Y.	
	W. E. Martin House, Oak Park, Ill.	
	Gilmore House, Madison, Wis. Unsupervised.	
	Stanton House, Iowa.	
	Ziegler House, Frankfort, Ky.	
	Ziegler House, Iowa	
	Heath House, Buffalo, N. Y.	
	C. E. Roberts Stable, Oak Park, Ill.	
	Cragin House, Grand Beach, Ill.	
1904–1905	†Administration Building, Larkin Soap Factory, Buffalo, N. Y.	

Frank Lloyd Wright	1905	R. M. Lamp House and Camp, Madison, Wis.
		Barnes House, McCook, Neb.
		F. W. Little Cottage and Stable, Lake Minnetonka, Minn.
		Ingalls House, River Forest, Ill.
		Moore House, II, Forest Avenue, Oak Park, Ill.
		E. A. Cummings Real Estate Office, Oak Park, Ill.
		Walser House, Austin, Ill.
		Evans House, Longwood, Ill.
		Baldwin House, Kenilworth, Ill.
		Evanston Model House, Evanston, Ill.
	1905–1906	Unity Temple, Oak Park, Ill.
	1906	Beachy House, Oak Park, Ill.
		Scudder House, Campmendour Island, Ontario, Canada
		Frank Smith Bank, Dwight, Ill.
		George M. Millard House, Highland Park, Ill.
		River Forest Golf Club, River Forest, Ill.
		Thurbers Art Gallery, Fine Arts Building, Chicago, Ill.
		Gridley House, Elgin, Wis.
		F. J. Baker House, Wilmette, Ill.
		Storrs Building, Wilson Ave., Chicago, Ill.
		Thomas H. Gale Cottage, Oak Park, Ill.
		Irving House, Decatur, Ill. Unsupervised.
		Walter Gale House, Oak Park, Ill.
		Larkin Building, Tercentennial Exposition, Jamestown, Va.
		[Project for skyscraper in San Francisco, Cal.]
	1907	Tomek House, Riverside, Ill.
		F. S. Baker House, Wilmette, Ill.
		Carnegie Library, Pembrock, Ottawa, Canada.
		*†Isabel Roberts House, River Forest, Ill.
		Horner House, Birchwood, Ill.
		Stewart House, Fresno, Cal.
		William Norman Guthrie House, Seewanee, Tenn.
		Hunt House, LaGrange, Ill.
		Steffens House, Sheridan Road, Birchwood, Ill.
		Rhodes House, South Bend, Ind.

Frank Lloyd Wright

1907–1908	Coonley House and adjuncts, Riverside, Ill.
1908	[Project for Harold McCormick House, Lake Forest, Ill.]
1908–1909	*†Robie House, Woodlawn Avenue, Chicago, Ill.
1909	Additions to Clark (formerly Little) House, Peoria, Ill. Mueller House, Decatur, Ill. Unsupervised. May House and Garage, Grand Rapids, Mich. Amberg House and Garage, Grand Rapids, Mich. Alteration of Fabyan House, Geneva, Wis. Alterations of Lake Geneva Country Club, Geneva, Wis. Hoyt House, Geneva, Wis.
1910	City National Bank Building and Hotel, Mason City, Iowa. Exhibits at Madison Square Garden, New York.
1911	Angster House, Lake Bluff, Ill. Taliesin I, House, Studio and Farm Buildings, Spring Green, Wis. Harry S. Adams House, Oak Park, Ill. Booth House, Glencoe, Ill. Government Recreation Pavilion, Banff, Alberta, Canada
1912	Lake Geneva Country Inn, Geneva, Wis. Unsupervised. House at Palm Beach, Fla. Three Houses for S. M. Booth, Glencoe, Wis. Unsupervised.
1912	Carr Cottage, Grand Beach, Mich. Bach House, Chicago, Ill. Boynton House, Rochester, N. Y. Henry J. Allen Gardenhouse and Garage, Wichita, Kan. A. D. German Warehouse, Richland Center, Wis. Greene House, Aurora, Ill. Voight Cottage, Grand Beach, Ill. Bogk House, Milwaukee, Wis. Richards Brothers Flats, Milwaukee, Wis.

Frank Lloyd Wright

1913
Hulteen House, Sheridan Road, Chicago, Ill. Unsupervised.
Concrete Bridge on Booth estate, Glencoe, Ill.
Hunt House, Oshkosh, Wis.
Coonley Playhouse and Kindergarten, Riverside, Ill.
Post-Office, Ottawa, Canada.
Nicolas House, Flossmoor, Ill.
Hilly House, Brookfield, Ill.
Midway Gardens, Midway Plaisance, Chicago, Ill.
Little House, Minneapolis, Minn.

1913–1914
[*Ready-cut* standardized wooden houses, and apartments. 35 designs.]
Ready-cut Houses built in seventeen different cities.

1914
Double House, Ottawa, Canada.

1914–1915
Taliesin II, Spring Green, Wis.

1915
Barnsdall House and adjuncts (now California Art Club), Olivehill, Hollywood, Cal.
Barnsdall House, Model A, Olivehill, Hollywood, Cal.

1916–1920
Hotel Imperial and adjuncts, Tokyo, Japan.

1917
Barnsdall House, Model B, Olivehill, Hollywood, Cal.
Aizaku Hayashi House, Komazawa, Tokyo, Japan.

1918
Jiyugakuen Girls' School, Tokyo, Japan.

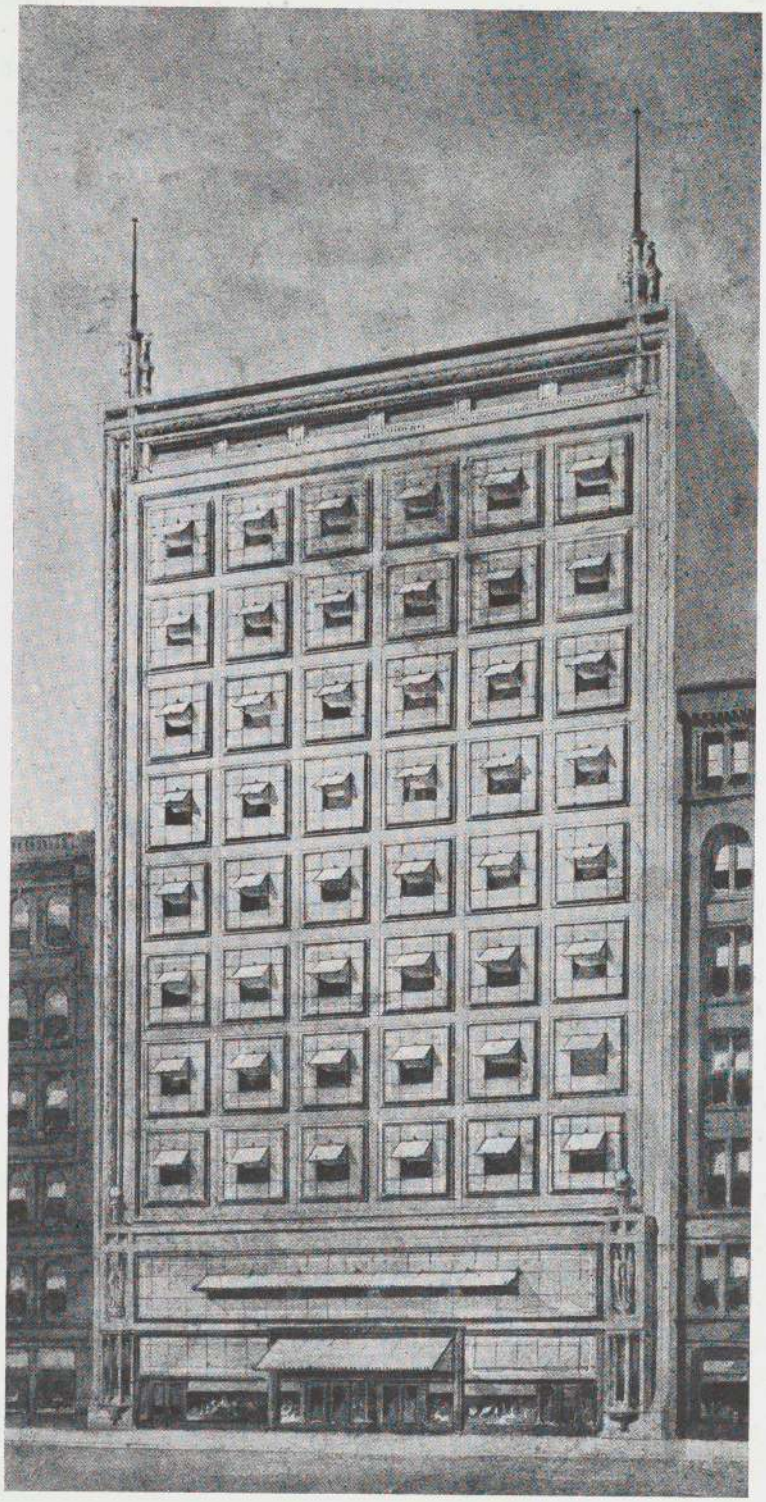
1920
[Project for Copper and Glass Skyscraper.]

1921
*†Millard House, Pasadena, Cal.
Storer House, Hollywood, Cal.
Yamamura House, Ashiya, Japan.

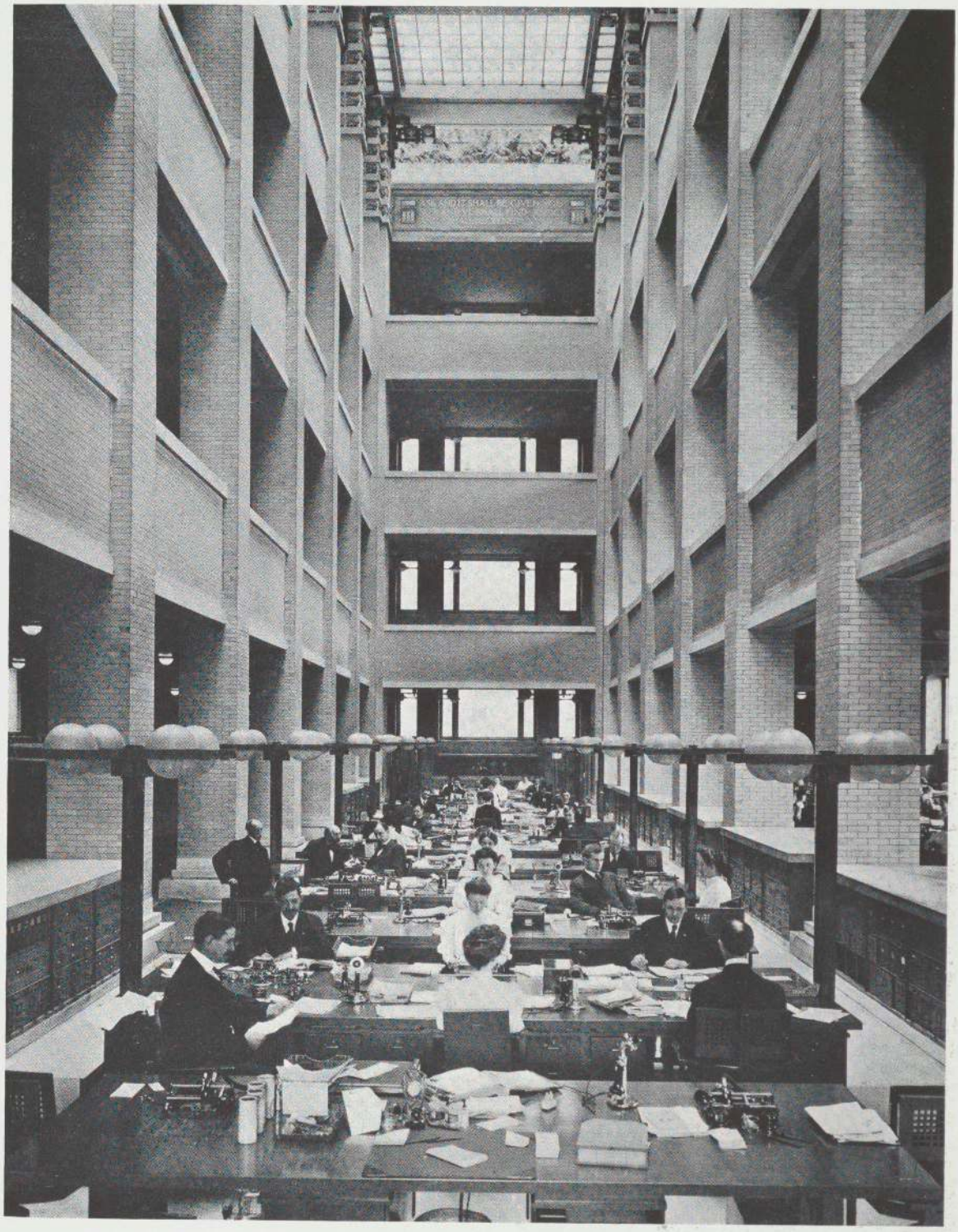
1922
Neighborhood Playhouse, "The Little Dipper" for Aline Barnsdall. Uncompleted. Hollywood, Cal.
Fukuhara-san House, Hakone, Japan.
Freeman House and Garage, Hollywood, Cal.
[Project for Doheny Ranch in the Sierra Madre, Cal.]

1923	Ennis House and Garage, Hollywood, Cal. [Project for Summer Colony at Lake Tahoe, Cal.]	*Frank Lloyd Wright*
1924	D. D. Martin House, Lake Erie.	
1925	*Taliesin III, Spring Green, Wis.	
1929	Architect's Camp, Salt Range near Chandler, Ariz. [Project for San Marcos-in-the-Desert Winter Resort, Ariz.] Chandler Desert Camp, Chandler Heights, Ariz.	
1930	Gallery for Millard House, Pasadena, Cal.	
1931	*†R. L. Jones House and adjuncts, Tulsa, Okla.	
1932	†[Project for house on the Mesa, Denver, Col.]	

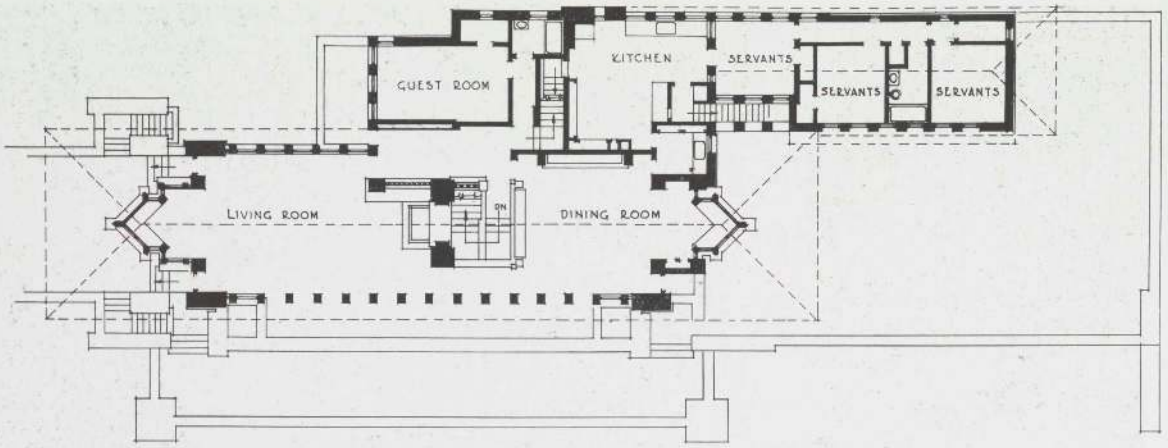
NOTE: This list of executed work and projects has been provided by Mr. Wright, together with the recorded dates.



FRANK LLOYD WRIGHT: Project for an Office Building. 1894



FRANK LLOYD WRIGHT: Administration Building, Larkin Soap Factory
Buffalo, N. Y. 1904–1905—Interior



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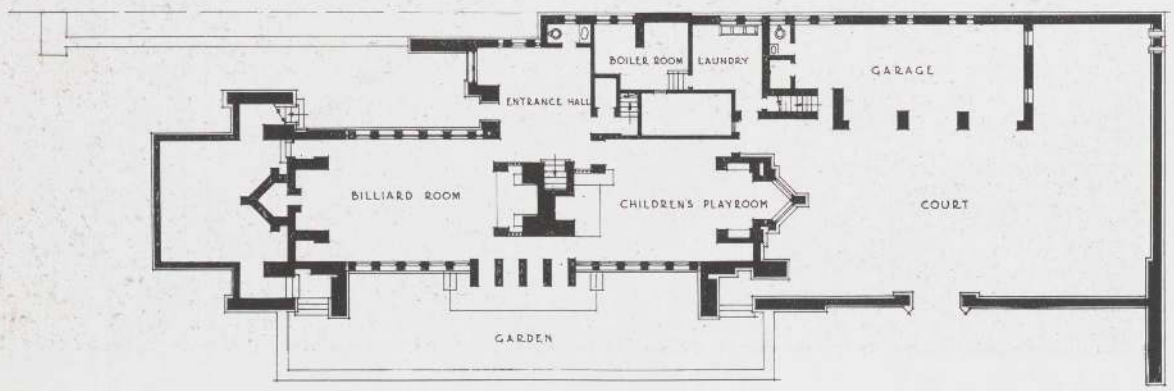

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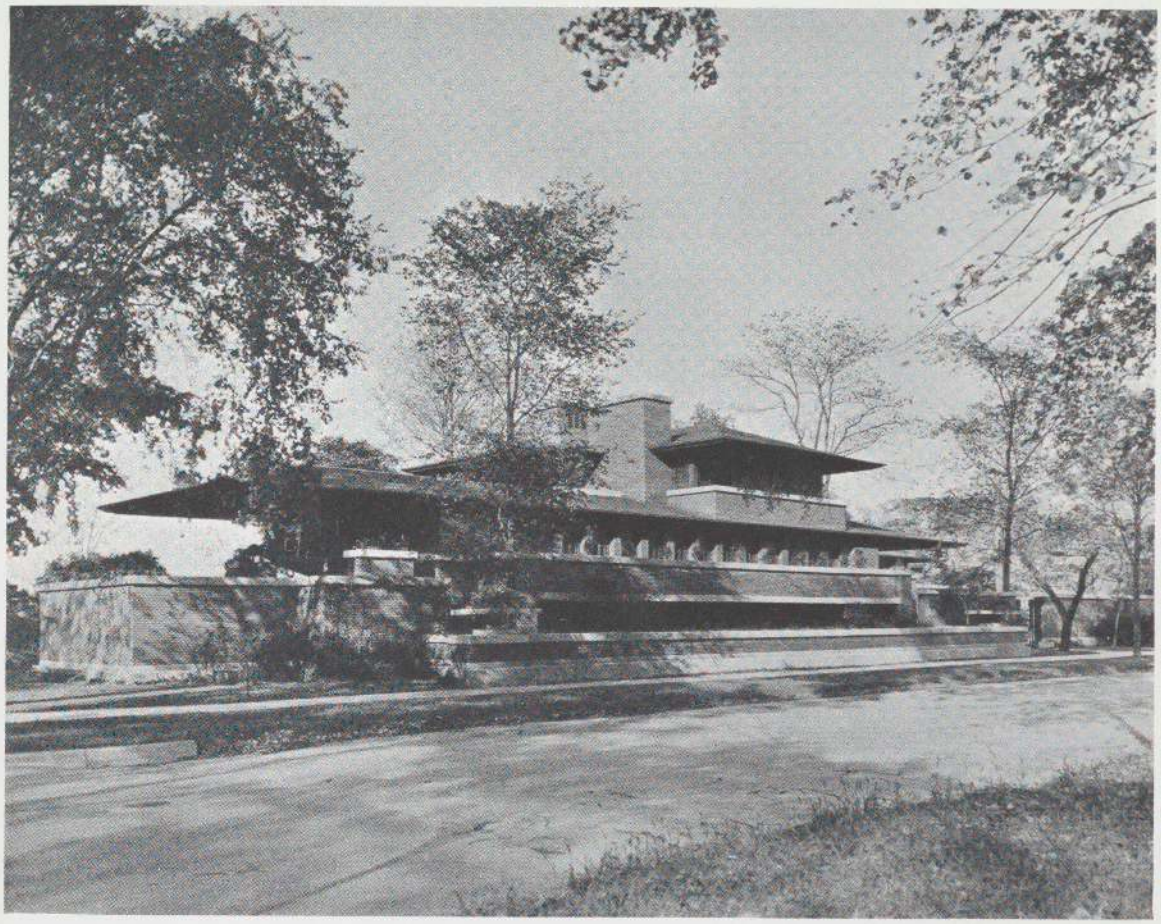
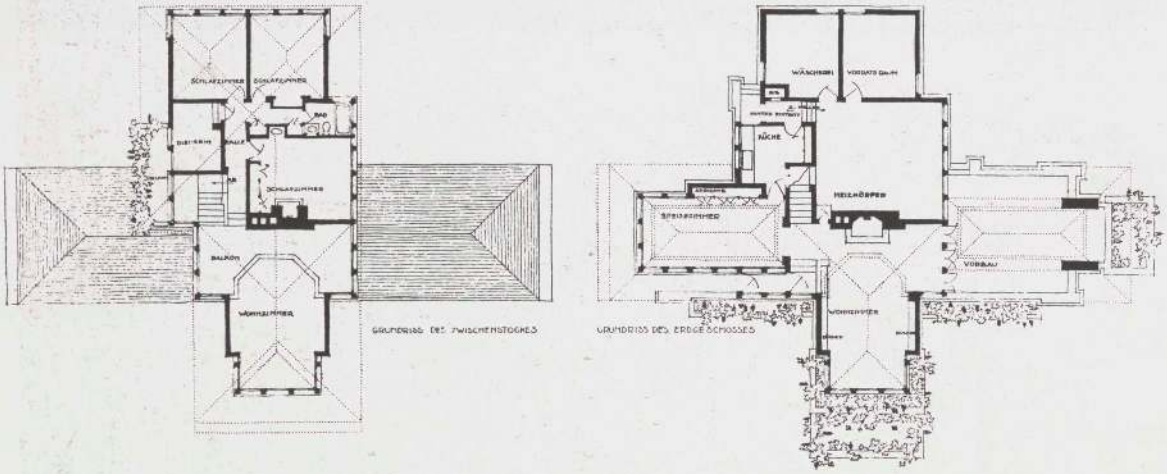
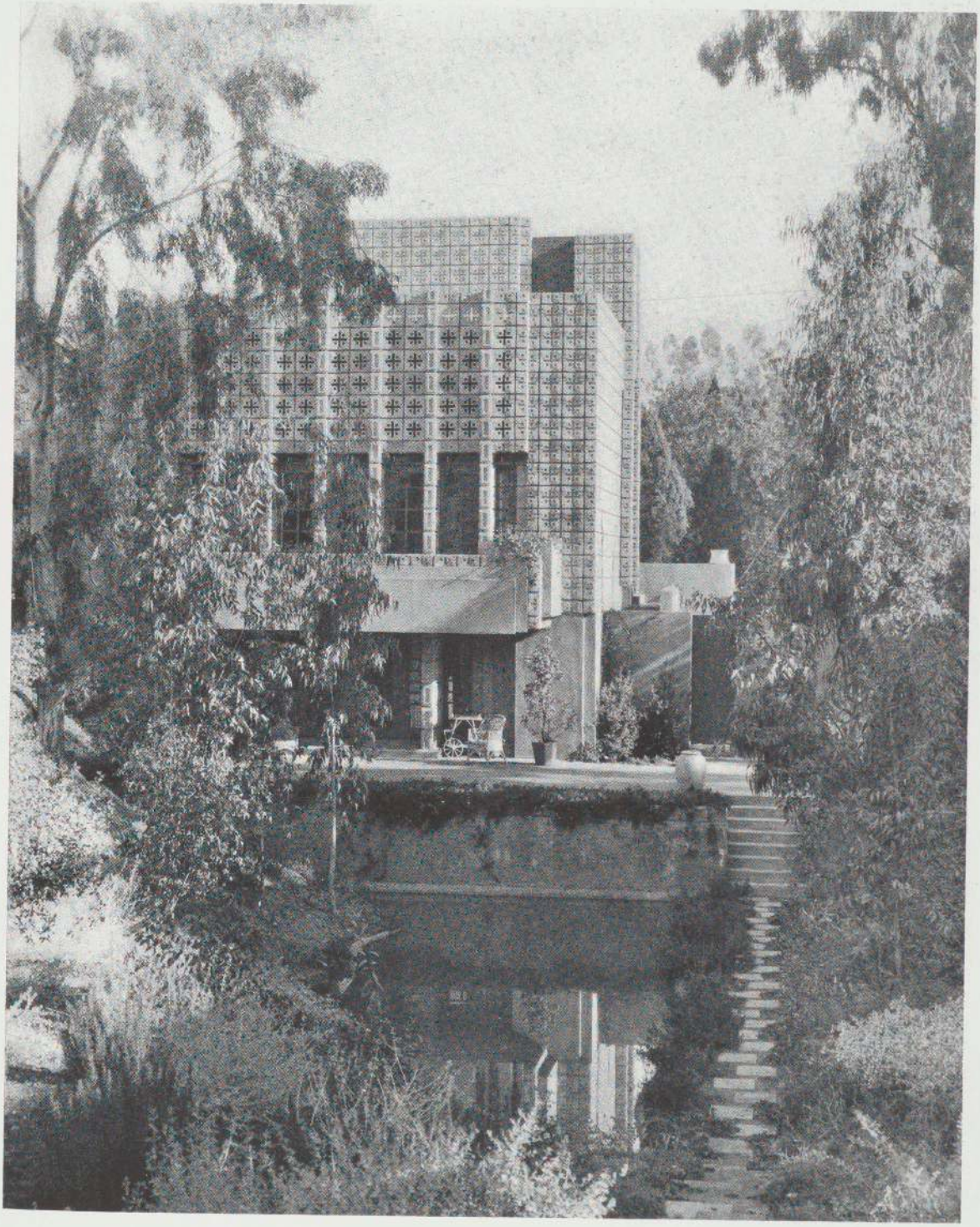


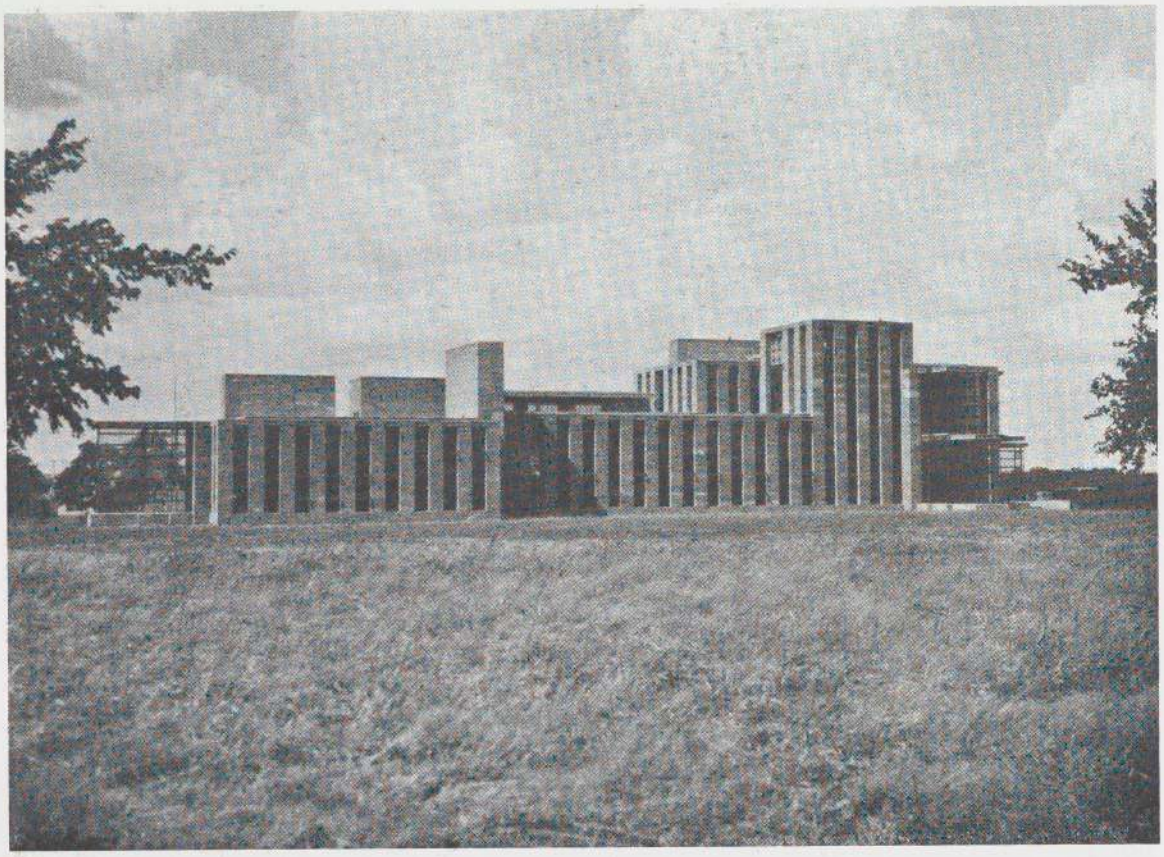
FRANK LLOYD WRIGHT: Robie House, Woodlawn Avenue, Chicago, Illinois.
1908–1909



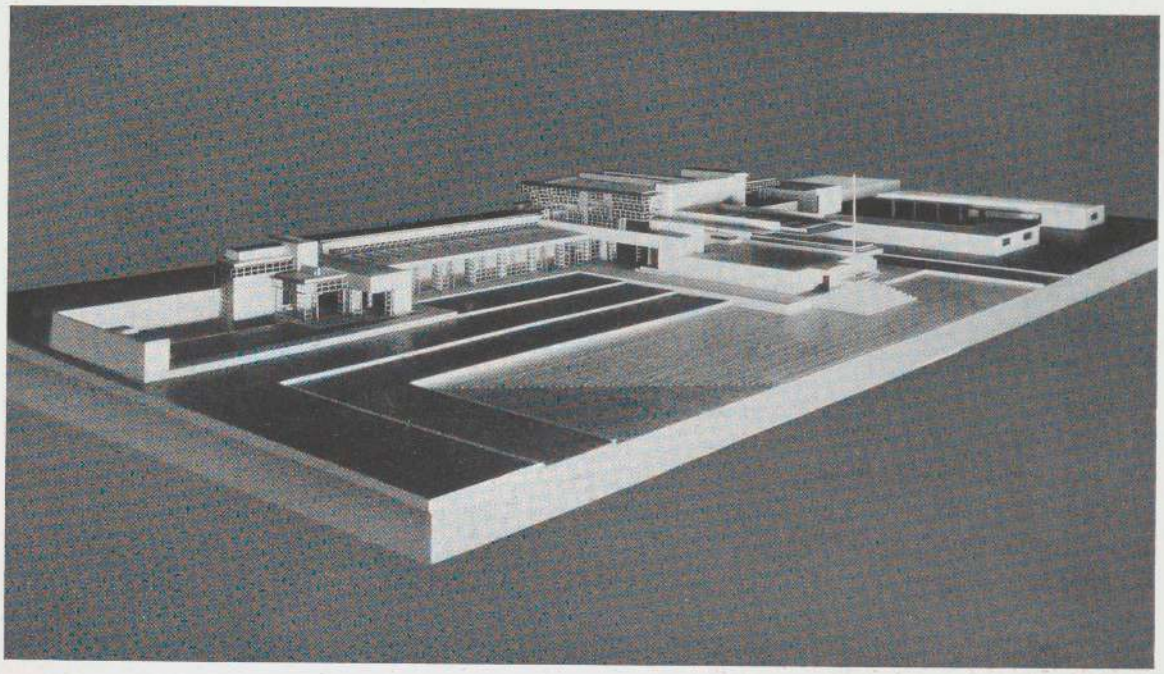
FRANK LLOYD WRIGHT: Isabel Roberts House, River Forest, Illinois. 1907

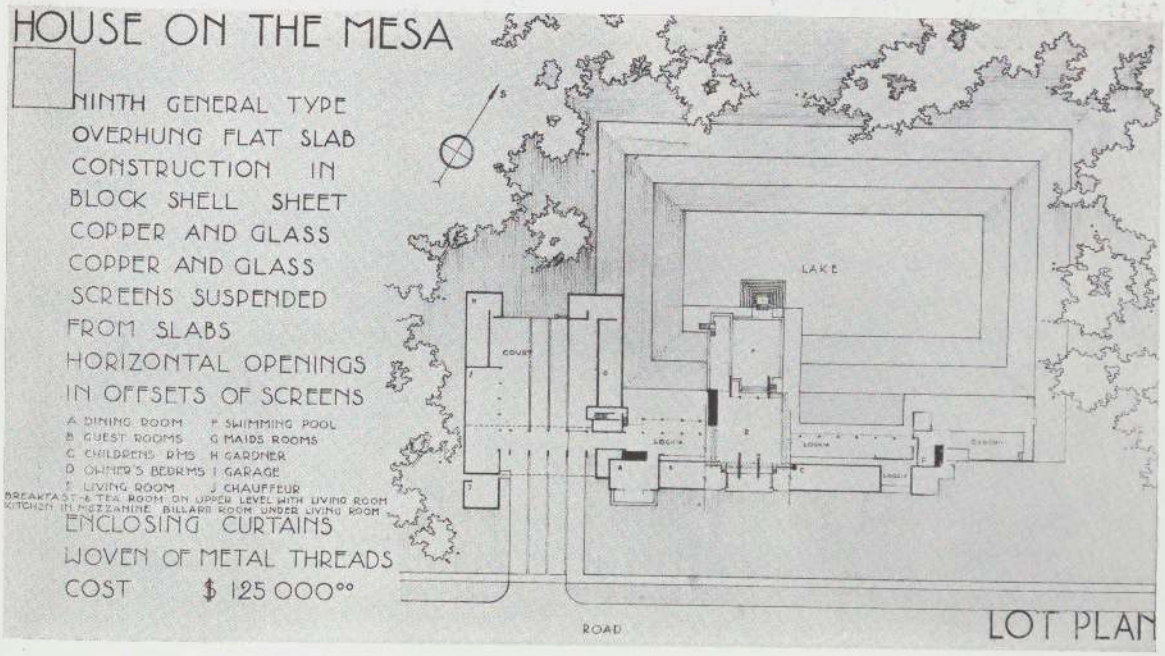


FRANK LLOYD WRIGHT: MILLARD HOUSE, PASADENA, CALIFORNIA. 1921



FRANK LLOYD WRIGHT: R. L. Jones House, Tulsa, Oklahoma. 1931





FRANK LLOYD WRIGHT: Project for House on the Mesa, Denver, Colorado

WALTER GROPIUS

WALTER GROPIUS was born in 1883. His great uncle was a pupil and follower of the distinguished German Neo-Classicist, Schinkel. His father was a member of the Berlin Building Commission. From his earliest years Walter Gropius intended to follow in the family tradition. He began his studies at the Technische Hochschule in Berlin-Charlottenburg. He soon left, however, as he found the emphasis on traditional design and the general method of instruction not what he wanted. He completed his formal education in the Munich Technische Hochschule, but he learned more in architectural offices than in schools.

EARLY WORK

After working with Solf and Wichards and other architects for several years, he had in 1906 an opportunity to build some workmen's houses on his uncle's estate in Pomerania (p. 65). These houses of bricks and other local materials are already a manifestation of *Sachlichkeit*, although the construction is traditional and the design symmetrical.

After traveling for two years, especially in Spain, and also in England and Italy, he returned to Germany. He then entered the office of Peter Behrens. In these years his theories of architecture developed rapidly. He collaborated with Behrens on the famous group of houses at Hagen-in-Westphalen and superintended their construction. Then in 1910 he was commissioned with Adolf Meyer to build the Fagus factory (p. 66) in Alfeld-an-der-Leine. There he was free to work out an industrial complex quite without reference to the architecture of the past and yet with thoroughness and distinction. The Alfeld factory is an epoch-making work with its great walls of windows, and its completely regular design devoid of decorative features. It may be considered the most advanced piece of architecture built before the War.

FACTORY AT ALFELD

In the Werkbund Exposition of 1914 in Cologne he was given charge of the industrial section. Although the architects at the head of the exposition had not intended this to be an important feature, Gropius succeeded in obtaining financial assistance from the industrial leaders of the Rhineland to build an impressive Hall of Machinery. This was heavier in design than the Alfeld factory and more influenced by Wright. Except for the remarkable all-glass stair turrets it was altogether much less interesting and advanced. But it was seen by everyone who came to the Exposition and established Gropius' position as one of the most original younger architects.

COLOGNE EXPOSITION BUILDING

After the War Gropius was made director of the Grand Ducal Art School at

Gropius

BAUHAUS AT WEIMAR

Weimar, the position which the pioneer Henry Van de Velde had held before the War. This Weimar School soon developed into the famous Bauhaus. Gropius was much influenced by the associates who worked with him at Weimar, the abstract painter, Kandinsky, the constructivist, Albers, and others. The Neoplasticist, Theo van Doesburg, although never a member of the Bauhaus, spent some time there in 1922. Gropius had produced in the early years of the Bauhaus an Expressionist war memorial and a wooden block-house elaborately decorated with abstract carvings. Under the influence of Van Doesburg's Neoplasticism, Gropius found again the path of modern architecture on which he had set out so brilliantly in the Alfeld factory. In remodelling the theater in Jena in 1922 he already achieved smooth stucco walls and rigidly geometrical forms, but it was still primarily a mere simplification of traditional design. In the projects of these years, however, Gropius made many experiments with block composition in which he continued further the aesthetic investigations of Van Doesburg and pursued on his own initiative the problems of mass production housing.

These years in Gropius' career were undoubtedly confused by the double influence of Expressionism and Neoplasticism but Gropius, the technician, was continually advancing. The house he built in Jena in 1924 with its roof terraces, broad windows, thin railings and plane walls is not distinguished in design,but it marked the end of the preparatory period, and his first application of modern methods of construction to the dwelling house.

BAUHAUS AT DESSAU

When in the next year the Bauhaus left Weimar and settled in Dessau, Gropius was ready to undertake the largest modern project thus far executed, the building for the school itself. The Bauhaus (p. 67), together with the nearby group of Professors' houses, was completed in 1926 and remains today one of the most considerable and impressive works of modern architecture. The functional articulation of the plan (p. 67), the bold ribbons and walls of glass, the masterly adjustment of a variety of rhythms of monotonous regularity to produce a general composition at once rich and serene, have hardly been surpassed. There are crudities in detail and a certain heaviness in some of the proportions, but not until Le Corbusier's League of Nations project of the next year was any such ample application of the growing style even conceived on paper.

HOUSES FOR PROFESSORS AT DESSAU

The houses for the professors are less successful. The arbitrary piling of the blocks and the strong contrasts in window shapes continue the specifically Neoplasticist manner. At the same time, however, Gropius had an opportunity better suited to his technical and organizing ability than the building of bour-

geois houses. The inexpensive housing development in the suburb of Törten (p. 68) is extremely successful in planning and in the use of concrete in mass production. It was also more disciplined in design. In the two houses at the Weissenhof Housing Exposition of 1927 in Stuttgart, Gropius introduced all steel construction and with more money to spend produced designs definitely more interesting than those at Törten, even if not comparable to those of Oud and Le Corbusier at the same exposition.

STUTTGART

The work done at Dessau and Törten in 1928 was Gropius' best in point of design. The apartment house with attached stores at the center of Törten provided an accent to the general composition of the community. The City Employment Office (p. 69) in Dessau with its skilfully organized plan and its asymmetrical façade design represents in its way as great an achievement of modern architecture as the Bauhaus itself. The extent is much less but the quality of the organization definitely higher. Brick has seldom been used so effectively in the post-War style.

DESSAU EMPLOYMENT OFFICE

The Lewin house in Berlin-Zehlendorf, although better than the professors' houses at Dessau, was less successful (p. 70). Gropius works best with larger problems of general sociological significance. He can raise ordinary building to the level of fine architecture; but he is not assured enough as an artist to produce architecture for its own sake.

LEWIN HOUSE

In 1929 and 1930 Gropius found important housing work to do. At the Dammerstock Siedlung outside Karlsruhe he was in general charge. He provided the plot plan and the specifications for the whole. Various other architects including Haesler worked with him, each designing a block or row of dwellings. Gropius' own designs for an apartment and several rows of small houses were somewhat monotonous but excellently disposed. The apartment houses he built shortly afterward at Berlin-Siemensstadt were even more considerable in size and extent although the relation of the balconies and stair windows to the general fenestration scheme was not altogether satisfactory. From the days of the Bauhaus Gropius has had a tendency to emphasize the horizontal grouping of windows by using dark color on the vertical dividing members which are better treated as part of the general wall surface. In this respect and in certain other details he shows a less scrupulous honesty in design than the other leaders of modern architecture.

HOUSING NEAR KARLSRUHE

In the Paris Salon des Arts Décoratifs in 1930 and in the Berlin Building Exposition of 1931 Gropius exhibited the common rooms of a bachelor apartment

EXPOSITIONS PARIS AND BERLIN

Gropius house and the projects for an elaborate development of this sort of housing. Associated with him in these projects were the architect and furniture designer, Marcel Breuer, and the theorist, Moholy-Nagy, who were important members of Gropius' Bauhaus group. Gropius had left the Bauhaus in 1928 to resume private practice in Berlin, but his name is inseparably associated with that institution. In the work he has accomplished as organizer and technician, his ideas have been close to those of the functionalists. Under Hannes Meyer, who succeeded Gropius at the Bauhaus, the functionalists for a time obtained control. Meyer has built at Törten apartments deliberately devoid of aesthetic interest.

