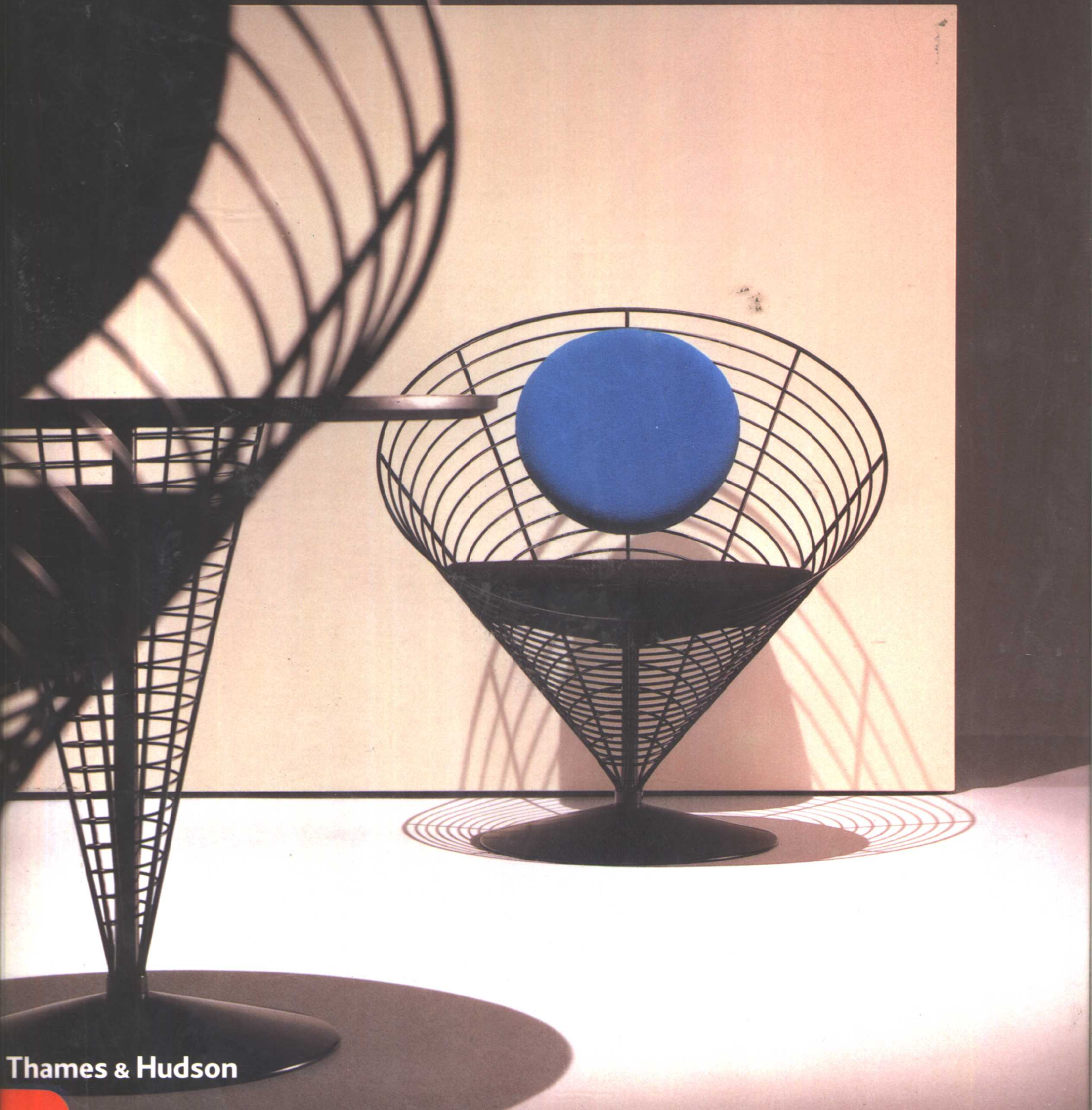


# Modern Furniture Classics

## Postwar to post-modernism

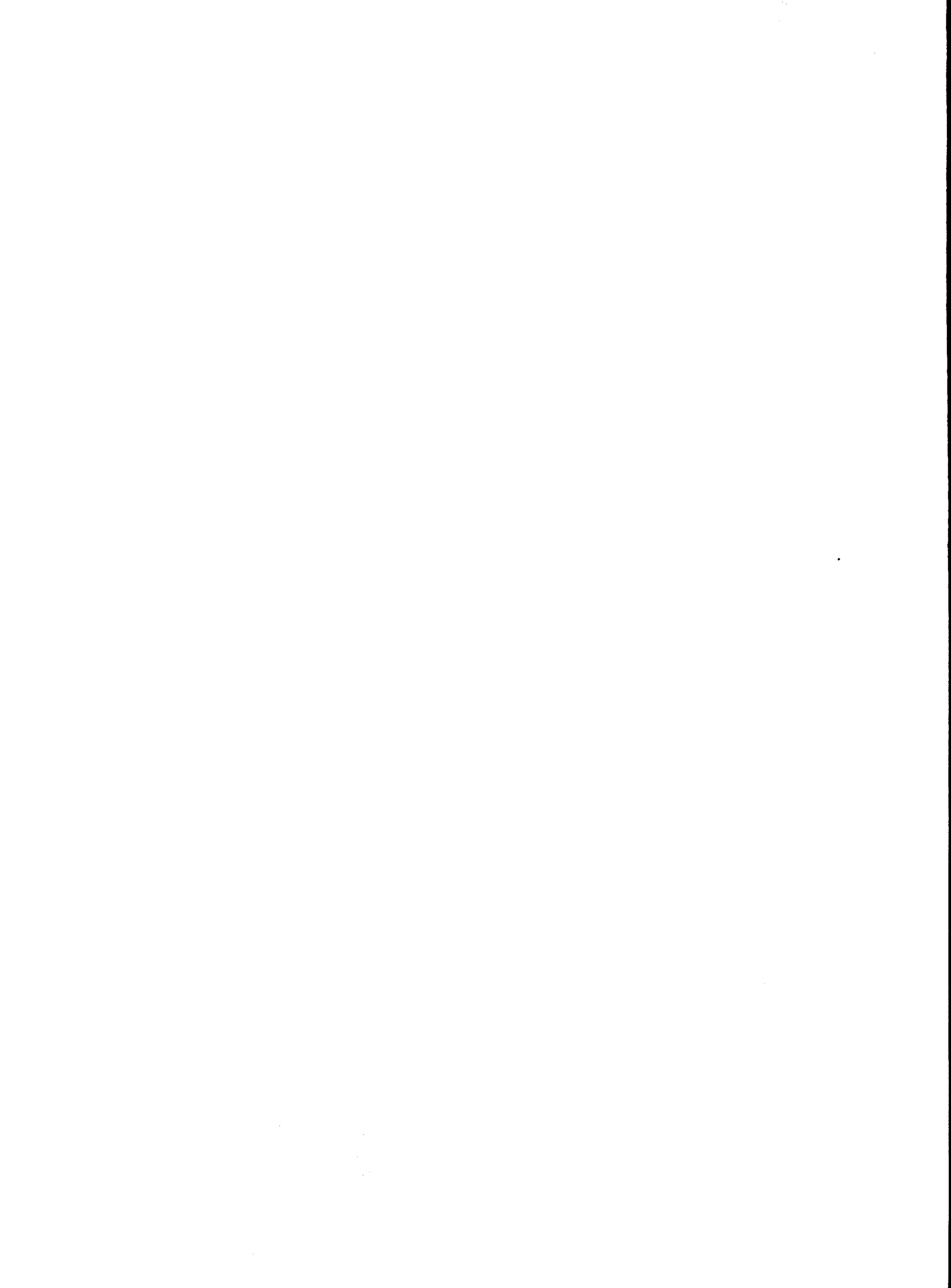
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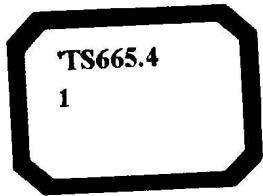


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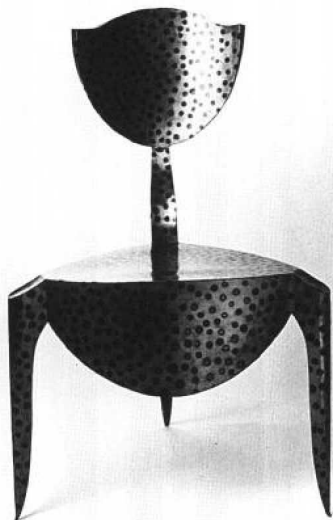
MODERN FURNITURE CLASSICS







Charlotte and Peter Fiell



**MODERN  
FURNITURE  
CLASSICS  
POSTWAR  
TO POST-  
MODERNISM**

347 illustrations, 144 in colour



**Thames & Hudson**

*For our daughter, Emelia Beatrice,  
born while we were writing this book*

p.1 Exterior view of Fiell,  
181 King's Road, London SW3, 1990

p.3 André Dubreuil  
Paris chair, 1988

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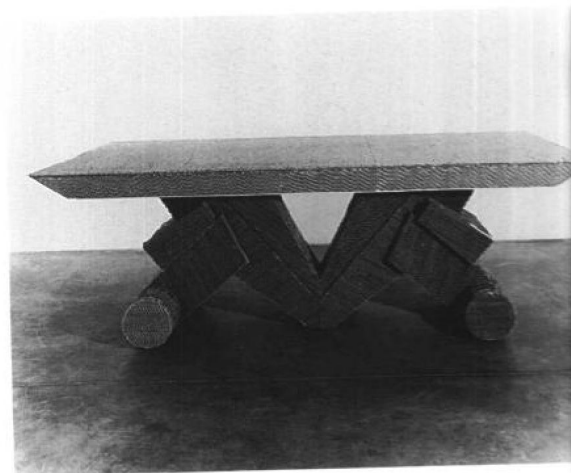
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**Carlo Mollino**  
Chair for the Agra House, 1955

