

The Aluminaire House, 1930-31

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A. Lawrence Kocher Albert Frey The Aluminaire House, 1930–31

Documentation by Joseph Rosa

Joseph Rosa teaches architecture at a division of the City University of New York. He is also a consultant to the New York Institute of Technology on the restoration of the Aluminaire House. His book *Albert Frey, Architect* will be published this year by Rizzoli.

The Aluminaire House, designed in 1930–31 by A. Lawrence Kocher and Albert Frey, is one of the earliest examples of modern architecture on the East Coast and the first structure built in America by a disciple of Le Corbusier. It was also one of the few buildings to represent the American expression of the modern movement at the acclaimed International Exhibition of Modern Architecture, curated by Henry-Russell Hitchcock and Philip Johnson at the Museum of Modern Art in 1932. Of the six buildings from the United States subsequently included in the book *The International Style: Architecture Since 1922*, two were houses: Richard Neutra's Lovell House of 1927–29 and the Aluminaire House. Of the American firms engaged in modern architecture, only three were considered to be practicing within the idiom of the International Style: those of William Lescaze, Richard Neutra, and Kocher and Frey.¹

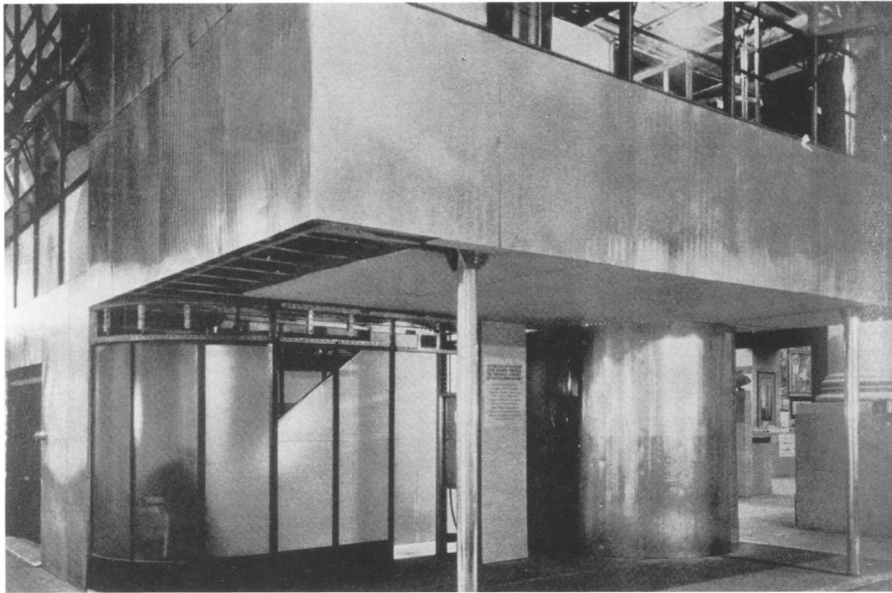
The Aluminaire was first constructed as a full-scale model house for the Allied Arts Exhibition, held in April 1931 in conjunction with the Architectural League's annual exhibition at the Grand Central Palace in New York. The house's volume was predicated on the size of the atrium space in the exhibit hall.² Erected in less

than ten days, it was the first house in America to be constructed solely from light steel and aluminum.³ It was designed as a prototype for low-cost, mass-produced housing and, if produced in quantities of ten thousand or more, would have cost only thirty-two hundred dollars.⁴ Kocher and Frey further explored the ideals of industrial production and improved land use in their article "Real Estate Subdivisions For Low-Cost Housing," published in *Architectural Record* to coincide with the opening of the exhibition. Here they presented two schemes for improving the layout and use of minimally sized lots for single-family low-cost housing. The schemes employed a prototype identical to the Aluminaire and disposed similarly to Le Corbusier's Pessac housing of 1925.⁵

