

Alvar

AALTO

BETWEEN HUMANISM & MATERIALISM

ALVAR AALTO
Between Humanism & Materialism

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FOREWORD

Six years ago when the Museum of Modern Art opened the first exhibition of modern architecture in this country, attention was focused on the fundamental qualities of the new "International Style." The work of Gropius, Miës van der Rohe, Oud, Le Corbusier and others was shown to have been conceived with a basically functionalist approach, and to have been carried out with a common set of esthetic principles.

Since then, modern architecture has relinquished neither the functionalist approach nor the set of esthetic principles, but both have been modified, particularly by the younger men who have since joined the established leaders. Among these none is more important than Aalto.

Like the designs of other men first active in the '30's, Aalto's work, without ceasing in any way to be modern, does not look like the modern work of the '20's. The younger men employ new materials and new methods of construction, of course, but these only partly explain the change. The buildings of men working naturally in an already established style are less assertive of that style's tenets than those earlier and more puristic buildings which were establishing the style with a necessarily stringent discipline. Certain materials and forms once renounced because of their association with non-modern work are now used again, in new ways or even in the old ones. To the heritage of pure geometric shapes, the younger men have added free organic curves; to the stylistic analogies with the painters, Mondrian and Léger, they have added Arp. Personal and national qualities are more apparent than a decade ago.

Aalto's designs are the result of the complete reconciliation of a relentless functionalist's conscience with a fresh and personal sensibility. This reconciliation demands tact, imagination and a sure knowledge of technical means; careful study of Aalto's buildings show all three in abundance. The personal character is most obvious in the delightful inventiveness of his forms and his handling of materials. The national character,

closely allied, can be seen in the general Scandinavian trimness, and above all in the use of wood, Finland's principal building material. Aalto's thorough knowledge of the various properties of wood guides his imagination in putting them to work architecturally, under the direction of his unique esthetic sensibility.

In his furniture, the audacious manipulation of wood might be thought bravura were it not always justified by the physical properties of the material. As in his architecture. Aalto's designs are a result of the same combination of sound construction, suitability to use and sense of style. Any one of the chairs is the result not only of a painstaking study of posture, the properties of laminated wood and esthetic considerations, but also of the study of efficient (and consequently economical) mechanical methods of mass-production. In fact, a major distinction of the furniture is its cheapness.

Low-cost housing of good modern design has been produced for the last fifteen years; now, probably for the first time, a whole line of good modern furniture is approaching an inexpensive price level.





ARCHITECTURE

The modern movement in architecture since the War has produced only a few figures of the stature of Alvar Aalto. Had his major designs been executed in the great countries of Europe, instead of in his native Finland, he would today be well-known throughout the world. As it is, the present exhibition of Aalto's work represents the formal introduction of this great architect to the American public.

Alvar Aalto is today 40 years old; he was still a student when the World War ended. By that time Finnish architecture had already passed through a period of romantic nationalism which had begun in the late 19th century. The leading figures in this self-consciously "native" movement were Gallen, Londgren and Eiel Saarinen, of whom Saarinen is best known to America because of his widely popular and much imitated design for the Chicago Tribune Building (awarded second prize in the international

competition of 1922), and his subsequent work at the Cranbrook School in Michigan. But the movement from which Saarinen's work stems has long been spent. In Finland today a more rational although no less expressive architecture flourishes healthily.

The great surge of building activity in Finland following the War brought with it new architectural ideas and forms from western Europe. These ideas, exemplified in the work of Gropius, Le Corbusier and Oud, first took root, naturally enough, in Turku, Finland's Baltic port. Here, a small group of young architects, stimulated by contact with the Congrès Internationale d'Architecture Moderne (CIAM), began the struggle to introduce the new doctrines to Finland. In the forefront were Alvar Aalto, Erik Bryggman and others.

Many obstacles beset the progress of the Turku group. They had to overcome the traditional prejudices not only of the public but also of other architects, particu-

larly those who served on competition juries. The romantic nationalism of the pre-war period was no longer a strong factor in Finland's architectural development, but in the 1920's the new movement was impeded — as, to some extent, it is even today — by the influence of the fashionable and chaste classicism of the Swedish and Danish pseudo-moderns.

Aalto's first great opportunity came in 1927 when he won the competition for the Viipuri (Viborg) Municipal Library with a straight-forward modern design. The site was on the edge of a wooded park neighboring a large pompous church in the neo-Hanseatic Gothic manner. The local clergy, and others, were alarmed at the threatened proximity of what they considered an architectural outrage and they set to work to prevent its realization so successfully that construction was put off until 1934. Fortunately, however, this seven year delay was used by Aalto to prepare an entirely different design, far more carefully studied in detail. Aalto considers the Viipuri Library the first building' he has had time to finish properly.

While the library project was being delayed by ecclesiastical opposition, Aalto continued to practise and to engage in several architectural competitions. In 1928-1929, the newspaper offices and printing plant of the Turun-Sanomat in Turku were constructed from his designs. In this reinforced concrete building, particularly in the great room housing the printing presses, Aalto demonstrated his growing sureness in the functional approach and his vigorous imagination and tact in the use of materials. The sturdy tapered piers and mushroom capitals are not only the natural forms resulting from reinforced concrete construction, but are also vividly expressive of it.

While the influence of the new architecture was spreading to the whole of Finland, Aalto set up his office in Helsingfors. There he found designers of similar views, among them young Yrjö Lindegren who was later to design the great Helsingfors Olympic Stadium now nearing completion. As more and more competitions were won and more projects completed by the young architectural radicals, the public granted them a greater measure of confidence.

1898

FEBRUARY 3

Born Hugo Alvar Henrik Aalto to Johan Henrik Aalto and Selma Hackstedt in Kuortane, Finland.

1917

Finland becomes an independent nation.