ACHIEVEMENT OF GROPIUS

Gropius on the contrary has always believed in the aesthetic possibilities of modern architecture even in the field of minimum building. His sense of design is less refined than that of Oud or Le Corbusier or Miës van der Rohe, but his achievement because of its wide significance has nevertheless been comparable to theirs. Indeed, modern architecture, at first widely believed to be synonymous with the work of Le Corbusier, was for a time considered the almost exclusive product of the Bauhaus and best represented by the buildings of Gropius. His work has been especially responsible for the rapid conversion of German officials and general public to modern architecture. As the formulator at the Bauhaus of a resolutely modern system of artistic education and the first great post-War leader in the field of minimal housing, Gropius' accomplishments have more social significance than those of any other modern architect.

THE MODEL IN THE EXHIBITION: BAUHAUS, DESSAU, GERMANY. 1926 (p. 67)

The different parts of the Bauhaus complex are clearly separated in plan and distinguished from one another in design. The tall block is made up of small apartments each one of which has its own balcony. The low connecting wing contains the dining room and the main lecture hall. The attempt to continue the banded effect of the rest of the design here by painting the separations between the windows dark gray indicates Gropius' lack of delicate aesthetic conscientiousness. No other great modern architect would have done this; but on the other hand few could have handled so effectively the repeated units of the apartment façade without monotony.

The great glass-walled block which is the most startling feature of the Bauhaus includes the workshops. The capping band of stucco is somewhat heavy in

appearance but the adjustment of the glass walls to the solid stair tower at the far end is extremely skilful. The profiling of the exposed concrete supports under the administration bridge is somewhat lacking in elegance. Yet the fashion in which the bridge joins the separate east wing containing the independent Dessau Trade School to the main building represents Gropius' talent for well-articulated functional expression at its best. The east wing by itself is a somewhat monotonous composition of successive ribbons of glass and stucco. Its great interest lies in the contrast established with the apartment tower and the glass block. The great size of the building and the extension of the wings permit it to be seen effectively from various different points of view.

HENRY-RUSSELL HITCHOCK, JR.

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Gropius has written many articles on housing problems which have appeared in German magazines and in special pamphlets published by the *Reichsforschungsgesellschaft*. He prepared the catalog for the Dammerstock Siedlung Exposition in Karlsruhe, 1929. He is also general editor of the thirteen *Bauhausbücher*.

WALTER GROPIUS—CHRONOLOGY OF LIFE

1883	Born in Berlin.
1904–1907	Studied architecture at the Berlin and Munich Technische Hochschulen.
1907–1908	Traveled in Spain. Worked in pottery factory. Returned by way of Italy and England.
1908–1910	Assistant to Peter Behrens with whom he received his real architectural training.
1910	Established himself as architect in Berlin.
1914	Appointed Director of the Industrial Section of the Werkbund Exposition at Cologne.
1914–1918	Fought in War.
1918	Founded the *Arbeitsrat für Kunst.*
1919	Appointed Director of Grand Ducal Art School and Arts and Crafts School at Weimar which he united and reorganized under the name of the Staatliches Bauhaus.
1925	Bauhaus moved to Dessau where Gropius built a complete new plant for the school.
1928	Moved to Berlin to resume private practice. Won First Prize in Federal Government competition for the experimental Siedlung at Berlin-Haselhorst, and also in the competition for the Dammerstock Siedlung at Karlsruhe. Only the latter was executed.
1929	Received Degree of Honorary Doctor from the Technische Hochschule of Hanover.
1930	Directed the Deutscher Werkbund Exhibition at Paris Salon. Chairman of Committee on Design of the Adler Automobile Company.

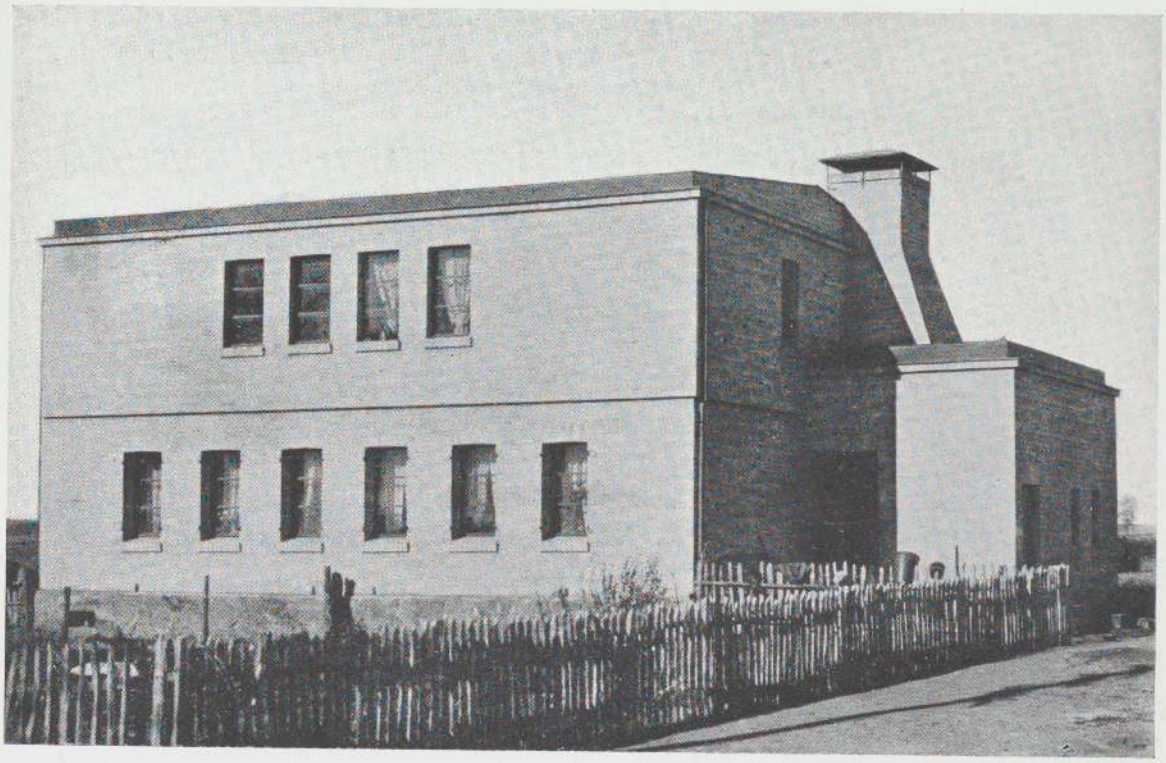
WALTER GROPIUS—LIST OF WORK

The model in the Exhibition represents the Bauhaus, Dessau, 1926.

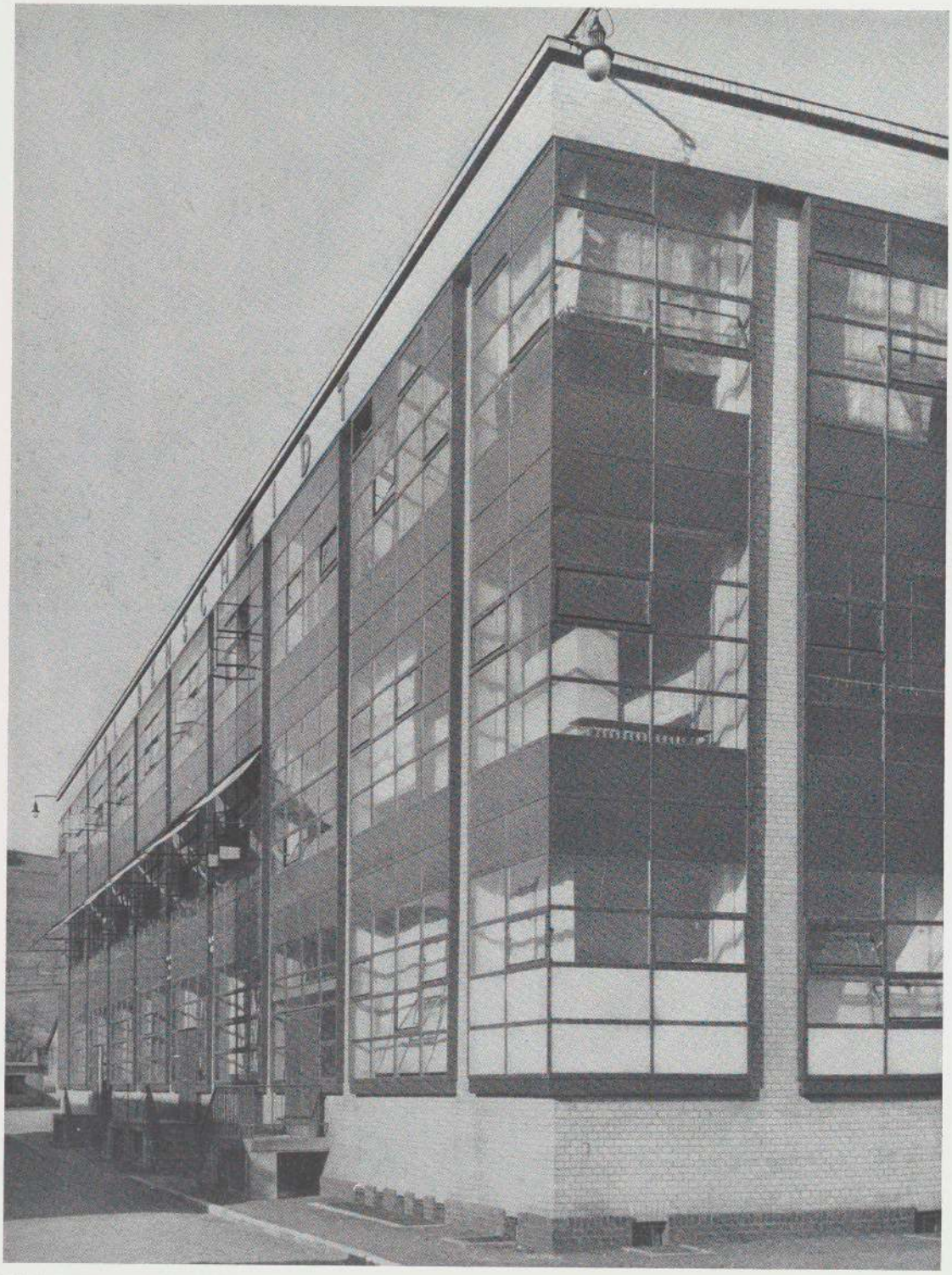
* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1906	†Houses for workmen in Pomerania.
1910–1914	*†Fagus Factory, Alfeld, near Hanover.
1911	Housing Development in Wittenberg-an-der-Elbe.
1914	Hall of Machines at the Deutscher Werkbund Exposition at Cologne.
1921	[Projects for mass production houses.] War Memorial at Weimar.
1922	Sommerfeld Block House, Berlin. Otte House, Berlin-Zehlendorf. Remodelling of the Civic Theater, Jena. [Project for the Chicago Tribune Competition.]
1923	Paper factory at Alfeld near Hanover. [Project for a School of Philosophy.]
1924	House in Jena.
1925–1926	*†Bauhaus, Dessau *Professors' Houses, Dessau
1926–1928	†National Experimental Housing (316 units) at Dessau-Törten.
1927	Two houses at the Weissenhof Housing Exposition, Stuttgart
1928	*Shops and Apartment House, Dessau-Törten. †Lewin House, Berlin-Zehlendorf. *†City Employment Office, Dessau. [Prize project for the Federal Experimental Housing Development, Berlin-Haselhorst.]

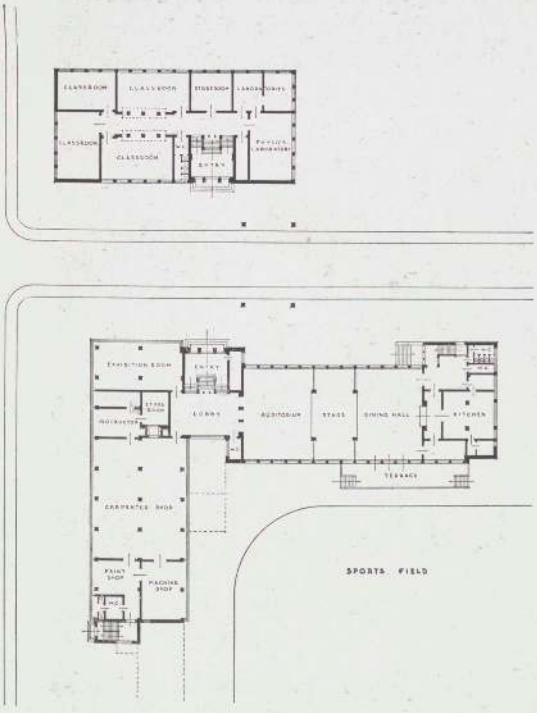
Gropius	1929	Experimental Housing Development, Apartments and Houses, Dammerstock, Karlsruhe.
	1930	Apartment development for the City of Berlin, Berlin-Siemensstadt.
		Apartment Houses for the City of Frankfort. Unsupervised.
		Part of a Community Apartment Project at the Paris Salon.



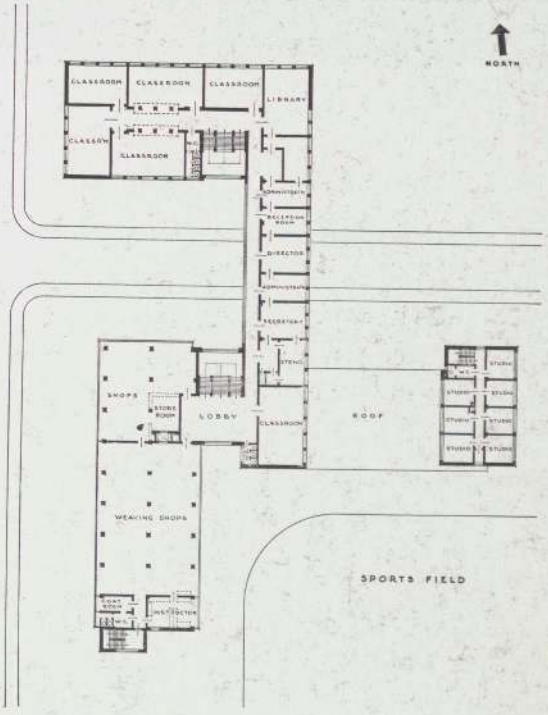
WALTER GROPIUS: Houses for Workmen, Pomerania, Germany. 1906



WALTER GROPIUS: Fagus Factory, Alfeld, near Hanover, Germany. 1910–1914



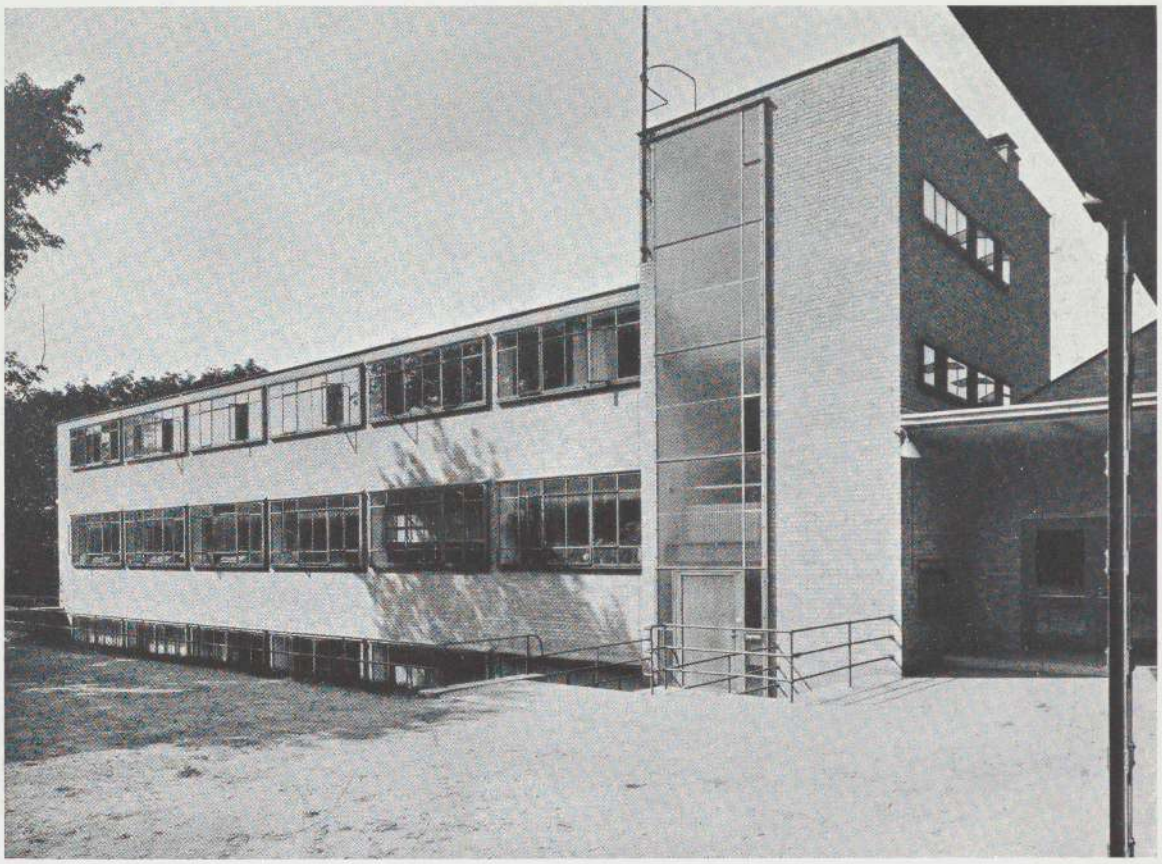
GROUND FLOOR



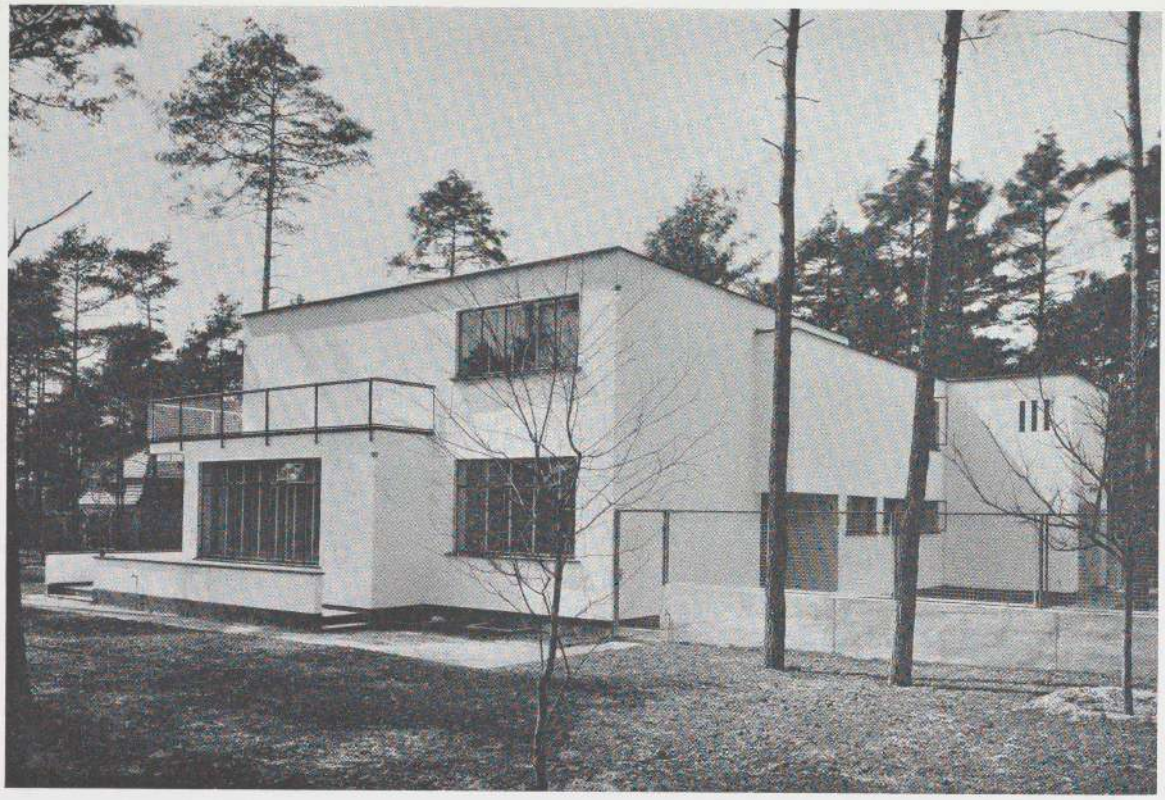
SECOND FLOOR

WALTER GROPIUS: Bauhaus School, Dessau, Germany. 1925–1926

WALTER GROPIUS: Experimental Housing Development
Dessau-Törten, Germany. 1926–1928



WALTER GROPIUS: City Employment Office, Dessau, Germany. 1928



WALTER GROPIUS: Lewin House, Berlin-Zehlendorf, Germany. 1928

LE CORBUSIER

LE CORBUSIER's real name is Charles-Edouard Jeanneret. He was born in 1888 at La Chaux-de-Fonds near Geneva in Switzerland. His father was a watch manufacturer with many intellectual interests; his mother was musical.

EARLY EDUCATION

At the age of thirteen Le Corbusier entered the School of Arts and Crafts in La Chaux-de-Fonds. Here he remained until he was seventeen studying as an engraver and profiting from the ideas of his teacher, L'Epplatennier. The influence of Naturalism and of the Art Nouveau was strong in L'Epplatennier's teaching. He formed a group of fifteen students in the various arts, permitting them to collaborate in designing a house for him. In this group it fell to Le Corbusier to take charge of the architecture. This was a typical Swiss house with gable roof and balconies, elaborately decorated inside and out by L'Epplatennier's pupils in the manner of the Art Nouveau. But Le Corbusier claims that he used here the first corner window.

TRAVELS

With the money he received for his work on this house Le Corbusier traveled in Italy, interesting himself particularly in early medieval art. In 1908 he went to Vienna, then a center for modern industrial and decorative arts, with the intention of studying architecture. Despite his respect for Josef Hoffmann, under whom he worked for a very brief period, Le Corbusier was soon disgusted with the preeminently decorative point of view of the Viennese. Yet, romantically enough, it was Puccini's *Bohème* which inspired him to move to Paris.

WITH PERRET IN PAIRS

Through the publisher Grasset he met Auguste Perret with whom he worked for nearly two years. Perret was the great influence on his later career, for from him he learned to appreciate the possibilities of modern construction. Perret encouraged him also to study physics and mathematics and other technical matters. This counteracted the decorative tradition of his earlier training. Le Corbusier was also studying and sketching at this time the little known collections of primitive art in the ethnological museum of the Trocadéro, which the modern painters were just beginning to discover.

BERLIN AND THE NEAR EAST

In 1910 Le Corbusier went to Germany, working for nearly half a year under Peter Behrens. Then, finding Berlin unsympathetic, he went traveling again down the Danube to Constantinople, Asia Minor, and Greece. The spirit of Hagia Sophia and of the Parthenon deeply affected him as did also the simple domestic architecture of the Orient. On his way home he saw in Rome the work of Michel Angelo, which also aroused his particular admiration.

Upon his return to La Chaux-de-Fonds, L'Epplatennier's group considered him already too revolutionary. They distrusted, moreover, the Mediterranean sense of form which had come more and more to dominate his aesthetic ideas. Yet the house he built for his father in 1911 was still rather in the Swiss tradition. The white stucco walls and the horizontal grouping of the windows suggested the direction in which he was moving, as did also the simple metal pipe railing.

HOUSE AT LA CHAUX-DE-FONDS

Establishing himself as an architect in Paris just before the outbreak of the War, he found no work to do and was forced to obtain a position as manager in a factory. In 1916, however, he built a house in La Chaux-de-Fonds (p. 82) in which he took full advantage of what he had learned from Perret. The general feeling was still symmetrical and reminiscently Classical like Perret's own work, although composed on a rigidly geometrical scheme of abstract proportions. The open planning and the study of interior space was highly original, passing even beyond Wright's innovations in plan. It was Le Corbusier's first attempt to apply both a new technic and a new aesthetic to the dwelling house.

EARLY PROJECTS

During the years of the War while he was in business, Le Corbusier also gave much attention to the problems of sociological housing. The *Dom-ino* houses of 1915 suggest the simplified architecture of the Austrian Loos in their design more than the work of Perret. But in the use of ferroconcrete skeleton construction the influence of his Parisian training appears. And in the project of 1917 for abattoirs near Bordeaux, industrial building in ferroconcrete is for the first time given conscious architectural character without even the slight vestiges of tradition which lingered in Gropius's Alfeld factory of 1911.

L'ESPRIT NOUVEAU

At the end of the War Le Corbusier turned for a time to painting, developing with Ozenfant from Cubism a theory of painting known as Purism. In 1920 he and Ozenfant founded *L'Esprit Nouveau*, a review in which they asserted their ideas on all the arts. When the business Le Corbusier was in failed in 1921 he began again to practise architecture in Paris in partnership with his cousin Pierre Jeanneret. At this time he took the name of Le Corbusier (that of his maternal grandfather) since he preferred to save the name Jeanneret for his painting.

VERS UNE ARCHITECTURE

During the years just after the War he continued to prepare projects of model houses for mass production. The *Citrohan* project perfected in the years 1919–22 may be considered as the point at which his various aesthetic and technical innovations crystallized to form a wholly new style. In 1923 in his first book, "*Vers une Architecture*," he elaborated and articulated his theories, pro-

viding a program for modern architecture which has been immensely influential throughout the world. In this book he emphasized sociological and technical matters, perhaps because there was then no vocabulary in which to describe the aesthetic of a style which was still in process of creation. But from the first in his executed buildings, he proved himself primarily an aesthetic creator.

VILLA AT VAUCRESSON

The villa at Vaucresson begun in 1922 is still somewhat transitional, particularly in its symmetry, but the great window areas, the flatness and thinness of the walls, make of it a composition in volume and not in mass. The Ozenfant house (p. 83), which was built in the next year, is much more advanced. The ribbon windows, the sawtooth skylights, the circular staircase represent the successful introduction into fine architecture of features hitherto restricted to industrial building. The proportions, moreover, are simpler and finer than at Vaucresson.

OZENFANT HOUSE

HOUSES AT BOULOGNE AND AUTEUIL

In 1923 and 1924, in the houses for the sculptors, Miestchaninoff (p. 84) and Lipchitz at Boulogne-sur-Seine, he experimented with polychromy—light orange and pale blue. The curves, the terraces and the railings of the Miestchaninoff house suggest steamships, in which Le Corbusier found a fresh source of inspiration for modern design. In the La Roche-Jeanneret houses built at the same time at Auteuil this marine influence was better fused in the general design. The polychromy also is more subtle and restrained: chocolate detail against off-white stucco.

VOISIN PLAN FOR PARIS

In 1925 Le Corbusier's fame began to spread. His books were becoming known; his ideas were being discussed. At the Paris Exposition of Decorative Art his *Pavillon de L'Esprit Nouveau* represented an ideal unit in a great urban apartment house. Le Corbusier also displayed in connection with the pavilion his Voisin Plan for rebuilding the center of Paris as a city of isolated skyscrapers. This was based on an earlier urban project of 1922.

The technical and sociological studies which began with the *Dom-ino* houses in the early years of the War continued. *Vers une Architecture* served throughout the world to turn the attention of architects and public alike to a radical revision of the problem. Yet despite the Ribot and the Loucheur laws France lags almost as far behind Germany, Austria and Holland in this field as does the United States. The housing development at Pessac begun in 1925 would not have been built but for the Bordeaux industrialist, Henri Frugés, nor is it comparable in efficiency or extent to the work of Oud in Rotterdam or of May in Frankfort. Perhaps indeed Le Corbusier, for all his studies, is less temperamen-

HOUSING AT PESSAC

tally adapted than Gropius or Haesler to the difficult conditions of this most essential field of modern architecture. Yet those who have criticized Pessac as stressing the aesthetic element too much should not forget that the very basis of their criticism derives from the pioneer studies and propaganda of Le Corbusier in the years just after the War. In the grouping of the houses of various standardized types at Pessac and in the use of different colors on different walls throughout, he built up a general composition which was certainly more interesting and subtle than the German work of the period.

STUTTGART

When his housing ideas were brought into direct comparison with those of the Dutch and Germans at the Weissenhofsiedlung at Stuttgart in 1927, his imaginative recreation of the dwelling held its own beside the less drastic and more bourgeois planning of his European colleagues. His single house at Stuttgart—on the *Citrohan* model—and his double house were certainly the most striking, if less practical than those of Oud. The double house (p. 85) with its continuous living room windows toward the magnificent view over the valley and its partially sheltered roof terrace is a splendid example of the functional possibilities of horizontal design. At the same time the rear wings, differentiated from the main body of the house by their pale green color, provide a vertical and three dimensional interest as logical and as expressive of other features of the plan.

DOUBLE HOUSE

THE STEIN HOUSE AT GARCHES

The Stein house (p. 86), at Garches of 1927–1928 and the additions to the Church villa of 1929 continued the development of the individual dwelling begun with the Vaucresson villa and the Ozenfant house. Each year Le Corbusier's combination of ingenuity in construction and imagination in design has been better coordinated; each year he has come nearer to reformulating the concept of the house, not merely as a *machine à habiter*, but as a lyrical manifestation of architectural beauty. In his later work there is no hesitation. Le Corbusier composes in a wholly new style with as assured a hand as any Baroque architect in the style of the seventeenth and eighteenth centuries.

HOUSE AT ANTWERP

Working on a narrow city lot at Antwerp he handled the Guiette house of 1927, rising high on a narrow city lot, as brilliantly as the more extended Stein house at Garches set in an open suburb. In both houses the same classical restraint brought all the elements within a single frame and into close proportional relationship with one another. The same bold asymmetry, based on function, gave interest and accent to the essentially regular scheme. The same refinement of detail appeared in the treatment of windows and the adjustment of surfaces.

In the last five years Le Corbusier's opportunities have expanded from the single house to the great public monument. His plans for the palace of the League of Nations failed in the end to be chosen. Yet even conservative architects admitted that he was extraordinarily successful from a practical standpoint in his articulation of that enormous complex. His sense of design, moreover, grew broader and more dignified so that this composition while absolutely new was yet successful in achieving the grand manner. The Centrosoyus, a large government building in Moscow begun in 1929, is thus far only two stories above the ground. But the large Salvation Army Home in Paris begun last year is now nearly completed, a splendid example of Le Corbusier's ability to handle a great sociological structure as effectively as a single free standing house. The Swiss building at the Cité Universitaire in Paris is now also under construction. This university dormitory built under the auspices of the Swiss government contrasts curiously with the imitations of American imitations of Oxford and Cambridge which the French government has erected, and, above all, with the late Beaux Arts design done by a mediocre French architect for the American building at the Cité Universitaire. The Salvation Army Home, this Swiss building and an apartment house soon to be built in Geneva all have southern façades entirely of glass.

SALVATION ARMY HOME PARIS

SWISS DORMITORY, CITÉ UNIVERSITAIRE, PARIS

Few modern architects have attempted with more assurance than Le Corbusier the renovation of monumental architecture. There is no project for the great theaters and the parliament house proposed in Russia, for which all the young architects of the world are competing, which does not show the basic inspiration of his League of Nations design. There is no executed modern building which represents so complete a fusion of technical and aesthetic possibilities in a work of enormous size and elaborately differentiated functions.

Nevertheless Le Corbusier has made particularly his own the field of the individual dwelling house. From the house of 1916 at La Chaux-de-Fonds down to his latest houses in Paris and on the Riviera, he has brought to this problem an imagination as great as Wright's combined with an ability to keep to a consecutive line of development. The Savoye house (p. 87) at Poissy represents a sort of culmination. The two later houses, the penthouse on the Champs Elysées for M. de Beistegui (p. 89) and the villa at Le Pradet near Hyères for Mme. de Mandrot (p. 88), introduce innovations which are curiously enough in the line of older traditions. The de Beistegui apartment with its walls of white marble plaques attains a sumptuousness lacking in the houses surfaced with stucco. The

DE BEISTEGUI PENTHOUSE

DE MANDROT VILLA

de Mandrot house with its use of solid sections of rubble masonry wall as well as isolated piers to support the slab concrete roof indicates Le Corbusier's willingness to avail himself of authentic local building materials when they can be logically combined with modern methods of construction. In these exceptional works he seems less doctrinaire than previously and more the latest brilliant representative of the Mediterranean tradition.

Here as in his larger works, his creative capacity is displayed in the resolute synthesis of technical and aesthetic elements. The housing work at Pessac and the Salvation Army Refuge establish Le Corbusier as an architect of sociological importance comparable to Oud and Gropius. In the field of expensive residence architecture there is no one with whom he can be compared except Miës van der Rohe. His Savoye house at Poissy (p. 87), is in no way equivalent to Miës van der Rohe's Tugendhat house at Brno (p. 126). Each in its own way illustrates the validity and the idiosyncrasy of modern architecture as an art.

THE MODEL IN THE EXHIBITION: THE SAVOYE HOUSE, POISSY-SUR-SEINE. 1930 (p. 87)

SAVOYE HOUSE AT POISSY

The composition in plan and elevation of the Savoye House is more elastic than at Garches and yet brought entirely within a single rectangle. The extended relation of the parts which marked the Miestchaninoff-Lipchitz and the La Roche-Jeanneret houses was eventually at Garches brought within a single volume with some violence to the independence of the parts. In the Savoye House the general form has a crystalline clarity, but the rooms are arranged in relation to the open terrace of the living floor as freely and easily as if on the ground. The ribbon windows, first used in the Ozenfant House, are here carried all around the block, a device made possible by cantilever construction. Yet they are stopped at the actual corners in order that the bounding line of the general volume may not be broken. The isolated pier construction which became prominent at Garches is here used throughout. The round concrete piers and the beams they support are handled with an elegance which recalls at once the stone supports of the early Gothic and Miës' chrome sheathed steel piers at Barcelona and Brno. In such details Le Corbusier from the first has shown a finesse beyond the realm of mere taste. But here such things are perfectly coordinated and restrained, where on earlier houses they were often unduly prominent.

Le Corbusier does not at Poissy depend upon the interest of surfaces of nat-

ural materials. These have since been used in his executed work for M. de Beistegui and Mme. de Mandrot and had been proposed as early as 1927 in the League of Nations project which was to have been covered with granite plates. The painted color at Poissy is at once restrained and full of interest. Most important is the strong contrast of dark and light, not of black and white but of dark green below and cream above with dark chocolate window trim. Then on the roof shelter, whose functional and structural requirements are so slight as to justify an absolutely free treatment, the pale rose and pale blue emphasize the adjustment of the curved and straight planes.

It is inevitable in the discussion of such a house to emphasize the aesthetic side of modern architecture. But the adjustment of the plan and the adaptation of the structure are no less masterly. It is moreover imbued with a personal spirit as Wright's best work always has been. Much of modern building, particularly in the field of housing, must be impersonal to the extent of anonymity. But modern architecture has also a place for individuality and a genius which is primarily artistic.

HENRY-RUSSELL HITCHCOCK, JR.

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In addition to the published books listed above Le Corbusier has written for many magazines both architectural and general. The material on architecture in *L'Esprit Nouveau*, nos. 1–28, 1920–25, was by him, as is also that in *Plans*, 1931–. Many magazines have devoted whole numbers at various times to Le Corbusier's work, especially *L'Architecture Vivante*, and no general book on modern architecture is without mention at least of his name.

The standard monograph is: *Le Corbusier und Pierre Jeanneret. Ihr Gesamtes Werk von 1910 bis 1929.* Stonorov and Boesiger. Zürich: 1930.

LE CORBUSIER—CHRONOLOGY OF LIFE

1888	Born in La Chaux-de-Fonds, Switzerland.
1901–1905	Studied engraving in local school of arts and crafts. Influence of Art Nouveau.
1906	Collaborating as architect with other students, built house for their master, L'Epplatennier. Traveled in Italy. Interest in primitive art.
1908	Four days with Josef Hoffmann in Vienna. Revolt from decorative art.
1908–1910	Paris. Worked under Perret. Studied mathematics and sketched primitive art at Trocadéro Museum.
1910	Berlin. Worked under Peter Behrens.
1910–1911	Near East, Greece and Italy. Break with L'Epplatennier on return.
1911–1914	Paris and La Chaux-de-Fonds.
1914–1919	Business in France.
1919–1921	Settled in Paris at first as painter.
1920	Founded with Ozenfant the review *L'Esprit Nouveau*.
1922	Architectural partnership with his cousin Pierre Jeanneret. Exhibited *Citrohan* model and project for the City of Three Million at the Salon d'Automne.
1924	Lecture at the Sorbonne.
1925	Pavillon de L'Esprit Nouveau at the International Exposition of Decorative Arts.
1927	One of nine First Prize winners in Competition for the Palace of the League of Nations.
1929	Lecture tour in South America.
1931	Selected by the Swiss Government to build dormitory at Cité Universitaire, Paris.

LE CORBUSIER—LIST OF WORK

The model in this Exhibition represents the Savoye House, Poissy-sur-Seine, 1929–1930.

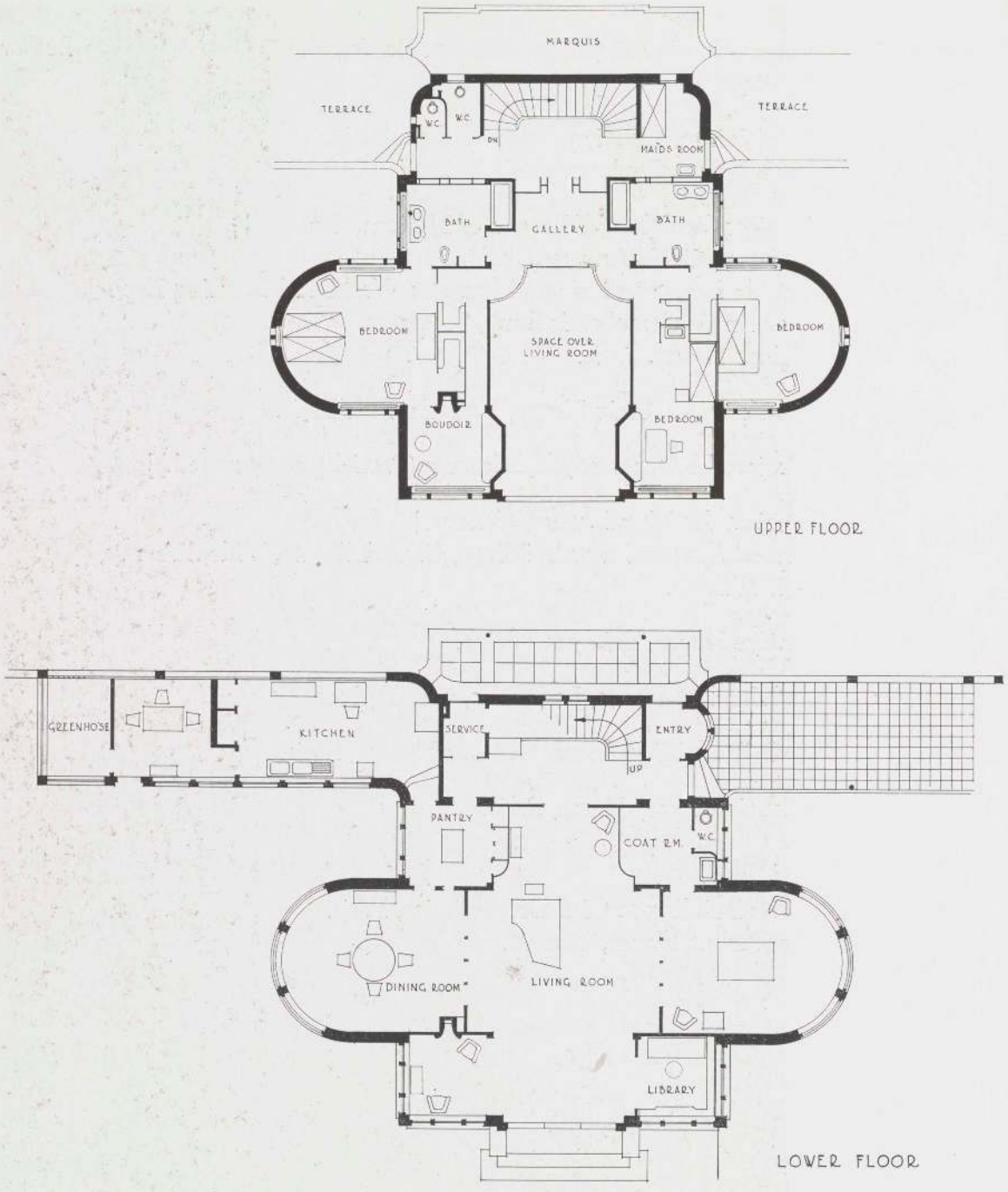
* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1905	L'Epplatennier House, La Chaux-de-Fonds. (Collaboration.)
1911	House for his father, La Chaux-de-Fonds.
1914–1915	[*Dom-ino* Project.]
1916	†House in La Chaux-de-Fonds. [Project for seaside villa for Paul Poiret.]
1917	[Project for Bordeaux abattoirs at Challuy and Garchizy.]
1919	[*Troyes* project for poured concrete houses and *Monol* skeleton houses.]
1921	[*Citrohan* project.]
1922	[Project for skyscraper City of Three Million.] [Second *Citrohan* project.]
1923	House in Vaucresson. †Ozenfant House, Paris.
1924	La Roche-Jeanneret Houses, Auteuil, Paris. †Lipchitz and Miestchaninoff Houses, Boulogne-sur-Seine. *Du Tonkin* House, Bordeaux. Lège Housing Development, near Bordeaux.
1925	House of the architect's parents, near Vevey on Lake Geneva. *Pavillon de L'Esprit Nouveau*, International Exposition of Decorative Arts, Paris. [*Voisin* Plan for rebuilding Paris.]

