

CONSTRUCTING AN OTHER

Picture-Building:

Le Corbusier, Louis Kahn and the Problem of Representation

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When Louis Kahn and his collaborators designed the Kimbell Art Museum in 1969, Kahn was forced to resolve questions that had been causing him anxiety his whole career. The design problem that troubled him the most was the connection between the wall and the roof structure at the ends of the cycloid shells. For Kahn the non-structural exterior wall was nearly tragic. He said: "It was difficult to give the purest expression to this wall since it was an unwanted wall anyway." (1) Ultimately Kahn decided to convey this simple truth by detailing this joint with a narrow piece of glazing to provide visual separation between the inert wall and the load-carrying member.

Kahn originally designed this glazing to a continuous two-inch width, but the engineer August Komendant convinced him that such a narrow dimension would not clearly indicate the structural truth. "It would look," he said, "from a distance, as if the wall supported the shell and would be completely dishonest, even architecturally." He told Kahn this two-inch strip would create "an impression that the columns are for some reason or other overdesigned about 7 inches." To avoid this, Komendant counseled, "the glass strips at column ends must be 9 inches wide and at the crown 4 inches wide." (2)

Although the roofs at the Kimbell are commonly called 'vaults', they are actually shell structures and they perform quite differently than compression structures. The transverse end of a barrel vault would be narrowest at the apex, and widen towards its base. However the transverse end of this shell structure is carrying tremendous loads in tension. Contrary to intuition, the curved beam needs to be deepest at its apex. By designing this strip of glass wider at the base and narrower at the top, Kahn and Komendant achieved a tremendously lightweight effect because the opening is greatest just where we expect the structure needs its greatest strength. Kahn spent weeks deliberating over what he called "Komendant's fearlessness."

Why would this detail cause Kahn such great anxiety? And why was he now prepared, in his maturity, to overcome his fears and capitulate to the engineer's aesthetic?

At roughly the same time, Kahn reflected: "Every man has...has a figure in his work who he feels answerable to. I often say, often say to myself, 'How'm I doing, Corbusier?' You see, Corbusier was my teacher." (3) But Kahn also asserted: "I never had a desire to make...a building such as Le Corbusier makes," (4) and this claim rings true. After all, Kahn's dominant architectural themes—masonry wall construction, structurally expressive detailing, and spatial order derived from the Beaux-Arts—place his work in high contrast to that of his 'teacher'. The problem Kahn faced in the design of the Kimbell knows no analog in the work of Le Corbusier, not at Maisons Jaoul or Ahmadabad; not even at Ronchamp where the separation between wall and roof is articulated by a continuous, narrow strip. Kahn said: "I have learned not to do as [Le Corbusier] did, not to...not to imitate...but to derive out of [his] spirit." (5)

Even in spirit, Kahn deliberately distanced himself from Corbusier's influence. He did so by studying pictures, and making pictures of his own. For Kahn, the strong presence of Corbusier's spirit came not from his buildings but from his *pictures of buildings*: travel sketches, photographs and architectural drawings. Thus they posed specific pictorial problems which Kahn intended to solve through pictorial means: his own drawings and paintings. Then Kahn resisted these means with varying degrees of success, as he, in turn, used pictures to make architecture.

Even though Kahn told Alison Smithson that he had lived in the 1930s in a beautiful city called Le Corbusier, (6) there is no indication that he experienced *any* of Le Corbusier's buildings in person until he visited Marseilles in the late 1950s. Indeed he may have *never* seen Corbusier's seminal achievements of the 1920s, such as the Villas at Garches and Poissy, and the housing at Pessac. Decisively, and apparently deliberately, Kahn developed his veneration for Le Corbusier's architecture through its representation.

