

Author(s): Jacqueline Goldstein

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Machines in the Garden:

The Private Houses of Richard Neutra

By: Jacqueline Goldstein

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Abstract: Richard Neutra's designs for private houses in the 1930s simultaneously emerge from

the Machine Age and resist it. In the 1930s, the United States was in the middle of the time

period categorized as the Machine Age, roughly the period between the two world wars. America

in the 1930s was in the throes of a love affair with technology, machines, and the products they

shaped. This paper examines the ways in which Neutra identified his private houses as

"machines," specifically as "machines in the garden." It is this distinction and association with

nature that separates Neutra from many of his peers categorized in this international movement

of the machine aesthetic. Examining his work and the epoque in which they were designed, this

paper considers Neutra's decision to adopt a language of the machine over a more humanistic

description of the residences he created. Did Neutra's language acknowledge the contemporary

shift towards a more machine-driven material culture, or did he see his homes as true machines,

themselves?

<u>Keywords:</u> Richard Neutra, Machine Age, contemporary architecture, architectural history

1930s America found itself in the throes of a love affair with technology. The Great Depression forced Americans to take advantage of new advances in materials, technologies, and product design. Roughly the period between the two world wars, this period became known as the Machine Age. The private house designs of Richard Neutra (1892–1970) in southern California during these years present a stunning example of the Machine Age as a cultural phenomenon crossing into architecture. Neutra identified the private houses he designed as "machines" but, more importantly, Neutra identified them as "machines in the garden," merging this new age of the machine with the land around it.

Neutra's vision of his homes as living "in the garden" is the distinction and association with nature that set him apart from many of his peers in this international movement of the machine aesthetic. Richard Guy Wilson, in his essay "America and the Machine Age," aptly describes the zeitgeist as follows: "... many Americans could see a unified period of science and industry, resulting in fast communications and new products. For many people, the period marked a new age, brought into being by the machine."

Born in Vienna, Neutra studied architecture at the Technical University in the same city. He was greatly influenced by the works of the local Otto Wagner, who he described as his "ideal architect," as well as by the American architect Louis Sullivan.² After he designed and subsequently built the Lovell Health House (fig. 1) in 1927, Neutra established himself internationally as a distinguished modern architect. His designs for the Lovell House prompted many invitations for him to lecture extensively around the world, starting with the 1927 Deutscher Werkbund exhibit in Stuttgart.³ In 1932, Neutra's designs were included in the Museum of Modern Art's exhibition *Modern Architecture*.⁴ The curators of the exhibit, Henry-Russell Hitchcock (1903–1987) and Philip Johnson (1906–2005) labeled the modernism of the

day as the International Style, due to "... its simultaneous development in several different countries and because of its worldwide distribution..."5 This same period of modernism that the curators sought to illustrate has since been termed the Machine Age.



After serving in World War I, Neutra Figure 1. The Lovell Heath House, 1927.

worked as an apprentice for one year with Gustav Ammann (1885–1995), a renowned landscape designer at the nursery and landscape design firm Otto Froebel's Erben in Zurich.⁶ It was there that he studied plants and their integration into the landscape, working to achieve a harmonious relationship between building and surrounding environment. This knowledge would become one of the central influences driving his designs for private houses throughout his career. Upon completion of his apprenticeship with Ammann, he worked with architectural firms in Switzerland and Berlin and then with the architect Erich Mendelsohn, also in Berlin from 1921 to 1923. Neutra then moved to the United States in 1923 and worked for architectural firms in New York and Chicago, where he collaborated with the architect Rudolph Schindler and, for a short time, with Frank Lloyd Wright in his compound in Taliesin before settling in Los Angeles to begin his own work in 1924.8

When designing private houses, Neutra considered three key variables: the use of modern materials and techniques, the incorporation of the surrounding environment, and the desires and needs of his clients. Neutra took particular care to get to know his clients and to tailor his designs to best fit their individual needs, such as the preferred site, number of rooms, and family

interests. His desire to create personalized solutions with modern materials proved cost-effective and accommodated the changing needs of clients, most of whom had been impacted by the Great Depression to some extent. Through this systematic process, he created his machines in the garden: useful, thoughtfully designed structures that acted as lean, functional tools for living, tools that did not fight against the land they occupied but, rather, ebbed and flowed with that earth and the lives lived upon it.

