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Opacity in Transparency

From Drawings and Photographs of the Modern Domestic Spaces by Mies van der Rohe

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Abstract

Building with glass, Mies van der Rohe expressed his singular vision of glass—*almost nothing*. Among the few things that remain in his minimalist domestic space, the body of a female sculpture holds conspicuous opacity. To seek the signification of this opacity in the transparency of Mies's architecture, this thesis analyzes his design drawings and the photographs of his buildings through a phenomenological reading. The juxtaposition and a parallel development between the presence of the opaque body and the view of glass throughout the evolution of his glass house are discovered. The discovery brings to light the finding that the opaque body is an irreducible substance in fulfilling Mies's ideal of modern house. This opacity in transparency reveals the *maternal materiality* that is the essence of human dwelling. Three chapters constitute this thesis. Chapter 1 introduces Mies's vision of glass and its representations; chapter 2 examines various views of the architect's glass house designs in drawings and photographs; chapter 3 explores the significance of the inherent opacity in Mies's design philosophy of modern house.

Résumé

Construire avec le verre, Mies van der Rohe a exprimé une singulière vision du verre – *presque rien.* Parmis les rares choses qui demeurent dans son espace domestique minimaliste, le corps d'une statue de femme incarne une opacité conspicieuse. Afin de chercher la signification de cette opacité dans la transparence de l'architecture de Mies van der Rohe, cette thèse analyse les dessins et photographies de projets des maisons qu'ils a réalisées, et ce, à travers une lecture phénoménologique. La juxtaposition et un développement parallèle entre la présence d'un corps opaque et la vue du verre dans l'évolution de la maison de verre sont présentés. Cela met à jour l'irréductible substance du corps opaque dans l'idéal de la maison moderne de Mies van der Rohe. Cette opacité dans la transparence révèle la *matérialité maternelle*, garante de l'essence de l'habitat humain. Cette thèse est divisée en 3 chapitres. Chapitre 1 présente la vision du verre de Mies Van der Rohe et ses représentations; chapitre 2 examine différents aspects dans la conception de la maison de verre de l'architecte au travers de dessins et de photographies; chapitre 3 explore la signification de l'inhérente opacité dans la philosophie de l'espace domestique de Mies.

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Pavilion and its reconstruction. In Chicago, I received assistance from various individuals and institutes. The Farnsworth House, the Ernest R. Graham Study Center for Architecture Drawings at the Art Institute of Chicago, the Architecture Department of the Chicago Historical Society, the Special Collection Department in the Newberry Library and the Special Collection Department at the library of the University of Illinois at Chicago were all helpful in allowing me to access documents and materials in their collections. Two interviews, with Mies's student and colleague George Danforth and Mies's biographer Franz Schulze, enlightened my research.

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Introduction

Ludwig Mies van der Rohe built with glass and steel, and termed his architecture "skin and bone structures."[1] His design is remarked as minimalism and his architecture is metaphorized as the skeleton under X-rays or the modern classic glass box. For decades, the image of Mies's modern spaces has been rendered as the exemplar of perfect transparency, simplicity and clarity.[2]

Mies spoke little and wrote less. The lack of verbal expression generates difficulties in bridging what he did and what he thought. The gaps and conflicts between his words and architecture have been the subject of comment. Peter Smithson pointed out the difficulties this presented for the next generation of architects: "Mies' thought runs very deep and is not easily accessible—not even one suspects to himself—so the re-direction of the main stream of architecture, which one's instinct tells one lies in his work, will take some years for us to comprehend and to grow upon."[3] Although many scholars have closely examined Mies's design projects, the depth of research has not been fully explored.[4]

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[1] Mies van der Rohe, "Office Building," *G*, no.1 (July 1923), 3; translated by Mark Jarzombek in Fritz Neumeyer, *The Artless World: Mies van der Rohe on the Building Art* (Cambridge: MIT Press, 1991), 241.

[2] Philip Johnson, for example, in the first monograph on Mies described Mies's five projects of the early 1920s as the "crystalization of a single unadulterated concept" and the designs of "purity," and noted that the influence of these projects was due to their "dazzling clarity" (*Mies van der Rohe* [New York: The Museum of Modern Art, 1947], 22, 30, 34).

[3] Peter Smithson, "For Mies van der Rohe on His 80th Birthday," *Bauen & Wohnen*, May 1966; reprinted in *Changing the Art of Inhabitation* (London: Artemis, 1994), 14.

[4] Adrian Gale, for instance, noted radically that because no essay has illuminated Mies's work in fresh light, "the first monograph, written by Philip Johnson...remains the most informative and observant survey to date." ("Mies van der Rohe: An Appreciation," in *Mies van der Rohe European Works* [New York: St. Martins

If Mies was verbally silent about his architecture, by contrast he was passionate about drawing and was admired for his excellent draughtsmanship. He exclaimed: "For heaven's sake, make a drawing; we are architects, not lawyers."[5] Drawing meant for him the clarity of an architect's perception and idea. If built structures and language do not sufficiently—and perhaps even misleadingly—articulate Mies's deep thoughts on architecture, his drawings are less ambiguous.

Mies's drawings and photographs of his buildings have been frequently employed in studies on his architecture, but they are usually used as supplementary evidence for the ideas that are already established in language. The task of illustrating the author's ideas suppresses the original visions in drawings and photographs. On the other hand, the reader's ability to perceive the visual sources is also limited by these ideas. Under such circumstances, seeing loses its own power in revealing architectural thinking.

To retrieve the lost visions, drawings and photographs have to be perceived otherwise. In this study on drawings and photographs, the original vision recorded in images is obtained through a phenomenological reading. The pre-given ideas are temporarily bracketed and the eye approaches more candidly the visual sources, so that the drawings and photographs themselves speak out and expose the inherent thoughts of the architect. Being so perceived, phenomena that have been overlooked could become prominent, and the opaque body of the statue in Mies's glass houses attracts our attention. The existence of this opaque body challenges the prevalent interpretation—the transparent image of Mies's domestic space and throws light onto his preliminary spatial intentions. What does this opaque body mean in Mies's design?

Remarkable endeavors have been made to study Mies and his architecture since the 1920s, and research shows an expansive scope of interest. The first monograph on Mies was written by Philip Johnson in 1947, when Mies was 61 years old. In the following years of the 1950s and 1960s, the interest in Mies generated a series of monographs by Ludwig

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Press, 1986], 95).

[5] Mies van der Rohe quoted in Reginald Malcolmson, "A Paradox of Humility and Superstar," *Inland Architect* (May 1977): 16.

Hilberseimer (1956), Arthur Drexler (1960), Peter Blake (1960), James Speyer (1968) and Ludwig Glaeser (1969). The interest in Mies continues and has been broadened throughout the 1970s, 1980s and 1990s until the present. The works of Juan Pablo Bonta (1979), Franz Schulze (1985), Wolf Tegethoff (1985), Fritz Neumeyer (1991) and Werner Blaser (1996) study various aspects of Mies's career. In the post-modern age, some new articles challenge the canonic interpretations on Mies, such as those by Kenneth Frampton, Michael Hays, Rem Koolhaas, Robin Evans, Neil Levine, Randall Ott and Alice T. Friedman.[6]

Given the large amount of literature and the complexity of issues touched upon in research, sorting out the publications within a frame will be helpful in obtaining a general view of the discourse on Mies. Nonetheless, considering the overlapping of topics, classification can only offer a simplified and relatively precise picture of the main issues that are covered in individual studies. Three main groups can be categorized according to their methodologies.[7]

The first group follows traditional approaches of historical research. These studies are based on the richness of first-hand information and original materials, and are mostly focused on introducing specific projects and events. Museum-based archival research, for example, oral histories and exhibition catalogues, and the majority of early monographs by Mies's friends, colleagues or students who knew him personally, such as Johnson and Speyer. Tegethoff's

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[6] These publications on Mies are: Philip C. Johnson, *Mies van der Rohe* (New York: The Museum of Modern Art, 1947); Ludwig Hilberseimer, *Mies van der Rohe* (Chicago: Paul Theobald, 1956); Arthur Drexler, *Ludwig Mies van der Rohe* (New York: G. Braziller, 1960); Peter Blake, *The Master Builders: Le Corbusier, Mies van der Rohe, Frank Lloyd Wright* (New York: Alfred A. Knopf, Inc., 1960); A. James Speyer, *Mies van der Rohe* (Chicago: The Art Institute of Chicago, 1968); Ludwig Glaeser, *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art* (New York: The Museum of Modern Art, 1969); Juan Pablo Bonta, *Architecture and Its Interpretation: A Study of Expressive Systems in Architecture* (New York: Rizzoli, 1979); Franz Schulze, *Mies van der Rohe: A Critical Biography* (Chicago: University of Chicago Press, 1985); Wolf Tegethoff, *Mies van der Rohe: the Villas and Country Houses* (New York: The Museum of Modern Art, 1985); Fritz Neumeyer, *The Artless World: Mies van der Rohe on the Building Art* (Cambridge: MIT Press, 1991); Werner Blaser, *West Meets East: Mies van der Rohe* (Boston: Birkhauser, 1996); Kenneth Frampton, *Modern Architecture: A Critical History*, 3rd edition (London: Thames and Hudson Ltd., 1992), chapter 18 & 26, 161-66, 231-37; Michael Hays, "Critical Architecture: Between Culture and Form," *Perspecta*, no.21 (1984): 14-29; Rem Koolhaas, "The House That Made Mies," *Any*, no.5 (Mar.-April 1994.): 14-15; Robin Evans, "Mies van der Rohe's Paradoxical Symmetries," *AA Files*, no.19 (Spring 1990): 56-68; Neil Levine, "The Significance of Facts: Mies' Collages up Close and Personal," *Assemblage*, no.37 (1998): 70-101; Randall Ott, "Reflections on the Rational and the Sensual in the Work of Ludwig Mies van der Rohe," *Arris: Journal of the Southeast Chapter of the Society of Architectural Historians*, vol.4 (1993): 38-53; Alice T. Friedman, *Women and the Making of the Modern House: A Social and Architectural History* (New York: Harry N. Abrams, Inc., 1998), chapter 4, 126-59.

[7] This classification is based on my reading of the literature on Mies during my internship in the Canadian

recent research documents Mies's house designs dated from the 1920s, and sets new criteria for dealing with data and their analysis. The works of this group are dedicated to introducing Mies's architecture and contribute most in establishing his status as a master builder in the modern movement. These works provide primary sources for further study and lay the foundation of the scholarship on Mies.

The second group is closely related to the first group. Here, arguments are based on primary sources but are interpretation oriented, for example, Bonta's research on the Barcelona Pavilion, the biography by Schulze, and Neumeyer's study on Mies's writings. Research of this group extends our understanding about Mies to various directions. Their subjective interpretation is a significant supplement to the factual documentation of the first group.

With the expansion of research on Mies, chances of discovering unknown archival materials are rare. The growing context fosters the research of the third group, which seeks new historical significance of the modern architecture initiated by Mies. The group investigates the extant discourse from fresh perspectives. It reads Mies more philosophically and approaches primary materials in a critical way. This trend is best shown in the anthology *The Presence of Mies* (1994) where the canonic image of Mies is challenged by the intention to relocate the presence of his architecture in contemporary urbanism.[8] Hays, for example, builds his arguments about Mies's design strategy of abstraction based on the phenomenological reading of a single sketch of the Seagram Building by Mies. The curtain wall of glass and steel, noted in the sketch by only a hasty and rhythmic zigzag of the pencil, is interpreted by him as "an opaque refusal of the situation...a primary clearing in the deadening thickness of the Manhattan grid."[9]

The research of these three groups has explored Mies and his architecture within a wide spectrum. His buildings have been studied down to each detail; his drawings have been published again and again; his writings, notes, even the marks and underlines in his personal

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Centre for Architecture (CCA). Details of my work in CCA will be introduced later in this introducation.

[8] Detlef Mertins, ed. "Introduction: New Mies" in *The Presence of Mies* (New York: Princeton Architecture Press, 1994), 23.

[9] K. Michael Hays, "Odysseus and the Oarsmen, or, Mies's Abstraction Once Again," in *The Presence of Mies*,

books have been analyzed word by word; and his words have been recalled by his students, colleagues and friends. In the sphere of discourse, the image of Mies exists in the same clarity and transparency as that of his glass buildings.

However, a satisfactory answer to the question about the opaque body in the drawings and photographs can hardly be found in such a vast literature. In spite of Glaeser's observation in 1969 on the features of Mies's drawings—"Most of his drawings...contain statues but never people, not even as the stylized scale figures"—the figural sculpture in Mies's space is generally understood as an artwork or a reference to scale.[10] Very few authors have focused on the sculpture in discussion. In articles and paragraphs that have mentioned the sculptures, their presence is generally treated as a physical object within the spatial structure. Recently, some scholars have cast light onto these sculptures. Neil Levine investigates the sculpture in Mies's collages to expose Mies's political denotations, while the relationship between the sculpture and the space is not explored.[11] Randall Ott interprets the juxtaposition of the statue and the pavement grid in the drawings as Mies's reflection on the relationship between the sensual and the rational, but his theory is ineffective in explaining the frequent appearance of the body in various circumstances.[12]

Feminist scholars examine modern domestic space from another specific perspective. They have paid attention to the cases when the figures in Mies's domestic spaces are obviously female. Friedman, for instance, asserts that the issues of privacy, gender and sexuality played a powerful role in the making of the modern house in her case studies on female clients and innovations of domestic architectural design (Edith Farnsworth and her house designed by Mies is one of these case studies).[13] Investigating the house and the domestic environment

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edited by Mertins, 236, 238.

[10] Ludwig Glaeser, introduction of *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art* (New York: The Museum of Modern Art, 1969), unpag.; refer also to the interviews with George Danforth and Franz Schulze in the appendix.

[11] Neil Levine, "The Significance of Facts: Mies' Collages up Close and Personal," *Assemblage*, no.37 (1998): 70-101.

[12] Randall Ott, "Reflections on the Rational and the Sensual in the Work of Ludwig Mies van der Rohe," *Arris: Journal of the Southeast Chapter of the Society of Architectural Historians*, vol.4 (1993): 38-53.

[13] Alice T. Friedman, *Women and the Making of the Modern House: A Social and Architectural History* (New York: Harry N. Abrams, Inc., Publisher, 1998). See also Christine Magar, "Project Manual for the Glass House," *Architecture and Feminism*, edited by Debra Coleman, et al. (New York: Princeton Architectural Press, 1996): 72-108; Paulette Singley, "Living in a Glass Prism: The Female Figure in Mies van der Rohe's Domestic

through the lens of feminism and sociology, these scholars push the scholarship of modern architecture to a panorama that integrates marginal issues into the main stream of architectural discourse. Their research opens the way for exploring the significance of the statue in Mies's space. However, feminist scholars aim at more sociological meanings than architectural significance when discussing domestic space. In this thesis, I intend to approach the same issue—the presence of the body in Mies's domestic space—architecturally, through focusing on the material opacity instead of the abstract gender.

Although the body appears prominent in sight, it is ignored in the discourse. The above review of literature shows that the presence of the opaque body in the drawings and photographs of Mies's architectural space remains absent in a sense of opaque. According to the *Webster's Dictionary*, two definitions of "opacity" are "obscurity of sense and lack of clearness" and "an opaque spot in a normally transparent structure."[14] The body not only is a visually dark spot in Mies's transparent spaces, but also stays unclear in the expansive discourse on Mies. Both the presence in image and the absence in literature identify the body as a remaining opaque spot in the generally transparent structure of Mies's domestic architecture. Such opacity in transparency is thus brought to our attention.

The presence of this opacity extends the understanding of Mies's design, and challenges the ideas about transparency, simplicity and clarity that underlying our comprehension of his architecture. Meanwhile, the absence of deep discussion about the body in the literature leaves room for reinterpretation. Departing from the opaque body in the transparent space, this thesis attempts to analyze its presence in drawings and photographs, and to explore its significance to modern house design. With the focal point of the opacity, Mies's vision of glass is revealed, and the views in the glass houses recorded in images are exposed. Following the vision and views trigued by the opacity in transparency, the history of Mies's domestic architecture is reinterpreted in a perspective that differs from what has been shaped otherwise.

Architecture," *Critical Matrix*, vol.6, no.2 (1992): 47-76.

[14] *Webster's New International Dictionary*, 3rd edition, s. v. " opacity."

The selected drawings and photographs include projects of Mies's modern houses in both Germany and America, dated after the 1920s. The number of buildings and projects in Mies's oeuvre reaches over 206, among which more than 80 are private houses and house-related designs.[15] House design played a crucial role in framing his spatial conceptions. Except for the earlier neoclassic-style houses, Mies's modern house designs can be characterized as the "glass house" because of his use of glass walls in defining domestic environments. As an independent topic, the glass house constitutes the picture of the evolution of Mies's spatial conceptions, and articulates the long process of his pursuit for the ideal dwelling in a new epoch.

The essence of the opaque body cannot be explored based on a single house. Since the presence of the opacity is not an occasional phenomenon in one project but an undeniable existence in most of Mies's glass houses, and each drawing and photograph shows a specific view of the glass house; there is a necessity to study the drawings and photographs in a broad range that covers his major house designs. By juxtaposing and comparing the views of various projects, a comprehensive picture of the opacity can be formed and the presence of the opaque body in visual sources might reveal new aspects of Mies's domestic architecture.

Although closely related to archival sources and including inspiring findings, the contribution of this study lies more in interpreting Mies's domestic architecture afresh from a point of view—the opaque body—that is overlooked in the scholarship. The effectiveness of the interpretation relies on how the already-known images are perceived. The visual sources chosen in this study are published or accessible in museum collections, and they have been used by researchers for decades. Only so, the existence of the opacity in transparency maintains a sense of criticality and entails the task of reinterpretation.

The main primary source of this research is the published 20-volume series, *The Mies van der Rohe Archive*, which reproduce the over 20,000 items of the Mies van der Rohe Archive in the Museum of Modern Art (MoMA), New York. Two other major collections of Mies

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[15] The chronology of Mies's oeuvre varies in different publications. The statistics of projects and all the dates of Mies's designs in this thesis are in accordance with the "List of Buildings and Projects" in Franz Schulze, *Mies van der Rohe: A Critical Biography* (Chicago: University of Chicago Press, 1985), xvii-xxiii.

of Modern Art (MoMA), New York, are reproduced in this series. Two other major collections of Mies drawings have also been consulted: the Mies van der Rohe Collection of the Canadian Centre for Architecture (CCA), Montreal, and the Mies van der Rohe Collection of the Art Institute of Chicago (AIC).

In addition to architectural sources, the philosophical interests of Mies himself and some of his clients remind us that certain references might open a way for interpreting their views of spaces. Several works of philosophy have enlightened my research, such as Martin Heidegger's writings on human dwelling and Maurice Merleau-Ponty's on the body. To retrieve Mies's original vision of space from drawings and photographs needs the perception that has not been contaminated by dominant ideas. Phenomenological perception inspires the methodology of my study.[16] It requires bracketing temporarily pre-given ideas before the images are scrutinized. Once the mind is freed from these ideas and the eye is brightened for a pure perception, the drawings and photographs of Mies's modern domestic spaces display views truthfully.

This thesis consists of three chapters. Chapter 1 first defines the vision of glass as a medium for approaching Mies's contemplation on the modern house. Mies's vision of glass is unfolded by a historical overview of his activities of building with glass. This places his exploration in the context of early modernity in Europe, and shows the long evolution of the glass house in his oeuvre. It then discusses methodologically why the views recorded by drawings and photographs are an effectual means for us to trace the vision in Mies's mind. The views on paper—drawings and photographs—bridge the vision of glass and the physical spaces of the glass houses. Based on these views, the trajectory of the architect's thinking can be traced.

Chapter 2 examines ten major glass houses through design drawings and published photographs. In this way, an illustrated history of these glass houses is displayed. It highlights the existence of the opaque body in the aura of glass, and reveals the interactive

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[16] For the basic thoughts of phenomenological perception, refer to Maurice Merleau-Ponty, *Phenomenology of Perception* (London: Routledge & Kegan Paul, 1966).

relationship between the body and space. The discovery of the opaque body unveils the mechanism by which the vision in the mind is transformed into the views on paper. Some conventional thoughts about Mies's domestic spaces are therefore reconsidered.

Based on the opaque body discussed in Chapter 2, Chapter 3 is a comparative study on the role of the opaque body in the glass house, and explores its significance in Mies's design philosophy of modern dwelling. It is perceived that the opaque body maintains tension in the space as an alienated presence. The body of the statue triggers the issues of gender and privacy in the glass house. With a focus on the Farnsworth House, these issues are not only analyzed but also given answers. The house provides a unique chance for discerning the remaining opacity and its relationship with nature and human dwelling.

During this research, I worked as an intern at the CCA for a major exhibition *Mies in America* planned for summer 2001. Phyllis Lambert, Mies's student, friend, client and colleague who selected Mies for the Seagram Building commission and cooperated with him as the planner of the project, is the exhibition curator. My work on the bibliography for the exhibition, which includes the entries of published books, articles and documents after 1978, Mies's writings and the interviews with Mies, enabled me to familiarize myself with the substantial literature on Mies. The intensive reading on the secondary sources extends the horizon of my study and solidifies its ground. While working on the literature, I started searching the cleavages in the present discourse and located my research topic on the issue of the statue in Mies's glass houses. The internship also provided me with access to other valuable materials about Mies, including the unpublished collections of the CCA.

Two field research periods enriched my personal experience of Mies's buildings, and ensured my access to valuable primary archival sources. Field research in Barcelona in August 2000 focused on the Barcelona Pavilion. The personal experience of the real space extended my understanding about the relationship between the sculpture, the court and the pavilion. This field research itself is a good example to demonstrate how representation influences the understanding of architectural space.

In a research trip to Chicago in July 1999, I visited Mies's buildings in downtown Chicago and its vicinity. Intensive surveys were made by me on the Farnsworth House, which include field research of the house at the Fox River and archive research on the Edith Farnsworth Collection at the Newberry Library. Besides the Mies Collection at the AIC, I also read a selection of books in Mies's personal library in the Special Collection Department at the library of the University of Illinois at Chicago, and of the Hedrich-Blessing Collection in the Chicago Historical Society. The work of Bill Hedrich, Mies's photographer, provides crucial clues for locating the relationship between the photograph and Mies's view of his architecture.

In Chicago I interviewed two renowned scholars on Mies. My interview with Professor George Danforth focused on Mies's drawings and collages. Professor Danforth was one of Mies's earliest students in America and the draftsman who redrew many of Mies's European works; his information is very important for understanding Mies's drawings. My interview with Professor Franz Schulze, Mies's biographer, focused on the Farnsworth House and the role of the sculpture in Mies's designs. Although the viewpoints developed in this thesis do not necessarily follow theirs, both interviews opened my mind.

Once the opaque body is brought to light, the discourse of transparency on Mies's domestic architecture is cracked. This cleavage leaves opening for further explorations about the interaction between opacity and transparency that underlying Mies van der Rohe's architecture, as well as the work of the modern movement.

Chapter 1 Vision of Glass and Its Representations

The introduction of glass as a main building material marked the debut of modern architecture at the end of the nineteenth century. It also established Mies van der Rohe's fame as a master builder in the modern movement. Issues of glass architecture keep provoking heated discussions in today's post-modern age. In a recent debate on the essence of glass architecture, the architect is asked by the philosopher:

> What terms do we use to speak about glass? Technical and material terms? Economic terms? The terms of urbanism? The terms of social relations? The terms of transparency and immediacy, of love or of police, of the border that is perhaps erased between the public and the private, etc.?

To frame the question, the philosopher then quotes Walter Benjamin in *Erfahrung und Armut*:

> It is not for nothing that glass is such a hard and smooth material upon which nothing attaches itself. Also a cold and concise material. Things made of glass have no 'aura' [Die Dings aus Glas haben keine 'Aura']. In general, glass is the enemy of secrecy. It is also the enemy of possession. The great poet André Gide once said, 'Each thing that I wish to possess becomes opaque for me'...Scheerbart and his glass and the Bauhaus and its steel have opened the way: they have created spaces in which it is difficult to leave traces.[1]

Answers to the question can be varied, but the question itself and the way it is framed enlighten our thoughts on Mies. It is starting from Mies's works that glass architecture has been widely accepted in modern cities. Since glass is usually described as a transparent

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[1] Jacques Derrida, "A Letter to Peter Eisenman," *Assemblage* 12 (1990): 9-10. This letter was written in October 1989 in lieu of his presence at the conference "Postmodernism and Beyond: Architecture as the Critical Art of Contemporary Culture" at the University of California, Irvine. For Peter Eisenman's reply

material, the term "transparency" gradually becomes an overwhelming idea in interpretation of Mies's design. Quite a number of studies on Mies presume this idea of transparency. However, the above-quoted debate about glass in contemporary architectural discourse reminds us that, after reading Mies's buildings architecturally, technically, aesthetically and socially, something might still be missing.

Mies liked to refer to his glass space as "*beinahe nichts*," "almost nothing." The phrase has been generally explained as a description of transparent space, and the idea of transparency in turn reinforces glass as a material that is easily seen through. Benjamin's words on glass bring new understanding to Mies's phrase. If glass is a material that keeps nothing and nothing can be imposed onto its materiality, the idea of "transparency" is then not intrinsic to glass. Commenting his earliest projects of glass architecture—the skyscrapers in the 1920s, Mies stated that by employing glass he aimed to achieve "a rich interplay of light reflections."[2] This statement implies that to build with glass originated from a vision of glass.

The vision of glass is different from the objective sense that sees glass as an existence external to the mind. It appears nothing to transcendental ideas but remains as something in the mind. This almost-nothingness cannot be possessed metaphysically in language and has to be approached visually. As a stretch of nothingness in the mind, the vision of glass eradicated the obsession with the mass of nineteenth-century masonry and initiated Mies's adventure of modern architecture.

The vision can be visible only when it is transformed into concrete views. There is an essential relationship between vision and view. Vision is "something seen otherwise than by the ordinary sight; a visual image without corporeal presence" and view is "what is revealed to the vision or can usually be seen; extent or range of vision."[3] Vision exists in the mind, and is revealed and becomes visible when it is measured in depth and expanse of views.

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refer to "Post/El Cards: A Reply to Jacques Derrida," *Assemblage* 12 (1990): 14-17.

[2] Mies van der Rohe, "Skyscrapers," *Frühlicht*, 1, no.4 (1922): 122-124; translated by Mark Jarzombek in Fritz Neumeyer, *The Artless World: Mies van der Rohe on the Building Art* (Cambridge: MIT Press, 1991), 240.

[3] *Webster's New International Dictionary*, 3rd edition, s. v. "vision" and "view."

If, as Benjamin observed, the glass spaces made by the Bauhaus (certainly including Mies's works) left no traces, it is nearly impossible that the vision of glass appears by itself. The almost nothing has to rely on something opaque in order to become a view. If "each thing that I wish to possess becomes opaque for me" (Gide quoted in Benjamin), what opacity did Mies still possess in constructing his spaces of almost-nothing? Before going further along this question, let us briefly review the historic picture of how the vision of glass was active in Mies's career as a master builder.

To Build with Glass

Mies's architectural career sprouted in Germany at the turn of the twentieth century. Born at Aachen in 1886, Mies grew up in an age of radical transformation from tradition to modernity. Changes in thought were reflected in buildings: the architectural form moved from nineteenth-century heavy mass to brightness.

While industrialization spread in Europe and opened the door to a new epoch of civilization, Germany was one of the centers for thoughts on modernity. Many German scholars at that time talked about the conflict between the external modernization and the internal conservation. Hermann Bahr, for instance, claimed that the innermost agony of the century was caused by the reality that the Modern existed outside and was not in the spirit. To alleviate this agony, the moderns must shatter the barrier that separated interior and exterior, so that they would be no longer strangers but possessors of the Modern.[4] For Hermann Hesse, the modern soul not only struggled against the disconcordance between inner and outer, but was also displaced in a prevalent chaos. The moderns became voyagers of the city. But the *Heimat* was an unforgettable memory. Every voyager was destined for a shelter, a space where only the ego resided. Interior and exterior were separated by the nostalgia for a refuge.[5]

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[4] Hermann Bahr, "Die Moderne," in the appendix of Francesco Dal Co, *Figures of Architecture and Thought: German Architecture Culture 1880-1920* (New York: Rizzoli, 1990), 289.

[5] Hermann Hesse, "The Refuge," in *My Belief: Essays on Life and Art*, edited by Theodore Ziolkowski (New York: Farrar, Straus and Giroux, Inc., 1974): 33-45.

Mies was greatly influenced by the thoughts surrounding modernity and discerned two tasks of architecture: to break the external boundary and to fulfill the internal spiritual need of the modern being. In 1927, he wrote that "only a vital inside has a vital outside. Only life intensity has form intensity."[6] To fulfill the task, he attempted to build with glass.

Glass had been used from the seventeenth to the nineteenth centuries in domestic interiors such as the Galerie des Glaces in Versailles, but it was treated as no more than a decoration until the development of iron structure. With the help of iron skeletons, the architectonic areas in which glass was employed were extended. To build with glass was advocated as a movement by the European architectural Expressionists, who briefly bloomed in the period immediately after World War I. Expressionist architects composed the so-called Glass Chain. For them, crystal was the symbol of mystic purity and the search for the divine. As poet Paul Scheerbart described in his 1914 text "Glasarchitektur," glass architecture was elevated to a level of reformed vision with social-cultural significance.[7] However, except for some experimental projects such as Bruno Taut's Glass Pavilion in 1914 and Glass House in 1915, to build entirely with glass remained in the realm of reverie.

Glass was not considered a prime material for modern architecture earlier than the publishing of Mies's Friedrichstrasse Office Building in *Fr/hlicht*, a magazine run by Taut, in 1921. In Mies's drawing, a bright skyscraper framed with glass walls was inserted into the dark texture of nineteenth-century Berlin (plate 1.1). The contrast between the brilliance of the building and the darkness of its background is visually shocking. By pushing the whole urban context into complete darkness, Mies expressed an extremely bright vision resisting the classic mass. A stiff cut line at the bottom of the glass tower clearly illustrates his decisive fleeing from the context. Rem Koolhaas reads this visual effect as a promise that "out of the stone mass of the nineteenth-century city could rise new crystal forms of transcendent lightness."[8] Following the Friedrichstrasse project, Mies successively published

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[6] Mies van der Rohe, "On Form in Architecture," *Die Form*, 2, no.2 (1927): 59; in Neumeyer, 257.

[7] Paul Scheerbart quoted in Kenneth Frampton, "The Glass Chain: European Architectural Expressionism 1910-1925," *Modern Architecture: A Critical History*, 3rd edition (London: Thames and Hudson Ltd., 1992), 116.

[8] Rem Koolhaas, "Eno/abling Architecture," *Autonomy and Ideology: Positioning an Avant-Garde in America*, edited by Somol, R. E. (New York: Monacelli Press, 1997), 294.

four other avant-garde projects between 1922 and 1924. These five projects initiated his lifelong pursuit of building with glass, and established him as a major figure in modern architecture.

Two of these projects are houses, and both have been frequently interpreted as Mies's revolutionary approach to new architectural form at this time. House designs had an incomparable importance to Mies's career. The priority of house design over utilitarian building design was clearly described by himself. He wrote: "Although there [in the utilitarian buildings], on the basis of function and necessity, a development sets in that needs no more justification, the full unfolding of which, however, will not occur there but in the realm of residential buildings."[9]

Yet, glass was not immediately used to its full extent in Mies's house design. His attitudes on using glass in public buildings and in houses were different from the very beginning. Of these five projects, in all three public buildings the use of glass as the main building material was proposed. From then on, Mies had never abandoned his preference for glass walls in his design for high-rises and public commissions, in which he showed dedication to glass firmly and radically. In the two houses belonging to the same group of projects, Mies acted with discretion. Although the five projects give evidence that Mies started to consider building with glass in houses and public buildings in the same period, it took him longer to figure out a suitable way to introduce the glass wall into house design.

In the Brick Country House (1923/24), the second of the two houses, Mies developed a spatial layout closely resembling Theo van Doesburg's de Stijl painting *Rhythm of Russian Dance.* The periphery walls are broken up and floor-to-ceiling glass plates are inserted at each break (plate 1.2 bottom). Three freestanding walls go beyond the circumscription of the roof and extend into the landscape until the edges of the drawing. The whole space is like a field of tension exploding from within and flowing gradually to the distance. The inside and outside thus fuse with each other. The openness in the plan alters in perspectives. While the

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[9] Mies van der Rohe, "What Would Concrete, What Would Steel Be without Mirror Glass?" contribution to a prospectus of the Verein Deutscher Spiegelglas-Fabriken of March 13, 1933; in Neumeyer, 314.

flow of tension is manifested by the smooth sliding of horizontal lines in the sketch (plate 1.2 top), the house appears solid. In a perspective drawing from the same point of view (plate 1.2 middle), massive brick exterior walls dominate the whole picture. The glass plates that reveal the fusion from inside to outside in the plan are tightly clamped by the elongated brick walls. The black and white compositions of the sketch, perspective and plan demonstrate Mies's basic manner of representing glass: using shaded areas to locate opaque parts, while leaving the glass unrendered.

Compared with the decisive cut in the drawing of the Friedrichstrasse Office Building, the drawings of the Brick Country House show Mies's hesitation in using glass for residences. The differentiation reveals a gap between his radical vision of glass and its realization in built houses. During the same period, Mies was still building several neoclassical residences, including the Eichstaedt House (1922) and the Mosler House (1924-26). Though the layouts of these houses were tailored by the clients' conventional taste, the architect's hesitation to introduce the radical vision of glass is obvious.

A few years after the Brick Country House project, Mies designed the Glass Room at the Stuttgart Werkbund Exhibition (1927). In this ephemeral project he went beyond the prime assignment of displaying glass as a building material by setting up sequenced residential spaces. His vision of glass in housing was thus first transformed into a concrete view in this exhibition installation. The experiment started his extensive exploration of building with glass in houses, and his ideas were soon refined in another exhibition structure, the Barcelona Pavilion (1928-29). In the years that followed, Mies used large glass plates in his major house designs such as the commission of the Tugendhat House (1928-30), the model house at the Berlin Building Exposition (1931), and his exploration of the Court House type through the 1930s. The exploration of building with glass in houses lasted for the duration of the 1920s and through to the 1950s, from Germany to America. A full use of periphery glass walls was finally realized in the Farnsworth House (1946-51). Though Mies did some further studies on the glass house afterwards, as demonstrated in the 50-by-50 House, in terms of spatial conception, the Farnsworth House marked the ideal.

The prominence of glass remains a constant throughout Mies's modern house design. Since in these houses glass walls are used as crucial means to create domestic spaces, they are usually referred to in scholarship as glass houses. In fact, only two of these projects are fully glass-walled: the Glass Room at the beginning and the Farnsworth House at the end. In the former, most of the glass walls are translucent; clear glass was only used in certain spots in order to generate a specific view to the other side of the wall; in the latter, the periphery glass walls are completely transparent for a full view of the surrounding nature. The view through the glass changes with the development of the glass house.

When viewed against an historic background, Mies was not the first to build with glass. The significance of his glass houses does not lie in whether he built with glass or not, but the way glass was used to create unique space for modern dwelling. In terms of using glass, he was not as radical in residences as he was in public buildings. Before achieving the final maturity of the idea, Mies had gone through a long endeavor. A common feature of Mies's glass houses is their kinship with representation. A large part of these houses are unbuilt projects that exist only in drawings. The public images of the built ones are closely related to photographs. To comprehensively understand Mies's modern domestic spaces, it is crucial to study the drawings and photographs of his glass houses.

Mies's "Paper Architecture"

Although Mies was reported as preferring "real building, not paper architecture,"[10] drawings played an important role in his design career. His image as a master builder is inseparable from architectural spaces that were recorded on paper.

A common understanding about the relationship between design and drawing is that drawing represents the architect's creative idea. The temporal gap between the immediate presence of an idea in the mind and the following visible representation of the idea creates an illusion

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[10] Mies van der Rohe quoted in Peter Blake, *The Master Builders: Le Corbusier, Mies van der Rohe, Frank Lloyd Wright* (New York: Alfred. A. Knopf, 1961), 155.

that drawing is only a mechanical tool for the creative mind. Another point contributing to this common understanding is that the essence of architecture is three-dimensional space, and architectural ideas can only be understood in the actual space of a building. With these understandings, Mies's phrase "real building, not paper architecture" gives an illusion that he paid little attention to the role of drawing in architectural design. Christian Norberg-Schulz, for example, described his impression of Mies's Chicago office in 1958: "Everything points more to 'building' than to the drawing of 'paper architecture.' The main thing is the model, and drawings are nothing but tools for the building site."[11]

However, Mies's career tells us a different story. Drawing was his lifelong passion. Nothing is more characteristic of him than his celebrated doggedness in exploring scheme after scheme through constant drawing. Almost 700 drawings were made for the Tugendhat House (1928-30),[12] and more than 800 drawings, mostly by his hand, were left after his first commission in America, the Resor House (1937-38). There are over 800 drawings for the Library and Administration Building of IIT (1944).[13]

In the modern movement of architecture, Mies was admired as one of its greatest draftsmen. Without formal architectural training, Mies taught himself by apprenticing in several architectural offices such as Bruno Paul's and Peter Behrens', where he started his career from drafting. Edward Duckett, Mies's former student and associate in Chicago, recalled: "He [Mies] could draw fast...It seemed that he didn't even touch the T-square!"[14]

The emphasis Mies placed on drawing is clear in his educational program at IIT. He treated

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[11] Christian Norberg-Schulz, "A Talk with Mies van der Rohe," *Baukunst und Werkform*, 11, no.11 (1958): 615-18; in Neumeyer, 338. In his late period, Mies did not draw much. The change was partly due to his arthritis, but it should be attributed more to his developing interest in studying space through models and model photographs in his American years.

