Kahn's reputation as a teacher is overshadowed by his buildings, but his teaching may be his greatest legacy. Based on interviews with his Master's Class graduates, this paper reviews his pedagogy.

Louis I. Kahn, teacher

James F. Williamson

Almost forty years have passed since the death of Louis I. Kahn. While Kahn's reputation as the greatest architect of the second half of the twentieth century has been acknowledged by many, there is another dimension to Kahn that has received little attention.[1] Kahn was an unconventional teacher, a radical philosopher whose influence on his students was both subversive and far-reaching *[1]*.

Writing as one of Kahn's former Master's Class students at the University of Pennsylvania, 1973–74, I will argue that his legacy as a teacher should be remembered as among his greatest accomplishments. For it is through his many students, beginning at Yale in the early 1950s and notably at Penn from 1955 until his death in 1974, that Kahn's distinctive philosophy of education and unique pedagogy have continued to influence the teaching and making of architecture in the late modern era.

This study is the first to focus on Kahn's Master's Class at Penn through the eyes of his students. With the assistance of the University of Pennsylvania's Architectural Archives, a comprehensive repository of records relating to Kahn's academic and professional career, I have contacted the majority of nearly 400 alumni of the Master's Class for assistance with this project. Some fifty responses were received, revealing a remarkable consistency both in their recollections of the nature and content of the Master's Class experience and in its personal significance.

Fikret Yegül, a member of Kahn's Master's Class



1 'One shouldn't judge in a school of architecture. One should criticise, but not judge,' Louis I. Kahn

doi: 10.1017/S1359135514000128

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

of 1966, has commented on this neglected aspect of Kahn scholarship:

> *I have always been surprised that in the many books and exhibitions about Kahn [...] I find very little information, emphasis or insight about his teaching and his students. The emphasis is always about his role as an architect and designer and the head of a not-always-successful architectural office; there is very little if anything at all about the fact that half of Kahn's life was dedicated to his teaching. He acknowledged that he was proud of it, and he was absolutely a dedicated teacher to his Master's Class* [...].[2]

Many of these graduates of the Master's Class have become teachers, and many of these have continued to pass along to new generations of students a philosophy of architectural education and a system of professional values originally inspired by their exposure to Kahn. Bill Lacy, founding dean of the University of Tennessee School of Architecture observed that, 'As great as his buildings are, I suspect that his true legacy will prove to be those whom he taught and his works, and the works of those whom they will teach, and on and on.'[3]

According to Michael Bednar who went into teaching along with most of the others in his Master's Class of 1967, Kahn 'engendered in many of us such strong belief and so many insights that we wanted to share them with others. In that way he was a great teacher of teachers. Through us, who are now teaching, his spirit and philosophy continue to explore the meaning of architectural belief.'[4]

Kahn in the context of twentieth-century American architectural education

Beginning in 1890, the architecture programme at the University of Pennsylvania was dominated by the influence of the Parisian École des Beaux-Arts, where the emphasis was on drawing and the adaptation of historical styles. Under the leadership of Theophilus P. Chandler, a remarkable cadre of Philadelphia's architectural elite were recruited as lecturers, including Wilson Eyre and Frank Furness. In 1903, the first Beaux-Arts alumnus to teach at the University of Pennsylvania, Paul Cret, joined the faculty. By 1921, under Cret's leadership, the Penn Architecture Department was considered the best in the nation.[5] Other Ivy League universities, and other north-eastern schools such as M.I.T., soon followed Penn's example. Cret dominated the architecture programme with his open-minded approach to style. Among his many gifted pupils, the most distinguished was Louis Kahn, who studied at Penn from 1920 to 1924, earning his Bachelor of Architecture degree. There he won two medals and narrowly missed qualifying for the final competition for the Paris Prize awarded by the École.[6]

'Penn was a nice school then', said Kahn:

> *It was highly religious, not as if it were a certain religion, but religious in the sense that transcendent qualities were considered worthy. We learned to respect the works of the masters, not so much for what they did for themselves, but for what they did for others through their works, which were a high use of the language of architecture.*[7]

With the rise of the Bauhaus following the First World War and the ascendancy of the International Style in Europe – and with the contributions of Joseph Hudnut at Columbia and Harvard, Walter Gropius at Harvard, and Mies van der Rohe at what was to become the Illinois Institute of Technology – it was only a matter of time until Modernism displaced Beaux-Arts classicism in the most progressive American schools of architecture.

Kahn's initial experience as a teacher was gained outside academia, however. In 1931, during the early years of the Depression, with many Philadelphia architects out of work, Kahn organised the Architectural Research Group, a forum for discussion of the new Modernist ideas. Kahn's natural gifts as a teacher became evident in the regular weekly lunch meetings, where he was remembered as 'this little guy who held forth'.[8]

Beginning in 1947, Kahn taught at Yale as a visiting critic, commuting from Philadelphia two days a week. During the mid-1940s, he was also active in the American Society of Planners and Architects, where he became acquainted with G. Holmes Perkins, a Harvard-educated architect and planner.[9] Following the war it was Perkins, as the visionary new dean at Penn, who first embraced Modernism and replaced the existing Beaux-Arts curriculum with undergraduate programmes in architecture, city planning and landscape architecture.

In 1955 Perkins hired Kahn away from Yale on the basis of his 'powerful reputation as an unorthodox teacher'.[10] At Yale, Vincent Scully had been instrumental in inviting Kahn to become chairman in 1956, a post he turned down to devote more time to his expanding practice in Philadelphia. But he had already begun to distance himself from Yale – perhaps due in part to Paul Rudolph's presence, including Rudolph's studio assignment of a 'roadside frozen custard stand' for which Kahn was expected to serve on the jury. Kahn's interest lay in deeper issues.[11]

Perkins believed that architecture should be a graduate programme entered from a liberal arts background. Under the banner of the new Graduate School of Fine Arts (GSFA), the old five-year undergraduate programme was replaced by a graduate curriculum. Perkins' greatest achievement was the recruitment of a vibrant new faculty that would take Penn in a new direction. In addition to Kahn, his recruits included Lewis Mumford, Robert Geddes, Stanislawa Nowicki, George Qualls, Romaldo Giurgola, Robert Venturi and the engineer Robert Le Ricolais. In addition he appointed visiting critics such as Paul Rudolph, Aldo Van Eyck, Balkrishna Doshi and Oscar Stonorov. Together, these individuals, under Kahn's spiritual leadership, constituted the core of what became known in the 1960s as the Philadelphia School.

