

THE INFLUENCE OF ROBERT VENTURI ON LOUIS KAHN

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Abstract

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This study considers the question of how Louis Kahn's development as an architect was shaped by the influences of Robert Venturi. The personal and professional interaction between these two historically significant architects began late in Kahn's career and early in Venturi's. Starting with Venturi's master's thesis in 1950, the relationship continued past the seminal publication of *Complexity and Contradiction in Architecture* sixteen years later. Some historical accounts portray Kahn as mentor to Venturi over this period of time. It was in fact a more dynamic exchange through which both artists benefited, and the contributions of the youthful Venturi on the elder Kahn may well have been pivotal for Kahn. As Kahn's mature work began to emerge during the later years of his career, crucial aspects of that now-distinct 'signature' architecture may well be traced to his intimate exposure to Venturi's (then radical) emerging theories.

By means of archival research, chronological analyses of key artifacts, and interviews of students and associates of Kahn and Venturi (including Scott Brown and Venturi, as well as other primary sources), this paper will consider how Kahn's adoption of the role of context in architecture, his use of layered space, his interest in natural light, and above all his reconsideration of the role of history were all arguably shaped by Venturi's influence during a specific historical period.

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INTRODUCTION

Venturi and Kahn's close relationship occurred well before their respective historical significances emerged - late in Kahn's career, early in Venturi's. For both, this was a crucial period: For Venturi, it spanned from his Princeton graduate studies to his first built works and the completion of *Complexity and Contradiction in Architecture*; for Kahn, it heralds the formation of his "mature" architectural vocabulary, which I suggest reflects the influence of Venturi in critical ways.

During this time architecture was dominated by the then-profound influence of International School ideals that valorized supposedly original expressions of modern technology and deemed the role of history in architecture irrelevant. Kahn had been trained in historically founded Beaux-arts values and methodologies in school, but followed mainstream architectural culture's wholesale rejection of historical architecture. In the early 1950's his practice reflected influences of Anne Tyng, with whom he was involved personally and professionally in the late 1940's and early 1950's. He had no evident interest in context, layered space, the relevance of history, or complexity and contradiction in form, all theoretical topics preoccupying Venturi at that time. Venturi was then a lone voice advocating the relevance of such issues to architecture, in radical opposition to the prevailing views amongst his professional brethren. In 1964, Venturi's realization that his own ideas were being presented verbatim in a public lecture by Kahn - as Kahn's own - abruptly quelled their personal and collaborative relationship.¹ From this point forward, as Venturi's career developed and the distance between him and Kahn would grow to be so vast as to represent virtually polar opposite approaches to and interpretations of architecture, there would be no communication between them.

¹ According to Venturi, Kahn presented Venturi's concept of 'walls parting to become columns' at a lecture at the Philadelphia Arts Alliance. Scott Brown and Venturi vividly described Venturi's reaction in Rittenhouse Square, after the lecture. (Scott Brown interview, February 16, 2007. Venturi and Scott Brown interview, May 3, 2007.)

Venturi's experience seems consistent with a well documented pattern of unacknowledged assimilation of many creative contributions of highly talented individuals that Kahn surrounded himself with, particularly later in his career as he began to draw such talent toward him in the forms of students, colleagues, consultants, and clients. Kahn cultivated an identity as the archetypal Eccentric Lone Genius. This was hardly unusual for the time, and in fact this posture is stereotypically characteristic of many of his contemporaries as well as of those who were mentors to Kahn's generation of architects; the celebrity and self-promotion of virtually all such figures as Frank Lloyd Wright or Le Corbusier was deeply embedded in the sub-culture of the architectural profession (and to a lesser but still significant extent, clearly persists today).

But though Kahn was a gifted architect, his was not the genius of the loner so much as that of the collaborator, and at least part of his genius was the ability to identify it in others – and tap into those reservoirs of talent. Indeed, the ability to generate a larger vision and orchestrate a team of qualified specialists toward the refinement, realization, and production of that vision is a fundamental requisite vital to any practicing architect (or firm), let alone an architect with the aspirations of Kahn. Assembling a great team and leading it to great things is the task of any architect (or client) who aspires to create great architecture. To look at but one project, the Kimbell Art Museum was the collective product of an exceptional group of individuals, each of whom played an essential role: The client, Richard Brown; Marshal Meyer, who might be thought of as Kahn's project architect²; August Komendant, the structural engineer; Richard Kelly and Edison Price, lighting consultants; Thomas Byrne, the general contractor... the Kimbell would not exist without the vital (and well documented) contributions of any one of them.

² The key role of Meyer in the design of the Kimbell Art Museum is discussed at length in Leslie's *Louis I. Kahn: Building Art, Building Science* and Loud's *The Art Museums of Louis I. Kahn*. Meyer was responsible for far more than the detailing of the building. Even the use of the cycloid vault form is documented as having come from Meyer, as a direct result of his research into shell structures.

Recognition of the contributions of Kahn's team, or those that contributed to his artistic development, does not diminish his architecture, even though it may undermine his 'lone genius' identity. The overarching question of Kahn's development as an artist is more fundamental than embedded issues of ego or self promotion, however, because his career as an architect might best be understood as being composed of distinct periods characterized by the systemic influence of specific key associations that appear to have been critical to his development as an artist.

This paper will present evidence that prior to his disillusionment with Kahn, Venturi helped Kahn move past International School dogma to reconsider key topics that subsequently preoccupied him for the remainder of his career as critically pivotal components of his artistic development and, ultimately, his highly distinctive architecture.

Louis Kahn

Robert Venturi



Sequence of critical events in Kahn's late career (left) and Venturi's early career (right).

Fig. 1 Kahn/Venturi Comparative Timeline. In the mid 1950's, Kahn and Venturi developed a strong professional relationship. After 1964, though Kahn was estranged from both Anne Tyng and Robert Venturi; his "mature" architecture might be said to reflect a blending of both their influences. This paper will examine the interaction between Venturi and Kahn from 1950 to 1964.

THE LITERATURE

Few historians acknowledge the influence of Venturi in Kahn's artistic development. I have found but three significant exceptions: David Brownlee and David De Long, Vincent Scully, and Eugene Johnson.³

Brownlee and De Long, who authored academically rigorous books on both architects, observe:

“Kahn's letters of recommendation for Venturi document close ties and deep appreciation, and it was surely Venturi's perceptive comprehension of personal mannerisms and specificity in architecture that came to loosen Kahn's growing inclination toward highly controlled, even compulsively ordered designs. Within the very shadow of the pure logic cast by the City Tower project, Venturi, in his sketch of the plaza, invoked the emotionally charged spirit of Michelangelo's Campidoglio. If Anne Tyng can be said to have strengthened Kahn's tendencies toward abstract geometric order, then surely Venturi provided the means by which that order could be made poetic.”⁴

And Scully, who shared close personal and professional relationships with both Kahn and Venturi, has written:

“...(Venturi) had never been subjected to... modernism's most intolerant and limiting school – to which Kahn, at least in his professional life during the 1930's and 1940's, had most destructively been exposed. So Kahn himself was eventually liberated by Venturi to recall his own past, no less than that of humanity as a whole,

3 Carter Wiseman mentions a claim Venturi makes regarding the Exeter Dining Hall being influenced by the Vanna Venturi house. His book on Kahn is otherwise notably silent with respect to Venturi.

4 Brownlee, David B., & De Long, David G.; *Louis I. Kahn: In the Realm of Architecture*, Universe Publishing, 1997 P. 72

and to build upon it. Those elements of design, mostly Roman, which are early in Venturi and late in Kahn, attest to that.”⁵

Johnson, thoughtfully considering Kahn’s artistic development in *Drawn From the Source: The Travel Sketches of Louis I. Kahn*, offers a more complex interpretation of the question of Venturi’s role in Kahn’s development. Johnson shows evidence that Venturi did not introduce Kahn to historical architecture, but admits that he may have encouraged Kahn to look at that history and indeed his own memories of European travel anew thirty years later.

“Denise Scott Brown has argued that Kahn’s contacts with Robert Venturi in the 1950s led to Kahn’s interest in layering: “*Through Bob, he investigated the layering of enclosed spaces and the layered juxtapositions of walls and openings, and he discovered that windows could be holes in the wall again.*” The evidence of the Italian drawings of 1928-29 demonstrates that Kahn had investigated these issues much earlier. ... As for his realizing that windows could be holes in the wall again, to use Scott Brown’s words, his drawings of interiors from Stockholm and Ravello and of the Bargello in Florence demonstrate this concept forcefully.”⁶

In endnotes, Johnson allows (after offering that “Scott Brown could not have known the evidence contained in the travel drawings”) that her claim “that Venturi introduced Kahn to ideas derived from mannerist architecture is buttressed by the lack of evidence of an interest in such architecture in Kahn’s travel drawings, even those from 1950-51.”⁷

Johnson is referring to Scott Brown’s *A worm’s eye view of recent architectural history*, in which she recalls, in part:

5 Scully, Vincent, *Modern Architecture and Other Essays*, Princeton University Press, 2003, p. 338 Scully also evaluates considerable evidence of Venturi developing architectural ideas prior to Kahn adopting them in the essay *Everybody Needs Everything*, published in *Mothers House: The Evolution of Vanna Venturi’s House in Chestnut Hill*, which I cite below.

6 Johnson, Eugene, *Drawn From the Source: The Travel Sketches of Louis I. Kahn*, MIT Press, 1996, p. 64

7 Ibid. p. 128

“When I arrived at Penn in 1958, Kahn was reassessing architectural history under the tutelage of a young architect, Robert Venturi. The influence, despite how history has been written, went mainly from the younger to the older.”⁸

This concise essay is one of the few written statements on the topic by Scott Brown or Venturi. It was prominently published in a mainstream professional monthly magazine *Architectural Record*, but with the exception of Johnson, it seems to have been passively disregarded by architectural historians.⁹

Venturi has written even more sparingly of his relationship with Kahn:

“... some of the characteristics of Kahn... represent influences of Denise Scott Brown and myself rather than on Denise Scott Brown and myself – exemplifying a not uncommon case of the son informing the father. ...I shall note here that Kahn learned from me concerning the elements of layering, holes in walls, and breaking the order described above; his use of inflection in the case of the pavilions in the Salk Center complex derives also from my critique.”¹⁰

Also, accepting the Pritzker Prize, Venturi included Kahn among those he wanted to thank:

“Louis Kahn, profound teacher of mine, and ultimately, in some ways, as all teachers become, a student of mine...”¹¹

These few citations represent the substantial exceptions to the far larger, more prominent, and in most cases more accessible existing body of literature on Kahn or Venturi, which generally ignores or discounts the question of Venturi’s potential influence on Kahn.¹²

8 Venturi, Robert, & Scott Brown, Denise; *Architecture as Signs and Systems*, Harvard University Press, 2004, p. 117

9 Historians may be cautiously shying away from her claims because of her subjective point of view, or because so many of the dynamics between Kahn and Venturi occurred prior to her arrival at Penn. (The judgment calls and other dynamics involved are apparent in Brownlee’s interview in the appendix.)

10 Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture*. MIT Press, 1996

11 Ibid. p. 100

CONTEXT IN ARCHITECTURE

The first documented articulation of the notion of ‘context’ in architectural design appears to be with Venturi’s M.F.A. thesis at Princeton in 1950: “*Context in Architectural Composition*.”¹³ Venturi had asked Kahn to sit on his thesis jury, and this was very probably his initial exposure to Venturi’s willingness to challenge the constraints of then-mainstream ideals of the International School.

The restoration of contextual considerations in architecture after 1950 is a sweeping historic development, far broader than could be attributed to any one influence, but Venturi first advocated its potential relevance to architecture. Asked if the topic of context came to be broadly accepted when he was teaching at Penn, Venturi told me “I think people eventually got hold of it, both at Penn and at Yale. Lou Kahn, to the degree that he dealt with context, he learned from me.”¹⁴

Although Kahn’s interest in context was far more limited than Venturi’s, his work began in the 1950s to feature a subtle resistance to modernist notions of generic universality by means of an engagement with “situationally” derived motivations behind fundamental design decisions. Though his architecture may be characterized as seeking “timeless” Platonic qualities, Kahn’s work increasingly displayed sensitivities to the selection and detailing of materials.

The Richards Medical Research Building was “the first major building on a college campus to be clad in red brick in over twenty years.”¹⁵ Kahn’s final works in Pakistan and India, composed of architectural palettes reflecting the context of indigenous economic, technological, and cultural conditions stand in stark contrast, for example, to the extravagant use of regionally foreign materials and technologies evident at his modernist mentor Le Corbusier’s earlier project at Chandigarh.

12 An annotated bibliography of selected writings on the topic is included in Appendix G.

13 Reproduced in Venturi’s *Iconography and Electronics Upon a Generic Architecture*, p. 333

14 Interview with Venturi and Scott Brown, April 3, 2007

15 Op. cit. Lobell, John, *A Lucid Mystic Helped Transform Our Architecture*
<http://johnlobel.com/publications/smithsnkhn.htm>

LEARNING FROM TEACHING AND PRACTICE

Teaching was always important to Kahn, and it was critically important to Venturi during these years. Of all the members of the faculty at Penn or Yale, no one directly challenged the premises of International School modernism as unreservedly, aggressively, or persistently as Venturi. Then relatively unknown, unpublished, and unbuilt, he was a lone young academic advancing ways of seeing and thinking about design that, though they may now seem obvious or mainstream, were then anything but. The credibility he wields today makes it hard to appreciate how provocative, quixotic, or perceptive his assaults on Modernism were.

At the University of Pennsylvania Architectural Archives, there is a list of students in Venturi's theory class (that he eventually compiled into *Complexity and Contradiction in Architecture*),¹⁶ and those I was able to contact vividly described an energetic, charged environment at Penn¹⁷. Venturi held the rapt attention of Penn students; from their perspective, his presence, both in the design labs and his theory classes, clearly loomed. Those students would inevitably have served to cross-pollinate Kahn's studio with insights from Venturi's historically oriented perspective. It is well documented that Kahn knew and appreciated Venturi as a student, as an employee, as a colleague,

16 Venturi, Robert. *Complexity and Contradiction in Architecture*. Museum of Modern Art, 1966.

17 Examples of student recollections:

- "It was a very confusing time; everything we had thought was sacred was being questioned; and our professors had all kinds of different ideas that did not agree with one another."
- "Venturi's theory class was after lunch, in a dark room, delivered with hundreds of slides and a relentlessly monotonous, droning voice. But the room was full of Kahn's masters' studio students – they were there because the word was out that this was a mind-blowing class."
- "Venturi's theory class was limited to forty people, but there were always over a hundred people crammed into that space. After a while, it seemed like almost everyone at Penn was showing up."
- "Listen: It was a tiny place, very intimate; everyone was fully aware of what everyone else was doing."
- "Design lab crits would start at 1:00 in the afternoon and run well past 1:00 in the morning; people would drift in from all over the school. Various members of the faculty would sit in on one another's sections, and the discussions made your head spin."
- "Something was happening every day and every night related to design. It was a total immersion in design."
- "Venturi was, hands down, the most sought-after teacher. Everyone wanted him for studio. He took so much time with every student; he would work very sincerely – a courteous but critical passion always in play with each of us to coax out work we had no idea we were capable of. He challenged us - he really made us think about things. He had a real impact on us."

and ultimately as a confidant and critic. To this list, I submit that Kahn was very likely to have also benefited academically from his relative proximity to Venturi in the classroom. Although Venturi's academic voice would eventually reach around the globe with the publication of *Complexity and Contradiction in Architecture*, Kahn was clearly within its range much earlier.

The application of academic and theoretical ideas in the practices of both architects reveals numerous examples of each architect influencing the other's built work. While the exchange clearly flowed in both directions, the majority of instances involve Venturi's ideas being executed in Kahn's work. During the early years of Venturi and Kahn's active relationship, Venturi had limited opportunities to apply his ideas in practice. Kahn, on the other hand, was attracting large, exotic institutional projects, and they actually reveal the first built applications of Venturi's theories and ideas that Kahn carried forward as essential components of his own architectural palette.

This ongoing exchange of influence is apparent in numerous comparative examples of their work during these years. Venturi is quite forthcoming about how and when he was influenced by Kahn.