[12] This number is from *Ludwig Mies van der Rohe: The Tugendhat House*, edited by Daniela Hammer-Tugendhat and Wolf Tegethoff [New York: Springer, 2000], 1. In *The Mies van der Rohe Archive*, the number of drawings for the Tugendhat House is given as 425 (*The Mies van der Rohe Archive*, "Tugendhat House," vol.2 [New York: Garland Publishing, Inc., 1986], 282).

[13] Franz Schulze, "Introduction to the American Work" of *The Mies van der Rohe Archive*, vol.7 (New York: Garland, 1992), xvii.

[14] Edward A. Duckett, in *Impressions of Mies*, an interview on Mies van der Rohe's early Chicago years 1938-1958 with former students and associates Edward A. Duckett and Joseph Y. Fujikawa, conducted by William S. Shell on November 1, 1988 (S. I. S.n., 1988), 18.

the way of seeing as the hallway to learn architecture. In the curriculum made by him for the Department of Architecture in IIT, "Visual Training" was given incomparable importance to first-year students. It was his conviction that a freshman should first become a good draftsman by knowing how to see sensitively and how to draw precisely and carefully. He asked Walter Peterhans, the former head of the Department of Photography at the Bauhaus in Dessau, to set up the Visual Training course to train the students' eyes and sense of design. Peterhans credited the course with its ability to foster insight and stimulating ideas, a greatly superior method for training the eye for architectural conception, quality and formal creation in the widest sense. Mies himself commented upon the effects of visual training as "a radical change in the whole mental attitude." [15]

What is equally impressive is that Mies said little about his own design. It seems that drawing was his way of expression. The gap between Mies's drawing and speaking causes one to suspect the common understanding to his phrase "real building, not paper architecture." The fact that Mies spent so much time on drawing suggests that the phrase advocate an active engagement with architecture, and demonstrate that the truth of architecture is in making, rather than in the autonomous idea of "architecture" disseminated in daily speech. This interpretation can be affirmed by Mies's quotation of Goethe's phrase, "artist create, don't talk," in his lecture manuscript.[16] In this sense, the "paper architecture" metaphorically indicates a kind of discourse unengaged with the material world of architecture, while the architectural spaces which he figured on paper—his design drawings—are indeed part of his real building.

To build, one has to deal with a certain materiality thoughtfully, and this is the basic design of architecture in which drawing plays an essential role. From Leon Battista Alberti's definition of design as the mental composition of lines and angles, we know that drawing has been looked at as the paper inscription of the trace of thought since the birth of the

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[15] Walter Peterhans, "Visual Training" and Mies van der Rohe, "Peterhans' Visual Training Course at the Architectural Department of IIT" in Werner Blaser, *After Mies: Mies van der Rohe—Teaching and Principles* (New York: Van Nostrand Reinhold Company, 1977), 34-36.

[16] Goethe quoted by Mies van der Rohe in an unpublished lecture manuscript, "Ludwig Mies van der Rohe: Lecture, Chicago, Evant and Date Unknown," *Domus*, 647 (July/August 1986): 22.

architectural profession.[17] If lines compose the mind, there must be an intrinsic relationship between inscribing a line and opening the mind. With reference to a work of art, Martin Heidegger gave some enlightening statements on the nature of *figure*. To figure, to draw a line is to inscribe a rift on the surface. He described the rift as "a basic design, an outline sketch that...brings what opposes measure and boundary into its common outline...Truth is fixed in place in the figure...This composed rift is the fugue of truth's shining."[18] In this perspective, a design drawing can be seen as an architectural truth inscribed on the paper surface.

How invisible thought is transformed into visible figures on paper is not easily detected. As for the glass house, we cannot simply say that Mies's drawings *represent* his idea of transparency. The term "represent" in a general sense blinds the complicated process from the invisible to the visible. Compared with the dualism of invisible/visible, there is a more interactive relationship between the vision in the mind and the visible image on paper. As mentioned before, Mies's phrase "almost nothing" indicates the existence of a vision of glass. This vision as a *tabula rasa* in his mind provokes his decisive fleeing from the context of mass by using glass. The vision of glass is something visual but not easily translated into words. The common ground—something visual—of the vision in the mind and the views on paper makes it possible to approach the architect's philosophy of modern dwelling through analyzing his design drawings.

If a design drawing is a visible inscription of vision, it is not yet what is actually built. Mies once recalled his disappointment upon his arrival in America, when he discovered that modern buildings, particularly those of Louis Sullivan, were much more massive and solid than he had expected them to be from Hendrik Petrus Berlage's travel drawings.[19] This anecdote alone shows the gap between the physical space and a drawing of that space.

The gap secured in drawings produces a distance from the architecture in common sense.

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[17] Quoted in David Leatherbarrow, "Showing what Otherwise Hides Itself," *Harvard Design* (Fall 1998): 50.

[18] Martin Heidegger, "The Origin of the Work of Art," *Basic Writings* (New York: HarperCollins Publishers, 1993), 188-89.

[19] Ludwig Glaeser, introduction in *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art*

Building settings are physically too close to be known completely by experiencing them on site. Visitors are easily captured by the physical qualities of spaces, while the architectural idea retreats underneath the materiality of these spaces. Drawings keep the architect distant from the building, allowing the architecture in its entirety to be shown. Because of this distance, drawings stand even closer to the space in the architect's mind: how to realize the idea, how visitors are led through the space, what is to be shown or otherwise hidden in real constructions. To analyze drawings is therefore an effectual way to read the architect's contemplation of space.

Unbuilt projects that only survived in drawings occupied a special part in Mies's career. His fame as a founder of the modern movement was first established by the five projects published in the early 1920s. When the situation for modern architects became difficult in Nazi Germany, Mies devoted a great amount of time in the 1930s to exploring a single building type: the Court House. Most of these projects were purely conceptual, and were never specifically assigned to a client. However, the exploration of Court House marked the zenith of Mies's reflection on residential architecture in his years in Germany. After his emigration to America in 1938, Mies continued to pursue conceptual projects, including the Museum for a Small City (1942) and the Convention Center (1953-54).[20]

In some cases, drawings even exemplified better than built works the new conceptions that Mies introduced into architecture. In the 1920s, when he was developing the five innovative projects, his built houses remained conservative in style. The co-existence of different styles that are apart not only reveals a gap between new thoughts and practice in Mies's career, but also indicates drawing as the forerunner of his new spatial conceptions and the recorder of his architectural adventure.

Drawings therefore mattered very much to Mies. In 1963, Mies donated the bulk of his drawings to the Museum of Modern Art (MoMA) in New York, which established the Mies

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(New York: The Museum of Modern Art, 1969), unpag.

[20] In the 75 designs Mies did in Germany, 34 are projects; and 61 of the total 131 designs in America are projects (My statistics is according to the "List of Buildings and Projects" in Franz Schulze, *Mies van der Rohe: A Critical Biography* [Chicago: University of Chicago Press, 1985], xvii-xxiii).

van der Rohe Archive. In recalling the establishment of the Archive in 1968, Arthur Drexler recalled that it was apparent "Mies himself wanted the entire body of work to be preserved intact."[21] Between 1963 and 1969 all materials in Mies's possession were transferred to the MoMA, and this finally made the Archive's collection reach over 20,000 items, including sketches, presentation and working drawings, models, documents, etc.

Drexler, in his introduction for *The Mies van der Rohe Archive* (vol. 1-4), classifies Mies's drawings into four categories according to characteristics and authorship.[22] In my own research, the drawings are classified into three groups according to their contents: perspective drawings, detail studies and construction drawings. My research focuses on the perspective drawings of the glass houses. Except for a minority of drawings reworked by others under Mies's supervision, most of the perspectives are from his hand and are primarily studies on open interiors and walled gardens. The views recorded in these drawings allow us to follow Mies's mind's eye and understand how he concretized his vision of glass.

Mies drew with graphite, colored pencil, ink, charcoal, and occasionally colored pastel and watercolor. He also used collage techniques. The bulk of his conceptual sketches are thin-line drawings in pencil, pen or ink, usually on large sheets of tracing paper or pieces of inexpensive paper from notepads in an approximate size of 5 by 7 inches. Sometimes, they were even drawn on the back of a napkin or a piece of hotel letter-paper. The smoothly flowing and quickly made lines suggest that his hand moved instantaneously with the mind.

Some features of Mies's conceptual drawings can be glimpsed in a sketch of the Hubbe House (plate 1.3). There is a heavily toned figure, looking like a reclining woman, in the court. Except for the curvilinear contour and opacity, no detail about the figure is shown. The figure looks at itself and seems not to be paying attention to the surrounding scene. The "careless" posture conveys a feeling that the whole world belongs to this body which is the

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[21] Arthur Drexler, foreword to *Mies van der Rohe: The Villas and Country Houses*, by Wolf Tegethoff (New York: The Museum of Modern Art, 1985), 6.

[22] Drexler, "Introduction," *The Mies van der Rohe Archive*, vol.1-4 (New York: Garland Publishing, Inc., 1986), xiii-xiv.

spirit of the place. The opacity makes the figure appear alienated in the glass space and provokes tension between them. In Mies's other house sketches, the figures are endowed with the same opacity and remoteness.

Another feature of the drawing is the continuous and smooth hatching lines that were used to envision and represent shaded surfaces. But Mies left surfaces directly connected with the glass, such as the ceiling, unrendered. Because the delineation of transparent glass plates has to depend on the boundaries, the ceiling and floor are left blank to assure the clear edges of the glass. The other parts, such as the internal wall and the tree crowns, are roughly toned to highlight the transparency of glass. This observation reveals that the glass is the central element that Mies strove to delineate in bringing out his vision of glass. If so, then, why was a dark figure inserted into the transparent view of glass and what role did this mystic body play in transforming his vision into a specific view?

Mies began his designs not from plans or elevations, but from interior perspectives. He told his clients at the first meeting for the Tugendhat commission that "a house should not be built starting from the façade, but from the inside."[23] His preference in studying the domestic environments from the interior can be witnessed in his perspective drawings in which most of the viewpoints are on the inside.

With normal viewing angles and vantage points, Mies's interior drawings are usually one-point perspectives imitating natural sight. Ludwig Glaeser commented, "The vantage point of most of his perspective is taken low, often with a view angle of more than forty-five degrees, as in the drawing for his own house."[24] Natural sight can be modeled as a cone with the eye at its vertex and the visual field making up the cone volume. Objects at the center of the cone are closest to their natural forms. From the center to the side, objects become increasingly distorted. The wider an angle is, the more widely stretched an image appears, e.g. a picture from a fish-eye lens.

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[23] Grete Tugendhat, "On the Construction of the Tugendhat House," in Hammer-Tugendhat (ed.), *Tugandhat House*, 5.

[24] Glaeser, introduction, unpaginated.

To match the view with the real scene and avoid marginal distortion, Mies omitted objects at the perimeter of the composition. Since a perspective always represents in depth and distances the beholder from the space, the central image appears more natural but remoter than the marginal one. The station point in Mies's interior perspectives is usually located far back in the house, sometimes even beyond the exterior wall. From such a distant station point, the view should normally be very wide, but Mies only drew the central image and left the marginal part empty (plate 1.4). Paradoxical effects are created: the central image appears natural and makes the beholder identify with the space, but at the same time, it is also the remotest image in the perspective and creates a distanced view. Consequently, the viewer is led to the house and focuses his eyes on the center, but is simultaneously distanced from the center where a statue or columns usually stand. This natural but remote view in Mies's drawings is illuminating when his spaces are considered.

Besides drawings, the images recorded by photographs are indispensable to the understanding of Mies's domestic space. Many of Mies's buildings now exist only in photographs, for example, the Glass Room in the Stuttgart Werkbund Exhibition and the Model House for the Berlin Building Exposition. Both of them were exhibits and were demolished soon after the exhibition, but the lack of a material body of building caused no damage to their fame as among the most representative designs by Mies. The best example is the Barcelona Pavilion. It was opened in May 1929 and demolished six months later. Consequently, only a very few critics experienced the original pavilion, and interpretation of the building had to be based on photographs. This situation did not keep the building from achieving the status as one of the milestones of modern architecture. The building had been admired for more than half a century, though it was known only through photographic images before the reconstruction on its original site in 1986. The remarks by critics finally led to its reinstallation.[25] Because many original drawings were missing, press photographs became important references for the reconstruction of the pavilion. The representation brings back what it represents to reality. Lingering in the reestablished pavilion, who can tell

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[25] For the growing discourse on the Barcelona Pavilion after its demolition, refer to Juan Pablo Bonta, *Architecture and Its Interpretation: A Study of Expressive Systems in Architecture* (New York: Rizzoli, 1979); for details of the reconstruction in 1986, refer to Ignasi de Sola-Morales, et al, *Mies van der Rohe: Barcelona Pavilion*, (Barcelona: Editorial Gustavo Gili, S. A., 1993).

if it is a reality or the realization of a mirage?

In the modern age, the understanding of built spaces is connected more and more with their photographic representation. It is difficult to say, at least in the case of those "iconic" modern buildings such as Mies's celebrated works, what contributes more to their public acceptance. Maybe one can argue that visitors who go to Chicago do not really expect to see Mies's buildings, but rather expect to see the architecture as represented in well-known photographs. For a private property like the Farnsworth House, the views shot by a photographer were for many years the only way to experience this privately-owned house. How a building exists and is understood through images, indeed, bears equal importance to the fact that it exists.

In research on the relationship between photography and works of art, Walter Benjamin notes that the camera lens sees what the unaided eye cannot and makes obvious certain aspects of the original that would otherwise be unknowable. In addition, photography undermines the original's presence. Both processes interfere with the authenticity of the object and eventually establish the *aura* of the object. By eroding the authority of the building, photography frees architecture from the constraints of its construction. Eventually, the image of architecture engenders the architecture of the image.[26]

Architectural photography has its own formula in embodying a space deployed and secured by the architect. Ezra Stoller, who photographed the Seagram Building, says: "It is my conviction that there is only one kind of architectural photography, and that is the one that conveys the architect's idea."[27] Many architects employ exclusive photographers to reproduce their built works. For Mies, it is Bill Hedrich of the Hedrich-Blessing Studio in Chicago, who shot the majority of Mies's American work.

Hedrich recalled that Mies had strong directions for photographing the designs, and that he always took Mies's directions:

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[26] Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," *Illuminations*, ed. Hannah Arendt, translated by Harry Zohn (New York: Harcourt, Brace & World, 1978), 217-51.

[27] Ezra Stoller, "Architectural Photography," *Inland Architect* (Aug.-Sept. 1978): 46.

> He [Mies] said, "Please do not use filters on my work...I want the sky to be white and I want to see reflections on the glass of my building. I want it to be black and white." It was...*his way* [my italic]. He saw it one way. I would never have photographed it in that fashion if he had not asked me to...He knew what he wanted. Very firm...He was positive, very dramatic, "It will be this way," and he did that.[28]

Mies knew very well how he wanted his buildings to be seen by the public through the camera lens, as if photographs were his devices to teach the reader to see. Sometimes, his awareness of the photographic views turned out to be astounding, as the following anecdote about the 860-880 Lake Shore Drive Apartments in Chicago reveals: A member of Mies's office sent Hedrich the model of one tower—though there were two similar towers to be built—and Mies's instructions:

> He wants this structure photographed as though there are two structures. We want them to be taken as though the camera were 350 feet out in the lake. We want your camera to be a height of the first story, and we want the first building to bisect the second building one column in from the west end.

In the last decades of Mies's career, he worked more with models than with drawings. Photography became the transferrer between the three-dimensional and the two-dimensional. Most of the models were study models for Mies and his assistants' further design. Mies would have the models photographed, and made changes to the design according to the photographic image. The photograph was for him no less a tool to help him really see the model. It was committed as a mirror to show what he was doing—the model and eventually the building. Mies actually saw things in the photograph that he did not see before. Hedrich reminisced on the exhausting experience of working with Joe Fujikawa, Mies's assistant, to shoot architectural models:

> Mies would make a model. I'd photograph it. We'd work two days on it...putting backgrounds, clouds, doing everything. Mies would study it—"It's good. We'll make one change." Then we'd shoot all those...[for] another day...Mies would study it...make another minor change and we'd shoot it all again...[H]e would scrutinize them so carefully. Not the work, the model. He'd see something through the photograph. He'd look at the photograph and run over to the model and change something, then we'd shoot it again.[29]

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[28] Bill Hedrich (William C. Hedrich), in *Oral History of William C. Hedrich*, interviewed by Betty J. Blum (Chicago: Art Institute of Chicago, 1994), 138-41.

[29] Ibid., 139.

Since Mies wanted to see "glass that looks like glass"[30] in photographs, one of his photographer's main tasks was the depiction of transparency and reflectivity of the glass wall. One way to achieve this effect in an exterior shooting is to juxtapose the glass prism of the building with the adjacent masonry. However, it is difficult to show the transparency of Mies's spare interior. Hedrich remarks: "It is very difficult to show an empty space and try to show it to its advantage."[31] Usually the shot would be taken from an angle where there was something in the foreground, such as a column, that was able to give the depth so that it would not be just a blank space. In terms of the use of columns and figures for composing an interior view, there is a similarity between the photographs (plate 1.5) and Mies's drawings (plate 1.4).

Two other features of Mies's photographic buildings occur to us his drawings. One is his preference for black and white photograph. Through controlling the tone of darkness, Mies brought out the presence of glass. Another is that Mies wanted the photograph to be in one-point perspective, because the one-point perspective is straight on and nothing is dramatic.

In the years working for Mies, Hedrich used a lens close to the human eye and large size negatives (8 by 10 inches). He stood far back from the building, and cropped the final picture. After these manipulations, a remote scene, like the one for the Lake Shore Apartments taken from 350 feet out in the lake, is close up. A large frame, big distance and a normal view angle are just the same means that Mies made for his perspective drawings. Few people really see the Lake Shore Apartments from the lake, but their oxymoron image in the photograph is remembered by many. What the photograph recorded is in fact the same remote natural view desired by Mies in his drawings.

When drawings and photographs are used to study architecture, there is a widespread issue about authenticity and representation. Are drawings and photographs true representations of architecture? Are they an expressions of architectural space? Some critics are skeptical about using visual images as the substitute for direct perception and experience of buildings.[32] In

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[30] Ibid., 140.
[31] Ibid., 145.
[32] Bonta, 146.

recent years, the role of paper architecture has been revalued in architectural discourse, and an increasing number of scholars have noticed that direct perception of buildings is insufficient in understanding the significance of a space and the ideas that shaped it.[33] Drawings, photographs and buildings are all visualizations of the thoughtful making of space.

Technically, drawing and photography differ from one another. A sketch records the architect's vision of space, while photography reveals a specific point of view in the actual space. The view in a drawing is seen by the architect's mind's eye; it does not necessarily match with what is built. The point of view in a drawing holds much more freedom and can be anywhere the mind wants to go, without being limited by actual boundaries of a building. What a drawing most clearly shows is the spatial atmosphere and the essential elements that bring out this atmosphere. The tone of darkness is therefore crucial for Mies to transform his vision of glass into a concrete view of glass. A standard lens presents the same view as is seen by the normal eye. The station point of a camera is limited by the actual space layout. A photograph therefore always reveals an accessible point of view and shows what a real space looks like from that point.

Meanwhile, both the design drawing and architectural photograph are connected with the architect's thoughtful making of space. One task of architectural design is to frame specific views of space through physical arrangements. In another sense, architectural space is composed of the views framed by the architect in his design. In terms of the view of space, design drawings concretize the vision into the views, while photographs reveal the views in buildings. The kinship between architectural representations—drawing and photograph—and their view of space assures the validity of studying architectural space through the images. This common ground is the basis for comparing drawings and photographs of the same space.

An architectural space can be photographed by different visitors under various circumstances. Though taking a picture in the real space is interpretative, the view framed by the architect's design is part of the inescapable context of photographing. This context

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[33] Leatherbarrow, 48-53.

immediately emerges when the photograph is shot with a normal angle and station points provided by the space. In his study on the Barcelona Pavilion, Robin Evans discovered the horizontal symmetric view in Mies's space by reading photographs. He notices that what the photograph revealed "was not an artifact of photography, but a property of the pavilion itself, a property which I had not been conscious of while there."[34] The photograph reveals the architect's view of space. From this perspective, photographs taken by others rather than the architect are helpful in discerning the architect's view of the space. In cases where Mies gave direct instruction for photographing his buildings, photographic images would be direct expressions of his views.

If a design drawing is the expression of Mies's vision and a photograph reveals a view of the real space, they both have an essential relationship with his view of space. Hedrich confirms that the images are "[Mies's] interpretation of what he saw, what he wanted to create, what he hoped to see. He was probably correct, because he liked what he saw."[35]

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[34] Robin Evans, "Mies van der Rohe's Paradoxical Symmetries," *AA Files*, no.19 (Spring 1990): 63.
[35] Hedrich, *Oral History*, 142.

Chapter 2 Illustrating Glass Houses

Chronologically, the glass house started from the Glass Room at the Stuttgart Werkbund Exhibition (1927), the first project where Mies used glass as the primary material for defining space. At the beginning of the 1930s, the glass houses was highlighted by three structures: the German Pavilion for the Barcelona International Exposition (1928-29), the Tugendhat House, Brno (1928-30) and the Model House at the Berlin Building Exposition (1931). In the late 1930s, Mies concentrated on the relationship between glass space and the open-air court by exploring the Court House. His idea of the glass house was consummated by the Farnsworth House (1946-51) in America, which was realized thirteen years after the first experiment of the Glass Room. A few glass houses were designed after the Farnsworth House, but none of them was close to the level that had already been achieved.[1] It is generally agreed that the Farnsworth House is not only the summit of this evolution of glass houses, but also the final realization of Mies's lifelong pursuit for modern dwelling.[2] This thesis focuses on the period from the Glass Room to the Farnsworth House.

The following analysis on the glass house is a phenomenological reading of the architect's design drawings and the photographs of his built houses. It focuses on what views these representations present and how the views are composed. The projects are arranged

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[1] The later projects of glass housesinclude Caine House (1950), 50 by 50 House (1950-51), McCormick House (1951-52) and Greenwald House (1951-53). In terms of spatial conception, these projects repeated the idea of the Farnsworth House. I visited the McCormick House (now part of a museum) in Chicago, and could hardly find any innovation in its spatial arrangement.

[2] Refer to my interviews with Franz Schulze and George Danforth in the appendices.

chronologically. For each project, a final plan of the main floor is provided to let readers be clear about each point of view taken by the drawings and photographs. The plans might be original or later redrawn; the drawings, unless otherwise stated, are by Mies's hand; as for the press photographs, the earliest available version is selected to match with the original spatial layout as closely as possible.[3]

Glass Room at the Stuttgart Werkbund Exhibition, 1927

The Glass Room was Mies's first space to be thoroughly enclosed and partitioned with glass. The interior is composed of three sub-spaces (plate 2.1): a writing area in the west, a living area in the south and a dining area in the north. Besides these areas, there are two spaces enclosed by glass: a winter garden, running along the living area to the south; and a cabinet space at the northeast corner that contains a sculpture entitled *Girl's Torso, Turning* by Wilhelm Lehmbruck who was Mies's close friend.[4] In the hard-line plan, Mies used slight pencil lines to lay out the simple furniture, and sketched an ambiguous bird's-eye view of the whole installation in the middle of the living area. The faint presence of the furniture and the perspective view are in contrast with the clearly inscribed lines of the glass walls. It suggests that the interior elements were arranged after the glass walls had been erected.

Several photographs of the installation published in *De Stijl* in 1928 recorded the aura of glass created by Mies. Varying tones of glass provided a gradation of transparency from the completely clear to the absolutely opaque. Only in three areas was transparent glass used: the division wall between the living area and the garden, and the two internal partitions around the female statue. In the interior so defined, a black-cowhide chair was turned away from the group of three other white-chamois chairs in the seating area, to face the garden. The clear glass makes the view towards the garden possible.[5]

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[3] For the photographs that have several versions, the version used in the first Mies monograph (Philip C. Johnson, *Mies van der Rohe* [New York: The Museum of Modern Art, 1947]) is selected.

[4] The friendship with Wilhelm Lehmbruck was "one of the deepest of Mies's young adulthood, perhaps of his whole life" (Franz Schulze, *Mies van der Rohe: A Critical Biography* [Chicago: University of Chicago Press, 1985], 80-81).

[5] According to Wolf Tegethoff, the view to the winter garden suggests a view to the outside, "Glass Room at

Mies's intention to suggest a view through glass is illustrated in a photograph of the dining area, taken from the west to the bust in the east (plate 2.2). Between the dining area and the statue is a partition composed of three panels of transparent glass. The body of the female statue faces the dining area, but her head turns 90 degrees towards the lobby on the other side. Her posture therefore connects two separated spaces. All the walls, ceiling, floor and the table surface are in similar light tone. The diffused light produces a bright environment without shadow that highlights the opaque body of the statue in the glass cabinet.

The Lehmbruck piece was co-presented with the glass wall at the very beginning of Mies's experiment with the glass house. The selection of the female bust might be attributed to the friendship between the architect and the sculptor, however, it is more Mies's intention to show the glass with the sculpture. Solid and figurative, neither completely abstract nor realistic, the sculpture appears prominent in the bright space.

The Glass Room represented an open space that Mies had not tried before. Franz Schulze comments that the Glass Room is more important than the Brick Country House for Mies future development.[6] The main features of the space—the separated sculpture and the view through glass—are continued in his following glass house projects.

Barcelona Pavilion, 1928-1929

Although the Barcelona Pavilion is not a house, its inclusion in this analysis is justified for several reasons. Wolf Tegethoff observes that the basically non-functional pavilion "provides a 'place to linger in' and therefore represents a form of dwelling in a broader sense."[7] Furthermore, the pavilion is a pivotal element between Mies's early experimentation in the Glass Room and his increasingly intense explorations of glass houses in the coming years. For the topic of this thesis *per se*, the female sculpture in the back court of the pavilion

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the Stuttgart Werkbund Exhibition," *Mies van der Rohe: The Villas and Country Houses* (New York: The Museum of Modern Art, 1985), 68.

[6] Schulze, *Mies van der Rohe: Interior Spaces* (The Arts Club of Chicago, 1982), 12.

[7] Tegethoff, *Villas and Country Houses*, 69.

is one of the only two extant pieces in Mies's works. It provides an opportunity to probe the role of the sculpture in the glass space.

Completed in 1929, the German Pavilion at the Barcelona International Exposition was an exhibition structure. Though the original building existed for only six months, it is generally considered a milestone of modern architecture, and was reconstructed on its original site in 1986.[8] In the plan, the pavilion is situated between two pools (plate 2.3). Eight cruciform chrome-plated steel columns support the flat roof. The covered space is defined by freestanding glass and marble partitions. A double-layered light wall and the famous onyx doré stand in the center of the pavilion. Except for several chairs and a table, the interior contains nothing. A critic commented after the inauguration that "the pavilion does not enclose anything but space."[9] The visiting route starts from the front yard, passes through the roofed space and finally reaches the back court where George Kolbe's female figure, *Morning*, stands in a pool. The arrangement of the enclosed court and the position of the statue closely recall the enclosed Lehmbruck bust in the Glass Room.

The surviving drawings show that Mies spent a long time studying the location of the statue after the basic form of the pavilion was decided. His contemplation of the statue is evidenced by the discrepancy between the preliminary plans and the final plan (plate 2.4). Two preliminary schemes both show three pedestals for sculptures: one in the large pool at the front yard, one in front of the light wall and one in the back court. Guiding the view in the space, the three statues are situated on a diagonal axis. In the final plan, Mies reduced the number of sculptures from three to one, and set the single sculpture in a corner of the back court.

This change in plan has aroused scholars' curiosity regarding Mies's intention for the

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[8] The original Barcelona Pavilion was opened in May 1929 and demolished after the exposition was closed in January 1930. It is reported that the idea of reconstruction started as early as in 1959, when Mies himself was contacted and he agreed to take charge of the work without fee. The process of reconstruction finally started in 1981, and was finished in 1986. Refer to Ignasi Sola-Morales, et al, *Mies van der Rohe: Barcelona Pavilion* (Barcelona: Editorial Gustavo Gili, S. A., 1993), 28-29.

[9] From an article published in *Cahier d'Art* 1929; quoted in Jose Quetglas, "Fear of Glass: The Barcelona Pavilion" in *Architectureproduction*, edited by Beatriz Colomina, et al. (New York: Princeton Architecture Press, 1988), 132.

sculpture. Comparing the pavilion to a landscape garden, Caroline Constant explains the role of the sculpture as that of a focal point on the viewing axis in an eighteenth-century picturesque garden. She interprets the reduction of the number of statues as a rejection of the pictorial means and a shift of attention to the onyx wall in the middle.[10] While it is reasonable to say that the reduction of focal points increases the continuity of the viewing sequence, it is disputable to simply treat the statue as a separate object without paying attention to its setting.

A comparison between the setting of the remaining statue with that of the deleted ones shows the difference. The statue in the back court can only be seen after a long promenade in the labyrinth formed by dazzling glass and polished marble walls. It seems that Mies wanted the visitor to experience a spatial sequence before seeing the statue that became a visual goal. The model of viewing the statue *through* glass recalls the glass view of the Glass Room. Since the image of the statue attracts visitors to experience the dramatic view of glass, it is reasonable to say that the statue provides an intriguing view. The distancing of the statue from the viewer is equally palpable. Like the female torso sealed in the transparent cabinet of the Glass Room, the statue standing in the pool is similarly unreachable. That the visitor is obliged to walk through the pavilion before being rewarded with a view of the statue enhances a feeling of remoteness. Tegethoff compares the back court to a *naos*, the cella of a Greek temple, where the cult image, often likewise inaccessible, is housed.[11]

The view of the sculpture is recorded in a press photograph published during the exposition (plate 2.5). Surrounded by the green marble walls, the figure is bathed in bright sunshine and appears as if it were swimming in the sea. The passage leading to the back court is flanked on the right by a long wall that is formed by a series of glass sheets and chrome mullions. Before reaching the court, the open passage is enclosed on the left by the marble wall extending beneath the roof from the court. The ensuing darkness contrasts with the natural light in the court and the reflection of the glass and the chrome columns in the foreground. Edges of the ceiling, floor and glass wall form four perspective lines converging on the body

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[10] Caroline Constant, "The Barcelona Pavilion as Landscape Garden: Modernity and the Picturesque," *AA Files*, no.20 (Autumn 1990): 47-54.

[11] Tegethoff, *Villas and Country Houses*, 80.

of the statue.

The reflective surfaces—glass, polished marble, white travertine floor and white plaster ceiling—cast few shadows in the space. To maintain a bright view, Mies was reported to turn off the electric light inside the luminous wall during the opening ceremony because he was unhappy with the effect of shadows cast by people moving in front of it.[12] With such manipulations, the pavilion is dematerialized as a membrane of splendor. Only the body of the statue casts deep shadows and holds opacity within this bright envelope.

An exterior perspective sketched by Mies from the street side affirms that he considered the statue not only as a focal point but also as an indispensable element of the pavilion (plate 2.6). In order to study the relationship between the statue, the court and the pavilion, Mies drew the marble wall on the street side transparent to expose the statue in the heart of the back court.[13] Through the transparent wall, the reclining statue is seen in the court, while the marble wall on the backside is hatched to highlight the presence of the statue.[14] Mies's mind penetrates the front marble wall to study the opaque body of the statue, which looks like a dark shadow in the bright box.

The sculpture in this sketch is probably one of Mies's favorite images: Aristide Maillol's reclining woman.[15] Its reclining posture appears distinctive within the geometric shapes of the architectural elements. Though the statue Mies finally used is Kolbe's standing female, its posture and appearance produce similar visual effects as Maillol's reclining figure. In the choice of sculpture, Mies preferred works by modern sculptors such as Lehmbruck, Kolbe and Maillol, whose figurative works prominently show the posture of the body. Lehmbruck and Kolbe were used more in Germany, while Maillol was used a lot in America. Though

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[12] About the legacy of the light wall, refer to the "Barcelona Pavilion," *Mies van der Rohe: European Works* (New York: St. Martins Press, 1986), 69; and Robin Evans, "Mies van der Rohe's Paradoxical Symmetries," *AA Files*, no.19 (Spring 1990): 62.

[13] In this sketch, the slight division lines on the front wall suggest the likelihood that Mies considered using glass. However, judging from the thickness of the wall and the same wall presented in other drawings, it is more reasonable to think that the wall was a solid structure made of material such as marble.

[14] Both Ludwig Glaeser and Franz Schulze agree that although in the early stages of planning Mies included a reclining sculpture in the sketches, his choice of the Kolbe piece seems voluntary rather than forced by circumstance (Schulze, Chapter 4, note 28, in *Critical Biography*, 337).

[15] George Danforth recalled Mies's preference of the Maillol figure as a reclining element in his design. Refer

Mies knew Lehmbruck and Maillol very well, his choices of sculpture were more connected with the needs of his space and the feature of the artwork than his personal friendships with the sculptors. Mies's taste for sculpture remained the same and lasted from Germany to America. George Danforth notices that Mies liked "dark and solid sculptures...He did not use any plastic sculpture, those that were 'modern' at that time."[16]

Tugendhat House, 1928-30

The Tugendhat House in Brno, Czech Republic, was designed for the young couple Grete and Fritz Tugendhat. It was Mies's most ambitious built house in Europe. He designed almost every detail, from the furniture to the lighting, and even the doorknobs. Mies's associate, the interior designer Lilly Reich, worked with him and was largely responsible for the selection of colors and fabrics.[17] Several of Mies's finest pieces of furniture were boasted: the Brno chair, the Tugendhat chair and the X coffee table.

One of the most important features of the house is the dining-living space on the lower floor, which looks out to the distant landscape (plate 2.7). A curved macassar ebony wall circumscribes the dining area to the west and an onyx wall is positioned longitudinally in the center, defining the main areas in this space. The seating area in front of the onyx wall is identified by several pieces of furniture that were specifically designed for the house by Mies. Areas for reading and entertainment are located in the northern half of the space.

In this commission, Mies introduced large glass plate similar to those used in the earlier exhibition structures, into a real house to achieve an uninterrupted view. The southern exterior wall is fully glazed and opens the room to the distant landscape. Every other one of the huge floor-to-ceiling windows that make up the wall can be electrically lowered into the

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to my interview with Professor Danforth in the appendices.

[16] Danforth interview.

[17] Mies left his wife Ada and three daughters in the earlier 1920s, and never married again. Lilly Reich was Mies's lover and associate from about 1925/26 until he emigrated to the US. She occupied a singular position in Mies's life and career. The buildings they worked on together were the highlight of Mies's German career. For Mies's marriage and his relationship with Reich, refer to Schulze, *Biography*, 94, 138-40.

wall, thereby transforming the living space into a veranda. At the eastern end, a glass wall extending nearly the full width of the building divides an enclosed winter garden from the living space.

One thing missing in the final plan while appearing in an earlier drawing is a female statue located in the seating area (plate 2.8). The perspective is viewed from the dining area toward the seating area. A female bust on a pedestal is positioned on the left against one end of the freestanding wall. A cruciform column in the foreground extends nearly to the full height of the picture, and divides the picture into almost two halves.

As the house was completed, Lehmbruck's *Girl's Torso, Turning* was installed at the same position as in the drawing, and the presence of the bust was recorded in photographs. It is unclear whether it was simply coincidental that the Tugendhats chose the same bust as Mies had installed in the Glass Room. The position and posture of the bust in the completed house matches exactly with what Mies had proposed in his sketch.[18] According to Grete Tugendhat's recollection, when they asked Mies for designs of the furniture during the construction phase, "he finally gave us a drawing of the large room and the only piece of furniture, so to speak, was a sculpture in front of the onyx wall."[19] It seems that in Mies's mind the sculpture alone could represent all the furniture, and with the sculpture the interior would not be empty.

Although this drawing might not be the one Mies showed to the Tugendhats, the female sculpture is equally dominant in the interior. Except for the cruciform column and the female torso, no other elements are emphasized in the drawing. The freestanding wall is composed of five wood panels rather than the finally realized onyx doré block. The chairs are Barcelona chairs rather than the ones specifically designed for the house. These details

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[18] I corresponded with Daniel Hammer-Tugendhat, daughter of Fritz and Grete Tugendhat, about the Lehmbruck bust. She replied: "My parents chose the bust without Mies...My mother said...the bust Mies had sketched...looked rather like a Maillol. The bust is lost...the Nazi Messerschmidt, who had his official rooms in the house during the war, took it..."

[19] Grete Tugendhat, "On the Construction of the Tugendhat House," address held in the Moravian Museum, Brno, 17 January 1969; in *Ludwig Mies van der Rohe: The Tugendhat House*, edited by Daniela Hammer-Tugendhat (New York: Springer, 2000), 7. No further clues can be found to prove whether the drawing she mentioned is the same drawing as fig. 2.8.

indicate that the drawing was made at an earlier stage of the commission when Mies was still concerned with the basic arrangement of the space. On the contrary, his contemplation on the statue had been detailed and showed little difference from the final installation. This implies that the statue was a decisive point for him to evolve the interior design.

The eye-level of the perspective marked by Mies, passes exactly through the statue's eyes. It shows that the perspective was drawn according to the height of the statue. In other words, the perspective records a view commensurate with the eye level of the statue. The head of the statue is right at the middle point of the height of the drawing but far off from the central line of the width. As distinct from the stiff contour of the other interior elements, the body of the statue is drawn with floating lines and heavily toned. The pencil hatching emphasizes the corporeality and opacity of the body, which is in sharp contrast with the bright interior and balances the otherwise dominant column in the foreground. The organic profile of the statue relieves the rigid geometry of the space.

Traces of the sketching lines around the head of the statue reveal some changes during drawing. The light traces of the original contour show that the head faced straight to the front column. The new heavy lines define the final contour of the head. It can be detected that Mies changed the orientation of the head and turned her eyes towards the seating area. His deliberation on the direction of the statue's head evidences that in his consideration of the space the posture of the statue matters.

