Marcel Breuer, architect and designer

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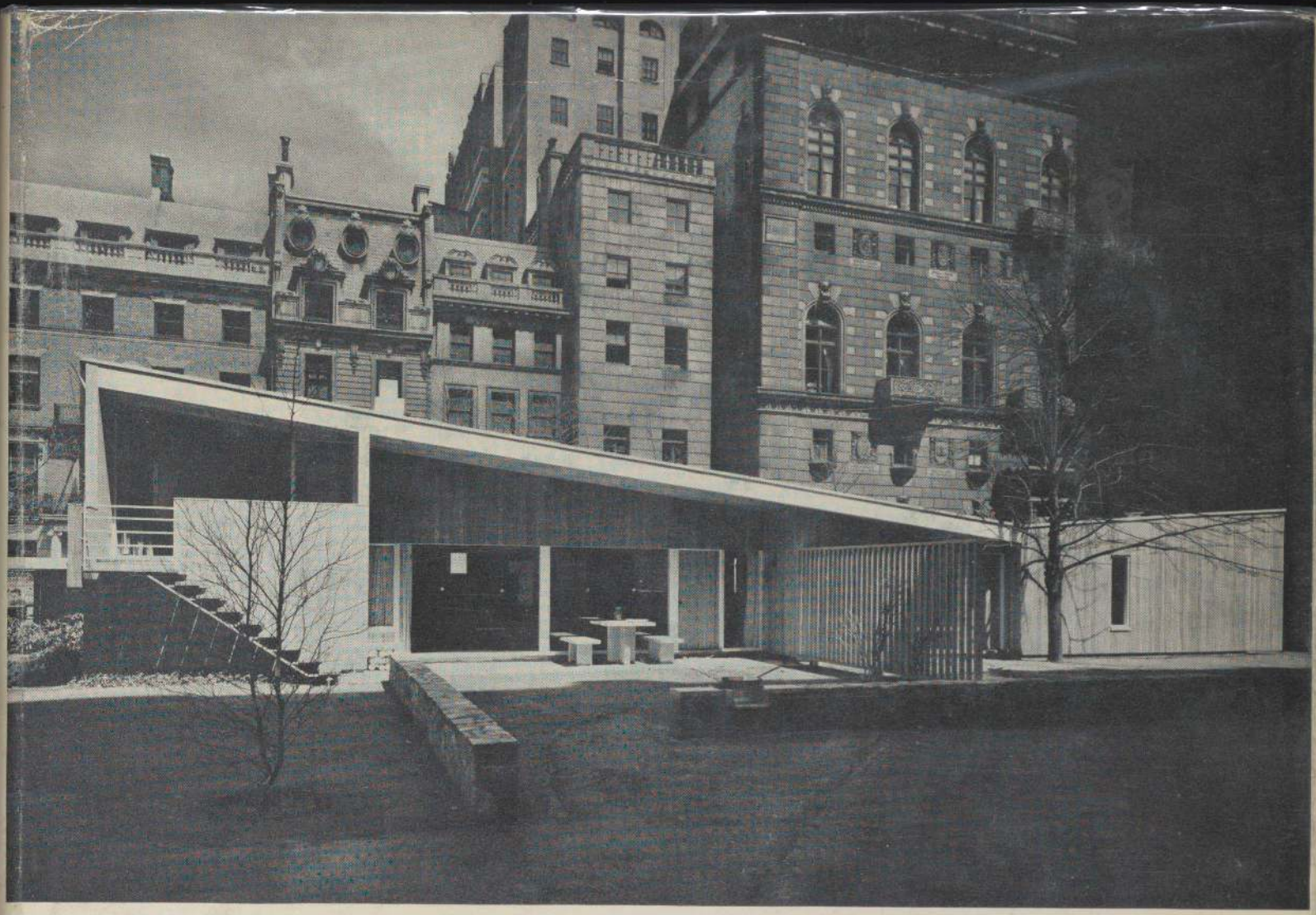

Marcel Breuer:
Architect and Designer

BY PETER BLAKE

128 pages; 196 plates *$4.00*

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Marcel Breuer's position in contemporary architecture is unique. He was present at the Bauhaus, in Weimar, Germany, when many new ideas in architecture and design were first channeled into one great movement. Although still young, he took a leading part in the movement, and contributed to it the invention of tubular steel furniture. In the late twenties and early thirties, in Germany, Switzerland, and England, he helped direct modern design into two important parallel currents. As one of the chief European advocates of American mass-production techniques, he strove to standardize furniture and building parts; and as an artist sensitive to the practical and psychological needs of family living, he began to use warm-colored and rich-textured materials in furniture and buildings to soften the originally harsh impact of the new architecture.

Upon his arrival in the United States in 1937, Marcel Breuer used his unique position to advantage. He was able greatly to influence young men around him at the School of Architecture at Harvard. And, in partnership with Walter Gropius, who had originally organized the Weimar Bauhaus, he helped design modern buildings that used the traditional materials familiar to the New England scene, without turning his back upon the machine-like clarity of the new architecture. In accommodating the European experience of the earlier years to the climatic and technical conditions they found in the United States, Gropius and Breuer carried modern domestic architecture immeasurably closer to a solution of the problems of American family living and to wide public acceptance.

Peter Blake, Curator of the Department of Architecture and Design at the Museum of Modern Art, had his apprenticeship in architecture in England when Marcel Breuer was practicing there, and has since worked in the offices of leading American architectural firms. Prior to serving with the Army in Europe, he was on the editorial staff of *Architectural Forum*. He has since contributed to professional magazines, including the *Architectural Record*.

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BY PETER BLAKE

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Acknowledgments

I am indebted to Marcel Breuer above all others for his help in collecting material of every type, and for his willingness to talk for many hours on subjects of which there was little record outside his own memory.

Special thanks are due to Professor Walter Gropius for his patient and painstaking criticism and advice; to Alfred H. Barr, Jr. for his help on the historical background to Breuer's work; to Philip C. Johnson for his careful editing and invaluable encouragement; and to Hannah B. Muller for compiling a complete bibliography.

A detailed appreciation of Breuer's work was written by Professor Henry-Russell Hitchcock, Jr., on the occasion of a Breuer exhibition held at Harvard in 1938. I have found Professor Hitchcock's essay an excellent source of information.

In addition, I want to thank Josef Albers, Petro van Doesburg, Helmuth von Erffa, Philip L. Goodwin, Edgar Kaufmann, Jr., John Peter, Alexander Schawinsky and Jon Stroup. Their advice and critical comments were of great assistance to me. The staff of the *Architectural Record* and that of the Department of Architecture and Design at the Museum of Modern Art also gave me invaluable help.

It goes without saying that those who helped me are not responsible for the views expressed in this volume, nor for my interpretation of certain controversial questions.

P.B.

Marcel Breuer. Photo by Homer Page, New York

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Preface

In addition to being a most accomplished artist in his own right, Marcel Breuer has formed a link between the turbulent days of the early twenties, when many of the esthetic and technical ideas that have produced the new architecture were first formulated, and the present day with its increasingly widespread acceptance of those ideas in this country and abroad. When Breuer was at the Bauhaus School in Germany many new attitudes toward design became clarified and channeled into one great movement. His own part in that movement was considerable. And because he thus understood its fundamental principles—and because he is still a young man—he succeeded better than most in interpreting these fundamentals to a new generation of American architects. This book is an attempt both to document Breuer's own work and to emphasize the main points in the message which he is trying to convey.

In tracing the movements and concepts from which Breuer drew some of his inspiration I have touched on several questions that are still controversial, even to those who argued them over and over again almost thirty years ago. The question of cross-influences between painting and sculpture on the one hand, and architecture on the other, is still a burning issue, and may not be settled for years to come.

Yet, regardless of the outcome of this debate, Breuer's qualities as an architect include a keen awareness of the significance of artistic endeavor in fields beyond his own; he is, like Le Corbusier, whom he admires, an essentially sophisticated man. And his architecture is, therefore, more than mere shelter: it is the framework not only for comfortable, but also for civilized and intelligent living.

New York, March 1949

PETER BLAKE
Curator of Architecture and Design
Museum of Modern Art

1902 - 1920

One day, in the late twenties, Marcel Breuer and Le Corbusier were talking together about southeastern Europe and its architecture. When Breuer mentioned that he had been born in Pécs, in southern Hungary, Le Corbusier at once began to describe the peasant buildings in that area as he recalled them from his travels, and picked up a pencil to illustrate his points as he went along.

Breuer remembers this small incident for several reasons, principally because he has derived much inspiration from peasant architecture, though he never tried to imitate it. He also realized at that moment that Le Corbusier was another artist with the same insight into true traditions that he himself possesses to a high degree. Many years later Breuer told a meeting of Swiss students: "If we ask ourselves what is the source of the solid, unself-conscious beauty, the convincing quality and reasonableness of peasant work, we find that the explanation lies in its unconsciously, and therefore genuinely, traditional nature. . . . . There are numbers of old peasant farmsteads that we find far more stimulating than many so-called 'modern' houses." This sympathy for the vernacular, and this sensibility to lasting values, as opposed to fashions—these qualities Breuer owes in part to the impressions of his youth, in Hungary.

The town of Pécs, where Breuer was born in 1902, is also known as Fünfkirchen, and carries five churches in its coat of arms. It is the capital of Baranya county in southern Hungary, a minor railroad hub, not far from the northern borders of Yugoslavia, near the western banks of the

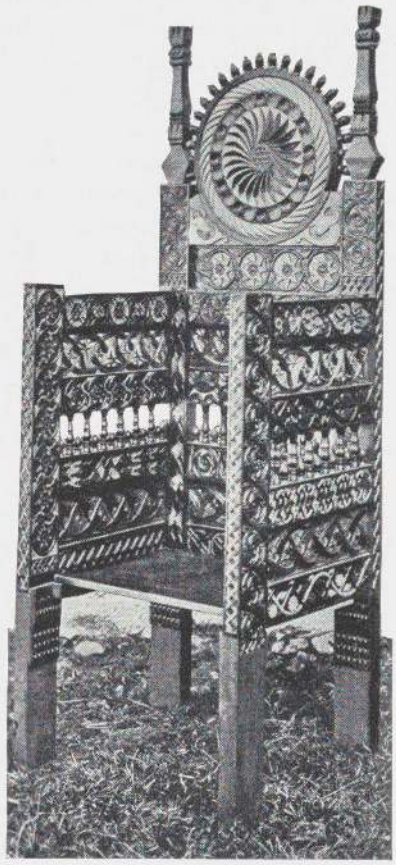
1. Peasant houses, Central Balkans (*La Yugoslavie*, by Kurt Hielscher)

Danube. It is an ancient town, and a small intellectual center, the seat of Hungary's oldest university. Breuer's father was one of the local doctors.

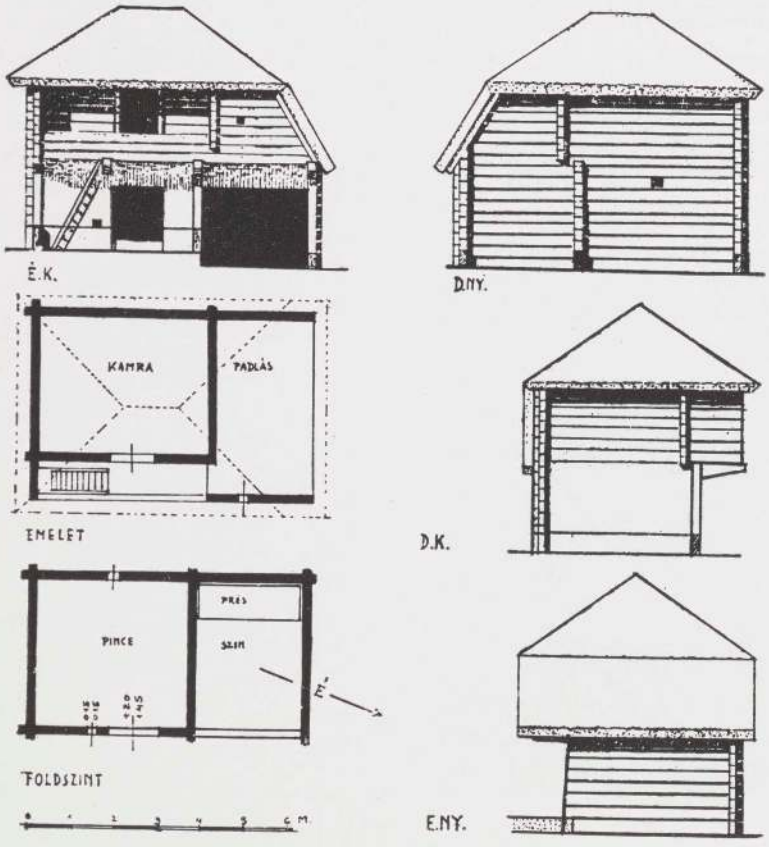
In this atmosphere Breuer grew up. At first he thought of becoming a painter or a sculptor. In his later days at the Bauhaus he continued to pursue his interest in painting, and some of the results are interesting clues to his visual approach to architecture. Of the first years at school in Hungary, however, there is no available record. But there can be no question that the cultural wealth of the Danube valley impressed itself deeply upon him during those years.

When Breuer left this valley in 1920 he was 18 years old. He had been offered a scholarship at the Art Academy in Vienna, and he virtually walked there to start on his studies. As the one-time center of the great Austro-Hungarian Empire, Vienna was still a focal point of formal culture. Many young men like Breuer were drawn to this city, for it seemed to be the gateway to great things in the West. But unlike most of his fellow students, Breuer came with a very good idea of what he was looking for, beyond that gateway. Today he says: "I walked into the Academy—and walked out again. I saw that it was not for me."

Breuer remained in Vienna for only a few weeks, working in the office and shop of the architect Bolek in order, as he now says, to "become more practical." These weeks determined for him that he wanted to be an architect; and when, a little later, he heard from another Hungarian, Forbat, about Walter Gropius' Bauhaus, he left Vienna for Weimar to study at that school.



2. Magyar chair



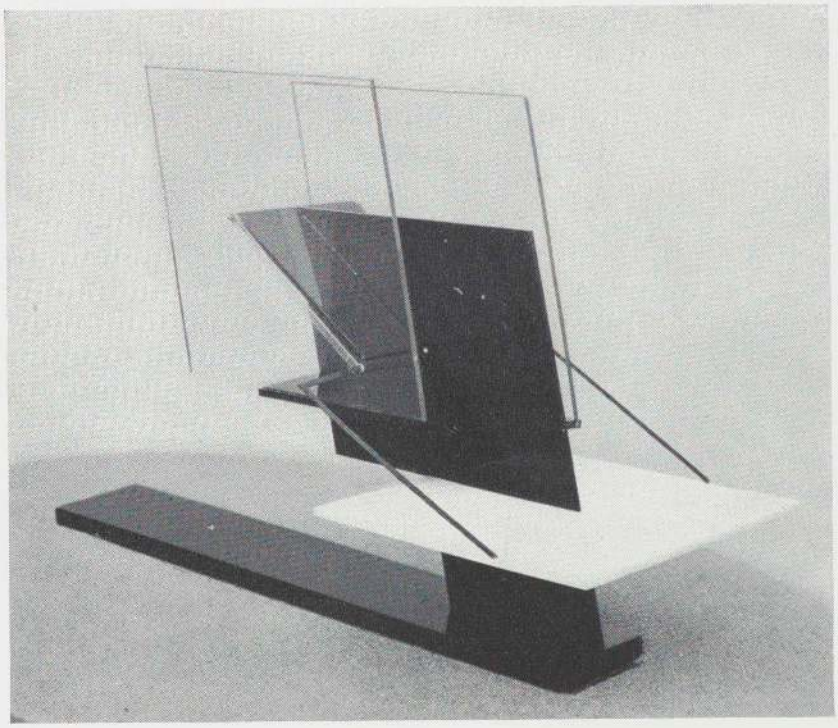
3. Transylvanian farmhouse type, plans and elevations (*Janos*)

1920 - 1928

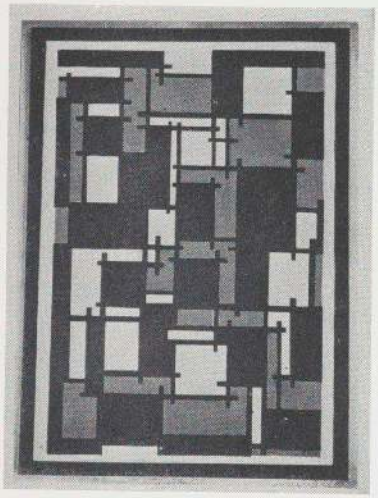
Germany after World War I was deep in the confusion of defeat. The old values had collapsed; the old ideals had failed. With the end of the imperial state there appeared an enormous void, into which were now drawn ideas from all over the world. Some of them had barely touched Germany until that time.

The Bauhaus in Weimar, where Breuer went in 1920, reflected in certain ways the state of the country as a whole. In 1919 Walter Gropius had been appointed to organize and direct this school, and to formulate a program that was to revolutionize design education for decades to come. Briefly, Gropius demanded that students first utilize their hands, familiarize themselves with the simplest of traditional and industrial materials, and, having mastered a craft, approach the vast problems of planning and design within an industrial society. This program was extremely flexible. For though it was later to become a tradition in itself, it was never a slave to stylistic traditions, either of the day or of the past. Gropius has said: "The goal of the Bauhaus is not a 'style' system, dogma, canon, recipe or fashion. It will live as long as it does not depend on form, but continues to seek behind changing forms *the fluidity of life itself*."

At the start, and for several early years, the freedom cultivated within the Bauhaus permitted tendencies, such as Arts and Crafts, occasionally to gain prominence. There was nothing wrong in this. It was, in fact, a tribute to the vitality of the Bauhaus group, and to the clear and far-sighted directorship of Gropius, who held the Bauhaus together in spite of its many independent parts. Recently Gropius said: "I think you can describe the Bauhaus as a real 'boiling' pot [sic]. I felt that all the ideas current at the time should be allowed to run their course, and I therefore did not want to



4. Naum Gabo: Monument, 1925–26

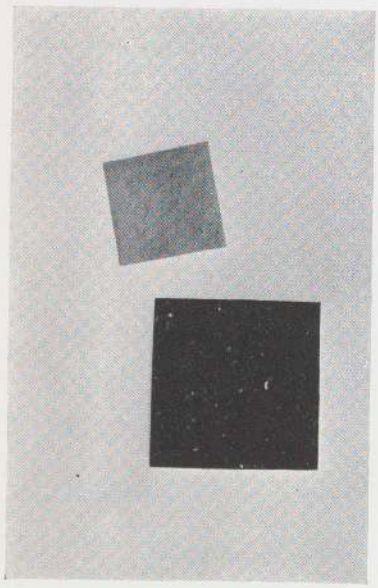


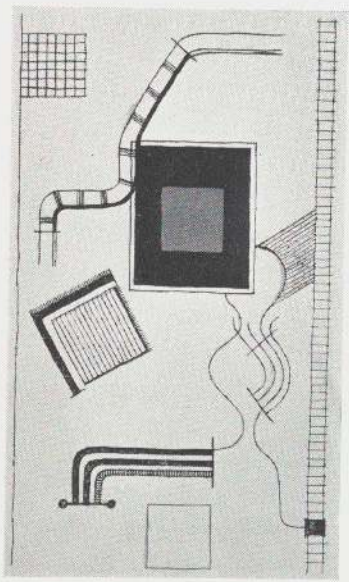
5. *left:* Theo van Doesburg: Composition X, 1917–18

6. G. Rietveld: Chair, 1918

suppress any of them. But it seemed to me that often the Bauhaus was close to exploding, for there were so many violently opposed movements represented there."

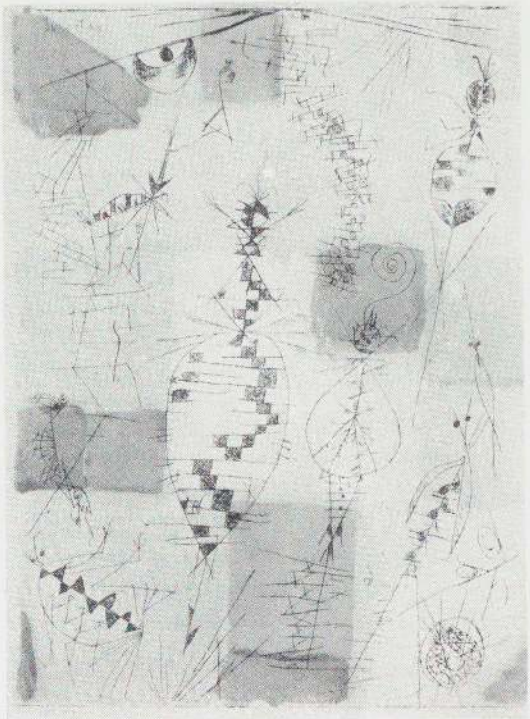
In the early phases the Bauhaus was the meeting place of several ideas and movements from the East and the West, whose forceful impact was noticeable then and is noticeable today. In 1922, the Constructivists held their big exhibition in Berlin. Among them were Tatlin, Gabo, and Lissitzky, who had developed the Cubism of Picasso and Braque in three-dimensional constructions which were made largely of new industrial materials and showed a fascination with the new possibilities of defining space in apparent violation of all the accepted principles of statics (pl. 4). They reveled in cantilevers, suspended forms, delicately balanced fantasies that were supported on a minimum base or on practically invisible wires or sheets of glass. Some of the Constructivists were elated by the overthrow of traditional ideas in politics and economics; their space-designs showed



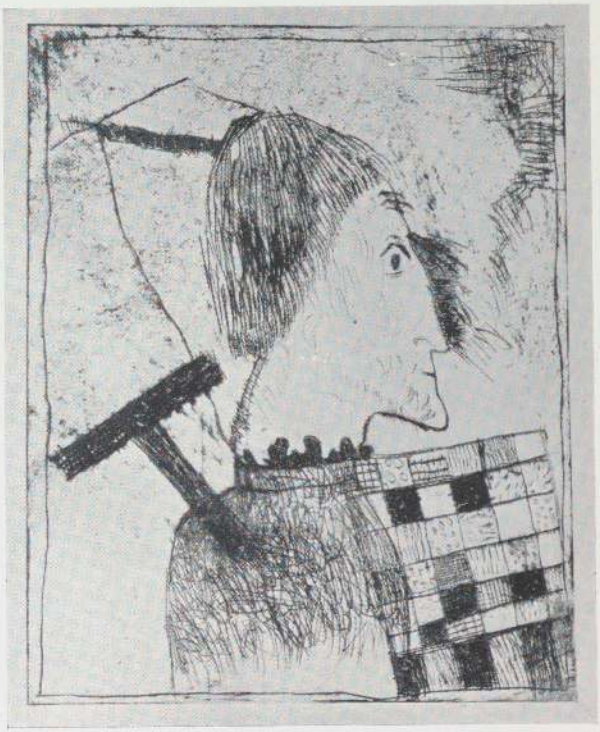


7. *left:* K. Malevich: Suprematist Composition

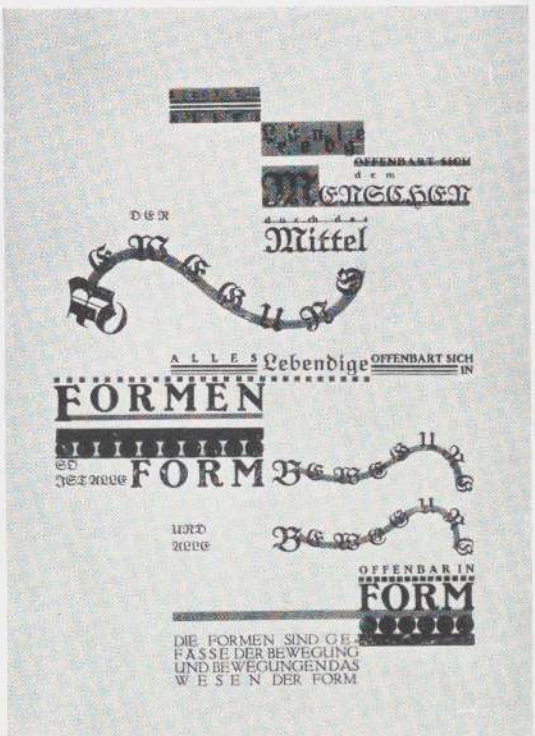
8. *right:* Breuer: Painting, c. 1923. Note also "Klee patterns" in this composition



9. Paul Klee: Insects, 1919



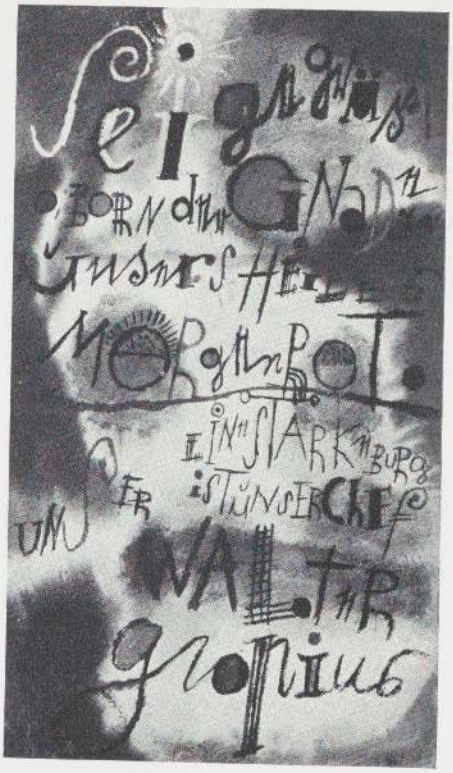
10. Breuer: Portrait of Josef Albers, c. 1923



11. Johannes Itten: Typographical design, 1921

12. Herbert Bayer: Poster, 1926. Note change from Itten's "rhythm" to Bayer's discipline

13. W. Kandinsky: Composition VII, Fragment 1., 1913



14. Breuer: Birthday card, c. 1923

the same kind of elation with the conquest of traditional limitations in statics.

Related to the Constructivist movement were the Russian Suprematist painters, like Malevich, whose work Breuer liked a great deal. The Suprematists, like the Constructivists, had taken their cue from Picasso's and Braque's Cubist work before the war. Since certain problems of space, color, and composition with which the new architecture concerned itself were first clarified in Cubism, the work of Cubist painters and of others who had been influenced by Cubism provoked great interest at the Bauhaus.

Other descendants of the Cubist school were the members of "de Stijl" movement which had been founded in Holland in 1917. Their leader and chief propagandist, Theo van Doesburg, was to come to Weimar in 1921, a year after Breuer began his studies. Van Doesburg's group embraced artists in many fields, from the painter Mondrian, to the architect and furniture designer Rietveld (pl. 6). The common denominator which united these men was a meticulous interest in the arrangement of rectangular patterns with painstaking attention to proportion, asymmetric balance, and composition.

Meanwhile in France, the Swiss architect and Purist painter Le Corbusier was writing his passionate appeals for a new architecture. Some of his drawings were exhibited in Weimar in 1923. His writings of this time in the *Esprit Nouveau* were known to Breuer.

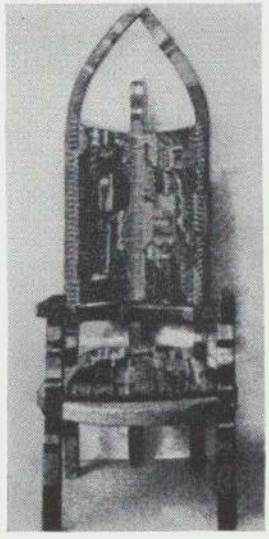
The work of all these men was published by the Bauhaus at one time or another, and exhibits, especially of the Constructivists, took place in several German cities during the early twenties.

While the descendants of the Cubist movement represented differing degrees of rationalism in design and construction, the most noticeable tendency at the Bauhaus between, approximately, 1919 and 1922 was represented by the lyricism of Kandinsky and the fantasy of Klee, and in the preliminary course initiated by Johannes Itten. Breuer was intrigued by Kandinsky's and Klee's painting, and his own paintings of that time show the influence of these men very clearly.

Itten's approach, however, which was greatly influenced by his interest in mysticism and strange eastern religious movements, was the cause of considerable controversy among Bauhaus students and masters alike. His principal contribution concerned the study of natural materials. This had been somewhat neglected by the Constructivists, whose major interest was with new *industrial* materials; and was completely overlooked by "de Stijl" group which worked with flat, untextured planes or angular, plain-surfaced cubes. Yet Itten's preoccupation with the study of natural textures and forms was inherently romantic and in conflict with the ideas of students like Breuer and Albers, who became more and more interested in the synthetic materials produced by modern industry.

The showdown came in 1923 when Itten left to be replaced by Moholy-Nagy and Albers. These two, together with Breuer, and, of course, Walter Gropius himself, represented a more rational tendency which was akin in spirit to the heritage of Cubism. This new rationalism is the characteristic for which the Bauhaus is now best remembered, and it is worth noting that Breuer aligned himself with it almost from the start. Yet the "Abstract Expressionists," Kandinsky and Klee, remained, and counterbalanced the more rigorous demands of the rationalist group. In Breuer's own work, this balance between Expressionist fantasy and freedom on the one hand, and rationalist discipline and clarity on the other, has remained a constant characteristic until today. He learned as much from Kandinsky's vivid color composition and from Klee's investigations into unconscious fantasy as he did from the discipline of the descendants of the Cubist movement.

*15. Breuer: Chair, 1921



16. Breuer: "African chair," 1921

17. Magyar peasant weaving

**Note: All designs illustrated in this book are by Marcel Breuer, unless otherwise identified.*

18. Armchair, 1922

Furniture

When Breuer came to the United States in 1937, he began one of his first public speeches by announcing: "Ladies and Gentlemen, if I should say what is the most important task of our time, I would say it is to select." Perhaps he had in mind his own career, which started with a process of selection. One former Bauhaus student recently said: "At first we used to get involved in a lot of nonsense. We tried everything, and that was the idea. A lot of it was wrong. A lot of it was good, and survived." A part of Breuer's greatness as an architect is due to the fact that he was perhaps the best selector the Bauhaus has produced. He, too, tried just about everything during his four student years. Some of the things he tried now appear trivial to him and to us. But many of his earliest designs show the touch of a sure and discriminating hand.

The Bauhaus discipline to which Breuer now subjected himself proved to be an extraordinary boon. Not a practical man by temperament—he had left Bolek's office in Vienna out of embarrassment after having tried to hammer the blade of a planer into place—Breuer decided that he must force himself to learn more about the simple facts of construction, about the way things are made, before he could design them himself. The acid test of what is good design, he says, is, after all, whether it will stand up. As a student in the carpentry shop, and later (after 1924) as its master and head, he learned to design things that would stand up. And while this apprenticeship period prevented him for a time from working on architectural problems, he made excellent use of it in the design of furniture.

When Breuer joined the Bauhaus community it was going through its early Expressionist phase. Itten was in charge of the preliminary course. Breuer's first chairs were a part of that phase. The upright chair of 1921 (pl. 15) was a simple, rugged construction, with colorful woven patterns in its seat and back. When Theo van Doesburg saw this chair he told Breuer that the pattern was "right" but that the curved back was "wrong" —it should have been straight . . . . (Breuer disagreed). The second design six months later was an elaborate armchair with a tall back (pl. 16). None of its wood members were planed; instead they were roughly hewn

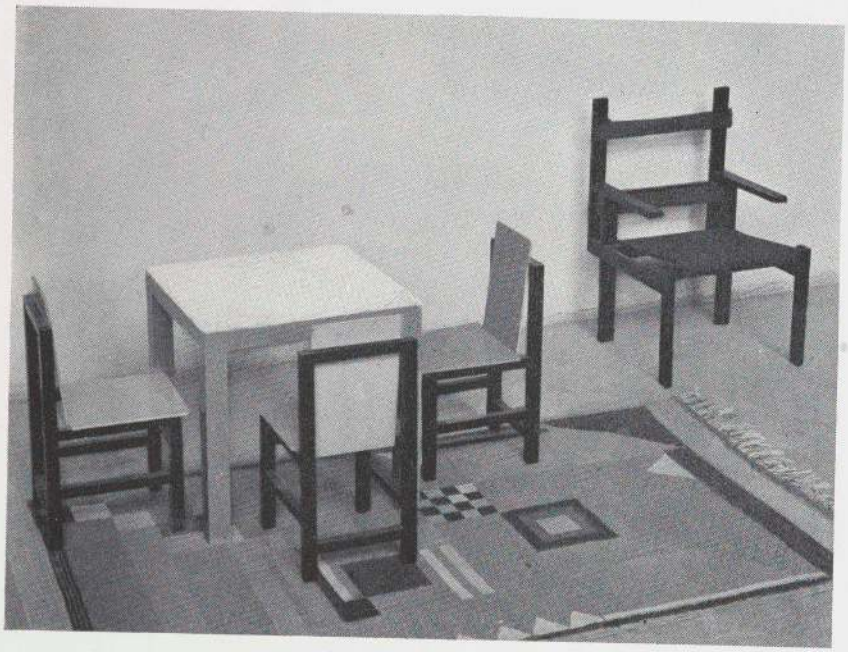
19. Padded armchair, 1922

20. Wood and fabric chairs, 1924

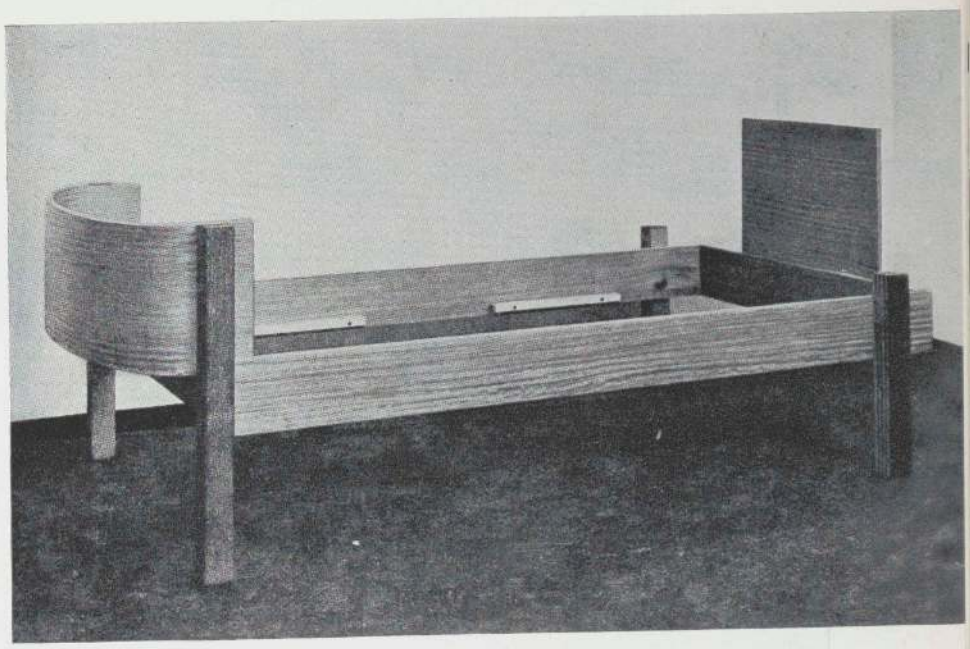
with an axe. Breuer calls this his "African chair"; and though it was undoubtedly motivated by the then current interest in primitive Negro art, it is not unlike Hungarian peasant furniture (pl. 2), and its fabric seat and back are strikingly reminiscent of the patterns of Magyar peasant weaving (pl. 17).

Although these two chairs are the work of a student, they contain the germ of an idea, of a principle, which Breuer clarified later, and which has had a decisive influence upon all phases of design: the separation of functions in any design-object, and the expression of that separation by visual and structural means. *This is a fundamental precept of Constructivism*, which made a great impression upon him, especially in Lissitzky's work. To Breuer the framework, the weight-supporting unit in any design became a distinct entity, to be expressed in structural terms. The added, non-structural portion with which *the human being comes into immediate contact*—this assumed an entirely different character, less abstract, less hard, less sharp-edged. In Breuer's vocabulary this distinction has remained constant. When he speaks of structure, he expresses the Constructivist's defiance of traditionally accepted statics. When he speaks of the human-contact element in a design, he is still a romantic, using increasingly "softer" materials (both in color and in texture) and fitting them ever more closely to the curves of the human form.

Once this definition is made it is almost unnecessary to comment in detail upon every piece of furniture designed by Breuer during the past 25 years. It is true that he has learned a great deal more about the different qualities of materials than he knew at the outset. Some of his first Bauhaus tables, for example (pl. 21), had flush wooden joints which, according to Breuer's old friend, Josef Albers, are "not right for wood; they are right for metal." But these early errors are far outweighed by the over-all clarity of structural concepts, the absence of ornamentation and the emphasis on fine finish that showed in Breuer's work from the beginning.



21. Chairs and table, 1923

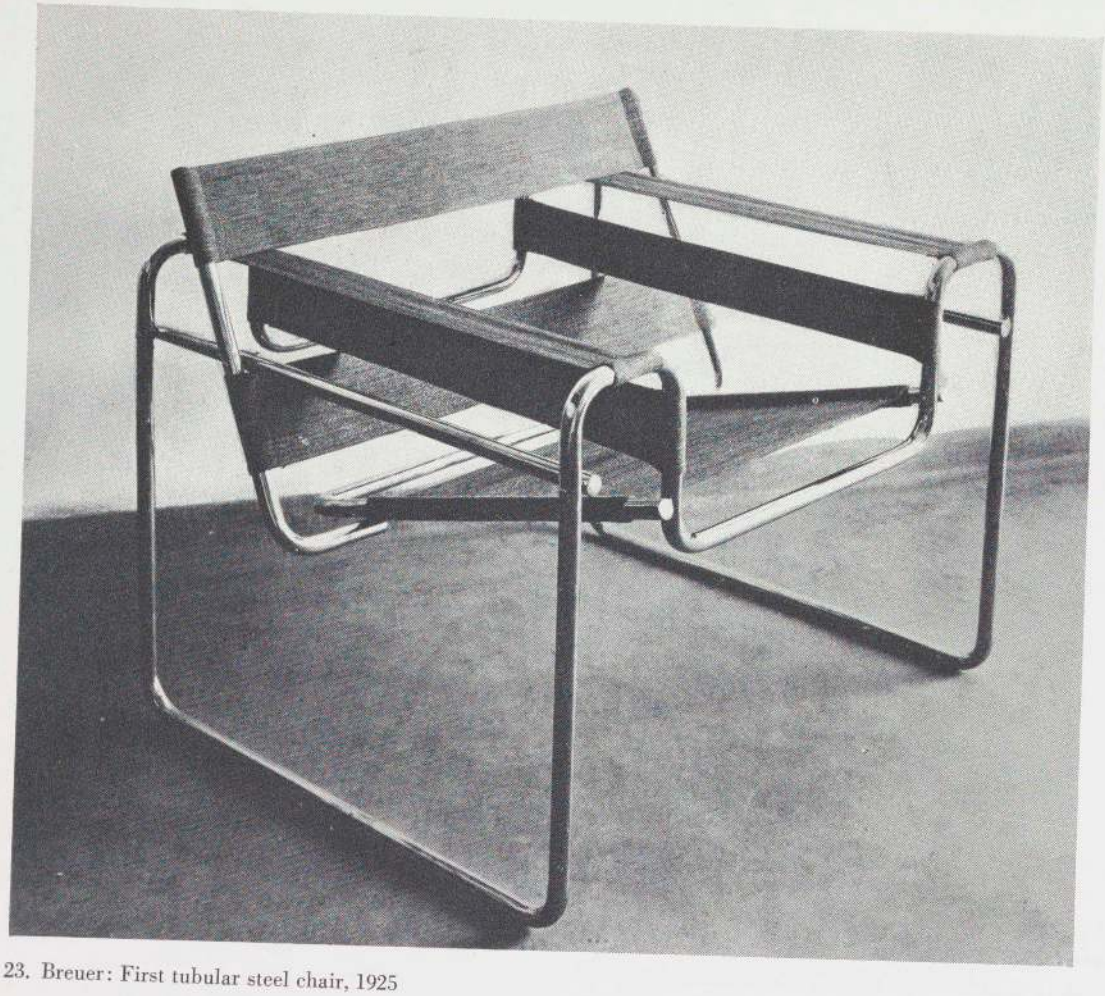


22. Bed, *Haus am Horn*, 1922

Breuer's furniture, then, developed rapidly in two parallel directions: the structural supporting frame became lighter and more delicate, its shape determined, first, by the use of straight wooden members (and by the primitive tools available); next, by the use of bent, tubular steel, then of bent aluminum straps, of bent plywood, and finally, of laminated, cut-out plywood sheets. Meanwhile the human-contact element—in the case of seating units, the seat and back—became increasingly soft. First, Breuer used straight slabs of plywood; next he used stretched canvas upholstery, caning in bent frames, bent plywood, and finally upholstered pads and wooden slat-frames curved in the shape of an elongated S, carefully fitted to the human posture. All along, his chairs developed visually from an angularity reminiscent of Cubist painting to smooth, flowing curves. All along, the trend was toward more organic forms.

Within this development it is necessary to point out two events of striking importance in the history of modern design. The first is the invention of the tubular steel chair. The second is the growing preoccupation with standard, modular unit cabinets.

When the Bauhaus moved to Dessau in 1925, Breuer bought himself a bicycle. It was an "Adler" make, and it had the usual chromium-plated, tubular steel handle bars. While he was learning to ride it, he suddenly realized that this type of tubular steel could be bent into continuous loops to form the supporting frame of chairs and tables. He talked to one of the managers of the "Adler" works about it, but this man thought Breuer was drunk. "Nobody would accept chromium-plating in the interior of a home," he said. "It has never been done before." So Breuer went ahead on his own, and, in the middle of 1925, designed and built the first chair entirely of chromium-plated, tubular steel (pl. 23). Its seat, back and arms were made of stretched canvas. It was a delightful Constructivist object, overly complicated, perhaps, but extraordinarily refined. Although it was never very extensively used, it has probably influenced many later designs, such as the 1929 chair by Le Corbusier (pl. 24).



23. Breuer: First tubular steel chair, 1925

Breuer now approached the Mannesmann steel works, and they manufactured for him the bent steel frames which could not be produced in the Bauhaus workshops. When the Bauhaus buildings were completed in 1926, Breuer furnished the school buildings, as well as the masters' houses, with his tubular steel furniture. By that time many more designs had been completed and manufactured including an extremely simple stool made of a continuous steel tube, and topped with a wooden seat (pl. 30). In this beautiful piece there is a first inkling of the next, revolutionary step: the design of the tubular steel cantilever chair.

As it happened the first cantilever chairs were designed, not by Breuer, but by the Dutch architect Mart Stam, who had seen Breuer's tubular steel furniture in the Bauhaus buildings in 1926, and by Mies van der Rohe. Both architects first exhibited their chairs at the *Werkbund* Exhibition in Stuttgart late in 1927. Mart Stam's chair was made of a stiff frame whose straight tubular members were linked by standard elbowpipe joints. The Mies chair, however, for the first time embodied the technical principle of a *resilient* cantilever (pl. 31). A year later Breuer produced his version of that same principle, as a logical development in his persistent work in tubular steel. The Breuer chair, more angular than that designed by Mies van der Rohe, has been the model for thousands of copyists the world over (pl. 32).

24. Le Corbusier: Armchair, 1929

25 & 26. Dining chairs, 1926

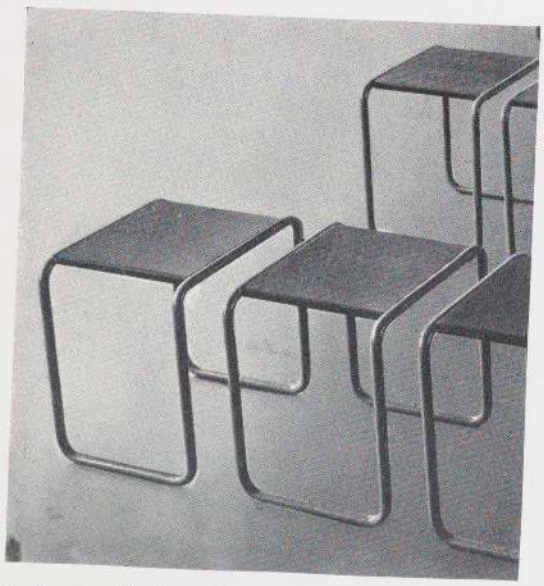
Breuer was perhaps the first modern architect to allow the chromium-plated surface to enter the home. It was a daring step, a rejection of all the traditions of Arts and Crafts (*Kunstgewerbe*)—which had gradually become identified in Germany with political reaction as well—and a powerful affirmation of his faith in an industrial and scientific society.

Breuer's interest in modular unit furniture dates from his first Bauhaus days. The possibilities of standardization had been brought into sharp focus through American mass production and construction techniques. The Cubists had been the first, in Europe, to draw attention to Machine Art, while Gropius had explained its possibilities in technical and philo-

27. Office chairs, 1926 (adapted from Breuer designs)

28 & 29. Folding chair, 1928

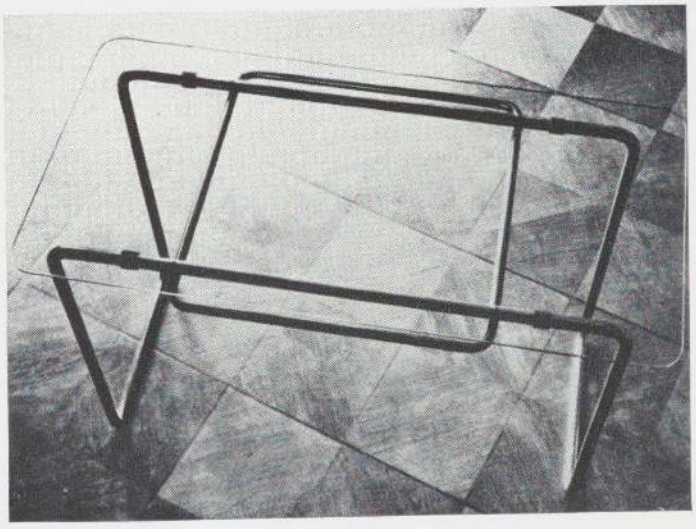
sophical terms as early as 1910. Breuer, who had come out of a handicraft environment, was perhaps more acutely conscious than most of his fellow students of the possibilities of standardization and mass production, and of what both could mean if used intelligently. While it is possible to detect a resemblance to Cubist and "de Stijl" painting in his first experiments—as in the playroom he designed, in 1923, with Alma Buscher (pl. 34)—Breuer believes that this resemblance is superficial and that "if architecture is fundamentally influenced by painting, it is to its real disadvantage." Nevertheless, it is interesting to note that these early designs were handled much in the way the painter Mondrian later furnished his studio (pl. 35).



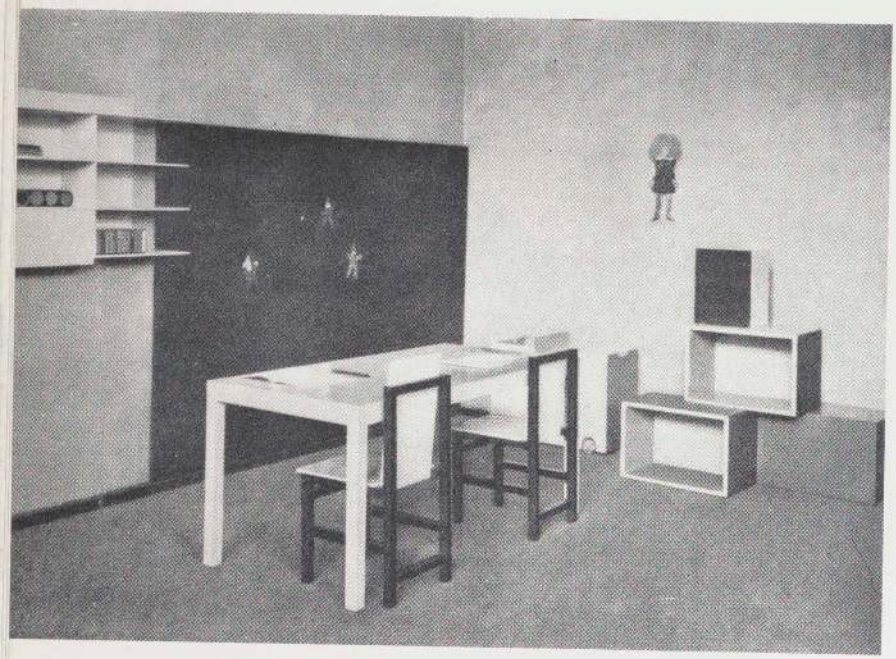
30. Breuer: Stools, 1926

31. Mies van der Rohe: First springy cantilever chair, 1927. Tubular steel and leather

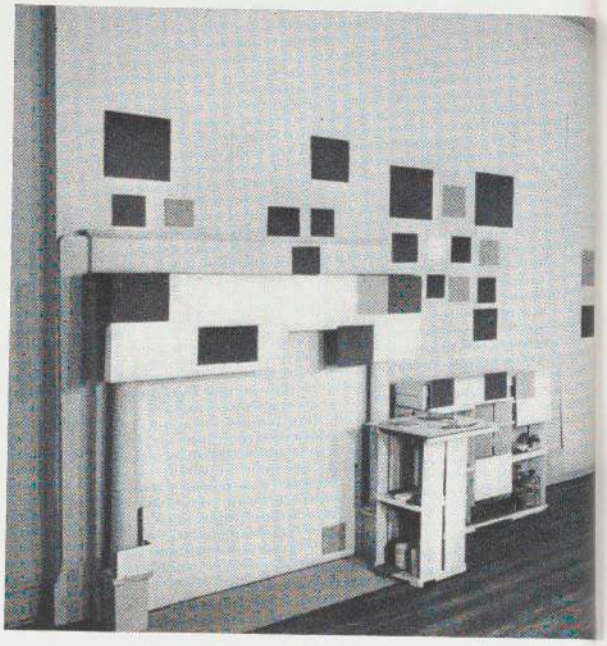
32. Springy tubular steel cantilever chair, 1928



33. Glass top table, 1928. Rubber sleeves hold glass to steel

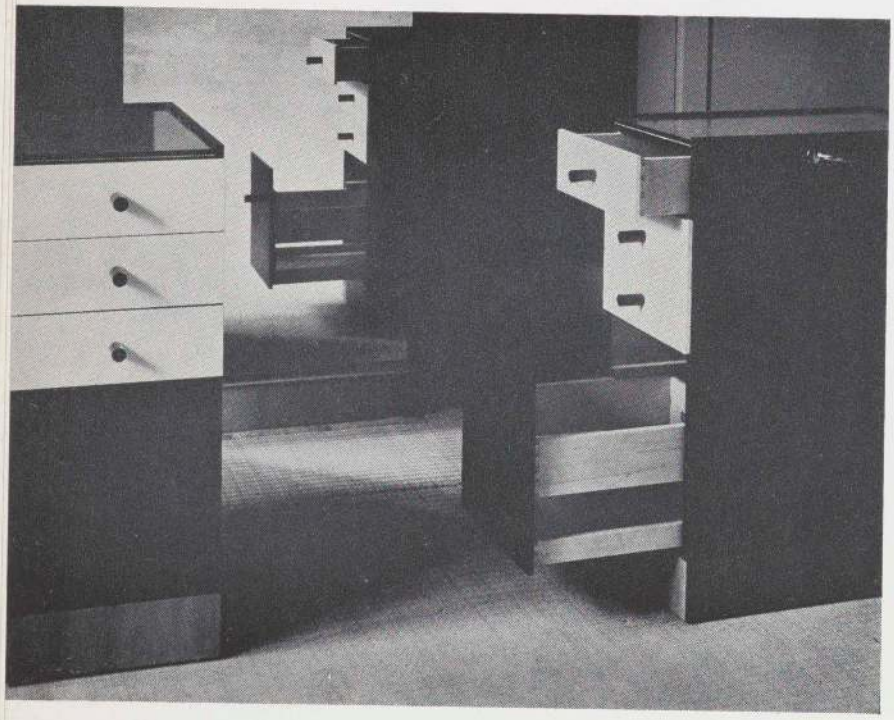


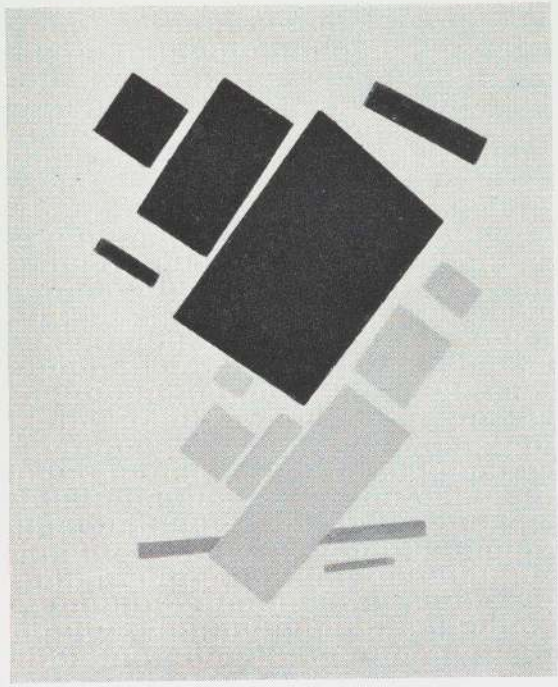
34. Children's room, Dresden, 1923 (Breuer and Alma Buscher)



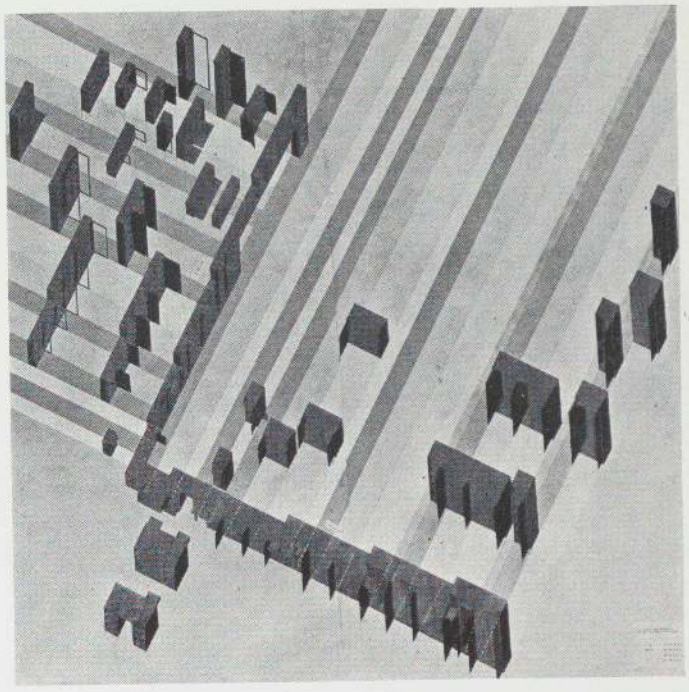
35. P. Mondrian: New York studio, 1942

36. Drawer units, 1925





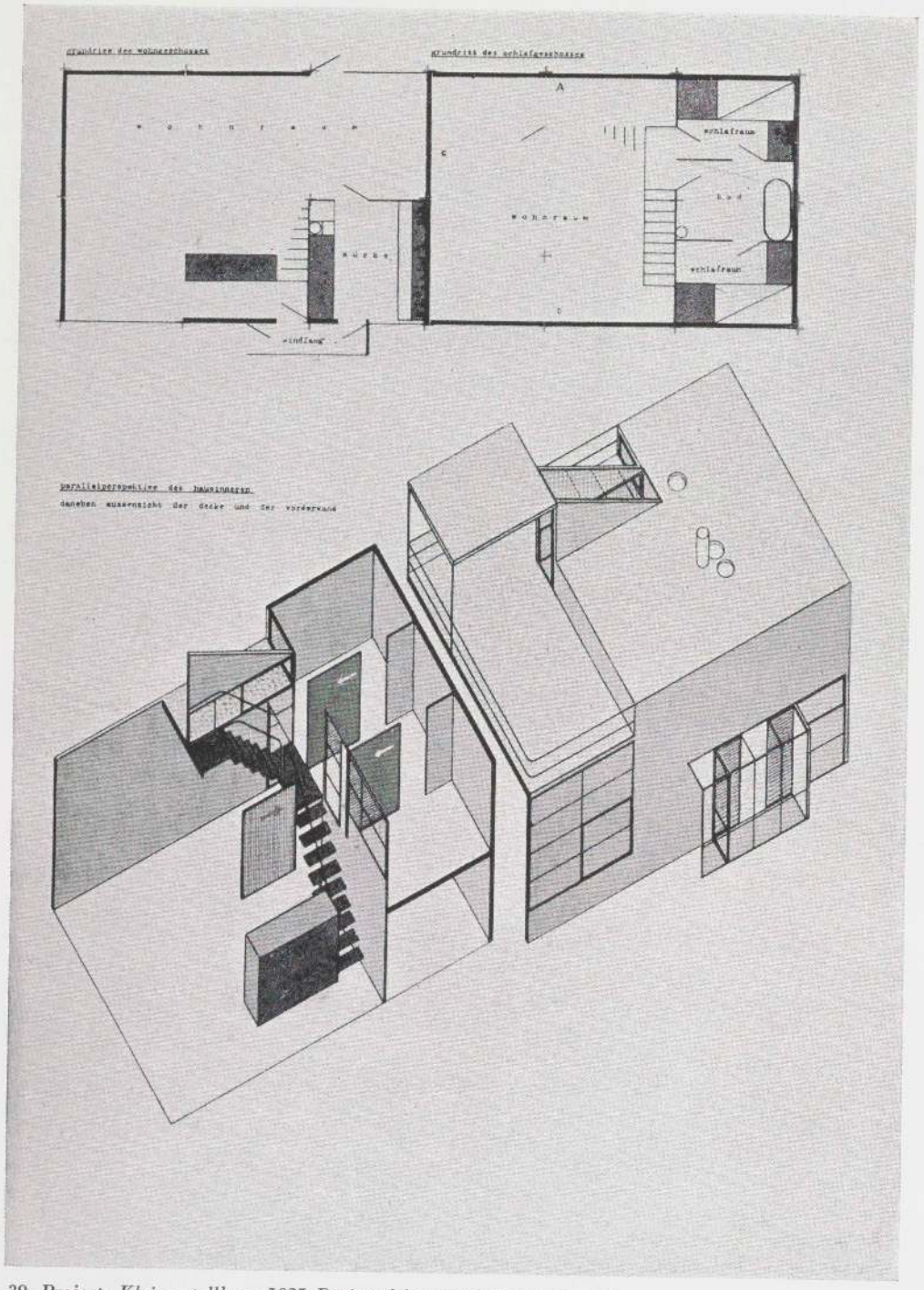
37. K. Malevich: Suprematist Composition, 1914



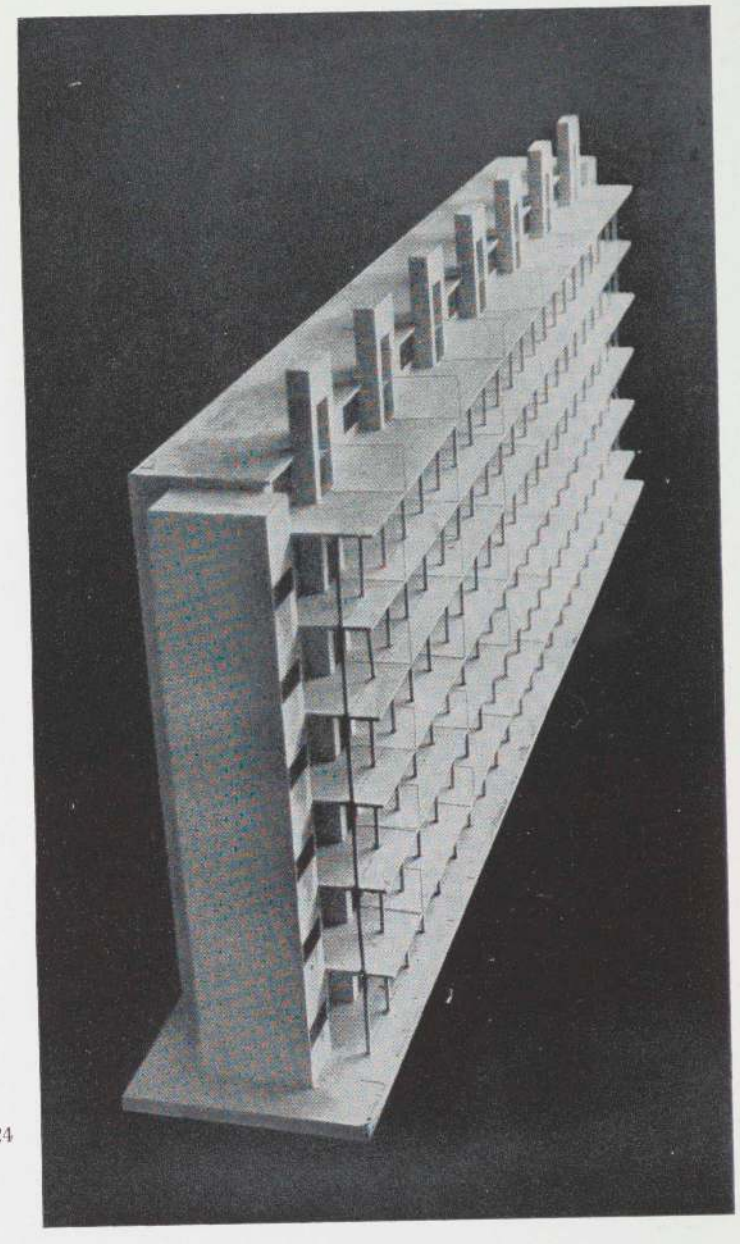
38. Breuer: Schedules for standardized cabinets, 1927

The sides of unit cabinets were each painted in a different color. Pattern and proportion played an important part. And Breuer's drawings—his schedules for standardized unit cabinets (pl. 38)—read like Suprematist paintings.

