Louis I. Kahn and the Ruins of Rome
Author(s): Vincent Scully
Source: *MoMA*, No. 12 (Summer, 1992), pp. 1-13
Published by: Museum of Modern Art
Stable URL: http://www.jstor.org/stable/4381193
Accessed: 19-11-2015 12:28 UTC

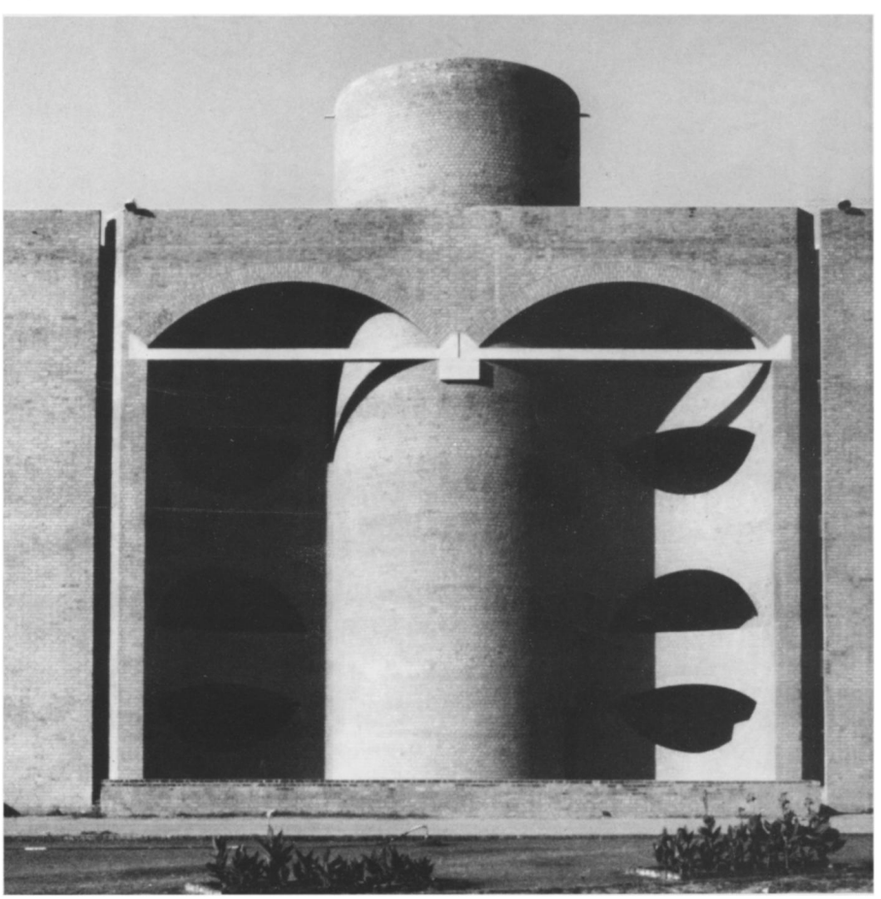
Louis I. Kahn
and the Ruins of Rome

by Vincent Scully

Louis I. Kahn was about the best thing that happened to most of us who were privileged to know him over the years. Historically, Kahn's work turned out to be a hinge: Robert Venturi, who was close to Kahn, and European architects who owe a lot to Kahn, like Aldo Rossi, have brought about what is, in my opinion, the most important development in architecture in the second half of the twentieth century. That is the revival of the classical and vernacular traditions of architecture and their reincorporation into the mainstream of modern architecture. Along with that has come historic preservation, a powerful popular movement, and the only major development in contemporary architecture which has been led by the people—with the participation of a very few architects, such as Venturi, Rossi, and Leon Krier—rather than by professionals.

These are all things that Kahn really didn't care a rap about. He had no desire to restore the traditions of architecture. He didn't have much interest in preservation. His city plans, which people are writing about now, are largely exercises in formal fantasy, rather than seriously considered plans. He was a modern architect in every way; that is to say, he wanted to invent, to "reinvent the wheel" in every project. He was determined not to use readily identifiable historical forms in his buildings, and he continues to be hailed as a prophet and a hero by those architects who consider themselves moderns in the canonical sense, who don't want anything to do with the revival of tradition.

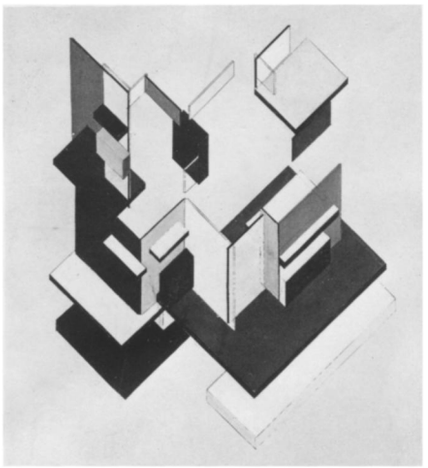
These architects want to continue to invent, want the freedom to invent that the painter has always had, which the architect took over from the abstract painting that developed in the first decades of this century. Kahn's work is like the work of those new-modernists only in its abstraction, and in his determination to invent. Their approach can be represented by Theo van Doesburg's 1923 study, fig. 2, which is all graphic design: the house is not drawn in perspective, the way one sees buildings, but in axonometric projection, to make it look like a cubist painting. It is a composition that seems absolutely free



1

ABOVE: Henri Cartier-Bresson. *Louis I. Kahn.* 1962. Courtesy The Queen Magazine, London

1. Indian Institute of Management, Ahmedabad, India. 1962–74.



2

because there's no up, no down, no weight, no static, no masses. It's an abstract, free invention, with constant movement of compositional planes.

This is absolutely the opposite of how Kahn worked, because what Kahn did was *build*, construct, as in his Indian School of Management at Ahmedabad (1962–74), fig. 1. He would never design anything the shape of which didn't derive from its structural character. This is how he began to make architecture anew. Instead of an architecture that is an affair of constantly shifting aesthetics and choices, all of them very free, architecture became again an affair of masses, of solids, of the weight of bricks, of horizontal ties holding arches together. You feel them thrumming with tension—at least Kahn wants it to look that way.

Kahn provided a kind of primitive new beginning for architecture, which is what he always said he was after, by starting with *building*: the basic, primitive, architectural fact of building. This is what makes architecture different, fundamentally, from all of the other arts. Through illusion, painting can embody all kinds of acts and environments; sculpture populates space with gesture and with movement; architecture is the construction of an environment and of volumes of space made in a structural way. Kahn's buildings have that *par excellence*.

Kahn's mature work is illuminated by a consideration of his early experience as an architect. For example, a house of 1924 by George Howe (fig. 3), with whom Kahn worked in the early 1940s, displays the subordination of glass, and the ruin-like voids, within heavy masonry, they are characteristic of Kahn's late projects. In a sense, this is the architecture that he grew up with. On a trip to Europe in 1928–29, four years after Kahn graduated from the University of Pennsylvania, he drew at Assisi, with a soft, flat carpenter's pencil, an architecture of mass, of pure void, and devoid of glass (fig. 4). When he did watercolors like figure 5 on that same trip, down near Positano, it's basically the same primitive architecture of solid masonry masses that have pure dark voids, without glass, punched into them.

The "high style" architecture in which Kahn was trained by Paul Cret at the University of Pennsylvania was called "modern classic" or "stripped modern" in its time, and Cret, more than anybody else, created it. His Folger Library and Federal Reserve buildings in Washington, D.C., major commissions in Cret's office during the time Kahn worked for him in 1929–30, are good examples (fig. 8). They're much like that vernacular architecture that Kahn had sketched in Europe, in the sense that they're heavy, massive, and symmetrical. What you feel is the mass and the void, and glass plays very little part in the design. It's a traditional classicism simplified under the pressure of modernism, but still retaining a monumental symmetry, and employing permanent materials, beautifully assembled. No sooner was Kahn trained in this approach, however, than Le Corbusier's Villa Savoye (1929–31) burst upon the architectural profession (fig. 9). Suddenly one could no longer look at buildings that were symmetrical, massive, heavy; one could no longer use the classical order in which Kahn had been trained, because now architecture had to be thin, taut, light, asymmetrical, stretched out to pure idea.