**Frank Gehry**  
Imperial table, c.1982

**Gerrit Rietveld**  
Zig-zag chairs, 1934



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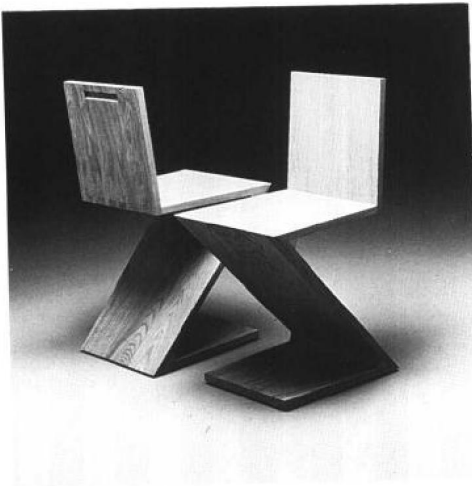
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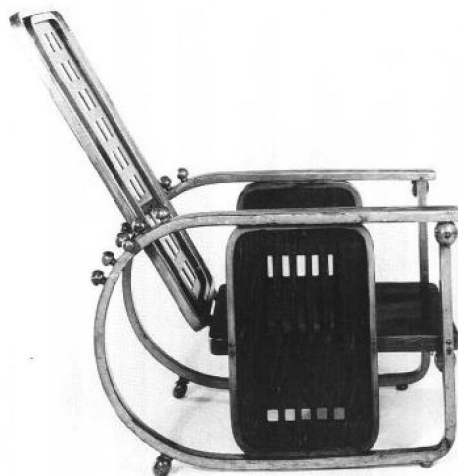
# 1900 to 1945 Introduction: Ornament in exile

**Josef Hoffmann**  
Sitzmaschine, 1908

**Marcel Breuer**  
Wassily chair, 1925

**Denham Maclaren**  
Glass and Zebra-skin chair,  
1931

**Frank Lloyd Wright**  
Chair designed for the  
Kaufmann Department Store,  
Pittsburgh, 1937





The term 'design' is used to describe a variety of components that have been subject to a creative process. Charles Eames interpreted design as 'a plan for arranging elements in such a way as to best accomplish a particular purpose'.<sup>1</sup> This is a classical definition of design and is necessarily rational. The rationalist design principles promoted by the Modern Movement represent the basis from which twentieth-century design has evolved.

A design that is highly rational in one period, however, may be considered anti-rational in another. Indeed, the history of furniture design in this century is dominated by two main themes: rationalism and anti-rationalism. Styling runs counter to design and can be regarded as essentially anti-rational. Functionalism and the industrial process are the primary concerns of design, whereas aesthetics are the central consideration of style. New styles are born out of the rejection of those that came before: Pop was in opposition to the 'good design' of the 1950s, High-Tech was a reaction to the anti-design of Pop and so forth.

Truly definitive or absolute design cannot be created because design is and always will be ephemeral. Although particular design solutions can only apply to specific purposes and periods in time, however, it is possible to speak in terms of 'classics'. Classic furniture is more forward-looking or better designed than its contemporaries. It represents a harmonic balancing of the objectives that characterize design and style, possesses an enduring aesthetic or functionalism and powerfully expresses the spirit of the time in which it was created.

Furniture designed after the Second World War bears the unmistakable mark of avant-garde design concepts formulated by the Modern Movement during the first half of the century. In order to understand the evolution of modernism and the development of contemporary design as we know it, however, one has to go even further back and examine what was happening during the last quarter of the nineteenth century, for it was then



that the Arts and Crafts Movement was paving the way for modern design.

Rejecting the eclecticism and unashamed opulence of the High Victorian style, while renouncing the use of superfluous ornament as being symptomatic of a decadent society, the Arts and Crafts Movement turned towards a simpler and more rational code of design ethics. Arthur Heygate Mackmurdo (1851–1942), founder of the Century Guild, described the moral imperative felt by the Movement's leaders: 'The more extensive our vision, the more intensive our sentiment, the greater appears the human importance of this movement not as an aesthetic excursion; but as a mighty upheaval of man's spiritual nature.'<sup>2</sup>

Indeed, William Morris (1834–96), undoubtedly the Arts and Crafts Movement's greatest exponent, wished to reform the social order as well as attitudes to design. During the period that encompassed the High Victorian style, machine-made objects were often reproductions of handcrafted work and were therefore untruthful to the materials and the technology they employed. Morris & Co. favoured a return to traditional craftsmanship in which a guild system could operate, retailing designs that were inspired by traditional vernacular design formats and especially by medievalism. For all their apparent simplicity, designs such as the Sussex chair were, ironically, well beyond the means of many ordinary people, for much of their construction was done by hand. Morris condemned the cluttered living spaces of the High Victorian period, extolling people to 'have nothing in your house that you do not know to be useful or believe to be beautiful'.<sup>3</sup> His ideas were hugely influential on the Continent, and shops opened in Munich, Liège and Paris to sell the new furniture. In America, meanwhile, a version of Englishman Charles Eastlake's *Hints on Household Taste* was published in 1872 and was a tremendous popular success, introducing the views of the Arts and Crafts Movement to a market that had been preoccupied with the mass production of elaborate

upholstered furniture. The Arts and Crafts Movement's distrust of hackneyed ornament and 'gadgets' prompted the search for a new idealism in design that laid the ground for the Glasgow School, the Wiener Werkstätte and the work of American architect Frank Lloyd Wright (1867–1959), all of which were profoundly instrumental in the conception of the Modern Movement.

