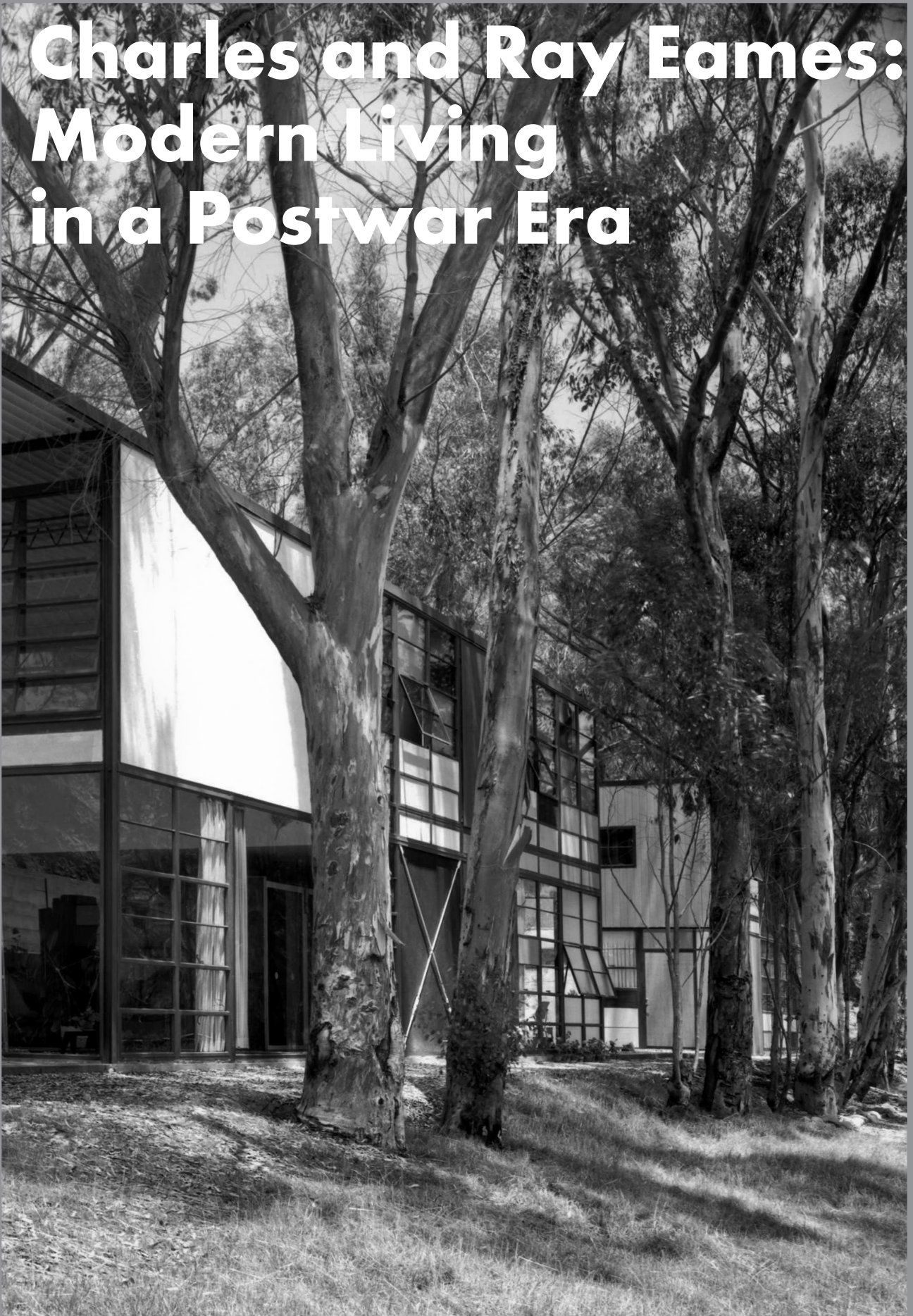


Charles and Ray Eames: Modern Living in a Postwar Era

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Anything seemed possible within the spirit of the postwar era. It is often noted that Charles and Ray Eames advocated the principles of Modernism through the adaptation of innovation from wartime technology. Undoubtedly, Charles and Ray Eames were pioneers who gave shape to America's 20th century through the pursuit of industrialization, including their influence in the process of prefabricated mass production and residential construction. Their lives and work are significant not only due to their innovative furniture but also because of the internationalization and global expansion of American culture through their contributions to architecture, film, and industrial and graphic design.

