UCLPRESS

Architecture_MPS

Critical Dimensions in Architectural Photography: Contributions to Architectural Knowledge

Mike Christenson [1]

How to cite: Christenson, M. 'Critical Dimensions in Architectural Photography: Contributions to Architectural Knowledge.' *Architecture_MPS*, 2017, 11(*1*): 2. DOI: https://doi.org/10.14324/111.444.amps.2017v11i2.001.

Published: 01 February 2017

Peer Review:

This article has been peer reviewed through the journal's standard double blind peer-review, where both the reviewers and authors are anonymised during review.

Copyright:

Open Access:

Architecture_MPS is a peer-reviewed open access journal.

[1] North Dakota State University, USA

Amps

Title: Critical Dimensions in Architectural Photography: Contributions to Architectural Knowledge

Author: Mike Christenson

Architecture_media_politics_society. vol. 11, no. 2.

January 2017

Affiliation: North Dakota State University

Abstract

This paper illustrates and explores three critical dimensions of photography in architecture, each of which informs the production of images, texts, and other artifacts which establish what might be called a building's *media footprint*. The paper's broad goal is to question the extent to which these critical dimensions are relevant to architectural decision-making processes. Acknowledging that such dimensions as the ones examined here rarely predict an architect's specific design decisions in a transparent manner, the paper discusses not only the decisions made by architects during the process of designing buildings, but the decisions made by critics, visitors, and members of the general public as they engage in activities such as visiting buildings, writing about them and, particularly, photographing them.

First, the text discusses the potential of buildings to operate as mechanisms for producing images, in the sense originated by Beatriz Colomina. The question is developed through the analysis of the *space of photography* – mapping of points of view, directions of view, and fields of view of defined photographic collections. Secondly, it considers *photography's complicity in the canonization of buildings*, and specifically, the extent to which photography is responsible for distinguishing between major and minor architectural works. Finally, the essay examines the erosion over time of photography's historical *power to frame* when confronted with contemporary technologies of virtual reality and photorealistically rendered digital models. Each of these critical dimensions, or concepts, develops a specific aspect of how photographic information about buildings is

DOI: 10.14324/111.444.amps.2017v11i2.001,

organized, structured, and disseminated, and is thus only part of the larger project of *architectural epistemology*, which inquires into this wider field. This will be done through an examination of the Mies van der Rohe-designed Commons Building at ITT in Chicago and the evolution of its relationship with architectural photography and photographic representation – both on its own terms and through the prism of the Rem Koolhaas-designed McCormick Tribune Student Center, which adds to and incorporates the Commons Building.

Until the end of the twentieth century, the Commons Building on the campus of the Illinois Institute of Technology was generally considered one of Mies van der Rohe's lesser works. Reportedly neglected by its own architect during the design process, and frequently marginalized in academic discussions of the campus, when mentioned at all the building was often cited as an unrefined prototype of Crown Hall. This discourse took a new direction when in 1998, Rem Koolhaas/OMA won a design competition for a student center on the IIT campus: uniquely among the competition entries, Koolhaas's design incorporated the Commons Building within a new context – what ultimately became the McCormick Tribune Campus Center (MTCC). When critics concluded that the incorporation of the Commons Building into the larger whole could compromise its integrity as an exemplar of Mies's work, the building became the object of renewed interest and controversy.

The two projects considered here show a clear evolution in architecture's relationship with the photographic image. Specifically, the history of the Commons Building can be traced through photographs: during and shortly following its construction, the building was photographed as part of Mies's own attention to publicity; it was documented as part of historical analyses; and over time it was visited and photographed by casual and amateur photographers. Following the competition results, photographs of the Commons Building were strategically deployed by both proponents and critics of Koolhaas's design. Contemporary photographs of the building appear in architectural and campus guidebooks and on websites such as Flickr.com. Examining the ways in which photographs of the Commons Building appear in these various contexts allows discussion of the critical dimensions identified above and permits us to trace the evolution of the mutually reinforcing relationship between architecture and photography.

DOI: 10.14324/111.444.amps.2017v11i2.001

Amps

Title: Critical Dimensions in Architectural Photography: Contributions to Architectural Knowledge

Author: Mike Christenson

Architecture_media_politics_society. vol. 11, no. 2.

January 2017

This paper illustrates and explores three critical dimensions of photography in architecture, each of which informs the production of images, texts, and other artifacts which establish what might be called a building's *media footprint*. The paper's broad goal is to question the extent to which these critical dimensions are relevant to architectural decision-making processes. Acknowledging that such dimensions as the ones examined here rarely predict an architect's specific design decisions in a transparent manner, the paper discusses, not only the decisions made by architects during the process of designing buildings, but the decisions made by critics, visitors, and members of the general public as they engage in activities such as visiting buildings, writing about them, and particularly, photographing them.

First, the text discusses the potential of buildings to operate as mechanisms for producing images, in the sense originated by Beatriz Colomina.[1] The question is developed through the analysis of the *space of photography* – mapping of points of view, directions of view, and fields of view of defined photographic collections. Secondly, it considers *photography's complicity in the canonization of buildings,* and specifically, the extent to which photography is responsible for distinguishing between major and minor architectural works. Finally, the essay examines the erosion over time of photography's historical *power to frame* when confronted with contemporary technologies of virtual reality and photorealistically rendered digital models. Each of these critical dimensions, or concepts, develops a specific aspect of how photographic information about buildings is organized, structured, and disseminated, and is thus only part of the larger project of *architectural epistemology,* which inquires into this wider field. This will be done through an examination of the Mies van der Rohe-designed Commons Building at IIT in Chicago, and the evolution of its relationship with architectural photography and

Figure 1. Exterior view of the Commons Building at IIT (photographer: Hedrich-Blessing), courtesy Chicago History Museum #HB-17346-J.

photographic representation – both on its own terms and through the prism of the Rem Koolhaas-designed McCormick Tribune Student Center, which adds to and incorporates the Commons Building.