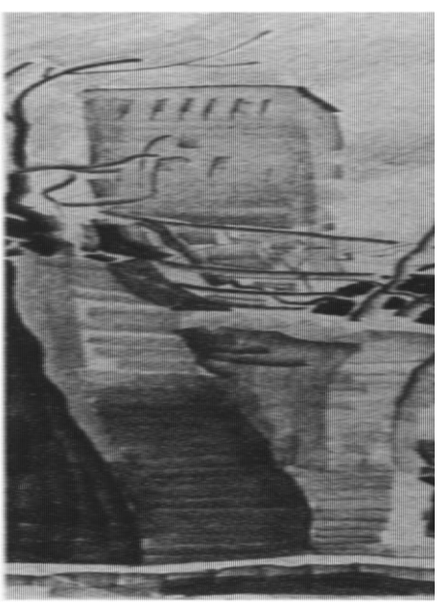
Modern classic architecture began to be used not only in the United States, where it made some of our best buildings in the thirties, but also by the totalitarian nations. The Fascists used it, as in Rome in the mid-thirties, and the Nazis used it, as

2. Theo van Doesburg and Cornelis van Eesteren. *Project for a Private House*. 1923. Gouache and pen and ink on paper. 22½ x 22½". The Museum of Modern Art. Edgar Kaufmann, Jr. Fund.

3. Mellor, Meigs, and Howe. Newbold Estate, Laverock, Pa. 1921–24. View of fore court.

4. Louis I. Kahn. *Street Scene with a Church Tower, Italy*. 1928–29. Graphite on paper. Present whereabouts unknown.

3



4

at Nuremberg. So, politically, you couldn't touch it. Modern criticism has tended to portray the style as an architecture of repression, maintaining that fundamental canard to this day. Kahn separated himself as well as he could from modern classicism through the thirties and on into the forties by taking up the new, light architecture of glass and thin Lally columns, a way of building to which he was fundamentally unsympathetic.

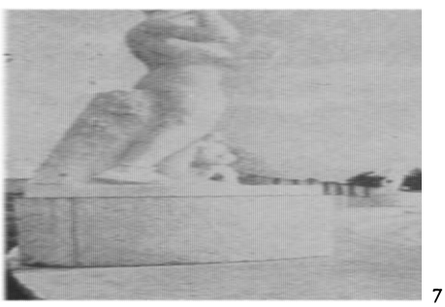
When he came to Yale in 1947, it was clear that here was a man who'd lost an *order* and was looking for it everywhere. What that order was nobody knew. He didn't know himself, but he constantly talked about it—not about flow diagrams and flow patterns, the kind of thing they were then talking about at Harvard, but about order, especially the order of crystals. It was as if he, like a lot of people in architecture and art history in the late forties, wanted to get outside art, to something that would sanction art. It was as if art had worn itself out. Kahn felt there had to be some kind of scientific basis for his work. It was a curious time in our lives, when we lost confidence in the things that we live by. I don't think he knew a lot about crystallography—the rest of us knew nothing—but he was looking for an order that would develop like the order of crystals.

At about this time Kahn's old friend and partner, George Howe, managed to get him an appointment as Fellow at the American Academy in Rome, where he was from 1950 to 1951. When he returned to Italy, he no longer used watercolor. By the forties watercolor had been banished because it belonged to the bad old decadent Beaux-Arts days, but he got as close to it as he could in a simpler medium: he took up pastels, and he began to do great ones. Among the first was one of a forum—not the Roman Forum, not Trajan's forum, but a forum in the architecture he'd been trained in: Mussolini's Foro Italico (fig. 6). The only thing Kahn added was a building to the right to cast an ominous shadow. That, of course, is in the tradition of de Chirico, who, as a young Italian in Paris in the teens, homesick for Italy, painted its haunted squares, its new industrialism, chimneys, trains, statues on plinths. That is what Mussolini wanted to build: a haunting image of Italian tradition. And the Fascists were sometimes able to do just that, as in the EUR, site of the Esposizione Universale di Roma, which was supposed to open in around 1942, except that Mussolini was otherwise engaged (fig. 7). It is now one of the most popular places to live in Rome. The EUR has a de Chirico-like perspective that finally leads to a building without glass, like a great ruin, which is the House of Italian Culture, all arches, pure void, open air, standing out against the sky.

Kahn then traveled, and he went to the squares of Italy, probably the greatest urban spaces that mankind has ever created. In his pastel of the Piazza del Campo in Siena, he gets rid of everything that establishes scale, such as doors, people, and kiosks, making it mysterious by wiping that all out in one great red swash (fig. 10).

5

6



7

5. Louis I. Kahn. *Bay Houses, Amalfi Coast, Italy.* 1928–29. Watercolor on paper. 14 3/5 x 10 3/5". Collection of Mrs. Esther I. Kahn.

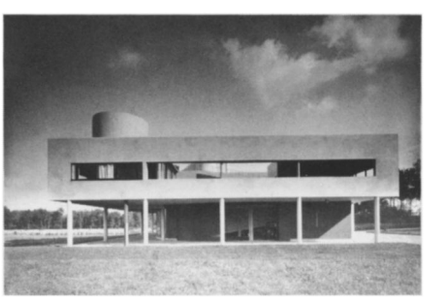
6. Louis I. Kahn. *Rome, 1951.* 1951. Pastel on paper. 7 2/5 x 8 1/2". Collection of Sue Ann Kahn.

7. Foro Italico, Rome.

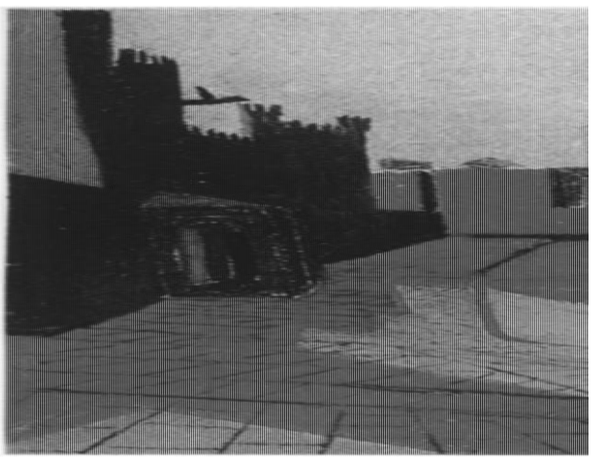
8. Paul Cret. Federal Reserve Bank, Washington, D.C. 1933–34.

9. Le Corbusier & Jeanneret. Villa Savoye, Poissy-sur-Seine, France. 1929–31.

8



9



10

11

This elimination of elements that tell you how big things are became fundamental in Kahn's mature architecture, as at Dhaka (fig. 11). Looking at the exterior of the hostels there, how can we tell that it's a housing group that has several floors within it? There's no way to tell. Instead, it is one strange, timeless shape—beyond function, beyond the changes that function always implies, reflecting in the water almost the same composition Kahn created in his pastel of Siena.

In that same year, 1950–51, he traveled outside Italy, and he went to Greece. When he drew in pastel the great temple of Apollo at Corinth, however, he made it and the background orange. The pastel doesn't show us the wonderful white light of Greece because he wasn't looking for that. He found what he was looking for, apparently, in Egypt, where you do see that warm terra cotta color, as in his pastel of columns at Karnak (fig. 15), which suggests the massing of his later Mikveh Israel synagogue project (fig. 16).