The Philadelphia School was part of a larger reassessment of architectural education led by a new generation of teaching practitioners who challenged the 'reductive and formalistic architecture of figures belonging to the post-

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

World War II period such as Philip Johnson, Eero Saarinen, Paul Rudolph, and Kevin Roche'. This new generation centred about a 'Penn-Yale axis' and, in addition to Kahn, included Venturi, Giurgola and Charles Moore.[12]

> *For over a decade, GSFA faculty and students together created the foremost school of architecture, planning and landscape architecture in the United States, perhaps in the world, embracing the notion of designer as scientist while at the same time augmenting the artist's position. Research and application were combined in a cauldron of new ideas, new values and a pervading sense of optimism. History and historicism, the foundation of Penn's Beaux-Arts curriculum, took a back seat to this new excitement.*[13]

Kahn was placed in charge of a new one-year Master's Class for holders of the first professional degree.[14] 'Do it your way', Perkins told Kahn.[15] As a result, the Master's Class would soon become known as 'the most famous course in the USA', according to one educator.[16] Denise Scott Brown (a 1965 graduate) recalls, 'It was what brought me to Penn, on Peter Smithson's advice.'[17]

Even though Kahn was fifty-four when he accepted the position at the University of Pennsylvania, already acknowledged as 'the most vibrant architecture school in the country',[18] his most creative years as a teacher and practitioner still lay before him.

A philosophy of education

Kahn's distinctive, even radical, philosophy of education emphasised three principal themes. Drawing on the Beaux-Arts tradition, he advocated a renewed appreciation of the place of history and an emphasis on order, monumentality and the power of intuition. He espoused a neo-Platonic view of reality, which influenced his approach to the beginning of a project. And he held subversive beliefs about the role of the architect in society.

The Beaux Arts Influence

Kahn was quick to credit his Beaux-Arts training at Penn with the later development of his own mature approach to both design and teaching. He often displayed lavish Beaux-Arts architectural renderings from the rare books collection of the Furness Fine Arts Library,[19] fondly pointing out to his students their elegance of detailing and breadth of vision.

His Beaux-Arts background led him to search for a way to integrate a new concern for monumentality into Modernist architecture, including the expression of symbolic content. For him, monumentality was defined as 'a spiritual quality inherent in a structure which conveys the feeling of its eternity, that it cannot be added to or changed'.[20] His concern for the spiritual, his respect for history, and his search for new ways to express the same permanence and timelessness emphasised in the Beaux-Arts tradition were to become a central focus of Kahn's pedagogy.

The Beaux-Arts influence also seems evident in the origins of his concept of 'form', which required the same sort of instinctive creativity as the Beaux-Arts *esquisse*, a quick sketch of an overall design concept made without consulting the programme or the instructor. As he said:

> *The sketch depended on our intuitive powers. But the intuitive power is probably our most accurate sense. The sketch depended on our intuitive power of appropriateness. I teach appropriateness. I don't teach anything else.*[21]

Kahn criticised the way most architects began to design based on the client's programme, which he believed should not be taken too literally, used instead only as a guide. 'The first thing to do is to throw away the programme', he said, perhaps somewhat rhetorically. Instead, Kahn advocated a search for the 'unprogrammed spaces' that, once discovered, would express the underlying nature of the building. For him, design should not come out of a programme, but emerge:

> [...] *simply as speculations on the powers of architecture to set down that which commands technology; which really writes the programme, because after all, if an architect gets a programme from a client, he gets an area programme. He, the architect, has to change the areas into spaces* [...].[22]

This philosophy could be deeply unsettling to Kahn's students who had previously been indoctrinated into the Modernist dogma that the client's programme was immutable, the only legitimate starting point, and that design should be a linear, rational process. August Komendant, Kahn's structural engineering consultant and a frequent lecturer in the Master's Class, criticised Kahn for this attitude toward the programme and his emphasis on intuition, considering it a disservice to the students and arguing that it made them arrogant.[23] But for many students, once Kahn's intuitive approach to beginnings was understood, a liberating effect resulted. 'Kahn set me free in the most incredible way,' said Glen Milne (1964).[24]

Neo-Platonism

A second central theme that ran through Kahn's philosophy of education was his neo-Platonic view of reality, which influenced his special interest in the beginning of a project. The emphasis on all Master's Class assignments was on beginnings, which held a special appeal for Kahn, and in his teaching he was always more interested in a student's initial thoughts than in the final product.

Kahn believed that the architect must first discover the eternal, ideal 'form' of a building, 'what the building wants to be', characterised by order and the relationships among its inseparable parts. Form was immaterial and 'unmeasurable', pre-existing in the realm of architecture. The student should search for this underlying essence.

Instead of just designing a school based on the programme, for instance, the student should first search for the form school. Not until the form was realised should design begin: the adaptation of the ideal to the constraints imposed by the programme, site, climate, materials, cost, etc.

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

Design was the process of bringing a building into physical existence, from the unmeasurable to the measurable, while remaining true to the original form. Finally, with a successful design, the completed building would once more suggest this quality of the unmeasurable. He advocated the radical idea that architects have a higher duty to rewrite the programme, and even the budget, when they pose an obstacle to the realisation of ideal form.

The Architect in Society

While Kahn's teaching rarely, if ever, touched on architectural practice, he was vitally concerned with the architect's role in society, which formed the third leg of his philosophy of education. His views challenged and subverted the view of the architect as primarily a businessman and problem-solver bound by the client's requirements.

He believed that the role of the architect should be all-encompassing, and opposed the compartmentalised study of the different design disciplines, such as interior design, urban design and city planning, advocating their unification under the single umbrella of architecture. He believed in social consciousness and addressing real human needs, and thought architects should study psychology, sociology and anthropology.[25]

He was careful to distinguish between being an architect and being a professional, because for him they were not the same thing at all:

> *Be really an architect and not just a professional. A professional will bury you. You'll become so comfortable. You'll become so praised* [...] *that you'll never recognize yourself after a while. You get yourself a good business character, you can really play golf all day and your buildings will be built anyway. But what the devil is that? What joy is there if joy is buried?*[26]

He taught that too many architects were more interested in business than in seeking the realm of architecture, distinguishing between making buildings and making architecture. 'If you think about the profession of architecture, you can't expect much', he said. 'But if you think about Architecture, you can expect a hell of a lot more.'[27]

> *I know architects who have tremendous commissions, who down deep want nothing more than to be recognised for a small building, in spite of all the great projects, as being a significant contribution to architecture itself. Because most buildings that are built belong merely to the marketplace. That doesn't belong to the realm of architecture at all.*[28]

Kahn was subversive in his challenge to many prevailing views. He advocated a renewed appreciation of the place of history and an emphasis on order, monumentality and the power of intuition, which grew out of the Beaux-Arts tradition. He espoused a radical approach to how a project should begin based on a neo-Platonic search for form that took priority over one's own ego or a slavish adherence to the programme. And he attempted to redefine the architect's role in society as more than just a professional.