Neutra explained his reasoning for this element of his design process:

[P]arents and children will also need individual space for their active life or rest. The sections dedicated to these separate uses can be greatly extended by auxiliary outdoor spaces such as an open-air extension, carefully evolved from the floor plan to fit the site intimately, (this) is one of the ideals of contemporary design.⁹

On the human element in his designs, he theorized that

the architect may well have to become an applied physicist like the engineers who collaborate with him, he may have to be an applied economist like the realtors and bank appraisers, but above all he must be an applied physiologist and expert on giving nerves, glands and muscles what they need from the outside, because he presents a setting to human individuals or groups of them. This is his primary function.¹⁰

These words illustrate how Neutra saw himself as far more than the designer of a structure itself. He delved into various disciplines to create a finished product that was as in-tune with a client's needs as possible, leaving no stone unturned while conducting his preliminary research. Careful selection and planning of a site and its surrounding environment were crucial for Neutra, as exemplified by his studying the climate with a hygrometer – an instrument that reads and records the humidity of a surrounding environment – before designing. He wrote: "It is fertile, useful and practical to praise and assume a truly realistic attitude toward the base of all environmental design, the natural setting and the site." He went on to further state that an "[e]mpathetic

understanding of vital needs becomes the basis for the work of the architect who continues nature's accommodations for human life." In this case, Neutra identified the client's needs and paired them to the chosen site, nurturing a symbiotic relationship that allowed both the client's needs and the surrounding environment to work together to achieve a harmonious space.

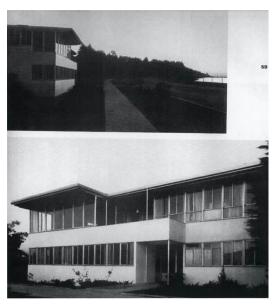


Figure 2. The VDL Research House, 1932.

Neutra's first major house of the 1930s was his own, and he called the complete home environment the VDL Research House (1932), located in Los Angeles (fig. 2). This house would serve as his residence and studio. The title was chosen partly in homage to the wealthy Dutch industrialist C.H. van der Leeuw (1890–1973), who was essential in funding this project. The house was indeed "research" as it was an experiment in new building materials and

style. Neutra met van der Leeuw, the owner of Van Nelle, a tobacco and tea company, in 1929 in Basel and began a friendship based on mutual admiration.¹³

Neutra procured many of the new materials for the house directly from manufacturers at little to no cost by promising them significant exposure through the publicity this "research" project would garner. One such manufacturer was Libby-Owens, who furnished the plate glass and aluminum that became the "sandwich" that Neutra would use for insulation. Neutra used other modern materials such as prefabricated metal for the home's facing, creating a protective layer made possible by the new machine industry. Another innovation was his use of concrete parallel beams to support the ceiling of the basement as well as the floor of the first story (fig. 3).

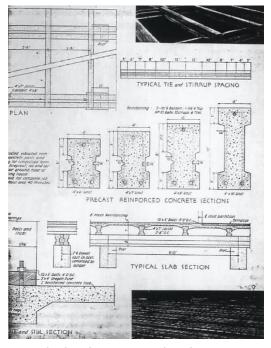


Figure 3. Plans for precast reinforced concrete sections in the VDL house, 1932.

The strength of concrete – weighing at least 3,000 pounds per square inch, nearly half the weight of an elephant – provided much greater support for this home than the more commonly used wood. Neutra further incorporated new industry to build large, mirrored panels to give a greater sense of interior space. He also pressed fiber boards into the walls, added a baked enamel metal facing, and cork in the floors. Neutra wrote: "the house turned out to be a novel sample of material, energy, and space economy, but with satisfying spaciousness enlarged by

mirrors."¹⁶ In spite of the financial constraints that the severe depression had laid upon the economy and society as a whole, Neutra's Research House emerged as a creative success.