Until the end of the twentieth century, the Commons Building on the campus of the Illinois Institute of Technology was generally considered one of Mies van der Rohe's lesser works. Reportedly neglected by its own architect during the design process, and frequently marginalized in academic discussions of the campus, when mentioned at all the building was often cited as an unrefined prototype of Crown Hall.[2] This discourse took a new direction when in 1998, Rem Koolhaas/OMA won a design competition for a student center on the IIT campus: uniquely among the competition entries, Koolhaas's design incorporated the Commons Building within a new context – what ultimately became the McCormick Tribune Campus Center (MTCC). When critics concluded that the incorporation of the Commons Building into the larger whole could compromise its integrity as an exemplar of Mies's work, the building became the object of renewed interest and controversy.

The two projects considered here show a clear evolution in architecture's relationship with the photographic image. Specifically, the history of the Commons Building can be traced through photographs: during and shortly following its construction, the building was photographed as part of Mies's own attention to publicity; it was documented as part of historical analyses;

Figure 2. The MTCC as a "frame" for the Commons Building. At left, the interior courtyard of the MTCC with the south wall of the Commons Building visible at right; at right, the MTCC loading dock with its roof extending over the west wall of the Commons Building, visible at left. Photographs by Author, 2011.

and over time it was visited and photographed by casual and amateur photographers. Following the competition results, photographs of the Commons Building were strategically deployed by both proponents and critics of Koolhaas's design. Contemporary photographs of the building appear in architectural and campus guidebooks and on websites such as Flickr.com. Examining the ways in which photographs of the Commons Building appear in these various contexts allows discussion of the critical dimensions identified above and permits us to trace the evolution of the mutually reinforcing relationship between architecture and photography.

Buildings as a Mechanism for Producing Images

Beatriz Colomina has asserted that buildings participate in the production of architecture together with images, drawings, exhibitions, and other media artifacts.[3] Like these artifacts, buildings for Colomina are *mechanisms of representation*. Understood as such, objects or artifacts – or events – possess unique capabilities to structure thought; that is, to highlight modes of vision or experience which are not superficially obvious, or equally, to obscure what would normally be considered ubiquitous and unremarkable. In this way, representational mechanisms such as buildings and photographs encourage, allow or inhibit questions to be asked and assertions to be made. Architecture thus considered as the intersection of mechanisms of representation functions, not as a language, but rather as a set of devices for thinking-through. Moreover, for Colomina, buildings are not simply the subject or content of images but operate to *produce* images. In its most prosaic sense this idea recognizes that buildings visually frame views of the world for their occupants. For example, modern architecture's conception of the ribbon window, through which the horizon is apprehensible, profoundly differs in its world-framing effect from the vertical window conceived as a hole-in-the-wall.[4]

Images and architecture have a peculiar reciprocity insofar as architecture produces images in the sense just described, while images also operate to produce architecture. Trivially, this happens whenever an architect creates drawings as a form of instructions for constructing a building, but it also occurs in situations where an architecture takes shape or form without definite reliance on a built structure. Mies's architecture, in particular, owed its initial reputation to images. Consider as obvious examples his 1921 scheme for the Friedrichstrasse Office Building in Berlin and his 1929 design for the Barcelona Pavilion, both of which proved deeply influential on the work of subsequent architects despite the fact that neither project had a lasting physical presence: the Berlin structure was never built, and the Barcelona Pavilion was demolished within one year of its construction.[5] Rather than serving as exemplars of built architecture, these works came to the attention of a wide audience through images – specifically, drawings and photographs – in the process establishing Mies's reputation as an architect. Indeed, Mies had completed very little built work at the time he was hired at IIT to lead the institution's architecture department.

Mies's work at IIT provocatively illustrates the reciprocity between photographic images and architecture, both through his use of photographic images in anticipation of new work, as well as in the composition and character of photographs of the built work. Consider Mies's use of photomontage. On at least two occasions, Mies's office produced photomontages of models of the proposed IIT campus superimposed on aerial views of Chicago's south-side Bronzeville neighborhood. The photomontages operate on a level similar to Mies's iconic drawing of Friedrichstrasse, or of the photographs taken of the (original) Barcelona Pavilion – which is to say that they instantiate the possibility of a new architecture within the old urban order, an architecture simultaneously part of the city but fundamentally separate from it, capable of making possible nothing less than new ways of thinking of space and of time. At IIT, the new architecture that manifested itself within Mies's photomontages was fundamentally based on the grid as an ordering device: not the existing speculative-development grid of Chicago's South Side, but a grid as instantiation of a rationalized, delimited portion of the earth's surface from which the new architecture would inevitably emerge. Being inside Mies's buildings at IIT is for a moment to occupy this image – to believe that the world can be meaningfully understood in this way. In part, this is due to Mies's understanding of the building's potential (and indeed the campus's potential) as a mechanism for producing images, certainly in the sense of a literal device for framing views as well as space. This is nowhere more evident in photographic form than in the collection of Hedrich-Blessing images at the Chicago History Museum: as a rule, the photographs are in stark black-and-white, unpopulated by students or faculty; they crystallize a set of pristine conditions never again quite achievable. Yet, after Mies was dismissed as the IIT campus architect in 1958, and the architects Skidmore, Owings, and Merrill (SOM) were asked to complete the design of additional campus buildings, not only were the new

SOM buildings ostensibly added in accordance with the Mies-designed master plan, but they also reflected the architects' conscious effort to reproduce Miesian details of construction and space-framing strategies: in short, a desire to recapture a quality preserved in photographs.