A unique pedagogy

Kahn's pedagogy was derived from his radical philosophy of education. It was informed by two ancient approaches, the Socratic method of questioning and the Talmudic tradition of the parable and the paradox. In addition, he emphasised a distinction between what he termed the 'what' and the 'how'.

The Socratic Method

A recurring theme in Kahn's students' recollections concerns his Socratic approach. Always probing into the nature of things, he constantly encouraged his students to search for the underlying essence of an architectural assignment through a process of questioning, emphasising that a good question was superior to the most brilliant answer. 'Learning was for Kahn an existential quest. It was at heart an exploration of life itself,'[29] one of the three major human inspirations, along with 'meeting' and 'well-being'. 'I revere learning because it is a fundamental inspiration', he explained:

> *It isn't just something we do because we have a duty. It is born into us. The will to learn, the desire to learn is just one of the most, the greatest of inspirations.*[30]

Like Socrates, he believed that 'you learn nothing that is not part of you'.[31] Reflecting on his year in the class, Fikret Yegül found that with the passing of time he came to appreciate Kahn's style of teaching more and more:

> *Kahn's Socratic manner of searching, debating, discussing around the big table was the best and truest, democratic, 'round-table' style I have ever seen* [...] *this was probably the most impressive contribution of Kahn's teaching. There was this great sense of openness and trust; we must have felt being in the presence of something greater than any one of us singly* [...]. *Kahn said he liked those long afternoons of Socratic musings, questions and answers; in that open atmosphere of searching he said he learned from his students, and I believe him.*[32]

As Michael Bednar understood it, the primary objective of the Master's Class was the examination of one's own life in the Socratic tradition:

> [...] *to develop a philosophical approach to architectural problems; to question, probe and search to the very core of architectural belief* [...] *the intent was not to acquire a certain amount of knowledge, but rather to develop attitudes and beliefs. The hope was to start the development of a philosophical approach to design which could last a lifetime.*[33]

Charles Dagit (1968) also emphasises that students were encouraged to investigate their own attitudes and values – to 'find out who we were; to find our own way [...] He wanted you to evolve into who you are' – for Kahn's teaching went beyond the design of buildings.[34] Michael Cobb (1970) thought that Kahn's teaching had two objectives: 'to uncover new insights from his students, as he continued to explore his own approaches to architecture and design, and to encourage us to find our way'.[35] 'This was his method of teaching', agrees James Cutler (1974), 'to lead us to discovery, but never force us to the answer.'[36]

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

The Talmudic Method

Kahn frequently employed startling parables, metaphors and fables of his own devising. He was Jewish and influenced by the Talmudic emphasis on questioning, 'the harmonisation of apparent contradictions and the interlinking of apparent irrelevancies'.[37] His intent was to open his students' eyes to new ways of thinking. Many of his well-known aphorisms – most famously, 'I asked the brick what it wanted to be, and the brick said, "I like an arch"' – show this paradoxical quality in their emphasis on the importance of a search for the underlying nature of reality. One of his fables, often repeated in class, involved the origins of the first school:

> *Schools began with a man under a tree, who did not know he was a teacher, discussing his realisations with a few others, who did not know they were students. The students reflected on the exchange between them and on how good it was to be in the presence of this man. They wished their sons, also, to listen to such a man. Soon, the needed spaces were erected and the first schools came into existence. The establishment of schools was inevitable because they are part of the desires of man.*[38]

The flavour of Kahn's ambiguous observations in the Master's Class is recorded by David Bernstein in his studio notebook from 1961:

> *Place something against your will. Put it where it really should be* [...] *Some spaces deserve attention and some do not* [...] *When a man knows how to make a joint he doesn't hide it* [...] *The ugliness must be seen before we can make it beautiful* [...] *Find the smaller architecture in the crevices of the larger architecture* [...].[39]

Kahn was fond of striking metaphors. He had been a skilled musician as a young man and often used musical analogies in his critiques, humming bars from Beethoven and Bach.[40] 'Look, here are the violins' he would say, pointing to certain parts of the plan in a student's work while imitating violin sounds, 'then enter the oboes', he exclaimed, pointing out the row of rooms on the side 'and here are the drums, the rhythm section [...] He starts pounding, "bum, bam, bum", and points to the structural grid. Studio critiques turn into a music lesson.'[41]

Kahn understood the Talmudic principle that an ambiguous observation can often be more effective than a straightforward one in conveying a truth. Because of its power to inspire questioning, reflection and interpretation, such a realisation, once understood, becomes the student's own.

The 'What' and the 'How'

Instead of just being a professional, Kahn emphasised the importance of attempting to penetrate the very essence of what it means to make architecture, a thread that ran throughout his teaching. He distinguished between the 'what' and the 'how'. The 'what', the discovery and the expression of form, should be the architect's first task. Only when the 'what' was understood should the 'how', the design of a building, begin.

Kahn was sceptical of the value of an education that stressed the 'how' over the 'what'. 'Knowing things is not the thing that will help you most', he observed. 'He who analyses only loses the world.'[42] He taught that the right thing done poorly is superior to the wrong thing done well, and that once you discovered what to do, doing it was easy.

His pedagogy, however, did acknowledge the importance of the student's learning, the 'how', and referred to three important aspects of professional instruction: teaching the architect's obligations to the client and to the public; instruction in the technical aspects such as structures and acoustics; and preparation of the student to find himself professionally, based on his specific talents and interests. But while these aspects of instruction, all dealing with the 'how', were important, the teacher should be more concerned with the most important thing, the 'what'. Kahn concerned himself almost exclusively with this aspect of instruction, teaching advanced students who already understood the 'how' to find the 'what', the right thing to do.

'Architecture has no presence', he taught. 'You can't get hold of architecture [...] Only a work of architecture has presence, and a work of architecture is presented as an offering to architecture.'[43] The 'what', the essence of 'what the building wants to be', was immaterial and unmeasurable. The completed building, 'an offering', should be evaluated according to how true it remained to ideal form and whether it belonged to the realm of architecture.