Built on a 4,200 square foot lot, the house is comprised of four units: living quarters, bedroom wing, a separate bachelor's pad and a 4th small but fully equipped living area (fig. 4).

Seen from the outside, it is a simple, rectangular, twostoried structure with a flat roof. Facing a lake, it has long horizontal planes of vertical, rectangular windows from one end of the structure to the other, broken only by a door along the first level. Lush plant life fills the interior garden patio and frames the open, spacious interior. As it wasn't a particularly a large structure, Neutra used multiple windows, roof decks, large

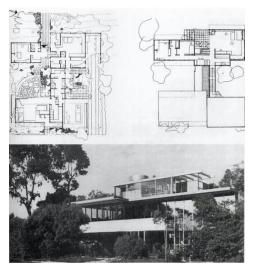


Figure 4. Lot plans for the VDL house.



Figure 5. Folding doors between living room and sleeping porch, VDL House, 1932.

sliding doors, large mirrors, and walls that could be removed to open up spaces in the interior (fig. 5).

A review in the November 1934 issue of *Architectural Forum* described the home as "...a splendid example of what American housing may yet be if the

industry adopts a modern point of view."¹⁷ The modernism of the Research House lives in its machine-like attributes – new building materials and machine-cut metals like aluminum and steel, left fully visible, along with copious amounts of glass. Among the innovations, the roof had screened openings for ventilation made from perforations in solid blocking. As much of the

exterior wall space was comprised of long, horizontal stretches of windows, Neutra used the lighting to provide privacy. Neutra placed a bulb in a galvanized iron box, covered it with a sheet of ribbed glass along the ceiling, and the ribbed glass and ceiling created a seamless line (fig. 6). This technique eliminated reflections in the interior and made the windows appear opaque when viewed from outside.¹⁸ This was a novel use of electricity and glass.

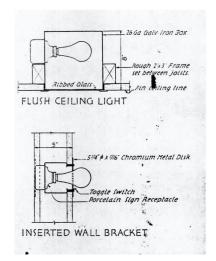


Figure 6. Plans for flush ceiling light.

As the site for the VDL House was on a lake, Neutra

embraced the view and incorporated it into the dynamics of the house by building a balcony along the second story which could be used as a sleeping porch, lining the facade with long panes of windows, and using his flat roof as a deck (fig. 7). Essential building components like metal flashing – used to cover the building material for weatherproofing – were left uncovered.



Figure 7. Woman seated in the VDL House, 1932.

This was a bold move which lent these materials a functional visibility. ¹⁹ For Neutra, these choices were not made in the name of a machine aesthetic. To him, the house *was* a machine, itself, and its structure relayed its function.

The VDL House was well-received by Neutra's contemporaries and the press and was

mentioned in the November 1934 issue of *Architectural Forum*. Neutra is quoted in the article on his design, describing the house as "... an experiment ... with models of the of the 'machine for living' to derive an empiric basis for the housing of the future."²⁰ Across the board in industry,

machines were being used to make products faster, cheaper and more efficient. Neutra used this technology to design and build more cost-efficiently while maximizing space and comfort, making his machines truly comfortable, smart spaces for living.

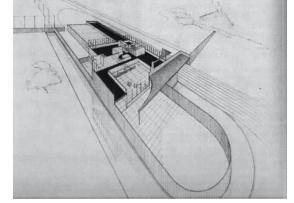


Figure 8. Plans for the Von Sternberg House, 1935.