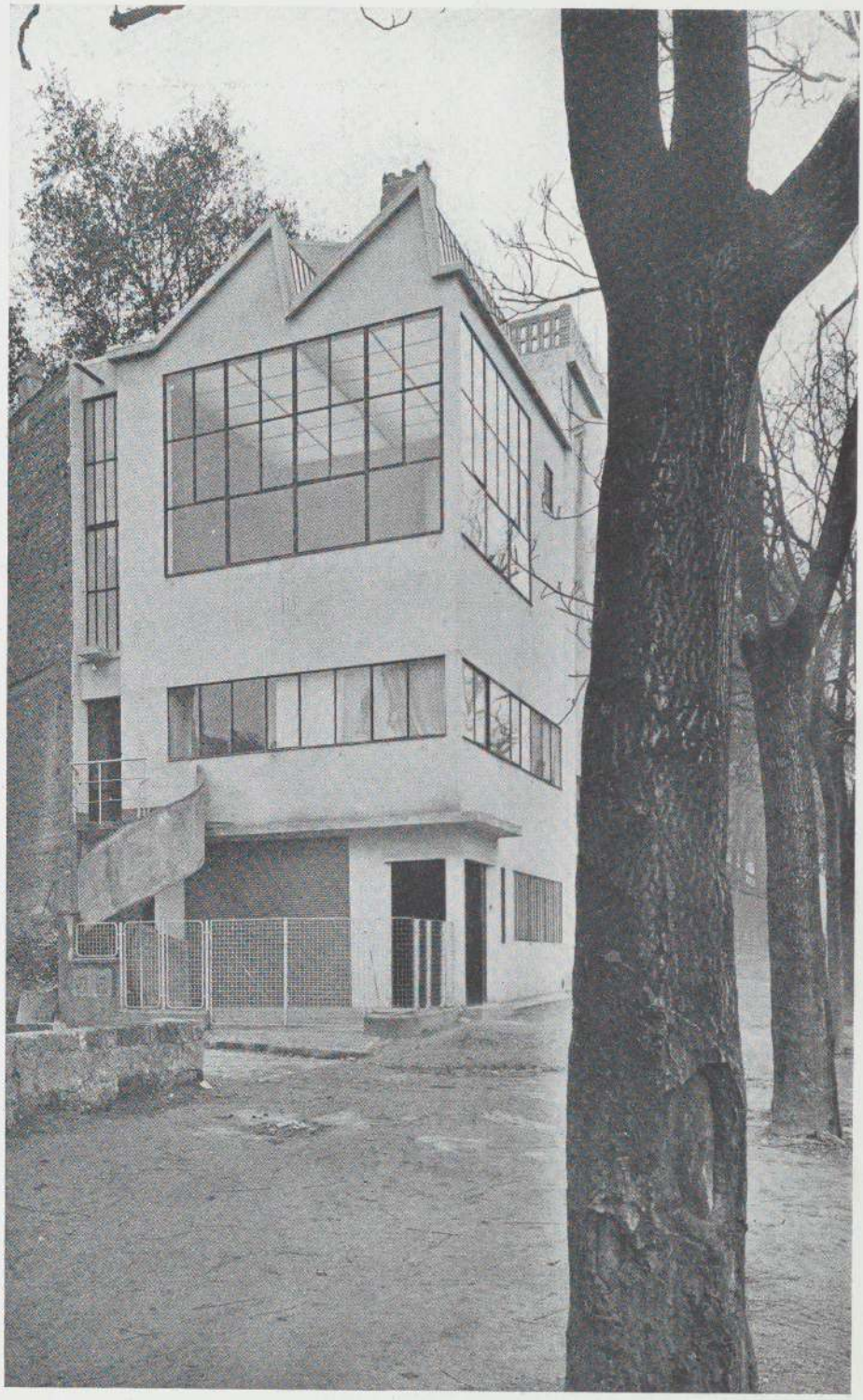
1925–1926	Pessac Housing Development, near Bordeaux. Studio House, Boulogne-sur-Seine.
1926	Addition to Salvation Army Refuge, Paris. Cook House, Boulogne-sur-Seine.
1927	[Project for Palace of League of Nations, Geneva.] Guiette House, Antwerp. *†Double House and Single House at Werkbund Housing Exposition, Weissenhofsiedlung, Stuttgart. Plainex House, Paris.
1927–1928	*†*Les Terrasses*, Stein House, Garches, near Paris.
1928–1929	[Project for Centrosoyus, Moscow (Partially constructed.)]
1929	[Project for Mundaneum, Geneva.] Remodelling and new buildings, Church Estate, Ville d'Avray, near Paris.
1929–1930	*†Savoye House, Poissy-sur-Seine.
1930–1931	†de Mandrot House, Le Pradet, near Hyères.
1931	*†de Beistegui Penthouse, Champs Elysées, Paris.
1931–1932	Salvation Army Home, Paris.

In construction:

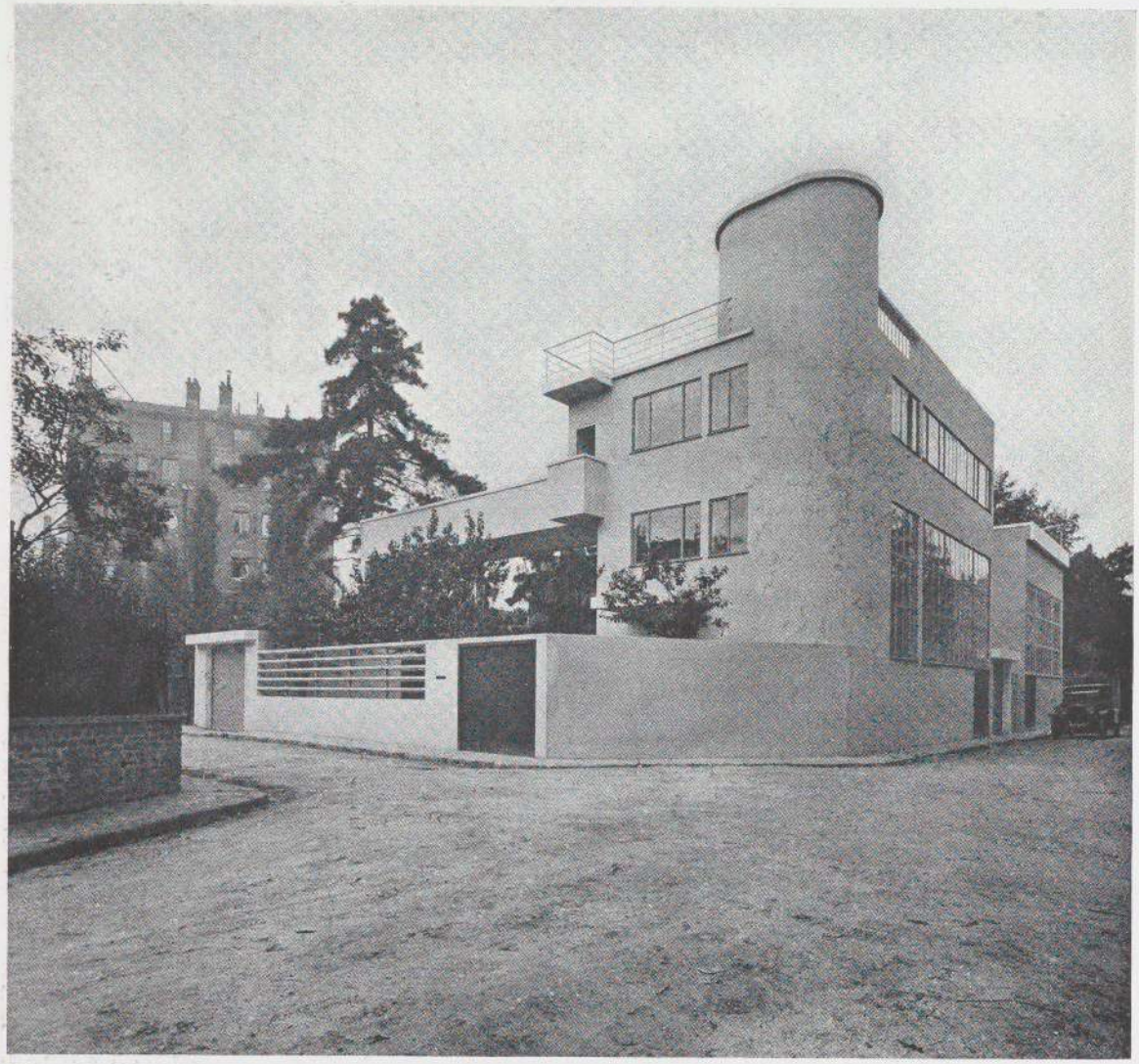
1932	†*Swiss Building at Cité Universitaire, Paris. Apartment House, Geneva.



LE CORBUSIER: House in La Chaux-de-Fonds, Switzerland. 1916

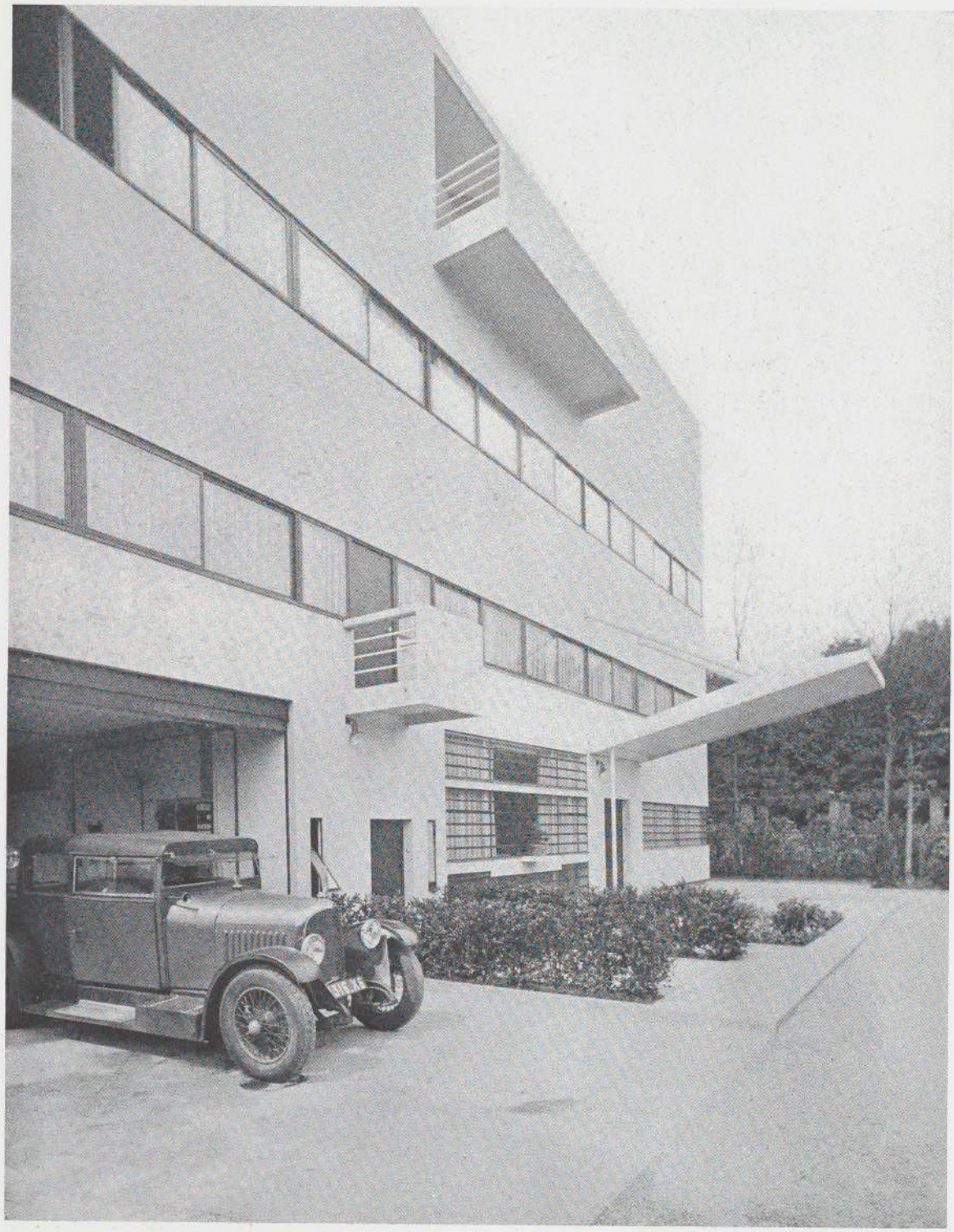


LE CORBUSIER & PIERRE JEANNERET: Ozenfant House, Paris. 1923

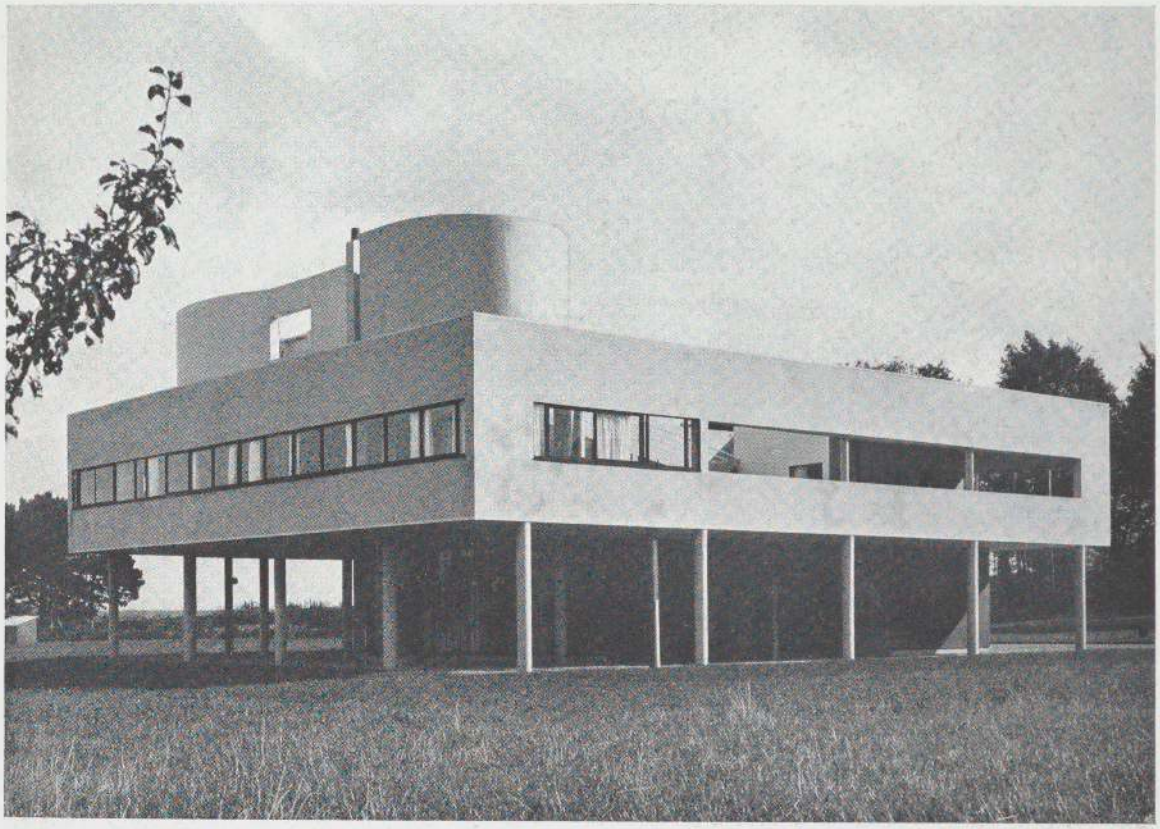


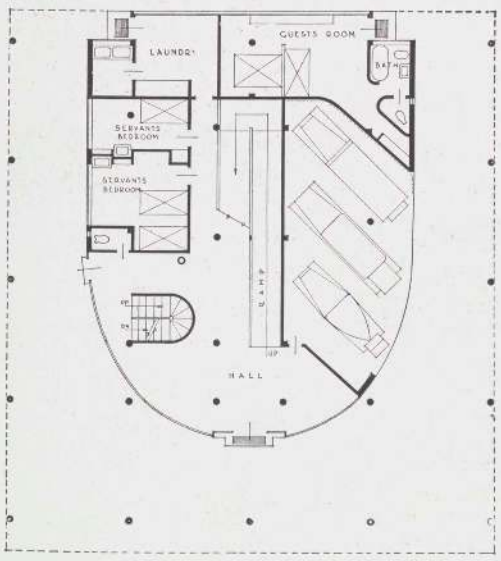
LE CORBUSIER & PIERRE JEANNERET: Lipchitz and Miestchaninoff Houses, Boulogne-sur-Seine. 1924

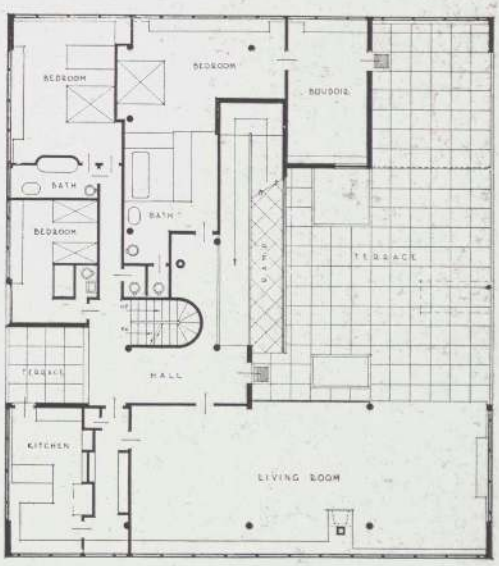
LE CORBUSIER & PIERRE JEANNERET: Double House at Werkbund Housing Exposition, Weissenhofsiedlung, Stuttgart, Germany. 1927



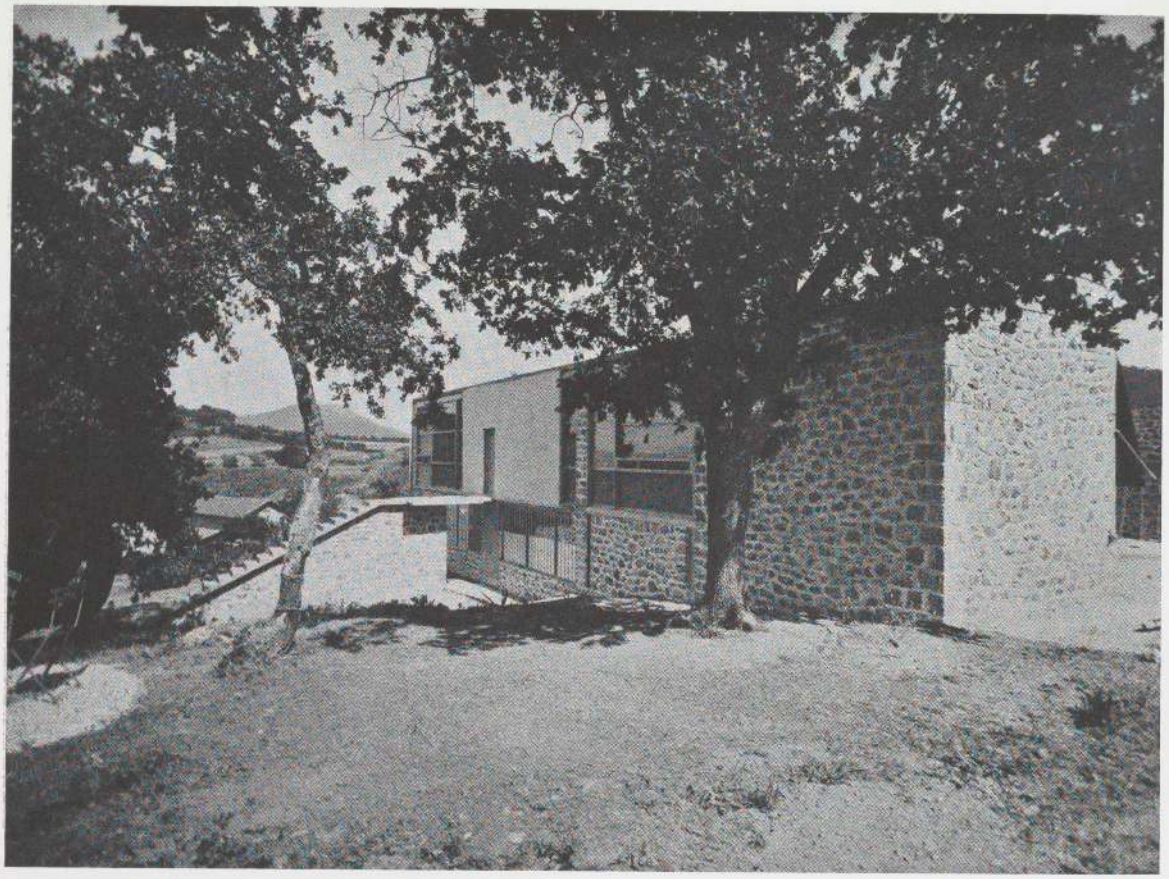
LE CORBUSIER & PIERRE JEANNERET: *Les Terrasses*, STEIN HOUSE, GARCHES NEAR PARIS. 1927–1928



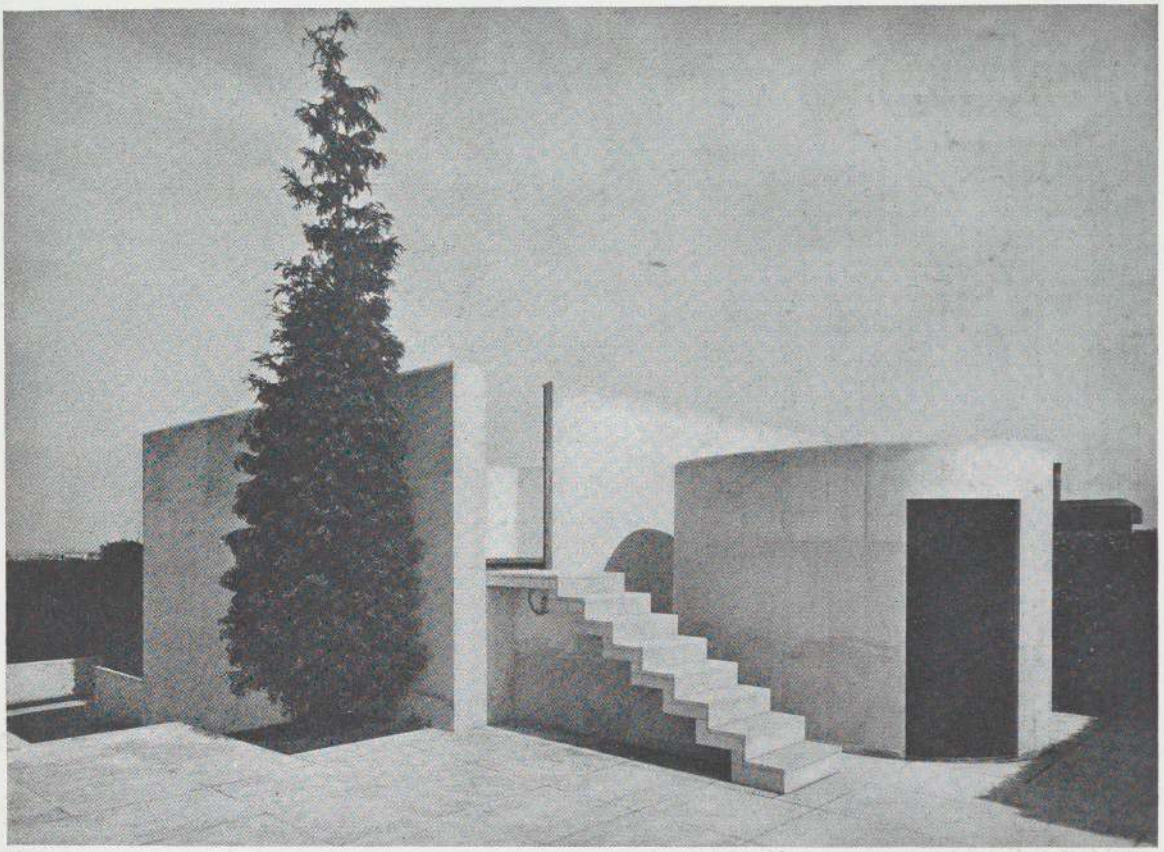




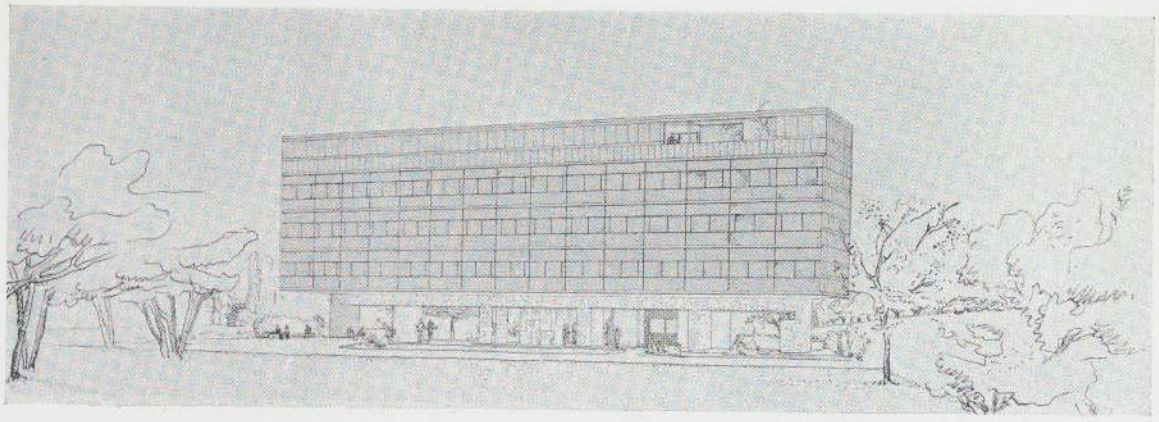
LE CORBUSIER & PIERRE JEANNERET: Savoye House, Poissy-sur-Seine, France. 1929–1930

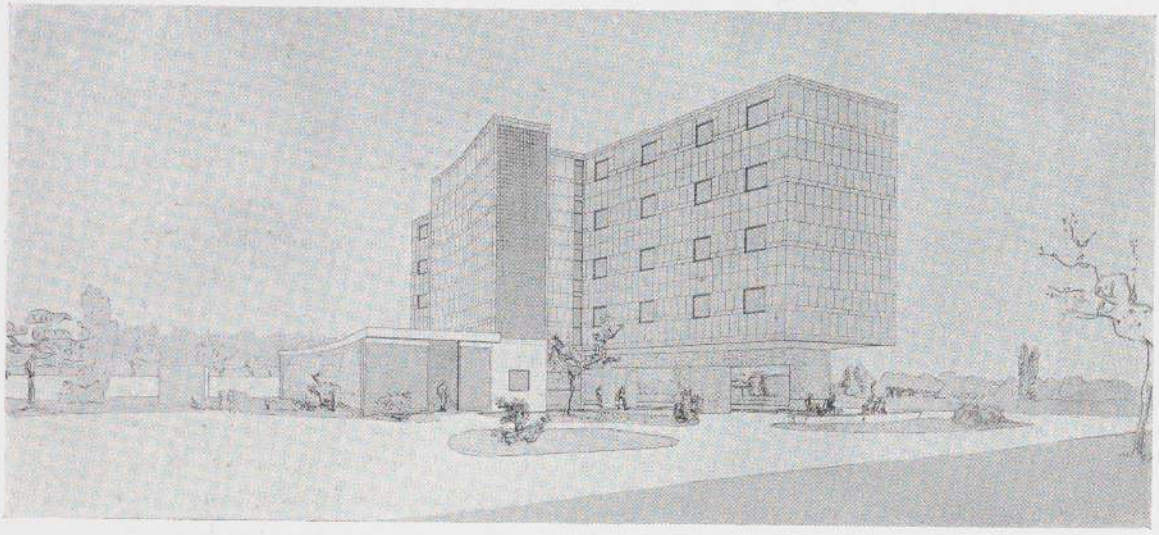


LE CORBUSIER & PIERRE JEANNERET: DE MANDROT HOUSE, LE PRADET, NEAR HYÈRES, FRANCE. 1930–1931



LE CORBUSIER & PIERRE JEANNERET: DE BEISTEGUI PENTHOUSE, CHAMPS ELYSÉES PARIS. 1931





LE CORBUSIER & PIERRE JEANNERET: Swiss Dormitory at Cité Universitaire, Paris, in Construction, 1932.

J. J. P. OUD

OUD was born at Purmerend in 1890. His artistic heritage leads back to Cuijpers, an exponent of medieval rationalism like Pugin in England or Viollet-le-Duc in France. Cuijpers had achieved in his civic buildings a temporary integration of style based on the North European architecture of the sixteenth century. Oud also admired in his youth the English revival of late medieval domestic building sponsored by Morris. This he studied in Muthesius' excellent book *Das Englische Haus.* EDUCATION

The architect Stuijt, a friend of Oud's father and a partner of the son of Cuijpers, recommended that Oud should study to be an architect at the Quellinus Arts and Crafts School at Amsterdam, if he did not wish to take the time for a more elaborate and general education. When Oud left this school he entered the office of Stuijt and Cuijpers where he worked for two years. The first house that Oud built at Purmerend at the age of sixteen was of modified English style.

Desiring further education Oud left his office work and continued his studies in the schools of Amsterdam and Delft. At this time he made the acquaintance of Berlage, "the father of modern architecture in Holland." Berlage, who had been educated according to the rationalistic Classicism of Semper, had become in the Nineties the worthiest and most advanced follower of the elder Cuijpers. His Exchange at Amsterdam, finished finally in 1903, remains one of the landmarks in the history of modern architecture, although Americans will justly remark that it goes little beyond the freer designs of Richardson executed a generation earlier except in its frank use of metal in the interior. Oud accepted the Berlagian "new style" enthusiastically, wrote articles urging its general adoption, and became like so many other young Dutch architects a devout disciple of Berlage. INFLUENCE OF BERLAGE

After two years of technical study at Delft, Oud went to Munich where he worked for a few months in the office of Theodor Fischer. Fischer was then achieving in South Germany a medieval rationalism, somewhat parallel to that of Berlage, but more archaeological and more monumental. Fischer's taste was certainly much better than Berlage's. In American terms Fischer was nearer to Stanford White, Berlage to Wright. Oud's early contact with Fischer may well have begun to open his eyes to the flaws of Berlage.

When, however, Oud returned to his native town of Purmerend the small public buildings and the block of workmen's houses he then erected were in the Berlagian manner. Moving to Leiden Oud had opportunities for collabo-

Oud

ration on suburban houses with other young architects, among them Dudok.

With the coming of the War the practice even of Dutch architects was much reduced and Oud gave more time to the preparation of elaborate projects, all conscientiously designed in the "new style" of Berlage. Of this period a Bathing Establishment with a small house attached is typical. Oud, naturally enough, was a less able practitioner of the Berlagian style than the master himself. Yet there is in this project a serenity and balance that Berlage seldom achieved.

INFLUENCE OF WRIGHT

Oud first heard of Frank Lloyd Wright from Berlage, who lectured enthusiastically on the great Middle Western architect after his trip to America in 1912. Oud in developing beyond the style of Berlage found stimulation in the style of Wright, which he could study in the Wasmuth publications of 1910 and 1911 (see p. 39). The influence of Wright was effective in assisting the development of Oud's personal style without leading to bald imitation as in the case of other young Dutch architects.

In his Berlagian period Oud had been interested in the revival of fresco painting in Holland under the leadership of Roland Holst. But he now turned to the newer painting of the Cubists and others, an interest which led him to an acquaintance with Theo van Doesburg. From this association there developed the magazine *de Stijl*, on which collaborated the painters, Mondriaan—the most important—Vantongerloo and van der Leck, and the poet Kok. The movement, called Neoplasticism, purified pictorial design until nothing remained but rectangles of white and primary colors separated by ruled black lines.

NEOPLASTICISM AND *De Stijl*

Oud attempted a parallel purification of architecture. The project for a row of seaside villas (p. 104), published in the first number of *de Stijl* in 1917, represents this phase. Here there is left nothing of Berlage and hardly anything of Wright except the latter's boldness in discarding all ties with the past. Yet in the Convalescent Home (p. 103) which he built in this year at Noordwijkerhout there are still definite Berlagian memories. The interior of this house had tile floors and doors worked into an elaborate abstract composition in color by van Doesburg. This represented an even more complete break with all previous conceptions of architectural decoration than Wright's Midway Gardens.

The remodelled villa at Katwijk-aan-Zee of this year was more the work of another of Oud's collaborators, the painter Kamerlingh Onnes. The massive simplicity was in large part due to the conscious inspiration of North African architecture.

Oud's projects of the next few years show the gradual disappearance of all

traces of Berlagian style and then the replacement of the heavy horizontality of Wright by a more strictly Cubist manner. The number of projects for workmen's housing are significant. They led to Oud's appointment in 1918 as a City Architect at Rotterdam. More interesting from the point of view of design were the industrial projects of 1919. As the Cubists broke up form and put the pieces together again, so Oud in a factory design attempted to analyze architectural mass into its elements and put them together again. *Oud*

In the articles which Oud wrote at this time for *de Stijl* he outlined a program to which his developed style in the next few years truly conformed. As he wrote much later of the 1919 factory design,[1] "Purity of form, straightness of line, equilibrium of proportions, directness of expression—in my opinion the features of the new architecture—were portended in this building—although they were there not yet at all!" (They were, however, present in approximate form in the bonded warehouse.) "Aesthetically I saw free form (in architecture) to become in a way analogous to that of the development of free art (painting and sculpture); practically the new methods (machine, etc.), new constructions, new materials, other habits (of living) had to be used or sanctioned." For this practical development his housing work for the City of Rotterdam offered the opportunity for important experimentation.

In some respects the housing designs published in 1918 were more interesting than those actually executed. But there is more of Wright in them, and in the Spangen and Tuschendijken blocks more of the local tradition. In Spangen I and V (p. 104), built in 1918, high roofs are still used, although in all the projects since 1917 the roofs had been flat. There is, furthermore, a heavy cornice, recalling Wright, and a round arched entrance on axis, recalling Berlage, as does also the vertical panelling. The black banding at the base of the wall is a remainder of the painted color used at Noordwijkerhout. The windows, although standardized throughout, are of traditional vertical shape, indeed positively medieval in size and proportion compared to the great expanses of glass one finds in all the eighteenth century architecture of Holland. SPANGEN BLOCKS I AND V

Yet in spite of these ties with the past, these blocks remain aesthetically Oud's first executed work in which the feeling of his own style is far stronger than are the outside influences. The rhythms are still complicated, but they are regular. The cornice, the banding at the base, and above all the treatment of the dormers give a serene horizontality despite the vertical panelling. There is no

[1] The quotations are in Oud's original English words.

Oud ornament, not even of the Cubistic abstract sculpture of the factory. The surfaces are felt as plane and the brickwork avoids the conceits of the Amsterdam school. The symmetry is logical and not forced.

SPANGEN BLOCK VIII

Spangen VIII built the next year was more advanced but less distinguished; the roofs became flat but the crowning band for all its crispness was slightly heavy. The first Tuschendijken blocks of 1920 are also disappointing except for the frank use of the light metal supports of the corner balconies. The complexity and difficulty of the technical problems of planning the minimal dwelling acted as a brake on the aesthetic development of style.

In a project of 1921 for a country house near Berlin Oud was able at last to pass well beyond both his earlier projects and his executed housing work. Yet he was far less dependent upon new possibilities of construction than Le Corbusier in the *Citrohan* project of this year. In Oud's case the whole road to definite style creation had hardly taken him outside the technical possibilities already explored. He took advantage of the new possibilities when they came, for his style needed them, but his aesthetic development went on independently. Thus there is nothing startling about the Berlin design but its serenity and the perfection of composition and proportions.

OUD-MATHENESSE

Oud's feat at Oud-Mathenesse (p. 105) is similar to his feat at Spangen. The terms of the problem are determined, not as in Le Corbusier's projects for housing by an ideal, but by an actual sociological situation. Built on land intended after twenty-five years to become part of the Rotterdam park system, they are of semi-permanent construction. The moderate window areas and above all the single story with high tiled roofs might have been expected to give an ineradicably traditional flavor to the whole. Yet the long continuous roof lines emphasized by the simple slab cornice give a strong horizontality which even the occasional gables do not seriously break. The pairing of the houses enriches the rhythm and the disposition of the plan gives effective architectural rather than pictorial vistas. With these smooth, white, amply fenestrated walls above bases of yellowish brick and beneath roofs of red tiles, this is an architecture that Vermeer might have painted. The shops with their long low dormers and their wide windows make evident that a new style has come into being. The use of the flat uncapped parapet, foreshadowed by the uncapped central pavilion of the Spangen blocks I and V even more than by the flat roofs of Tuschendijken, is an achievement of primary importance. Massive pyramidal form is translated into light, immaculately surfaced volume. To achieve this effect the use of stucco

was in 1922 quite essential. Brick, time has proved, is a more practical surfacing material in the North, but it was then too closely associated with the still dominant style of the school of Amsterdam.

HOOK OF HOLLAND

Two years later Oud prepared the designs for the row of houses at the Hook of Holland (p. 106). Here at last all the world could see that a new style existed in which modern methods of construction made possible various things which a new aesthetic demanded: flat roofs, long horizontal windows flush with the surfaces and with light metal frames, projecting balconies, wall areas entirely of glass revealing the interior skeleton supports. There are many subleties in this design: the use of curves is free and masterly; the detail of doors, grilles, and lighting fixtures is absolutely devoid of unnecessary complications and yet in the highest degree decorative; the polychromy is varied yet without either the traditional colors of the Rotterdam work or the Neoplasticist blatancy of the Noordwijkerhout villa. In the suavity of the details of style, in the fusion of the rhythms, Oud may have owed something to Henry Van de Velde of whom he saw much in these years. Never before or since has the older architect produced anything comparable and yet he had from his Art Nouveau days a sense of the values of the curves which the group *de Stijl* eschewed.

The Hook of Holland houses designed in 1924–1925 were not executed until 1926. In the interim Oud built the Café de Unie in Rotterdam. There he used brilliant color in large areas and well disposed lettering. Less serene and less sound than the design for the Hook, it was more an experiment than an achievement.

In 1926 Oud made two important projects neither of which were executed. That for the Rotterdam Exchange with its alternate ribbons of stucco and aluminum window frames was his first work at large scale. The plan was most skilfully disposed to provide a central glass roofed court and surrounding offices. The project for the hotel at Stiassni at Brno, Czechoslovakia, was less successful, as the complications of the program were not sufficiently resolved in the façade design.

In 1929 Oud further remodeled and added to the villa at Katwijk-aan-Zee. The contrast between the lightness and openness of the new work and the still traditional solidity of the work of 1917 is an instructive example of the rapid creation of style.

STUTTGART

The row of houses Oud built at the Weissenhof Housing Exposition in Stuttgart in 1927 was less startling in design than those of Le Corbusier, and less

Oud experimental technically than Gropius'. But Oud's great experience in minimal housing made it possible for him to arrive at domestic arrangements somewhat above the minimal level in which the various functions of family living were provided for fairly and broadly. At the same time the purity of the proportions and the refinement of the detail gave an unusual distinction which the later growth of trees and vines has only softened and embellished. Brought here into direct comparison with the other leading architects of post-War Europe Oud's work like Miës' stood out by virtue of its balance and its good sense even though these houses lack the lyric quality of the work at the Hook of Holland.

KIEFHOEK The housing development at Kiefhoek in Rotterdam was first studied in 1925. It was executed only in the years 1928–1930. The necessity for extreme economy in construction made impossible the metal window frames, the projecting balconies and the curves of the houses at the Hook of Holland. The arrangement of the houses with bearing party walls and façades largely of glass is skilful. The use of orange and gray green with the white stucco is effective. But the symmetrical general plan is open to criticism and the long lines of houses are somewhat monotonous without trees or vines for variety and shade. The stores however accent the street corners and the church provides a focal center for the whole scheme.

The building of Kiefhoek offered few general opportunities. The site was circumscribed and uninteresting, with earlier housing all about. The houses were limited to the occupancy of families with no less than eight children. The need for economy proscribed the use of metal windows and other technical innovations. But in the church (p. 107) Oud had a chance to design a single building of special interest which should dominate and compose by its placing and its design the whole scheme. Working over this church project during several years with a thoroughness and a critical conscientiousness such as few contemporary buildings have received, Oud refined the façade almost to excess. The placing and the forms of the lettering, which might have given character to the façade, are awkward and constricted. Nor has the entrance treatment the same logic and grace as the clerestorey arrangement with the rounded supports between the windows. But the side of the church where the various subsidiary functions are housed in a lower wing is one of the most subtle and masterly three dimensional compositions in all modern architecture. These horizontal adjoints lighted each from a single side lead up to the strong vertical accent of the rounded chimney which provides something of the emphasis of the spires of the

KIEFHOEK CHURCH

past. The church doubtless fails to symbolize religious aspiration as well as certain German churches of the last few years, but as a direct architectural expression of a small inexpensive auditorium there is nothing with which it can be compared.

OUD'S IMPORTANCE

Oud is the most conscientious of modern architects. Both in technical matters and in matters of design he accomplishes results less by startling strokes of imagination than by a cumulative process of refinement. In many respects the least drastic innovator among the European leaders he has advanced as does a craftsman by dint of taking infinite pains. With a highly developed critical sense and a vision intellectually clear rather than emotionally stirred, his few vices are negative rather than positive. Serenity, balance, sense of scale and sober grandeur of rhythm, the very qualities least associated with the Northern mind, he alone among the Dutch of the twentieth century has made his own. His is the classic genius of understatement, the assurance of inevitable judgment reached by slow and profound study. In any period he would have been a very great architect, in our own he is of all great architects the most sound.