Kahn believed that architects have a higher duty to constantly search for the elusive realm of architecture. Michael Cobb feels that:

> [...] *he was trying to dismantle the ideas and methods of design which we as students initially brought to the class. In other words, to get us to 're-tool' our minds about what architecture could or perhaps should be about. As Kahn himself put it, the students' biggest challenge in the Master's Class would be to 'rapidly unlearn much of what you have been taught at your own architectural schools'.*[44]

The Master's Class: pedagogy in practice

Kahn would stride across the University of Pennsylvania campus, a small, jaunty figure in a rumpled black suit with a loosely tied bow tie, thick glasses and a beat-up raincoat draped over one shoulder. To a casual observer, he might have been a shopkeeper, a tailor perhaps. A closer look revealed a scarred face, badly burned as a child, somehow beautiful in its ugliness. Kahn's personal aura contributed to his mystique. He was seen by some as a prophet, like 'Merlin [...] a little old man with a thatch of winnowed hair and wistful blue eyes [...] His world was the world of the fairies, gnomes and goblins whom he loved, and of magic [...].'[45] For students, the Master's Class was enveloped in a 'general sense of awe; the belief that we were witnessing something truly amazing, meaningful, in the total scheme of things'.[46]

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

In the Studio

It was said that each class of some twenty to twenty-five students was hand-picked by Perkins from among over 200 applicants from around the world. Many students were married with families and all had previously earned either the Bachelor or Master of Architecture degree. Many had architectural office experience and all had demonstrated an outstanding talent for design. Women were few and, based on the available records, out of a total of approximately 380 Kahn graduate students at Penn between 1956 and 1974, no more than a dozen appear to have been women.

Perkins' eventual organisation of the Master's Class included a triumvirate consisting of Kahn; Norman Rice, an architect and an old friend of Kahn's from high school who had worked in Le Corbusier's office; and Robert Le Ricolais who taught advanced structures classes. Komendant, Kahn's structural engineer, frequently served as a visiting lecturer and jury member. In addition to the studio, students were required to take two electives per semester. Popular choices included Le Ricolais's class on experimental tensile structures, Edmund Bacon's 'Design of Cities', Ian McHarg's 'Design with Nature' or Anne Tyng's class on advanced geometrical concepts in architecture.

Rice's teaching was limited in scope and usually emphasised the technical aspects of construction, which tended to devalue his contributions in the eyes of some students. He was the class administrator and taskmaster and appears to have taken charge of assigning grades based, at least in part, on the averaging of the jurors' evaluations.

Kahn himself was famously indifferent to grades, once announcing that the entire class would pass. 'Nobody is going to flunk this class', he said. 'Everybody is going to pass. But I do require attendance. That's all, just attendance [...] Because one shouldn't judge in a school of architecture. One should criticize, but not judge.'[47] Nevertheless, Glen Milne comments that learning under Kahn was 'challenging, agonisingly insightful, and exhausting [...] so challenging that in each studio year one or two people would break under his uncompromising scrutiny and go back to their home town'.[48]

Beginning in 1964, the Master's Class met in the upper floor apse of Frank Furness's Fine Arts Library, perhaps the most distinguished building on the Penn campus *[2]*. Drawing tables hugged the curved walls and, in the centre of the room, student presentations on yellow tracing paper were displayed on rolling panels.

Kahn's seminar style of teaching, instead of the traditional individual 'desk crit' still typical of most schools of architecture, was one of the Master's Class's most unique characteristics. The class met two afternoons per week and often continued late into the evening. At one end of the studio stood a long wooden conference table and a blackboard where, surrounded by students and his teaching colleagues, Kahn would hold forth as everyone strained to hear his soft, rasping voice.

No formal or written introduction to the Master's Class was provided for entering students, apparently to preserve a sense of adventure,[49] and on the first day no one ever knew what to expect from Kahn. He once began the class by 'questioning the right that an architect has to do what he does'. Architects don't have the right to be 'wilful' he emphasised, and have a duty to serve those who use their buildings. Another year, after a long silence while the students waited to hear him express some profound insight, he looked up and asked simply, 'What are your questions?' leaving the class momentarily speechless.[50] James Cutler recalls, 'The



2 Kahn's Master's Class met in the upper floor apse of Frank Furness's Fine Arts Library, perhaps the most distinguished building on the Penn campus

3 'School is my chapel. I write songs when I teach well [...]', Louis I. Kahn

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first time that Lou came into the studio in 1973, he briefly introduced the course and then said, "I am thinking of a room which would be so crafted that it would inspire a great painter to do a great painting on its walls." Then he left.'[51]

The first couple of months could be intimidating. 'I was confused as to what he wanted from me', recalls Michael Cobb,

> [...] *somewhat bewildered if not intimidated by what I was hearing; and a little pissed-off. After all, I was first in my undergraduate architectural class, received the AIA School Medal, and had become thoroughly 'socialised' into the profession and brotherhood of architects for the past five years. But* [...] *Kahn assumed we could do competent conceptual design – he was about something else*.[52]

After their initial confusion, most, including Cobb, began to realise that this 'something else', what their teacher wanted, was for them each to adopt the Socratic method, to 'critically examine our underlying thoughts about design, and [...] to begin developing our own individual approaches [...]'.[53] As articulated by Max Robinson (1964), the Master's Studio 'was not about doing architecture, especially like how Kahn would do it, but about how to approach it yourself and what to aspire to as an end rather than as the finite product of the result itself'.[54]

Assignments in the Master's Studio varied in building type and ranged from the vague to the concrete. For an assignment to design a high school, one student project consisted solely of foundations, instead of an entire building. Kahn praised this approach to beginnings and the notion of 'building on the ruins [...] A good building makes good ruins', he commented.[55] Some assignments were extremely ambiguous, such as 'A Room without a Site or Purpose'. Others were more realistic, including a site and a programme, such as a music school *[4]*, Society Hill housing *[5]*, and the redesign of Independence Mall *[6]*. Some were also based on Kahn's own commissions, including the Rochester Unitarian Church, the Salk Institute, the US Consulate in Luanda, and the Phillips Exeter Academy library.[56]



3

Interaction with Students

Jack Sidener (1963) recalls the first days of what he called the 'Shangri-La' of Kahn's Master's Class:

> *Mr. Kahn sat at the center of the long table, his aide-de-camp, Norman Rice, clucked around, tape recorders from the Japanese students whirred, and Mr. Kahn picked a project to talk about. Our first project was based on the programme of a house he was doing up in the Wissahickon River valley, and he talked about the house as a sanctuary, a chapel, with a central space ringed with columns like a small Pantheon. I wasn't ready for that, I'd spent too long on publicly funded school buildings, low-cost housing, and other straightforward projects. More difficult was the abstract conversation; the hard-core students seemed like they were clustered around a guru under a banyan tree, with conversations only among Kahn, Le Ricolais, and a few chosen students.*[57]

