

“The Edge of Danger”: artificial lighting and the dialectics of domestic occupation in Philip Johnson's Glass and Guest Houses

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Abstract: In the first half of the twentieth century the dematerializing of boundaries between enclosure and exposure problematized traditional acts of “occupation” and understandings of the domestic environment. As a space of escalating technological control, the modern domestic interior offered new potential to re-define the meaning and means of habitation. This shift is clearly expressed in the transformation of electric lighting technology and applications for the modern interior in the mid-twentieth century. Addressing these issues, this paper examines the critical role of electric lighting in regulating and framing both the public and private occupation of Philip Johnson’s New Canaan estate. Exploring the dialectically paired transparent Glass House and opaque Guest House (both 1949), this study illustrates how Johnson employed artificial light to control the visual environment of the estate as well as to aestheticize the performance of domestic space. Looking closely at the use of artificial light to create emotive effects as well as to intensify the experience of occupation, this revisiting of the iconic Glass House and lesser-known Guest House provides a more complex understanding of Johnson’s work and the means with which he inhabited his own architecture. Calling attention to the importance of Johnson serving as both architect and client, and his particular interest in exploring the new potential of architectural lighting in this period, this paper investigates Johnson’s use of electric light to support architectural narratives, maintain visual order and control, and to suit the nuanced desires of domestic occupation.

“The Edge of Danger”: occupation in Philip Johnson's Glass and Guest Houses artificial lighting and the dialectics of domestic

Philip Johnson, one of the more controversial and outspoken personalities of twentieth-century American architecture, infamously replied to a visitor of the Glass House who remarked she could never live there, “I haven’t asked you to, madam.” (Huxtable, 1964). The subtext of Johnson’s retort is not so much confrontational as it is defiantly exclusionary. The Glass House was conceived and developed as a work of art for the living delectation of the architect himself, rather than as a prototype for modern living. However, the Glass House is only a single element within the larger composition of Johnson’s New Canaan estate (Fig. 1).

History has elevated the Glass House to the status of icon, while turning a blind eye to the stubbornly eclectic Guest House. This paper seeks to address the estate as a whole, uncovering a more complex negotiation of physical and psychic, real and symbolic occupation. The dialectically paired transparent Glass House and opaque Guest House (both 1949) can be seen as metaphorical expressions of Johnson’s public persona and private architectural explorations during the mid-twentieth century. Johnson’s material, architectural, and aesthetic explorations, ultimately served to tightly regulate the inhabitation and the performance of domestic life within the New Canaan site. In this latter respect, Johnson’s estate represents the extreme manipulation of traditions of domestic occupation within modern architecture, in particular with regard to the use of large areas of glazing and indirect lighting applications.¹ The sophisticated illumination program developed for the Glass and Guest houses through the collaborative efforts of Johnson and Richard Kelly, one of the

premier architectural lighting designers working in the United States during the mid-century period, was a key mechanism in the aesthetic control and domestic “scripting” of the New Canaan estate.



Fig. 1; Glass House and Guest House in Frampton, 1978. p.53

While Johnson’s Glass House and, to a lesser extent, Guest House have been broadly analyzed and discussed by architectural historians, theorists, and critics, the unique electric lighting program for Johnson’s estate has been largely overlooked.² Traditionally, modern architectural discourse has approached its subject as suspended in a neutral or daytime environment. Temporal conditions and light effects are ignored despite the vital role of electric illumination in the articulation, imaging, and occupation of modern domestic architecture. The unique tensions that Johnson exploits between the Glass and Guest houses and the surrounding landscape cannot be appreciated fully without recognition of the role of the lighting programs for each structure and the surrounding estate, as well as knowledge of how these techniques fit into the contemporary interest in the potential of electric lighting to transform the domestic environment. This paper argues for a reconsideration of Johnson’s Glass and Guest houses, one which addresses the critical role of electric lighting in regulating and framing both the public and private occupation of Johnson’s New Canaan estate.