1918

Finish Civil War

In 1932, work began on one of Aalto's greatest buildings, the South-West Finland Tuberculosis Sanatorium outside the little town of Paimio just north of Turku. Two hundred and ninety patients and a staff of doctors, nurses and maintenance employees make up a completely self-contained community.

From the pictures of the model and the isometric drawing the Sanatorium is seen to be composed of a long main wing "A" housing the patients; a central block with stairs, elevators and other vertical services; a smaller wing "B" for the dining room, social rooms and clinic; a "hotel" section "C" for the hospital staff and general kitchen; and the power house group "D". Set around the main structure are the doctors' homes "E", the employees' building "F" and the garage "G".

The disposition of these elements is the result of a carefully coordinated plan whereby the functions of each separate block are taken into account and all are considered in relation to the natural characteristics of the site, the surrounding country and the all-important sunlight. For example, the main wing "A" faces SSE in order that each patient may receive the full morning sun directly on his bed; the block of open-air terraces at the end is bent slightly southward to enjoy the midday and afternoon light. The wing "B" containing the dining room and social rooms is turned so that these

the ceiling a shade darker. Natural light pours through the window; artificial light is placed above and behind the head of each bed so that the light source is never in the patient's line of vision. The usual hospital room is not only visually harsh; it is also acoustically disturbing because of its hard slick surfaces. At Paimio three walls of each room are "hard" and one is "soft." The "soft" wall is made of thick slabs of insulating board covered with a jointless cellular material about 1/8 inch thick. The usual hospital noises are conspicuously absent.

In many details, particularly in those which relate most closely to the occupants themselves. Aalto reasserts his ingenuity. The ordinary wash basin causes water to splash. As hand washing is necessarily frequent in a hospital, Aalto designed a special basin which receives the falling water at an angle of 30 degrees without splashing. Continuing his analysis — and solution — of even the smallest problem relating to the patient, he designed a door knob which really fits the hand, has good leverage, protects the door and does not catch clothing. His fool-proof swinging door closes itself easily by the automatic action of gravity. A low-temperature heating panel forms a large part of the ceiling and in combination with the ingenious, draftless window ventilation insures a constant temperature with a minimum of dust-laden air currents. The wardrobes are made of light plywood hung from the wall, so that they do not interfere with easy cleaning of the room.

and less infectious cases, accommodating 120 patients in groups of 20, and small solariums for more serious cases with 24 couches its groups of four. It was Aalto's idea that, with a little care, the doctors could nurture the special character of each group, and by encouraging an easy transfer from group to group make it possible for each individual to find the most congenial milieu.

The construction throughout is reinforced concrete. Outside walls consist of 4 inches of concrete with a 4 inch facing of brick and a 1 1/4 inch interior facing of compressed cork. No formwork was used in pouring the concrete of these walls, for the brick and cork membranes were set up first and the concrete was poured into the space between. The brick is surfaced with stucco and the cork with plaster.

It is not possible to discuss all the detailed problems and their solutions here; the sum and synthesis of all these solutions produce the finished structure. This is not to say that the form of the whole follows automatically from the solution of the parts. Aalto is no relentless theory-bound functionalist; he feels that a completely rational architecture must be esthetically expressive. His esthetic is not at variance with the demands of function but is, rather, a living part of it.

SANATORIUM *at* PAIMIO (Pemar)

spaces too may be flooded by the direct rays of the sun. The other elements of the plan are phototropically oriented with similar care.

The illustrations indicate the qualities of the Sanatorium buildings; these striking architectural effects are not achieved at the expense of the occupants, nor, as so often happens, with inadequate regard for them. Aalto's architectural credo stresses the necessity of satisfying the requirements of the people for whom any structure is built. At Paimio the ordinary patient spends 60 percent of his time in bed, the severe case 100 percent. With this in mind, Aalto designed as his basic unit a two-bed room conceived in terms of the tubercular patient's physical needs and the psychological effect on him of his surroundings. To save the eyes of anyone lying on his back from the reflected glare of shiny hospital-white, the walls are painted a soft indefinite tone and

The standard room units are piled six high like great building blocks to form the main wing of the Sanatorium. On its roof and at the eastern end of each floor are open-air terraces where the occupants of the separate units assemble during the sun-bath period. The psychological relation between the individual and the group in a tuberculosis sanatorium is a very delicate one. Aalto's scheme, successful in practice, provides two kinds of terrace space -- a large roof garden for new

1921 1923

Receives diploma in architecture from the Helsinki University of Technology. As a student, works in architect Armas Lindgren's atelier. Travels to Sweden.

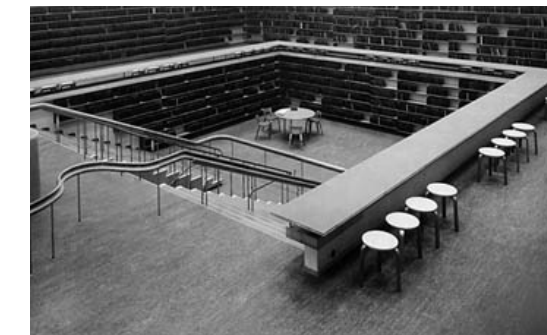
Opens the Alvar Aalto Office for Architecture and Monumental Art in Jyväskylä, Finland.

1924

Marries architect Aino Marsio (b. 1894).

Travels to Europe on honeymoon. First trip to Italy.

LIBRARY *at* VIIPURI (Viborg)



After a seven year delay, Aalto's revised but not compromised design for the Viipuri Municipal Library was placed in construction in 1934. It was opened a year later, and in planning and equipment remains one of the most efficient libraries in Europe. A visit to Viipuri reveals that the local clergy were wiser than they knew; not only the church but almost any other structure would have suffered in juxtaposition to this novel and handsome building.

Here in one great design are found the discipline of a true functionalist, the imaginative expression of a vivid and original artist and the integration of both qualities with contemporary industrialized building technique.

It is characteristic of Aalto's buildings that they "read" clearly even to the layman. The Library is a highly complex design, but the elements are so well arranged that their relationship and purpose are made apparent immediately.