Whether the preoccupation with standardized furniture had primarily esthetic or technical motives is not very important. More important is the fact that it was a part of a new rational trend at the Bauhaus. Defenders of "de Stijl" movement claim that this trend began after Theo van Doesburg came to Weimar in 1921, and opened a studio which attracted numbers of Bauhaus students. Most Bauhaus people deny this. From Gropius and Breuer to Albers, Schawinsky and Bayer, they believe that this change was in the making long before van Doesburg arrived. Gropius points to his *Fagus Werke* of 1911 and to all his subsequent work to prove the consistency of his own development and of that of the Bauhaus idea. Yet there undoubtedly *was* an early Expressionist phase in the Bauhaus, and there undoubtedly *was* a rejection of that phase from about 1922 on. That rejection came from the students, like Breuer, as much as it came from Gropius himself. Within the context of this development, Breuer's stand on standardization and mass production techniques assumes a new and important meaning. The young Hungarian had become one of the chief exponents within the Bauhaus of the principle of the American assembly line.



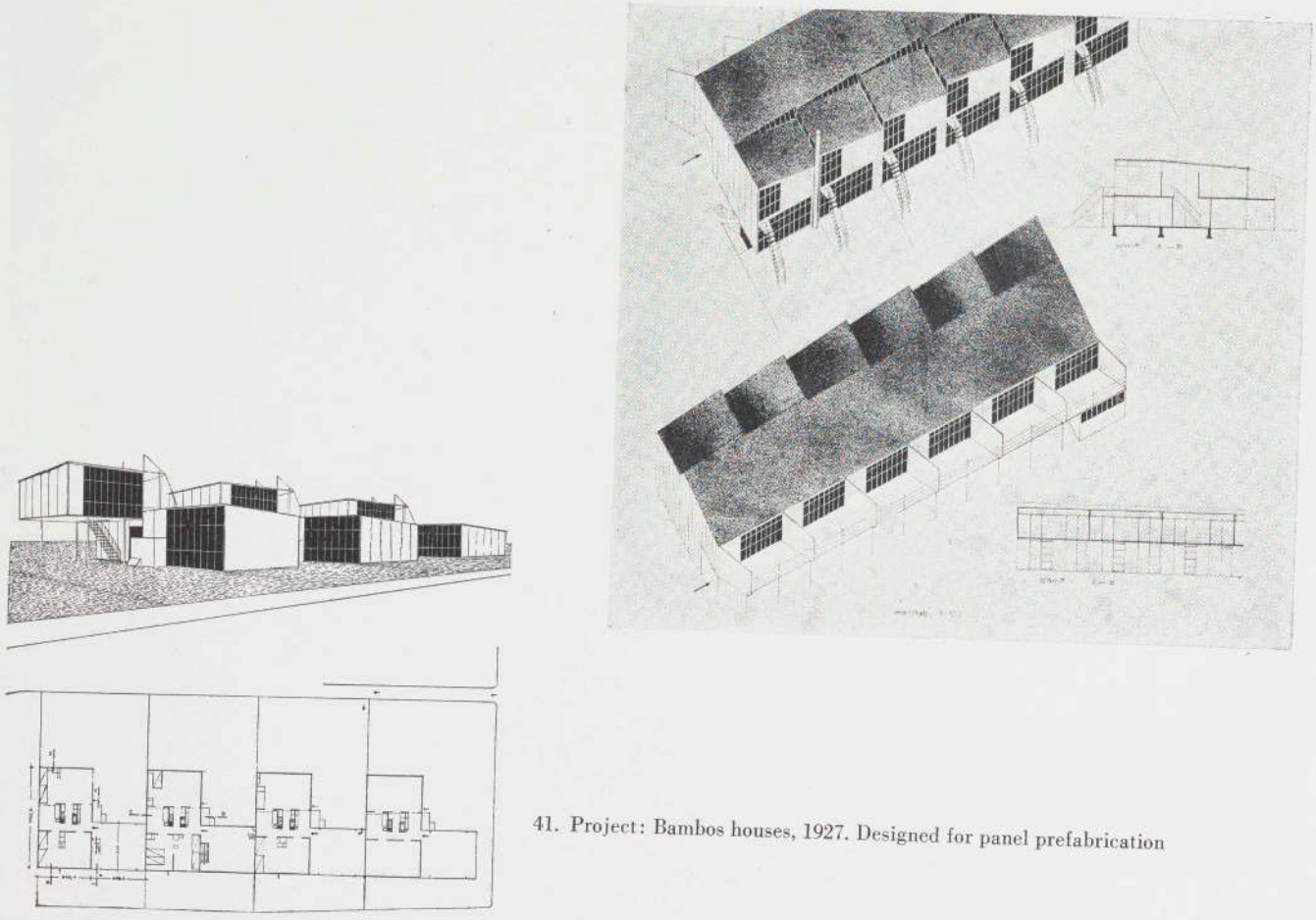
39. Project: *Kleinmetallhaus*, 1925. Designed for prefabrication in steel



40. Project: Apartment house, 1924

Architecture

"It is interesting that the modern furniture was promoted not by the professional furniture designers, but by architects," Breuer said recently. He was, in part at least, speaking of himself. In his work (as in all Bauhaus work) there has never been a sharp distinction between categories of design. As he went on to say, "The stresses on a chair are heavier than those on any factory floor." The design approach had to be similar in either case. It is, therefore, hard to draw a clear dividing line between his Bauhaus furniture and his Bauhaus architecture. Much of his early furniture is extremely architectural—his tables are sometimes almost monu-



41. Project: Bambos houses, 1927. Designed for panel prefabrication

mental (pl. 44); while such early architectural work as the prefabricated steel house, the *Kleinmetallhaus* of 1925 (pl. 39) and the Bambos houses of 1927 (pl. 41), is indistinguishable in spirit from his mass-produceable unit furniture.

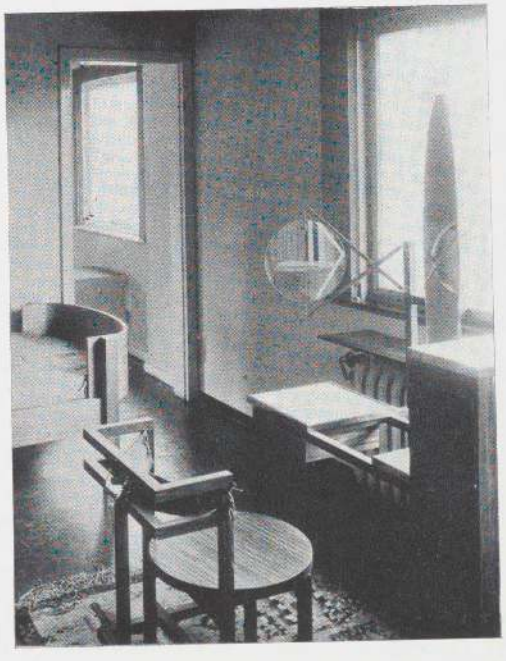
Yet, despite his interest in prefabrication, Breuer never surrendered to the "party line" of architecture defined as a social or political science. In his *credo*, as expressed in the Zurich lecture of 1934 (when the scientific approach was very popular) Breuer stated unequivocally:

"It is an error to imagine that architecture in its broadest sense is determined by political considerations. . . . . As an architect I am content to confine myself to analyzing and solving the various questions of architecture and town planning which arise from their several psychophysical, coordinating and technical-economic aspects. And I believe that work of this kind leads to material advances which have nothing to do with politics."

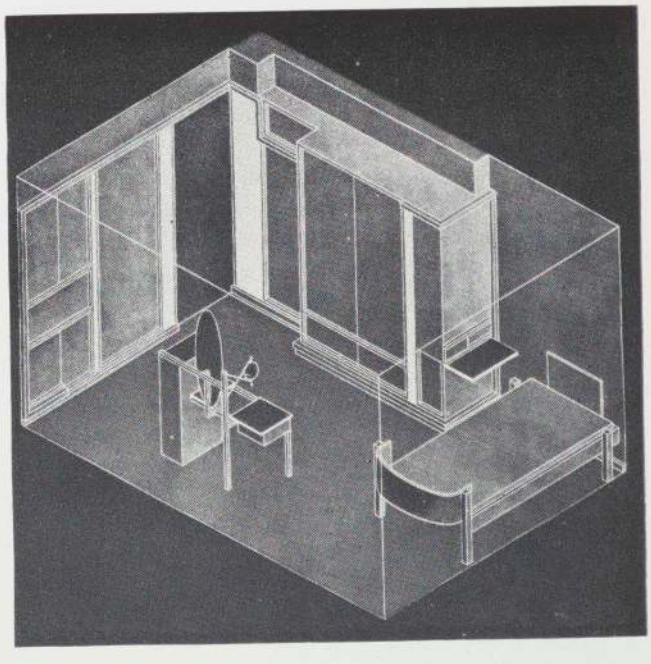
From Dessau to Berlin

In 1919, Gropius had found that there were not enough men trained as designers *and* craftsmen to operate the Bauhaus workshops singly. Consequently he headed each workshop with an artist and a craftsman acting in close collaboration. While this was the only possible course to follow at the time, it was far from perfect. For example, the kind of furniture Breuer was designing during his student years had never been made before, and there were few people competent to instruct him in its development. The first group of students was thus partly self-taught in the new direction which Gropius advocated; and in 1924 Gropius made a courageous and farsighted decision: he selected several of the new graduates and immediately appointed them Bauhaus masters, to head the various workshops. Among the new appointees were two good friends, the oldest student and the youngest, Josef Albers and Marcel Breuer. Thus, at the age of 22, Marcel Breuer was appointed Master of the Carpentry Shop.

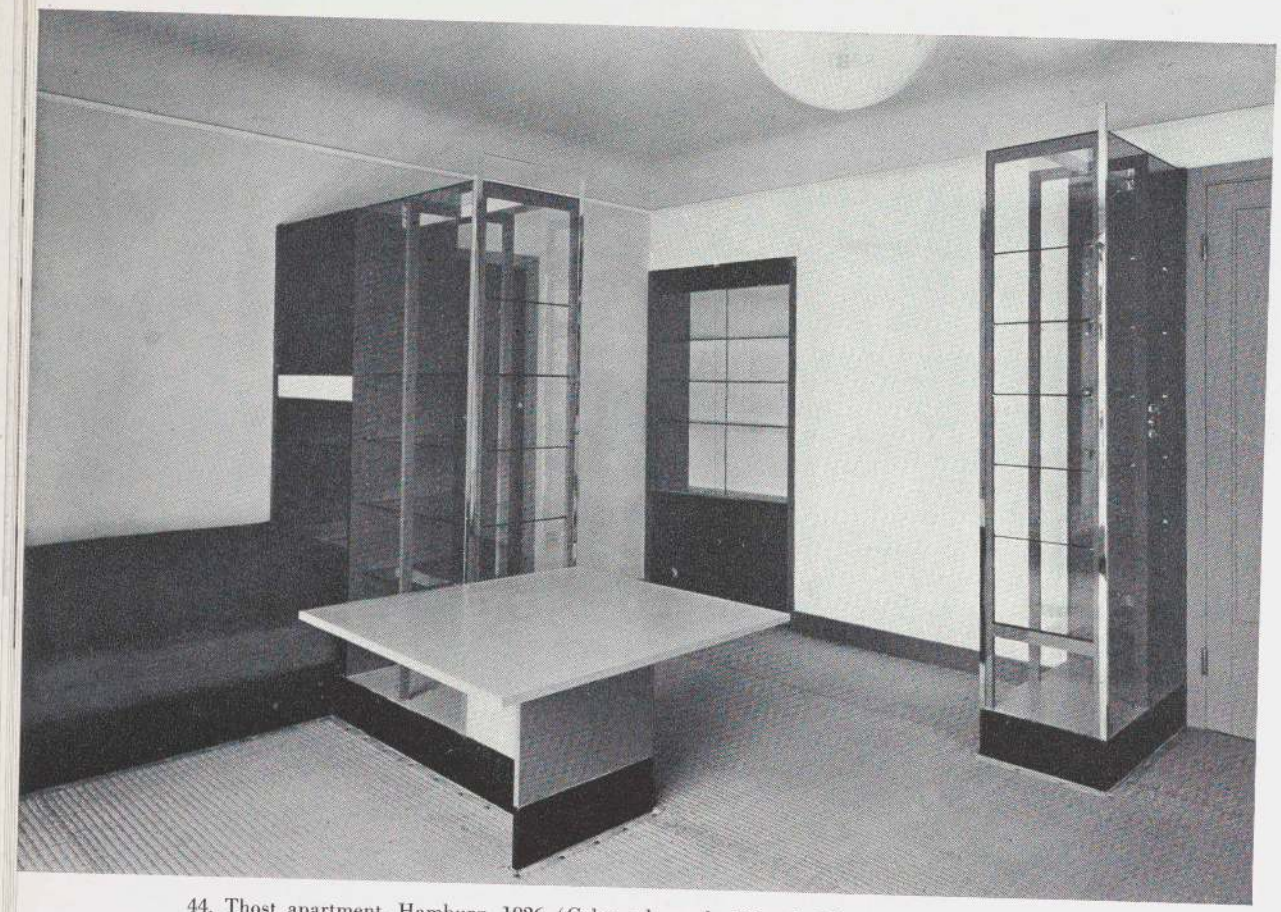
Gropius' trust was not misplaced. We have seen that, only half a year later, Breuer revolutionized furniture design by producing the first chair made entirely of bent tubular steel. Yet in architecture—his great predilection—Breuer had found few opportunities to put his ideas into practice. While it had originally seemed that the Bauhaus move to Dessau in 1925 would increase these opportunities for him and others, economic conditions severely limited such work. As time went on, Breuer became increasingly conscious of this gap in his experience; and in 1928, at the age of 26, he decided to leave the Bauhaus and open an architectural office in Berlin.



42. Chair and dressing table. *Haus am Horn*, Weimar, 1922



43. Bedroom, *Haus am Horn*, Weimar, 1922



44. Thost apartment, Hamburg, 1926 (Color scheme by Hinerk Schaeper)

1928 - 1932

Breuer could hardly have chosen a worse time to start out on his own. The great depression was about to hit Europe, and while there were demands for projects, few of these were ever executed. Fortunately for Breuer, several firms had begun to manufacture his tubular steel models, and royalties from their sale kept him going through the trying years that followed.

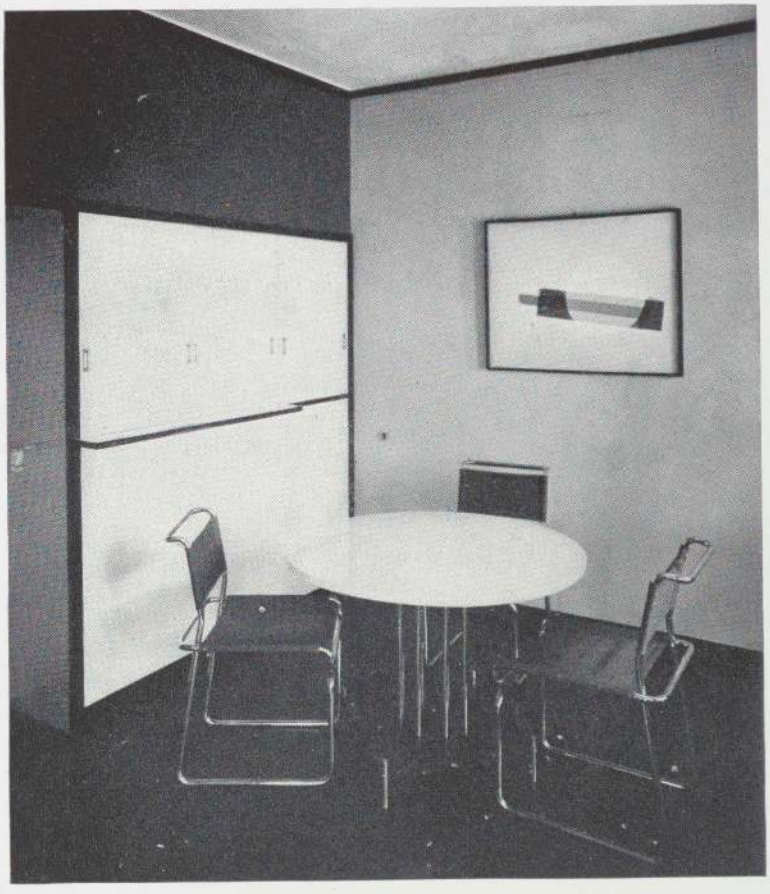
As one might expect, Breuer now preferred to concentrate upon architectural work although he also continued his work in furniture design. But the period from 1928 to 1932 is marked by many important developments primarily in his *architectural* thinking, and numerous projects which he designed during this time have formed the basis for actual buildings executed much later.

Interiors

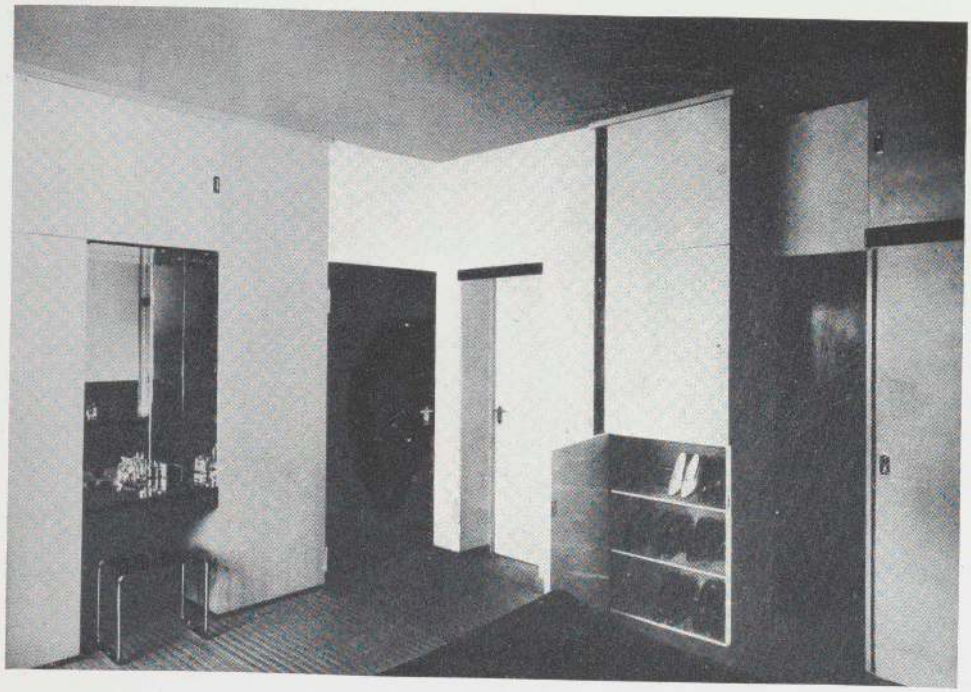
Even before leaving Dessau, Breuer had executed several designs for Bauhaus interiors. They range from the delicate wooden pieces in the 1922 *Haus am Horn* (pl. 42) through the formal Thost living room and the Moholy-Nagy dining area (pl. 45), to more playful and informal interiors for Bauhaus masters and others. And in 1926 Breuer used his steel furniture throughout the new Bauhaus buildings.

Shortly after settling down in Berlin, Breuer was at work on more apartments and exhibitions. The Harnischmacher apartment, designed in 1929, contained an adjustable reclining chair with a tubular steel frame (pl. 53), which was the prototype for later, form-fitting reclining chairs of aluminum and bent plywood. It also contained flexible unit furniture which Breuer used again when he built his 1932 house for the same clients. Since the cabinets were all standardized, the transfer presented no problems. Similar unit cabinets were built up into entire walls in the 1931 *Bau Ausstellung* in Berlin, where Breuer exhibited a "House for a sportsman" (pl. 57). So flexible were these units that few visitors realized the cabinet combinations had not been custom-made.

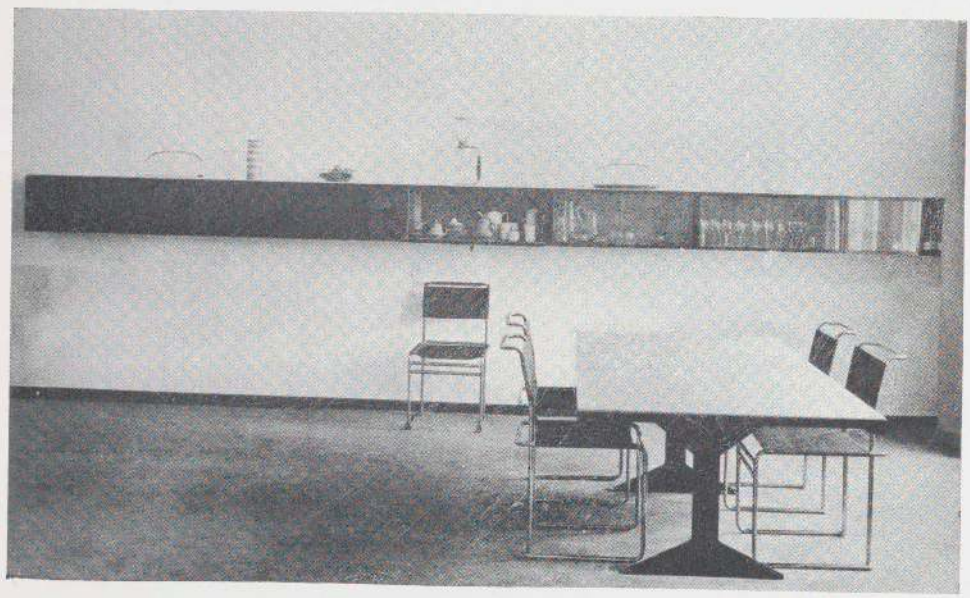
This practical flexibility in Breuer's work was accompanied also by an increasing visual and esthetic flexibility. The abstract, Mondrian-like pat-



45. Dining room for Moholy-Nagy, Dessau, 1926



46. Bedroom, Gropius house, Dessau, 1926

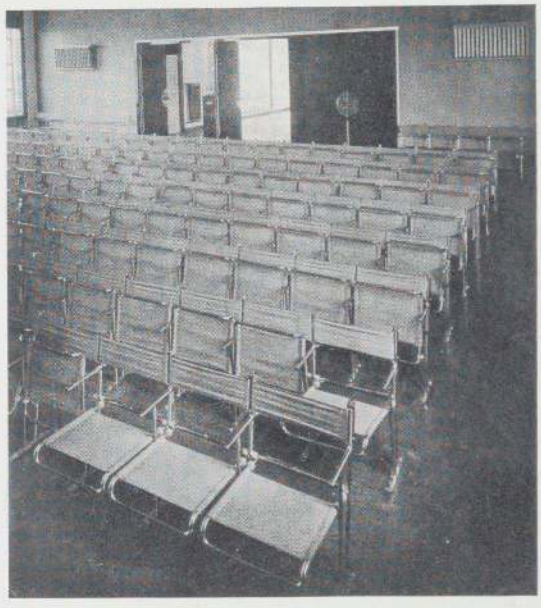


47. Piscator dining room, Berlin, 1927

terns of the first cabinetwork gradually dissolved into more playful and less rigid compositions. In his own 1928 apartment (pl. 61) he used regularly spaced, vertical strips on the walls to fasten drawings and photographs in arbitrary variations. The Harnischmacher cabinetwork, with its interchangeable patterns, permitted books to alternate with the flat planes of sliding doors, and these, in turn, to alternate with shelves to display small-scale sculpture. Yet an architectural, orderly framework remained. Breuer did not know Lissitzky's remarkable Hannover Gallery (pl. 60), but the spirit of his interiors was very similar to it.

In the little-known decorations Breuer did for the glass manufacturer Heinersdorff in 1929 (pl. 63) there is some of the same spirit. Although Breuer today intensely dislikes this small job, it is worth recording; for apart from its obvious formality, it shows certain experiments with textures and unusual materials that give us a preview of Breuer's later work. In addition to the decorative patterns in this house, Breuer installed a fascinating multi-lens window (pl. 62), that repeated the outside image in a series of circular frames, each formed by a concavity ground into the large sheet of plate glass. Again a disciplined pattern, sufficiently flexible to produce different and interesting visual effects!

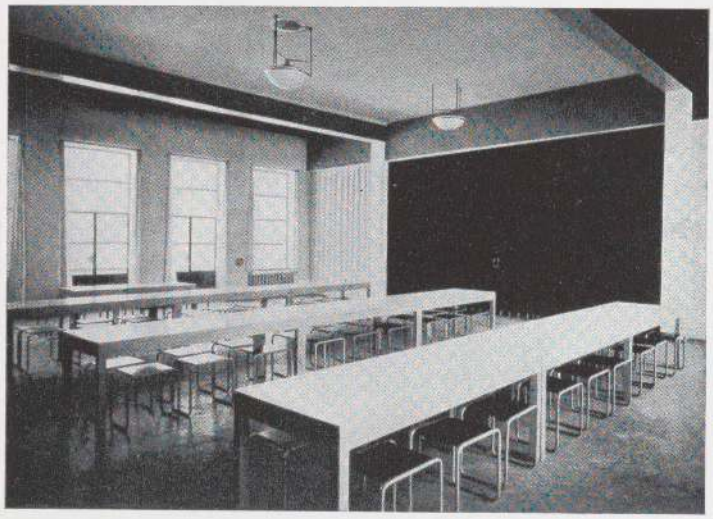
If some of the interiors of this period still appear brutally stark to us today, we should remember that in the revolutionary twenties the use of curtains, Persian rugs and textured fabric upholstery was often frowned upon as the ultimate in bourgeois respectability. Breuer was using soft textures with about as much daring as befits a man trying to teach table manners to a robot.



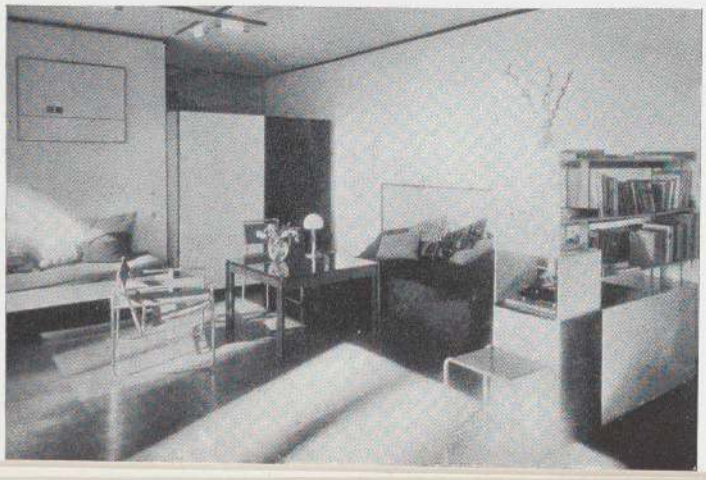
48. Bauhaus auditorium, Dessau, 1926

49. Boroschek dining room, Berlin, 1930

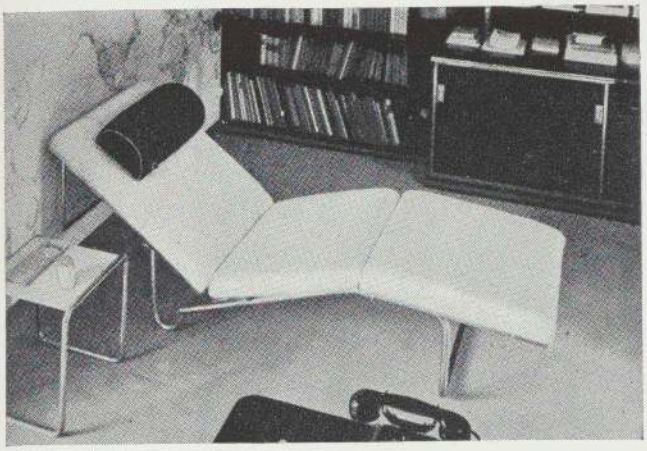
50. Harnischmacher office, Mainz, 1929



51. Bauhaus dining room, Dessau, 1926

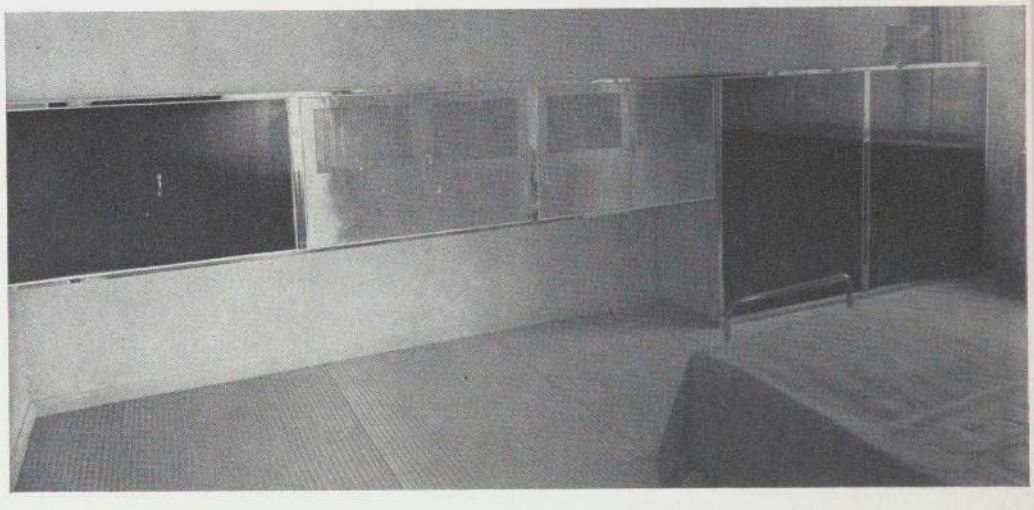


52. Living room for Moholy-Nagy, Dessau, 1926

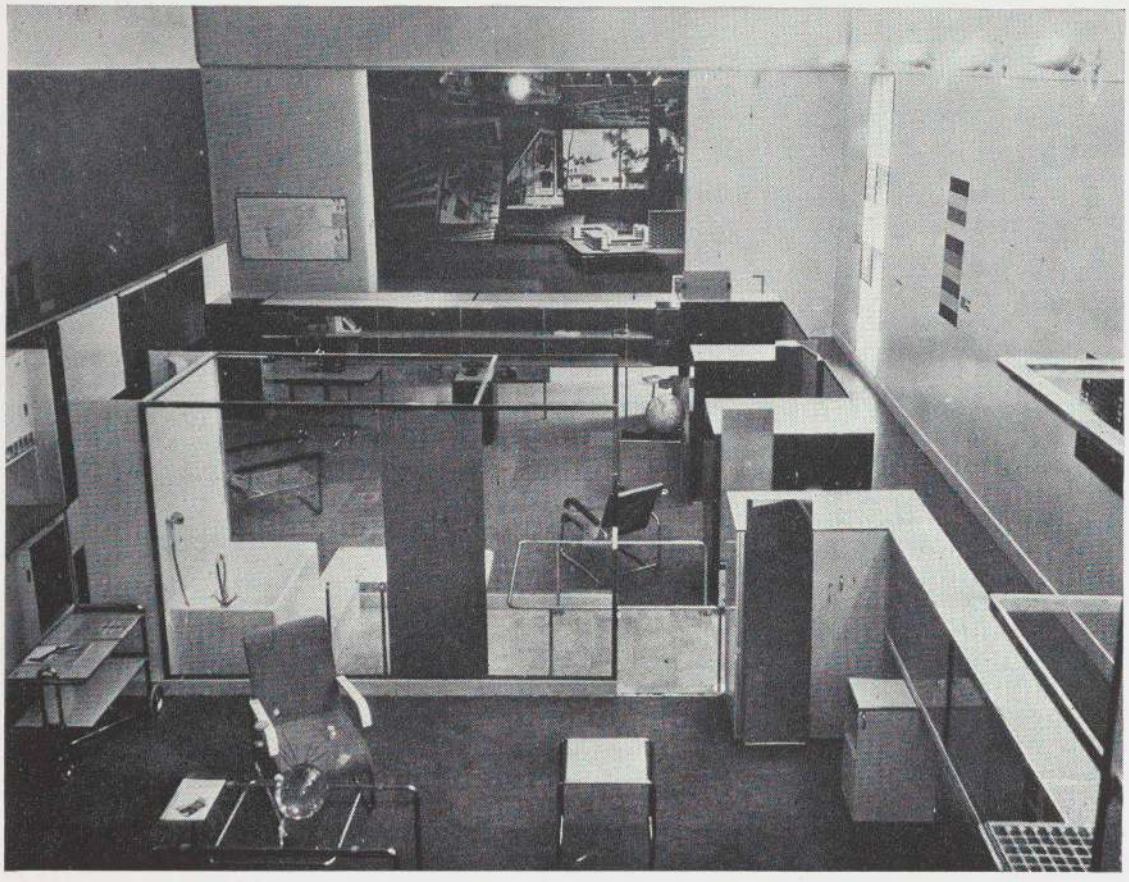


53. Harnischmacher reclining chair, Wiesbaden, 1929

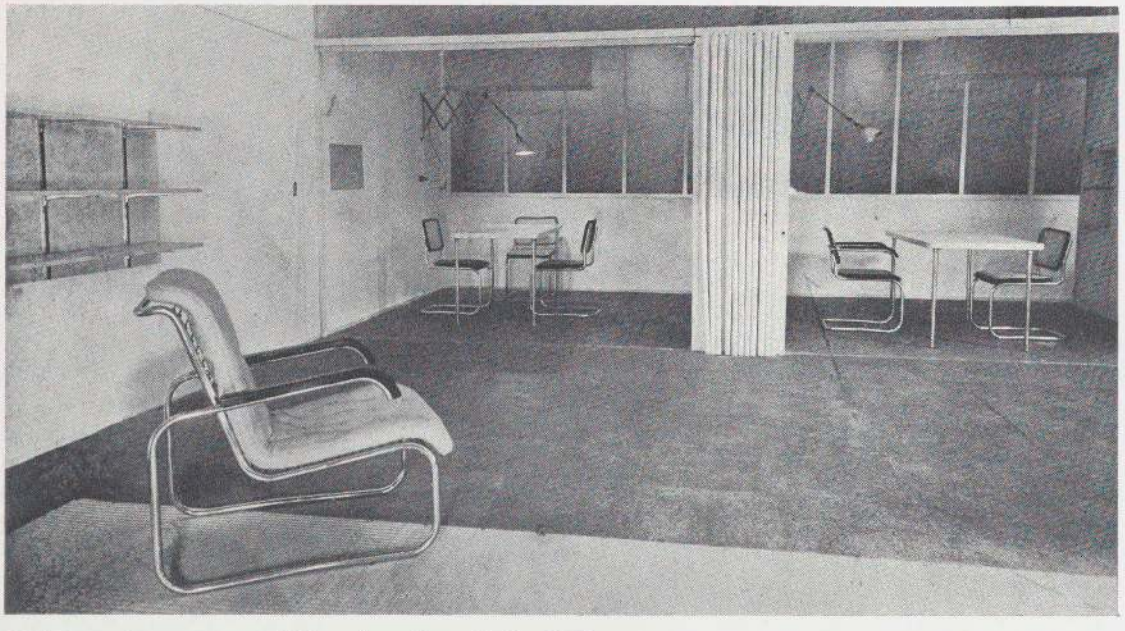
54. De Francesco apartment, Berlin, 1929



55. De Francesco cabinets, Berlin, 1929

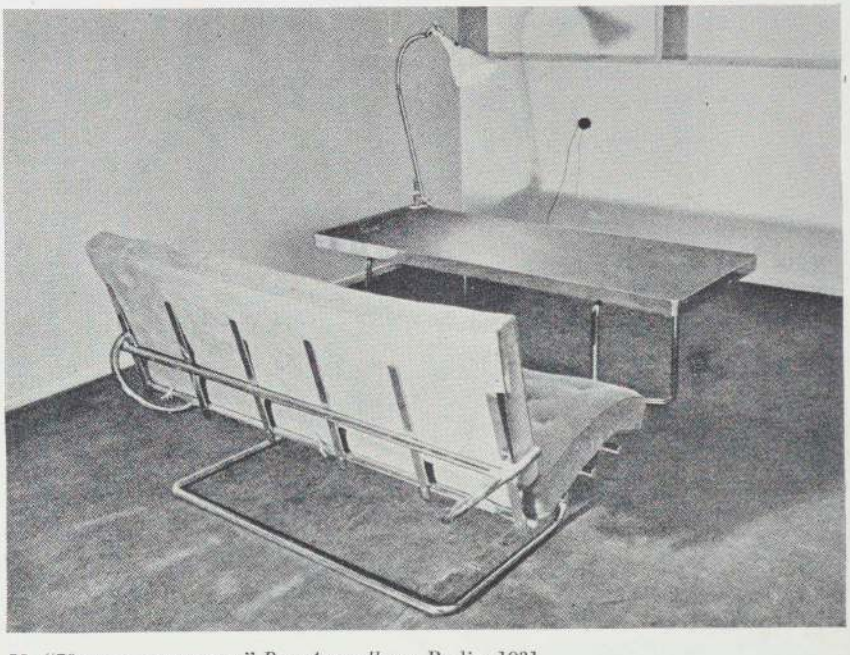


56. *Werkbund* Exhibition, Paris, 1930

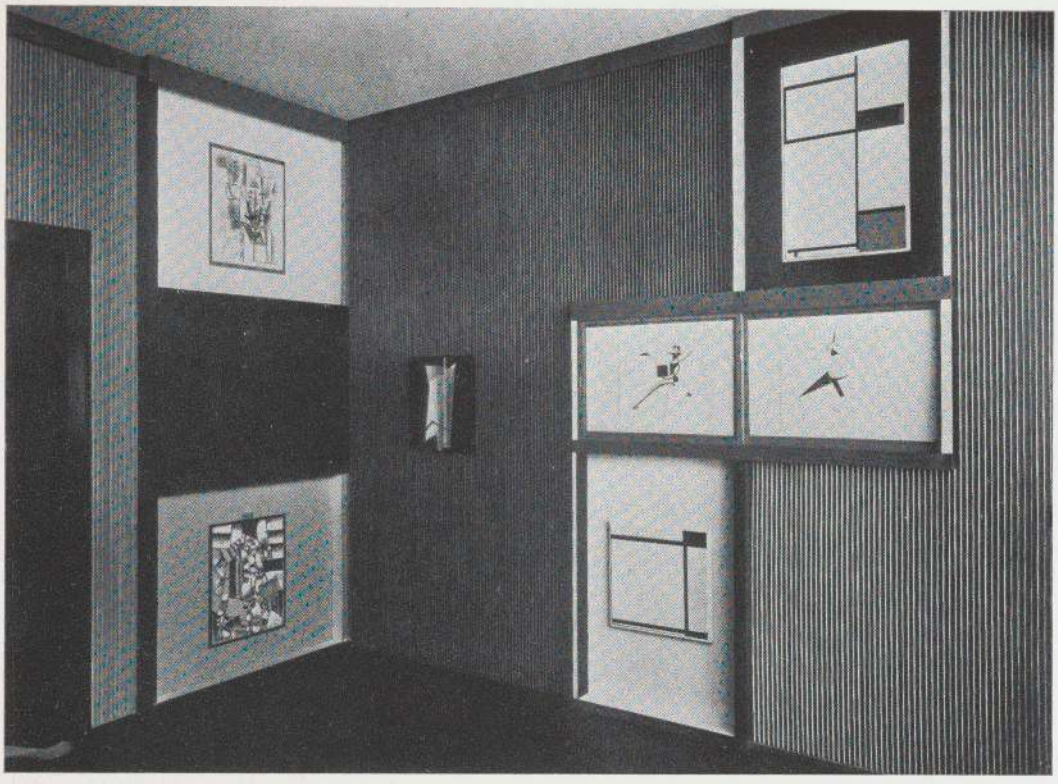


57. "House for a sportsman," *Bau Ausstellung*, Berlin, 1931

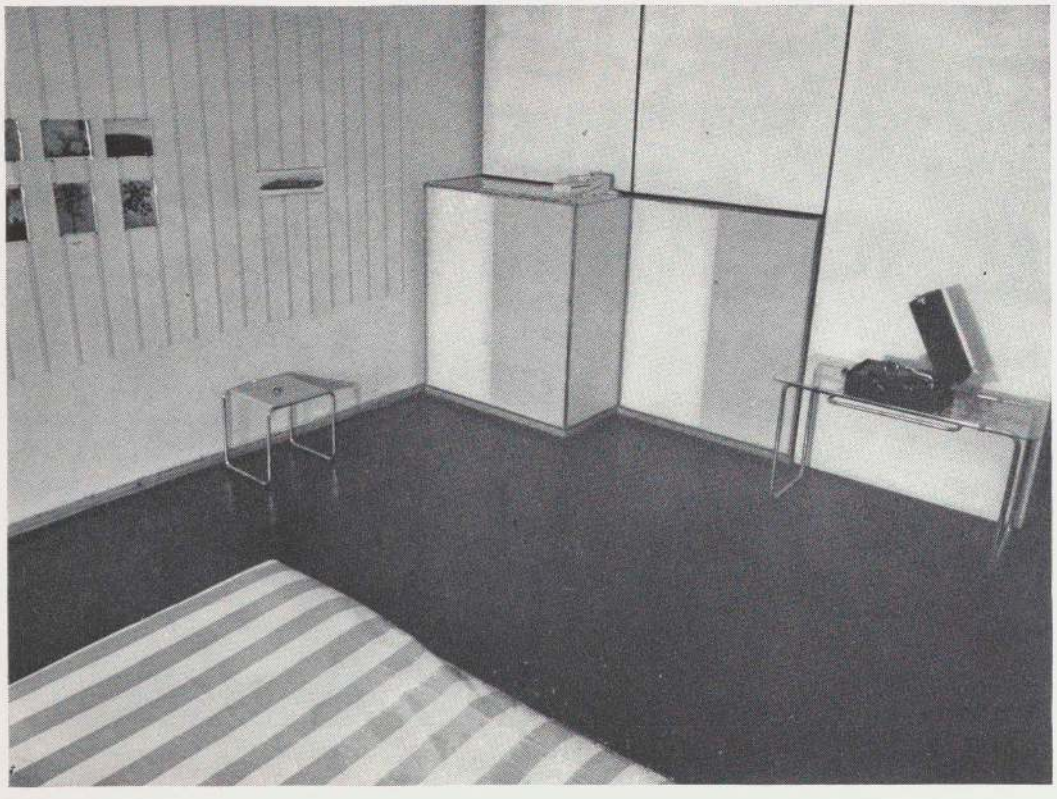
58. "House for a sportsman," living room, 1931



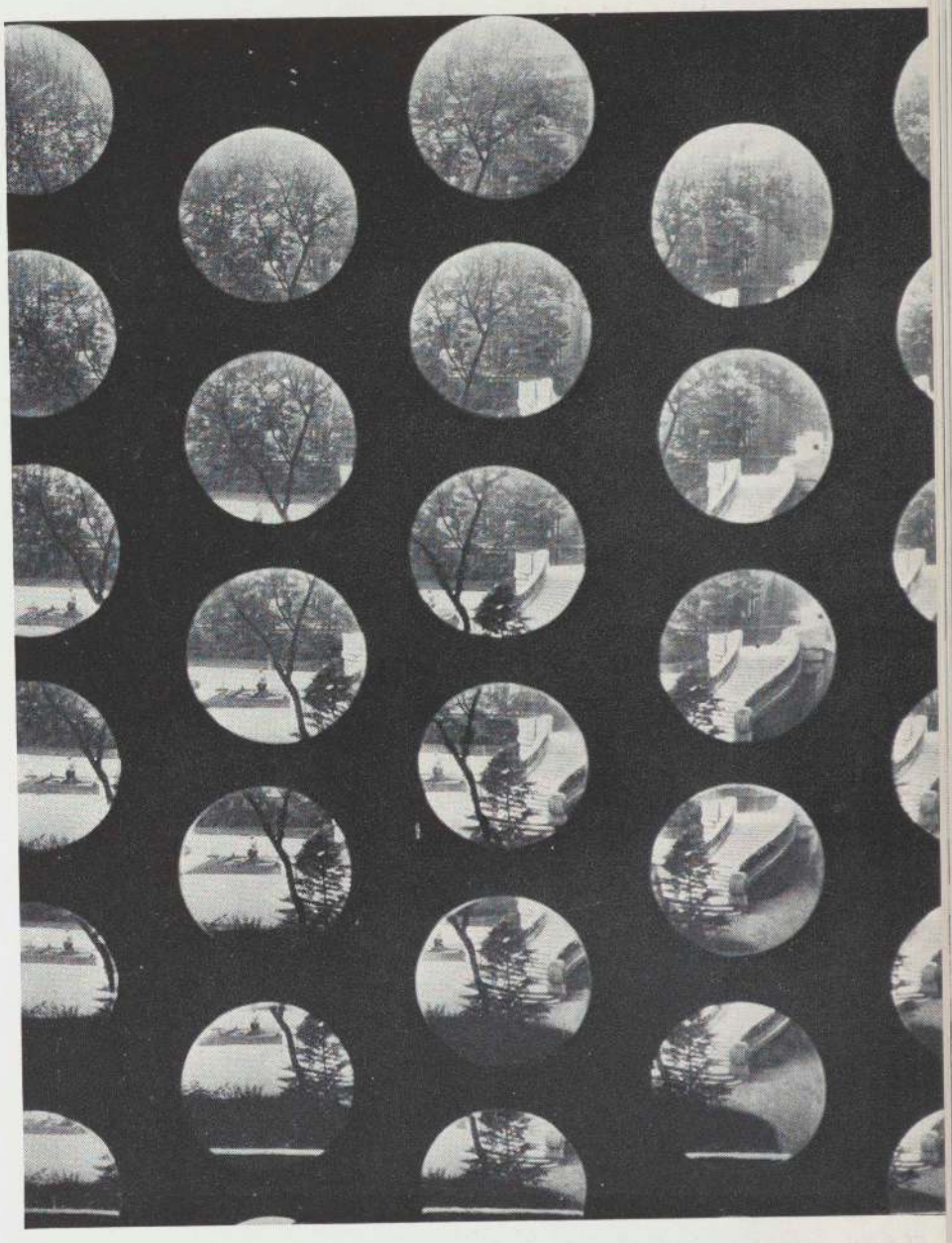
59. "70 sq. m. apartment," *Bau Ausstellung*, Berlin, 1931



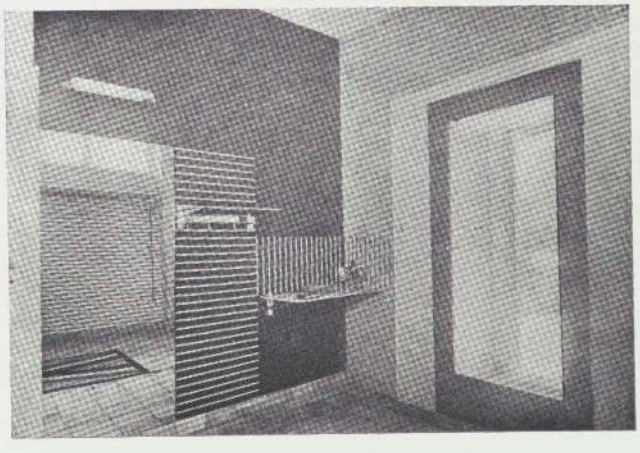
60. E. Lissitzky: Hannover Gallery, c. 1925



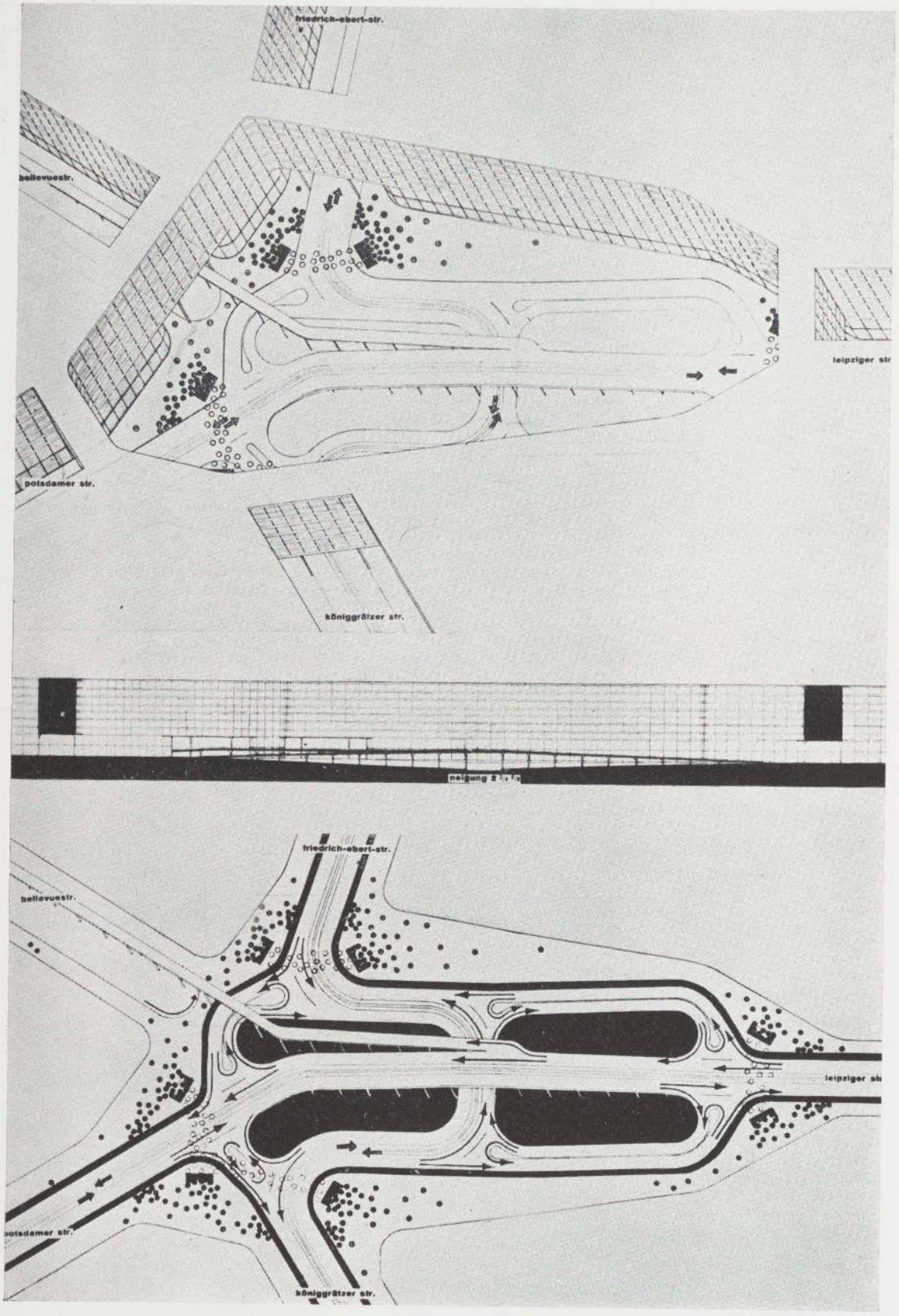
61. Breuer apartment, Berlin, 1928



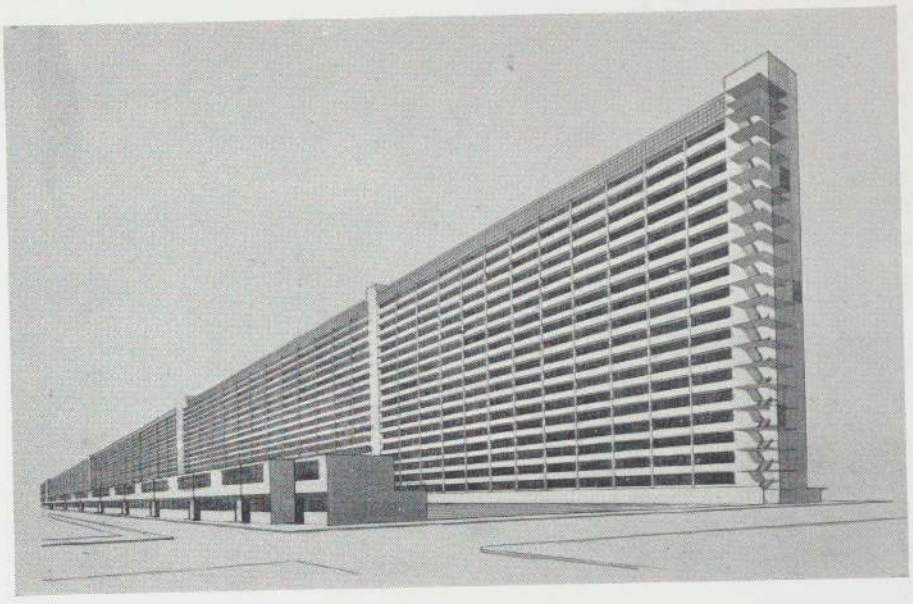
62. Heinersdorff multi-lens window, Berlin, 1929 (Breuer and Hassenpflug)



63. Heinersdorff lobby, 1929



64. Project: Potsdamer Platz, Berlin, 1928

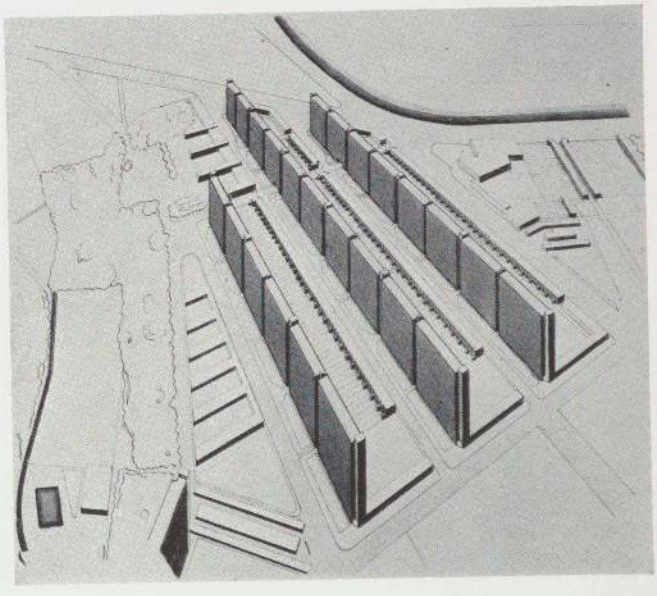


65. Project: Apartments for Spandau-Haselhorst, 1928. Typical block

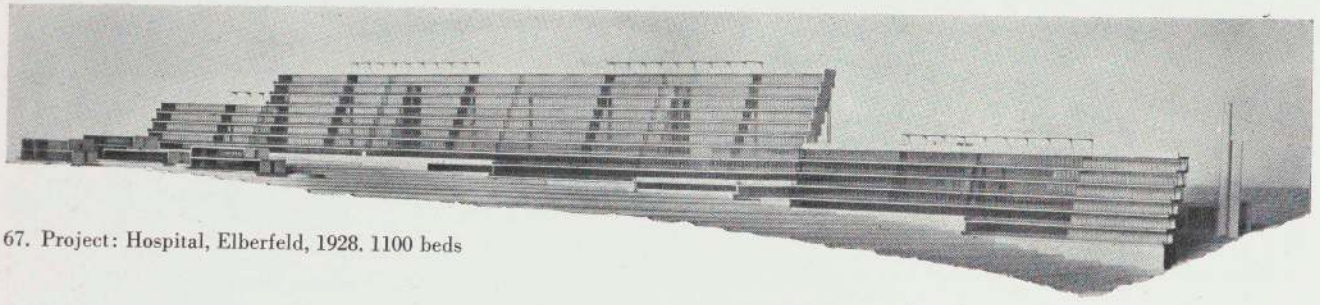
Architecture

There were three major phases in Breuer's architectural work of that period. The first was an expression of his increasing interest in American techniques—his "*Amerikanismus*." This was manifested in his multi-level traffic scheme for the Potsdamer Platz in 1928 (pl. 64), his multi-story apartments for Spandau-Haselhorst (pl. 65) of the same year, and his Fuld factory (pl. 70) of 1929, which was based on the flow diagram of an American-type assembly line.