Lighting: Domestic “Attraction, Comfort, and Personality”

In the United States beginning in the latter 1940s and throughout the 1950s, consideration of the lighting environment for the home began to receive increasing attention in the popular press. A number of articles offering advice on how to best incorporate electric lighting into the domestic interior appeared in this period in sources such as *The New York Times*, *The Saturday Evening Post*, *Vogue*, *House and Garden*, and *Flair*. These articles typically addressed the integration of new electric lighting techniques into domestic spaces as an aspect of “home decoration” rather than as technology or utility. Richard Kelly, who was himself just beginning his career as an architectural lighting designer in these years, published a number of articles offering guidelines on how to improve lighting conditions in the domestic realm; one of the earliest of these, “Making the Most of Lighting” appeared in *The New York Times* in October 1948 (Kelly, 1948, p.21). Using familiar, non-technical language, Kelly organized his instructions around three primary roles of light in the home, which he identified as: attraction, comfort, and personality. “Attraction” refers to the use of light for

“direction of interest” and to emphasize “the good and important features of the home, such as fine carpeting, pictures, and glassware,” while “comfort” includes more utilitarian applications of light for activities like reading, sewing, cooking, and dressing. “Personality,” the third principle use of light in the home receives the greatest attention throughout the article and is, according to Kelly, “truly the art of lighting.”

While falling under the article subheading “creating atmosphere,” Kelly clearly aligns the atmospheric use of light with an articulation of individual “personality”—a luminous self-expression that can be immediately sensed by guests upon entering one’s home. Kelly writes, “Every hostess wishes to make her home a true expression of herself...On entering the living room, the guest should sense the personality of his hostess. To make this possible, painstaking care should be taken in light planning.” Kelly continues, describing a variety of lighting techniques that could be used to imbue domestic spaces with tailored visual narratives—from a hierarchical formality resulting from a brightly-illuminated ceiling, to a more intimate impression given with lighting restricted to areas below eye-level. In this article, Kelly’s attention is largely given to lighting scenarios for entertaining, where creating the correct “personality” with modern home lighting becomes the ultimate challenge for the sophisticated hostess. In this way, electric lighting not only infiltrated the technological systems of the domestic realm, but also through the scripting of the home as a social space. With new lighting sources that allowed a variety of recessed and indirect lighting applications, the fixtures themselves became less important as the emphasis moved to the effects of the light itself and the variety of emotive atmospheres that could be created. As Sheldon and Martha Cheney had predicted in their 1936 survey of modern American design, *Art and the Machine*, “the final, the most distinctively machine-age element is electric light, used as the harmonizing and unifying element, now a marvellous flexible instrument in the hands of the designer.” (Cheney, 1936, p189).

Living in Glass Houses

Johnson’s interest in lighting design as a tool of new and significant architectural potential increased in the latter 1940s as he began a series of collaborations with Kelly. Among their first projects together was Johnson’s Glass House. Here Johnson and Kelly established the primary vocabulary of light that they would use throughout the estate and on other projects. With the New Canaan estate, Johnson and Kelly pushed the use of artificial lighting to create specific visual environments that expressed the “personality” of Johnson—a sizable job indeed. For Johnson, who was in the early stages of his career as an architect, the New Canaan estate was more than just a weekend retreat; it was an opportunity to prove himself as a designer. Therefore, to appreciate the intentions that guided the design and use of artificial light for the Glass and Guest houses, it is helpful to consider the context from which they emerged. It is nothing less than modern architectural legend that the impetus for Johnson’s Glass House arose from a disagreement in 1945 between Johnson and Mies van der Rohe as to whether or not it was possible to build an entirely glass-walled house.³ Mies claimed that it was possible and responded by designing the Farnsworth House, which had been commissioned by the American physician Dr. Edith Farnsworth.⁴ After Johnson saw Mies’s drawings for the Farnsworth House, he began developing plans for his own glass house in 1946. While much attention has been paid to the formal distinctions between the two architects’ solutions—Mies typically credited with superior tectonics and Johnson with scenography—the important relationship of architect to client is less frequently discussed. Mies designed the Farnsworth House for a single, professional woman, but Johnson designed

the Glass House for himself. So while the paternity of the Glass House is clearly Miesian, the rich and strange complexity of the New Canaan estate is fully-Johnson.