The Library has two functions: in addition to the normal library services it provides a community auditorium, club rooms and buffet facilities. The larger block houses the library proper, and the smaller contains a lecture room on the ground level and club rooms on the floor above. The larger block consists of one great windowless room, illuminated through a series of circular light-wells in the roof. An upper level of this room is used for the circulation desk and book shelves; a lower level for reference and study. The children's reading room is on a still lower level. The library office is in the center and communicates directly with the several librarians' desks and, by lower corridors, with every other portion of the building. From the librarian's commanding central position, it is possible to observe and control all three sections of the library.

The most striking feature of the main reading room is the overhead indirect illumination. Although the 57 circular light-wells are 6 feet in diameter they are so designed that no direct sunlight can penetrate to the room. As the maximum angle of insolation in Viipuri is 52 degrees, the sun is never high enough to send rays straight down through any one of the deep wells. The rays pass first through a sheet of prismatic diffusing glass, strike the conical sides of the well and are then reflected down into the room. Each circular opening sends down a larger circle of diffused light which is overlapped by neighboring circles of light, so that a reader's book is lit from many indirect sources at once and a white page cannot reflect light up into his eyes. The books on the shelves are safe from the harmful effects of direct sunlight. The vast room is bathed in a soft shadowless light, ideal for reading, conducive to quiet. At night the artificial light is reflected from the high white walls above the bookcases, and is equally

restful and diffused.

The smaller building block shown in the air-photo contains an auditorium on the ground floor. Whereas the library rooms are windowless in order to shut out those factors inimical to quiet and study. One whole side of the lecture room is clear glass opening out broadly to the leafy park. This hall is used by the community for lectures, debates and meetings. In keeping with the democratic traditions of the old city. The room was designed so that members of the audience rising to speak in any one part of the auditorium would have the acoustical advantages usually reserved for the man on the platform. The wave-like contour of the sound-reflecting wood ceiling was the result of detailed study and experimentation: a tract of dead forest provided the 30,000 knotless Karelian pine strips.

Wherever wood is used, it is neither painted nor stained, but left to display the integral beauty of its color and grain, for esthetic as well as practical reasons. Both the Sanatorium and the Library have furniture of Aalto's design, and it, too, shows the natural beauty of the wood, varied by occasional painted surfaces. Seen always against the white of the walls, the woods take on a more positive color and ornamental pattern. The photograph of the main stairway shows another characteristic simple and fresh device, the use of climbing plants as a generic element of architectural design.

Simple though it is, the building never seems dull nor severe, for every glance discovers some handsome and practical innovation, like the reading room or lecture hall ceilings, or finds sonic pleasant new combination of plaster, wood, glass, multicolored books and green foliage.

LIGHT FITTINGS

The literature dealing with Alvar Aalto frequently notes the importance of light in his architecture, but the point at issue here is usually natural light. Nevertheless, Alvar Aalto always endeavoured to design buildings right down to the smallest details including the light fittings. During the long winter months up in the north, electric light is of major importance, from the point of view of both function and atmosphere. Even when switched off, certain Aalto light fittings retain their impact, and give their settings the finishing touch.



Jyväskylä Workers' Club
Ceiling fittings in the theatre

1925
Metal/glass

The motifs for all the light fittings in the theatre are derived from styles of the past. With their ample shapes, the lamps fit in well with the imaginative world of the theatre. The light fittings in the Workers' Club date from a time when lamps took shape on the architect's drawing board, but skilled hands were still needed to make them.

1925

AUGUST 1

Daughter, Johanna Flora Maria Annunziata, born.

1927

Moves to Turku, Finland.

1928

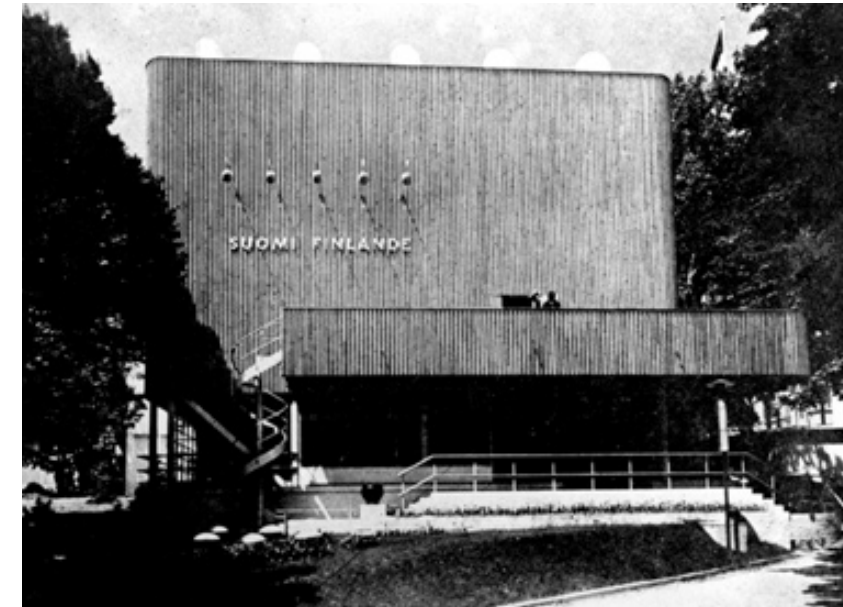
JANUARY 8

Son, Johan Henrik Hamilkar Alvar, born.

Travels to France, the Netherlands, and Denmark to see modern architecture and design by Le Corbusier, André Lucrat, J.J.P. Oud, Wilhelm Dudok, Poul Henningsen and others.