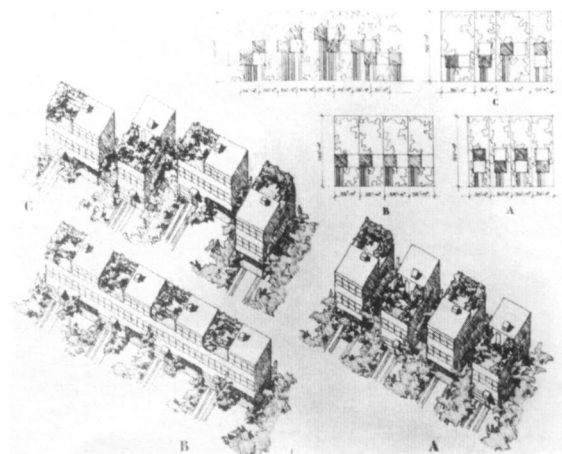
Using the latest in American technology, the Aluminaire House was supported by six five-inch-diameter aluminum columns fastened to aluminum and light steel channel girders. These supported light-weight steel beams covered with battle-deck pressed steel flooring layered, in turn, with insulation board and linoleum. All walls were non-load-bearing and acted as screens. The exterior wall assembly comprised narrow-ribbed aluminum with insulation board covered with

1. A. Lawrence Kocher and Albert Frey, *the Aluminaire House, 1930–31*





2. The Aluminaire House as first constructed at the Architectural League and Allied Arts Exhibition, Grand Central Palace, New York, 18–25 April 1931



3. Kocher and Frey, axonometric of prototype based on the Aluminaire House, 1931.
A. row house; B. terrace row house;
C. staggered grouping.

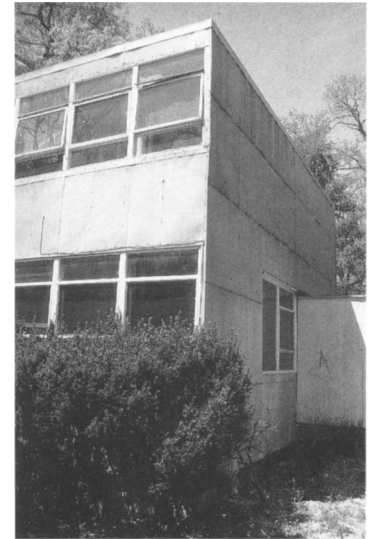
building paper.⁶ This assembly was fastened together with aluminum washers and screws. Although only three inches thick, the exterior walls were promoted as having a higher insulation value than a thirteen-inch-thick masonry wall. The interior wall surface was insulation board covered with “Fabrikoid,” a washable wall fabric that gave the appearance of a flat, jointless surface. The window sashes, doors, and frames were steel. All hardware was made of either aluminum (the handrail at the stairs) or chromium-plated brass (the doors and windows).⁷ Manufacturers such as Westinghouse, McClintic-Marshall (a subsidiary of Bethlehem Steel), and Pittsburg Plate Glass donated materials for the house. The Aluminum Company of America (now known as ALCOA) provided the corrugated metal panels that sheathed the exterior walls. Although some of these materials were not then commercially available, they were intended to show what a “House for Contemporary Life” would be like, constructed from light metals and synthetic products that had proven their ability in other technical fields.⁸

Since its original erection, the Aluminaire has been moved twice and is now awaiting its third reassembly. At the close of the exhibition, the architect Wallace K. Harrison purchased the house from the Allied Arts for approximately one thousand dollars.⁹ The house, dismantled in six hours, was delivered to Harrison’s estate on Long Island, where it was to be reerected as a weekend abode for his family.¹⁰ Construction started in mid-May but was not completed until the end of June; the cost, too, was greater than anticipated.¹¹ That the disassembled Aluminaire had been left outside on the Harrison estate contributed to the delay and added expense: a strong rain had washed away the identifying chalk numbers, leaving it a jigsaw puzzle of un-

marked parts. Consequently, after the house was finally reassembled, diagonal bracing had to be applied to the north wall to ensure its structural rigidity.¹²

The photographs of the Aluminaire House used in the MoMA exhibition and frequently reprinted in magazines and books illustrating modern architecture in America show it standing on a knoll of the Harrison estate. Shortly after the house was reassembled, Harrison built two one-story additions at either end of the garage.¹³ Eventually, in the early 1940s, the Aluminaire was relocated to a new site. The first floor was transformed into a basement, the entrance was moved to the second floor, and the exterior roof deck became a fully enclosed room with windows identical to the bedroom below. The Aluminaire, once poised elegantly against the horizon, was now reduced to a “tin house,” as Harrison referred to it, buried into a hillside and left to corrode for the next forty-five years.¹⁴

