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## **Formless - The Concept of Structure and Material in John Cage's 4'33" and the Resor House by Mies van der Rohe**

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### **Formless - The Concept of 'Silence' in Music and Architecture**

Traditionally, music has been distinguished from noise, just as architecture is usually framed in juxtaposition with formless matter. As cultural-products, music and architecture have been essentially connected to ideas of beauty, unity, harmony, and structure. Nevertheless, a series of radical twentieth-century compositional experiments have questioned the fundamental assumptions behind these ideas. Experimental explorations into the concept of "silence" and the role of structure and material in music and architecture introduced a full engagement with the phenomena of the formless.

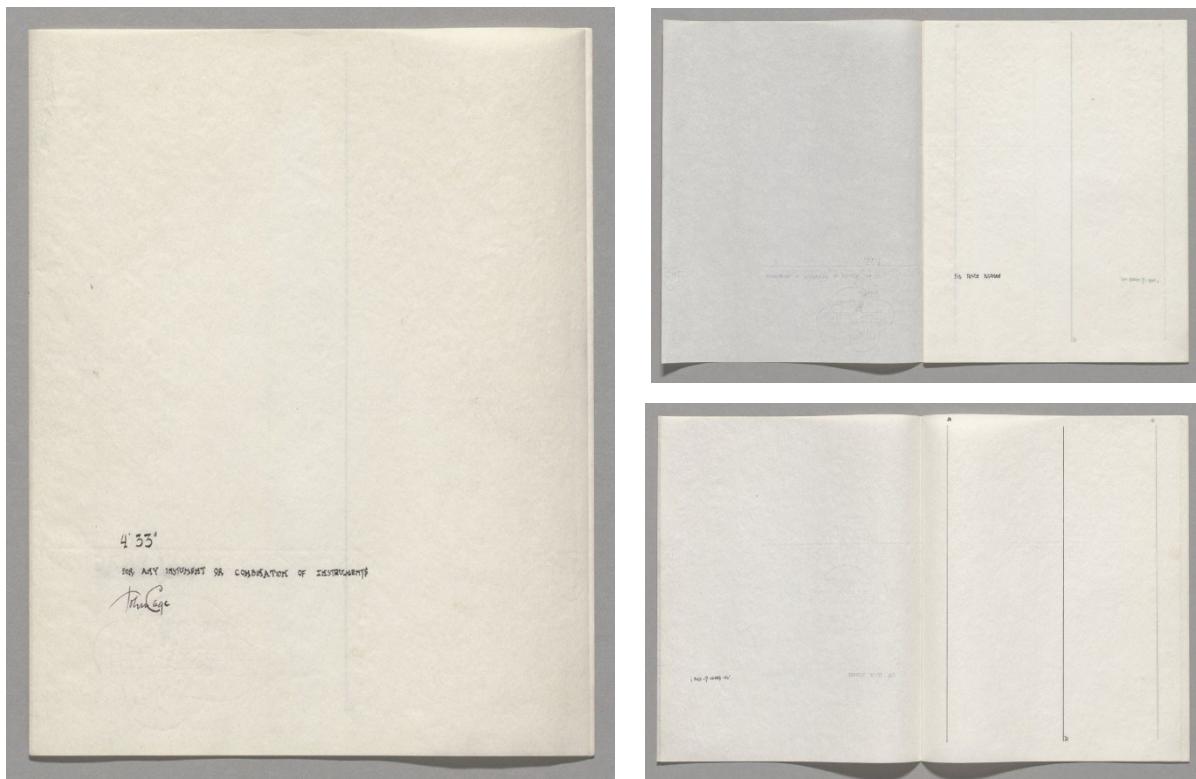
This paper introduces some of these radical experiments in music and architecture while discussing parallels in the conceptional use of structure and material in John Cage's 4'33" and architectural drawings of the Resor House project by Mies van der Rohe. This essay will further discuss how the concept of 'silence' could be integrated not just in music but also in architecture through the deployment of its structural or material equivalent. The article comparatively explores the spatial interpenetration/intersection that could be experienced through sound material in 4'33' on the one hand and the spatial intersection that occurs between the Resor House and its enveloping Grand Teton Mountain environment. The consideration of these interactive possibilities is enabled by the means through which Cage and Mies van der Rohe independently apply the concept of 'silence' in respective disciplines.