Venturi credits Kahn with inspiring him to first use a "double hung window" in the final version of the Vanna Venturi residence, or "Mother's House." (Fig. 2)¹⁸ The double hung window would later become a "signature" element in Venturi's work, but it began with a small remodel Kahn did in downtown Philadelphia, the Shaw Townhouse project (Fig. 3). Venturi told me:

"...I have not seen them for years – no one ever writes about them, they have never really been acknowledged as being important, but they use these double hung windows... those windows made me think, why not? Why is the window not relevant for architecture; why should that be thrown out? That's when I did it in my mother's house."¹⁹

18 This "double hung window" is actually a sliding glass door with two horizontal "mullion" elements added.

19 Interview with Venturi and Scott Brown, May 3, 2007



Figure 2: Shaw Townhouse
Louis Kahn, 1956-57



Figure 3. Vanna Venturi House
Robert Venturi, 1959-64

The first few versions of the house he designed for his mother (Fig. 4), over a period of five years, reflect the influence of Kahn. Venturi has said “The house started out more like Kahn. After all, I was young, and he was influential.”²⁰ Venturi also recalls his use of diagonal elements in early plans were influenced by Kahn, and that “The idea of the servant space was a beautiful idea that influenced me much. The influence went both ways.”²¹

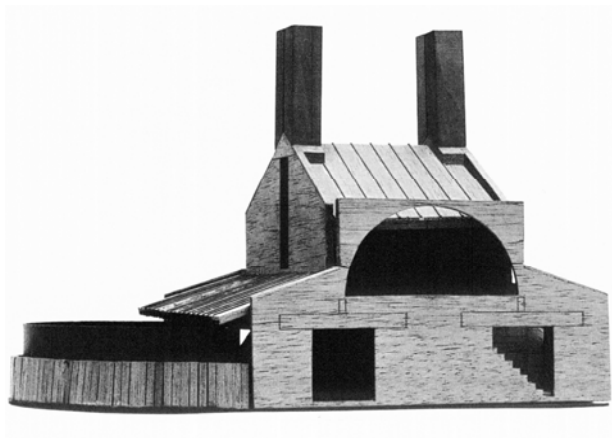


Figure 4: Mothers House Study Model
Robert Venturi, 1959



Figure 5: Korman House
Louis Kahn, 1971-73

20 Schwartz, Frederick. *Mothers House – The Evolution of Vanna Venturi’s House in Chestnut Hill*, Rizzoli 1992 p.24

21 Interview with Venturi and Scott Brown, May 3, 2007

Evidence of Venturi's probable influence on Kahn is indeed apparent in numerous examples. Venturi's projects frequently featured dramatically manipulated iconic architectural elements such as over-scaled chimneys. They dominated architectural compositions, and were often seen either free standing or incorporated as a compositional architectural 'anchor'. Kahn's use of strong vertical massing occurs later both in his residential and institutional architecture.²²

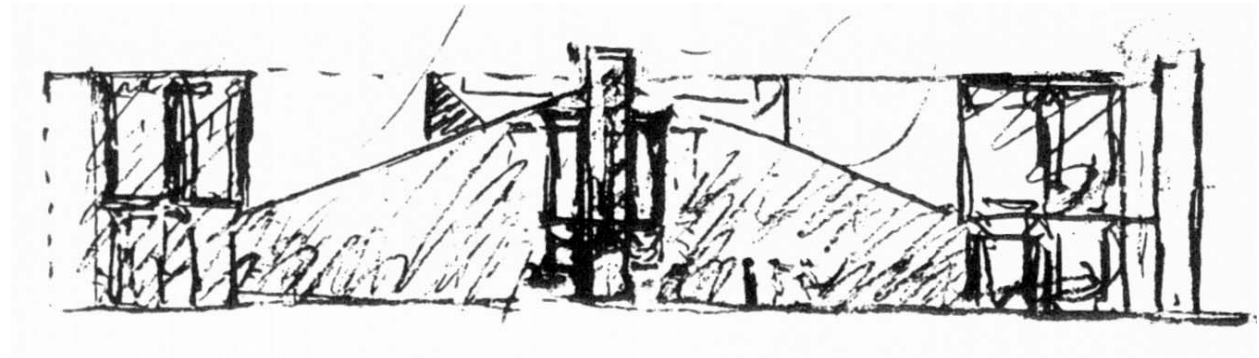


Figure 6: Phillips Exeter Dining Hall, Louis Kahn (1965-71)

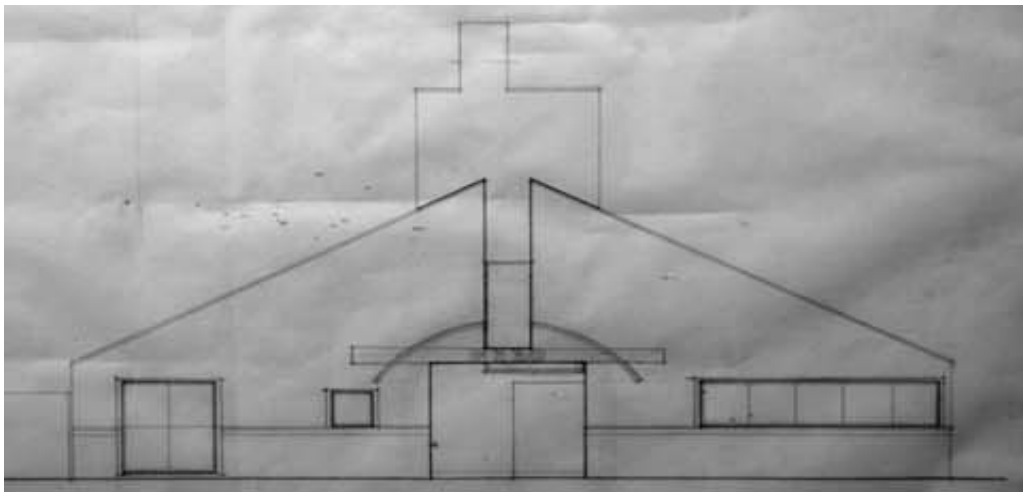


Figure 7: Vanna Venturi House, Robert Venturi (1959-64)

In *Louis I. Kahn: Beyond Time and Style*, Carter Wiseman quotes Venturi talking about Exeter Dining Hall project (Fig. 6) specifically, as well as the borrowing of chimney elements:

²² Some historians speculate Richards Medical Research building towers were been inspired by Kahn's visit to the Tuscan hill town of San Gimignano, although I find no evidence that Kahn ever suggested that to be the case.

The dining hall was distinguished by dramatic, overscaled gables, and chimneys that broke free of the building's walls. Both bear strong resemblances to elements of Robert Venturi's 1959 Beach House, and the house he designed for his mother. ...In a conversation with a former employee, he said, "There's no question it is Mothers-House-influenced, and the chimney separate from the wall he got from me, too."²³



Figure 8: Vanna Venturi House

Robert Venturi (1959-64)



Figure 9: Esherick House

Louis Kahn (1959-63)

Distinctive chimney elements are also a dominant element in Kahn's Esherick House (Fig. 9) and Venturi's Mothers House (Fig. 7,8). These houses are but a few hundred yards from one another, and were developed concurrently. Visiting them, one cannot help but be struck by the similarities of the sculptural chimney compositions playing central roles as daylighting devices. Venturi told me the window/chimney in the Esherick house was actually his idea.²⁴

Venturi's first built work, an office building for the North Penn Visiting Nurse Association (Fig. 10, 11), shows ideas he developed throughout his career, including the inflection of the building to respond to specific site circumstances was one such idea. Similarities between Venturi's modest project and Kahn's Salk Institute (Fig. 12, 13) are readily apparent, supporting Venturi's specific claim that he influenced Kahn's forms in this project as well.

23 Wiseman, Carter. *Louis I. Kahn: Beyond Time and Style* W. W. Norton & Co. 2007 p. 202

24 Interview with Venturi and Scott Brown, May 3, 2007



Fig. 10
North Penn Visiting Nurse Association
Venturi & Short, 1960
Parking lot and entrance



Fig. 11
North Penn Visiting Nurse Association
Venturi & Short, 1960
Street elevation

Figures 10, 11: Entry and reception inflected towards the parking lot.



Fig. 12
Salk Institute for Biological Studies
Louis Kahn, 1960-65
Study tower



Fig. 13
Salk Institute for Biological Studies
Louis Kahn, 1960-65
Courtyard

Figures 12, 13: Lab and study towers inflected towards the sea.

LAYERED SPACE

The idea of architectural elements behind or inside others – now commonly referred to as “layering” in architecture – is not something Venturi invented so much as derived from historical precedent and his exposure to the work of Armando Brasini in Italy.²⁵ Venturi recalls that at that time, the idea of layering was considered taboo, considered ‘redundant’ as by modernists. Much of Venturi’s early work displays his early interest in this concept, including the first (unbuilt) project of his practice, the Pearson House.

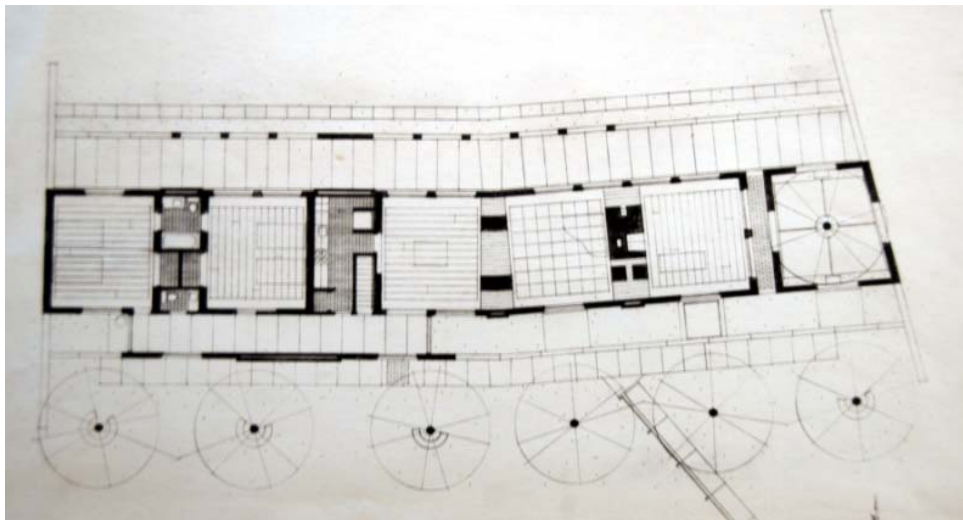


Figure 14. Plan, Pearson House
Robert Venturi, 1957

This project showcases many architectural ideas in addition to spatial layering (massive chimney elements, designing in section to introduce indirect light, architectural elements not structurally authentic or necessary) Venturi would explore throughout his career that would also later appear in Kahn’s “mature” architecture.

Scully, tracing the development of Venturi’s Mothers House through the progression of drawings revealed in Schwartz’s *Mothers House*, observes:

25 Op. Cit. Scully, Vincent. *Everybody Needs Everything*, in *Mother’s House: The Evolution of the Vanna Venturi’s House in Chestnut Hill*, Edited by Frederick Schwartz, Rizzoli 1992 p. 46

“Even what we have come to think of as Kahn’s “ruins wrapped around buildings,” which first appear in his work in the first design for the U.S. Consulate in Luanda, Angola, of 1959-62, are there in the section to set up a deep spatial layering for the main facades. But again there is a critical question of date here. Kahn’s ruins don’t stand free of his enclosing walls until his project for the Salk Community Center of 1961-62; Venturi’s drawings of this first Vanna Venturi project are earlier than that, so that Venturi’s layering would seem to be entirely his own, not derivative from Kahn’s. It clearly pre-dates Kahn’s in any event. Venturi himself traces it back to his earliest projects and ascribes it, again, to Rome... Moreover, Stern’s *Perspecta* 9/10 (pp.50-51) also published a project for a “House at Chestnut Hill” (also known as the Pearson House) by Venturi, dated 1957, where the layering of ruins far out in space was already conspicuously present.²⁶

Scully’s assertion that the idea of layering reflects Venturi’s influence is echoed by Brownlee: “Kahn would adopt this idea over the next few years as his own, using it in the double-skinned designs for warm climates that, he said, looked as though they were made by “wrapping ruins around buildings.”²⁷ Discussing Venturi’s North Canton, Ohio, redevelopment plan, (Fig. 15, 16) Brownlee goes further, drawing a direct line from the Pearson House to specific Kahn works:

The perforated screen walls were, of course, descended from Venturi’s own Pearson house, but this form had been given monumental status in Kahn’s recent designs for the conference center of the Salk Institute , Indian Institute of Management, and the East Pakistan capital complex.²⁸

26 Scully, Vincent, *Everybody Needs Everything*, published in Schwartz, Frederick, *Mothers House – The Evolution of Vanna Venturi’s House in Chestnut Hill*, Rizzoli 1992 p.39

27 Brownlee, David, and DeLong, David. *Out of the Ordinary – Robert Venturi Denise Scott Brown and Associates* Philadelphia Museum of Art, 2001 p. 14

28 Ibid. p. 34

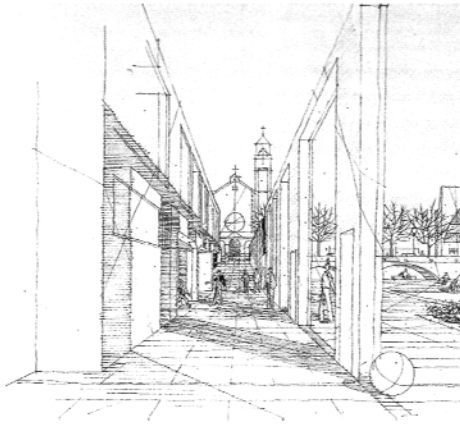


Fig. 15
North Canton, Ohio Redevelopment Plan
Robert Venturi, 1961-62
YMCA facade

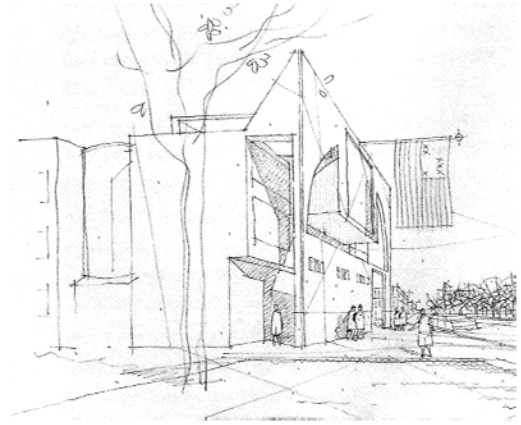


Fig. 16
North Canton, Ohio, Redevelopment Plan
Robert Venturi, 1961-62
City Hall facade

The North Canton, Ohio Redevelopment project (Fig. 15, 16) shows Venturi's development of the idea of 'layering' – a direct progression of the concept first seen at the Pearson House, and clearly emulated by Kahn in his concurrent work in San Diego for the Salk Institute (Fig. 17,18).



Fig. 17
Salk Institute Meeting House
Louis Kahn, 1965-66
Computer model rendering



Fig. 18
Salk Institute Meeting House
Louis Kahn, 1965-66
Computer model rendering

NATURAL LIGHT

The topics of architectural treatment of natural light and layering are closely related. Scully, tracing the development of Venturi's Mothers House through the progression of drawings revealed in Schwartz's *Mothers House* observes:

“... up above the design bursts into a welter of roof shapes expressive of elaborate schemes for encapsulating discrete interior spaces and lighting them from above. They seem typical of Kahn at his most obsessed. Yet when we look at the date we must pause because the urge to light spaces from above, indeed to design in section, comes to Kahn only later and is most beautifully developed in his later museums. Venturi himself believes that the sectional preoccupation and the overhead lighting are his own and derive from his personal experience of the oculi and thermal windows of Rome.”²⁹

In *Louis I. Kahn – Light and Space*, Urs Büttiker notes “In the late work of Louis I. Kahn, it becomes apparent that skylight plays an increasingly important role, and that Kahn develops ever more sophisticated solutions for light control and modulation.”³⁰ Most scholars take up the topic of Kahn's preoccupation with natural light, but not the question of what might have inspired the dramatic increase in Kahn's interest in it late in his career.

Venturi was focusing on the potential and the problems of natural lighting earlier than the topic surfaced as being of interest to Kahn, not only in Venturi's architecture, as Scully notes, but also in his theoretical work and teaching at the time. The lecture outline below shows Venturi presenting a theoretical treatment of lighting in distinctive terms – terms that Kahn featured prominently in the ‘signature’ lexicon that subsequently dominated many of his lectures, essays, panel discussions, and statements to the press in which he spoke at length about the nature and uses of natural light in architecture.

29 Scully, Vincent, *Everybody Needs Everything*, published in Schwartz, Frederick, *Mothers House*, Rizzoli 1992 p.39

30 Büttiker, Urs. *Louis I. Kahn – Light and Space* Whitney Library of Design, 1994 p.28

Architecture 512
Spring Term 1965
Mr. Venturi

February 23, 1965

EXERCISE 3--The Vocabulary of Light

This exercise is concerned with the use of light in architecture. Light will be considered as an element for use, in both a positive and a negative way, to perform certain services for the architect in relation to the spaces he is working to construct or to the functions he is trying to accommodate. Light is admitted by certain devices, which are generally called windows, but which may take many forms, so that we shall not wish to call them by a name so specific as "window", and serves to illuminate space, although we shall not wish to call its purpose "illumination", since that word also seems to exclude functions which may be on one level the very opposite of itself. We will consider light simply as to how it is created and what it is meant to do.

Choose three examples of natural light in internal spaces. Explain it in terms of:

- A. The Devices of Light
 - 1. The hole
 - 2. The baffle or screen
 - 3. The absence of wall
 - 4. The natural lighting fixture

- B. The Functions of Light
 - 1. Clarification
 - 2. Mystification-deception
 - 3. Indication-symbol
 - 4. Creation of space
 - 5. Light as an enemy

Each example should be illustrated by a sketch which attempts to show the quality of the light as well as the way of admitting it. A diagram (plan or section) may be included to explain the functioning of the light-making device or its relation to the structure it serves.

Fig. 19: Lecture outline. Robert Venturi, 1965

This entire lecture format shows Venturi considering natural light in architecture well outside of the limitations of International School Modernists. Venturi recalls the relatively simplistic attitude toward natural light that prevailed in architecture at the time:

“Modernism had thrown out the window. You either had an absence of a wall – meaning the whole wall was glass – or you had no window, meaning the whole wall was solid.”³¹

Venturi’s then-radical interest in designing in section to work with indirect light, as well as layered or baffled architectural elements that diffused natural light are all apparent in these lecture notes.