In contrast to Mies, whose photographic images and buildings are thus tightly bound into a reciprocal relationship, each simultaneously repeating and anticipating the other, Koolhaas's approach betrays an understanding of the image/building reciprocity that is far more dynamic and unbounded. While Koolhaas's work suggests at least a *consistent* understanding, his is not an approach as easily categorized as Mies's. For Koolhaas, image and building operate together to create architecture: it is often difficult to tell where one ends and the other begins. Consider, for example, Koolhaas's small Villa dall'Ava in Paris, and his somewhat later proposal for the Mediatheque in Karlsruhe.[6] In the Paris house, Koolhaas structured a series of spaces and experiences almost cinematographic in their conception: a dominant sense of transparency and openness is confounded by the presence of discrete volumes and objects, the arrangement apparently "dictated by the movement of a camera," as Rafael Moneo would have it.[7] At Karlsruhe, Koolhaas concretized the possibility of the building as a device for simultaneously *producing* and *inhabiting* images. Due to the project's insistence on locating program spaces at the center, and service functions at the periphery, the scheme depended largely on controlled, artificial light. The project's exterior facades, each one designed independently, emphasized in turn the separation, disconnection, and reconnection between the building's interior and the city. As at Villa dall'Ava, glimpses of the city – the surrounding urban tissue – were acknowledged and framed, but Karlsruhe is fundamentally a project of interiors. The critical exception is the project's east facade: designed as a mesh surface, it would have served as a building-size projection screen or electronic display, capable of representing the media housed within the building at the scale of the city. Of course, Karlsruhe exists now only in images (many of them photographs of architectural models), much as Mies's original Barcelona Pavilion existed only in photographs after its demolition. To the extent that either Karlsruhe or the Barcelona Pavilion participates in the shaping of architectural discourse, it is photographic images rather than built reality which serve as common ground. And yet, the Barcelona Pavilion was reconstructed, and images of the Karlsruhe project are easily found online. Understanding the reciprocal and mutually foundational relationships which exist between photographs and architecture must, in short, recognize that while the architect has an obvious role in shaping how a building is photographed, the conditions surrounding the *dissemination* of photographs shift over time and are inherently difficult to predict.

Recognizing this, the question of how a building operates to produce images can be developed through the construction and analysis of a *space of photography* – that is, the mapping of points of view, directions of view, and fields of view of defined photographic collections. For a given collection of photographs, the space of photography is defined as the mappable space

photographed in these images, and the map itself as a point-of-view/field-of-view map (or POV/FOV map).[8] Multiple POV/FOV maps of a given building can be expected to differ, based on whether the photographic collection under consideration is a collection of amateur photographs or a professional collection; whether the collection was assembled by a human curator as distinct from an algorithmically based image aggregator; whether the photographs were produced over a long or short period of time, and so on. The value of the POV/FOV map is that it constitutes a critical tool for assessing different approaches to photography, by making explicit the idiosyncratic *view geometry* and *viewspace fragmentation* associated with specific collections. In the case of the Commons Building and the MTCC, we can consider the following collections of photographs as candidates for mapping:

1. A collection of seven photographs in the collection of the Chicago History Museum;[9]
2. A collection of photographs gathered in an online search using Google Image;
3. Photographs from *GA Document 76* (i.e., contemporary photographs of the MTCC building).

Each of the collections, representing a unique space of photography, necessarily results in a unique POV/FOV map as shown in Figure 3. In each of the maps, the outline of the Commons Building appears as a rectangle positioned at the northeast corner of the MTCC complex.

Consider how the addition of the Koolhaas building to the Commons Building is reflected in the various maps. The first map, representing a collection of professionally produced photographs of the newly constructed Commons Building, depicts a carefully selected, methodically structured

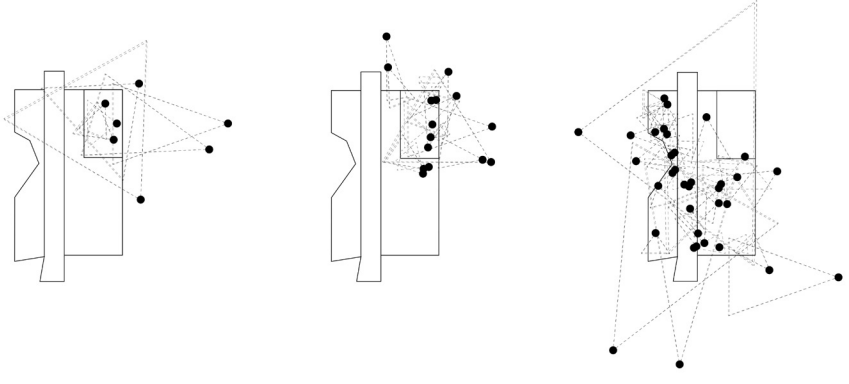

Figure 3. POV/FOV maps of the MTCC. From left: (a) Photographs within the Hedrich-Blessing collection; (b) Photographs from Google Image; (c) Photographs from GA Document 76. Diagrams by Author.

space of photography, configured (we can assume) so as to provide a thorough but concise documentation of the completed building. Supposing this assumption to be true, the mapped space at first glance appears remarkable for its total omission of the building's western side. Undoubtedly, however, this omission was due to the presence of the elevated railroad tracks immediately to the building's west. (The tracks, of course, still exist today, sheathed within the immense metal tube which hovers over the MTCC.)