The work of the Glasgow School, particularly that of Charles Rennie Mackintosh (1868–1928), was to forge a link between the new aesthetics of the Arts and Crafts Movement and parallel developments on the Continent. Mackintosh's work was startlingly avant-garde in its day, for although the influence of the Arts and Crafts Movement is clear – he rejected worn-out historicism, insisting on careful use of ornament and genuine craftsmanship – his designs contain the curving organic elements of Art Nouveau, Celtic motifs from his native Scotland and curiously elongated forms. In his later designs Mackintosh employed geometric and abstract forms of ornament, at a time when non-representational art was only just beginning to emerge.

At the same time, in Vienna, the architect and designer Josef Hoffmann (1870–1956) was designing plain, linear furniture and interiors for the Wiener Werkstätte. It is important to remember that the furniture designs of Mackintosh, Hoffmann and others were only a small part of larger decorative schemes, for it was not until after the Second World War that 'designer' furniture was to take on a truly separate identity from the architecture surrounding it. The display of Mackintosh's furniture and interiors at the Vienna Secession exhibition of 1900 had a profound influence on the work of the Wiener Werkstätte; indeed, Franz Wärndörfer, who financially supported the Werkstätte, is thought to have bought some of Mackintosh's furniture for his dining-room, and Hoffmann visited Mackintosh in Scotland. Founded in 1903, the Werkstätte was a guild of designers engaged in all aspects of design, from textiles and graphics to

furniture and metalwork; Wärndörfer had been impressed by the work of the British Guild of Handicraft founded by C.R. Ashbee (1863–1942). Hoffmann, nicknamed ‘Quadrat’ owing to his use of rectilinear forms, and his colleague Koloman Moser (1868–1918), also echoed the aims of the Arts and Crafts Movement – and perhaps recalled the simple honesty of Biedermeier furniture, which had been submerged by ostentatious historicism – when they stated in 1905 that for the Wiener Werkstätte the ‘guiding principle is function, utility our first condition, and our strength must lie in good proportions and the proper treatment of material. We shall seek to decorate when it seems required but we do not feel obliged to adorn at any price’.<sup>4</sup> The Hoffmann Sitzmaschine, a reclining chair designed in 1908, certainly meets the Werkstätte’s criterion of minimal ornament. It was originally sold with or without large horsehair-filled, upholstered cushions. More often than not, the chair was purchased without the cushions, which may indicate, ironically, that the Sitzmaschine was acquired purely for its aesthetic appeal rather than for its function.

Walter Gropius (1883–1969) believed the later Bauhaus approach to design was the logical progression of ideas founded by the Deutscher Werkbund, of which Hoffmann was a member. The Deutscher Werkbund, founded in 1907, was set up, like the Wiener Werkstätte, in opposition to the decorative excesses of the then prevalent Art Nouveau style, or ‘Jugendstil’ as it was known in Germany. One of its members, Adolf Loos (1870–1933), wrote a paper in 1908 entitled *Ornament und Verbrechen (Ornament and Crime)*, in which he put forward the idea that excessive ornament could lead to the debasing of society and ultimately to crime. A later Werkbund publication, *Form ohne Ornament (Form without Ornament)*, of 1924, illustrated and expressed the virtues of plainer, more rationally based industrial designs. The movement aimed to promote closer co-operation between artists, architects and manufacturers, believing that the machine was not responsible for poor

design, but that designers had not ascertained how to use the machine to its maximum efficiency in aesthetic terms.

The question of mechanization versus handcrafted techniques was a long-running dispute. While William Morris had been fervently against mechanized production methods, the Arts and Crafts architect and designer Charles Voysey (1857–1941) believed that mechanization did have a place in modern furniture design, particularly as the rapid growth of the middle classes created a pressing need for the mass production of furniture. Machines, he argued, would ultimately provide well-designed furniture within the economic reaches of all people and not just the élite, thereby avoiding the paradox of Morris’ beautifully handcrafted, ‘simple’ furniture that was beyond the financial grasp of the masses; even Ashbee came to support Voysey on this point, accusing Morris of ‘intellectual Ludditism’.

The interwar years were characterized by the search for new uses of materials and by the desire to use as few components as possible in any one design; minimizing the number of components would not only encourage aesthetic purity but would also, it was hoped, facilitate mechanized production. Ideas from Continental Europe were most influential at this time, with designers such as Gerrit Rietveld, Marcel Breuer and Alvar Aalto experimenting with newly developed materials. New housing built for ordinary working people meant that there was a demand for affordable furniture that would fit into small living spaces, and the modernist ideal of simple, flush surfaces and basic forms with minimal decoration was gradually to enter the public consciousness.

The Dutch furniture designer Gerrit Thomas Rietveld (1888–1964) created some of the most radical designs of this period. He was certainly inspired by the work of Josef Hoffmann, but it was the idea of aesthetics over functionalism that was of greater significance in Rietveld’s early furniture. He was profoundly influenced by the artistic work of his



Gerrit Rietveld  
Red/Blue chair, 1917–18



**Marcel Breuer**  
Chair B33, 1927–28

**Marcel Breuer**  
Cesca chair, 1928

fellow countryman, Piet Mondrian (1872–1944), and the rectilinear designs of Frank Lloyd Wright. Rietveld's early designs are for the most part based on geometric abstracted forms derived from the fine art of the De Stijl movement. Indeed, he became one of the movement's first members when it was founded in 1917 by Theo Van Doesburg (1883–1931) and Mondrian.