The supposed station point of the architect when he made this drawing is revealed by a frequently published photograph of the living area (plate 2.9). The shooting point of the picture is at the corner close to the winter garden and has a diagonal relationship with the station point of the drawing. The view captured in the photograph and the view formulated in the drawing therefore complete one another.

The position and posture of the statue in the photograph are the same as that in the drawing. The torso faces the glass wall of the distant landscape but the head turns towards the seating area. Since the view of the photograph is shot when the eye looks through a camera lens, the

vanishing point of the photograph truthfully reveals the eye level of the photographer. The viewing line of the photograph can be found at the height of the shoulder of the statue. It means that the statue in the built space is taller than the normal height of a person. In the drawing, the statue was used to locate the vision line of Mies's mind's eye; while in the photograph, the statue holds a monumental scale and watches over the living area as a protective spirit of the space.

The presence of the statue is enhanced by the dark background—the ebony wall in the dining area. A comparison between the Glass Room, the Barcelona Pavilion and the Tugendhat House shows that Mies used walls as the foreground or background of the statue. The sharp contrast of the tone of darkness between the statue and the wall makes the statue stand as a focal point. The statue does not simply act as a decoration, but rather draws the mind of the designer or the spectator.

The role of the statue is confirmed in another photograph taken by Fritz Tugendhat, the owner of the house, from the same point of the sketch (plate 2.10). The statue sits between the onyx wall and the glass wall of the winter garden. A dark curtain as a foil outlines her contour and makes the body appear prominent at a place flanked by two bright walls. The statue is composed at the center of the picture. Her torso faces the seating area and the camera, but her face looks through the glass wall towards the outside.

From the comparison between the Tugendhat photograph, the press photograph and Mies's drawing, it can be found that the position of the statue was shifted from the left end of the onyx wall to the right end. The statue in Tugendhat's shot is beside the winter garden, while in the press photograph and the drawing the statue is located at the end close to the dining area. With the shifting of the position, the eyes of the statue are oriented to different directions, creating a new tension between the statue and the space.

A study on the station points reveals the intriguing relationship among these three interior views. The statue in the Tugendhat photograph sits at the station point of the press photograph. The focal point of the former is the shooting point of the latter. The viewer

and the statue in these two photographs therefore exchange positions with one another, while a comparison between the Tugendhat photograph and Mies's drawing reveals that, with the same point of view, the inhabitant and the architect perceived the space differently through the different positions of the statue.

The fact that both the architect and the inhabitant paid special attention to the orientation of the statue suggests that the statue was treated as an agent to explore the space. By relocating the statue, Fritz Tugendhat rejected the artistic view in press and showed his house in a singular way that revealed its natural feature and livability. Through the statue's eye, he rediscovered the meaning of the space. Fritz Neumeyer remarked that the Tugendhat House should be understood as a structure that revealed rather than concealed itself.[20] This revealing is then realized by the statue whose position and posture draw the viewer's mind into the space.

The shifted position of the statue demonstrates the inhabitant's singular passion and understanding of Mies's space. Though Grete Tugendhat's parents gave her the property as a wedding present and paid for the construction of the house, Fritz and Grete Tugendhat were the real clients in terms of the design process. Attracted by the open quality of the space, together they played crucial roles in the development and the final acceptance of this modern work that challenged the conventional ideas of the house at its time. When the house was targeted in an article entitled "Can One Live in the Tugendhat House?" that questioned the livability of the house, the Tugendhats answered firmly in the affirmative.[21] Their comments provide valuable sources for probing how Mies's domestic space was understood by its inhabitants.

As an amateur filmmaker and experienced photographer, Fritz Tugendhat documented with his camera how the house was seen and lived. At the same time, Grete Tugendhat played a dominant role in the commission, and attempted to disseminate the idea brought by the

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[20] Fritz Neumeyer, "Barcelona Pavilion and Tugendhat House," *Globe Architecture* 75 (1995), unpag.

[21] Both Mr. and Mrs. Tugendhat refuted the question in an article "Die Bewohner des Hauses Tugendhat aessern sich," *Die Form*, 11 (Nov. 15, 1931), 437-38; titled as "The Inhabitants of the Tugendhat House Give Their Opinion" in *Tugendhat House*, edited by Hammer-Tugendhat, 35-37.

house in the following years. Her role exemplifies Alice Friedman's argument that female clients are powerful catalysts for innovation in modern domestic architecture.[22] It is worth mentioning that Grete was intensely concerned with Martin Heidegger's philosophy. Her closest friends were Heidegger's students and she was introduced to Heidegger's lectures even before the publication of *Sein und Zeit* in 1927. Her personal interest in philosophy well prepared her to grasp the essence of Mies's glass house. The collaboration between the client and the architect hence, in her words, could be based on "the same basic feeling of being."[23]

Model House at the Berlin Building Exhibition, 1931

The Berlin Building Exhibition titled "The Dwelling of Our Time" was organized by the Werkbund in 1931, four years after the Weissenhofsiedlung. Different from the theme of the Stuttgart Exposition on family dwellings, this exhibition addressed housing for single people and couples. Mies was named the artistic director and officially shared the direction of the entire exhibition with Reich. Besides being the planner for the exhibition, he also contributed a two-bedroom model house for a childless couple and a bachelor's apartment. In many respects, the model house marked the end of Mies's prolific period of the 1920s, but the semi-enclosed court in the scheme prefigured his exploration of the Court Houses in the following years of the 1930s.

The basic layout of the model house is composed of several freestanding walls, extending from the inside to the outside (plate 2.11). Among them, a long wall darting off to the west connects Mies's house with Lilly Reich's house. The western half of the house contains the living-dining area whose center is marked by an ebony partition that recalls the onyx walls in the Barcelona Pavilion and the Tugendhat House. The eastern half is closed off by four freestanding walls, and contains a semi-court and the bedroom with two sleeping areas

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[22] Alice T.Friedman, *Women and the Making of the Modern House: A Social and Architectural History* (New York: Harry N. Abrams, Inc., 1998).

[23] Grete Tugendhat, "The Architect and the Client," 38; about her philosophical interest refer to Daniela Hammer-Tugendhat, "Is the Tugendhat House Habitable?" 31; both in *Tugendhat House*, edited by Hammer-

separated by a bathroom enclave. A floor-to-ceiling glass wall demarcates the bedroom and the court. The court is enclosed by plaster walls in both the north and south and separated from the outside in the east by a rectangular pool. At the opening to the pool stands a female statue by Georg Kolbe. The official catalog of the exhibition characterizes the unity of the eastern half of the house, the semi-court and the open bedroom as a "garden room."[24]

The unique relationship between the interior, the court and the pool is well illustrated by a published photograph (plate 2.12), which provides a view looking across the pool towards the court and the glass-walled bedroom. With the dark foreground of the water surface and the dark background of the interior, the statue looks like a white spirit. Her body then becomes an unavoidable focal point for viewing both inside out and outside in, and maintains the threshold between inside and outside. The pool distances the statue from the spectator.

Natural light falls to the court from the top of the exhibition hall, producing an illumination effect similar to that in the Glass Room. Inside the court, the statue with a walking posture stands alone. Except for the slight shadow cast by the pedestal, the statue leaves no shadow on the ground. Her white body appears homogeneously translucent with no shade on its surface. The bright and weightless body looks like a spirit wandering in the garden room.

Mies studied the position and posture of the sculpture in two preliminary drawings with bird's-eye views. In the freehand sketch (plate 2.13), the layout of the house is the same as the final version, but a sculpture of a reclining figure is placed in the pool. This sculpture is the same as the reclining female figure appearing in the sketch of the Barcelona Pavilion (plate 2.6) and later in the sketches of the Court Houses (plate 2.20), Hubbe House (plate 1.3) and Mountain House (plate 3.10). In the photographic collage (plate 2.14), the layout of the house is different from the final plan, which demonstrates that the drawing could be an earlier scheme. No court can be clearly identified; a statue is placed beside a large pool. Although the dark figure is too small to show details, the lifted arms and the curved body show a feminine stance consistent with that of the Kolbe sculpture in the Barcelona Pavilion.

Tugendhat.

From the reflection of the statue in the pool, it is clear that Mies was contemplating what the body could bring to the space.

These drawings give evidence that Mies had been concerned with the statue since the beginning of the design. In the earlier scheme with collage, the pool and the statue were given a more dominating status than the house itself, as if the statue were the *genius loci* of the house. The development of these schemes manifest how the building and the statue interacted with one another in the design process.

Gericke House (project), 1932

In this unrealized project for an art historian, Herbert Gericke, Mies proposed a glass house with a court. He held a design competition for his house, which was to be on a sloping site overlooking Berlin's Wannsee. Mies and four other architects were invited, but none of their designs were selected, since Gericke preferred his own design. Mies's design combines many of the features in his earlier projects, such as the Concrete Country House and the Tugendhat House. In the plan of the lower floor, a court at the northwest corner is opened to the west while has a brick wall to the north. It is embraced in the east and south by two wings of the building: the master bedroom and the living room (plate 2.15). The living room is a glass box glazed on all four sides that grants the insider an exceptionally rich view of the surroundings. It stretches out into nature like a peninsula.

A large number of drawings of the project survive. In an interior perspective drawn from the staircase of the living area towards the court (plate 2.16), with the exception of two chairs at the left corner, Mies left the room nearly empty. The zigzag form of the long glass wall leads the view towards the woody court where a dark figure stands in the openness. Schulze describes the effects of the sculpture as that "art balanced coolly and distantly between nature and architecture."[25]

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[24] Official exhibition catalog of the Berlin Building Exhibition, 1931 (Tegethoff, *Villas and Country Houses*, 112.)
[25] Franz Schulze, *Mies van der Rohe: Interior Spaces* (Chicago: Arts Club of Chicago, 1982), 22.

A re-examination of this sketch finds that the foliage, drawn in a glib fashion, withdraws into the distance, and that the architectural elements such as the column and the glass wall are dematerialized by very ambiguous lines. None of them is strong enough to "balance" with the opaque body of the statue. There is no shadow presented in the whole picture. While the transparent view of the house and the court presents Mies's vision of glass, the dark figure acts as his mind's eye drawing the vision into view, emphasizing the transparency of the glass and guiding the eye through the interior.

The statue as a focal point can be witnessed in a perspective of the house from the court (plate 2.17). In this sketch, the body of the statue is heavily toned and becomes the only opaque element in the picture. The glass wall of the living area that embraces the court is hatched smoothly, creating a homogeneous and continuous surface in the background. Trees in the foreground are circumscribed with a few loose lines to frame the picture.[26] The statue holds a feminine stance: the head inclines, the arms are folded on the chest and the legs bend slightly. The glass surface is unfolded around and unified by the opaque body into a bright view.

At the bottom of both sketches, Mies gave respectively the titles in German: "*Blick vom Essplatz zum Wohnraum und Wohngarten*" and "*Wohngarten*," which can be literally translated into English as "the view from the dining space to the living room and the living garden" and "living garden." The compound word "living-garden," made by Mies to signify the court, indicates that the court viewed through the glass was for him a livable space. The statue in the garden thus has the character of an inhabitant. The "garden room" of the model house at the Berlin Building Exhibition was interpreted here by the architect as a livable room and a livable garden. With the glass wall, Mies blurred the demarcation between inside and outside for a unified view. His exploration of the "living garden" was continued more creatively in the Court Houses.

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[26] I am thankful to Cammie McAtee in the Canadian Centre for Architecture for sharing her manuscript "The *Avant-texte*(s) of Mies van der Rohe's Museum for a Small City," which provides valuable information for identifying Mies's drawings (The article will be published in the coming issue of *Genesis*, 2000). According to her, part of this drawing could be from other's hand.

Court Houses, 1930s

Mies's engagement with the Court House type started in the earlier years of the 1930s and it was key to his successful education programs at the Bauhaus and at IIT. When he was appointed the director of Bauhaus in 1930, the first assignment he gave to the students was a single-bedroom Court House. Throughout the 1930s in Nazi Germany, Mies designed a series of projects on imaginary sites that were usually called the Court Houses. Though most of them are not built, they are among his most compelling architectural compositions.

A plan composed of three Court Houses is characteristic. Each Court House includes two basic parts: a glass-walled living area and a court (plate 2.18). The three court houses are enclosed into a rectangular unity by brick walls. The general plan is organized like a pin-wheel: court-house-court-house-court-house. The houses are separated from each other by internal brick walls. Though bound together as a unity, the three houses have no visual contact with each other. The whole unity clearly shows Mies's idea of *block*: a rigid geometric body with a continuous enclosing wall. An opinion shared by several scholars is that the exclusion of exterior space, achieved by the brick bounding walls, is Mies's reaction to the general hostility in Nazi Germany and is an evidence of his self-isolation from the outside world.[27] However, in Mies's design, architectural forces were always more active than external reasons.[28] The social-psychological explanation is not sufficient to explain the real force that shaped the Court Houses.

Within the Court House, a floor-to-ceiling glass wall divides the interior and the court and while providing a visual contact between them. The court has a double identity: it is an outside room of the house, but it is inside in terms of the whole unity. The view to the outside from the Court House is blocked by the brick bounding walls, while a micro-cosmos is created on the inside. The only visual contact between inside and outside occurs between the interior and the court through the glass wall. Mies's basic design strategy seems like the

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[27] One of the earliest mentions appeared in Ludwig Glaeser, *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art* (New York: The Museum of Modern Art, 1969), unpag. See also Wolf Tegethoff, "On the Development of the Conception of Space in the Works of Mies van der Rohe," *Daidalos*, no.13 (Sept. 15, 1984): 122.

theory of the eighteenth century *camera obscura*: a viewer in a dark room looks at an image of the outside projected on the interior wall through a needle hole. The closed Court House acts as a dark room where the viewer looks at the court (an outside within an inside) through the "lens" of the glass wall. In this sense, Mies first formed a "dark room" strictly enclosing the glass and the court, and then made the glass wall as the only chance for viewing from the interior to the court. It is therefore detected that Mies's real focus in the Court House projects was not the court but rather the view of glass.

The Court House as a building type then should not be treated as a recession in Mies's endeavor of the glass house, rather it is a crucial step in its progress. The double wall system—the glass wall and the brick wall—completely blocks the view to the outside world, but encloses nature as an internal garden. With the solid brick wall, Mies set the stage to explore the possibilities of glass. The absolute exclusion of the outside enhances an extreme openness on the inside. The scene in the court can only be seen through the glass.

The majority of the drawings of the Court Houses are perspectives drawn from the interior towards the court. Some typical elements present in the drawing include: a veneered screen with abstract patterns, a hatched opaque statue, the rigid paving grid, ambiguous foliage and furniture. The interior is vast and empty. In a perspective from the interior towards the court (plate 2.19), no roof is delineated and the pavement grid extends all the way to the brick girding wall. Nor does the continuous brick wall help to differentiate the inside and the outside. The only element for demarcating the inside and the outside is the glass partition in the middle ground. The sight goes through the glass wall and reaches the court. It confirms the above analysis that in the court house Mies's focus is on the unique view brought by the glass wall: the fusion between inside and outside. With the transparent glass, the view can flow freely and the mind is opened up. A block of opacity—the female statue attached on the right side of the drawing—appears in this flowing view of glass. Standing in front of the glass wall, the body is extremely dark in the transparent space. Tension is brought into the homogeneous space by the intrusion of this figure that at first seems alien to the context. The glass wall and the statue are the only elements that are in complete contours, and all the

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[28] Mies cared for his architecture more than anything else; refer to my interview with Schulze in appendices.

other things extend outside the frame. While the glass wall demarcates the space, the presence of the body identifies the inner and the outer.

In another sketch from a similar angle (plate 2.20), the frequently used reclining figure is situated in the court behind the glass wall. No matter it is placed before or behind the glass wall, the figure attracts the spectator's eye through the glass. Another sketch shows two courts sandwiching the interior (plate 2.21). Glass walls not only separate the interior from the court, but also separate the two courts from one another. The view of the sheer transparent spaces relies on the presence of a certain materiality. There are three opaque elements: a tree in the front court, a picture wall in the room, and a statue in the distant back court. The opaque body of the statue, which was put in the darkest tone, draws the view into depth.

From the different positions of the statue in these drawings, it can be discerned that Mies used the opaque body as a means to study the view of glass. The opaque bodies not only identify the features of the spaces, but also confirm the relationship between the viewer and the space. Within the strict enclosure of the continuous brick bounding wall, Mies's mind's eye follows the opaque body of the statue and wanders into the space.

Besides the studies for the Court Houses, Mies designed at least two houses for specific clients in the 1930s: the Ulrich Lange House and the Hubbe House. They are closely related to the court house series. Although neither of the designs was finally realized, they provided opportunities for Mies to verify the possibilities of opening up the interior to nature while using glass walls.

Ulrich Lange House (project), 1935

After Mies built the first house for the Lange family of Krefeld in the late 1920s, the textile industrialist's son, Ulrich Lange, commissioned Mies to design a house for his marriage in 1935. Two schemes were proposed, but neither of them was built. According to the so-

called "unsightliness law," which was usually used by the Nazis to restrict modern architecture, the local authorities refused to issue a building permit for Mies's design. Then the permit was issued under the condition that the house would be hidden by an earth berm on the street side. This time Mies was said to be deeply hurt and declined any further revision.[29]

In the plan for the second scheme, the house is organized in an L-form whose concave side embraces a court that is enclosed by brick walls on three sides (plate 2.22). The living room is walled on both sides in glass, and faces the court to the west and the distant landscape to the north. The differentiation of the brick walls and the glass walls orients the eye from the living room towards the court and the distant landscape.

An elevation was juxtaposed with the plan. It shows that while making the plan, Mies was also calculating spatial effects. His mind shuttled between the two-dimensional layout of the plan and three-dimensional space. Another evidence of his considering spatial effects is the twelve female figures sketched over the plan. The bodies are heavily toned and hold different postures. In the court, there are two figures: one stands straight and lifts her arms over her head; another slightly inclines and looks at the ground. These two figures appear again on the right side of the drawing. Mies was studying the various postures of the statue fixed into the views between the living room and the court. Other sketches for the house affirm that statues were to be erected in the court and in front of the curved wall of the living room.

Hubbe House (project), 1935

This is the last house Mies designed for a specific client in Germany. A single woman, Margarete Hubbe, asked Mies to build a house on an island in the Elbe River at Magdeburg. Mies designed the house according to the client's needs and the features of the site which

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[29] For detailed backgrounds about the commission, refer to Tegethoff, "Ulrich Lange House," in *Villas and Country Houses*, 123.

included a distant landscape to the east and a disturbing view to the south. In the final scheme, Mies reached a plan of a T-shaped house where a glass living room was flanked by a small court to the south and a large one to the north (plate 2.23). Views to the south, north and west are blocked, but the view toward the river to the east is left open. This commission was not realized, for "the lady client sold the property."[30]

Mies seems to have spent an inordinate amount of time on designing the house with great commitment. The abundance and variety of a cache of plans and sketches demonstrate the sedulousness of his endeavor on the project. In addition, Mies published a rare explanation about his design in *Die Schildgenossen*:

> I have enlarged the living quarters by a garden court surrounded by a wall and so locked out this view [to the south] while allowing full sunshine. Toward the river the house is entirely open and melts into the landscape. Thereby I...obtained a beautiful alternation of quiet seclusion and open spaces.
>
> This articulation also corresponds to the dwelling needs of the client, who, although living alone in the house, wanted to cultivate a relaxed social life and hospitality. This also is reflected by the interior arrangement. Here also, the required privacy combined with the freedom of the open room forms.[31]

In these words, Mies's intention to use the building as a mechanism to capture the beautiful natural scene and combine the open domestic space with privacy is obvious.

Two photographs of the original model were used as illustrations in Mies's article. In one photograph the double wall system, same as that of the Court Houses, is clearly identified by the tones of darkness: the transparent glass wall of the living room and the dark brick wall enveloping the house property (plate 2.24). The living room and the courts are combined according to the conception developed in the Court Houses: a spacious glass room sandwiched by two courts, each of which contains a female statue. In the northern court, Mies installed his favorite statue of a reclining woman, which appeared frequently in his drawings of the 1920s and 1930s, and faced her towards the distant landscape. In the southern court, a standing female statue was placed in a remote corner.

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[30] Lily Reich, letter to J. J. P. Oud, February 12, 1936; quoted in Tegethoff, *Villas and Country House*, 121.

[31] Mies van der Rohe, "The H. House, Magdeburg," *Die Schildgenossen*, 14, no.6 (1935); translated by Mark Jarzombek in Fritz Neumeyer, *The Artless World: Mies van der Rohe on the Building Art* (Cambridge: MIT Press, 1991), 314.

The view of the statue from the interior through the glass wall is displayed in Mies's sketch (plate 2.25). Looking from the seating area towards the southern court and the distant river landscape, the interior is spacious and sparsely furnished. In the center of the room, a group of chairs is placed around a column to identify the main seating area. The column here is not stressed as Mies usually did. Dynamic hatching lines of the interior and the edge lines of the walls converging towards the distant river set off the isolation of the statue.

The statue stands in the far corner with her head inclining and her legs slightly bending, as if she is meditating. In Mies's interior drawings, the seating furniture is always empty, while a lonely statue figure is placed elsewhere. Her presence brings certain solitude and melancholy into the open space. The opaque body of the statue distracts the sight and causes the eye to move between the river and the court. Is this what "a beautiful alternation of quiet seclusion and open spaces" means in Mies's article?

Resor House (project), 1937-1942

A commission of a vacation house for Helen and Stanley Resor brought Mies to America in 1937, and initiated the second half of his career in the New Continent.[32] Although ideas of glass house that were opener than the court house type had been shown in sketches of the Mountain House for the Architect (1934) and Glass House on a Hillside (1934), it is in his American works that Mies thoroughly opened the interior to nature. The changes in his design are generally regarded as a reflection on the openness of landscape and his spiritual brightening-up.[33] The Resor House was revived and postponed over the next few years, but the thought and discussion of the building continued until 1942 and was finally ceased in the spring of 1943.

The site is on the Resor Ranch along the Snake River near Jackson Hole, Wyoming. The house was proposed to straddle a creek running through the property, and to take maximum

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[32] Mies fully emigrated to the US in 1938 and became an American citizen in 1944. He lived and worked in Chicago in all his American years.

[33] Tegethoff, "Development of Conception of Space," 122.

advantage of the view, especially the snow-capped mountain ranges looming in the north. With an enclosed service wing and bedrooms on either side of the creek, Mies created a huge living-dining space, walled by floor-to-ceiling glass on the south and north, over the creek. A great fireplace of fieldstones is placed at the western end of the living room.

In a sketch of the living room (plate 2.26), the windows, furniture and the fireplace are all delineated with cursory strokes of lines. A statue standing against the curved wall of the central hearth is heavily toned, and appears opaque and static in the floating atmosphere. While a freestanding column beside the sofa defines the height of the space, the statue inclines towards the seating area and anchors the view of the whole space. The composition of the statue, the frontal column, the freestanding stone wall and the glass periphery walls recalls a similar arrangement in the sketch of the Tugendhat House.

Mies's special concern for the female form is recorded in a rare figure drawing (plate 2.27). Three statues, all of which are nude females, are drawn on a same piece of paper.[34] The largest figure at the top-left corner bends her left leg, slightly inclines the head and the arms almost melt into the body. A soft robe is falling from her shoulder. Except for simple marks for the eyes and mouth, no more details are ascribed to her face. The smallest statue at the top-right is obviously a distant image of the largest one. The figure at the bottom is medium size and her posture is slightly different from the other two. She bends her right leg and her robe falls on her knee. Her arms are behind her back and her head turns aside.

Mies showed no interest in details of the face. Instead, he carefully studied the postures of the statues. This attitude is consistent with his preference for three contemporary sculptors, Wilhelm Lehmbruck, George Kolbe and Aristide Maillol, whose works focus on the motion and posture of the body. Mies's studies of the different sizes and features of the three statues indicate his concern for the optical difference caused by the distance between the viewer and the statue. This suggests that he studied the statues within imaginary spaces rather than looked at them as autonomous objects. The figures in his spaces usually appear as a posturing opacity within the presence of glass. It can be either small in a distant court,

[34] Since Mrs. Resor was a trustee of the Museum of Modern Art in New York, the statue could be related to

or in a medium size against a freestanding wall in the living room, or very big close to the spectator's eyes. The varied features of the figure show that Mies pushed the opaque body back and forth in his mind while sketching, to locate the perfect point of view to present his view of glass.

Farnsworth House, 1946-1951

In America, Mies finally realized his first completely glass house—the Farnsworth House for a single nephrologist Edith Farnsworth—in 1951. The house is considered to be the consummation of his pursuit to the high unity between human dwelling and nature through building with glass. Sited in the woodland beside the Fox River near Plano, Illinois, the single-room house is constructed on a white steel skeleton, and is walled with floor-to-ceiling glass on all sides. Unfortunately, the commission was ended by a bitter lawsuit between the architect and the client that was launched by Mies in 1951 and lasted until 1954. The battle in court was covered extensively in journals, in which Mies and the International Style were critiqued.[35]

Started in 1946, the design process lasted for five years and was the longest in Mies's American works. Mies took the commission personally—he even personally went to the plywood warehouse to pick the materials for the primavera panels[36]—however, he drew very little. The few surviving drawings from his hand show almost nothing. In a preliminary sketch for the plan (plate 2.28), only the inner core and a few thin lines of the exterior glass walls are sketched on paper. Except for some construction sketches of the bathroom, there is no interior drawing in *The Mies van der Rohe Archive.*

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her own art collection. However, we have no evidence to prove this assumption.

[35] At the earlier stage of the project, a close relationship was developed between the architect and the client, and Farnsworth was happy with the design. However, the two sides saw the commission differently—"Farnsworth wanted the house and Mies, and Mies wanted the house and the next client" (Schulze, *The Farnsworth House* [Chicago: Lohan Associates, 1997], 18). As the construction of the house reached the end, their relationship was broken and both sides were disappointed. Mies sued Farnsworth for owing him money, and she countersued for overcharging, meanwhile, the press spun a political web around the issue. Mies won the lawsuit, but was deeply hurt by the articles targeting him (see chapter 3, 65-67).

[36] Myron Goldsmith, *Oral History of Myron Goldsmith*, interviewed by Betty J. Blum (Chicago: Art Institute of Chicago, 1990), 112.

The only available perspectives are several exterior sketches. In one of them (plate 2.29), a few lines frame the basic space of the house. Because glass is transparent and cannot be drawn directly, Mies used flimsy lines to indicate the mullions of the glass wall. There is no delineation of any internal elements or reference to the surrounding scene. Besides the minimum steel structure, the only thing that can be imagined is the glass periphery wall. Other exterior sketches are in the same style and even have less to show. The structure, supported by eight columns, lifts the building five feet above the ground. The idea of putting the floor on stilts is not only a practical solution to the floods that are a regular occurrence on the property, but also an architectural consideration to emphasize the impression of a floating structure. Tegethoff observed that light entered from all sides into the lifted space and created a condition of complete transparency.[37] For David Spaeth, the space flows beneath, above and through the house, as if the house has been detached from the land and the room become penetrable.[38]

Mies's intense consideration of the details is in discord with the lack of drawings for the Farnsworth House. Given the fact that he was a passionate draftsman, he seemed reluctant, or unable, to draw much for this house. There is also no sculpture in the interior. The glass house is thoroughly transparent in his mind. He could not find opacity to locate the view as he did before.

Edith Farnsworth attended the first exhibition of Mies's designs in the Museum of Modern Art where the model of her house was exhibited. The lawsuit and the debate that followed anchored her image within the house.[39] After the lawsuit, she lived in the house alone for nearly twenty years and finally sold it. As a matter of fact, instead of a female statue, the image of its female inhabitant becomes prominent in the Farnsworth House, and is indispensable for understanding this ideal glass house by Mies.

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[37] Tegethoff, *Villas and Country Houses*, 130.

[38] David Spaeth, *Mies van der Rohe* (New York: Rizzoli, 1985), 110.

[39] Edith Farnsworth was frequently mentioned in articles about the house after the lawsuit. Even Mies said in his bitterness after the lawsuit: "I've made her famous with the house and of course she'll go down in the history with the Farnsworth House" (Mies van der Rohe recalled by Goldsmith, 124).

Recapitulation

The drawings and photographs illustrate the features of Mies's glass houses. Mies's focus in his house design is the glass-walled living space, of which each drawing and photograph presents a specific view. Most of the views are from inside out and in one-point perspective. The images emphasize the existence of glass and its effects on the domestic environment—the open space and the view through glass.

Very few things are left in Mies's domestic space: floor-to-ceiling glass walls, columns, a few chairs that are always empty and a solitary female sculpture. Architectural elements and furniture are drawn with slight strokes, composing a bright aura of glass. The presence of glass in the drawings describes certain opacities, among which the body of the statue is the most heavily toned and sometimes the only opacity in the framed space. The sharp contrast between opacity and transparency maintains a sense of tension in the space.

In each view, the opaque body and glass are co-present. The juxtaposition lasted throughout the history of the glass houses. On the one hand, the space is opened up and gets simpler and purer. From the Glass Room to the Farnsworth House, Mies kept exploring the domestic space shaped by glass. On the other hand, with the increasing openness of space, the opacity borne by the female body remains prominent.

The existence of this opaque body challenges the transparent image of Mies's glass house. From the views created on paper and captured in film, it is found that what Mies realized through building with glass is more a singular vision than merely the use of a new material. The inherent opacity in transparency makes his vision of glass visible, and raises questions about the opaque body itself.

Chapter 3 The Body That Is Not Transparent

The analysis of the drawings and photographs has provided an overview of the existence of the female statue in the glass houses. In each recorded view, the opaque body of the statue and the transparent glass wall are two elements that intensely interact with one another. The opacity in Mies's "transparent" domestic space is thus discovered. A phenomenological reading of the illustrated glass houses may help us ascertain that the opaque body is a *thing* that remains in his minimalist design.

Nevertheless, discerning the juxtaposition of the body and the glass wall is not yet sufficient to explicate Mies's philosophy of house design. The opacity encourages further exploration. How is the statue presented within the glass house, and why is the body always feminine? The photographs and drawings allow us to close up and compare the recorded views from a critical perspective—opacity within transparency.

Alienated Body in the View of Glass

Once the opaque body of the statue is brought to light by the drawings and photographs, the transparent image of Mies's modern domestic space, which has been frequently rendered in language, cracks. If the visual shock is what Mies intended, it provides an opening for us to approach his ideal of modern dwelling.

The statue in Mies's built spaces and the figure in his design drawings show no more details than the posture and contour which suggest the presence of a female body. Their figurative appearance is different from either an abstract structure or a realistic statue. It is more opaque, solid and figural than a purely abstract piece, but less detailed and concrete than a realistic statue. In the drawings and photographs, the body appears ambiguous in the glass space: on the one hand, it presents the feminine posture and contour; on the other hand, it holds back from imitating in detail a female body. The ambiguous appearance in turn highlights the body's opacity in the aura of glass.

A full-size female statue was included in each of the three exhibition structures: the Glass Room at the Stuttgart Exhibition, the Barcelona Pavilion and the Model House at the Berlin Exhibition. Although these structures were demolished soon after the exhibitions, the presence of the statues was captured by press photographs that conveyed Mies's domestic spaces to the public. In these structures built with glass, the position of the statue is prominently defined but set apart from the route of the spectators' movement. A photograph of the Glass Room shows that the female torso is placed in a totally enclosed cabinet and the perceived distance between the statue and the spectator appears immense (plate 3.1). The photo was shot from the lobby towards the cabinet. Except for the transparent glass between the spectator and the statue, all the other glass partitions are translucent. The spectator is compelled to see the statue through glass. In this sense, the view towards the statue is in fact a view *of* glass.

The body of the statue appears opaque behind the glass. Except for her posture, which has been implied by the title, *Girl's Torso, Turning*, no other details of the body can be clearly seen. The posture maintains the continuity of the space: her chest faces the dining area, while her head turns towards the spectator in the lobby. Four edge lines of the ceiling and floor converge towards the statue. The strong perspective effect and the darkness of the body itself enhance a sense of distance between the spectator and the statue. The silhouette of the statue behind the glass looks like the spectator's reflection in a distant mirror. However, the dark figure prevents one from clearly identifying oneself. A feeling of estrangement emerges.

The static view of the Glass Room changes into a dynamic one in the Barcelona Pavilion—the sculpture is situated in the back court and her reflection can be seen throughout the visitor's journey towards her in the glass pavilion. Mies's intention of drawing views of glass through the remote body of the statue is recorded in a popular photograph of the back court (plate 3.2). The female statue by Georg Kolbe stands in the pool bathed by sunshine. The picture was taken after the spectator (the photographer) passed through a labyrinth of glass and finally reached the back court, the innermost point of the pavilion. The body of the statue faces the glass, but her eyes look down to the water. Her arms rise up and cast deep shadows on her face. She seems to be avoiding direct visual contact with the spectator and is thoroughly immersed in her own existence. The water renders the statue inaccessible to the spectator. The complicated reflections of her body on the surrounding marble walls attract the spectator's attention, encouraging them to move through the pavilion and experience the aura of glass, which Mies created by employing glass and polished materials, before finally reaching the small pool. The circuitous route among the freestanding partitions prolongs the spectator's promenade and reinforces the feeling of remoteness from the female figure.

As analyzed, Mies selected and positioned the sculpture in relation to his space and paid much attention to the posture of the statue. A photograph of the model house at the Berlin Exhibition presents a view from the interior towards the statue on the outside (plate 3.3). The female figure by Kolbe stands beside a pool at the opening of the garden wall. Illuminated by natural light from the top of the exhibition hall, the body of the statue almost melts into the plaster wall and leaves only slight shades. No other detail of the body can be seen and the statue looks like a white specter. The walking posture makes her appear as if she has suddenly stopped, like a film still. Once the eye is engaged with the body, it is immediately led in the direction that the posture indicates. The statue, when viewed through the glass wall of the bedroom, appears to drift. An illusion of daydreaming is created.

The alienation of the body captured in the photographs is confirmed in Mies's drawings where the singular view of glass is co-presented with a dark figure. Compared with the photographs, the views in the drawings are more direct and closer to the architect's vision of space. When the vision in the mind is transformed into a concrete view in the drawing, the

point of view is located in a certain opacity that can be easily perceived in the composition. In a perspective drawing for the Hubbe House (plate 3.4), a female statue was placed at the end of the vista. The dark figure stands solitarily in a remote corner of the court. Her seclusion is in contrast with the open space of the interior and the natural view of the nearby river landscape. The one-point perspective effect intensifies the distant sense of the figure. Positioned at the vanishing point and heavily toned, the figure becomes a block of opacity at infinity. The view extends to the horizon by the opaque body and the otherwise homogeneous space is thus given its depth.

Through the opaque body, the vision of glass is formulated into not only a distant view but also a wide view. In a perspective drawing for the Row House (plate 3.5), one of the Court Houses, the dark figure of a standing woman by Wilhelm Lehmbruck looks inside from a corner of the composition.[1] The placement of the veneer board, the column, the pavement grid, and the brick girding wall provides no clear clue for differentiation between the inside and the outside. Tension is caused by the contrast between the dark statue and the converging pavement grid. At the center of the tension, a glass wall demarcates what we read to be the inside and the outside. Standing on the outside but looking inside, the sculpture is at the threshold of staying or leaving, of being included or excluded. The existence of this external opacity stretches and widens the view of the interior.

Through such drawing compositions, Mies maintained tension between the opaque body and the transparent space. At the edge of the tension emerges the unique view of glass. The tension is modified by the location of the statue. Mies usually placed the statue either at the vanishing point or in the front ground of the perspective, but seldom in the middle ground. German Romantic aesthetician and sculptor Adolf Hildebrand discerned the necessity of tension for drawing depth in the form of art. In 1893 he wrote: "To maintain a coherent movement into depth, we must advance into the picture...This is only possible insofar as

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[1] In *The Mies van der Rohe Archive* (vol.4 [New York: Garland Publishing, Inc., 1986], 69), this collaged drawing is dated 1931; but its hardline drawing style and collage technique suggest it may have been made after Mies's emigration to the United States, and possibly by his students in IIT under his direction. Ludwig Glaeser, *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art* (New York: The Museum of Modern Art, 1969), unpag. Wolf Tegethoff, *Mies van der Rohe: The Villas and Country Houses* (New York: The Museum of Modern Art, 1985), 124-25.

there is something beyond the foreshortened image that forcibly suggests the idea of depth or distance."[2] Following this theory, the alienated sculpture deepens and expands the view of glass into infinity.

The role of this opaque body in constructing the expanded view of glass is generally overlooked. Ludwig Glaeser, for example, observed that Mies's drawings of the 1920s and 1930s always contained statues but never people, not even the stylized scale figures; however, he did not explore what further role the statue might play in these scenes. Defining the statue simply as a substitute for a real person, he wrote: "By replacing figures with sculptures...Mies eliminated an accidental element hard to reconcile with his abstracted presentations. Sculpture had the same complementary role whenever it appeared in an executed building."[3] The statue is thus equalized to a compromise between a literal representation of a human being and Mies's geometric space.

The close-up reading of the images has revealed that the female statue, instead of reconciling with the abstracted space, sharply contrasts with the glass walls. The effect that Mies wanted to achieve between the statue and the interior was not a reconciliation but a distinction. Franz Schulze agrees that the body exists as a counter-foil to the glass-walled space, as something resisting the prevalent abstraction of architectural form.[4] After the reduction of building mass and decoration, the statue remains an otherness in the minimalist space. The tension between the body and the space is enhanced by the femininity of the statue whose distinctive posture and curvaceous contour exert a maximum counter-force to the strict geometry and austerity of Mies's space.

This counter-foil effect is clearly displayed by the opaque body that frequently appears in Mies's design drawings. Mies never included shadows in his drawings, but the body, standing alone in the living area or the court, was displayed like a prominent "shadow" in the heart of the bright aura of glass. In the realized spaces where sculptures were inserted, the

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[2] Adolf Hildebrand, "The Problem of Form in the Fine Arts" (1893), *Empathy, Form, and Space: Problems in German Aesthetics 1873-1893* (Santa Monica, CA: The Getty Center for the History of Art and the Humanities, 1994), 246.