A great deal has been written about Kahn's relation to Jewish mysticism. His widow Esther Kahn says that he wasn't a practicing Jew, and he rarely talked about Judaism, but there's no doubt that when the chips were down, he would turn to it. When he came to make the proposal for the Mikveh Israel project for Philadelphia, which would have been, I think, the most important monument of synagogue architecture in the modern day, he found the shape of his synagogue in a Jewish tradition, the Kabbalah, drawing directly, as Anselm Kiefer has since done, on medieval and Renaissance texts illustrating the tree of the Sefiroth (figs. 12 and 13). The cylinders indicated by the circles on the plan are hollow, and can contain, if necessary, the quorum of ten men; a thousand congregants may be seated in the main space.

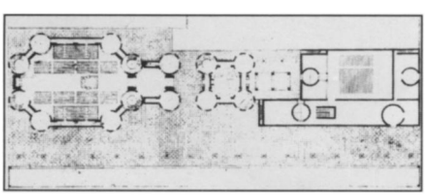
10. Louis I. Kahn. *Piazza del Campo, No. 1.* Siena, Italy. 1951. Pastel on paper. 11 1/3 x 14 3/5". Collection of Sue Ann Kahn.

11. Sher-e-Bangla Nagar, Capital of Bangladesh, Dhaka. 1962–83. View of east hostels reflected in water.

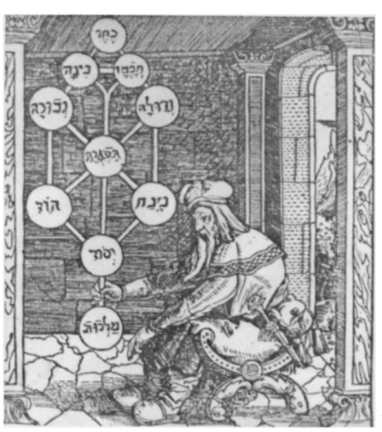
12. Mikveh Israel Synagogue, Philadelphia (unbuilt). 1961–72. Plan; detail.

13. Tree of Sefiroth from Paulus Ricius, *Portae Lucis,* 1516.

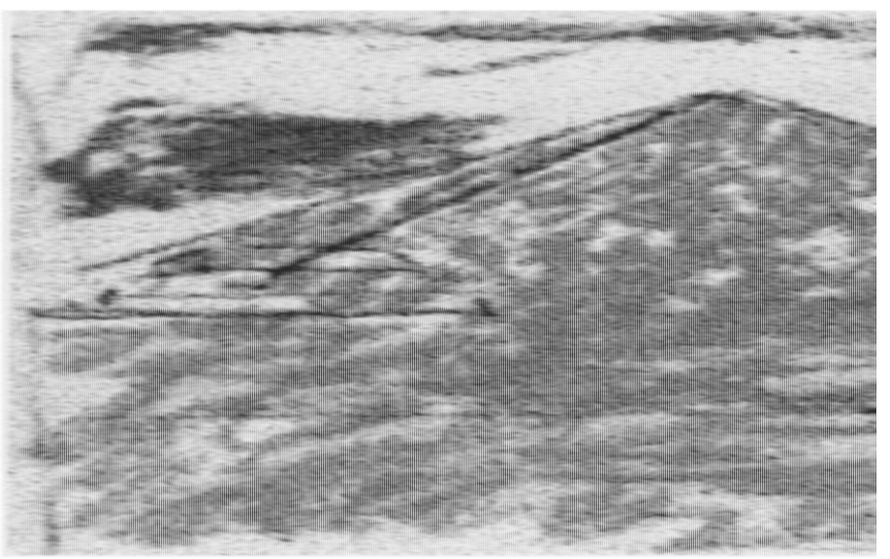
14. Louis I. Kahn. *Pyramid Studies, Egypt.* 1951. Pastel on paper. 4 x 6 1/4". Detail, upper left. Collection of Sue Ann Kahn.



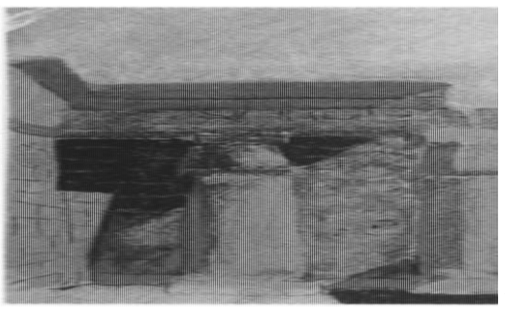
12



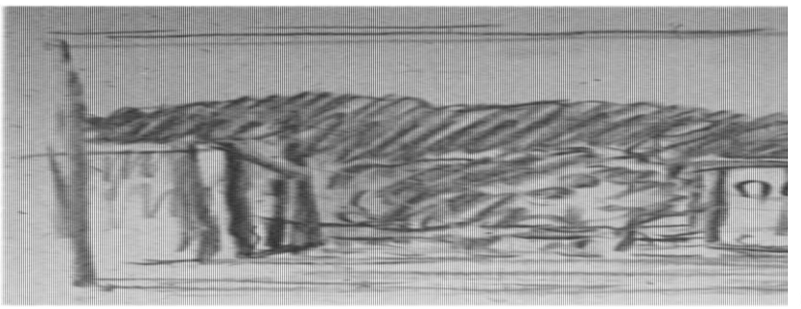
13



14



15

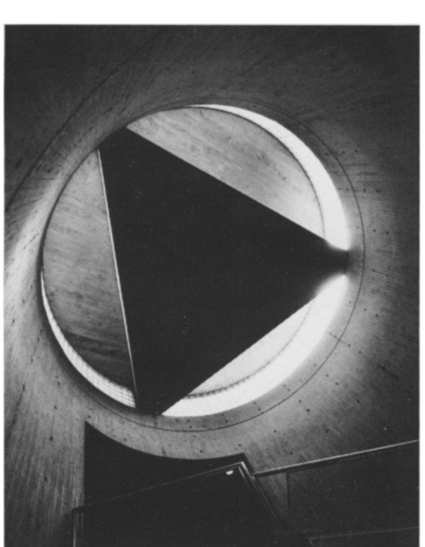


16

15: Louis I. Kahn. *Court, Temple of Khons.* Karnak, Egypt. 1951. Pastel and charcoal pencil on paper. 7 1/8 x 12". Collection of Sue Ann Kahn.

16: Mikveh Israel Synagogue. Elevation.

When Kahn traveled in Egypt, he had to have a document or stamp on his passport that said he was an Episcopalian, or something of that sort, because Egypt was still at war with Israel. They weren't allowing Jews to travel there. But in the end, Egypt seems to have unlocked Kahn's Jewishness, and at last he came to the most important place of all for him, to the pyramids at Giza, and made what I think are his greatest pastels (fig. 14). Kahn saw the pyramids as embodying divinity, and as creatures of light. Indeed, he saw them dissolving in light: the great four-sided mass of the pyramid disappears in the drawing into reflections that make you think that maybe it has only three sides, or only one, facing forward. He also wrote a poem while he was there, calling Giza "The Sanctuary of Art, of Silence and Light." He couldn't have used two words more descriptive of the divinity, especially in Jewish literature, than "silence" and "light." The very fact of silence, in a good deal of medieval Jewish and Christian theology, is the clearest indication of the presence of God, while light, of course, is practically the most important word in the beginning verses of Genesis.



17

While he was in Egypt Kahn received, again through George Howe, his first important commission, for the Yale University Art Gallery. The pyramids, as he looked at them, had turned into tetrahedrons, and then into planes, some light and some dark, and he worked out the idea that the pyramids could in fact be carriers of light. He combined with this idea the concept of the space frame advocated by his most important collaborator of that time, Anne Tyng, and the tetrahedronal forms of Buckminster Fuller. Fuller had come to Yale when the Art Gallery was being designed, and talked and talked. He also built a cardboard dome over the architecture school at Yale, which slowly rotted in the sun. Kahn condensed the pyramids with the space frame and created his incomparable slab (fig. 19). It isn't, of course, a space frame. You can see that it is made up of braced beams. The effect, however, is of a great articulated canopy—indeed, of a kind of crystalline order. If at any time Kahn came close to communicating a sense of the order of crystals, perhaps it was here.