³¹ Interview with Venturi and Scott Brown, April 3, 2007

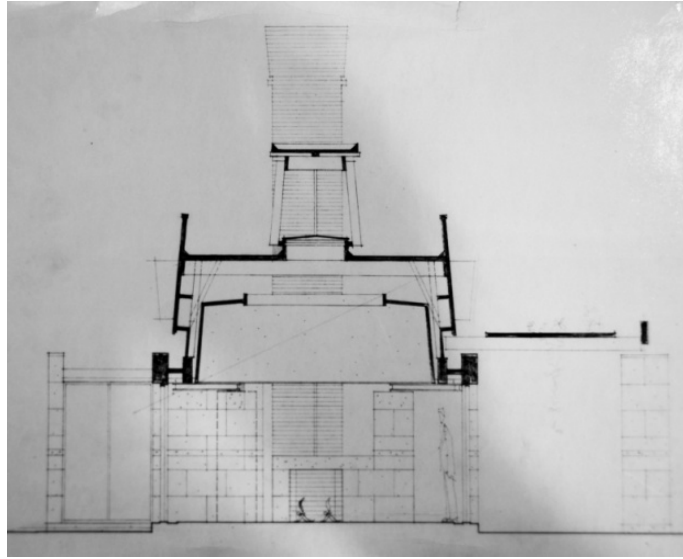


Fig. 20
Cross section, Pearson Residence
Robert Venturi, 1957

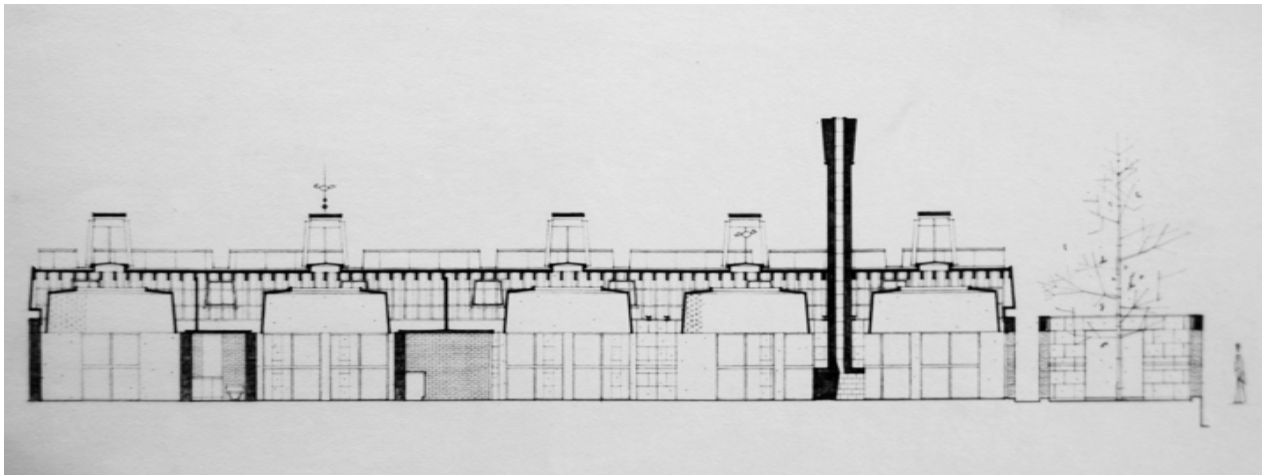


Fig. 21
Longitudinal section, Pearson Residence
Robert Venturi, 1957

The Pearson House (Fig. 14, 20, 21) shows Venturi designing in section as well as plan, with the sectional studies proposing the extensive use of architectural elements designed to admit indirect daylight into interior spaces. After 1957, a similar preoccupation with designing in section and working with baffled light increasingly appeared as a signature element of Kahn's work (tentatively at the U. S. Consulate in Luanda, and definitively after the First Unitarian Church in Rochester).

KAHN'S RECONSIDERATION OF HISTORY

Historians are in broad agreement that Kahn's education delivered a solid background in architectural history that was not reflected in his work until the mid-1950s, when a sudden shift in his interest toward it accompanied his rise to prominence. Most attribute Kahn's dramatic change to an epiphany on a 1950 visit to Italy and Egypt, but Kahn's travel that year would hardly seem sufficient to explain why he began to reconsider the architectural role of history to the extent that it redefined him artistically a few years later. Kahn, with his classical Beaux-Arts college education, was no stranger to historical architecture. Tyng recalls Kahn's historical knowledge as strong; he helped her study for history portions of her architectural licensing exam.³² Nor was Europe unfamiliar to him; he covered much of the same territory thirty years earlier.

Those historians who offer Kahn's 1950 trip to Europe as an explanation of Kahn's abrupt move away from International School constraints all overlook the presence of Venturi, who was actively encouraging Kahn to seriously reconsider the role of history at that specific time. Venturi had been profoundly affected by his first trip to Rome as an architecture student as well as a subsequent fellowship to the American Academy in Rome where he spent two years before returning to Philadelphia and employment in Kahn's office.

Archived correspondence shows Venturi sharing enthusiasm for Rome with Kahn. In 1951 Venturi writes to Kahn "... I was surprised to find in my mail a copy to that February '50 Review on Rome from a book dealer, which I had been seeking at book stores for some months but had given up hope on. Therefore I can let you keep this one which I am sending under separate cover..."³³ and "Eero (Saarinen) has returned with some wonderful color slides of Italian piazzas, especially that

32 Interview with Tyng, April 2007

33 Letter dated September 11, 1951 University of Pennsylvania Architectural Archives

of San Marco, and four copies of engravings of maps of Rome of different periods which give you palpitation (sic) of the heart.”³⁴

Tyng recalls Kahn’s interest in Venturi’s experiences in Rome: “Bob had history. I came from Harvard... they had eliminated history from the curriculum. I had no background in the things he was talking about with Lou.”³⁵ Kahn’s high regard for Venturi and his knowledge of architectural history is apparent in a letter to Tyng in July of 1954:

“Bob (V.) is a very good architect. He looks for the right things and is very well backgrounded historically which helps his judgment. ... I believe is going to be one of our best if and when he gets the work.”³⁶

Venturi maintained an ongoing, active relationship with Kahn after his return from the American Academy in Rome. He worked in Kahn’s office for a brief period of time, just before opening his own practice in 1957, and maintained an active collegial relationship with Kahn for the following eight years, often visiting Kahn’s office and participating in design critiques and discussions related to both practices.

Nicholas Gianopulos, a Philadelphia structural engineer who worked directly with Kahn from 1953 onward and Venturi from the first days of his practice, remembers an exchange in which

34 Letter dated November 28, 1951 University of Pennsylvania Architectural Archives

35 Interview with Tyng, April 2007

36 Tyng, Anne Griswold. *Louis Kahn to Anne Tyng – The Rome Letters 1953-1954* Rizzoli, 1997 p. 163

Archives include numerous correspondences that reveal Kahn’s esteem for Venturi. In May of 1963 he wrote to the National Council of Architectural Registration Boards “... Venturi is one of the most gifted men in the art of architecture. He deeply understands the inter-relations of the philosophical, spiritual and practical side of our profession...” To an architectural selection committee in November of 1963, he wrote “... Venturi is, in my opinion, one of the most outstanding architects in the profession. He is a thorough practitioner and a profound student of architecture...” (University of Pennsylvania Architectural Archives. Louis I. Kahn Collection, file 030.11.A.59.7)

Kahn expressed his admiration of Venturi and Venturi's knowledge of architecture and architectural history:

“We were associated with August Komendant on the Olivetti project...at one point, Komendant posed to Lou the question “What do you think of Romaldo Giurgola?” Lou said nice things... he was a very competent designer, etc. Komendant then asked, “What do you think of Venturi?” Kahn paused, and said “Venturi is an *architect*. He is an architect, through and through. He knows architecture; knows what it was, knows what it is, knows what it will be.”

Gianopulos vividly recalls Venturi challenging Kahn to fundamentally reconsider a Tyng-influenced architectural parti:

“One Sunday afternoon, we were all talking about a synagogue in West Oak Lane ... some rotated-tetrahedron type of thing. Bob – and Bob never, never was off-putting or rude in any way – said to Lou, quite earnestly: “Lou, I think there are other ways of expressing what you want to express here.” It stopped Lou, gave him pause.”³⁷

Gianopulos readily recalls various examples and indications of Venturi influencing Kahn, often in fundamental ways:

“Historians are skewing the relationship between Kahn and Venturi... casting Bob as a protégé of Lou, and I never saw it that way, not ever. Bob did have a strong influence on Lou, and on his work... It was clear to me that up until (Venturi), Lou was so strongly under the influence of Tyng. Once Bob came into the picture, Lou started to drift away from Tyng, and his career took that critical turn.”

37 Interviews with Gianopulos, October 2007 and January 2008

“These are subtle things, but I think they came from his relationship with Bob ...Lou very quickly changed from the International School. At Bryn Mawr... above the fireplace is a Jack arch ...a flat beveled arch. Above that, there is a segmental circular arch. It is a redundancy; a play on structural elements... similar to something Furness did at a much larger scale... as though Kahn turned a magnifying glass around and borrowed the whole thing at a reduced scale. I think Bob’s philosophy that you can use (historical) elements that that seem logical and pleasing to you without being accused of plagiarizing... was nothing like the way Lou had been working. In Dacca he did something I don’t think he would have ever done before... the first time we saw him use columns in conjunction with bearing walls... he had always either used either all walls or all columns. I think this relative freedom of thought was a result of his working with Bob, because Bob was always emphasizing how in the work we admire of the past, there was nothing pure.”³⁸

It is hard to imagine a better primary research resource than a design professional who worked intimately with both Kahn and Venturi, though a close second might be Venturi himself:

- Rodell: “I have a broad question here – do you think you, personally, directly reignited Kahn’s interest in history?”
- Venturi: “Yes. Yes I do definitely think so. I have written about that.”
- Rodell: “Earlier, I was saying – well, the two of you come back from Rome, and major things start to happen... I have to wonder if you helped Kahn see another Rome – Rome through a different set of lenses.”
- Venturi: “Yes, yes. I do think so.”³⁹

38 Ibid.

39 Interview with Venturi, May 2007

CONCLUSION: COMPLEXITY AND CONTRADICTION IN RELATIONSHIPS

Venturi's greatest architectural mentor is Michelangelo. Venturi admires him for his work, but Michelangelo's contribution was also the liberating influence of that work on the artists of his time and the generations of artists that followed him. It seems appropriate that, much like Michelangelo, Venturi's influence on other artists has been least as important as his own work.

One of the very first artists to benefit from Venturi appears to have been Kahn. Venturi influenced Kahn in significant ways, ultimately helping him find his way forward along his own journey. His was by no means the only presence in Kahn's life to do so, but he was probably one of the most profoundly important and certainly one of the least acknowledged. Key contributions of the youthful Venturi on the elder Kahn appear to be so significant to Kahn's artistic development that vital aspects of Kahn's architecture may never have emerged without Venturi's influence.

Kahn left little evidence of the contributions of others in his work, and admitted even fewer. Though there is not (and probably never will be) indisputable 'proof,' there is abundant archival evidence suggesting Kahn's development as an artist was shaped by Venturi. The impact of that influence is neither simple nor obvious; Kahn is seen by most as an absolute opposite of Venturi, as he ultimately was in many ways. But each incorporated the influence of the other, advancing their own interpretations of those influences (in Venturi's words, to "evolve out of" one another).⁴⁰ Productive practicing architects are not lone geniuses. Kahn, like any great architect, applied what his life experience and his accumulated understandings of design had offered him, incorporating it into his own architectural vocabulary... a remarkable and distinctive vocabulary, that, as Scott Brown has written, "is his own."⁴¹

40 Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture*. MIT Press, 1996

41 Scott Brown, Denise. "A worm's eye view of recent architectural history" *Architectural Record*, February 1984

BIBLIOGRAPHY

- Brownlee, David B. & De Long, David G. *Louis I. Kahn: In the Realm of Architecture*
Museum of Modern Art, 1997
- Brownlee, David B., De Long, David G., & Hiesinger, Kathryn B. *Out of the Ordinary: The Architecture and Design of Robert Venturi, Denise Scott Brown and Associates.* Philadelphia Museum of Art, 2001
- Büttiker, Urs, *Louis I. Kahn – Light and Space*
Watson-Guption Publications, 1995
- Goldhagen, Sarah Williams. *Louis Kahn's Situated Modernism.*
Yale University Press, 2001
- Johnson, Eugene J. and Lewis, Michael J. *Drawn From the Source: The Travel Sketches of Louis I. Kahn.*
MIT Press, 1996
- Larson, Kent. *Unbuilt Masterworks: Louis I. Kahn.*
Monacelli, 2000
- Lobell, John. *A Lucid Mystic Helped Transform Our Architecture.*
Smithsonian, July 1979, Volume 10, Number 4
- Ronner, Heinz, and Jhaveri, Sharad. *Louis I. Kahn – Complete Work 1935-1974*
Birkhäuser, 1977
- Schwartz, Frederic. *Mother's House: The Evolution of Vanna Venturi's House in Chestnut Hill*
Rizzoli, 1992
- Scott Brown, Denise. "A worm's eye view of recent architectural history."
Architectural Record, February 1984
- Scully, Vincent. *Louis I. Kahn.*
Braziller, 1962
- Tyng, Anne Griswold. *Louis Kahn to Anne Tyng: The Rome Letters 1953-1954*
Rizzoli, 1997
- Venturi, Robert. *Complexity and Contradiction in Architecture.*
Museum of Modern Art, 1966
- Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture.*
MIT Press, 1996
- Wiseman, Carter. *Louis I. Kahn: Beyond Time and Style*
New York: W. W. Norton & Co., 2007

APPENDIX A

Interview with Denise Scott Brown, February 16, 2007

Verbatim transcript notes:

DSB: “What is the nature of your research? Is this a doctoral dissertation?”

SR: Initially, I’m researching this topic as a thesis project to complete a Masters degree, but I also see it as having potential to carry through to research beyond that level.

DSB: “Is this a term paper?”

SR: The thesis is a terminal project for the degree, a graduate level project of seven to ten credits or so, supported by a faculty committee – it’s a research project.

DSB: “Before you come visit us, you should try and do what you can in preparation. Look at our website, and the Penn archives website. William Whittaker is the archivist there, and will be most helpful. Call ahead and discuss all this with him.

SR: “Brownlee & Delong write that it is ‘tempting to link these variations as a group to ideas that Robert Venturi may have helped to stimulate, for in Kahn’s immediate work to follow are even stronger reflections of what Denise Scott Brown has claimed...’ Do you have thoughts about why they went right up to the edge here, then stopped?”

DSB: As architectural historians, they probably feel they have only circumstantial evidence to support any further claim.

SR: “Vincent Scully writes ‘So Kahn himself was eventually liberated by Venturi to recall his own past, no less than that of humanity as a whole, and to build upon it. Those elements of design, mostly Roman, which are early in Venturi and late in Kahn, attest to that.’ Would Scully be someone I should interview?”

DSB: Vincent is quite protective of Lou. He seems to need to make archetypical heroes, who descend from the heavens. He's crazy – fiery, plows through facts, is very temperamental. He has made a point of ignoring me and my contributions fully, and has influenced many other historians in that direction. He is a very talented writer, can turn a phrase, but he has a view to advance.

SR: So, he is very much a proponent of the 'lone genius' idea?

DSB: Yes, exactly.

SR: In writing the quote I cited, Scully was discussing that point in history where Mr. Venturi was working on the Vanna Venturi house and was going over to Kahn's studio for crits, etc.

DSB: Bob was very trusting of Lou. He was trying out ideas on Lou, in a very trusting way.

SR: "While I am in Philadelphia, are there other individuals I should try to interview?"

DSB: Nathaniel Kahn, Harriet Patterson, and Alex Tyng are all in the area and have strong ties to Bob, who has been something of a father figure. Perhaps the Philadelphia architect, Santo Lipari, who Lou often called on the phone for late night talks. Lou's taxi drivers said he talked more than he should have – that would be anecdotal at best. Lou's widow is very protective of Lou and probably would not be helpful.

SR: "It seems well documented, widely known, that Kahn developed as an architect through his interactions with others..."

DSB: All artists grow in this way. But it is not very nice to borrow, and never acknowledge the borrowing.

SR: Kahn never wanted to credit anyone else, it seems. (Discussion of Tyng, probability that she designed the Trenton Bathhouse; discussion of the repeating pattern of Kahn not acknowledging key work or contributions of others. DSB mentions Carter Manning interviewing Tim Reland, who discusses a moment in Kahn's studio when Kahn is told "Anne has something" –

the concept for the Trenton bathhouse. SR mentions that Tyng claims in Louis Kahn to Anne Tyng – The Rome Letters – that she was the sole designer of the Trenton Bathhouse; DSB says she believes that, lists several reasons why...)

DSB: “Bob and I went to a very prominent lecture, and afterwards (we were sitting in a plaza after the lecture) Bob said he suddenly realized that ‘all of those ideas (e.g., the wall parting and there was the column) came from him’. Lou obfuscated his sources through his rhetoric, which he also used to work out, test, and refine ideas (his and others, represented as his alone).

DSB: Lou was competitive – and sometimes not nice – with students. He could be critical in a destructive way. I thought it could be jealousy. Bob told me he had never been treated this way; I suggested that he may not have been seen as a threat?

SR: “Mr. Venturi has been silent about this topic (Venturi’s influence on Kahn). Would he consider speaking with me about it? As a primary source, his input would clearly be invaluable to my work.”