[3] Ludwig Glaeser, "Introduction," unpag.

curvaceous shape of the female body casts rich shadows and intensifies its opacity within the transparent space. Some research reminds us of an ancient magical notion that the shadow of a human body is an external manifestation of the soul.[5] In this sense, the opaque female body can be regarded as the embodiment of the essence of Mies's vision of glass.

Fritz Tugendhat, in a photograph of the living area of the Tugendhat House, captured the view of glass that was provoked by the tension between the counter-foil body and the glass space (plate 3.6). He shifted the statue from the original position set by the architect to the present position, and took several photographs of the seating area that shows the Lehmbruck bust, *Girl's Torso, Turning*, prominently. As discussed before, the images of the statue presented by the architect in drawings, by professional photographers or by the inhabitant in photographs display different perspectives of the same space. In the present photograph, Mr. Tugendhat captured the living area from the intersection of the freestanding onyx wall and the glass wall of the winter garden. The furniture and other details of the interior demonstrate that the picture was shot from eye level. The station point of the camera is so close to the statue that it almost replaces the position of the statue. It can be thought that the picture so photographed shows a view perceived from the statue.

The tension between the space and the opaque body is employed by Mr. Tugendhat, consciously or unconsciously, to reveal the space. He composed the statue at the right edge of the picture frame. The torso faces the seating area, but her silhouetted head turns to the external landscape. From the perspective feature of the photograph, it can be discerned that the statue is higher than a normal person. Although the photo was shot from a position close to the statue, the female torso appears alienated in the composition. The feeling of alienation is not only caused by the body's marginal position but also by its scale and height. The torso occupies almost the full height of the picture, and overlooks the whole space. "Stretched" by the opaque body on the margin, the living area is opened and merges with the natural landscape through the long glass wall.

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[4] Refer to my interview with Franz Schulze in the appendices.

[5] Victor I. Stoichita, *A Short History of the Shadow* (London: Reaktion Books, 1997), 19, 55.

In their article, the Tugendhats did discern the role of the statue in activating this expansive view of glass.[6] Grete Tugendhat wrote: "Every piece of art seems more expressive (for example, a piece of sculpture standing in front of the onyx wall), so too a person appears, both to himself and others, to be more clearly set off from his surroundings." For Fritz Tugendhat, "art is permitted to take on a special importance in the form of a noble sculpture by Lehmbruck, just as our personal lives do—more freely than ever." If, as Fritz Neumeyer observed, "the house is understood as a structure that reveals rather than conceals itself,"[7] the female torso is the agent of revealing.

That the photograph was taken at a position close to the statue makes the spectator occupy almost the statue's point of view. Randall Ott senses a linkage between the statue and the inhabitant. He thinks that it is the body of the inhabitant that Mies wished to contrast with his architecture, and this explains why Mies came gradually to place fewer statues in his spaces: "He wished us to take the stage."[8] Tugendhat's photograph suggests that once the position of the statue is fully assumed by real people, the expansive view of glass can actually be experienced fully by the inhabitant. And the endeavor for a full dwelling is finally accomplished in the Farnsworth House when the inhabitant took the place of the statue.

The drawings and photographs reveal that the opaque body of the statue plays a role in expanding the view. As the expansion increases, the statue will finally disappear from the field of vision and the spectator will become the only body occupying the view. In Mies's glass houses, the statue usually stands against a freestanding wall and faces a glass exterior wall. If these two walls are imagined to expand in the view simultaneously with the stretching statue, then the morphological result should be that a periphery glass wall contains a solid core and the inhabitant wanders between them. This morphology matches the plan of the Farnsworth House (plate 3.7).

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[6] Grete and Fritz Tugendhat in "Die Bewohner des Hauses Tugendhat aessern sich," *Die Form*, 11 (Nov. 15, 1931), 437-38; titled as "The Inhabitants of the Tugendhat House Give Their Opinion" in *Ludwig Mies van der Rohe: The Tugendhat House*, edited by Daniela Hammer-Tugendhat and Wolf Tegethoff (New York: Springer, 2000), 35-37.

[7] Fritz Neumeyer, "Barcelona Pavilion and Tugendhat House," *Globe Architecture* 75 (1995), unpag.

[8] Randall Ott, "Reflections on the Rational and the Sensual in the Work of Ludwig Mies van der Rohe," *Arris:*

The spatial layout of the Farnsworth House therefore can be understood as a form that is created by enlarging the view of glass to its extremity. As analyzed before, the opaque body of the statue anchors a specific view of glass in the interior. If the opaque body is pushed aside, the view is stretched wider and wider and finally curves back to enclose the viewer's body. Consequently, the statue no longer appears and the spectator becomes the inhabitant of the full view. From the presence of the statue in the glass houses to its final absence in the Farnsworth House, the view of glass is gradually enlarged from a specific point of view to a 360-degree infinitely big view. The mind is correspondingly opened up from being a spectator to being an inhabitant who exclusively lives this unique view. Mies once said: "I need to have a wall at my back."[9] In the Farnsworth House, the inner core provides an incessant back wall. With the wall pushed to the back, the inhabitant's mind becomes extroverted and completely immersed within the full view of nature.

The full view at the Farnsworth House no longer relies on the presence of the statue to appear, and is too big to be drawn from a specific point of view. This might explain why Mies left few interior perspective drawings for the house, when it is impossible to draw the unique view from either inside out or outside in. Nature, the house and the inhabitant become one. The unity of one can be further understood through Merleau-Ponty's words as: "a space...starting from me as the zero point of spatiality. I do not see according to its exterior envelope; I live it from the inside; I am immersed in it. After all, the world is all around me, not in front of me."[10] The world thus becomes a realm where the body lingers.

Unable to be represented on paper, the full view must be apprehended by experiencing the space. At the Farnsworth House, the space is completely glass-walled on all sides, with a single entrance from the deck on the west and two small windows on the east. The domestic space is arranged around the central service core. The immensity and clarity of the interior bestow the sense of a sanctuary. The movement in the interior is situated around the core,

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Journal of the Southeast Chapter of the Society of Architectural Historians, vol.4 (1993): 42.

[9] Mies van der Rohe quoted in Wolf Tegethoff, "From Obscurity to Maturity: Mies van der Rohe's Breakthrough to Modernism," in *Mies van der Rohe: Critical Essays*, edited by Franz Schulze (New York: Museum of Modern Art, 1989), 55.

[10] Maurice Merleau-Ponty, "The Eye and the Mind," *The Primacy of Perception* (Evanston: Northwestern University Press, 1964), 178.

and the full view is unfolded through the movement of the body.

For Mies, the full view "bring[s] nature, houses and human beings into a higher unity. If you view nature through the glass walls of the Farnsworth House, it gains a more profound significance...more is said about nature—it becomes a part of a larger whole."[11] The glass house helped him to be aware of the beauty of nature and to learn how to live it. On his own experience in the house, he extended his view far beyond the house. He said: "I myself have been in this house from morning until evening. Until then I had not known how colorful Nature can be...These colors are continually changing completely, and I would like to say that it is simply glorious."[12]

The shift of Mies's mind from a specific interior view to a universal view towards nature is reported by his photographer Bill Hedrich. Hedrich recalls that when Mies gave the directions for photographing the Farnsworth House, "he was more in love with the maple tree outside than he was with his house. He kept talking about how he wanted this maple tree, and where he wanted the maple tree."[13] In such a big view, all the meanings of the house have to be found from without.

Once the statue is pulled out of the view, the spectator is pushed to the center of the view field and becomes its inhabitant. Since the big view cannot be kept in a specific perspective, but rather is completely occupied by the mind, the original distance between nature and the mind is reduced. The inhabitant becomes fully and keenly conscious of the outside world. The keen consciousness of nature is corroborated by the present owner of the house Peter Palumbo. He claims that he becomes gradually aware of the interaction between humans and nature, and describes the effect as "being at one with nature, in its broadest sense, and

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[11] Mies van der Rohe in Christian Norberg-Schulz, "A Talk with Mies van der Rohe," *Baukunst und Werkform*, 11, no.11 (1958): 615-18; in Fritz Neumeyer, *The Artless World: Mies van der Rohe on the Building Art* (Cambridge: MIT Press, 1991), 339.

[12] Mies van der Rohe, "Architect of 'the Clear and Reasonable': Mies van der Rohe Considered and Interviewed," interviewed by Graeme Shankland, *The Listener* (Oct. 15. 1959). This quotation is translated by Russell M. Stockman in Wolf Tegethoff, *Mies van der Rohe: The Villas and Country Houses* (New York: The Museum of Modern Art, 1985), 131.

[13] Bill Hedrich (William C. Hedrich), *Oral History of William C. Hedrich*, interviewed by Betty J. Blum (Chicago: The Art Institute of Chicago, 1994), 143.

with oneself."[14] This comment recalls Grete Tugendhat's "feeling of being" when she lived in her Mies-designed house.

The feeling of being at one with nature is expounded in Martin Heidegger's writing on dwelling. Moreover, Grete Tugendhat's familiarity with his philosophy gives us another reason to think of her "feeling of being" within the perspective of *Being and Time.* Heidegger describes dwelling as being on the earth and as a primary call that falls silent in daily language.[15] In other words, dwelling is a silent staying on earth and this silence, beyond linguistic expression, must be material. The silent dwelling is experienced and much appreciated by Palumbo, who perceived that "the overriding quality of the Farnsworth House is one of serenity. It is a very quiet house."[16] For Werner Blaser, the house is a virtual embodiment of "the icy language of silence."[17] Ultimately, the silent primary call of dwelling becomes the most captivating feature of the glass house, and is heard when the view gets limpid and big. As Mies himself observed, "here we have...the Farnsworth House. We have taken away from it everything we could take away, and what is left, sings."[18]

Irreducible Opacity of the Glass House

The femininity of the body is crucial for maintaining tension in the view of glass. In the drawings, Mies co-presented the female figure with the rigid form of glass walls and steel columns. One of his favorite images is the reclining woman whose tender and curvaceous posture is in sharp contrast with the austere geometry of the space (plate 3.8). Emphasizing the stiff outline of the cruciform column, Mies meanwhile introduced tension through the female body into the interior to highlight the presence of glass walls. Had there been a male figure or an abstract sculpture, it would reduce the tension in the view of glass. For the sake of the unique view of glass, the statue in Mies's glass house has to be female.

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[14] Peter Palumbo, "Farnsworth Impressions," *Inland Architect*, vol.30, no.2 (Mar.-Apr. 1986): 44.

[15] Martin Heidegger, "Building Dwelling Thinking," *Basic Writings*, edited by David F. Krell (San Francisco: Harper Collins, 1993), 349-50.

[16] Palumbo, 43.

[17] Werner Blaser, *West Meets East: Mies van der Rohe* (Boston: Birkhauser, 1996), 20.

[18] Mies van der Rohe quoted by James Ingo Freed, "Mies in America: A Interview with James Ingo Freed,

Mies's approach of juxtaposing the figurative body and the building elements can find its precedent in architectural history. In the Renaissance tradition of architectural anthropomorphism, the measure and proportion of a building were directly related to the human body. A typical example is Francesco di Giorgio's projection of the human body into his design of columns (fig. 3.1). The column was interpreted through a human form. Marco Frascari notices that the abstracting of architectural representation in the modern movement is required by the alienation of human corporality from the business of building.[19] But in Mies's minimalist architectural abstraction, he maintains human corporality through the co-presence of the human form and the building—the female statue and the glass interior. While reducing architectural mass to the minimum, Mies presented the female statue as an independent human form within the glass space. In this sense, Mies should be understood not only in the light of classicism but also of modernist.

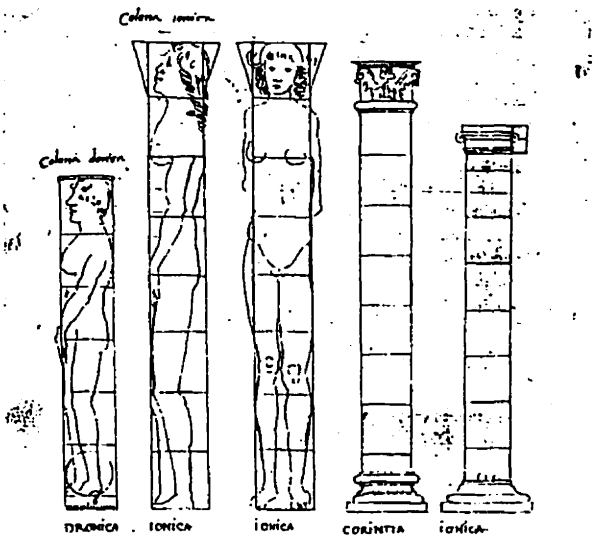

Figure 3.1 Proportioned columns with human body by Francesco di Giorgio.

The shifting of the presence of the female body from the statue to a real person is witnessed in a model of the Farnsworth House where a female doll is placed in the interior (plate 3.9). Though Mies's office had special skills of making figures of sculptures in models, the doll in this model alludes to a real person.[20] The doll shows all details as a micro-inhabitant. When

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conducted by Franz Schulze"; in *Critical Essays*, 193.

[19] Marco Frascari, "The Body and Architecture in the Drawings of Carlo Scarpa," *Res* 14 (Autumn 1987), 123.

[20] I am thankful to Cammie McAtee in the Canadian Centre of Architecture, Montreal, for information about model making in Mies's Chicago office.

compared with the drawings and photographs previously discussed, the presence of a real human figure is a special case in Mies's architectural representation. As distinct from the role of the statue, the doll implies that the house would be fully occupied by its inhabitant.

However, the female inhabitant of the Farnsworth House was not satisfied with being positioned as the dweller of Mies's ideal glass house. In 1953, following the well-known legal battle between Mies and Edith Farnsworth, a journalistic campaign was launched by *House Beautiful.* The editor of the magazine, Elizabeth Gordon, targeted the glass house as a symbol of the International Style, the architect's dictatorship over private life, and the "threat" it posed to the traditional American home. She illustrated that Mies's design controlled the inhabitant by controlling the things in her house and by placing her in a position similar to a statue. She also contended that the "mystical idea" of "less is more" promoted "un-livability, [and] stripped-down emptiness."[21] The campaign extended into the next issue of *House Beautiful* with an article by Joseph Barry, in which Farnsworth complained: "In this house with its four walls of glass I feel like a prowling animal."[22] Life in the glass house was depicted ironically in a cartoon titled "The Emperor's New Palace" following Barry's article. It shows the image of a nude man sitting in the house surrounded and gazed at by crowds of people, much like the effect of being in a shop window.

Both Farnsworth and Mies were deeply hurt, and they both were the victims of the bitter lawsuit and debate. It is reported that the unpleasantness of this experience caused Mies to reduce his commitment to further residential design.[23] Dr. Farnsworth lived alone in the house for nearly two decades and finally sold the house to Palumbo who reinstalled the interior and opened it to the public in 1996.

One issue about the Farnsworth House that has been frequently questioned is its intended occupant. Before their break, Farnsworth was reported to tell Mies to build the house as his

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[21] Elizabeth Gordon, "The Threat to the Next America," *House Beautiful*, vol.95, no.4 (April 1953), 12

[22] Edith Farnsworth quoted in Joseph Barry, "Report on the American Battle between Good and Bad Modern Homes," *House Beautiful*, vol.95, no.5 (May 1953), 270.

[23] This has been reported both by Tegethoff, "Farnsworth House" in *Villas and Country Houses*, 130; and Franz Schulze, *The Farnsworth House* (Chicago: Lohan Associates, 1997), 19.

own, and to consider offering him to use the house.[24] Mies has long been thought to be involved in this project so personally that it is as if he were indeed building a house of his own. He closely supervised each detail during the design and construction, and proposed to design furniture exclusively for the house. Following the break in their relationship, Farnsworth refused the Miesian interior by furnishing the house with her heirloom pieces and Scandinavian design. Although her furniture looked strange in Mies's space, they indeed helped outfit the house into a real home for her. When Palumbo, whose role in the house is more of an art collector than a real inhabitant, purchased the house, it was restored with Miesian furniture in order to reflect more closely the architect's original intention.

The fight between the architect and the female inhabitant around the Farnsworth House provoked feminist studies on modern domestic environments. Alice Friedman, for example, in her study on the Farnsworth House, highlights the issue of gender in the modern glass house and points out how the subtleties of the interior profoundly alter the experience of the inhabitant.[25] Her study re-poses the question: who is the ideal dweller of Mies's glass house?

Wolf Tegethoff observed that Mies had a singular vision about the ideal dweller of his houses: "Mies's private commissions and projects were conceived essentially for occupancy by a single client...With little concern for the habits and ideals of the average client, Mies must have *envisioned* [my italic] a rather different type of man for his buildings."[26] The fact that Mies usually included in his house design, even in a family house, two bedrooms instead of one master bedroom, or two single beds that could be easily separated with a screen within a bedroom has manifested his idealist tone of the proposed inhabitant.[27] This might be related to his personality. Mies insisted: "I don't belong to anyone who cannot live alone."[28] These words recall the alienated body of the statue. The ideal dweller of his glass house must live alone.

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[24] Myron Goldsmith, *Oral History of Myron Goldsmith*, interviewed by Betty J. Blum (Chicago: Art Institute of Chicago, 1990), 112, 117.

[25] Refer to Alice T. Friedman, "People Who Live in Glass Houses: Edith Farnsworth, Ludwig Mies van der Rohe, and Philip Johnson," in *Women and the Making of the Modern House: A Social and Architectural History* (New York: Harry N. Abrams, Inc., 1998).

[26] Tegethoff, "From Obscurity to Maturity," in *Critical Essays*, 57.

[27] Refer to the plans of the Model House at the Berlin Building Exhibition, Gerick House and Ulrich Lange House in Chapter 2.

Nevertheless, Mies's vision of the ideal dweller is also related to the issue of gender. The dark figures in the design drawings and the opaque statues in the photographs show the image of a female body. The only exception to this was in the case of the Golf Club of Krefeld, a typical masculine field (plate 3.10).[29] The exception may suggest that Mies used the gender differentiation as a means to specify the space, and confirms indirectly that the installation of the female body in his house design is intentional rather than occasional. From this viewpoint, the presence of the single female inhabitant in the Farnsworth House matches the image of the ideal dweller of the glass house that Mies himself had envisioned.

The presence of the female body in Mies's works has been questioned in research from various aspects. Reading the symbolic image of a female body in a glass box, Paulette Singley, for instance, concludes two modes of spatial occupation in Mies's domestic space: a tactile understanding of form arrived at through the body, and a cognitive appropriation of space through optical perception. Criticizing Mies for exploiting female figures as the instrumental object of architectural desire and as the silent inhabitants of the "Bachelor Machine," she interprets the installation of the sculptured women in relation to reflective and transparent surfaces as akin to voyeurism that encourages looking but forbids touching.[30]

The model of voyeurism assumes that to be looked at means to be displayed and to be controlled. I would argue that the female body in Mies's houses is *naked* rather than *nude*. Studying the representation of female body in arts, John Berger differentiates nudity and nakedness. According to him, to be naked is to be oneself and to be nude is to be seen naked by others. A naked body has to be seen as an object in order to become a nude. Nakedness reveals itself, while nudity is placed on display.[31] To be nude is to be objectified in the world. To be naked is to be in the world.

The analysis that interprets the glass house as a mechanism of voyeurism observes the female

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[28] Franz Schulze, *Mies van der Rohe: A Critical Biography* (Chicago: University of Chicago Press, 1985), 249.

[29] This observation is based on my survey of *The Mies van der Rohe Archive*, vol.1-20 (New York: Garland Publishing, Inc., 1986-92). Drawings that contain clear human figures have been included in this thesis.

[30] Paulette Singley, "Living in a Glass Prism: The Female Figure in Mies van der Rohe's Domestic Architecture," *Critical Matrix* 6, no.2 (1992): 47-77.

[31] John Berger, *Ways of Seeing* (Harmondsworth: Pelican, 1977), 54.

body as a displayed object. The glass house is gazed at from *without*, and the female figure is seen as a representation of nudity. Such an external point of view was indeed also held by Edith Farnsworth herself. She complained: "I can't even put a clothes hanger in my house without considering how it affects everything from the outside. Any arrangement of furniture becomes a major problem, because the house is transparent, like an X-ray."[32] She later told *Newsweek* that Mies wanted to build the interior partition only five feet high for reasons of art and proportion. She refused the plan for the reason that "I am six feet tall, and I wanted to be able to change my clothes without my head *looking* [my italic] like it was wandering over the top of the partition without a body."[33]

For Mies, the view of glass has to be perceived from *within*, so that the mind opens to the outside and fully embraces nature. With such an internal point of view, exposure of the interior was not considered a problem. He approached the house from a different perspective: "I would think that here where everything is beautiful, and privacy is no issue, it would be a pity to erect an opaque wall between the outside and the inside. So I think we should build the house of steel and glass; in that way we'll let the outside in."[34] Through letting the outside in, Mies realizes the truthful dwelling—*being* in the world. Within such a boundless view, the dweller of his ideal house is "naked" in Berger's sense.

Nakedness is to be oneself with keen self-awareness. Once the self is faced, uneasiness emerges. Like the image of "I" in a mirror, the unique view of glass triggers the inhabitant's care, just because truthful dwelling is rare. The heated debate on the Farnsworth House demonstrates that we are in the plight of dwelling. Heidegger argues that to solve the plight of dwelling is not simply to produce more houses; the proper dwelling starts from searching anew for the essence of dwelling and learning to dwell.[35] In this perspective, the debate on the modern house and domestic privacy fused by the Farnsworth House can be understood as our thinking of dwelling and the role of the body in dwelling.

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[32] Farnsworth quoted in Barry, 270.

[33] Edith Farnsworth quoted in "Glass House Stones," *Newsweek*, vol.41 (June 8, 1953): 90.

[34] Mies van der Rohe quoted in Edith Farnsworth, "Memoirs," Farnsworth Collection, Newberry Library, Chicago, chapter 11, unpag.

Based on the above arguments, the gender of the body should not simply be equated to the matter of sexuality. Mies gendered the body in the glass house as female. Christine Magar infers that the existence of the sculpture means Mies treated the glass box as male and compensated for its inadequacy by adding a female body into the interior.[36] Such an analysis based on the metaphysical dualism of male/female does not provide a deep understanding of the significance of the female body in the glass house. There is indeed a visual contrast between the opaque statue and the glass space, but as pointed out before the femininity of the body is to enhance a counter-foil effect against the rigid geometry rather than to work as compensation.

Besides the direct visual effects, deep significance can be drawn from the presence of the female body in the glass houses. The fact that Mies sketched the figure of a reclining female body in his own house, the Mountain House (plate 3.11), reminds us that the use of the female body is relevant to his fundamental understanding of human dwelling. In this drawing, Mies used hatching lines for delineating in the same style the natural landscape and the house, and this brings about a sense of unity between nature and human dwelling. Through the glass wall, the female statue enjoys the openness in a free manner. Mies kept sketching the Mountain House after his emigration to the United States. The main subject of his sketches is always to coordinate a female figure and the house with nature.[37] However, it is agreed that Mies never really considered the possibility of its construction. It remains a study on ideal dwelling.[38]

The presence of the female body in Mies's design has to be considered in its context—the specific view of glass—rather than to be cut off from the space and isolated as a displayed body of female. When the dimension of sexuality is emphasized without enough attention to the presence of the body within the concrete view, there is a risk of generalizing the body

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[35] Heidegger, 363.

[36] Christine S. E. Magar, "Project Manual for the Glass House," in *Architecture and Feminism*, edited by Debra Coleman, *et al* (New York: Princeton Architectural Press, 1996), 107.

[37] Mies continued exploring the Mountain House until the 1940s when he sketched frequently on notebook papers. Some of these sketches are in the collection of the Canadian Centre for Architecture (CCA).

[38] The same viewpoint has been expressed by Philip C. Johnson, *Mies van der Rohe* [New York: The Museum of Modern Art, 1947], 96; Glaeser, "Mountain House," unpag.; Schulze, "Mountain House," *The Mies van der Rohe Archive*, vol.4, 116; Tegethoff, "Mountain House," *Villas and Country Houses*, 120.

into a universal sign of "she," and objectifying it as a victim of voyeurism. The essence of the female body—the remaining opacity in the big view generated by glass—is thus veiled.

Standing in the court or in the corner of the living room, the opaque body of the female statue deepens and stretches the view of glass. The active relationship between the spectator and the statue recalls Jean-Paul Sartre's thoughts on the existence of the human body. He writes: "I exist for myself as a body known by the Other."[39] My body escapes me and is there for others. *Being-there* is precisely the body. In the glass house, the spectator resigns himself to seeing himself through the other's eye—the statue as the other being.

The other's eye provides a concrete point of view through which the view of glass is anchored, and this point of view is concrete because of the opaque body. Since the other's *eye* can only be held by a human body, Mies's selection of the figurative sculpture instead of an abstract piece can be understood as his endeavor to represent the other's eye in his domestic spaces. The otherness of the eye is expressed by the opaque body in the aura of glass. Its feminine posture and contour without other details enhance the opacity and remoteness of the body to the maximum. Hilderbrand advanced that special attention must be paid to the silhouette rather than the detailed feature of the body in order to see a sculpture in distance.[40] In another sense, the presence of the statue as a block of figurative opacity instead of a realistic body draws depth of view and registers tension in the space.

Mies's humanist propensity is related to his seeking the truth of human dwelling through house design. For him, "a natural, human characteristic [of architecture] is to consider not only the purposeful but also to search out and love beauty."[41] The classic incorporation of the human body into architectural mass is transformed in his glass house as an independent presence of an opaque body in the transparent space. This opacity in the transparency reveals the otherwise hidden essence of human dwelling that can only become obvious after the minimalist abstraction. In this perspective, Mies's abstraction should be regarded as a

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[39] Jean-Paul Sartre, *Being and Nothingness* (New York: Washington Square Press, 1992), 460.

[40] Hildebrand, 259.

[41] Mies van der Rohe, "Build Beautifully and Practically! Stop This Cold Functionality," *Duisburger Generalanzeiger* 49 (January 26, 1930): 2; translated by Mark Jarzombek in Fritz Neumeyer, *The Artless World: Mies van der*

process of extraction for the truth of human dwelling.

The understanding of the primordial materiality revealed by the glass house can be extended further by Gaston Bachelard's study on the poetics of space. He characterizes the utmost feature of the house as a material paradise full of maternity that nourishes human being in its bosom. "The Mother image and the house image are united."[42] The female figure in the glass house therefore plays an irreplaceable role in the essential connection to human dwelling. It is not that the female body cannot escape the architect's control, rather that the architect cannot get rid of the image of maternity in building human dwelling. Mies's glass houses prove that a top priority of house design is to materialize the maternal, which is opaque and impenetrable to the mind, to ensure peace and protection for human beings.

Though the female statue finally disappears in the Farnsworth House, the primordial opacity remains there. Hidden shadows underneath the elevated glass box are disclosed by my own photograph of the Farnsworth House (plate 3.12). The center of the opacity is a dark conduit containing pipes for water, electricity, sewage, etc. The conduit acts as in fact the umbilical cord connecting the house with the mother earth. No matter how transparent the glass house looks and how decisively its form cuts itself off from the traditional mass through abstraction, there is still an opacity that anchors the house "to the earth" and makes it a truthful dwelling in the Heideggerian sense.

The irreducible opacity connecting the house to the mother earth provides a clue to understanding the gender issue of the statue. I would call this irreducible opacity the *maternal materiality* of dwelling. It is not because of the representative gender but because of the essential connection with Mother Nature and human existence. The maternal materiality insures protection and the well being of ideal dwelling. Mies announced that the open spatial arrangement should yield "a protective and not an enclosed space,"[43] in which modern man would find a domicile commensurate with his needs for privacy and freedom. The opacity in transparency was relevant to his meditation on the ideal house in the new epoch.

Rohe on the Building Art (Cambridge: MIT Press, 1991), 307.

[42] Gaston Bachelard, *The Poetics of Space* (Boston: Beacon Press, 1994), 7, 45.

[43] Mies van der Rohe quoted in Neumeyer, "Barcelona Pavilion and Tugendhat House," unpag.

The irreducible opacity also forms an essential connection between architectural body and the mind. On the essence of mind, Gilles Deleuze notes: "The mind is obscure. The depth of the mind is dark, and this dark nature requires a body."[44] Mies wrote in his notebook: "Formed body is expression for how the soul maintains itself towards the surroundings and how it masters them."[45] The opaque body expresses something in his radical vision of almost nothing that the human mind can conceive, but the corporal eye cannot see. Through the opaque body, the eye may at once perceive this something that is otherwise hidden in the depth of the mind. From this viewpoint, the opacity of the statue acts as the medium between Mies's free spirit of modern dwelling—the vision of glass—and the corporeal body of the glass house.

The historical significance of Mies's modern domestic architecture is extended by the enlightenment of this opacity in transparency. Building with glass, Mies not only displayed glass as a modern material, but also attempted to realize his vision of glass—a decisive departure from the traditional heavy mass. Reyner Banham noted that the Farnsworth House was "the admiration of...an architectural concept that is taken to its outermost limits...a demonstration of how far architecture can go."[46] When the mass of the house is abstracted to the minimum through glass, the otherwise hidden substance of human dwelling is unconcealed. Mies's glass house then provides us a unique chance in the history of modern architecture to discover the primordial materiality that could only present itself after the radical abstraction of "almost nothing."

The "feeling of being" in the almost-nothing domestic environment is too heavy for a single female inhabitant to shoulder. Edith Farnsworth, after battling outsiders' curiosity and her self-uneasiness, finally left the house in 1971. She wanted nothing but to be invisible:

> I would prefer to move as the Old Quarter of Tripoli, muffled in unbleached homespun so that only a hole is left for them to look out of...[and the world outside would] not even know where the hole was.[47]

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[44] Gilles Deleuze, *The Fold: Leibniz and the Baroque* (University of Minnesota Press, 1993), 85.

[45] Mies van der Rohe, notebook page 59; in Neumeyer, *Artless World*, 288.

[46] Reyner Banham, "Mies' Farnsworth House Wins 25 Year Award," *American Institute of Architects Journal* 70 (1981): 9.

[47] Farnsworth, "Memoir," chapter 14, unpag.

The new owner was content to leave the Farnsworth House on its own, now opened to the public as a jewel of modern architecture. The house now stands among the greenery in sheer serenity. The ideal dweller of the glass house is discovered by Mies's grandson Dirk Lohan, who helped Pulambo restore the house. He notices:

> [The Farnsworth House] owes its stature as one of the highlights of modern architecture to its spiritual rather than its functional values...Mies, in designing this house...had his own ideal retreat in mind. If anyone could have lived in it, it certainly would have been the *philosopher* [my italic] Mies van der Rohe himself.[48]

Mies himself never lived in the house. At the age of seventy-five, he insisted in an interview that the house was not really understood and he dreamed for a house of his own.[49] A photograph captured an illuminating moment: Mies was scrutinizing a model of the Farnsworth House in front of a drawing of his own Mountain House on the side wall (fig. 3.2). The house for the architect himself and the house for the ideal dweller are meaningfully co-presented here. Peering at the Farnsworth House from outside in, the mind of the architect penetrated the space and inhabited therein as a true dweller would.

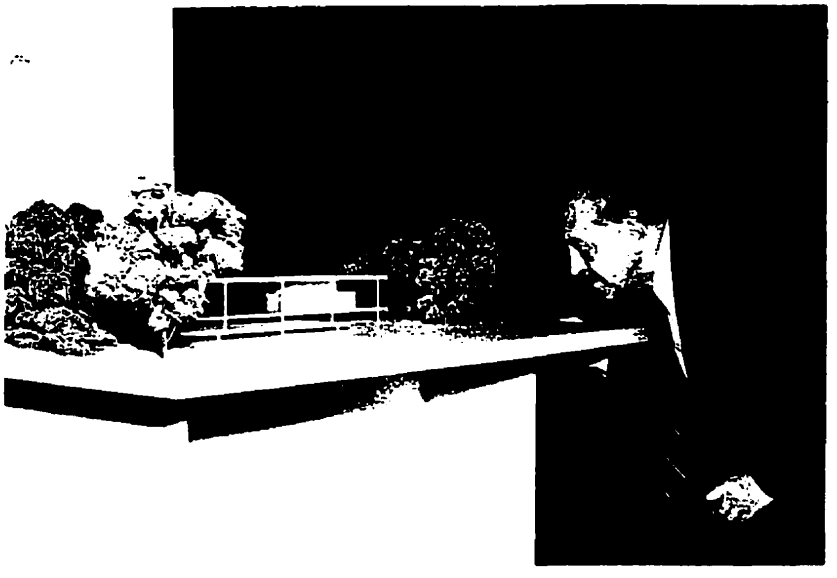

Figure 3.2 Mies van der Rohe peers in to the model of Farnsworth House at the Museum of Modern Art exhibition, New York, 1947.

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[48] Dirk Lohan, "Mies van der Rohe: Farnsworth House, Plano, Illinois, 1945-50," *Global Architecture Detail*, (1976): 4.

[49] Mies van der Rohe, "Architect of 'the Clear and Reasonable,'" 620-22.

Appendices
Interviews

Appendix A Interview with George Danforth

(This interview was taken on July 14, 1999 in George Danforth's apartment at 880 N. Lake Shore Drive, which is the first glass-walled high-rise apartment designed by Mies van der Rohe. During the interview, Philip Johnson's monograph of 1947 was used to show examples of Mies's drawings. The page number of each drawing that was mentioned is given in brackets. Danforth was Mies's student and colleague in Illinois Institute of Technology. The Museum for a Small City was his master thesis project under Mies's supervision. He redrew many of Mies's European works and developed a drawing style close to Mies's. Many drawings included in 20-volume *The Mies van der Rohe Archive* of which he is one of the editors is indeed his re-drawings. He is a professor of architecture, and was the director of the School of Architecture, Planning of IIT, taking the same chair that Mies had.)

Wu: There is a sharp contrast between the sculpture and the glass space in Mies's drawings: solid vs. light, opaque vs. bright. Is that his intention?

Danforth: These things were out of Germany, when the solid sculptures by Picasso, Lehmbruck and Rodin were very popular. Mies knew them well of course. They were, therefore, the sources we began to investigate for the collages in America. They did probably have the effect to create a contrast, but he did use them also for scale. The collages that had Paul Klee and Picasso's drawings on illustration board drawings were to show how artworks could be shown in a museum like the Museum for a Small City, which was my uncompleted thesis.

Wu: Why did Mies choose the sculptures that were over sized?

Danforth: Very possibly. One of the reasons is scale. At the same time, I think he used those pieces of sculpture to indicate not what their real sizes might be but their relative sizes to the composition in which they were placed. If you have a sculpture like this size, it becomes bigger when you come closer. It depends on the point of vision and where it is placed visually in the composition.

Wu: The figures, either in collages or sketches, were usually close to the vanish point. What did Mies want to express through these figures?

Danforth: In a perspective like this [p. 177], the idea here is that he chose to give scale to the space. The sculpture is of a human being. He was not indicating the details of the person. It was used as a figure placed in the scale and dimension of the perspective. The painting of *Guernica* by Piccaso, 20 feet long and 12 feet high, is very big [p. 176]. The idea in a museum for a small city here is that it can be a wall element itself. We chose the cuttings of the photographs or posters, and placed them on the drawing. All these things were taken to show how works of art in a museum could be placed. Paintings and sculptures on the area of the drawing are to show the impression of the building itself. Here, he used water, as if it looked like a pool or was in the woods. Here is the one point perspective [p. 175] which shows the building from distance. This one has a Maillol's work [p. 176]. He was very fond of that figure as a reclining element. He seemed to like that. I remember showing these photographs while working with him; then he began to use it abstractly as a sketch, not as a collage. Those were dark and solid sculptures of course. He did not use any plastic sculpture, those that were "modern" at that time.

Wu: It seems Mies focused on the posture rather than other details of the sculpture.

Danforth: I think that is an interesting point. I did not notice that. They do not look like sculptures. They look more like people. You even thought they were standing there talking. The Hubbe House is quite early (p. 120), before he came to America. He was using the sketch of a figure then. Even the sculpture [by Georg Kolbe] in the Barcelona Pavilion has a similar feeling to this.

All these drawings with collages of paintings and sculptures I have shown here are made in America— *Guernica* by Picasso and the Braque which hung free in space. He used them a lot, probably more than anything I saw in the German materials that MoMA has, when Franz Schulze and I worked for the Garland Publishing/MoMA catalogue of the 20 volumes of Mies's materials at MoMA. I do not remember seeing any such drawings from his works in

Germany where he treated the collage technique in the same way as we did in America.

In fact, the first time he used the collage technique was in the Bismarck Monument project. In the Bismarck Monument project there is a drawing overlooking the Rhine River [p. 17]. The original is now in New York. Part of it used collage technique. Things were pasted on. It is not entirely a drawing or rendering. Many are wondering whether he was the first one using this technique when he did this in 1912. Certainly, he was the first in architecture, but I do not know whether Braque and Picasso did it about the same time or a little before, because they also started using collages in their abstractions. It was not until he came to Chicago that he began to do some presentations using the collage technique, which was quite a new thing to the students here. It was just marvelous to begin working in that idiom. It opened a new way of seeing.

Wu: Was there any guideline in choosing the images for collage?

Danforth: How did he choose the pictures and figures for collage? We all worked together. He would not say, "Do this, do that." He said: "Let us try this, try that." So if we went through illustrations from magazines, posters and books, and found the kind of thing that was proper with what we wanted to show, we would make a drawing of its size for the area, cut it out, lay it over the drawing and look at it. It was quite spontaneous. All of us were interested in doing that. That was a way to create a composition for the perspective.

He liked Braque and Picasso's works very much. Those were the sources that we began to investigate. He determined how you could show the idea through a drawing. The character and quality certainly was part of his thinking. Back to the exhibitions in Germany, he did not use pictures very much. He did not do anything in Germany that came to the level of employing the collage as he did in America.