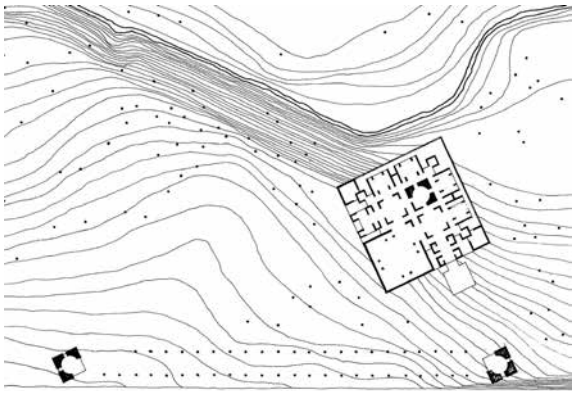
While many remember relationships among the students as generally collegial, the class was not entirely a Shangri-La, however, and Denise Scott Brown recalls, 'There were some jealousies, particularly of those Lou seemed to favour,'[58] and more than one student found fault with the personality cult that developed around Kahn. Among these was Dennis Johnson (1961), who was suspicious of Kahn's declaration that architecture was his religion and the worshipful attitude it encouraged among his students:

> *When Kahn came into the studio, he would usually stop at one or another student's desk and use a sketch to begin a long discourse on the nature of architecture in a very poetic, almost religious style. In his appearance and manner he assumed the persona of a monk, without a habit, and his students would gather in a circle around him as disciples. They listened with wonder and rapt attention. Being a Swede from the Midwest, my nature caused me to sit on the outer edge of the circle and listen, but skeptically* [...].[59]

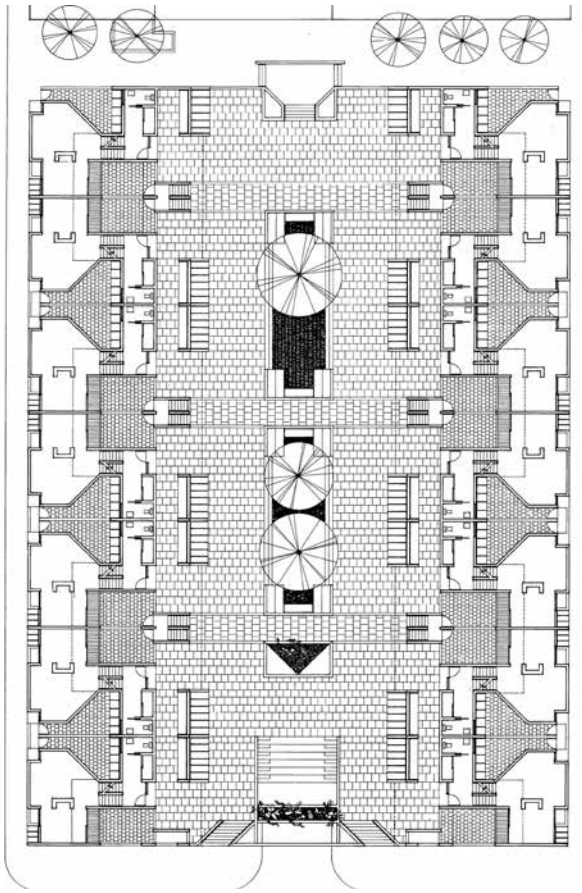
Although many of his students found Kahn to be rather impersonal in his relationships with them, he nevertheless held a magnetic appeal. 'You know, it's amazing, he never even bothered to know our names', said one, 'then he comes up to us, and puts his hands on our shoulders, and he looks into our eyes [...] what more do we need?'[60] Fred Osmond (1962) had hoped for a personal relationship with his teacher and was disappointed to discover this 'quality of distance' in Kahn.[61] In the end, however, it was not their personal relationship with Kahn that left an indelible mark on his students. They learned to appreciate him for the courage and confidence he instilled, encouraging them to find their own way, even if it sometimes meant going against the grain of the architectural establishment.

Kahn's magnetism as a teacher had a great deal to do with his unique way of expressing his thoughts, although one of the first challenges confronting students in the Master's Class was learning to make sense of his poetic use of terms like 'form', 'order', 'silence and light' and 'the unmeasurable'. On some days, 'we told ourselves we understood what he was trying to say', recalls Sherman Aronson (1974). On other days, his students would leave the studio

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press



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scratching their heads and trying to make sense of what they had heard.[62]

Peter Shepheard, who succeeded G. Holmes Perkins as dean of the Graduate School of Fine Arts, may have glossed over the difficulties of understanding Kahn when he noted that Kahn's most sympathetic audience was always among students:

> *He had magic communication with the young. His language was idiosyncratic to the point where it exasperated the middle aged and the old, but was always lucid and compelling to the young. His gift of communicating his own delight in architecture was to my mind almost a divine gift* [...].[63]

Not everyone agreed with this assessment. Even Vincent Scully, a long-time supporter, was critical of Kahn's 'inscrutable vocabulary',[64] and Robert Venturi referred to it as 'hanky panky'.[65]

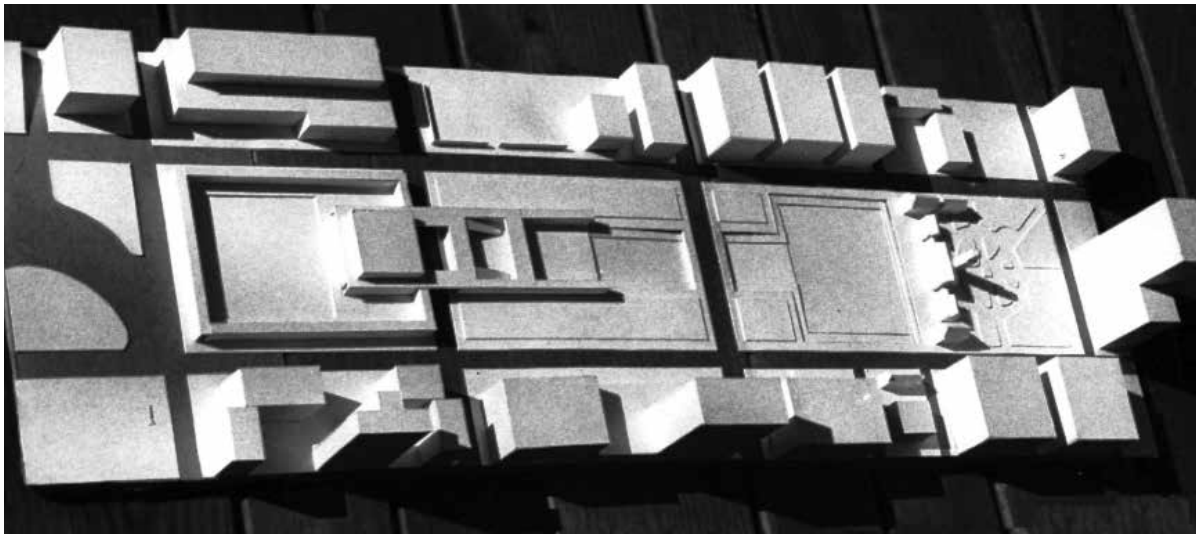
Due to the distance that usually separated them from Kahn, students didn't always know the extent of his interest in them, and there are accounts of ways in which he exhibited respect, generosity and concern. Anne Tyng related that, in criticising student work, 'Lou never drew right on another person's drawing, always on tracing paper over the drawing.'[66] Denise Scott Brown recalls that, on one assignment, Kahn initially disliked her concept and said so during his critiques in the studio. 'He and I fought all the way.' But he eventually came to agree with her and at her jury, when she was too groggy from lack of sleep to present her ideas, Kahn did so for her, energetically defending the same ideas he had initially opposed. [7]