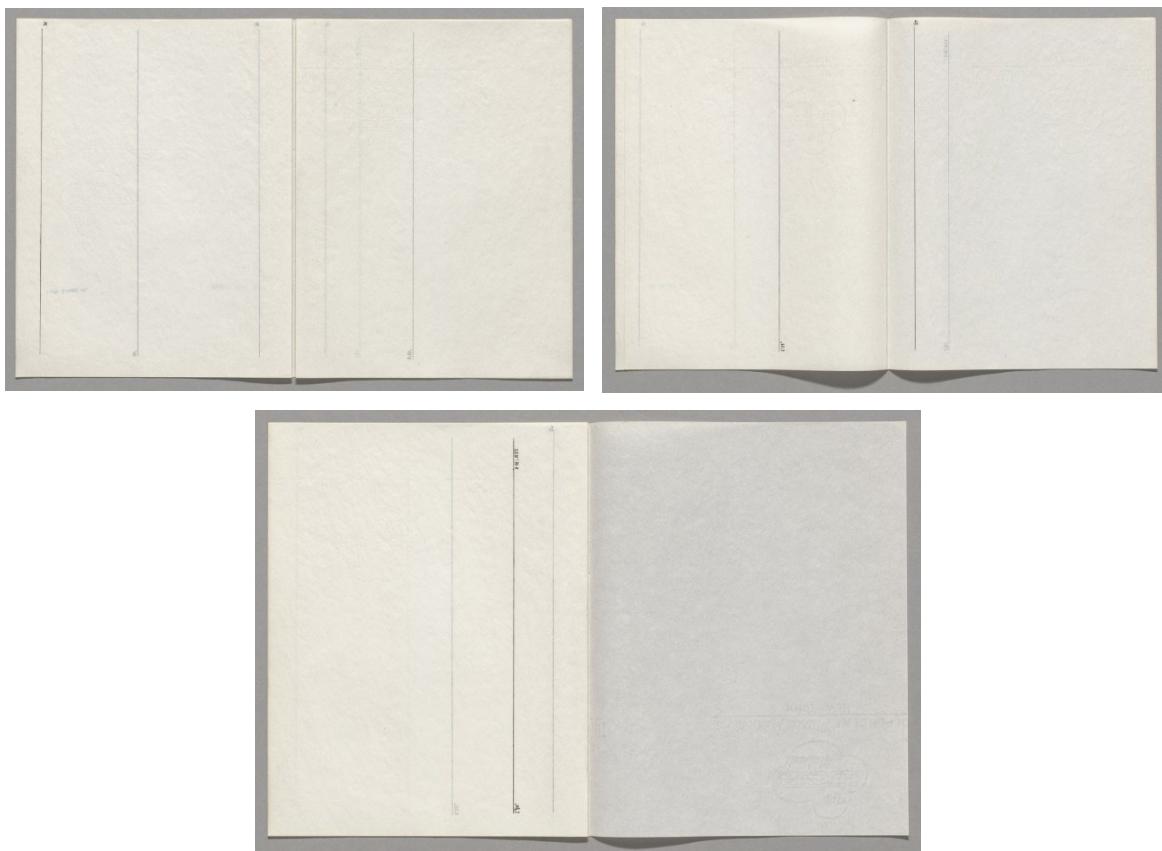
The pedagogic approach of Bauhaus masters, such as Moholy-Nagy and Albers, contributed significantly to Cage's work as a musician and performer as well as to the courses and lectures he offered to the students at the Black Mountain College in Black Mountain, North Carolina, and the New School for Social Research in New York City. Cage was part of the evolution of Bauhaus principles towards more process- and performance-oriented practices in the fine arts. Jeffrey Saletnik succinctly captured this Bauhaus-Cage relationship when he noted that: "Cage approached musical material

(sound) very much as a designer and for Cage, to compose music was to design with sound and 'silence.'<sup>1</sup> Cage and van der Rohe were similar in their experimentations or conceptualization of material, which was sound for Cage and glass for Mies. There is a similarity in the structural nexus between music and sound as a compositional material on the one hand and between architecture and glass as a building material.