Wu: It seems that Mies always include female statues.

Danforth: The things that were available to him were mostly Rodin and Lehmbruck. He

liked those things. Those were all females and were there in the medium. It just happened. I think, if he could find a place for Michelangelo's *David* and it was in the right scale, he would also choose it. There were not many photographs of those though. Back to the later 1930s, we did not have those sources of pictures. Therefore, he used the kind of things that he knew from his living in Europe.

Wu: He never used anything by Rodin, as I know. Why?

Danforth: No. I never asked him and there is no clue. I guess he preferred Maillol and Lehmbruck as artists. But there was not an intention of eliminating somebody else. I think it was just what was available to us to work with this new presentation technique. We had to either make a sketch of the idea, or get a picture of it to cut it out and lay it in the drawing. That's collage. In the old program of the Beaux Arts, we worked on life drawing and had a sculpture class, but we never brought them into a relation with the architecture as we were doing with Mies.

Wu: After the Farnsworth House, Mies did a few commissions and studies of house, but all of them almost reiterated the same spatial conception of the Farnsworth House. Could I say that Mies treated the Farnsworth House as an ideal house he had ever built?

Danforth: Yes, I think so. He was very happy with the house, though it was not his time to work on the interior, which he would like to have. It is not until Peter Palumbo came to buy it, and was able to do something on it after Edith left. She had her farm furniture. They were nice but it was not the spirit of the house. When she sold it to Palumbo, he realized he wanted to put it back and made it as Mies wanted. That was how it happened. It was all very fortunate that there was somebody like Peter Palumbo who had that ability and money to do it, and had the intention and the desire to do it.

Wu: Mies built few houses in America, why?

Danforth: There was no client. When Mies came here from Europe, we were going into

the war. We were not building houses. The last house he began while he was still in Europe was the Resor House, which remained a project and was the first design he did in America. Then the whole direction of his work turned to apartments. Also the school project came along, the development of the IIT campus, and then these buildings, this one we are in and that one over there. Until the Farnsworth House, he never did a residence. He was very interested in residence design, but you have to have clients. His interest then was in the technology of tall buildings.

Wu: How about the McCormick House?

Danforth: The idea of the McCormick House came when he was working on these buildings: 860/880 Lake Shore Drive. McCormick and Mies had the idea that maybe the same system could be used in a housing development: the basic form and structure where you had the kitchen and bathroom and you could do the rest whatever you wanted and put them together. That should not be a very expensive house. In the case of the McCormick House, it is very cheap. McCormick must have had the idea to develop a serial of houses where the structure was prefabricated and you could do inside whatever you wanted beyond the basic core.

Wu: Glass houses, like the Farnsworth House, attracted Mies very much.

Danforth: Because Mies felt that the idea of the glass box was a thing to itself, and another thing was the pavilion. The enclosed porch was not this kind of things. He did not like it. Edith had done that. That was with Bill [William Dunlap]. The first one did have a screened porch. He thought about it, but then he changed it. He always put things on and off. You can see that screen in the first model [p. 167]. But that was a problem then, because there were a lot of mosquitoes. Mies was thinking of more of the purity than the context.

Wu: Did Mies ever stay in the house?

Danforth: Not to my knowledge. When the house was finished, he and Dr. Farnsworth

were not on good terms. Palumbo started to work on the house when Mies was still alive. He did a lot of work on it and on the landscaping of the property. Lanning Roper did a great work on it. The Palumbos do stay there. He brought a house in the town of Plano. It is an old Victoria house. When they come here from England, the family stays there. During the day, they all go down to the weekend house [Farnsworth House].

Wu: Dr. Farnsworth complained a lot about the privacy of the house.

Danforth: She was always conscious of that. When you see that house, you will not be aware of the outside. You are not aware of anybody who is looking at you. You are in the forest. You are in the woods. The river is here, and the trees are all around. When you drive into it, you do not see it at all at first. You probably can see it from the bridge if you look carefully.

Mies maximized the minimal. He was a minimalist in a way to see the structure and space where you could have a high architectural expression. Like this apartment here, he did nothing to the interior other than the kitchen and the bathroom. The occupant is quite free to readjust the room within its spatial limitation. Let people make what they want inside. I think it is very successful. I have been here since 1977. There are certain people here who are the original owners or tenants.

Wu: Was it the similar idea in the 50 by 50 house?

Danforth: Yes, that was a research project with students. He worked with some of the graduate students. There are three kinds: 40 by 40, 50 by 50, 60 by 60. As you know from the drawings and photographs, the models took various structural systems to make it possible to be free on the inside, except for the things you had to have, for example, utilities. He did hope people had the sensibilities to accept the possibility. Many people are very culturally developed and try new things. There were more open-minded people for this possibility. But none of these were built. There was no opportunity to really explore the possibilities.

Wu: How do you feel living in this glass-walled apartment?

Danforth: Look at the lake. I love to see the lake and the boats through the glass wall. At the same time, I am here at home, not in a jail. I love it and am very happy here. Most of the people here feel very happy, and they adjust the apartments in all ways.

Appendix B Interview with Franz Schulze

(This interview was taken in Chicago on July 16, 1999. Franz Schulze is a renowned Mies researcher, Mies van der Rohe's biographer and one of the editors for 20-volume *The Mies van der Rohe Archive*. His latest publication is *The Farnsworth House* in 1997. He is the Betty Jane Hollender Professor of Art at Lake Forest College, Illinois.)

Wu: Mies did few house designs in America. In terms of the idea of glass house, none of them surpassed what is fulfilled in the Farnsworth House.

Schulze: Yes, that is true. The Resor House has a living area on one end and service area on the other. Then, there is a long living space in between. That interior space is walled with glass. I think that is true also of the Caine House. But as far as the pure glass house concerned, the Farnsworth House is the first.

Wu: It maybe is also the last.

Schulze: Yes, that's true. That was the only house he did with glass on all four sides. The Mountain House in Germany was a forerunner. You can also argue that the Court Houses, going back to the early 1930s, had glass walls for looking out on interior courts. Glass always meant a great deal to him. The Tugendhat House was the major house he finished in Europe. You can see some of the drawings he did. There is the Gericke House, never built. That too was very open and it had quite some glass walls.

When he began working on the Farnsworth House, his ambition was much more modest than it had been earlier. For example, he had three designs of the layout in different dimensions. One was larger and cost more, and one was smaller and cost less. The one he finally used is 77 feet in length, 28 feet in width in interior. Myron Goldsmith who worked for the Farnsworth House recalled that they considered using limestone, blue stone, tile and concrete, as well as travertine for the floor. The decision to use travertine is made by Dr.

Farnsworth herself. Mies wanted it, but she was the one who agreed to spend the money for it.

Wu: What did the relation between nature and the interior of the house mean to Mies? I remember he said "from inside to outside."

Schulze: That means a great deal. Mies thought one of the great things about the Farnsworth House was that you were in nature yet totally surrounded by it. He was concerned about what it looked like from the inside to the outside.

Wu: Did Mies ever talk about looking "from outside to inside"?

Schulze: Not that I know of, in so many words. Philip Johnson has spoken about the relationship too. Johnson had lamps on the ground outside the house. He said one of the most fascinating things about his glass house was that when you turned on the lamp outside and turned off the light in the house at winter nights, the snow fell and you felt as if the house had been lifted.

Wu: The landscape designed by Lanning Roper after Palumbo's purchase is wonderful. Now the Farnsworth House is visually well protected by the dense woods. It seems to me that the woods and the lawn present a sense that the house is surrounded by a wall of trees and faces an open yard— which instead expresses a notion similar to the Court Houses of the 1930s. Do you think Roper's design might change the essence of Mies's design?

Schulze: Well, that is a good point. Keep in mind that Mies was dead before Roper was hired by Palumbo. The Court Houses are, of course, surrounded by material walls. I think the Court House was just Mies's idea of experimenting with possibilities. He did not have any clients for them, so he designed them in a number of different ways. Anyhow, the Farnsworth House is a building developed more out of the Mountain House rather than the Court House. The glass wall is the thing they have in common.

Wu: I talked with Professor Danforth yesterday about Mies's drawings. My main question is why there is always a sharp contrast between the transparent glass spaces and the opaque bodies of figures in his drawings. What is your idea about this?

Schulze: When Mies collected art, he did not collect abstract art. He collected Braque, Picasso and Paul Klee. All of them were figurative artists. I mean they approached abstraction, but they never went all the way. I believe the reason he liked figures was that he wanted something as counter-foil, something opposite to his building rather than like it.

Wu: Why did he insert these "dark spots" into his so-called "purest" crystal prisms?

Schulze: As a counter-foil. For example, in the Barcelona Pavilion, when you go to that pool, you see that figure by Kolbe. If you see a piece of an abstract sculpture there, I think it will be less effective. I did have one conversation with Mies and asked him why he did not have any paintings by Mondrian. All he said was: "Why do you have to have everything?" It was Mies's way. He just shifted away from the subject. I do believe it, especially when you speak of those drawings with sculptures in them. They look like Henry Moore and Lehmbruck. And the Concert Hall has one by Maillol. The Maillol, by the way, he learned from Peter Behrens, his boss in Germany. I think that he wanted something not just different, and not exactly opposite. The best word I can find in English is counter-foil. Have you seen in the Federal Center that huge Alexander Calder piece? That was not Mies's idea. He was dead by that time when it went up. But the Calder is colorful, very biomorphic and curvilinear, and it works better that way. Had Mies been there, I do not know what he would choose. That obviously is a too great space for just a small figure, a life-size figure.

Wu: It seems he focused more on posture and movement of the body than on the face when he picked the statues.

Schulze: Agree. I think face did not interest him much. Structure did. Think of the human body as a piece of architecture. The Maillol is very stable. The Lehmbruck is restful. So is the Henry Moore. I do not think the movement was a concern as much as just the

biomorphic, the human quality without necessary attention to the face. The face is not a great concern.

My own personal feeling is that the meaning of those figures, also the paintings he used in drawings, was basically formalistic. *A* painting or *a* sculpture, it could be any number of other things. Again, he did not choose Mondrian or Malevich. He chose something that had certain activity in it and certain recognizable figure in it. When you look at it, you say: "Ah, it's a painting!" If it is a Malevich, how do you know? It is so minimalist. Maybe it is a wall. So the painting, again, is taken to show you it is a painting and different from architecture.

Wu: In terms of the use of artworks in drawings, what do you think of the differences between his works in Germany and in America?

Schulze: In the Tugendhat House, there is the Lehmbruck, the torso. That would be 1928-30. In the 1930s, he did different sorts of drawings. In the Ulrich Lange House, there were drawings using wall paintings, which looked very like the one you saw in the Museum for a Small City. The American design did grow out of the German. It is more interesting to think about the differences between American and German works than the similarities. It is an evolution.

Wu: What is Mies's idea on privacy in the glass house?

Schulze: Well, I think first of all Mies was primarily interested in being an artist as well as an architect. In a sense, the client of the Farnsworth House was not Dr. Farnsworth but Mies himself. He did this to please his own ideas. He wanted to make a glass house as minimalist as possible, or very nearly possible. Since the site was out in the country and away from civilization, it seemed to him OK to do it this way. If this building were in downtown Chicago, he would have never done that. The apartment building in Lake Shore Drive is also floor-to-ceiling glass, but you can put curtains over it. You can also do it at the Farnsworth House, but ideally, you want to open the scene up and to have a view of the river and the meadow behind the place. Though outsiders now do find their way in, I think he had

reasons for building it as it was, as far as he was concerned privacy was the secondary consideration. He was mostly thinking that the house was out there totally in the free, in the wild, that there was very little likelihood that anybody would intrude upon Dr. Farnsworth. So she could walk around naked if she wanted to. Unfortunately, she learned to regret about that later, when people begun to show up. She did not feel comfortable at all. That was when the problem developed between them.

I would say, now we get the level of personalities. Farnsworth knew from the very beginning what kind of house it was going to be. I think she was totally seized by the idea, totally captured by the fact that she was working with this distinguished architect. Did she fall in love with him? I do not know. But I agree there was once a special bond between them, and she cherished it very much. In a certain sense, her animosity towards Mies came because he did not return the affection that she wished should belong to her alone. Or, if not the affection, certainly the friendship. She wanted to be someone special in his life, and she deserved that in a sense. She was a bright woman and she knew the value of this house. But Mies was the kind of man who I think would dismiss her with very little feeling. Mies cared more his art and architecture than anything else, more than his country and his family.

Wu: To my knowledge, Mies did not react much to the debates targeting him and the International Style, which was fused by the legal fight around the Farnsworth House and even Frank Lloyd Wright was involved. Could you tell me something about Mies's reaction?

Schulze: That bothered him a lot, and he did not like Wright's remarks either. The relationship between these two men was close at one time when Mies came over to Chicago in 1937, before he immigrated fully. Mies visited Taliesin for several days and the two men got along very well. Things began to cool at the time of Mies's exhibition at MoMA in 1947, when Wright made those remarks on Mies's notion *Beinahe Nichts*, almost nothing, which means keeping as simple as you can. During that exhibition, Wright one time said, "there is much do about almost nothing," which was taken off from the Shakespearean play "Much Ado about Nothing."

Mies recognized he was dealing with materials that had to have some substances, but he wanted to keep them as minimal as possible. That was an idea he cared about. Very minimal, "*nichts*". Substantial, necessary so, but keep it as little as possible. So when Wright made that remark, Mies didn't take it kindly. From that point on, their relationship began to cool. By the time he did the Farnsworth House, Wright was opposed to him. He made those remarks about the Bauhaus architects. There was no friendship left between Wright and Mies at the end. It was especially apparent when their students got together. The two great men could stand apart without paying attention to each other. However, when Wright's students and Mies's students got together, they would argue seriously.

Wu: Many commented the Farnsworth House as a temple. Is there any relevance with Mies's religion aspect?

Schulze: Mies was raised a Roman Catholic. I believe his training as young boy in a Catholic school remained with him in some form. He talked a great deal about spiritual qualities in architecture, though it was a problem with German language, for *geistlich* meant spiritual but also intellectual. He did become interested in religious factors at the end of 1920s when he ran into a young priest in Berlin, and also of course there was the Catholic theologian-philosopher Romano Gaurdini, with whom he spent a lot of time. He did think a lot about religion.

However, I am not sure whether it is the same thing as a belief in God. I think probably he did not even believe in God. But there is an interesting passage in *Memoirs* of Dr. Farnsworth, in which she recalled a conversation with Mies about a book *What Is Life?* written by the great scientist Erwin Schrödinger. Mies was reading it then, and he did not fully understand what Schrödinger was talking about. In the reflection on what is life, Schrödinger did not mention about what would happen after we die. That worried Mies.

Wu: The Farnsworth House reminds me of a Japanese teahouse. In his new book *West Meets East*, Werner Blaser gives a comparative study between Mies's design and the philosophy of Chinese sage Laotse [Lao Zi]. What are your opinions on the issue of oriental

influence?

Schulze: Mies was conscious of Japanese architecture. I spent some time when I was researching the biography with a German architect Sergius Ruegenberg, who was Mies's former assistant in Berlin. Ruegenberg claimed that in the 1920s Mies was interested in Japanese and African native architecture. As far as Japanese works were concerned, some of the works seem to me very reminiscent of Mies's. Now the question is this: did that influence him, or did he look at it and say "that touches and sparks me. I like it"? It may be a kind of sympathy rather than an influence from it.

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Plates

Drawings and Photographs of the Glass Houses

Plate 1.1 Exterior perspective from the street, Friedrichstrasse Office Building, 1921.

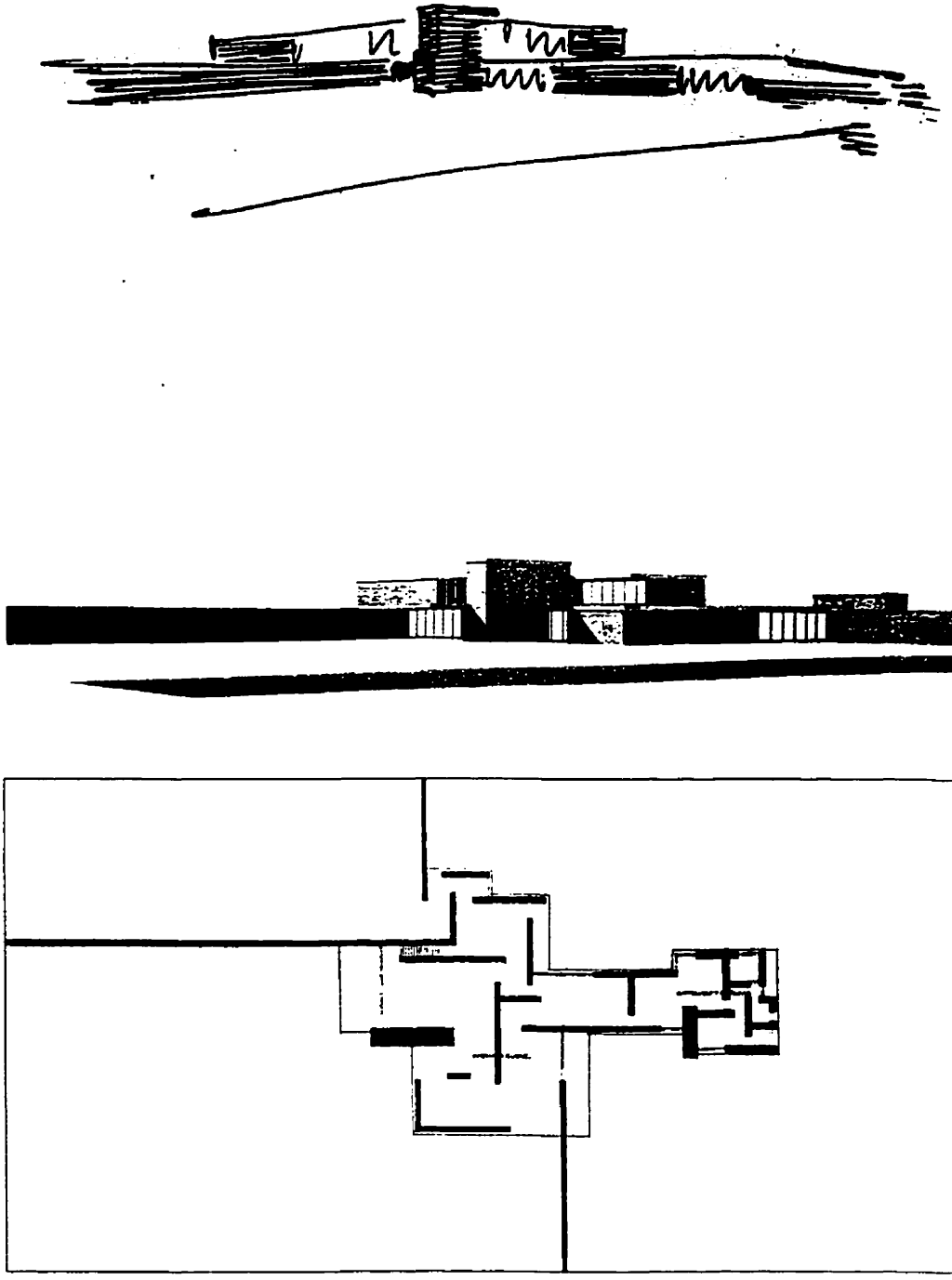

Plate 1.2 Plan and exterior perspectives, Brick Country House, 1923/24.

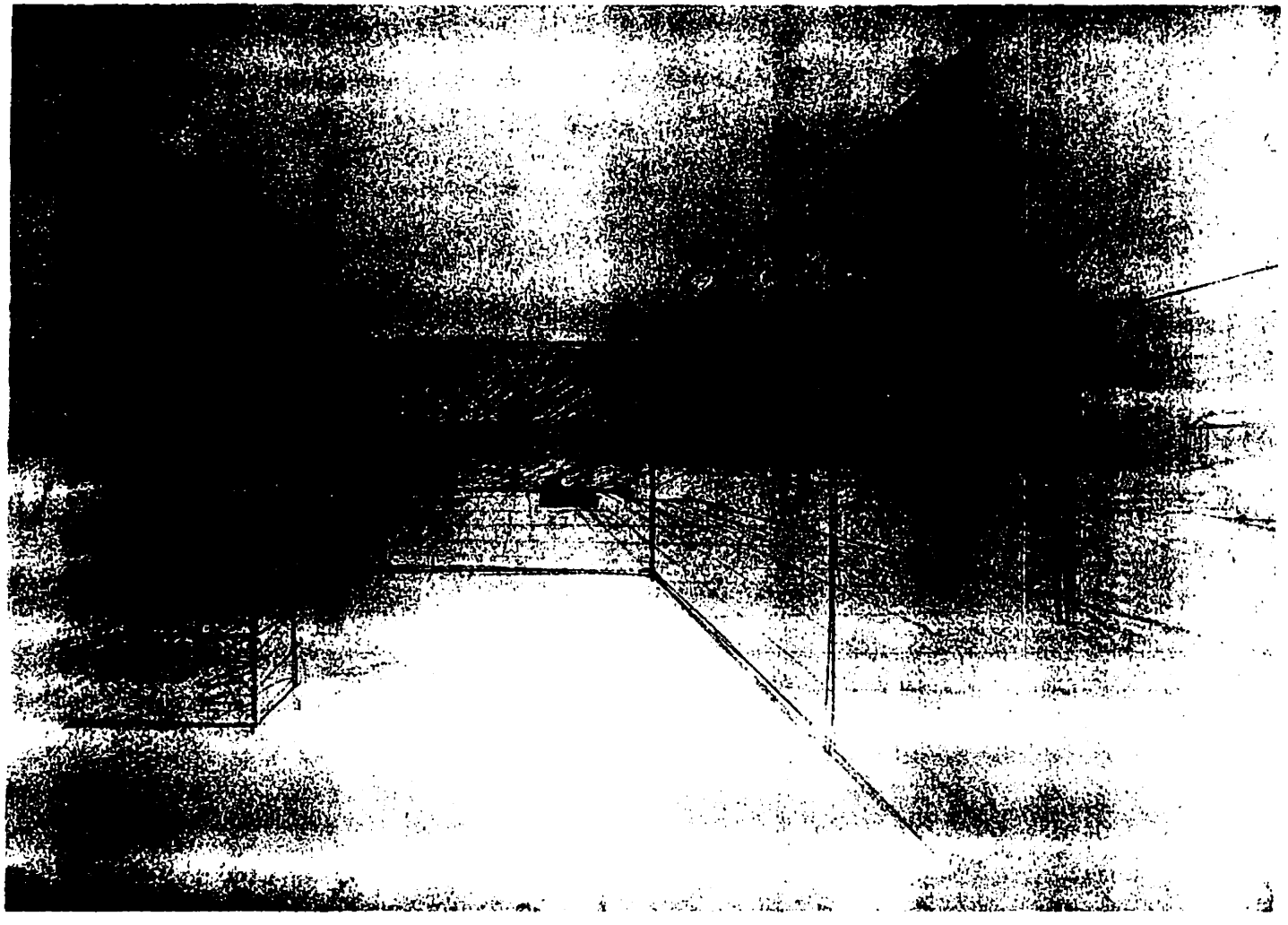

Plate 1.3 Perspective of living room and terrace, Hubbe House, 1935.

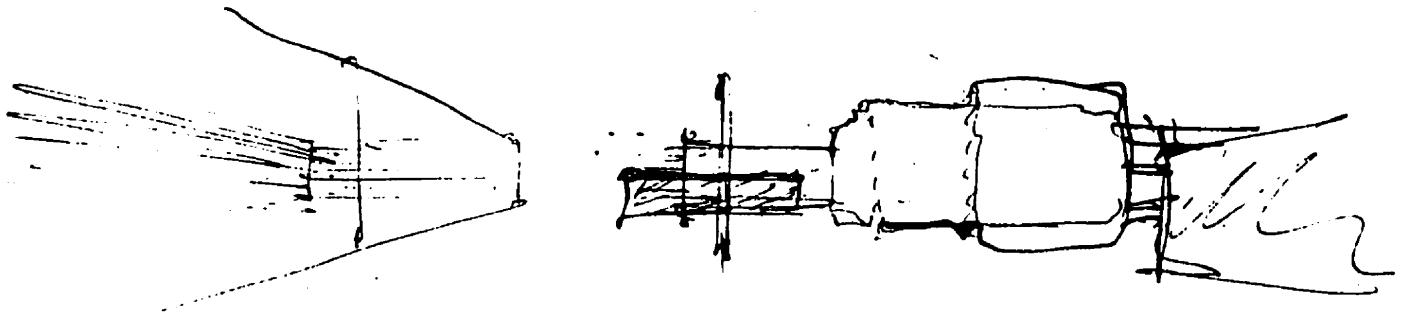

Plate 1.4 Interior perspective (c. 1931), Court Houses.

Plate 1.5 Interior perspective, Barcelona Pavilion.

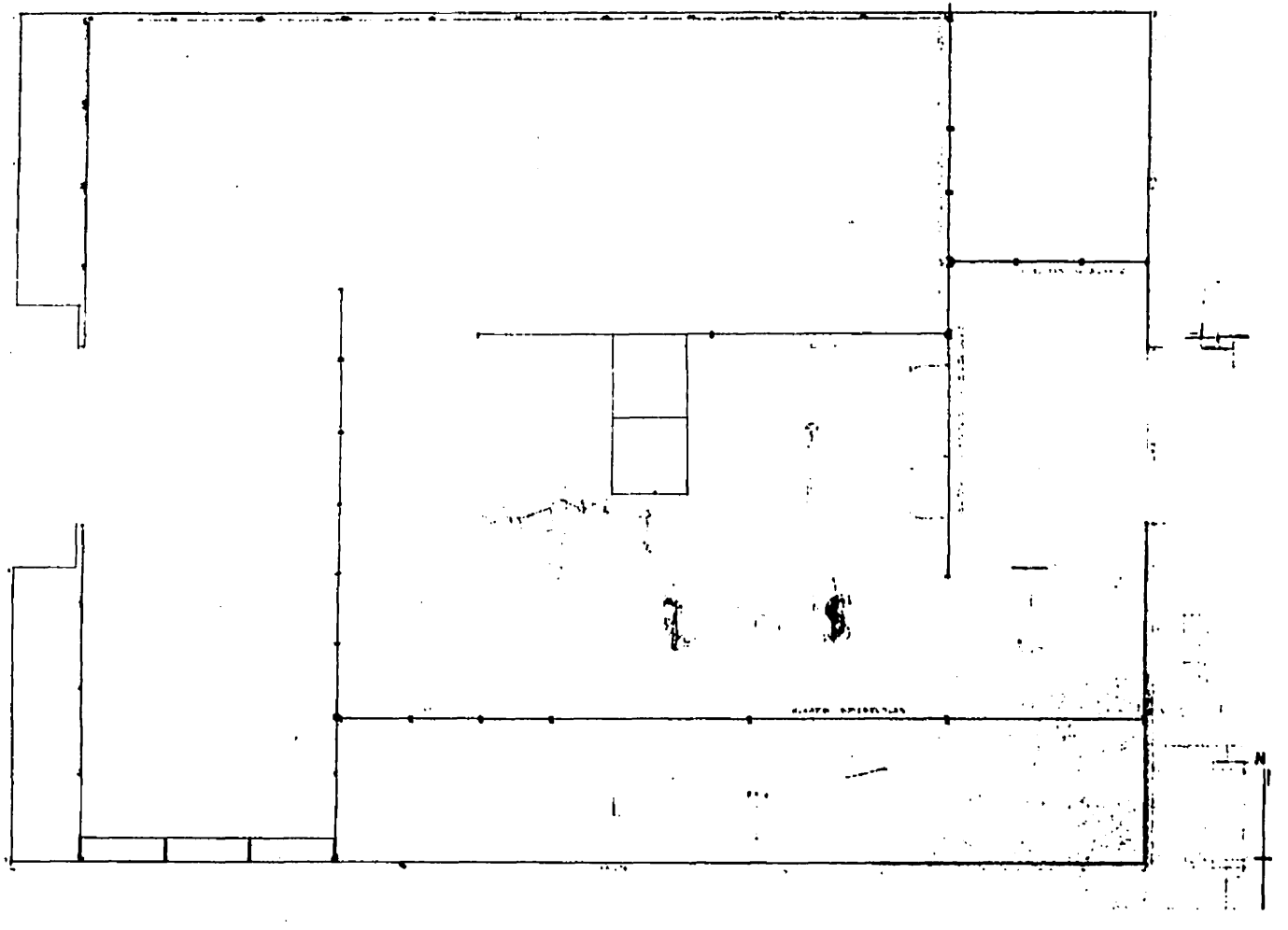

Plate 2.1 Plan, Glass Room at the Stuttgart Werkbund Exhibition, 1927.

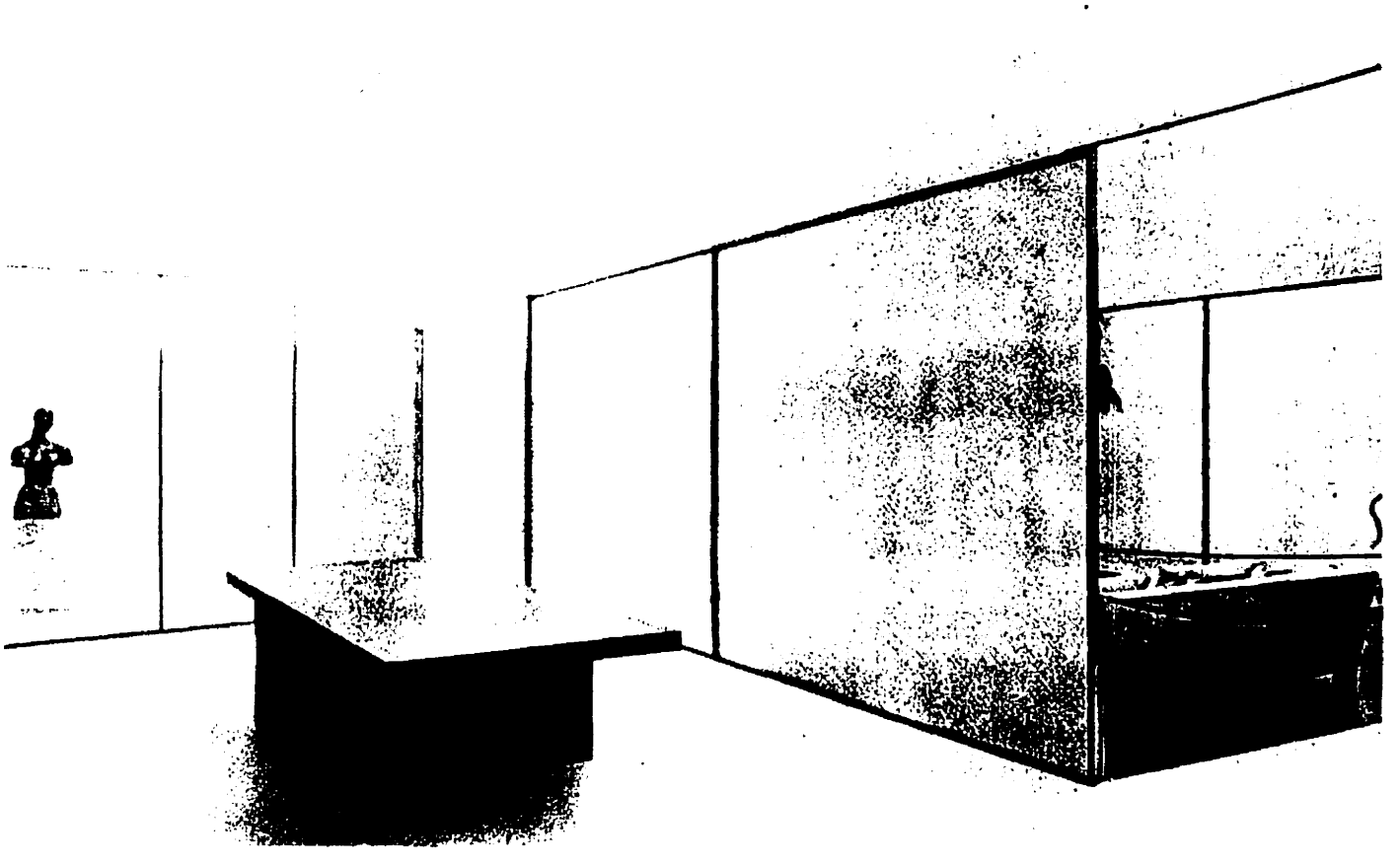

Plate 2.2 View to the dining area with a statue in the background, Glass Room at the Stuttgart Werkbund Exhibition.

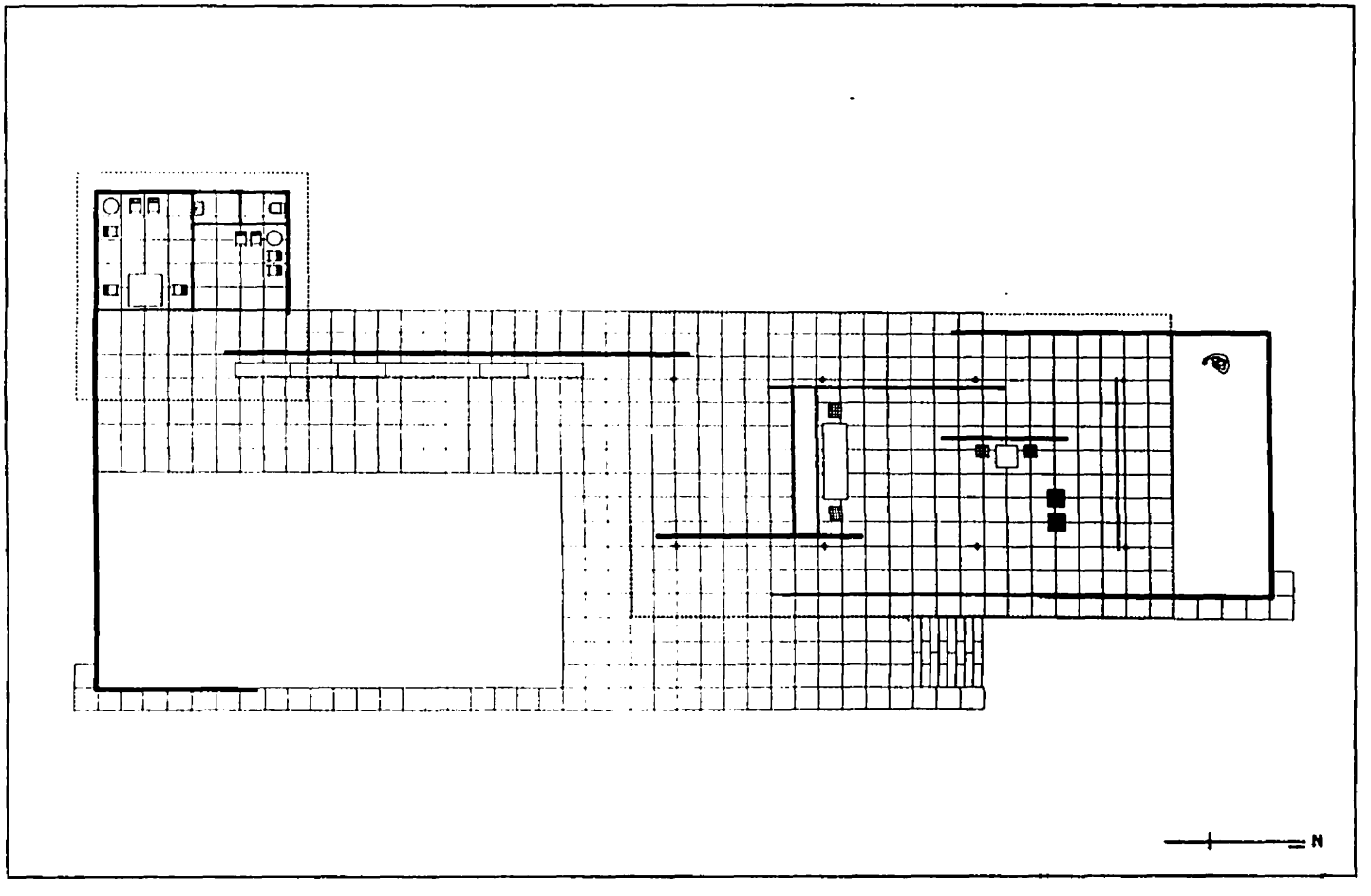

Plate 2.3 Plan, Barcelona Pavilion, 1928-29.