The importance of Kahn's achievement at the time it appeared can be grasped if we look at one of Mies van der Rohe's climactic spaces of the fifties, such as Houston's Museum of Fine Arts, where the structure is all outside the space (fig. 18). Inside, the space is dematerialized, if one can use that term, the masses are weightless planes that are far away, and the sculpture appears as discrete bodies in a void. When Mies himself organized an exhibition for that space, he selected classical sculpture because he wanted the solid human figure in this constructivist world. Humanity is thus placed in a Neo-Platonic idea of perfect space, without any matter, any mass. That is the great quality of Miesian space.

17. Louis I. Kahn, Douglas Orr. Yale University Art Gallery, New Haven, Connecticut. 1951–53. Stairwell.

18. Mies van der Rohe; Staub, Rather & Howze. Cullinan Hall, Museum of Fine Arts, Houston, Texas. 1958.

19. Yale University Art Gallery. Interior, showing ceiling slab.

18

19

Kahn is just the opposite. All at once matter is present, challenging space. You feel that invincible Western tradition of physicality in architecture. Indeed, the Yale Art Gallery was regarded in its day as a monument of the New Brutalism, which in fact committed so many crimes.

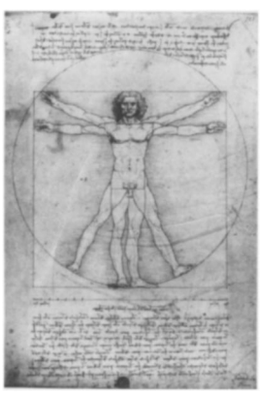
20

20. Bathhouse, Jewish Community Center, Ewing Township, New Jersey. 1954–59.

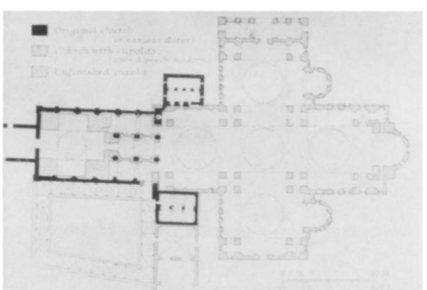
21. Leonardo da Vinci. *Vitruvian Man of Perfect Proportions.* c. 1510. Pen and ink on paper. 13 1/2 x 9 1/8". Accademia, Venice.

22. Saint-Front. Périgueux, France. 1120 and following centuries. Plan.

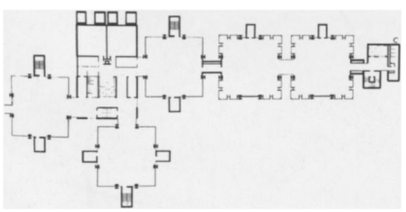
23: Alfred Newton Richards Medical Research Building and Biology Building, University of Pennsylvania. 1957–65. Plan.



21



22



23

Through the primitive, overweening masses of its buildings, modernism finally destroyed our cities. But this building by Kahn was different. It seemed to embody a law, a system, not a brutal gesture. Nevertheless, Kahn contained the Yale Art Gallery within a Miesian envelope. That rectangular volume was not chosen by Kahn but by Howe, before Kahn came back from Egypt, and Kahn exploited it. A gallery director later installed continuous wall planes, like those in The Museum of Modern Art, and Kahn never got over that. He said he learned not to make a big, uninflected space like this again, because people could change it so easily. In addition, he didn't know how to design an entrance, or rather, *wouldn't* design one not suggested by structure, so he just set it back, and you slide into the building at the side. Kahn's refusal to design anything he can't intrinsically build continues right through his career. What's inside the Yale Art Gallery, of course, is what he loves, and what haunted him: the pyramids. The staircase is especially wonderful; you look up the staircase and the black shadow of a pyramid floats there, weightless, pure shadow, pure light—silence and light—overhead (fig. 17).

Finally, in 1955, when he was coming close to leaving us at Yale, Kahn built actual pyramids for the bathhouse he designed to be part of a Jewish community center near Trenton (fig. 20). They are four-sided, and you feel, even more than in the art gallery, I think, the great silence of the structure and the profound poetry of the light that he experienced before the pyramids of Egypt. In Trenton, he came also to other basic shapes that have pervaded Western architectural aesthetics since the days of Vitruvius and before, the square and the circle. There are five squares, and in the middle he has a circle. The four squares outside are capped with pyramids.

The well-known image by Leonardo (fig. 21) of the *Man of Perfect Proportions* (c. 1510) is only one of hundreds of such drawings derived from the passage in Vitruvius where he says, more or less, that it's wonderful that the human body is proportioned so that it can fit into the perfect shapes of the square and the circle. This idea, probably Pythagorean, obsessed the Middle Ages and was taken up by Neo-Platonism during the Renaissance. It suggested the basic image upon which Gothic and Renaissance architecture alike are based. Implicit in it is the idea that there exists a fundamental order that you can find only in drawing, that is, in the domain of conception; if gross matter intervenes, you get farther away from the idea of an underlying order of the universe as a whole. The forms thus drawn are taut as piano wire: the circle and the square. Kahn's embrace of this idea connects him with the richest part of the classical tradition, its theoretical center, from which are derived the great architectural images of the order of the world—for example, the new France and the cosmic order as embodied in the great French classic gardens of the seventeenth century. This is a central theme of history that Kahn, once taught by Cret and other French Beaux-Arts architects, was now able, in a sense, to reclaim.

More than that, Kahn returned to a plan type, also traditionally French and Beaux-Arts, the concept of served and serving spaces. Structures are articulated by small spaces, which, acting as corridors, lavatories, or whatever, serve large spaces. This is how he articulated the cross-axial plan of the bathhouse at Trenton. We get the feeling that he was really seeing for the first time all the things he'd been trained to look at in his youth, as illustrated in the books of Eugène-Emmanuel Viollet-le-Duc and Auguste Choisy. In the plan of Saint-Front, at Périgueux, for example, there are five squares, each with a circle in the middle—a dome on pendentives—and they are articulated by piers grouped in fours, making small spaces in exactly the same places Kahn has them in his plan (fig. 22).

That plan broke Kahn loose from the Miesian envelope within which everybody, including himself, had been designing. It freed him to articulate a building, to study its function—"what it wanted to be," as he'd say—and make a very special, new organism of it. The result was the articulated plan of his Alfred Newton Richards Medical Research Building at the University of Pennsylvania (1957–65) (fig. 23). Some of the small spaces on the peripheries of the squares seen here are staircases, and some house the ducts that remove noxious air from the laboratories. Kahn shows that these towers are non-structural by stepping them in, or by cutting a triangle at the bottom of those housing staircases. The whole structure is articulated around great precast concrete columns (fig. 25). All these elements suggest that the building has wholly developed out of function and structure, as if it were entirely contemporary and had no antecedents, as if it really grew out of a pragmatic analysis of how it wanted to be.

As Kahn studied the laboratory's towers, other forms haunted him: the towers of San Gimignano that he had painted in watercolor on his trip to Italy in the 1920s (fig. 24). Those are solid masonry masses, based firmly on the ground. They are all much the same and they group in a way that seems strangely appropriate for the Richards laboratory, which is, if I may say so, a place of hard work and a tower of pain. The normal image of a laboratory is of an aseptic place, beyond morality. This building has the sense of human beings, working in the community of a shared profession, ruthlessly doing things that are hard and tragic.