The second phase emphasized his interest in structure and Constructivist fantasy. The terraced hospital project and the Kharkov theatre of 1931 are a part of that phase. The hospital project is made up of multi-story buildings in which each floor is projected out toward the rear in order to



66. Apartments for Spandau-Haselhorst. Site layout



67. Project: Hospital, Elberfeld, 1928. 1100 beds

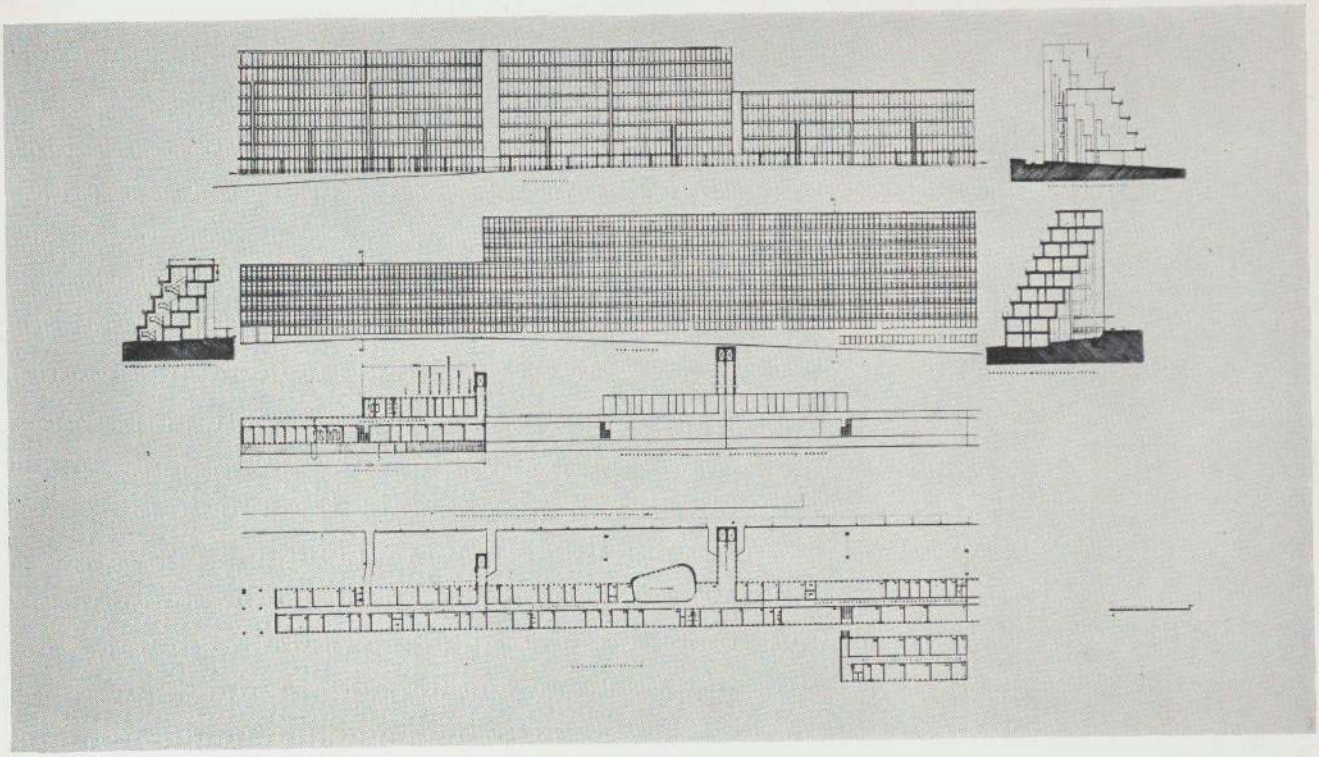
form a recessed terrace in front (pl. 69). The projections to the rear are propped up by a free-standing column-and-girder system. Breuer referred to this principle again in the Civic Center for the British Cement Industries (pl. 118), and in the Tompkins house designed almost twenty years later (pl. 169).

The Kharkov theatre project has an extraordinarily Russian quality —one is reminded a little of the early revolutionary Soviet architecture. Attached to it are hanging staircases, exposed steel towers and trusses, and cantilevered slabs extend in different directions (pl. 73). Breuer's description of the theatre refers to several movable stages, an orchestra pit that rises and falls in sections, sliding walls and roofs, and a central control bridge suspended from the ceiling. He approached this project in much the same manner that can be found in the works of the Constructivist stage designers (pl. 74).

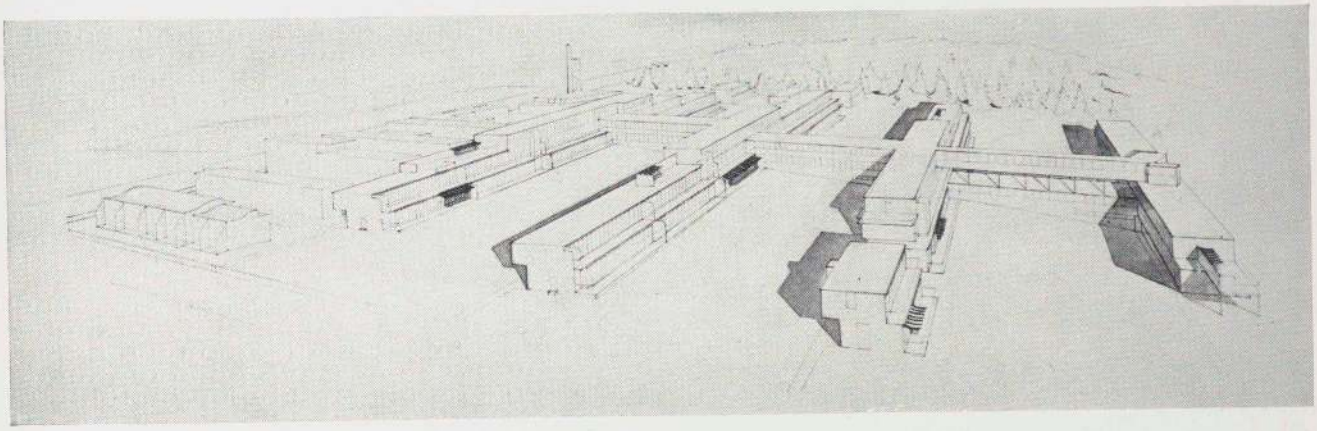
Through these years Breuer was engaged in a real struggle to clarify, for himself, the architectural expression best suited to his temperament. There now remained a "showdown" with the Purism of Le Corbusier. This came in the 1932 Harnischmacher house, in Wiesbaden, which represents the third phase in Breuer's architectural development of that time.

If one were to draw a line between the two main facets of contemporary architecture it might be possible to say that some of its exponents believe in wedding a building to the ground and making it a part of its natural surroundings, and that others believe in setting it up *against* nature, a deliberate man-made object defying its natural environment. Le Corbusier, whom Breuer met for the first time in Paris in 1924, belongs to the second group. He expresses this defiance in his concept of the *prisme pur*. The Poissy house is an excellent example: in it a clean rectangular prism is held up above the ground on stilts. It makes no concessions to romanticism. It is, in fact, its very antithesis.

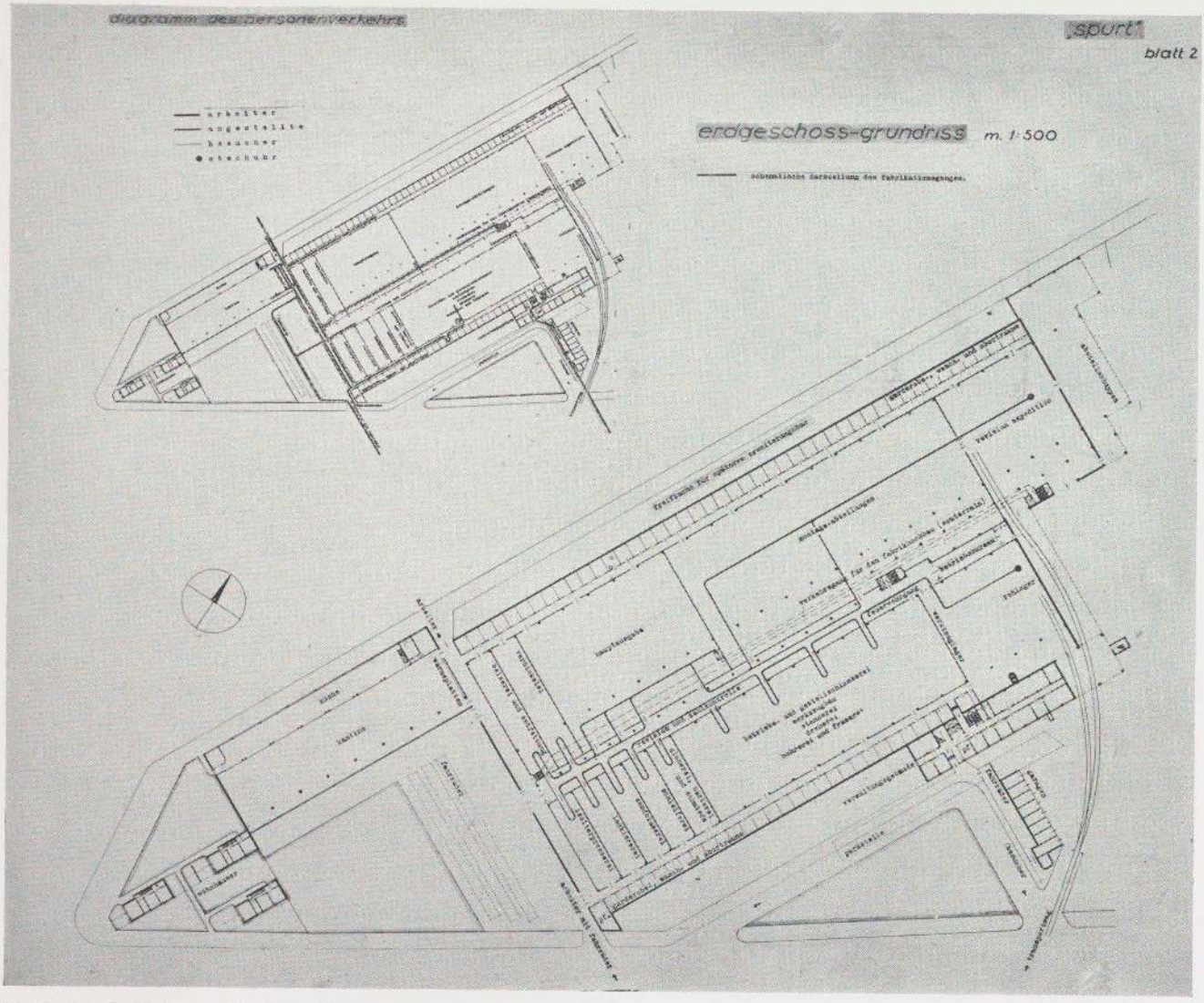
The Harnischmacher house was Breuer's "Poissy." It, too, in its main part, is a rectangular prism raised up above the ground on stilts, deliberately expressing in each detail the synthetic quality of a modern, industrial product. Breuer has said that he is not antinaturalistic. "Instead," he stated, "I think that each object has its own nature. A rock has rock nature. A tree has tree nature. A wall has wall nature. A human has



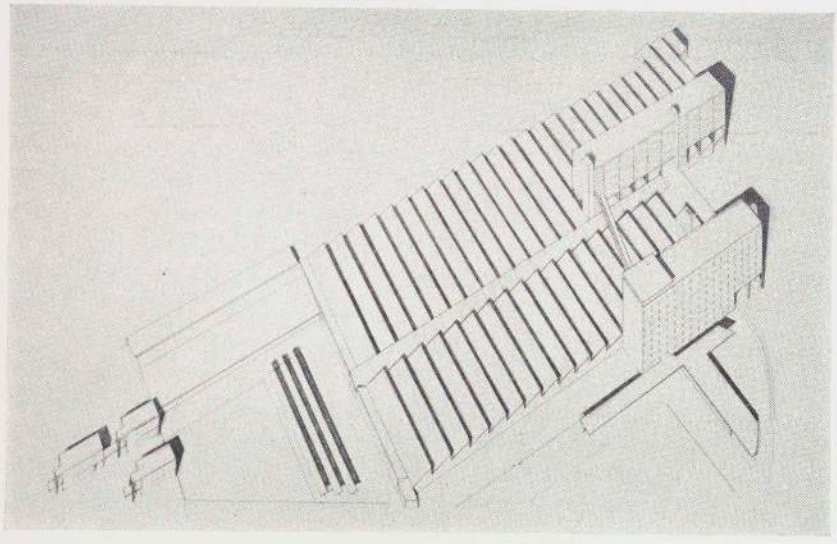
68. Elevations, sections and plans



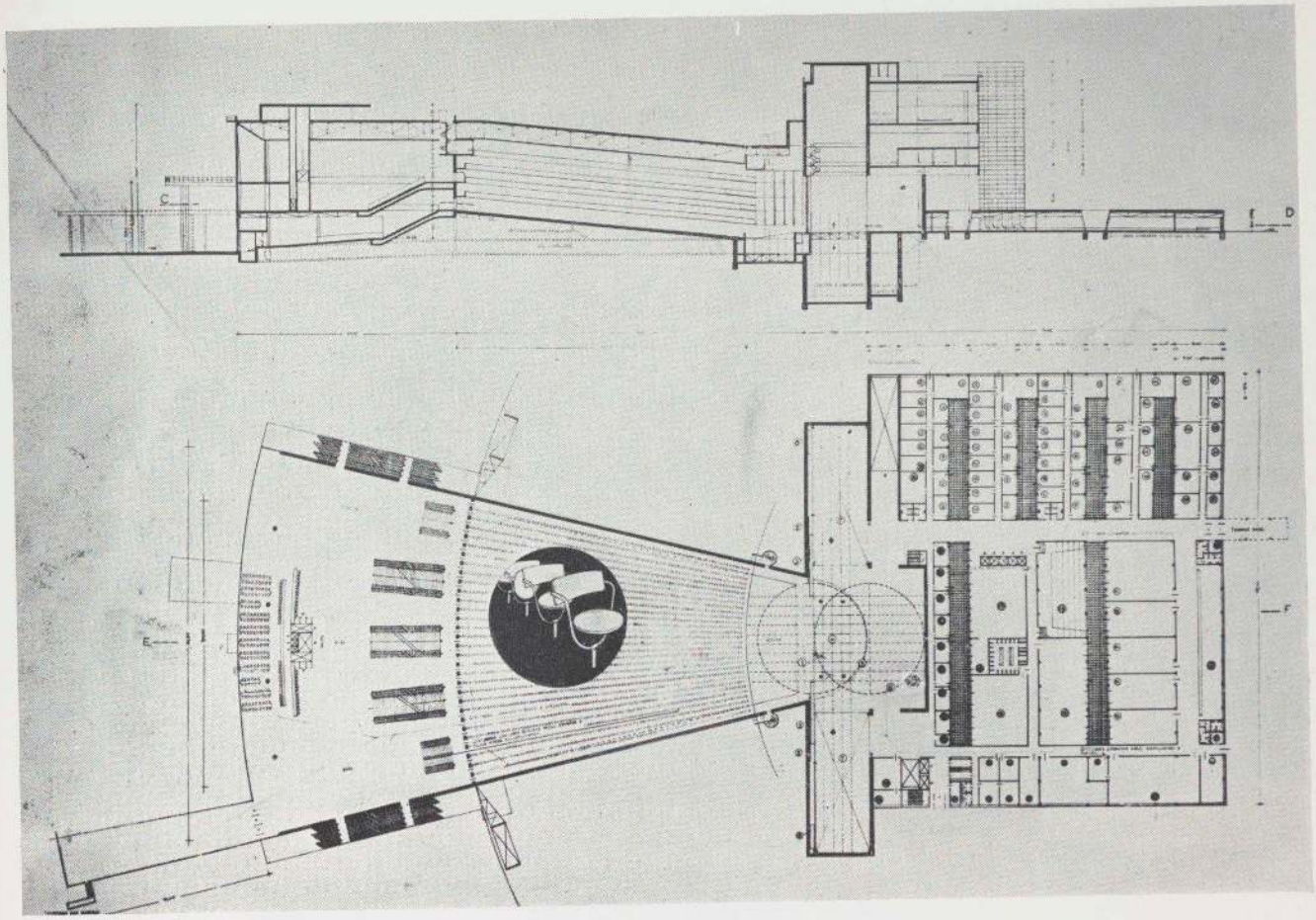
69. Hospital, Elberfeld. Smaller scheme



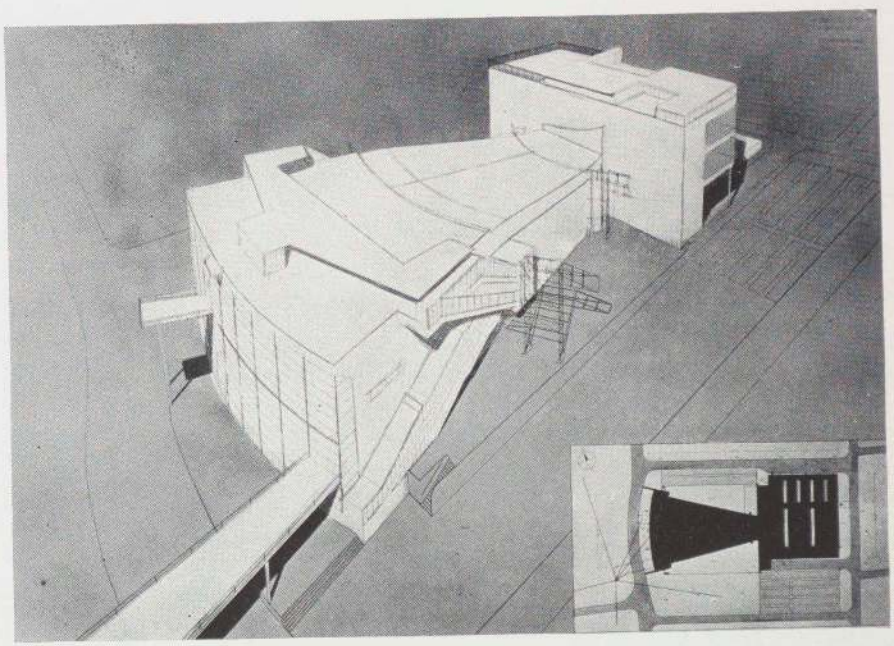
70. Project: Fuld factory, Frankfurt/Main, 1929. Plans with assembly line



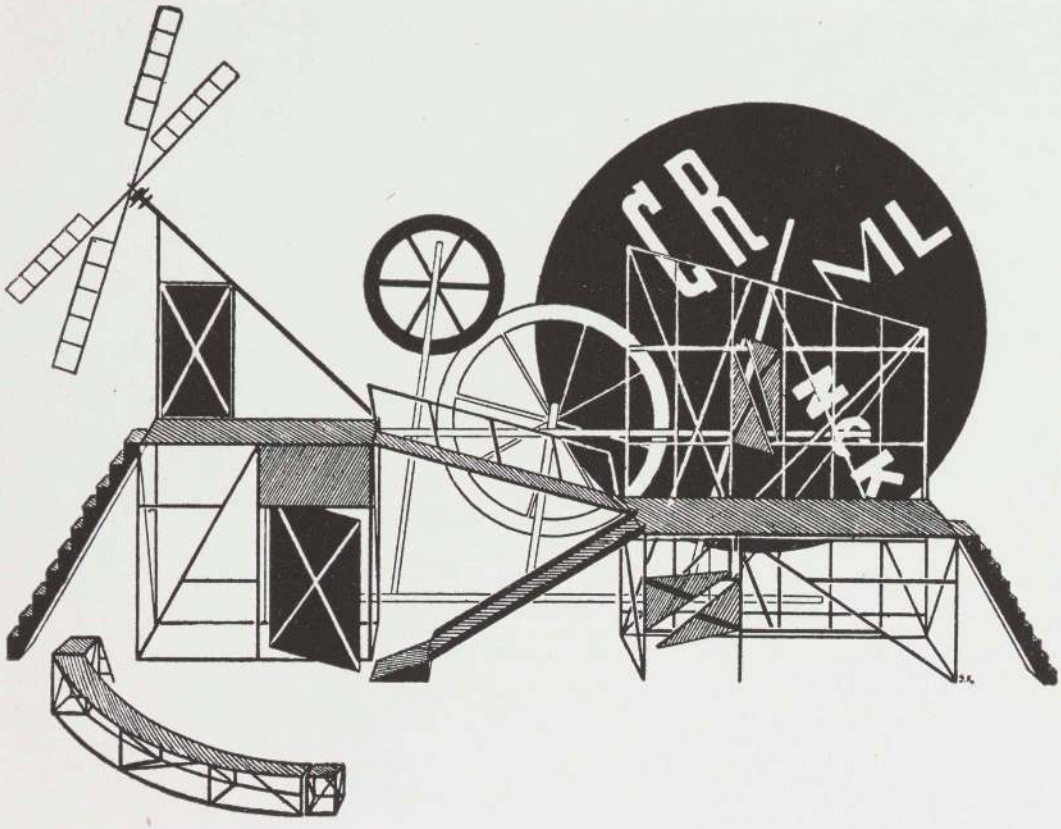
71. Fuld factory. Perspective



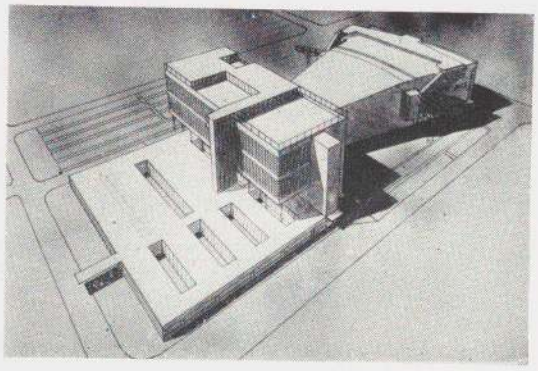
72. Project: Kharkov theatre. USSR, 1931



73. Kharkov theatre. Perspective and site plan



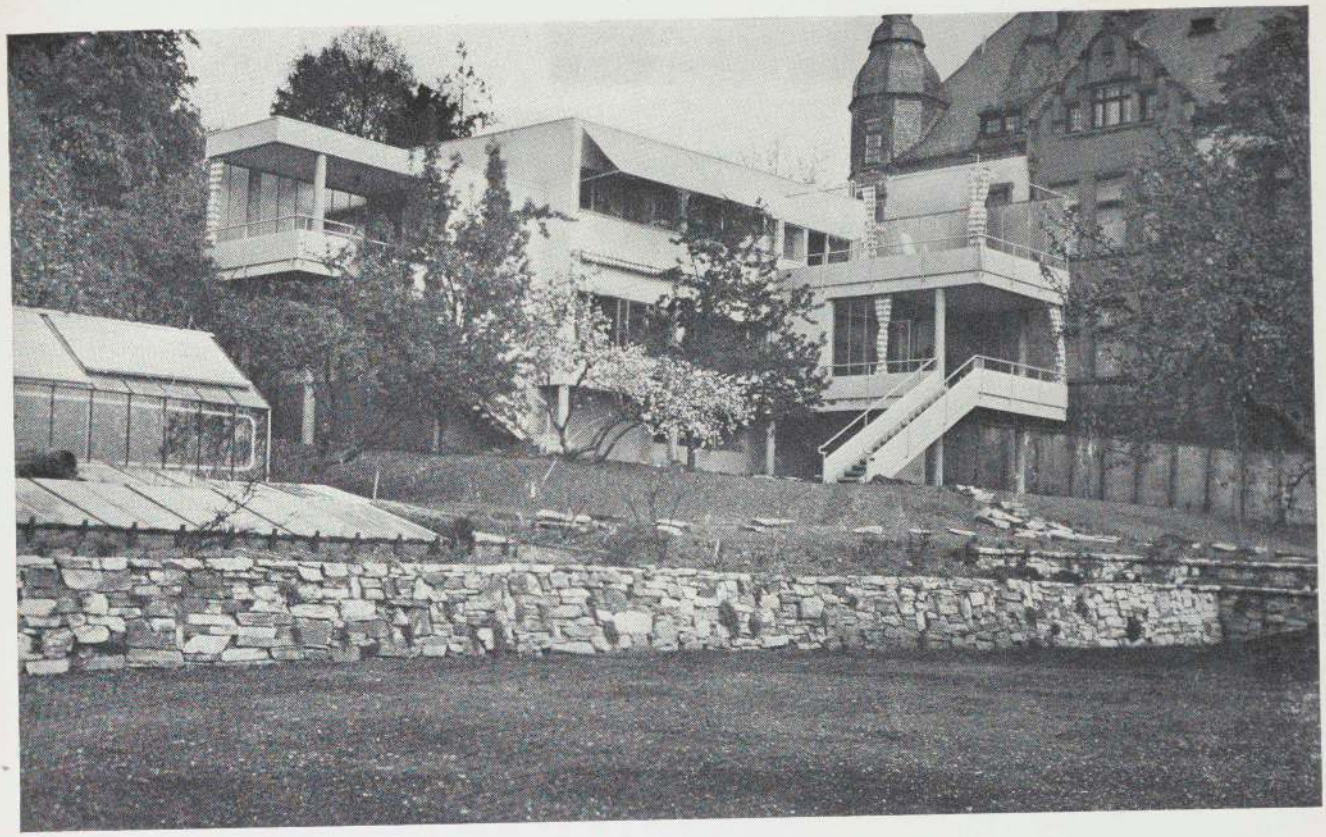
74. Popova: Stage setting, 1922



75. Breuer: Kharkov theatre, 1931

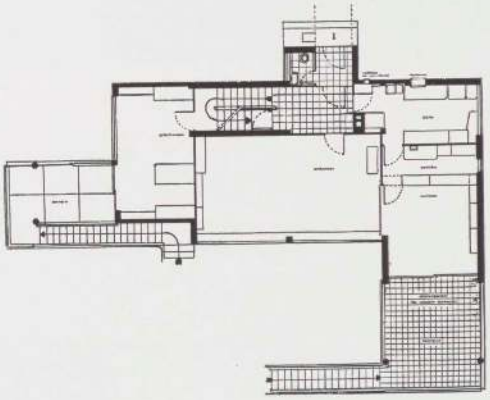
human nature. Why should I make a wall look like a rock or a tree?" The Harnischmacher house, therefore, has a modern "house nature." Breuer mistrusts an intellectualized approach to architecture. "There are some natural requirements in architecture," he says, "the requirements of materials, of climate, and so on." He likes to discuss these, but shies away from talking about his esthetic principles. "I know what my esthetics are, but it is better to discuss architecture in terms of practical requirements," he said recently.

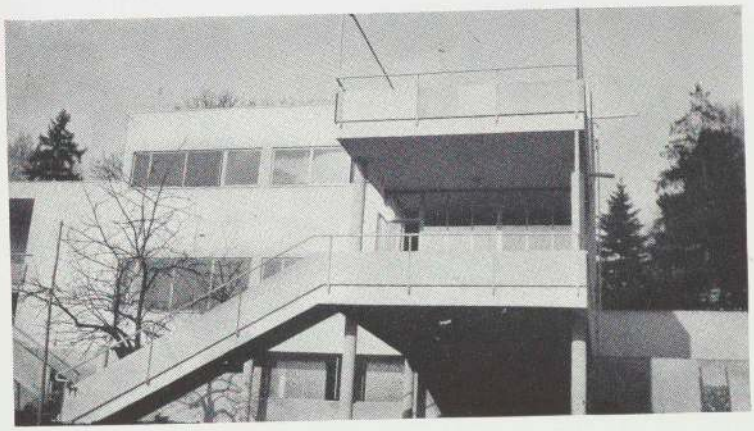
The exterior of the Harnischmacher house showed different, pleasant textures: basalt and quartz mixed into the stucco facing produced a coarse and grainy finish. The parapet was of free-standing asbestos sheeting, whose surface was very smooth. The stairs were of reinforced concrete. Low retaining walls in the garden were built of rough fieldstone. Inside, Breuer used large plants, wide areas of fabrics, white walls alternating



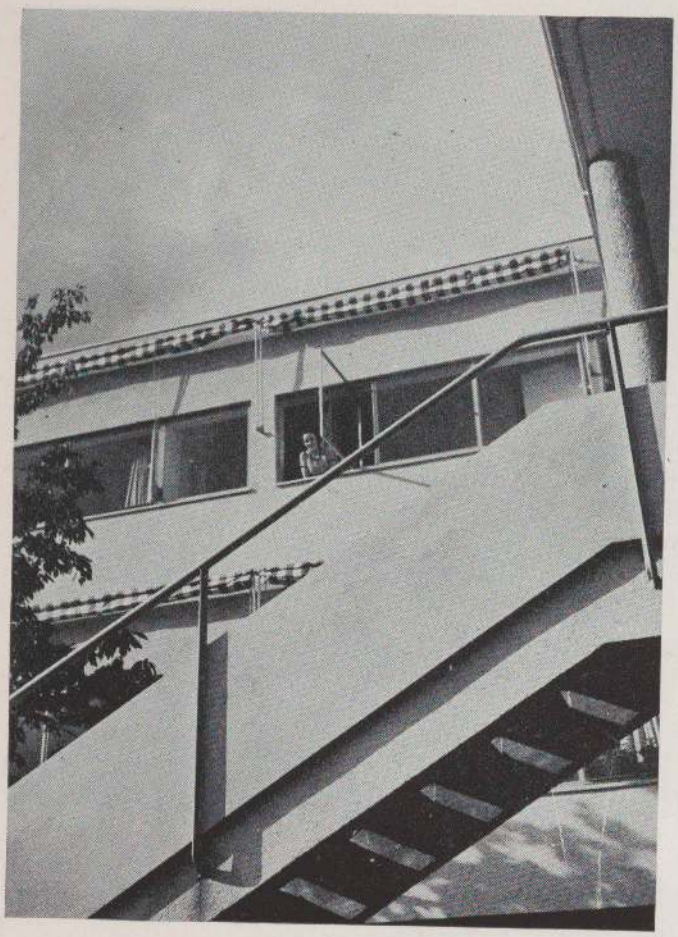
76. Harnischmacher house, Wiesbaden, 1932

77. Main floor plan

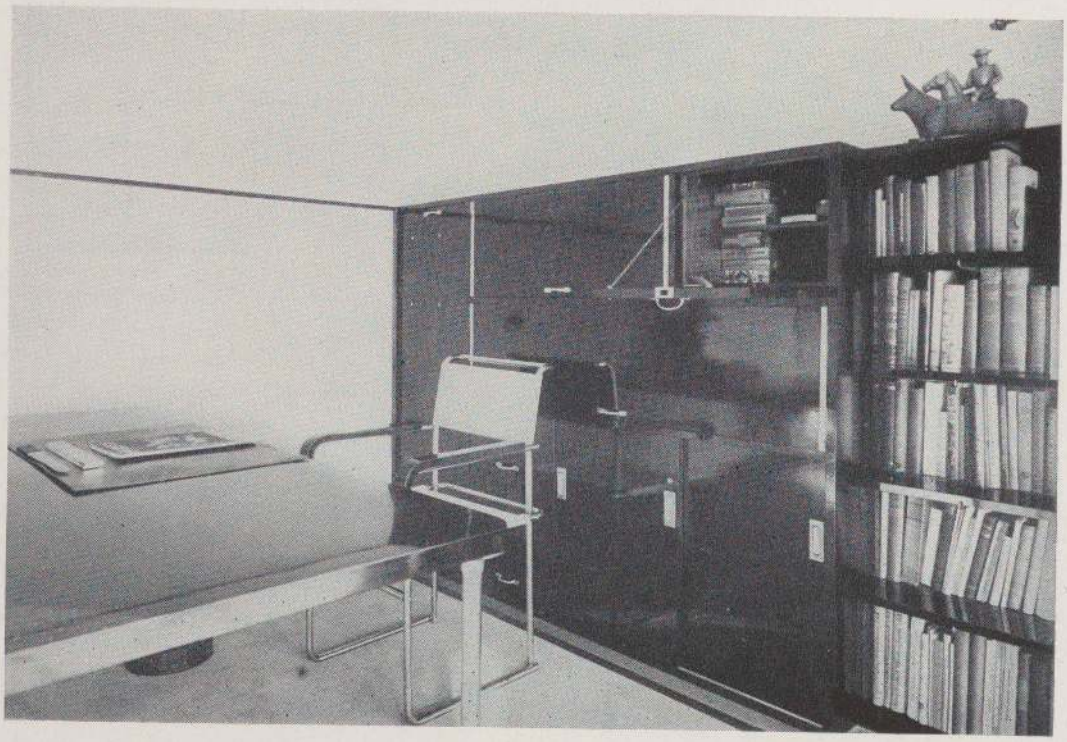




78. Porch and outside stairs



79. Stair detail

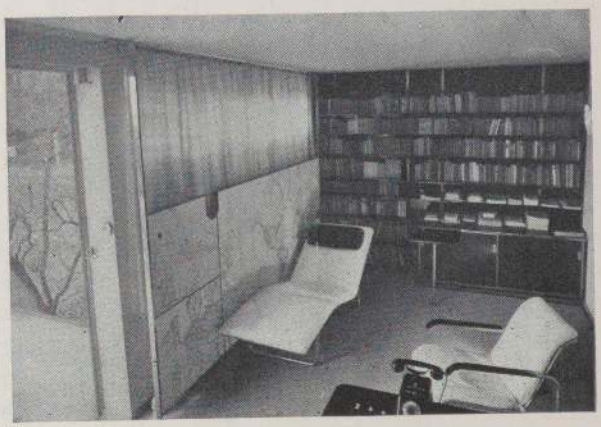


80. Study

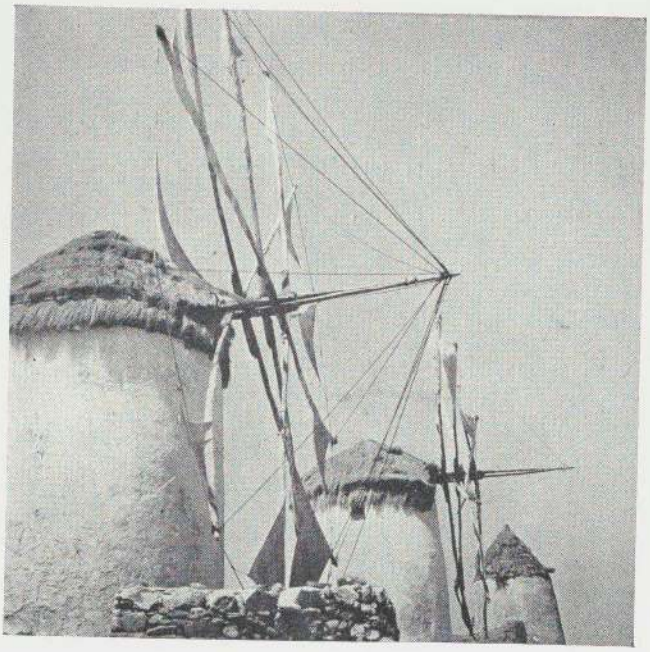
81. Living room with bent wood armchair

with brilliantly blue surfaces—all brightened by sunlight controlled by outside awnings.

Having raised his architecture above the ground Breuer now proceeded to adjust it to the needs of human comfort and of friendly family living. Thus, while in 1932 he took Le Corbusier as his point of departure, his development since that time has been distinctly personal and determined by little outside his own creativeness and imagination.



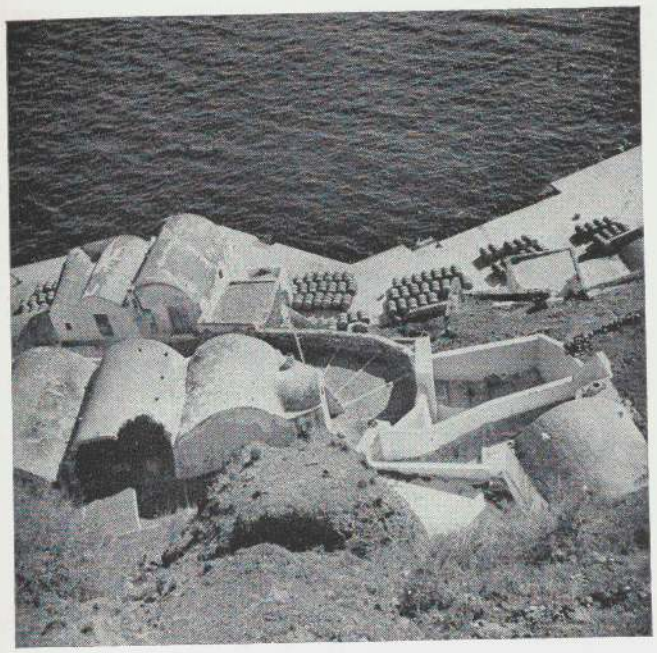
82. Library

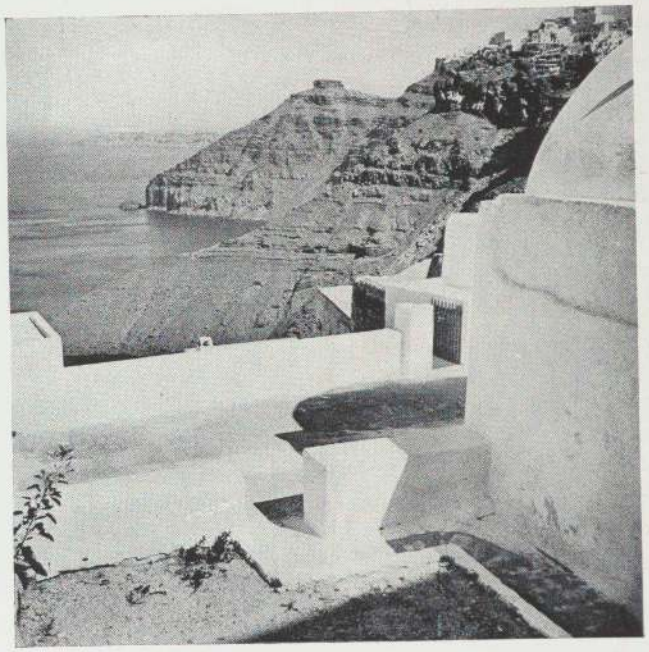


1932 - 1935

From about 1932 onward, Germany's intellectual and moral climate rapidly became unbearable to Breuer; and, like many other ex-Bauhaus members, he made preparations to leave the country.

For Breuer it was a period of enforced idleness. Except for completing two major works—the Paris aluminum furniture group and the Dolderthal apartments in Zurich—he spent these years traveling around Europe, the Mediterranean and Morocco. The record of these travels can be found in Breuer's snapshots, some of which are reproduced here (pls. 83–86). An enthusiastic amateur photographer, he allowed the camera to act as an auxiliary eye, documenting those special impressions, those casual views and sudden forms that are best remembered when more factual events are forgotten. His photographs, then, are a remarkable clue to his esthetic preferences, to the manner in which his perception operates. The unaffected superstructure of a tramp steamer will suddenly remind him of his own Harnischmacher house; exquisite stonework among the ruins of Greece and in the castles of Spain will make him aware of the marvelous patterns and textures with which architecture has been enriched for thousands of years; the heavily sculptured forms of Greek island buildings, with their thin and complicated windmills, will open his eyes again to old and new possibilities of mass and volume, to the architectural qualities of airy space. There is no doubt that these travels did, indeed, open his eyes—if only to something which he had rationalized before in the vocabulary of the twenties: Cubism, Constructivism, Expressionism. Yet after these travels through the lands of palaces, of cathedrals—and of peasant huts—these rationalizations took on a concrete form in Breuer's mind.





83–86. Photographs taken by Marcel Breuer along the Mediterranean and in North Africa during 1932–34

Far from wanting to return to an Arts and Crafts atmosphere, he realized, as he now stated in Zurich, that there was "a parallel between certain aspects of vernacular architecture, or national art, and the Modern Movement. . . . . These two diametrically opposed tendencies," he went on to say, "have two characteristics in common: the impersonal character of their forms; and a tendency to develop along typical, rational lines that are unaffected by passing fashions." That was the lesson of those years of travel, and Breuer has never forgotten it.

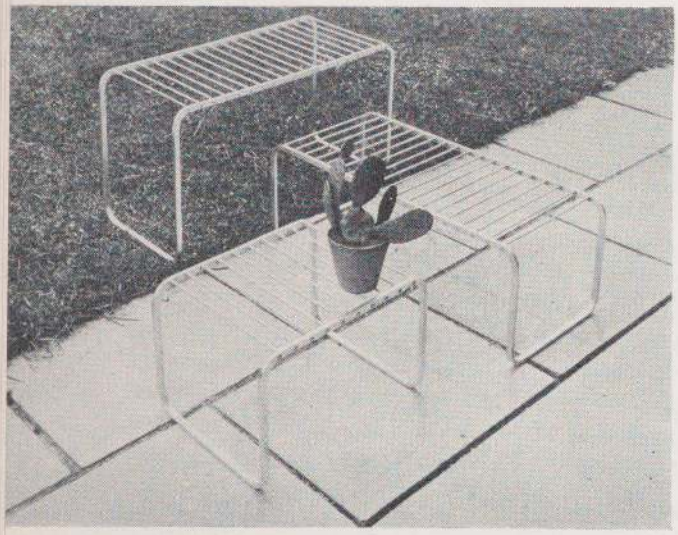
Upon returning from one of his trips in 1933, Breuer participated in a competition for aluminum furniture then being held in Paris. His group of designs (pls. 87–92) are a logical advance from his earlier, tubular steel furniture. It won two first prizes, and some of the models were manufactured in small quantities. Of all his furniture designs, this group of aluminum chairs and stools is probably the most elegant.

Breuer was now spending a considerable amount of time in Switzerland working with A. and E. Roth on a design of two small apartment blocks in the Dolderthal near Zurich for Siegfried Giedion. These two buildings (pl. 94) are similar in character to the Harnischmacher house, raised above the ground on stilts, and angular and sharply defined in their surfaces. However, they are more refined in detail than the Wiesbaden house of 1932; and the subtly sculptured mass of the buildings, the increasing use of textures and of flagstone patterns is proof of Breuer's newly acquired understanding of Mediterranean work.

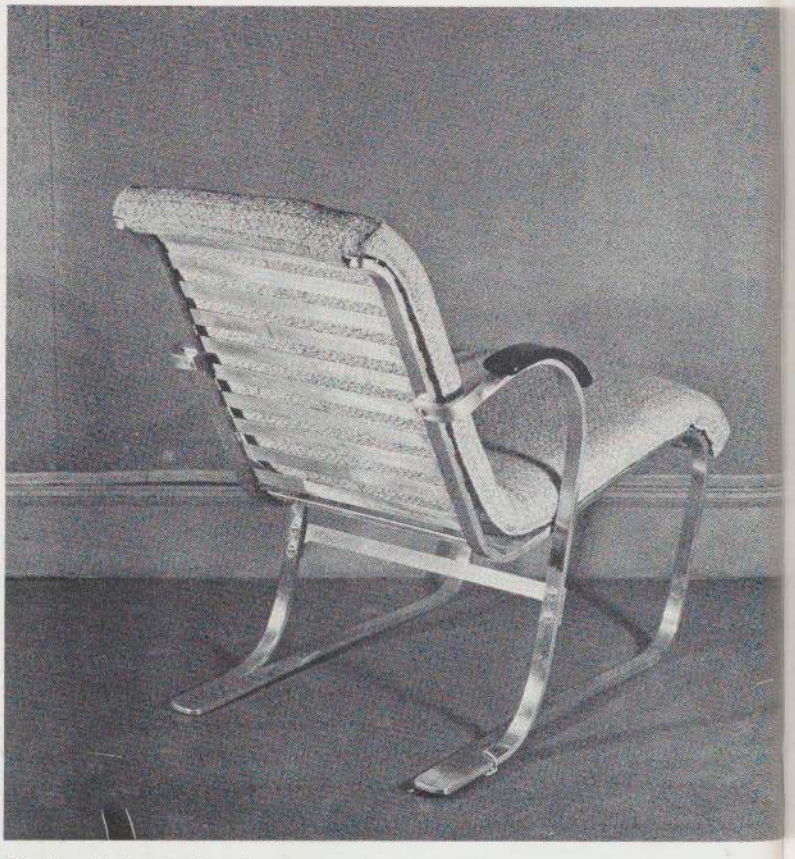
With the Dolderthal apartments completed, Breuer went to England on the invitation of the young English architect F. R. S. Yorke, with whom he entered into a partnership which lasted until two years later when he was asked to come to the United States.