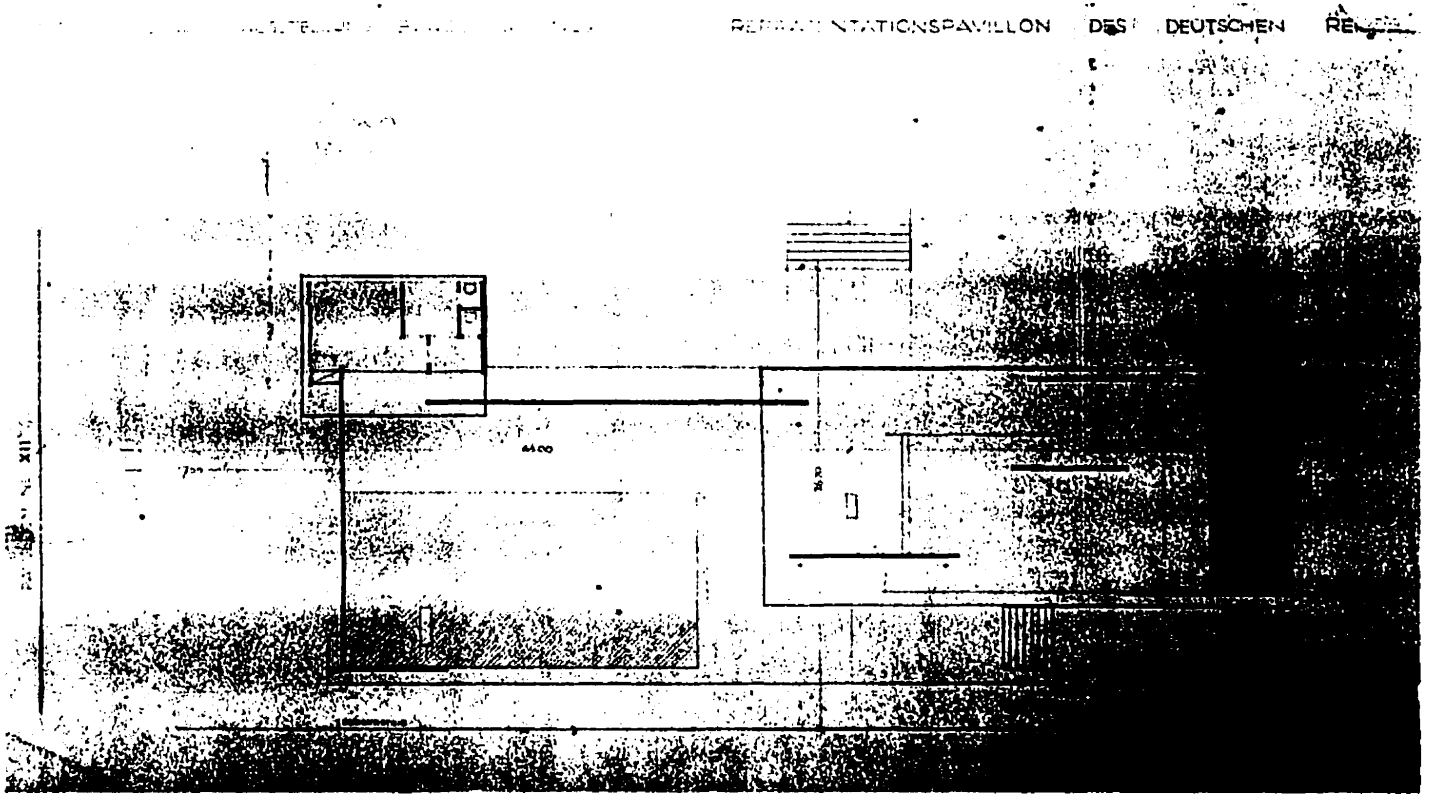

Plate 2.4 Plan, the second preliminary scheme 1928, Barcelona Pavilion.

Plate 2.5 View from the corridor to the Georg Kolbe sculpture, *Morning*, in the small pool, Barcelona Pavilion.

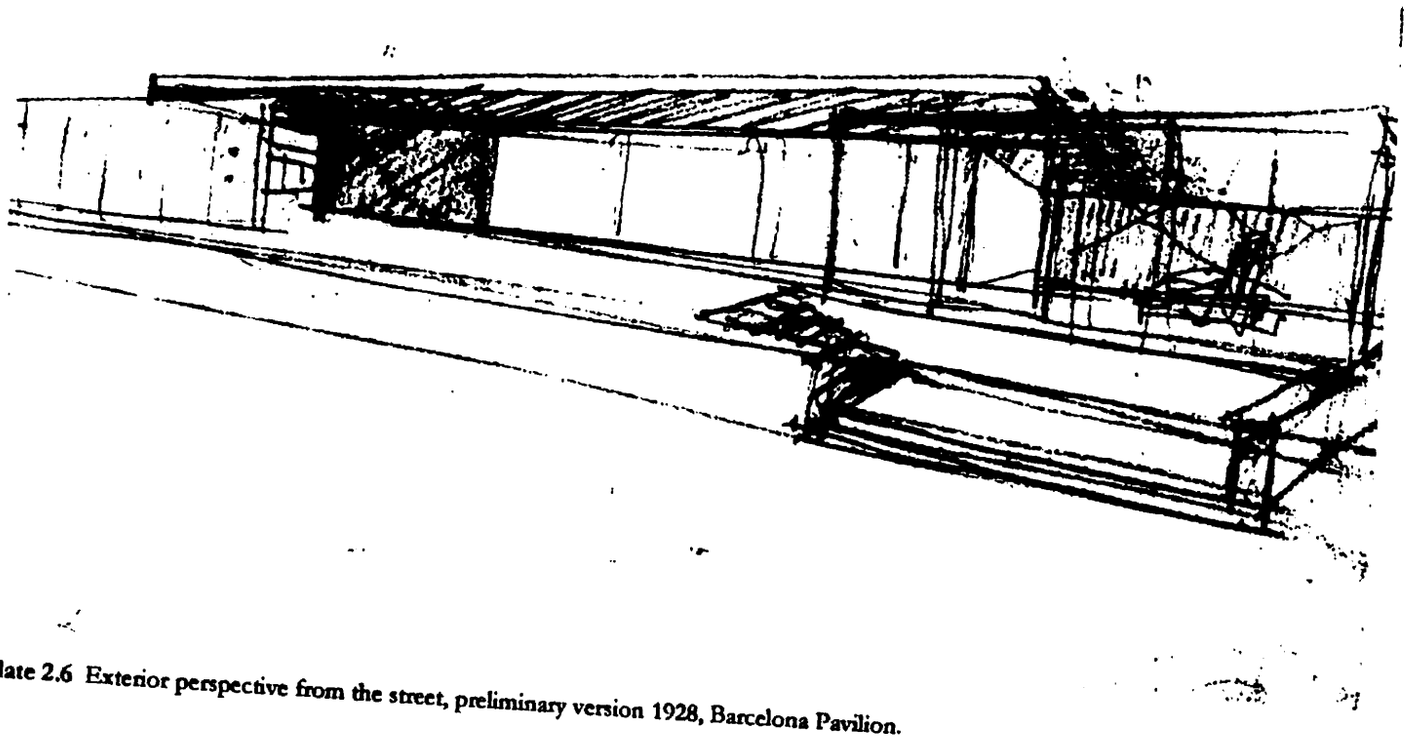

Plate 2.6 Exterior perspective from the street, preliminary version 1928, Barcelona Pavilion.

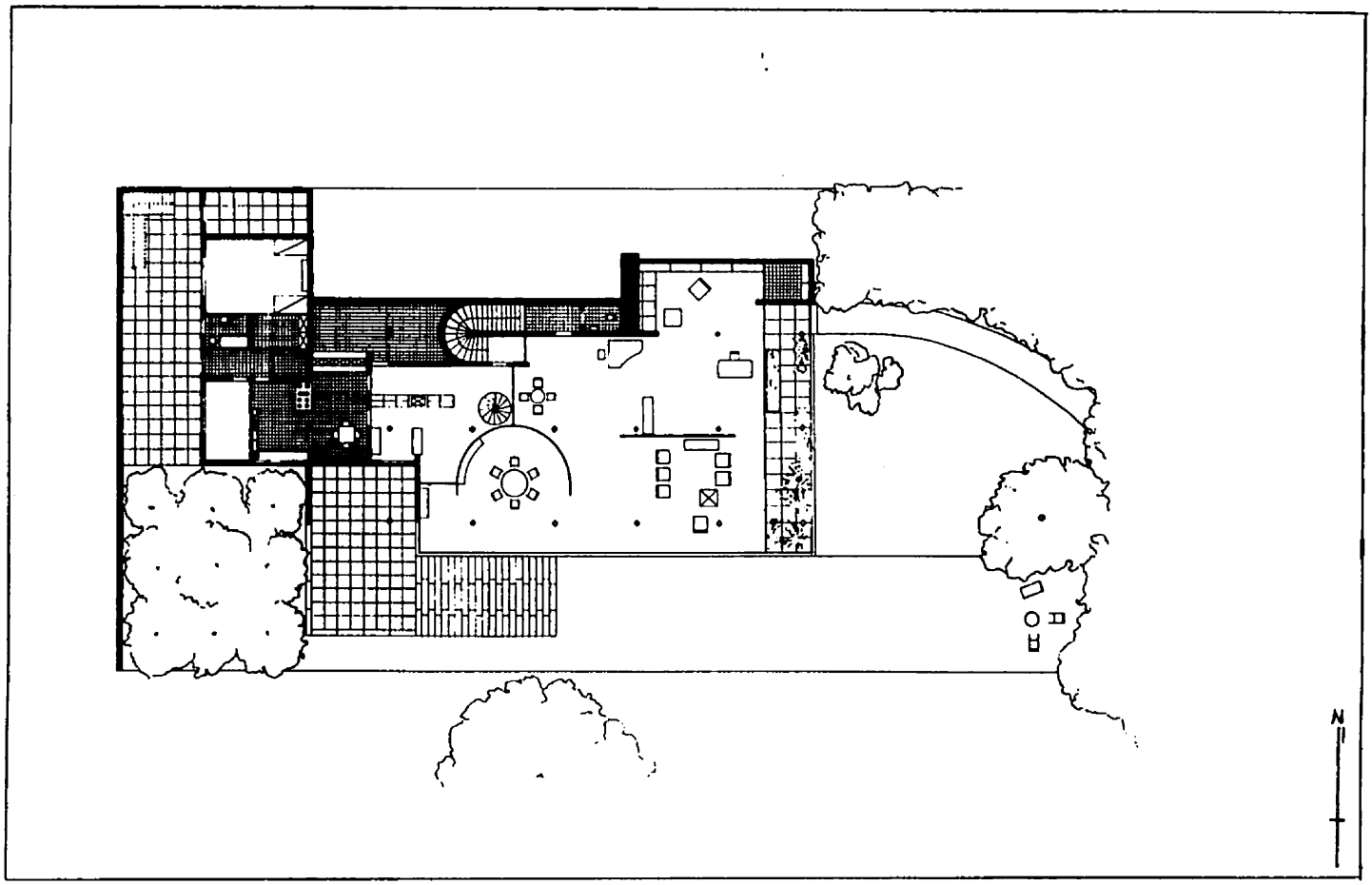

Plate 2.7 Plan of lower floor, Tugendhat House, 1929-31.

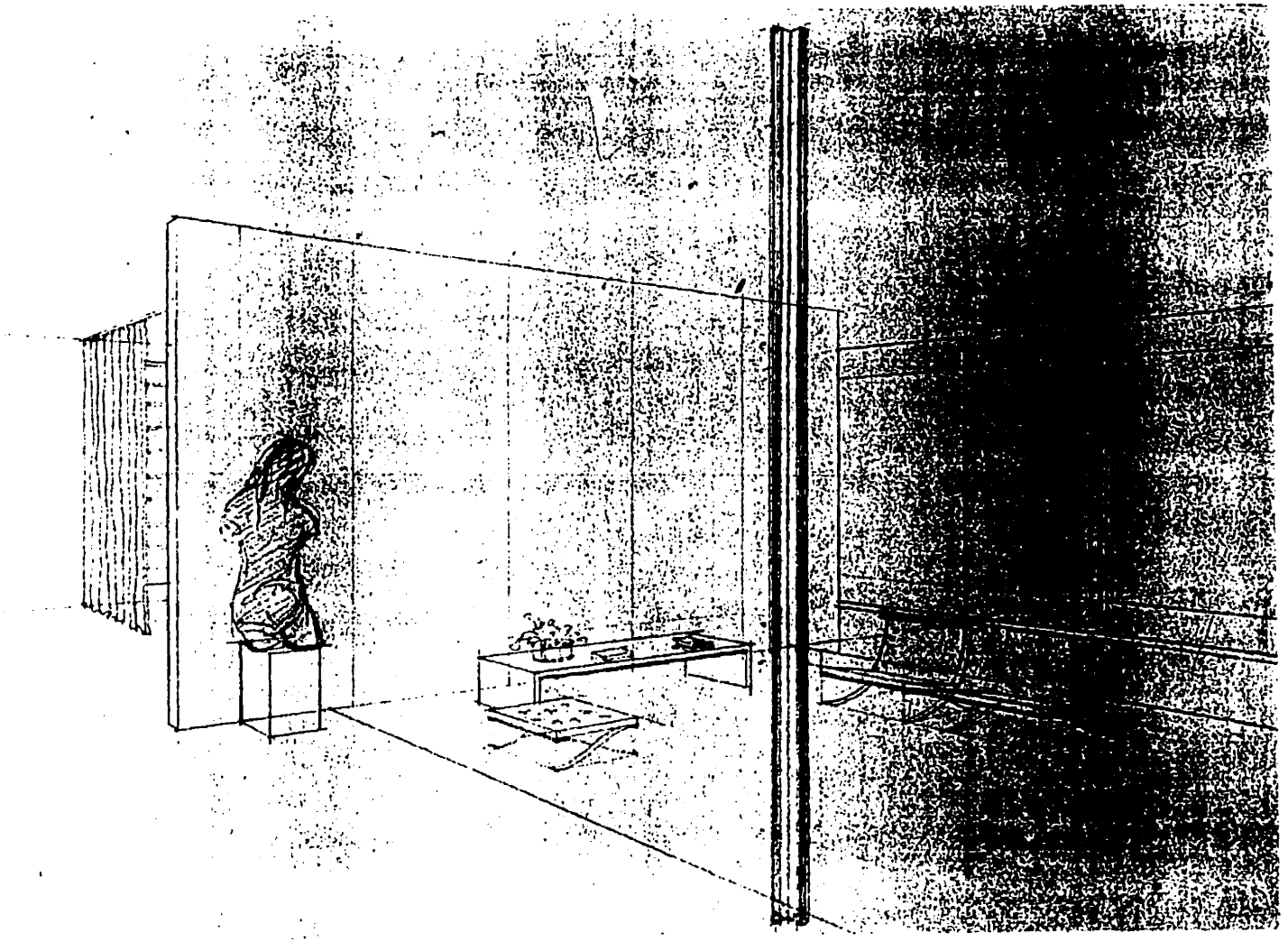

Plate 2.8 Interior perspective of the seating area, Tugendhat House.

Plate 2.9 View to the living area with the statue, Tugendhat House.

Plate 2.10 View to living area with the statue, Tugendhat House. Photographed by Fritz Tugendhat.

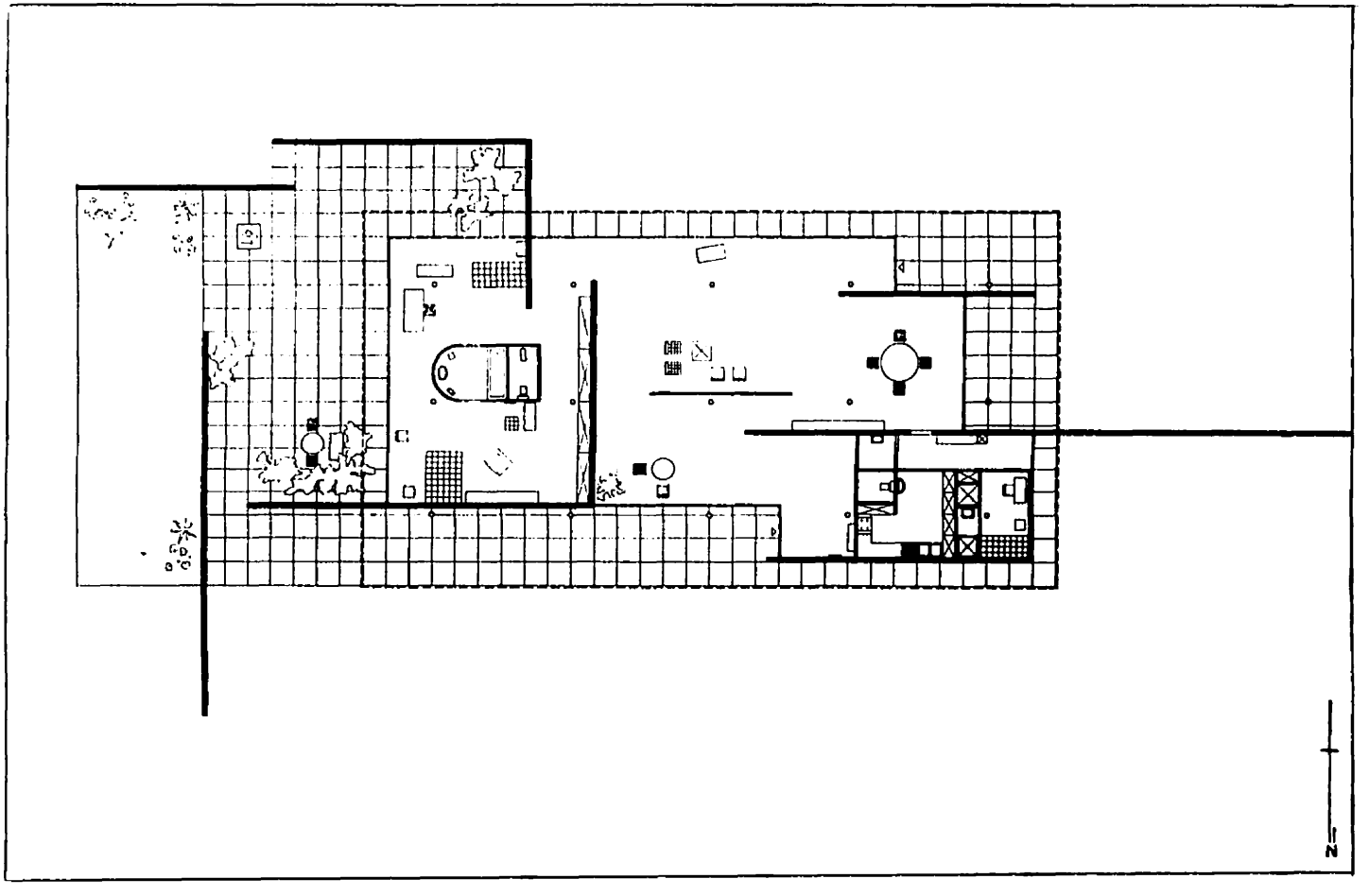

Plate 2.11 Plan, Model House at Berlin Building Exposition, 1931.

Plate 2.12 View to the garden from the outside, Model House at the Berlin Building Exposition.

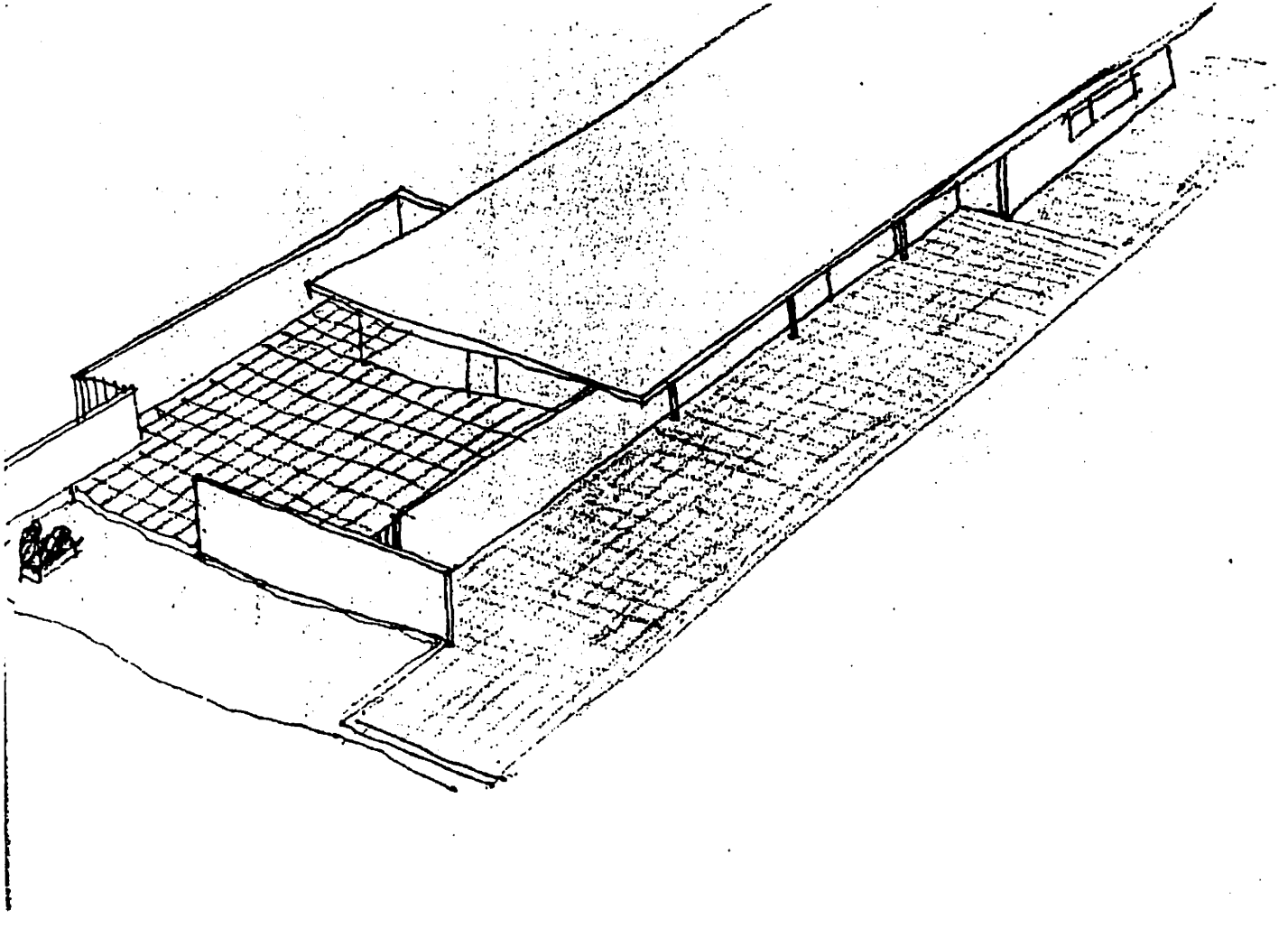

Plate 2.13 Aerial perspective, Model House at the Berlin Building Exposition.

Plate 2.14 Aerial perspective with collage, preliminary version, Model House at the Berlin Building Exposition.

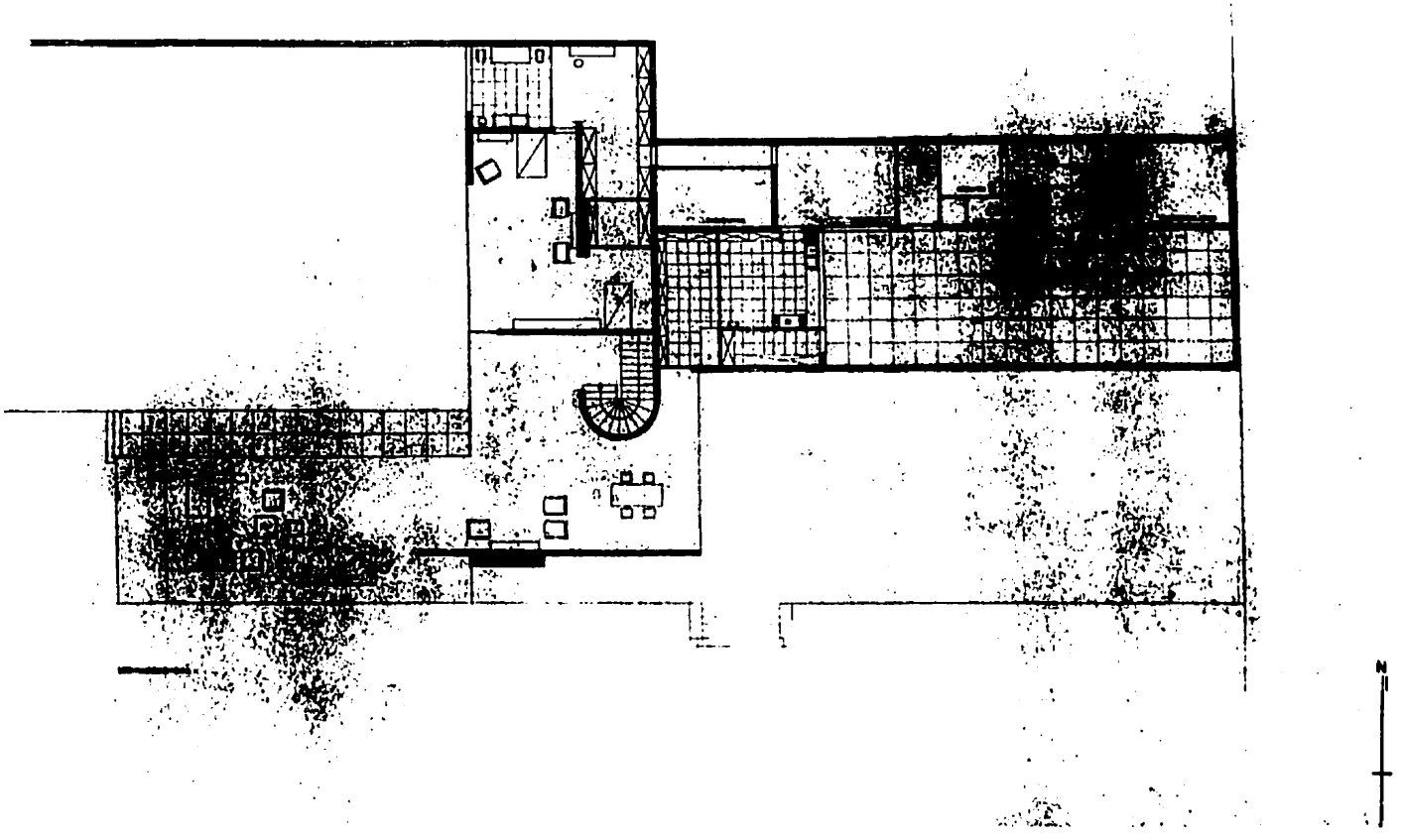

Plate 2.15 Plan of lower floor, Gerick House, 1932.

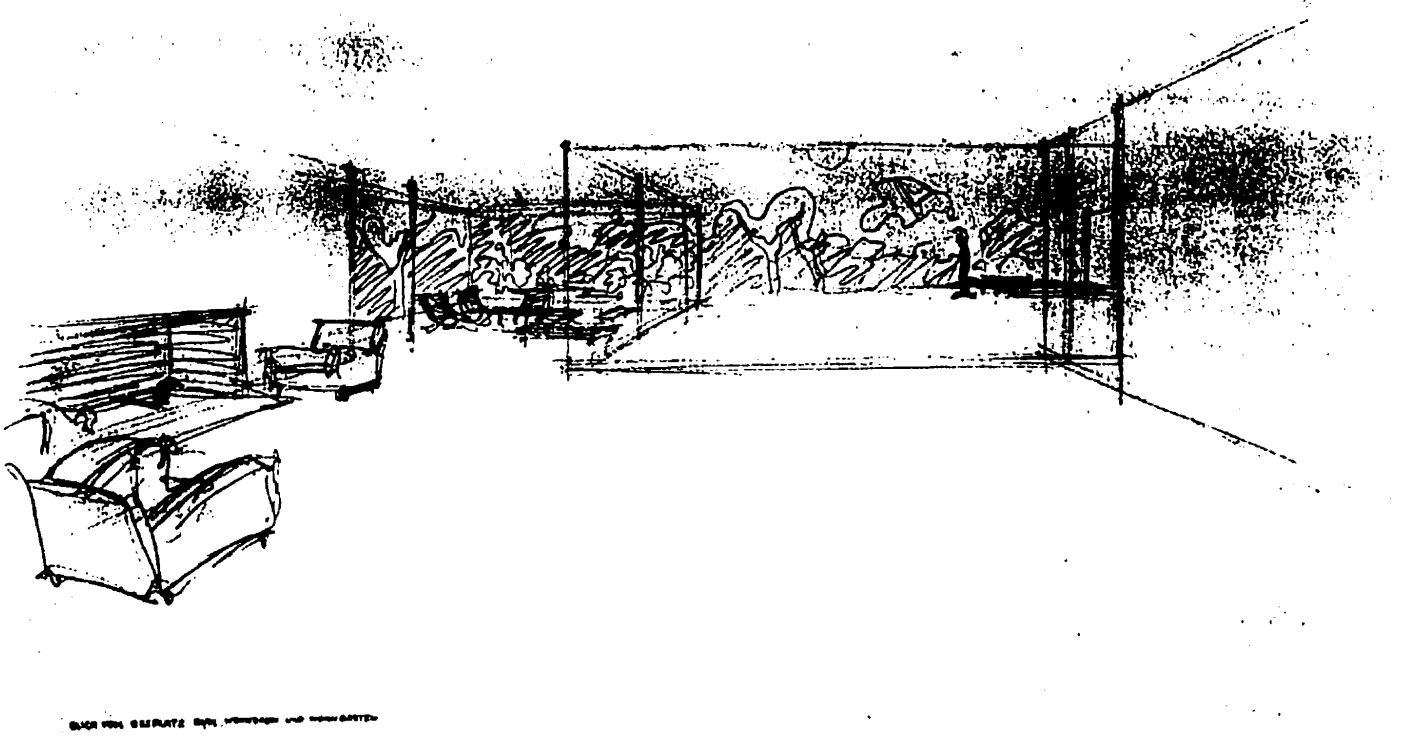

Plate 2.16 Interior perspective, view to the court from the dining area, Gericke House.

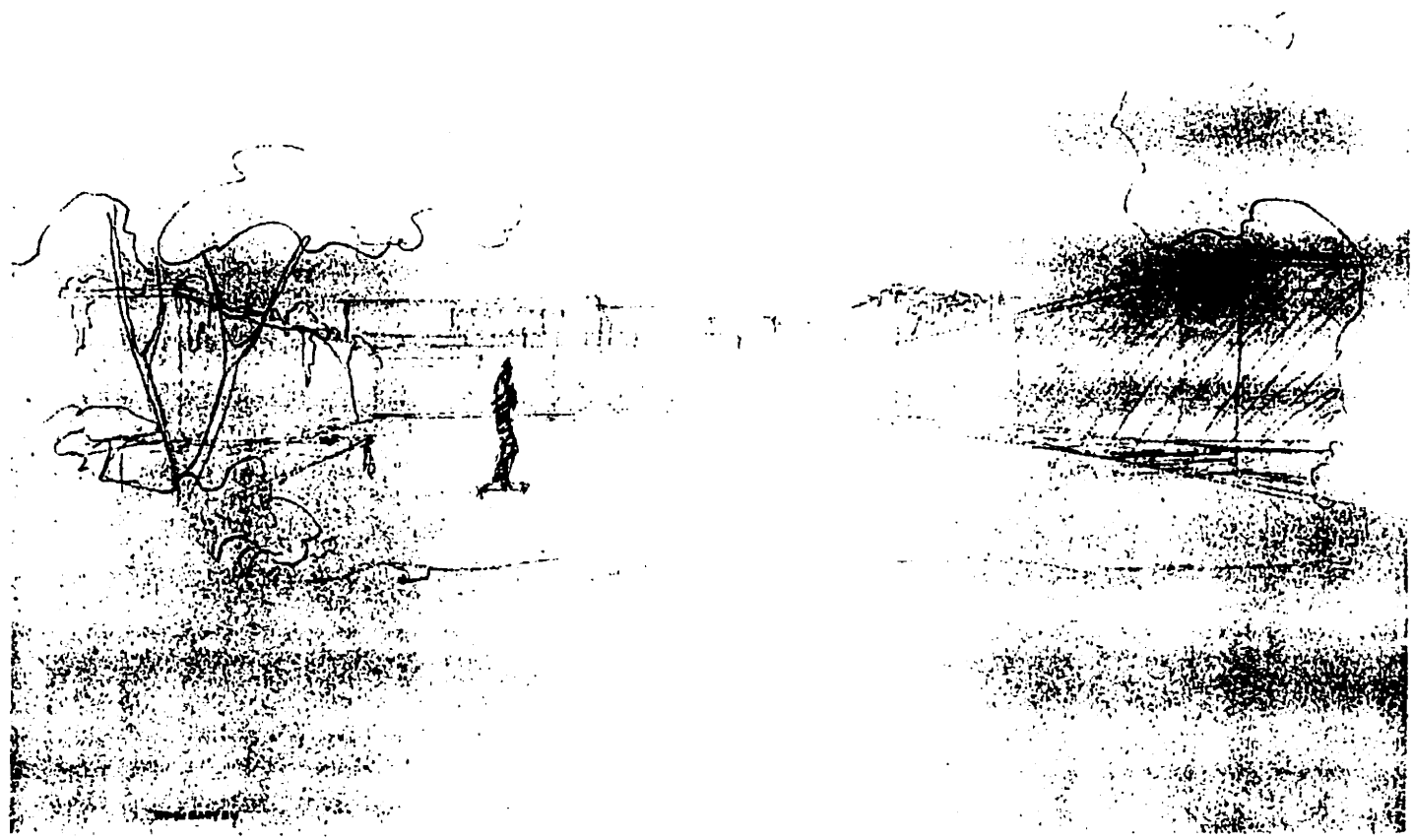

Plate 2.17 Perspective of garden, Gericke House.

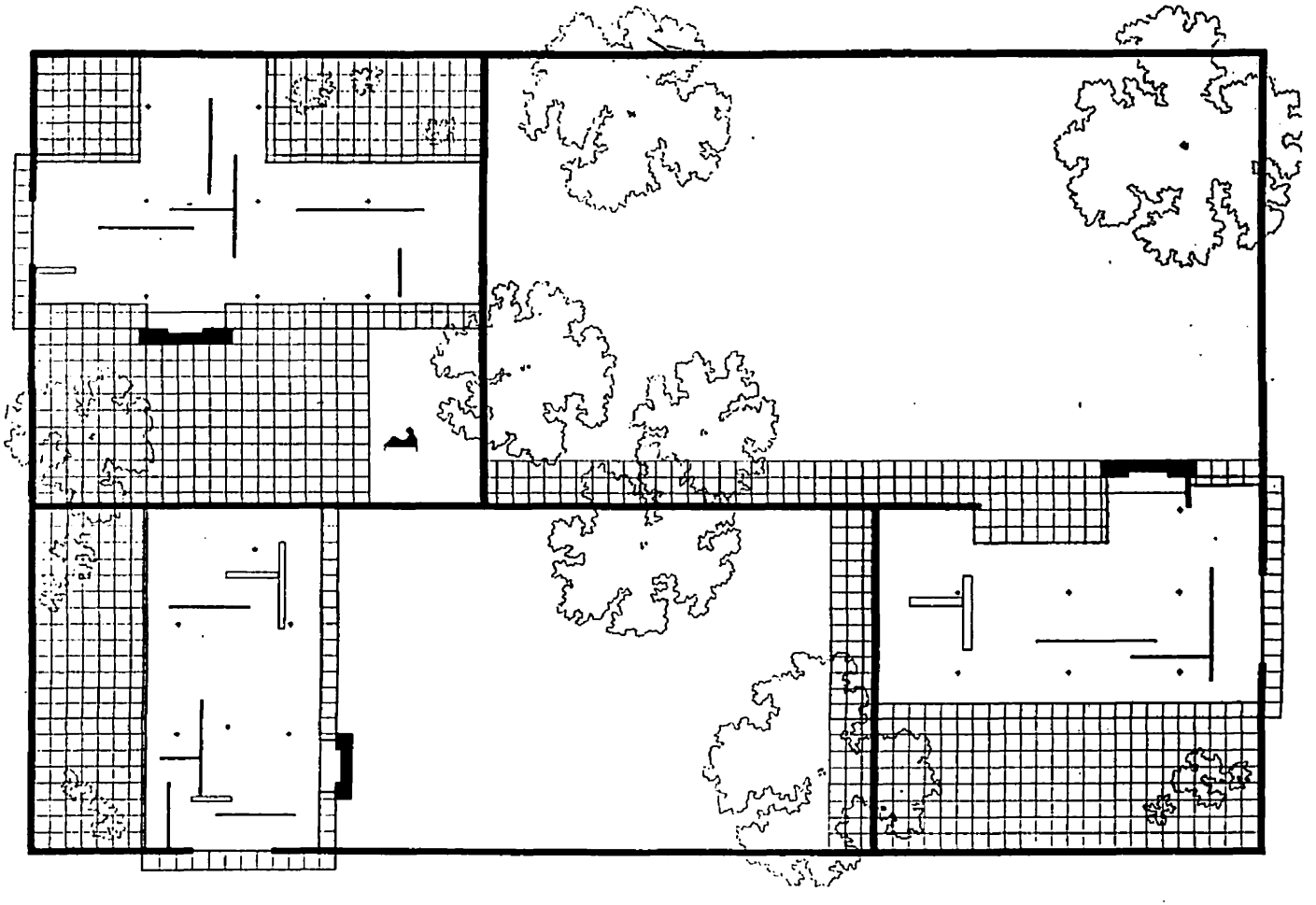

Plate 2.18 Plan, group of three Court Houses, 1930s.