DSB: (Reminds me of her earlier reference to his brief discussion concerning this topic in Iconography & Electronics...) Possibly – he would consider it, perhaps, if he thought you would be responsible about it, documenting your evidence, not being sensational. It would be best to send him an e-mail. Tell him that you talked to me, that you are coming to Philadelphia, that you hope he would be open to meeting with you. He can handle things easily through his secretary this way. He has broken his arm and his involvement in the office has been cut back of late.

SR: “Is there a time frame that would be better for you for me to arrive in Philadelphia to speak further with you?”

DSB: We will be traveling in April and quite busy prior to that, so after April would be best. Send me a resume about yourself, and we will build the next set of involvements on that.

Additional recollections supported by notes:

I mentioned that the topic would be difficult to advance forcefully from their position (better for an outside researcher to build the argument with the claim of scholastic objectivity, etc.) Ms. Scott Brown affirmed that it had been said to her that while it is all very good of her to support her husband, she was after all writing about her husband.

I inquired about direction she might offer toward specific evidence in the work of Kahn that could document Venturi's influence on Kahn through his work. She noted that Kahn did not like to admit influences etc. and probably would not have left overt evidence; that I should go to the archives, look at the work, evaluate what I find there in light of what I know about Kahn and Venturi and their work. She discussed Peter Reed's doctoral work on early planning in Philadelphia as an example of that kind of 'detective work.' (Reed documents, through meeting notes, that Kahn's 'streets as rivers' idea was a borrowing from another group.)

Ms. Scott Brown said their work has always been about making Modernism part of a longer tradition (although this idea was "hijacked by people like Philip Johnson for very specious aims"). She says this aspect of Venturi's work that influenced Kahn was characterized by some as a 'bad influence' – making Kahn "go soft."

She discussed how many architects influenced by Kahn (mentioning Ando) are less sophisticated than Lou was, in that Lou draws from within the problem; he does not impose an arbitrary geometry from without. Mentioning Dacca, discussed how Kahn understood the scarcity of some materials, the abundances of others; understood how human labor played out in the realization of building with handmade bricks in abundance (where concrete is scarce).

She mentioned that it would be interesting to study how architects who were in Lou's studios at Penn went on to build initially, and perhaps if/how they subsequently adapted to expediencies or influences of modern economies, or fashions.

APPENDIX B

Interview with Dr. David Brownlee, April 30, 2007

DB: It's clear to me that Kahn drew ideas pretty concretely from the younger people – well, not necessarily the younger people – the community of people he worked with. What I can't really put together – and there really doesn't seem to be any evidence to work with – is exactly what Venturi may have been saying and doing within Kahn's earshot that is connected to something that Kahn then did. There are a couple elusive things, though. In no particular order, these are the things that look like they might be reflections of influence coming from Venturi to Kahn. One is, I would say, the general, more literal historical referencing that Kahn makes. One sees a little bit of it in the Trenton bathhouse – which doesn't help this argument, because that is before Venturi, that is in '55 – I think that is before Venturi's working for Kahn.

SR: Actually, my notes indicate that Venturi was working briefly for Kahn before he left for Rome... He was working for Kahn while the Trenton project was underway, as was Anne Tyng, of course – both Venturi and Tyng just back from Rome at that point...

DB: Yes, you're right about that. OK, well, I have a hard time looking at the Trenton bathhouse and seeing the influence of Venturi. In any case, what happens in the late '50's is a more palpable historical reference. There is the peculiarity of what I call the Philadelphia corner – the plan form that is sucked in at the corner – the diagonal across the corner (refers to Kahn's Goldenberg house and Venturi's beach house). They are both '59. Now I have to say, on the face of it, this (Goldenberg) is a lot more sophisticated looking design. But that element of design is seen in Mitchell Giurgola's work, and in Vreeland's work. That's a vocabulary that has gone around – it pops up in Kahn's work at this time - Khan's dorm at Bryn Mahr, and the Richards Medical Building has it sort of implicitly – you enter off the diagonal of a corner...

SR: You see this corner treatment as something specifically about the Philadelphia School?

DB: I do. It all appears about the same time?

SR: Do you think anyone can be identified as being responsible for it? Does Venturi have a hand in it?

DB: I don't know. One of the things I would venture is to say that a more established architect like Kahn – with a formal vocabulary already established – may not be the place where you look for such provocative innovation. It certainly happens – but it is a teasing sort of thing. And another formal trait I see coming in at this time are, what I call another Philadelphia School trait, the big chimneys. They pop up out of the skyline in everybody's work about this time. Those would be places I would look for anything you can in terms of concretely dating 'who does what first.' I have found nothing written that acknowledges or even suggests that kind of influence between the two, having worked through the papers of both. There is not much to go on – Kahn, I think, writes a letter of recommendation for Rome. But that's about it. It has always been said that after the '60's Kahn expressed verbally his respect for Venturi, but said he was unwilling to 'go that far.' He did not follow Venturi's interest into Pop culture. Or, you know, large graphics. Or into the vocabulary of commerce and the strip. And fundamentally, I think, continued to believe in abstraction. He did not believe that buildings required words or intelligible historical references in order to be meaningful. At one point, he said that he 'liked ruins because in ruins the architectural forms had been detached from associated use.' They had no denotative meaning left with them anymore, and in that sense continued to be an abstractionist, a modernist of that kind. The things that I see that I can plausibly say are the contributions are some of those stylistic – I won't call them quirks, but they are stylish bits and pieces – and within that, the broader acceptance of things that people could call 'historical' in his work. Now mind you, he was almost always hostile to the notion that anything he did had specific historical references. His willingness to talk about his fondness for

history generally, and to speak admiringly of medieval and ancient buildings, never allowed you to draw a connection (that was pretty obvious) between these historical precedents and his work. Whereas Venturi, of course, was underlining that connection wherever possible. Certainly, the younger man's rhetorical style, in using those forms, did not rub off on Kahn at all. But I think the case is plausible that in the period of '54 to '58, as the Philadelphia School was coming together, that some of the distinctive features of it were created by people other than Louis Kahn – although Kahn gets to be their Guru.

SR: A topic I would like to take up with you are tactics to approach this, to take this apart in a manner that is coherent and scholastically responsible. One of the things I have been looking at is what Venturi was doing in the '50's where he was the lone voice for positions he was advocating. Where he is the only person in the whole landscape of personalities that was advancing ideas that to us now, seem hardly exceptional or challenging but at that time, were very counter to mainstream thought, that were oppositional to modernist ideologies. So 'off the charts' as to be seen as radical. Probably the first of those would be the idea of context. As Venturi defined context – actually, still defines it, very specifically and not at all in the general way it is so often thought of today. That all would have hit Kahn right at Venturi's thesis crit, in 1950. You get the feeling that Kahn starts to shift his weight from one foot to the other in terms of who he begins to draw influences from, where he begins to move away from this focus on abstract mathematical constructs and toward a more sculptural, emotional, massive – well, what we now think of as his 'mature' work. All of this seems to coincide with their returns from Rome – it all begins to happen right there in the early '50s. A lot seems to be happening very quickly, almost at once for Kahn. The challenge, of course, is parsing things out. There is no way that you can attribute, to any artist, one influence.

DB: I think that is always the case. Most things that happen – what historians will generally confess – is that they can find multiple explanations for whatever they are looking at. And that is

probably because there are multiple influences. It is probably a rare situation where a person does something for a single reason. The way I see Kahn's style developing is along the lines that you talk about, but I think there is a long pause between Rome and the heroic Roman-looking sculptural forms of the late '50's and early '60's. People look at the blank façade of the Yale Art Gallery and say 'Rome.' I suppose that is true in some sense. But that is not a theme that is picked up and carried forward in his work at that time. And to be truthful, it is just a large blank brick wall with string courses in it.

SR: Well, I think we can advance the timeline to '56 when Venturi returns from Rome. The Yale Art Gallery happened in '52.

DB: Yes. When he comes back – when Kahn built the Trenton bathhouse – I am pretty sure that that is the building that Kahn felt was the turning point. We, as historians, probably due to Vincent Scully, look to the Yale Art Gallery and say that that is the building. But if you look, for instance, at the Philadelphia Psychiatric Hospital, I don't think the Yale Art Gallery is that big of a change. I think the change comes at Trenton.

SR: Reading Tyng, in her book, she makes clear her disappointment in Kahn denying her acknowledgement once again, with his famous quote saying he felt the world discovered him with the Yale Art Gallery, but he felt he discovered himself with that little bathhouse.

DB: That rings true to me. You know, I think it depends on what you think is important. I think that the important things in Kahn's evolution in the '50's occur in the way he thinks about planning. And in the way that the open plan of the Yale Art Gallery is replaced by the plan of rooms, the 'Society of Rooms' that he creates at Trenton. And he of course creates two of them – one for the bathhouse, and also one for the day-camp; they are different little societies, organized by different social principles. And there are a bunch of other projects; he does a series of houses that are all pavilion plan houses. And what I think the bathhouse is, is his realization that back in the

beginning of his own education, when he was a student in the Beaux-Arts, there was a system that enabled one to think about parts associated with one another. And the dumbest way to associate them is to organize them axially – and he does that exactly once. Once you decide that space is not all the same, and it's in pieces, it's in 'rooms,' you have to decide how to organize them. How do I organize them? Well I can sort of scatter them, in a modernist way. And the Adler house and the DeVoires house are examples of that. Or maybe, I could assemble them all in some structural system, the grid of which would determine things. And so with Anne Tyng, the Jewish Community Center main building is defined by a honeycomb structure, and the shapes of the rooms are defined by the structural system. And the dorms at Bryn Mawr, again, with Tyng. But Kahn really was a formalist – not a structural engineer – and for him, ultimately the more powerful, the more artistic solution, was the one that manipulated form, and organized it, and fundamentally played against the expectations that axial alignments create for you. So, having done that once – he creates a scattering of those at the Richards building – he then turns all these squares on their ears at Erdman. At Dacca, he turns them into triangles and echelons. That diagonalizing of stuff, I in my view, is related to the Philadelphia school and the breaking open of the corner. The corner is now 'activated' – it solves the corner problem that the modernists solved by glazing the corner, that the Greek architects solved by stretching the metaphyseal as you get closer to the corner, the Philadelphia School solves the corner by cutting a diagonal through it. And that diagonal is the organizing principal through which Kahn works out his planning strategies for the next little while. So that is where I could see Kahn learning significantly from the younger people who were around him at that time. The tricky thing is trying to figure out any individual's role in that. Some of those people are still around. Bob Geddes; Romaldo Giurgola; trying to doing an oral history of the Philadelphia School might still just barely be possible. You could talk to Bob Venturi about it, except that in all honesty, I was never able to get a discussion going with him about it. I don't think

they had a sense that they were working together, that they were in much awareness of one another's work. It is very difficult to determine just how these similarities occurred. Nobody is acknowledging anything about anybody, or their relationship to anybody. And then, on that foundation, the great echoing Roman-like forms begin to rise. I would say the first building you begin to see that has that character is Rochester. Which is '58, '59... basically, just after Richards. Richards has the big ventilating towers, but it's still a sort of light-footed building, on its pre-stressed structural system, which lifts everything lightly off the ground.

And there is another 'Kahnian' thing, in early Venturi. This house – the Pearson house – has this screen wall here. The Luwanda, Angola embassy project by Kahn – you know, there are a lot of forms out there held in common.

SR: The Pearson house has a lot of elements in it that I think illustrate ideas that Denise Scott Brown talks about -layering, holes in walls –

DB: Yes, she does.

SR: And she talks about Mannerist exception –

DB: I find it hard to think of Kahn as a mannerist. But I... Maybe the Goldenberg house, which is almost unique; right where you expect the corner to be, there is nothing.

SR: I think about Dacca, the fact that he built all that out of mud. That seems like a pretty contextual kind of move.

DB: I think that's a fair call, but context is such an enormously broad term. There are so many different kinds of things that get called context at this time. What Kahn, to me, seems to be interested in, is a set of contexts that add specificity to a project, that move it away from the open plan and the universality of the International Style. So one of the contexts is the place. If it is to be a building surrounded by grey buildings, you make it grey. Erdman at Bryn Mawr, the Exeter Library, the Richards building.

Incidentally, you know the dining hall there, at Exeter – boy, that is a Venturi-like profile. That simple picture of a house, the peaked room with the central chimney.

Anyway, so one is the physical location. The other context that Kahn was clearly interested in was the specificity of human function. It is a library; the context of the use of this building is the library function. Here is my picture of how a library operates; there is a central space where a librarian opens books to attract people; people take the books and walk to the light to read them. Here is my picture of what a women's dormitory looks like. There are communal spaces - an entrance hall, a living room, a dining room - where people can come together, and then they retreat to a perimeter and their individual rooms. Here is my picture of how a scientific academic research facility works. Small teams work independently, without getting much bigger or much smaller, on projects that do not require contact with one another. This is all the context of human activity.

But there are other kinds of contexts. There is the context of popular culture; what people like and do today. Clearly something the Venturi's are interested in; not something Kahn is interested in. There is the context of the natural environment. What Lawrence Halprin is interested in; not really what the Venturi's are interested in. For me, that notion is too big, too multifarious to have a parent, to have a mother.

You know, the Venturi's themselves, their fascination with popular culture comes out of the British direct observation movement of the 1940's that Denise heard about and saw echoes of in the east end of London when she was a student in London in the 1950's. That's where they get their interest in pop culture, what people actually do. The Smithsons, Team Ten. "Oh! The slum and the medieval city as a model for modern urbanism." Those are things the Venturi's are interested in, but Kahn not.

SR: I think that is specific to Denise Scott Brown's interest. I think for Venturi, it started with a much more limited kind of focus.

DB: Yes, what he is talking about in his senior thesis, yes.

SR: But recognizing that both Kahn and Venturi were both influential in going against the grain of modernist thought; the reason I think Venturi's interest in context might have relevance is because modernism seemed to seek to ignore or overcome context. I think of Kahn's one admitted mentor, Le Corbusier. Corbu's heroic building in France and his heroic building in India; it's all basically Corbu; Corbu here, Corbu there...

DB: Yes. But by the time we are talking about, there are other people who – well, Paul Rudolph is designing buildings in Sarasota Florida – '49, '50? – that are designed specifically for the particularities of the climate there. Eero Saarinen builds dormitories at Yale that he says are “medieval masonry without masons” – seeking to echo the Gothic revival forms of the Yale campus in modern materials. Walter Gropius, in rewriting what the International Style means once he gets to the states, says that the notion that there is a single style has been overstressed; what is universal is a variety of adaptable forms that can be changed to suit different situations and environments. Alvar Aalto's popularity at this time and the notion of regionalism. Tange's early work; his own house in Tokyo in '51, which is basically a sort of tatami mat house sort of 'Miesianized.'

I think all kinds of context are vividly present everywhere. It is possible that at a particular dinner party, or over a particularly thick pastrami sandwich, words were said between one person and another that got things going in a particular way in Philadelphia in 1957. But I don't know where that sandwich was eaten.

My concern with context is that it has all those other mothers. When Saarinen's father was still alive and was designing the GM technical center in Michigan in the late 40's, they were using automobile paneling; gosh, the context there was the automobile industry.

It's really important; it's huge; and I do think it comes out of a pretty broad and wide recognition that the International Style's rhetoric was pure, perfect, and almost silly. The notion that

you could actually do the same thing everywhere. And you look at that chapel that Venturi designs that he says is a demonstration of contextualization – well, I think that would demonstrate that you could call almost anything contextual.

I mean, I remember looking at Mitchell Guirgola's work when I was in college and reveling in its respect for the surrounding buildings. The academic wing on the back of the university museum – “Ooh, my gosh, it's got a tile roof! Ah! Boy, you know, it's almost a 19th century building!” The Provident Mutual Life Insurance Building, behind Independence Hall, where they saved the façade of the Greek Revival building, which nowadays of course is seen as an atrocious disfiguration of a historical building, but at the time was seen as respectful.

The terms are big, broad, confusing, and truly important – titanic in their importance – but it includes everything from Halperin and Moore's Sea Ranch being related to the context of the North California Coastal scenery to people studying the actual living patterns of Levittowners.

It's (Venturi's claim to the concept of context) like Frank Lloyd Wright saying he invented the carport.

I think the one person who would not have wanted to have been called a contextualist was probably Kahn – although he was – but all this other 'soft stuff' like environment, and pop culture, and those sorts of contexts - I think he would have... I mean, Kahn said “Architecture is what God cannot make.”

(Laughter.)

His was like the city kid's view of nature. I think I quoted that in my discussion of the Salk Institute, where they got rid of much of the landscaping in the central courtyard.

SR: With Barragán.

DB: Yes, playing some sort of role. That's a little fishy. I think I came out a little more strongly for his involvement at the time. Keith Eggener has written some things – to be honest, I can't remember which way his argument goes.

SR: I remember reading about Kahn visiting Barragán's home in Mexico – it would be interesting to plug that into the timeline I am building here – and reading that that event was important for Kahn's thinking.

DB: I think that's the story. Yes, Oh, I remember where this has surfaced - there has been a big fight to get the Salk Institute on the National Register. And I think it is scholarship related to that fight that I have been reading as a consultant. The whole fight has been over how much of the landscape gets included in the site. The Salk Institute wants the boundary drawn about six inches beyond the edge of the building, and preservationists want the entire site included. The long and the short of it is that some of the credit for the responsibility for the landscape has shifted to or from Kahn as a result of this scholarship.

But if you were to walk up to Kahn and say, "Kahn, you are a contextualist" – well, I don't know. He loved to be in and with people of different kinds. He reveled in his regular, brief immersions into the culture of India and Pakistan, loved to be told stories, loved to take in these places, and in that sense, strove to be contextual.