The FINNISH PAVILION

at the PARIS EXPOSITION



It is a great tribute to the system of open architectural competitions that, through this method of selecting a design, Alvar Aalto won the opportunity to produce several of his fittest buildings. This fact should cause us in the United States to regret that the competition idea is so infrequently resorted to here. In 1936, Aalto won a competition for the design of the Finnish Pavilion at the 1937 Paris Exposition. Most critics are agreed that this Pavilion was one of the two or three most distinguished in Paris and that it represented a vigorous expression of the work and culture of the Finnish people, as well as a personal triumph for Aalto.

The Finnish Pavilion stood on a very prominent site to the right of the Trocadero Gate. In character with his own modesty and that of his country, Aalto erected no such bold, pompous facade as did the Yugoslav architect whose building occupied a similar site across the way. Instead, to the Trocadero crowds, Finland's face was represented by a grove of stately trees. This was not only part of a brilliant architectural conception, it was good exhibition psychology. Paris is hot in the summertime and the average, foot-sore visitor welcomed the inviting shade of Aalto's trees as a relief from the sun and the aggressive fronts of the other buildings.

The expectations of the visitor were more than rewarded by the building itself. The trees led into a small, open court surrounded by shaded outdoor exhibits constructed of Finnish woods. Beyond this was a large room open in the center to the sky with vines climbing up out of view. Several routes led the visitor further down the sloping site into the final great exhibition hall -- an approach in delightful contrast to the long, restless labyrinths of the "forced traffic" plan of many other pavilions.

Wood is Finland's chief product and Aalto used it freely and in a number of fresh and unusual ways for the Pavilion itself and for the interior exhibits. In all this variety, the material is always employed logically and with a unique understanding of its essential qualities. Slender columns were strengthened against lateral bending by slender inserted strips. At the middle, where the tendency to bend would have been greatest, the reinforcement was greatest. At the top and bottom, where there was no likelihood of bending, there were no strips. Other columns, more slender still, were knotted together with peeled withes so as to keep each other from bending.

Aalto's scheme for the Pavilion concentrated on the interior design. It was, of course, natural for one with his rational attitude towards architecture to emphasize the exhibits in a building for exhibition purposes rather than the building in which the exhibits were to be housed. Unfortunately many of the interior displays were given to others to design and fell below Aalto's high standard. He was also handicapped by the opposition of diplomats to novelty and by very small appropriations of funds. But in spite of these obstacles, the Finnish Pavilion is one of Aalto's most successful buildings.



Office building for the Turun Sanomat newspaper

Ceiling fittings in corridor

1929/1930

Painted metal

The modern light fittings in the Functionalist offices of the Turun Sanomat newspaper were in harmony with the style of the building. The lamella fittings in the corridors distribute the light in a longitudinal direction. Their form is not unlike the tubular neon lamps that came into common use in public buildings decades later. This particular light fitting was only made for the Turun Sanomat building.

1929

1930

1933

Attends the 2nd Congrès Internationaux d'Architecture Moderne (CIAM) in Frankfurt, Germany--the theme is "Die Wohnung für das Existenzminimum" (Housing for Low-income Earners.) Meets artist László Moholy-Nagy and architects Walter Gropius, Le Corbusier, and Karl Moser, as well as the architectural historian Sigfried Giedion.

Participates in exhibition, Rationalization of the Minimum Dwelling, at Helsinki Art Hall.

Travels to Brussels for the 3rd CIAM conference and a presentation of modern design from Finland.

Travels to Germany and Switzerland. Meets architects Gerrit Rietveld, Hugo Häring, Ernst May, Richard Neutra, Mart Stam, Hans Schmidt, and art patron Héléne de Mandrot, among others.

Moves office to Helsinki.

Attends the 4th CIAM conference in Athens.



Pendant fitting
Early 1950s

Painted brass/brass

This lamp, which has become popular in the home, is nicknamed Mehiläispesä (Beehive). Sources of inspiration for this fitting might be seen in some of the light fittings of the famous Danish lighting designer Poul Henningsen, which Aalto became familiar with in the 1920s. Even when switched off, this fitting is a decorative and sculptural object.

Ceiling fitting
Early 1950s

Painted aluminium/brass

Because of its shape, this small light fitting, which gives a concentrated light, has been nicknamed Nauris (Turnip). When switched on, the light emerging from between the partially nested, concentric rings of the upper part emphasises the shape of the lamp. The lamp has been available in standard colours of white, yellow and grey, and to special order, in blue.

HOUSE *and* OFFICE *at* HELSINGFORS



In 1937 Aalto built his own house in Munkkiniemi (Munksnäs), just outside Helsingfors. Perhaps not a major work, it has a special interest as a project for which Aalto was both architect and client. The working space of the house is separated from the living rooms by a terrace and porch on the south, or garden side. This wing, which is used more than any other, is faced with vertical wood siding reminiscent of the Pavilion in Paris. On the north side, or entrance, the surface material is stucco.

The interior walls are covered with canvas, woven fibrous material or natural wood. The vertical construction is brick and steel and the floors are of reinforced concrete. Like his other buildings, this one is also noteworthy for the use of ivy and creepers as an essential part of the decorative scheme. The fresh informality of the house reflects Aalto's own spontaneity. In its design he was assisted by his architect wife, who has frequently been his collaborator.

Alvar Aalto has more buildings to his credit than the few which are described in this essay. Nevertheless, the Sanatorium, the Library and the Pavilion suffice to reveal his architectural credo and to make those interested in living architecture look forward to the new work that he will do.



Ceiling fitting
National Pensions Institute, head offices

1955
Painted/unpainted brass

About a dozen new light fittings were created in conjunction with the interior design for the head offices of the National Pensions Institute. The design work is seen as having given an extra impetus to Aalto's lighting designs in the 1950s.

The most impressive space in the building, the lofty main hall where customers are served, is lit by a pyramid-shaped roof-light. When darkness comes, the space is lit by fittings specially designed for the space, which are suspended inside the pyramid.

The same fitting is used in the main conference hall. In this space, the light intensity shining downwards from the fittings is increased by a brass saucer which reflects indirect light. The choice of materials for the lights is also affected by the hierarchical status of the space in the building.