Like the VDL House, the Von Sternberg House (1935), in Northridge, California, represented a

Built on the side of a hill in a barren part of San Fernando Valley, this house used many streamlined elements and resembled either the bow of a ship or the front of a train. The arc of this shape formed a peak in the curved walls of the grounds, cradling an enclosed court (fig. 9). Neutra's use of aluminum-coated copper-bearing steel for that wall and aluminum-coated steel

continuation of his philosophy of the house as a "machine in the garden" (fig. 8).

for the exterior of the house further display his own kind of machine aesthetic. He does not hide these materials in any way, but instead allows the parts of his industrial machine to remain fully visible. The courtyard wall also stretches the structure out into its surrounding



Figure 9. Curved outdoor court at the Von Sternberg House, 1935

environment, fully rendering the machine *in* its garden.

Neutra encircled this wall and most of the structure with a shallow ring of water and a



Figure 10. Exterior of the Von Sternberg House, 1935.

high-tech sprinkler system (fig. 10). Neutra used the water as a coolant to offset the heat generated by the harsh sun.²¹ Instead of completely

paving a driveway, he interspersed grass and concrete strips. The two elements in effect realized the idea of the machine in the garden as well. The house was designed for Josef von Sternberg, a famous filmmaker, the choice of the remote sight and the courtyard wall accommodated the client's desire for privacy. The interior had large open spaces such as the two-story living room

surrounded by a balcony on the second floor (fig. 11). A large garage was designed for his Rolls Royce and the bathroom of the master bedroom on the second floor opened to a shallow roof pool for tropical fish.²² The house was



Figure 11. Interior shot of the Von Sternberg House, 1935.

almost completely surrounded by the ring of shallow water which, in addition to acting as a cooling feature, formed a moat, thus creating an added element of privacy. Combined with a searchlight from a ship near the entrance, these elements heightened the drama of the house, befitting its dramatic owner. The von Sternberg house illustrates how Neutra integrated the landscape with the machine to create the totalizing living environment that the client desired.

The Kum House (1936) was featured in the April issue of *Architectural Forum* the same year it was completed (fig. 12). It was built for the journalist Josef Kun, his wife, and their adult daughter on a steep incline in the Laurel Canyon section of Los Angeles, overlooking the valley and the ocean. The house had three levels, the top story being the entrance, which was at street level. This level housed the garage and the entrance hall, and also served as a deck. The second and third stories descended down the natural hillside. The second story was for the large living spaces and included the living room, kitchen, and dining room. The lowest floor had three bedrooms. The further from the entrance the levels were, the more private the rooms became, similar to the format of most private homes. Each level had its own landscaping and all of the

almost the entire length of the floor. These balconies served as bridges connecting the living space with the exterior environment. A machine-like quality is exemplified by the walls – coated in aluminum, they served as a heat reflector. The overhanging roofs gave added sun protection to the structure, which lay exposed on the hillside.²³ By building into the hillside and descending the



Figure 12. Exterior shots of the Kum House, 1936.

structure along with the natural gradation of the hill, Neutra successfully fused building and landscape.

Like the Kun House before it, the Miller/Mensendieck House (1937) in Palm Springs is not only another example of Neutra's machines in the garden, but also a testimony to his ability to overcome the natural challenges of a site. Neutra wrote on the house in the desert:

[This house] is an import, yet never would it do to deny the desert even in the lawn; the desert is allowed to send an outcrop of its bonelike boulders through the well-tended grass... resistance and mutual respect are the basis of friendship between a house and the desert.²⁴

Here, Neutra carefully used his landscape design experience to deal with the extreme climate of the desert-like Palm Springs, from the scorching sun and heat of the day, to the cool air of the night (fig. 13). He plotted the surrounding landscape with plants that would thrive in the environment, including palo verde, cholla, barrel cactus, yucca, and mesquite.²⁵



Figure 13. Miller/Mensendieck House, 1937.