Aluminum Furniture,
Paris Competition, 1933

87. Dining chairs, cane seats and backs

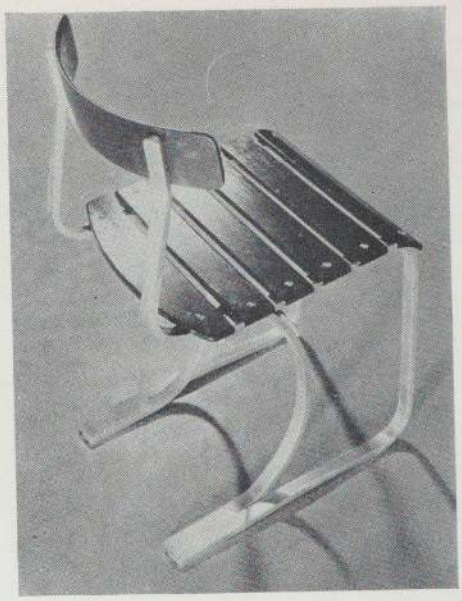


88. Stacking tables



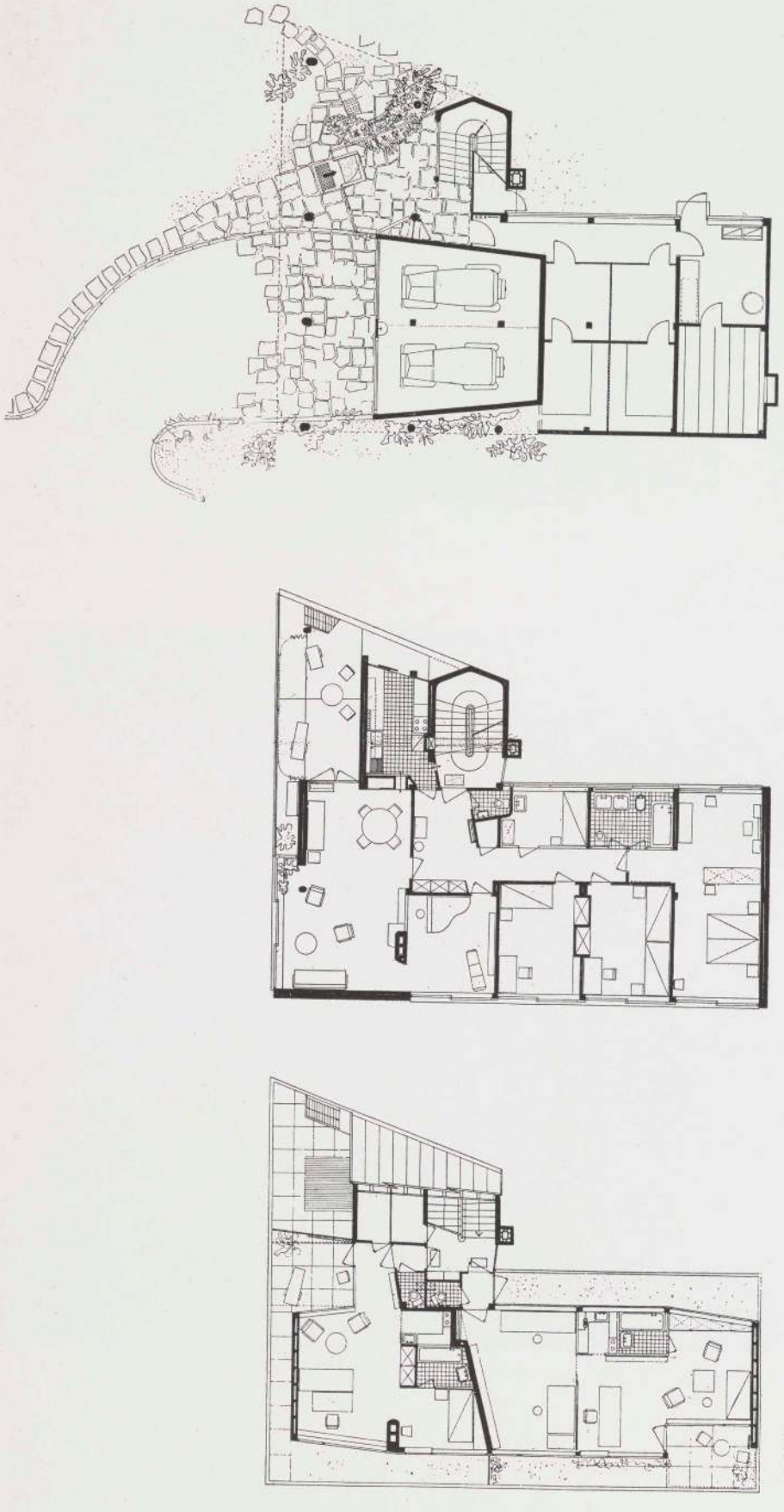
89. Armchair, upholstered seat

90. Side chair, molded plywood seat

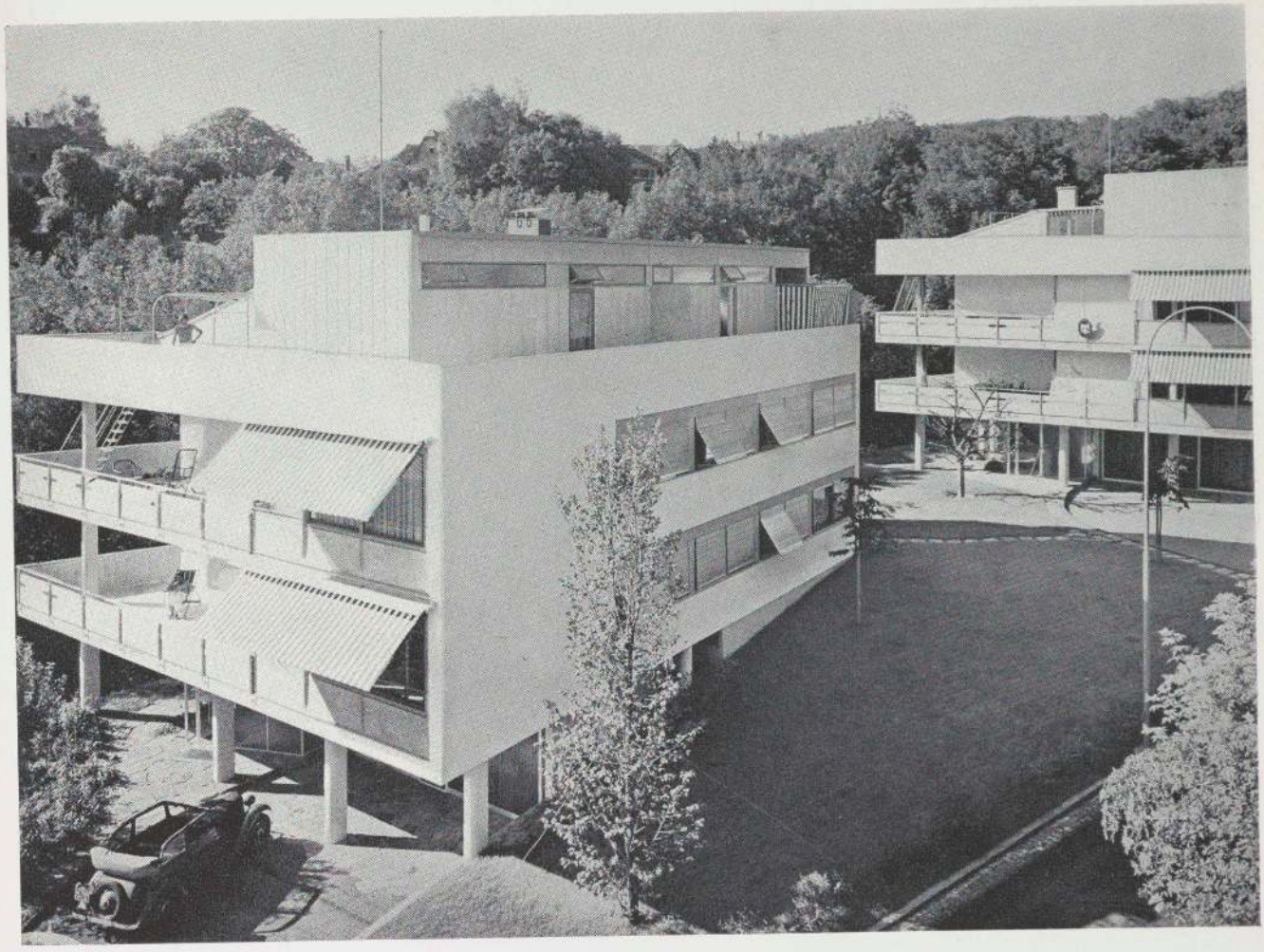


91. Side chair, slat seat

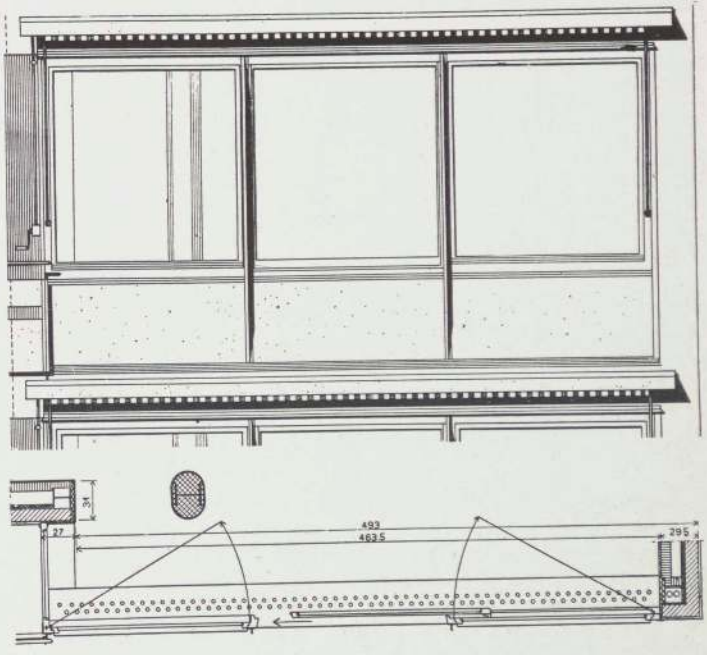
92. Form-fitting reclining chairs



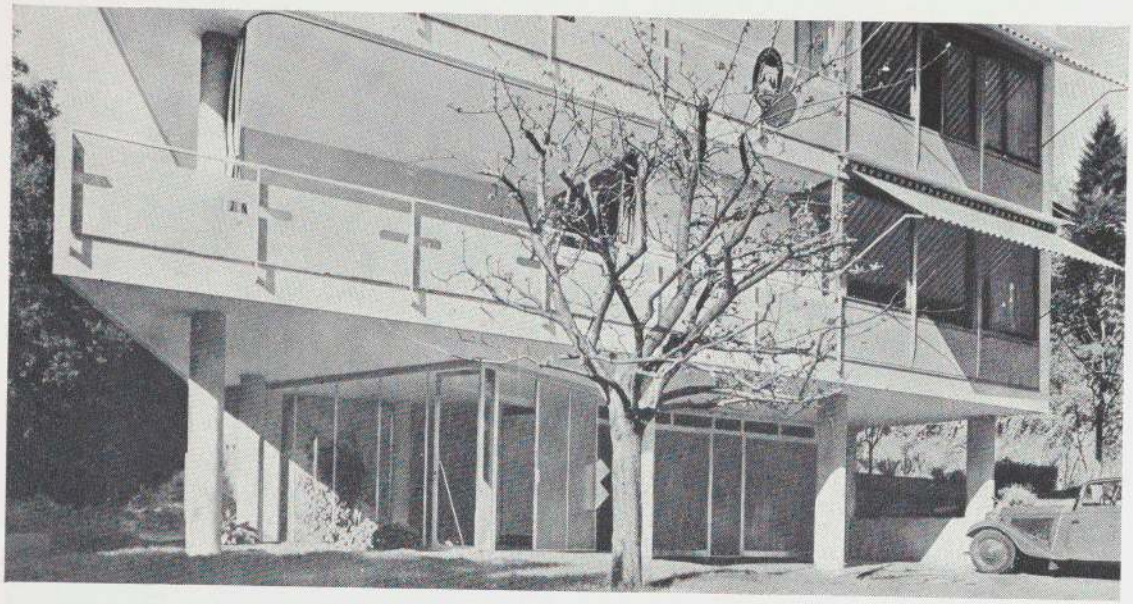
93. Dolderthal apartments, Zurich, 1934. Ground floor, apartment floor and penthouse plans (Breuer and A. & E. Roth)



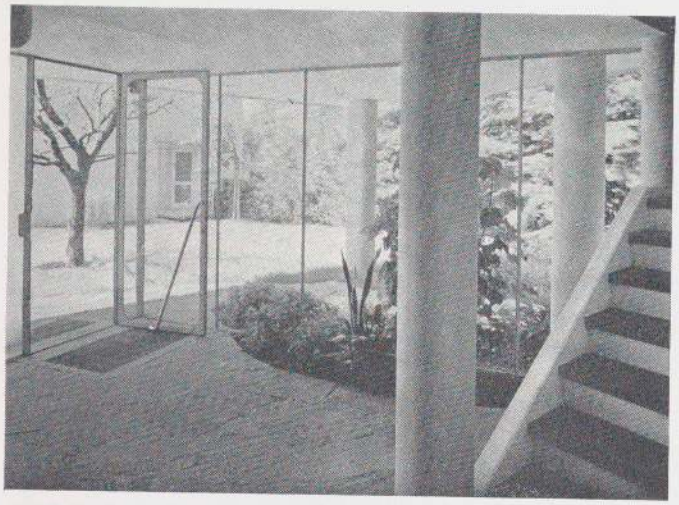
94. Dolderthal apartments. General view



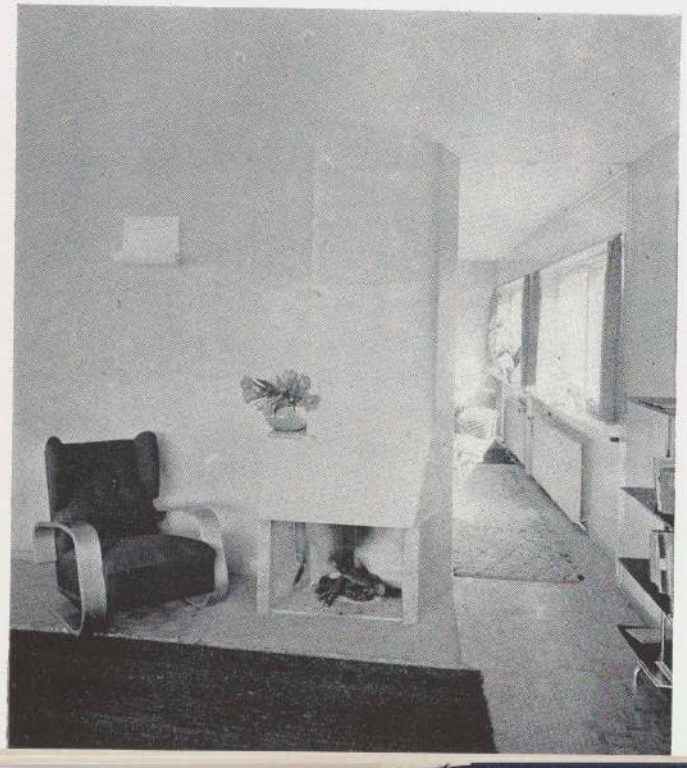
95. Typical bay, elevation and plan



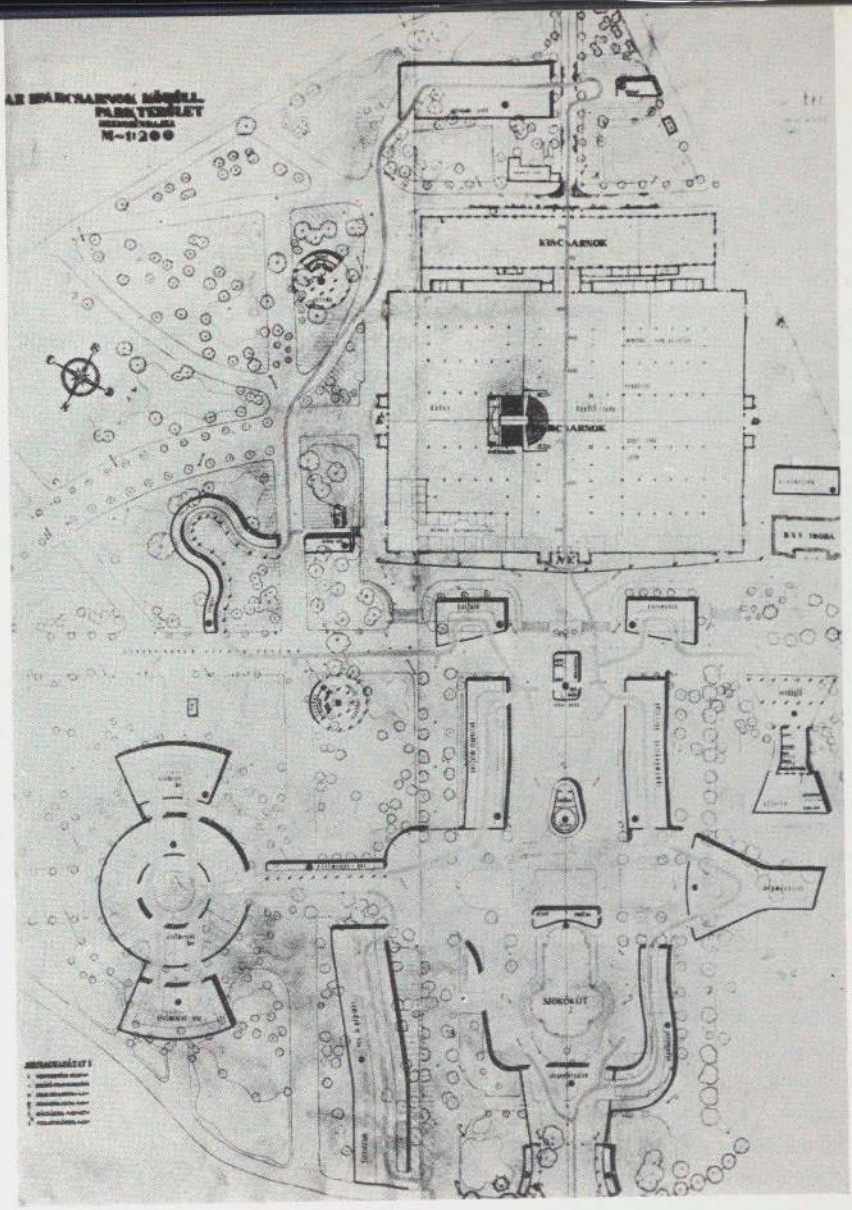
96. Dolderthal apartments. Entrance level



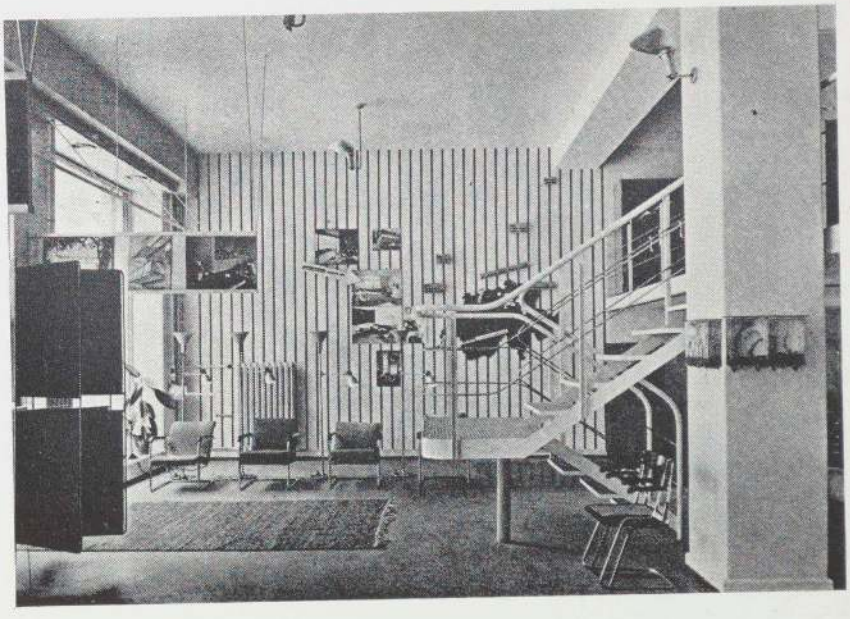
97. Entrance lobby



98. Fireplace (chair by Alvar Aalto)



99. Project: Budapest spring fair, 1934 (Breuer, Fischer and Molnar)



100. Wohnbedarf store, Zurich, 1932

1935 - 1937

Breuer's work in England included three major projects: the "Isokon," bent plywood furniture group; the Bristol Pavilion; and the demonstration model of an ideal Civic Center.

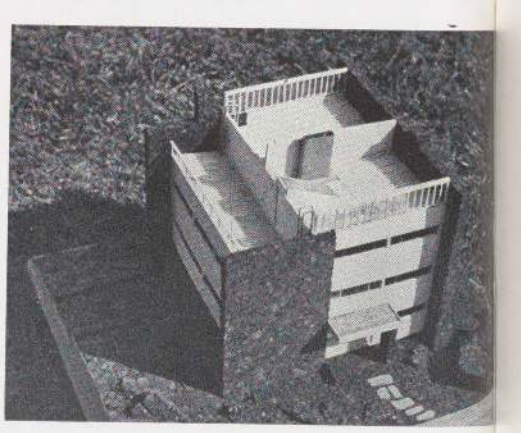
Shortly after getting to England, Breuer found a London manufacturer, Jack Pritchard, head of Isokon, who was willing to produce bent plywood designs that were developed, in part, from the Paris aluminum furniture group. Most famous of these Isokon designs (pls. 102–04) are the reclining chairs with their elegant, form-fitting lines. They represent the high point in Breuer's consistent efforts toward more organic forms in modern design. Since that time Breuer's furniture has consisted primarily of variations on the basic Isokon theme.

In addition to the form-fitting chairs, Breuer designed a series of stacking tables that are ingenious in their simplicity (pl. 103) and two types of dining chairs of heavy, laminated frames and light, bent plywood seats and backs. These also stack. While they left some technical problems still unsolved, their basic shape has served as a point of departure for several younger designers experimenting with this material.

The Pavilion for the Royal Show at Bristol, in 1936, was designed by Breuer and Yorke as an exhibition house for the display of typical modern furniture groupings. It is undoubtedly one of the most successful buildings of the new architecture, and expresses one of its most important facets: the possibility of using traditional materials in an essentially modern structure. Its walls were of local stone and of large sheets of glass reaching from floor to ceiling. Unpainted plywood partitions divided the interior into free and open spaces. Flagstone floors reached out beyond the exterior walls to create a visual connection between indoor and outdoor living areas. The roof—a floating "slab" visually independent of the open plan beneath it—reinforced this indoor-outdoor connection in a dramatic fashion (pl. 105).

In Breuer's development this small building is an extraordinary achievement. Its plan is as exciting in spatial concept as an open plan by Wright. It is neither a Le Corbusier "box" nor a Constructivist space design. It is an original creative effort of the first order. For the first time, perhaps, Breuer has achieved a building that is *all* structure and *all* space. No compromises here, no windows broken into a wall, but instead entire walls of glass; no barriers between spaces, but instead a continuously flowing space, across a continuously open floor and beneath a continuously floating roof. Neither floor nor roof depends upon the space-divisions sandwiched between them: they exist by themselves; they are in a different plane and therefore of an entirely different nature.

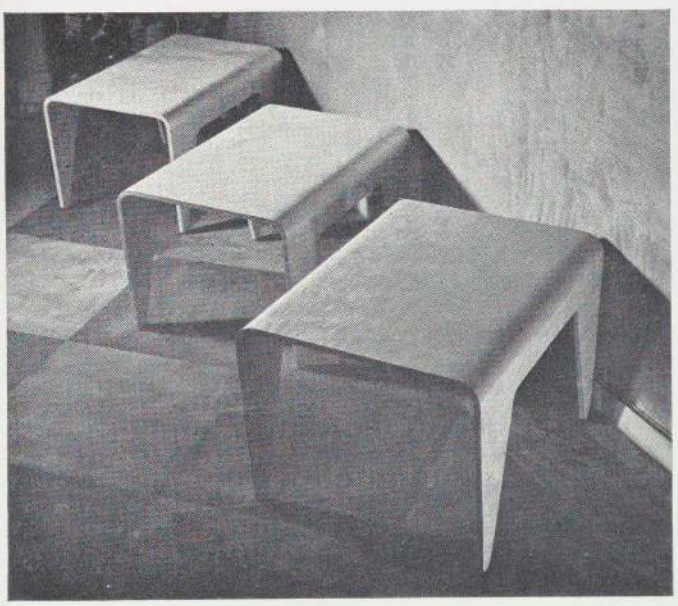
In another respect, too, the Bristol Pavilion is a turning point in Breuer's work. From 1936 onward he has used natural materials, local stone and traditional wood framing, as a matter of course. When he designed a winter sports hotel for the Tyrol in 1937 (pl. 101) its walls were of stone and wood. Yet, despite his conclusion that traditional materials can help to humanize the International Style, Breuer still used native materials in somewhat abstract compositions, in flat slabs and panels rather than in natural and playful forms.



101. Project: Winter sports hotel, Tyrol, 1937

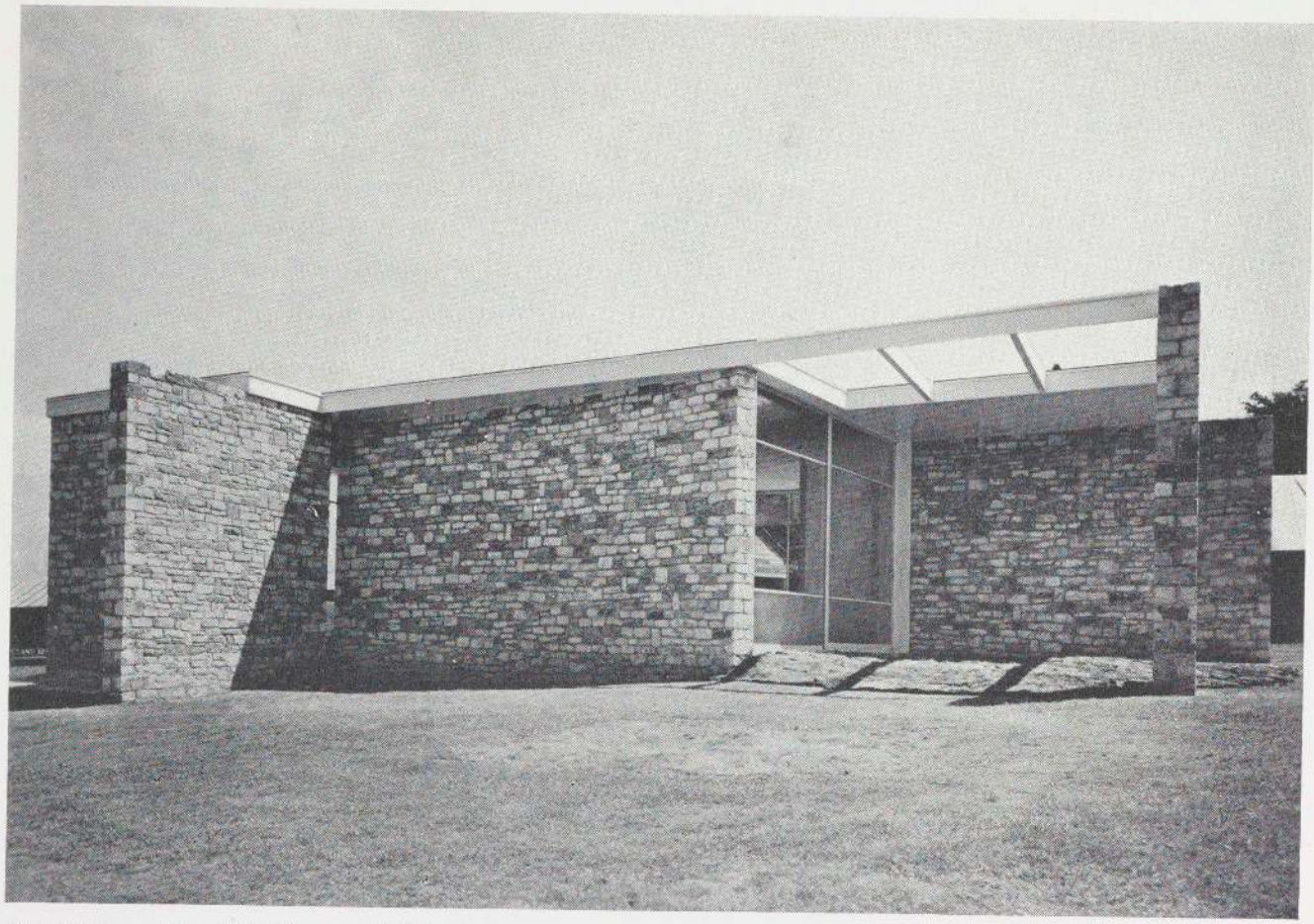
Isokon Furniture, London, 1935

102. Form-fitting reclining chair, bent wood

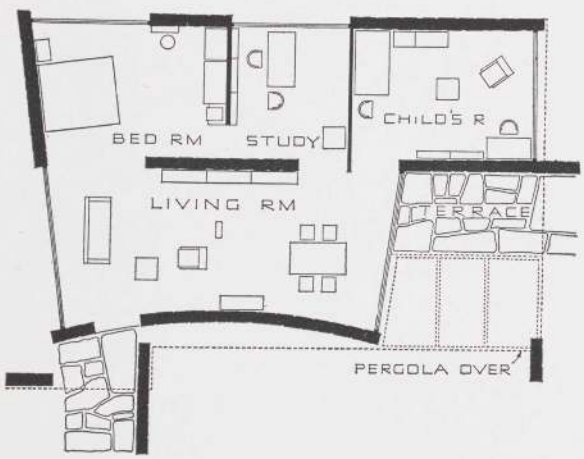


103. Stacking tables, bent wood

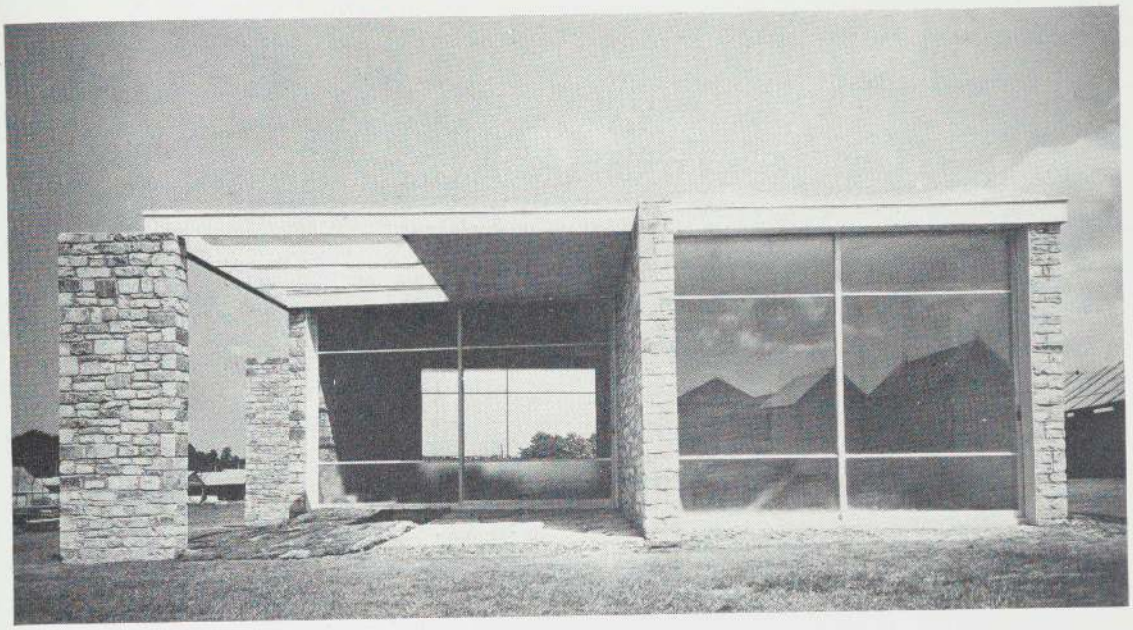
104. Dining chairs, bent wood



105. Bristol pavilion, 1936 (Breuer and Yorke)



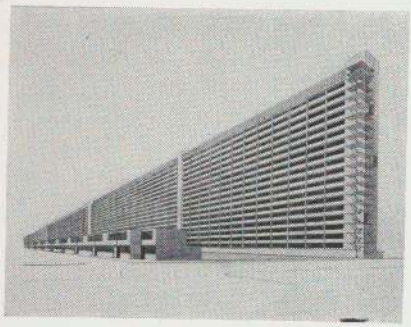
106. Plan



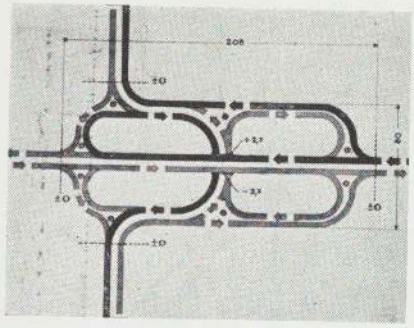
107. View of terrace

108. Living room

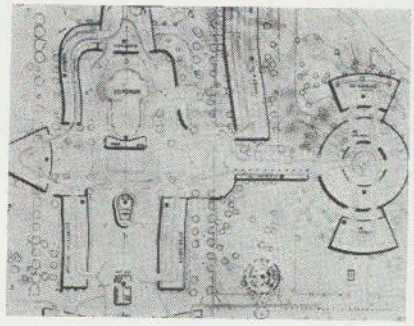
The Civic Center of the Future (pl. 118), which Breuer & Yorke designed for the British Cement Industries in 1936, was built in model form as a "shock demonstration" of certain city-planning techniques and principles. The project is really a kind of "interim report" in which Breuer has both recorded some of his past design achievements, and served notice of his future architectural intentions. Thus the Civic Center model contains a Potsdamer Platz (1928) type of traffic intersection; apartment buildings similar to the Haselhorst housing (1928); a shopping center with spiraling ramps based on the same stepped-back principle as Breuer's Elberfeld Hospital (1929); a theatre not unlike the Kharkov project



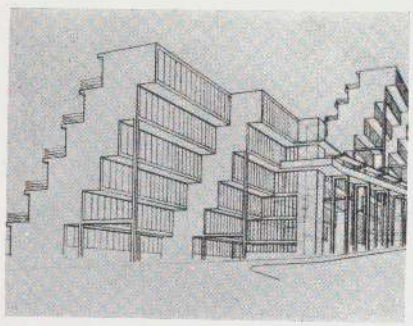
109. Spandau apartments, 1928



110. Potsdamer Platz, 1928

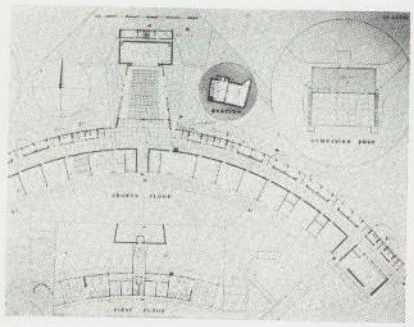


111. Budapest fair, 1934 (with Fischer and Molnar)

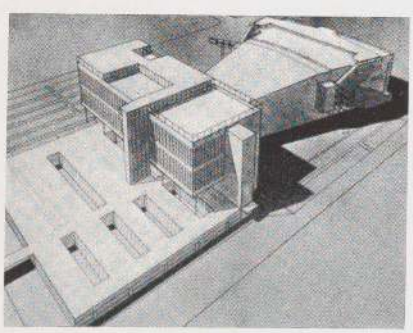


112. Hospital, 1928

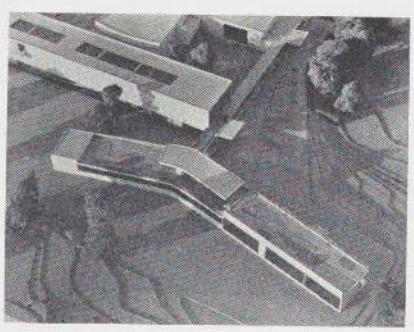
113. Restaurant, 1947 (with Coire and Catalano)



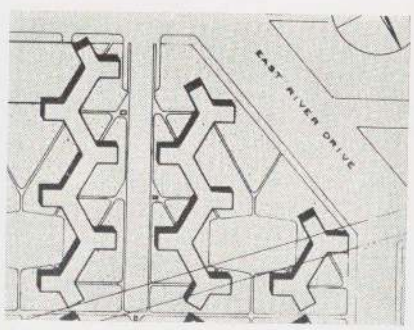
114. School, 1936 (with Yorke)



115. Kharkov theatre, 1931

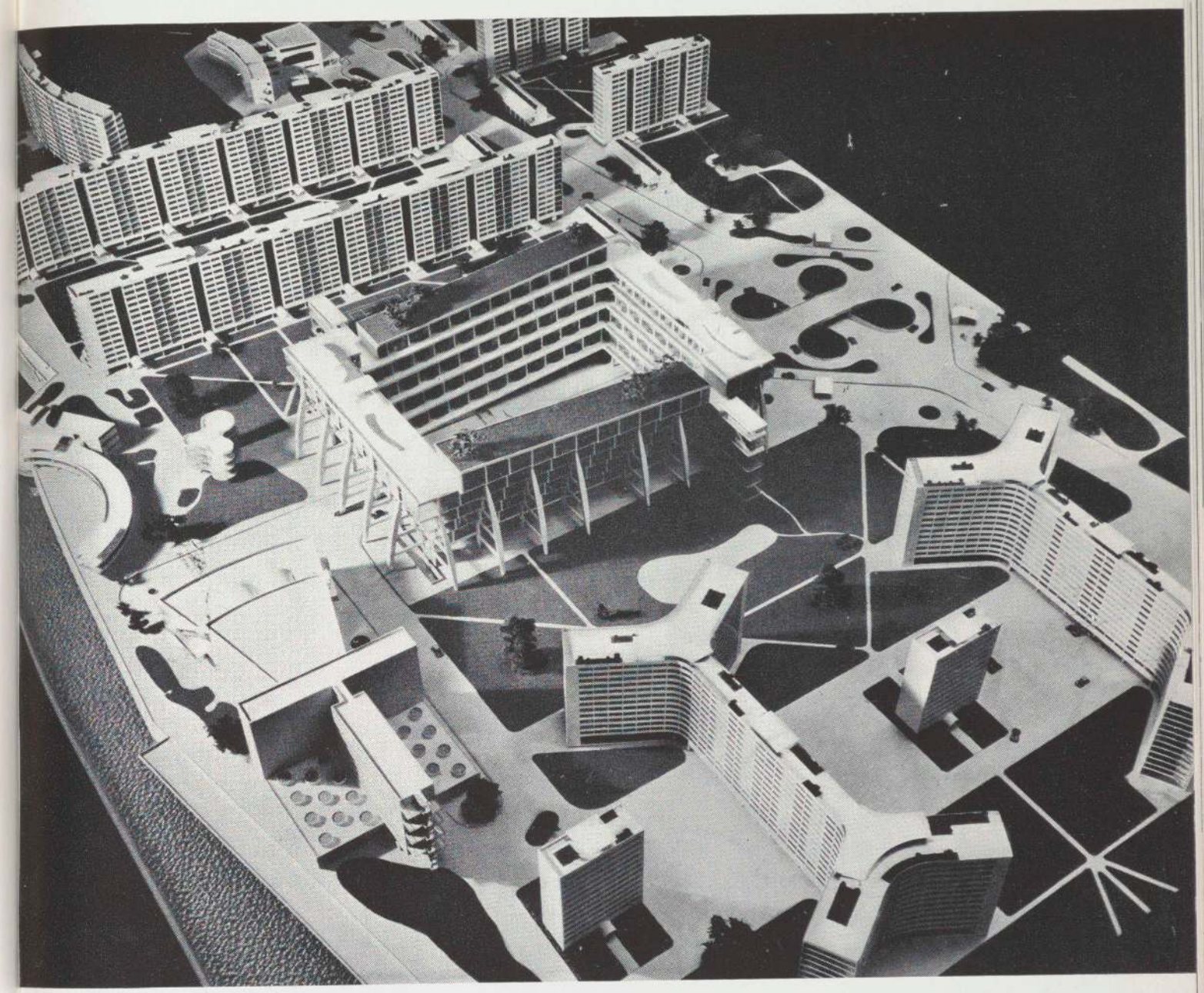


116. Wheaton College, 1938 (Gropius and Breuer)



117. "Stuyvesant Six," 1943

(1931); and a series of curved buildings and free-shaped spaces very similar to the Budapest Fair designs of 1934. In addition, the model contains the germs of several ideas which Breuer has put into practice since the Civic Center was designed. Among them are Y-shaped apartment buildings that are very similar to Breuer's 1943 study for an alternative to Stuyvesant Town. And the small, clover-leaf restaurant shown close to the hypothetical waterfront was actually built by Breuer, ten years later, at Mar del Plata, Argentina. Whatever critics may say about Breuer's work in the past and in the future, they will never be able to claim that its results are anything but deliberate and carefully premeditated.



118. Project: Civic center of the future, 1936 (Breuer and Yorke). Many of Breuer's earlier projects were incorporated in this model, and some later designs first appeared here in sketch form (see opposite page for comparisons)

In 1937 Walter Gropius, who had also gone to work in England in partnership with the architect Maxwell Fry, was asked by Harvard University to come to the United States to revitalize that university's Graduate School of Design. Shortly after arriving in Cambridge, Gropius invited Breuer to join him, both at Harvard and in an architectural partnership in Cambridge. Recognizing the impossibility of doing constructive work in a Europe on the brink of war, Breuer accepted. And in the fall of 1937 he left Europe, his reputation firmly established, his contribution to the new architecture already a part of its history. He was then only 35 years old.

1937 - 1941

As this is written, barely a dozen years after Gropius and Breuer arrived in this country, it is too early to evaluate the effect which their work has had and may continue to have upon American architecture. Needless to say there were many others, long before 1937, who fought for the new architecture in the United States. However, the arrival of Walter Gropius and his appointment as Chairman of the Department of Architecture at Harvard marks a turning point: for better or for worse, American architecture has not been the same since 1937.

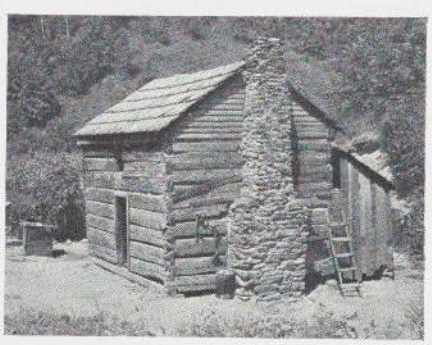
When the definitive biography of Walter Gropius is written it will become apparent how decisive was the part played in that change by this great and kindly man. It was almost twenty years since he had organized the original Bauhaus, and five years since it had been closed by Nazi order. Gropius was no longer young. He was a foreigner in a strange land. And yet he made a new start, and for that American architecture owes him a debt we cannot yet assess.

But since this book is concerned primarily with the work of his younger partner, it is Breuer's part in this story that we must try to evaluate. Being the younger man, he formed a physical link between the early "tradition" of modern architecture and the newcomers. Gropius was the first generation; Breuer had been part of the second; and the young men who were soon to come out of Harvard were the "third generation modernists." It is undoubtedly due in part to Breuer—a man almost as young as those whom he taught and influenced—that the Harvard "gospel" has spread so fast and so convincingly. Few other schools of great architects have produced so many excellent apprentices in so short a time.

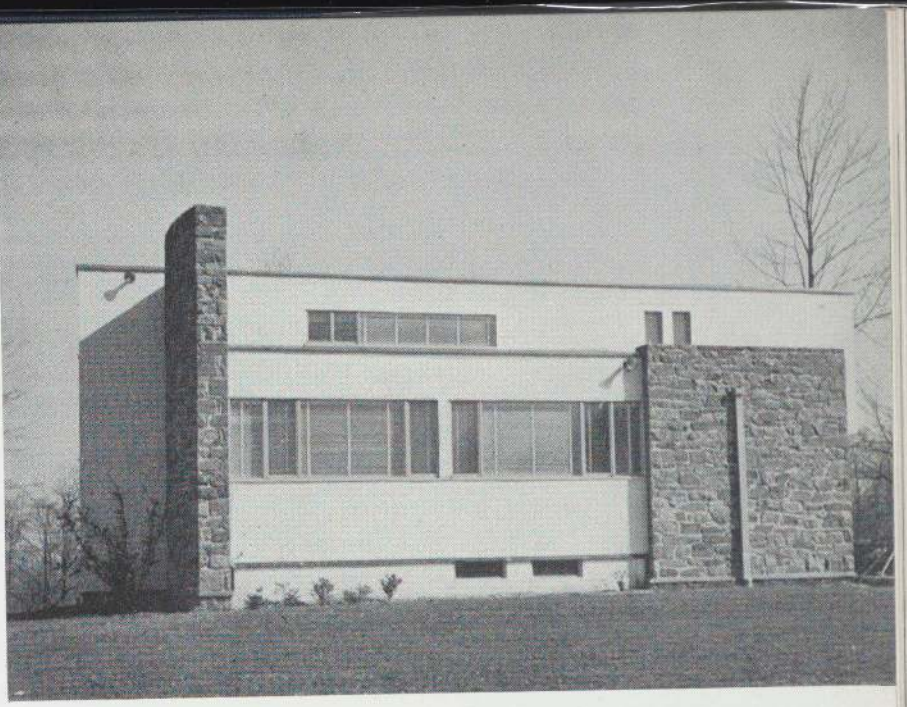
But apart from subjecting these young Americans to the lessons of modern European architecture, Breuer himself was now being subjected to certain lessons that could be learned from the building traditions of North America and, especially, of New England. It is amusing to note that the greatest impression he received of the United States was *not* its modern industrial potential, that magic formula which had intrigued him so much in his earlier European days. Instead, it was the simple honesty and clarity of the traditional New England wood structure, with its braced frame and its fieldstone chimneys that struck him most forcibly, and that he now proceeded to interpret to his students.

The first Gropius & Breuer houses at Cohasset and Lincoln (pls. 120–129) form a homogeneous group. And while they differ in many respects, they all use the traditional New England braced frame; they are all finished in wood; and they all use some local stone in walls and floors.

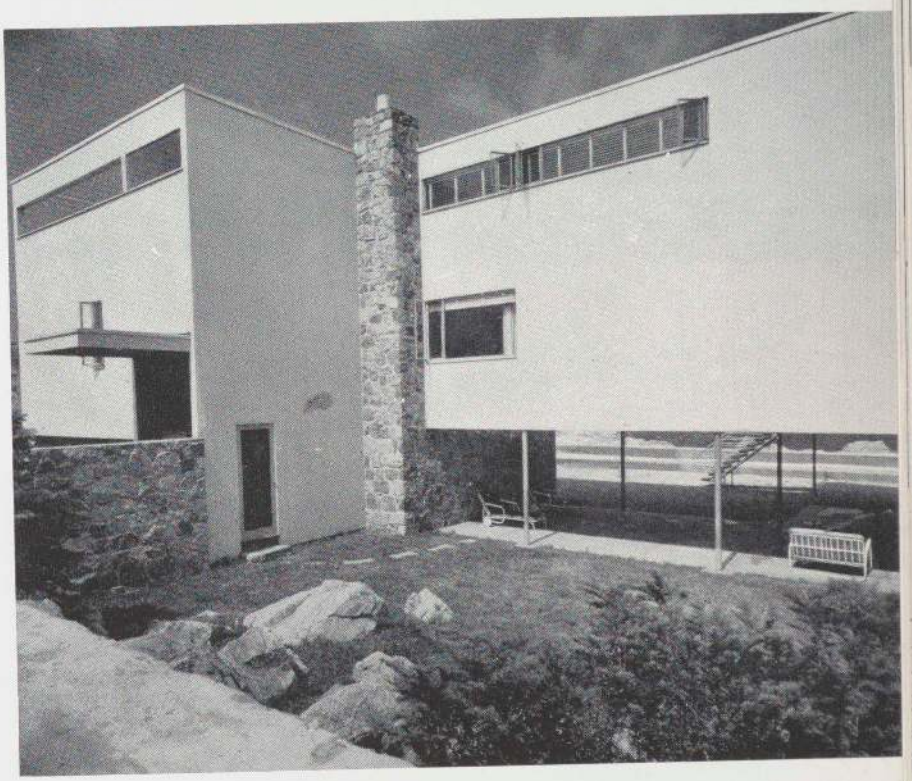
Yet, while accepting the traditional materials of the Northeast, Gropius and Breuer did not immediately use them in the facile manner to which we are now accustomed. One feels, for example, that in the Ford house the plan has been dictated by the regular, evenly spaced pattern of the wood framework. In later houses the structure, while still an important design element, was made to *serve* the plan rather than to dominate it. Furthermore, the exterior wood siding in the early Gropius and Breuer houses was always painted white in the best New England tradition—which may give them a superficial resemblance to the European stucco buildings of



119. American cottage, F.S.A.

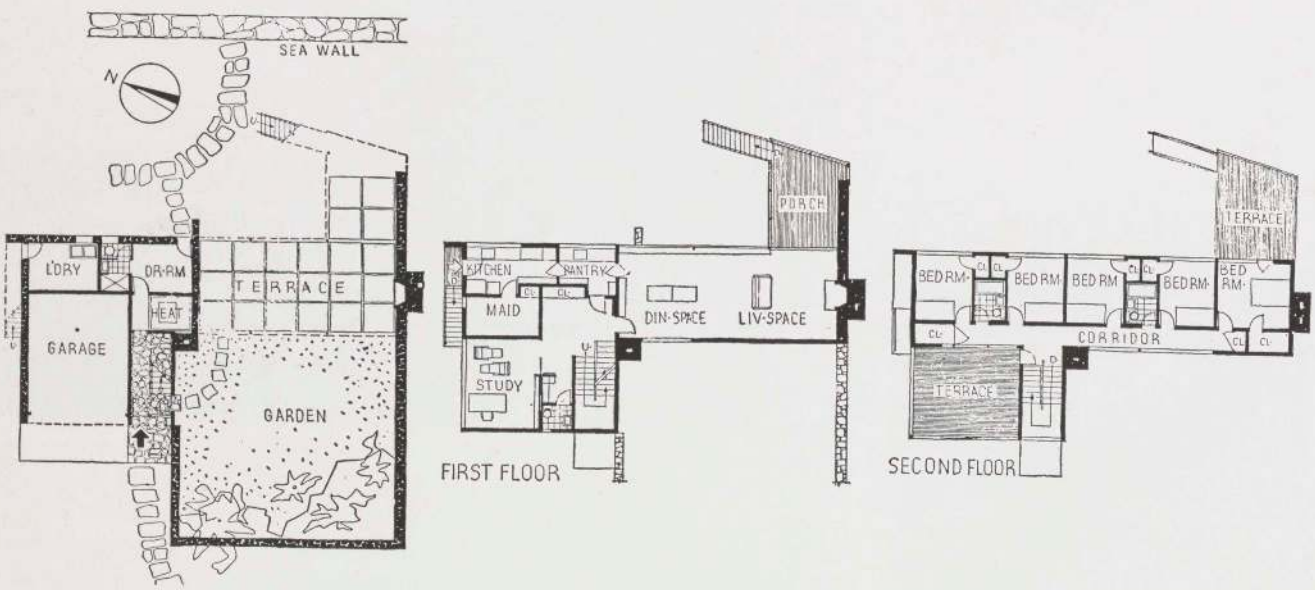


120. Fischer house, Newtown, Pa., 1938 (Gropius and Breuer)



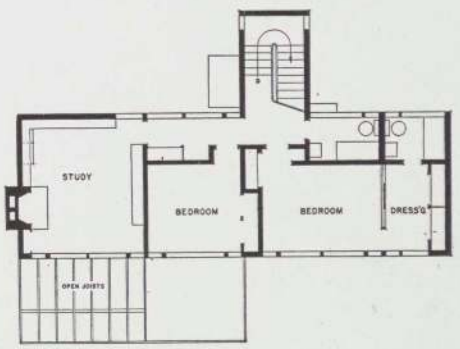
121. Haggerty house, Cohasset, Mass., 1938 (Gropius and Breuer)

122. Haggerty house. East view



123. Plans

124. Ford house, Lincoln, Mass., 1939 (Gropius and Breuer)



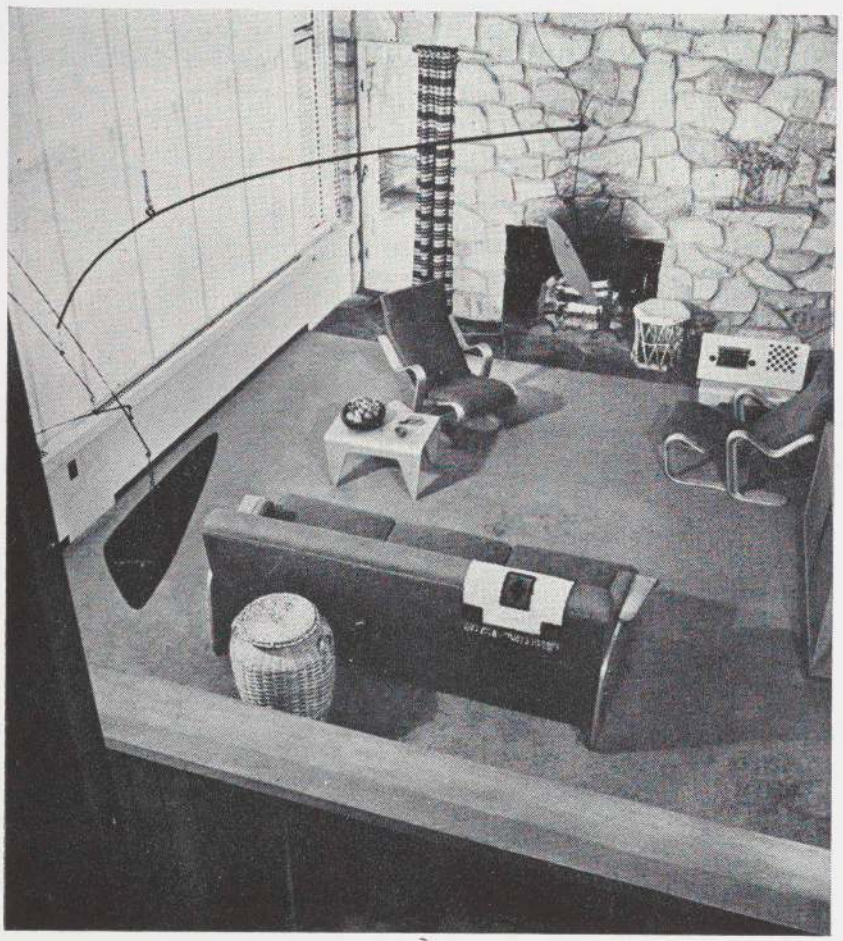
Second floor

125. Plans

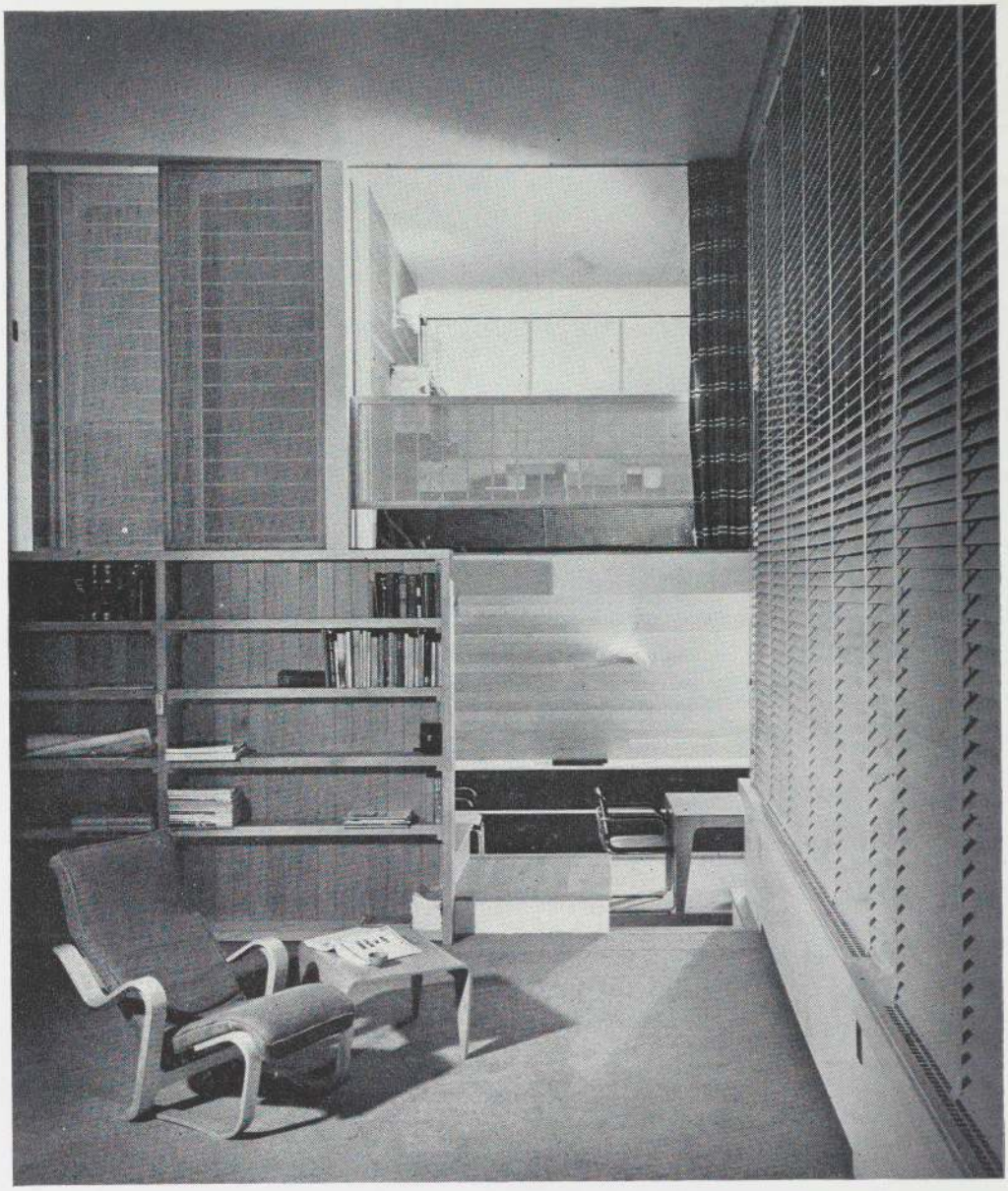
First floor

the 1920's. And finally, the Breuer house and the Cohasset house use fieldstone walls much as they were used in the Bristol Pavilion: as flat abstract panels rather than as organic forms. Yet this very precision and formalism drove home one extremely important point: that the new architecture can use the techniques and materials of traditional building without dissipating itself in romanticism.