Standard lamp

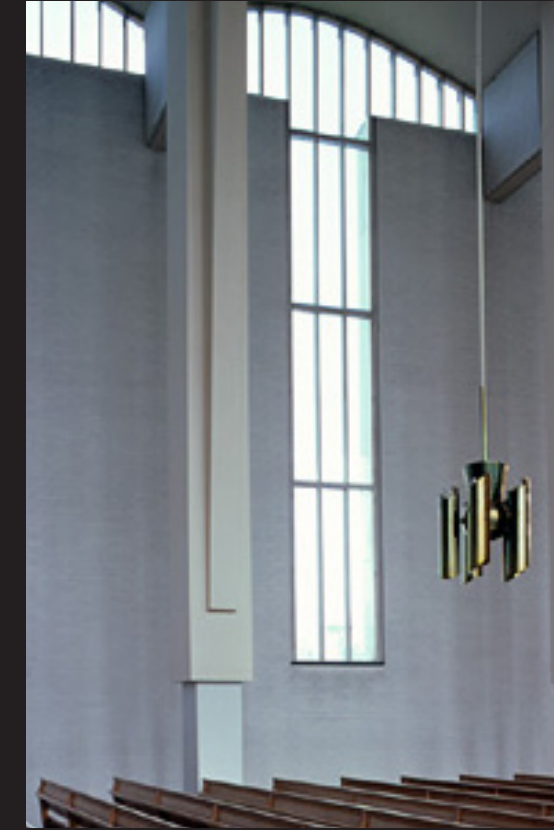
Mid-1950s
Painted metal/brass/leather

The shade is made of slightly overlapping, thin metal rings. The shape of the shade and the light that filters between the lamellas have caused the lamp to be given the descriptive name Enkelinsiipi (*Angel's Wing*).

As a child, Alvar Aalto is known to have admired filtered light – just like sunlight filtering through grandma's lace curtains on a summer's day.

“Churches don't need art, churches don't need ornament...at least not in the sense of art for churches... Whatever their shape, they need purity of form and piety. That kind of purity of form is ... the outcome of artistic work.”

—Alvar Aalto, 1925



Chandelier
Seinäjoki Church

Early 1960s

Brass

Aalto still stuck to this view when he was designing the Church of the Cross of the Plains at Seinäjoki in the 1960s. The brass chandeliers in the church itself are an integral part of its powerful, holistic beauty.



1935

Meets Maire Gullichsen, wife of Industrialist Harry Gullichsen, through his associate, Nils-Gustav Hahl. With Marie Gullichsen, Hahl, and his wife Aino, the Artek company is established to produce and distribute Aalto's furniture and glassware.

1937

Travels to Paris during the summer where he meets artists Pablo Picasso, Alexander Calder, Constantin Brancusi, and art historian Christian Zervos.

FURNITURE

1938

First trip to the United States.

The creation of new furniture was implicit in the development of a new architecture. The most obvious relationship lay in the formal elements. Straight lines, smooth and sanitary surfaces, simple proportions and pure color were as applicable to the chairs and tables within a house as to the structure by which the house itself was formed. Moreover the new brightness and openness of spaces shaped to clearly defined use made necessary the restudy of the uses and dimensions of inside accessories.

In a deeper sense, furniture changes not only to "harmonize" with the modern house but because, like the house itself, it must be re-created for contemporary life and derived from contemporary production methods. The designer works no longer with a manual craftsman but with a manufacturer employing machines: his materials are no longer largely restricted to "natural" ones, such as wood, but include many that are synthetic, such as steel, aluminum, plastics and plywood. The user of the furniture retains the same human frame and muscles as always, but his sitting habits change with

1939

While in the United States, meets architects Marcel Breuer, Wallace K. Harrison, Joseph Hudnut, and Edward D. Stone, among others.

Visits Moholy-Nagy's New Bauhaus school in Chicago, then travels to California, Arizona, and New Mexico.

1940

Visits Edgar Kaufmann, Jr. at Fallingwater, Edgar J. Kaufmann House, Mill Run, Pennsylvania, designed by Frank Lloyd Wright.

Appointed Research Professor at Massachusetts Institute of Technology, Cambridge. This arrangement lasts briefly; he returns to Finland due to war.

the introduction into his environment of new factors such as the automobile and short skirts.

Of the developments which have produced changes in furniture, the one that perhaps best rewards study in connection with Alvar Aalto's designs is the growth of furniture-making by machine. With the arrival of power-driven machinery, furniture-making was altered and machine process substituted for handcraft. The immediate influence of the machine, however, was to stultify the development of design. It made possible the cheap and accurate reproduction of the old handcraft patterns, so that machine objects were produced with the idea of giving a handcraft quality. Several generations passed before it was discovered that machine work produced characteristic esthetic qualities of its own and likewise had its natural limitations. The power production of objects implied new qualities and new potentialities.

Walter Gropius has pointed out the nature of the change in saying that "the difference between industry and handcraft is due far less to the different nature of the tools employed in each than to subdivision of labor in the one and undivided control by a single workman in the other."

1946

Visits Frank Lloyd Wright in Milwaukee and travels with him to his home, Taliesin, in Spring Green Wisconsin.

1948

Travels to Rome with his wife, Aino. Visit numerous classical ruins.

1949

JANUARY 13

Aino Aalto dies after a long illness.

1952

Marries architect Elissa Mäkineniemi (Elsa Kaisa Mäkineniemi, 1922-1994).

MACHINE *and* ESTHETICS

The subdivision of labor changed living habits and industrialized society. We ask. "In what way was this done? What was the 'subdivision of labor in the one' (industry) and 'undivided control by a single workman in the other'?"

Under handicrafts the single workman produced an object in all of its parts, starting with design, and following through all of the steps in the manufacture. With the machine the workman became a link in the long chain of production. He carried through only one step or part in the manufacturing process.