This house was to serve as work and living quarters for Grace Lewis Miller, who bought the Mensendieck exercise system to California, pioneering the method out west. Known in some circles as a St. Louis socialite, she was also a writer and a historian on the life and work of Meriwether Lewis, the American explorer. Neutra built the interior and the exterior of her home to work harmoniously together through his signature mix of strategic landscape

design and curated building materials. The use of aluminum in the walls served to keep the heat in at night when the area drastically cooled. On the flip side, the overhanging roofs shielded the house from taking in too much heat. Long, vertical, and open aluminum strips acted as a

breezeway and could also close for protection against the harsh climate. The flat lines of the house here contrasted with the surrounding rugged terrain, while still paying homage to the angles of the landscape. Extensive use of glass enabled the viewing of the surrounding valleys, hills, canyons, and Mt. San Jacinto (fig. 14). The south wall of the living room was composed entirely of glass with metal framing. Sliding

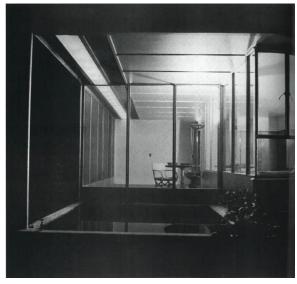


Figure 14. Glass panels in the Miller/Mensendieck House, 1937.

doors in the glass, when completely open, effectively join the interior of this room with the outside patio, creating one large, open space which shared a continuous roof. The bedroom also had a similar setup on one side, with glass doors sliding open to an outside area that could also be used as a sleeping porch.²⁶

Viewing Neutra's Davis House (1937) in Bakersfield, California and the Ward-Berger House (1939) in North Hollywood in the late 1930s, it is apparent that his desire to create machines in the garden continued to drive his designs for private houses throughout the decade. Neutra equated efficiency not only with material and cost but with space and the ability to maximize comfort. In the Davis House, this spaciousness was achieved with the use of glass and mirrors, coupled with built-in furniture such as drawers, shelves, and seats, all contributing to a sense of minimalism in the interior. Simplicity was key to Neutra's designs to create feelings of vastness and comfort in the living spaces inside each structure.

Along the exterior, a long, horizontal row of windows sweeps across the second floor with a porch that extends the entirety of the home, similar to the VDL House and the Kun House

(fig. 15). The Davis House also featured overhanging roofs for sun protection. Neutra designed the landscape surrounding the Davis House with open spaces complemented by many trees that served to offset the site, which was devoid of any commanding views that the Miller/Mensendieck house in Palm Springs had.²⁷



Figure 15. The Davis House, 1937.

As with the Davis House, the Ward-Berger House forced Neutra to think creatively within limited square footage (fig. 16). Neutra responded to the small physical scale with extensive use of large panes of glass. The glass had a two-fold effect: foremost, it provided a greater sense of space by visually integrating the landscape with the interior. Secondly, his expansive use of reflective glass accentuated the structure's machine-like aesthetic. He added a





Figure 16. The Ward-Berger House.

large, sliding glass door into the wall of windows in the living room, which opened the wall out onto a patio.

The exterior floor – flush with that of the interior space –further enabled the extension of the room, along with the shared roof and the use of the same furniture in both spaces.

Most of the houses Neutra built in the 1930s were in southern California. Neutra wrote about this location:

Summing it up, I felt that southern California was a god send. It was an instructive new subtropical country, developing surprisingly from quasi-paradisical low countries into an industrial region... climatically, it favored the launching of a new architecture, quite a little closer to biological requirement, a new mode of living.²⁸

It was largely due to this location and its climate that he was able to put into practice his idea of merging the structure – the machine – with its surrounding environment. Neutra coined the term "biorealism" to define how man's relationship to nature acted as an integral component when designing his machines. Neutra's houses were indeed fully functioning machines, using the materials newly on the market at the time, like aluminum. Neutra celebrated these machine-made materials by often times leaving them fully visible, like in the layer of flashing – the metal layer for weatherproofing – left uncovered on the VDL house.