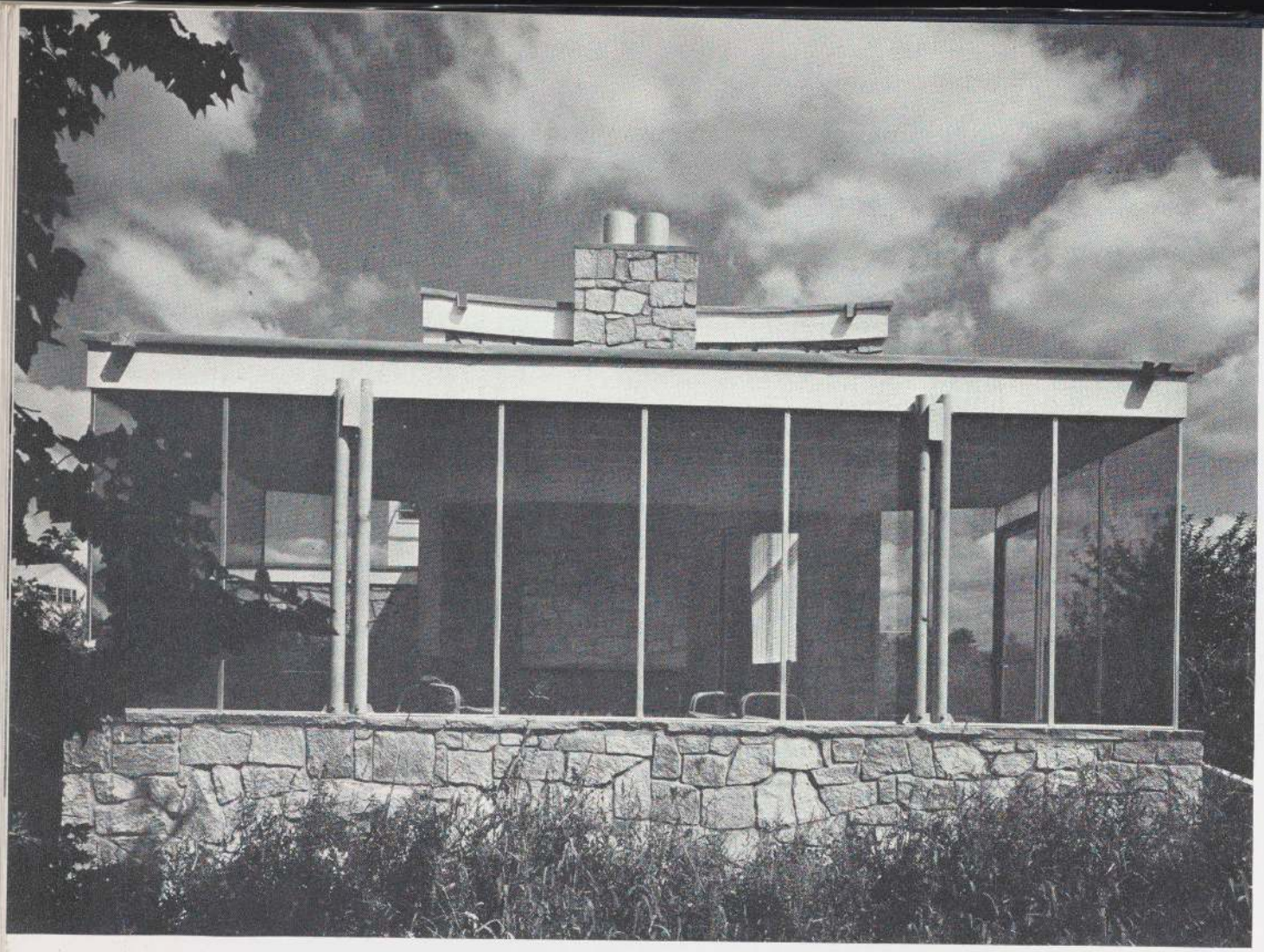
Because of the exacting workmanship employed in building these houses, they have remained in perfect condition. Among their beautiful details are several staircases that are exquisitely engineered, elegant exercises in Constructivism. Breuer, especially, has always delighted in these airy structures and his work from the beginning has been punctuated with Constructivist masterpieces of this sort. This airy spaciousness—the attempt to create architectural space by circumscribing it—is evident again in Breuer's own house in Lincoln. It is essentially an "indoor house"—a space conception developed by the interplay of different floor levels, and by the interpenetration of volumes of different heights and proportions. This house is Breuer's 1939 version of one of his first architectural designs: the *Kleinmetallhaus* of 1925 (pl. 39). The basic scheme has remained the same, but the forms and materials employed show the vast change Breuer had undergone since his Bauhaus days.



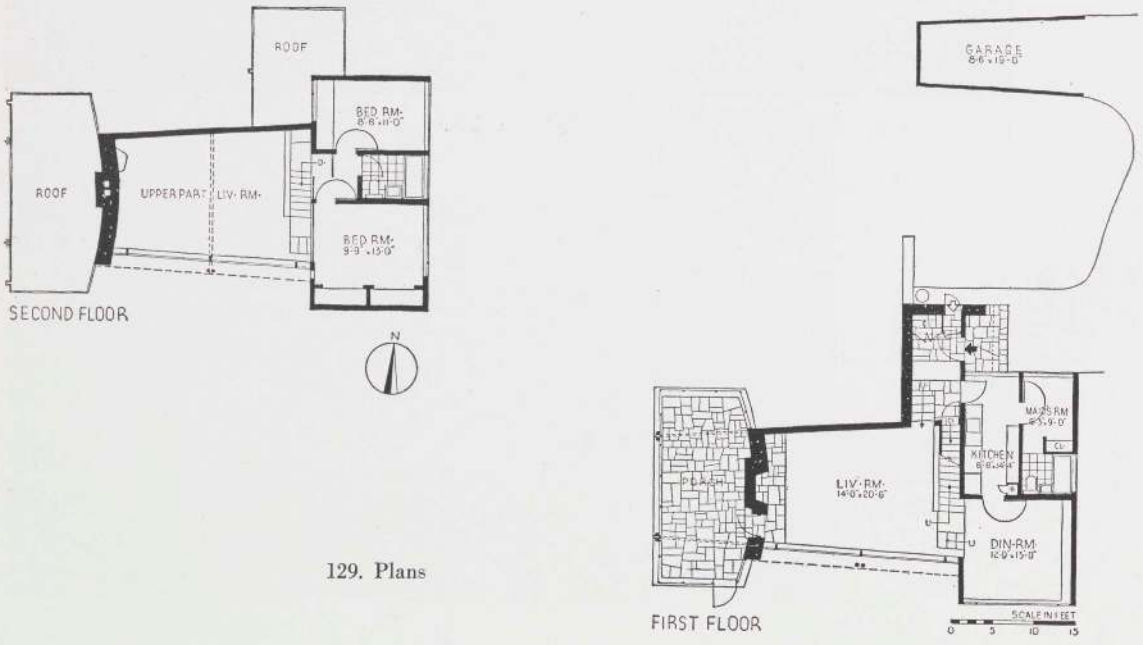
126. Breuer house, Lincoln, Mass., 1939. Living room (Gropius and Breuer)



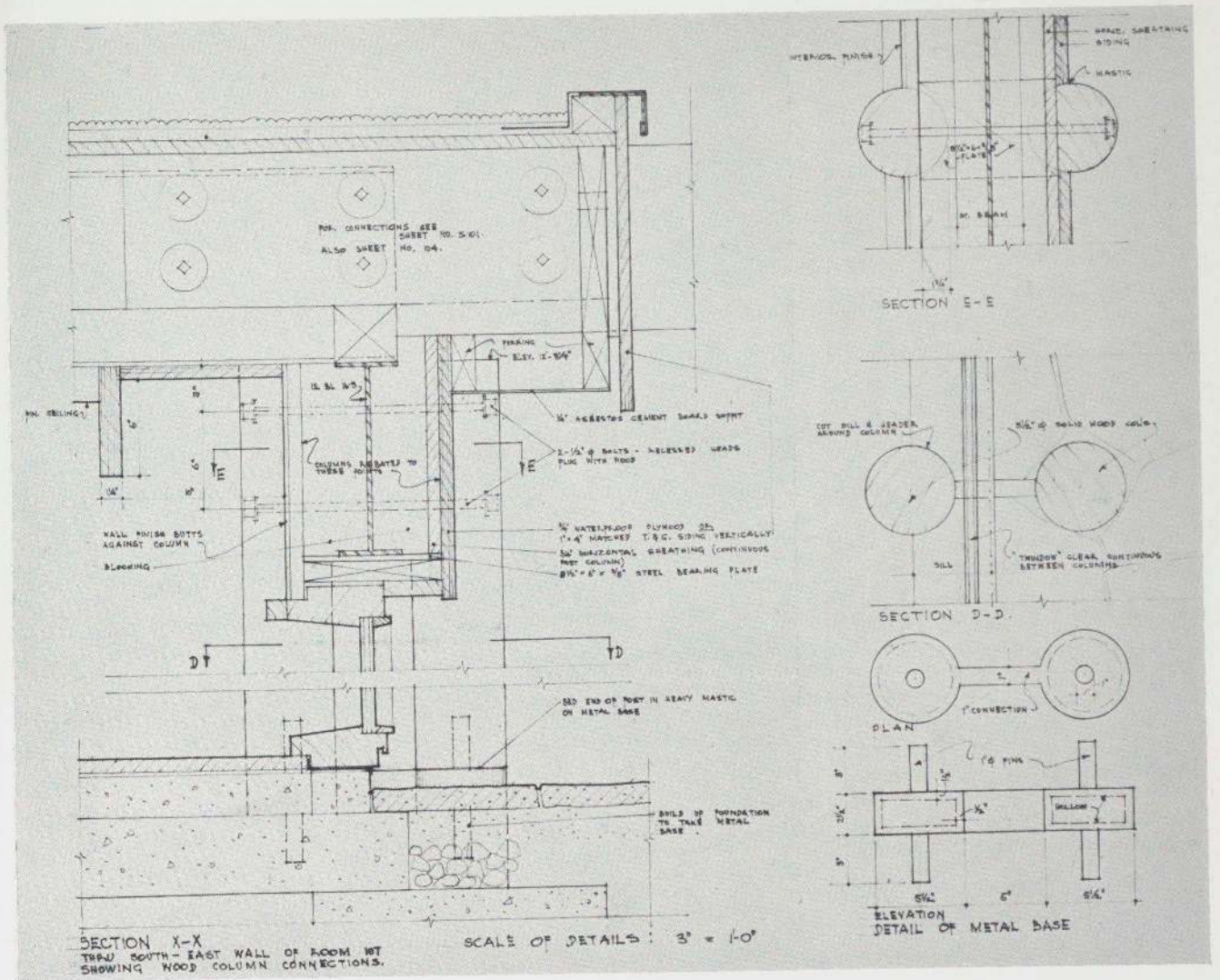
127. View from living room into dining room. Bedroom above



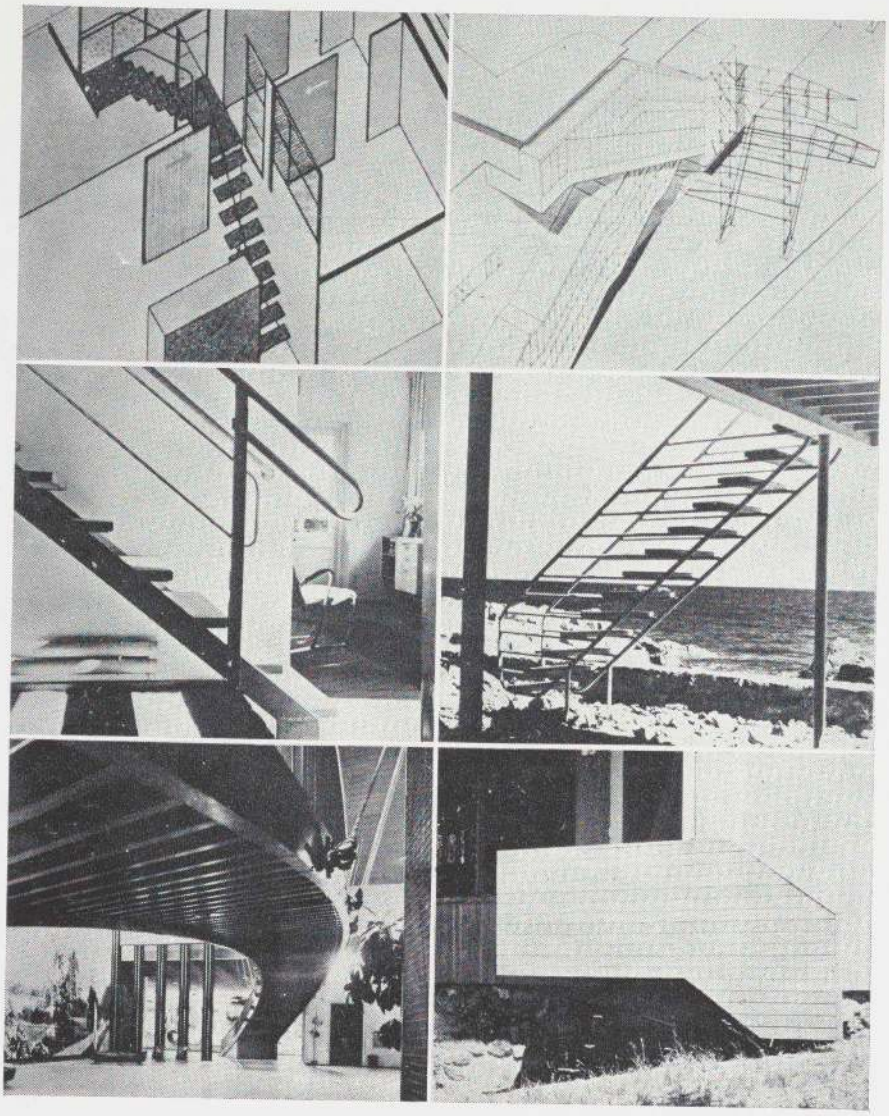
128. Breuer house, Lincoln, Mass., 1939. Porch at west end of house (Gropius and Breuer)



129. Plans



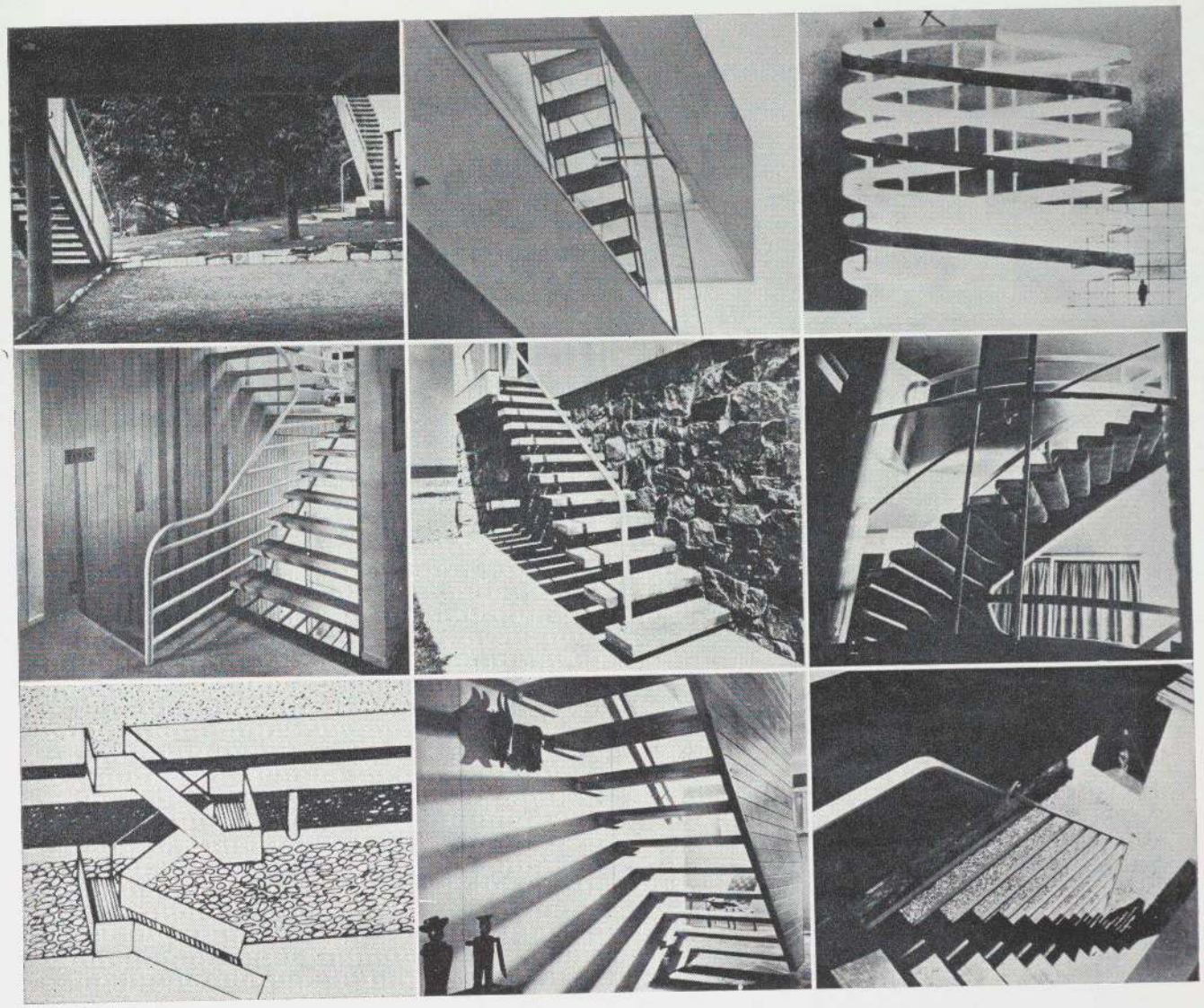
130. Working details, 1948. Similar to those used in Breuer house, Lincoln, Mass.



131. Stairs. *top row: Kleinmetallhaus*, 1925; Kharkov theatre, 1931; Harnischmacher house, 1932; Dolderthal apartments, 1934 (Breuer, A. & E. Roth); Budapest fair, 1934 (Breuer, Fischer & Molnar); *center row:* Clifton, 1935 (Breuer & Yorke); three stairs from Haggerty house, 1938 (Gropius & Breuer); Frank house, 1939 (Gropius & Breuer); *bottom row:* World's Fair, 1939 (Gropius & Breuer); Chamberlain cottage, 1940 (Gropius & Breuer); N. Y. apartments, 1944; Tompkins house, 1946; Breuer house, New Canaan, Conn., 1947

Gropius and Breuer complemented each other especially well in the design of planning projects like the Wheaton (pl. 132) and Black Mountain College (pl. 134) schemes. One of Gropius' interests at Harvard was with the Masters class, which became increasingly concerned with problems of community planning, and with the philosophical basis of the new architecture. Meanwhile Breuer was dealing with the younger graduates, and his classes were, perhaps, more concerned with the esthetic and structural problems of architecture as such, with less emphasis upon its sociological ties. While it is not possible singly to evaluate the work of partners, it is probable that this concentration upon different aspects of architecture carried over into the work of their private practice, and that it was in planning projects, such as the Wheaton and Black Mountain schemes, that the partnership operated most successfully.

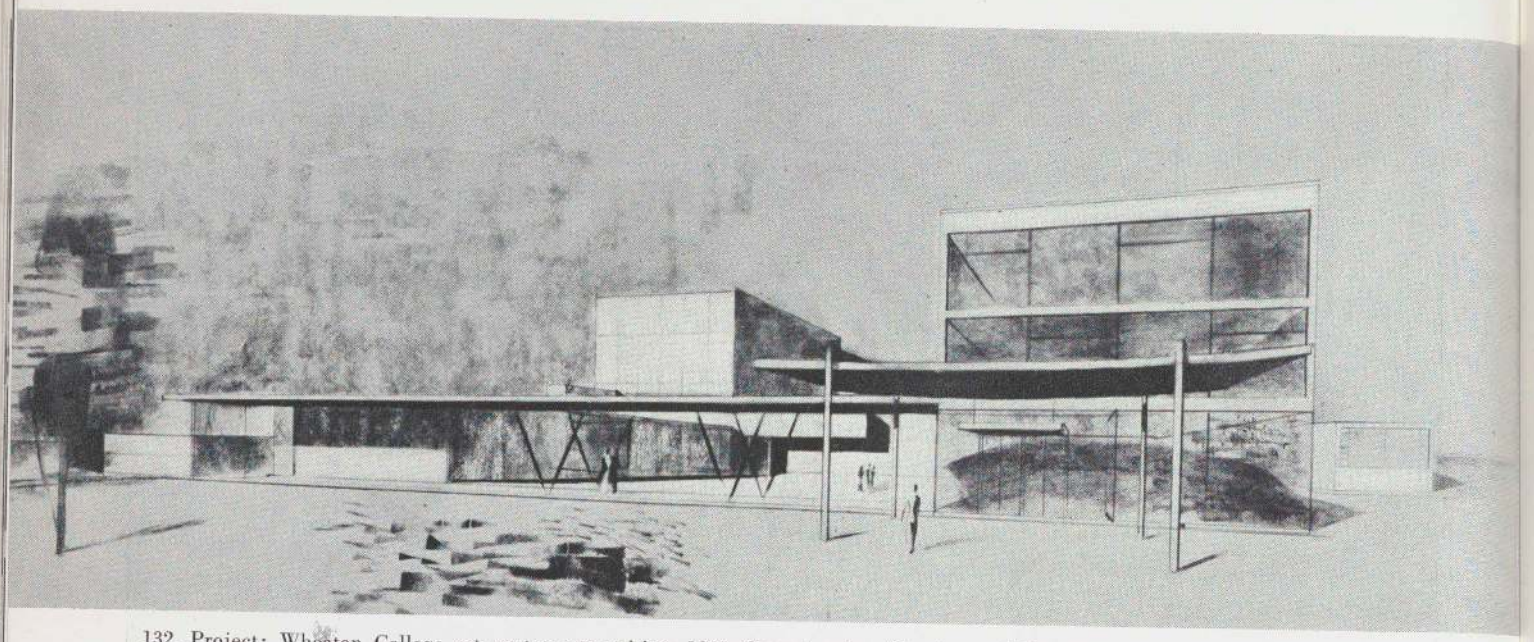
After Hitler's attack on Poland, the United States channeled much of its building activity into the expansion of defense industries. But before Gropius and Breuer began to concentrate upon their New Kensington



housing project for aluminum workers (pl. 143) they completed two additional houses in 1940. These were the large Frank house in Pittsburgh, and the small Chamberlain house at Weyland, Mass. (pl. 138). The latter, although little more than a one-room week-end cottage, is one of the best houses built in the United States during the past few decades.

Like some of the earlier European houses we have mentioned, the Wayland cottage is elevated above the ground, in a very personal version of the *prisme pur*. But while Le Corbusier would have opened up his *prisme* in one direction at least, Gropius and Breuer made this an almost completely enclosed box. The view toward a nearby river is opened up through one window only—a glass rectangle perfectly set into its wall.

The materials used in this cottage are *unpainted* wood (applied to the braced frame in narrow vertical siding) and local fieldstone, which forms the deeply recessed base for the wooden box on top. The fieldstone appears again on the upper level in the form of a rugged, free-standing fireplace. A simple system of box girders and twin columns ties this build-



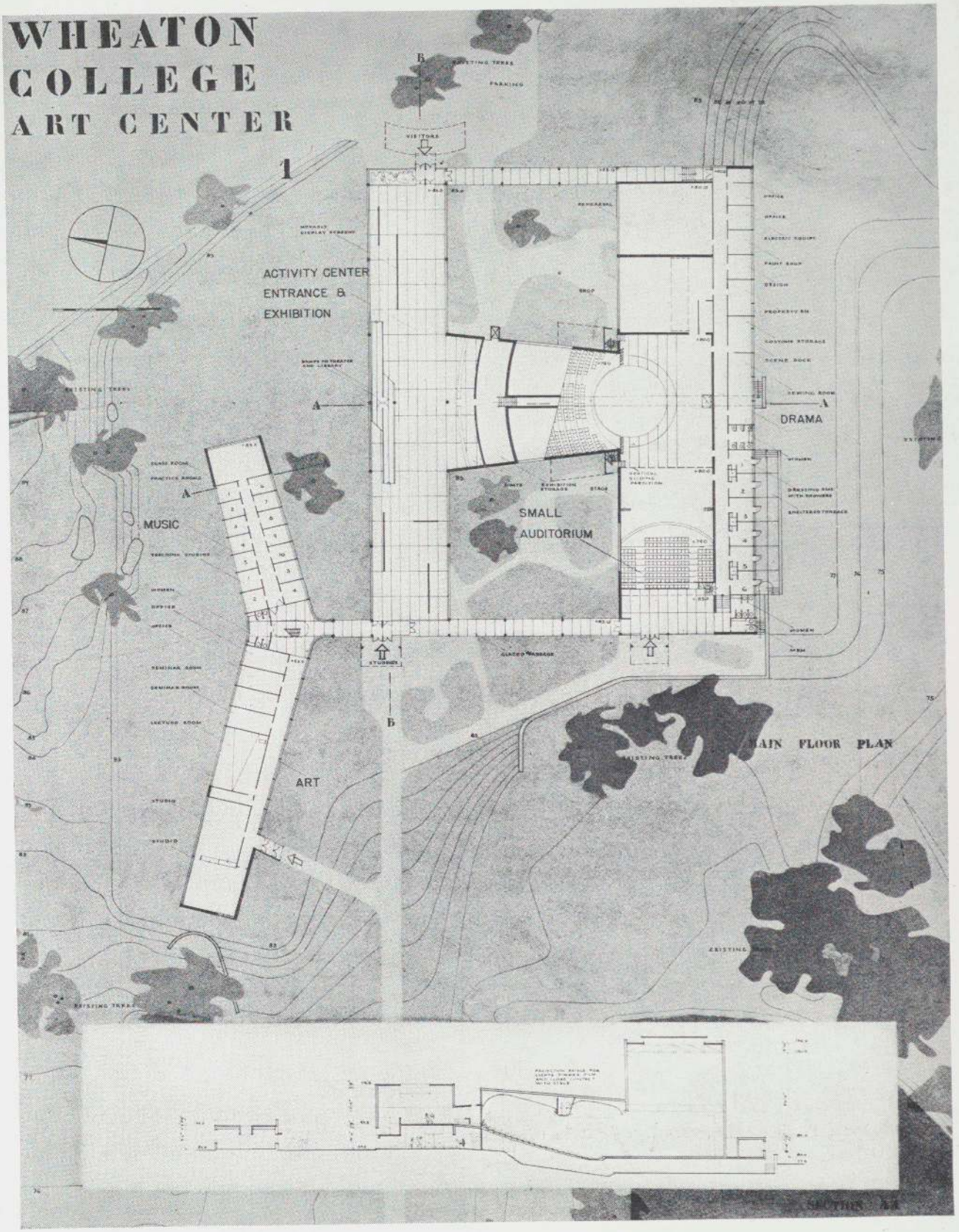
132. Project: Wheaton College art center competition, 1938. Second prize (Gropius and Breuer)

ing together, and gives it an astonishing attitude of unconcern for the usually accepted limitations of structure. The outside walls themselves, acting as solid vertical slabs, help support the deep cantilever, a system which Breuer used again in his own house at New Canaan in 1947.

More important even than the extraordinary delicacy of this structure is the complete and final assimilation in it of the tradition of New England building to the demands of the new architecture. This cottage is an organic concept; its materials are no longer used self-consciously, in abstract patterns. They are used with the utmost facility and with a sure mastery of technique. Like some of the earlier houses, the Weyland cottage defies nature; but unlike those earlier houses, it is not a brittle product of industrialism. Its "human-contact" surfaces are warm in color and soft in texture, fully satisfying the demands of "human nature."

One of the last jobs of the Gropius and Breuer partnership was the defense housing project for aluminum workers in New Kensington, Pa. To date it is the only completed planning project designed by either architect in this country. It contains several buildings of unusual interest. But its most striking characteristic is the "fluid" site plan, in which buildings and roads were carefully fitted to the contours of the land. In this accommodation to natural conditions the New Kensington plan shows a trend that parallels the use of soft and more organic forms in the design of houses and of furniture.

With this project completed, Gropius and Breuer decided to dissolve their partnership and to open separate offices. Gropius gathered about him a number of young men, some of them former students, to form the Architects' Collaborative. Breuer, meanwhile, began again to feel the burden of too much teaching—as he had in 1928—and of too little practical work. While he continued at Harvard through the years of the war (with their restrictions on private building), he opened his own practice, hoping to give it his undivided attention once the war was over.

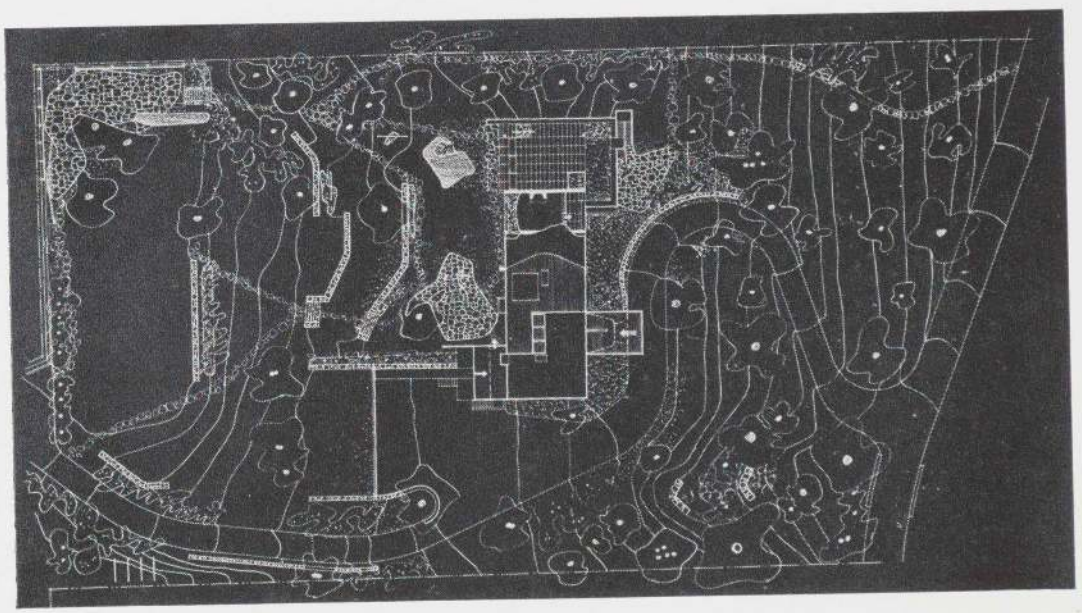


133. Plan and section

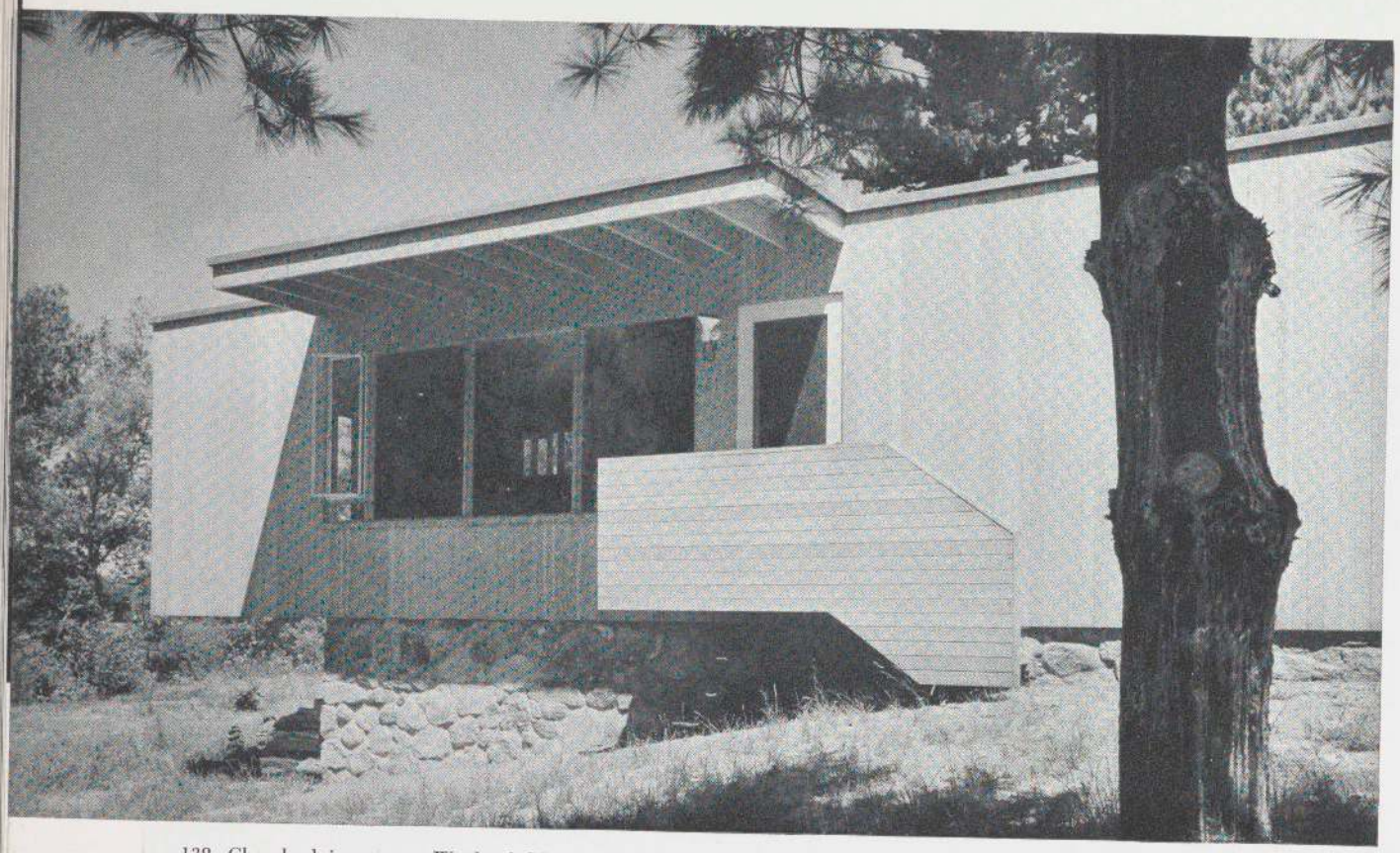
134. Project: Black Mountain College, N. C., 1939 (Gropius and Breuer)

135. Frank house, Pittsburgh, Pa., 1939. Exterior stairs (Gropius and Breuer)

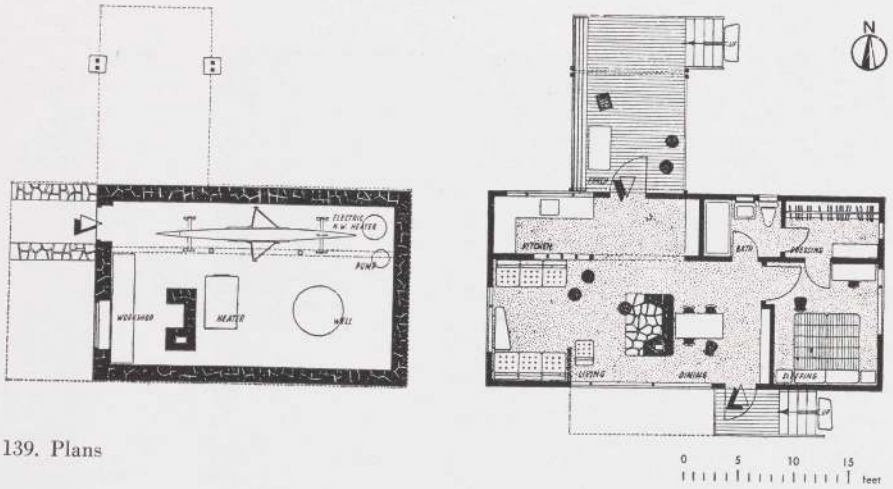
136. Frank house. Rear entrance



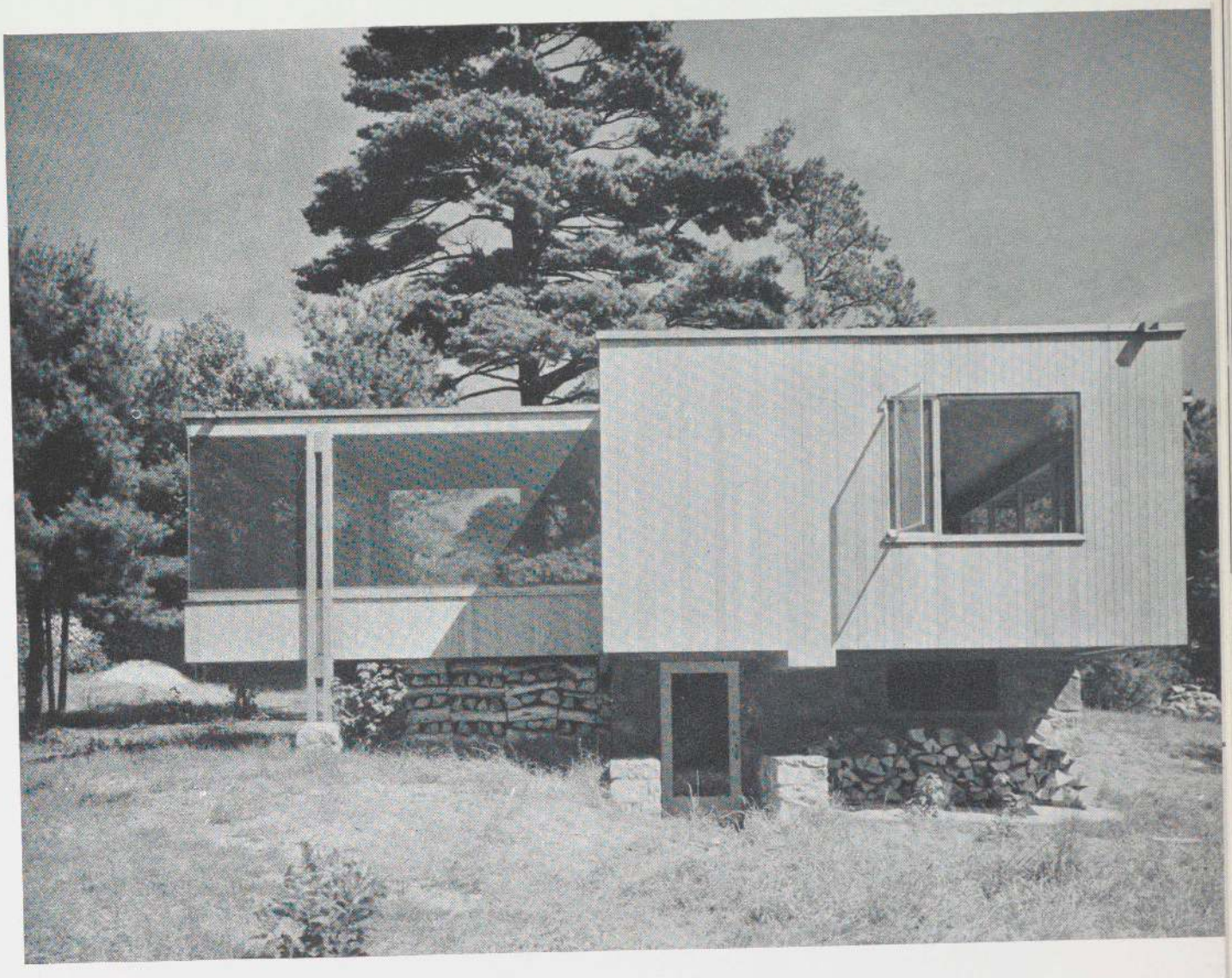
137. Site plan



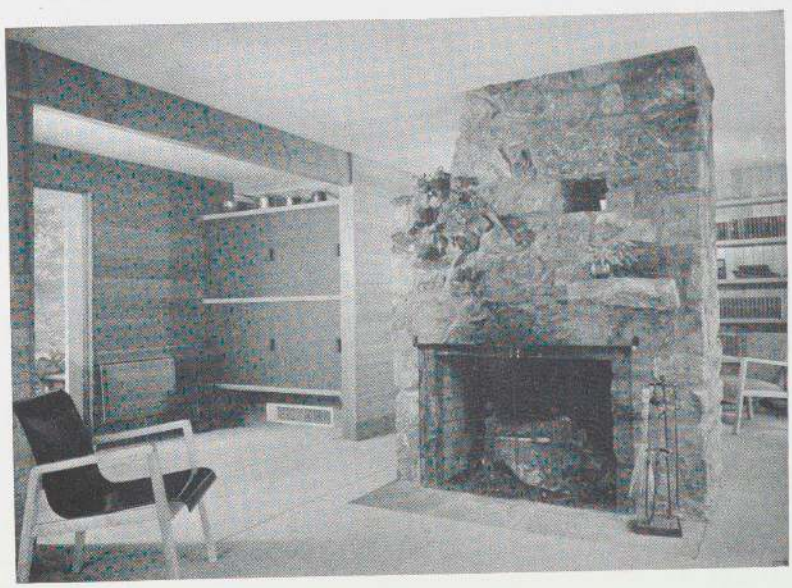
138. Chamberlain cottage, Weyland, Mass., 1940 (Gropius and Breuer)



139. Plans

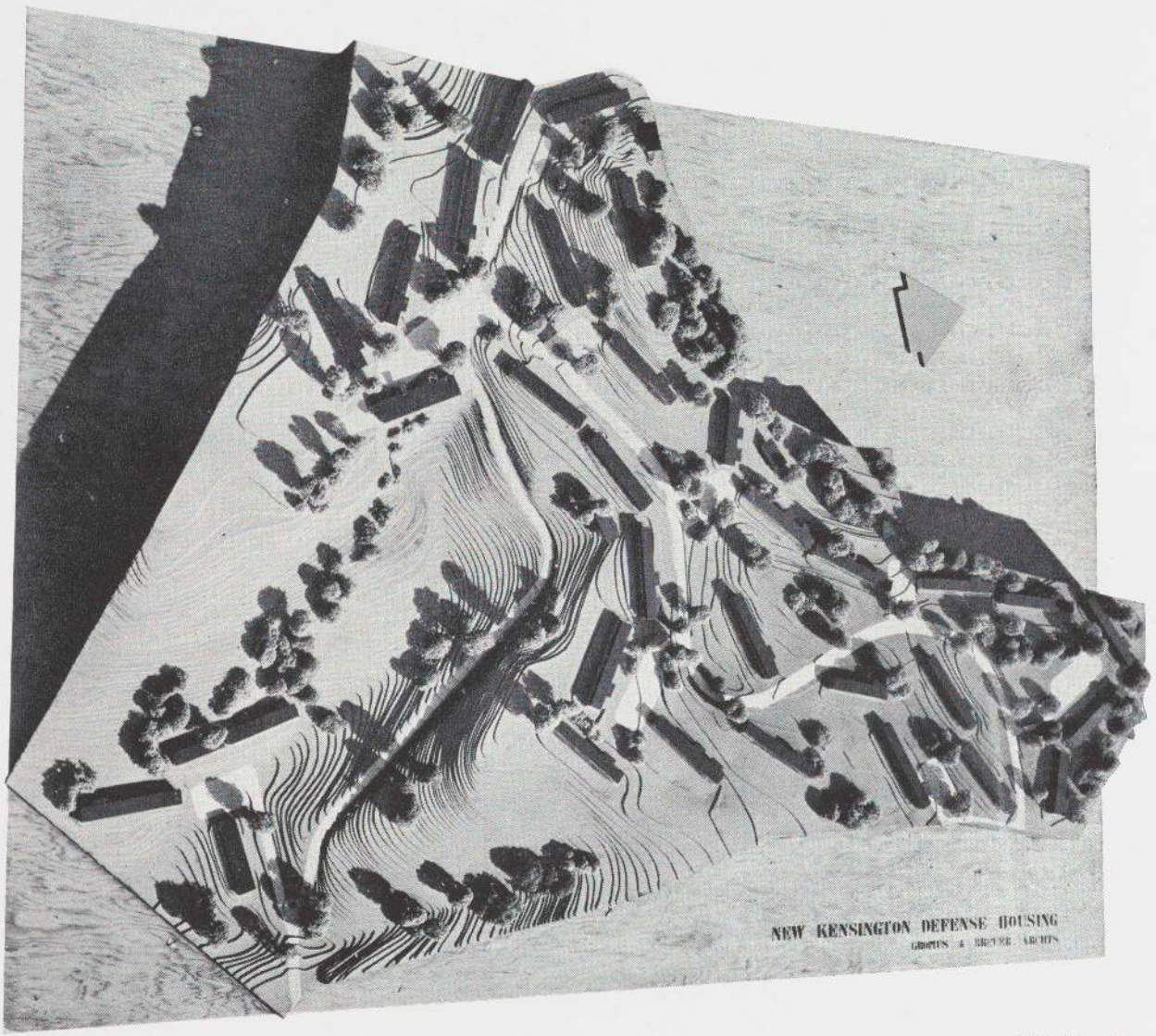


140. West view

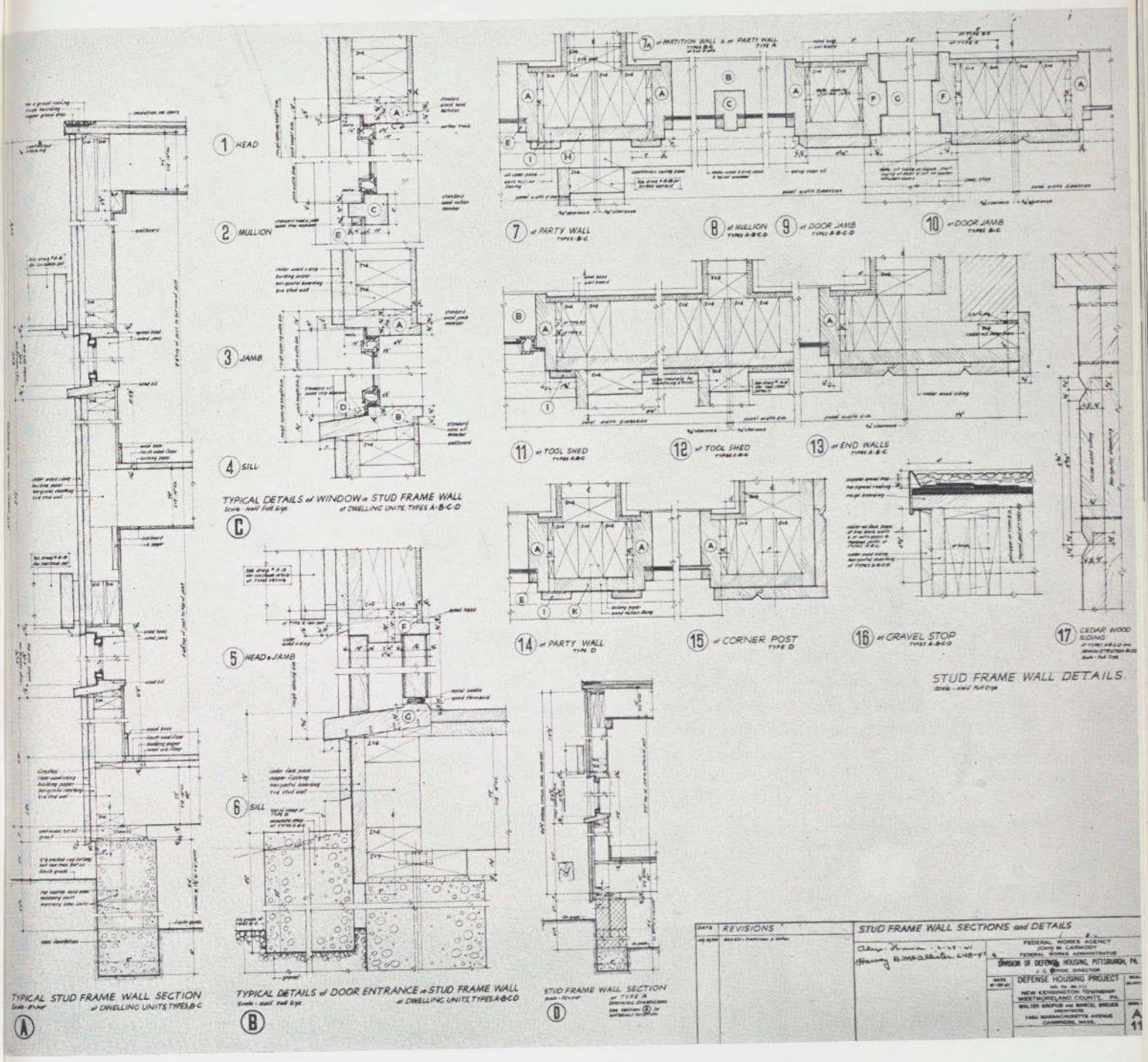


141. Interior (chair by Alvar Aalto)

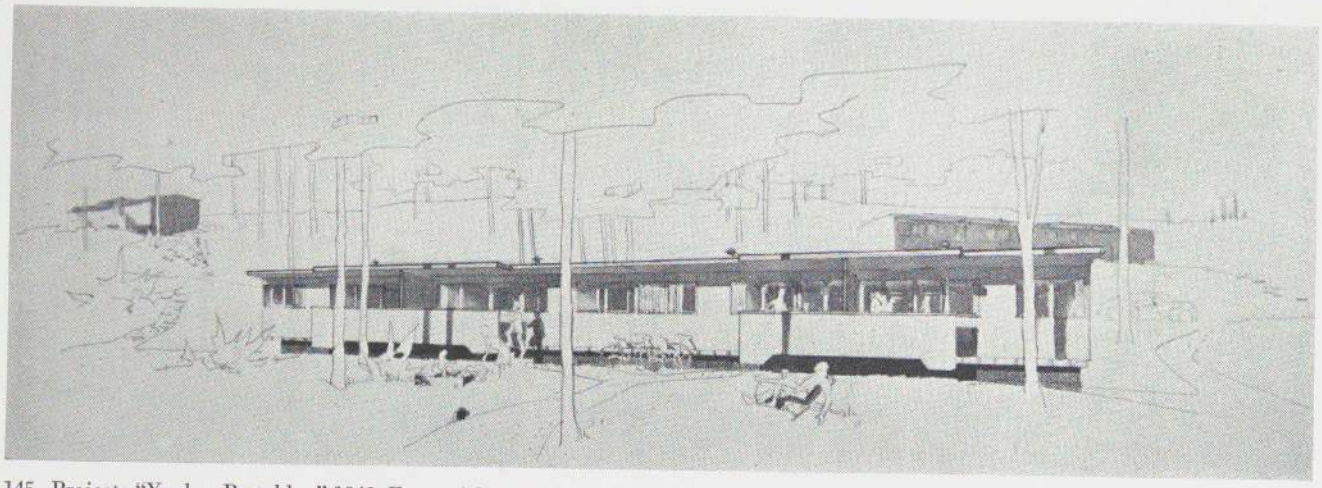
142. Defense housing project, New Kensington, Pa., 1941. Dwelling unit (Gropius and Breuer)



143. Site plan



144. Typical working details

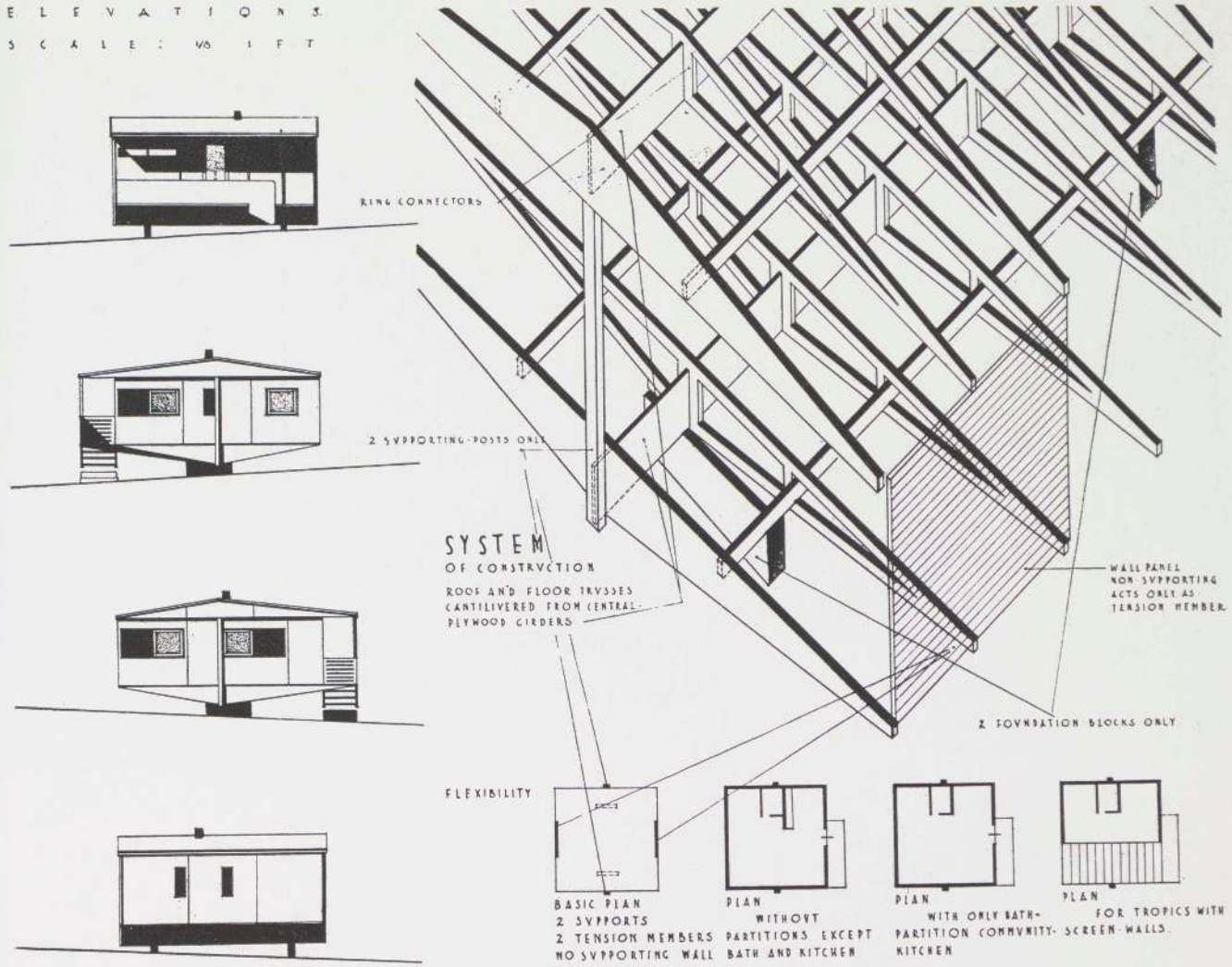


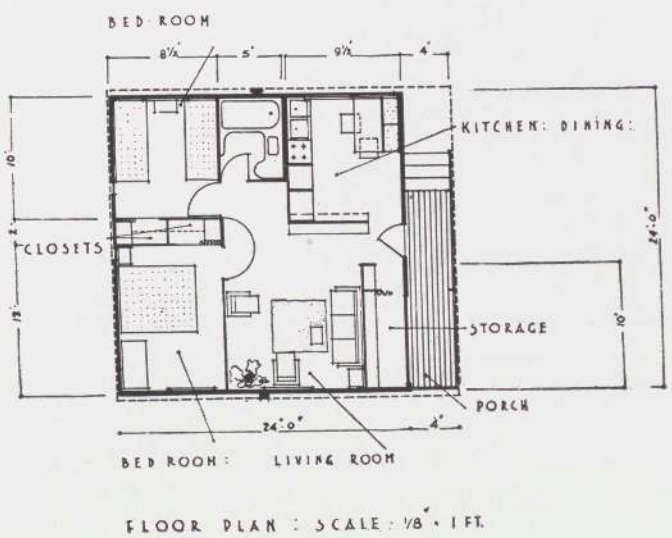
145. Project: "Yankee Portables," 1942. For prefabrication in wood