The second map depicts a collection of photographs resulting from the search term "commons building iit" – with the words "commons building" in quotes – entered into a Google Image search in May 2015. Only the first fifteen photographs resulting from this search are mapped. Given a basic understanding of the operation of Google's image-search algorithms, we should expect the results to consist of appropriately metatagged images with a relatively high number of citations (i.e., links).[10] Although the Google Image collection includes one of the Hedrich-Blessing images from the first collection, the other images constitute a wide range of focus and quality, suggesting that the majority of the photographs were produced and posted by amateur or casual (as distinct from professional) photographers. The collection is roughly equally split between interior and exterior images, and three of the images are actually taken from points within the MTCC.

Finally, the third map depicts a collection of photographs published in an academic context, taken by the late Yukio Futagawa, a renowned professional photographer. Here, we see an approach similar to that in the first collection; that is, a carefully selected and structured space of photography is configured with the goal of thoroughly depicting the completed building. Although the Commons Building is visible in two of the photographs, it is clearly not the focus of Futagawa's collection, suggesting that in this case at least, the Commons Building was understood as a *separate* structure, not properly meant for inclusion in a documentary recording of Koolhaas's work.

By registering specific ways in which architecture's built reality inflects the practice of architectural photography, POV/FOV maps reveal a building's capability to produce images. The mapping technique allows for the possibility of teasing out even small differences between documentary and casual approaches, or perhaps more remarkably, of observing the ways in which casual photographers tend to repeat the photographs they have already seen in published form. But more is yet at stake. The maps do not explicitly reveal what must be understood by anyone taking a photograph – that is, some foreknowledge of how a photograph once taken will be disseminated, and to whom. The persistence of certain images over time (as evidenced, for example, by the image repeated from the Hedrich-Blessing collection) suggests a way of defining such images as *canonical,* that is, identified and generally agreed upon as being representative of the highest quality.

If buildings are (as Colomina asserts) mechanisms for producing images, through what agency does this mechanism operate? The question is convincingly tested through the analysis of the *space of photography* – mapping of

points of view, directions of view, and fields of view of defined photographic collections, incorporated in the device of the POV/FOV map. Because this methodology questions the degree to which photography should be treated non-critically as a means of constructing architectural knowledge, it seems reasonable to allot POV/FOV maps a place in the discussion when photographs are used to structure knowledge about architecture.[11]

Photography's Complicity in the Canonization of Buildings

It is well established that photographs of buildings are not simply neutral frames through which images of buildings are glimpsed, but are rather artifacts loaded with biases and exclusions.[12] To some extent, these biases contribute to what might be called the *object-value* or *art-value* of photographs, as when an architectural photographer succeeds in calling attention to familiar or mundane environments in an extraordinary manner.[13] Yet, the art-value of photographs differs markedly from their value as commodities – whether they are considered as devices for broadly disseminating a specific kind of knowledge or merely as marketing tools. When considered as commodities, photographs of buildings must be evaluated in terms of their *dissemination*: how widely they are disseminated, by and to whom, and through what means; and they must be evaluated in terms of their provenance, in the sense of their history of production and reproduction.[14] Both dissemination and provenance of photographs contribute to the *canonization* of buildings – as in the case of canonical images, the word refers to those buildings on which general agreement of their high quality rests.

Nikolaus Pevsner famously suggested that some buildings qualify as *architecture* (he suggested Lincoln Cathedral) while others do not (his example was a bicycle shed).[15] Significantly for the present argument, at the time Pevsner made his assertion in the early 1940s, it was much easier to find a photograph of Lincoln Cathedral in published form – in a book, say, or on a postcard – than it would have been to find a photograph of a bicycle shed. Why, indeed, would one waste resources photographing a bicycle shed and, even more, why go to the trouble of publishing the photograph? Taking photographs and reproducing them for wide dissemination was not a trivial matter; consequently, the act of photographing and publishing can be understood very simply as a traditional method of conferring special status on a building. Whatever idiosyncratic opinion of aesthetics may have motivated Pevsner to make his original assertion, it can reasonably be translated as: "Lincoln Cathedral is well photographed; bicycle sheds tend not to be." Juan Pablo Bonta expresses a similar view on the formation of canonical interpretations by tracing the documentary history of Mies's Barcelona Pavilion from its original lukewarm reception at the 1929 Barcelona Exhibition to its recognition, by 1960, as an acknowledged masterpiece of modern architecture.[16] Pevsner (to select just one example) does not even mention Mies in the original edition of his seminal book *An Outline of European Architecture,* but in the 1960 edition claims the Barcelona Pavilion as the "most perfect"

architectural work of the past thirty years. "One wonders why," writes Bonta, "if the building was so perfect, it took him so long to discover it."[17] Indeed, in the case of the Barcelona Pavilion, the fact that the building did not physically exist past the end of the Exhibition must account for some of the delay, but as Bonta correctly writes, "its effect as an idea spread over the entire world by means of photographs and descriptions was enormous."