The year typically ended with a class party, sometimes at Kahn's house in Center City. On these occasions he would reveal another side of the remote philosophical persona he usually presented in class, conversing casually over a glass of wine or the straight gin he preferred, sometimes entertaining the group by playing Bach on the piano.

4 'A Music School', Master's Class student project by Karl Smith, 1972

5 'Society Hill Housing', Master's Class student project by Karl Smith, 1972

6 'Redesign of Independence Mall', Master's Class student project by Michael Cobb, 1969



6

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Motivation for Teaching

As to Kahn's motives for teaching, Martin Meyerson, a fellow faculty member and later president of the University of Pennsylvania, thought that teaching was deeply ingrained in his personality and that:

> [...] *he professed outside the class as much as inside it. He professed in his practice, so that the young from everywhere yearned to work with him* [...]. *He was recognised very early by the people he most wanted to reach, in the young, in the students. I have, ever since I met him, marvelled at his ability to inspire the young. His ability to teach was grounded in love.*[68]

'Every work of art is a joyous thing,' Kahn said. 'No work of art comes from sadness.' 'The initial thing is the capability of joy.'[69] In class he was completely engaged. 'When I am among my students and teach them architecture', he said, 'I am happy and forget everything else.'[70] As a student, Denise Scott Brown saw this quality in him. 'Kahn came alive when students were around.'[71] 'School is my chapel', he remarked about the Master's Class *[3]*. 'I write songs when I teach well [...]. Teaching is to represent the yet not said, the yet not made.'[72] 'I come much more refreshed and challenged from the classes. I learn more from the students than I probably teach.'[73]

Kahn's motives were not entirely altruistic, however. By his own admission they were based on his needs as much, if not more than, the needs of his students. He enjoyed being the centre of attention and it was rare that a student dared to challenge him. Perhaps taking advantage of this, he dominated the class discussions, using them as a sounding board for the exploration and testing of his own unformed ideas. 'Actually, I believe that I do not teach architecture, but that I teach myself.'[74] His students, like Michael Cobb, agreed, 'He teaches himself – what we get [...] is what rubs-off in the process.'[75] Fred Osmond recalls Kahn explaining that the class was there to 'listen to him think'.[76] Kahn claimed that he benefited from 'the contact I have with young students who don't have much of an axe to grind [...] I am inspired by their sincerity, by their not being in the marketplace, by not taking that position in the battle of wits. Many things are drawn out of you which couldn't be drawn out otherwise.'[77]

Disappointment and Encouragement

Despite the generally favourable reaction to Kahn's teaching methods, there were students who failed to understand what Kahn expected. For these, the Master's Class could be a frustrating and disappointing experience. His typical reaction in such cases was to say little or nothing, simply moving on to the next project, a response that could be devastating. Gavin Ross (1968) recalls how he 'peered silently and intently for what seemed an interminable time at my latest offerings and then turned to me and with great sadness said, "I see no architecture here".'[78] A thick skin was required, for Kahn never shied away from blunt critiques, and could sometimes be quite brutal when students fell short of the mark. He declared that one student's clay model 'looked like a turd', without shape, geometry or form.[79]

When you finally 'got it', however, it could be an exhilarating and memorable moment. Glen Milne (1964) recounts an inner-city urban renewal assignment in which he couldn't bring himself to raze the site, at odds with the guidelines and an unusual position for an American student to take at that time, at the height of 'urban renewal' in American cities. Before his presentation had been completed, Kahn nudged him aside. Pointing at Milne and addressing the class, he said, 'the rest of you can answer to him'.[80]

Kahn's pedagogy in the light of contemporary architectural education

As the youngest of Kahn's students begin to retire from teaching, what is the relevance of Kahn's approach for students and teachers today and in the future? The success of the Master's Class was heavily dependent on Kahn's personal mystique, which will never be duplicated. His pedagogy was appropriate only for mature graduate students who had already mastered the essentials of design. The unique seminar approach to teaching employing the Socratic method and the Talmudic tradition demanded intellectual maturity, philosophical inclinations, a high degree of abstract thinking and a tolerance of ambiguity.

Certainly there have been revolutionary changes since 1974, and Kahn would scarcely recognise some aspects of the contemporary professional scene, including the large number of women, many of whom outperform their male counterparts, the advent of computer-aided design, the emphasis on historic preservation and sustainability, and the lingering influence in some quarters of Postmodernism and Deconstructivism.

Despite these changes, today's students and teachers would profit from the rediscovery of many of his lessons, which are as valid now as they were forty years ago. For mature students and under the tutelage of the right instructor, Kahn's seminar approach to design with its reliance on Socratic and Talmudic techniques continues to hold promise. The over-emphasis in many schools on the architect as simply a satisfier of the client's programme needs to be reconsidered in Kahn's spirit of a search for the 'unprogrammed spaces'. His warnings about the dangers of 'being only a professional' and against seduction by the glib and the trendy need to be emphasised in today's studios and professional practice classes. Despite the advent of computer technology, Kahn's emphasis on drawing as the primary design tool for architects has continuing relevance. While he would applaud today's rediscovery of sustainable principles, he would criticise as a false idol any suggestion that sustainability become the architect's chief focus. And in an age of over-specialisation and fragmentation of the design disciplines, he would deplore the proliferation of 'construction managers' and 'owner's representatives'. His insistence that the architect be educated as a generalist and respected as the leader of all aspects of design and construction is well worth reconsideration.

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

Above all, the most important lessons for today are to be found in Kahn's emphasis on questioning, on inquiring into the essence of things, on finding one's own way, on thinking problems out from first principles. Today's teachers and students would be well-advised to heed the wisdom of Kahn's advice to allow the solution to a design problem to emerge from its nature, asking 'what does it want to be?', instead of 'what do I want it to be?'