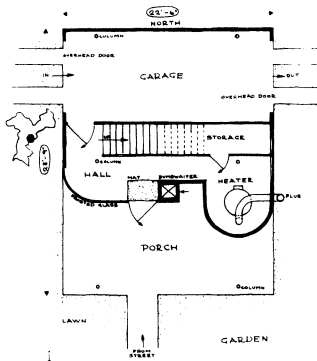
The first floor of the Aluminaire comprised an open-air porch, an entry with an exposed boiler, a dumbwaiter that serviced each level of the house, and a drive-through garage. The second floor was the only level that occupied the full perimeter of the house. The living room was a two-story space with a seventeen-foot-high ceiling. The dining area was separated from the living room by a built-in glass and metal china cupboard that housed an extendable dining table. The table was made of metal with a rubber top that retracted into a cylinder. The bedroom, exercise room, and bath were actually a single space divided by a folding screen. The beds were to be suspended from the ceiling. On either side of the glass cupboard were two polished metal pipes that serviced the bathroom above. In the living room, multicolored neon light tubes with reflectors were re-



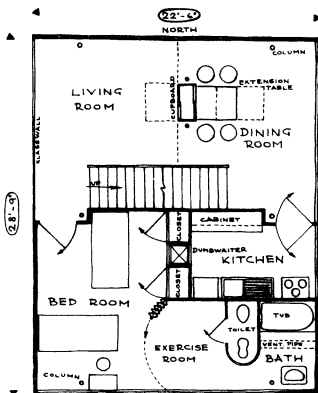
4. The Aluminaire House, view of southeast corner after relocation to base of knoll on the Harrison estate, with modifications, 1940s



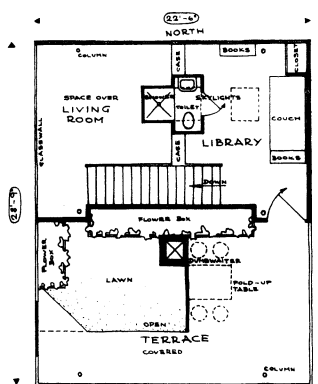
5. View of southwest corner with Harrison's additions on either side of garage, ca. summer 1931



6. Plan of first floor



7. Plan of second floor



8. Plan of third floor

cessed into the ceiling above and in front of the windows. One light tube emitted ultraviolet light for tanning; the others were used in the evening to simulate daylight. The third floor contained a library, a bathroom with a shower that projected into the two-story living room below, and a roof terrace. The walls, parapet, and partial roof plane at the roof terrace were sheathed in asbestos cement board and the floor was covered in a resilient asphalt tile. This terrace was intended for various uses: as a play area for children, a sleeping porch on summer nights, and an outdoor dining area.¹⁵ Most of the furniture for the Aluminaire House, whether freestanding or built-in, was never realized, but would have included an extendable spiral stool for the bedroom as well as a chaise and chair constructed of rubber and filled with air, which could be deflated for storage. The chaise was similar in shape to the tiled chaise in the master bathroom of Le Corbusier's Villa Savoye.¹⁶ Both the chaise and the chair were reminiscent of the designs of Charlotte Perriand and Le Corbusier from the late 1920s.

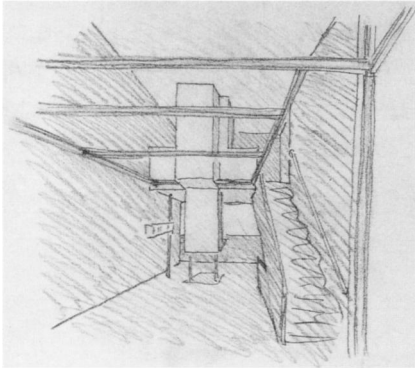
Albert Frey was born in 1903 in Zurich and educated at the Institute of Technology in Winterthur, Switzerland. He worked for Eggericx and Verwilghen in Brussels from 1925 to 1927 and, again, this time as their chief designer, from 1929 to 1930. Frey worked for Le Corbusier and Jeanneret from 1928 to 1929. Frey was one of only two salaried, full-time employees then at the atelier and in a ten-month span contributed to the following buildings and projects: the Villa Savoye, Poissy; the Centrosoyus Administration Building, Moscow; the Villa Church, Ville d'Avray; the Maison Loucheur, France; the Cité de Refuge, Paris; the Asile Flottant, Paris; the League of Nations Palace (competition 2), Geneva;