Equal parts manifesto and bravado, from the outset the Glass House was designed to be the “star” of the New Canaan estate. As an exploration of the formal and material concerns of modern architecture, Johnson took great pride in his ability to put aesthetics at the centre of his design process, as he reflected:

The glass house set out to change people’s way of life. My personal aim, and it was not the public’s nor the modern architects’ aim at all, was to show that modern houses can be beautiful. I only had one objective, and I still do, that it has to look beautiful.⁵

As an aesthetic ideal, the Glass House was very much tied to the principles of International Style architecture that Johnson had himself defined with Henry Russell-Hitchcock in 1932 with *The International Style* exhibition for the Museum of Modern Art in New York City. The exhibition highlighted certain formal and aesthetic continuities in modern architecture, primary among them: emphasis on spatial volumes rather than mass and solidity; regularity as opposed to symmetry; and the banishment of applied ornament (Hitchcock; Johnson, 1932). These principles, not surprisingly, find distilled expression in the Glass House. The floor-to-ceiling glazing, formal precision, tectonic regularity, and open interior volume of the pavilion all speak to the rationalized and rigorous aims of the International Style as Johnson and Hitchcock had described it. Similarly, the aesthetic regulation of the Glass House was not confined within the glazed walls of the pavilion, and Johnson carefully edited the surrounding landscape in order to frame the most pleasing views from the Glass House.⁶

Johnson was hardly alone in his desire to visually appropriate the landscape as an element within the composition of modern residential architecture.⁷ In the first half of the twentieth century the dematerializing of traditional boundaries between enclosure and exposure developed hand-in-hand with improved construction technologies and glazing manufacturing and performance. However, the increasing emphasis placed on bringing the “outside in” created significant challenges for the feasible occupation of such domestic spaces. Primary among those concerns was how to overcome the psychic dislocation caused by the extensive visual exposure of living behind glass walls.⁸ Particularly after dark this sense of vulnerability, of being seen without being able to see, was greatly amplified. As Johnson described his conflict over this effect in within the Glass House:

My plan was first of all a shelter, which is the goal of every home. But having used transparent walls to enclose myself within a decorative landscape, instead of hiding behind conventional walls, I wanted to enjoy that environment at night, I didn’t want to clutter the place with drapes and shut myself in. Neither did I want to live in a gold fish bowl. (Nicholson, 1958, p.61).

Thus, while Johnson wanted to maintain the transparency of his glass walls and the visual connection to the estate after dark, he was keenly aware of the inversion of the gaze at night. Yet, despite his claim of not wanting to be on display as if in “a gold fish” bowl, Johnson perversely boasted of the pleasure he derived precisely from the risk of exposure within the Glass House:

I mean the idea of a glass house, where somebody just might be looking—naturally, you don’t want them to be looking. But what about it? That little edge of danger in being

caught. Sometimes a little kid masturbates because he wants to get caught. (Lewis; O'Conner, 1994, p.49).

The complexity of Johnson's engagement with the binary tensions of the gaze is revealed in his likening of this "edge of danger" to that of a young boy whose enjoyment in masturbation comes in part from the knowledge that he might be seen. The electric lighting program Johnson developed with Kelly for the Glass House exaggerated that edge of danger through control of the visual environment, both within and without the pavilion, sublimating fear into titillating exhibitionism (Fig. 2). It allowed Johnson to maintain his controlling gaze over the estate from the safety of the Glass House, while amplifying the stage-like setting of the glass pavilion after dark.