It is obvious that he embraced the new material culture of the 1930s. On machines and modern materials, Neutra wrote:

We should strive to make the best use of the means which our time lays into our hands, however foreign they may have been to our forefathers. If we can have a mirror of a door size, let us not cut it up into smaller panes because a French king two hundred years ago had to use a patched-up mirror.²⁹

With those words, he stressed the importance of using the new materials, such as aluminum and large-scale panes of glass not previously available to the mass market, to build more efficiently in the style he loved. Neutra's principles of integrating landscape with the structure formed the second and equal part of his design equation. This was achieved in two ways: his extensive use of balconies, patios, glass, and sliding doors in his site-detailing, and his careful attention to the horticulture in his landscape design for each site. New technologies enabled Neutra to have the structural means to open a house out into its surrounding environment, a move that he felt was

integral to each of the houses that he designed. By interrelating exterior and interior spaces, a greater sense of pleasure could be derived from the visual stimulation of the landscape along with the physical sense of a larger space. Pleasure, here, would be found in the ability to feel as if one was outside, enjoying the fresh air and beauty of the surrounding organic environment, even when in the living room or study. This sense of peaceful, living beauty counterbalances the more sterile attributes of his homes – his man-made machines.

Ultimately, Neutra's description of the houses he built as fully functional "machines in the garden" surmises the degree to which he embraced the ethos and the visual qualities of the Machine Age, along with its material culture. He merged this style with his personal desire to integrate nature with structure. Using equal parts machine and nature to form the total environment of the house, Neutra distinguished himself as a unique emblem of the Machine Age, creating functional homes that served their inhabitants and their surrounding environments with a thoughtfulness that could only come from seeing the machine not as separate from the living thing, but as its vital extension.

Illustrations



Figure 1. The Lovell Heath House. (Photograph by Yukio Futagawa, 1927.)

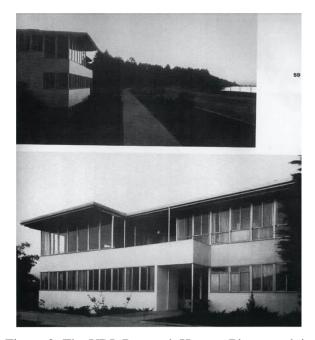


Figure 2. The VDL Research House. (Photograph in *Architectural Forum*, November 1934.)

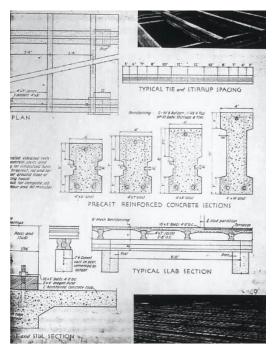


Figure 3. Plans for the precast reinforced concrete sections in the VDL house. (Photograph in *Architectural Forum*, November 1934.)

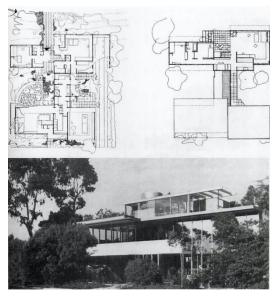


Figure 4. Lot plans for the VDL house. (Photograph in *Architectural Forum*, November 1934.)



Figure 5. Folding doors between living room and sleeping porch, VDL House. (Photograph in Architectural Forum, November 1934.)

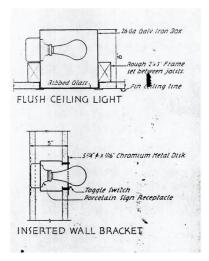


Figure 6. Plans for flush ceiling light. (Photograph in *Architectural Forum*, November 1934.)



Figure 7. Woman seated in the VDL House, 1932. (Photograph in *Architectural Forum*, November 1934.)

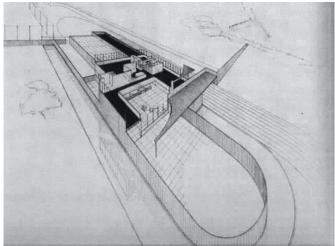


Figure 8. Plans for the Von Sternberg House, 1935. (Photograph by Yukio Futagawa.)



Figure 9. Curved outdoor court at the Von Sternberg House, 1935. (Photograph by Yukio Futagawa.)



Figure 10. Exterior of the Von Sternberg House, 1935. (Photograph by Yukio Futagawa.)