Lasting legacy: a teacher of teachers

While many former Master's Class students have had long, successful careers in practice, many others have become teachers or combined teaching and practice. Of the Master's Class alumni whose subsequent careers were documented for this study, more than half went into teaching. It was as a teacher of these teachers that Kahn may well have made his most far-reaching contributions, for through his students his ideas and values are still being passed along to a new generation of architecture students.

Max Robinson tells of a 1984 ACSA/AIA conference at Cranbrook Academy where Kahn's legacy as a teacher of teachers was dramatically demonstrated:

> [...] *Lee Copeland, Penn's dean at that time, gave a presentation on Kahn and noted that many of his students went on to careers in academia rather than in practice. He asked those in the audience, which was mainly composed of faculty representatives from architecture schools from all over the country, who had been students in Kahn's Master's Studio to stand, and over 40 percent of us did so. The implication was that perhaps the greatest influence of Kahn's teaching was the shaping of American architectural education for the next 50 years or so by disseminating his teaching through his former students.*[81]

Robinson feels that:

> *Kahn's greatest contribution as an educator was to reveal a method of thinking that led to constantly questioning what it was that was being considered [...] In both practice as an architect and as a professor, I have not sought to do it like he did it, nor to think the same thoughts as he conceived it, but to follow his lead in proceeding with a rigorous, profound, comprehensive effort to delve into the very essence of what I am taking into account.*[82]

Glen Milne summed up Kahn's ability to inspire his students' own search and this influence on his own teaching:

> *Many became disciples. I did not. I felt it was a disservice to him and his search for truth to merely imitate his vocabulary and narrative* [...] *He was the best teacher in my life. He facilitated a very difficult journey of personal striving for insight* [...] *and transformed us in the process. I in turn passed his spirit along in 30 years of teaching architecture.*[83]

Michael Bednar, reflecting on his 40-year teaching career, points out the influences of Kahn's use of Talmudic techniques on his own approach to the design studio:

> *My design criticism was almost always indirect, through analogies, metaphors and examples in nature. This forced students to engage the critique and make it a part of their own design process. Teaching students how to think about architectural design was the real result of teaching, not the actual design produced.*[84]

Conclusions

I have argued that Kahn's most important and longest lasting legacy may well be his teaching, an opinion shared not only by many of his former students but also by outside observers. Always unconventional, even radical and subversive in style and content, his pedagogy grew out of his distinctive philosophy of education which reflected three principal themes: a Beaux-Arts emphasis on history, order, monumentality and the power of intuition; a neo-Platonic view of reality and the beginning of a project; and beliefs about the architect's role in society. His philosophy was instilled in his students through his unique seminar approach to teaching, which relied upon two ancient teaching techniques, the Socratic method and the Talmudic tradition, and which stressed the distinction between the 'what' and the 'how'.

Kahn's pedagogy was not without shortcomings. His methods could be unpredictable. The seminars were often more monologue than dialogue. His ideas were sometimes obscured by his idiosyncratic vocabulary, opaque metaphors and inscrutable parables. He ignored or downplayed the importance of most aspects of architectural practice, including the client's programme and budget. He could play favourites among his students and his criticism could sting.

Ultimately, however, I submit that Kahn's contributions as a teacher far outweigh his imperfections. Vincent Scully commented that beginning in the mid-1950s, Kahn 'set his strongest students free' from the straitjacket of an exhausted International Style model, as well as from his own powerful vocabulary of form.[85] He 'released a generation of students that think and act upon their own. He also opened up, by breaking that model, their own paths – their own paths that had been separated from them by two generations of persuasive European influences. And those students are now an army [...]'.[86] Reflecting on the timeless character of Kahn's teaching, Moshe Safdie commented:

> *As time goes by, Kahn somehow stands apart as the measure, the standard, something to compare to, to evaluate by, to give sustenance. As the journals spin out page after page of trivia, we remember Kahn's words about the nature of school, a place for work, a room with light, and the making of a window.*[87]

Alison and Peter Smithson observed, 'No architect with a memory of a Kahn lecture cannot be aware of another level, another pattern of architectural thinking.'[88] Many of Kahn's students, having reached the mature stage of their careers, have found that with the passage of time his influence as a teacher has lost none of the relevance of that memorable year spent with him in the Master's Class. Stan Field (1969) echoes the thoughts of many of his fellow alumni:

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press

> *I have come to believe that Kahn was first and foremost a teacher* [...] *The underpinnings of Kahn's teachings remain as fresh to me as the sense of wonder he exuded when he first gave expression to his realisations. Kahn awakened in me the unique role of the architect, that could not come from any other discipline and that it was up to each one of us to define and express* [...].[89]

Norman Rice, Kahn's lifelong friend, summed up his significance as a teacher:

> *He was an ardent missionary of architecture* [...] *the discussions in the studio, with their give and take, helped Lou fight out and resolve many of his architectural battles* [...]. *He fascinated students by his poetic visions and the veritable flood of his images, the analogies with music, his evocation of primary essences. For the first time they saw the essential nature of a stairway, of a column and a beam, and a wall – and the differing natures of brick and concrete* [...] *Above all, he tried to inspire them, by his own example to become architects of the nature of a building as well as the architects of its plan and configuration.*[90]

Despite her differences with Kahn, Denise Scott Brown concluded:

> *Kahn is a good teacher* [...]. *Dealing in basic principles and searching for essences, he lets his students see and join in the development of his thoughts over time, until a clarity is reached. In this way they come to sense the searching nature of his thought; to know that there is little room left for* [the] *capricious and the superficial, when the architect in humility, tries to draw the solution from within the problem itself rather than to impose it from above.*[91]

The Master's Class was not for everyone. For those students who were willing to accept the challenge, however, Kahn began to reveal the existence of a hidden world, a realm of architecture that changed their approach to their life's work. In the 1960s and '70s, many in the Master's Class and elsewhere had become disenchanted with what Venturi referred to as 'orthodox Modernism' and, for these, Kahn's approach offered to open new doors. He taught students to go beyond the sterile functionalism that characterised much of mid-century architecture and to see instead a reawakened potential to express the deepest longings, the noblest strivings of the spirit.

In the end, the lasting legacy of Kahn's teaching in the Master's Class lies not in knowledge, the 'how', and not in the answers to the questions he raised. Rather it is to be found in the questions themselves, timeless, enduring questions regarding the 'what', the underlying essence of architecture that Kahn posed to himself and his students. The lifelong habit of searching for these essential realities, along with the confidence he inspired in his students to become the best they could be by trusting their intuitions and feelings, are among his most enduring contributions. Louis Kahn did indeed 'set his strongest students free' to find their own way. Through those students who became teachers, and through their students who will in turn become teachers, Kahn's legacy continues to be passed down to new generations of young architects.