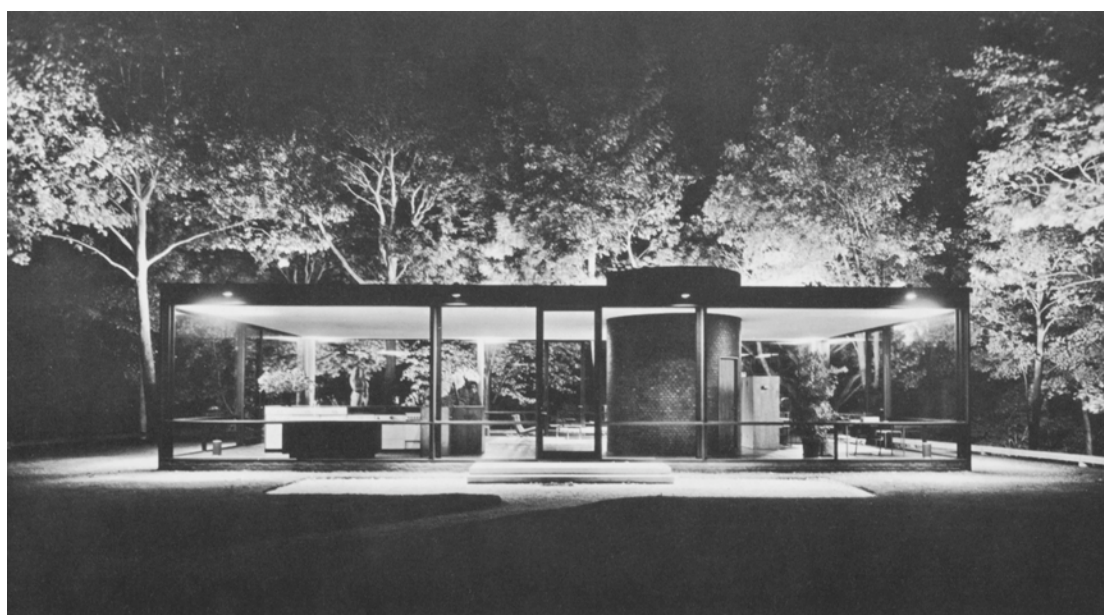


Fig. 2; Philip Johnson, Glass House, New Canaan, Connecticut, 1949; exterior night view of house with lighting design by Richard Kelly, c.1960. Photo, Alexandre Georges

“Effect before everything”: Lighting and the performance of occupation in the Glass House

Originally, Johnson had attempted to design the lighting for the Glass House himself but found that he was unable to eliminate the sharp glare and reflections produced by artificial light on the blacked-out glass walls after dark.⁹ These conditions created the “fish bowl” effect that Johnson wished to eliminate. The fundamental visual transparency of the Glass House was blocked when the surrounding night turned the glass walls into mirrors. Finding himself unable to achieve the nighttime visual environment he desired for the Glass House, Johnson sought Kelly's assistance.¹⁰ Like Johnson, Kelly also had given considerable thought to the challenge of glass architecture, particularly how to light it. After studying architecture at Yale in the early 1940s, Kelly had designed the lighting for a number of high-profile modern interiors and residences. Based on these experiences, Kelly raised questions about illuminating modern architecture, arguing for the integration of lighting design into modern architectural practice. Kelly's unique approach to lighting design considered the role of illumination in the articulation and performance of modern architecture, as well as in the perception and experience of space. In an era when electric lighting technology and design was still in its infancy, Kelly argued for an integrated approach to architectural lighting design,

writing in 1946, "Today, good lighting is a vital part of good living. It begins, not with the house, but with all the things that make up your life in the house...Ideally, lighting grows with the plans of the house right from the blueprint stage." (Kelly, 1946, p152).

Analyzing the Glass House from both its material and performative context, Kelly devised an illumination scheme that emphasized the transparency of the glass walls and controlled views of the landscape from the interior and exterior of the pavilion (Fig. 3).