De Stijl is regarded by many as the first major 'modern' design movement. The design that exemplifies the movement's style better than any other must be Rietveld's Red/Blue chair of 1917. The chair's form consisted of flat rectilinear pieces of wood, which were painted at a later date in primary colours. This chair was first publicized in an article by Van Doesburg for the 1919 edition of his magazine *De Stijl*, in which he described the Red/Blue chair as 'the abstract-real sculpture of our future interior'.<sup>5</sup> The chair is as much if not more a work of sculpture than a functional piece of furniture. Reyner Kras has described it as 'a three-dimensional realization of the philosophy of the De Stijl movement... Rietveld redefines the "chair", and does so without precedence'.<sup>6</sup>

A turning point in the history of design that was to alter all existing notions of design education came in 1919, when the architect Walter Gropius merged the two art schools in Weimar, Germany and founded the Staatliches Bauhaus; it was the first time modernist ideas had been promoted in a truly academic context. At the Bauhaus the idea of unity between the arts was stressed and the tutors and their students, or 'masters and apprentices', were urged to be artisans rather than artists. In 1919 Gropius wrote in the institute's prospectus: 'The Bauhaus strives to bring together all creative effort into one whole, to reunify all the disciplines of practical art – sculpture, painting, handicraft, and the crafts – as inseparable components of a new architecture.'<sup>7</sup> There was an interchange of ideas between the De Stijl movement and the Bauhaus: Van Doesburg lectured at the Bauhaus from 1921 to 1922 and in 1923 the Red/Blue chair was included in a general

exhibition at the school, a show which helped to disseminate the modernist Bauhaus design doctrine throughout Europe and America. In 1923, László Moholy-Nagy (1895–1946), the Hungarian Constructivist, became the master of the metalwork studio. Moholy-Nagy encouraged the idea of industrial design and in so doing brushed away the last vestiges of 'craft' at the school. An element of Bauhaus design philosophy, that form must follow the dictates of function and industrial mechanization, was to become a fundamental tenet of the Modern Movement.

Ironically, much of the furniture designed at the Bauhaus was not particularly comfortable or practical – but it was conceived for mass production. The reason for this has much to do with the socialist roots of the school. It was believed by its members that a 'better' society could be achieved through the application of good design; the school attempted to provide functional and aesthetically pleasing design for the masses through the means of large-scale mass production. However, ideology was yet again in advance of technological progress: the furniture was consciously designed to look machine-made, although in reality most of it had to be handcrafted and was therefore costly.

Hungarian-born Marcel Lajos Breuer (1902–81) studied at the Bauhaus, Weimar from 1920 to 1924 and in 1925 became master of the woodwork studios at the Bauhaus in Dessau. He had a profound influence on the evolution of modern design, not only through his later teaching at Harvard but through his furniture designs, which received worldwide recognition and acclaim. In 1925, he designed the Club Chair Model B3, which was to become known as the Wassily chair, named after the artist Wassily Kandinsky (1866–1944), who had asked Breuer to design a chair for his staff house at the new Bauhaus campus in Dessau. The chromium-nickel plated, tubular steel frame with leather or canvas sling back, seat and arms was revolutionary in its application of materials. It is said that the handlebars of his newly purchased

Adler bicycle inspired Breuer's use of a tubular steel construction for this chair. The simplicity, tension of line and spatial qualities of the design are reminiscent of contemporary abstract Constructivist sculpture. Prior to the Wassily chair, metal furniture had been reserved strictly for commercial buildings. The acceptance of this design by Breuer's contemporaries and more importantly by Thonet, the large furniture manufacturer, meant that the Wassily chair changed the public's conception of what a residential interior could include.

An even greater simplicity of form was achieved by Breuer in his cantilevered Cesca chair of 1928, a format that was first applied to furniture by the Dutch architect, Mart Stam (b. 1899), with his Chair S33 of 1926. A year later the German architect and designer, Ludwig Mies van der Rohe (1886–1969), designed his own variations known as the MR chair and the Weissenhof chair. For the first time in the history of furniture, through the cantilever principle and the use of resilient tubular steel, a stable chair could be constructed of only a single-linear frame with two vertical elements. The use of steel tubing allowed these designs to be mass-produced economically using existing industrial technology; this novel method of construction also allowed a minimalism in design and its inherent springiness gave more comfort to the sitter. Tubular-steel furniture, however, fell from grace in Nazi Germany during the 1930s because of its association with the Bauhaus and thereby socialism. Ironically, this type of furniture was favoured by the Fascists in Italy: the architect Giuseppe Terragni was commissioned to design several pieces of tubular metal furniture for the Casa del Fascio in Como. The cantilever chair, however, utilizes more raw materials in its construction than chairs with four legs and its production was therefore limited during the Second World War.