This meant that in machine production the individual did but one thing in all of his working time and that only limited skill and a minimum of mental exertion or creative effort were required of him. This was a tremendous change in working method. It developed some few individuals who could organize and direct, while others (the masses) were required to work mechanically with their hands in operating the machine. The vast "upset" in working method resulted in a change in society, not alone for the groups engaged in manufacture but in business as well. In business the office worker was developed--the clerk, the accountant, the specialists in every line of work. The agglomeration of many workers around industry and in cities was a natural outcome of specialization of labor. The urgent need for more rational methods of town planning was recognized and only partially solved. What occurred was not confined to a single country and it is not possible to determine the exact place of its inauguration since its manifestations appear simultaneously in many different countries.

STANDARDIZATION

While the machine acquired new values with the advent of power machinery, there was at first little change in the product. It was not until our own time that we began to assimilate the machine and a "new machine aesthetic, unselfconsciously developing," as expressed by J. R. Richards. "not being imposed from without. To this new aesthetic the opportunities of rationalization that the machine brings, the progressive impersonalization of design, the new emphasis on the product rather than on the process of making it and the discovery of the abstract aesthetic virtues of machines themselves have all contributed. The difference is between a humanistic aesthetic and an abstract one."

As a routine production "models" or types were evolved which could be extensively reproduced in vast quantities. These types became the embodiment of forms for specific purposes, refined by use and investigation. The combination of logical form and perfection of shape with character of finish and interrelation of parts imposed by the machine is what we expect but have not fully realized under the new order. Most important of all--standardization made quantity production possible and, because one result of quantity production is lowered cost objects were made available to the great masses.

Standardization necessitated an acceptance of order. It meant that all possible thought and skill must be used in the design of a flawless model suited to the process and worthy of large-scale reproduction before the machines started to turn. It was no longer natural or possible to produce forms of unlimited variety. It was necessary to evolve types possessing universal value. Only thus was it possible not only to lower costs but to turn the machine process into a machine craft, a worthy successor to the old handicraft because of its unashamed reliance on its own methods and its own forms of excellence.

CHAIRS

This exhibition contains the complete range of Alvar Aalto's chairs. On show are unique, one-off chairs from Aalto's early period that were hand-made by master joiners, and mass-produced chairs from his later period. Of course, the story of his chairs is also the story of all the different stages in the whole of Aalto's design work; of how, as a young architect, he and his wife Aino were fascinated by revivalist styles and designed revivalist buildings and furniture themselves. Historical motifs disappeared fairly rapidly from his designs, however, and gave way to the Modernist trend made famous by his colleagues from Continental Europe. After the Second World War, Alvar Aalto's architecture took on a distinct character of its own, a development that can also be perceived in his other design work.

Study furniture for Dr. Paavo Peräinen

1919

While still a student, Aalto was commissioned to design a suite of furniture for Paavo Peräinen, a dentist who was the brother of one of his classmates. This sturdy furniture with its slightly Baroque flavour is believed to be his first venture into furniture design.

Bench

1928

Alvar Aalto designed the interior of a modern cinema for the premises of the Jyväskylä Defence Corps Building (1926-1929). The foyer of this cinema, Kino, was furnished with 3-seater 'wall benches'. In combination with the wall sconces designed by the Danish architect Poul Henningsen, that were used for lighting the foyer, the interior was simple and 'in excellent taste', as described by the local paper.

The corduroy upholstery of the seat cushions on the benches is probably original. When the cinema ceased to function in the 1930s, the furnishings were sold at auction.



1957

Awarded a Gold Medal by the Royal Institute of British Architects (RIBA), London.

1962

Awarded Sonning Prize in Copenhagen, Denmark.

1963

Awarded Gold Medal from the American Institute of Architects.

Elected President of the Academy of Finland (1963-68).

1969

Elected a member of the order of Pour le Mérite (the highest cultural accolade awarded in Germany).

1972

Awarded Gold Medal by the French Academy of Architecture.

DESIGN *and* MANUFACTURE

The development of furniture may be described as an interplay between designer and manufacturer, and between both and the consumer.

The greatest contribution of the designer probably lies in his power of intuition. Rarely does an invention arrive entirely by way of a reasoned program. Roebbling heard of wire being used in a new way in the form of rope, and his mind jumped to the idea of using this rope first to draw canal boats up inclined planes and then to replace chain on suspension bridges. Breuer, in our own day, saw a bicycle, and his mind jumped to the idea of using a similar tubular frame to support a chair. After the first intuition, imagination supplies intermediate steps. It is then that reason and science enter. These check and control the direction of intuitive thought. Even "pure" scientists, such as Pasteur and Marconi, have found intuitions of great value in solving an intricate problem. They have had the ability to follow up their intuitions, using the laboratory and other technical means to control and develop concepts that at first were merely "felt."

Useful intuitions differ from random fancy in the fact that they arise in minds already well stocked with knowledge and aware of the problems to be solved. Successful modern design is impossible without a background of familiarity with the new materials, processes of manufacture and specific requirements.

Alvar Aalto as a designer of furniture must be considered not as a unique creative artist who suddenly appeared to give us a completely novel kind of furniture. His accomplishments were in a clear line of development. In the design of Aalto chairs we can perceive the applied experience of chair designers who immediately preceded him -- Marcel Breuer, Miës van der Rohe and others. Aalto's first chair with plywood seat and back was mounted on a tubular frame as a base. This chair was made in 1932. A short time later he followed it up with a wood supporting frame, making the entire chair of homogeneous material. The material required for support was now heavier in section but even lighter in weight than tubular steel. This change from steel to wood meant a great gain in simplification of manufacture.



Easy chair

1932

Maker: Oy Huonekalu- ja Rakennustyötehdas Ab; from 1966 Huonekalutehdas Korhonen Oy

Top prices have been paid for this Aalto chair at international auctions (e.g. €23,333 in London in spring 1999). This may well be because of a certain amount of misleading information about the rarity of the chair.