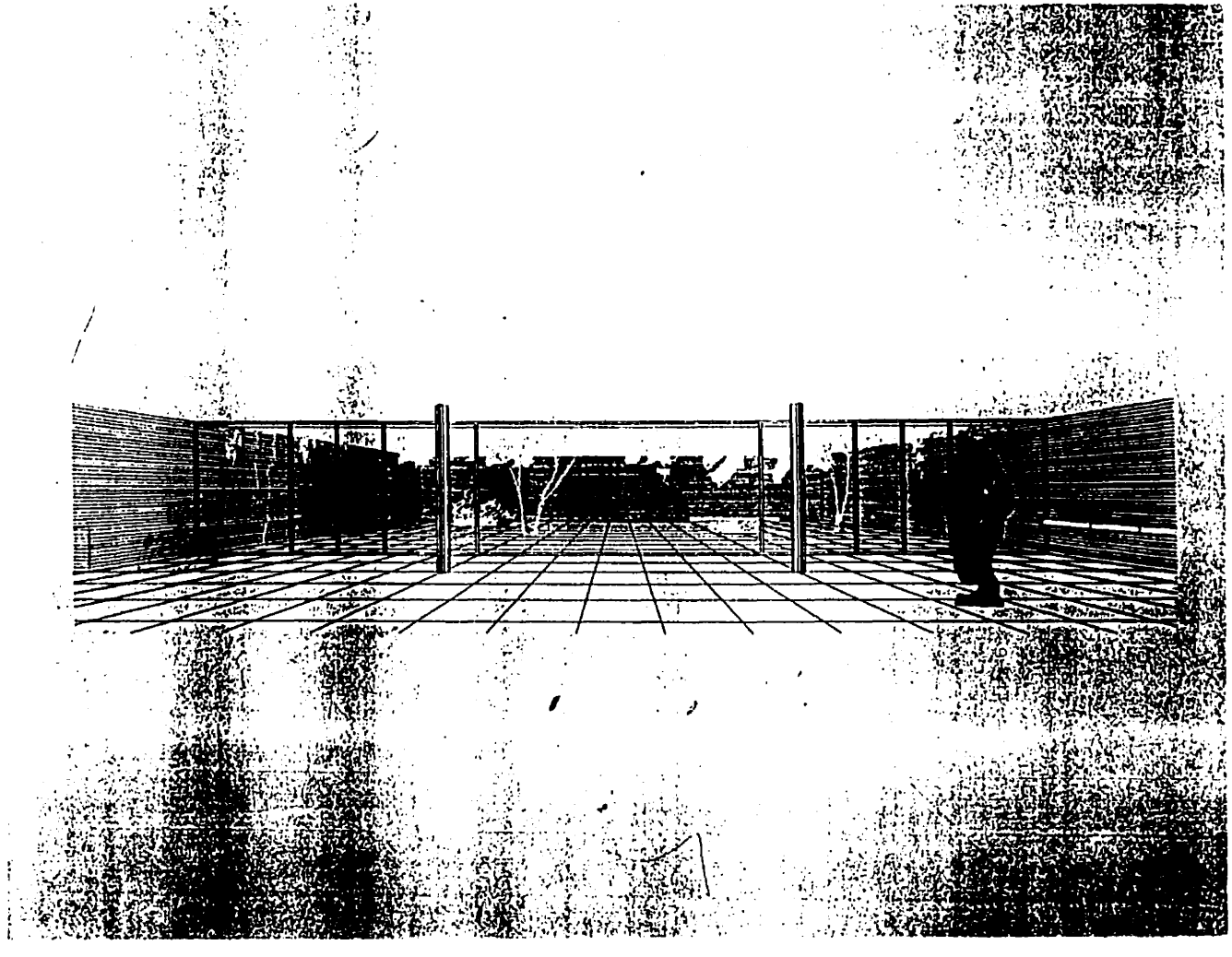

Plate 2.19 Interior perspective with collage, c. 1939, Court House,.

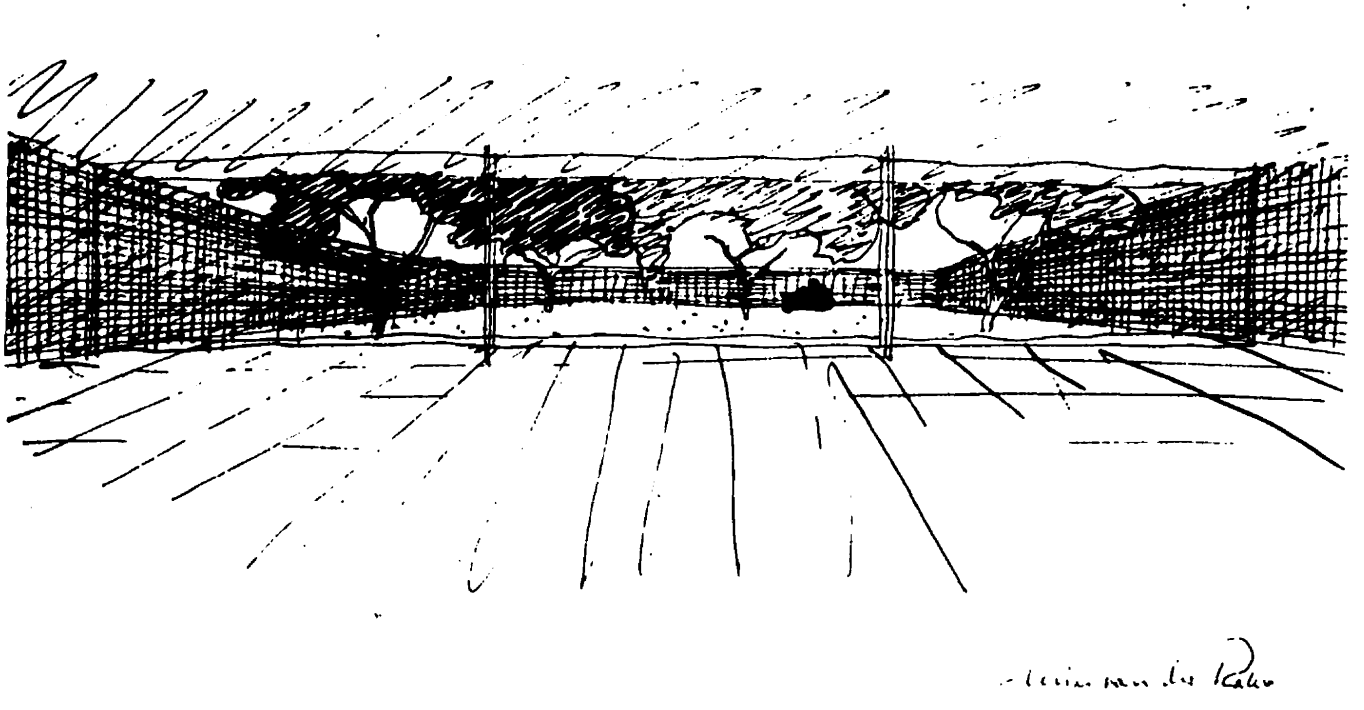

Plate 2.20 Perspective to the court, c. 1934, Court House.

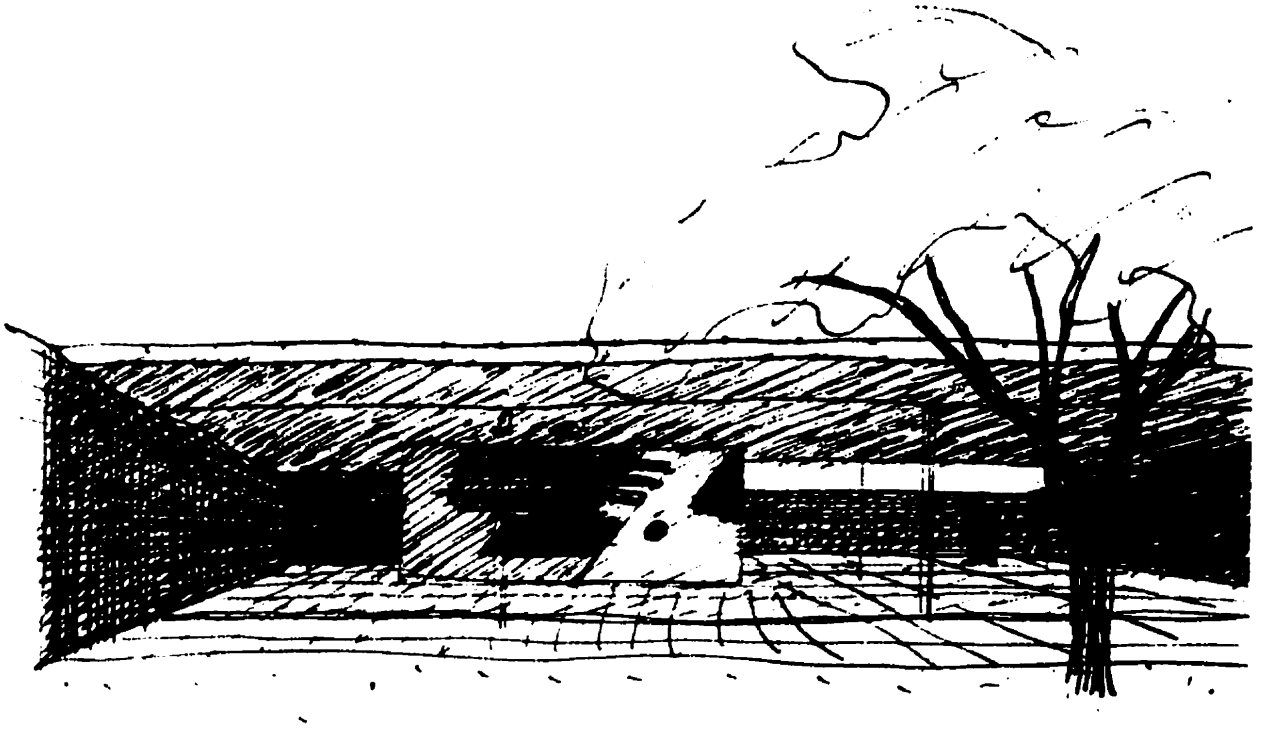

Plate 2.21 Perspective through the house, c. 1934, Court House.

Plate 2.22 Plan and elevation, Ulrich House, 1935.

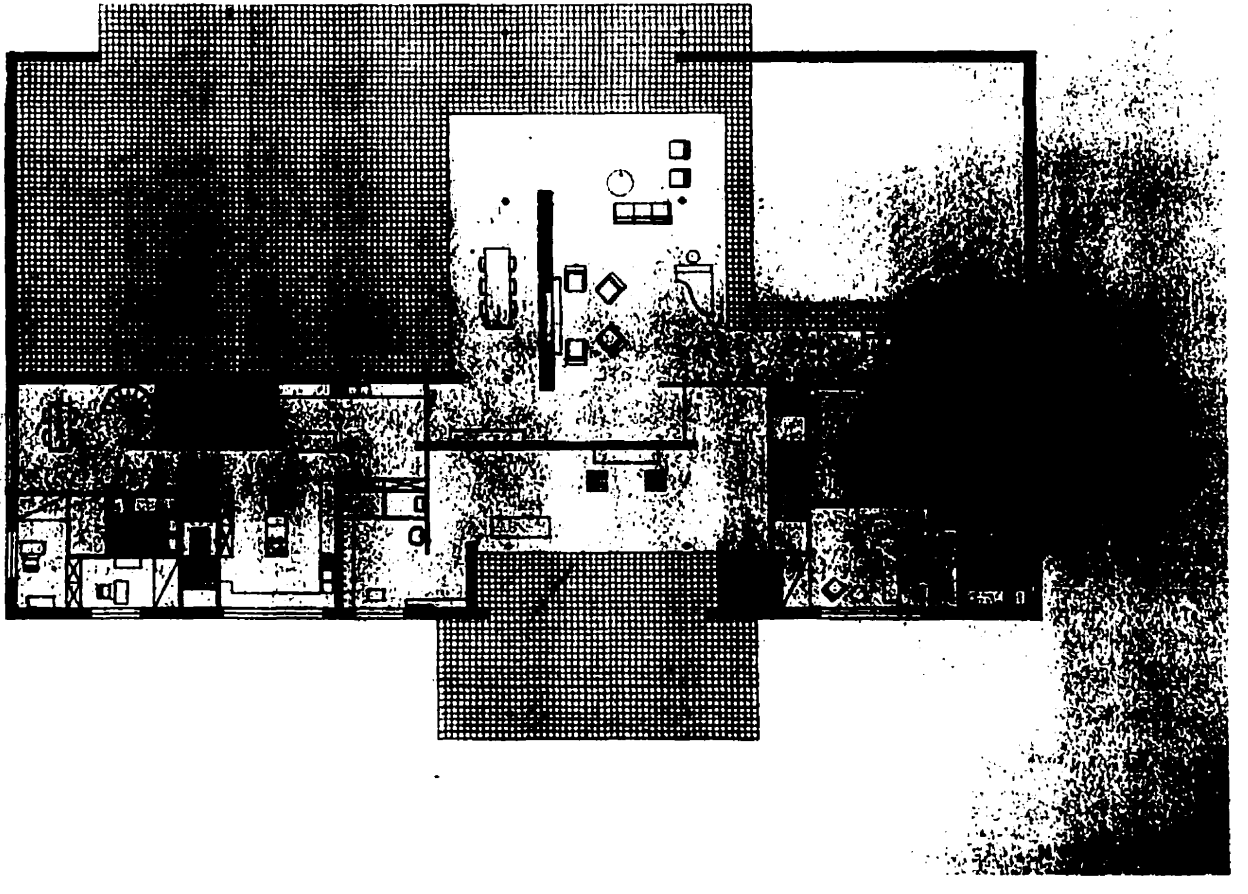

Plate 2.23 Plan, Hubbe House, 1935.

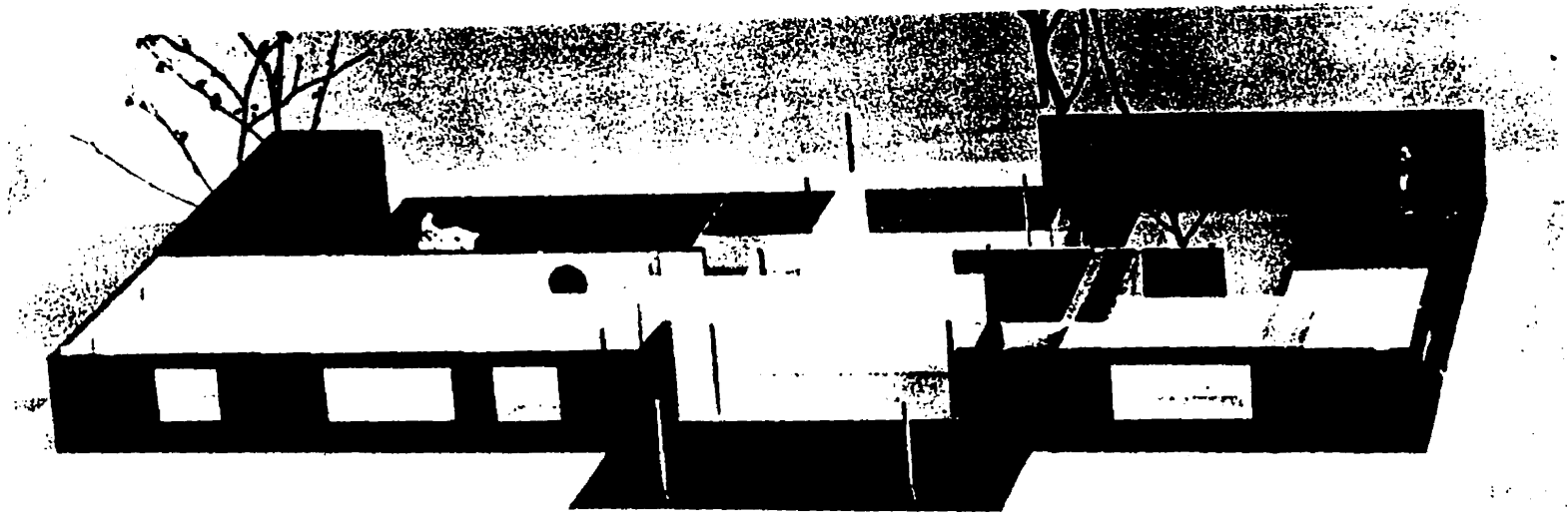

Plate 2.24 Model , Hubbe House.

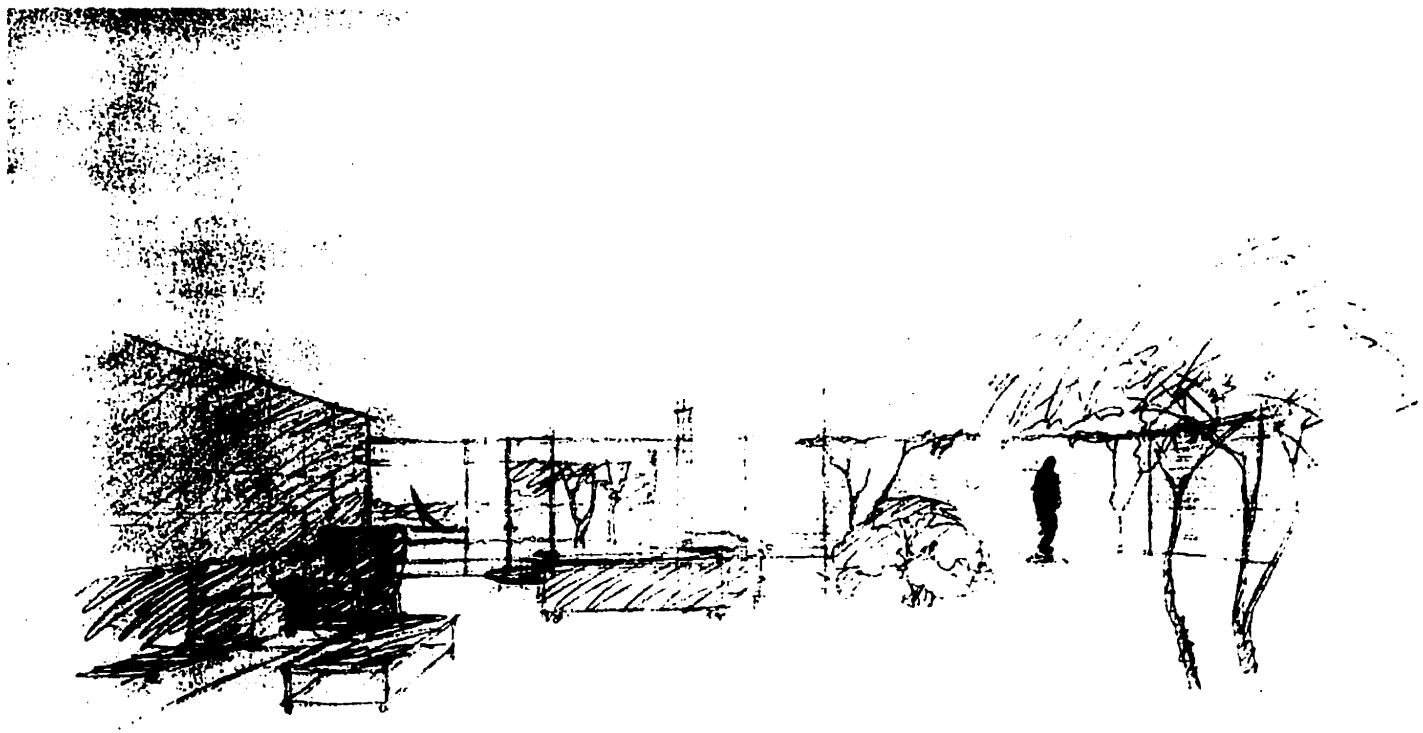

Plate 2.25 Interior perspective of the living room and the court, Hubbe House.

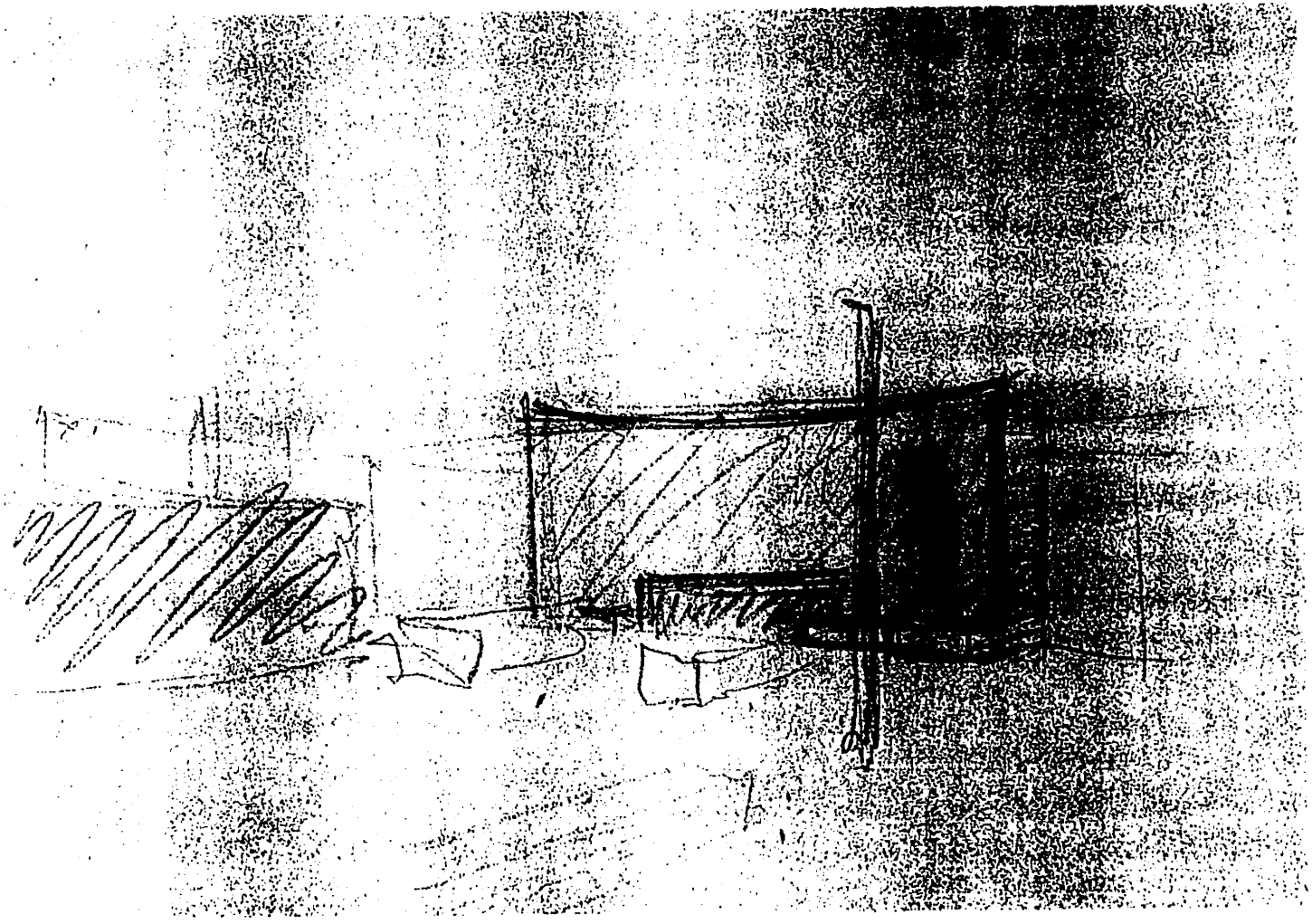

Plate 2.26 Interior perspective, Resor House, 1937-42.

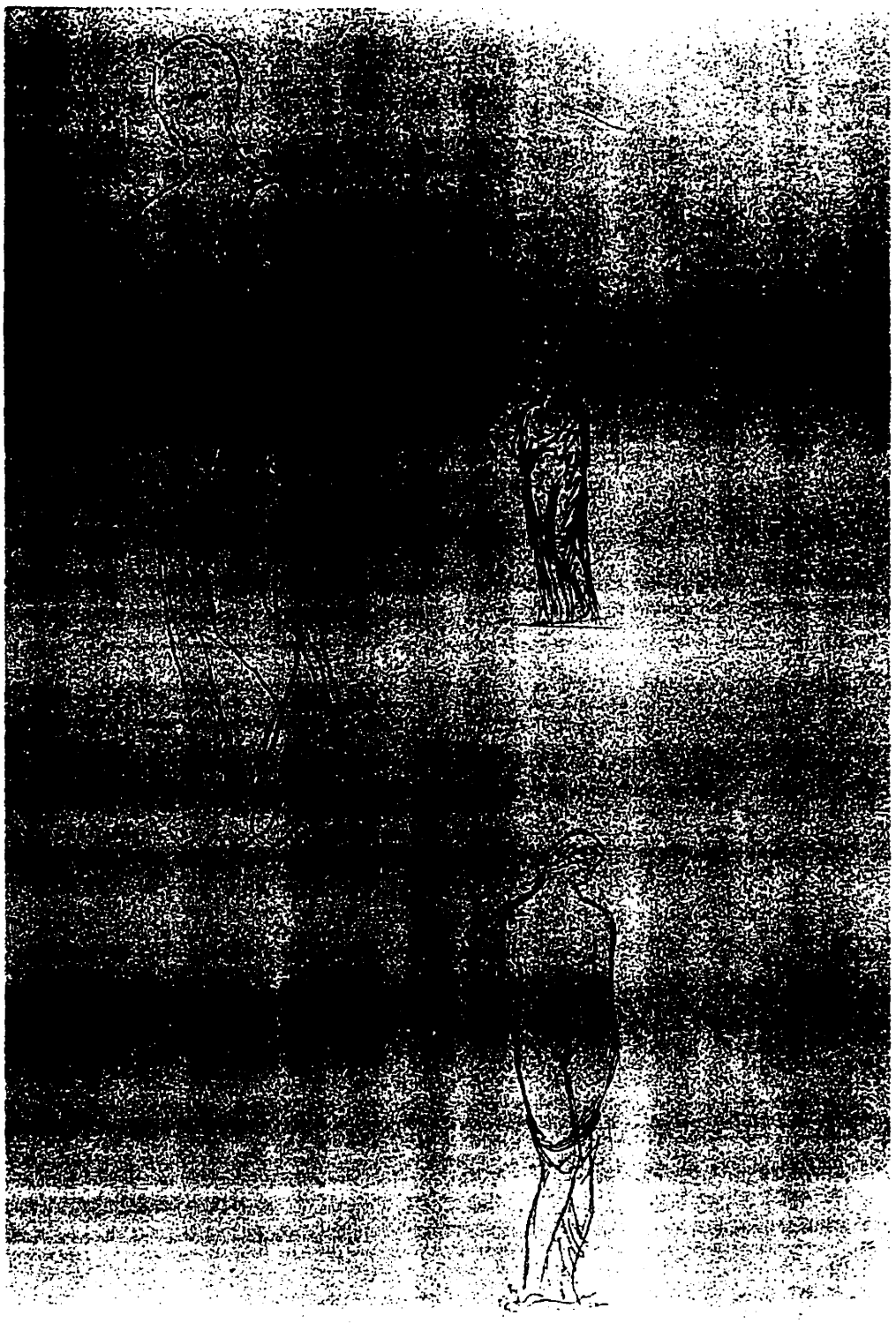

Plate 2.27 Female Statues, Resor House.

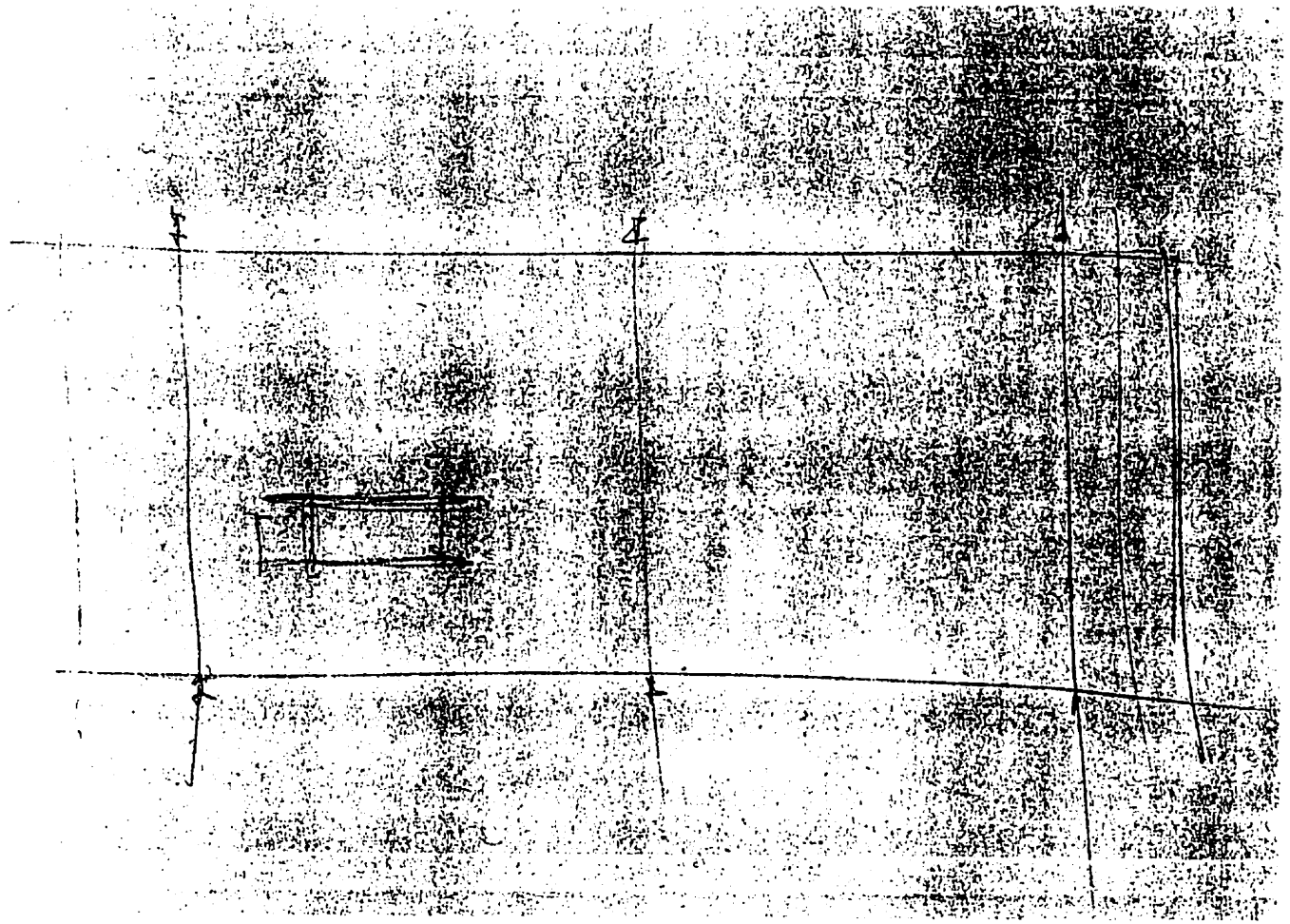

Plate 2.28 Plan, Farnsworth House, 1946-51.

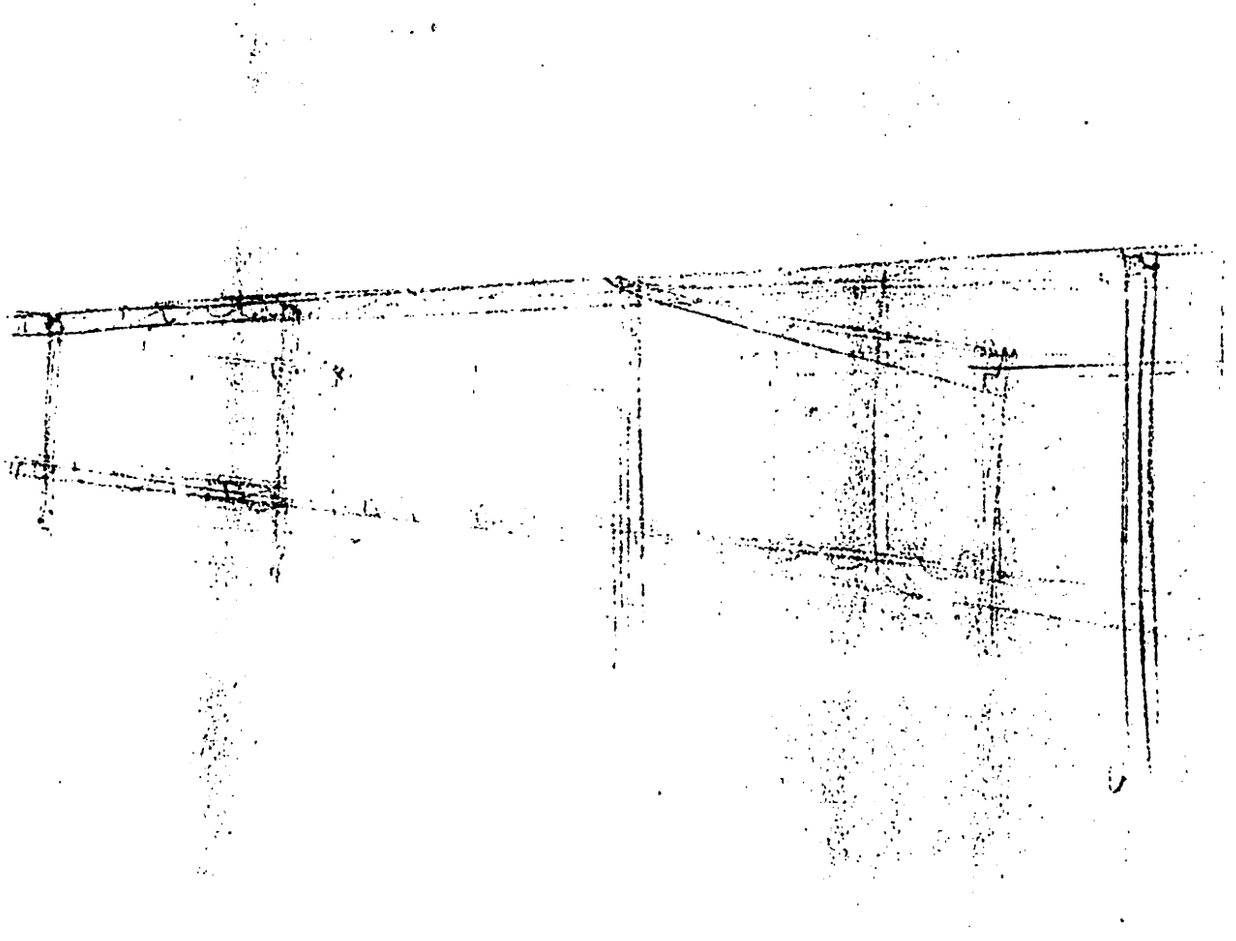

Plate 2.29 Exterior perspectives from the north, Farnsworth House.

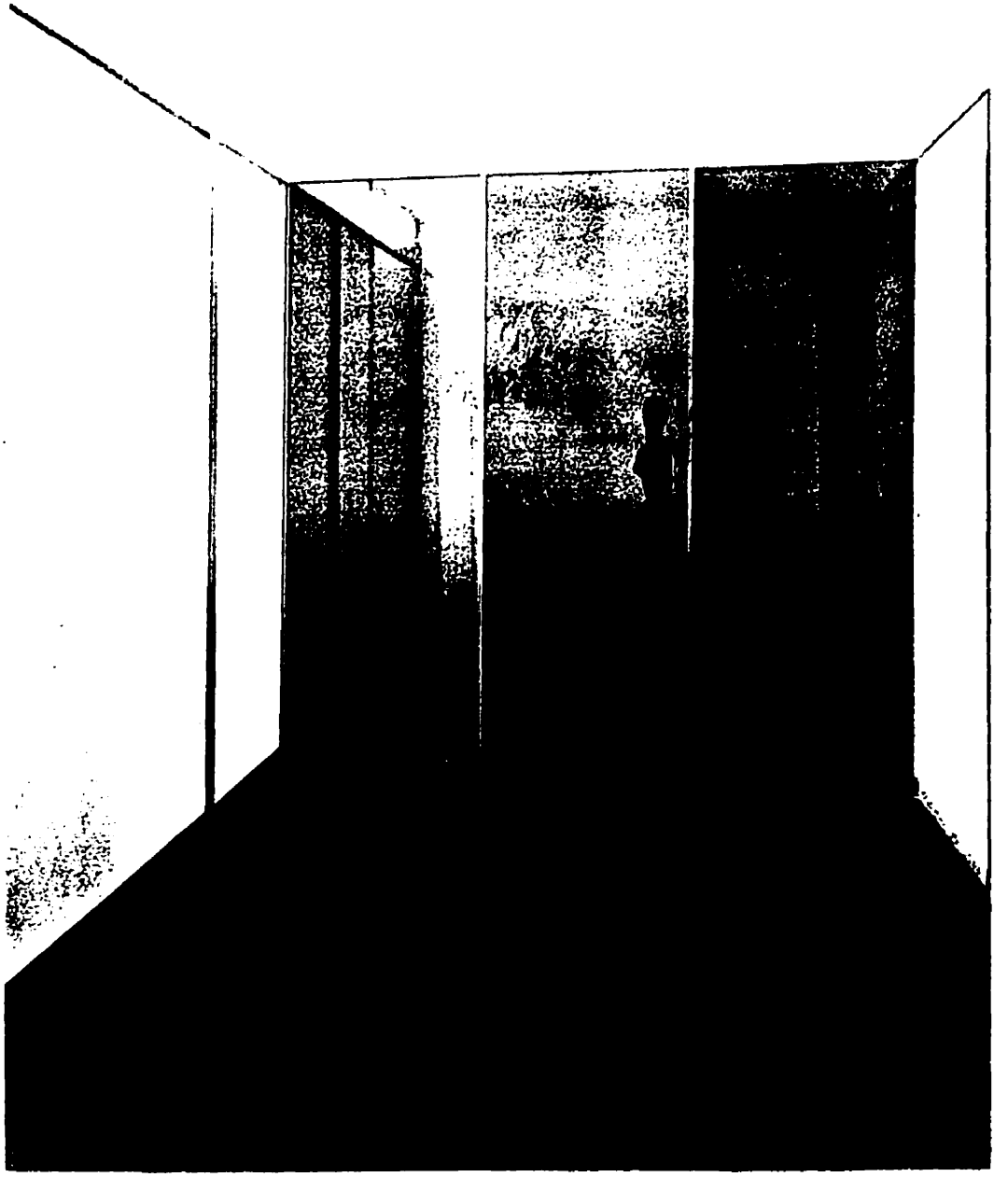

Plate 3.1 View to the statue, *Girl's Torso, Turning* by Wilhelm Lehmbruck, Glass Room at the Stuttgart Werkbund Exhibition, 1927.