Ludwig Mies van der Rohe was appointed the director of the German government pavilion at the Barcelona International Exhibition of 1929, the year before he was to become director

of the Bauhaus (1930–33). The pavilion was furnished with pieces specially designed by him, including two X-framed Model No. MR90 chairs with matching ottomans upholstered in white kidskin. The Barcelona chair, as it was later to become known, exudes a sense of luxury, with its buttoned leather cushions and its ample yet classically inspired proportions and form based on the ancient folding stool known as the *sella curulis*. The chair was specifically designed for use by King Alfonso XIII and his queen at the exhibition's inauguration ceremony. Indeed, this throne-like design can be seen as a precursor to the ultimate executive chair, the 1956 Lounge chair and ottoman designed by Charles Eames (1907–78). Although the Barcelona chair is thoroughly modern in its design its methods of production were not: it was almost entirely handmade, including the welding of the X joint. In its use of costly materials and production methods it could be said to mimic rather than to comply with the Bauhaus socialist design ethic.

The Swiss architect, Charles-Edouard Jeanneret (1887–1965), known as 'Le Corbusier', was a 'modern classicist', like Mies van der Rohe and Walter Gropius with whom he had worked in the Berlin architectural office of Peter Behrens (1869–1940). Le Corbusier initiated a reappraisal of bentwood furniture through his work as an interior designer in the 1920s. He would place Thonet bentwood chairs, designed in the second half of the nineteenth century, in modernist architectural settings, juxtaposing the elegant curves of bent wood with the unrelenting angularity of his residential interiors. The idea of Thonet chairs in anything but a café or a bar would have been unthinkable before this date. One of Le Corbusier's progressive interior schemes was exhibited in the Pavillon de l'Esprit Nouveau at the Paris 'Exposition Internationale des Arts Décoratifs et Industriels Modernes' in 1925, the exhibition from which the term 'Art Deco' was coined. This was the style that superseded Art Nouveau and drew its decorative inspiration from a wide variety of sources, which



**Michael Thonet**  
No. 4 bentwood chair, 1848

**Mies van der Rohe**  
Barcelona chair, 1929



**Le Corbusier**  
Grand Confort, 1928

**Eileen Gray**  
Transat chair, 1925–26

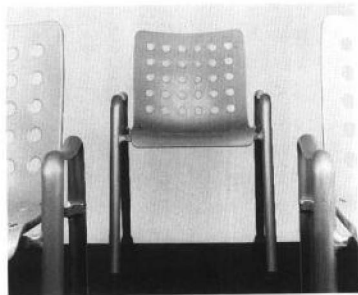
included ancient Egyptian civilization, tribal art, geometric abstraction, popular culture and the Modern Movement. Unlike their modernist contemporaries, exponents of Art Deco, such as Emile Jacques Ruhlmann (1879–1933), still favoured the idea of handcrafted furniture that relied on costly raw materials such as tropical woods, ivory, silver and even mother-of-pearl. With its inevitable reliance on private patronage and its incompatibility with machine production, even the best of Art Deco was bound to be out-of-step with the ideals of the Modern Movement.

Le Corbusier went on to design a range of tubular steel furniture that was manufactured by Thonet. His Grand Confort armchair was co-designed with his cousin Pierre Jeanneret (1887–1967) and Charlotte Perriand (b. 1903) in 1928 for a villa in Ville d'Avray. The proportions of this armchair and its heavily stuffed upholstery were influenced by Art Deco, yet it achieves a sense of modernity through its use of a tubular steel frame. It was first exhibited, to much acclaim, at the Salon d'Automne, Paris in 1929 together with the Basculant chair and the Model No. B306 chaise longue, also designed in 1928. Charlotte Perriand stated: 'Metal plays the same part in furniture as cement has done in architecture. It is a revolution. If we use metal in conjunction with leather for chairs . . . we get a range of wonderful combinations and new aesthetic effects.'<sup>8</sup> Model No. B306 uses a continuous tubular steel frame with rubber webbing covered in pony skin. The use of contrasting materials, combined with its proportions solely based on the human form and the fact that it could be set in various positions, including rocking, created a harmony between functionalism and aesthetics, making it one of the best-known designs of the twentieth century.

Eileen Gray (1878–1976) was born in Ireland, yet spent most of her life in France. She was able to combine the existing Art Deco style prevalent in late 1920s Paris with the new functionalism emanating from Germany to produce a chic style that was very much her own.

The folding Transat chair of 1925–26 exemplifies this fusing of styles: the angularity of the frame and the slung seat are derived from the Bauhaus, yet the padded leather used for the seat and the use of lacquered frame are derived from Art Deco. Her designs were expensive to produce and were never intended for large-scale mass production; it was, therefore, inevitable that designs by Gray, like those of Le Corbusier, remained élitist during the 1920s and it was not until the 1950s with the launching of 're-editions' that they became more widely known and influential.