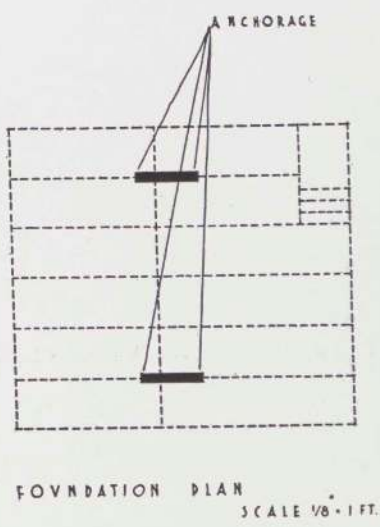
1941 - 1949

Breuer's last years in Cambridge were again busy with post-war projects—hopeful ideas for advancing prefabrication techniques under the pressure of war housing demands, and hopeful schemes for post-war houses and city plans. In 1942 he designed two prefabricated buildings: the "Yankee Portables" and the "Plas-2-Point" house (pls. 145–147). Each was demountable, each eminently practical. And each was conceived as an assembly-line product. Breuer was now thoroughly familiar with American frame-construction methods. He could talk to lumber mill foremen in the kind of language they understood. He had come a long way from that planer in Bolek's shop, in Vienna. . . . . The "Plas-2-Point" house is especially interesting, for it is virtually supported on two points only, with cantilevered plywood girders forming the floor and roof. The side

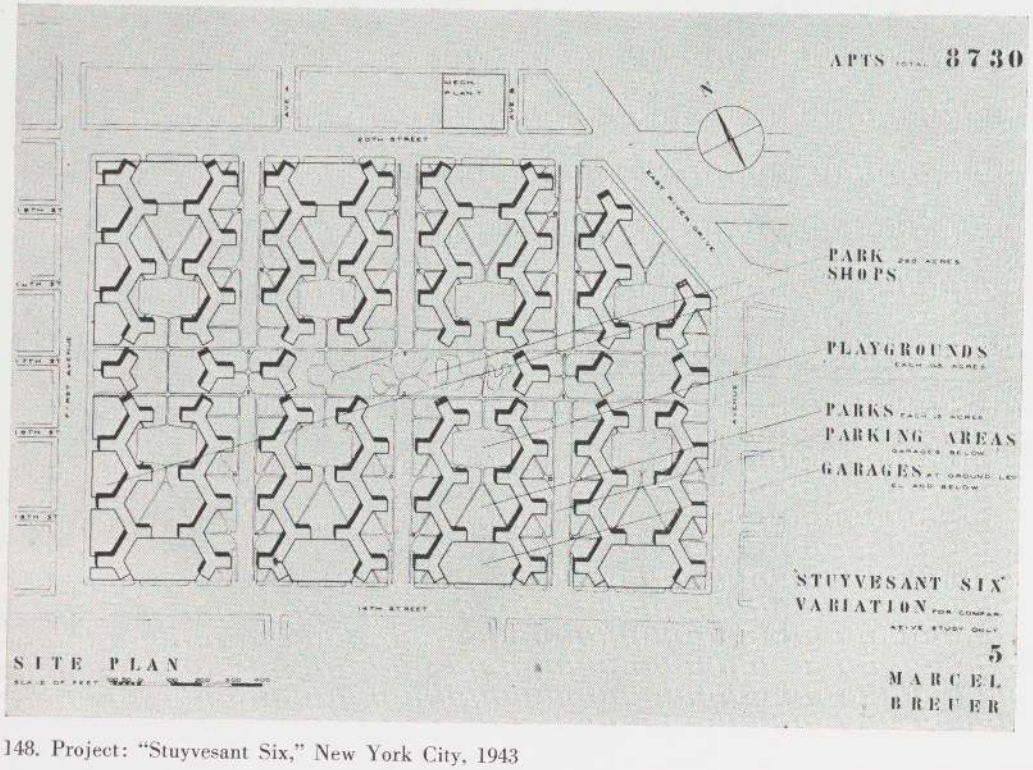
146. Project: "Plas-2-Point" house, 1942. For prefabrication in wood



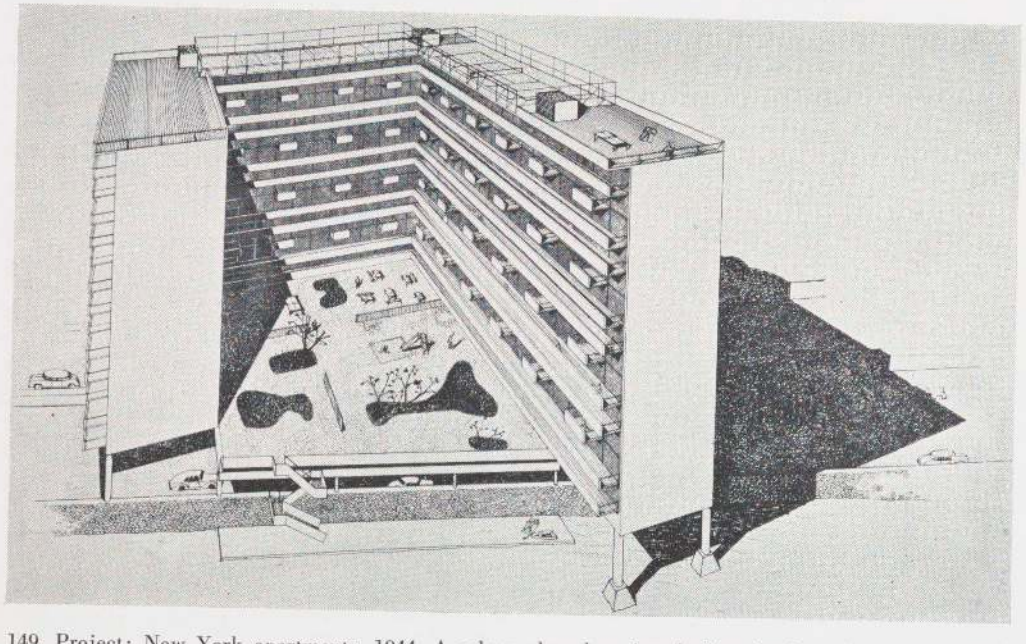




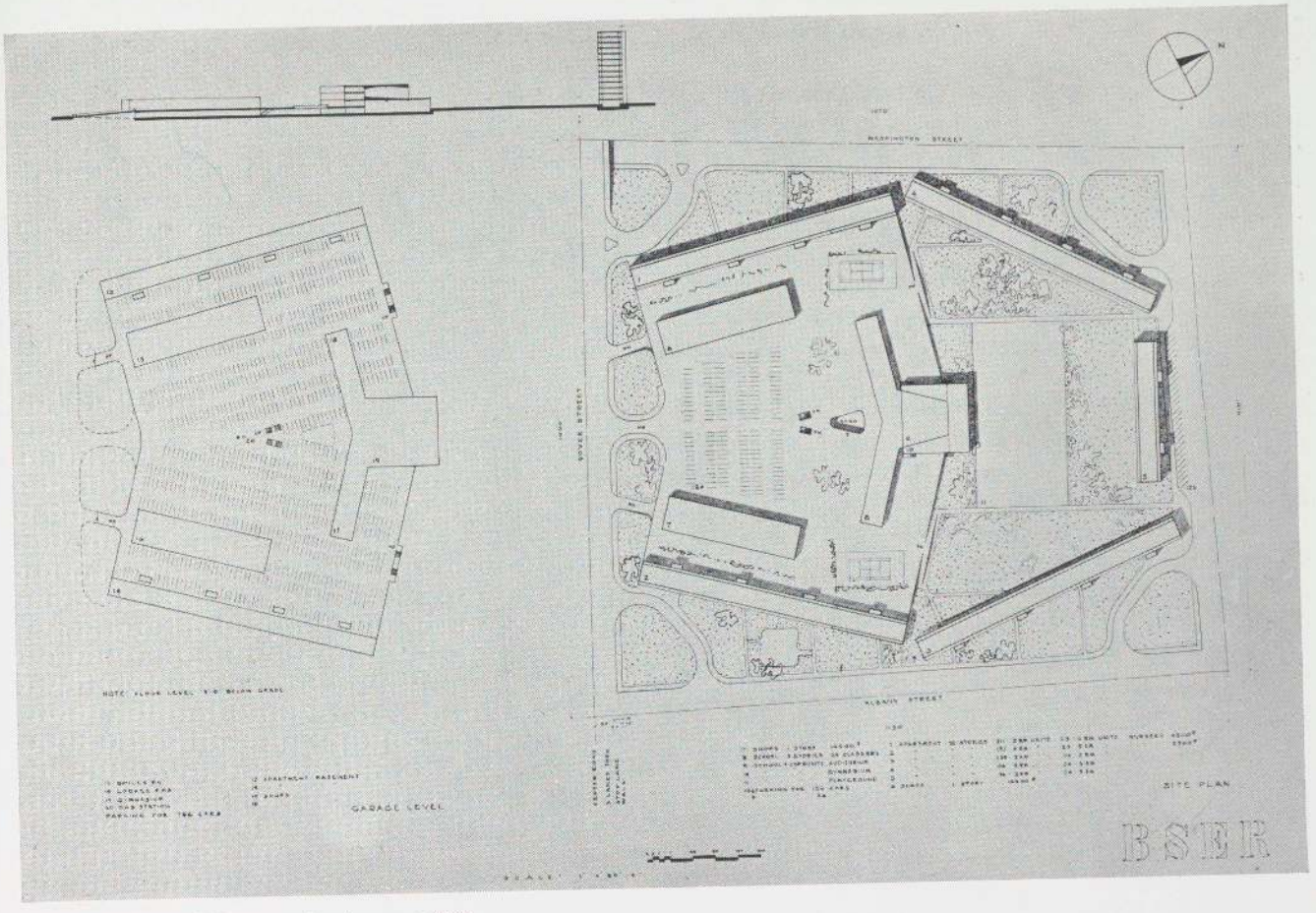
147. Plans, elevations and framing diagram



148. Project: "Stuyvesant Six," New York City, 1943



149. Project: New York apartments, 1944. A scheme based on interlocking levels and access corridors on every third floor



150. Project: South Boston redevelopment, 1943

151. Project: Smith College dormitories, 1945

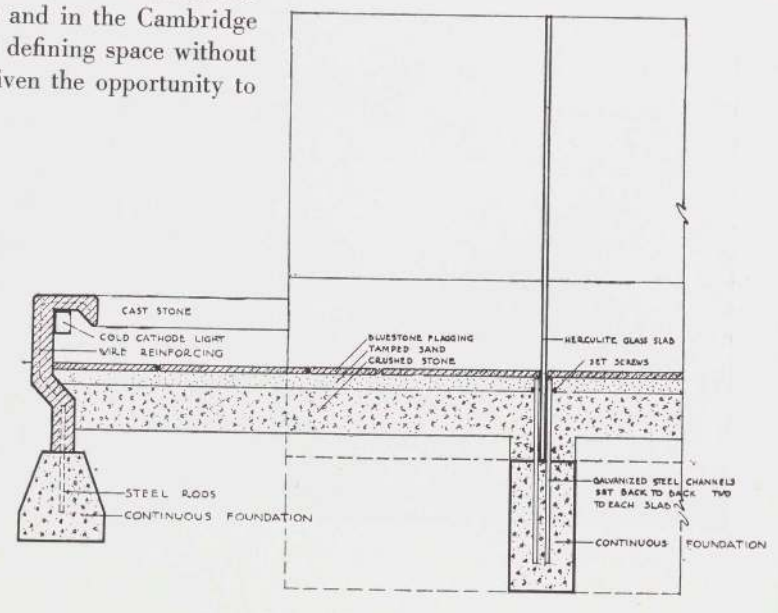
walls, again made of rigid panels, are *in tension*, holding down the roof as in a tent.

A year later, in the midst of the battle against the conservative scheme for Stuyvesant Town, Breuer produced an alternative project of widely spaced towers with interlocking apartments for the proposed site on lower Manhattan (pl. 148). He said: "Although (social scientists and planners) . . . say that our metropolises are both undesirable and unnecessary, it is a fact that large cities have stood in all cultures and all ages, and that they are here today. They have a practical and psychological fascination. . . . ." Like Le Corbusier, Breuer could accept the stimulating influences of vernacular building and yet remain essentially a modern, citified intellectual.

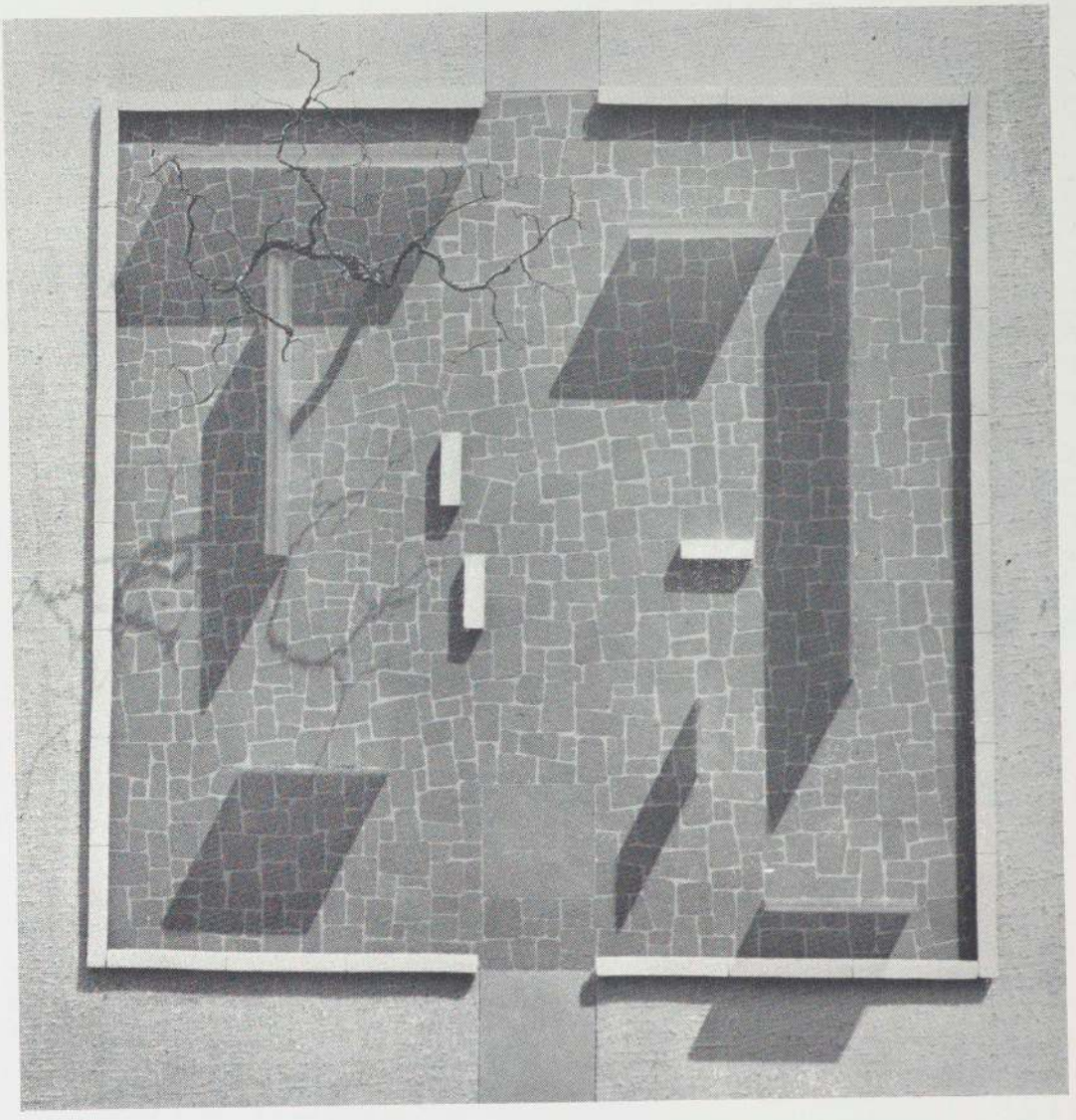
At about the same time Breuer produced a scheme for the redevelopment of an area in South Boston (it was the time of fond hopes of the post-war world). This project (pl. 150) contained apartments and schools around a huge hexagonal court in the center of which was a community building. Part of the court's area was raised above the ground to permit parking and shopping underneath. The project had a certain classical quality found in Italian piazzas. It was every inch "city"—"no 'country-suburban romanticism,'" Breuer said.

His most important project of the last years at Cambridge was, oddly enough, a monument (pl. 153). In 1945, Breuer designed a Memorial Plaza to be located in the path of a pedestrian thoroughfare, in the Cambridge Common. Its plan was a small square, 50′ x 50′, surrounded by low stone benches, and paved with flagstone. Placed within this square plaza were several vertical sheets of rough and unbreakable plate glass, to compose translucent space-divisions and to articulate the area as a whole. The names of service men and women from Cambridge were to be baked into the surface of the glass screens, to be lit up at night by spotlights from beneath the stone benches.

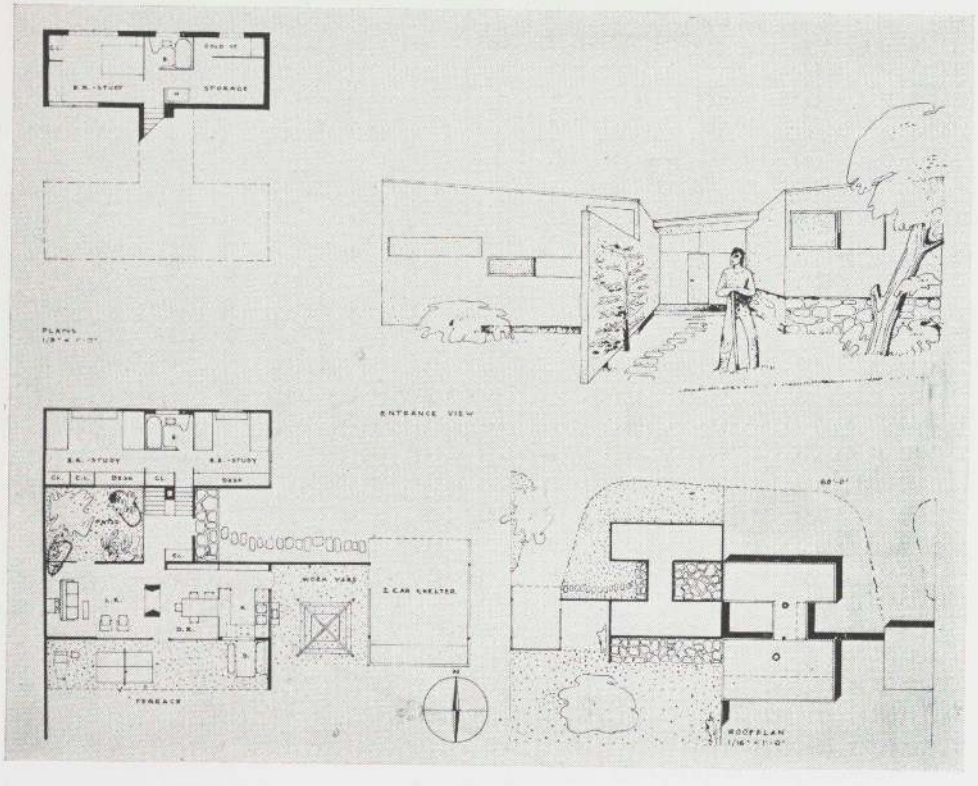
In this Memorial Plaza Breuer achieved again what he had achieved in the Bristol Pavilion: an architectural solution without esthetic compromise, a complete work of art, a pure space. There is no greater architectural experience than that of space; and yet it is the most difficult one to convey, for space must be both limitless and carefully circumscribed to achieve any meaning. In both the Bristol Pavilion and in the Cambridge Memorial, Breuer succeeded in circumscribing and defining space without destroying it. One may hope that he will yet be given the opportunity to build his small monument.



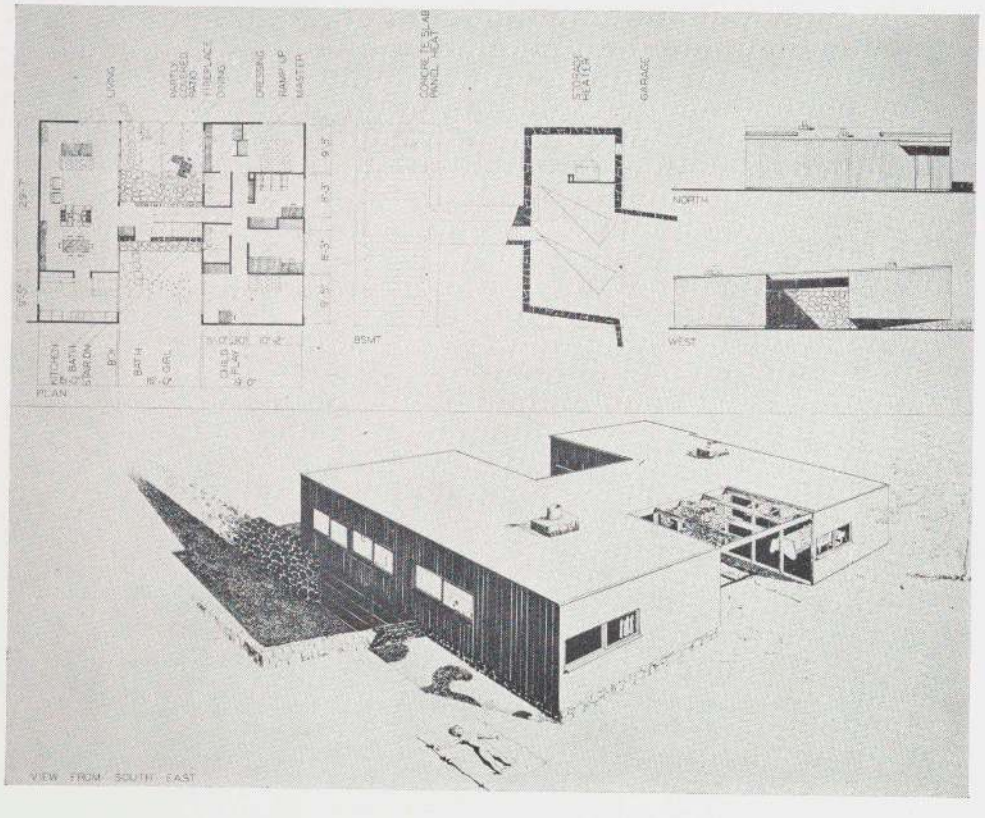
152. Project: Cambridge Memorial, 1945. Typical section



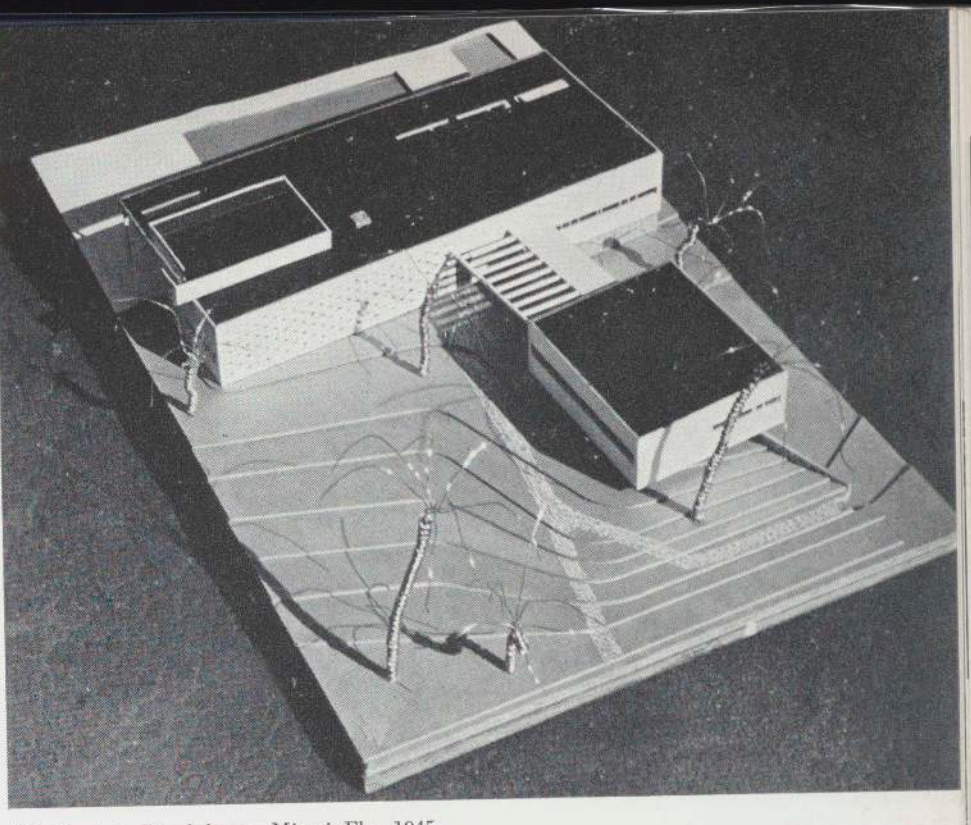
153. Plan



154. Project: "H-house," 1943



155. Project: "Bi-nuclear house III," 1945



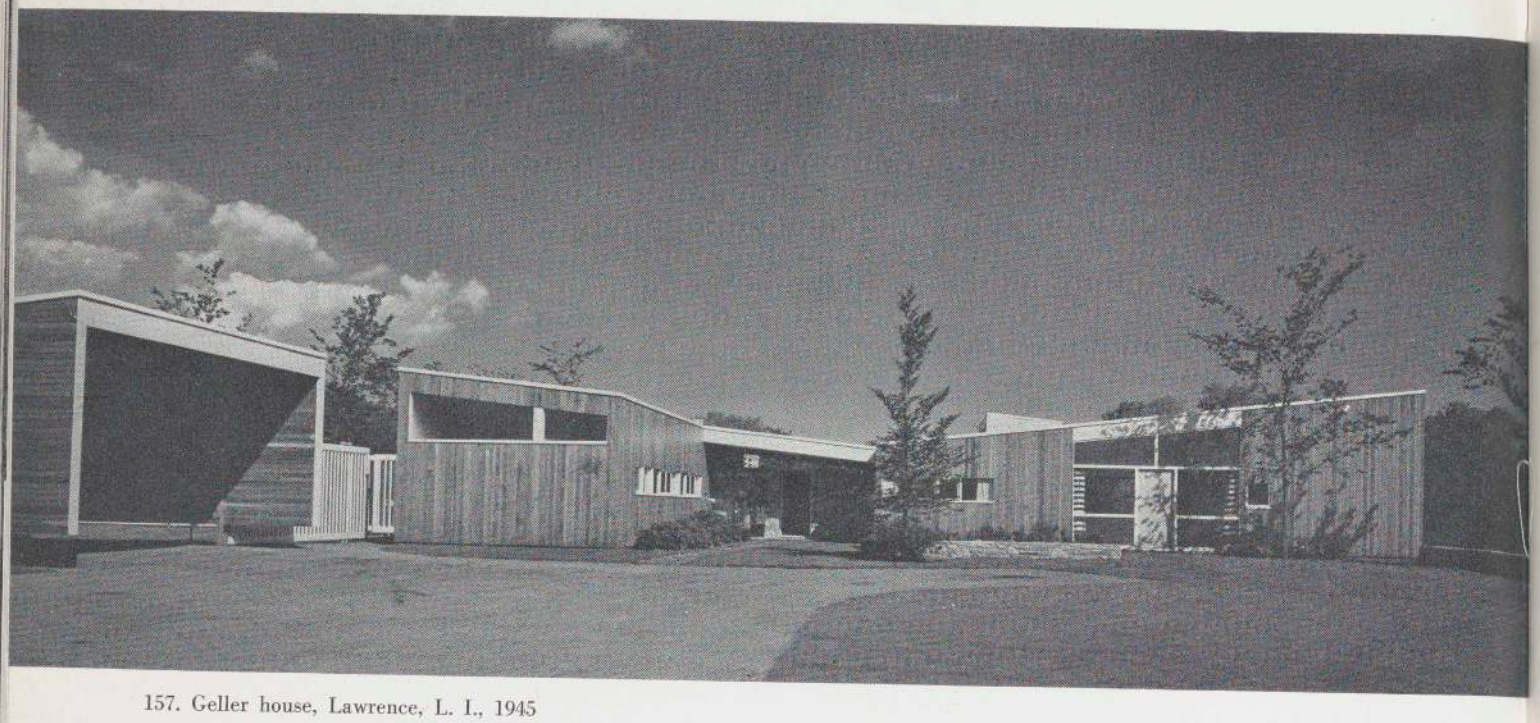
156. Project: Beach house, Miami, Fla., 1945

There were several residential projects to occupy Breuer's attention during the remaining years of the war. Of these, the most interesting was his 1943 plan for a "bi-nuclear" house—a type which he has repeatedly used since, and which expresses better than any other plan Breuer's convictions about the way architecture can serve the needs of American family living.

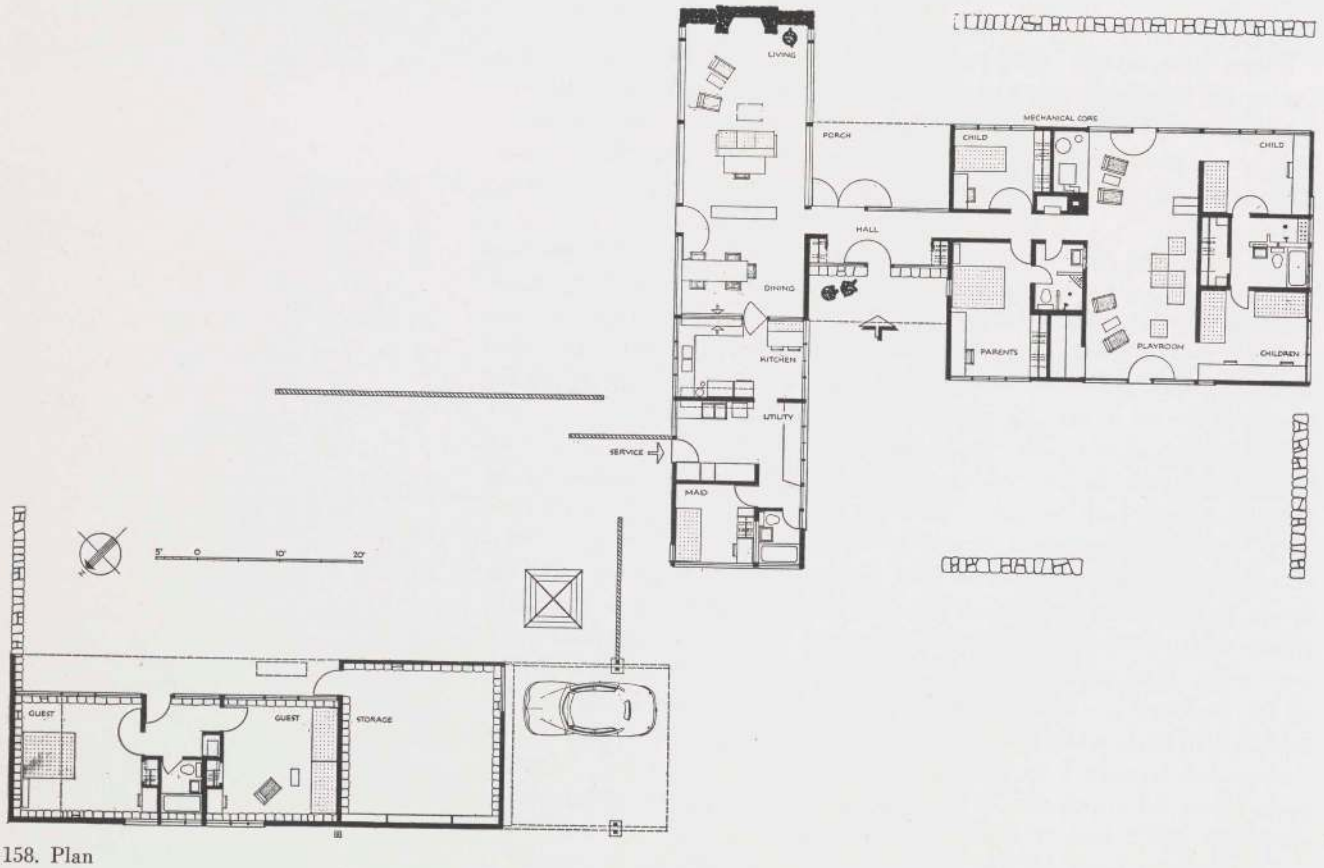
The bi-nuclear plan in its essentials consists of two separate elements joined, roughly, in the shape of an H. One element contains all the areas used during the daytime—living and dining areas, kitchen, utility room and so on—while the other element contains bedrooms and bathrooms, as well as children's play areas (pl. 158). The entrance is located at the center of the H, in the link connecting the two main elements.

The beauty of this plan lies in its clean organization, its simplicity of management, and in its creation of zones of privacy. For a small family without outside help the plan has many conveniences: only the daytime wing needs to be kept up in presentable condition, while the bedroom-playroom element can safely become the necessarily chaotic domain of children; furthermore, the connecting link forms an excellent sound baffle between the parents' rest and work space, and the children's realm of self-expression. The plan is, moreover, so flexible that differences in the slope of the land can be overcome in the link itself (which can be turned into a kind of ramp), while problems of orientation, view, and other site conditions can be solved by shifting the bi-nuclear elements in relation to each other. So successful is this plan that it has formed the basis of numerous recent designs, both by Breuer and by others.

The esthetic basis for the bi-nuclear plan is again to be found in Breuer's devotion to Constructivism. More than twenty years before the bi-nuclear plan, we found that Breuer had established a certain principle



157. Geller house, Lawrence, L. I., 1945



158. Plan

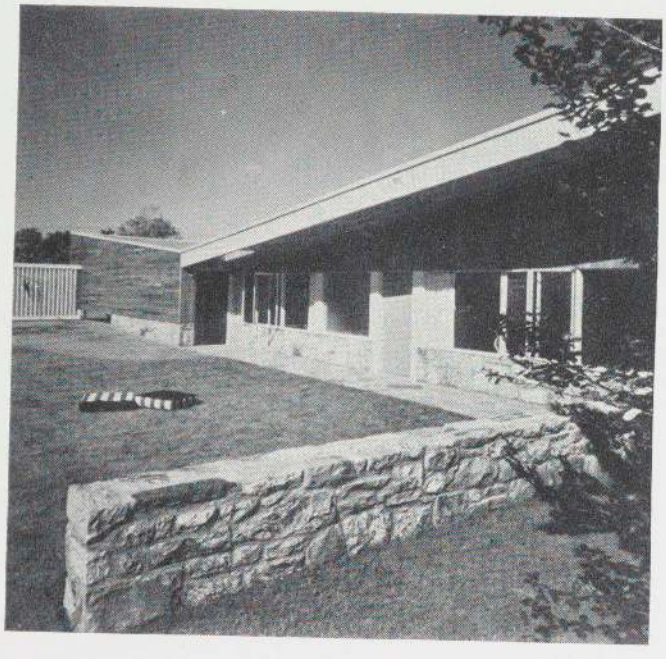
159. West view

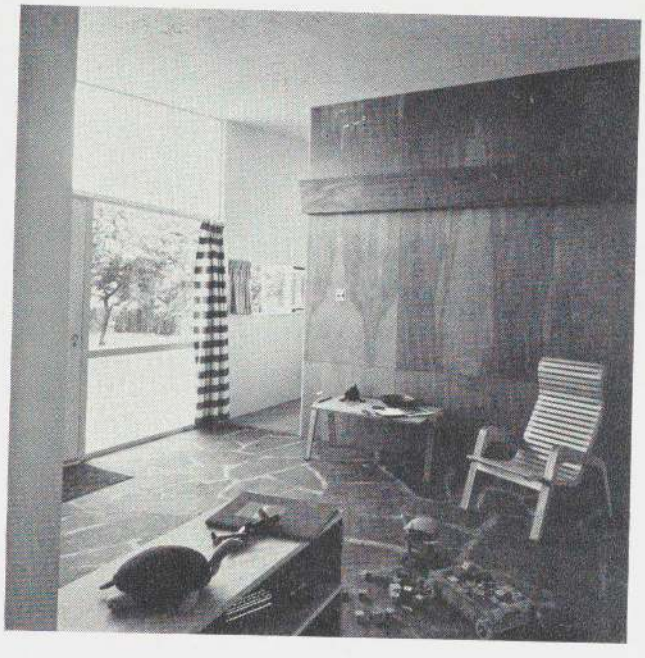
in his work with furniture, and that this principle was one of the main facets of Constructivism: he had decided that elements with different functions (such as the supporting frame of a chair as opposed to its seat and back), should be expressed in terms of different materials and elements clearly distinguished from each other in character. His first chairs had followed that principle in 1922. Now, many years later, Breuer's bi-nuclear houses reaffirmed it. In philosophical terms there is no difference between the steel chairs and the Geller house (pl. 157).

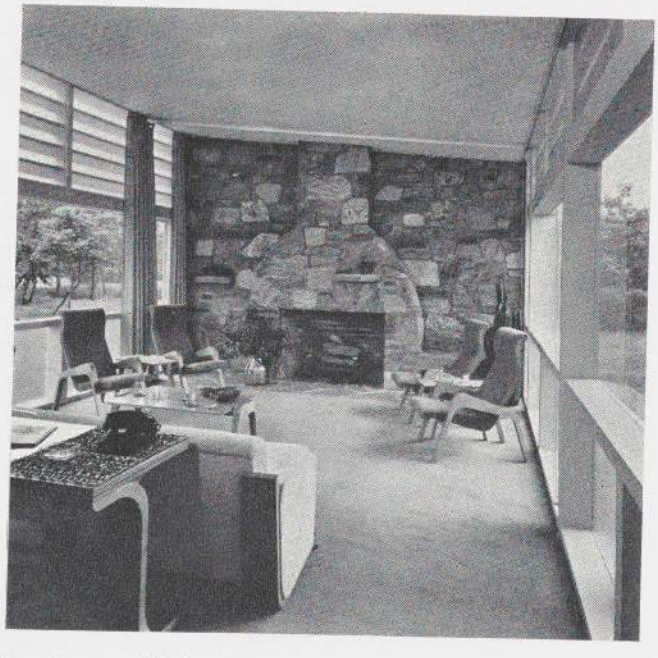
The houses Breuer has built since the end of the war are too numerous to discuss in detail. By 1946 he had left Harvard and moved to New York to open an office there. The output of that office has been among the most important contributions to domestic American architecture since the war. It has established Breuer's place in that architecture beyond recall.

What is that place? In addition to having adapted the ideas of Constructivism to the realistic problems of architecture, Breuer is still a Purist, too. In the Tompkins house (pl. 171) and in his own magnificent house in New Canaan (pl. 178) he has again produced a variation of the floating *prisme pur*. In his bright color schemes he still shows the discriminating eye of a painter. And in his juxtaposition of planes and lines, and in his handling of interlocking volumes and masses, there is more than a trace of the pioneer work of a Rietveld and a Lissitzky.

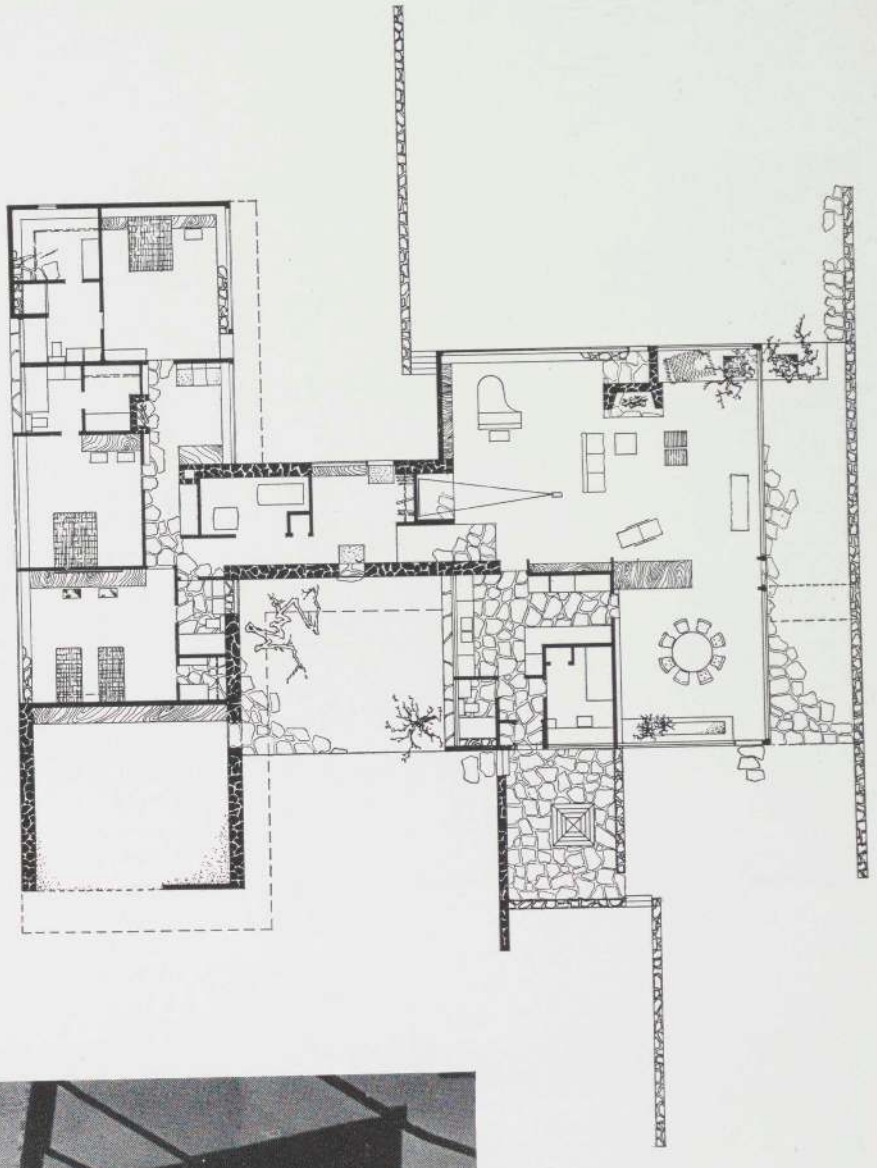
Yet these are not the things Breuer talks about when he describes his own work. To him the easiest way to put across his meaning is to talk of his houses in terms of the life for which they were designed, in terms of their plans for family living. When he recently described his exhibition house in the garden of the Museum of Modern Art (pl. 190), he talked only about its plan and its convenience of operation. He hardly mentioned the materials of which it was built (and which were chosen by him on purely esthetic grounds, after much consideration) and he never mentioned the architectural form of the building as he had conceived it. And yet it is these esthetic concepts, *together* with his practical knowledge of structure and plan, that make Breuer a great architect—rather than merely a great housekeeper. He is the epitome of what Gropius meant by his new concept of a designer: the man who is part technician, and part artist; the man who can creatively select the best elements that industrialism has to offer, and who can relate them in patterns that only an artist could conceive. What makes Breuer's houses great is this creative selectiveness of which he does not like to speak. What makes them successful is that he has made them fit to live in.



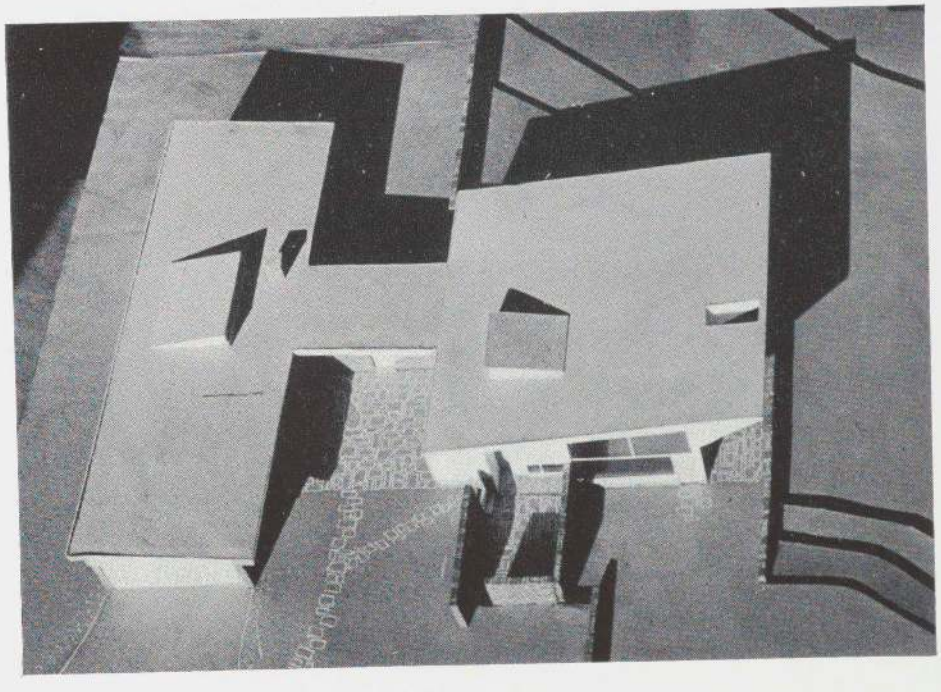




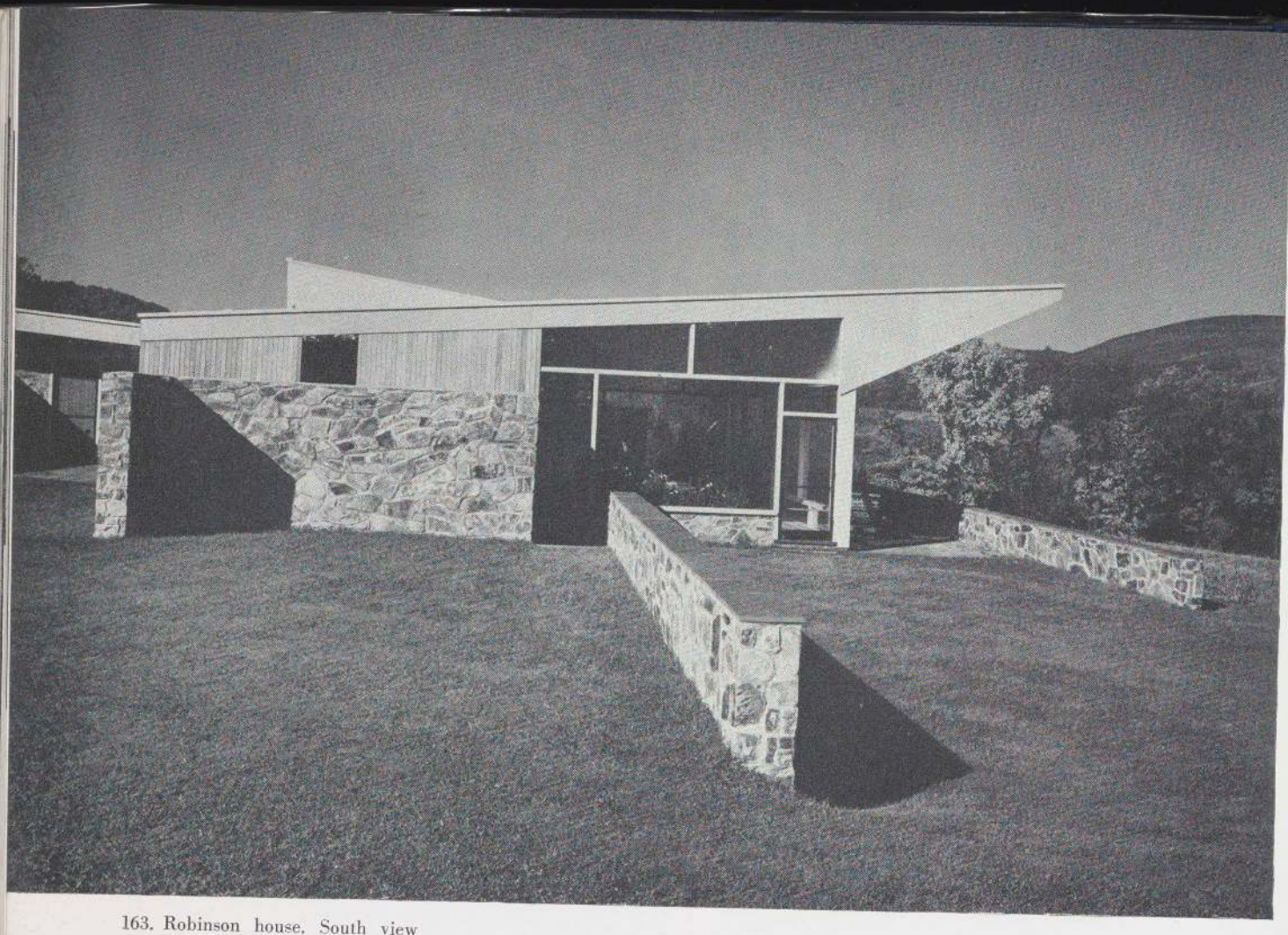
160. Geller house. *top:* Guest house exterior and playroom; *bottom:* Main entrance and living room



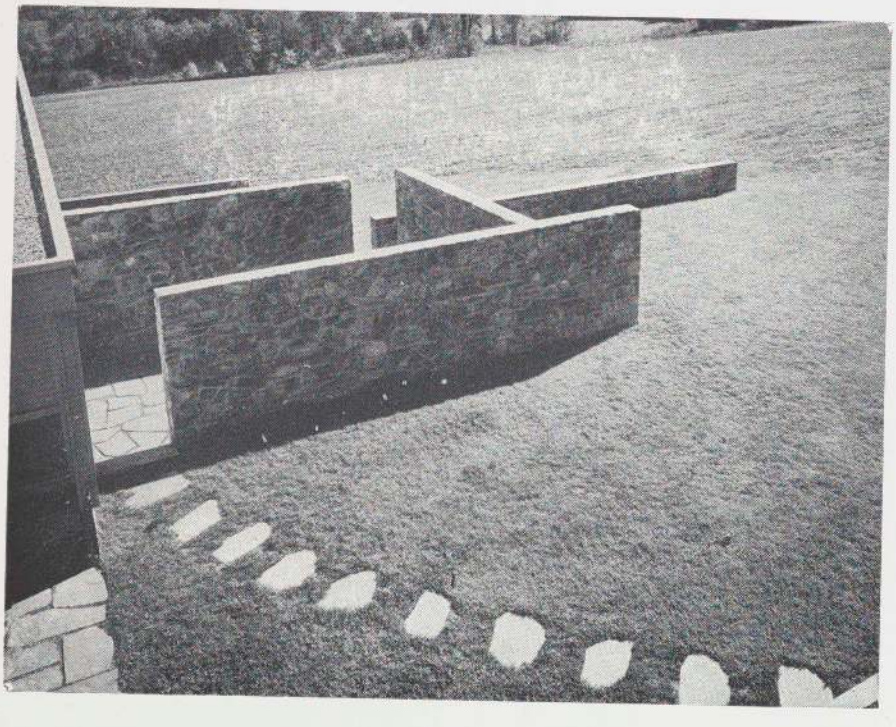
161. Robinson house, Williamstown, Mass., 1947. Plan