By Kyle Normandin

Embracing the Spirit of the Postwar Era

"We don't make art; we solve problems" was a favorite motto of Charles Eames [figure 1].¹ In a rare era of common objectives, the federal government and the country's top businesses partnered with the Eameses to lead the way in modernizing postwar America. Charles and Ray Eames embraced this era with visionary concepts of technological innovation that set out to prescribe a pioneering aesthetic for Modern living. By recognizing problems and coming up with solutions through design and mass production, they demonstrated that good design could be achieved on a mass scale. Ultimately, their furniture shaped our visions of Modern interiors and provided a new idiom for living in the postwar era. Charles and Ray Eames represented the vanguard of social change through creative design innovations that overlapped with emerging interests of the 20th century, and were part of an era of rebuilding after World War II.

Molded Plywood Innovation

Charles Eames trained as an architect and, together with Eero Saarinen, taught at the Cranbrook Academy of Art outside Detroit from 1939–1941. Both architects had the idea of creating a minimal piece of furniture—primarily a cushion chair that would be constructed using a hard substance—which would also be comfortable. More importantly, the simple constructed form would be mass produced, a consideration that would have a positive influence on its design.² Both Eames and Saarinen collaborated on various furniture designs to address the challenge of bringing a final design into mass production. The Academy's adaptive design approach and its creed of "better living through better design"³ influenced their sensibilities and informed their shared agenda of design concepts.⁴

In 1940, the Museum of Modern Art in New York announced a competition for young designers in which the winning entries would be put into production by manufac-

turers. Eames and Saarinen entered designs for several pieces of furniture and won first prize for living room furniture in what came to be known as the "Organic Design Competition." At that time, they worked with the manufacturers Heywood–Wakefield and Haskelite to make chair shells out of a single piece of plywood, but because the technology did not exist to mass-produce the designs, very few chairs were actually made.⁵

During this time, Charles Eames and Ray Kaiser met at the Cranbrook Academy. They married in 1941 and moved from Detroit to Los Angeles. Committed to overcoming the challenges of developing new methods to mass-produce compound curved, shaped, molded-plywood chairs, the Eameses set out to create and further develop their furniture designs by researching new manufacturing and fabrication techniques that drew on prior developments with plywood chair manufacturing at Cranbrook. Eventually, the Eames's molded-plywood chair represented their first attempt to create a single shell that would be comfortable without padding and could be quickly mass produced.

At the beginning of World War II, Charles and Ray proposed to the U.S. Navy the creation of a lightweight, inexpensive, molded-plywood leg splint that would be much lighter and more practical than the metal ones already in use.⁶ They received a contract based on a molded-plywood design for which a patent was issued on May 28, 1941 [figure 2]. The design sketch shows a sculpted and functional device that is modular in form. With access to additional technological developments from the U.S. government, including newly developed water-resistant glues, the Eameses were able to yield and shape stronger plywood to produce the curved leg splints. Access to military technology and manufacturing facilities: the office designed the machines, set up and ran their own manufacturing facilities which allowed the designers to perfect their technique for molding plywood, on which they had been working for several years. The three-dimensional, ergonomic form incorporated numer-

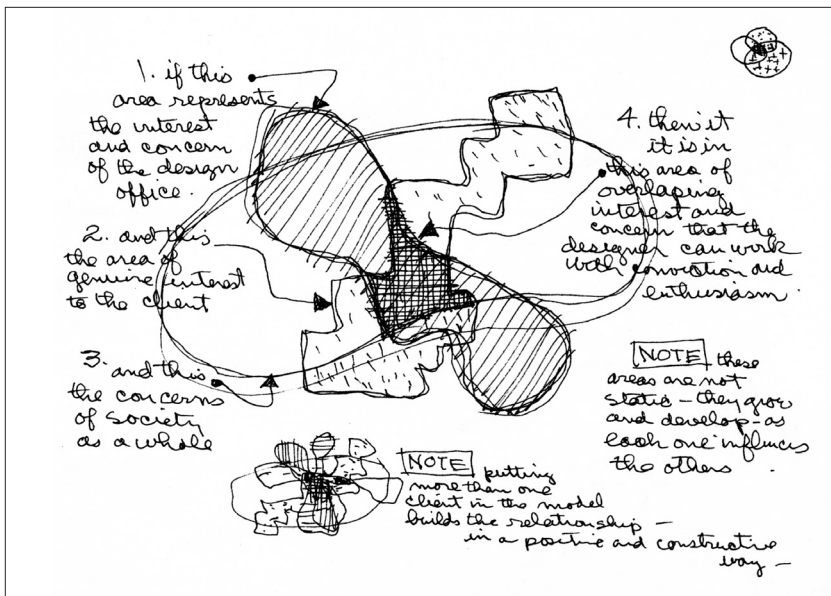


Figure 1. Diagram by **Charles Eames**, displayed in the 1969 Exhibition, *Qu'est-ce Que Le Design?* (What is Design?) at the *Musée des Arts Décoratifs* in Paris, France. Image is: Courtesy and © 2012 Eames Office.