Still, those towers look structural; they dominate the columns and were criticized for that. The actual structure, when you see it, is very beautiful, though: the tense interlocking of the precast elements, the dry joints, the reduction of the spandrels in section as they approach a corner. You sense that Kahn is *building*. He said that

24

25

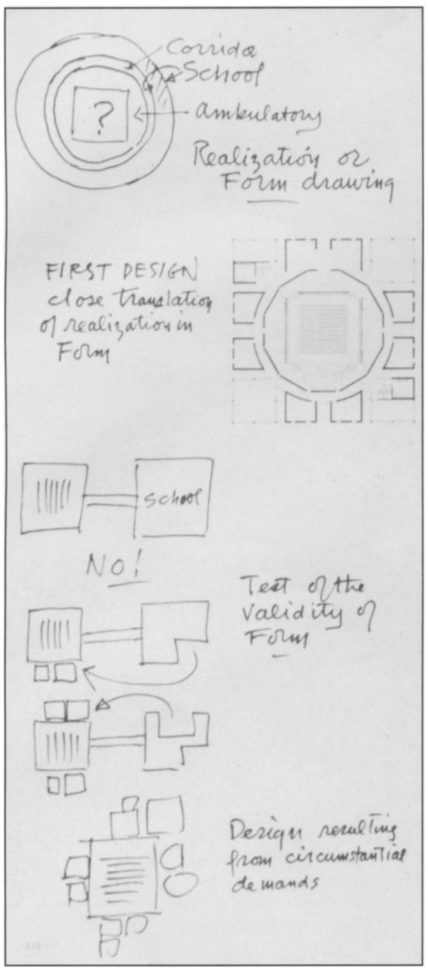
24. Louis I. Kahn. *Towers*. San Gimignano, Italy. 1929. Watercolor and red pencil on paper. 12 x 9 1/10". Collection of Sue Ann Kahn.
25. Alfred Newton Richards Medical Research Building.
26. Alfred Newton Richards Biology Building.

when he began to imagine that the crane was like his arm, and the big precast elements were like bricks he could carry in his hand, "then I could feel what I was doing."

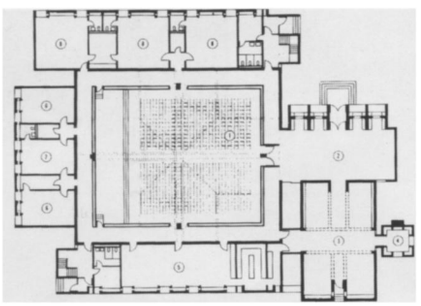
Kahn, returning to what he'd been taught, recalled in the Richards complex the great drawings by Auguste Choisy in his *Histoire de l'architecture* of 1899, which was Kahn's text. Choisy loved worm's-eye perspectives of dry structures like Greek temples, put together piece by piece, locked together without mortar, and that's what Kahn was able to recreate here. However, in terms of function, which was supposed to be the other modern determinant of the design, nothing really works very well. The squares are small to contain the laboratories. Pieces of equipment have to be put out in the corridors. There's no sun protection; people put silver paper up in the windows. So when he came to add the Biology Building, Kahn not only fiddled with the structure, but also put in library carrels at the top to make a cornice (fig. 26). He studied how people would sit, and how the little low windows would cast light on a book, while the big window above illuminated the space as a whole without glare. Though the library was taken out of the project before the building was constructed, the carrels were retained, as a device to terminate the towers—a gross dereliction of method from Kahn's own point of view.

For this reason, Kahn began to ask himself, How do I use the forms that populate my mind; how do I actually form my work? When he came to Rochester to build the First Unitarian Church and School, we can see the answer taking shape. He begins by saying, When you get a new program, a form suggests itself (fig. 27). Here that form was basically a circle within a square, representing a central meeting hall with a kindergarten, a library,

26



27



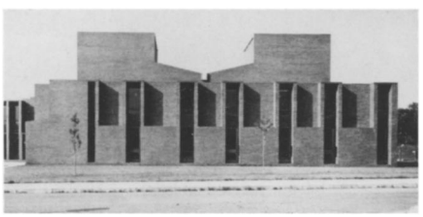
28

27. First Unitarian Church and School, Rochester, New York. 1959–69. Form and design drawing.

28. First Unitarian Church and School. Plan.

29. First Unitarian Church and School. Exterior.

30. First Unitarian Church and School. Auditorium.



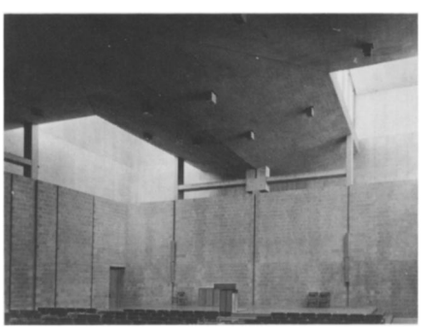
29

and other functions grouped closely around it because, Kahn explained, all of those functions occasionally want to use the large space.

Having established that form, Kahn then bombards it with the specific demands of the program—his approach is really Neo-Platonism and realism combined. As he does this, he says, the plan will deform, and this is what happened as the Rochester plan developed. If it doesn't deform too much, he says, that means that the original form idea was the right one to use. If you choose the wrong form in the beginning (as Kahn said the clients themselves did), and bombard it with specific demands, it will deform too much, and you can't build it.

At Rochester, as the ideal geometry of Kahn's circle-within-a-square form distorted, an eloquent plan developed in which the entrance space is larger, the library big, the kitchen long, and classrooms moderate in size (fig. 28). From that point on we can trace everything about the building through its reception of light. We feel that he has expressed function and structure like an absolute modernist, and that the plan is also absolutely abstract—that he's achieved, in a sense, the modern ideal.

The windows are set back, to protect them from glare, he said, so we hardly see the glass in the exterior wall, which becomes very plastic and solid (fig. 29). Up above, four great monitors rise to light the central space, whose bony structure is one of his greatest. You can really feel the silence he talked about, thrumming as with the presence of divinity, when the



30

cinder block is washed silver by the light that floods down upon it, while the heavy, heavy slab is lifted overhead (fig. 30). This space joins that of the Yale Art Gallery as one of Kahn's early essays in the sublime, into whose vast silences all his late work was to move.

In 1965, I accompanied Kahn to the Soviet Union, where his work was included in an exhibition of American architecture in Leningrad. He walked around with the mayor of the city, who was inspecting the show, and they came to this Rochester building. The mayor said that it didn't look like a church, which by Russian standards was true enough. Kahn instantly replied, "That's why it was chosen for exhibition in the Soviet Union." The translator wouldn't translate it, but all the Russians laughed anyway, indicating they understood perfectly well what we were saying. And, of course, it doesn't look like a church. It has the abstraction Kahn insisted upon, and, more than this, the glass is subordinated. The way Kahn liked to look at the building, and the way it was first published, was in elevational views where the glass in the walls is far enough back to be in shadow, and the glass in the monitors above doesn't show at all, so that it looks as if it's all mass.

Kahn's real turning toward the ruins of antiquity started with his first project for the Salk Institute for Biological Studies in La Jolla. There he had a big Vierendeel truss that spanned the laboratories, leaving the work space open and flexible. In his first schemes for the scholars' studies adjoining the laboratories, Kahn produced a plan which consisted of a square with a fanning pattern opening out from the center (fig. 33). He'd seen that pattern in the so-called Domus Augustana, on the Palatine Hill in Rome—part of the Flavian palace—probably built by the great architect Rabirius. It is a nymphaeum—once full of water flowing and rising, so that its energies were projected into the air—in which there is a wonderful fan-like pattern

opening out to half-circular segments on all four sides (fig. 34).