THE MODEL IN THE EXHIBITION: PROJECT FOR A HOUSE IN PINEHURST, N. C. (p. 109)

In this project, his only design for an individual house since 1921, Oud has combined the open pavilion treatment of the living room and the enclosed treatment of the other portions of the house with unexpected success. The regularity of the living room façade with its round concrete supports and its projecting slab roof contrasts with the regularity of the service wing with its two bands of similar windows. The isolated circular sun-room poised on a single pier at one corner of the house gives a startling accent to a design otherwise very quiet and restrained. The distribution of the plan with the masters' bedroom on the ground floor and with varied means of communication was required by the client and elaborately developed by the architect. There are a few objections to be made. The bedrooms on the second floor should have in an American house of this scale separate bathrooms as well as individual wash basins. The bedrooms despite their glass walls are rather shut in and the staircase descends awkwardly against the service wing.

The classic severity of the design as a whole, the general relation between

the different wings, the features such as the porte cochère and the round sun-room have a quality comparable to the work of Le Corbusier at Poissy and that of Miës at Brno. But the basic conception is very different and the sense of the methods of construction pure and refined in a wholly individual way.

HENRY-RUSSELL HITCHCOCK, JR.

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Oud has written at various times in many magazines, particularly *de Stijl* and *i 10*. Among many presentations of his work that in several numbers of *L'Architecture Vivante* is the most considerable.

The standard monograph on Oud is: *J. J. P. Oud. Maîtres de l'Architecture Moderne II*. Henry-Russell Hitchcock, Jr. Paris: 1931.

J. J. P. OUD—CHRONOLOGY OF LIFE

1890	Born at Purmerend, Holland.
1904–1907	Attended Quellinus Arts and Crafts School, Amsterdam.
1906	Built first house in Purmerend.
1907–1908	Worked under Cuijpers & Stuijt in Amsterdam.
1909–1910	Studied at Rijksnormaalschool, Amsterdam.
1910–1911	Studied at the Technical School of the University of Delft. Met H. P. Berlage.
1911	Worked for three months under Theodor Fischer in Munich.
1912–1913	Independent work in Purmerend.
1913	Moved to Leiden. Collaboration with Kamerlingh Onnes, van der Steur, and Dudok.
1915	Met Theo van Doesburg. Beginning of association with abstract painters.
1917	Founded the review and group *de Stijl* with the painters, Mondriaan, van Doesburg, Vantongerloo, and van der Leck.
1918	Became the architect in charge of city housing in Rotterdam.
1927–1930	Retired on account of ill health to the seaside at Kijkduin.
1929	Invited to give the Kahn Lectures at Princeton University.

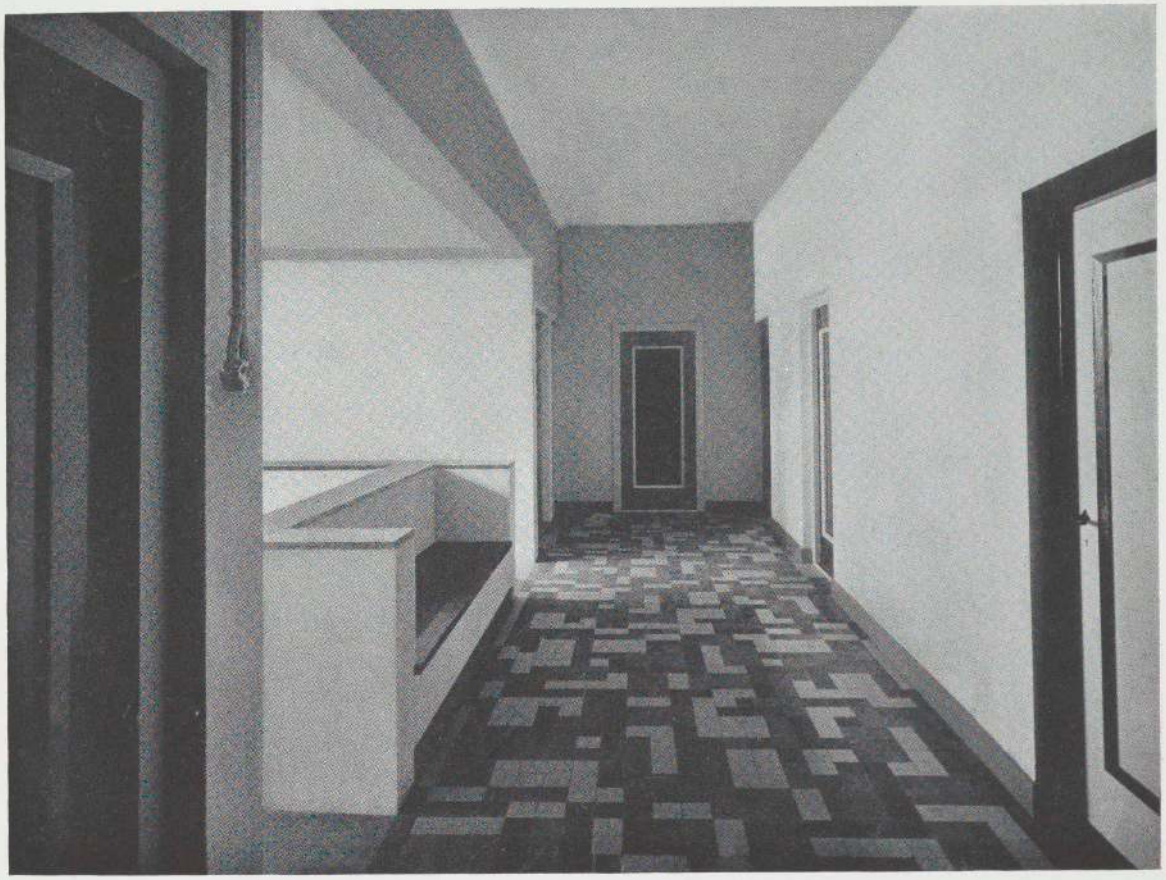
J. J. P. OUD—LIST OF WORK

The model in the Exhibition represents a project for a house in Pinehurst, N. C.

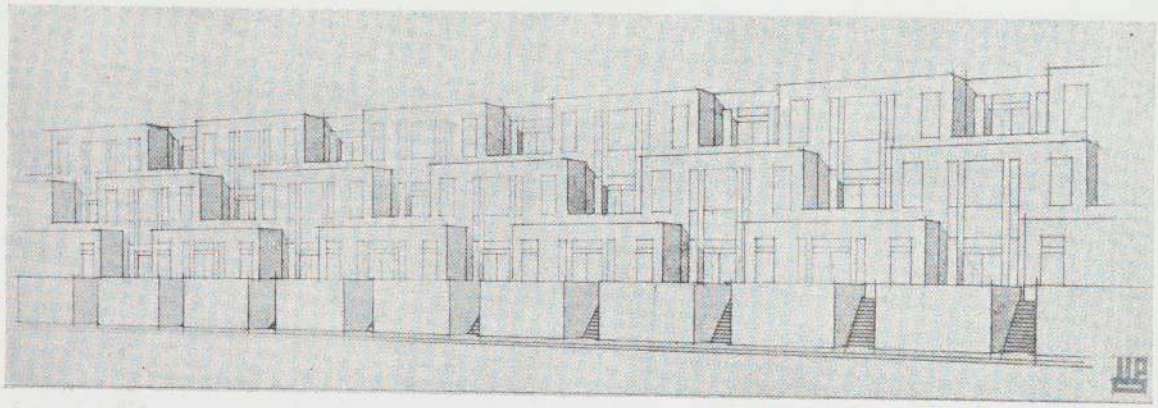
* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1906	First house in Purmerend.
1912	Movie Theater. Block of laborers' dwellings and small individual houses. Purmerend.
1913–1914	Small houses in Leiden and vicinity.
1915	[Project for a Municipal Bath House.]
1917	House in Katwijk-aan-Zee. (With Kamerlingh Onnes.) †House in Noordwijkerhout in collaboration with Theo van Doesburg. †[Project for a row of seaside houses.]
1918	†Spangen, Blocks I and V, Workers' dwellings in Rotterdam.
1919	Spangen, Blocks VIII and IX. [Projects for a factory and a bonded warehouse.]
1920–1921	Tuschendijken, Blocks I to IV and VI. Rotterdam.
1921	[Project for a house in Berlin.]
1922	†Garden Village, Oud-Mathenesse, Rotterdam.
1923	Superintendent's Office, Oud-Mathenesse. (Temporary building.)
1925	Café de Unie, Rotterdam.
1926–1927	*†Workers' Houses at the Hook of Holland. (Project of 1924.)

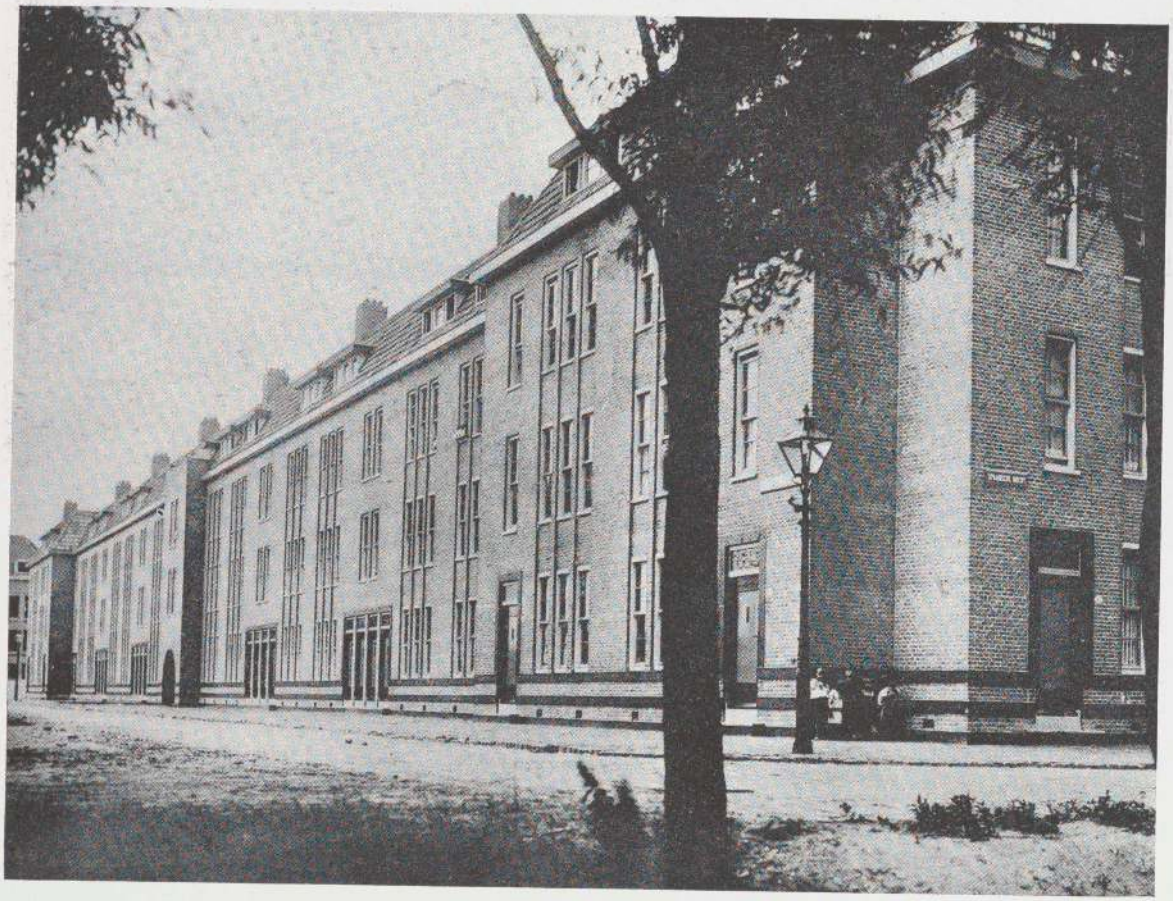
1926	[Project for Hotel Stiassni in Brno, Czechoslovakia.]	*Oud*
	[Competition project for Rotterdam Exchange.]	
1927	*Row of five houses at the Weissenhof Housing Exposition, Stuttgart.	
1927	Additions to the villa at Katwijk-aan-Zee.	
1928–1930	*†Kiefhoek Housing Development with shops and church, Rotterdam. (Project of 1925.)	
1931	[Project for steel apartments for the City of Rotterdam.]	
	†[Project for a house in Pinehurst, N. C.]	



J. J. P. OUD: House in Noordwijkerhout, Holland. 1917 (In Collaboration with Theo van Doesburg)

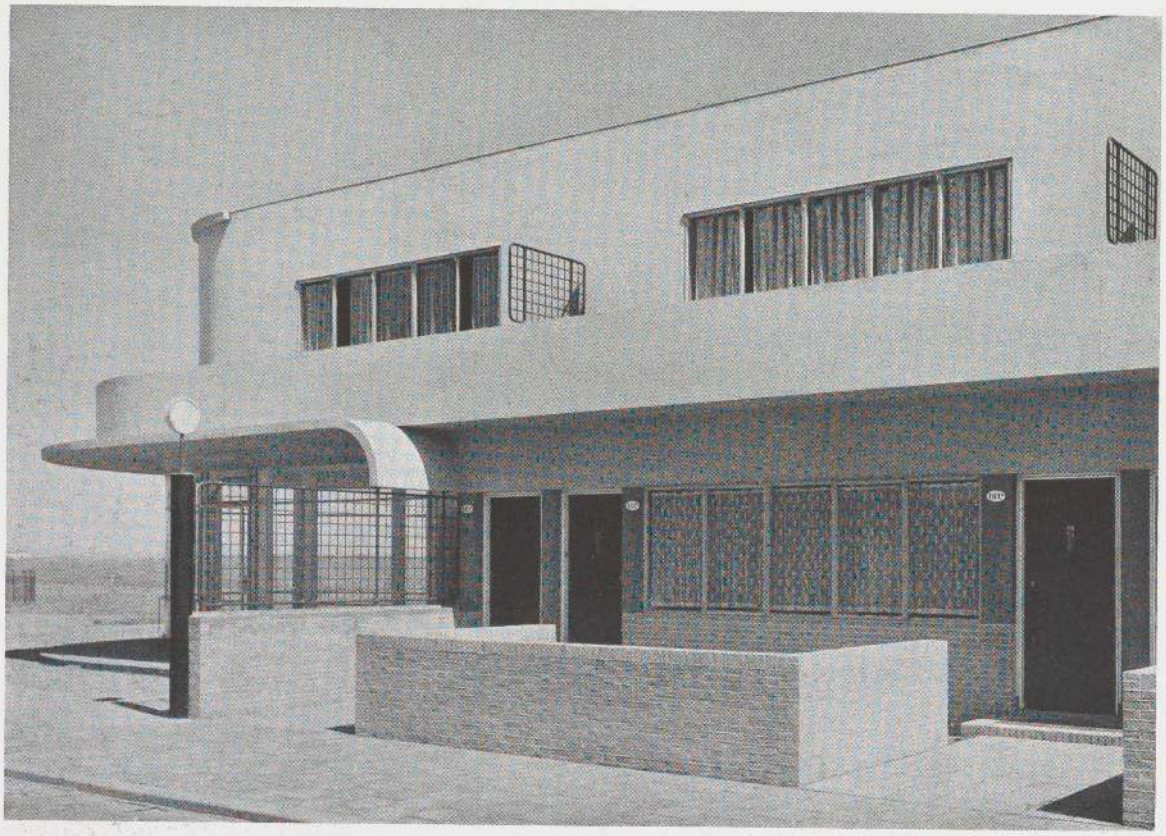


J. J. P. OUD: Project for a Row of Seaside Houses. 1917

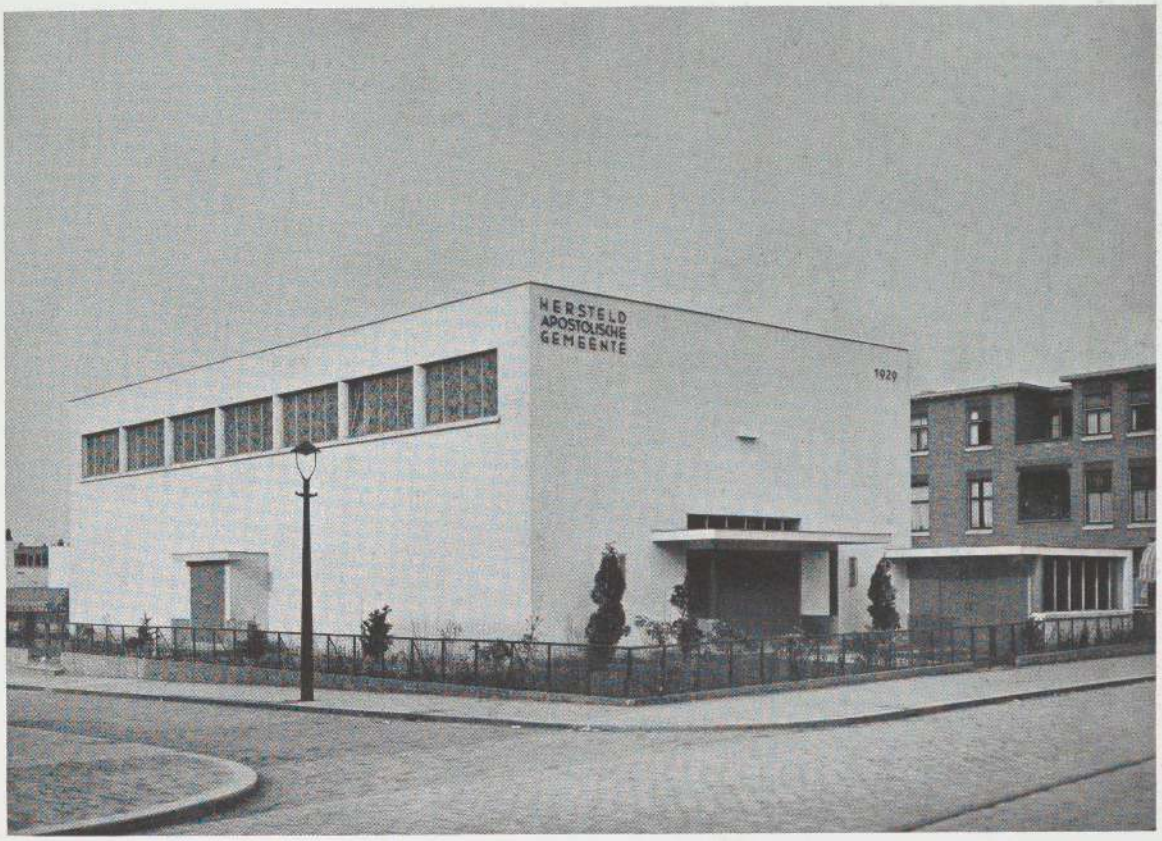


J. J. P. OUD: Spangen, Blocks I and V, Workers' Dwellings, Rotterdam. 1918

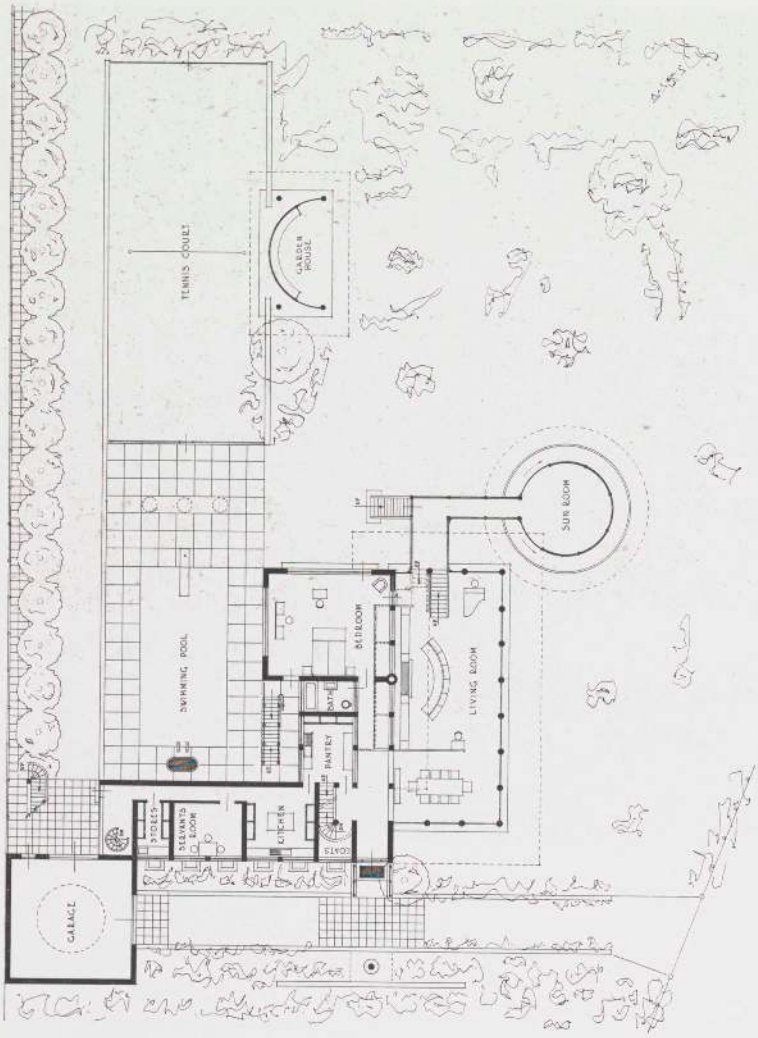
J. J. P. OUD: Garden Village, Oud-Mathenesse, Rotterdam. 1922



J. J. P. OUD: Workers' Houses, Hook of Holland. 1926–1927



J. J. P. OUD: Kiefhoek Housing Development, Rotterdam. 1928–1930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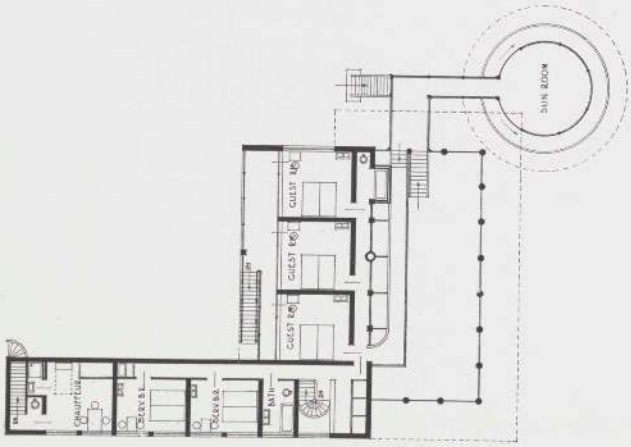
GARDEN HOUSE
SWIMMING POOL
SUN ROOM
BEDROOM
LIVING ROOM
PANTRY
SERVANTS ROOM
KITCHEN
GARAGE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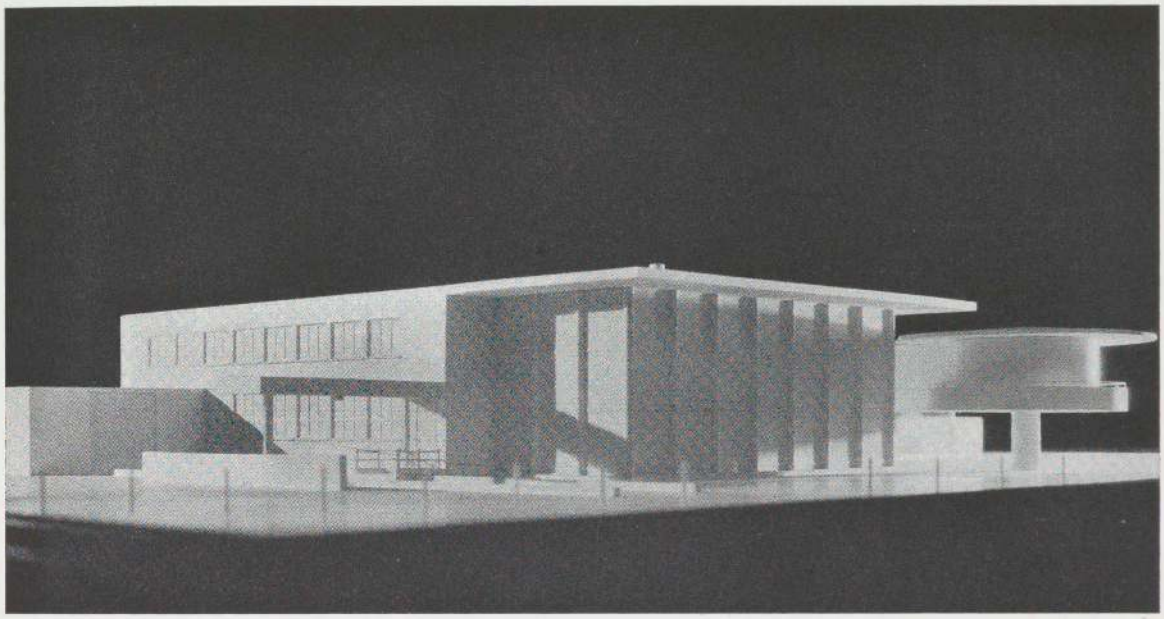


J. J. P. OUD: Project for House at Pinehurst, N. C. 1931

LUDWIG MIËS VAN DER ROHE

I. Career.

LUDWIG MIËS[1] was born in Aachen, or Aix-la-Chappelle as it is more usually known, in 1886. As his father was a stone mason, it was naturally to building that he turned for a trade. He had only an ordinary general education and no formal technical or architectural training. His early schooling was practical and actual building under local contractors.

Reverberations from the Artist Colony of Grand Duke Ernst Ludwig at Darmstadt brought to the young man the first new ideas in architecture. The work of the brilliant young Josef Maria Olbrich, whom the Grand Duke had imported from Vienna, had carried to the Rhineland the tenets of Otto Wagner's group. Although Olbrich had no direct influence on Miës, his experimental attitude toward architectural problems was well known even in Aachen.

Before he was twenty, Miës moved to Berlin, which was already taking the lead as a cultural center from the older cities like Munich. For two years, from 1905 to 1907, Miës worked as a furniture designer in the office of Bruno Paul. BRUNO PAUL

Paul was a highly popular decorator and architect whose basically traditional ideas of *Heimatkunst* were much influenced by the new decorative movement which had its origin in Vienna. The furniture Miës produced before the War was not unlike the simplified traditional forms which Bruno Paul designed. Yet what Miës learned was of more importance than formal designing: a thorough craftsmanship and a feeling for fine detail. The results of this training are obvious in his work in metal furniture which he began in 1926. He often spends a whole year studying one chair model, submitting it to the hardest test,—that of constant use. The fundamental, simple curves, the excellence of materials, and care in execution of detail have made Miës' chairs the most widely used modern furniture in Germany. They are used in Spain, England, Japan, and even in America where they are copied by manufacturers scarcely aware of the designer's name. FURNITURE

Following his apprenticeship with Bruno Paul, Miës worked as an assistant in the office of Peter Behrens, Germany's grand old man of modern architecture. BEHRENS

Gropius was already working in the office, and Le Corbusier began his few

[1] When he moved from his native town to Berlin, he added a diaeresis over the "e" in Miës to indicate the second syllable, which is only locally pronounced, and appended van der Rohe, his mother's surname.

Miës van der Rohe

months' work with Behrens in 1911 just as Miës was leaving. It is to his practical work here that Miës owes the completion of his architectural education. He was Behrens' representative in the execution of many buildings, the most important of which is the German Embassy at Leningrad.

Of the several houses which Miës built in the period just before the War, the Fuchs house stands out as superior to the contemporary houses of Behrens. It is simplified Classical in style, but the fenestration and proportions of the whole show a refinement and serenity which is entirely lacking in his master's work.

KRÖLLER PROJECT

The remarkable project for the house of Mme. Kröller (p. 121), shows even more clearly how far Miës had advanced. No influence of any contemporary architect is to be found, but the example of Schinkel's work must have affected him powerfully. The handling of the doorway and cornice, the restrained ornament and finally the broad solidity of the proportions are strongly reminiscent of the work of the great Romantic architect. The asymmetric massing, on the other hand, and the close spacing of the second story windows are very different from Neo-Classical models and are fundamentally Miës' own. Berlin is full of Schinkel's work, and in lieu of any stronger tradition, the discipline of Schinkel's building was the most tonic the young architect could have had.

The War intervened to prevent development of this early phase. Until 1925 Miës built nothing. Yet the brilliant series of projects which he made in these years became later as famous and influential as if they had been executed (p. 121). At the same time his quiet sureness and the purity of his architectural ideas were winning for him a very high position in the architectural world. In every group of architects with whom he allied himself he became the leader, from the revolutionary *Novembergruppe* in 1919 to the staid and powerful Deutscher Werkbund of which he is still Vice-President. As late as 1927, however, he was comparatively unknown to the public at large. He had built but one house and one set of workers' apartments. He had never written a book or made a public speech. In the Werkbund, nevertheless, which is an organization of manufacturers, architects and industrial designers, Miës' position was such that he was placed in complete charge of the building of the Werkbund Housing Exposition at Stuttgart in 1927. The Exposition consisted of twenty-two complete houses and apartment houses built by architects chosen by Miës. Miës was perhaps the only man at the time who combined the ability to select the best modern architects with the diplomacy needed to force the conservative city of Stuttgart to tolerate such progressive architecture. Thus the Weissenhofsiedlung is

STUTTGART EXPOSITION 1927

still today the only place to study comparatively the work of the great contemporary architects: Oud, Le Corbusier, Gropius, and Miës himself. *Miës van der Rohe*

Miës van der Rohe presents the paradox of being one of the best known and most admired architects, who has nevertheless built very little. Although the Werkbund Exposition put him in the limelight, it brought him no contracts. For Miës is a pure artist in architecture. Neither the economic nor the sociological aspects of architecture, so important in post-War Germany, interest him as much as the aesthetic. For Miës there is good architecture and bad, and, to achieve good architecture the architect always has required, and always will, money and freedom. So the commissions were few, though he was hailed by the critics as the Schinkel of the twentieth century.

In 1929 Miës was put in charge by the German government of the German section of the International Exposition at Barcelona. Here in the German Pavilion, as previously in his paper projects, Miës had the opportunity to carry out his ideas unhindered by the demands of conservative clients. The result of this freedom is one of the finest buildings of the decade.

In 1930 Miës succeeded the communistic functionalist, Hannes Meyer, as director of the Bauhaus, the famous school of contemporary arts and crafts which was founded by Walter Gropius. Although his educational ideas are more concerned with art than those of his *sachlich* predecessor, Miës does not teach design. As in all architectural styles of the past, Miës feels artistic ideas should be absorbed unconsciously while the student is learning to be a good builder. BAUHAUS

Miës keeps up his private practice while teaching at the Bauhaus. In 1930 he built what he considers his first modern house at Brno in Czechoslovakia (p. 126). It is epoch making as the most luxurious house in the modern style and as the first house where Miës' open plan was actually carried out for a particular client.

The most recent mark of Miës' position in the architectural world was his choice as the Architectural Director of the most important section of the Berlin Building Exposition of 1931. As in most German Expositions, whole houses were set up, in this case by Miës and the architects he invited. Miës' own building (p. 125) was a house developed on the principle of the Barcelona Pavilion. In this Exposition the modern style which was still a novelty in Stuttgart in 1927 was quite taken for granted. For the Stuttgart Exposition Miës had to choose architects of the older generation who had been more or less successfully converted. In 1931 there were enough men from the younger generation. BERLIN BUILDING EXPOSITION 1931

Miës van der Rohe

II. Architecture.

In his peculiar treatment of space and in his keen sense for decoration and materials Miës is unique. For him a building is a series of partially enclosed spaces opening into one another and opening to the exterior without the intervention of a solid screen as a defining façade. The planes which define these spaces he makes independent and apparently intersecting by the use of a different material for each plane: plate glass, marble, or screens of wood. These varying planes of rich materials form the basis also of Miës' scheme of decoration.

It is in the projects of the early twenties such as the Country House illustrated on page 121 that Miës' distinctive type of planning has its genesis. While Le Corbusier was experimenting with the house as a hollow box, Miës treated it as a series of brick screens, which, being independent of the roof slab, open the house to include the garden. Instead of composing the façades of the house with the windows and doors as the units, Miës makes of the roof slab and wall planes separate entities which he uses as units of three dimensional composition. There are no doors or windows in the house; only walls of glass separate the inside from the outside.

COUNTRY HOUSE 1922

The process of breaking up the traditional plan of the house with its many separate rooms enclosed in a single rectangle was begun by Frank Lloyd Wright at the turn of the century. Le Corbusier, even in his earliest house, made his interiors of one space which could be subdivided. He kept, however, the simple outer rectangle in his plans. Miës' tendency, on the other hand, is to extend the house to include part of the outdoor world, doing away with the continuous outside wall.

The plan of the Country House (p. 121) looks, indeed, less like a diagram of a house than an abstract drawing. Judged purely as such, it bears a strong resemblance to the work of the contemporary Neoplasticist painters. In the aesthetic of plans, which exists as surely as the aesthetic of façades, Miës has especial originality and power.

The early date of this Country House is shown only by the irregularity of plan and elevation, which he rejected in his later work. Some of the other projects of this period like the famous glass skyscraper of 1921, which showed even more irregularity, were undoubtedly influenced by the contemporary wave of Expressionism in Germany. Yet in 1922 he made a project for an office building which is surprisingly regular and severe. The alternate cantilevered bands of

spandrel and window are carried without a break around the building. Only in 1932 in the Columbus Haus in Berlin by the architect Mendelsohn is a building based on this astoundingly simple design actually being erected.

The executed works, the workers' apartments of 1925, the Guben and Krefeld houses of the next years, are disappointing in the light of his brilliant projects. The proportions are usually fine, but the plans are complicated, the windows of differing sizes and shapes, the façades massive in appearance. Even in the Lange House at Krefeld, the finest of these, the windows are set traditionally as holes in a masonry wall. This divergence from his projects is simply explained: the client insisted upon a more traditional execution of the architect's plan.

LANGE HOUSE

For Miës designs in three dimensions with the interior walls as the units. When a plan with small individual rooms is dictated, there is consequently no opportunity for his characteristic scheme and the resultant exterior is apt to be of well proportioned but dull design. Miës is not like Le Corbusier, for example, who designs his exteriors as entities in themselves. On the contrary he strives not to have his exteriors a screen against the outside, but merely the obvious arrangement of the walls which compose the whole house.

The Stuttgart Apartment House which again was more like a project since there was no client, was the first steel building Miës had built. He understood the fundamental principle of steel construction—regularity. Steel is most economically set up in regular standard units and this structural regularity can be made also the basis of the design of the building. The plans on page 122 show how the underlying regularity interferes not in the least with the internal arrangements of the apartments themselves. Each apartment has a different plan; many even possess the spur wall division of rooms, typical of Miës. The façade, even including the stairwell, which another architect would have made a striking vertical accent, is an exact indication of the plan and structure of the building.

STUTTGART APARTMENT HOUSE

It was not until 1929, however, in the Barcelona Pavilion (p. 124) that Miës really added to the aesthetic innovations of his Country House of 1922. The new element is the rigidly regular system of steel posts and the simple rectangular roof slab, which replace the arbitrary brick walls and irregular roof slab of the earlier project. Space flows around this rigid system. Partial screen walls, so placed as to create the feeling of space beyond, form separate rooms. The posts stand away from the walls in order to allow freedom of planning and to emphasize aesthetically the rhythm of the structure. So strong is the feeling for one space, rather than separate rooms, that Miës often continues the wall screens

BARCELONA PAVILION

Miës van der Rohe

beyond their intersections except at the four corners of the entire plan (p. 124).

In the Berlin Building Exposition in 1931 Miës used the same fundamental plan as in the Barcelona Pavailion to serve the complicated functions of a house (p. 125). Only the service quarters are shut off by regular walls. Otherwise there are only opaque and transparent partitions. The walls which separate the sleeping rooms from the living rooms run from beneath the rectangular roof slab and enclose part of the garden, providing privacy for the bedrooms and, except for glass partitions against the weather, including the garden in the house.

BERLIN EXPOSITION HOUSE

But before this Exposition, in the Tugendhat House Miës had the finest opportunity to carry out his paper and Exposition projects. The result is magnificent. The street elevation (p. 126) presents the nearest to a definite façade design to be found in Miës's work. The garden side of the main floor is all glass. The plan (p. 127) of the living floor is for the first time as completely open as Miës could wish. Again, the plan has the quality of a good abstract drawing. But as it serves as well all the needs of a family of four, it may become more influential than that for the Berlin Building Exposition House (p. 125).

TUGENDHAT HOUSE

Miës arrived at his unique manner not from an intensive study of steel construction and the functions of living, but from his long aesthetic experimentation. There is an interesting parallel to his architecture in the work of two young architect-engineers, the Bowman brothers of Chicago, who approach the problems of modern architecture primarily from a thorough and extended research in steel engineering. The Bowmans, who know nothing of Miës' work, subscribe to many of his practices. For example, they use, like Miës, absolute regularity of steel construction, cantilevering, steel columns placed free from the partitions, great expanses of glass walls. It would be difficult to find a better example of the interdependence of technics and aesthetics in architecture.

Bound up with Miës' feeling of space is his feeling for the qualities of the planes which divide that space. He dislikes cheap materials, believing that in a style which is otherwise so severe the decoration should be provided by the richness of the materials. As in the Barcelona Pavilion, he favors marbles and various types of plate glass. In his interiors, which are but the obverse of his exteriors, the planes retain their independence through distinctive materials. In the Tugendhat House (p. 127) the different materials are plate glass, translucent and clear, macassar wood, onyx, and curtains of silk and velvet. Miës relies for effect on the richness and contrast of the materials themselves. There is no artificial pattern.

Miës van der Rohe

In his expositions, as well as in interiors, Miës uses luxurious amounts of material. Sheer quantity of one plain material displays best the quality inherent in it. Just as in the Tugendhat House the decorative effect is enhanced by the silk curtain seventy-five feet long, and a whole wall of onyx, so in exposition displays at Stuttgart, Barcelona and Berlin, the effect depends on great sheets of marble or glass set in metal frames, bolts of silk draped from a forty-foot ceiling, hundreds of identical bottles.

Quantity is a principle of display as well as of decoration. A thousand identical objects in a single reiterative row attract more attention than a few samples composed artistically in different levels against colored backgrounds. Miës' displays, in which he is so ably assisted by his associate, Lilly Reich, are never monotonous because of the varied materials exposed and the simple grouping appropriate to their character. As in his interiors Miës combines simplicity, richness and great scale.

Because Miës thinks of the outside of a house as part of the inside, he has never achieved in his executed buildings a façade design as brilliant as Le Corbusier's, nor can he compete with Oud in making distinguished architecture out of cheap building. As an artist of the plan, as a decorator in the best sense, as a creator of space, he has no equal.

P. J.

THE MODEL IN THE EXHIBITION: THE TUGENDHAT HOUSE, BRNO, CZECHOSLOVAKIA. 1930 (pp. 126 and 127)

The model of the Tugendhat house makes clear many things which are difficult to apprehend in the plans or photographs. The house is adjusted to the steeply sloping site by placing the street entrance on the upper floor while permitting the lower story of living rooms to open freely upon the garden. The clear glass walls of the living rooms, which can be lowered electrically into the cellar, and the translucent glass walls on the street side exemplify the functional distinctions evident in the planning of the house. The most remarkable feature, and most typical of Miës, is the plan of the lower floor (p. 127). Though enclosed in a single rectangle, and dotted in a regular pattern by the steel supports, the living section contains many rooms which form in effect one space. The composition is developed not only by the partitions within this space but also by the fine materials of which these partitions are composed: onyx, macassar wood, velvet

Miës van der Rohe

and silk. The design especially on the street side shows Miës tendency to make of the roof slab more than the top plane of an enclosed volume. It becomes an independent unit under which walls may divide the space. Because of the lack of normal windows it is difficult to appreciate the size of the house in photographs. The glass wall of the living room is one hundred feet long and the stairs to the garden from the terrace have a monumental width and shallowness which make the ten-foot difference in level appear much less.

P. J.

MIËS VAN DER ROHE—CHRONOLOGY OF LIFE

1886	Born in Aachen.
1905	Moved to Berlin.
1905–1907	Worked in Bruno Paul's office as furniture designer.
1908–1911	Worked as an assistant to Peter Behrens. Supervised the building of the German Embassy at Leningrad
1911	Established himself as an independent architect in Berlin.
1914–1918	Fought in the Balkans.
1921–1922	Publication of important projects particularly the Glass Skyscraper.
1926–	First Vice-President of the Deutscher Werkbund.
1927	Director of the Werkbund Exposition at Stuttgart.
1929	Director of the German Section of the International Exposition at Barcelona.
1930	Succeeded Hannes Meyer as Head of the Bauhaus School at Dessau.
1931	Director of the Section of the Berlin Building Exposition, *The Contemporary Dwelling.*

MIËS VAN DER ROHE—LIST OF WORK

The model in the Exposition represents the Tugendhat House, Brno, Czechoslovakia, 1930.

* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1907 House in Neu Babelsberg.

1911 Fuchs House, Berlin-Zehlendorf.

1912 †[Project for the Kröller House, Holland.]

1913 House on the Heerstrasse, Berlin.

1921 [Project for an all glass skyscraper.]
[Project for the first competition for an Office Building opposite the Friederichstrasse Station, Berlin.]

1922 †[Project for a brick country house.]
[Project for a glass and concrete cantilevered office building.]

1923 [Project for a concrete country house.]

1925 Workers' houses on the Afrikanerstrasse, Berlin.

1926 House in Guben.
Monument to Karl Liebknecht and Rosa Luxemburg, Berlin.

1927 *†Apartment house in the Weissenhofsiedlung, Stuttgart.

1928 *Lange House, Krefeld.
Esters House, Krefeld.
Picture gallery added to the Fuchs House, Berlin-Zehlendorf.
[Project for a competition for an Office Building opposite the Station, Stuttgart.]