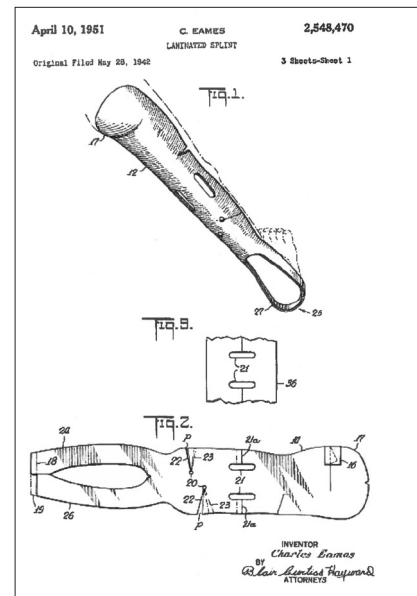


Figure 2. Molded plywood leg splint patent sketch from April 10, 1951, originally filed in May 1942, United States Patent n°. 2548470, **Charles and Ray Eames**, manufactured by Evans Products, Molded Plywood Division. Image courtesy Library of Congress, Prints and Photographs Division, Work of Charles and Ray Eames. © 2012 Eames Office.

ous curved holes in the plywood that allowed for surface tension release in slotted curves and simultaneously allowed for practical locations to wrap bandages around and through the wood splints. The Eameses worked to mass produce the leg splints. Ultimately this experience in mass production provided the opportunity to design new shapes with new materials and technologies on a mass scale. Through this process, the Eameses gained practical insight into design implementation. Coupled with production of approximately 5,000 wood splints, this became their first experience in mass production and would later provide the base of knowledge needed to manufacture a line of plywood furniture designs including the iconic Eames Lounge Chair.

Furniture and Materiality

*The details are not the details, they make the product, just as details make the architecture—the gauge of the wire, the selection of the wood, the finish of the castings—connections, the connections, the connections.*⁷

Charles Eames

As Charles and Ray Eames discovered new techniques and innovations for gluing plywood, the expertise gained from war production continued to extend toward their interest in the development of furniture. Through a period of experimentation with a range of materials during the war, they were able to design a number of plywood experimental chairs that included a variety of concepts in

different formations. Starting in 1945, molded plywood shapes were formed in several configurations to include different types of back supports, seats, and various types of legs and spines. These early plywood chairs served as prototypes that could be experimented upon and were created at full scale not only in wood but also in metal, so that components of each chair could be compared to address technical and aesthetic issues. Solving technical



Figure 3. Molded plywood lounge chair prototype, *Architectural Design*, September 1966. Image courtesy and © 2012 Eames Office.

problems was paramount in resolving aesthetic issues, as newly shaped material components often relied on engineered connections. Various types of glues and rubber discs were used in these experiments to optimize connections between individual chair components. The Eameses not only developed prototype plywood chairs but also tables and lounge chairs. The lounge chair studies were carried out in an effort to develop a comfortable reclining chair [figure 3]. During this time, the Eameses also designed a line of children's furniture and molded plywood animals. The furniture was constructed from laminated birch and was manufactured in various colors, with an eventual run of 50,000 chairs and stools mass-produced by the Molded Plywood Division of Evans Products. In June 1946, Evans Products granted the furniture company Herman Miller Inc. exclusive rights to market and distribute the plywood furniture.⁸

As the Eameses continued experimentation with materials discovered by American manufacturers during wartime production, their interest in materiality extended also to plastics with fiberglass reinforcements for their new furniture designs. The first chair to be mass produced in plastic was Charles Eames' shell chair, which had a single molded unit for the seat and back support. The successful experimentation using fiberglass-reinforced polyester resin to form this chair is perhaps one of the most epic examples of how development of new materials and techniques had an impact on design during the postwar era. The shell chair was designed to be light, durable, and easy to store, and together with the Eames plywood armchair and ottoman, it is among the classics of 20th-century chair design. All of the leading Eames furniture designs, including the plastic shell chairs on metal legs, all-wire chairs, stacking chairs in plastic, and the

Figure 4. Exterior view of the Eames House from the meadow toward the living space, photographed in 1950. Image © The J. Paul Getty Trust. Used with permission. Julius Shulman Photography Archive, Research Library at the Getty Research Institute. Shulman Photography Archive, Research Library at the Getty Research Institute.



bent-plywood lounge chair and ottoman were manufactured by Herman Miller. The Eameses did not just design furniture but engaged implementation of full-scale mass production of tables, storage units, and stacking chairs, all which were engineered artwork.