The late Bernard Rudofsky wrote *Architecture Without Architects* to accompany the exhibition of the same name conducted at the Museum of Modern Art in 1964–65. Rudofsky's strategy was to equate architectural value with a lack of provenance or pedigree: works which were relatively "unknown" to the professional and academic audiences targeted by the exhibition were deliberately selected for inclusion. In furtherance of his goal, Rudofsky expressed a preference for the use of contemporary photographs over historical ones, and to this end, his argument relies on historical photographs only in those cases which presented logistical difficulties to the production of new photographs: specifically, sites located in Communist countries which placed restrictions on photographers' activities. Glossing over the factors affecting the production of photographs aligns generally with Rudofsky's promotion of photography as neutral documentation. *Architecture Without Architects* thus seeks – through omission of relevant detail – to minimize the mechanics and the historical effects of what is essentially the formation of a canon.[18]

From the preceding arguments, it follows that architectural canonization has more to do with the mass-market effects of photography – specifically the commodification of photography and the dissemination of mass-produced photographs – than with any factor having to do with the inherent quality of buildings. Thus, canonization – previously defined here as the recognition of a building as being worthy of admiration or study, is not in fact a stamp approving a building as being of better quality than others, but is rather an implicit acknowledgement that *photographs of the building have been effectively disseminated* so as to reach an influential, or at least a wide, audience. In particular, the notion of effective dissemination of photographs can be employed strategically, as in the case of Le Corbusier, who saw to it that photographs of his buildings were carefully selected and deployed so as to maximize their persuasive power.[19] The Commons Building at IIT exemplifies the case of a building earning a canonical position through its relationship with a later architecture, specifically its threatened and actual incorporation within the MTCC building. This position was earned in three ways: first, as a result of polemically deployed photographs; second, as the consequence of a literal reframing of views; and finally, in a symbolic sense.

First, the canonization of the Commons Building relates to preservationists' attempts to prevent or alter the construction of the MTCC, and their need to base their case on only a small set of photographs of the building in its pristine state, set against the numerous photographs which Koolhaas deployed to examine the contemporary condition of the building.[20] While the small set of pristine images represented a lost condition, Koolhaas was

at liberty to produce an arbitrarily large number of photographs of the existing condition of the Commons Building, and to deploy those photographs strategically in order to build the case for his own design intervention. This strategic deployment was done most memorably in Koolhaas's essay "Miestakes," in which contemporary photographs of the Commons Building are pointedly framed and selected to deliberately highlight the changes made to Mies's building over its lifetime.[21] Fire alarms, air-conditioning equipment, and vents dominate the images, serving as a catalog of retrofits made to the building. These photographs are not the kind of images one would normally expect to find in an academic publication but, rather, are much more like the photographs that might be taken by custodial staff or insurance adjusters to document in-place equipment in need of replacement. Second, consider the ways in which the MTCC altered the production of images through reframing: Koolhaas's design specifically frames views of the Mies building, most obviously in the internal courtyard at the southwest corner of the Commons Building (Figure 2). The addition of Koolhaas's design opened specific new opportunities for both buildings to produce images. In particular, the MTCC internalizes what had previously been external: it changed the Mies building from being a free-standing slice of universal space as conceived by Mies into a vignette within Koolhaas's highly differentiated volumetric field. As discussed above, this aspect of the architecture can be analyzed through the mapping of spaces of photography. Finally, consider the way graphics are used in the MTCC. Even as Koolhaas's building confounds Miesian understandings of volume through its mixture of permeable boundary conditions and its plays on visual depth, there is an apparent desire to call attention to the quality of surfaces and most of all *flatness* – the ubiquitous greenboard ceiling detail and the adhered window graphics are the most obvious devices. Moreover, the view of the southwest corner of the Mies building made possible within the MTCC is effectively "flattened," becoming almost like a graphic itself, apprehensible as something without depth, simply because it is captured behind glass, almost like a museum exhibit. Graphically and symbolically, the MTCC appropriates the fabric of Mies's building into Koolhaas's worldview.

The notion of photography's role in the canonization of buildings is not a simple matter of photographs operating as neutral registers of buildings universally agreed upon as being of high quality, but rather, it is the case that photography and buildings participate reciprocally in the construction of architecture's identity. The various mechanisms for dissemination of photographs, and the provenance thereof, contribute meaningfully and strongly to this construction, and cannot legitimately be ignored in any serious discussion of "canonical" buildings.

The Erosion of Photography's Power to Frame

Traditional photographs, even if they are produced to support the sensation of omniscient, panoramic view, necessarily frame *something*: the

everywhere-present rectangularly framed photograph represents a convention so strong that it is rarely questioned as being critically significant.[22] Also as discussed above, the fact of a photograph's existence implies, at least historically, that something was worth photographing: time and resources were required to photograph it; the photographer chose *this* spot and *this* view direction when taking the photograph. Framing thus becomes a conferral of status. Yet, in contrast with traditional, rectangular-framed photographs, the photorealistically rendered digital model makes possible in theory a boundless visual simulation of experience. A virtual-reality or augmented-reality environment is possible, in which photographic framing in its traditional sense is nonexistent, as visual effects are simulated without edges or boundaries. While the construction of such environments is time- and resource-consuming, if constructed to a sufficiently high level of detail, they not only provide a convincing full-surround environmental simulation of visual experience, but they can capably support the production of an arbitrarily large number of images comparable in appearance and quality to traditional film photographs. Given this situation, what then is photography's continuing role *vis-à-vis* architecture in the context of hyperrealistic simulation?