Kahn did possess the means and the opportunity. When he traveled to Paris in 1928, Kahn stayed with his friend Norman Rice, the first American to work in Corbusier's office. But Kahn did not visit the office, evidently, and he failed to seek out any of Corbusier's buildings. Given his later adoration, and given that this was one of Corbusier's most fertile periods, Kahn's inattentiveness remains conspicuous and curious. Vincent Scully noted the irony: "[In the 1920s] Kahn first became aware of the Modern Movement as such and of Le

Corbusier's writing, which, he says, he loved from the start. But when he visited Europe in 1928, he saw none of that architect's work." (7)

He certainly, though, studied Le Corbusier's pictures. Oscar Stonorov, Kahn's early architectural partner, had been one of the editors of the first volume of the publication of Le Corbusier's works, the *Oeuvre Complete*. Stonorov certainly introduced Kahn to the Corbusian brand of modernism in the 1930s. Photographs and drawings of Le Corbusier's buildings were distributed widely in the United States through books and magazines, particularly after 1932, when the *Modern Architecture* exhibition at the Museum of Modern Art increased popular awareness of European architecture.

Le Corbusier used photographs and drawings to document a particular view of an objective reality. He was not typically interested in the artistic practice of making pictures as autonomous aesthetic objects; rather he used sketches and photographs as a scientist would, as research for later analysis. Indeed, Corbusier's description of his own sketching method emphasizes that he perceived himself as an *observer* rather than a creator: "When one travels and works with visual things...one uses one's eyes and *draws*, so as to fix deep down in one's experience what is seen...all this means first to look, and then to observe, and finally perhaps to discover." (8) So Le Corbusier wrote fairly extensive notes on his travel sketches to help him remember particular features of a building, such as colors or materials, which were not recorded in the sketches themselves. And he sometimes also noted his immediate reactions to buildings. According to Eugene Johnson, for Le Corbusier "drawing was an act of memorization and understanding." (9)

Le Corbusier also used photographs to convey analytical information, rather than picturesque sensations. The portrayal of the Acropolis in *Vers une Architecture* serves as an excellent example, since Kahn would have been especially attentive to Le Corbusier's presentation of classical architecture. Le Corbusier used carefully cropped photographs from Frédéric Boissonnas's renowned album *Le Parthenon*, creating what Daniel Naegele has described as "purified" images, which "dematerialize[d] the objectivity" of architecture. Naegele concluded: "The photograph is didactic. It teaches the 'reader' to see." (10)

The consequences for consumers of these images, such as Louis Kahn, were tremendous. Le Corbusier successfully re-presented architectural history by his selective use of images. In Beatriz Colomina's view, this procedure is intrinsically ideological: "Architecture [becomes] not simply a platform that accommodates the viewing subject. It is a viewing mechanism that produces the subject. It precedes and frames its occupant." (11)

Kahn apparently sketched from these photographs of the Parthenon published in *Towards a New Architecture*. Or, perhaps more

provocatively, he may have positioned himself on the Acropolis to re-enact pictorial views he knew from the book. One of Kahn's sketches replicates the one of Boissonnas's images of the Acropolis, indeed the one that Corbusier selected to introduce the chapter "Architecture: Pure Creation of the Mind." In this image the Parthenon appears at the left margin, barely but decisively present, its strong perspective lines directing the primary view out to the landscape. In Le Corbusier's interpretation of this picture, he argued that the Greek temples "are animated by a single thought, drawing around them the desolate landscape and gathering it into the composition." (12) In Kahn's sketch, as in Boissonnas's image, the "desolate landscape" is crowned by the luminous atmospheric effects of twilight, while the columns of the Parthenon are compressed by depth into a nearly-continuous surface, more suggestive of a solid wall. Likewise Kahn's sketch of the interior space of the Parthenon virtually replicates a sketch of Corbusier's of the Forum at Pompeii printed in *Vers une Architecture*.

In his essay "The Value and Aim of Sketching" (1930), Kahn advised his readers to get a camera if they wanted to draw from accurate images. Although Kahn never used a camera himself, he collected postcards of landscapes and buildings, and it is well-established that he sketched directly from postcards on occasion. (13) "What does it mean that Kahn sometimes drew from other people's representations of a site in devising his own compositions?" Sarah Williams Ksiazek asked. "Abundant ancillary evidence suggests that Louis Kahn was at times attracted to carefully composed representations of the places he visited as much as he was to the places themselves." (14)

A major exhibition of Kahn's travel sketches in 1996 was entitled *Drawn from the Source*. But Kahn seemed to move effortlessly between making pictures-of-buildings and making pictures-of-pictures-of-buildings, apparently without anxiety. He simply did both. Certainly, many of his pictures-of-buildings seem fully original, such as the well-known expressionist pastel drawings of Siena's *Campo*. Still, the derivative quality of many of his pictures, particularly those of the Acropolis, should help to dismiss the idea that Kahn's images were "drawn from the source." More often, they suggest a much more complicated process of transmission and reception.