The Eames House

The Eames House, also known as Case Study House n° 8, consists of two structures—a living space and a working space—separated by an open courtyard. The house and studio, which are set in a grove of eucalyptus trees, are built into the base of a hill supported by a concrete retaining wall and enjoy expansive views across a meadow to the Pacific Ocean [figure 4]. Built by Charles and Ray Eames in 1949, the house was an experiment in the use of prefabricated materials and mass-produced, off-the-shelf products to rapidly construct a residential structure. Once underway, construction started in January 1949 and the Eameses moved in during December 1949. A brief period of construction and the use of prefabricated industrial materials in a residential context was unique at the time. The overall shape and height of the structure, the enclosed maximum amount of volume, and personalized use of interior space are equally exceptional.

The Eames House is one of a group of five houses located on a five acre parcel in Pacific Palisades, California, designed under the influential Case Study Program initiated by John Entenza, editor of *Arts and Architecture* magazine, to promote the development of new models of affordable, mass-producible housing utilizing the technology of the Modern age. The site, house, and studio were inhabited by Charles and Ray Eames up through their deaths in 1978 and 1988 respectively, and the ensemble, with its contents, tells a remarkable story not only about the design and architecture of this period but also about the role the Eameses played as innovators of Californian Modernism within an international context.

Today, the Eames House provides an intimate view and lens into the lives of its occupants, affording a new understanding of the human side of Modernism. The interior contents of the house, which accumulated over time, tell many stories of the evolution of experimentation beginning with the furniture Charles and Ray designed throughout the 1940s and 1950s, spanning the years following their arrival in California [figure 5]. As pioneers and designers of furniture for Modern living, together they developed a vast body of work that shaped the future and the way we live today.

Charles's daughter, Lucia Eames [Demetrios], uses her personal experience to describe the house's interior: "When one wakes up in the morning, there is the most wonderful shadow play as light filters through the Euca-



Figure 5. Interior view of the living space with **Charles and Ray Eames**, photographed in 1950. Image © The J. Paul Getty Trust. Used with permission. Julius Shulman Photography Archive, Research Library at the Getty Research Institute.

lyptus leaves onto the screens and walls, One takes a delighted look at the beautiful pattern of the living space, as seen from above, and then a wonderful spin down the spiral staircase and into the sudden openness of the living space before settling into the kitchen for breakfast." Furthermore, the living space served as a set where objects could be placed and taken away. The way in which Ray and Charles Eames perceived the unique volume of the living space included placement of collected objects from their many travels, and furniture from numerous exhibitions and films, all of which were part of a constant changing collage in this extraordinary setting.

The Eames House Conservation Project

In September 2011, the contents of the Eames House living space which included 1,869 items, was temporarily relocated to the Los Angeles County Museum of Art (LACMA) for exhibition until June 2012. The transfer of the items provided an opportunity to address various issues relating to the general wear and tear on the house since

its construction in 1949. Currently, the Eames Foundation is developing a program of conservation and repair with a view to addressing issues relating to the building envelope, interior flooring, steel-framed windows, and other interior fabric issues. In addition, the Eames Foundation seeks to develop a long-range strategy for the ongoing conservation, maintenance, and display of the house; this strategy will include investigative and analytical work in order to understand the current condition of the house; its interior living space collection, furniture, and artwork; and its setting; and identification of optimal condition requirements that will guide development of strategies that meet long-term conservation needs. The Eames Foundation has engaged project architect Escher GuneWardena Architecture (EGA) to oversee the current program of work at the house. The Getty Conservation Institute (GCI) is working with EGA and the Eames Foundation to assist in the development of the conservation management plan for the house.

Currently, the GCI is providing the necessary investigation and scientific analysis to understand the environmental and physical conditions affecting the site, the house, and its contents. Environmental monitoring is currently in place and will be carried out over the course of the next year. This will provide a better understanding of the context in which the building performs so that appropriate conservation approaches and techniques for the historic fabric can be considered and determined. The current environmental monitoring program will lead to the design of a climate control system that will protect Charles and Ray Eames' interior living space collection and artwork for the life of the house.

The Eames's influence in the use of mass production in defining the aesthetic of the postwar era, as evidenced through furniture and residential design, as well as industrial and graphic design and film, undoubtedly demonstrates that they were ground-breaking pioneers who gave shape to American culture in the 20th century. Through their design innovation, iterative process, and utilization of mass production, their work is prolific not only due to their success in design process and approaches but also because of the internationalization and global expansion of American culture through a prescribed Modern way of living.

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5. *Ibid.*, 71.
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