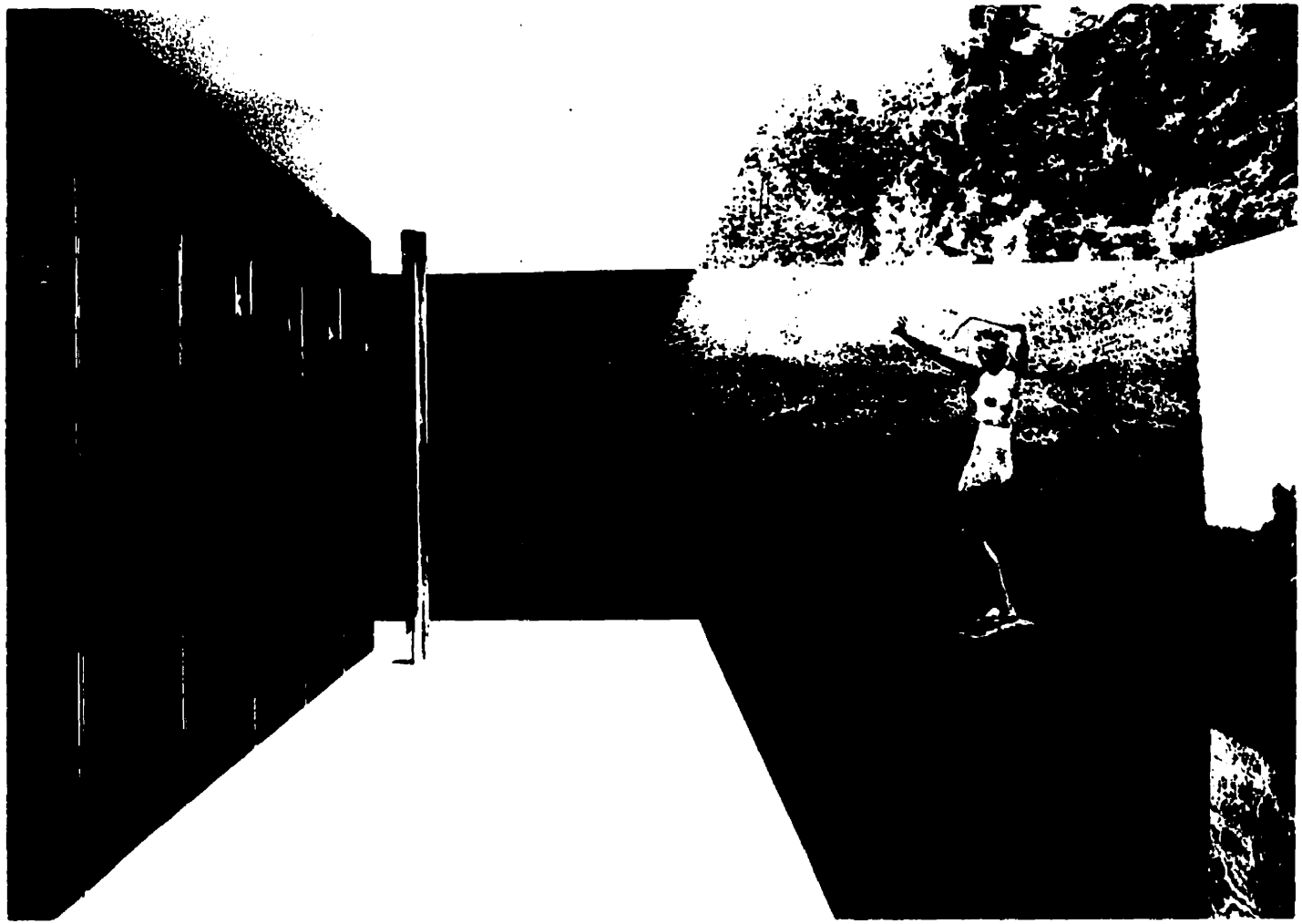

Plate 3.2 View to the statue, *Morning* by Georg Kolbe, in the small pool of the inner court, Barcelona Pavilion, 1928-29.

Plate 3.3 Female figure by Georg Kolbe in the garden, Model House at Berlin Building Exhibition, 1931.

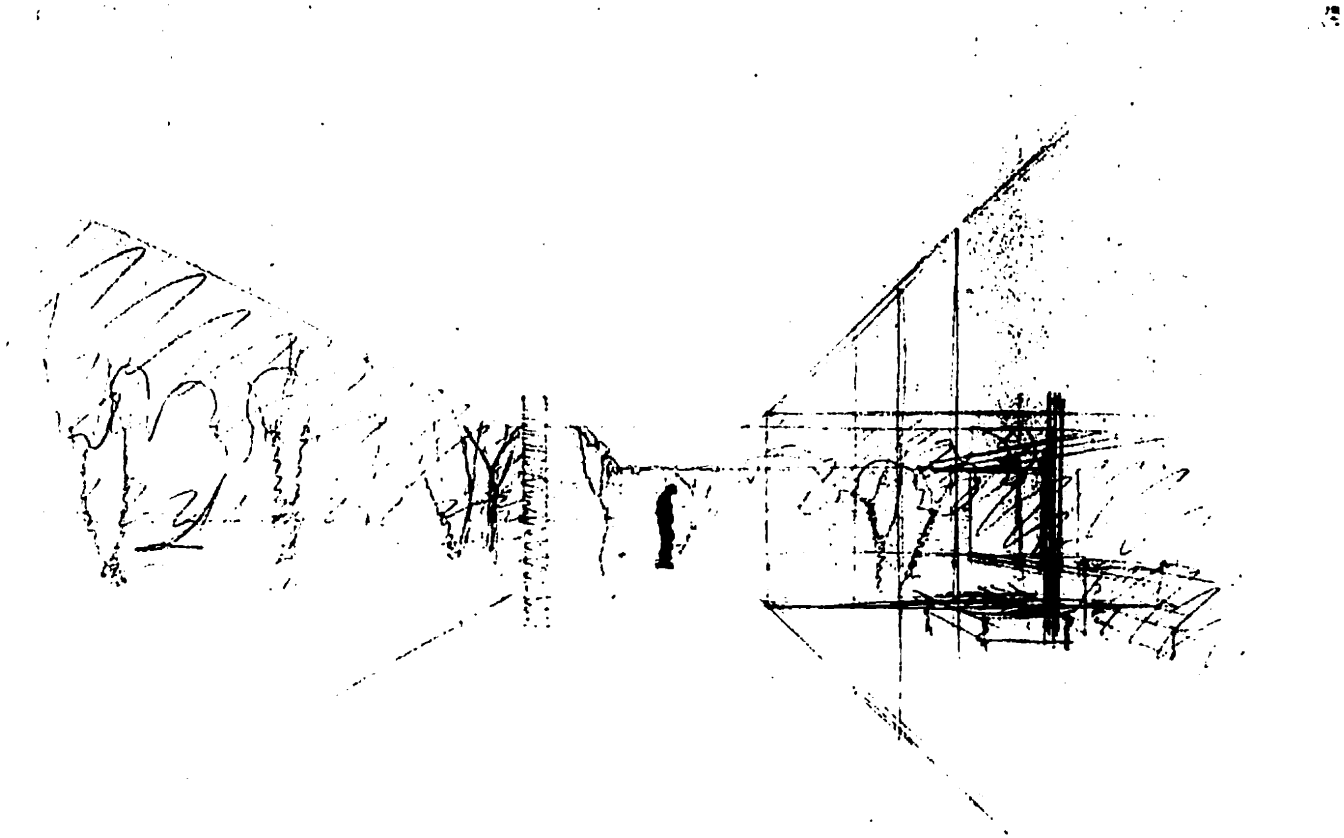

Plate 3.4 Perspective of the court from the terrace, Hubbe House, 1935.

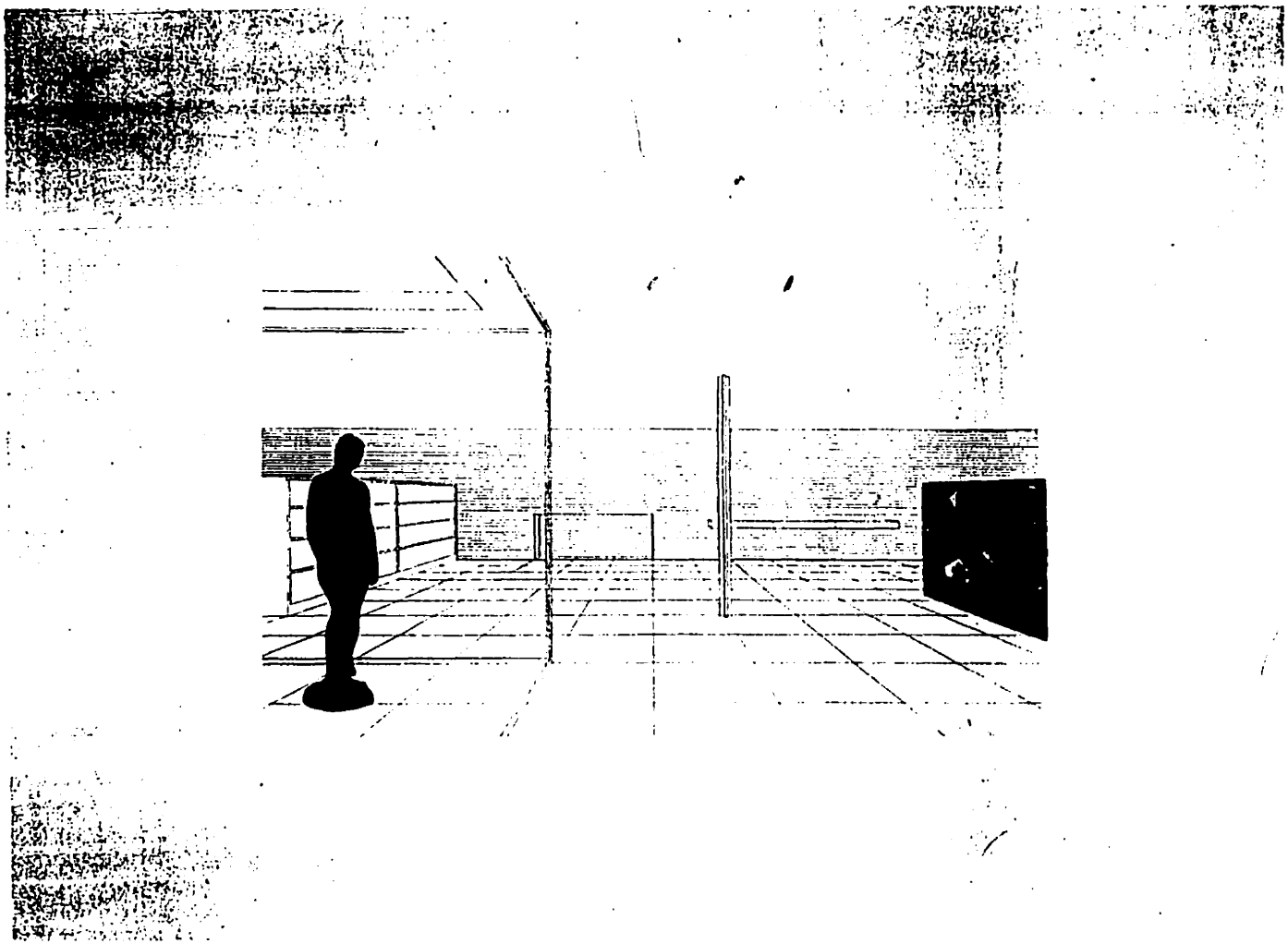

Plate 3.5 Interior perspective with collage, Row Houses, 1931.

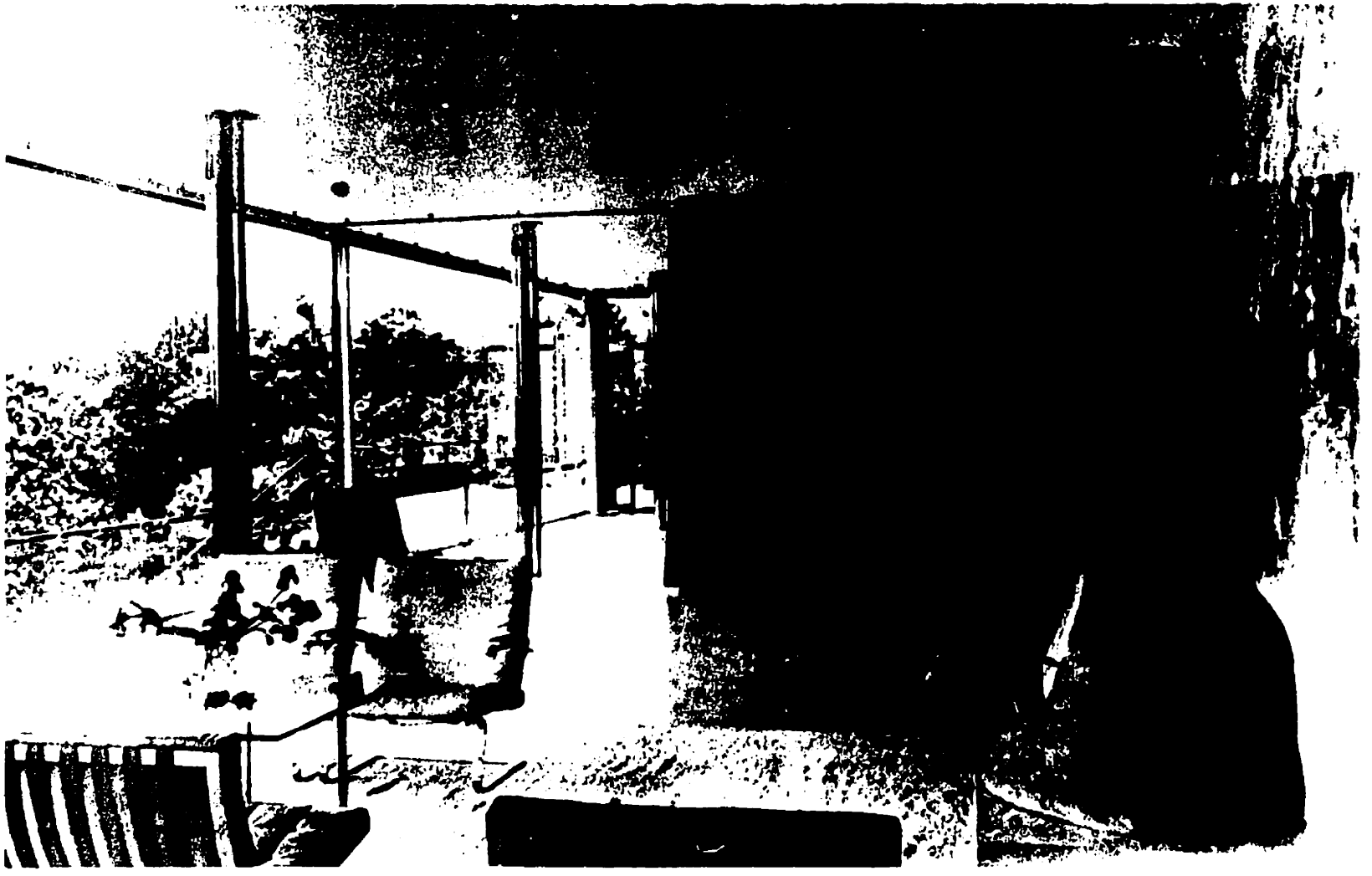

Plate 3.6 View to the seating area from the position of the statue, Tugendhat House. Photographed by Fritz Tugendhat.

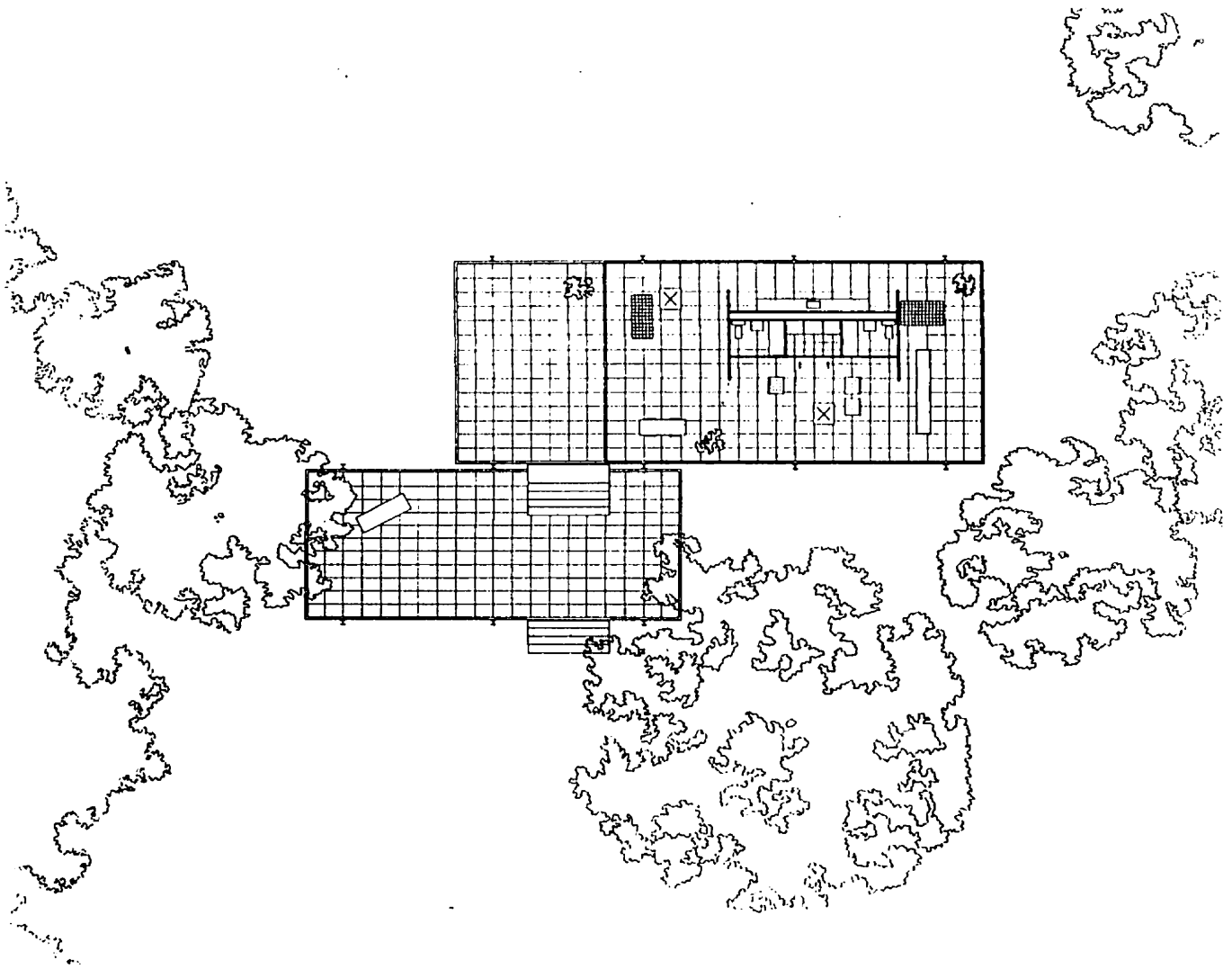

Plate 3.7 Plan, Farnsworth House, 1946-51.

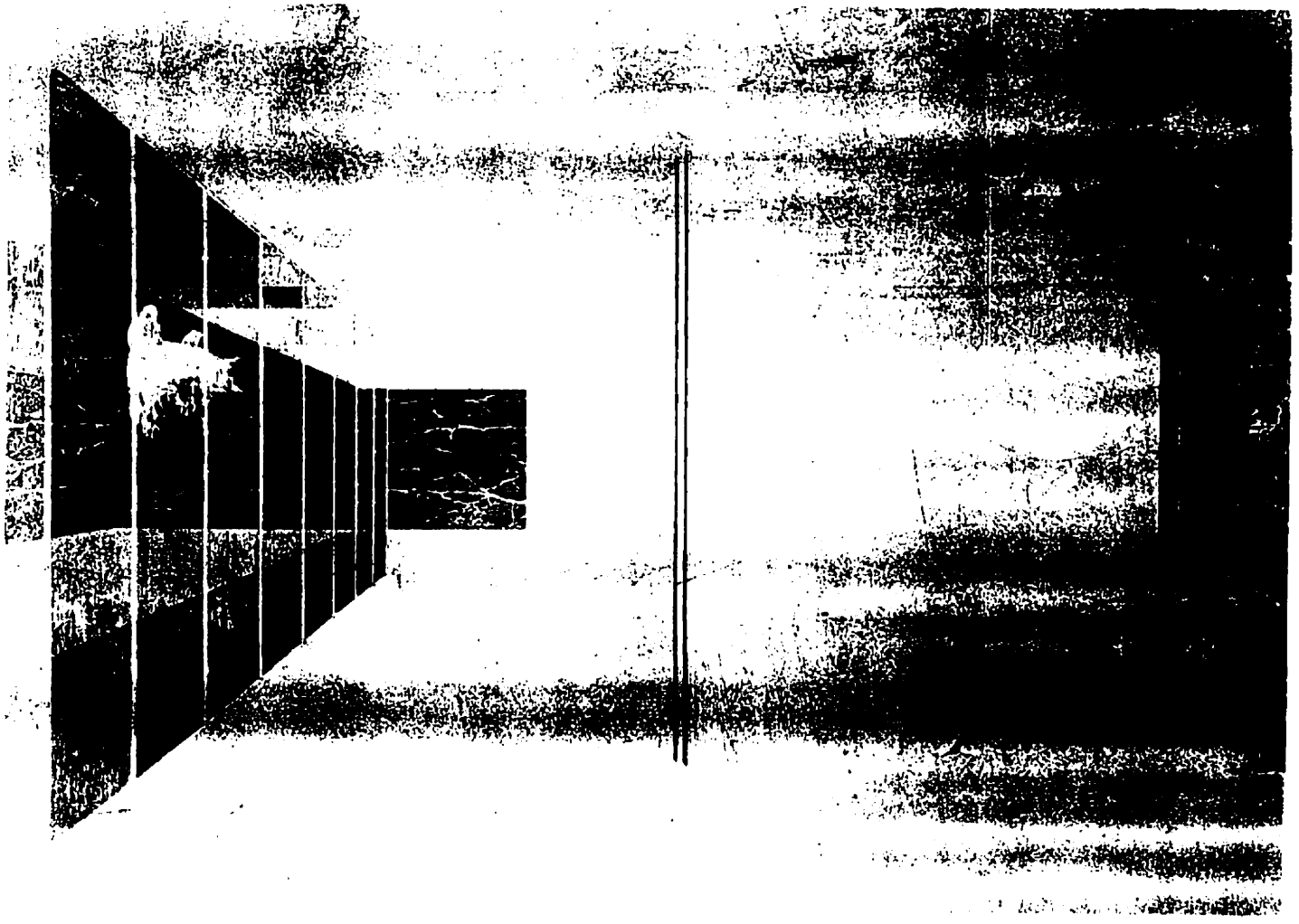

Plate 3.8 Interior perspective, c. 1928, Barcelona Pavilion.

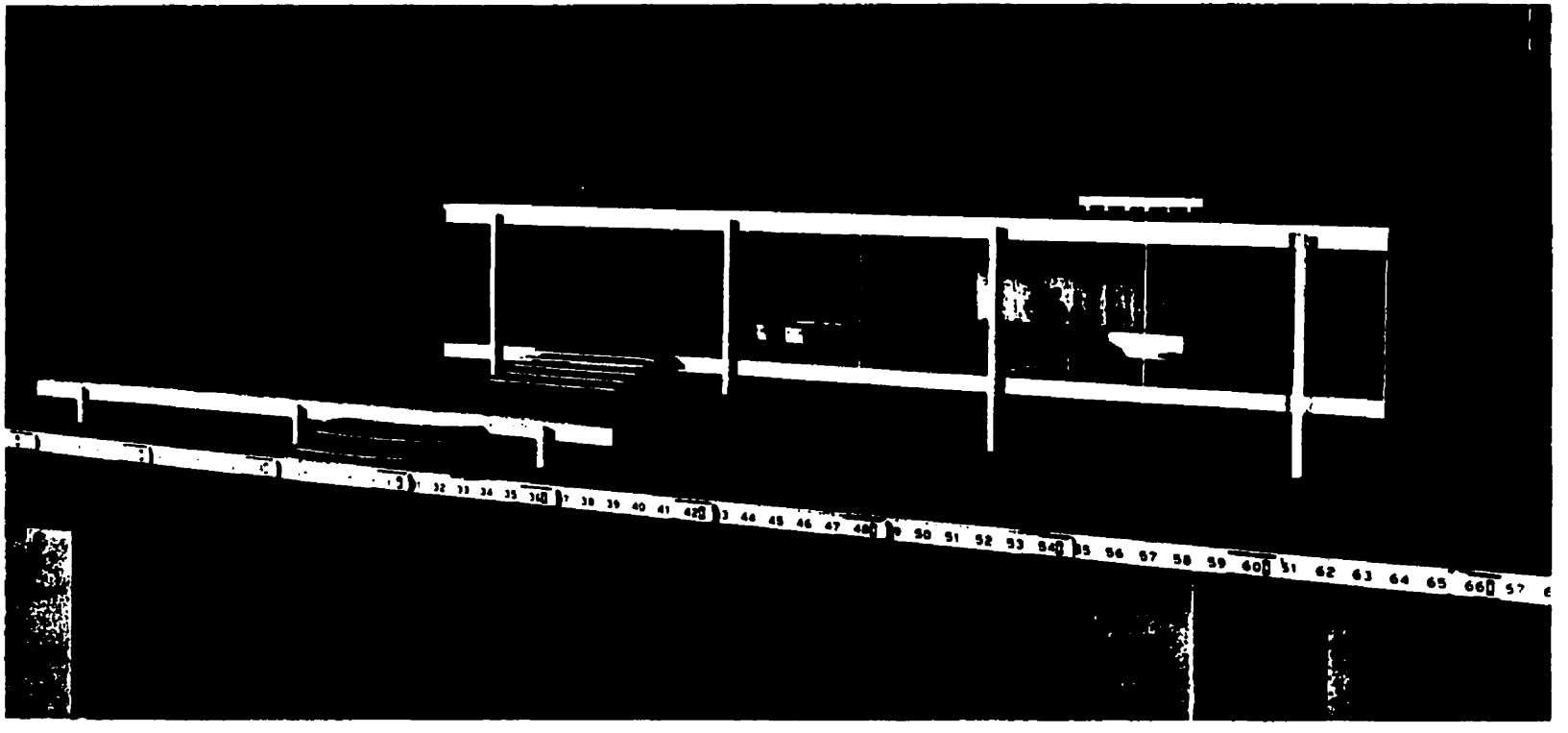

Plate 3.9 Model, preliminary version, Farnsworth House, 1946-51.

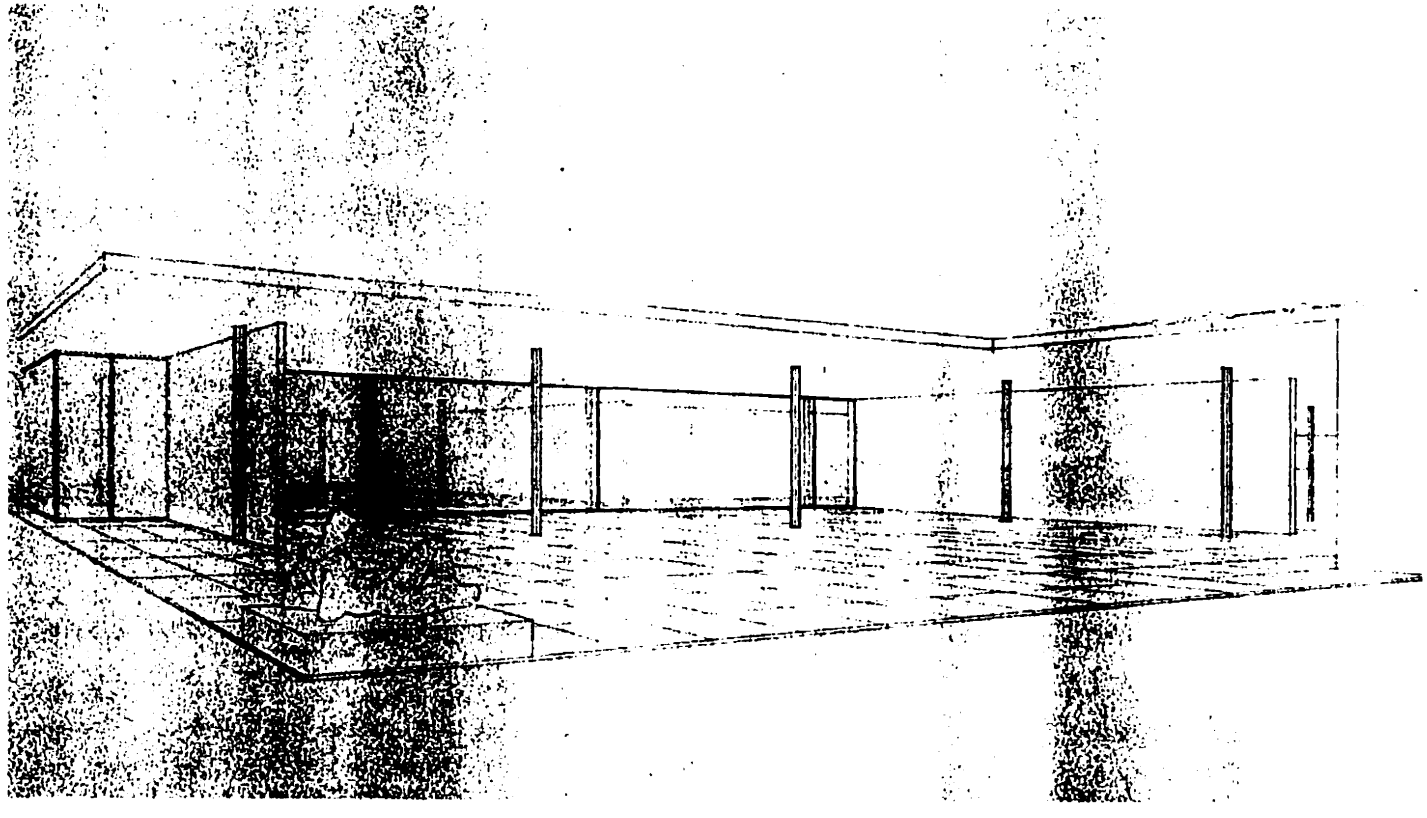

Plate 3.10 Perspective of the terrace, Krefeld Golf Club, 1930.

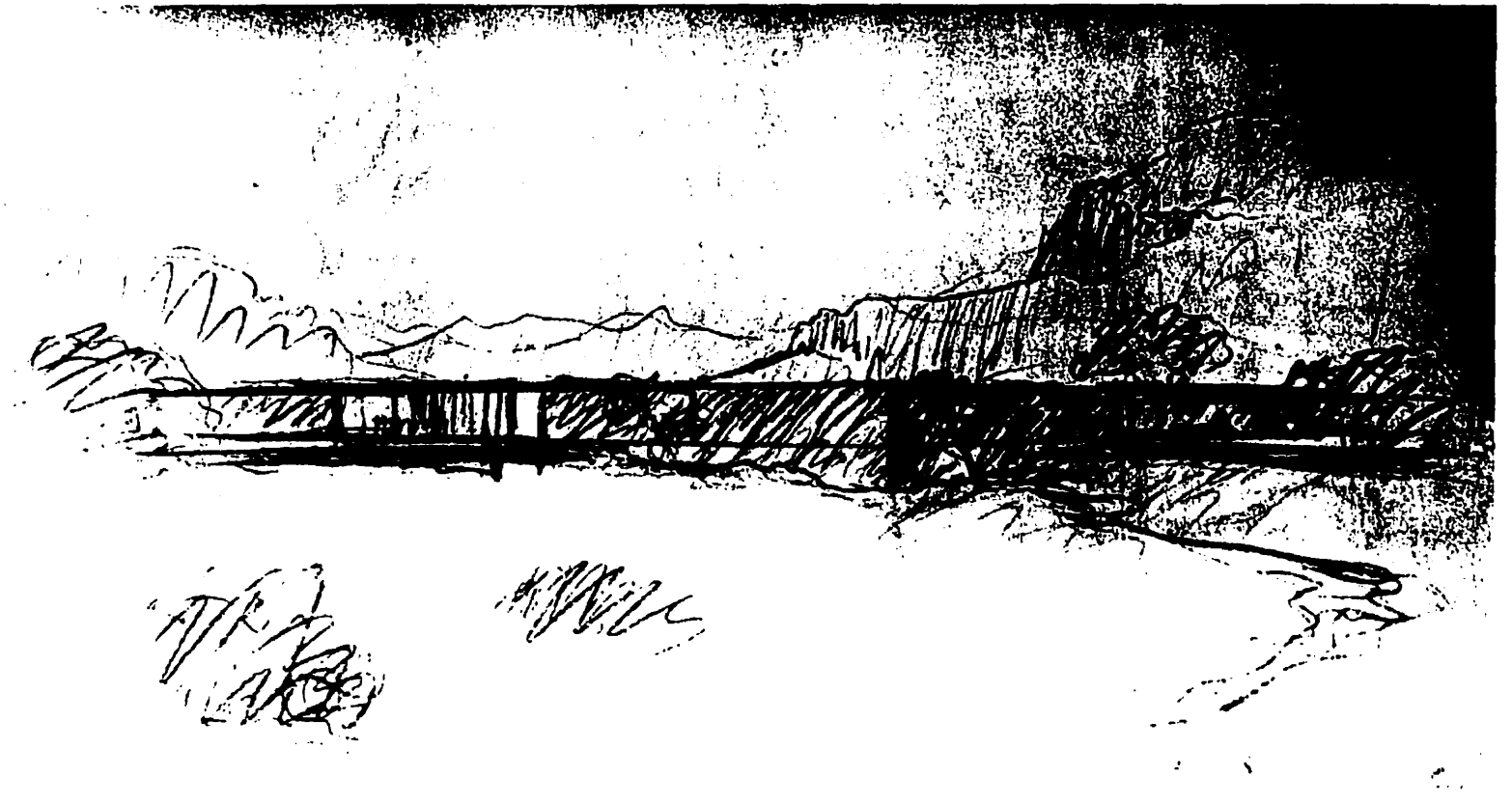

Plate 3.11 Exterior Perspective, Mountain House for the Architect, 1934.

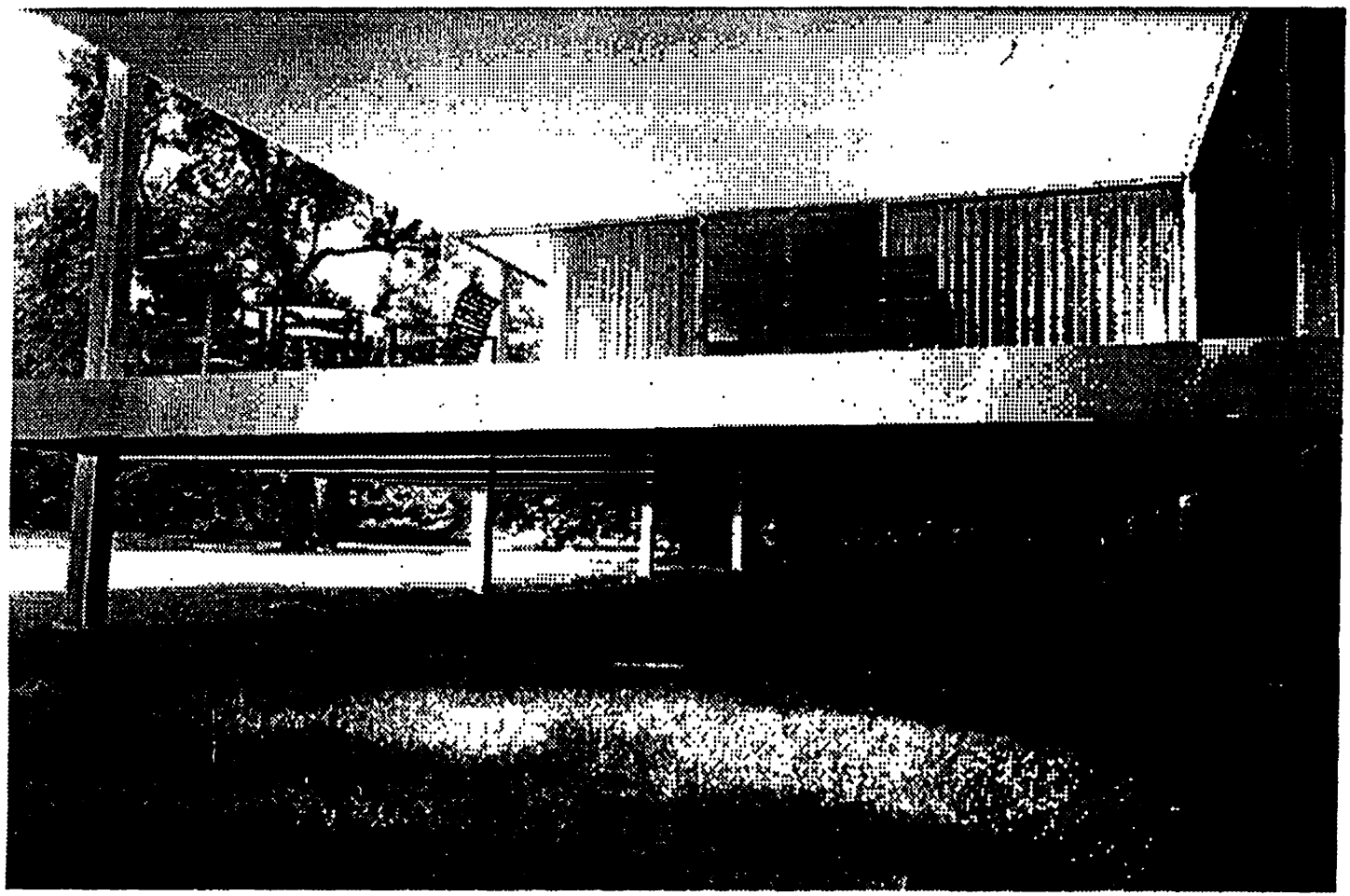

Plate 3.12 View from the west of the deck, Farnsworth House (slide taken by Xin Wu, July 1999).