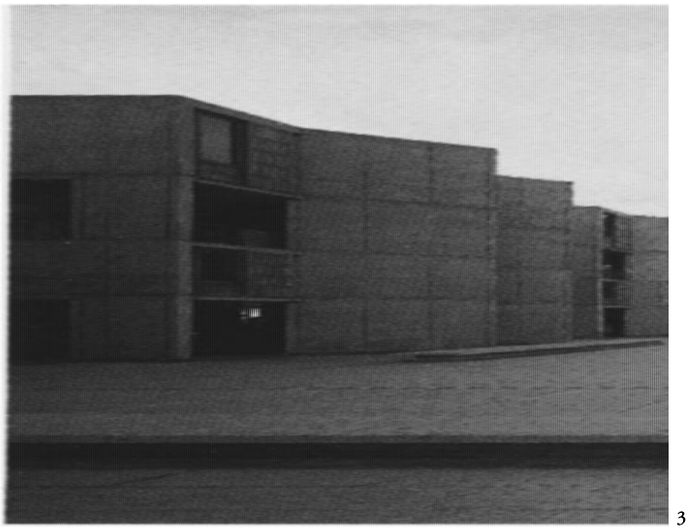
Kahn had rediscovered the ruins of Rome when he went there in 1950, under the influence of the greatest Romanist that those who knew him are likely to know, Frank E. Brown of Yale University and the American Academy in Rome. Brown wrote one of the shortest and, I think, one of the best books about Roman architecture. He led us all to Rome; he led Kahn to the ruins. Earlier historians, and even the Beaux-Arts architects who used Roman forms, wrote about Rome as if it had just a utilitarian architecture, an engineer's architecture; it wasn't pure and glowing like that of Greece. Brown made us see that it was a poetry of space, of light and water. He led us to Hadrian's villa, the Flavian palace, Trajan's market, and Ostia. Kahn went to all those places, alone and with Brown, looked at them hard, and drew them.

Eventually, Kahn eliminated the fan-like pattern because he wanted to establish a view towards the sea from the scholars' studies, and so he articulated the buildings in accordance with that intention (fig. 31). In addition, glass is once again almost completely subordinated. The words that people most use to describe the Salk Institute are "Acropolis" and "marble"; the milky concrete is so beautifully formed that the sense is of being in a perfect, classic world. That impression is heightened by the fact that right out there off the coast is one of the favorite places for hang-gliding in Southern California, so every once in a while Icarus glides across the scene.

Kahn originally intended to bring trees into the central courtyard, but the architect Luis Barragan, as Kahn acknowledged, told him to leave it open. Kahn also projected housing and a community center that would have been on the bluff above the Pacific. In that community center, he proposed a very strange thing: a series of rooms, some of which were square and some cylindrical (fig. 35). They all had walls of glass. They were to be protected from glare by thin concrete walls, circular ones around the square rooms, and square ones around the circular rooms. He called this "wrapping ruins around buildings."

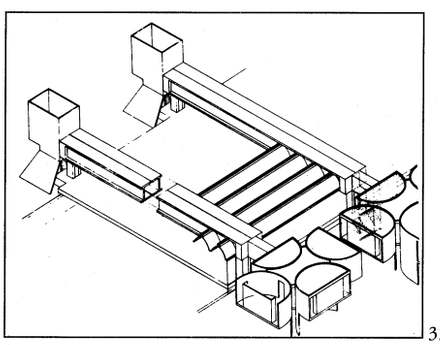
This is the first really complete proposal for something in three dimensions that resembles Roman ruins as Kahn saw them. But it's more than that. A student of Brown's at the Academy, who was an engineer, went to the forum baths at Ostia and proved (to everyone's satisfaction, anyway) that their orientation was such, and the power of the hypocaust, which distributed heat to the baths, was such, that these wonderful rooms—some rectangular, some cylindrical, opening with columns—probably never had glass. The Romans had plenty of glass, but here they probably didn't use it. That helped sanction the whole thing for Kahn: They didn't use it, I won't use it. He saw how wonderful it would be to have the dark void in the pure ruin, to have the opening in the curving wall, to have the round arches and the flat lintels, and the typical keyhole arch that we find all over Hadrian's villa. Kahn used all those forms.

A drawing Kahn made for this project seemed to me, when I saw it in 1962 as I was writing a book about Kahn, the greatest drawing in modern architecture that I'd seen (fig. 36). It expressed *romanitas*, the gravity of Rome, the bigness of Rome—what Brown called the authority of Rome. Notice, however, that unlike Roman ruins,



31

32



33

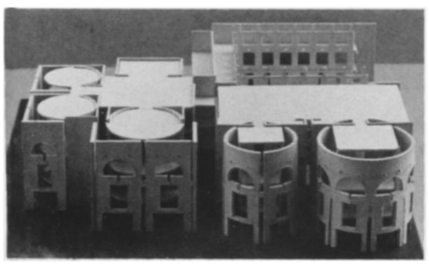
34

31. Salk Institute for Biological Studies, La Jolla, California. 1959–65. Courtyard, facing west.

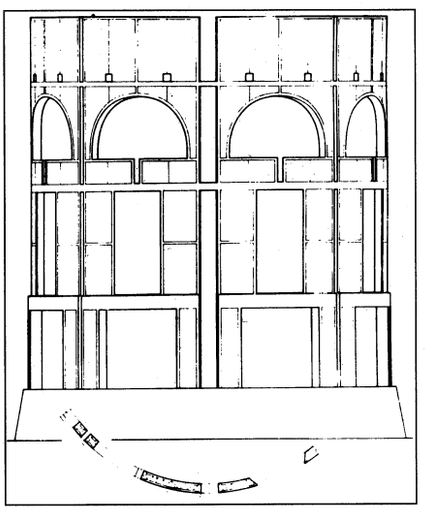
32. Salk Institute for Biological Studies. Scholars' Studies Building.

33. Salk Institute for Biological Studies. Early scheme, Scholar's Studies Building.

34. Garden Court, Domus Augustana, Palatine Hill, Rome. Completed A.D. 92.



35



36

35. Salk Institute for Biological Studies. Community Center (unbuilt). Model.

36. Salk Institute for Biological Studies. Community Center (unbuilt). Elevation drawing.

Kahn's drawing shows thin walls, a bit like those of Corbusier or of Pier Luigi Nervi, taut with their own bending. And indeed, Kahn always keeps the wall as thin as he can. Everybody said, Well, Loony Lou: he's wrapping ruins around a building. Nobody can do that. It's like having to build two rooms each time. It's ridiculous.

Of course, Kahn had the last laugh, because just after this he received the commissions for his great projects on the subcontinent of India, where he didn't have to have glass in most instances, and those great primitive shapes began to appear. In his Indian Institute of Management, in Ahmedabad, Kahn even created an order again, his lost order. It was a structural order, derived from a misprision, a conscious misreading, of Roman brick and concrete construction, with lintels over openings, as at Ostia. In this kind of Roman construction, of course with very thick walls, the mason laid a section of brick on both sides, filled it with concrete, and let it set. He then capped it, built up a scaffold if necessary, climbed up, and did it again. Over an opening, often with a wooden lintel, he built an arch between the sections of wall to divert the heavy concrete from the lintel until the concrete set.

Kahn took this procedure and turned it around. He made the lintel concrete (which the restored lintels at Ostia are), and it is the lintel that seems to hold the arch together as a tie. Everything reverses the ancient method. The concrete tie is a taut element that dramatizes the presumed thrust of the arch, and you can feel it hum like a bowstring. Corbusier, late in his life, also turned to a kind of primitive mass in his buildings, but his masses are in a way more like primitivized Greek temples, sculptural bodies in whose gesture we feel a modern violence. Kahn's aren't like that; we don't read the human body in Kahn. His approach is Roman: we read the environing space and the structure, which is self-contained. Therefore, its presence never tires; its gesture, if any, is always potential, mysterious. Structure, not sculpture: fundamentally, that is how the primitivized classic in Kahn is different from that in Le Corbusier.