A Finnish proponent of the Modern Movement was the architect and designer, Hugo Henrik Alvar Aalto (1898–1976), who, unlike the majority of his European contemporaries, was more interested in the design potential of plywood than that of tubular metal. His all-wood constructions attempted to prove that a wood laminate was just as valid and modern a material as tubular metal. Aalto strove to design furniture that could be mass-produced; he realized that the fewer components needed, the easier the assembly process. The 41 chair, designed between 1930 and 1931 for the TB sanatorium at Paimio, exemplifies this idea, for the seat and back are constructed from a single piece of bent plywood. Although the technique for bending plywood was invented in the nineteenth century, Aalto made an important improvement to it: where there was a need for greater pliancy, such as in the curve between the back and the seat, he thinned out the veneers by removing several layers, thereby allowing greater malleability. The use of contoured plywood was later to be further advanced by Charles Eames and Paul Goldman (b. 1912) in the 1940s and 1950s respectively. The seat and back section of the 41, or Paimio chair, appear to be suspended between the pair of side frames, an idea Aalto undoubtedly borrowed from Breuer's design for the Wassily chair; it is known that Aalto had ordered a Wassily chair in 1928 for his own use. The Paimio chair is a more minimal and economic design comprising fewer components, only six in total. For some



**Gerald Summers**  
Lounge chair, 1933–34

**Bruno Mathsson**  
Eva chair, 1934

**Hans Coray**  
Landi chairs, 1938

of the other furniture commissioned for the Paimio sanatorium, Aalto did use a combination of bent wood and tubular metal, but he maintained that it was wood that was ‘the form-inspiring, deeply human material’,<sup>9</sup> thereby promoting a more organic form of modernism. The idea of using less angular forms indicated an important shift in the Modern Movement that was to culminate in the ‘free flowing’ forms favoured by American and some European designers in the late 1940s and 1950s.

A British designer who was to use bent plywood in a novel way was Gerald Summers (1899–1967). Inspired by the 1933 exhibition of Aalto’s work in London, Summers designed his own Lounge chair intended for use in the tropics. Cut and bent from a single length of birch plywood, it pushed the inherent qualities of plywood further than had been achieved previously.

Scandinavian design at this time was particularly notable for its new treatments of wood, which were promoted by the region’s abundance of wood as a natural resource. An apparent commitment to functionalism and machine aesthetics emerged from the 1930 Stockholmsuställningen (Stockholm Fair), organized by the architect Gunnar Asplund (1885–1940) – it was Aalto, a Finn, who was the first Scandinavian exponent of this new style – but by the end of the decade the Swedish designer Bruno Mathsson (b. 1907) was again using simple, natural materials to create an impression of luxury. His 1934 Eva chair has a laminated beechwood frame and uses hemp webbing for the seat and back. Mathsson designed the chair to be both aesthetically pleasing and comfortable, declaring, ‘the business of sitting never ceases to fascinate me’.<sup>10</sup> Ten years later the Danish designer Hans Wegner (b. 1914) designed the Chinese chair, which again points to the Scandinavian love of simplicity in line and form together with a deep understanding of the intrinsic qualities of natural fibres and woods. Combining natural materials was an essentially Scandinavian approach to furniture design, which continued as the century progressed.

The Butterfly chair, designed in 1938 by the Argentinian architects, Jorge Ferrari-Hardoy, Juan Kurchan and Antonio Bonet, achieves a similar visual simplicity through the use of few components. Occasionally called the Sling chair, it was constructed of a tubular metal frame in sections, making it easy to dismantle and reassemble. It was inspired by a wood and canvas folding Tripolina chair designed by Joseph Beverly Fenby in 1855, which was used by British army officers in the nineteenth century. The Butterfly chair was manufactured under licence by Knoll International but there were also many unlicensed copies made. In the 1950s interest in the Butterfly chair was revived – not surprisingly, as it comprises an abstracted organic form.

In contrast, the highly influential Landi stacking chair designed by the Swiss designer Hans Coray (b. 1906) in 1938 has been called ‘proto-High Tech’, for like High-Tech furniture designs from the 1970s it makes use of industrial materials, is entirely functional and perfectly suited to mass production. It was commissioned by the architect Hans Fischli for the Landi, the Swiss national exhibition held in Zürich in 1938, where it was received with great acclaim. This innovative design was very progressive in its use of sheets of ‘steel hard’ tempered aluminium alloy – a sheet was stamped using a drop-press into the required shape and then was punched with large circular holes – which had a distinct crystalline finish. The chair was designed for outdoor use in public parks and was the main source of inspiration for the British designer Rodney Kinsman (b. 1943) when he came to design the Omkstack chair in 1971, which is viewed as a design icon by the functionalist camp of architects and designers.

Completely at odds with the Modern Movement was the development of Surrealism, which made its own bizarre contribution to the classics of twentieth-century furniture design. The Mae West Lips sofa, designed in 1936 by Salvador Dalí (1904–89), first appeared in a gouache drawing entitled *Mae West* (1934), depicting an interior

in which her lips are represented by a sofa, her nose by a sideboard and her hair by a pair of curtains. The sofa was manufactured around 1936 in Paris for Baron de L'Épée and in London for the great Surrealist art collector, Edward James. The upholstery was covered in a pink satin that was made to correspond with the colour of Schiaparelli's Shocking Pink lipstick. (This sofa was 'redesigned' by Studio 65 using foam upholstery in 1972 and was renamed the Marilyn sofa.) The design readdresses the recurring question of whether furniture can be regarded as art, a matter that was to be widely debated in the early 1980s with 'one-off' anti-functional designs.

The Second World War dramatically affected the development of furniture design in Europe. Earlier, in 1933, Nazi persecution had led to the closure of the Bauhaus and designers such as Moholy-Nagy, Breuer and Mies van der Rohe emigrated to America, designating the United States the new centre of progressive design. Meanwhile, in Europe, it was inevitable that the war would wreak havoc on furniture manufacturing – in occupied France, for example, the industry ceased to exist and would not regain confidence until the mid-1950s.