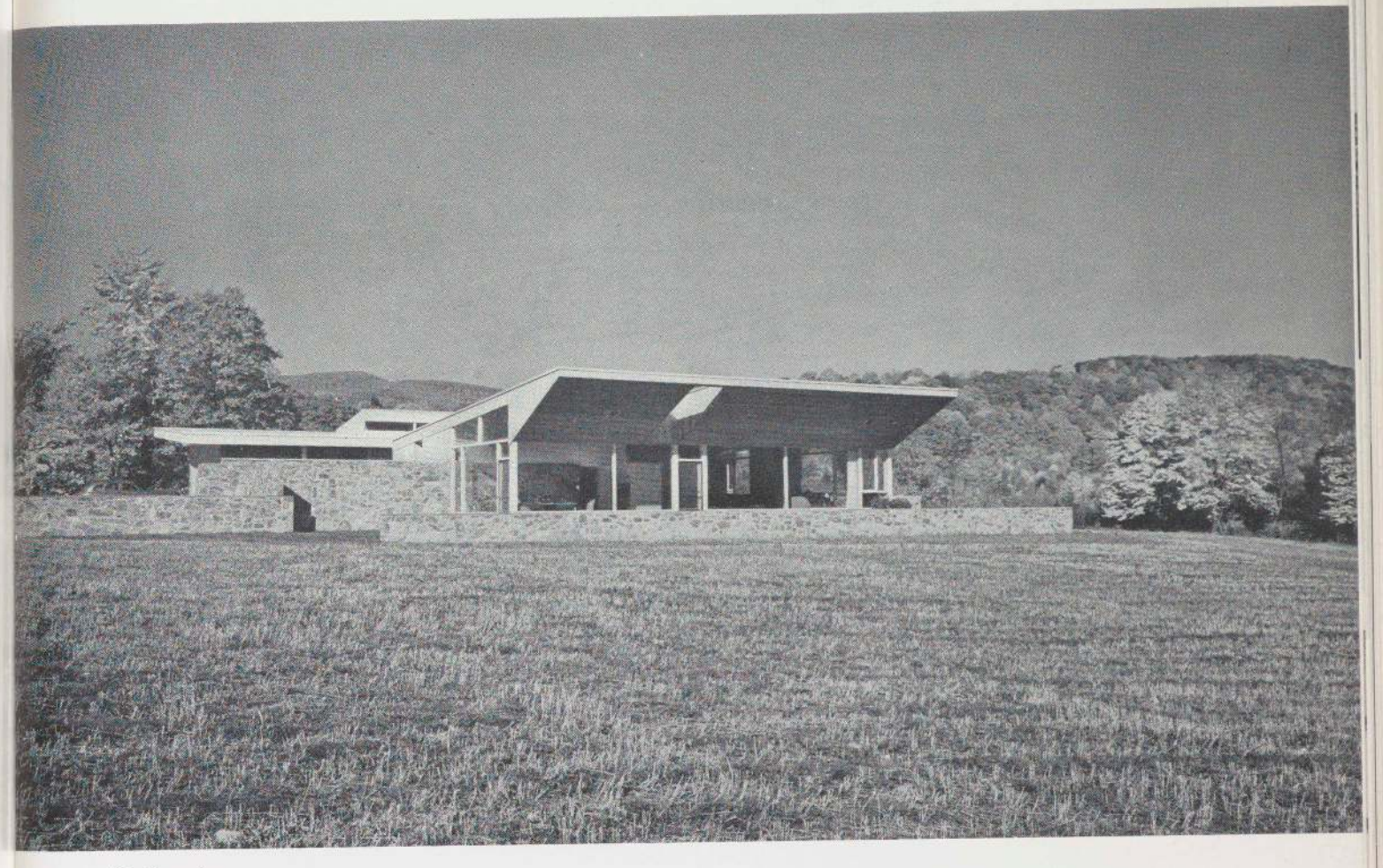
162. Model



163. Robinson house. South view



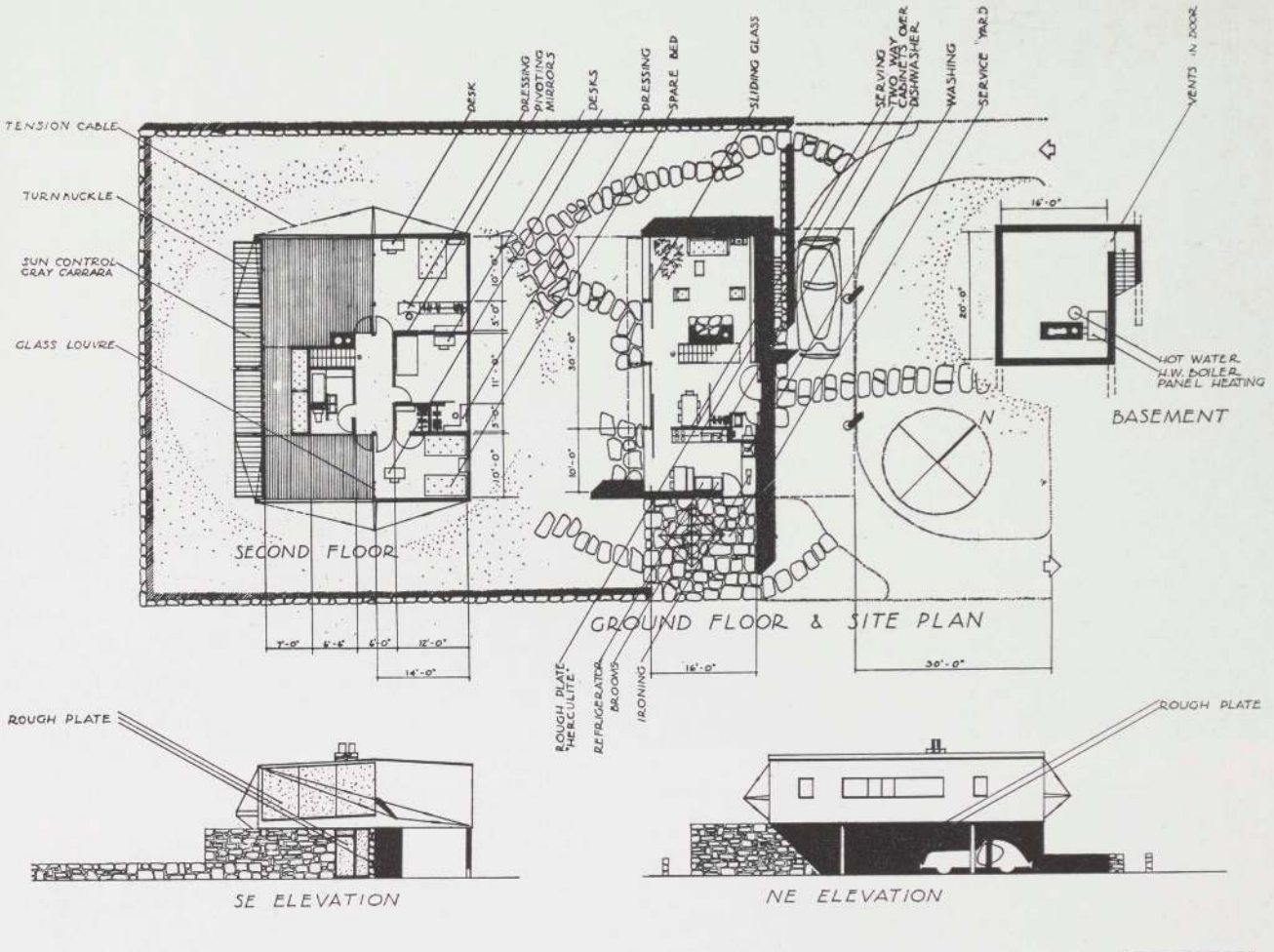
164. Service yard

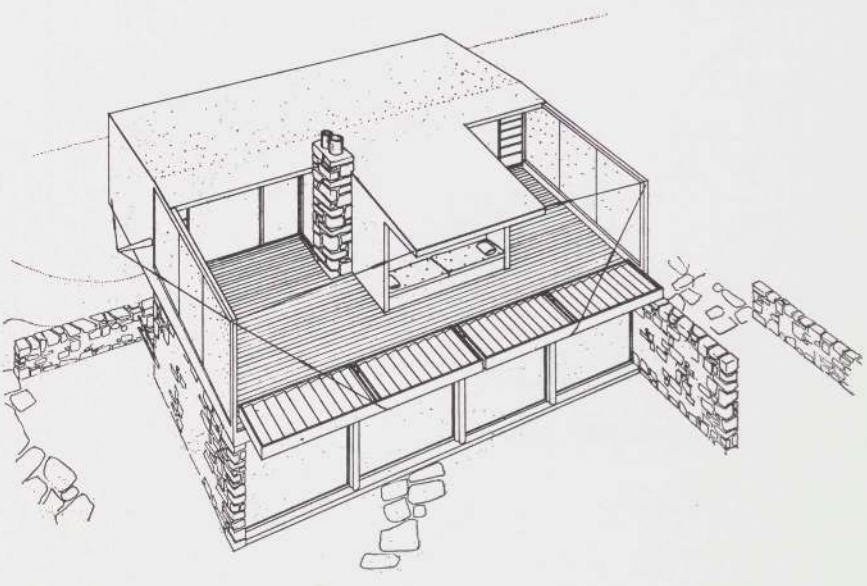


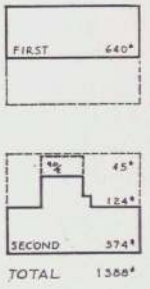
165. East view

166. Robinson house. Dining room and terrace

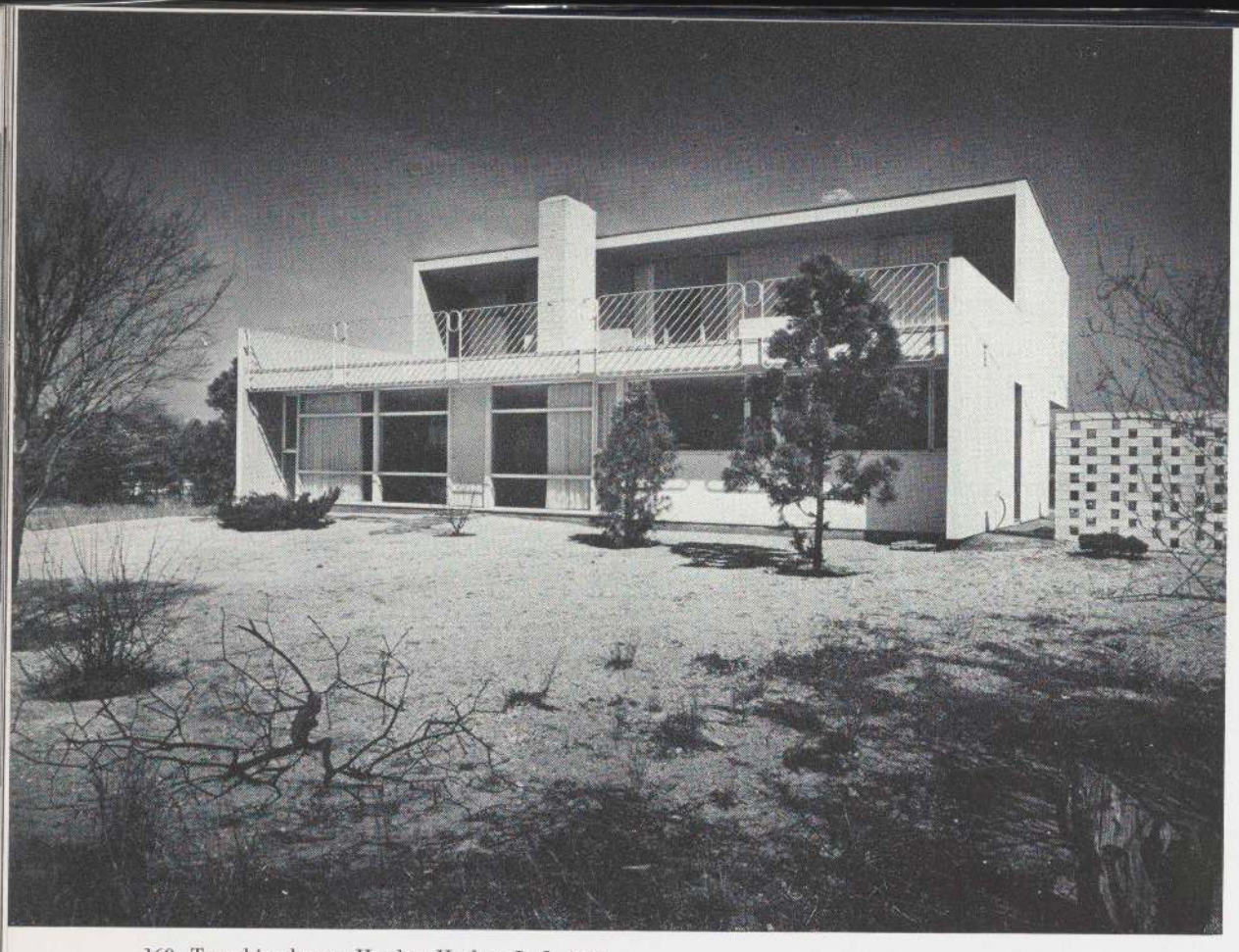
167. Kitchen



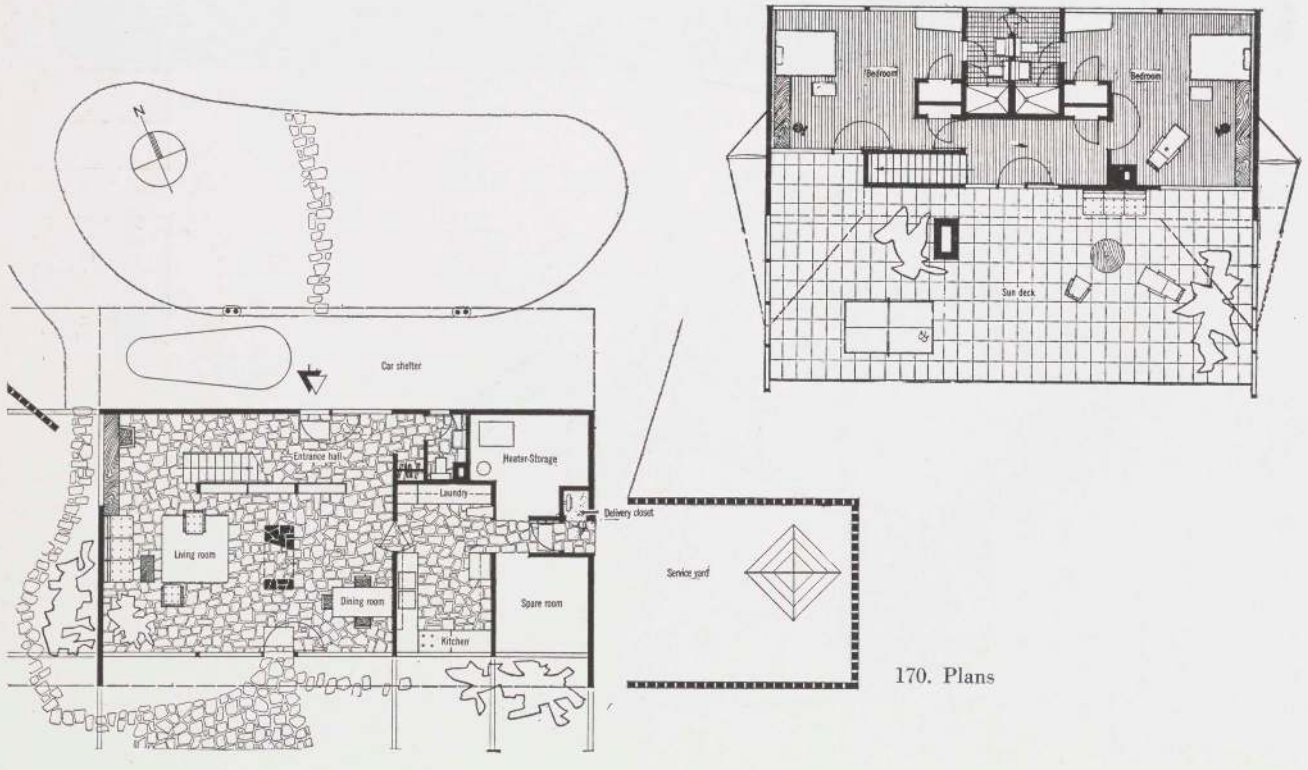




168. Project: Pittsburgh glass house, 1945. Predecessor to the Tompkins house (next page)



169. Tompkins house, Hewlett Harbor, L. I., 1946

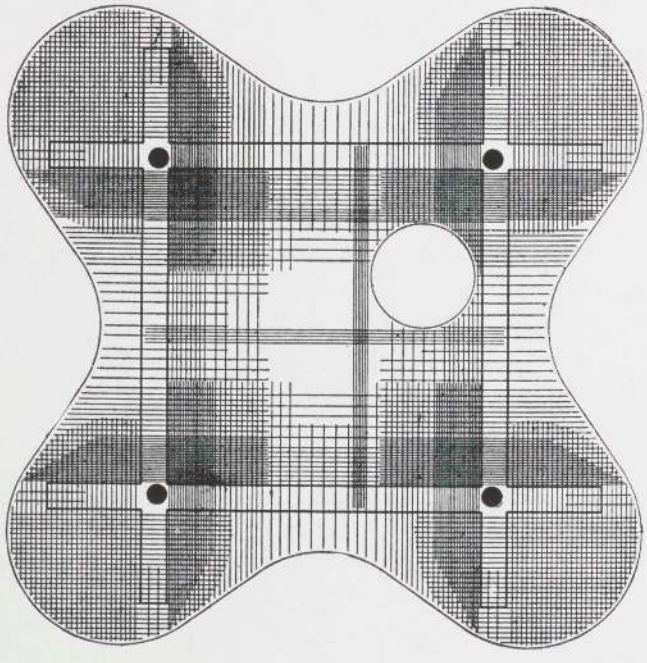


170. Plans

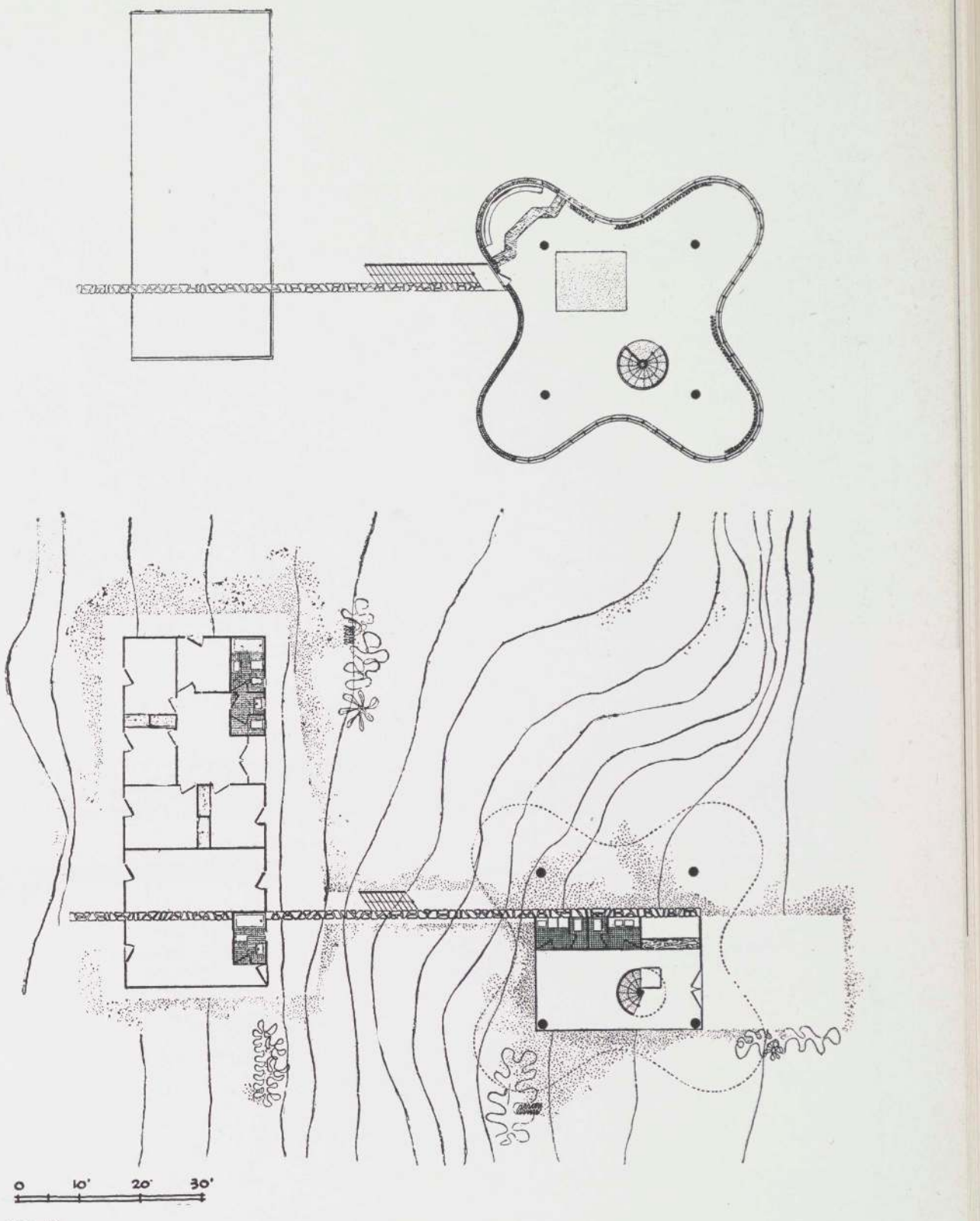
171. Rear view

172. Living room

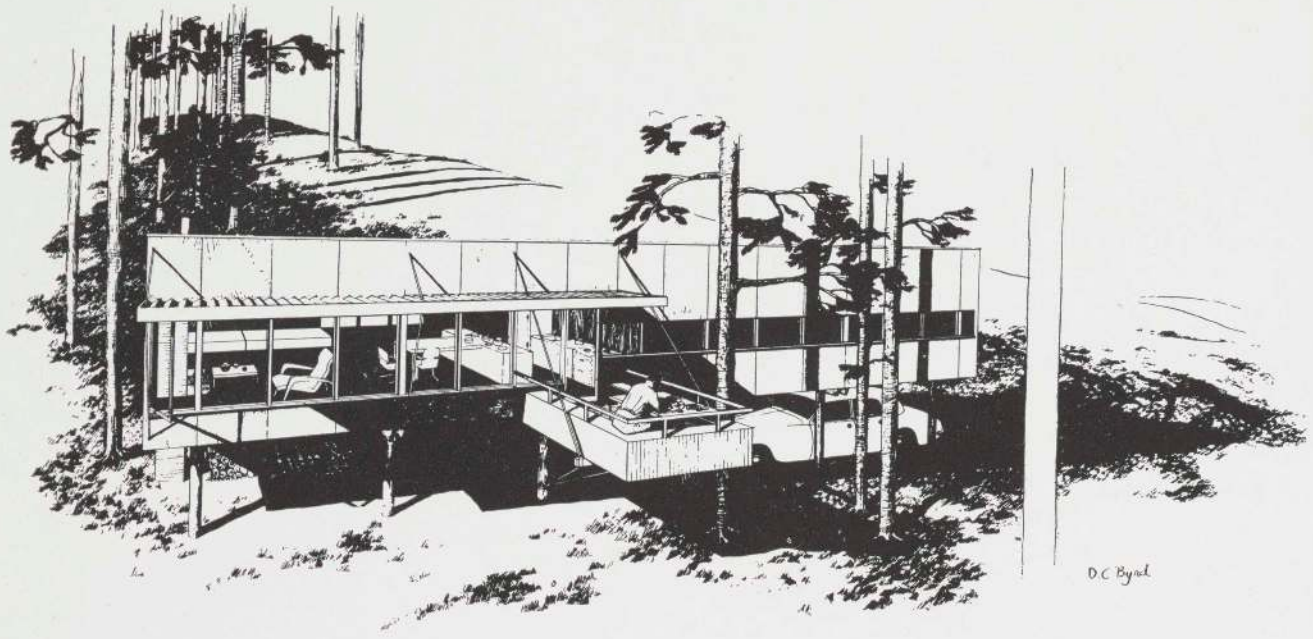
173. Ariston restaurant, Mar del Plata, Argentina, 1947 (Breuer, Coire and Catalano)



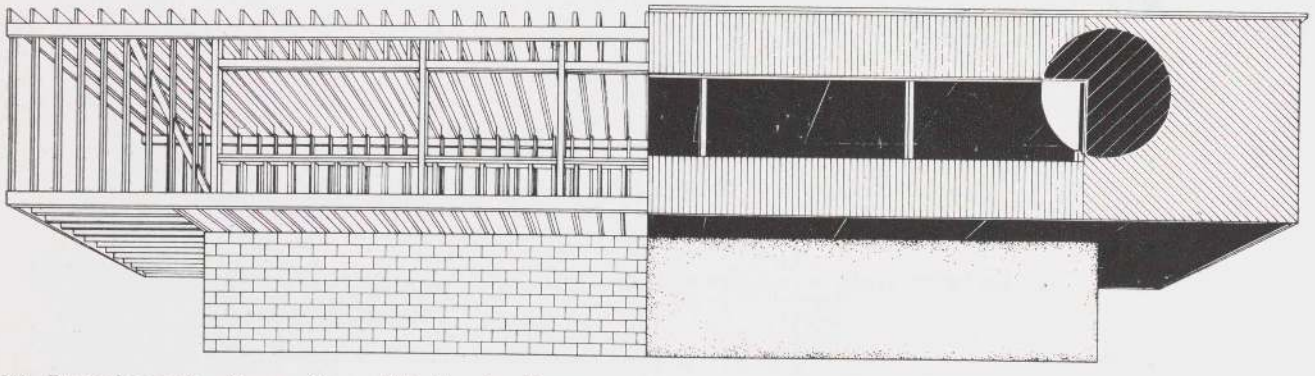
174. Diagram showing steel reinforcement in floor slab



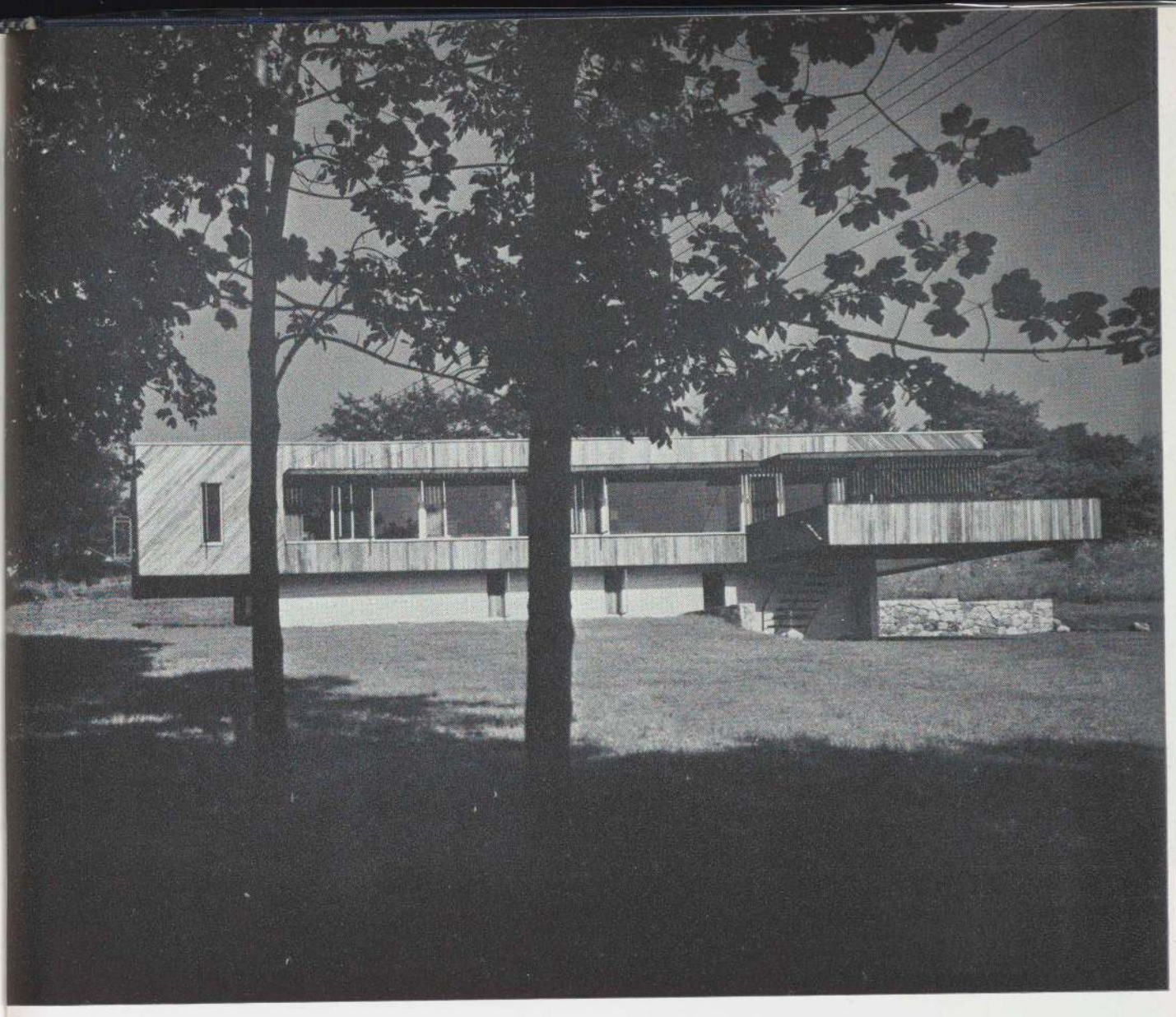
175. Plans



176. Project: Cape Cod cottage, 1945

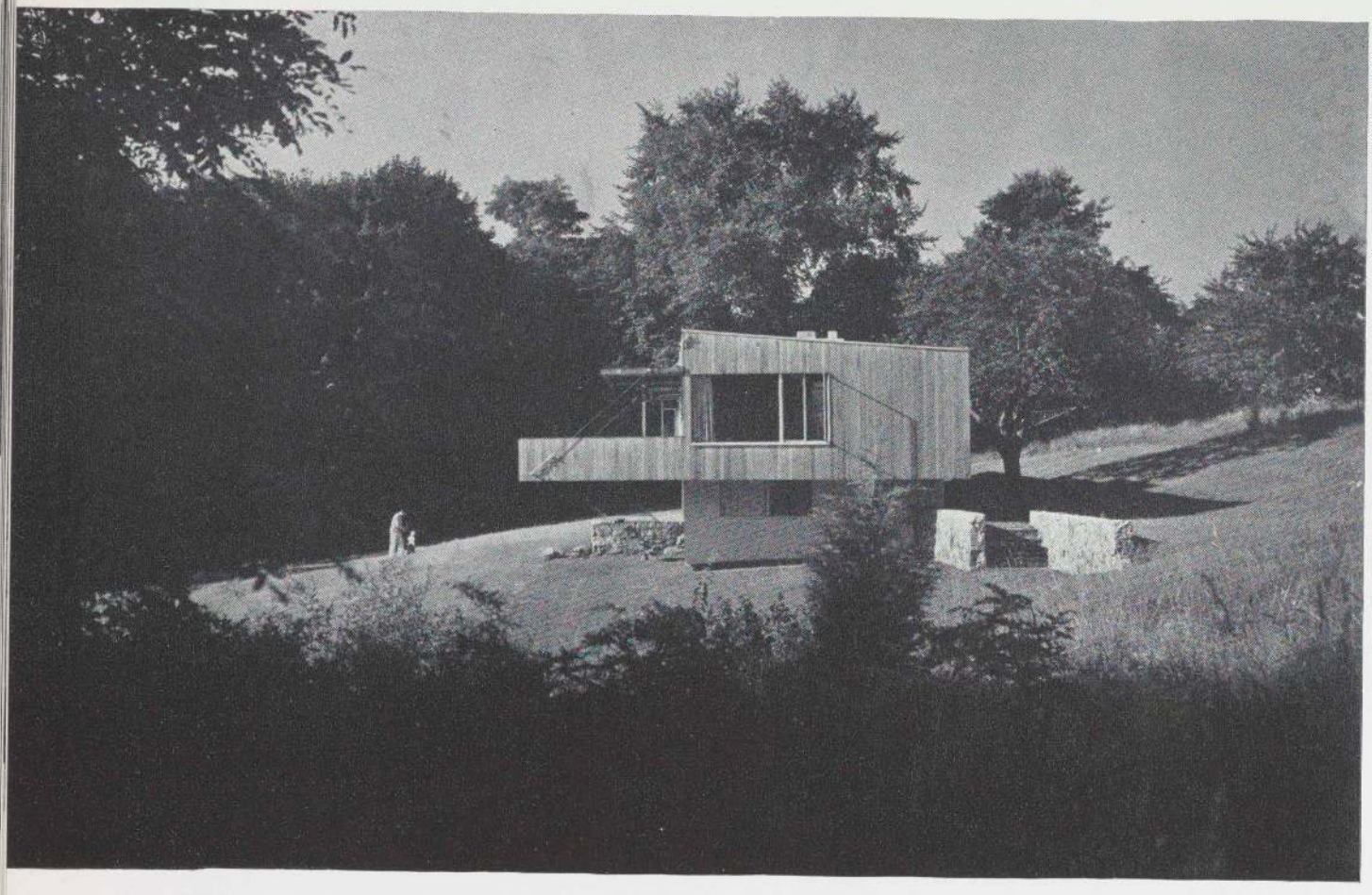


177. Breuer house, New Canaan, Conn., 1947. Framing diagram

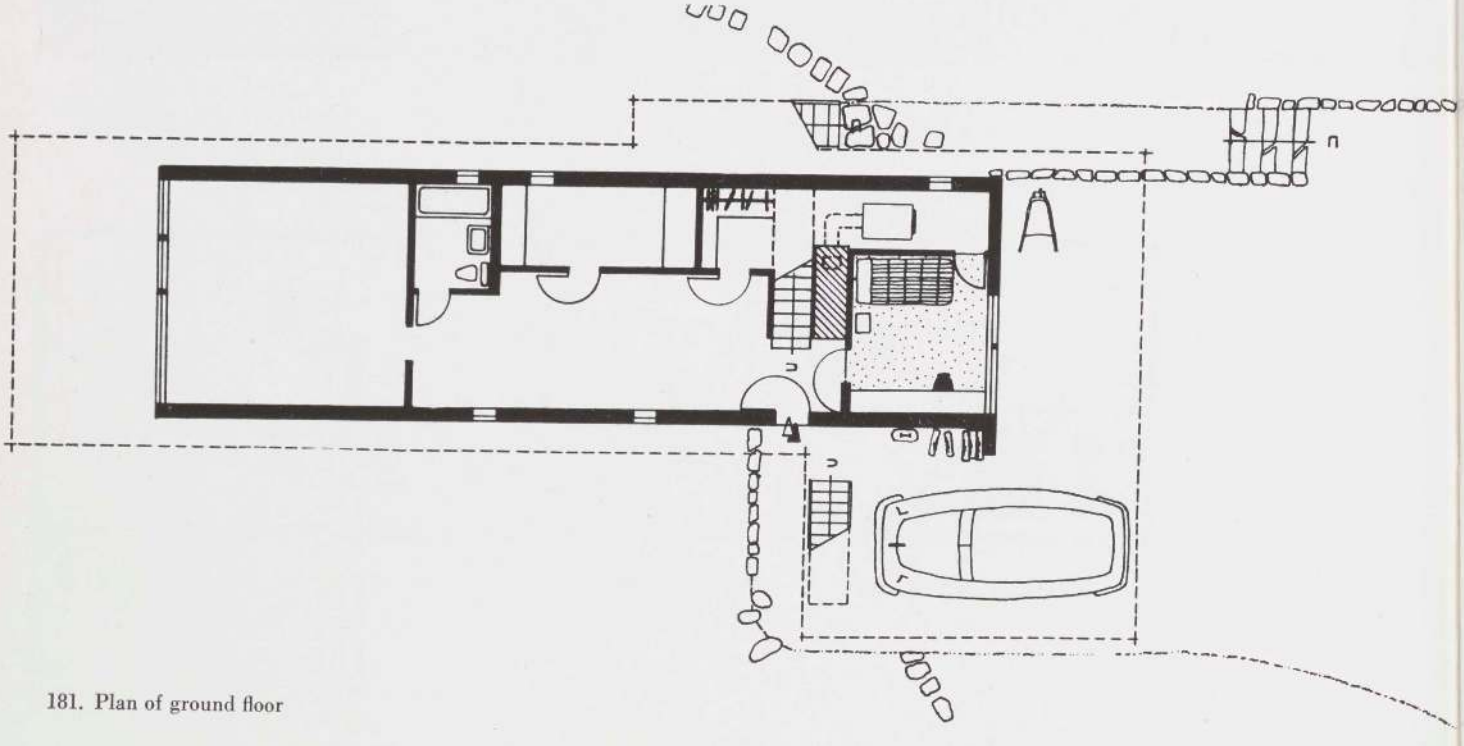


178. Breuer house, New Canaan, Conn., 1947. Southeast view

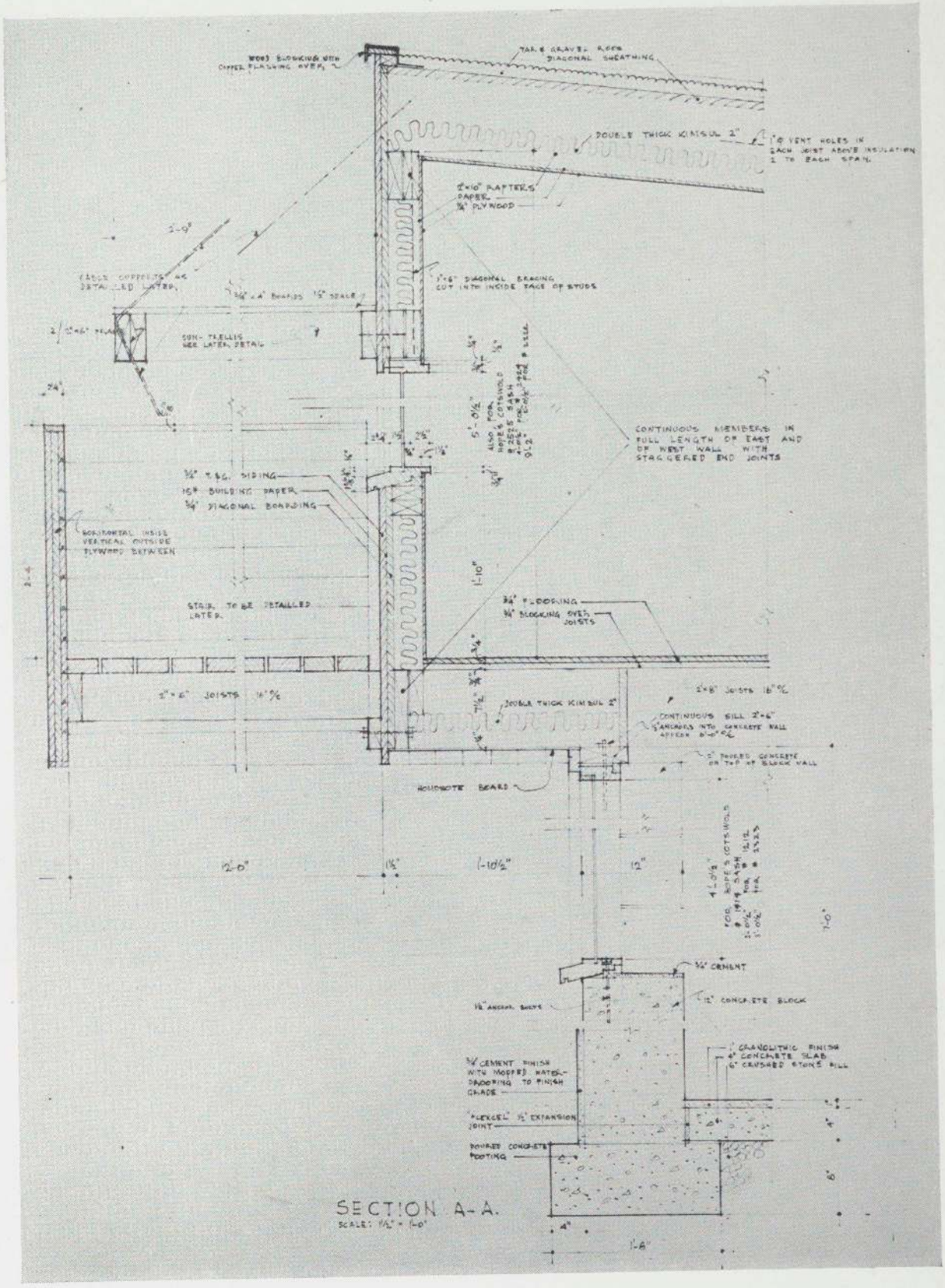
179. Plan of living floor



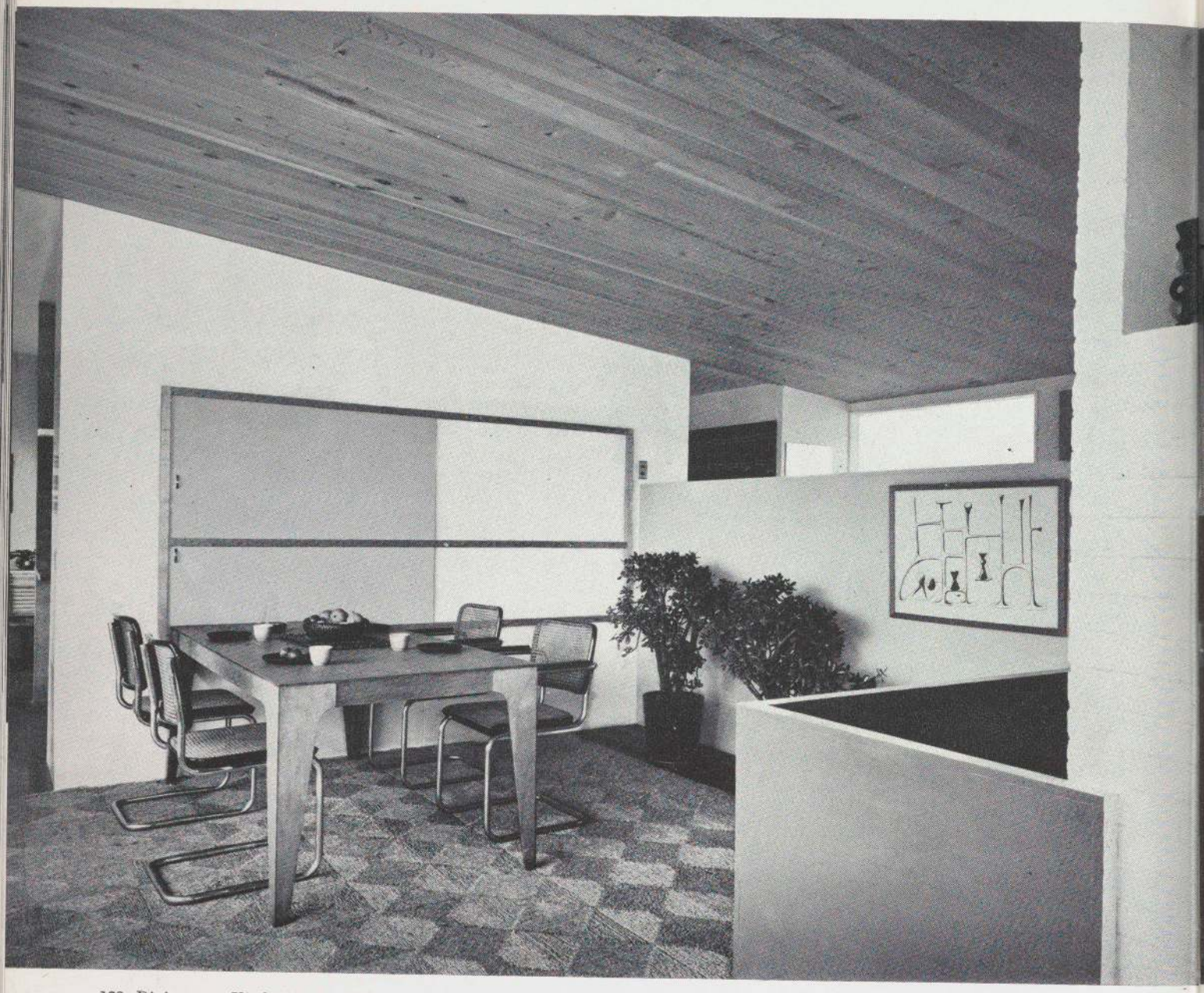
180. Breuer house. Northeast view



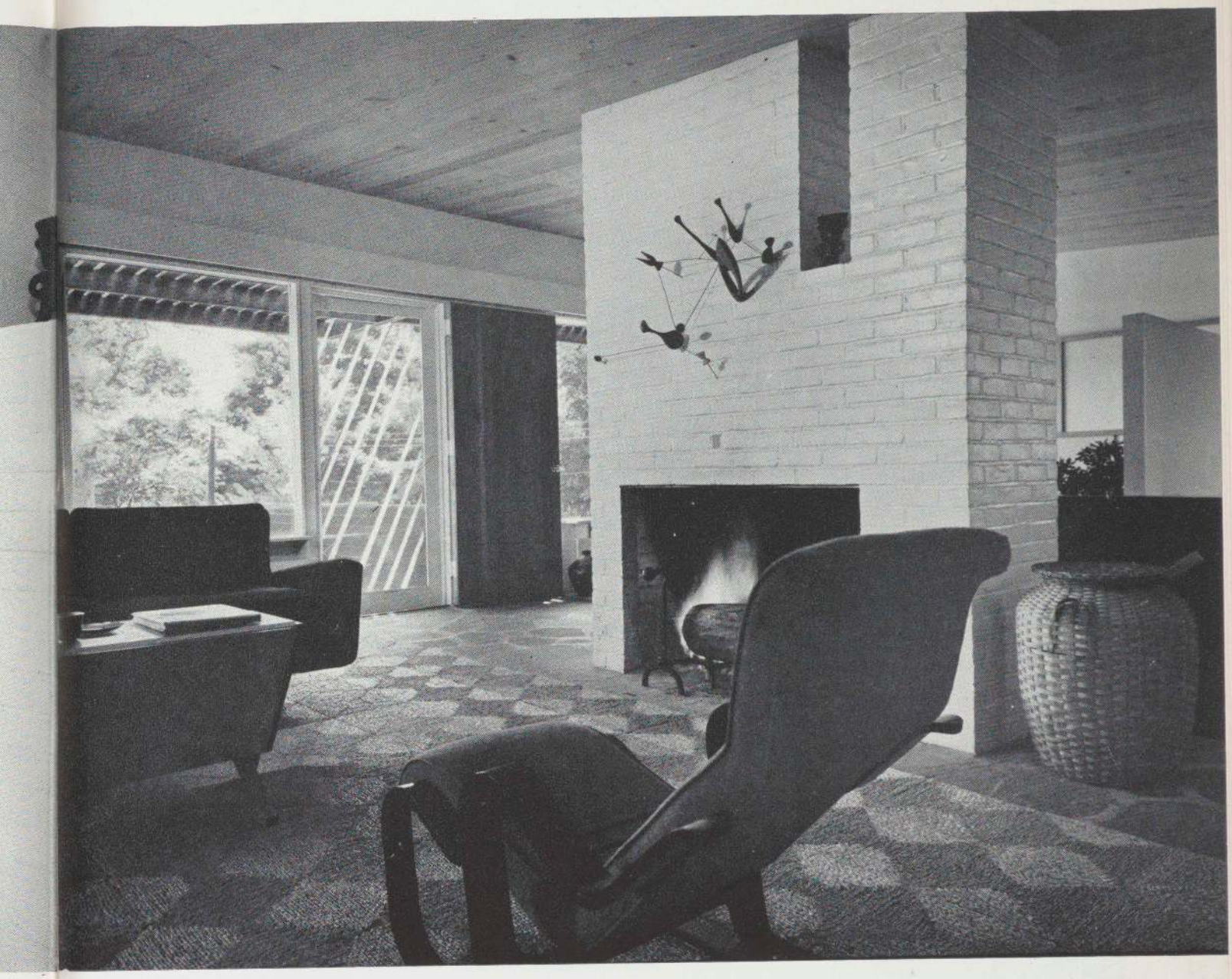
181. Plan of ground floor



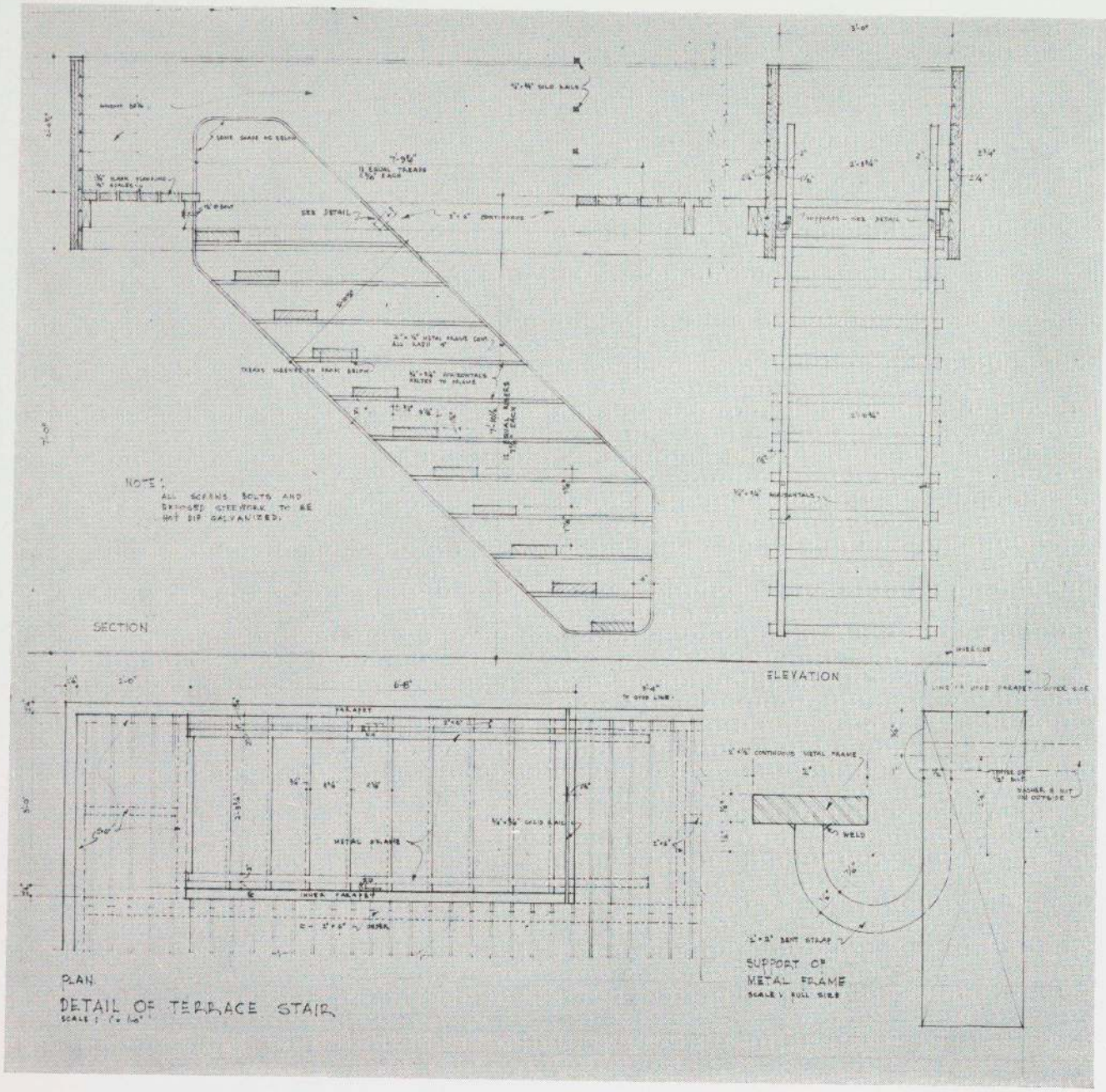
182. Typical section



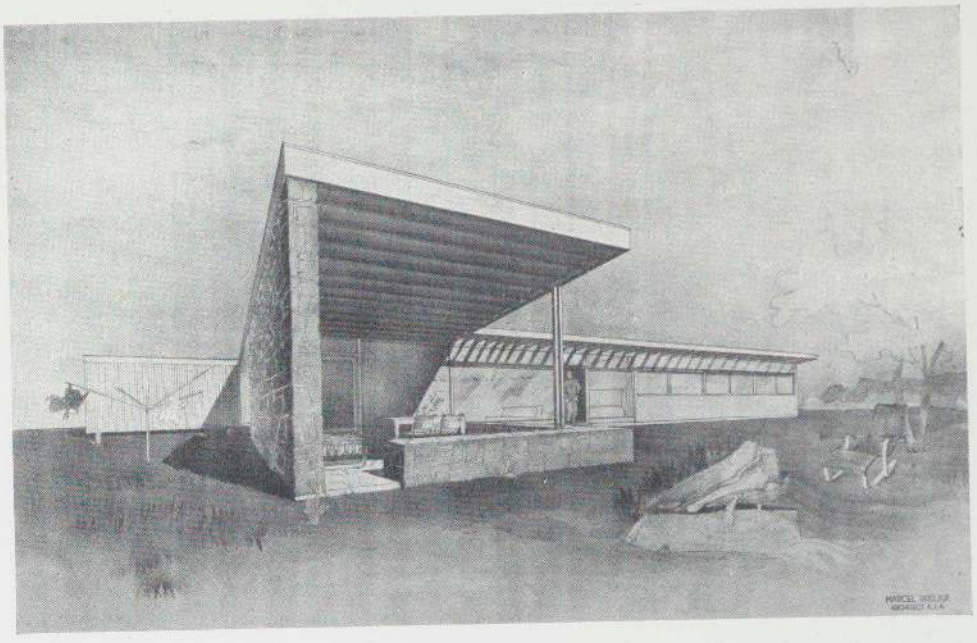
183. Dining area. Kitchen beyond sliding panels



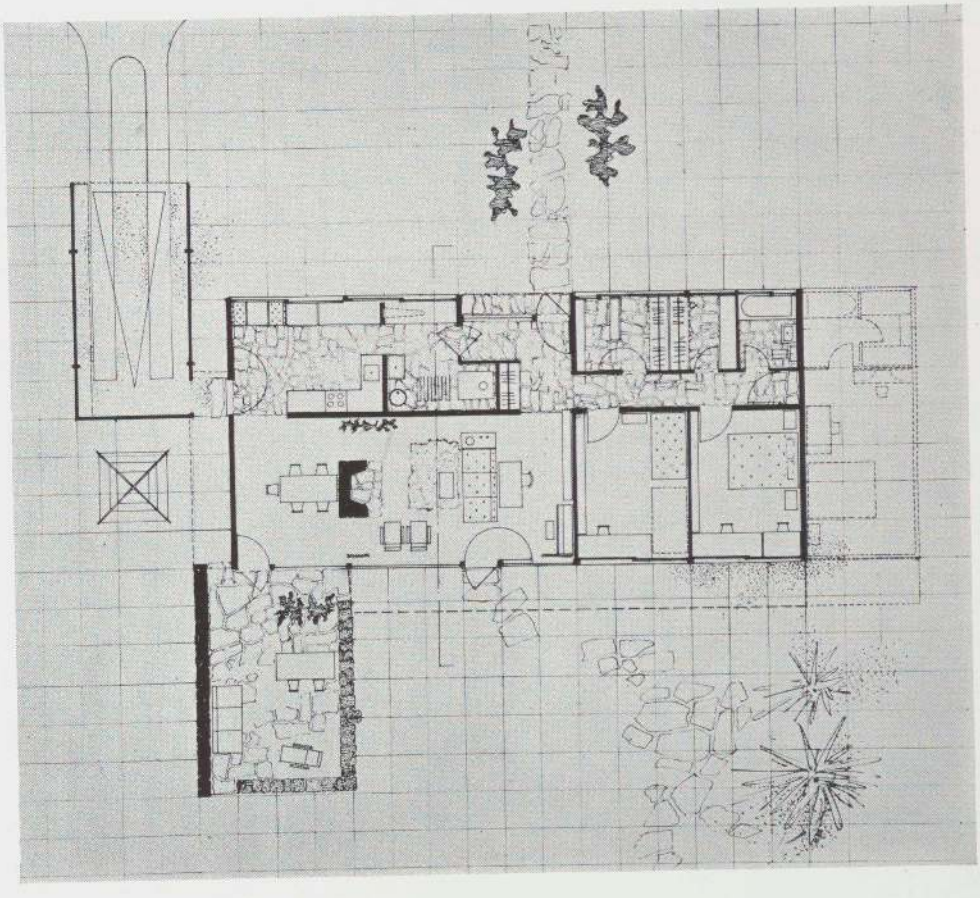
184. Living area. Stabile by Alexander Calder