Fig. 3; Upper right, interior with Kelly's lighting program; upper left, interior without Kelly's lighting program; lower left, lighting plan, in Kelly, 1953, p.153

Kelly's innovative plan lit the house from the "outside in," providing the interior with a functional level of indirect light while allowing the glass walls to remain transparent membranes. Equally important to maintaining the continuity between indoors and outdoors was the incorporation of the landscape into the visual environment of the Glass House. Just as Johnson had curated the trees and foliage framing the ledge on which the Glass House was sited, Kelly selectively illuminated the landscape composing views and giving Johnson full visual control of the staging of the Glass House after dark.¹¹ Positioning powerful lights downwards in regular intervals along the cornice, Kelly illuminated a strip of lawn around the perimeter of the house, forming a light-frame for the structure that emphasized the footprint of the pavilion and as well as the visual connectivity between inside and outside. Floodlights buried in a trench surrounding the house, just outside the glass walls, directed strong beams of light up onto the interior ceiling providing soft diffused illumination for the principal and functional lighting of the interior. The final layer in Kelly's lighting plan reached out beyond the frame of the Glass House, bringing the surrounding landscape into focus with individual spot and floodlights placed at the base of selected trees and mounted on the roof.

Through the design of artificial light, Johnson and Kelly strengthened the outward reaching visual occupation and domestication of the surrounding landscape and stabilized the performance of the Glass House day and night. However, the controlled precision that Johnson required of the Glass House, denies something of the human fallibility one necessarily expects of conventional domestic space (Lewis; O'Conner, 1994, p. 45).¹² One might ask how much of Johnson's ideal of beauty as expressed in the Glass House, was just that, an ideal of what modern inhabitation should look like? Johnson famously denied a guest a bedside reading lamp because it would, "spoil the effect," and as he added, "effect before everything." ((Lewis; O'Conner, 1994, p. 39). If the aesthetic effect was the foremost consideration for Johnson, then it is possible to argue that the lighting for the Glass House was clever architectural stagecraft in service of a personal *mise-en-scene* of modern domestic life—one which illustrated Johnson's own ability to live in denial of what most would consider necessary comforts. As Kevin Melchionne (1998) posits in his analysis of the radical aestheticism of Johnson,

The Glass House contradicts the long standing Western association of dwelling with enclosure, privacy, and relaxation. As these tendencies are deeply entrenched, one can never get used to the Glass House and so can never truly inhabit it." (p.192)

Johnson was a showman who revelled in contradicting himself and confounding his critics. In this role the Glass House perhaps was his grandest folly, not the infamous half-scale pre-cast concrete lakeside pavilion he would build some 13 years later on the New Canaan site. The Glass House, in which Johnson held court for just over fifty years, served as an elaborate performance of the architect's desire to control, in its entirety, the aesthetics of domestic occupation (Melchionne, 1998, p.191).¹³ Yet even Johnson could not manage to live solely within the exacting requirements of the Glass House, and indeed, it never was intended in isolation. Perhaps as a way of cheating the answer to the initial question of whether or not it was possible to build (and live in) an entirely glazed house, Johnson developed the Guest House in tandem with his *miesian* glass box.¹⁴ As much as the Glass House was phenomenologically about "outside," the Guest House was equally "inside." Johnson claimed to separate his buildings into "inside" and "outside" and in many ways these two houses represent the quintessential expression of these binary typologies. The Glass House framed and promoted Johnson's public persona, while the Guest House quietly nurtured the architect's private life, initiating his first steps away from Mies and his embrace of the emotive and purely decorative.¹⁵