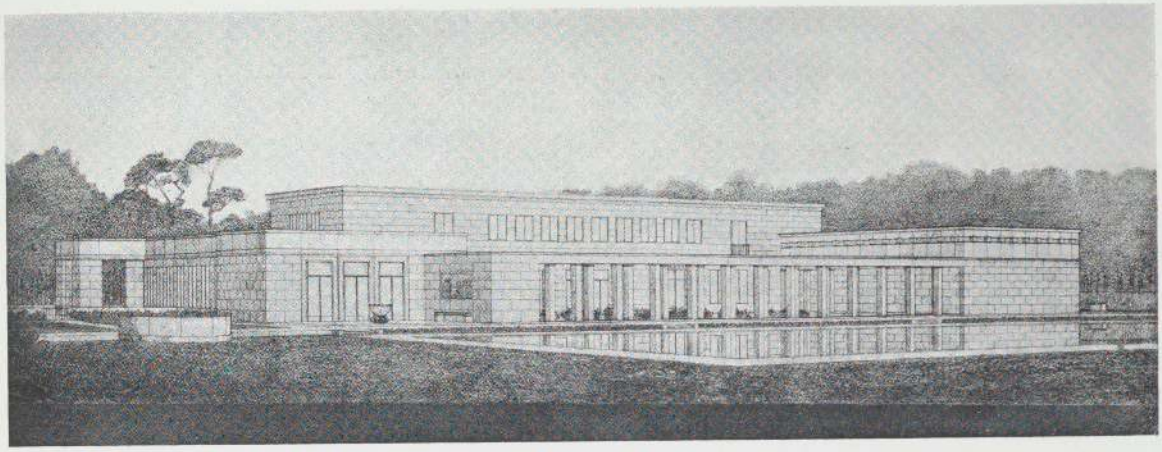
Miës van der Rohe

1929 *†German Pavilion at the International Exposition, Barcelona.
Hesse apartment interior, Berlin.
[Project for the second competition for an Office Building opposite the Friederichstrasse Station, Berlin.]

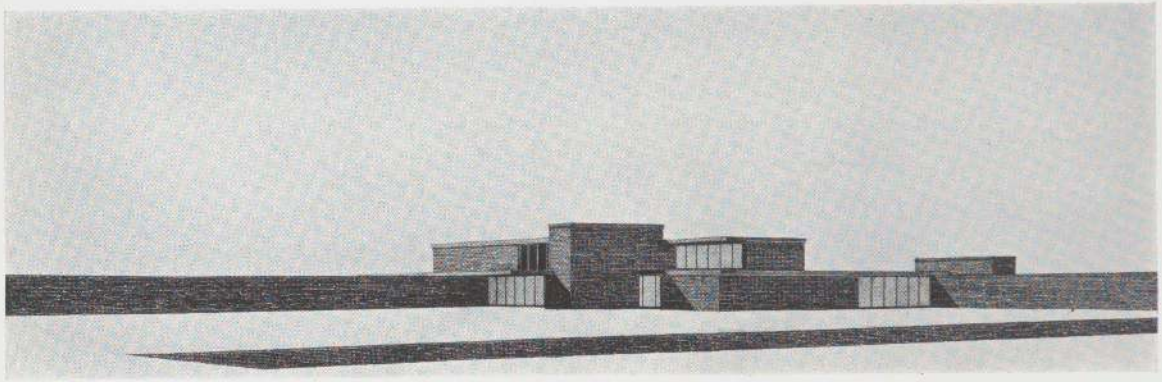
1930 *†Tugendhat House, Brno, Czechoslovakia.
Apartment interior, New York.
[Project for a Golf Club, Krefeld.]

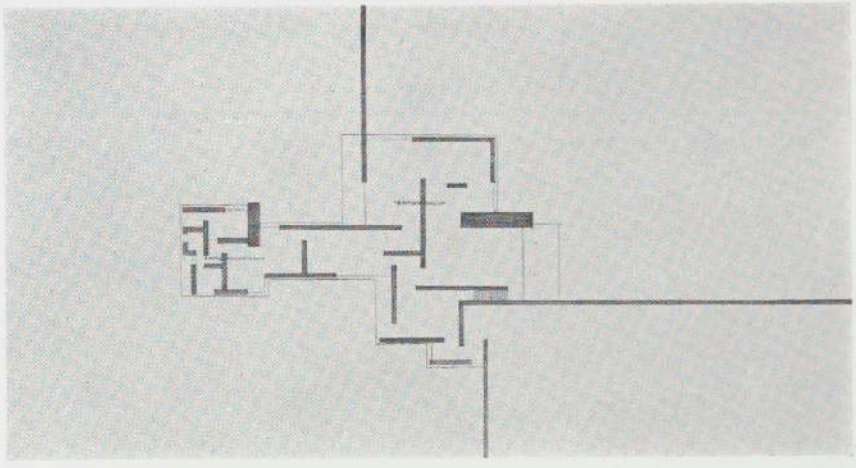
1931 †House at the Berlin Building Exposition.

Many chairs designed for the Stuttgart and Barcelona Expositions and the Tugendhat House are now in production. Since 1927 Lilly Reich has been associated with Miës in the designing of interiors and displays at expositions.

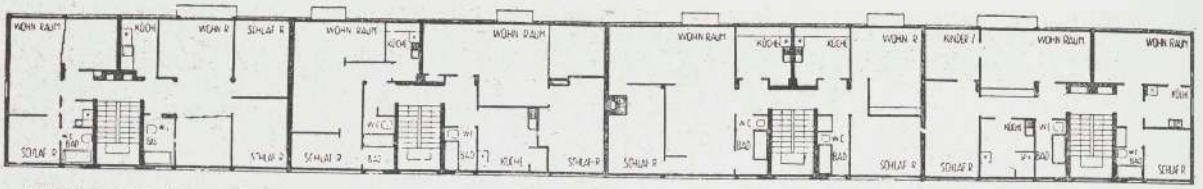


MIËS VAN DER ROHE: Project for the Kröller House, Holland. 1912

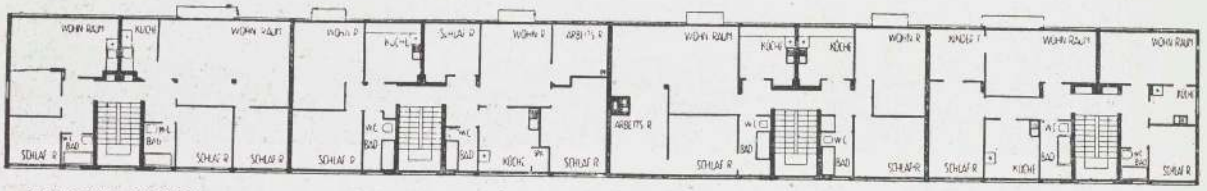




MIËS VAN DER ROHE: Project for a Brick Country House. 1922



THIRD FLOOR



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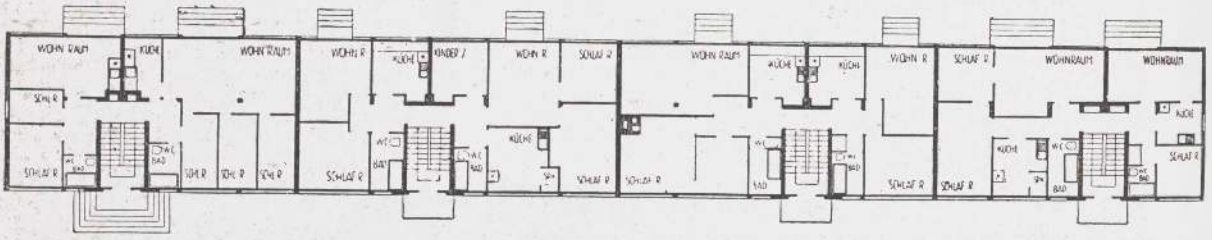
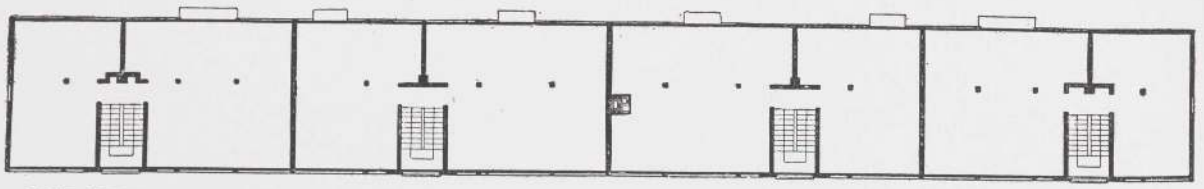
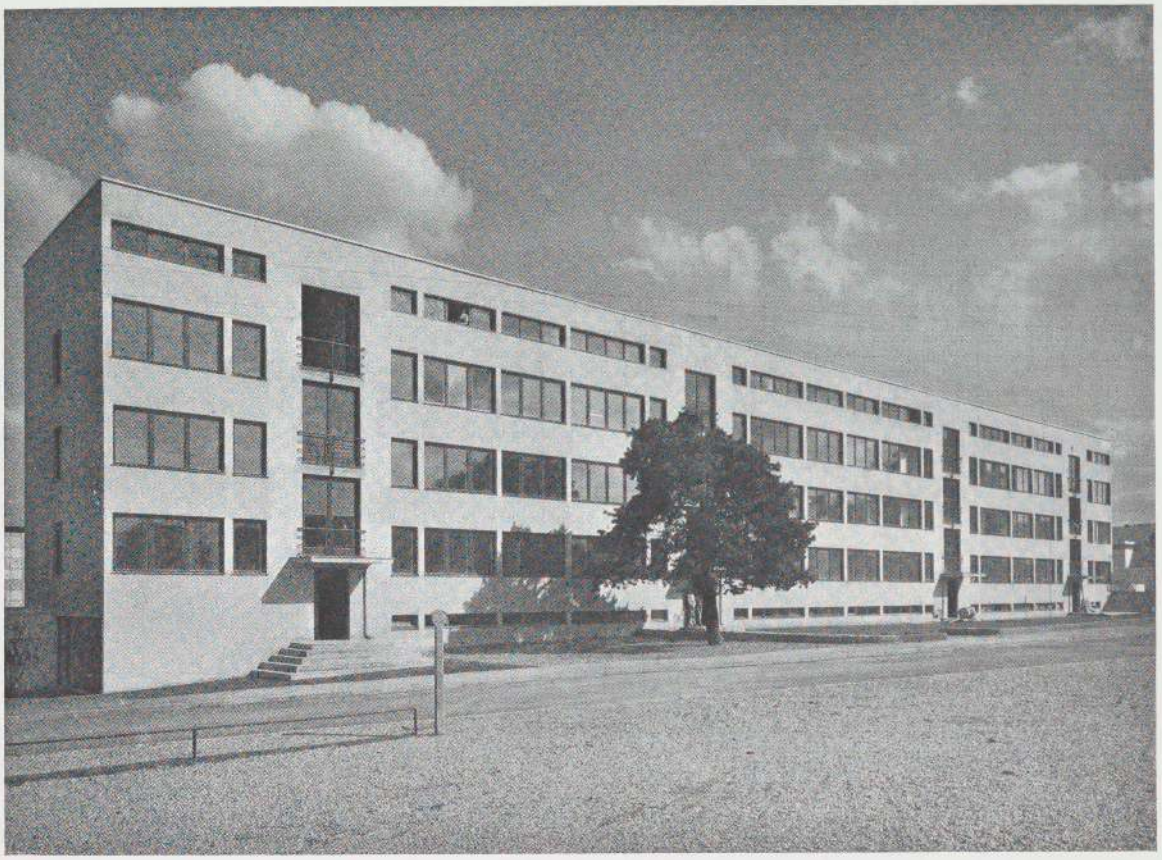


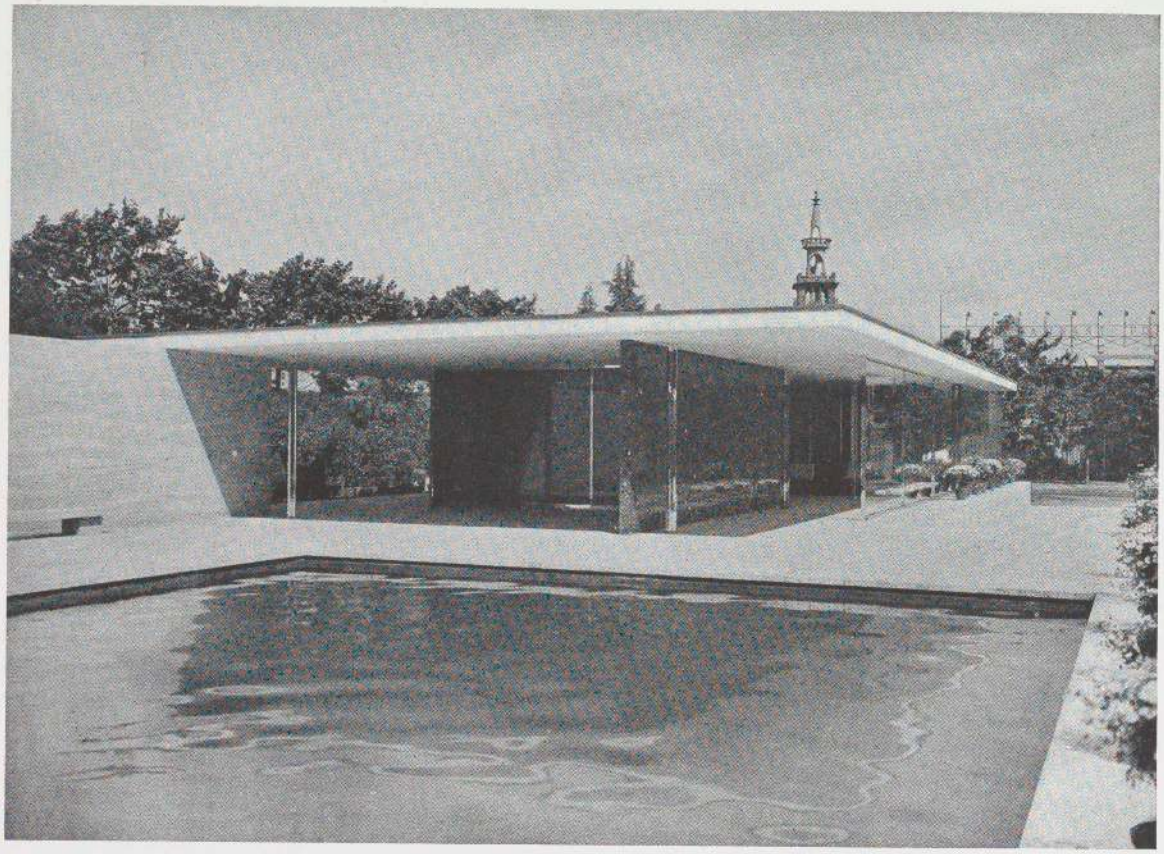
GROUND FLOOR

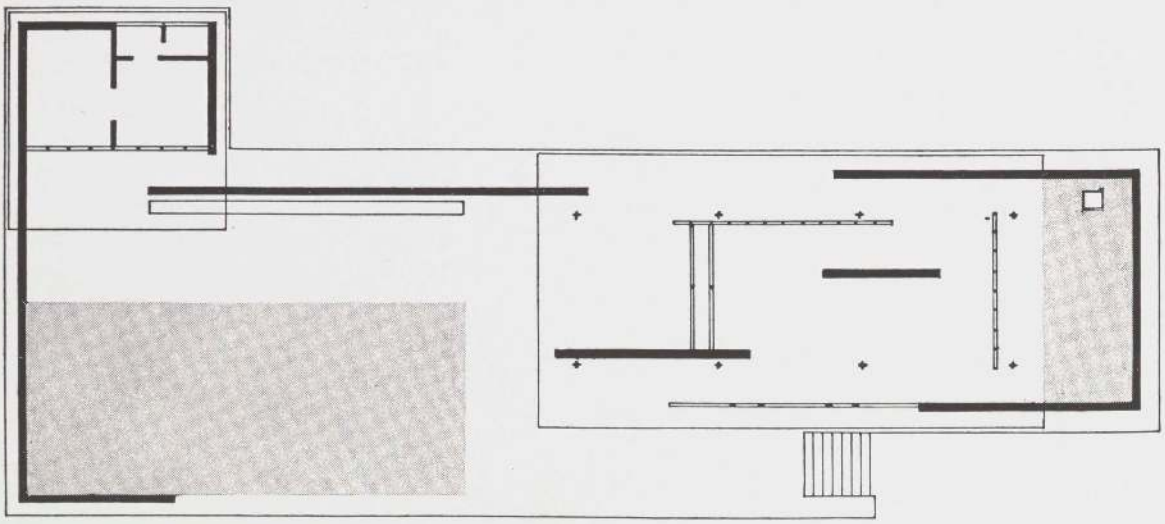


THE SIMPLE CONSTRUCTION SYSTEM

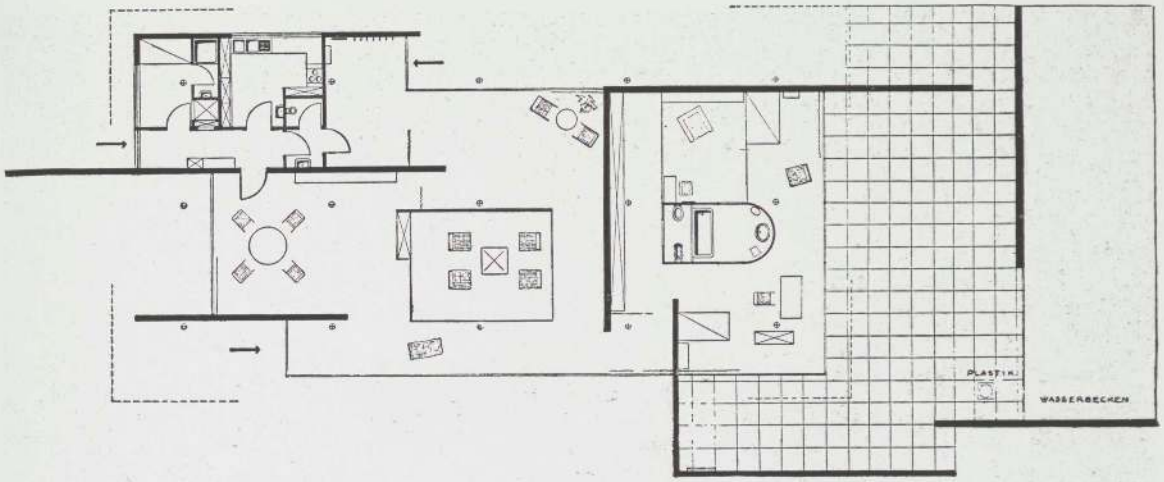


MIËS VAN DER ROHE: Apartment House in the Weissenhofsiedlung
Stuttgart, Germany. 1927

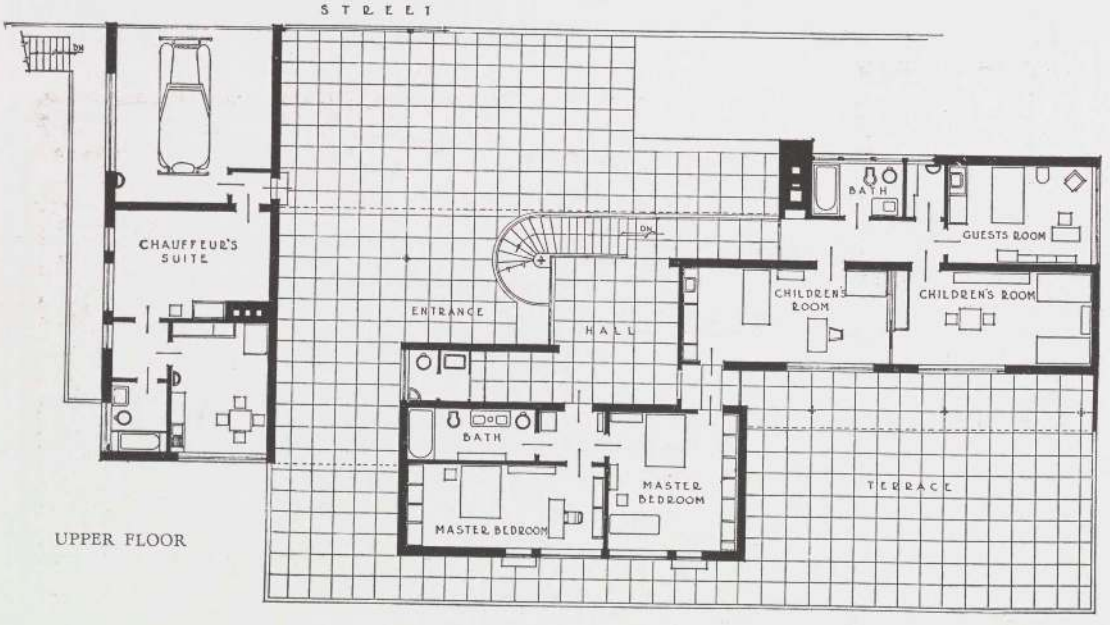




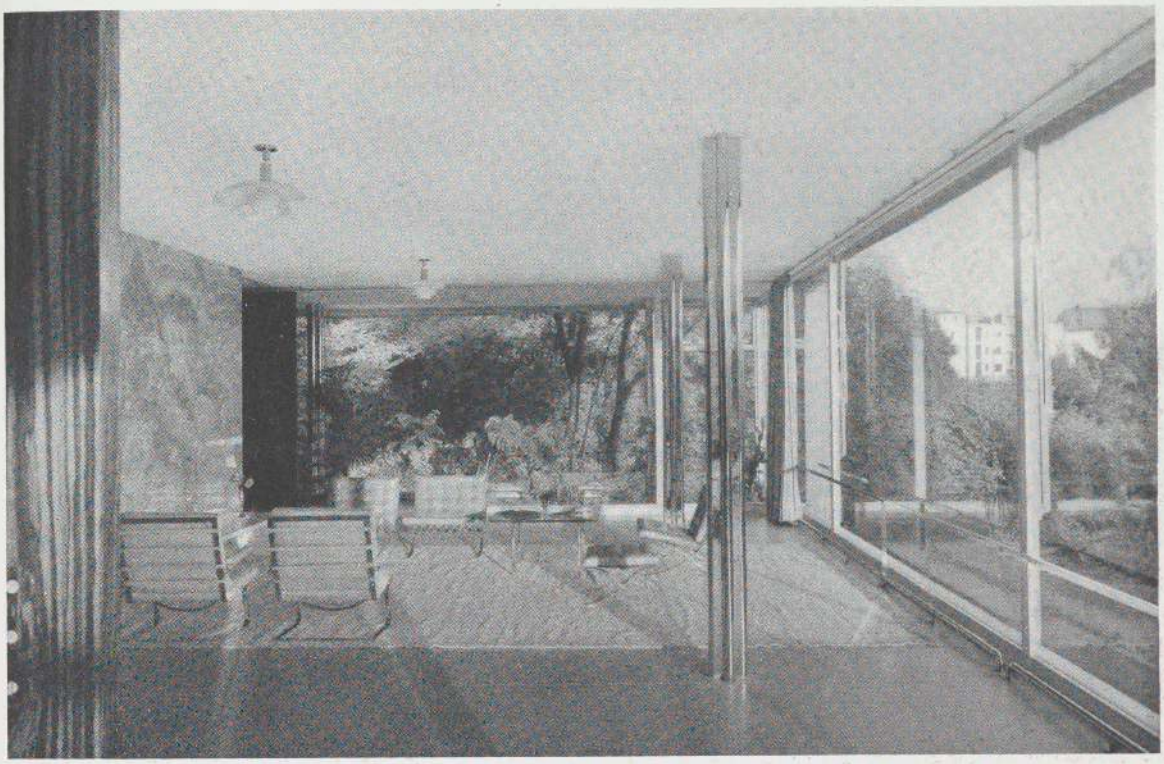
MIËS VAN DER ROHE: German Pavilion at the International Exposition Barcelona. 1929

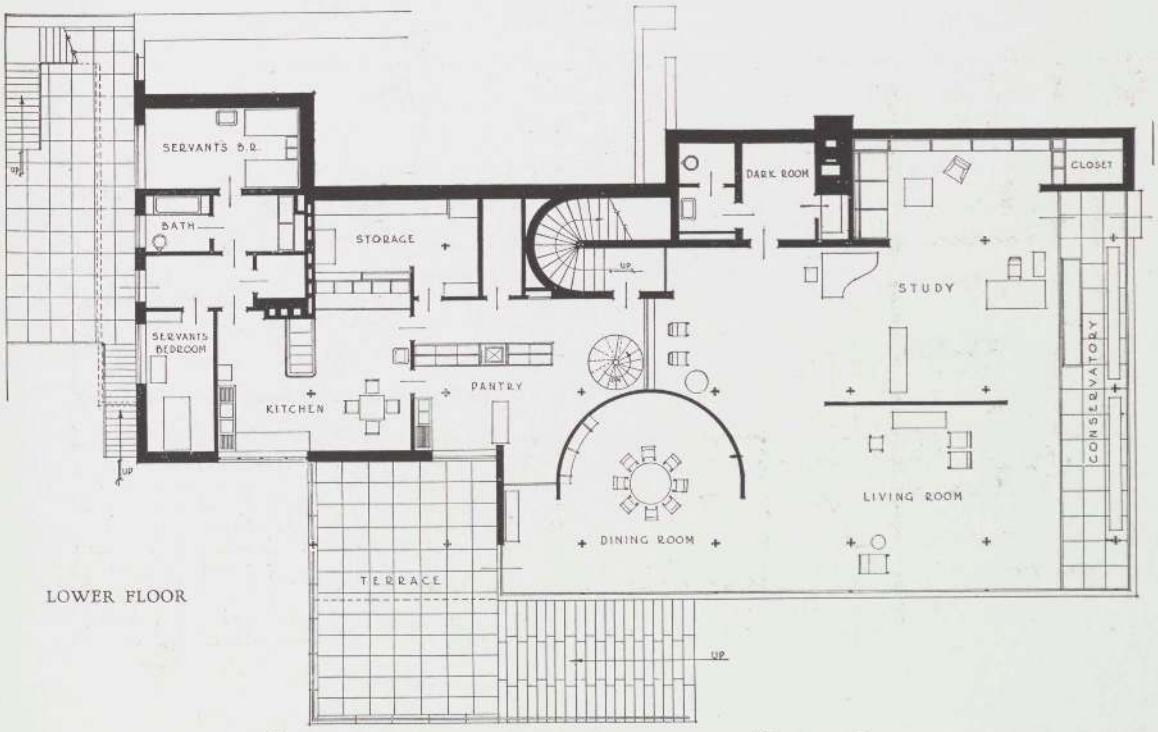


MIËS VAN DER ROHE: House in the Berlin Building Exposition. 1931



MIËS VAN DER ROHE: Tugendhat House, Brno, Czechoslovakia. 1930. Exterior





LOWER FLOOR

MIËS VAN DER ROHE: TUGENDHAT HOUSE, CZECHOSLOVAKIA. 1930

RAYMOND HOOD

RAYMOND HOOD was born in Pawtucket, R. I., in 1881. He was educated at Brown University and the Massachusetts Institute of Technology. After working in the offices of Cram, Goodhue & Ferguson in Boston and with Palmer, Hornbostel & Jones in New York, he went abroad receiving his diploma from the Ecole des Beaux Arts in Paris in 1911. On his return to America he worked until the War in association with Henry Hornbostel in Pittsburgh.

CHICAGO TRIBUNE TOWER

Hood's career really began in 1922 when, in association with John Mead Howells, he won the international competition for the Tribune Tower in Chicago. This Gothic project, carried out in the next two years, was not particularly advanced as skyscraper design. Comparison with the other projects entered in the competition shows that its originality lay largely in the unification of the composition.

AMERICAN RADIATOR BUILDING

The American Radiator Building in New York, completed at the same time as the Tribune Tower, was somewhat simpler and less traditional in design. But its fame was more due to its startling black and gold polychromy than to any more fundamental innovation. The use of black brick to minimize the effect of the windows might even be considered a reactionary step. The Radiator Building built in London four years later in collaboration with J. Gordon Jeeves is much better. The walls are unbroken by vertical projections; the windows are well related to the smooth dark plates which cover the whole façade, while the top, despite its suggestion of a cornice, is simply treated with a single setback. The polychrome ornament here and in the studios of the National Broadcasting Company is in the gaudy taste of the Paris Exposition of 1925.

The monolithic granite Mausoleum for the McCormick family in Rockford, Illinois, built in 1927 showed a finer sense of the possibilities of modern design although the construction was traditional.

3 EAST 84TH STREET

In the apartment house at 3 East 84th Street in New York (p. 137), built in collaboration with Howells in 1928, Hood attempted a somewhat more radical modernism than the mere application of exotic detail. The design is strongly vertical and there is still much ornament on the lead spandrels, but the limestone buttresses between the windows project very slightly and are quite undecorated. Yet as late as 1929 the majority of Hood's work was completely traditional, and he was hardly to be distinguished from the other successful New York architects who began to permit their draftsmen to turn to the repertories of novel orna-

ment coming from Paris rather than to the measured detail of the historic styles.

In 1930 Hood built two buildings in which he achieved a more thoroughgoing modernism in the field of apartment and skyscraper design than his prominent metropolitan colleagues. The Beaux Arts Apartments (p. 138) were built in association with the firm of Kenneth M. Murchison. Here the horizontality of the design is emphasized by corner windows and by continuous spandrels of light brick. But this banding, like the European examples it imitated, is rather deceptive; for there are no ribbon windows and the elaborate piling up of the upper stories contradicts the simplicity of the general design.

BEAUX ARTS APARTMENTS

THE DAILY NEWS BUILDING

The Daily News Building (p. 139), on which Hood was again associated with Howells, remains the most effective skyscraper in New York. This effectiveness is obtained at a price. The setbacks, each the width of bay, are brilliantly handled in a way that does not produce a heavy pyramidal mass. But the crisp square termination which masks the watertank and the elevator machinery is a deception. These elements might well have been frankly expressed. This skyscraper is far simpler and better composed than any other, yet fundamentally it is as much an example of applied architecture as the Tribune Tower.

Indeed, William Van Alen's excellent office building at 421 Seventh Avenue, built as early as 1926, was simpler in design and essentially sounder despite its limited use of traditional ornament. For it has windows nearly the width of the bays throughout and the continuity of surface is emphasized by the avoidance of reveals and by the use of the same slabs of artificial stone on supports and spandrels without differentiation.

On the Daily News Building, however, the effect of vertical banding is obtained deceptively by introducing intermediate buttresses similar to those which sheath the supporting columns and by covering the spandrels with dark brick in contrast to the white brick of the buttresses. As in the American Radiator Building, the windows are inconspicuous and the separate stories nearly indiscernible.

The Patterson house at Ossining, also built in association with Howells in 1930, indicates an attempt to assimilate many of the features of contemporary European domestic design such as roof terraces, large windows and plain uncapped walls. The exterior was camouflaged with variously colored paint suggesting the fantasies of the German expressionists. The garage, despite its chamfered corners which suggest weight and mass, is much more successful than the more incoherent house.

Hood

The two Rex Cole Refrigerator Showrooms built in 1931 on Long Island indicate a greater respect for the possibilities of modern construction at small scale and a sounder command of contemporary design than the Patterson house. The arbitrary symmetry and the emphasis on advertising display lend these buildings the air rather of exposition pavilions than of permanent architecture.

MCGRAW-HILL BUILDING

Hood's latest important work, the McGraw-Hill Building (p. 140), on West 42nd Street, built in 1931, marks a significant turning point in skyscraper design. It is the first tall commercial structure consciously horizontal in design executed by an architect since Sullivan's Schlesinger-Mayer Building in Chicago built in 1903. In the same year, 1931, the Starrett-Lehigh Building on Eleventh Avenue at 26th Street, with its cantilevered concrete construction, was a more radical example of the same tendency but it was less conscious aesthetically. Indeed, the architects, Cory & Cory, regretting the economic demand for a horizontal design, decorated the central feature of the south side with vertical buttresses.

The continuous spandrels of the McGraw-Hill Building faced with sea green tiles, the vertical supports sheathed with dark green painted metal, and the wide groups of windows produce a standard wall pattern at once logical and agreeable. Unfortunately the setbacks are distinctly less skilfully handled than on the Daily News Building and the decorative advertising feature on the top is inharmonious and out of scale. Moreover, both the setbacks and the terminal motif suggest a general massive pyramidal form which contradicts in appearance the light open cage pattern of the walls.

Hood is at present engaged upon the Chicago Exposition of 1933 and the Rockefeller City development in New York. Unfortunately it appears that neither of these will be an advance over the McGraw-Hill Building. The published projects suggest rather a retrogression toward Hood's earlier ventures into applied modernism. Rockefeller City is, of course, in the hands of other architects as well as Hood.

The American Skyscraper Architect

Raymond Hood has in the last two years experimented with a type of design definitely more modern than that of other New York skyscraper architects. Working at various times with different associates he has claimed responsibility for design throughout his career. Yet he minimizes the importance of design in the traditional sense. Indeed his point of view resembles in many ways that of

the European functionalists who deny altogether the aesthetic element in architecture.

Hood's development illustrates the inevitability of modern conceptions of architecture rather than any basic originality or aesthetic conversion. Most of American architecture of the twentieth century has been produced under the same conditions which limit the aesthetic success of the Daily News and the McGraw-Hill Buildings. It is much to Hood's credit that those skyscrapers are more consistent as well as more effective than such famous rivals as No. 1 Wall Street, the Squibb Building, the Chrysler Building and the Empire State.

Among the skyscraper architects of America, Hood stands out by his frank admission of the limitations of the field. His aim is to provide the commercial client with the maximum of rentable space at minimum cost. He is not an idealist and he is not a creative artist. He should therefore not be directly compared with those architects in Europe and America who approach contemporary building from the sociological or from the artistic standpoint. His approach is above all that of the business man and his successes must be measured in terms which are not directly applicable either to the houses of Wright and Le Corbusier or to the housing of Gropius and Haesler.

Hood accepts the conditions under which the metropolitan architect is expected to work in America today. His advances in construction and in design are greater than those of his New York colleagues or of Holabird and Root in Chicago. But they are predicated on a conception of service to the client neither aesthetic nor sociological. The service that he provides in bringing together realtors, various engineering specialists and all the others who are involved in the execution of a skyscraper, is one of supervision and coordination, not of creation. This has long been true of most successful American architects. Hood has the advantage of accepting the situation without pretense and working sympathetically with both technicians and business men. In so far as modern architects must still accept and cope with the desperate building conditions of the metropolis he can do it better than most. Were there better cities to build doubtless he would build them.

THE MODEL IN THE EXHIBITION: COUNTRY TOWER (p. 141)

Hood's current project for an apartment house in the country is ingenious rather than radical. It is based on two related ideas. In the first place by piling up

apartments in the air the inhabitants as a group can afford to control a vastly larger area of open land than if the tract were divided and individual houses built. Secondly, by building the tower like a city office building the apartments may be arranged within the permanent skeleton to suit the individual families. The scheme, because it implies a high rent level, has no particular sociological significance.

Ten towers replace a hundred houses on a large tract of land. Each tower has its own garages, gardens, swimming pools and other sport facilities in which all the inhabitants have equal rights. The construction of the tower in T form with communications concentrated at the center permits a maximum of outside wall surface for the apartments. The steel skeleton need not interfere with the disposition of the interior partitions, or even with the use of a considerable part of the apartment area for open balconies. None of the varied plan contributions suggested are novel. Indeed, the restriction of window area proposed in most would not only reduce the advantages of apartments in the country but quite change the general effect of a glass sheathed skeleton the general basic design provides.

In the absence of zoning laws the silhouette is uncomplicated by frequent set-backs, although the duplexes at the top are skilfully provided with uncovered terrace space impossible on the lower floors. It is unfortunate that Hood, to whom ornament is rightly a matter of no consequence, should have arranged for patterned terra-cotta bands at top and bottom. The same effort and expense spent on obtaining finer materials or on achieving a more careful adjustment of color would lead to a more distinguished architectural effect. In any case the applied ornament would hardly be very conspicuous on the executed building and the visual impression would depend more on the general proportions and the relation of the brick spandrels to the exposed concrete floor lines. The contrasting color of the brick on the supports produces the same artificial banded effect as on the Beaux Arts apartments, which is unfortunate. The double hung windows complicate the surface pattern in a way hardly essential to the basic program. These matters of detail, unimportant as they are in Hood's estimation, serve nevertheless to distinguish his work clearly from that of other leaders of contemporary architecture whose aesthetic conscientiousness is as great as their technical ingenuity.

HENRY-RUSSELL HITCHCOCK, JR.

Interviews with Hood frequently appear in American newspapers.

The standard monograph on Hood is that in the *Contemporary American Architects* series edited by A. H. North. New York and London: 1931.

RAYMOND HOOD—CHRONOLOGY OF LIFE

1881	Born in Pawtucket, R. I.
1898	Studied at Brown University.
1899–1903	Studied architecture at the Massachusetts Institute of Technology.
1903–1904	Worked with Cram, Goodhue & Ferguson in Boston, and Palmer, Hornbostel & Jones in New York.
1904–1911	Studied at the Ecole des Beaux Arts, Paris.
1911–1914	Worked with Henry Hornbostel in Pittsburgh.
1914–1927	Established himself as independent architect in New York.
1922	Won the International Competition for the Chicago Tribune Tower.
1926	Was awarded Medal of Honor in Architecture by the Architectural League of New York.
1929–1931	President of the Achitectural League of New York.

RAYMOND HOOD—LIST OF WORK

The model in the Exhibition represents the project for Country Tower, a skyscraper apartment house in the suburbs of New York.

* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

1920	Alterations to the John Gun Residence.
1922–1924	Chicago Tribune Building. (John Mead Howells, Associate.)
1924	Mori's Restaurant, New York. St. Vincent de Paul Asylum, Tarrytown, N. Y. (With J. André Fouilhoux.) *American Radiator Building, New York.
1925	House of the architect, Stamford, Conn.
1926	Bethany Union Church, Chicago
1927	McCormick Mausoleum, Rockford, Ill. Morris House, Greenwich, Conn. Studios of National Broadcasting Company, New York.
1928	†3 East 84th Street, New York. (John Mead Howells, Associate.) National Radiator Building, London, England. (J. Gordon Jeeves, Associate.)
1929	Mason Temple & Scottish Rite Cathedral. (With Godley, Fouilhoux, and H. V. K. Henderson.)
1930	†Beaux Arts Apartments, New York. (With Godley & Fouilhoux; plan by the firm of Kenneth Murchison.) *†Daily News Building, New York. (John Mead Howells, Associate.) Addition to the DuPont Building, Washington, D. C. (With Godley & Fouilhoux.) *Patterson House and Garage, Ossining, N. Y. (With John Mead Howells, Associate.)

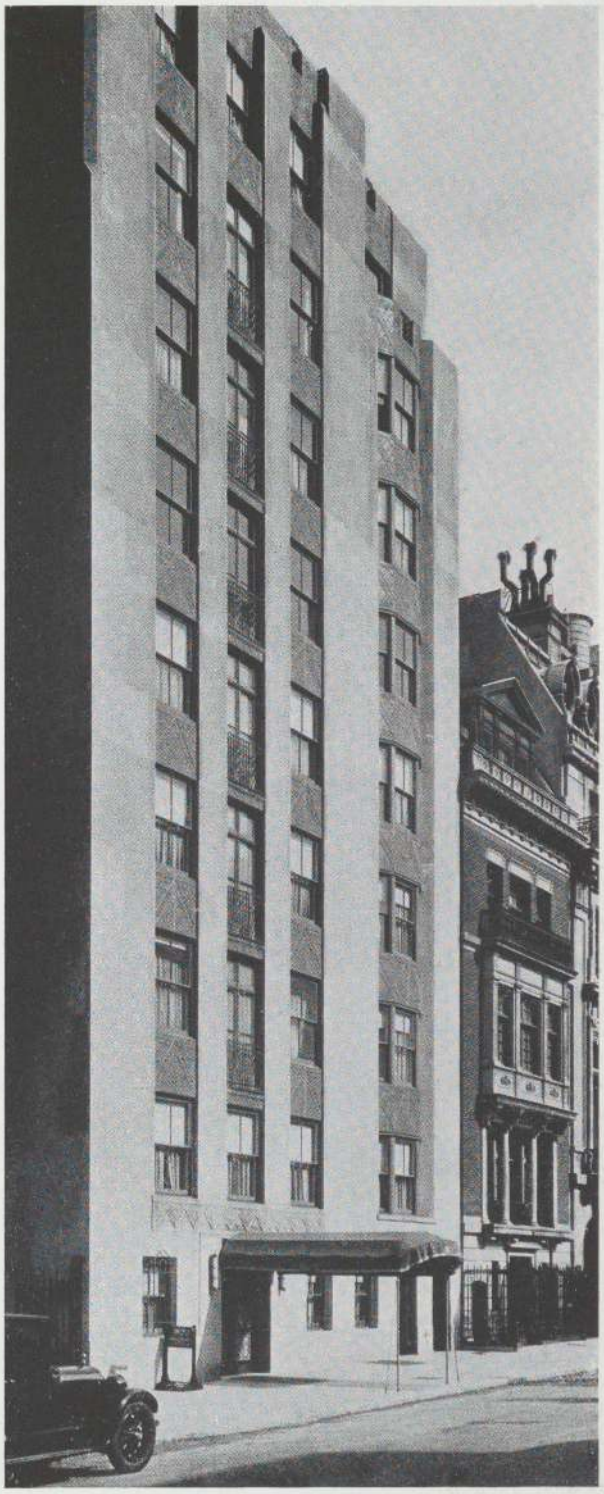
Hood 1930–1933 Electrical Buildings for the Century of Progress Exposition, Chicago.

1931 Rex Cole Showrooms, Bay Ridge and Flushing, L. I. (With Godley & Fouilhoux.)

*†McGraw-Hill Building, New York. (With J. André Fouilhoux.)