Mies's work at IIT exists very much within a traditional understanding of photography as a device for framing. His architecture, like traditional photography, operates to frame: Mies's photomontage mentioned earlier is significant in this regard in that it emphasizes architecture's capability to define edges or boundaries so that whatever is *outside* of them can be safely ignored, or at least provisionally set aside. Within the frame of the IIT campus, as depicted in the photomontage, an order permeates according to a fixed logic deriving ultimately from the underlying 20-foot grid. Outside of the frame is only a kind of undifferentiated Chicago – a background against which Mies's work was expected to emerge and stabilize. This stability brought about by grid and frame is everywhere evident at IIT, even as the grid admits occasional exceptions. The provision of fixed, object-like rectangular buildings in an open field makes it possible for campus occupants to orient themselves in terms of center-to-periphery as well as according to cardinal directions: this is as true when finding spaces (e.g., "northwest corner of the building") as it is when giving directions (e.g., "walk north until you see ..."). There is, ultimately, a kind of serenity at IIT which aligns very well with traditional, stationary-viewpoint, rectangular-framed still photography. Not that this is unique to IIT, of course: Mies's work at the Chicago Federal Center or Dominion Centre in Toronto betrays precisely the same kind of sensibility. Photographs of the Commons Building, such as the images in the Hedrich-Blessing collection discussed earlier, are deliberately set up and composed in order to frame particular object-views. But perhaps even more suggestive is the famous photograph of Mies standing over a model of Crown Hall (Figure 4): symmetrical, centered, the architect portrayed as being at the origin of the design, fully in control of perception. Without the rectangular frame of the image, we would necessarily

Figure 4. Mies van der Rohe with a model of Crown Hall (photographer: Arthur Siegel), courtesy Chicago History Museum #ICHi-15955.

confront a host of inconvenient questions: who else is in the room? What other models were set aside in order to highlight this one?

While for Mies's work generally, and the Commons Building in particular, the architect's grid is of paramount importance in concretizing a characteristic sense of stability and control, Koolhaas's work disarmingly places the dual responsibilities of interpretation and navigation onto the occupant. Although the MTCC has a rectangular grid of columns (and a related but separate grid representing the support structure for the elevated railroad tracks), there are very few spaces in the building where more than a few of the columns can be seen at once. Instead of Mies's emphasis on parallel walls and perpendicularity, there is in the MTCC an abundance of non-parallel walls and corridors or spaces which are placed at a diagonal orientation to the cardinal directions. In place of Mies's gridded reference system, Koolhaas provides a path-based architecture: paths in the building have directionality, thresholds, and nodes consisting of different rooms or activities. In part, this reflects Koolhaas's desire to organize the building in response to pre-existing footpaths crossing the construction site, but more generally it reflects his long-standing interest in path-based architectures as mentioned above in the project at Karlsruhe, the Villa dall'Ava, and also his project for two libraries at Jussieu.[23] Instead of Mies's carefully structured frames, Koolhaas's paths promote a kind of

overlapping or depth, an insistence on the experience of movement – not only the movement of one's body through space and time, but even more, the movement of one's glance across and through surfaces and into depth. This insistence is evident, not only in Koolhaas's interest in path-based architectures, but also in his office's use of virtual-reality technology while designing the MTCC. The use of virtual-reality environments in architectural design assumes a way of sensing the possible configuration of space *through image* but without frame. Immersed in the technology, one can cast glances arbitrarily and feel as if visually surrounded by the proposal. Using virtual reality is very different from building a physical model of the building, which one views by standing over it, or even building a real-size model and inhabiting it – the significant difference is not in the verisimilitude made possible but precisely because the use of the technology is dynamic – one can enter into the model *and* change it simultaneously.

But the use of virtual-reality technology is more than a tactical departure from a traditional photographically framed architectural design process. Using virtual reality to design a building – and specifically, using any technology which enables the production of arbitrarily configured perspectival views, photorealistically rendered – is to admit that the building will, like traditional buildings, be understood by visitors who enter it directly; also like traditional buildings, it will be understood through photographs, and those photographs will be disseminated through traditional means such as print, as well as online; but what is new in the use of this technology is the foreknowledge that the building will be understood through virtual-reality environments. That is to say, the building is being designed with full awareness that it will be virtually "experienced" through technology. Of course, virtual reality technologies can be used to simulate traditionally designed and built environments, but these buildings and environments were not *designed* with the foreknowledge that their presence as architecture would be mediated in this way.

When photography's historical power to frame is confronted with contemporary virtual-reality technologies and photorealistically rendered digital models, there is an erosion in the traditional understanding of a photograph as a carefully selected, highlighted "moment" in an architectural experience. A digitally produced, photorealistically rendered image is no longer an isolated instant, but just one of an unlimited number of possible images in a continuum. It follows that new technologies need to be thoroughly understood as opening modes of understanding previously inaccessible – even as they appear to function in limited ways like historically constructed photographic images.