Illusion and the private occupation of the Guest House

The Glass House—cool, intellectual, rational—has been celebrated as one of Johnson's highest architectural achievements, while the Guest House—sensual, irrational, and illusory—has a much humbler reputation. The thick opacity of the Guest House contradicts much that is highly praised in its glazed neighbour and seems to purposely deflect inspection. From the outside, the physically and visually impenetrable brick face expresses containment and secrecy. Similarly rectangular in form, the long brick *façade* situated towards the Glass House is broken only by the black ground-to-cornice door, revealing nothing of the structure's inner life or divisions. The eastern *façade*, despite being punctuated by three round windows, is similarly poker-faced. Even in its slow development, Johnson's brick clad Guest House suggests the messy, illogical patterns of private thoughts. Originally designed as three rooms arranged sequentially along the building's length and accessed by a narrow corridor, just four years after its completion, Johnson decided to remodel the space, merging two of the rooms

into one long bedroom and creating a small adjacent study from the remaining room. In this reorganization, the Guest House was transformed from an economical arrangement for housing visitors into an intimate interior landscape. Enclosing the new bedroom within a series of canopied plaster vaults suspended from the ceiling and carried to the floor on thin columns, Johnson created a faux open pavilion within the brick walls of the Guest House (Fig. 4).



Fig. 4; Philip Johnson, Guest House, New Canaan, Connecticut, 1949; interior view, bedroom of Guest House, 1953

Inside this hermetically sealed interior space Johnson experimented with romantic architectural effects and in collaboration with Kelly, developed atmospheric and dramatic lighting techniques. As Phyllis Lambert (2005) described her first experience of the Guest House,

An ecstatic aura pervaded the guest room. One was not aware of entering a tall, narrow, windowless, tomblike space but rather was captivated by the glow of light washing the sandlike expanse of pink, silver, and gold Fortuny cloth covering the enclosing walls. Turning the knob of a substantial dimmer box at the head of the bed...one had the sense of nightfall in the desert, under the vaulted canopy—a sheltering firmament—as the light gradually faded. (p.45)

The dreamy, sheltered world Johnson conjured within the Guest House defied the physical containment of its brick walls. Lambert and others allowed entry into the Guest House have remarked on the expansiveness of the bedroom and perceptual illusion created by the soft indirect lighting emerging from behind the canopy and gently fading down the drapery (Nicholson, 1958, p. 61). Here again Johnson worked closely with Kelly designing the lighting

program for the renovated Guest House. In opposition to the sharp, bright illumination that plucked the Glass House and the surrounding trees out of the darkness, Kelly's lighting scheme for the Guest House was low and illusionistic, dissolving details. The transformative qualities of Kelly's lighting no doubt were a result of his belief in the perceptual and sensual potential of architectural lighting. As Kelly described his approach in an article from 1950:

[Light] is not nature, but the artificial control of selected natural elements. Light and seeing are inseparable conceptions. We in fact make what we see by making things visible, and we make them appear and disappear to suit nuances of our desires." (p.66)

The Guest and Glass houses represent the extremes of this principle. The clever use of artificial light within the Guest House transformed the closed, claustrophobic interior of the brick structure into an atmospheric, sensual space where the walls disappear behind light-washed drapes. The Glass House, alternatively, achieved its greatest transparency at night, when bright illumination fused architecture and landscape into precisely planned views. Both houses express very different kinds of occupation—the Glass House a stage for public performance of a tightly choreographed ideal of domestic beauty and the Guest House a closed interior for the private exploration of the sensual and illusory. The Glass House was central to Johnson's public persona—it was here that he held countless architectural salons and entertained the glitterati of the art and design world for much of the second half of the twentieth century. As a key site of his public life, the Glass House was occupied by the presence of an outward controlling gaze, one that brought all in alignment with Johnson's aesthetic agenda. The Guest House was Johnson's inward-looking retreat, where he first began to experiment with his own playful approach to architecture and to indulge in the romantic, scenographic effects of lighting.