### Into 'Silence': The Layering of Sound: 4'33" Musical Notations by John Cage

Joseph Branden notes in his book *Experimentations: John Cage in Music, Art, and Architecture* that John Cage saw harmony as an outdated and abstract ordering principle which served to regulate the otherwise continuous field of sound and Cage sought in his own work to find a substitute in structures based solely on the duration of time. For this reason, Cage intended to structure a musical piece or performance without regulating the existing sound-space within and around it.<sup>2</sup>





Figures 1 – 5: 4'33", by John Cage, 1951, (In Proportional Notation), ink on paper,  
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As I have argued in “Illustrating the Dialectics of the ‘Blatant’ and the ‘Latent’ through Translating Drawing Notations in Music and Architecture”, the experimental notations of Cage’s musical composition 4'33" from 1951-52 consist of manuscript paper with bar-line separations that correspond to the duration of the individual time units.<sup>3</sup> With no pre-set notes, 4'33" was designed to allow for an undetermined performance. Compositionally speaking, Cage sought to outline guidelines or rules for the composition’s actualization/realization, but he was not trying to pre-determine or circumscribe the actual musical performance. 4'33" was created to question harmony as a legitimate basis for musical composition, which entailed shunning the prevailing rules of musical notation and performance while embracing a translation of music into space and a vividly present spatial experience."<sup>4</sup>

The piece 4'33" offers a growing awareness of the acoustical surroundings of the musical performance. Cage deployed the absence of composed sound in order to draw attention to the kinds of sounds that would arise in the environment of the performance space itself – such as the shuffling of the audience's feet or an involuntary cough or the humming of electric lights. In thus forging a compositional integration between freedom and structure, Cage allows the listener or audience to experience the relationship between aural material and durational form."<sup>5</sup>

Branden writes, "The most widely known score of 4'33" (1951) is a specific textual version with Roman numerals that indicated movements I, II and III, with each of these numerals or movements marked as 'Tacit'. In this version, Cage's instructions indicate that the performer may use his/her own timing for each movement; or, following the principles of musical 'chance operations', the performer on his/her own may determine the duration of each movement".<sup>6</sup> Branden further explains:

It is not insignificant that this first reference [by Cage towards the concept of 'silence' in music, art and architecture] appeared in 1952, for that year marks the composition of Cage's most known work, 4'33": the manifesto presentation of his definition of 'silence' as the presence of ambient and unintentional noise rather than the complete absence of sound. Indeed, the following passage quoted from the 'Juilliard Lecture' in 1952 might well refer to 4'33", for as originally composed, the work consisted solely of an empty time-structure of three 'silent' moments through which any sounds emanating from the environment could flow.<sup>7</sup>

The "Juilliard Lecture" is also the earliest reference to glass architecture that can be found in Cage's writings about contemporary music. In 1952 Cage compares the transparency of music with the one of architecture, respectively of sound and of space, as follows: "It acts in such a way that one can 'hear through' a piece of music just as one can see through some modern buildings or see through a wire sculpture by Richard Lippold or the glass of Marcel Duchamp."<sup>8</sup>

And Cage comes back to the parallel between glass architecture and structuring 'silence' in his own work in his 1957 lecture "Experimental Music", delivered in Chicago:

For in this new music nothing takes place but sounds: those that are notated and those that are not. Those that are not notated appear in the written music as 'silences', opening the doors of the music to the sounds that happen to be in the environment. This openness exists in the fields of modern sculpture and architecture. The glass houses of Mies van der Rohe reflect their environment, presenting to the eye images of clouds, trees, or grass, according to the situation. And while looking at the constructions in wire of the sculptor Richard Lippold, it is inevitable that one will see other things, and people too, if they happen to be there at the same time, through the network of wires. There is no such thing as an empty space or an empty time. There is always something to see, something to hear. In fact, try as we may make a silence, we cannot...<sup>9</sup>



Figure 7: Ludwig Mies van der Rohe, Farnsworth House, Plano, 1951, Photograph by Dr. Ole W. Fischer, 2015. Permission to publish courtesy of the photographer.