Conclusions

Through the detailed examination of two buildings this essay has shown how a set of critical dimensions can operate to exemplify photography's relevance to the making of architecture. The work at IIT – both Mies's work and Koolhaas's – concretizes various lines of inquiry into the "representational

function of photography." This representational function incorporates the potential of each building to operate as a *mechanism for producing images,* effectively constructing the identity of both architects and buildings: the function is inextricably wound up with Colomina's conception of architecture as a form of media. Photography's *complicity in the canonization of buildings* is exemplified by the McCormick Tribune Campus Center, insofar as it unites two distinct architectural approaches, not simply in terms of their physical proximity, but in their legibility as intersections of critical issues. For Mies, the Commons Building is an iteration along the way to the canonical Crown Hall, a step in his realization of the IIT campus as built form and as image, while for Koolhaas, the MTCC makes specific the ideas and concepts he had hitherto tested at Paris and Karlsruhe – in essence, using media in general, and image in particular, to turn the city inside out. The transition from the static, rational Commons Building to the dynamic and at times apparently irrational MTCC highlights the *erosion of photography's power to frame*: the work of both architects is inseparable from the practices of photography current at the time of design, whether in the cool, rational, carefully composed Hedrich-Blessing photographs, which serenely capture the qualities of the Commons Building, or in the virtual-reality technologies which so easily enable the production of arbitrary perspectival views characteristic of Koolhaas's design process as well as of the built result of his work. In this way, the close reading of the projects permits study of the evolution of the relationship between architecture and the photographic image.

For both Mies and Koolhaas, the work at IIT can be seen as a realization of the critical dimensions discussed in this essay, the result of a desire to instantiate these dimensions in built terms. It is of course a recognition of the critical dimensions of photography, not only in how these dimensions affect, and are affected by, built structures, but also in how these critical dimensions operate on their own terms: the terms of image-making and image-dissemination. Contemporary critique notwithstanding, neither of the buildings at IIT is simply an expression of an architect's will, or a singular artistic statement; neither the Commons Building or Koolhaas's MTCC can be reductively understood solely as an imposition of new form atop and within a pre-existing context.

In conclusion, three critical dimensions of architectural photography – buildings operating as mechanisms for producing images, the complicity of photography in the canonization of buildings, and the erosion of photography's power to frame – are seen to cooperate to reveal the mutually constitutive relationship between photography and architecture. As shown in this essay, buildings crystallize multiple, overlapping, and intersecting understandings of the architectural power and potential of photography.

Notes

1 Colomina writes that buildings are "not simply represented in images but [are] mechanism[s] for producing images." See Beatriz Colomina, "Mies Not," in *The*

Presence of Mies, ed. Detlef Mertins (New York: Princeton Architectural Press, 2004), 214.

2 The extent to which Mies van der Rohe was directly responsible for the design of the Commons Building became a contentious issue after Rem Koolhaas won the competition for the new IIT Student Center. Koolhaas asserts that the design of the building was turned over to Gene Summers, one of Mies's assistants. See Rem Koolhaas, "Miestakes," in *Mies in America,* ed. Phyllis Lambert (New York: Harry M. Abrams, Inc., 2001), 726. However, Vinci takes an opposing view, arguing that Mies was committed to and directly involved in the design. See John Vinci, "Mies' IIT Commons Building and Rem Koolhaas," *Structurist* 41/42 (2001/2002): 105. On the question of the Commons Building's precursor relationship to Crown Hall, see, for example, "The Commons," Mies van der Rohe Society, accessed August 28, 2015, http://www.miessociety.org/legacy/projects/commons.

3 See, in particular, Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge (USA): MIT Press, 1994). Other authors have traced related ideas to the Renaissance. See, for example, Mario Carpo, *Architecture in the Age of Printing: Orality, Writing, Typography, and Printed Images in the History of Architectural Theory* (Cambridge (USA): MIT Press, 2001).

4 Beatriz Colomina discusses Corbusier's preference for the *fenetre en longueur* (i.e., "long window," or ribbon window) over the traditional *porte fenetre* ("door window") in her essay "Le Corbusier and Photography," *Assemblage* 4 (Oct. 1987): 20.

5 The Barcelona Pavilion was, of course, subsequently reconstructed in the early 1980s. See George Dodds, *Building Desire: On the Barcelona Pavilion* (London: Routledge, 2005).

6 Both projects are described in Rafael Moneo, *Theoretical Anxiety and Design Strategies in the Work of Eight Contemporary Architects* (Cambridge (USA): MIT Press, 2004).

7 Ibid., 353.

8 Mike Christenson, "On the Architectural Structure of Photographic Space," *Architectural Science Review* 54. 2 (2011): 93–100.

9 The seven photographs in question were retrieved via an online search using the keyword phrase "Hedrich blessing Illinois institute technology commons building." Staff at the Chicago History Museum confirmed to the author that these seven images are the only Hedrich-Blessing images of the Commons Building in the museum's collection.

10 See Lawrence Page, Sergey Brin, Rajeev Motwani, and Terry Winograd, "The PageRank Citation Ranking: Bringing Order to the Web," Technical Report (Stanford InfoLab: 1999). Accessed August 28, 2015. http://ilpubs.stanford.edu:8090/422/1/1999-66.pdf.

11 A similar conclusion is drawn in Christenson, "Architectural Structure."

12 See, for example, Maria Antonella Pelizzari and Paolo Scrivano, "Intersection of Photography and Architecture – Introduction," *Visual Resources: An International Journal of Documentation* 27. 2 (2011): 107–12.

13 A characteristic example is Henri Cartier-Bresson's well-known photograph titled *Behind the Gare Saint-Lazare.*

14 The importance of photographic provenance is forcefully illustrated in Le Corbusier's use and modification of photographs depicting American grain elevators which he published in *Vers une Architecture* (Paris: Les Éditions G. Crès, 1923). The photographs, in their unmodified form, were earlier published by Walter Gropius in "Die Entwicklung Moderner Industriebaukunst (The Development of Modern Industrial Architecture)," in *Jahrbuch des Deutschen Werkbundes* (*Yearbook of the German Association of Craftsmen*) (1913): 17–22. Gropius, in turn, had collected the images from various trade publications. See Mike Christenson, "Viewpoint: 'From the Unknown to the Known': Transitions in the Architectural Vernacular," *Buildings & Landscapes* 18. 1 (2011): 1–13, and also Reyner Banham, *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture 1900–1925* (Cambridge (USA): MIT Press, 1986), especially pages 194–235, in the sections titled "Industrial Architecture and Monumental Art," "Reminders to Architects," and "Atlantis as Commonly Understood." Banham also discusses the photographs in his "Introduction," particularly on pages 9–19.

