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Unless otherwise noted, all works of art in this exhibition are by Frederick Kiesler (American, born in Austria-Hungary, 1890, died in 1965) and in the collection of the Austrian Frederick and Lillian Kiesler Private Foundation, Vienna.

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MOBILE HOME LIBRARY

Frederick Kiesler chose the common bookshelf as the first test of his Laboratory of Design Correlation at Columbia University. The lab's primary assignment was to analyze and update an everyday object whose design was generally seen as satisfactory. He proposed that his version of the bookshelf—reconceived biotechnically to reduce human energy expenditure—would solve an old problem anew and reveal the healthful benefits of his biotechnique. Based on studies of body movement, fatigue, and respiration, the *Mobile Home Library* emerged as a rotating, spinning, physical, and informational assembly. The outer ring could be wheeled around the home, and individual units could spin to accommodate different body postures and degrees of effort. An array of dust flaps provided ventilation and protection from environmental damage at once. Gripping surfaces held books in place and accommodated a variety of other documents, magazines, and reading material of varying sizes and formats.

Beginning with the simple task of storing books, the *Mobile Home Library* evolved into a calisthenic instrument, an energy-saving device, and a proto-media system. Kiesler postulated that, in its inherent flexibility, the construction could adapt through time and incorporate new forms of communication, from television to radio, microfilm, and "opto-phonetics"—photo-cell units to store information that he speculated would be invented by the year 2000. In some respects, the library resembled apartment furniture Kiesler had designed in the 1930s. Yet its circular form and rotating movement drew more directly from his earlier constructivist-inspired set designs. The library was not an inert fixture, but a dynamic biotechnical tool and a new device to interact with information, restage prewar modernity, and reframe domestic space.

Although the laboratory fabricated prototype shelf units, the library was never built in its entirety. This is the first complete version of the *Mobile Home Library* to be constructed. To mark the distance between 1939 and now, the materials of the library have been altered. The prototypes were made of stainless steel, aluminum, and hardwood shelves, while this version consists of powder-coated metal, milled acrylic shelves, and 3-D-printed parts. The intricate details of flaps, angles, and hinges, as well as the structure and dimensions, faithfully reflect the original design.

FILMS

Designed for books, printed materials, and new media forms, the *Mobile Home Library* was never far from Frederick Kiesler's thinking about film and cinema. Writing on design correlation in 1937, Kiesler traced the history of photography, film, television, and a "genesis of design with light." These processes were reflected in his 1929 design for the Film Guild Cinema in New York. He proposed that the building demonstrated ties between spatial design and "photography in motion." Kiesler noted that his cinema was a step in the technical evolution and the eventual architectural integration of large television screens with new building types.

The *Mobile Home Library*, with its rotating shelving units that open and close like the aperture of a camera lens, carries associations with cinematic technologies. Yet the library and Kiesler's laboratory link most immediately to film as a new educational medium and as a teaching aid for design correlation. To expand the range of topics architecture students should draw upon—such as physics, anthropology, and biology—Kiesler embraced film as a fundamental aspect of design instruction. He envisioned the laboratory as a space to both explore and produce media. Kiesler repeatedly appealed to the dean of the Columbia University School of Architecture for funds to shoot his own 16mm film on the subject of the *Mobile Home Library*, urging the school to take the lead in developing educational films on architecture for a wide public.

The full list of films Kiesler screened for students at the laboratory in the first year illuminates his investment in new media pedagogies:

1. The World of Paper
2. Constitutions and Transformations of the Elements
3. The Arrangements of Atoms and Molecules in Crystals
4. Oil, Films on Water
5. Radioactive Rays
6. Beyond the Microscope
7. Molecular Theory of Matter
8. Electrons
9. The Frog
10. Tiny Water Animals
11. Butterflies (Mutation)

LABORATORY OF DESIGN CORRELATION

A Columbia University brochure from summer 1937 announces Professor Frederick Kiesler's "course in furniture design for contemporary living." A year later, this course mutated into the Laboratory of Design Correlation. The language of the 1938-39 course bulletin cites the physical and psychological needs of the human being, hinting at the orientation of the work that later came out of Kiesler's laboratory.

Documents from the laboratory reveal the scope of students' research and their involvement in the biotechnical formulation of the *Mobile Home Library*. Student drawings examine library precedents and their shelving systems, including a circular desk at Harvard Law School, annotated as "energy and time saving." Other drawings analyze examples of mobile furniture, along with bookshelves designed by Kiesler. The laboratory fixated on energy, as seen in notes from students' cycle-time studies—measurement and analysis of the steps involved in different activities or work processes—and in Kiesler's diagrams of the *Mobile Home Library*'s fatigue-reduction features. Photostats and photographs of energy studies, from respiration measurements to nerve diagrams, underscore the laboratory's attention to physiology and the metrics of physical health. Other research folios reveal how the *Mobile Home Library* was informed by both contemporary industrial shelving and new media devices such as microfilm readers.