In the above-passage, Cage reflects upon the transdisciplinary connections among music, sculpture, and architecture. Explicitly he compares the formlessness of unannotated noise with the openness of contemporary sculpture of Lippold and modern architecture of Mies van der Rohe: like his use of 'silence' in music would open it up to the ephemeral sounds from the environment, so does glass architecture open up space to the environmental elements (such as images of clouds, trees, or grass). In both cases, there is no emptiness nor timelessness, just unstructured material, openness to its surroundings. The environment becomes an integral part of the composition, whether the external influences and sounds in 4'33" or, as will be discussed here, the landscape in the case of the unbuilt Resor House near Jackson Hole, Wyoming, designed by Mies van der Rohe in 1937-38, prior to his glass houses. Accordingly, this exposition suggests that the relationship between architectural design / experimental music and its compositional material and environment could be construed as an interconnected spatial relationship – a reciprocal interpenetration of interior and exterior spaces.

In reference to Cage's Chicago lecture, Branden notes that "in Mies van der Rohe's architecture, the observation of the environment is to be understood as an observable result of the reflections cast across the glass surface of the building. In this reformulation of transparency in terms of reflection, Cage returned to what was one of the primary sources of his interpretation of transplantation of sound and 'silence' into architecture".<sup>10</sup> Here the author also interrelates the conceptions of vision and hearing, space and time, music, sculpture, and architecture.

### **Into 'Silence': The Layering of Space: Resor house Drawings by Mies van der Rohe**

The Resor House project was designed by Ludwig Mies van der Rohe between 1937 and 1939, as a private weekend retreat for Stanley and Helen Resor in Jackson Hole, Wyoming. This first project by Mies van der Rohe in the US was planned for a rural location in the middle of a wooded landscape with a river against the backdrop of the Grand Teton Mountain Range but remained unbuilt. The architectural features of this vacation home are so simplified that they can be read almost like a diagrammatic

abstract structure, which facilitates an integrative complementarity for the existing informal mountain landscape. Mies van der Rohe minimized the use of structural elements such as abstract planes of floor and ceiling and slender cruciform columns that span between them. These minimal structural elements of the interior are wrapped in glass curtain walls, which frame the exterior landscape.

One can read these intentions of Mies van der Rohe from three perspectival photocollages accompanying the Resor house project: they are an inversion of the old technique of an architectural drawing inserted into a photograph – here a photograph of a landscape is inserted into a perspective drawing.<sup>11</sup>

Mies van der Rohe chose to construct the images by cutting and pasting different photographs into a single perspectival montage, where the photographic content enters a discourse with the architectural drawing. These three perspectival collages reveal how Mies van Rohe developed the relationship to the landscape from the inside to the outside, not vice versa. With the perspectival photocollages for the Resor House, Mies had forged a synergy between the house and the landscape to form a platform that is discoverable and visible only once the visitor is inside the building. Also, the numerous other sketches that Mies van der Rohe drew for the Resor House underline this active and connection between interior and exterior spaces.<sup>12</sup> This suggests that it is important to interpret the concept of “silence” in the architecture of Mies van der Rohe not only in terms of the interior spaces but foremost in its relationship to the exterior.

While the floor-to-ceiling glass façade seems open in two directions, the perspectival collages and drawings of the Resor House show the interior carefully framed. The space is solely defined by the large horizontal windows and creates a prospective view from the interior space onto the surrounding landscape.

**For the first** modified drawing Mies van der Rohe combined an actual photograph of the site and a perspective view of the building from the interior through the north glass wall.<sup>13</sup> **The second** altered perspective (Figure 8) featured a distant panoramic photograph of the peak of the Grand Teton Mountain that was taken from a film poster or a magazine, rather than the actual, much less dramatic view from the Resors’ site.<sup>14</sup>



Figure 8. Ludwig Mies van der Rohe, Resor House project, Jackson Hole, Wyoming 1937-38, Interior perspective of living room view through north glass wall, collage, (pencil and cut-and-pasted photographs of the Teton Range (Rocky Mountains) on illustration board), © 2024 Artists Rights Society (ARS), New York / VG Bild-Kunst, Bonn.