Even though many of his drawings seem to have been drawn from other sources, he did not adopt Corbusier's pictorial techniques. Unlike his teacher, who used drawing as a tool of research, most of Kahn's travel sketches were obviously conceived as works of art, meant to stand on their own. Kahn rarely made notes on his drawings, apart from occasional color notations, indicating that his concerns were primarily pictorial as opposed to academic or journalistic. Indeed, Kahn's travel sketches do not include a single plan, a startling fact

considering his Beaux-Arts training. It is tempting to imagine that, while his friend Louis Skidmore was pacing distances and drawing scaled plans in the summer heat of Piacenza, Kahn stayed at the *pensione* drawing from postcards he bought. Kahn told Jan Hochstim that “many of [the sketches] were meant as studies for paintings,” causing Hochstim to conclude: “Kahn’s sketches were not executed for the purpose of becoming sources of architectural designs.” (15)

In fact, Kahn developed his own pictorial strategy that enabled him to mitigate Le Corbusier’s influence. In Corbusier’s travel sketches, he often modified the position of the eye of the viewer *upward*, to an ostensibly more ‘objective’ position above the horizon. His elevated viewpoint at Algiers aspires to panoramic journalistic objectivity. This strain in his travel sketches is directly related to similar viewpoints he constructed in his design drawings in the *Oeuvre Complete*, and both are certainly derived from his enthusiasm for air travel and aerial photography, as has been argued by Bruno Pedretti. (16)

Kahn apparently never copied these drawings, and although he did sometimes alter his drawings, changing certain relationships in order to enhance a pictorial effect, it was always *downward*, lowering the position of the viewer to emphasize the visual weight of the building. For example, Kahn’s drawing of Sant’ Ambrogio (1929) uses at least six different vanishing points and a viewpoint that places the eye about three feet above the ground. It is virtually impossible to imagine Le Corbusier framing the scene in this manner. Perhaps, as a corrective measure, Kahn sought to bring Corbusier’s viewpoint back to earth, for Kahn seems to have been singularly prepossessed by the presence of gravity.

In a 1950 visit to Pisa, gravity assumed a tragic dimension for Kahn: “When I first came to Pisa I went straight in the direction of the Piazza. Nearing it and seeing a distant glimpse of the Tower filled me so that I stopped short to enter a shop where I bought an ill-fitting English jacket. Not daring to enter the Piazza I diverted to other streets toward it but never allowing myself to arrive. The next day I went straight for the Tower touched its marble.” (17) As the building appeared defeated by gravity, for one of the few times in his life, Kahn was left pictorially defeated. His troubled sketch of the scene shows that he struggled to establish the basic relationships between the buildings; the distraction is palpable.

Kahn’s preoccupation with gravity became the basis for his pictorial technique. “I draw a building from the bottom up because that’s the way it’s constructed,” Kahn said. “It depends on gravity. You begin with the way all the weights can be distributed on the land, and then you build up. If you do that, then you draw like an architect.” (18) Here we find the point of cleavage. Kahn’s nearly-metaphysical notion of the harmonic relationship between the building and earth stood in clear opposition to the manner in which Corbusier had de-

veloped a disconnection of the building from the earth through the use of *pilotis* and horizontal extension. Kahn’s sketching technique indicated a deeper critical position that later appeared as a dominant theme in his own buildings.