Conclusion: occupations of control and desire

With the dualities of the Glass and Guest houses in mind, it is revealing to return again the Farnsworth House and to the relationship of the architect to the client. Mies in designing the Farnsworth House surely succeeded in building a sublimely beautiful glass house for his client, yet he failed to create a space that Farnsworth herself could comfortably occupy. In an interview with *House Beautiful* in 1953 Farnsworth complained, "In this glass house with its four walls of glass I feel like a prowling animal, always on the alert. I am always restless." (Wagner, 1996, p.217). Farnsworth found she could not live in the modernist ideal of domestic inhabitation. In rebellion, she put up drapes, brought in carpets and enclosed herself with traditional comforts. Johnson, being architect and client, had the luxury to design for himself spaces within the New Canaan estate for both his substantial public persona and his private person. Where Farnsworth found herself helplessly exposed, Johnson delighted in the "edge of danger" and the risk of exposure precisely because he created both means to control and escape the gaze. In expression and experience of both of these realms, electric lighting served a critical role in articulating the visual regulation and domestication of the Glass and Guest houses. The lighting scheme for each house creates its own form of occupation by visually and psychologically defining the expectation of that space. At night the illuminated Glass House became a stage upon which Johnson could perform and control the rituals of his public life. Within the Guest House, artificial illumination transcended natural distinctions of day or night, creating a perpetual dusk where fantasy and invention are unbound. When we view these two houses as engaged in this dialectic—exposure and enclosure, control and release, day and night—we are allowed a more complex understanding of Johnson work and the means with which he occupied his own architecture.

Endnotes

¹ Kevin Melchionne argues that Johnson's Glass House is the result of a search for "aesthetic pleasure" rather than traditional domestic comforts; see Melchionne, Kevin (1998). Living in Glass Houses: Domesticity, Interior Decoration, and Environmental Aesthetics. *The Journal of Aesthetics and Art Criticism* v.56, n.2, pp. 191-200.

² A notable exception is Lambert, Phyllis (2005). *Stimmung* at Seagram: Philip Johnson Counters Mies van der Rohe. *Grey Room* 20, pp. 38-59.

³ See Johnson, Philip (1950). House at New Canaan, Connecticut. *Architectural Review* v.108, n.654, pp. 152-159.

⁴ The Farnsworth House was not built until 1951 however, two years after the completion of the Glass House.

⁵ Johnson also said in this 1991 interview, "Since it is not adaptable for family living, this type of house didn't gain great popularity in United States...the Glass House doesn't fulfil the needs of family living." Kunihiro, George (1991). Interview with Philip Johnson. *The Japan Architect* 1, pp. 4-7.

⁶ Key critical texts argue that the Glass House is defined by its perceptual limits, rather than by traditional architectural boundaries. Kenneth Frampton suggests, "The tress surrounding the house serve as the perceptual limits of the domain. These limits are unambiguously established at night by floodlit trees, while during the day the domain is determined by the extent of the manicured lawn." Frampton, Kenneth (1978). The Glass House Revisited. *Institute for Architecture and Urban Studies*, n.9, pp. 38-59.

⁷ Mark Wigley examines the lawn as a critically neglected architectural surface, including a discussion of its electrification and illumination. Wigley, Mark (1999). The Electric Lawn. In *The American Lawn*. Ed. Georges Teyssot. New York: Princeton Architectural Press, pp. 155-195.

⁸ An article in the New York Times called attention to the problems arising from the use of window-walls and large expanses of glass in domestic architecture, reporting that residents of glass buildings "develop dizziness, a fear of being watched, and an aversion to light that has been dubbed 'the lighting syndrome.'" Klemesrud, Judy (1967 Nov. 28). Light-Shy Tenants Taking a Dim View of Glass Walls. *The New York Times*, pp.52.

⁹ Johnson said, "When I first moved into the glass house there was no light—other than the sun. You can imagine the problem with reflections. If you had one bulb, you saw six. When it got dark outside, there wasn't anything a lighting man could do, or so I thought. Richard [Kelly] founded the art of residential lighting the day he designed the lighting for the Glass House." Johnson, Philip (1979). Philip Johnson Remembers Richard Kelly. *Lighting Design and Application* v.9, pp. 28, 49.