"The greatest interest at the Nordic Building Forum exhibition was undoubtedly aroused by the new chair types designed by the architect Alvar Aalto and made at Kaarina near Turku by Oy Huonekalu- ja Rakennustyötehdas Ab. These easy chairs were extremely comfortable and light, aesthetically pleasing in their appearance and close to French taste in terms of decoration. A room furnished with these, plus a couple of Modernist French pictures on the wall, would have a style and character that truly captures the spirit of the age..."

— Arttu Brummer

Aalto hastened to set up models for industrial manufacture, creating a complete line of chairs, tables, settees and beds. He allied himself with a manufacturer in order to secure systematic and wide distribution.

It was very natural for the earlier designers of furniture from the Bauhaus to suppose that Aalto, with his academic training, was a designer by instinct — not one who delved long into the property of materials and methods of production as a preliminary to design. In reality Aalto has exemplified the combination of intuition and science in all of his architecture and furniture. In his tuberculosis sanatorium at Paimio, Finland, he applied a new version of cantilever structure to the frame of his building, releasing free ground space for the use of patients. For this same building he devised a draftless window and a lighting fixture which scientifically reflects and diffuses light and has ingenious vertical walls which do not collect dust.

In addition, Alvar Aalto has the ability to give his furniture the natural appearance and character of wood. The material is expressed in the shape of his chairs and in their finish. Some American designers of chairs wrought in aluminum unfortunately continue to simulate with metal the forms developed for wood because of the past popularity of woeful.

In the making of his chairs Aalto employed plywood with different degrees of veneer thickness. Plywood is simply a structural reformation of an old material. It consists of layers of wood veneers dependent for their strength on being bound together with modern synthetic cements. The fibres in the middle layer of a "three-ply" sample run at right angles to the fibres of the two outer layers. Plywood with four, five, six or more layers is built up on the three-ply as its manufacturing foundation.

The formation of plywood in layers permits it to be bent into curved shapes by stretching and compression under heat or steam. For the piece that forms the continuous back and seat of a chair it can be used as thin as a quarter-of-an-inch. Because of the cross-grained lamination, expansion and contraction under changes of heat or humidity become negligible. Nor can plywood split or warp under normal conditions.

The plywood most generally employed by Aalto is birch, a product of heavily forested Finland. This wood has outstanding qualities of firmness and hard surface combined with unusual pliability. It has few knots and immense gluing strength. The color of Finnish birch is a pale yellowish shade with occasional markings like watered satin. The birch of our northwoods is similar except that its color is usually a pale reddish tan. Birch has been called the ideal plywood for general purposes.

Many of Aalto's chairs and tables have a peculiarity of a different sort. They are designed so as to "nest" or "stack" in great numbers with the result that twenty or more occupy no more floor space than one. The average user of furniture is well aware of the convenience this brings in narrow living quarters; but to the manufacturer and distributor the feature is still more important, since it saves space and therefore costs at every point; in factory storage, in crating, in transportation, in warehouse and in showroom. The cumulative advantage is enormous.

Aalto respects the qualities of plywood so that his use of the material varies under a wide range of conditions. The bearing surface of the chairs or other furniture, that is, the area in contact with the floor, is never the edge of plywood, which would be injured with moving, but on the flat face of built-up layers of wood. The straight shaft of a stool or table leg is one piece of solid wood which is laminated where the leg is bent—a patented Aalto invention. Since chair seats are subject to unusual strain, they are sometimes reinforced by the addition of one or more layers of veneer.

FURNITURE *and the* USER

Aalto's experiments as recounted illustrate the relationship between the designer and the manufacturer, leaving still to be considered the growth of new furniture forms in relation to changes in use.

The consumer may be considered as a person with a threefold character: he has a skeleton and set of muscles that have not changed appreciably throughout all his centuries of sitting; but there is a good deal of variety and change in his habits and also in his tastes.

“As well as all the well-known Aalto chairs, there were a couple of rather interesting new ones. A huge reclining chair upholstered in special fabric...However, the chair seemed perhaps to be a little clumsy and over-dimensioned in comparison with Artek's usually slender and graceful vocabulary of form.”

—Arkkitehti (The Finnish Architectural Review)

Chair

1930/1932

Maker: Oy Huonekalu- ja Rakennustyötehdas Ab

This chair was at one time in Alvar Aalto's ownership and may well be a prototype. Several models have been made, each one slightly different. The first chairs of this type were probably made in 1930 and shown at the Minimum Apartment exhibition in Helsinki. In construction, they were a little more fragile than the one you see here, and were not yet suitable for production. The Swiss furniture makers Wohnbedarf took the chair into production for the Continental European market in the early 1930s. In Finland, the chair was presented as being ready to go into production in 1932 and was used in Aalto's Paimio Sanatorium.



MECHANICS *of* SITTING

Not only do we inherit the bodily sitting mechanism of our fathers, but sitting has become the most universal occupation of mankind in what may be termed sedentary modern life: we should be expert sitters. While sitting we work, relax, read, dine, and do our “running around” in vehicles of transportation. So convinced are we of the virtue of sitting that we prefer “settled” civilization which radiates from the “seats” of culture and of learning. Our physical well-being, enjoyment and efficiency are dependent on how we sit. Nevertheless, despite all our experience and tradition of sitting, there is nothing we do so badly.

Easy chair

1932

Maker: Oy Huonekalu- ja Rakennustyötehdas Ab

This model was first shown at an exhibition at the Nordic Building Forum (1932). The chair formed part of the interior furnishings at Paimio Sanatorium and has also been made in curly-grained birch and finished in white paint.



Easy chair

1933

Maker: Oy Huonekalu- ja Rakennustyötehdas Ab

Aalto's easy chairs were considered ultra-modern in the 1930s, but when they became acceptable as home furnishings, the upholstered versions were more popular than those with plain plywood seats. The latter were more commonly used in public spaces, but the upholstered versions were sometimes used there, as well.