15 Nikolaus Pevsner, *An Outline of European Architecture* (Harmondsworth (UK): Penguin, 1960).

16 See Juan Pablo Bonta, *Architecture and its Interpretation: A Study of Expressive Systems in Architecture* (New York: Rizzoli, 1979), especially Chapter 4, "The Emergence of a Canonical Interpretation."

17 Bonta, *Architecture and its Interpretation,* 137.

18 Christenson, "Viewpoint: 'From the Unknown to the Known'," 4–5.

19 See Colomina, *Privacy and Publicity,* and Andrzej Piotrowski, "Le Corbusier and the Representational Function of Photography," in *Camera Constructs: Photography, Architecture and the Modern City,* ed. Andrew Higgott and Timothy Wray (Burlington (USA): Ashgate, 2012), 35–45.

20 See the use of historic photos in Vinci, "Mies' IIT Commons Building."

21 Koolhaas, "Miestakes," 738.

22 The artist David Hockney is a notable exception. His photographic "joiners" forcefully question the presence of the rectangular photographic frame.

23 The project at Jussieu, with its continuous spiraling path from bottom to top, is discussed at length in Peter Eisenman, *Ten Canonical Buildings 1950–2000* (New York: Rizzoli, 2008): 200–28.

Bibliography

Banham, Reyner. *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture 1900–1925*. Cambridge (USA): MIT Press, 1986.

Bonta, Juan Pablo, *Architecture and its Interpretation: A Study of Expressive Systems in Architecture*. New York: Rizzoli, 1979.

Carpo, Mario. *Architecture in the Age of Printing: Orality, Writing, Typography, and Printed Images in the History of Architectural Theory*. Cambridge (USA): MIT Press, 2001.

Christenson, Mike. "On the Architectural Structure of Photographic Space." *Architectural Science Review* 54.2 (2011): 93–100.

———. "Viewpoint: 'From the Unknown to the Known': Transitions in the Architectural Vernacular." *Buildings & Landscapes* 18.1 (2011): 1–13.

Colomina, Beatriz. "Le Corbusier and Photography." *Assemblage* 4 (Oct. 1987): 6–23.

———. "Mies Not." In *The Presence of Mies,* edited by Detlef Mertins, 193–222. New York: Princeton Architectural Press, 2004.

———. *Privacy and Publicity: Modern Architecture as Mass Media*. Cambridge (USA): MIT Press, 1994.

Dodds, George. *Building Desire: On the Barcelona Pavilion*. London: Routledge, 2005.

Eisenman, Peter. *Ten Canonical Buildings 1950–2000*. New York: Rizzoli, 2008.

Gropius, Walter. "Die Entwicklung Moderner Industriebaukunst (The development of modern industrial architecture)." In *Jahrbuch des Deutschen Werkbundes* (*Yearbook of the German Association of Craftsmen*) (1913): 17–22.

Higgott, Andrew and Timothy Wray, eds. *Camera Constructs: Photography, Architecture and the Modern City*. Burlington (USA): Ashgate, 2012.

Koolhaas, Rem. "Miestakes." In *Mies in America,* edited by Phyllis Lambert, 716–43. New York: Harry M. Abrams, Inc., 2001.

Lambert, Phyllis, ed. *Mies in America*. New York: Harry M. Abrams, Inc., 2001.

Le Corbusier. *Vers une Architecture*. Paris: Les Éditions G. Crès, 1923.

Mertins, Detlef, ed. *The Presence of Mies.* New York: Princeton Architectural Press, 2004.

Mies van der Rohe Society. "The Commons." Accessed August 28, 2015. http://www.miessociety.org/legacy/projects/commons.

Moneo, Rafael. *Theoretical Anxiety and Design Strategies in the Work of Eight Contemporary Architects*. Cambridge (USA): MIT Press, 2004.

Page, Lawrence, Sergey Brin, Rajeev Motwani, and Terry Winograd. "The Page Rank Citation Ranking: Bringing Order to the Web." Technical Report. Stanford InfoLab: 1999. Accessed August 28, 2015. http://ilpubs.stanford.edu:8090/422/1/1999-66.pdf.

Pelizzari, Maria Antonella, and Paolo Scrivano. "Intersection of Photography and Architecture – Introduction." *Visual Resources: An International Journal of Documentation* 27.2 (2011): 107–12.

Pevsner, Nikolaus. *An Outline of European Architecture*. Harmondsworth (UK): Penguin, 1960.

Piotrowski, Andrzej. "Le Corbusier and the Representational Function of Photography." In *Camera Constructs: Photography, Architecture and the Modern City,* edited by Andrew Higgott and Timothy Wray, 35–45. Burlington (USA): Ashgate, 2012.

Rudofsky, Bernard. *Architecture without Architects: A Short Introduction to Non-Pedigreed Architecture*. New York: The Museum of Modern Art, 1964.

Vinci, John. "Mies' IIT Commons Building and Rem Koolhaas." *Structurist* 41/42 (2001/2002): 104–08.