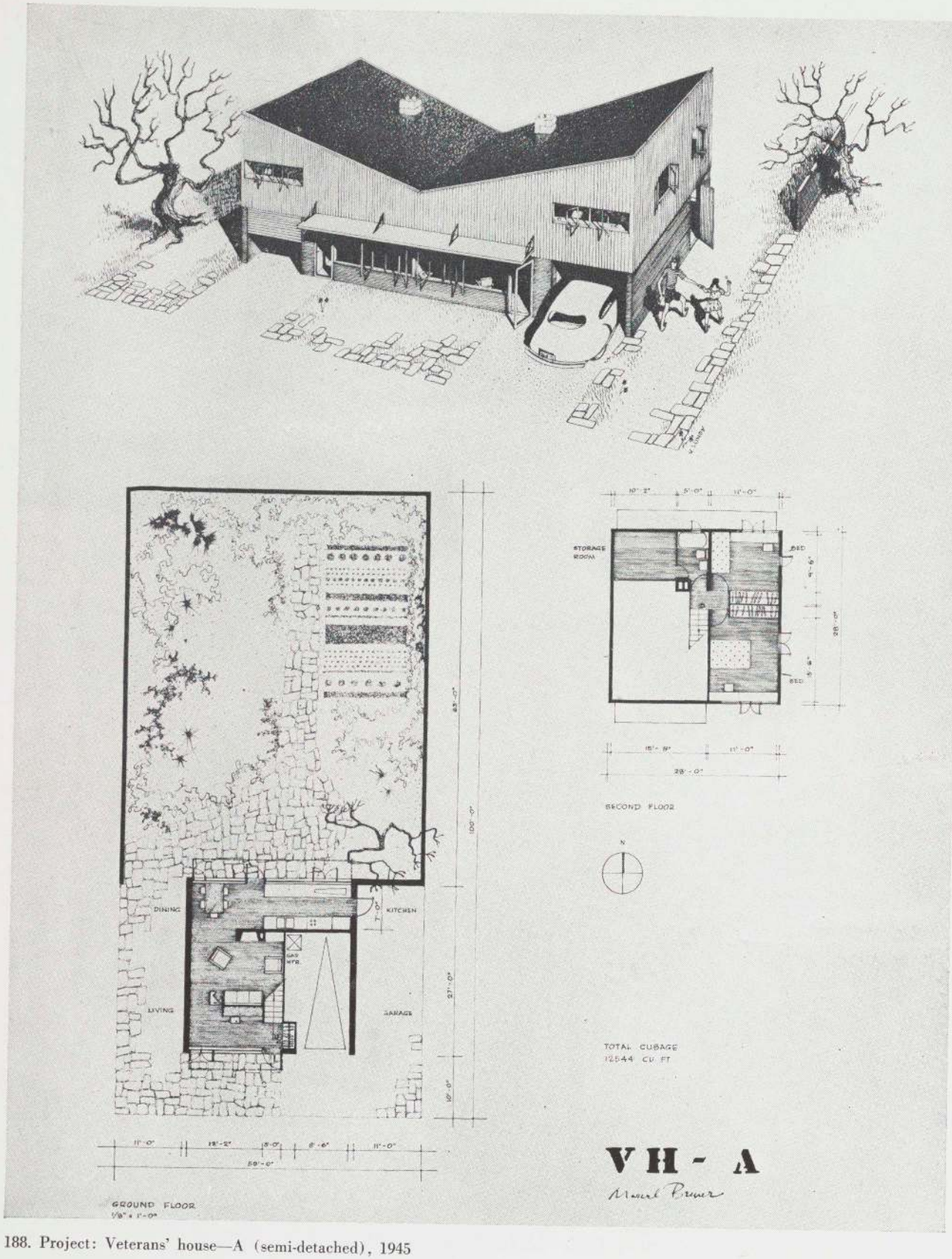
185. Breuer house. Stair details



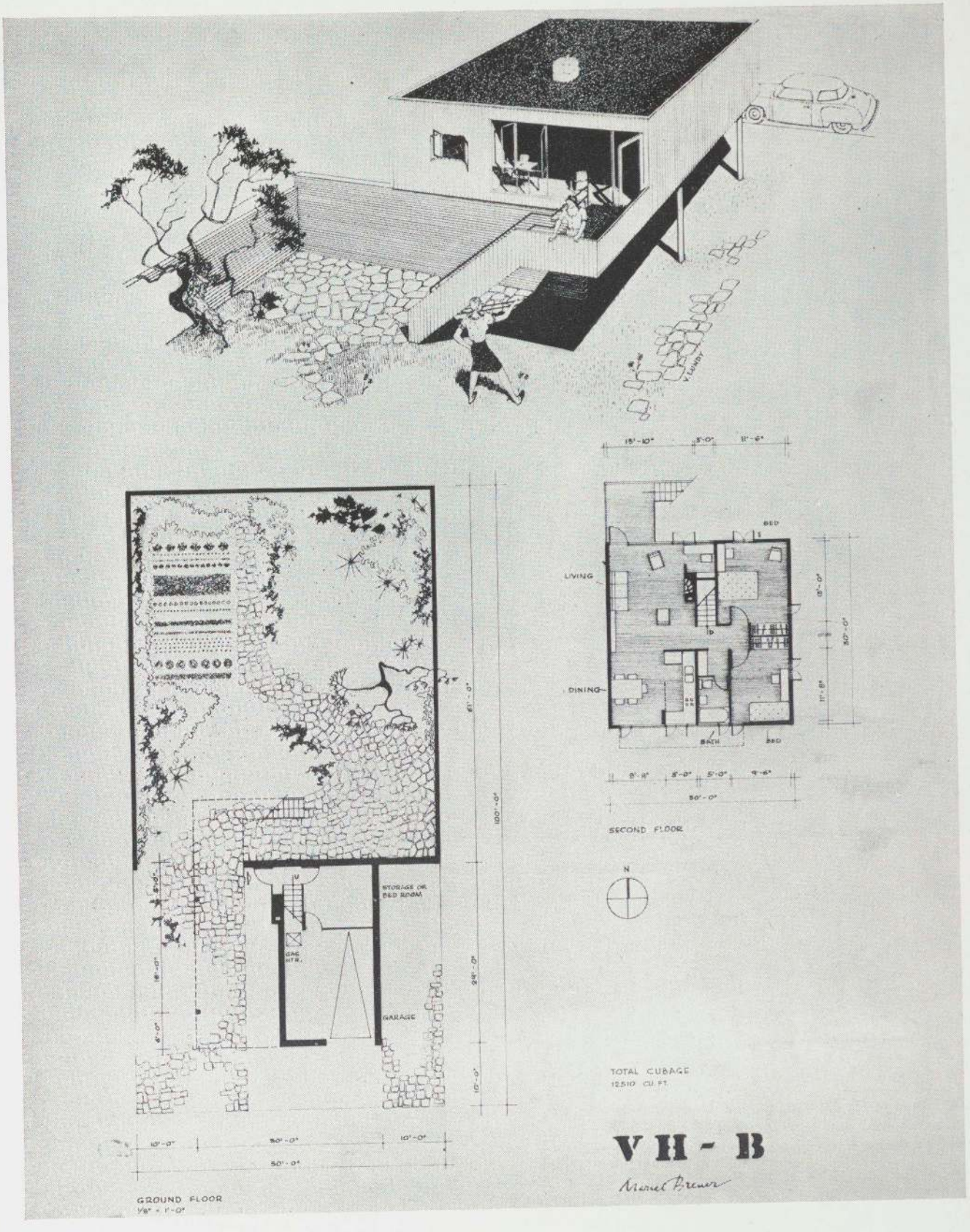
186. Project: "1200 sq. ft. house," 1944



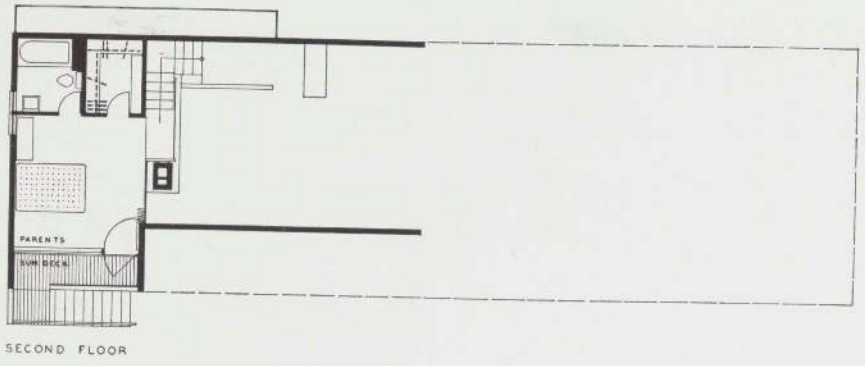
187. Plan



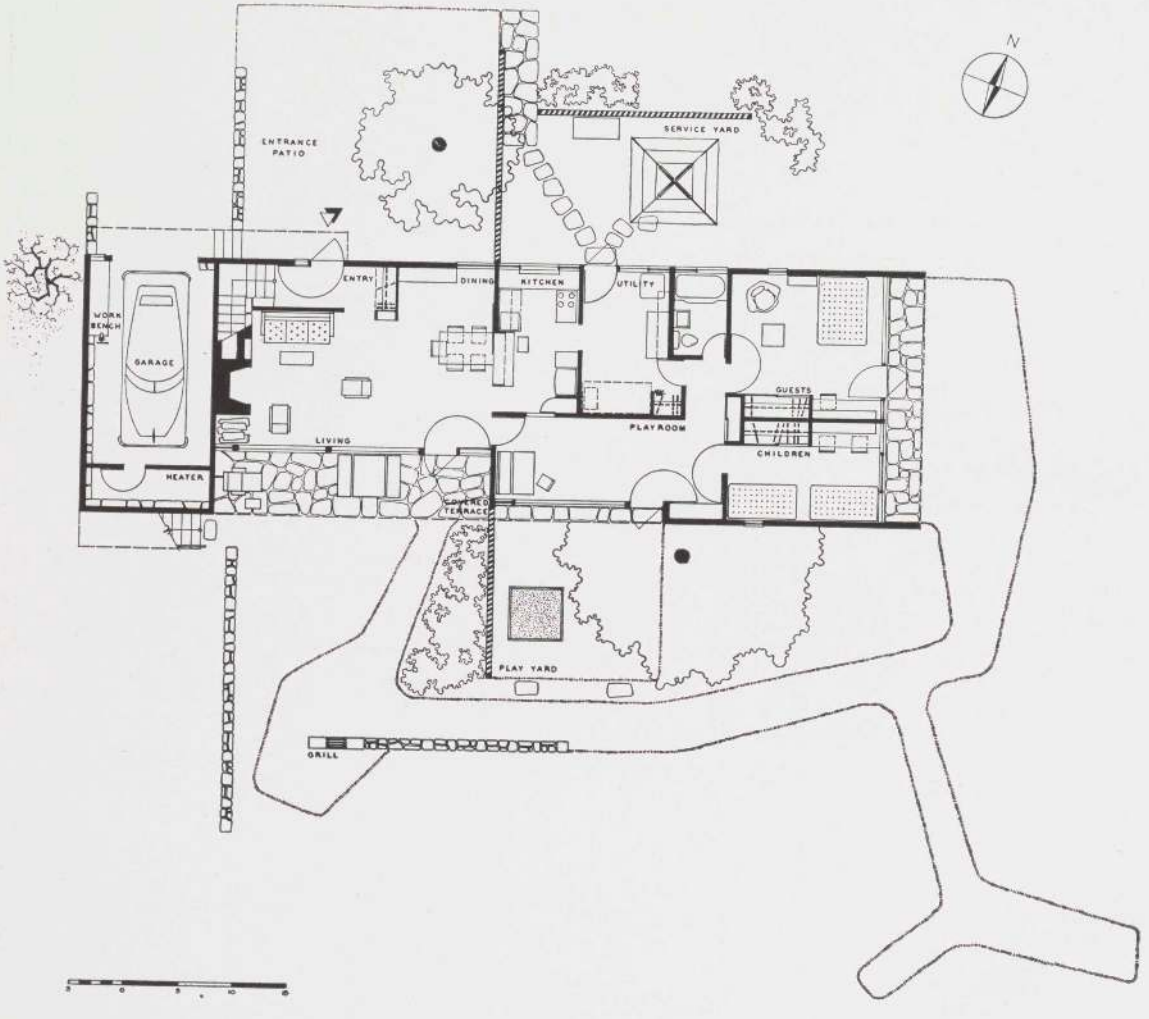
188. Project: Veterans' house—A (semi-detached), 1945



189. Project: Veterans' house—B, 1945

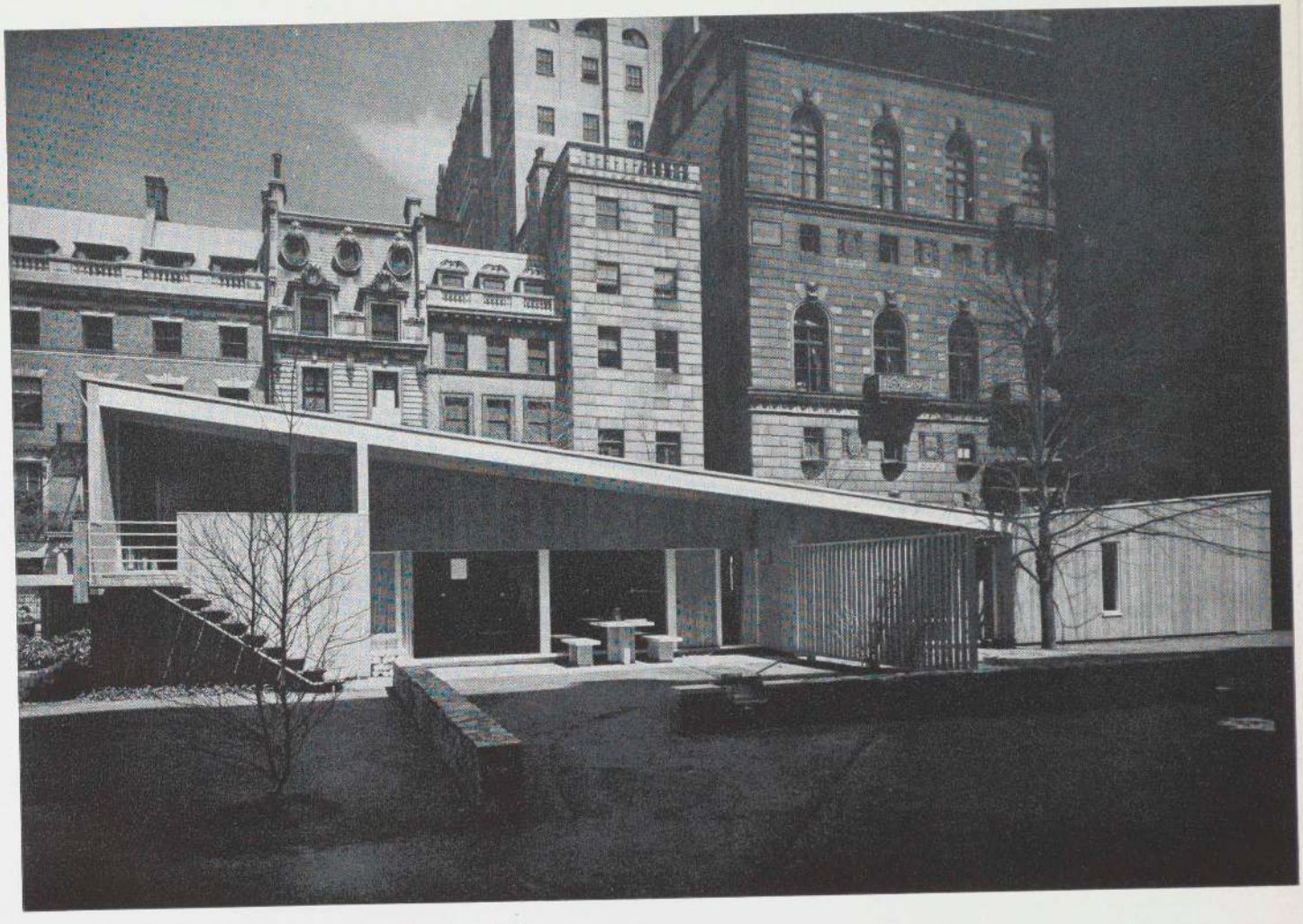


SECOND FLOOR



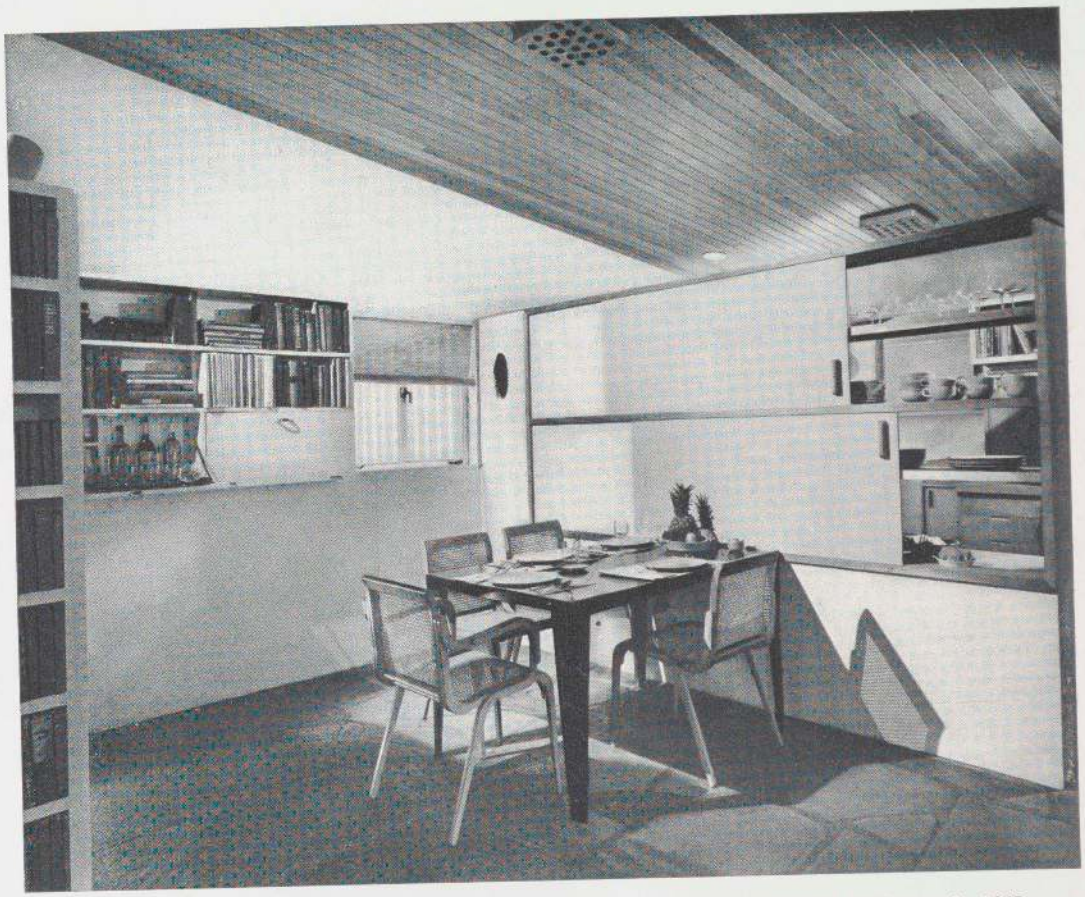
190. House in the Museum Garden, Museum of Modern Art, New York, 1949. A plan for a middle-income family. Indoor and outdoor zones for different activities. Two-story portion at west end can be added in a later stage*

**For a full description of this house see the Museum of Modern Art Bulletin Vol. XVI, No. 1, 1949, issued especially for this exhibition*

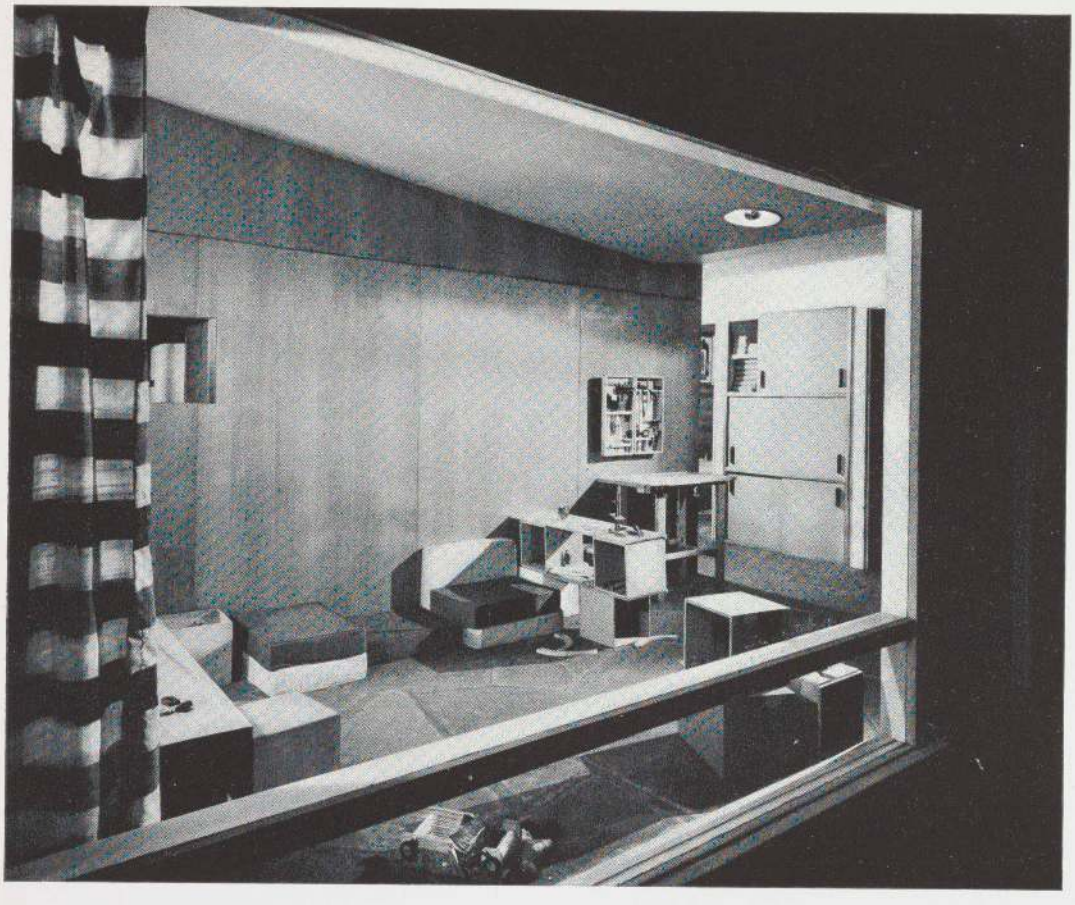


191. South view. Upper-story bedroom at left, garage below

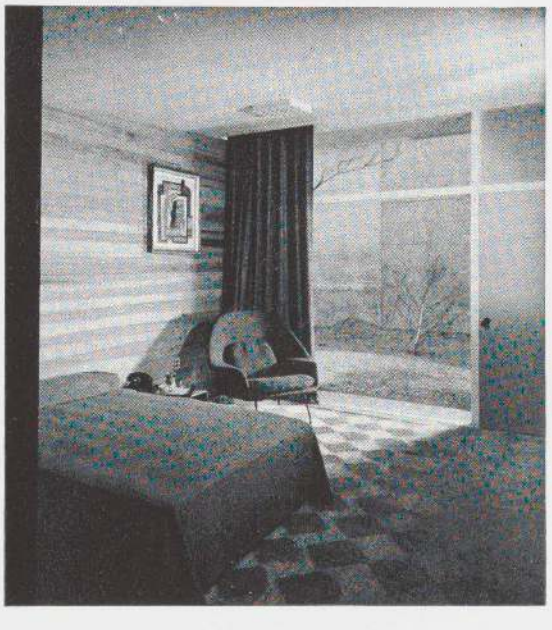
192. Living room with upper-story bedroom beyond. Relief at right by Jean Arp



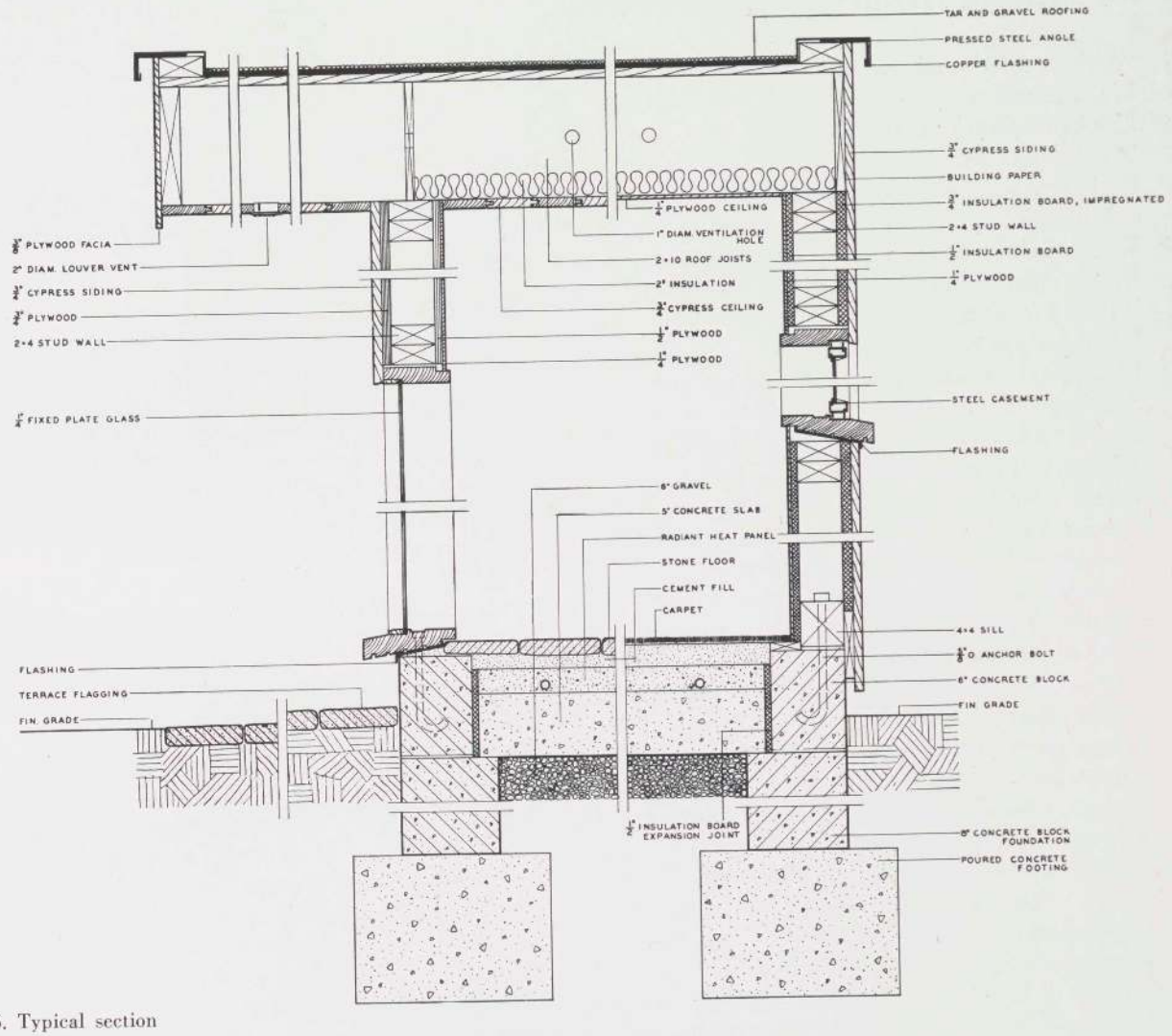
193. Dining area with kitchen beyond. Laminated, cut-out plywood chairs designed by Breuer in 1948



194. Playroom. Hollow blocks of different colors. Open hatch at left permits supervision from kitchen. Playroom designed to be used as sitting room when children have grown up



195. Bedroom at east end



196. Typical section

List of Marcel Breuer's Major Works

1921 "African chair" and other wood furniture
1922 Wood furniture for *Haus am Horn*, Weimar
1923 Children's playroom, Dresden (with Alma Buscher)
Wood chairs and cabinets
Project: Apartments with offset levels, in open rows, for low-cost housing
1924 Wood chairs and other furniture, experiments with thin plywood
Project: Seven double-story apartment house
1925 Wilinsky apartment, Berlin
Wissinger apartment, Berlin
First all-tubular steel chair, chromium-plated
Standardized unit cabinets in wood and metal
Project: *Kleinmetallhaus* (for prefabrication in steel)
1926 All interiors for Bauhaus building, Dessau
Interiors for Gropius, Grote, Kandinsky and Moholy-Nagy, Dessau
Interior for Thost, Hamburg
Chromium-plated, tubular steel dining chairs and stools (and other tubular steel furniture continuously until 1930)
1927 Piscator apartment, Berlin
Smith apartment, London
Interiors, Gropius and Stam houses, *Werkbund* Exhibition, Stuttgart
Project: Bambos houses
1928 Breuer apartment, Berlin
Glass table with steel frame and rubber connectors
Springy, tubular steel cantilever chair, chromium-plated
Project: Apartments for Spandau-Haselhorst
Project: Hospital, Elberfeld (1100 beds)
Project: Potsdamer Platz, Berlin
1929 De Francesco apartment, Berlin
Harnischmacher apartment, Wiesbaden
Interior of Harnischmacher office, Mainz
Interior of Heinersdorff house, Berlin (includes multi-lens window)
Bent plywood chair with movable back
Project: Apartment hotel
Project: Fuld factory, Frankfurt/Main
Project: Hospital, Zagreb
Project: Melder house, Merisch-Ostrau
1930 Apartment hotel living unit, *Werkbund* Exhibition, Paris
Apartment for a sports teacher
Boroschek apartment, Berlin
Singer apartment, Berlin
Interiors and store-remodelings for Leiser shoe stores
Project: Sanitorium, Essen

1931 "House for a sportsman," *Bau Ausstellung*, Berlin
"70 sq. m. apartment," *Bau Ausstellung*, Berlin
Remodeling and interiors, Lewin house, Zehlendorf
Auditorium furnishings, Folkwang Museum, Essen
Auditorium furnishings, *Technische Hochschule*, Berlin
Project: Kharkov theatre

1932 Harnischmacher house, Wiesbaden
S. S. Kettenladen, Berlin
Wohnbedarf store, Basel
Wohnbedarf store, Zurich

1933 Apartment X, Berlin
Aluminum furniture, Paris competition

1934 Dolderthal apartments, Zurich (Breuer, A. & E. Roth)
Project: Budapest spring fair (Breuer, Fischer and Molnar)

Note: Unless otherwise indicated, all designs between 1935 and 1937 must be credited to Marcel Breuer and F. R. S. Yorke, Architects.

1935 Interiors for Gane house, Clifton, England
Isokon molded plywood furniture, London (Breuer only)

1936 Bristol pavilion, England
Heal's exhibition, London (experiments with cut-out plywood furniture)
House at Angmering-on-Sea, Sussex
Theater-studio, London
Two houses for Eton College, England
Ventris apartment, Highpoint I., London
Interiors for Motley's fashion studio, London
Project: Civic center of the future, British Cement Industries
Project: School

1937 Isokon bar, London
London galleries, London
Project: Winter sports hotel, Tyrol (Breuer only)

Note: Unless otherwise indicated, all designs between 1938 and 1941 must be credited to Walter Gropius and Marcel Breuer, Architects.

1938 Fischer house and studio, Newtown, Pa.
Gropius house, Lincoln, Mass.
Haggerty house, Cohasset, Mass.
Project: Wheaton College art center

1939 Breuer house, Lincoln, Mass.
Ford house, Lincoln, Mass.
Interior displays for Pennsylvania pavilion, New York World's Fair
Frank house, Pittsburgh, Pa. (cut-out plywood furniture)
Project: Black Mountain College, N.C.

1940 Chamberlain cottage, Weyland, Mass.

1941 Defense housing project, New Kensington, Pa.
Weizenblatt house, Asheville, N.C. (Breuer only)

1942 Split-support aluminum chair
Project: "Plas-2-Point" house (for prefabrication in plywood)
Project: "Yankee Portables" (for prefabrication in wood)

1943 Project: "H-house" (bi-nuclear house)
Project: South Boston redevelopment
Project: "Stuyvesant Six," New York City

1944 Project: New York apartments on East River
Project: "1200 sq. ft. house"

1945 Airline ticket office, Boston, Mass.
Geller house, Lawrence, L.I. (split-support chairs and tables, cut-out plywood)
Remodeling, Almy's department store, Salem, Mass.
Project: "Bi-nuclear house III"
Project: Cambridge Memorial Plaza
Project: Cape Cod cottage
Project: Beach house, Miami, Fla.
Project: Nurses' home, Long Beach Hospital
Project: Pittsburgh glass house
Project: Smith College dormitories
Project: Veterans' houses A and B

1946 Tompkins house, Hewlett Harbor, L.I.
Project: Maas house

1947 Breuer house, New Canaan, Conn.
Mills house, New Canaan, Conn.
Robinson house, Williamstown, Mass.
Scott house, Dennis, Mass.
Thompson house, Ligonier, Pa.
Ariston restaurant, Mar del Plata, Argentina (Breuer, Coire and Catalano)
Project: Hospital city, Bogota, Colombia (3800 beds)
Project: Low-cost housing project, Bogota, Colombia (1100 units)
Project: New Presidential palace, Bogota, Colombia (preparatory planning)
Project: Wholesale market and chain of local markets, Bogota, Colombia

1948 Kniffen house, New Canaan, Conn. (Breuer and Eliot Noyes)
Research, low-cost furniture competition, The Museum of Modern Art, New York (cut-out plywood furniture)

1949 House in the Museum Garden, The Museum of Modern Art, New York
Under construction:
Hooper house, Baltimore, Md.
Potter house, Portland, Me.
Rand house, Harrison, N.Y.

Statements by Marcel Breuer

Lecture "Where Do We Stand?"

Zurich, Switzerland, 1934

I would ask my readers to be resigned to a purely theoretical handling of this question, since I shall assume that they are already familiar with the tenets of the New Architecture and what it looks like. They will know, for instance, that these buildings are conceived of in severe terms—a maximum simplicity, wide openings for light, air and sunshine; balconies, flat roofs, minutely studied practical floor-plans, a scientific basis, strong emphasis on mechanization; industrial methods of production with a tendency towards standardization; light colors, new materials used for their own sake and a reconception of housing and town-planning in the light of social and economic research. Therefore I want to confine myself to a statement of what is really fundamental in our thought and work.

In the past I have been opposed to over much of this theorizing about the New Architecture, believing that our job was to build, and that our buildings sufficed, since they speak plainly enough for themselves. I was, moreover, not a little alienated to observe that there was often a considerable discrepancy between these theories and the personalities who advanced them. The danger of all theorizing is that, by carrying one's arguments too far, one is apt to leave the world of realities behind one.

Parts of the principles of the Modern Movement have been extensively adopted, but they have been compromised by being used separately without any co-ordinating relation to the aims of that Movement as a whole. A closer examination of the ideology of the New Architecture has therefore become a pressing necessity.

The protagonists of the Modern Movement have been occupied with the classification and development of their intellectual principles and the carrying out of their individual designs. This meant that further propaganda was left to chance, industrial advertisements and the technical press. Much has been distorted, much overlooked, as a result. Modern terminology has been put under tribute for snappy slogans; and each of these serves only some isolated detail. A correlation of these heterogeneous parts to their unifying whole is still lacking. Whereas the pioneers of the Modern Movement have now succeeded in establishing a very broad intellectual basis, which is in harmony with their own work, the younger generation still confines itself to rigid formalization.

I should like, therefore, to give a more general survey that will cover a wider field than these catch-phrases. To do so, however, is not such a simple matter. Architecture is an alarmingly many-sided complex, and as soon as one leaves the technical sphere all conceptions tend to become vague and overlapping.

I intentionally renounce historical comparisons, and leave to others the task of contrasting our age with epochs of the past, and showing us from history what leads to progress or decay, what to art or architecture.

What, then, are the basic impulses of the New Architecture?

In the first place, an absence of prejudice.

Secondly, an ability to place oneself in immediate objective contact with a given task, problem or form.

Thirdly, to create esthetic satisfaction by balance and use of elemental forms.

Let those who prefer respectful transition from the principles of one school or style to those of another, adopt them if they will. What we believe is what we have perceived, experienced, thought, proved and calculated for ourselves.

At this point I should like to consider traditionalism for a moment. And by tradition I do not mean the unconscious continuance and growth of a nation's culture generation by generation, but a conscious dependence on the immediate past. That the type of men who are described as modern architects have the sincerest admiration and love for genuine national art, for old peasant houses as for the masterpieces of the great epochs in art, is a point which needs to be stressed. On journeys what interests us most is to find districts where the daily activity of the population has remained untouched. Nothing is such a relief as to discover a creative craftsmanship which has been developed immemorially from father to son, and is free of the pretentious pomp and empty vanity of the architecture of the last century. Here is something from which we can learn, though not with a view to imitation. For us the attempt to build in a national tradition or an old-world style would be inadequate and insincere. To pride oneself on such things is a bad symptom. For the modern world has no tradition for its eight-hour day, its electric light, its central heating, its water supply, its motor roads and filling stations, its bridges and its steel-motor liners, or for any of its technical methods. One can roundly damn the whole of our age; one can commiserate with, or dissociate oneself from, or hope to transform the men and women who have lost their mental equilibrium in the vortex of modern life, but I do not believe that to decorate their homes with traditional gables and dormers helps them in the least. On the contrary, this only widens the gulf between appearance and reality and removes them still further from that ideal equilibrium which is, or should be the ultimate object of all thought and action.

It may, perhaps, seem paradoxical to establish a parallel between certain aspects of vernacular architecture, or national art, and the Modern Movement. All the same, it is interesting to see that these two diametrically opposed tendencies have two characteristics in common: the impersonal character of their forms; and a tendency to develop along typical, rational lines that are unaffected by passing fashions.

It is probably these traits that make genuine peasant art so sympathetic to us—though the sympathy it arouses is a purely platonic one. If we ask ourselves what is the source of the solid, unself-conscious beauty, the convincing quality and reasonableness of peasant work, we find that the explanation lies in its unconsciously, and therefore genuinely, traditional nature. A given region has only a few traditional crafts and uses a few definite colors. Roughly speaking, the same things, or variants of the same things, have always been made there. And even these variations are obedient to a regular and recurrent rhythm. It is their uninterrupted transmission through local and family associations which conditions their development and ultimately standardizes them as type-forms.

In one direction at least our modern efforts offer a parallel. We

seek what is typical, the norm: not the accidental but the definite *ad hoc* form. These norms are designed to meet the needs, not of a former age, but of our own age; therefore we naturally realize them, not with craftsmen's tools, but with modern industrial machinery.

If one examines a *bona fide* example of industrial standardization, one cannot fail to perceive that it is representative of an "art," and that that art has reached this point of perfection only by a sort of traditional development which is the result of exploring the same problem over and over again. What has changed is our method: instead of family traditions and force of habit we employ scientific principles and logical analysis.

Please do not misunderstand me. I do not for a moment mean that peasant art and the Modern Movement have any connection in fact with one another. All I wanted to do was to bring out the similarity between certain tendencies which have led, or can lead, to relative perfection in each. In any case, we can all admit that there are numbers of old peasant farmsteads that we find far more stimulating than many so-called "modern" houses.

To sum up: it is quite untrue to say that the Modern Movement is contemptuous of traditional or national art. It is simply that the sympathy we feel for each does not take the form of making us want to use either as a medium for the utterly different purposes of the present day.

I should like to divorce the "unbiased" aspect of the New Architecture from association with terms like "new," "original," "individual," "imaginative," and "revolutionary." We are all susceptible to the persuasion of that word "new." Society pays its meed of respect to anything new by granting it a patent. It is common knowledge that international patent law is based on two principles: "technical improvement" and "newness." Thus novelty becomes a powerful commercial weapon. But what is the Modern Movement's real attitude to this business of "newness"? Are we for what is new, unexpected and a change at any price, in the same way that we are for an unbiased view at any price? I think we can answer this question with an emphatic negative. We are not out to create something new, but something suitable, intrinsically right and as relatively perfect as may be. The new in the Modern Movement must be considered simply a means to an end, not an end in itself as in women's fashions. What we aim at and believe to be possible is that the solutions embodied in the forms of the New Architecture should endure for ten, twenty, or one hundred years as circumstances may demand—a thing unthinkable in the world of fashion as long as modes are modes. It follows that, though we have no fear of what is new, novelty is not our aim. We seek what is definite and real, whether old or new.

This perhaps invites the retort, "Be sincere. Look into your motives without trying to make your introspection too moral or positive. Don't all of us get sick of everything after a time? Doesn't everything, even architecture, become tiresome in the end? Isn't our thirst for change greater than we care to admit?"

Here we reach a point where logic ceases to be logical, where consistency loses sense, and anticipation is impossible, because history provides examples for and against. It were easy, but futile, to indulge in prophecy. I would rather interrogate that unwritten law of our own convictions, the spirit of our age. It answers that we have tired of everything in architecture which is a matter of fashion; that we find all intentionally new forms wearisome, and all those based on personal predilections or tendencies equally pointless. To which can be added the simple consideration that we cannot hope to change our buildings or furniture as often as we change, for example, our ties.

If by "original," "individual," or "imaginative" artistic caprice, a happy thought or an isolated flash of genius is meant, then I must answer that the New Architecture aims at being neither original, individual nor imaginative. Here, too, there has been a transformation in the meaning of terms. According to our ideas, modern architecture is "original" when it provides a complete solution of the difficulty concerned. By "individual" we understand the degree of intensity or application with which the most various or directly interconnected problems are disposed of. "Imagination" is no longer expressed in remote intellectual adventures, but in the tenacity with which formal order is imposed upon the world of realities. The ability to face a problem objectively brings us to the so-called "revolutionary" side of the Modern Movement. I have considerable hesitation in using the word at all, since it has recently been annexed by various political parties, and in some countries it is actually inculcated into school children as an elementary civic virtue. In fact, revolution is now in a fair way towards becoming a permanent institution. I believe that what was originally revolutionary in the Movement was simply the principle of putting its own objective views into practice. It should also be said that our revolutionary attitude was neither self-complacency nor propagandist *bravura* but the inward, and as far as possible outward, echo of the independence of our work. Although, as I have just pointed out, to be revolutionary has since received the sanction of respectability, this causes us considerable heart-searchings; the word inevitably has a political flavor. In this connection it is necessary to state that our investigations into housing and town-planning problems are based primarily on sociological, rather than on formal or representational principles. In short, that our ideas of what developments were possible were based on the general needs of the community.

All this has led some people to believe that the Modern Movement either was, or was bound to become, a political one. Our opponents resuscitated this old accusation so as to be able to assail us with political propaganda. Other bodies of opinion tried to force us to define our position by such arguments as: "You make radical proposals for improvement which can only be realized in a radically different form of society. Architecture is the expression of its age, and so, of the circumstances, social structure and political conformation of that age. If your work has no political bias and it is not your main object to realize a political programme, you are simply Utopians who, as things are today, will sooner or later be dragged into impossible compromises."

To which I would reply:

"It is an error to imagine that architecture in its broadest sense is determined by political considerations. Politics, of course, play an immensely important part in architecture, but it is a mistake to identify that part with any one of its different functions. To come down from the general to the particular:

"The technical and economic potentiality of architecture is independent of the political views of its exponents.

"It follows that the esthetic potentiality of architecture is also independent of their political views; and likewise the intensity with which particular architects may apply themselves to the solution of particular functional problems."

Politics and architecture overlap, first, in the nature of the problems presented to the latter; and, second, in the means that are available for solving them. But even this connection is by no means a definite one. For instance, how does it help us to know that Stalin and the promoters of the Palace of the Soviets competition are Communists; their arguments are very much the same as those of any primitive-minded capitalistic, or democratic, or Fascist, or merely conservative motor-car manufacturer with a hankering for the cruder forms of symbolism. In spite of the undeniable influence of politics in every sphere of life and thought, no one can deny that each of these spheres has a highly important

unpolitical side to it, and that that side determines its nature. As an architect, I am content to confine myself to analyzing and solving the various questions of architecture and town-planning which arise from their several psycho-physical, co-ordinating and technical-economic aspects. And I believe that work of this kind leads to material advances which have nothing to do with politics.

The second dominant impulse of the Modern Movement is a striving after clarity, or, if you prefer it, sincerity. No romantic tendencies are implied in either of these terms. They do not mean that we wear our hearts on our sleeves, or invite all and sundry to pry into our homes and private lives through our long horizontal windows.

This particular exemplification of "clarity" has caused a great deal of harm, in the same way that the desire to show construction openly arrived at has often led to the violation of structural principles or their naïvely childish over-emphasis. Clarity interpreted in this spirit has been responsible for a decidedly uncomfortable world full of screw-heads and intellectual exhibitionism. With a little good will and a pinch of crass stupidity, the famous principle of inside-out "exteriorization" can be relied upon to conjure up a perfect wilderness.

The principle of clarity, as we understand it, expresses itself in the technical and economic fields of architecture, through emphasis on structural laws and practical functions; and in the esthetic field by simplicity and a renunciation of all irrational forms. The New Architecture might be compared to a crystalline structure in process of formation. Its forms correspond to human laws and functions, which are other than those of nature or organic bodies. In its more immediate conception this New Architecture of ours is the "container" of men's domiciles, the orbit of their lives.

Are our buildings identifiable with descriptions such as "cold," "hard," "empty-looking," "ultra-logical," "unimaginative and mechanistic in every detail"? Is it our aim to trump the mechanization of offices and factories with the mechanization of home life? Whoever thinks so has either seen only the worst examples of modern architecture, or else has had no opportunity to live in or make a closer inspection of the best. Or possibly there is some confusion in his ideas. Does he perhaps mean pompous when he says "human"; dark-brown wallpapers when he invokes coziness, empty pretence when he demands "peacefulness," and a brothel when he refers to love? Anyhow, he attributes intentions to us which we have never had and can hardly be accused of embodying in our work.

The origin of the Modern Movement was not technological, for technology had been developed long before it was thought of. What the New Architecture did was to civilize technology. Its real genesis was a growing consciousness of the spirit of our age. However, it proved far harder to formulate the intellectual basis and the esthetic of the New Architecture intelligibly than to establish its logic in practical use. I have often found that something like a functional kitchen equipment has made hypercritical people far more accessible to our ideas; and that they have not infrequently ended by becoming reconciled to our esthetic as a result. The ease of this method of approach led certain modern architects to outbid each other in broadcasting technical progress, and to rely on theoretical deductions supported by columns of figures. A deliberately statistical attitude to architecture ensued, which degenerated into a competition as to who could go furthest in denying it any sort of esthetic movement. The engineer was proclaimed the true designer, and everything was declared beautiful that was technically efficient.

I think we can take it that this tendency has nearly seen its day. Engineering structures are by no means necessarily beautiful *qua* engineering structures, though they may often be beautiful either because their builders had a marked talent for formal design, or as a result of that scientific tradition which in process of time evolves a satisfactory industrial form for everything—the norm type, the standard. There is, of course, a great deal to be said for the practical objectivity of engineering methods in facing technical problems. The engineer has been responsible for several things which, in contrast to many architectural designs of the last century, were at least useful.

But we must call things by their proper names, and not bamboozle ourselves into believing that the achievements of engineering are *ipso facto* beautiful.

To sum up again: clarity to us means the definite expression of the purpose of a building and a sincere expression of its structure. One can regard this sincerity as a sort of moral duty, but I feel that above and beyond this it is a trial of strength for the designer, which sets the seal of success on his achievement. Nor do I see any puritanism in our cult of simplicity, but rather a zest for obtaining greater effect with less expenditure; and the satisfaction of fashioning something out of nothing with intelligence and arrangement as one's only resources. By which I mean winning color, plasticity, and animation from a flat white wall. Simplicity in this sense connotes both attainment and quality.

Where does rationalism end and art begin in the New Architecture? Where is the dividing line between them, and how is it fixed? I could not trace that frontier if I tried. Architecture seems worthy of notice to me, only in proportion as it produces an effect on our senses, and our senses are strangers to rationalizing processes. It is the same to me whether this effect, which we can, if you like, call "beauty," has been created by an engineer or an artist: whether it is the result of what is called speculative research, or what is called intuition. I care nothing for any differentiation as between these methods, but I care a great deal whether I feel at ease in the finished building. Besides, I do not wish to invalidate the super-rational basis of the Modern Movement which is its unwritten law, by any passionate assertion of principles. All the same, a few of them can be indicated here.

We have no use for beauty in the form of a foreign body, of ornament, or of a titivating of undesigned structural elements; nor even as an arbitrary magnification of certain dimensions, a purely transient vogue. We have no use for architecture that is labelled symbolist, cubist, neoplastic or "constructivist." We know that the essential and determining elements of a building can be wholly rational without this rationalism's in any way affecting the question of whether it is beautiful or ugly.

Everyone who has planned, designed and constructed, knows:

1. That in spite of the most logical volition, the decisive impulse towards co-ordination very often occurs through uncontrollable reflexes.

2. That even in the most objective exploration of a given problem by the logical method of procedure, in nearly every case a final, one might almost say illogical, choice between different combinations has to be made.

3. That the commanding and so to speak convincing impressiveness of really inspired construction is the outcome of an inflexible tenacity which is almost passionate, and that that passion transcends mere logic.

Perhaps the slogan: "Art and technique as a new unity," which Gropius coined some years ago, most nearly expresses the idea that in the New Architecture these concepts are no longer separable.

I now come to the third dominant impulse of the Modern Movement: the relation of unbroken elements to one another—contrast.

What is aimed at is *un*schematic design. Whoever supposes that our preference for flat roofs inclines us to adopt flat tops for our coffee-pots; that the cubic forms of our buildings will be echoed in our lighting fixtures; or that our guiding principle of establishing unity and a certain harmonious relation between all these things can be labelled as a "style," has entirely misunderstood our objects. There is no hard and fast formula for doing this or that in the New Architecture. Wherever you find identical forms in different places, you can be sure it was due to the adoption of a similar solution for a similar problem. But when a cupboard begins to look like a house, the house like the pattern of a carpet, and the pattern of a carpet like a bedside lamp, you can be certain that it is not modern work in the sense that modern is used in this article.

We strive to achieve a definite design for all different elements, and we arrange them side by side without dressing them artificially for the purpose. These elements receive different forms as a natural consequence of their different structure. Their complete individuality is intended to establish a kind of balance which seems to me a far more vital one than the purely superficial "harmony" which can be realized by adopting either a formal or a structural common denominator. We reject the traditional conception of "style" first, because it gainsays sincere and appropriate design; and second, because the link between quite justifiable differences in appearance produces the sort of contrast we consider is characteristic of modern life. Contrasts like house and garden, a man's working and home life, voids and solids, shining metal and soft materials, or even living organisms like animals and plants, can all be realized against the stark plain surface of a wall; also in the opposition of the discipline of standardization to the freedom of experiment that leads to its development. Such contrasts have become a necessity of life. They are guarantees of the reality of the basis we have chosen to adopt. The power to preserve these extremes without modification (that is to say, the extent of their contrast) is the real gauge of our strength.

But what about the esthetic of the New Architecture? Its dogmas are the kind that cannot be formulated. The important thing for me is that it exists, and that it fulfills a vital need for all of us.

Speech at the Symposium "What is happening to Modern Architecture?"

The Museum of Modern Art, February, 1948

I don't feel too much impulse to set "human" (in the best sense of the word) against "formal." If "human" is considered identical with redwood all over the place, or if it is considered identical with imperfection and imprecision, I am against it; also, if it is considered identical with camouflaging architecture with planting, with nature, with romantic subsidies.

If International Style is considered identical with mechanical and impersonal rigorism, down with International Style! Anyway, the word is an unhappy one, just as unhappy as "functionalism."

However, all this controversy was in order, I am afraid, about twenty-five years ago. Since then, many things have happened. For instance, just as Sullivan did not eat his functionalism as hot as he cooked it, Le Corbusier did not build his machine for living! His houses are much less machines for living than, for instance, the three thousand family housing developments of the West Coast, the same pseudo-prefabricated houses, hill up, hill down, in rigid rows or in rigid curves—though quite redwoody.

Many things happened, as I see it, which some prefer not to see, because they want to prove or, better, to create, a fifty-year-old original, native and modern California style full of humanity.

"Human" seems to me more than just a pleasant forgiving of imperfection and an easygoingness as to precision of thinking, as to the quality of planning, as to consequences of materials, details and construction.

God knows, I am all for informal living and for architecture in support of and as background for this, but we won't sidestep the instinct towards achievement—a human instinct indeed. The most contrasting elements of our nature should be brought to happiness at the same time, in the same work, and in the most definite way. The drive toward experiment is there, together with and in contrast to the warm joy of security at the fireplace. The crystallic quality of an unbroken white, flat slab is there, together with and in contrast to the rough, "texture-y" quality of natural wood or broken stone. The perfection of construction and detail is there, together with and in contrast to simplicity, broadmindedness of form and use. The courage of conception is there, together with and in contrast to humble responsibility towards the client. The sensation of man-made space, geometry and architecture is there, together with and in contrast to organic forms of nature and of man. "*Sol y sombra,*" as the Spanish say; sun *and* shadow, not sun *or* shadow.

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HANNAH B. MULLER

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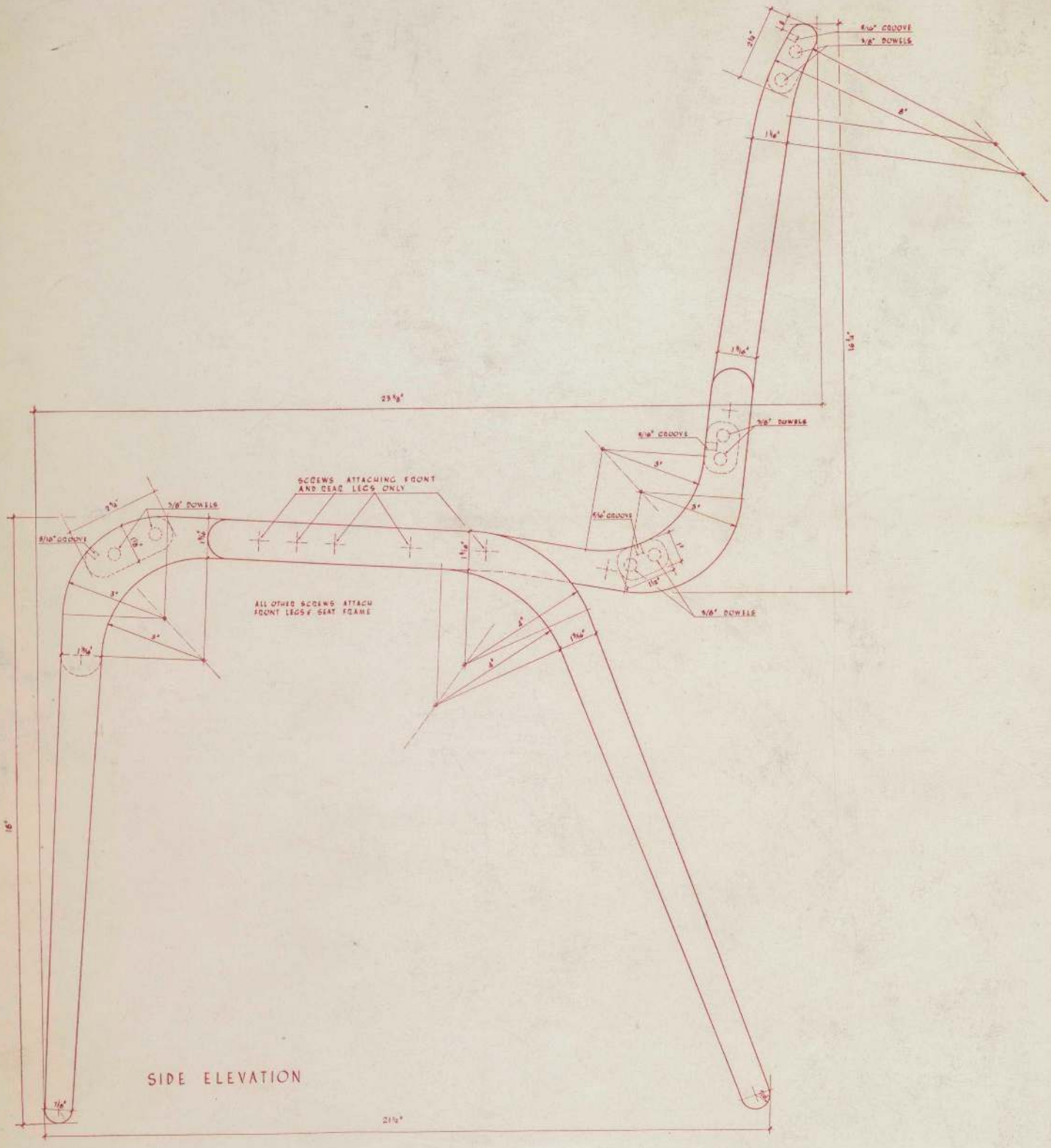

SIDE ELEVATION