Furthermore, Kahn idolized painters who could use their pictorial technique to resist gravity’s imperative, particularly Giotto and Chagall, who freely displaced figures and buildings in relationship to each other and to the ground. Kahn said: “The painter can paint people upside down, as Chagall does, as you know, but he has this prerogative because he’s a painter. He’s representing nothing; he’s presenting everything.” (19) For Kahn architecture, by extension, lacked this prerogative and was obligated to address issues of pictorial representation.

Only once did a Corbusier building pass *unmediated* from its physical reality to Kahn’s picturing of it, at Ronchamp in 1959. Although Kahn said, “I fell madly in love with [Ronchamp],” Anne Tyng had criticized it for its lack of order. To many architects of Kahn’s generation, it seemed that at Ronchamp Le Corbusier had abandoned all the great principles of modern architecture for which he had once stood. Some critics even called the building *baroque*, a devastating castigation for a contemporary building in the mid-1950s. James Stirling famously wondered if it would launch a “crisis of rationalism.” (20) Kahn decided to see for himself. Perhaps, according to Eugene Johnson, Kahn “wondered if the building actually offered a way out of the dilemma in which Kahn and younger architects found themselves.” (21)

Kahn made two drawings of the pilgrimage chapel, almost identical views of the interior looking east toward the altar. He concentrated on the passage of light through the east wall into the interior, while giving a sense of the entrance of light through the deep openings in the southern wall. In Jan Hochstim’s account: “Without the use of obvious shading techniques, Kahn conveys the play of light on this precious space by using agitated arrangements of discontinuous ink lines.” (22) Why would Kahn be ‘agitated’? Perhaps he was too close to his subject. In his architecture at this time, Kahn was wrestling with the same problem: how to control light by controlling the shapes of openings in masonry walls. Significantly, Vincent Scully described the Ronchamp sketch as Kahn’s first use of Le Corbusier’s “thin, pitiless, analytical line.” (23)

At Ronchamp, the picture that Kahn avoided may have been more important than the picture he drew. To Kahn’s back was an enormous sag in the roof, a wonderfully expressive gesture of gravity. There are several familiar analyses of the Ronchamp roof which suggest metaphors: it is a clam shell, or an airplane wing, or Noah’s ark, or a nun’s bonnet. But virtually all of them agree that the roof is “floating,” largely due to the slice of light Corbusier designed be-

tween the wall and roof. Still, particularly on the interior, the roof was composed with tremendous visual weight. As it moves from the altar to the back of the chapel, the roof develops an exaggerated slack, as if it were made of fabric. Indeed, this motif was developed by Corbusier through a series of sketches, one of which shows an early version of the chapel with three sections of the "sagging" roof.

Just as Kahn had been pictorially defeated at Pisa, so he was at Ronchamp, where again he found the building defenseless to the forces of gravity. Kahn's anxiety about gravity can be used to reinterpret the chapel at Ronchamp. Instead of "floating," the roof is "sagging." Throughout his career, Le Corbusier had been committed to denying gravity by lifting the volumes of the building above the ground, from the Domino House in the teens to the work at Ahmadabad in the fifties. Before Ronchamp, Corbusier's work is invariably *lightweight*, literally and pictorially.

The symmetries are stunning. Just as Le Corbusier had used drawings and pictures to convey a particular view of the relationship between the building and the earth, Kahn used pictures and his own distortion of pictures in order to work out his anxieties about the visual weight of buildings. Just as Le Corbusier had sought to deny gravity, Kahn in his pictures and built work sought to deny Corbusier's denial. Le Corbusier worked from an extreme position throughout his career and abandoned this position in his final masterwork. Likewise Kahn finally capitulated in the design of the Kimbell, relinquishing his lifelong commitment to a principle.