SR: Well, I'm looking for ways in, tactically. I can see I'm losing ground here on that approach because when I operate on the premise that Venturi's was a lone voice talking about context in the '50's, that might be a naïve position to take.

DB: Yeah, I'm afraid it is Denise's view, but not one that stands up very well. I think, in a curious way, Venturi is more important than that. That is to say, no one creates the weather. Context was the weather. What he created was a node of human creativity within that weather system. What he did was not... you know, he did not just stand out in the rain. He chose to create

something with it – to channel the rain. To take it into a view of architecture that was very highly focused and specific on just a few things that he judged to be important. That is art. Art and weather are different. Weather has no meaning. Weather just comes down. It's just there. Art has meaning. And I think that is what he should be applauded for.

In that sense, Kahn was also standing in the weather, and he created a different kind of art. He was working in the same weather system – the context of the time.

I truly do think there is a story we were not able to parse of Venturi's relationship to Saarinen. We say a little bit about it. But Saarinen's is a very fertile imagination at this time. He really is someone who is taking modern architecture apart, and saying things have to be more specifically about feeling, and references to knowable things and objects, in history and elsewhere. Saarinen can make a building that looks like a duck. He can make a building that looks like a castle. He can make a building that looks like an airplane wing. He is doing that already.

And I think what Venturi then in turn learned from Kahn – and that reinforced his already nerdy seriousness – was that architecture was one hell of a serious business. It was just about the most important thing on earth. And so if you were going to talk about pop culture, you had to establish it within the culture of the renaissance and mannerism. You had to historicize it and make allusions to T.S. Eliot, and to theories of modern avant-guard poetry. It wasn't like Wham Bam Roy Lichtenstein – whoa, boy, look at those! They're big!

There is a lovely little story. I'll have some of these details wrong, but the rough part of it is this. Kahn teaches mostly at Yale until 1956, and in '57 he is lured to Penn. I think he was offered the chair position at Yale, but turns it down. Paul Rudolph comes in about this time, and one of the first projects he assigns at Yale is a custard stand. Kahn had been assigning projects dealing with important civic buildings, and someone comes in and assigns the students a custard stand as a project. Well, that was what the influence of this enthusiasm for pop culture could lead to. And I

think it is notable that Venturi never assigns students a custard stand as a project; no, it's more like, let's go to Times Square and study it as though it was Piranesi's Rome! Let's go and study Las Vegas as though we are art historians trying to define its forms the way Wittkower studied and analyzed renaissance forms.

If there are any soft underbellies in this project of trying to figure this out, the two that occur to me that are possibly fruitful are a) trying to find other people who were around in the '50's to talk about the social dynamic between these two people, and b) literally trying to correlate the dating of drawings in Kahn and Venturi's work and trying to identify which ideas occur first where. Most of these drawings are un-datable – at least not dateable specifically enough – because most were for private residences where there was almost no trail of correspondence and documentation.

We did not go at this with the intention of testing this particular hypothesis. We did not do anything that in any way at all goes toward trying to answer these questions. I suppose if it had been there staring us in the face – but it wasn't staring us in the face. We had Denise's allusion to this possibility – which is an attractive notion. I think it is fair to say that Venturi's would have been a reinforcing role in these directions; determinative? Maybe. That's about as far as we could go.

SR: Well, that seems to be where it stands. Bill Whittaker has been very helpful with me today, and has taken this apart with me, and had some obvious concerns. He suggested something just like your first suggestion. He says that has not been done.

DB: No, it sure hasn't been done.

SR: We found a class list from Venturi's theory class, in the spring of '63. So the thought is, let's talk to those people.

DB: Wow. Wow. Yeah.

SR: Let's see what they remember. Because I think the social dynamic – I've been at this long enough to know firsthand how things work – is a critical thing.

DB: I think you are absolutely right. And I think that on the face of it, I would be inclined to believe that when you see changes in an older architect's work, the first thing to look at is the younger people around him who are hatching new ideas. That makes sense to me.

SR: Kahn has this lifelong pattern of reflecting the influences that he pulls toward him, or that he chooses to use as a lens.

DB: I think that is certainly true.

SR: Which may lend some gravity to the Venturi connection. It would have been Kahn's choice of course. He would have had to have recognized things in Venturi that he saw as having value.

DB: I think that is very true. And I have to say this to you – this is a social dynamic scholarship. All of us who have talked with Bob and Denise – well, at a certain level, Denise claims so much, you have a natural tendency to push back against it. But it is important not to push too far against that, as a scholar. They have accomplished a great deal. And I may have pushed back too far on this notion of Venturi's influence on Kahn at this time. But to look at the other side, Denise really was not in the loop yet.

SR: Well, that is what Anne Tyng said.

DB: (Laughs) Well yeah! Absolutely! From Anne's point of view, no one but she ever had any substantial effect on Kahn. And that's unfair too - you know, Oscar Stonorof was pretty influential in shaping Kahn's thinking in the '50's - there continues to be the ugly and petty squabbling about the mantle of the master, which has been going on for quite a while now.

But I think the reality is that most cohesive, powerful ideas are the products of communities, of cultural settings. And the 'Philadelphia School' – for want of a better word for it – clearly came out of such a community.

SR: That is an interesting topic in itself. And what I heard you say earlier is that no one seems to think they were a part of that.

DB: No I have never heard anyone – I would love – I just don't know! No one has ever – I mean we tried to track these things down to some extent. But what you don't find is any account of people getting together in any organized way or interacting in any identifiable pattern. Or someone saying, "It was Kahn's studio crits we all went to." You just don't get that. Maybe, in talking to a bunch of these people, you can get some sense of that. You know, Kahn had a couple of people loyally following his studio crits. But they weren't Aldo Gurgola, Bob Geddes, or Bob Venturi.

SR: Bill has a list of thirty or forty people over there. Some are not going to be alive or reachable. But a lot of them are.

DB: Someone else to talk to is John Rauch.

SR: Bill said there is some –

DB: There is some very bad blood. They fired him. They parted on very bad terms. They believed he was stealing from them. I only dealt with him in a straightforward way, and he seemed like an eminently rational, sane person and a pretty good architect in his own right. And he certainly was there – I think early enough to be helpful (consults reference) – yes, 1960. William Short. Did we talk to him? I can't remember.

SR: Quite a cast of characters.

DB: Yes, it certainly is.

SR: Well, in taking away the counsel of someone who knows more about this than anyone...

DB: To be honest, I could not afford to figure this out. That is to say, if I did figure it out, one side or the other would hate me, and there is a political price to be paid for – I couldn't do further work with these people if I figured that one out. After a couple more deaths... if you are

working in my position... well, I guess I also have to say it did not strike me as being even feasible to figure out. And maybe it is. Maybe more can be done.

I like the idea – in general – regardless of what you find out about this specific question – finding out more about the interactions of these people in this period of time is bound to be darned interesting. Because there are lots of things going on – not just between Venturi and Kahn. And it is a good piece of history – it was an exciting time.

SR: You are echoing what Bill has been suggesting here, suggesting that the problem is better framed as being part of a larger dynamic, a larger series of interactions.

DB: Yes. I have heard it said, for instance, that Bob Geddes was really the one who led the way toward the sort of straightforward directness, the toughness of the Philadelphia School. Penn just tore down a lovely little building that embodied that – the Pender Laboratory.

Where are you located?

SR: Washington – Washington State.

DB: Okay. So they can't get at you.

SR: Everybody asks me that, really the first question. It's like they want to know what camp I'm in.

DB: Yes. Well I'm in it up to my neck because I know the Venturis very well. And care for them. I don't want to disprove anything they are claiming. And so, in a way, I don't look. And on the other hand, I also have very fond associations with Anne Tyng and with all of Kahn's children. So there are still elements of that story that are tough to talk about. Nathaniel's film helps a lot. I don't know if you noticed, but we omitted any biographical information about the children. They were quite shy about it, and we did not want people doing the math and looking at who Kahn was sleeping with where and that sort of thing.

SR: Denise Scott Brown suggested I speak to the children.

DB: I don't know how they would know anything. The oldest would have been maybe nine when all this was happening. They couldn't.

SR: Well, thank you so much.

DB: It has been very nice meeting you. You will find Bill is the institutionalized memory – the person who leads to all of these possibilities. And I do think intrinsically, it is very interesting, important stuff. But I think the broader – how shall we say, context? – of this is probably the thing that in the end will be the most fruitful rather than trying to answer a specific question because there are a lot of very interesting people bouncing in and out of the story. I think all history we write today tends to do this – probably, at the end of the day, you will wind up downplaying both Kahn and Venturi, as this other sea of people rise up with their voices and their ideas.

APPENDIX C

Interview with Denise Scott Brown and Robert Venturi, May 3, 2007

SR: I've been in touch with Anne Tyng, as you suggested, who has been very gracious and willing to talk with me further.

RV: Good. I haven't seen her for a while - Anne is an old friend. She is in San Francisco now, right?

SR: Yes, she is. I've been here this week at the architectural archives, and I have discussed the topic at length with Bill Whitaker and met with Dr. Brownlee. This is a challenging topic to parse out, and as I've gotten into it, it seems to be a much larger topic than I had initially realized. While I was initially looking at threads of influence on Kahn that could be traced to you, it seems that your influence should be seen as having been not simply on Kahn per se so much as it would have been on a whole community of other influential people, a community in which Kahn was a major participant and of course also a major beneficiary. And Kahn was developing as an artist in the context of working in this community, of course.

RV: Please close the door...

SR: Well, I would like to start by asking you about your return from Rome – what are your recollections of discussions you and Kahn may have had about what you saw there, what he saw there?

RV: Well, I met Louis Kahn in the summer of '47. I had just graduated from Princeton and I was working for an architect named Robert Montgomery Brown, who had a small office on one floor of a Victorian townhouse in central Philadelphia. On another floor was another architect whom no one had ever heard of named Lou Kahn, who was working there with Anne Tyng. I would meet him in the elevator, where he was always quite cordial. And I began to appreciate his

work, and I in January of '50 asked George Howe and Lou Kahn – whom no one had ever heard of – to be on my masters' thesis jury. And that was that. And the next few years, I was teaching at Yale and Penn, and especially at Yale I kept saying “you ought to get this guy Kahn to come in as a visiting critic.” They didn't seem to pay much attention, but at some point he did get there. To what extent that derived from my influence, I don't know. And then he became the architect for a couple of buildings there. I have written in my book (*Iconography and Electronics Upon a Generic Architecture*) about how I influenced him as much as he influenced me. Later, I learned that had happened to a lot of people – that he got a lot of his ideas from his students - which is fine, except that he never acknowledged any of them. I had a friend teaching at Harvard who warned me later that “Hey, you ought to watch out for Kahn, he gets a lot of his ideas from his students.” And I think what I have written here pretty much covers my experience and my thoughts on Kahn. They come out of two lectures, one at the opening of an exhibition on Kahn here at Penn, and then again at the opening of the same exhibition in Tokyo.

SR: Yes, you sent me those pieces, and I have these books...

RV: Good, then you have everything.

SR: One of the things that I have found interesting was the topic of your thesis in 1950, which ran counter to mainstream thought of Modernism at the time. While there was architecture being done then that was contextually responsive, no one was framing it that way, no one was discussing context as an architectural issue; I don't think anyone else was talking about it.

RV: Yes, I don't know that anyone else was talking about it either. I think I was the first one who did. Now, of course, context is a cliché. Overdone. But yes, concerning my thesis, I remember when I got the idea, I was reading in the Department of Psychology library at Princeton, and I came across some writing on Gestalt psychology, and it grew out of that. The thesis was completely anti-modern, in that Modernism dictated that you design from the inside out. Frank

Lloyd Wright and Le Corbusier both said that - that you design from the inside out. The outside evolved from the interior requirements – the outside was a result of interior program and functionalism. Designing from the outside in was something I brought back; I said hey, you do both. You design from the inside out *and* from the outside in. And the tension that creates can lead to great architecture. And I very much emphasized that working with context did not mean that you simply made your building analogous to the existing context – but that meaning can be derived from contrast as well. (That meaning can be derived from contrast was something I learned from my teacher Jean Lebeaue.) And that was highly a new idea. Now of course, it gets overdone. And it has been misinterpreted, that you have to be analogous when acknowledging context.

SR: Did the topic come up a lot with other people on the faculty at the time? I mean, I think of someone like Ian McHarg; context was his business...

RV: McHarg I knew, and heard a lot about him – I don't think he was talking specifically about context. Landscape architecture is of course a contextual endeavor, framing the background for a building and other elements. But I think McHarg was looking more at the horticultural issues of design.

DSB: The ecological, the environmental.

RV: And that was very important, and very good. But it was ecological and horticultural, not looking at the topic of context as such.

SR: Was the topic of context sort of 'in the wind' after some period of time at Penn? Or After your presence there?

RV: Oh, I think people eventually got hold of it, both at Penn and at Yale. But it derived distinctly from me. Lou Kahn, to the extent that he dealt with context, he learned from me.

SR: When you think about how Lou Kahn addressed context, can you think of specific examples in his work?

RV: I don't think he really dealt with context very much. Did he say he did? I don't think he did.

DSB: When I was doing a campus plan for Bryn Mahr, I had to deal with Lou Kahn's siting of those dorms. I began to understand his siting in terms of the method of the design of previous architects, Cope and Stewartson. It was interesting to see that, and I think that was the extent of his consideration of it – the influence of other people's designs and design philosophies. I don't think he used the word 'context.' Context was very much 'in the air' in postwar Europe. So much so that one might say they didn't talk about much else. Again, they did not use that word, but always, the question was "how do we tie in with the historical city..."

RV: I was the guy who said, in *Complexity and Contradiction*, Modernism is not anti-historical, it represents an evolution from history. It can be said to be a revolution – but a revolution within the evolution of history. It did not represent the end of history.

SR: I know Kahn spend time in Rome, but I wonder if he saw the same Rome you saw.

RV: I think not. I was there for two years at the academy – I loved Baroque Rome. And at the very end of my time there, in 1956, I realized it was not Baroque that I was finding relevant, but mannerism. And that was a revelation.

DSB: I write about 'context in context' in this book. There is a whole chapter about many aspects of how we look at context.

RV: And I write a little bit about context in this book (*Architecture as Signs and Systems*) where I include parts of my thesis on context. (Reads portions of his writing on context).

SR: Do you remember why you were over in the psych library reading about Gestalt psychology to begin with?

RV: Because – that's a really good question – because I was looking into meaning. – into meaning rather than expression!

DSB: But who said to you, “It would be a good idea to go over to the psych library to look into meaning?”

RV: No one. It was me.

SR: In the “Worm’s Eye View” article, there is a list of things that Lou Kahn learned from you: (lists)

RV: Well, that was your article, Denise.

DSB: Yes, but I got that list directly from you. I said, “let’s list the things that Lou specifically learned from you” and that is what you said. So that list comes directly from you.

RV (Looks for other lecture, the Tokyo lecture, ‘Louis Kahn Remembered.) This is really important, and it’s all here, be sure you read this one.

RV: I also indicate here what we learned from him.

SR: Do examples of mannerist exception or distortion appear in his work?

RV: I don’t think you see much of that in his work – he is after consistency.

DSB: There is some in Dacca, where bits get cut off. And things like that, for circumstantial reasons. And that was very late, after you had had all those discussions.

RV: It might be; I’ve hardly looked at those buildings. They just never interested me much.

RV: The idea of the servant space was a beautiful idea that influenced me much. So the influence went both ways.

SR: In the book Mother’s House, you talk about the influence of light and designing in complex section. This is something that has always been there in your work.

DSB: You talked about letting light in between columns in your lectures. And after we went to that lecture of Lou’s and we sat in the park, you realized that his poetic discussion of the columns parting and there was light, and you realized that was all yours.

RV: Yes, yes... you have written about that, haven’t you?

DSB: No, I have not written about that. I remember that.

RV: We went to this lecture at the Art Alliance, and afterwards we sat in Rittenhouse square and I said to Denise that I realized that a lot of these things were coming directly from me. It was a profoundly disillusioning realization.

RV: By the way, another idea that came from me was the window in front of the chimney that he did in that house in the neighborhood of Mother's House. The Esherick house. That was my idea.

DSB: I had been talking to David Crane, who had been observing Lou at faculty meetings. Sardonicly talking about how Lou would always wait until the younger faculty were all quiet and then begin talking so they would all hear him, and how he was often not very nice to them. Like he was competitive with them. I told Bob about this a few days before Bob had his realization in the square about what was happening with Lou. I told Bob about this and he said, "He never does that with me," and I said maybe that was because he did not see you as a threat. In that context, perhaps an insult.

RV: I think this list here is pretty good. It pretty much says what I think.

SR: There are notes in Kahn's correspondence about you maintaining a relationship with Kahn's practice as a visiting critic after you had left there. What was the nature of the relationship between the two of you after you had gone out on your own?

RV: I work in his office for a time, and Anne Tyng was there then. There was a lot of discussion between us until I had this realization in the square. That was when suddenly I had a whole new view.

DSB: By the way, the person who said "Anne's got something" was Tim Vreeland.

SR: I would like to go over a list of students that was in your archives from the theory class, in 1963. Vreeland was on that list.

DSB: I have a whole file of those names in my teaching materials. Many students, one of whom was John Scully, the famous head of Apple.

SR: Well I would love to get my hand on those. I have this plan to talk to these students.

DSB: It would be very interesting to talk to the students that were in Lou's Masters class as well. By the way, the same lists that we have should be at Penn. All the teaching records should be there.