Figure 11. Interior shot of the Von Sternberg House, 1935. (Photograph by Yukio Futagawa.)



Figure 12. Exterior shots of the Kum House, 1936. (Photograph in *Architectural Forum*, April 1936.)



Figure 13. Miller/Mensendieck House, 1937. (Photograph in *California Arts and Architecture*, May 1937.)

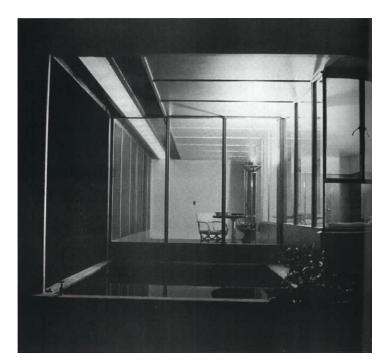


Figure 14. Glass panels in the Miller/Mensendieck House, 1937. (Photograph in *California Arts and Architecture*, May 1937.)

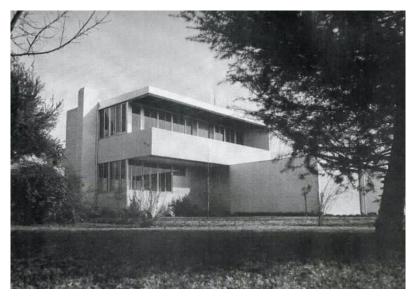


Figure 15. The Davis House. (Photograph in *California Arts and Architecture*, August 1938.)



Figure 16. The Ward-Berger House. (Photographs by Julius Shulman.)

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Endnotes

¹ Richard Guy Wilson, "America in the Machine Age" in *The Machine Age* (New York: Harry N. Abrams Inc., 1986), 23.

² Richard Neutra, *Life and Shape: The Autobiography of Richard Neutra* (New York: Appleton-Century-Crofts, 1962), 67–68.

³ He was the American delegate to the CIAM conference in Brussels in 1930 and spoke in Japan and at the Bauhaus school in Germany, among other places.

⁴ Modern Architecture (New York: Appleton-Century-Crofts, 1932), 67–68.

⁵ Modern Architecture, 67–68.

⁶ Neutra 1962, 136–137.

⁷ Neutra 1962, 67–68.

⁸ Neutra 1962, 67–68.

⁹ Richard Neutra, *Richard Neutra on Building: Mysteries and Realities of the Site* (Scarsdale: Morgan and Morgan Publishers, 1951), 54.

¹⁰ Neutra 1962, 283.

¹¹ Neutra 1962, 15.

¹² Neutra 1962, 272.

¹³ Neutra 1962, 255–256.

¹⁴ Neutra 1962, 265.

¹⁵ Neutra 1962, 266–267.

¹⁶ Neutra 1962, 267.

¹⁷ Architectural Forum, "Master Detail Series: VDL Research House, LA, Calif., R.J. Neutra Architect" (November 1934), 359.

¹⁸ Architectural Forum 1934, 372.

¹⁹ *Architectural Forum* 1934, 364-367.

²⁰ Architectural Forum 1934.

²¹ Neutra 1951, 41.

²² Manfred Sack, *Richard Neutra*, with an Essay by Dion Neutra: Memories of my Years with Richard Neutra (Zurich: Artemis Verlags AG, 1992), 44–46.

²³ Architectural Forum, "J. Kun House, Hollywood, Calif., R.J. Neutra Architect" (April 1936).

²⁴ Neutra 1951, 41.

²⁵ California Arts and Architecture, "Mensendieck/Miller House, Palm Springs, Calif., R.J. Neutra Architect" (February 1937).

²⁶ California Arts and Architecture 1937, for site and building plans.

²⁷ California Arts and Architecture, "Bakersfield Residence of F. Davis: R. J. Neutra Architect" (August 1938).

²⁸ Neutra 1952, 214.

²⁹ California Arts and Architecture, "VDL Research House, Los Angeles, Calif. R.J. Neutra Architect" (January 1935).