In Britain during the war, Gordon Russell (1892–1980), who in the 1930s had adopted the principles of modernism, became the Chairman of the Board of Trade and designed a range of 'utility' furniture. Stylistically, these designs owe much to the English Arts and Crafts Movement of the early 1900s, although their methods of production were vastly dissimilar. Throughout the war, furniture – like other goods – was strictly rationed and from 1942 it could only be manufactured under licence from the Board of Trade. These restrictions were not revoked until 1948, although they remained effectively in force until 1952, through a tax on furniture that did not meet the Board's specifications. This meant that the government determined not only the types of furniture produced, but also the manufacturer and the materials used.

In essence the Board of Trade did an admirable job during the war,

providing functional furniture for young couples setting up their first home and families whose houses had been destroyed in the Blitz. However, during the years immediately following the war, commonly known as the period of 'austerity', the British public grew tired of the socialist-inspired utility furniture and no longer wished to have good taste dictated to them by the government.

The only country that had a design industry that was able to remain relatively intact during the war was America. In 1929 the Museum of Modern Art had been founded and from its conception promoted modern, rational design. To the American public, however, the organic modernism of Scandinavian design was more acceptable than the more functional modernist designs that had come out of Germany and France before the war. Furniture designed by Aalto, for example, received an extremely favourable reception when first seen at the 1939 New York World's Fair. This may be because in its use of natural materials and purity of line such furniture is reminiscent of Shaker design and, therefore, had a nostalgic appeal for the American public, similar to that exercised by Arts and Crafts furniture some years before.

This tendency towards organic design became emphatic in the work of the American designer Isamu Noguchi (1904–88), who in 1939 received a commission from A. Conger Goodyear, the President of the Museum of Modern Art, to design a table for his personal use. This table has a highly sculptural articulated base that supports a thick glass top; it is particularly significant as one of the first examples of American organic design and it set a precedent for the use of organic forms as well as organic materials. Asymmetrical and biomorphic furniture design increased in popularity throughout the 1950s, especially in America and eventually led to the organically inspired, surreal Pop furniture of the 1960s.

The newly acquired taste for organic design inspired the 1940 'Organic Design in Home Furnishings' competition at the Museum of Modern

Salvador Dali  
*Mae West*, 1934



Art. Among the judges were Alvar Aalto and Marcel Breuer. Undoubtedly, the most innovative entries were designs submitted by two Cranbrook Academy of Art tutors, Charles Eames and Eero Saarinen (1910–61), working together as a partnership. Of this famous if brief collaboration, Cesar Pelli wrote, 'Eero was worried about form, Eames was worried about how to produce',<sup>11</sup> identifying their ability to create aesthetically pleasing designs that could be mass-produced. Their revolutionary interpretation of organic design was founded on amorphous forms derived from the 'essence' of organic life; they also proposed to manufacture this furniture using state-of-the-art technology. All the chair designs they submitted to the competition employed plywood shells with three-dimensional compound curves; this was one of the first instances of compound curves – bending wood over two geometric planes – being applied to furniture design. Another remarkable element of the designs they submitted, such as the A3501 series of three chairs, was that Eames and Saarinen had conceived the forms of chairs in accordance with the way people actually sit, rather than according to the way they ought to sit.

This period heralded the beginning of postwar design. In 1941, the 'cycle welding' process was developed by the Chrysler Corporation; it allowed wood to be joined to glass, metal and rubber. In the same year, Charles Eames with his new second wife, Ray (née Kaiser; 1912–89) moved to southern California and set up the Plyformed Products Company. There they developed techniques for producing low-cost wood laminates and mouldings. The Italian-born sculptor, Harry Bertoina (1915–78), who had also studied and taught at Cranbrook Academy of Art, began working with the Eameses in 1943. Their research led the company to be commissioned by the United States Navy to produce leg splints, arm splints and stretchers executed in moulded plywood. Although extremely lightweight the splints were very strong owing to the use of compound curves in their construction. The designers

developed new machinery for moulding and bonding plywood which they called the 'KAZAM!' machines, a name derived from the noise they made when operated. Using these new machines they were able to develop various prototype parts for the Vultee BT15 Trainer aeroplane and parts for a working prototype plywood glider known as the CG-16 Flying Flatcar. This in-depth research into moulded plywood and its applications allowed such classic chair designs as the LCW and LCM to be mass-produced after the Second World War.

The developments in modernist ideology between 1900 and 1945 shaped the history of furniture design in this period. It was not until after 1945, however, that modernist ideals could be reconciled with the demands of a mass market. After years of seeing the potential for greater mechanization, but being deprived of the technology that would transform their ideas into reality while maintaining the integrity of their designs, avant-garde designers were at last able to combine the prewar modernist 'vision' with the technology to make it possible, allowing for previously undreamed of possibilities in the furniture manufacturing industry.

Charles Eames  
Leg splint, 1942





# 1945 to 1950 Reconstruction and rationalism

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**Finn Juhl**  
NV-45 Easy chair, 1945

**George Nelson**  
Platform bench, 1946

**Charles Eames**  
La Chaise, 1948

**Carlo Mollino**  
Armchair for the Minola House,  
1944-46