the Prager Factory, France; and the Mundaneum, Geneva.¹⁷

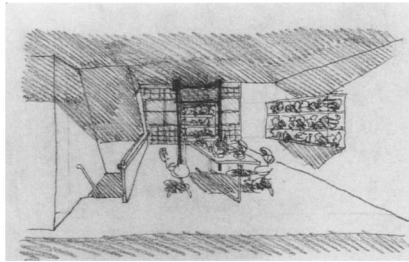
A. Lawrence Kocher (1885–1969) was born in San Jose, California, and studied architecture in the Beaux Arts tradition at the Massachusetts Institute of Technology. From 1926 to 1928 he was chairman of the school of architecture at the University of Virginia. In 1928 he moved to New York to become managing editor of *Architectural Record*, turning it into a forum for modernism. In 1929 Kocher collaborated with Gerhard Ziegler on the Sunlight Tower project and the Rex Stout House, Fairfield County, Connecticut, establishing himself as a modern architect.¹⁸

Of their collaboration, it was commonly known that “Frey was the designer and Kocher was the writer and front man.”¹⁹ Frey worked at their office, designing the projects and producing most of the drawings. Kocher, with a full-time position at the *Record*, served as design critic, wrote specifications, promoted their work, and maintained client contacts. Their writings were penned by Kocher, with Frey's consultation. Although Kocher and Frey's partnership lasted only from September 1930 to March 1935, with a brief collaboration in 1938, and produced only four buildings, their contribution to the American modern movement was significant. They coauthored many articles on urban planning, the modern style, and technology, which established them as one of the country's most innovative and influential teams of the early 1930s. Their projects for low-cost, experimental housing, which explored the latest in American building technology, were published internationally, placing them at the forefront of the modern movement in the United States.

In 1986 a permit was requested to demolish the Aluminaire House. Through the



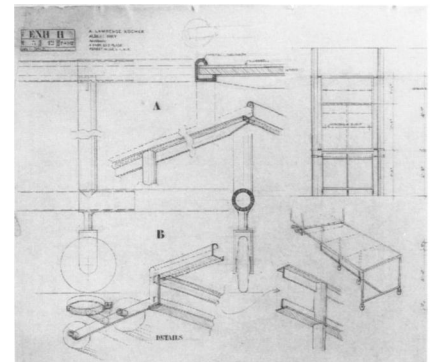
9. Perspective sketch of living room



10. Perspective sketch of dining room

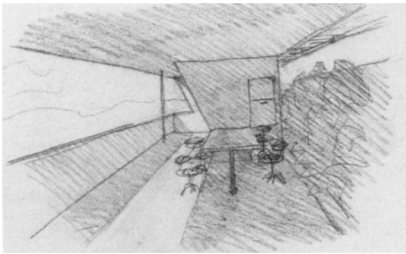


12. View of glass and metal cupboard (left) with retractable dining table

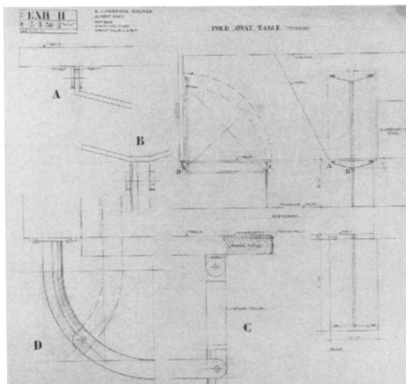


11. Drawing of glass and metal cupboard with retractable dining table

efforts of various individuals and institutions, the house is being relocated to the campus of the New York Institute of Technology, School of Architecture, in Central Islip on Long Island, and will be restored to its original condition of 1931 and placed on the National Register of Historical Places.²⁰