SR: Yes, but they won't give me access to those because of university privacy policies.

DSB: I suppose that's the point.

SR: I don't even have contact information, so I will have to go on from there. You will remember many of them – many have gone on to have very significant careers. Well, Steve Izenour was one of them.

DSB: Yes, well, you see in the Fall I taught a theory class in landscape architecture and planning, and in the spring Bob taught the theories class on architecture. And I was involved in both classes. So on that basis, between us we would have seen most of the students who passed through.

SR: I think the impact you were both having at Penn is much larger than that of an influence on Kahn. There is a much larger truth here, I think. And much of the influence you had on Kahn might have been somewhat indirect – passed through the students.

DSB: The main influence of the theories classes would have been on the first year design studios. I think it was a very effective teaching method that Perkins developed.

SR: Well, certainly something was happening – just look at what has happened to the graduates of that program.

DSB: Yes. Well, at the time, these were the only theories courses being taught anywhere. How did that happen? I have my own theory about it based on the fact that I was there at the time. I don't know if this is useful to you, since it is not what you came asking about.

SR: I think it is very important.

DSB: Well, I'll tell you what I think happened. It had a lot to do with the social revolutions going on in the city of Philadelphia and all around. I was in the planning school teaching architecture and planning – teaching the opposite thing in each – and so the city planning department had been one where people from the New Deal had been teaching, in the social sciences and economics, and then Holmes Perkins came with a group of people from Harvard. Young architects, like David Crane and Larr Genlenco, and Ian McHarg, and so on...

RV: Everyone was from Harvard.

DSB: Well not everyone.

RV: Everyone except me and Tim Vreeland.

DSB: Well, Bob Mitchell, Herb Gannes, Jack Dykeman weren't from Harvard

RV: Well, they were older.

DSB: Yes – they were in the planning department. Some of them came from the University of Chicago, which had a great school of city planning; they were unable to plan anything. By their own admission, they were critics. They were gadflies. And so, this heady mixture of older people, like Bill Wheaton – he was from Harvard, but he had also worked in the new deal, and so had Bob Mitchell, who was an architect who had worked with transportation planning, and Britton Harris, from the University of Chicago – they began the critique that is called Jane Jacobs. The critique of urban renewal, and of architectural ways of thinking about things, a lot of that really began right there at Penn. In the middle of all of that – teaching courses like organization and implementation, and statistics, and all of that, a young firebrand named Paul Davidoff, who had taken a year or so of

law at Yale, and was very much a part of the Socratic method – which is the way the Yale Law School teaches – and pretty fiery about social conditions – and then more scholarly people like Herbert Gaddes - who did a better critique than Jane Jacobs – was much broader but of the same kind, from the point of view of the needs of poor people and things of that kind – Paul Davidoff began to say “we need a class in theory,” because planning is not an end state, it is a process. Once you do that, and you have studied a little philosophy and you have attended Yale Law School, you probably want a course in theory. So he started working on a course in theory, and I sat in cibbits, making life much harder for Paul, I later discovered. But he withstood it. That course in theory was there from '61 or '62. I think Holmes began to think we needed that in architecture as well. Now Holmes had an idea that the people who come into a graduate school of architecture have good literary abilities, and verbal skills, and they have learned a whole lot of subject matter, but they don't know how to be architects. And they don't have manual and graphic skills. So he began to put together this funny alliance, he said “We will be teaching them theory, at the same time we will give them a lot of drawing practice. Everywhere they go they have to get drawing practice, to catch up. For the first semester, we will start with the kind of analysis they are used to, but at the same time we will be giving them intense drawing exercises. So that part of the way through the semester, even if the drawing is very basic, they will be able to frame basic ideas graphically. And so my course in theory, which they were getting at the same time, was trying to get them to span between verbal and physical thinking – at a broad scale - doing a lot of drawing. But he had out cardboard pattern books of steel and glass buildings and the like with which they were to ‘build up their vocabulary’ drawing neighborhood units, and schools, and things like that, by actually drawing them, to get the drawing experience. They had to draw steel and glass buildings – you couldn't use history. There I was as a young teacher with the unenviable task of ramming down their throats - for the first semester – things being done the way Holmes wanted it, but the students hated it. I

couldn't stand it, and after the first semester, I went to the head of the studio in the architecture department and said "They are just killing me, they hate this. They want to know why they had to do this busywork." And so I was told to do it the way I thought it should be done, and Holmes stopped supervising me after the first semester. So then I began setting out what I thought the issues were, that they should go and research to tie neighborhood planning to what they were going to be doing in studio. Once that happened, they got really interested and it was fun. When we did housing, we looked as much at the minor architecture of Venice as we looked at what Philip Johnson's house, you see; and they could choose for themselves what they drew. I told them what the issues were and they should be illustrated with their drawings. And so it became a plausible course, and that was what really made a difference in studio. Meanwhile, Holmes was looking at this course Davidoff was teaching, and thinking he had something along those lines established for the first semester, but didn't have anything set up for the second semester. He says, "We don't want to hire new faculty, but we have this funny, nerdy guy from Princeton, and he knows history. Maybe he could give a series of lectures – not on theory, but on theories. Different people's theories, the same way we had been looking at different people's architecture to draw. So, different people's theories of architecture. He goes to Bob, and he suggests a few sources that might be good for him. He doesn't have to pay any more because he has already got him on staff. And there he gets a nice cheap course which will be useful to help the students catch up with where he thought they should be, if they were going to be in the graduate school of architecture. I think that's how it happened. It's all a set of hypotheses, but I was right there – I was in all of the faculty meetings.

RV: Out of that course came Complexity and Contradiction.

DSB: And also fifty million other courses in theory –

RV: All over the country. One extreme to the other; no theory, then all theory.

SR: Did that all happen in the same year?

DSB: I think the first course happened in '61 or '62. Then again in '63, and Bob told me he worked eighty hours a week preparing for that course the first year, and forty hours a week the next.

RV: Yes. And I also went up and gave it at Yale. The same course.

DSB: 1963, you began writing the book out of your lecture preparation notes.

SR: I looked at those notes. It was amazing – those packing boxes full of cut and taped collages of handwritten and typed thoughts, evolving into versions of a manuscript.

DSB: It was really very exciting. I sat through those lectures because I was going to be teaching to them – it was not any duty, it was just pleasure. It really made you want to get up and start designing.

RV: How does this connect to Louis Kahn? It doesn't, really, I don't think.

DSB: You used to include – well, you see, what Bob did was take one of the Vitruvian elements – expanded, so that one of the Vitruvian elements might have to do with air conditioning, for example – and he would say everything that was to be said, from a theoretical point of view, about that subject. Taking the different theories of different eras – how the Gothic architecture let in light as opposed to how early Christian architecture let in light; what Gropius thought about it; what Lou Kahn felt about it; and in the end, what he, Bob, felt about it. All about light, but a real designer's way of looking at a topic. Whereas these people had all had a history course of some sort or other – where Vince Scully taught them the same material, but chronologically. Now, they were professionalizing the same knowledge by having a designer like Bob, knowing history, but showing another way of looking at it.

SR: Well, some of those students would eventually wind up in the Master's class. They would have been carrying all that forward into Kahn's studio. And so it seems that that could have been a very powerful, - indirect and difficult to trace, but a very powerful link nonetheless. One that would seem to be difficult to ignore to discount.

DSB: By the time those students would have been arriving in Kahn's studio, Bob would have been about to leave. As was I. So I am not sure how much support there was for the continuation of those ideas. Of course now, there isn't any at all.

RV: Of what, honey?

DSB: Well in other words, our way of thinking about architecture.

RV: Yes.

SR: What is your take on the whole topic of the Philadelphia School?

RV: I think it was a bit of an exaggeration. One thing that I think is positive was that it was not a promotional thing – the way it was among the 'deconstructionists' and the 'whites vs. greys' and all that – so much of that was all self-serving promotion. To some extent, there was a level of analogy around Louis Kahn. It was 'in the air' but it was not highly unified or organized.

DSB: I think also, that Lou owed a lot to his time in the '40's when he involved with those same fellows, after all.

RV: Yeah. Good point.

DSB: Although he never talked about that – he never talked about any influences – some of the ways he thought were traceable back to those people. And I think that made him much more powerful, and sets him apart from many of his followers. Some of the thinking that came out of city planning groups and those discussions he was exposed to, being with Oscar Stonorov and Bob Mitchell, he seemed to gain some understanding that informed his architecture in a way that is quite different from, say how Tadao Ando works. Notions of a hierarchy of communities, public and private, and all those things that you were inclined to talk about if you were an urban planner. You do see some of that in Lou's work. I think that is part of the reason why Lou could cotton onto some of the things Bob was talking about.

SR: This turning point in your relationship with Kahn that happened at the Art Alliance lecture – where Kahn was discussing the idea of walls opening to form columns –

DSB: Yes, the walls parting to form columns and then there was light, something like that.

RV: I don't remember, specifically. The method of the lecture pretty much was showing his work, and analyzing the work. And in analyzing the work, certain key ideas were involved and expressed. There were – something I have never written about, but there were influences on me by Louis Kahn that had to do with the idea of bringing back a window in a wall. Modernism had thrown out the window. You either had an absence of a wall – meaning the whole wall was glass – or you had no window, meaning the whole wall was solid. That building there, in France, you see those windows – those windows derive from two row houses Kahn did somewhere in downtown Philadelphia. I have not seen them for years – no one ever writes about them, they have never really been acknowledged as being important, but they use these double hung windows... those windows made me think, why not? Why is the window not relevant for architecture; why should that be thrown out? That's when I did it in my mother's house. I had a window I used there that specifically derived from Kahn's little row house downtown. Do you remember that, dear?

DSB: No.

RV: They've hardly been acknowledged.

RV: The idea of a servant space influenced me. But I think in the end, Lou just became terribly much a formalist – his architecture was primarily dramatic form. I really didn't think too highly of it.

DSB: Look at the women's dorms at Bryn Mawr. You know where he lived in west Philadelphia. You go there and look at the forms – it's not suburban, it's streetcar urban architecture –

SR: Is this on Clinton Street?

DSB: No, this is before that, when he was living with his parents. Which he did until he moved to Clinton Street. There are funny things on the back of the houses which look like those waste shafts at the Richards Medical Building. But in a way, you can interpret the women's dorms as a set of row houses, each room a little row house, interlocked the way row houses look as if they do. And the form – the public sector is created by how the buildings are put together. And so there are three public spaces in the middle, three public squares with houses all around. He is being very urbanistic. Now, we could have had great fun distorting all that. But it is a very beautiful urban statement.

SR: Dr. Brownlee was talking about a couple of things he thinks of as being characteristic of the 'Philadelphia School.' One: big chimneys. The other: what he calls the 'Philadelphia corner.' The latter, I think he may have written about – how various architectural historical approaches 'solve the corner problem.' Is that ringing any bells for you?

RV: What does he mean by the corner? Big chimney – actually I think I may have possibly been influenced by Kahn to some extent, but I don't think he ever had a chimney like that. My beach house project, with its big high chimney – never built – horrified Vince Scully. But then also fascinated him at the same time.

DSB: You know, the diagonal was very much Philadelphia School.

RV: Yes. The diagonal. That's right, that diagonal. That, I got from Louis Kahn.

DSB: Well, I know where Lou Kahn got it. He got it from Team Ten. You know, in Europe, there was a lot of thinking about diagonals at that point. Lou had more influence from Team Ten earlier than has been generally recognized. I think I discovered how that happened, too. But that's another story. You know, the conference in Amsterdam in '59 he met Blag Valenca and Aldo Van Eyck. That's how Aldo Van Eyck eventually wound up coming to Penn.

RV: Is Blag still living?

DSB: I believe so. Van Eyck is dead.

RV: She is in Canada?

DSB: Yes.

RV: She didn't like me in the end, did she?

DSB: I don't know.

RV: I don't know what the hell happened there.

SR: The Pearson house certainly holds lots of examples of things that are listed in the 'Worm's Eye View' article as what Kahn learned from you... to look at that list again, 'his' philosophy of light, the notion of a 'thing in a thing,' layering of enclosed spaces and layering of juxtaposed walls and openings, discovering windows could be holes in walls, and mannerist exception, distortion, and inflection in form.

RV: That's your piece, Denise.

DSB: Yes, but I got that list by taking dictation from you. It's your list.

RV: Well the hole in the wall, he used once. I really took it further, made it significantly relevant. Then later, as I fell in love with it, and I don't remember to what extent that might have involved Le Corbusier's influence. I got a lot of that from Le Corbusier via the Villa Savoye.

SR: Well, we certainly see the use of layering in Kahn's work later, certainly.

RV: Yes.

DSB: I used to call that 'he wraps ruins around buildings.' That was probably influenced by Bob.

RV: The Villa Savoye was tremendously influential – I loved it and still do. It has a layer upon which sort of different things happen – popping in and out.

DSB: And it's a very thin, paper thin layer... rather like the stuff at Dacca, except that that's all circular. But the thinness of the openings.

RV: Of course he was very oriented toward concrete, and then in the end, brick came back into the work. A lot of red brick.

SR: I find it interesting that that last building, he essentially builds out of mud. He goes up ten feet, then there is a thin course of concrete, then he starts with another ten feet of mud.

DSB: Now that – what date is that building?

SR: That project actually spans a long time... he worked on it over twelve years...

DSB: Let me tell you, I don't think those dates will matter – in '59, there was, in the planning school, a studio called the Chandigarh studio. We were given, as students, the program of Chandigarh. We worked with Dave Crane's ideas to design a city using that program. There were lots of economic philosophies developed by Britton Harris and Dave Crane that influenced our thinking. Among them was the notion that there are different kinds of capital in building. There is 'sweat equity' – a concept now famous, but not known then – there is also the kind for which you need hard currency. And of which you must use very little. But it might be permissible to use some. And then there is the kind you make yourself, like mud bricks. A building could be made out of 90% mud bricks and just a little bit of concrete to help you span a big opening. Well, Lou heard all of that going on and he came to the jury of that studio. And he was quite critical of it, but the one part he did like was the part where we showed housing made of mud bricks with just a little bit of concrete used for structural reasons. I suspect there was quite a bit of influence taken away from that seen later in Dacca. You never see Tadao Ando doing anything like that.

RV: I think it is very interesting how influential Lou has been in the last decades. So much new architecture is Kahnian.

RV: Have you interviewed the great historian, Vincent Scully?

SR: No.

RV: It could be interesting. He has viewpoints that are not necessarily conventional.

DSB: There was a person who worked for Lou for some years, name Harry Rash Pau. And he lived in Sri Lanka. I don't know if he is still alive. He was alive when we were in India, but that was in 1985. No, he lives in Dehli. He became a powerful political architect in India. But for quite some time he worked for Lou, and he had a very cynical attitude about Lou. He had a planning background as well as an architectural background, and I used to have dinner with him now and then, and he had some wry comments about Lou and what was going on at the office, what Lou was doing at the office.

SR: I would like to talk to anyone who was there. He might be a challenge to get in contact with –

DSB: I have an address. A very old one, but who knows?

SR: The other contact information you could help me with would be Scully.

RV: Yeah, we can give you that. He spends half the year up here and half in Florida. Near Miami..

DSB: Coral Gables? Near Miami...

SR: Is he still teaching?

RV: I think he is!

SR: David DeLong, I have not talked to yet – David Streatfield ...

RV: I don't know him –

SR: He is at the University of Washington – head of the school of architecture now... these are all people who I have learned were around during the period we have been discussing... Arthur Jones... I'm going to butcher the pronunciation of a lot of these names...

DSB: Arthur Jones used to work for us, has been with Bauer Haeur for a number of years, may be retired.

SR: Alvin Holm... Steven Goldberg...

DSB: In New York.

SR: Fred Foote –

DSB: California.

SR: Jack Diamond –

DSB: Canada.

SR: I have states listed for many of these names, and so far, my notes agree with you. Peter Arfaa –

DSB: Philadelphia. Quite nearby.

SR: Thomas... Vernalou? Vernalett?

DSB: Vertalett.

RV: Vertalett.

SR: Mark Ueland

DSB: Mark has a firm in Chestnut Hill.

SR: Rollin La France

RV: He's around. Lives in Bucks County, which is north of here – he is retired.

SR: Bob Geddes?

DSB: Princeton.

SR: He is at Princeton now?

DSB: He was the dean –

RV: He is now retired. But he now lives at Princeton.

SR: Herbert Gannes?

DSB: New York. Won't have much to say about Kahn. Paul Davidoff – had something interesting to say about Kahn, but he died. He said, "I'm beginning to understand why you think he and I have something in common... something to do with great generalities about mankind..."

SR: Mather Lippincott?

RV: He lives in Swarthmore, I think.

SR: David Rinehart?

DSB: He went to California.

DSB: Nick Gianopulos. Have you spoken to him?

SR: No.

DSB: Absolutely someone you must speak to. He was his engineer, forever. He is very bright, intelligent – and, he was our engineer, too... pretty insightful about Lou's relationship with us.

SR: Great! I'm sure you have his contact information as well.

DSB: Yes.

Now, students of the theory class in '63... Richard Bartholomew.

DSB: He is here. Married to Julia Congress, who heads the archive.

SR: Ah. That's easy enough.

DSB: It's all very incestuous here.

SR: Gordon Bertrand, Willis Boyer, Miriam Comuico, Jay Coopershon...

DSB: That's almost right, but not quite right. How have you got it spelled?

SR: Well... I took these names from a handwritten class list, and to be frank, the handwriting left one to interpret a fair amount. I should have brought a photocopy.