All of Kahn's sources are present in his Indian Institute of Management (fig. 1). Kahn said he needed the brace across the arches there because of earthquake problems, but of course the model is Piranesi. Giovanni Batista Piranesi was one of Kahn's great loves, and he bought every book by Piranesi that he could find. Kahn didn't read a lot—*pace* those who talk about his philosophy and so on. He looked at the pictures, like most architects, and he loved Piranesi, who was really the inventor of what Kahn was doing. Piranesi is one of the first great Romantic-Classic architects, those who began the modern age by going to the ruins of Rome. What the Romantic-

37. Thermopolium (tavern), Ostia Antica, Italy. Second century A.D.

38. Sher-e-Bangla Nagar, Capital of Bangladesh, Dhaka. Loggia of outpatient clinic.

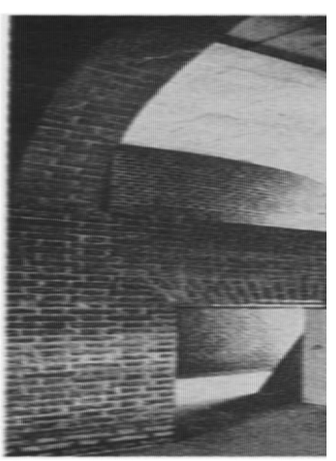
39. Cross-vaulting, Basilica of Trajan's Marketplace, Rome. Early second century A.D.

40. Indian Institute of Management. Interior.

37

38

39

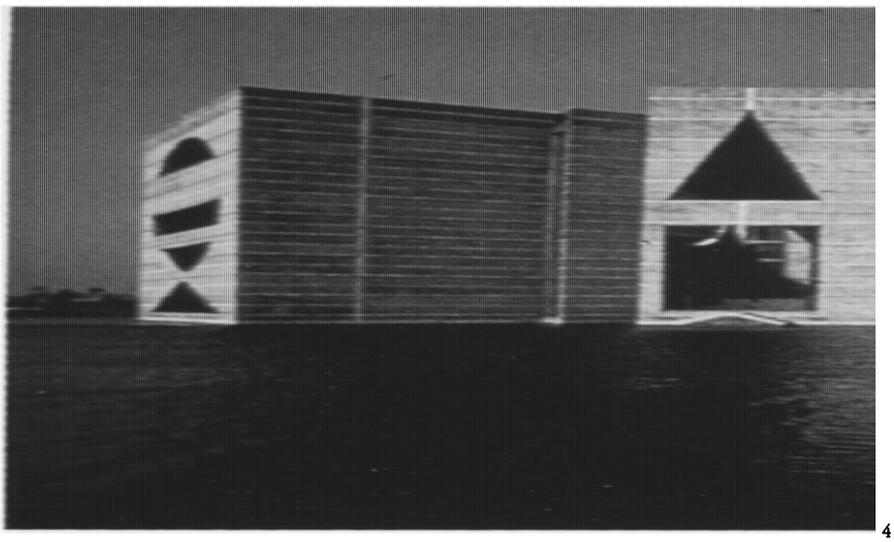


40

Classic movement wanted was the Sublime, which was, in that aesthetic, different from the beautiful: it was crude and frightening, awesome and dangerous. The Piranesi of the great Roman ruins, with light coming down from above, is matched in Kahn's great Roman crypto-portici, the underground passages that he built at Ahmedabad and at Sher-e-Bangla Nagar, the Capital of Bangladesh, Dhaka (fig. 44, 45). He's building Piranesi: the sublime, the ruin. It's true that Kahn concealed his sources—he won't use columns and entablatures, for example, because that would be a giveaway—so now he can be deified by the modernists as inventing it all out of his head. But it really is coming out of the ruins of Rome—rebuilt, in the marvelous illogicality of art, on the Indian sub-continent. In the wonderful spaces within the loggia of the clinic at Dhaka, the visitor doesn't really need to conjure up Piranesi: it's almost purely Kahn and the ruins of Ostia—here of the thermopolium, the tavern, near the House of Diana (fig. 37, 38).

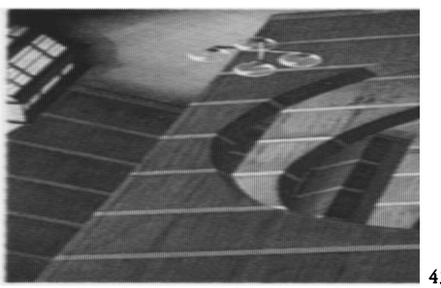
Kahn's use of the ruin is not only visual, it is also conceptual, structural, and systematic. For example, Trajan's Market in Rome, above his forum, offers some of the greatest brick and concrete construction, such as the impressive cross-vault lighting of the long tunnel vault over the nave of the central basilica (fig. 39). Kahn recreated that effect in a simpler structure of brick arches (fig. 40). He doesn't need a cross-vault because he has a reinforced concrete slab, so that he can do it in the flat. He simplifies and clarifies the basilica's basic *parti*—the architectural concept realized by the structure—according to how he can build it most simply.

Again, in the temple of Jupiter Optimus Maximus that rises above the forum at Ostia, there is a marble staircase and two frontal planes that are a product of erosion, as well as walls containing relieving arches of different shapes. It's not that far from all those elements to those of the great central council building at Dhaka (fig. 41). At the same time, every one of the shapes in its plan, some square, some cylindrical, can be found in Piranesi's fantastical reconstruction of the Campus Martius in Rome, which always hung behind Kahn's desk in his office in Philadelphia. Kahn used those shapes as he had intended to do at Mikveh Israel, as containers of light, their thin walls cut through with circles and tall pyramids, while big circles light the great council chamber in the center (fig. 43). What Kahn wanted was mystery, a sense of majestic and ambiguous scale, of function transcending into awe. It is totally, as it were, outside time—has escaped time as a ruin does—containing within it, as always,



41

42



43

44

45

41. Sher-e-Bangla Nagar, Capital of Bangladesh, Dhaka.

42. Giovanni Batista Piranesi. *Carcere, with a Doorway Surmounted by a Colossal Wheel-shaped Opening.* From *Invenzioni Capric. di Carceri.* Second state. 1761. Etching. 21 x 16" (irreg.).

43. Sher-e-Bangla Nagar. National Assembly Building, north entrance staircase.

44. Giovanni Batista Piranesi. So-called Villa of Macenas at Tivoli. From *Vedute di Roma.* Etching.

45.: Sher-e-Bangla Nagar. Vaults (crypto-portici) under National Assembly Building.

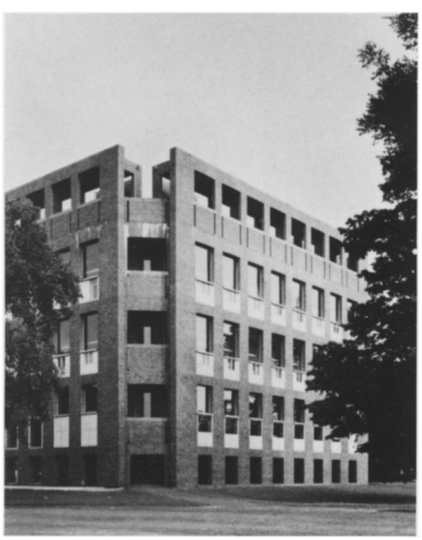
46

46. Kimbell Art Museum, Fort Worth. 1966–72.

the sublime. We are reminded of Piranesi's *Carceri*, the terrible stairs going up into space, seen through the enormous circles, vertiginous and awesome (fig. 42).

Many of Kahn's later buildings in America are like those Roman projects, which found such a natural, full outlet on the sub-continent. In the Kimbell Art Museum in Fort Worth (1966–72), he employed the Roman round-headed arch, but deformed it so that, in his view, the ceilings would distribute the indirect light better. The running arches of the porticos on the outside (fig. 46) are actually very close to an element at Hadrian's villa. At the Kimbell, glass is again strikingly subordinated, so that Kahn is always close to his Romantic-Classic roots, to the ruin, deformed only a little. The same thing is true of his Library at Phillips Exeter Academy (1965–72), in Exeter, New Hampshire, which he won't allow to come together at the corners as a completed building (fig. 47). This can be compared with the facades at Hadrian's villa and also with Ahmedabad, where Kahn set some panes of glass far back in the window opening. At Exeter he wants us to see the building as a brick and concrete ruin with the glass where he absolutely has to have it, shoved into the ruin without ceremony. Beyond that, he wants us to perceive the square of the exterior with the vast concrete circle inside it (cover illustration). It's a diagrammatic realization of the Neo-Platonic order indestructible within the ruin.