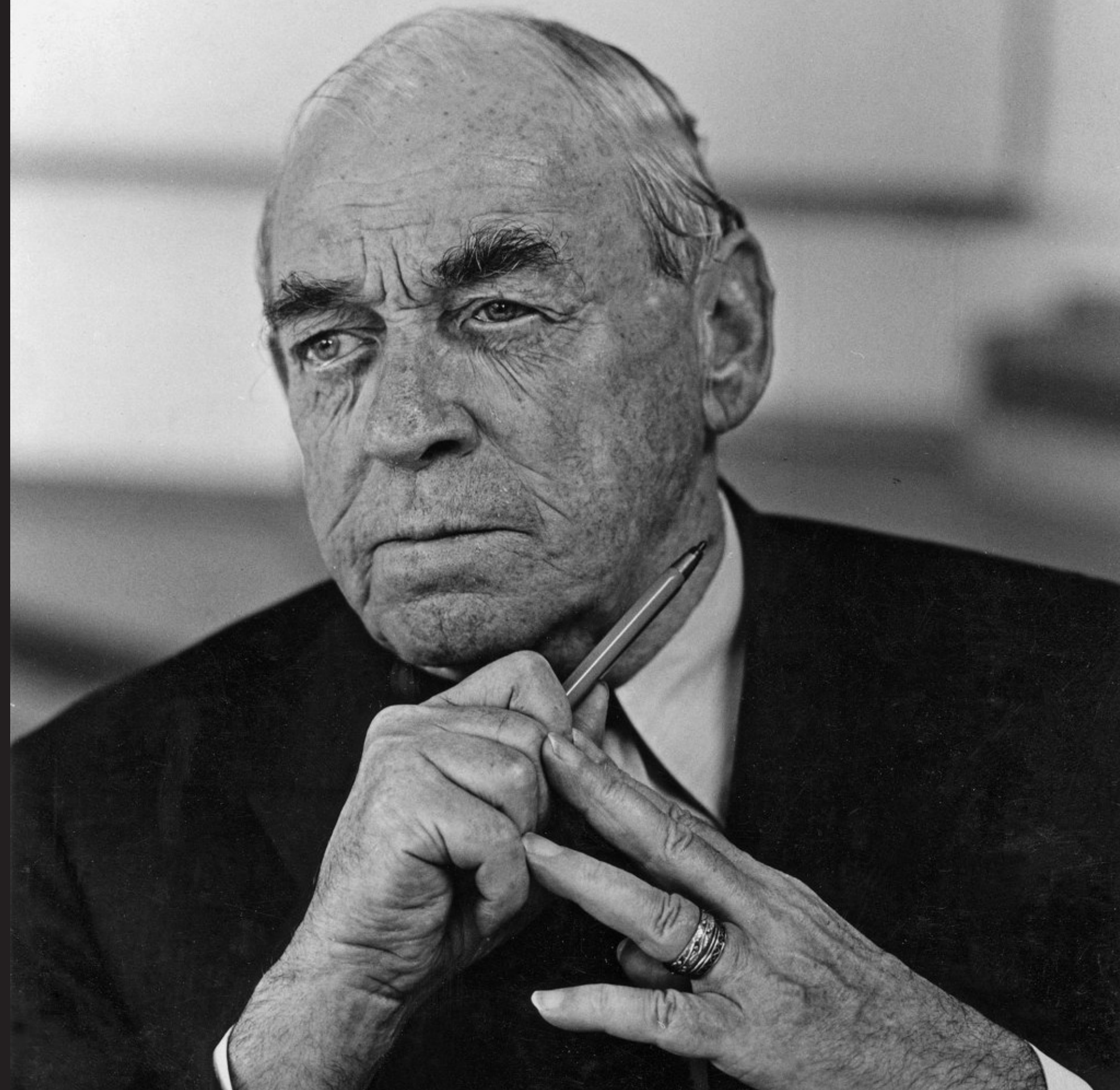
This chair stood in front of the fireplace in the front hall of a Modernist house designed by the architect Bertel Strömmer (1890-1962). The client who commissioned the house was a great admirer of Modernism and at the start of the 1930s he wanted modern furniture in his home. The chair remains in its original state.

Chaise longue

1936

Maker: Oy Huonekalu- ja Rakennustyötehdas Ab

An upholstered version of this chair was shown at this particular exhibition. The exact year this chair was given its present-day, lighter look is not known. Perhaps the criticism in Arkkitehti had some influence in the matter.

**Bar stool****1934***Maker: Huonekalutehdas Korhonen Oy*

The invention by Alvar Aalto and the joiner Otto Korhonen of bending chair legs from solid wood made it possible for the Aalto stool to be conceived. Thus Aalto achieved one of the main goals of modern furniture design; genuine mass production of furniture. All that was needed now was a board for the seat, the legs and some screws. Joints, which demanded a good deal of time and skilled workmanship, could be abandoned. Tables could be manufactured the same way.

The basic Aalto stool is 3-legged. Because of this, even large numbers of them can be stacked and stored in very little space.

The first 4-legged stool was a bar stool. In the earliest models, the footrest forming a ring around the stool was made of metal. The seat could be painted, varnished, upholstered, covered in fabric or finished with linoleum.

The stool shown here was made in the 1970s.

Chair**1940s***Maker: Oy Huonekalu- ja Rakennustyötehdas Ab*

Oy Artek Ab was set up in 1935 to market Aalto furniture and carry out interior design work. The drawing office, where countless items of new furniture and complete interior designs were conceived, was steered by the expert hand of Aino Aalto (1894-1949).

In her Artek period, Aino Aalto designed many lightly constructed chairs, mainly dining chairs. Many of them were in production for varying lengths of time, but many of these models have now been forgotten.

This particular woven rattan chair formed part of the furnishings at the Aaltos' Riihitie home, in front of the grand piano, for example. The designer of the chair was also the keenest musician in the family.

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