For Kahn, the act of making pictures seems to have been crucial to this liberation. Clearly he had been preoccupied with the disappearance of the wall, an obsession that saturated his travel sketches and his lectures about ancient buildings:

"Let us take the example of the Parthenon. You can see in the sunshine the walls are broken; the columns ruined the walls, which protected man from danger. When man realized that all was calm outside he pierced a hole in the wall and said 'I have made an opening.' The wall wept and said 'What are you doing to me?' And man said 'I felt that all was well and that I had to make this opening.' Man realized the need for an opening, he decorated it and made the top half into an arch; the wall liked that and agreed that it was beautiful. If we now think about the column, we should see it in terms of a wall which has admitted more and more openings until it has all become concentrated on one upright, called a column." (24)

In his travel sketches (even the ones that appear highly derivative of Corbusier's images) Kahn displayed his suspicion of the column as a skeletal element and his clear preference for wall-bearing building methods. Particularly at Corinth, but indeed in the preponderance of his drawings of columnar structures, Kahn rendered columns exces-

sively thick and too close together. Likewise, he was apt to exaggerate their *entasis*; all these mannerisms seem to have been related to his hyper-cthononic relationship to gravity, and his anxiety about the loss of the wall.

Indeed, Kahn's body of architectural work as a whole is fully occupied by his attempts to resolve the relationship between the column and the wall. In his full maturity, at the Kimbell, Kahn finally embraced Corbusier's column-grid as the structural system, while refining the infill wall to give it a distinct identity and autonomy. The Kimbell Museum was, in many ways, Kahn's most Corbusian building. But it was also strongly his own, for it deeply assimilated several Corbusian themes through his idiosyncratic process of pictorial distortion. In the astonishing lightness of the Kimbell, Kahn finally embraced his teacher's spirit, liberated after decades of making pictures.

NOTES

¹Kahn, quoted in Richard Saul Wurman, ed., *What Will Be Has Always Been: The Words Of Louis I. Kahn* (New York: Rizzoli, 1986), 242.

²August Komendant, *18 Years With Architect Louis I. Kahn* (Englewood, N.J.: Aloray, 1975), 122.

³Kahn, quoted in Alessandra Latour, ed., *Louis I. Kahn: Writings, Lectures, Interviews*, (New York: Rizzoli, 1991), 307.

⁴Kahn, quoted in John Wesley Cook, *Conversations With Architects* (New York, Praeger, 1973), 212.

⁵Kahn, quoted in Latour, *op. cit.*, 307.

⁶Eugene Johnson, *Drawn from the Source: The Travel Sketches of Louis I. Kahn* (Cambridge: MIT Press, 1996), 108.

⁷Vincent Scully, *Louis I. Kahn* (New York: G. Braziller, 1962), 13.

⁸Le Corbusier, *Creation is a Patient Search*, James Palmes, trans. (New York: Praeger, 1960), 37.

⁹Johnson, *op. cit.*, 38.

¹⁰Daniel Naegele, "Object, Image, Aura: Le Corbusier and the Architecture Of Photography," *Harvard Design Magazine* (Fall 1998); 39.

¹¹Beatriz Colomina, *Privacy and Publicity: Modern Architecture as Mass Media* (Cambridge: MIT Press, 1994), 279.

¹²Le Corbusier, *Towards a New Architecture*, Frederick Etchells, trans. (New York: Holt, Rinehart and Winston, 1960), 204.

¹³See Johnson, *op. cit.*, 41.

¹⁴Sarah Williams Ksiazek, "Drawn From the Source: The Travel Sketches of Louis I. Kahn," *Journal of the Society of Architectural Historians* 56, no.1 (March 1997): 94.

¹⁵Jan Hochstim, *The Paintings and Sketches of Louis I. Kahn* (New York: Rizzoli, 1991), 31.

¹⁶Bruno Pedretti, "The Flight of Ethics," *Casabella* 51, no. 531-532 (Jan.-Feb. 1987): 119.

¹⁷Kahn, quoted in Latour, *op. cit.*, 77.

¹⁸Kahn, quoted in Wurman, *op. cit.*, 121.

¹⁹*Ibid.*, 56.

²⁰Stirling, James, "Le Corbusier's Chapel and the Crisis of Rationalism," *Architectural Review* (March 1956), 161.

²¹Johnson, *op. cit.*, 108.

²²Hochstim, *op. cit.*, 331.

²³Scully, "Introduction," in Jan Hochstim, *The Paintings and Sketches of Louis I. Kahn* (New York: Rizzoli, 1991), 16.

²⁴Kahn, quoted in Latour, *op. cit.*, 342.