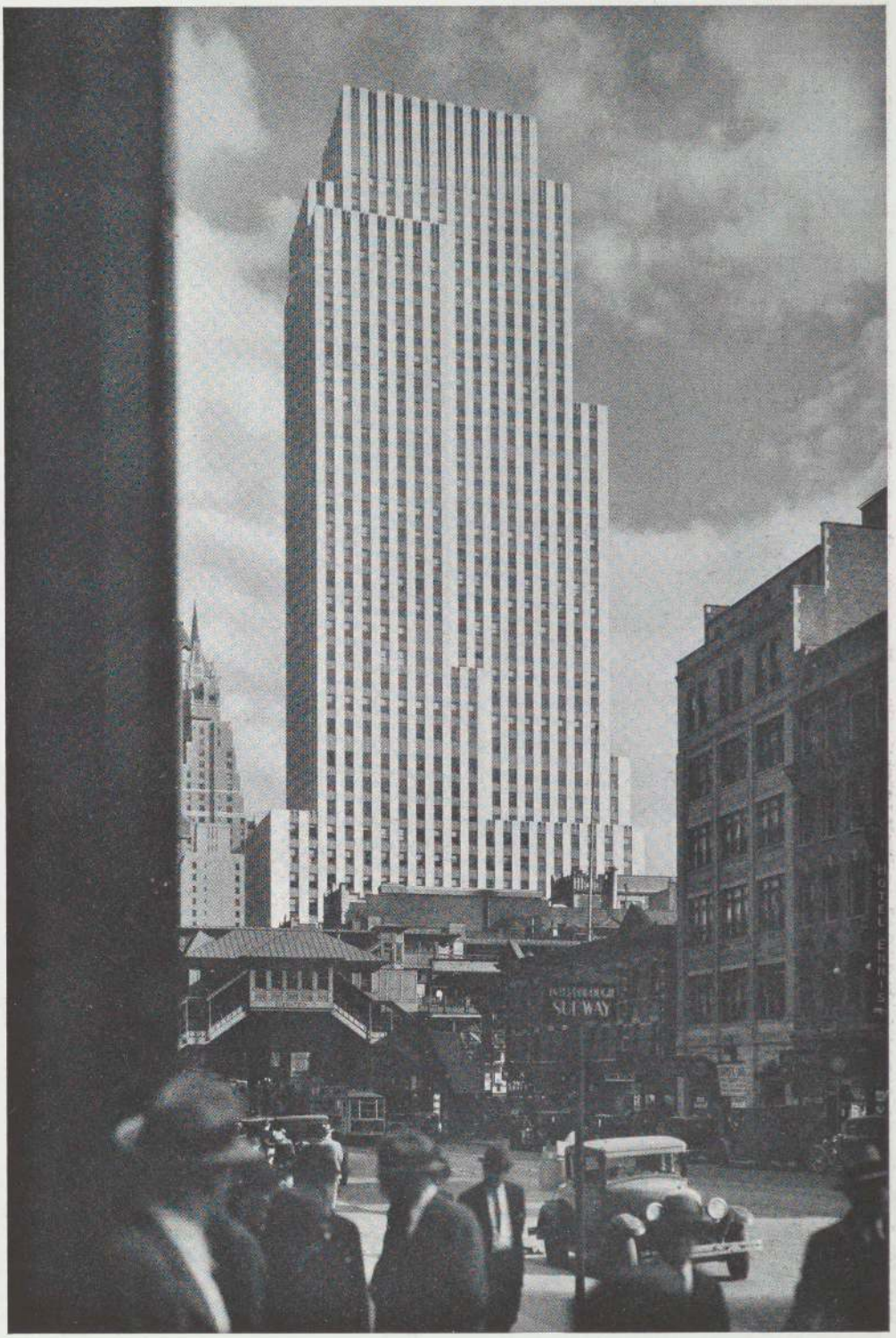
1931– Rockefeller City, New York. (With J. André Fouilhoux; Reinhardt & Hofmeister; Corbett, Harrison & McMurray, Associate Architects.)

1932 *†[Project for skyscraper apartment tower in the country.]



RAYMOND HOOD: 3 East 84th Street, New York. 1928

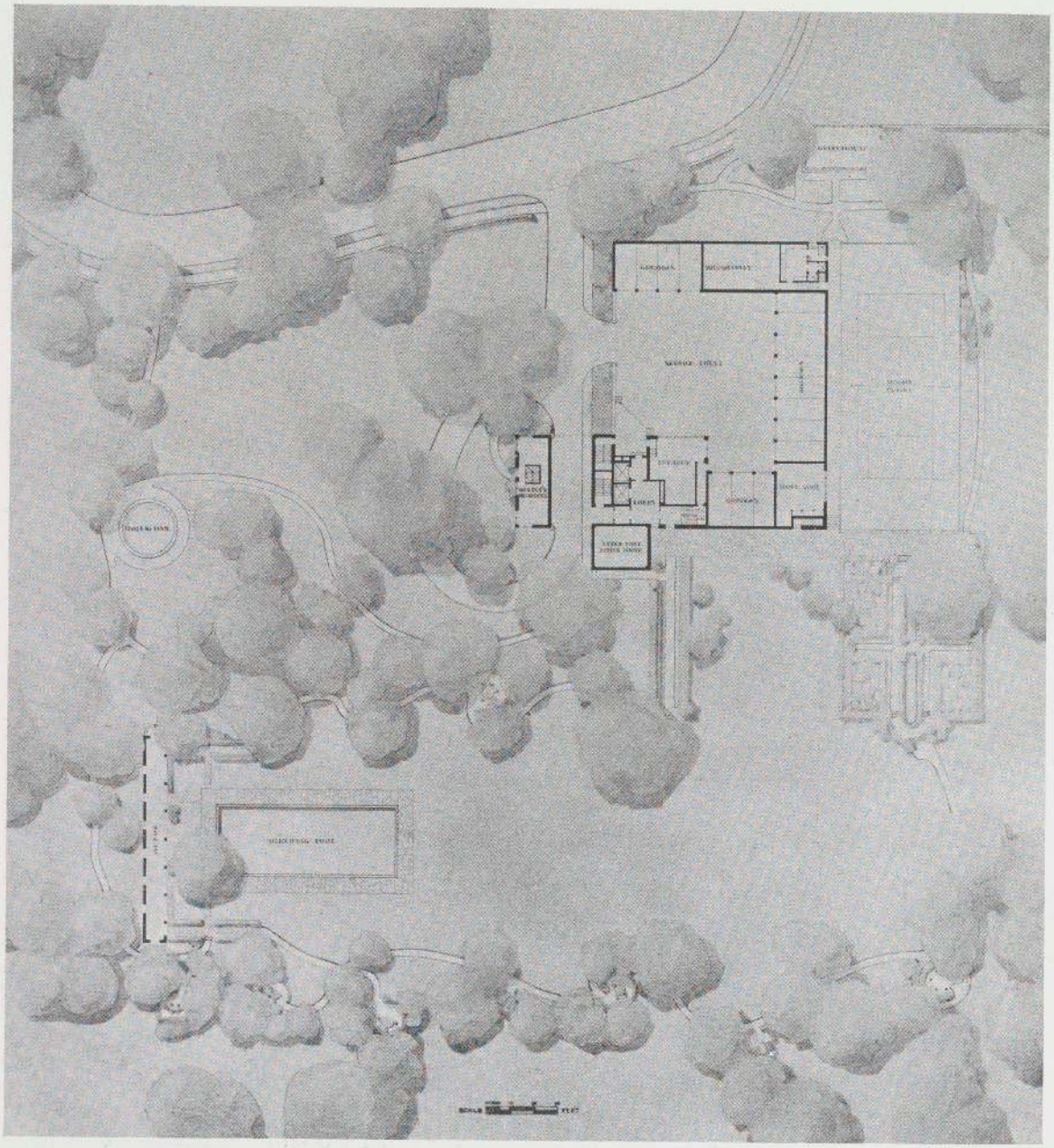
RAYMOND HOOD: Beaux Arts Apartments, New York. 1930



RAYMOND HOOD: Daily News Building, New York. 1930

RAYMOND HOOD: McGraw-Hill Building, New York. 1931

RAYMOND HOOD: Project for Apartment Tower in the Country. 1932



RAYMOND HOOD: Plan of "Country Tower."

HOWE & LESCAZE

IN EUROPE architecture is usually the product of a single architect; in America for various reasons the partnership of architects is typical. Some firms are entirely the expression of one man. In others, collaboration has real meaning. When Howe and Lescaze joined forces in 1929, modern architecture of a type hitherto hardly known in America was brought into the field of regular American practice. In the work done since both have been represented equally but in different ways, Lescaze representing originality and imagination, Howe representing the restraining force of cool intelligent criticism and long practical familiarity with American conditions.

George Howe

George Howe was born in 1886. He was from an early age educated as much by wide travel and through the cultural interests of his parents as by the schools in Switzerland and New England where he studied. At Harvard, however, he profited from the courses in art history of Charles Moore. Moore, developing the theories of Viollet-le-Duc, believed that in structure and in function lay all the significance of Gothic architecture. This conception was of immense importance in forming Howe's attitude toward the art. Though his first interest had been painting, his parents directed his thoughts toward architecture as a career for the typical American reason that it seemed to them more stable.

Memories of Italy and the rising glory of McKim, Mead and White counterbalanced at the time the teaching of Moore. Yet while he was at the Ecole des Beaux Arts in Paris, Howe was influenced not only by the formal instruction of Victor Laloux, but by the new Jugendstil in Germany with its fresher and more eclectic vision.

Establishing himself in Philadelphia in partnership with Walter Mellor and Arthur I. Meigs, Howe worked at first largely in the field of domestic architecture (p. 149). The houses produced by this firm were elastic in plan, frank in their use of local materials, but, for all their simplicity, traditional and eclectic in the elements of design.

Coming eventually into contact with commercial architecture and realizing the lack of meaning in the convention of covering steel with masonry design, Howe turned from the line on which he had thus far advanced. The interest of his Paris days in new European developments had never abated. Separating him-

Howe & Lescaze

self from his Philadelphia partners Howe shortly afterwards joined Lescaze, for in him Howe found a man whose education had been from the first along the most radical European lines.

William Lescaze

Lescaze was born in Geneva, Switzerland, in 1896. While at the Collège de Genève he also followed courses in painting and modelling at the local Ecole des Beaux Arts. In 1915 he entered the classes of Professor Karl Moser at the Technische Hochschule in Zürich. Moser was perhaps the first to give under official auspices formal instruction in modern architecture. On his graduation from this school Lescaze came to America with Professor Moser's son, Werner M. Moser. In his first years here he had few commissions of interest and was chiefly occupied with interior design. Prior to the beginning of his association with Howe, only a bus terminal in 1927 (p. 150) in New York and a small country house at Mt. Kisco require mention. The former represented a direct and economical handling of a metropolitan problem, but without conspicuous architectural interest. The country house despite its large windows and horizontality was as fundamentally traditional as Howe's work.

Howe & Lescaze—1929

OAK LANE SCHOOL

The Oak Lane Country Day School (p. 151) built in 1929 near Philadelphia was the first joint work of Howe and Lescaze. Although the design represents a complete break with American traditions, the construction is not particularly advanced. Impressive as it was at the time, it appears now to have had value chiefly as a manifesto turning American attention to new architectural possibilities.

HESSIAN HILLS SCHOOL

The Hessian Hills School (p. 152), just completed, marks an enormous advance over the earlier school in frankness of construction and in simplicity of design. Built under conditions of financial stringency it lacks lightness and grace. Exposed concrete, moreover, is less attractive than other more expensive surfacing. But this school may be compared with such important European examples of the last few years as Hannes Meyer's at Bernau and Lurçat's outside Paris, representing like them a thorough and sound treatment of a particularly important problem of modern architecture.

PHILADELPHIA SAVING FUND SOCIETY

The building for the Philadelphia Saving Fund Society (p. 153) now being completed in Philadelphia marks even more than Hood's McGraw-Hill Building

(page 140) or Cory & Cory's Starrett-Lehigh Building the application of an aesthetically logical and consistent horizontal scheme of design to the skyscraper. It is too soon to appraise this building in detail but its significance already appears. The tower with its cantilevered façade of rows of aluminum window frames and gray brick spandrels is certainly admirable both as sound building and excellent architecture. The curving corner of the granite surfaced base for the banking rooms is awkward in its relation to the general shape of the building and the handling of the elevator tower at the rear at present appears confusing. But it is the one American skyscraper which is worth discussing in the same terms as the work of the leading architects of Europe.

Howe & Lescaze

The work of Howe & Lescaze represents an increasingly successful attempt to apply in America with full regard for all our conditions, the technical and the aesthetic ideas of modern architecture as they have been developed in the last decade in Europe. They are not nationalists nor are they importers. They recognize that since the nineteenth century, technics and design have developed differently in America than in Europe. They aim to bring these developments together and to work as a firm of American architects respectful of, but not dominated by, the concepts of the nationalists and the functionalists. Theirs is the direction in which our better architecture may be expected to advance.

THE MODEL IN THE EXHIBITION: CHRYSTIE-FORSYTH HOUSING DEVELOPMENT (p. 155)

Howe and Lescaze have just completed an important housing project for the land between Chrystie and Forsyth Streets near the Manhattan Bridge in New York. Although it does not provide for slum replacement at minimum rents, the possible conditions of financing and construction would make rents of about eleven dollars per room practical. This is within the limit of thirteen dollars and fifty cents set by the City for that district. This land which is now vacant belongs to the City and might be ceded at a low price. The greater part of the money needed would be obtained through the State Housing Board at a low rate of interest. It is necessary to mention these circumstances since the project would be meaningless had the architects not taken them into consideration.

The blocks are built high to permit a large amount of uncovered ground. They are arranged in such a way that the important living exposure of each block is as distant as possible from the other blocks and from the old housing around.

Howe & Lescaze

Except for occasional stores the blocks are entirely raised off the ground and carried over the streets in order to permit a regular plot plan throughout. Elevators and stairs lead in each block to the outside corridors from which the apartments are entered. The planning of the individual apartments varies somewhat. Moreover the partitions might in exceptional cases be modified without disturbing the structure. The apartment plans in their standard form are well organized and more influenced by contemporary European practice than in other similar American apartments. Even at much higher rent levels it would be difficult to find such large window areas together with such freedom of circulation.

The steel construction provides a regular skeleton for the design. The concrete slab floors are exposed on the façade. Where the walls are not of glass they are of brick, providing the masonry sheathing the New York building code requires. There are no sacrifices of the logical distribution of the parts in order to obtain a consistent and dignified design. Yet the composition as a whole and the handling of the detail indicate an architectural conscientiousness comparable to that of the best European mass housing.

In work of this sort the serious problems of modern architecture are so interrelated that it is impossible altogether to isolate and emphasize any one. Financing, planning, construction and aesthetic design are interdependent. Yet even without considering—as many unfortunately will not—the underlying practical conditions, the superiority of this project as effective architecture over such existing examples of mass housing in New York as the Grand Street Apartments, or in another district and on another plane, Tudor City, is apparent. The lightness, straightforwardness, and skilful combination of necessarily inexpensive material leads to as much of architectural distinction as can be hoped for in building of sociological significance. The addition of crêches, schools and stores completes the commercial unit and gives interest to the regular scheme.

Such projects alone will not solve the housing problems of New York. Drastic slum replacement and park construction are even more essential. But at rent levels lower than those for which this project provides, new housing is only possible through the direct intervention of the public authorities. Such experiments as this lead the way to action. But action must be political as well as architectural if the city is to be made habitable for the majority of its citizens. (Compare Lewis Mumford's general discussion of Housing beginning on page 179).

HENRY-RUSSELL HITCHCOCK, JR.

HOWE & LESCAZE—CHRONOLOGY OF LIVES

GEORGE HOWE

1886	Born in Worcester, Massachusetts. Traveled as a child, especially in Europe.
1896–1903	In school in Switzerland and New England.
1904–1906	Harvard University. Influence of Charles Moore.
1906	Traveled in Italy.
1907–1913	Ecole des Beaux Arts, Paris. Influence of Victor Laloux and contemporary German architects.
1913–1928	Partnership with Walter Mellor and Arthur I. Meigs in Philadelphia. Many houses and several branch banks.
1929	Formed partnership with William E. Lescaze.

WILLIAM E. LESCAZE

1896	Born in Geneva, Switzerland.
1911–1914	Studied painting while at the Collège de Genève.
1915–1919	Studied architecture under Karl Moser at the Zürich Technische Hochschule.
1919–1920	Worked on the reconstruction of the devastated areas in France, and then with Henri Sauvage in Paris.
1920	Came to the United States.
1920–1923	Worked in Cleveland, Ohio.
1923	Established himself as an architect in New York.
1929	Partnership with George Howe.

HOWE & LESCAZE—LIST OF WORK

The model in the Exhibition represents the Chrystie-Forsyth Housing Development Project.

* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

LESCAZE ALONE

1927 [Project for League of Nations]
†Capital Bus Terminal, Manhattan (Now destroyed).

1928 Hunting lodge for the Count de Sieyes, Mt. Kisco, N. Y.
[Project for apartment house and garage.]
[Country house of the future, designed at the request of the *Architectural Record.*]

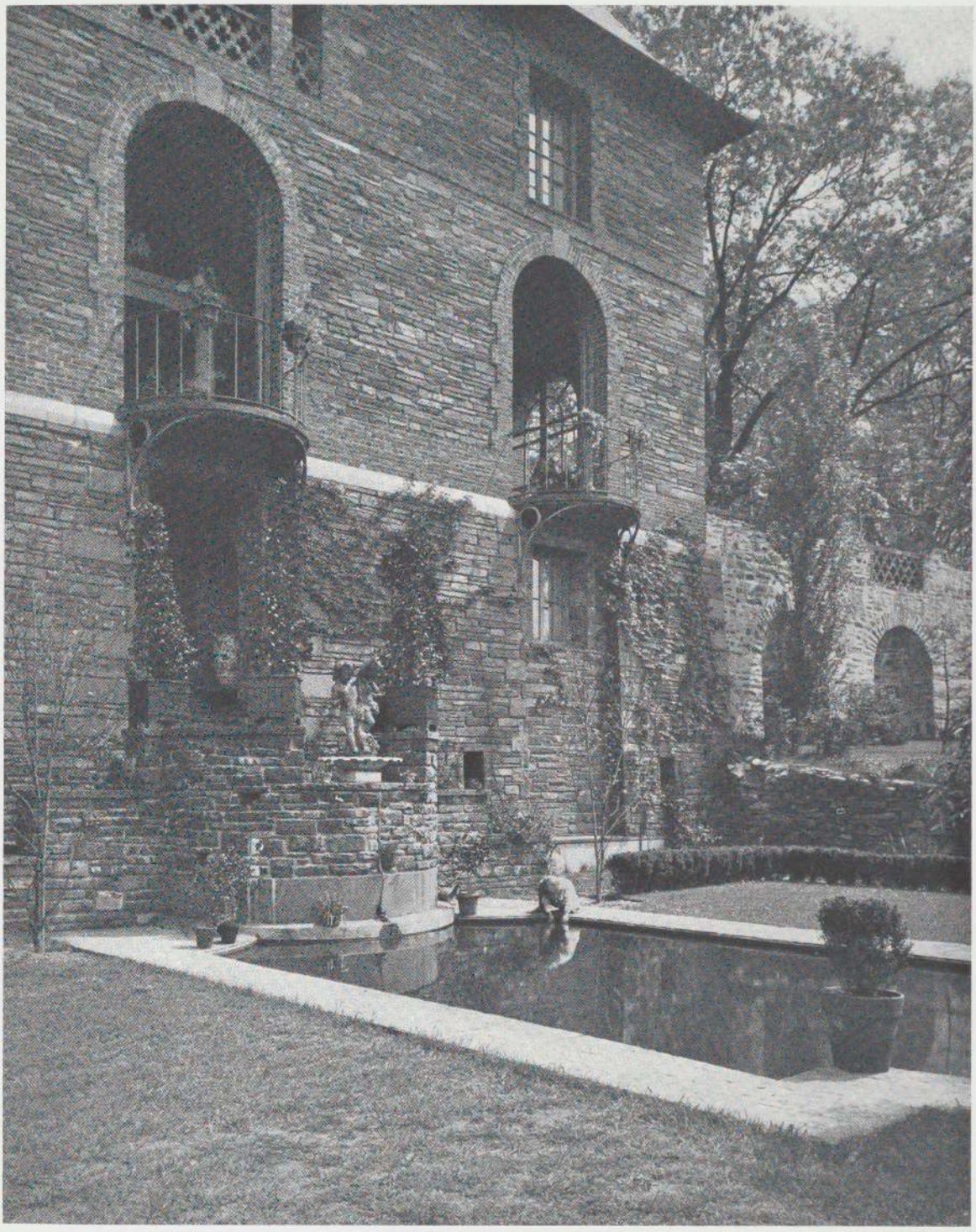
PARTNERSHIP WITH GEORGE HOWE

1929 *†Oak Lane Country Day School, Philadelphia, Pa.
Central Airport, Philadelphia (Consultants).

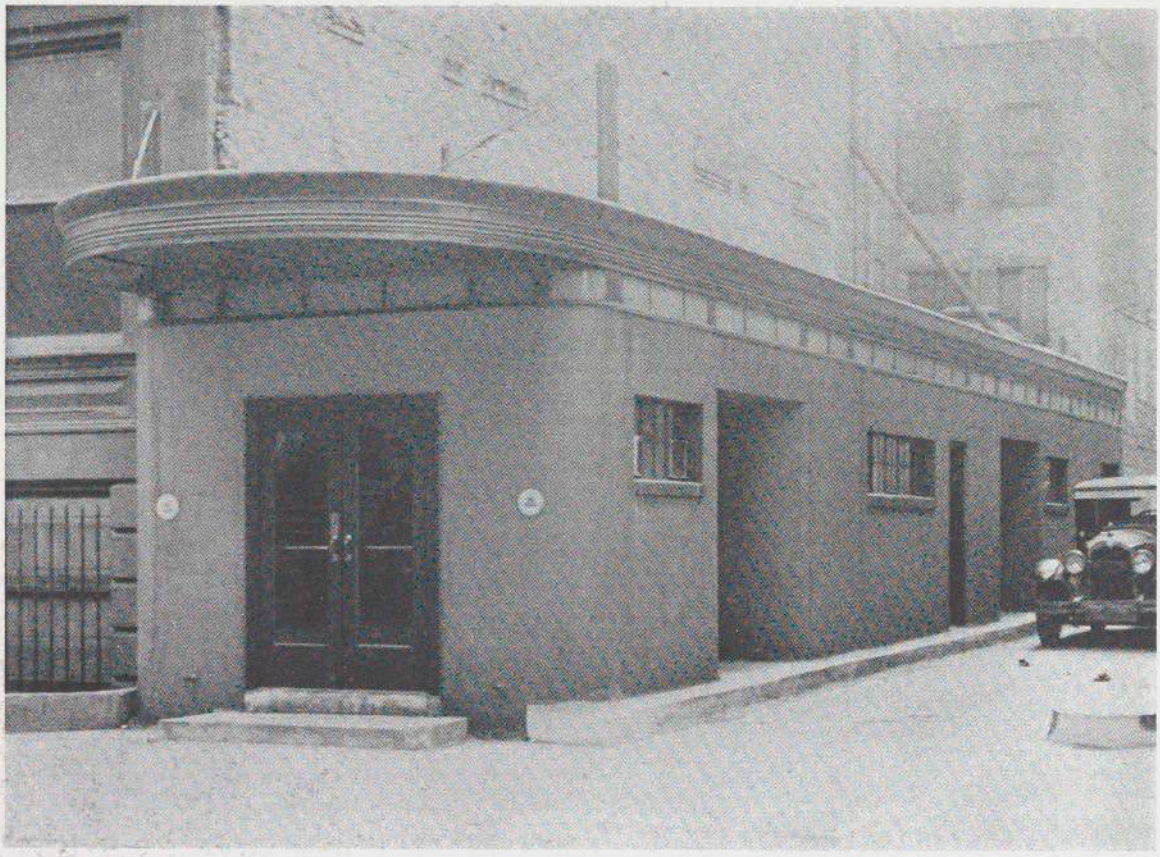
1930–1932 *†Philadelphia Saving Fund Society Building, Philadelphia.

1931 *Interiors of three Trans-Lux Theatres, New York.
Interiors for Hattie Carnegie, Inc., New York.
*†Hessian Hills School, Croton-on-Hudson, N. Y.

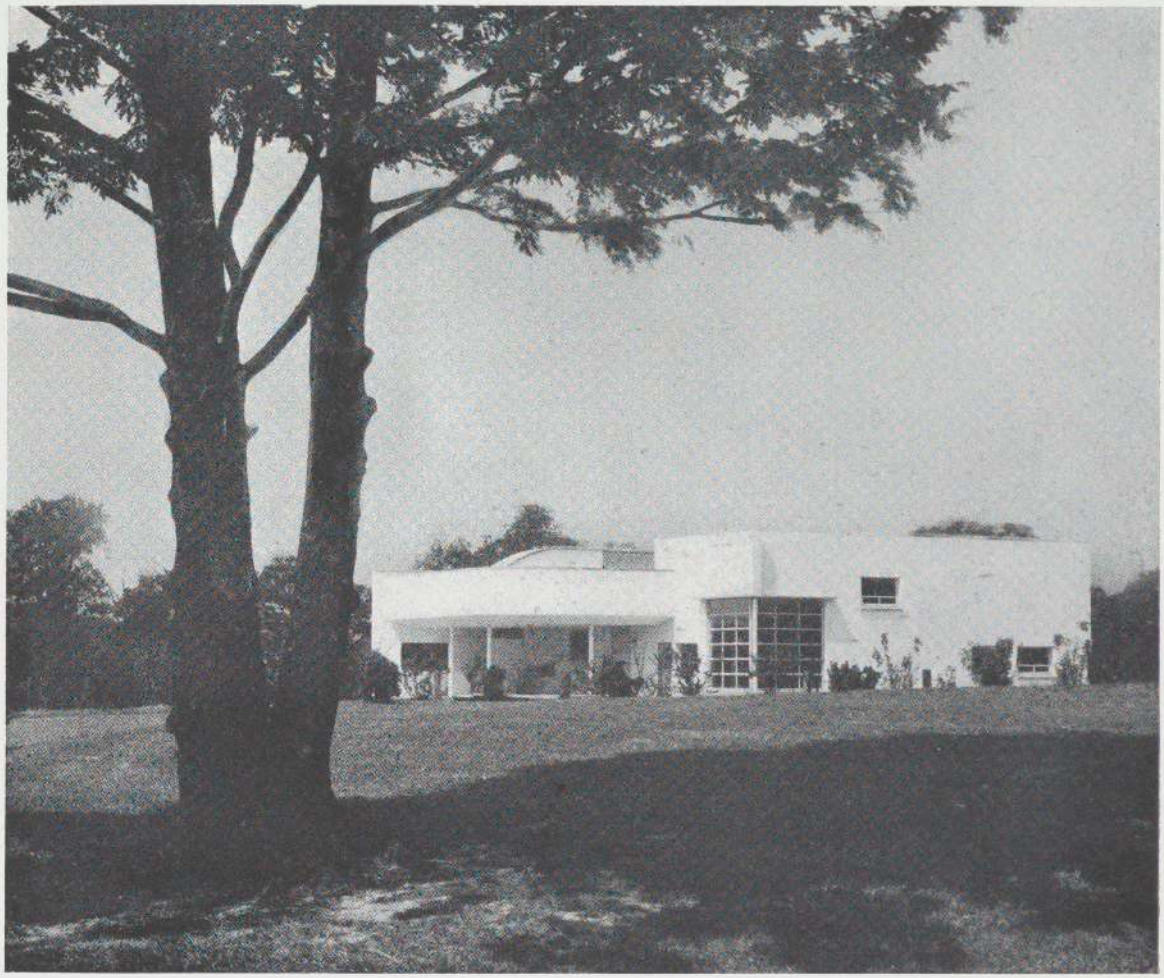
1931–1932 Field House, New Hartford, Connecticut.
Headmaster's house, Dartington Hall, Totnes, England.
†[Project for Chrystie-Forsyth Housing Development.]



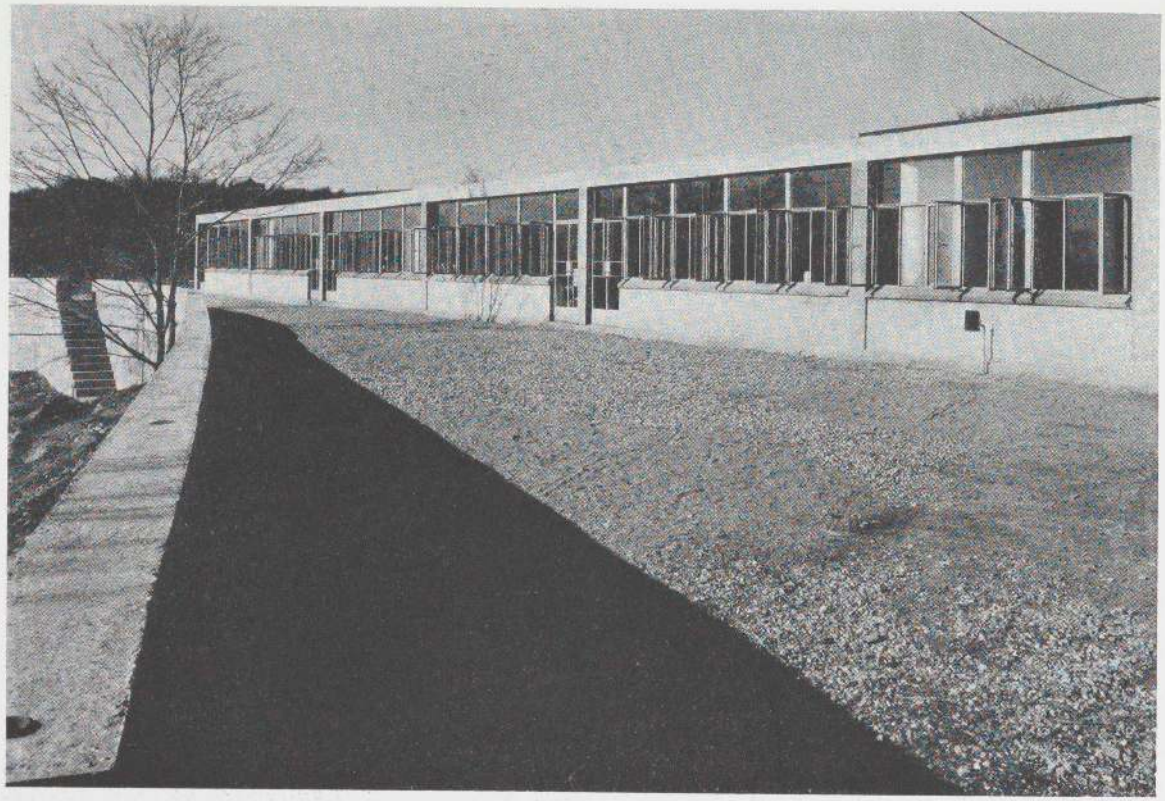
GEORGE HOWE: House of the Architect, Philadelphia, Pa. 1914



WILLIAM LESCAZE: Capital Bus Terminal, New York. 1927

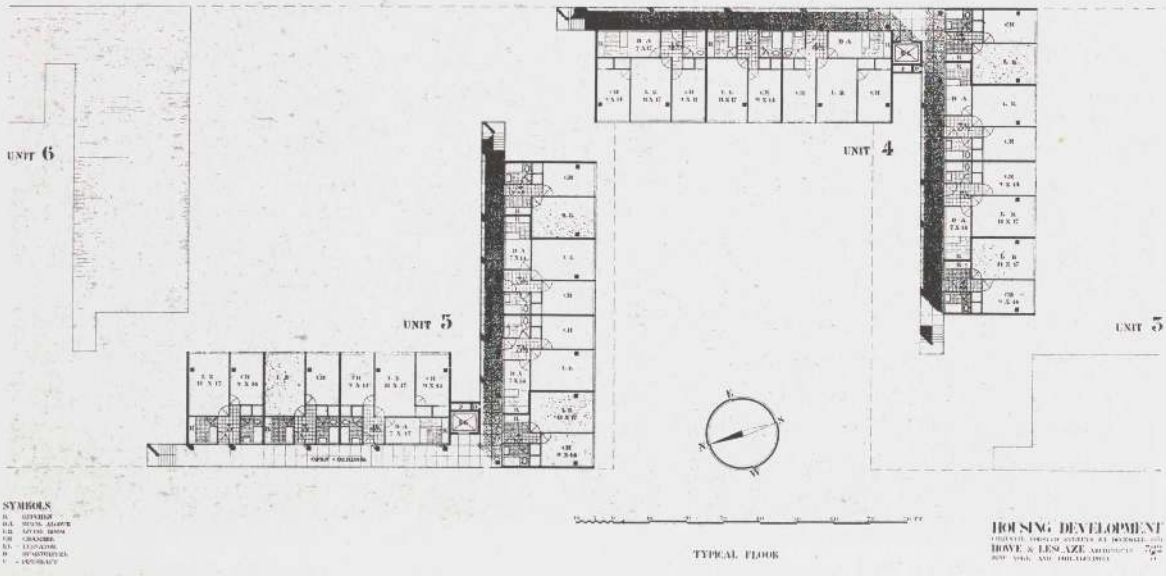


HOWE & LESCAZE: Oak Lane Country Day School, near Philadelphia, Pa. 1929

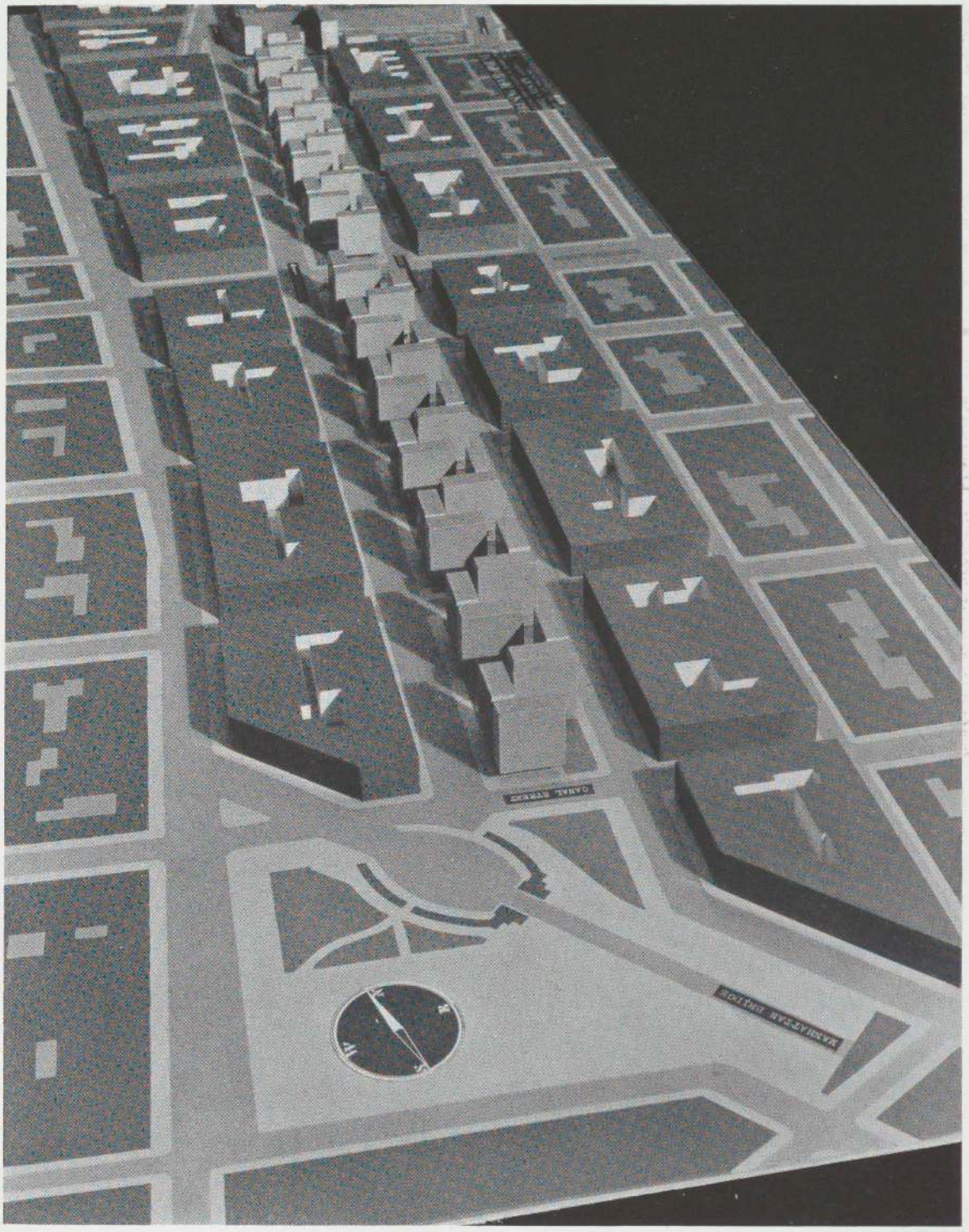


HOWE & LESCAZE: Hessian Hills School, Croton-on-Hudson. 1931

HOWE & LESCAZE: Philadelphia Saving Fund Society Building, Philadelphia, Pa.
1931–1932



HOWE & LESCAZE: Project for Housing Development, Chrystie-Forsyth Streets New York. Four Units



HOWE & LESCAZE: Project for Housing Development, Chrystie-Forsyth Streets
New York. Block Plan

RICHARD J. NEUTRA

NEUTRA is a European naturalized as a citizen and as an architect in the United States. He has served as a critic not only to bring information of European developments to America, but also as the interpreter of American methods of construction to Europe and Japan. His books with their technical information and their elaborate projects are of as much consequence as the buildings he has thus far executed.

Education in Europe

Richard Joseph Neutra was born in Vienna in 1892. As a child he was interested in things mechanical, and from an early age admired the experimental architecture of Otto Wagner. At first undecided between engineering and architecture, the work of Wagner determined him and he completed the then rather academic architectural course at the Vienna Technische Hochschule. He next studied with Adolf Loos in whose work the experimental tradition of Wagner was best continued. He also worked for a time at landscape architecture under Gustav Amman in Switzerland. During the War he executed his first architectural commission in the Balkans.

His more important work began after the War in Berlin. He collaborated with Mendelsohn and Henning on the Berliner Tageblatt Building of 1921. The technical design and organization of this large modern steel building was due to him. The rather Expressionist design of the exterior was Mendelsohn's. The next year Neutra built at Berlin four houses (p. 163) in a group of a dozen. These strongly resemble the contemporary work of Mendelsohn. They have thick projecting slabs and entrance walls of clinker brick laid in ribbed courses, contrasted with stucco. But they are simpler in design, less arbitrary and less heavy than Mendelsohn's.

America, 1923

In 1923 Neutra came to America. He worked in the offices of Holabird and Roche while they were building the Palmer House in Chicago; he met Sullivan, and spent several months with Wright at Taliesin. In 1924 he wrote *Wie Baut Amerika* (published in 1926), in which he explained American steel construction

WIE BAUT AMERIKA

to Europeans on the basis of his experiences with Holabird and Roche. He also presented Wright's new concrete block system. In this book also appeared his projects for an ideal modern city, "Rush City," on which he had been working several years.

In 1925 Neutra established himself in Los Angeles. In collaboration with R. M. Schindler, another Austrian working in California, he prepared a project for the Palace of the League of Nations which was sent around Europe by the Deutscher Werkbund along with those of Le Corbusier and Hannes Meyer. The next year Neutra built the Garden Apartments (p. 164) in Los Angeles. In this suburban apartment house he made in this field the first practical application in America of a consistent scheme of design based on modern methods of construction. The ribbon windows are splendidly used; but the attempt to make the bands continuous around the façade by painting the occasional intervening wall sections black is a trick of design which is hardly frank. The scale of the building —there are forty-three apartments—and the adaptation of modern European ideas of apartment planning with balconies and roof terraces to California conditions make it an important, if not a distinguished, step in the development of modern architecture in America.

GARDEN APARTMENTS LOS ANGELES

LOVELL HOUSE

The house for Dr. Lovell (p. 167) on the hills outside Los Angeles was completed in 1929. The problem is entirely different from that of the apartments. It represents technically a definite advance and the steel skeleton, the regular pattern of which controls the whole design, is skilfully used. Yet the exterior has more complexities than are required by the plan so that the general effect is lacking in serenity. The exposed steel with the fine cement surfaced spandrels is logical and attractive, although the introduction of occasional steel spandrels is inconsistent. It is without question stylistically the most advanced house built in America since the War.

In 1929 Neutra prepared the volume on America for the Series *Neues Bauen in der Welt*. In this and in his projects for roadside markets and other new problems with which American architects must learn to deal, his technical organizing ability in relation to new possibilities and opportunities in community planning are even more significant than his work as an architect.

Neutra's originality has perhaps been sounder than that of Howe and Lescaze. But his imagination has been less disciplined either by typical American conditions or by a fixed aesthetic than theirs in their best work. America must take into account the projects of men like Neutra and Kiesler, just as Europe was

forced to take into account those of Le Corbusier and Oud and Miës van der Rohe ten years ago, when the few buildings those new men had built might easily have been dismissed. Modern architecture cannot develop in quite the same way here as in Europe. And the way of those who have come from Europe to find their opportunities here has neither been clear nor easy. *Neutra*

THE MODEL IN THE EXHIBITION: THE RING PLAN SCHOOL (p. 169)

The project for the Ring Plan School was worked out in connection with a general project for "Rush City Reformed." As the air view shows, these typical schools are to be located outside the residential area (p. 165). The children are to be delivered to them in buses. The project is an ideal one since current real estate conditions would hardly permit the use of so large an area for a school in a region densely populated enough to provide the children. It must be considered in the terms of a radically reconstructed community and not as a building which could practically be built anywhere by itself at the present time. The project assumes that not one such school should be built but a series. For they are to be built of standardized shop fabricated parts. As in the case of housing, this would greatly reduce the cost per unit if many were built.