13. Perspective sketch of roof terrace with folding outdoor dining table



14. Drawing of folding dining table for roof terrace

Notes

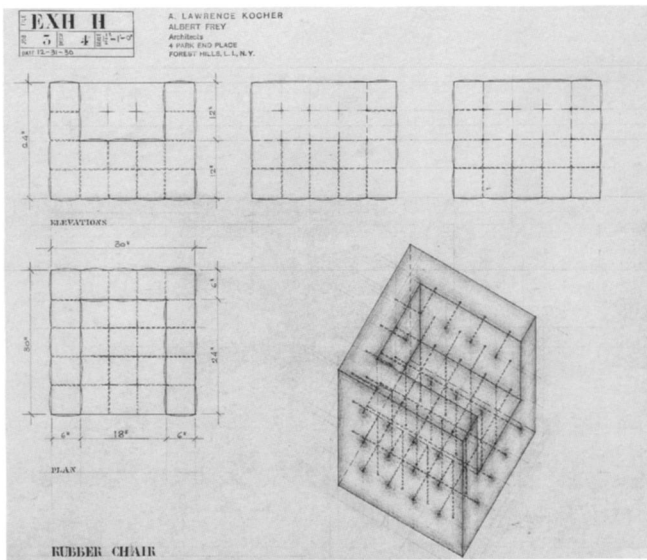
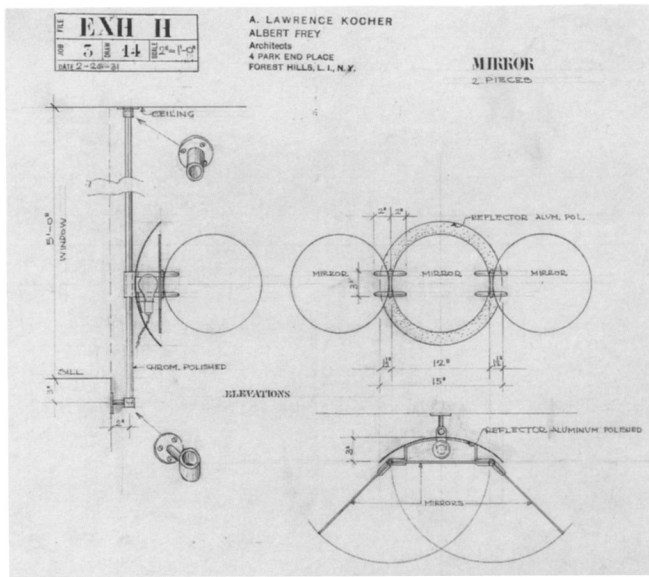
1. See David Gebhard and Harriette von Breton, *Kim Weber: The Moderne in Southern California, 1920 through 1940* (Santa Barbara: University of California, Santa Barbara, 1969), 33.
2. Joseph Rosa, interview with Albert Frey, 14 November 1986.
3. See the A. Lawrence Kocher Papers, Special Collection, Colonial Williamsburg Foundation Library, and F. R. S. Yorke, *The Modern House* (London: The Architectural Press, 1934), 181–82.
4. See “Aluminaire: A House for Contemporary Life,” *Shelter* (May 1932): 58.
5. A. Lawrence Kocher and Albert Frey, “Real Estate Subdivisions for Low-Cost Housing,” *Architectural Record* (April 1931): 323–27; see also idem, “Improved Lot Uses Recommended for Better Housing,” *Real Estate and Builders Guide* (27 June 1931): 5–6.
6. Yorke, *The Modern House*, 181.
7. “Aluminaire,” 58.
8. The Albert Frey Papers, held by Albert Frey.
9. Victoria Newhouse, *Wallace K. Harrison, Architect* (New York: Rizzoli, 1989), 60.
10. See the A. Lawrence Kocher Papers.
11. See “Family Will Be All Bottled Up,” *Los Angeles Times*, June 1931.
12. Mrs. Wallace K. Harrison, letter to Joseph Rosa, 20 May 1987.
13. Newhouse, *Harrison*, 63.
14. Ibid., 60.
15. Joseph Rosa, interview with Albert Frey, 25 July 1987.
16. Frey prepared almost all of the construction drawings for the Villa Savoye, from the tile chaise in the bathroom to the details for the large sliding-glass door that opens to the *jardin suspendu*. Joseph Rosa interview with Albert Frey, 19 July 1987; Fondation Le Corbusier, black log book nos. 2036, 2039, 2089, 2122, 2131, 2134, 2136, 2137, 2138, 2141, 2146, 2148, 2152, 2160, 2162, 2171, and 2172.
17. This list of projects and buildings is assembled from interviews with Albert Frey and from the black log book at the Fondation Le Corbusier. This book was used in the atelier to record the drawings and was usually signed by the draftsman. The log book confirms this listing with the exception of the Cité de Refuge, the League of Nations Palace (competition 2), and the Mundaneum. No record exists in the Fondation Le Corbusier of who worked on these projects.
18. See the A. Lawrence Kocher Papers and Lawrence Wodehouse, “Kocher at Black Mountain,” *Journal of the Society of Architectural Historians* (December 1982): 328–32.
19. Joseph Rosa, interview with Philip Johnson, 28 May 1987.
20. Enormous efforts were made by the Huntington Historical Society and others to prevent the demolition and to bring it to the attention of the public. At the time, the Aluminaire House was listed in the National Register of Historic Places as part of the Harrison estate, but to be protected, it required an individual listing with the Huntington Local Register of Historic Places. After extensive newspaper and magazine coverage, telephone campaigns, and local town hearings, the New York Institute of Technology expressed an interest in moving the Aluminaire to the campus of its School of Architecture in Central Islip. In the fall of 1987 the school