Notes

1. Very few scholars have previously addressed Kahn's contributions as a teacher. Among those who have done so are Denise Scott Brown, David Brownlee and David De Long, Ann L. Strong and George E. Thomas, and Michael Bednar, all of whom are referenced in this article. Denise Scott Brown, 'A Worm's Eye View', *Having Words* (London: Architectural Association, 2009); David B. Brownlee and David G. De Long, *Louis I. Kahn: In the Realm of Architecture* (New York: Rizzoli, 1991); Ann L. Strong and George E. Thomas (eds), *The Book of the School: 100 Years, The Graduate School of Fine Arts of the University of Pennsylvania* (Philadelphia: University of Pennsylvania, 1990); and Michael Bednar, 'Kahn's Classroom', *Modulus*, 11, 1974, University of Virginia School of Architecture.
2. Fikret Yegül, 'Louis Kahn's Master's Class' (unpublished essay supplied to the author, 2011).
3. Richard Saul Wurman, *What Will Be Has Always Been: The Words of Louis I. Kahn* (New York: Access Press and Rizzoli, 1986), p. 287.
4. Bednar, 'Kahn's Classroom'.
5. The designation was made by the government of France. Strong and Thomas, *The Book of the School*, p. 37.
6. Brownlee and De Long, *Louis I. Kahn*, p. 21.
7. Wurman, *What Will Be Has Always Been*, p. 121.
8. Brownlee and De Long, *Louis I. Kahn*, p. 25.
9. Ibid., p. 34.
10. Carter Wiseman, *Louis I. Kahn: Beyond Time and Style* (New York: W. W. Norton & Co., 2007), p. 82.
11. Brownlee and De Long, *Louis I. Kahn*, pp. 44–46, 62.
12. Joan Ockman and Rebecca Williamson (eds.), *Architecture School: Three Centuries of Educating Architects in North America* (Washington DC: Association of Collegiate Schools of Architecture, 2012), p. 171.
13. Strong and Thomas, *The Book of the School*, pp. 135–37, 148.
14. Ibid., pp. 134–35.
15. Wiseman, *Louis I. Kahn*, p. 83.
16. Norman Rice to Louis I. Kahn, 18 May 1964 (unpublished letter, Louis I. Kahn Collection, University of Pennsylvania Architectural Archives).
17. Denise Scott Brown, 9 May 2012 (unpublished interview with the author).
18. Wiseman, *Louis I. Kahn*, p. 83.
19. Ray Griffin, 'Recollections on Louis Kahn' (unpublished manuscript supplied to the author, 2011).
20. Paul Zucker (ed.), *New Architecture and City Planning* (New York: Philosophical Library, 1944), p. 577.
21. Brownlee and De Long, *Louis I. Kahn*, p. 22.
22. Alessandro Vassella (ed.), *Louis I. Kahn: Silence and Light* (Zurich: Park Books and Louis I. Kahn Collection, University of Pennsylvania, 2013), p. 40.
23. August Komendant, *18 Years with Architect Louis I. Kahn* (Englewood, NJ: Aloray, 1975), p. 185.
24. Glen Milne to the author, 7 September 2011 (unpublished letter).
25. Bednar, 'Kahn's Classroom'.
26. Robert Twombly (ed.), *Louis Kahn: Essential Texts* (New York: W. W. Norton & Co., 2003), p. 280.
27. Karl Smith, 7 May 2012 (unpublished interview with the author).
28. Wurman, *What Will Be Has Always Been*, p. 73.

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29. Brownlee and De Long, *Louis I. Kahn*, p. 140.
30. Wurman, *What Will Be Has Always Been*, p. 305.
31. Ibid., p. 300.
32. Yegül, 'Louis Kahn's Master's Class'.
33. Bednar, 'Kahn's Classroom'.
34. Charles Dagit, 8 May 2012 (unpublished interview with the author).
35. J. Michael Cobb, 'Thoughts on Louis I. Kahn' (unpublished essay supplied to the author, 2011).
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43. Wurman, *What Will Be Has Always Been*, p. 58.
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47. Wurman, *What Will Be Has Always Been*, p. 31.
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49. Carlos Vallhonrat to Norman Rice, 1 September 1967 (unpublished letter, Kahn Collection).
50. Strong and Thomas, *The Book of the School*, p. 232.
51. James Cutler to the author, 4 October 2011 (unpublished letter).
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58. Denise Scott Brown to the author, 3 September 2012 (unpublished letter).
59. Dennis Johnson, 'Early Years, the Making of an Architect' (unpublished manuscript supplied to the author, 2010).
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62. Sherman Aronson, 10 May 2012 (unpublished interview with author).
63. Wurman, *What Will Be Has Always Been*, p. 304.
64. Brownlee and De Long, *Louis I. Kahn*, p. 127.
65. Denise Scott Brown to the author, 3 September 2012 (unpublished letter).
66. Wurman, *What Will Be Has Always Been*, p. 301.
67. Denise Scott Brown to the author, 3 September 2012 (unpublished letter).
68. Wurman, *What Will Be Has Always Been*, p. 305.
69. Komendant, pp. 172–75.
70. Ibid., p. 190.
71. Denise Scott Brown to the author, 3 September 2012 (unpublished letter).
72. Wurman, *What Will Be Has Always Been*, p. 304.
73. Brownlee and De Long, *Louis I. Kahn*, p. 62.
74. Louis I. Kahn, *Conversations with Students: Architecture at Rice 26* (New York: Princeton Architectural Press, 1969), p. 30.
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91. Terence Farrell (ed.), 'Louis Kahn at the University of Pennsylvania' (London: Architectural Association, Vol. 82, No. 910, March 1967), pp. 216–19.

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Acknowledgements
The author gratefully acknowledges the invaluable assistance of William Whitaker, Collection Manager of the University of Pennsylvania's Architectural Archives, and David G. De Long, Professor Emeritus of Architecture and Historic Preservation, the University of Pennsylvania. In addition, the author acknowledges financial support provided by the University of Memphis.

Author biography
James F. Williamson is Associate Professor of Architecture at the University of Memphis. He holds two Master of Architecture degrees from the University of Pennsylvania, where he was a student in Louis I. Kahn's Master's Class. He was an Associate at Venturi, Scott Brown and Associates. During some thirty years of professional practice in his own firm, he received over thirty design awards at local, regional and national levels. His work has been published internationally. Williamson was elected to the AIA College of Fellows in recognition of his contributions to architectural design and education.

Author's address
James F. Williamson
jfwllmsn@memphis.edu

https://doi.org/10.1017/S1359135514000128 Published online by Cambridge University Press