In the case of an ideal project dependent upon the revision of innumerable other factors of community planning and land distribution it is not possible to judge of the details as accurately as in the case of a building designed for a fixed site to be built under definite conditions. Certain advantages are obvious in this school, such as that of providing each classroom with an outdoor terrace. Other advantages are more debatable. Miss Helen Parkhurst of the Dalton School, to whom the plans have been referred as an authority on modern education, believes in general that the scheme is unduly decentralized for purposes of administration, even granting that there is no need to save space. In detail she questions the desirability of overhead lighting when there is plentiful side light, the impossibility of maximum use of an uncovered swimming pool, the placing of the kitchens inside instead of outside the lunch room (since it is impractical to use the same kitchen to prepare the food for the school and for instruction in domestic science), the running track over the corridor in close conjunction with the classrooms, the lack of locker space and adequate reception rooms at the entrance. A school, like a museum, must be as much the creation of those who are to use it as of the architect, indeed probably more. Such a school as this would not actually

be constructed except in collaboration with an educational authority and with definite limiting conditions.

Neutra has availed himself of the freedom which an ideal project permits to articulate the provision for function very fully and to dispose the parts in an interesting way. Even if in actuality considerable modification were necessary, this ideal study in terms of shop-fabricated materials with the extensive use of the outdoors possible in the California climate is of great interest. The organization from the point of view of design expresses clearly and coherently the construction used and the purpose of the various parts. One important means of architectural advance is the preparation of ideal projects even though the City of the Future must in reality be as much a modification of the cities of the present as a totally new and free conception.

HENRY-RUSSELL HITCHCOCK, JR.

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Neutra has written many articles in German architectural magazines and in the *Architectural Record* in America. The standard monograph on Neutra's work is in Japanese, published in Tokyo, 1931.

RICHARD J. NEUTRA—CHRONOLOGY OF LIFE

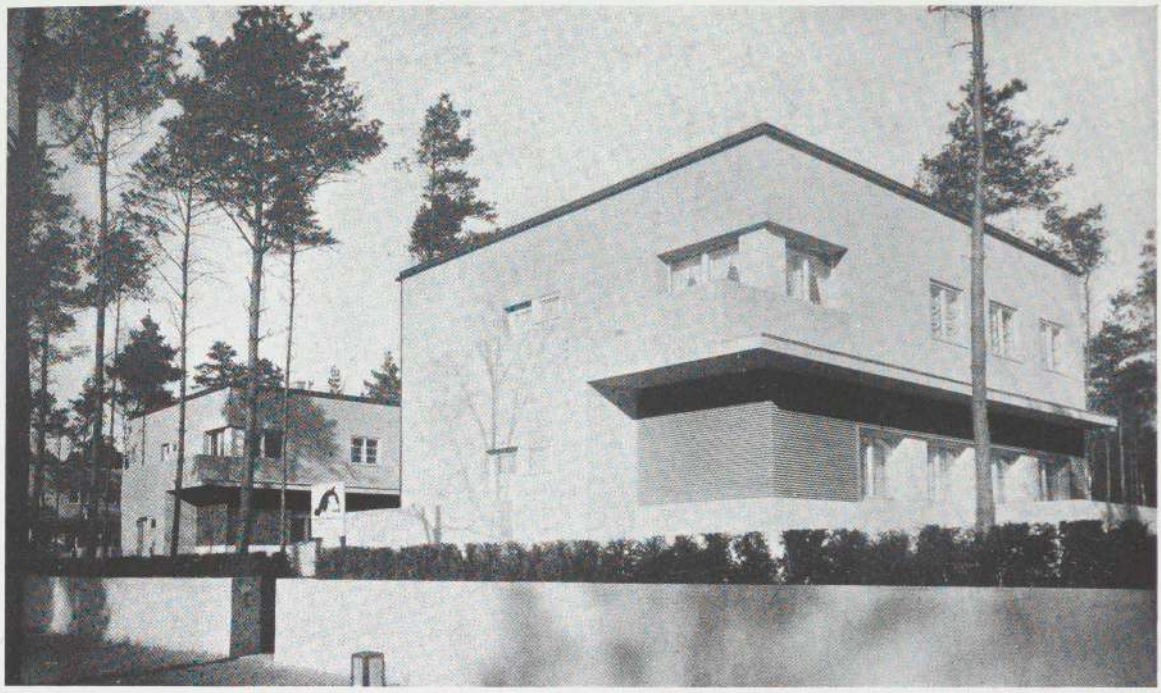
1892	Born in Vienna.
1909–12	Studied at Vienna Technische Hochschule.
1912–14	Studied under Adolf Loos.
1914–18	Field artillery officer in the Balkans.
1919–20	Studied landscape architecture in Switzerland under Gustav Amman.
1921–22	Associated with Erich Mendelsohn in building important steel construction building in Berlin.
1923	Came to America and worked in New York architects' offices.
1924	Worked in office of Holabird & Roche in Chicago; talked much with Sullivan, and visited Wright at Taliesin.
1925	Established himself as architect in Los Angeles.
1926	Wrote *Wie Baut Amerika* which interpreted American methods of building, especially steel construction, to Europe.
1927	League of Nations project, with R. M. Schindler, exhibited by Deutscher Werkbund throughout Germany.
1929	Elected first American delegate to the International Congress of Modern Architecture.
1930	Lecture tour to Japan and ten European countries.
1931	Lectures in the East and Middle West in the United States.

RICHARD J. NEUTRA—LIST OF WORK

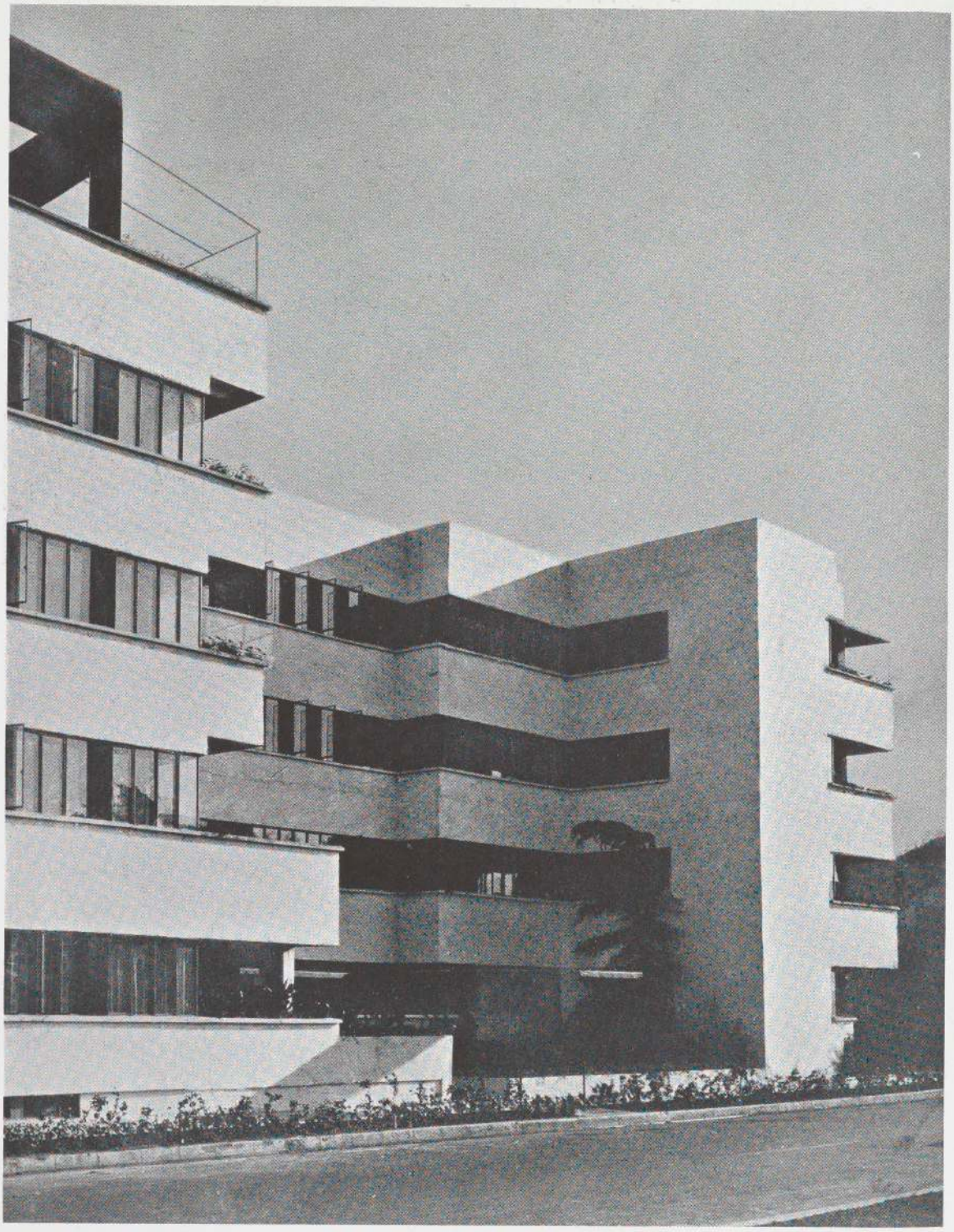
The model in the Exhibition represents the project for the Ring Plan Schools of "Rush City Reformed."

* Indicates photograph in Exhibition.
† Indicates illustration in catalogue.
Brackets indicate unexecuted projects.

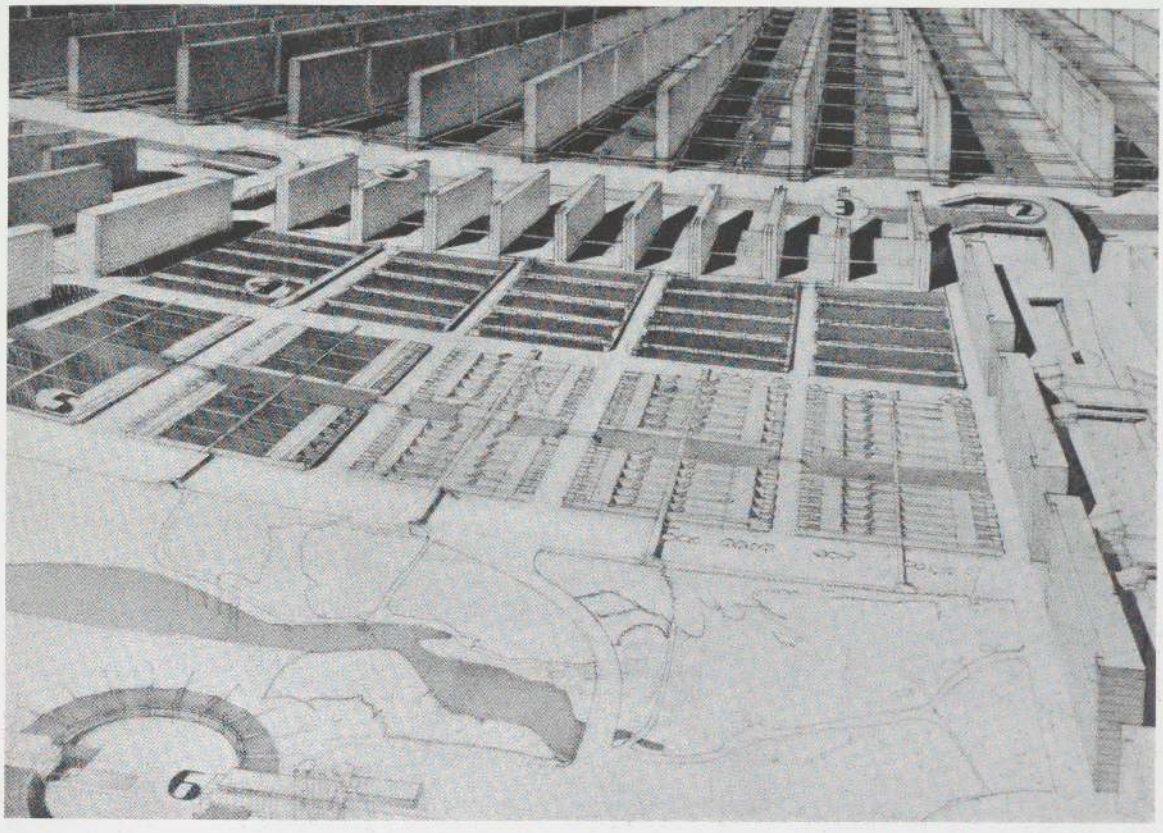
1913	[Project for steel frame dwelling house.]
1915	Tea house in the fortress of Trebinje, Herzegovina.
1921	Reconstruction of Berliner Tageblatt Building with Erich Mendelsohn.
1922	†Four houses in a group, Berlin-Zehlendorf. With Erich Mendelsohn won international competition for business center of Jaffa, Palestine.
1924	*†[Project for an ideal city: "Rush City Reformed."]
1927	*†Garden Apartments, Los Angeles, Cal. [League of Nations project, with R. M. Schindler.]
1928	Additions and alterations to Buff House, Los Angeles, Cal. Physical Culture Center, Los Angeles, Cal.
1929	*†Lovell House, Los Angeles, Cal.
1930–	Model House, Vienna, Austria.
1931	Restaurant Dining Room, Los Angeles, Cal. [Designs for buses for the White Motor Company.]



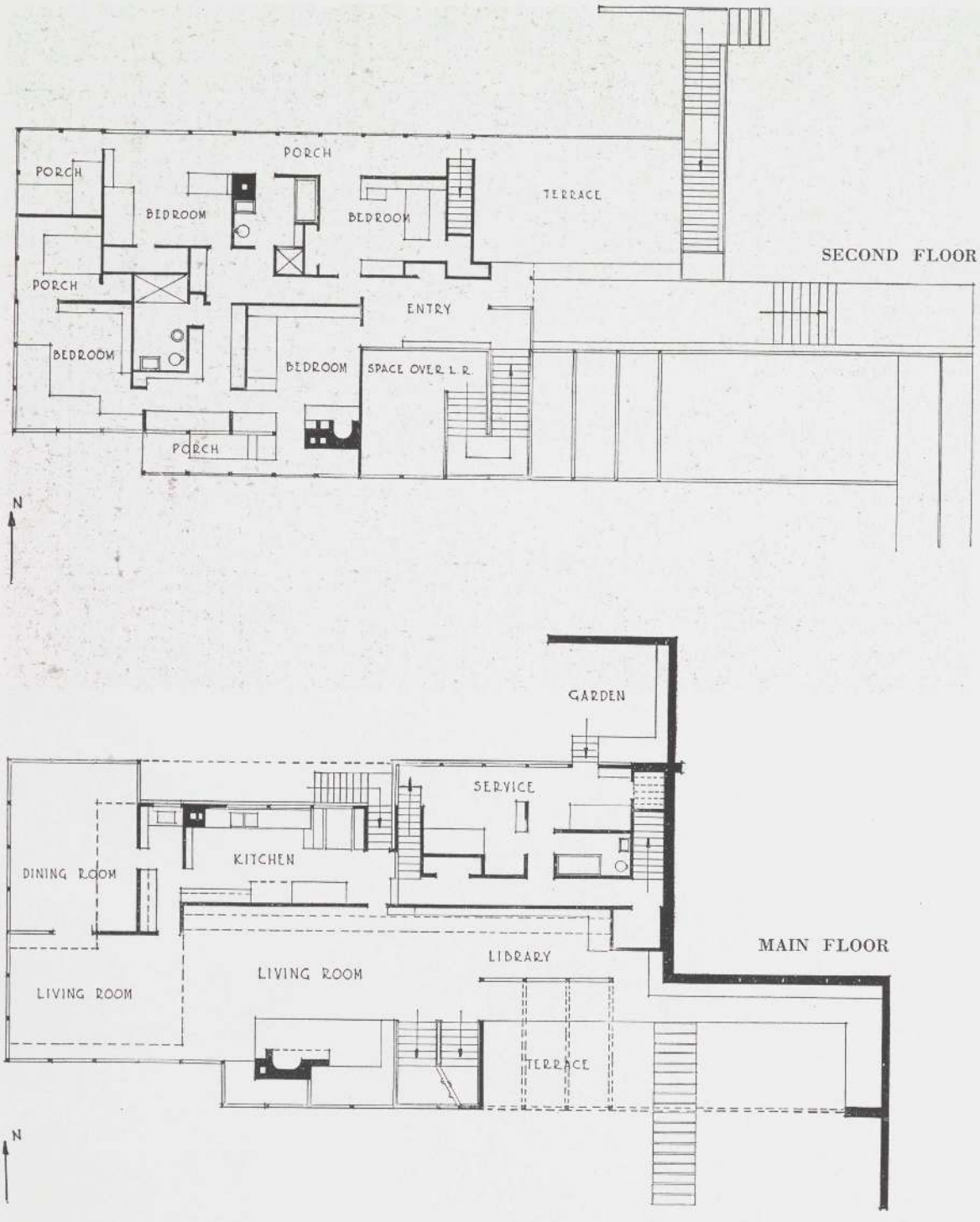
RICHARD J. NEUTRA: Four Houses in a Group, Berlin-Zehlendorf. 1922



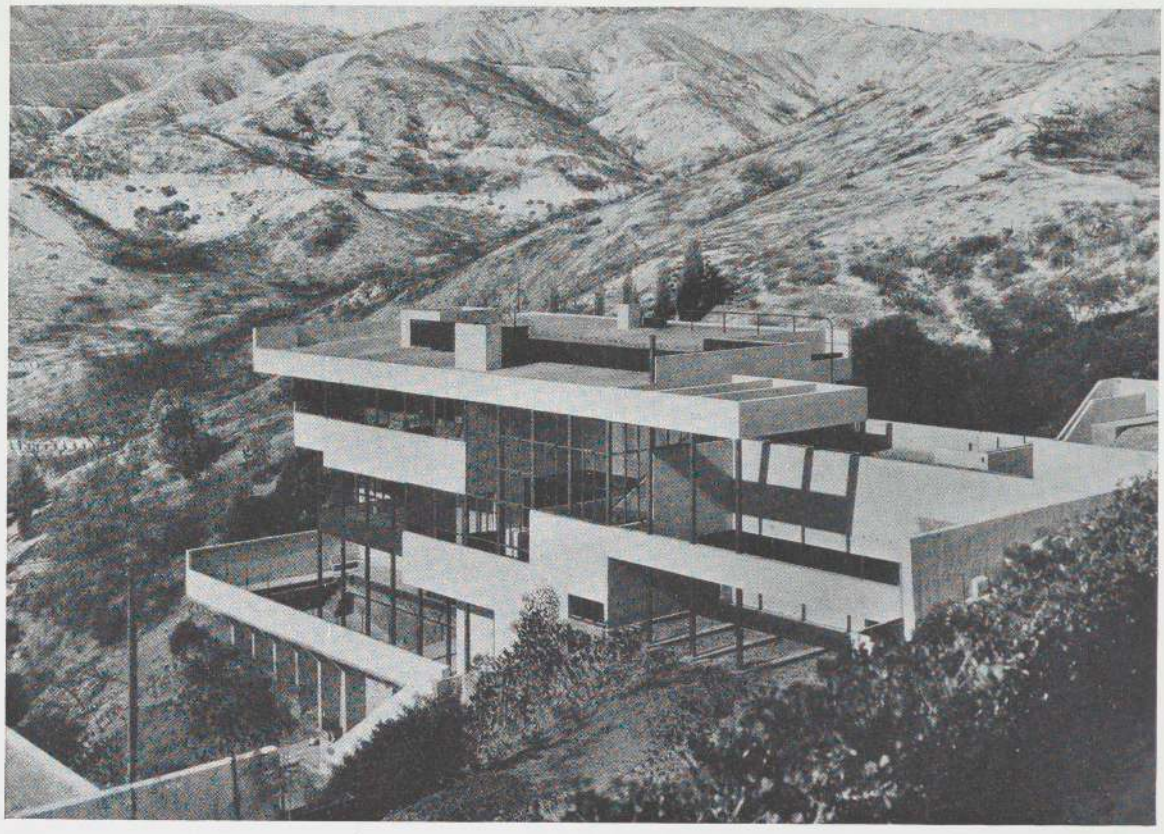
RICHARD J. NEUTRA: Garden Apartments, Los Angeles, Cal. 1927



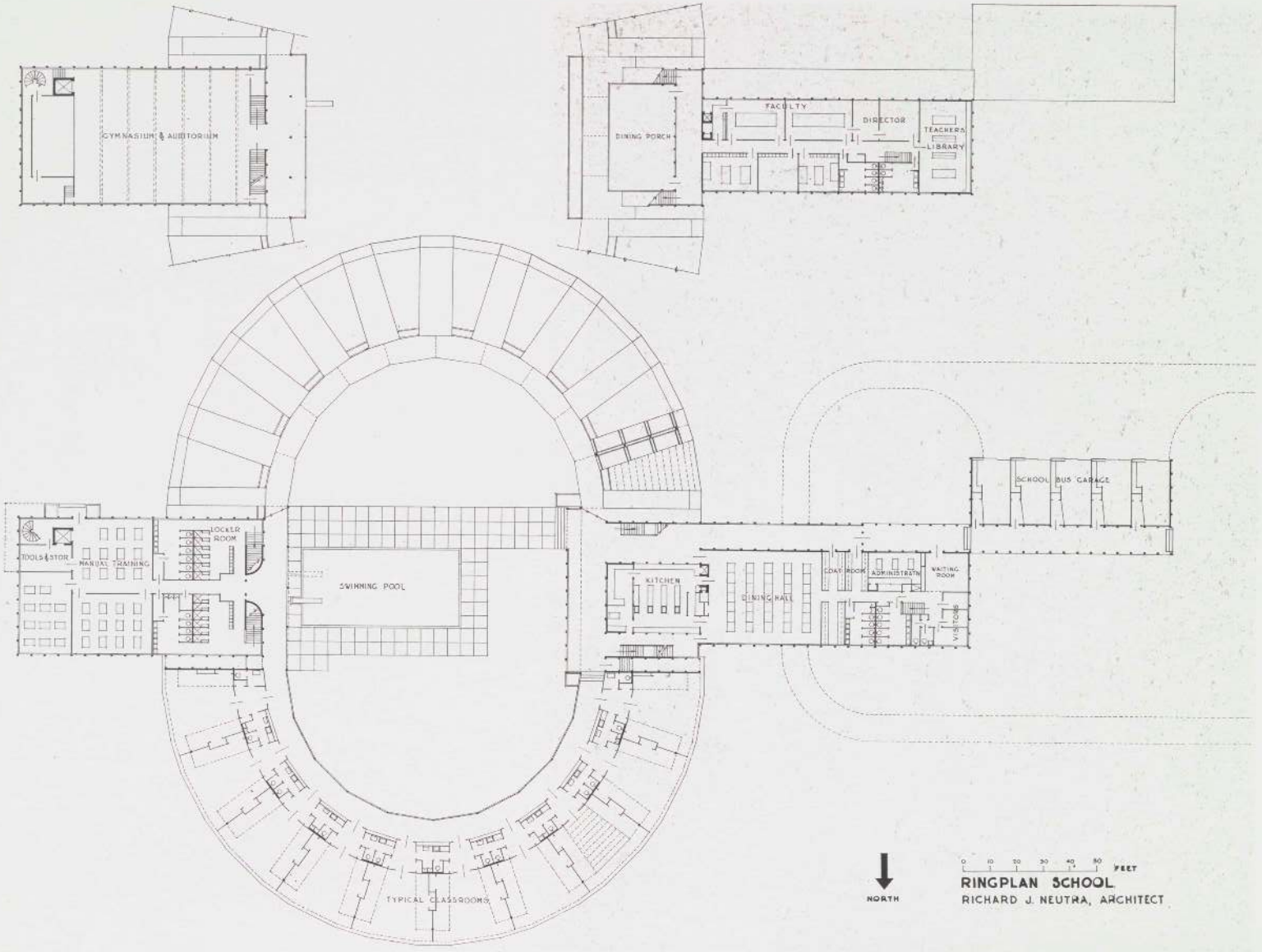
RICHARD J. NEUTRA: Project for an Ideal City: "Rush City Reformed." 1927



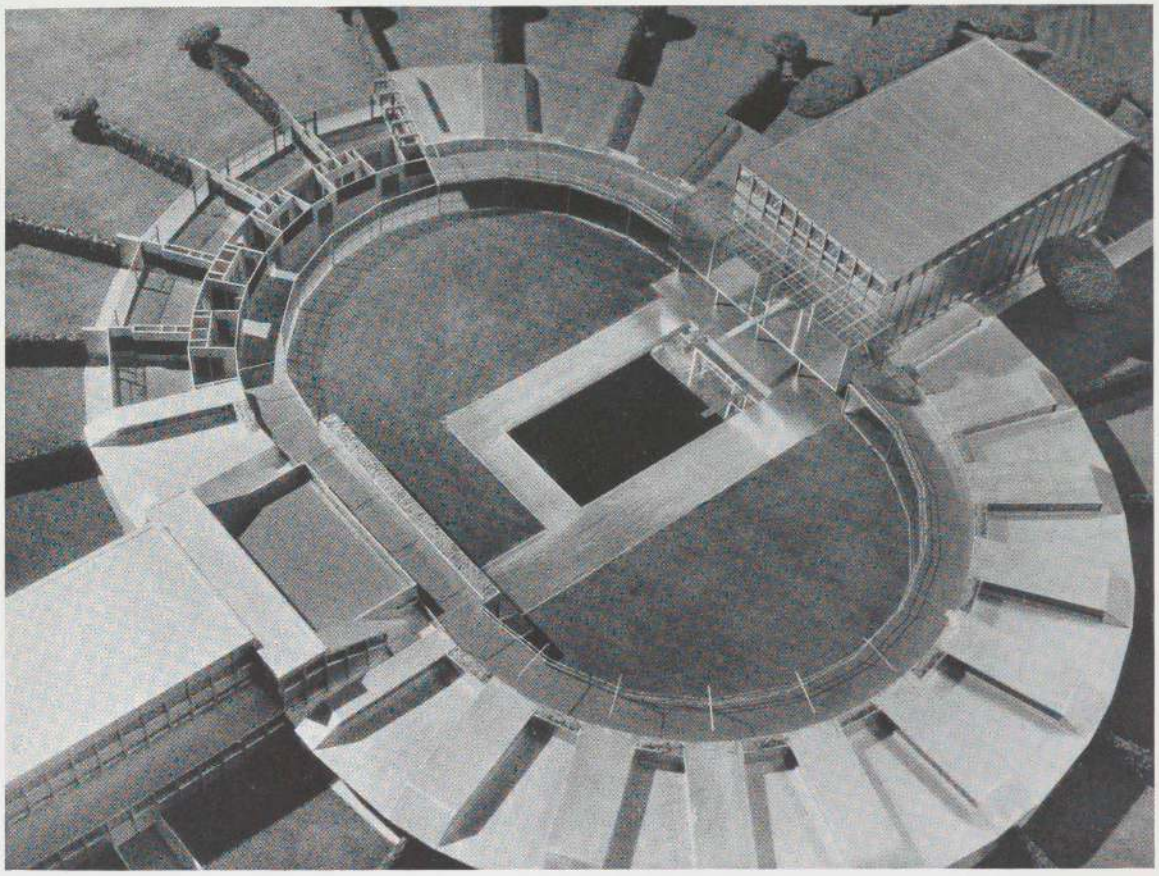
NEUTRA: Plan of Lovell House



RICHARD J. NEUTRA: Lovell House, Los Angeles, Cal. 1929



RINGPLAN SCHOOL
RICHARD J. NEUTRA, ARCHITECT



RICHARD J. NEUTRA: Project for Ring Plan School

BOWMAN BROTHERS

MONROE BOWMAN was born in Chicago in 1901, his brother Irving in 1905. Both were much interested in things mechanical and in music during their childhood. As their father was a builder their thoughts were early turned toward architecture. Their formal studies in architecture were at the Armour Institute of Technology but at the same time and later both worked with their father and in various leading Chicago architects' offices, such as Holabird and Root, Tallmadge and Watson. They formed their present firm in 1928 and have since devoted themselves to the development of their ideas of pre-fabricated mass production in housing.

The inexpensive houses they propose (p. 175) would be made up of factory produced wall units, floor units, partition units, etc., assembled on the site. The analogy with Ford's transformation of the automobile industry suggests that they may have found a way by which sound, inexpensive housing may be made technically possible[1] in America. Equipped with technical information and with creative imagination, they approach the problems of housing quite without sentimentality and, indeed, with no particular belief in aesthetic principles other than that design should be the truthful expression of the functions involved and the method of construction used.

In the work they did before their present collaboration they were so hampered by conservative associates that their particular ideas found no expression. In the last three years their efforts have been devoted to the preparatory work of what may be no less than a complete reorganization of the housing industry. Their projects indeed are models like the model T or the model A Ford, rather than designs for architecture. Their accomplishments are the compilation and correlation of data on all the elements, structural, manufacturing, and financial involved rather than a concrete and tangible work of architecture in the usual sense. The profession of architecture in America has hardly a place as yet for men like the Bowman Brothers who fit into no established category. But the future of housing at minimal cost in America must lead to some such reorganization as they propose. At the present time their schemes certainly appear to have resolved and surmounted at least in theory the extraordinarily complicated nexus of issues involved. They have analyzed and attempted to overcome the

[1]Cf. the more general analysis of the housing situation by Lewis Mumford beginning on page 179.

Bowman Brothers

various legal, labor, and financial difficulties their proposed metal unit construction confronts. Modification of the building codes is fought by the conservative leaders of the present trade labor unions, brick layers, carpenters, metal workers, etc. Factory mass production of houses requires financing like that of the automobile industry rather than the current system of real estate loans and mortgages. Even more than the average architects with new ideas they are dependent upon outside support. Not clients alone must come to their aid, but whole groups of established powers in the industrial, the real estate, the financial, labor, and political worlds must be brought into effective cooperation.

THE MODEL IN THE EXHIBITION: THE LUX APARTMENTS (p. 177)

The project for the Lux Apartments to be erected in Evanston, Illinois, is worked out in terms of fabricated units. Only two sizes of window frames (all of aluminum) are used in the entire scheme and the spandrels throughout are of large slabs of fireproof insulation material protected on the exterior with sheet metal and with smooth surfaces on the inside which need only be painted to provide a finish.

The two-inch interior partitions are also made in advance so that not merely the underlying steel frame but the whole construction is a matter of assembling on the site rather than of building in the traditional sense.

The plans are not particularly advanced and the central projection in the front façade seems hardly justified by the small amount of space and light it adds to the living room. Indeed living rooms rather than bedrooms might better have profited from the double exposure possible at the windows at the corners of the building. The placing of the intermediate range of steel piers off center to permit an axial corridor might better have carried through to the front and rear façade. The pier on axis like the projection of the front façade and the arrangement of the stairs on the ground floor creates an arbitrary and unnecessary symmetry in the design. The projecting dining room at the side and the penthouse on the roof are far more effective as well as more practical features. The open section of the ground floor would be used for shops if the zoning laws permitted.

This project with its regular scheme of windows and metal spandrels throughout is a splendid example of the architectural effects possible with fabricated construction. Yet it was not the effects that were sought but the logical development of the means of construction which led to them. As a design its negative

virtues are perhaps greater than those more positive. But it is without question the most distinguished project for a city apartment house thus far worked out in America. It demands of course a lot wide enough and deep enough or so protected as to permit light to enter the windows at the side and rear. It might well be more radical in the planning of the apartment units. Other designers might have avoided all arbitrary symmetry and produced in addition a composition in itself more interesting. But fabricated unit-metal construction could hardly be more auspiciously presented.

HENRY-RUSSELL HITCHCOCK, JR.

BOWMAN BROTHERS—CHRONOLOGY OF LIFE

MONROE BOWMAN

1901	Born in Chicago.
1909–1920	Studied music.
1920–1928	Studied architecture at the Armour Institute of Technology.
1923–1924	Worked for his father who was a builder, designing some of the buildings.
1924–1928	Worked with various Illinois architects, including Holabird & Root.
1928	Formed partnership with his brother Irving Bowman.

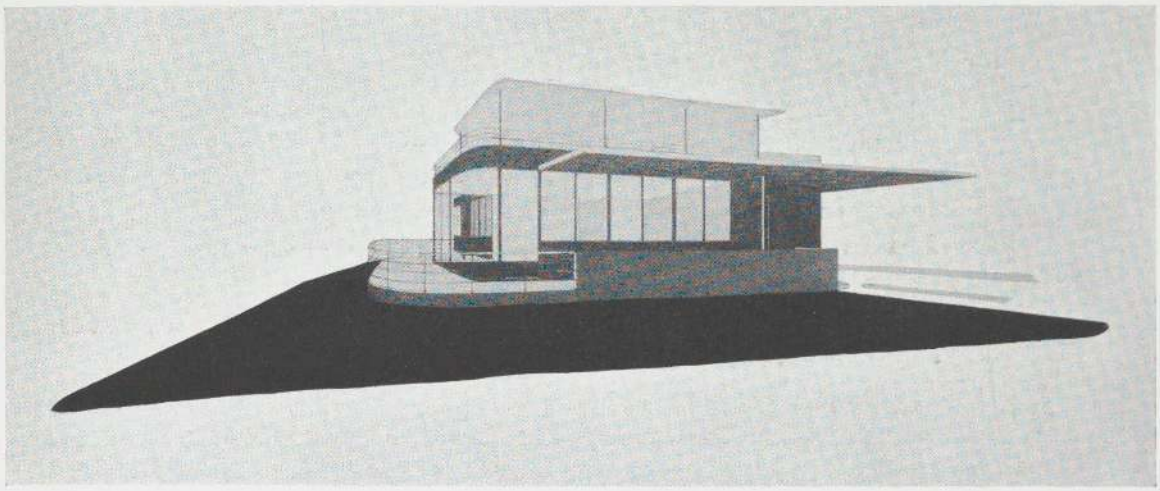
IRVING BOWMAN

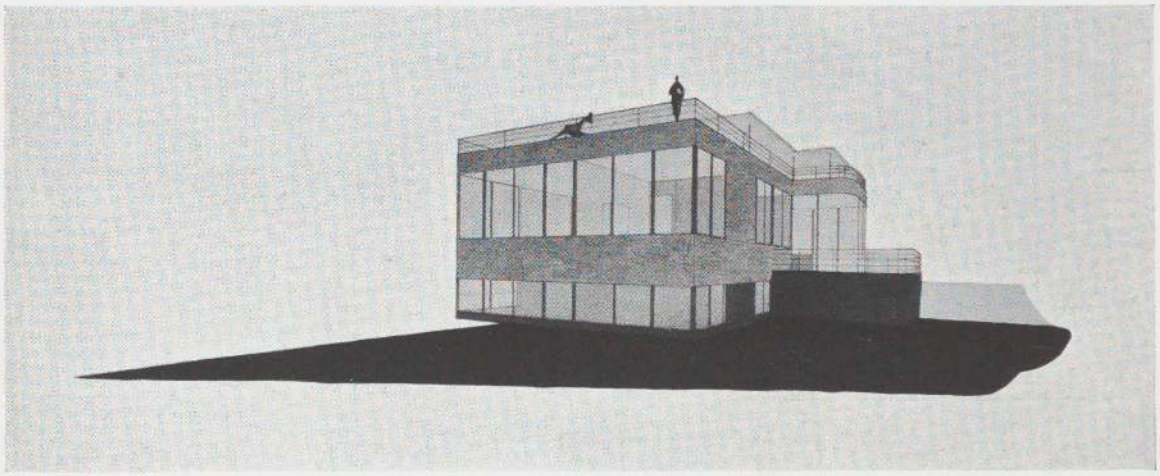
1905	Born in Chicago.
1922	Worked in architects' offices.
1924–1928	Studied architecture at Armour Institute of Technology. Worked for various architects, including Tallmadge & Watson.

Bowman Brothers

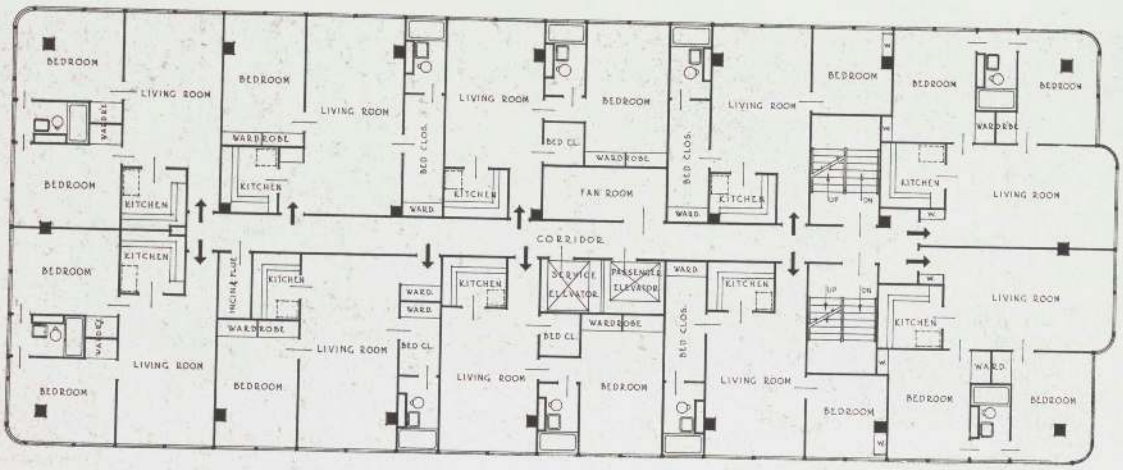
WORK

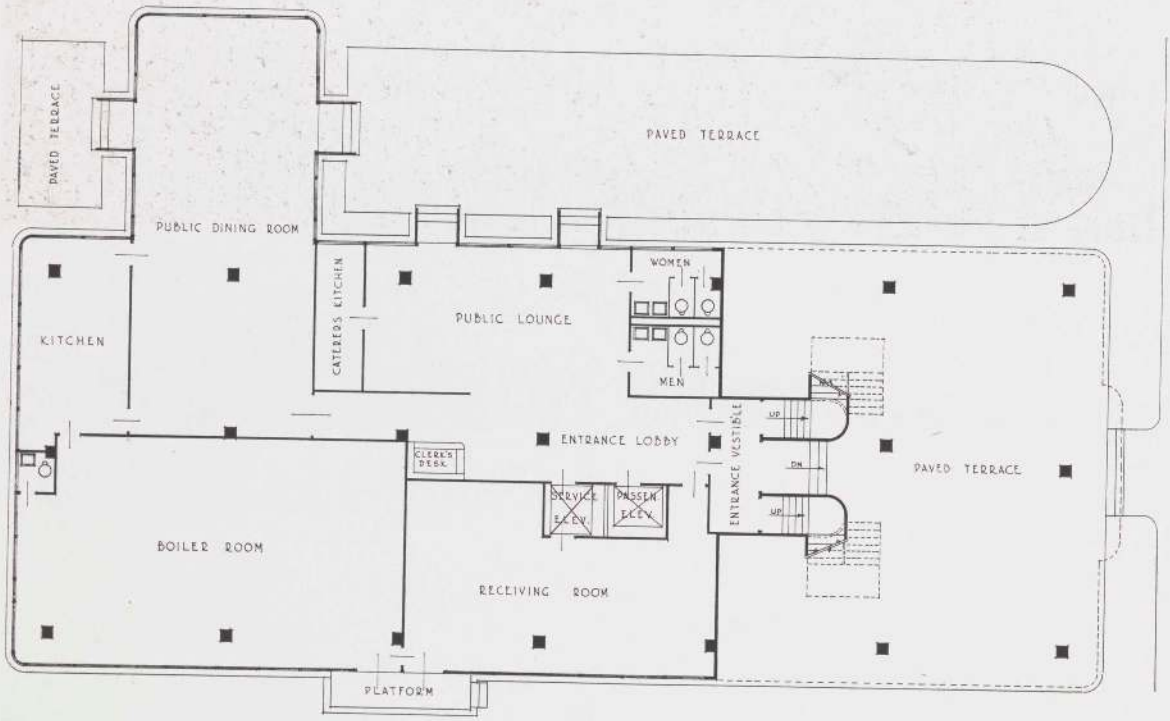
From 1924 to 1928 the Bowman Brothers designed certain buildings which were built by their father. Since 1928 they have done research in the problem of pre-fabricated construction for small houses and city buildings. They have designed metal chairs, desks and lamps which are now in production. The model in the Exhibition represents the project for the Lux Apartments at Evanston, Illinois. The photographs in the Exhibition include projects for a small house and for two city buildings, as well as an executed interior.