obtained a restoration grant of \$131,750 from the New York State Department of Parks Recreation and Historic Preservation. For the school to move the house, it had to be temporarily removed from the National Register of Historic Places. Once the Aluminaire is reassembled and restored, it will be reevaluated and reinstated. It will be listed on its own right, independent of its site — the first such listing in the National Register. The New York Institute of Technology will use the house to teach students about early affordable housing. It will also be open to the public. Joseph Rosa, interview with Michael Lynch, restoration coordinator of grants for the New York State Department of Parks Recreation and Historic Preservation, 26 May 1989, and idem, interview with Jon Michael Schwarting, New York Institute of Technology, School of Architecture, 8 June 1989.

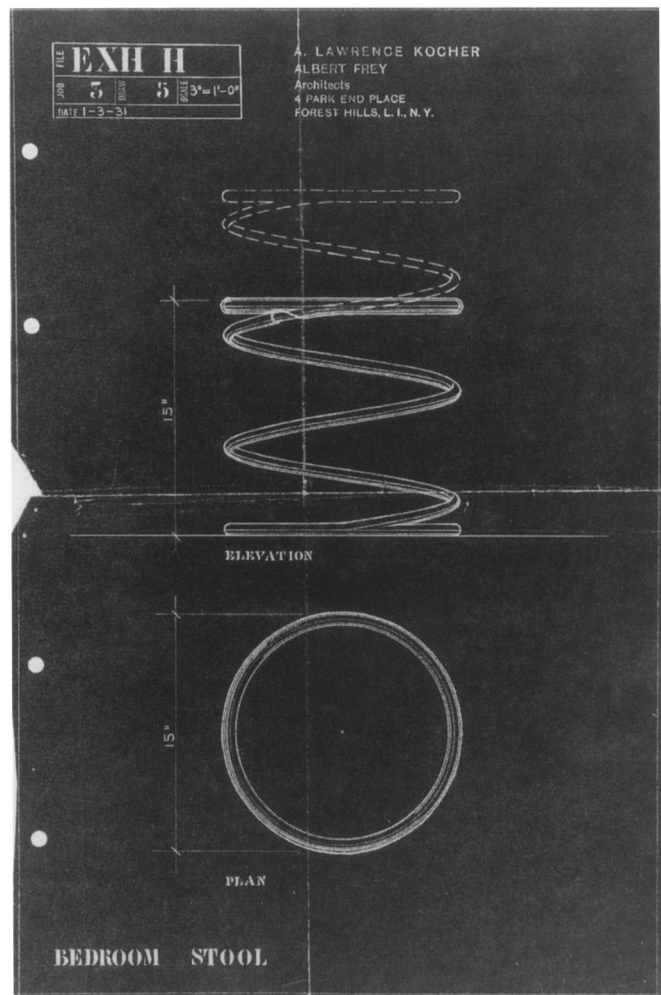
15. View of roof terrace

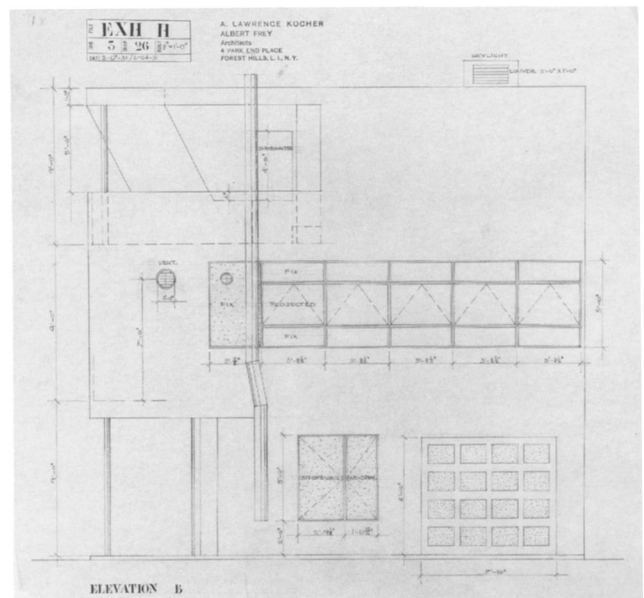
16. Drawing of bathroom mirror



17. Drawing of inflatable rubber chair

18. Drawing of extendable bedroom stool





19. Drawing of east elevation



20. View of house under reconstruction on knoll of Harrison estate, June 1931

21. Drawing of south elevation

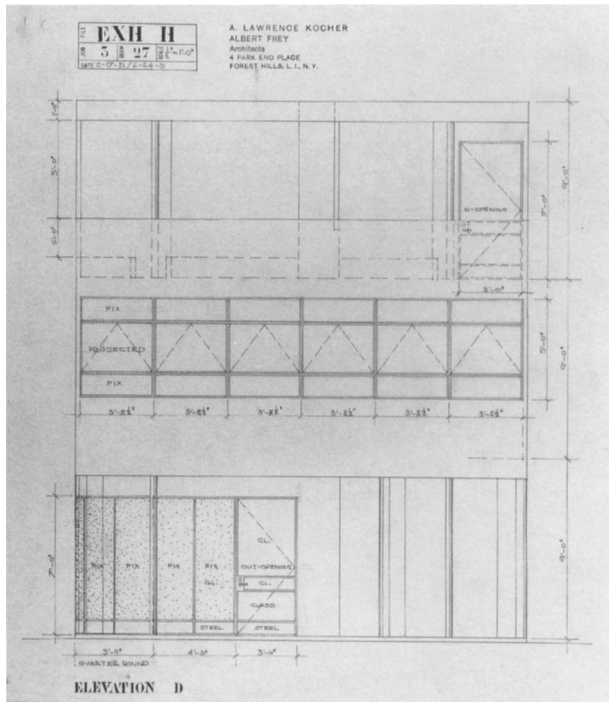
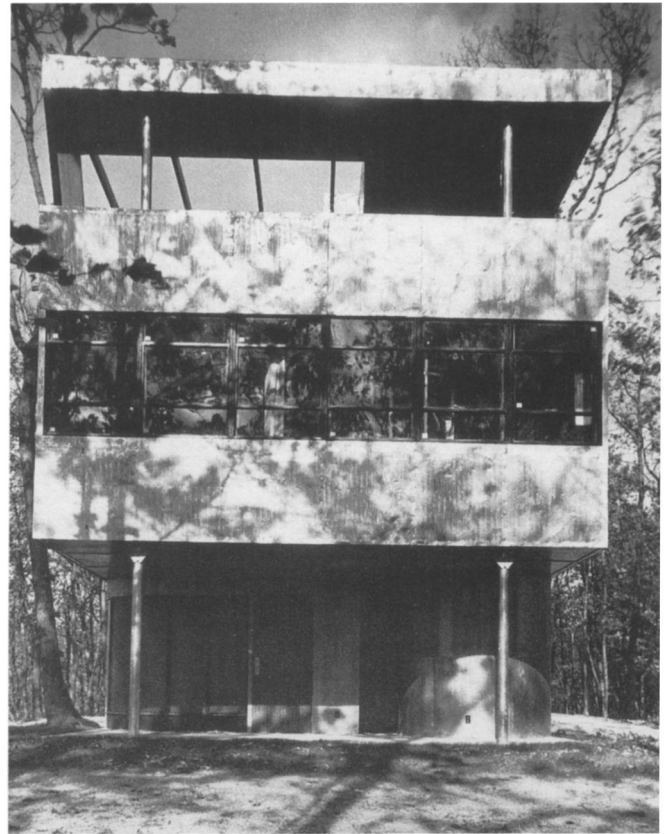
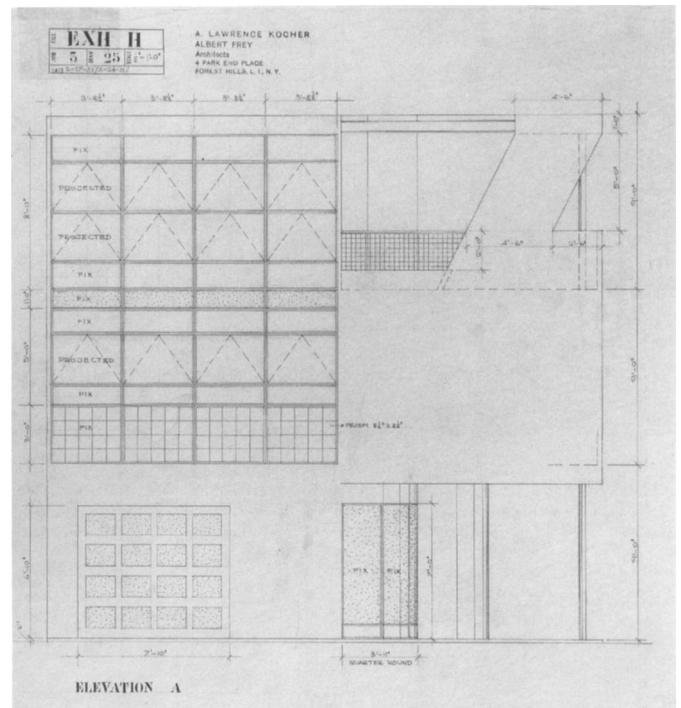