DSB: I've got a picture of that guy in my mind. Coopersmith? I think so.

SR: David Cox, H.A. Davis, Frash D'Lauro, Robinson Fiedenthal...

DSB: Robin, yes. He got very sick. I don't know if he is alive, but he had a degenerative disease.

SR: Stephen Hill, or Allen Hill – only last names were on the class list – Willard Hottle, Conor Levy, John Lobell...

DSB: He is in New York. He wrote that scandalous book with Mimi about open love. Very recognizably involving half the architectural community in New York.

SR: I wasn't aware of that. I just knew about his book on Kahn, which was – well, not nearly so colorful...

DSB: Have you read about Ricky Wearman? He was another one. Had a lot to do with Lou Kahn.

RV: Now, he is in Long Island. Or somewhere up in New York.

SR: John Parker, David Peterson, James Paltou, Bill Rosenberg Denis Sander...

DSB: David Peterson, somewhere in California.

SR: Peter Saylor,

DSB: Saylor is here. Has a practice here.

SR: Roont Shusserman...

DSB: A scandal. Became a lawyer.

SR: Oh... dear...

DSB: And he is a very, very bitter guy. And he has managed to – we don't know what we did to him, but he apparently has formed a huge grudge against us when he was our student. He was very bright. He has taken up suing a client of ours for some years now, to keep the project from going ahead. By any means he can. His house is right opposite the project, and he is a bright enough lawyer that he can think of one way and then another way to keep stalling things, indefinitely. We think he may have finally run out of ways to hold things up – he fails every time – but nevertheless, what he is doing is keeping the building from being built. And he says “he will bring the institution to its knees.”

SR: Every city has one of those, it seems.

DSB: It's hard to know, but anyway, he is not stupid.

SR: Johann Stein, Carl Strona, Morton Weil, Charles Weymouth...

DSB: Charlie Weymouth lives near Wilmington.

SR: Ellen Winans, David Williams, or maybe Michael, or maybe Jack Williams...

DSB: I think it was David. There is also a James Williamson, who is in Memphis.

SR: Did I mention Guirgola?

DSB: He is in Australia.

SR: This is just the cast of characters I have turned up to potentially talk to at this point – I am sure they will suggest others.

RV: I think jet lag is kicking in. It usually gets you the third day.

DSB: You have this meeting at three. It would be best to not be asleep in that meeting.

SR: Where have you returned from?

RV: We were in Toulouse. And Geneva. We judged a competition for a building next to the one we did there, and gave a lecture. Two lectures. I am fighting jet lag, and not talking much here, but if you just get back to what I have written in these books, it is all there.

SR: There is something quite interesting in this one... (Mother's House).

RV: That book is rare now.

SR: Actually, I carry this one around... (Pulls first edition copy of Complexity and Contradiction out of luggage). I bought it in 1977 in Copenhagen, and have been trying to figure it out ever since....

RV: My God.

DSB: Pretty valuable these days... you need to look on e-bay, the prices on these things are going – well, up.

SR: Well, this is a worn – this is a loved copy.

RV: I corrupted you?

SR: I think the first decade, I couldn't really make much sense of it – I didn't have the foundation, didn't have the background.

DSB: Yes.

SR: I think that when you are a student of architecture, even if you take the kind of history classes that are available as an undergraduate, about the best you can do is just set the table. You know, it takes time, experience.

DSB: Yes.

SR: Here it is, in Mother's House: "Venturi himself believes the sectional preoccupation and overhead lighting are his own." He is talking here about Kahn's "urge to light spaces from above – and indeed to design in section – comes to Kahn only later, and is most beautifully developed in his later museums."

RV: (No response.)

SR: I personally find the Kimbell to be the building I often center on when I think of Kahn.

DSB: I suspect a lot of that detailing was done by someone else. I am not sure who... for example, could it have been Marshal...

RV: Marshal Meyers.

DSB: Yes. Marshal Meyers. He was one of those people who held Kahn's office together forever. His wife, Angel Meyers, is still alive. But she probably would have only sardonic, cynical things to say. But in any case, I suspect that detailing was probably done by Marshal. It's beautiful detailing, but it doesn't look like Lou.

SR: (Pause) It has some elements of complexity to it; that's for sure. And contradiction.

DSB: Yes.

SR: The idea of an arch. There, where we expect to find the compressive element of a keystone, light pours in – but of course, it is not an arch, it is a beam – but, of course, where the beam bears, light is also flowing in...

DSB: Yes, and it has the beginnings of taking a system and breaking it. But only in a very, very little way. He couldn't really grasp that as an interesting idea to become more involved with.

SR: Well, the topic is a challenging one to parse out, as I have already said. It is difficult to put a pedigree on an idea.

RV: Yes. Right.

SR: In these years, there is so much interaction between so many very historically significant and important people, I've begun to frame this – and I have been encouraged to think about it, by both Bill Whitaker and David Brownlee – as a larger thing. That yours was an influence on a larger community; Kahn would have been a part of that community.

DSB: What we are finding now is that there is a huge interest in our work in Europe among young architects. We had a journalist here from London a while back who was saying that at the AA – the school I was at – that the students there are interested in the Smithsons and in us, and that's it. Who knows how long that will be the case, but it is basically a reawakening of social interest, interest in the mapping techniques we have used, and also an interest in the early Las Vegas. So we are experiencing approaches from all directions to come talk about these things, write about them – we are getting it from all over the place, and really it is all quite nice – the whole discussion of 'postmodernism' has fallen away, and I think we are getting a better understanding of what we really stand for than we have ever had – but it is from another generation.

SR: That is very interesting.

DSB: We have had scholars from Holland, Switzerland, England, France, and then all the scholars from Princeton and the rest, and Rem Koolhaas's students, and so on.

SR: I have a broad question here about Kahn – do you think you, personally directly reignited Kahn’s interest in history?

RV: Yes. Yes I do definitely think so. I have written about that.

SR: Earlier, I was saying – well, the two of you come back from Rome, and major things start to happen. Big things happen. I have to wonder if you helped Kahn see another Rome. Rome anew – Rome through a different set of lenses.

RV: Yes, Yes. I do think so.

DSB: When Lou did those colored sketches – of Greece and of Rome –

SR: The travel sketches are interesting because they convey an interest in massing and in – as I say – he appears to be looking at a Rome, but not the same Rome that you were looking at.

DSB: That is what I was going to say. I think the travel sketches show Kahn’s way of seeing before Bob talked to him. Before he began to open his eyes to another way of looking at the same subject matter. He was doing all these sketches in colors he was quick to say did not exist – as if what he is interested in is light, that is what he is thinking about – he is trying to look at the different ways light is falling on these forms. He is now sort of ‘eyes wide open’ when Bob comes onto the scene.

RV: Yes, he went to the academy. But that was sort of my – he went there for a few months, visiting. You know, I feel guilty not having said much here – I feel jet lagged, but essentially what I want to say I feel I have already said best in what I have written on the subject. It’s all here in this book.

SR: Well, I thank you both very much...

DSB: Should he talk to Sue or Judy about the contacts?

RV: I think Judy might be the one.

DSB: Well, some of them might be in my contacts file. Also, Jeremy has compiled the big, comprehensive contacts file. So Judy can refer to that to see what she can find.

RV: If you could e-mail her a list, she could then work from that. You are in Philadelphia for how long?

SR: I leave in the morning.

RV: Oh, well. You might come back.

SR: I also think much of this might best be done with telephone interviews. Of course, I could and would come back, but many of these people are scattered across the country – the world, actually. I have so many people to talk to, and many will undoubtedly suggest others...

RV: Well, write down the names you have. We'll do what we can on our side. Let's have Judy come in and talk to us about this right now.

DSB: We have not managed to ask of you what else you do; this work you are doing now is undoubtedly taking up a great deal of time. It seems you are in practice? So this would be at best, a part time occupation.

SR: Yes. I have to carve out time to do this work.

DSB: Well, we do the same thing. Scholarly endeavors alongside practice. We wouldn't do it any other way, but it's not so easy.

SR: Well, I have been inspired by that. By you, actually.

DSB: People here in the office are not so inspired. They say it is a very expensive way to run a practice.

SR: Yes. Yes it is.

RV: I want to introduce you to Judy.

JG: Hello.

RV: He will give you a list of names we gave him, and we would like you to give him the contact information for those names. Anything you have.

DSB: Use Jeremy's new list. And I have also got a lot of stuff, some of it over twenty years old. Thank you, I have enjoyed both sets of our interactions...

RV: You want me to sign that book for you?

SR: Sure, I would love that – thank you.

RV: Since you're 'Sam', I'll be 'Bob'... Do you have a car?

SR: I rented a car. I toured your work this morning, what I could – I went by the Guild House, Mother's House, the North Penn Visiting Nursing Center.

RV: Oh, that (North Penn Visiting Nursing Center office building) is a disaster. It has been ruined. It is not the same. But it is very nice that the people who have had Mother's house for over decades, have taken such good care of it. They are good friends. I call architecture the most fragile medium – it has to be maintained, functions change over time, it gets added to, altered...

SR: Well, there is no substitute for visiting these places one has studied for years.

RV: Oh, yes.

SR: You can learn a given amount through books, photos, drawings, descriptions, but to understand architecture you have to spend time with it, actually with it, right? When you arrive at a place you have studied for years, it is always so different than you have it in your mind.

RV: Yes. Right.

SR: Particularly in the case of Mother's House. It is just so dramatic volumetrically, and I, at least, was not prepared for that – I had not sensed that from the many, many photos and drawings I have viewed of it...

RV: That's interesting.

SR: That front elevation is so iconic; it presents as such a two dimensional façade, it almost deceives – well, one is wholly unprepared for the volumetric drama, the sculptural power, the place, that is first revealed within that entry slot and all that is tightly woven into it.

RV: Yes. That photo, that famous photo with my mother and her flowers sitting in that entry... you know, another building - a shame, really... well, Steve Izenour, one of my very best friends, but a complete and total bastard in some ways, went to London and was in charge of the photographer who we spent thousands of dollars to send from America to photograph the Sainsbury Wing project. And he photographed it only when these double-decker busses came by – he thought that was so funny, and witty, and so these busses are in the foreground of every single photograph we got of that project. This is the one photograph we have where you can see more of the building behind a bus. And this elevation is so wonderful because you have the juxtaposition of the classical historical façade, the continuation of the older one, and then you also have the Mies Van de Rohe modernist frame integrated... I still love that building too, which we saw just last week. And the project in Toulouse, where we just were, that was great fun. You know, that building has never been published. It's out of fashion, I guess, but it beautifully appreciated in the city.

SR: It is a beautiful project.

RV: That, again, is also a context thing – it very much relates to the context – it is red brick within that city.

SR: And that is the other thing about visiting these projects; you can't fully understand much about the context without being there.

RV: Yes, absolutely. The context is significant.

SR: Seeing the Guild House in its setting was very useful for me.

RV: Yes, a very ordinary, conventional setting. It is so nice that that building has also been very well maintained by our clients. It is too bad that the ornamental TV antenna in the front had to be taken down, because people thought of it as vulgar. Sad. I think it is still visible in this photograph... yes, there it is. Beautifully maintained.

RV: If you would like to get into Mother's house, we can give them a call – they may be out of town, they live partly in Virginia and partly in Pennsylvania.

SR: Thank you for that, but Bill Whitaker already gave them a call and I think they are out of town. I will take my leave now – thank you for lunch, and for the opportunity to speak with both of you.

RV: Thank you for coming, and good luck, and I look forward to – not that I read much any more –

SR: Well, I still have a lot more interviewing to do, and lots of sorting out – perhaps I will have a few more questions of you downstream.

RV: Sure, absolutely. By all means, and I will be 'unjetlagged.' Well, it has been a pleasure - good luck with everything.

APPENDIX D

Interviews with Nicholas Gianopulos,

October 2, 2007

SR: I have a lot of evidence, pretty consistent, but it is mostly anecdotal and circumstantial. Although in some cases, the lack of evidence seems to become a kind of evidence, as in the absence of documents related to Tyng in Kahn's records. Citing your statements will help there, because you are a direct source – you were there - but if your statements include specifics that shore up their document-ability, so much the better.

NG: I have strong feelings about this topic. Historians are skewing the relationship between Kahn and Venturi. They are casting Bob as a protégé of Lou, and I never saw it that way, not ever. Bob did have a strong influence on Kahn, and on his work. I can give you case histories of that.

SR: Earlier, we discussed that there is 'something more' to this than the mere exchange of specific architectural ideas. By that, I mean both Kahn's move away from Tyng toward Venturi and Kahn's reawakening of interest in architectural history. Any support you can offer there - you already have, but the deeper I can go here the better - would be invaluable to my work.

NG: Yes. There is something larger than that. It seems to me, has always seemed to me, that up until that time, Lou was so strongly under the influence of Tyng. Once Bob came into the picture, Lou started to drift away from Tyng." One Sunday afternoon, we were all talking about a synagogue in West Oak Lane – one of the projects that died, never got built. It was some rotated-tetrahedron type of thing. Bob – and Bob never, never was off-putting or rude in any way – said to Lou, quite earnestly, "Lou, I think there are other ways of expressing what you want to express here." It stopped Lou, gave him pause. We were associated with Komendant on the Olivetti project, and one afternoon, I drove Lou up to Komendant's house, about ninety miles north of

town. We sat on the deck, got fairly sauced. Komendant posed to Lou the question “What do you think of Romaldo Giurgola?” Lou said many nice things; very competent designer, etc. Komendant then asked, “What do you think of Venturi?” Kahn paused, and said “Venturi is an architect. He is an architect, through and through. He knows architecture; knows what it was, knows what it is, knows what it will be.” I am the lone living witness to that event. Bob should be acknowledged for his contributions at that time. He has not been. Carter (Wiseman) and Bob never hit it off. And Bob had problems with some of Carter’s previous book, so I don’t think he got much help with this one.⁴²

January 3, 2008

NG: Your e-mail mentions having anecdotal and circumstantial evidence, no hard evidence. Well, I don’t think you will ever have anything much more than that here.

SR: There is no proof that I am finding, but there is a great deal of evidence.

NG: Well, yes. There is one thing that I will go and get some photos of, that show how Lou very quickly changed from the “International School”. The dormitory at Bryn Mawr, Lou is moving into a historicist... everyone says it looks like the citadel in France or a Scottish castle and so on, but there is something there I find quite interesting. You walk into the central space and there is a freestanding fireplace with its back to you, beautifully crafted, beautiful clean masonry work. Above the fireplace is a Jack arch. You know, a flat beveled arch. Then, above that, there is a segmental circular arch. It is a redundancy, a play on structural elements. And it is similar to something Furness did at a much larger scale at his art museum, above some knock-out masonry panels designed to accommodate future expansion of the museum. It was as though Kahn turned a magnifying glass around and borrowed the whole thing at a reduced scale. This was nothing like the way Lou had been working. This was just after Dacca. Dacca was ‘64, ‘65, and Bryn Mawr came just after that, In Dacca he did something that I don’t think he would have ever done before. He

⁴² Referring to Carter Wiseman’s recent book *Louis I. Kahn: Beyond Time and Style*.

has these offices off of the quadrant in the corner of the assembly chamber, where he intermixes the use of exterior, linear bearing walls, but on the inboard he introduces freestanding columns. That was the first time we saw him use columns in conjunction with bearing walls... he had always steered away from – well, he had either used either all walls or all columns. I think this relative freedom of thought was a result of his working with Bob, because Bob was always emphasizing how in the work we admire of the past, there was nothing pure. His whole complexity and contradiction argument... you go back to all the buildings we admire, and architects had no problems with ‘hoking them up.’ These are subtle things, but I think they came from his relationship with Bob.

I was not a party to Venturi’s relationship ending with Lou – would rather not discuss what I don’t know. I try to steer away from all that – you know, we work with all these people, and we have a level of trust there. I’m not a party to the correspondence.

You’ve read the latest book on Kahn, by Carter Wiseman? I’ve been trying to get Wiseman and Bob together, but Bob won’t have a part of it.

SR: There is Wiseman’s book just out, and also McCarter’s. Neither of them acknowledges what we are talking about here at all.

NG: No. No. No. Not at all. I talked to Carter about all this. I did emphasize all this to Wiseman. I told him about the West Oak Lane synagogue project that we talked about earlier. Lou was at a party on a Sunday in West Oak Lane that I was at with my wife, and Lou asked us to give him a ride to his office for a meeting – then he asked my wife to go on without me because he wanted me to come up and meet a fellow in his office – and that was when I met Bob. Lou had a study model of the synagogue project, and that is when that exchange I talked to you about occurred. Lou just held it up in front of Bob, not asking for a crit, but implying that was what he wanted. Several moments of silence passed, and Bob finally said, “I think I know where you are

trying to go here...” I never saw that model again. You know that big Swiss compilation book of Kahn’s work – I don’t think that project is even listed in there. It may be. I don’t think so.

SR: Returning for a moment to that fireplace at Bryn Mawr – you say this ties back to...

NG: I think Bob’s philosophy that you can use elements that that seem logical and pleasing to you without being accused of plagiarizing.

SR: And now Lou is borrowing a historical element from Furness and using it at the Bryn Mawr dorm.

NG: Lou lived amongst the Furness work, and he was a great admirer of Furness. Furness was one of his idols – when they were going to tear down his bank building, Lou said “I would rather see them tear down Independence Hall than that building.” Bob felt the same way about Furness. Here in Philadelphia, Furness is a deity, as you know.

SR: And you would be willing to take some photographs...