In 1939 the laboratory fabricated three *Mobile Home Library* unit prototypes. These shelf units, photographed by Ezra Stoller, are shown here, as is the collage of the library based on those images. Other documentation shows the prototypes in fabrication and details of hinges, along with other components, that facilitate movement and operability.

THE VISION MACHINE

Along with the *Mobile Home Library*, the *Vision Machine* was the most prominent project to come from the Columbia University Laboratory of Design Correlation. Frederick Kiesler's notes, drawings, diagrams, and material tests from 1938 to 1941 show the *Vision Machine* less as a singular object and more as a fluid and shifting study formed around the puzzle of human vision and visual perception. In some iterations, and in the eventual exhibition-design proposal, the *Vision Machine* models the physics of optical perception and what Kiesler called "the flow of sight."

In the *Vision Machine*, neon tubes, glass bulbs filled with gas, lamps, and spark balls, all activated by push buttons, were meant to illustrate how we see. Recalling human organs, some drawings suggest a sympathy between electrical circuits and human physiology. More analogy than anatomical depiction, the *Vision Machine* sought to reveal vision as a creative action and aimed to account for the occurrence of images disconnected from external impulses and optical mechanics. Dreams, dream images, hallucinations, and telepathy are all part of the picture. Indeed, in some drawings, the machine shows the content of dreams. In others, an automatic apparatus replaces a therapist in dream interpretation. In many of Kiesler's *Vision Machine* studies, brains, nerves, eyes, external objects, and the vision that connects them appear as an active field of energy exchange.

CORREALISM

Frederick Kiesler's Laboratory of Design Correlation was the educational and experimental extension of his theory of "correalism." An early note shows Kiesler testing the terms "psycho-realism," "physio-realism," "biorealism," "inter-realism," and finally correalism. This constellation of prefixes helps explain correalism as a design approach integrating interactivity, psychology, physiology, and biology. Correalism is the "active object," as his notes suggest. It is also the activation of objects, spaces, design, architecture, buildings, and environments by human perception, human engagement, and biotechnique, the latter his term for biologically engaged design meant to improve bodily health.

In 1939 Kiesler applied for and was granted patent number 373 132 for the use of correalism, the same year he published the article "On Correalism and Biotechnique: Definition and Test of a New Approach to Building Design." In this text, correalism reorients architecture toward the study of environments, specifically the technological one in all of its meanings and dimensions from "shirts to shelter." Kiesler argued that the primary goal of correalism was to formulate designs that engender and support health. He describes a salubrious feedback loop: an environment is maintained to assure the "equilibrium of its health," which in turn supports maintaining human health. Energy, fatigue, degeneration, and regeneration alike belong to the correalist and biotechnical vocabulary. Kiesler further developed his theory of correalism in his *Correalism Manifesto*, which was published in French in 1949. Spreads of the manifesto and pages from "Correalism and Biotechnique" are shown here.

EXHIBITION MACHINES

Frederick Kiesler was invited in 1942 by the noted art collector Peggy Guggenheim to design her Art of This Century gallery in New York. The project drew on the design work, correlation theories, and studies from his Columbia Laboratory of Design Correlation, which had closed the previous year. He claimed that, with new biotechnical tools, viewers could have regenerative interactions with design, space, and environment. In the gallery, Kiesler targeted the picture frame on the wall as the antithesis of biotechnique, a deadening format, “a decorative cipher without life or meaning.” He speculated that design could help art resume its role as an “active, organic factor in human life.”

Kiesler churned out hundreds of drawings, diagrams, and schematic designs for new gallery devices, viewing systems, and exhibition machines. In some, bodies slump on ropes; in others, paintings and lights intertwine, hanging and protruding into space. In sum, the drawings and designs are an aggressive assault on conventional gallery viewing. As the *Vision Machine* did elsewhere, Kiesler’s exhibition devices in the gallery operated on and amplified human vision as a field of active energy exchange between objects and bodies.

The Art of This Century gallery opened with Kiesler’s designs crystallized into four spaces: the Abstract, Surrealist, Daylight, and Kinetic galleries. Curved plywood walls, stretched canvas enclosures, rolling stands, and interactive viewing devices helped him “liberate” painting and reconceive the gallery’s “environmental coordination.” Kiesler continued these active designs in the exhibitions *Bloodflames 1947* in New York and the Hall of Superstitions for the 1947 *International Exposition of Surrealism* in Paris.