**For the third** manipulated drawing Mies van der Rohe used an over-scaled and vividly textured landscape image that was also taken from an unknown movie poster and combined it with a photographic reproduction of a painting by Paul Klee and a rectangular piece of wood veneer.<sup>1516</sup> Here, Mies van der Rohe composed planar elements that are layered one behind the other in absolute frontality creating a collage that appears like an abstract arrangement of planes floating in space. This creates an illusionistic space that distorts and rearranges the linear perspective of the drawing. This is perhaps the most striking feature of Mies van der Rohe's modified drawings for the unexecuted Resor house: the aspect of layering. He employed linear perspective not as an end in itself but used it as a method to arrange flat pictorial surfaces one behind the other in layers (Figure 10) or in parallel order. (Figure 8+9).

In this third drawing that was completed in 1939, the photograph shows the outside of the house framed by the ceiling and the floor, the partition on which Paul Klee's abstract painting "Colorful Meal" is installed, as well as the furniture and the

columns, all of which create a single integrated image. The development of this characteristic, in which a building becomes a type of visual frame, can be found through Mies van der Rohe's previous and later buildings. The framing of the interior space, which appears to be overlapped, is not only transparent, but also has its distinctiveness. While this perspective view can only be appreciated against the exterior space, the living room of the Resor House project can represent the outside view through the interior space, visually overlapping the interior and exterior spaces. In this instance, the interior space appears transparent, so that its identity almost disappears and becomes visibly recognized as part of the exterior space.

In discussing the transparent architectural space presented by Moholy-Nagy in the book *The New Vision*, Cage effectively echoes Moholy-Nagy's clear understanding of a glass building's ability to reflect the environment. At the end of *The New Vision* Moholy-Nagy speculated that: "A white house with great glass windows surrounded by trees becomes almost transparent when the sun shines. The white walls act as projection screens on which shadows multiply trees, and the glass plates become mirrors in which trees are repeated. A perfect transparency is the result; the house becomes part of nature."<sup>17</sup> Furthermore, Moholy-Nagy noted that: "Fenestrations produced the inward and outward reflections of the window. It is no longer possible to keep apart the inside and outside. The mass of the wall, at which all the 'outside' previously stopped, is now dissolved, and lets the surroundings flow into the building."<sup>18</sup> In his analysis Branden Joseph supports this perspective through Cage's understanding that Moholy-Nagy's formulation "freed the wall of any attachment to the interior of the building, the wall becomes a mechanism of pure exteriority, mimetically dissolving into the environment via the interrelated play of transparency and reflection".<sup>19</sup>

In these curated drawings the landscape acts as a visual interconnection and extension of the architecture (building) and according to art historian Barry Bergdoll, "The ambiguity between background architecture and objects of display made the whole a dynamic three-dimensional kinesthetic experience, set between montage and cinema."<sup>20</sup> Even though this glass-house architecture is radically reduced to 'almost

nothing', its existence or manifestation is nevertheless strongly asserted by the way it is detached or distanced from the space of nature.

In an essay titled "The Visuality of Space and the Space of Vision: On Mies van der Rohe's late Photocollages", Martino Stierli notes that "It would seem that the notion of distance is fundamental for the way Mies treats the exterior in this second visualization; and I would argue that this treatment of nature is characteristic for late modern civilization and its discontent..." Stierli further concludes *that* "the Resor collages represent this discomfort and alienation with respect not to the modern metropolis and all that it entails but to nature-which itself was increasingly a cultural fabrication of an urbanized society."<sup>21</sup>

Nature itself becomes increasingly understood and deployed as a constructed cultural product. Thus, Mies van der Rohe makes it possible with the Resor House for nature to be experienced as a "remote" cinematic "spectacle" from the inside of a glass box.<sup>22</sup> This way, the 'natural' landscape now becomes a site that is made available for recreation, leisure, and aesthetic pleasure.