47. Library, Phillips Exeter Academy, Exeter, New Hampshire. 1965–72.



47

So far Kahn was wholly Romantic-Classic, but in the Yale Center for British Art (1969–74), effectively his last building before his death, he almost completely changed. Here, in his analysis of how to use classicism, and how to make a modern building fronting a street, it is as if Kahn jumped almost a hundred years, from Piranesi in 1745 to Henri Labrouste's Bibliothèque Sainte-Geneviève of 1843-50 in Paris, which is unquestionably the most copied building of the nineteenth and twentieth centuries (fig. 48). Labrouste asked himself, How would the Greeks have built with columns if they had to contain space, too? It was not enough just to put the columns in front of the wall, as in the classicizing or Romantic-Classic buildings of earlier generations. How do you make *sense* of it, how rationalize it, most of all how condense the opposites of column and wall to make a new unity?

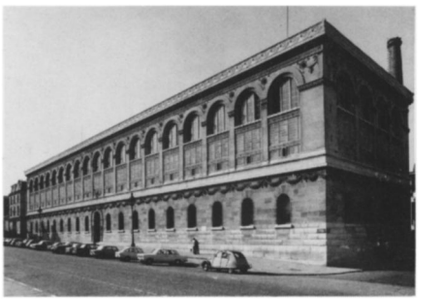
Labrouste's answer was a system consisting of a lower zone (the ground floor's exterior); a string course; and a columned arcade, expressing the upper story, partially filled with panels, some glass and some solid. That's the theme out of which H. H. Richardson built the Marshall Field warehouse in Chicago and Sullivan built the Guaranty Building in Buffalo. The skyscrapers all come out of it in one way or another. It's a basic modern type, and Kahn used it in New Haven. He's got the frame, he has the infilling panels of stainless steel, which has such a matte finish that it looks like slate, and the panels of glass. Mies, in part through his nineteenth-century German predecessor, Karl Friedrich Schinkel, used the same system, for example at the Illinois Institute of Technology. But Kahn's frame, unlike that of Mies, expresses weight and compression. The lintels weigh heavily on the piers; the joint is point-loaded, static, Greek, silent.

The outside of the Yale Center conveys no sense whatever of a ruin, as his first projects for it had done. But inside there are still sublime effects, as in the big cylinder

housing of the stair, which doesn't quite reach the beams spanning the library court, so that it's like a monster in the space. And in the top floor, the light still floods down from above, illuminating the silence. Most of all, however, the magic is in the glass, which Kahn had avoided and tried to subordinate all his life. Now the glass comes alive as an incandescent, reflective material. On the exterior, he presents it cleanly and without detailing, and the stainless steel panels are so matte in finish that the glass surface explodes with light. Standing across from the building, near the corner of High and Chapel Streets, one sees, as if illustrating the Cartesian perception that the angle of reflection is the same as the angle of sight, that the building is reflecting all the buildings across from it (fig. 49). One sees first of all the wonderful old Art Gallery by Egerton Swartwout of 1926–28. A little farther on it reflects Kahn's own art gallery of 1951-53. Then, down at the end of the street, it reflects Paul Rudolph's Art and Architecture Building of 1958–63. However much that building may be criticized, nobody can fault its siting: where Kahn's building is a cut-off box, Rudolph's opens in a great gesture to embrace it from across York Street, so concluding the impressive movement of Yale's art and architecture buildings down Chapel Street (fig. 50).

We can see how right Kahn had been to adorn his old art gallery with string courses. They carry the eye down the street. As in the old building, Kahn still doesn't "design" an entrance in his new one. There he decided, when the students and the city demanded that there be shops on the ground level, that he would leave the end bays open. The visitor just slides in, and then enters the great court.

Perhaps, though, Kahn almost embraces the principle of contextuality in the new building. He is, after all, right across the street from his own earlier building. He has treated the street as a community space, and he has in large measure carried on that dialogue between the generations which the older buildings embody. That is what architecture primarily is, after all, and what makes the city as a whole. One wonders whether Kahn would have gone further in that essential direction if he had survived. But it is moving to know that this last building of his looks across to his old art gallery, where he struggled with the pyramids, wrestling like Jacob with the angel, all night long, when the first great architects of Western civilization reached out to him and set him on his way.



48

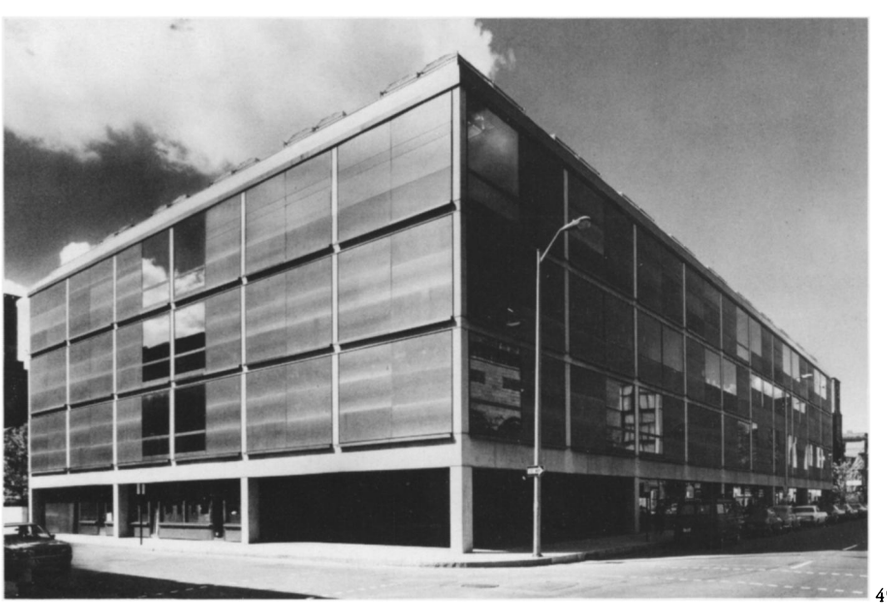
48. Henri Labrouste. Bibliothèque Sainte-Geneviève, Paris. 1843–50.

49. Yale University Center for British Art, New Haven, Connecticut. 1969–74.

50. Yale University. View down Chapel Street, with old and new wings of Art Gallery and Paul Rudolph's Art and Architecture Building.

ILLUSTRATION CREDITS

Figs. 1, 3, 7, 8, 11, 12, 13, 16, 22, 23, 27, 28, 33, 34, 36, 37, 38, 39, 42, 43, 44, 50: Photos courtesy the Yale University Slide Library. Fig. 2: Soichi Sunami. Figs. 4, 5, 6, 10, 14, 15, 24: Photos by Rick Echelmeyer; courtesy Sue Ann Kahn and Jan Hochstim. Fig. 17: Photo by Robert Perron; courtesy the Yale University Slide Library. Fig. 18: Photo by Hickey & Robertson, photographers. Fig. 21: Photo courtesy Archivi Alinari/Art Resource. Fig. 25: Photo by Malcolm Smith. Figs. 20, 26, 29, 30: Photos © John Ebstel. Figs. 31, 45: Photos by Grant Mudford; © 1992 the Museum of Contemporary Art, Los Angeles. Fig. 32: Photo by Marvin Rand. Fig. 35: Photo by George Pohl. Fig. 41: Photo by Reha Gunay. Fig. 47: Photo © Joseph W. Molitor. Fig. 48: Photo by James Austin. Fig. 49: Photo by Tom Brown; courtesy the Yale University Center for British Art.



49

50