¹⁰ Kelly and Johnson had served together on a jury to select the ten best new lighting fixture designs for 1946 as a part of the Museum of Modern Art's "Good Design" program.

¹¹ Johnson called his heavy editing of all but select trees from the New Canaan site "negative landscaping." Schulze, Franz (1994). *Philip Johnson: life and work*. Chicago: University of Chicago Press, p.198.

¹² Johnson remarked that he could not work in the Glass House because of the "lack of containment" and in response built the "studio" in 1984 on the New Canaan estate.

¹³ Johnson famously marked the precise location of each object within the Glass House so that visual order would be maintained.

¹⁴ Just prior to the completion of the Glass House an article in the *New York Times* describe the house as part of a “three unit composition for living” referring to the Glass and Guest houses and the large free standing sculpture. Haeberly, Mabel C. (1948, Dec. 12). All-Glass Home on Ponus Ridge Startles New Canaan Residents. *New York Times*, R1.

¹⁵ Phyllis Lambert argues that, “Philip’s first constructed move away from Mies occurred in the remodelling of a bedroom of his Brick Guest House, conceived as a foil to his Glass House.” Lambert (2005), p. 43.

References:

- Cheney, Sheldon and Martha Cheney (1936). *Art and the Machine; an Account of Industrial Design in 20th-Century America*. New York, London: Whittlesey House, McGraw-Hill Book Company Inc.
- Frampton, Kenneth (1978). The Glass House Revisited. *Institute for Architecture and Urban Studies* 9, 38-59.
- Haeberly, Mabel (1948, Dec. 12). All-Glass Home on Ponus Ridge Startles New Canaan Residents. *New York Times*, R1.
- Hitchcock, Henry-Russell and Johnson, Philip (1932). *The International Style: Architecture Since 1922*. New York: W.W. Norton & Co.
- Huxtable, Ada Louise (1964 May 24). He Adds Elegance to Modern Architecture. *New York Times*.
- <http://proquest.umi.com/helicon.vuw.ac.nz/pqdweb?index=0&did=118660903&SrchMode=2&sid=1&Fmt=10&VInst=PROD&VType=PQD&RQT=309&VName=HNP&TS=1233088266&clientId=7511>.
- Johnson, Philip (1979). Philip Johnson Remembers Richard Kelly. *Lighting Design and Application* 9, 28, 49.
- Kelly, Richard (1950). “Focus on Light: new techniques inspire exciting use in decor,” *Flair* 1. ----- (1946, December). The Better to See. *House and Garden* 90, 152-154.
- Klemesrud, Judy (1967 Nov. 28). Light-Shy Tenants Taking a Dim View of Glass Walls. *The New York Times*, 52.
- Kunihiro, George (1991). Interview with Philip Johnson. *The Japan Architect* 1, 4-7.
- Lambert, Phyllis (2005). *Stimmung* at Seagram: Philip Johnson Counters Mies van der Rohe. *Grey Room* 20, 38-59.
- Lewis, Hilary and O’Conner, John (1994). *Philip Johnson: The Architect in his own Words*. New York: Rizzoli.
- Melchionne, Kevin (1998). Living in Glass Houses: Domesticity, Interior Decoration, and Environmental Aesthetics. *The Journal of Aesthetics and Art Criticism* 56, 191-200.
- Nicholson, Arnold (1958). Mr. Kelly’s Magic Lights. *The Saturday Evening Post* 231.
- Schulze, Franz (1994). *Philip Johnson: life and work*. Chicago: University of Chicago Press.
- Wagner, George (1996). The Lair of the Bachelor. In *Architecture and Feminism*. Ed. Elizabeth Danze and Carol Henderson Debra Coleman. New York: Princeton Architectural Press.
- Wigley, Mark (1999). The Electric Lawn. In *The American Lawn*. ed. Georges Teyssot. New York: Princeton Architectural Press.