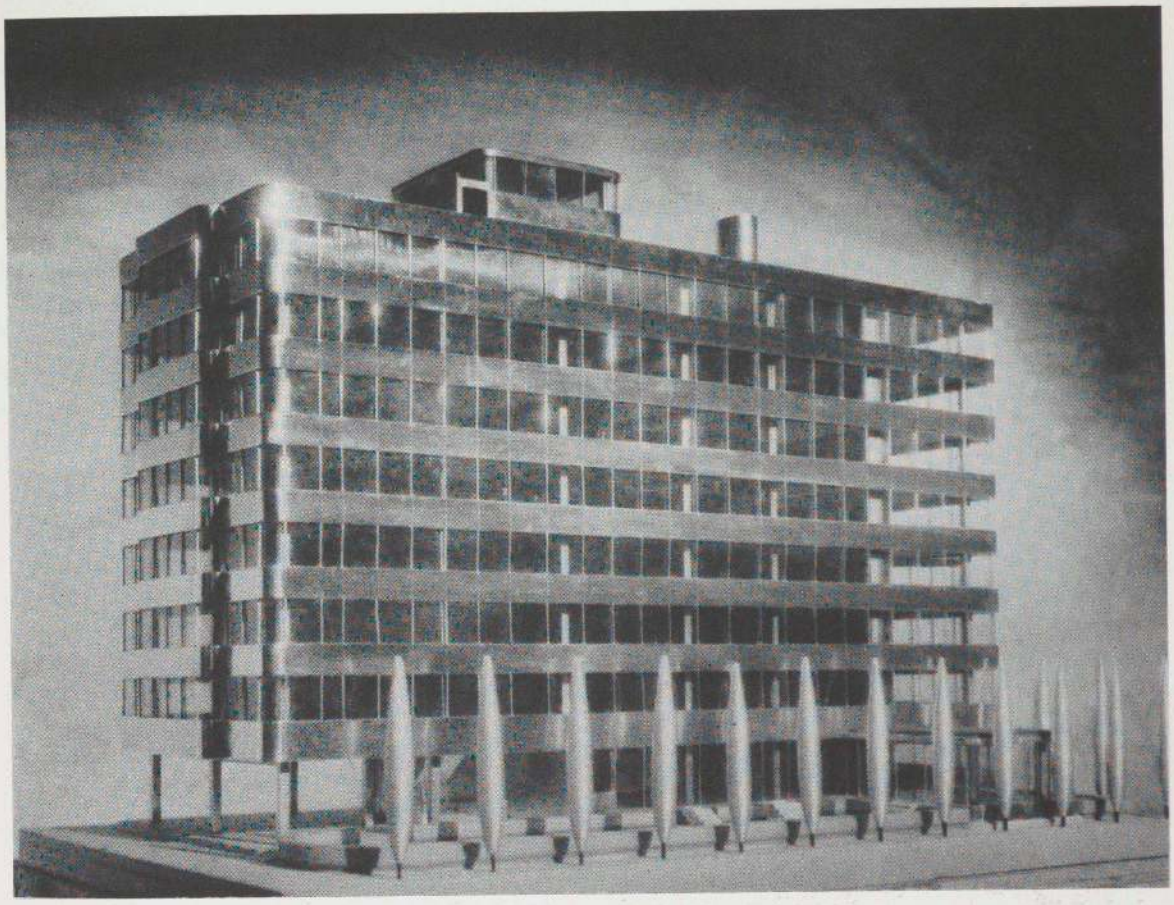




BOWMAN BROTHERS: Project for a Pre-Fabricated Small House. 1930


BEDROOM
LIVING ROOM
KITCHEN
WARDROBE
BED CLOS.
BED CL.
WARD.
FAN ROOM
CORRIDOR
SERVICE ELEVATOR
PASSENGER ELEVATOR
UP
DN
W.


PAVED TERRACE
PUBLIC DINING ROOM
KITCHEN
CATERERS KITCHEN
PUBLIC LOUNGE
WOMEN
MEN
ENTRANCE LOBBY
ENTRANCE VESTIBULE
CLERK'S DESK
SERVICE ELEV.
PASSEN. ELEV.
UP
DN
BOILER ROOM
RECEIVING ROOM
PLATFORM



BOWMAN BROTHERS: Project for the Lux Apartments, Evanston, Ill. 1931

HOUSING

I. THE NEED FOR A NEW DOMESTIC ENVIRONMENT

THE building of houses constitutes the major architectural work of any civilization. During the past hundred years the conditions of our life have been completely transformed; but it is only during the last generation that we have begun to conceive of a new domestic environment which will utilize our technical and scientific achievements for the benefit of human living. The laying down of a new basis for housing has been, since 1914, one of the chief triumphs of modern architecture.

Even the best houses of the past are now obsolete: they were conceived in terms of outworn modes of living, and by their attention to past habits and defunct tastes they spoil the finer possibilities that are offered by our present age. As for the great mass of housing erected since the industrial revolution, it was unhygienic, inefficient, ugly, and inadequate, even by the standards of the generations that created it: to wipe it out and replace it is one of the chief duties laid upon the present.

The house cannot remain outside the currents of modern civilization. The machine has endowed us with new powers and created new needs: the hygiene of the body, the care of health, the widespread interest in athletic recreation, the education of children, the use of leisure—no longer restricted to a special class—all demand an environment differently ordered from that with which our ancestors were content. These realities are much more important to modern architecture than the traditional conception of what constitutes a house; to achieve them, to make them available, not to a fortunate minority but to the entire population, we must face the whole problem of the house freshly and invent boldly methods and designs appropriate to our real needs.

The new house cannot be conceived except in terms of the new community; we must take into account all the changes in our habits of working and acting brought about by the motor car, the airplane, the telephone, the giant power line, and above all, by the methods of planned organization that these instruments have helped to create. The new house has a firm outline, determined by the nature of things; it cannot, in our day, represent the feeble wishes and imitative ambitions of either the house-dweller or the architect; it cannot, therefore, be picturesque or accidentally beautiful, like a thatched English cottage.

The virtues of our present age are different virtues: we value the positive results of science, disciplined thinking, coherent organization, collective enterprise, and that happy impersonality which is one of the highest fruits of personal development. For us who wish to enjoy the manifold benefits of living in communities, the accidental means chaos. We can no more afford to let our houses be designed and dumped down by accident and whim and haphazard speculations in real estate than we can afford to permit our motors to mellow with a fine patina of rust. To think of housing in terms of the individual forms of the past is to betray the real promise of our present life; such thought is simply not good enough. It is because the house in use is something more than a simple machine that it must at least have the elementary excellences of the machine.

We have already crossed the threshold of a new age; but our housing remains behind, clinging to dreams that no longer satisfy, attempting to meet conditions that no longer exist. It is time to make a positive and unified effort in America to overcome this state. What stands in the way? Obsolete habits of thought; sentimental inhibitions; belief in abstract individual rights and opportunities which have no reality or efficacy; futile and wasteful methods of land development; inefficient technics in planning and building; the subordination of human values and needs to possibilities of commercial profiteering. All these handicaps must be removed.

Fortunately, even in America, we have begun to break through these obstacles. Thanks to the initiative of modern architects and modern community planners, we can present both a program and various concrete examples of a sounder domestic environment than the past has known. Let us examine these needs and possibilities in a little detail.

II. THE PRESENT IMPASSE: HIGHER STANDARDS AND POORER HOUSING

By *house* I mean any sort of domestic quarters: the free-standing house, the row house, the multi-family house, the apartment house. Let us consider the development of the individual unit.

At the beginning of the industrial revolution the house consisted of a foundation, four walls, and a roof, with, perhaps, a small amount of earth scooped out to make a cellar. A host of new mechanical improvements were added one by one to this bare shell: running water, central heating, bathrooms, cooking stoves, gas, electricity, refrigerators, garages, radio aerials. What happened on the

inside was duplicated on the outside: expensive hard-surfaced roads took the place of dirt roads, and water mains and reservoirs served instead of the well. The gains in comfort and sanitation were real; but the increased costs were also real. The bare shell, which once constituted almost ninety per cent of the total cost, was now reduced to twenty or thirty per cent.

With all these improvements, the house ceased to be in any valid sense an individual free-standing unit, and it ceased also to be cut to the individual's personal requirements. In seventeen cities recently studied, eighty to ninety per cent of the houses built were done by mass production methods. Beneath the ground the present day house is connected with drains, mains, reservoirs, power-plants, gasworks, street systems. In the form of initial costs and taxes the house has to bear its share of all this new equipment. A low initial cost for the structure alone means nothing in itself; sound housing must face the ultimate burdens and costs, and this involves control over communal relationships from the outset. Houses that are cheap to build, and even cheap to sell, may be extravagant to own; if the owner cannot stand the subsequent charges then the community has to. Bad housing is not merely a social blight but a persistent financial burden.

The introduction of all these new mechanical elements, without any social and economic readjustment, has led to a scamping of the materials and workmanship on the structure itself, to an overcrowding of the land, to the wiping out of backyard and garden space by the individual garage. What we gained in internal convenience, we lost in durability, in spaciousness, in a pleasant environment. Thanks to our new utilities, the cost of one room was now buried in the street. Mechanical knicknacks and decorative gimcrackery were introduced to distract attention from the deterioration of the essential parts.

The present century confronted us with this paradox: as the individual house improved, housing in the mass deteriorated. Throughout the Western World, the new domestic quarters were uniformly shoddy and sordid; in the big cities, even the rich were not able to escape the pervasive conditions of the slum. The reasons for this state are complex; they range from the faulty education of architects, trained only to carry out monumental projects, to the bourgeois emphasis upon "possessions" rather than functions. But the main element in the answer, the economic conditions, is relatively simple. *Good housing*, as the Committee on Large Scale Operations of the President's Conference on Home Building put it, *has become a luxury product*. At the height of American "prosperity" only one-third of our American families had incomes in excess of two thousand dollars

a year. This means that, roughly speaking, two-thirds of the population could make no effective demand for housing at a level where decent *minimum* standards were *possible*.

Current commercial building did not of course attempt to face this situation; how could it? In so far as commercial methods have provided new quarters for the lower income groups, they have done so by lowering the standards. Failing this, the worker himself is forced by high rents to accept overcrowded and unhygienic conditions within the home. We have concealed this state of things from ourselves by pious hopes and vague platitudes about the American home; meanwhile, the typical American house is a disgrace to our civilization. While we have professed, in the amiable words of President Hoover, that "it should be possible for any person of sound character and industrious habits to provide himself with adequate and suitable housing," we have ignored the fact that at no time during the last fifty years has even half the urban workers of the country been able to demand new quarters built according to then current standards of hygiene and amenity.

"Today," to quote again the President's committee, "the houses of the country constitute our largest mass of obsolete and discredited equipment." How are we to replace these old quarters? How are we to cease building substandard houses? How are we to make a better type of domestic environment available to the entire population? Standards have been rising; costs have increased; the product has deteriorated. Shall we lower the standards? No one can seriously propose that we scrap all our mechanical improvements and return to the crude environment and the high death rate of a hundred years ago. On the contrary; we must continue to raise the standards whilst we lower the costs of each separate item. But with the utmost economy and the most comprehensive approach to the problem, roughly half of the population can still not afford a modern house. The alternative for this group is either an economic revolution, which will raise their real wages, or a public subsidy, which will supply the difference between what they can afford to pay in renting or purchasing a house and what they must pay. There is no third way.

Europe, which has been conscious of its deficiencies in housing since the eighteen-sixties, has faced this situation. In America, even our most zealous housing reformers, to say nothing of architects and lawmakers, have until recently lacked the courage to admit the inexorable conclusions, even when they grant all the statistical facts: they take refuge in the myth of individual initia-

tive. As a result, in Europe during the last fifteen war-impoverished years, hundreds of Siedlungen or communities, and millions of handsome, sound, well-planned houses have been built, whereas our American work on the same level can be measured only in paltry thousands.

The reason for our social backwardness in housing has been due to the fact that we have habitually confused the real issue of good housing with the very limited and abstract matter of ownership. Even now, we make strenuous efforts to foist our inferior old housing upon new owners who cannot afford it at any price. We have treated the house as an abstract symbol of safety, patriotism, citizenship, family stability; we have failed to deal with the house frankly as primarily a place to live in. Concerned with the stigmata of ownership, we have not bothered to produce houses for the majority that were worth owning.

We cannot afford to deceive ourselves any longer; our health, our family life, our education, our civic interests, are all bound up with the necessity to build on a large scale a new and happier type of domestic environment. Individualism does not result in true individuality, but in a sordid chaos which defeats the very ends it seeks to achieve. We must now elaborate the strategy of a collective attack.

III. THE BIOLOGY AND ECONOMY OF THE MODERN HOUSE

The new attack upon the housing problem is distinguished by the fact that it treats the social, the economic, the vital, and the architectural requirements of the modern house on a single plane. Its first concern is with the essential nature of the modern house.

The modern house is a biological institution. It is a shelter devoted primarily to the functions of reproduction, nutrition and recreation. To expand the definition a little, the house is a building arranged in such a fashion that meals may be easily prepared and served, that the processes of hygiene and sanitation may be facilitated, that rest and sleep may be enjoyed, that sexual intercourse may take place in privacy, and that the early care of the young may be opportunely carried on. None of these functions, needless to say, is restricted to the house; but the house is peculiarly adapted to facilitate all of them together. Add to these primarily physiological requirements, the provisions of space for social companionship and play and study and the definition of the house is complete.

With the return of entertainment to the home, through the mechanical invention of the phonograph, the radio, the motion picture, and the near prospect

of television, the house has made up by gains in recreational facilities what it has lost through the disappearance of earlier household industries. Hence the proper design of the house has a new importance, in that, with greater leisure for the whole community, more time will probably be spent within its walls and environs. The garden and the playground belong to the functions of the modern house; they are essential parts of its equipment and must be planned and financed with it.

In order to provide for all these essential biological functions, we must ruthlessly abolish many conventional standards, including the old-fashioned canons of show and conspicuous waste. This does not merely hold when we begin seriously to re-house in decent quarters that part of the population which now stands in need of special subsidies; it applies equally to the entire community. Less than ten per cent of the population can, under present economic conditions, afford to create for themselves individually an even partial equivalent to the new physical and communal environment that modern life demands.

Fortunately, these new conditions, with all their rigorous limitations and inclusions, are not a curse; they are the very soil out of which the new architecture has grown. Modern architecture, with its strong lines, its disdain for the "quaint" and the "pretty," its communal unity, its submergence of the individual unit in the design of the whole, is not a poor substitute for our abandoned heaven of the individual romantic house, built according to the heart's desire; on the contrary, it is far superior, superior not only to the speculative builder's pathetic caricature but likewise to such nearer approximations as one finds in the upper class suburbs today. Modern housing turns its back upon the romantic individual nourished in the illusion of isolation; accepting the house as a part of the community, modern architecture concerns itself with the comprehensive and integrated design of the whole. Without such design, no single unit can function properly. A single house may be a mansion; but three such houses, poorly related, may constitute a slum.

Let us now translate these essential biological requirements into their concrete equivalents. First: sunlight and air. Every room should have direct exposure to sunlight. No house should be more than two rooms deep; all row houses should be properly oriented to sunlight and winds. Windows should admit the maximum amount of light compatible with economic heating arrangements in the cooler zones or reasonably economic cooling methods in the more torrid regions. Bedrooms should be private and numerous enough to permit the separation of

the sexes. Walls should be soundproof; courts that echo noise or reduce privacy should be eliminated.

Every family should have a private kitchen when desired, and at very least a private toilet; in America the private bathroom should form a minimum standard. In communities, the necessary sanitary facilities should be connected to a public system for providing water and carrying off waste. The walls, floors, kitchens and bathrooms should be designed with a constant view to labor saving and hygiene.

Living rooms should be provided with a maximum amount of floor space, and should face the garden; balconies or roof tops for direct private exposure to sunlight should be provided. Row houses and apartment blocks should be separated from other groups by green open spaces, to further recreation, to permit the private or public cultivation of gardens, to give outdoor play-space for infants, and above all, to ensure adequate air and sunlight for all rooms.

To preserve quiet and increase safety, no through streets should be permitted within a residential community, and to effect economy, service roads and streets should be reduced in number and width to the smallest area possible; good planning saves enough on streets to pay for parks. Schools and playgrounds should be so placed as to permit the passage of children to and from their homes without crossing a main traffic street, and if possible, as at Radburn, New Jersey, without encountering wheeled traffic.

This is a large order. Even the best modern community does not yet carry it out in every detail; but it is the minimum goal of our present efforts. If we cannot by our present methods achieve houses and communities that meet these standards we must not abandon the standards: we must devise and put into effect more adequate methods.

IV. THE STRATEGY OF A COLLECTIVE ATTACK

The new methods to be utilized in creating the modern house must be adapted to the needs and conditions and standards that have just been outlined. No single approach to the problem is sufficient; in the past, housing reformers have put their faith in legal regulation, in improved building methods, in parsimonious equipment, in limited dividend companies. At present many people are intrigued by an analogy between the manufactured dwelling house and the automobile and believe that a similar reduction could be made in the cost of the

house structure; a solution that overlooks land costs, public utilities, and communal facilities, essential ingredients in the modern house. The modern approach to the house does not confine itself to any single item; for effective work on a large scale, all the following methods must be utilized.

First: Comprehensive planning. The unit is no longer the individual house but the community. Since the costs of the house are affected by the costs of the original land, the cost of improving the site, the cost of municipal utilities, and a score of other communal items, measures must be taken to control land-uses and land-values at every stage, and to conserve both for the advantage of the community. This is necessary not merely to increase the factor of safety by preventing the untimely running down and blighting of municipal areas, a process that has driven more than one American city to the edge of bankruptcy; it is necessary in order to prevent rising taxes and land values from compelling an otherwise unnecessary change in the character of the community. The relations of industries and transportation lines and municipal services must be established by far-sighted regional planning, as at Frankfort-am-Main. Playgrounds, school sites, and market areas must be established on the original plan, not introduced at hazard at a later stage.

Second: Large Scale Operations. This permits the purchase and treatment of land in large blocks, before it has been broken up into unuseable private parcels, and it further permits its development in one continuous operation, "avoiding a multitude of commissions, carrying charges, and in the case of outlying projects, the usual premature investment in public plant and utilities." It likewise permits the laying down of an economic street system and the relation of land subdivision to the various functions that are to be served.

Third: Mass Production. This means the use of standard plans and standard units of design, the fabrication of house units in the factory where this is more efficient and economical, and the use of special machinery in preparing the site and building.

Fourth: Efficient design. Row housing, properly oriented, spaced, and planned, is superior to detached houses in privacy and far cheaper in construction. With exactly comparable units, the cost of a row house in America is from twenty-two to twenty-four per cent cheaper than a detached house. Similarly, row apartments two rooms deep are more cheap and efficient than elaborate layouts that overcrowd the land. Further economies in fabrication may be expected: but if they reduce the price of the detached house, they would reduce that of the row

houses even more. Row housing would then still be desirable in order to increase the internal spaciousness.

Fifth: Limited Profits. Capital directed into housing must seek in stability and safety what it lacks in speculative profits. High standards in mass housing are incompatible with a high return on the investment. In cutting and trimming all the factors that make up the modern house, finance must not be treated as sacred, immune to such cuts.

Sixth: Cheap Money. The amount of money at the disposal of housing should be determined by the actual needs of the community. When private capital is unwilling to accept the necessary low returns upon good housing, the superior credit of the state should be placed at the disposal of properly regulated public utility corporations and municipalities. By careful planning and sound administration, the excuse for the present forms of commercial piracy surrounding the second mortgage can be eliminated.

Seventh: State Subvention. Perhaps forty-four per cent of the population can be rehoused by the combined application of all the above methods; this leaves fifty-six per cent uncared for. At present they are condemned to live in leftovers. If they are to have new quarters, these houses can only be built—failing an economic revolution—by one form or another of public subsidy.

All of the above methods have been tried in America. The time has come to apply them persistently and systematically on a much wider front than we have ever done before. The individual no longer builds his house; but the house is still building the individual. Since bad housing is dominant, this fact should alarm us; but it should also give us the courage to follow up the lines which the pioneers of the modern house have laid down, both in Europe and in the United States. The field itself has already been explored. A word now for the samples presented in this exhibition.

V. THE PROMISE OF MODERN HOUSING AND COMMUNITY PLANNING

Most of the houses represented here conform to minimum standards; but these standards are already superior to the great mass of work done in America, not alone for the poorest groups, but in cities like New York even for the well-to-do. For every genuine requirement of living, including the pleasure of good architecture itself, one cannot compare the ordinary American product with J. J. P. Oud's work in Rotterdam (p. 196), or with such non-commercial hous-

ing in America as that which the Amalgamated Clothing Workers erected in Grand Street, New York, under the State Housing Law, as that which the Rosenwald Fund put up in Chicago, or that which the City Housing Corporation built in Sunnyside Gardens, Long Island City, N. Y. Oud's little community, designed to meet minimal conditions, trimmed to the last degree of Dutch economy, is among the finest products of the disciplined imagination in modern architecture. Beside such an example of vital design, the fake romanticism of the American suburb, with its thin pretensions and its silly fripperies, has scarcely even the reality of confectioner's architecture.

While Oud's row units are positive examples of the modern small house, conceived in terms of modern conditions, another great advance was made in American group design by Messrs. Stein, Wright, and Ackerman in Sunnyside Gardens, by shifting the garage from the backyard to a corner of the tract and by creating a maximum amount of handsome private and communal gardens in the space between, the upkeep of the latter being charged as an original cost of the house. In designing the new town of Radburn, New Jersey (p. 195), the wasteful rectangular city plan, with its needlessly wide service streets, was eliminated by the planner, Mr. Henry Wright, and a new type of plan developed which created a system of superblocks, containing a series of dead-end streets immune to through traffic, connected internally by a continuous park, and belted around with traffic avenues. This form of plan not merely secures the domestic environment from invasion by completely separating the garden walks from the traffic system and the service roads but it enables the child to go directly from the home to the playground or school in the middle of the superblock without crossing a street.

But one of the most complete examples, perhaps, of all the principles of modern housing is the community designed for Kassel by Otto Haesler. Here the street plan, the house plan, and the architectural design of the whole are completely unified and consistent. On expensive land the row apartment house can reach lower income levels than the single family house, even in rows; those of higher incomes are provided for here by apartments of greater width, with more rooms, too, than the minimal designs. But in these new communities, all the major elements are common to high and low incomes alike; sunlight, fresh air, space, outlook, hygiene, sound construction. Note the roads, laid out economically to follow the contours; note the placing of the shops on the edge of the community, and the school in the center. This type of functional

planning is possible only when all the factors have been treated systematically at one time. While the Kassel Siedlung does not insulate wheeled traffic as completely from foot traffic as does Radburn, note that only service roads run into the community and that between the apartment blocks there are no wasteful and expensive streets (p. 199).

These are but samples; there are numerous experiments all over Europe that deserve serious attention in America; particularly those in Hamburg, in Cologne, in Berlin, and above all around Frankfurt-am-Main. In these experiments one witnesses the growing integration of modern architecture, an integration with the land itself, with human beings and their needs. Those who cling to the ideal of the romantic cottage—however that ideal is betrayed and soiled by present-day actualities—are doubtless incapable of appreciating the aesthetic achievement of these new housing projects. It is as if they rejected the automobile because it does not resemble a sedan-chair. But the romantic cottage is not a universal form, and for life in close communities, it is unsatisfactory.

In these new housing communities, light and air and gardens and recreation space are available to every resident in a fashion that now only a lucky few enjoy. The lower death rate of the modern garden city tells a significant story; in England it is lower, not merely than the other cities, but even lower than the surrounding country-side. In these new communities, all the requirements of life, of the growing child, the housewife, the student, the mother, the worker, the lover are embodied in the design of house and garden. These buildings are not complete by themselves, like a tomb that functions equally well with or without a corpse; they need the cooperation of the sky, the earth, the forms of men and women, the play of children, the moving routine of daily life itself. Then and then only does the whole live; the aesthetic arises out of the actual. The eye is gratified by the new architecture, not alone because its order and composure is the essence of all sound architecture; the eye is likewise happy because every other function of the mind and body is in effective rhythm.

LEWIS MUMFORD.

Housing and the Housing Problem, by Carol Aronovici. Chicago: 1920. A brief and excellent introduction to the entire problem.

A Primer of Housing, by Arthur C. Holden, in collaboration with Clarence S. Stein and Henry Wright. New York: 1927. A brief graphic analysis of costs and conditions.

Recent Trends in American Housing, by Dr. Edith Elmer Wood. New York: 1931. A comprehensive, up-to-date, and sound statement of every aspect of the problem; particularly good on the economic and social side. Has a fairly exhaustive American bibliography.

Modern Housing, by John R. H. McDonald. London: 1931.

Report of the United States Housing Corporation, Henry V. Hubbard, Editor. 2 vols. Washington: 1919. An account of the first large-scale attempt to deal with housing in America.

Report of the Housing Division, Emergency Fleet Corporation. Washington: 1919.

The Joke About Housing, by Charles Harris Whitaker. Boston: 1920. An effective statement of the underlying economic difficulties by a man whose brilliant editorship of the Journal of the American Institute of Architects strongly contributed to our renewed interest in architecture, housing, and community building.

Housing by Employers in the United States, by Leifur Magnusson. Washington: 1920. A useful study.

The Housing Situation in the United States, by Leifur Magnusson. Geneva: International Labour Office: 1925.

The Housing of the Unskilled Wage Earner, by Dr. Edith Elmer Wood. New York: 1919. A brief survey of problems and policies in America and Europe.

Housing Progress in Western Europe, by Dr. Edith Elmer Wood. New York: 1923. An account of the early stages of realization of the modern movement for good housing in communities.

Housing Policy in Europe: Cheap Home Building. Geneva: International Labour Office: 1931. This covers the post-War situation in thirteen different European countries.

Garden Cities of To-morrow, by Ebenezer Howard. London: 1898. The first comprehensive attempt to outline the needs of a new type of urban community;

this book, and the two cities that were built in accordance with the principles laid down by Howard, have had an enormous influence upon both housing and community planning throughout the world.

The Building of Satellite Towns, by C. B. Purdom. London: 1925. A description of the principles and actualities of Letchworth and Welwyn, the first full-bodied garden cities.

The City of the Future, by Le Corbusier. New York: 1930. An exposition of the principles of modern city planning in relation to community building and housing; mainly theoretical, but full of suggestions.

Cities in Evolution, by Patrick Geddes. London: 1915. A valuable survey of city development and housing by a biologist who is also a practicing city planner.

Regional Planning Number, Survey Graphic, May, 1925. An attempt to relate the new needs in housing, community planning, city planning, and regional planning, by various members of the Regional Planning Association of America.

Final Report of the New York State Housing and Regional Planning Commission: 1926. Reports of the New York State Housing Commission: 1929, 1930, 1931.

Tentative Reports of the President's Conference on Home Building and Home Ownership. Washington: 1931. These reports are of uneven value; but that of the Committee on Subdivision Layout, and particularly that of the Committee on Large Scale Operations, are excellent. The Report of the Committee on Relationship of Income and the Home is scrupulously inconclusive, partly because it is concerned more with ownership than with good housing, partly because it shrinks from following facts to their conclusions.

The Place of the Apartment in the Modern Community, by Henry Wright. Architectural Record, March, 1930. *What Does the Architect Know About Small House Costs*, by Henry Wright. Architectural Record, December, 1931, February, 1932. The best detailed studies of the problem in terms of American experience and accurate cost accounting analysis.

Housing Series. Fortune, beginning February, 1932. An able presentation of the essential elements of the housing problem, all the more significant because of its conservative source.

Housing, by Clarence S. Stein. Article in the Encyclopedia Britannica under heading Social Architecture. Useful summary by one of the leading American exponents of modern community planning and regional city development.

Mass Production and the Modern House, by Lewis Mumford. Architectural Record, January, 1930, February, 1930.

The Autobiography of Another Idea, by Henry Wright. Western Architect: September, 1930. Account of the development of the Radburn plan.

Befreites Wohnen, by Siegfried Giedion. Orell Füssli Verlag. Zürich: 1929. A brief introduction to the concept of the modern house, with numerous photographs.

Zum Problem des Wohnungsbaues, by Otto Haesler. Verlag Herman Reckendorf. Berlin: 1930. A systematic clarification of the social and hygienic and architectural problems of modern housing.

Das Neue Frankfurt. Frankfurt-am-Main: February-March, April-May, 1930. Thoroughly illustrated description of the work done in Frankfurt.

Die Wohnungspolitik der Gemeinde Wien. Vienna: 1929.

Die Wohnung für das Existenzminimum. Verlag Englert und Schlosser. Frankfurt-am-Main: 1930. A study of attempts in various countries to meet by careful planning the problem of housing the lower income groups.

Wohnbauten und Siedlungen aus Deutschen Gegenwart, by Walter Müller-Wulckow. Leipzig, Karl Robert Langewiesche Verlag: 1929. Illustrations of new German housing and communities.

LEWIS MUMFORD.

OTTO HAESLER AND HIS WORK

OTTO HAESLER is the foremost housing architect in Germany, and perhaps in the world, since Germany has so far outstripped other nations in solving the housing problem. In America it is not only the social system, but the indifference of the architects that makes our housing so retrograde. Otto Haesler, equipped not only with a thorough knowledge of economics and economical construction, but also with an ideal of sociologically sound housing, has had his detailed programs of housing accepted by many city governments. The *Siedlungen*, or housing developments in Celle, Hanover, Rathenow, Karlsruhe and especially in Kassel (p. 199) bear witness to his achievement.

Since 1926 Otto Haesler, who lives in the small town of Celle near Hanover, has become increasingly well known and sought after until today he is the most prolific of all architects of the modern style in Germany. Besides *Siedlungen*, he has built many schools and houses and an Old People's Home in Kassel (p. 26),

all with the same care for the economic and social questions involved. He is neither a social idealist nor merely the practical builder. His success is due to the combination of both. In addition, Haesler has great regard for the aesthetics of modern architecture. While many city architects surrender too readily, when confronted by conservative prejudice, Haesler never compromises. He insists that even the most inexpensive housing can still be handled as an art. *Otto Haesler*

THE MODEL IN THE EXHIBITION: ROTHENBERG HOUSING DEVELOPMENT, KASSEL. 1930

Mr. Lewis Mumford's article has ably presented the economic and social advantages of the community development at Kassel. As a work of architecture it may be criticized in much the same manner as a large complex building. The single apartment block ceases to have architectural meaning except as part of a larger whole. Analogously in the Classical city planning of the seventeenth and eighteenth century in France whole blocks and squares were the units with which a general architectural scheme was built up.

The modern *Siedlung* is likewise planned as a unit, with the unique community buildings serving as accents. Just as in a modern single building the design depends on the regularity of structure, set off by some feature such as an entrance or stair tower, so in this *Siedlung* the basis of the larger composition is the regularity of the rows of apartment houses broken by the unique community buildings. Although the parts of the *Siedlung* are arranged according to the provision for function, the final synthesis is architectural. The rows of regularly spaced apartments run north and south in order to provide the best light. The streets are planned to take advantage of the contours of the land. The school and nursery are placed conveniently near the center. It is in the planning, ordering and proportioning of these functional elements that the possibility of choice exists. The achievement of the modern housing architect as an artist rather than as a mere builder may be measured by the quality of such individual choices within a comparatively limited range of possibilities.

Siedlung Rothenburg may not have the architectural finesse that J. J. P. Oud could have given it, nor be sociologically as radical as Walter Gropius would have designed it, but there are few masters of the modern style who could have brought to so successful a conclusion a project involving so many ramifications—economic, sociological and architectural.

P. J.

PHOTOGRAPHS IN THE HOUSING SECTION OF THE EXHIBITION

Each picture, or pair of pictures, is accompanied by explanatory labels.
† Indicates illustration in catalogue.

†Rothenberg Housing Development, Kassel. Otto Haesler, Architect. Air view and single apartment house.

†Römerstadt Housing Development, Frankfort-on-Main. Ernst May & Associates, Architects. Air view.

†Radburn, New Jersey. Clarence S. Stein and Henry Wright, Associate Architects and Town Planners. Consultants: Frederick Ackerman, Thomas Adams, Robert D. Kohn, Raymond Unwin. Air view and plans.

COMPARISONS

New York Slums: Lower East Side. Air View.

New York Super-Slums: Park Avenue District. Air View.

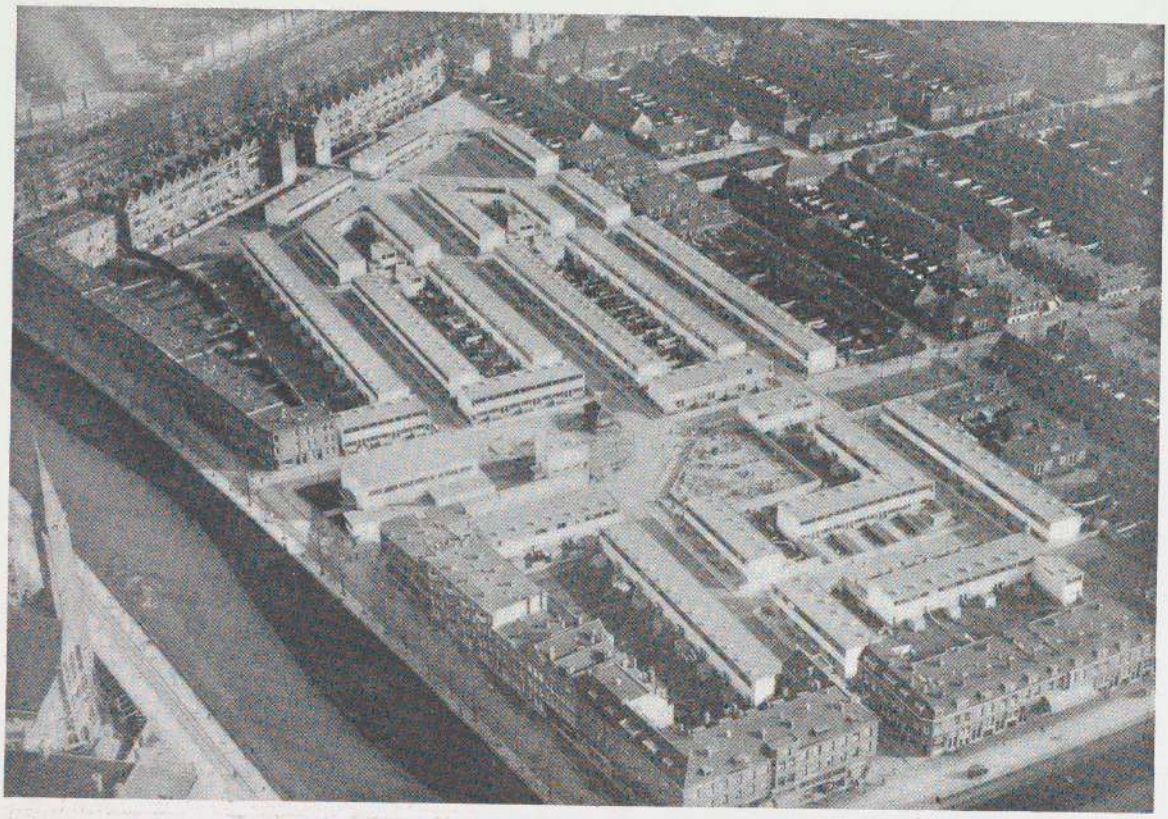
Slum Improvement: New York, The Amalgamated Grand Street Apartments.

†Slum Improvement: Rotterdam, Kiefhoek Housing Development. J. J. P. Oud Architect.

Interior of Block of Row Houses in Long Island City, N. Y.

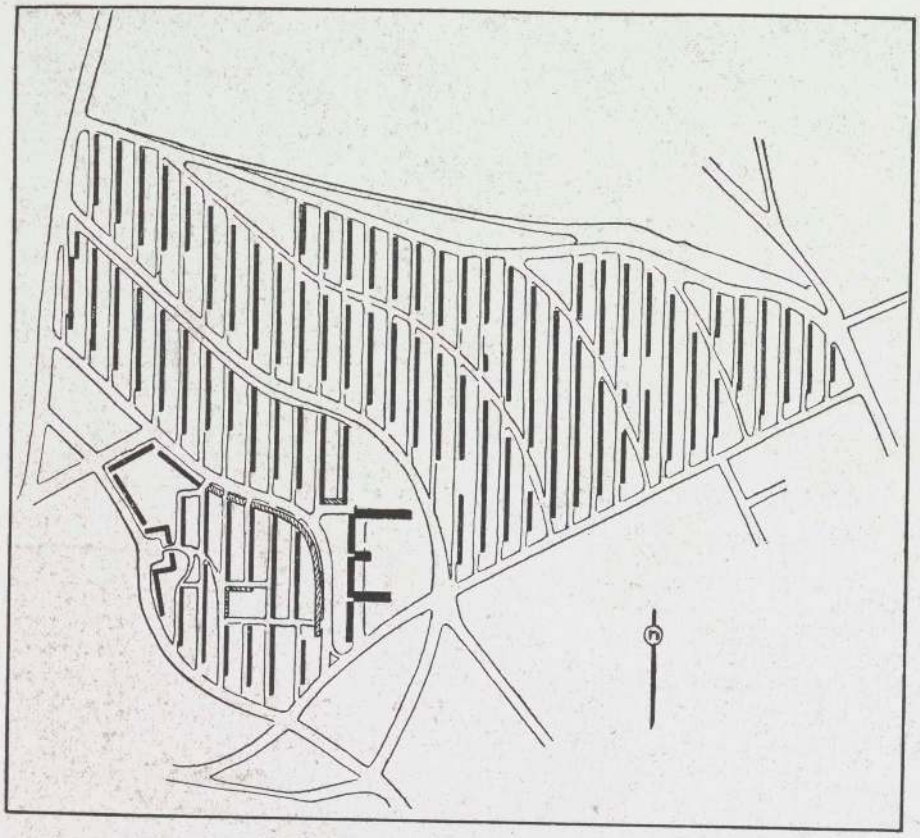
Interior of Block in Sunnyside Gardens, Long Island City, N .Y. Clarence S. Stein and Henry Wright, Architects and Planners.

PLAN OF RADBURN, NEW JERSEY: CLARENCE S. STEIN AND HENRY WRIGHT, ASSOCIATE ARCHITECTS AND TOWN PLANNERS

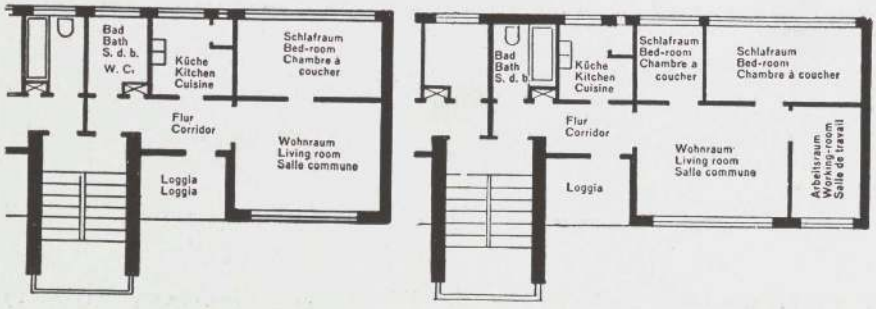


KIEFHOEK HOUSING DEVELOPMENT, ROTTERDAM: J. J. Oud, Architect

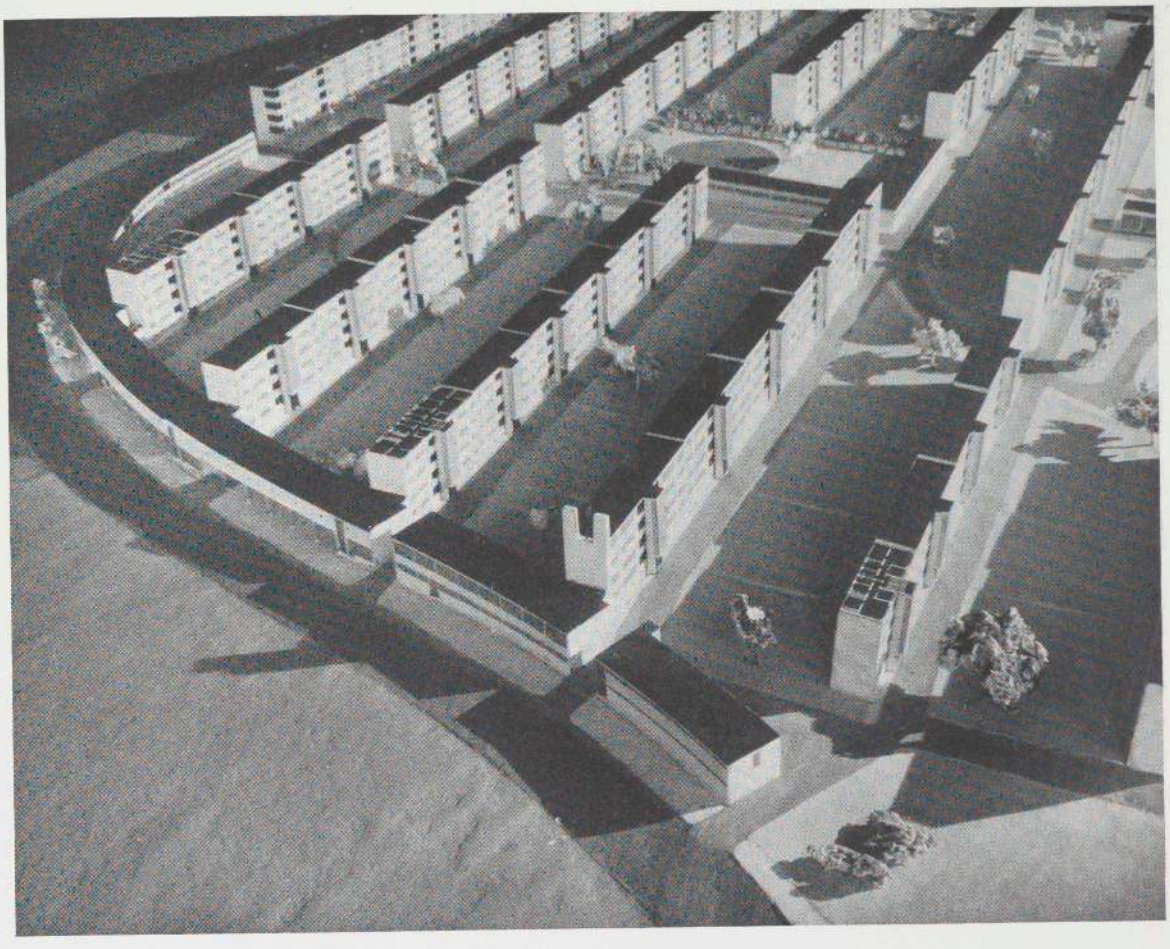
RÖMERSTADT HOUSING DEVELOPMENT, FRANKFORT-ON-MAIN:
ERNST MAY & ASSOCIATES, ARCHITECTS



GENERAL PLAN



APARTMENT PLAN



ROTHENBERG HOUSING DEVELOPMENT: Kassel, Germany. 1930–32
Otto Haesler, Architect and Planner

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