The interior of the building is perceived as a continuation of the existing landscape rather than as an independent space. Consequently, the building acts as a medium to create a visually integrated relationship, for the interior and exterior spaces. Here, the outside landscape at various viewpoints becomes a pictorial image and create an object of nature to be appreciated in a similar way to that of art pieces. 'Nature' and works of art become objects with an equal status and the building becomes an apparatus to integrate these.

Mies's drawings not only illustrate the transformation of nature into an object of aesthetic consumption, a landscape. It also includes a definition of what architecture is. According to Joseph w. Branden "For Cage, any silence in Miesian architecture would not negate the environment but would open the building up to an interpenetration with its surroundings along the lines of Cage's own definition of silence. Indeed, Cage figures the transparency of Mies's glass buildings as a metaphor for his own goal of eradicating harmonic music's alienation from the plane of the everyday existence".<sup>23</sup>

This article offers a perspective that posits that the relationship between architectural design work or experimental music and its environment could be construed as an interconnected spatial relationship or interpenetration in which the environment (landscape/ sound surroundings) comes to be seen as an integral part of the building design and/or the musical composition.

In the concept of unannotated music or 'silence' that gives the music an opening to sounds from the environment, Cage sees a similarity with environmental elements (such as images of clouds, trees, or grass) that represent this 'silence' or opening in Mies's glass architecture.

This suggests that the concept of 'silence' in the architecture of Mies is achieved by way of making the natural landscape to become an integral part of the architectural design similar to Cage's 4'33" in which any ambient sound of the environment becomes an integrative complementarity of the musical performance.

Though there is no explicit evidence that Mies was aware of Cage's work, unlike Cage who was directly inspired by van der Rohe's Farnsworth House,<sup>24</sup> we can infer a reciprocal relationship in their respective approaches. Mies's integration of interior and exterior spaces through transparent glass structures and spatial differentiation through layering resonate with Cage's conceptualization of 'silence.' Both seek to dissolve boundaries of inside and outside or notated and unnotated sound — Mies through the physical and visual transparency of architecture, and Cage through the auditory transparency of his musical performances for the reason to form a visually/auditory/spatially integrated whole.

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<sup>1</sup> Saletnik, Jeffrey, "Pedagogy, Modernism and Medium Specificity: The Bauhaus and John Cage". Published Dissertation for a Ph.D. in Art History, University of Chicago, Chicago, (2009). p.22.

<sup>2</sup> Branden, W. Joseph, "Experimentations: John Cage in Music, Art, and Architecture", Bloomsbury Academic, New York, (2019) p.101.

<sup>3</sup> Greub, Charlott, "Illustrating the Dialectics of the "Blatant" and the "Latent" through Translating Drawing Notations in Music and Architecture," National Conference on the Beginning Design Student No. 37: Blatant – Latent, conference proceedings, College of Architecture and Planning, Ball State University, Muncie, Indiana, (2022) p.136.

<sup>4</sup> Greub, "Illustrating the Dialectics..." p.136.

<sup>5</sup> Greub, "Illustrating the Dialectics..." p.136.

<sup>6</sup> Greub, "Illustrating the Dialectics..." p.136.

<sup>7</sup> Branden, "Experimentations: John Cage in Music, Art, and Architecture", p.106

<sup>8</sup> Cage, John, "Juilliard Lecture" in *A Year From Monday: New Lectures and Writings by John Cage*, Wesleyan University Press, Middletown, Connecticut, (1967), p.102.

<sup>9</sup> Cage, "Silence: Lectures and Writings", pp.7-8.

<sup>10</sup> Branden, "Experimentations: John Cage in Music, Art, and Architecture", p.106

<sup>11</sup> This inversion is by no means singular in Mies's American oeuvre and can be found in several drawings produced for the architect's Chicago high-rise projects. See Dietrich Neumann, "Promontory to Lake Shore Drive: The evolution of Space in Mies van der Rohe's High Rise Apartments", in *Modern Wohnen, Moebeldesign und Wohnkultur der Moderne*, ed. Rudolf Fischer and Wolf Tegethoff, Gebr. Mann Verlag, Berlin, (2016), pp. 363-86.