Figure Credits

1. F. R. S. Yorke, *The Modern House* (London: The Architectural Press, 1934).
2. Norman N. Rice, "Small House Construction: A Problem to Be Solved," *Architectural Forum* (August 1931).
3. 15, 20, 22, 24, 25. Courtesy of Albert Frey.
4. Courtesy of Joseph Rosa.
- 5–11, 13, 14, 16–19, 21, 23. Courtesy of the A. Lawrence Kocher Papers, Special Collections, Colonial Williamsburg Foundation Library.
12. "Aluminaire: A House for Contemporary Life," *Shelter* (May 1932).



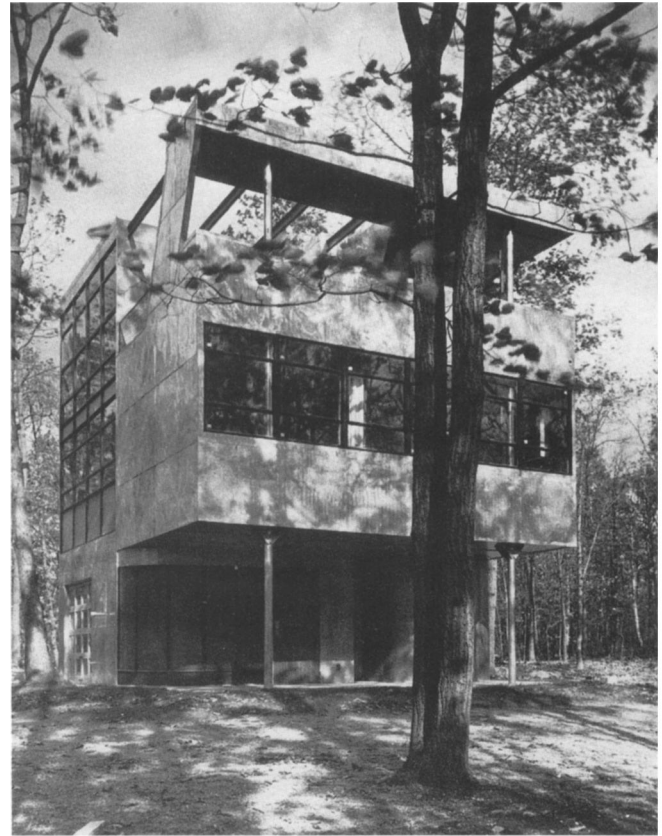
22. View of south elevation



23. Drawing of west elevation



24. View of northwest corner



25. View of southwest corner