<sup>12</sup> It is evident that Mies left numerous sketches and drawings, and he actively prepared numerous plans even though the client did not want to proceed with the project. Schulze, Franz, *Mies van der Rohe: A Critical Biography* (1985), p.212.

<sup>13</sup> See: *Resor House project, Jackson Hole, Wyoming (Perspective and view of site from interior)*, Collection of the Museum of Modern Art, NY. Collage: gelatin silver print and pencil on illustration board. 20 x 30" (50.8 x 76.2 cm). Mies van der Rohe Archive, gift of the architect. MR3800.808. © 2024 Artists Rights Society (ARS), New York / VG Bild-Kunst, Bonn. <https://www.moma.org/collection/works/87688>

<sup>14</sup> Stierli, Martino, "The Visuality of Space, and the Space of Vision: On Mies van der Rohe's late Photocollages", Mies van der Rohe's Design of his 1947 Exhibition at MoMA edited by Andreas Beitlin, Wolf Eiermann, Brigitte Franzen, Koenig Books, London, (2017), p.133.

<sup>15</sup> See: *Resor House project, Jackson Hole, Wyoming (Interior perspective of living room and south glass wall)*, Collection of the Museum of Modern Art, NY. Graphite, wood veneer, cut-and-pasted gelatin silver photographs, and cut-and-pasted photoreproduction (of Paul Klee's Colorful Meal, 1939) on illustration board. 30 x 40" (76.1 x 101.5 cm). Mies van der Rohe Archive, gift of the architect. 716.1963. © 2024 Artists Rights Society (ARS), New York / VG Bild-Kunst, Bonn.

<https://www.moma.org/collection/works/749>

<sup>16</sup> Bergdoll, Barry, "Walk-In Collage: Mies van der Rohe's Design of his 1947 Exhibition at MoMA" edited by Andreas Beitlin, Wolf Eiermann, Brigitte Franzen, Koenig Books, London, (2017), pp.173-174 and Tegethoff, Wolf, "Mies van der Rohe. Die Villen und Landhaus Projekte", Richard Bracht Verlag, Essen (1981), pp.121-122.

<sup>17</sup> László Moholy-Nagy, *The New Vision: Fundamentals of Bauhaus Design, Painting, Sculpture, and Architecture*, (1938) p. 63-64. For more on Cage's reception of this passage, see Branden W. Joseph, *Random Order: Robert Rauschenberg and the Neo-Avantgarde* Cambridge, MA: MIT Press, (2003) pp. 25-71.

<sup>18</sup> László Moholy-Nagy, *The New Vision*, p.62. It should be noted that Moholy-Nagy directly mentions Mies van der Rohe, among others, in the sentence in which this figure is referenced.

<sup>19</sup> Branden, W. Joseph, "Experimentations: John Cage in Music, Art, and Architecture," p.107.

<sup>20</sup> Bergdoll, Barry, "Walk-In Collage: Mies van der Rohe's Design of his 1947 Exhibition at MoMA", p.174.

<sup>21</sup> Stierli, Martino, "The Visuality of Space and the Space of Vision: On Mies van der Rohe's late Photocollages", in *Mies van der Rohe: Montage-Collage*, edited by Andreas Beitlin, Wolf Eiermann, Brigitte Franzen, Koenig Books, London, (2017), p. 134.

<sup>22</sup> Manfredo Tafuri und Francesco Dal Co, "Architettura Contemporanea", Electa Editrice, 1976, deutsche Fassung: "Die Architektur der Gegenwart", Belser Verlag, Stuttgart, (1977), p. 136.

<sup>23</sup> Branden, "Experimentations: John Cage in Music, Art, and Architecture", p.111.

<sup>24</sup> In reference to Mies's Farnsworth House in Plano, Illinois, Cage stated, "If, as is the case when I look at that building near Chicago, I have the impression it's not there even though I see it taking up space..." in Cage, John, *A Year From Monday, New Lectures and Writings by John Cage*, ("Rhythm Etc."), Wesleyan University Press, Middletown, Connecticut (1962), p.128.