NG: Yes, I will get those for you. I live close to the dormitory. And I’ll go out to Penn and get that detail wall that Furness did. There is also a Unitarian church here that Furness did, that has some windows over the fireplace. Not with the clarity that Lou has in the Esherick house or at a big scale the Unitarian Church at Rochester, but we believe that is a Furness derived detail. My partner, Tom Leidigh, did the Esherick house. He did a lot of Kahn’s projects, but none for Bob. He and I split up a lot of the larger projects working with Kahn – we both worked on Dacca, that sort of thing.

SR: Is he available to talk to?

NG: (Gets contact information)

SR: I’m interested in this historicist line in Kahn’s work tracing back to Furness, because I think that in itself shows Kahn looking at historical precedents more...

NG: You know, we worked for Lou for 22 years. We used to have a lot of interesting lunches, bull sessions, and so on. And I remember one time he brings back this section of extruded steel handrail from La Jolla, the Salk project. Big, heavy piece of steel he brought back in his luggage. He says, “Just look at that – it looks five hundred years old.” These were not the kind of things you were accustomed to hearing from Lou, because over the years he had never made these verbal allusions to historicity.

SR: Well, yes, that shift in his outlook is something everyone acknowledges, but most historians want to attribute it to his trip to Europe right about then. But he had been to Europe, was well educated in history, was classically trained, had a beaux-arts education. None of that was new to him – but what was new was the presence of Venturi, and Venturi’s ideas. It may have been something else in the wind around Kahn at the time, but it seems that Venturi was at the forefront, if not the only voice advancing those ideas in his circle...

NG: Bob was the only one. He was the only architect in Philadelphia talking about history in any kind of analytical way. We had some art history professors out at Penn, and some good art historians, like Dave Robb and Garrison and those fellows. But they were just analyzing historical buildings in the context of their own time and period.

SR: Then Bob took the whole deck of cards and shuffled it, dealing out historical examples from unrelated periods and looking at their implications for contemporary work.

NG: When he was working on *Complexity and Contradiction*, he would stop by the house on weekends, and ask “what do you think of this” and I barely knew what he was talking about... fifteen years later, I began to understand.

APPENDIX E

A WORM'S EYE VIEW OF RECENT ARCHITECTURAL HISTORY

(Selected Excerpt)

Denise Scott Brown

There was at this time another influence on Kahn that, in his late years, would prove to be stronger than the Brutalists, Kahn's Beaux-Arts training, or his experience in Rome, although it was linked to the latter. This was the ideas of Robert Venturi. Bob was 22 and working for the summer for the architect Robert Montgomery Brown when he first met Lou Kahn. Brown and Kahn had offices in the same building; Bob saw Lou in the elevator, he says Lou was the only architect in his firm to notice a quiet college grad. That was in 1947. In 1950 Bob invited Kahn to be on his thesis jury at Princeton. Each was impressed with the performance of the other and Kahn bore the younger architect in mind. After Bob had worked for Oscar Stonorov for a year, Kahn recommended him to Eero Saarinen and Bob spent the next two and a half years in Saarinen's office. Kahn was on the jury when Bob won the Rome Prize. On his return in 1956, Bob worked for Kahn for nine months. At the same time he was Lou's teaching assistant at Penn. In 1957 Bob left Kahn's office to start his own practice. He and Kahn were on the faculty at Penn and maintained the friendship that was cemented when Bob returned from Rome. They talked a great deal. Bob was often in Lou's office to give crits. He shared his recent experience in Rome with the older architect and it is probably from these talks that Lou's real interest in history as source material dates, despite the earlier and beautiful historical sketches that he made while in Europe. Bob's ideas and the source buildings he discussed with Lou were later to have circulation in *Complexity and Contradiction in Architecture*. Bob's admiration for Lou was ungrudging.

Kahn had a need to use colleagues, often younger architects, as a sounding board for his ideas. Visiting students would be accorded precious time in his office while frustrated draftspeople waited. As a young faculty member, I was, on occasion, the recipient of long, one-sided telephone calls from Lou. A Philadelphia architect, Santo Lipari, seems to have been another friend for late evening conversations. Philadelphia taxi drivers, who were his local conveyance, tell of Lou's extended monologues while riding home at night. His two afternoons a week at Penn probably provided the most creative outlet for this need. Studio was an important buttress of Lou's emotional life. I met him at Penn on the day President Kennedy was killed. This was a Friday and not Kahn's regular studio day, but he came to Penn when he heard the news because that was where he wanted to be.

The communication did not go only one way. Although Lou appeared to do most of the talking, he got ideas from his students and young colleagues, just as he had earlier from Fuller, Le Ricolais, and Tyng. I know this personally to be true as I was surprised (and flattered) to hear Lou deliver as his own, thoughts that I had shared with him. Two that come to mind are, "campus architecture should be kickable," and "every architect puts a chapel somewhere in each building." I noticed too that my suggestions were included in a revised version of the site plan for the Salk center.

Therefore I believe Bob's claim that, despite his initial position as a disciple and protégé of Lou, the architectural influences went in both directions; that is, that Bob taught Lou as much as he learned from him and that the last phase of Kahn's architectural career should be seen as under the influence of Venturi. This influence was not so much upon the vocabulary as upon the relationship of forms. In particular, Lou learned from Bob about Mannerist exception, distortion, and inflection in form. He learned "his" philosophy of light in buildings, as well as the notion of a "thing in a thing." Through Bob, he investigated the layering of enclosed spaces and the layered juxtapositions

of walls and openings, and he discovered that windows could be holes in the wall again. He played on these themes in his important late buildings, particularly those in Dacca.

The borrowings were never acknowledged. Kahn acknowledged the collaboration of Tyng in print. The only influence I ever heard him acknowledge verbally was Le Corbusier's. During the Depression Kahn was among the many unemployed architects who were sustained by Federal projects. His assignment involved library research which led him to read and examine all the works of Le Corbusier. He said this was his starting point as a Modern architect.

Lou was a great artist. The influences I have described probably account for the changes that were visible in his architecture over the years, but they were well incorporated. The work is one and it is his. Nevertheless, the sources and influences should be known and understood by architectural historians and architects. The Solitary Genius theory of architecture is usually a distortion that does violence to the facts and harms the profession, particularly the students and young architects.

The fact that Lou acknowledged few of his borrowings and probably not the most important ones, finally clouded the friendship between Bob and Lou. Their work had already diverged. Although Bob's modest practice limited his opportunities to use the ideas he had shared with Lou, when such opportunities came, Bob proved that he was not merely "Squashed Kahn." When Bob and I took the road to symbolism by turning to Las Vegas, there was no way for Kahn to follow. The older architect was perplexed at the younger's disaffection. He tried to discover its cause. He sent a message to Bob that there was "truth" in Las Vegas. When Lou died, Bob cried. I think he felt he had lost an architectural mother.⁴³

⁴³ Scott Brown, Denise, "*A worm's eye view of recent architectural history*", *Architectural Record* 171, February 1984

APPENDIX F

THOUGHTS ABOUT EVOLVING TEACHERS AND STUDENTS

Robert Venturi

The final test of an artist, to put it simply, is: Is he right and is he good? And certainly there is a “right” quality in the heroism of Louis Kahn, as so evident when we review his work from the vantage point of now and consider it in the context of then – as we consider his architecture as reflecting the can-do America of then, in the fifties and sixties, and as characterized by confidence, optimism, know-how – by idealism – when we were on top of the world and before the American economy, social sensibility, and just plain will had succumbed to excesses of military-industrial complexity, decadent capitalism, and John Kenneth Galbraith’s *Culture of Contentment*: Kahn’s heroic architecture was valid for his time – right as well as good.

And from this viewpoint Louis Kahn might be the last relevant Modernist among the great architects of our century – as well as in some ways the first after-modernist. But it is also right, as I look back explicitly through my own subjective eyes, that *our* emerging approach, that of Denise Scott Brown and myself, was right – that approach of us young architects of that time about to be mature architects of the next time. I was called an anti-hero then, sympathetically, by Vincent Scully – while at the same time our work was labeled ugly and ordinary by Gordon Bunshaft; we took this phrase as a compliment, considering the source, and adopted it. And the bases of our architecture do now appear far more evolutionary than revolutionary, pragmatic than progressive, familiar than original, ornamental than articulated, realist than idealist, vernacular than formal, symbolic as well as formal. And our buildings were elemental in their symbolism and their art; they looked familiar *and* different, ordinary *and* good, the little houses looked like houses and they even had windows; the fire stations reminded you of something – of fire stations actually, rather than exhibitionist fragments of

late Corbu or correct manifestations of Mies exposing their structure out of context – as fire stations of young architects tended to look at that time. (In a later time they might look like an explosion in a Cubist sculpture exhibition: have you looked at Zaha Hadid’s Fire Station while envisioning the regular guys who are going to inhabit it and work in it erectly? The heroic and original tradition lives on!) *Our* starting points included urban sprawl, commercial strips, and even Main Street, and if Kahn’s urban planning acknowledged existing fabric – as opposed to that of Frank Lloyd Wright, the Emersonian individualist, who remade the American city in his own motival image, or that of Le Corbusier, the heroic revolutionary, who demolished the historic city to begin all over again – Kahn’s intrusions within the existing fabric could be nevertheless heroic and utopian, as in monumental public parking garages resembling the turrets of medieval fortresses. Perhaps Denise Scott Brown’s and my evolving approach to architecture and urbanism reflected Nathaniel Hawthorne’s somber view that “a hero cannot be a hero unless in an heroic world.”

As Kahn’s young students we were able to evolve out of him – to learn from his sensibility concerning the condition of this time of then and to attune ours anticipating the quality of our time to come – acknowledging ambiguity and mannerism and pragmatism – to do as Kahn did as he evolved out of Paul Cret, Le Corbusier, Buckminster Fuller, and also out of his own students toward his way.

It is moving to remember his thrilling revelations of the building not as a floating frame but as walls – walls sitting on the ground and with holes in them – and of servant spaces acknowledging hierarchies of space, and of *poché* in plan; these revelations of then seem ordinary now, but this proves their ultimate force and significance. It is also touching to recall Kahn’s saying to Denise Scott Brown “There is truth in Las Vegas” and to recall his conversion to historical analogy as an element of architecture in terms of its process and substance.⁴⁴

⁴⁴ Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture*. MIT Press, 1996 p. 85

APPENDIX G

LOUIS KAHN REMEMBERED

Notes from a lecture at the opening of the Kahn Exhibition in Japan, January 1993

Robert Venturi

Here is a short and subjective view of Louis Kahn's work – or rather, three perspectives of his work – as I am reminded of it in the current exhibition designed by Arata Isozaki. I refer to Kahn in the context of his own time, Kahn from the perspective of now, and inevitably Kahn in relation to me as an architect then and now – in short, as I saw Kahn then and see him now.

But I have to add that reconstructing how we saw Kahn and his work then is difficult: the recent past is the hardest time to recapture and perceive when you are focusing on issues of taste and sensibility. For this reason I shall employ the comparative method – contrasting what Kahn was and is, as I see it, with what he was not.

Also, it is important that an underlying assumption, basic to this analysis, is: Kahn was and is a great architect; that is, he was good and right. He was also a great teacher; I speak, I think as a true student of Kahn – that is, not as a follower but as one who evolved out of him and his work – was liberated by him rather than converted by him.

Some characteristics of Kahn's work, as I see them in the context of then from the perspective of now, and employing comparisons:

- Kahn's architectural vocabulary was UNIVERSAL; it evolved and developed over time but at any one time it was essentially consistent – the same, simultaneously, for example, for a library for a northeastern boarding school in the United States like Phillips Exeter Academy and for a national parliament building in Bangladesh. His vocabulary was rich, but not

eclectic – essentially not accommodating to a particular function or to context as ethos of a place.

In this way Kahn's architecture was very much of its time and within the Modern architectural tradition, one of the ideals of which was a universal system applicable in a single unified world whose basis was an order derived from industrial technical forms – very different from our multicultural view today, where ironically elements of universalism are most vividly evident in Pop culture and in fast food imagery promoted via electronic communication and multinational corporations.

- Kahn's architectural vocabulary was essentially one promoting FORM – essentially geometrical, sculptural, abstract – a vocabulary therefore not involving symbol and thereby accommodating again to Modernist tradition. Do you remember Le Corbusier's definition of architecture as “the play, magnificent and just, of pure forms in light?” But Kahn's approach at the same time was not classic Modern because of the quality of MASS characteristic of his form and its deviation from a Modernist emphasis on frame. This approach was most striking in the context of his time, although it paralleled that of the *béton brut* forms of late Le Corbusier.
- And Kahn's vocabulary of mass eschewed ORNAMENT – or at least explicit or applied ornament. What could be called ornament for him derived almost incidentally from function-structural detail involving texture deriving in turn from materials, joints, etc. It could never be explicitly symbolic, graphic, or lyrical. In the context of the fifties and sixties this was not unconventional, where articulation was substituted for ornament.
- And the expression of Kahn's forms as mass was HEROIC and ORIGINAL – as opposed to ordinary and conventional. Allusions that were populist or vernacular were unthinkable, although Kahn's gentle early houses of the forties and early fifties might exemplify kinds of

ordinary-Modernist conventions. Architecture was to be essentially a vehicle for promoting the progressive and attaining the ideal. And again this approach was of its time, when being original was equated with being creative. For example, the Market Street North project in Philadelphia does not exemplify the Corbusian revolutionary idea of the Ville Radieuse with its superblocks without reference to historical or local context, but Kahn's spatial intrusions within the existing fabric of the American gridiron plan were in themselves heroic, as were those castle-like forms of the parking garages.

- The element of BIG SCALE: scale that is heroic predominates within these forms, although it is sensitively balanced by small-scale elements within the composition.
- The EXCLUSION OF SHELTER: the heroic sculptural quality of late-Kahn architecture precluded any expression of architecture as shelter. This is ironic because Kahn's return to archaic basics would seem to encourage an acknowledgement of such an elemental quality of architecture – as is evident in the generic archaic temple.
- STRUCTURAL and GEOMETRIC RHETORIC was prominent in Kahn's work of the fifties as he was fascinated and influenced by Buckminster Fuller's and Anne Tyng's ideas, but this element diminished in the sixties with his later orientation toward sculpture and mass.
- THEORY: the prominent theoretical basis of Kahn's work as he enunciated it in the last part of his career involved equivalents of the HISTORIC, ORIGINAL, and UNIVERSAL vocabulary of his form. His emphasis on esoteric metaphysical pronouncements concerning mind, spirit, body, and timeless universal absolutes involved things as they should be rather than as they are, and his contemporary and parallel historical reference focused on the archaic heroics of form. Historical reference I was into too, but I embraced a wider range of historical examples and prototypes that I employed as analogy for analysis. My personal

feeling as an artist is one of uneasiness concerning this later aspect of Kahn's stance. I think such fundamental dimensions you embrace not by striving for them explicitly as an artist but by thinking pragmatically about immediate things and achieving them incidentally. It's for others, perhaps, to perceive the sublime and lyricize over it after the job is done. That stuff will take care of itself if you've done a good job of art.

These characteristics of Kahn's forms I have briefly enumerated as I see them in the context of his time and from my perspective now. Here are some other characteristics of Kahn's architecture described as elements that I love and have learned from:

- **HIERARCHICAL SPACE:** What a glorious revelation the **SERVANT SPACE** was, with its hierarchical implications and functional acknowledgement of mechanical equipment as implied *poché* for now. And its implications were stupendous for enriching programmatic-generic space – especially after the naïve promotion of mechanical equipment as sculpture deriving from the machine aesthetic – which is currently in as a substitute for ornament.
- **The IDEA OF THE ROOM:** enclosure is OK, indeed valid and enriching. It is hard to comprehend how original this idea was: after the domination of Modern flowing space, enclosure was shocking.
- **The WALL:** sitting on the ground rather than as a floating plane on a frame. Believe me, that deserves a Wow! – hard as it is to believe now: it allow us, Denise Scott Brown and me, to acknowledge Pop-vernacular for instance!
- **HOLES IN WALLS:** rather than total interruption of walls – although Kahn was too Modern to stomach the conventional image of the window in his heroic work, he did so in some of his local residential work in Philadelphia. This characteristic in his work evolved out of abolishing the frame wall and was most influential on my work.
- **LAYERS:** spatial layering *had* been taboo because it promoted redundancy.

- **BREAKING THE ORDER:** this happened near the end of Kahn's career, but his exceptions were not anguished or mannerist.

It is hard to see from the perspective of today how these elements were shocking in the context of then. And here Lou was sublime in his influence as he liberated young architects and expanded our sensibilities.

It is hard also to reveal that some of the characteristics of Kahn's, described above represent influences of Denise Scott Brown and myself rather than on Denise Scott Brown and myself – exemplifying a not uncommon case of the son informing the father. Denise has written of this issue elsewhere (“A Worm’s Eye View of Recent Architectural History,” *Architectural Record*, February 1984), and I shall note here that Kahn learned from me concerning the elements of layering, holes in walls, and breaking the order described above; his use of inflection in the case of the pavilions in the Salk Center complex derives also from my critique.

And Kahn's use of **HISTORICAL REFERENCE** in the fifties and sixties is usually attributed to the influence of his early Beaux-Arts training at the University of Pennsylvania and his impressions from his stay at the American Academy in Rome in the early fifties. But I think it derived more from me when I was close to Kahn in the late fifties and early sixties – during the end, let's not forget, of his fifties geometric-structural period dominated by the ideas of Buckminster Fuller and Anne Tyng. And my use of historical analogy as a part of the analytical process of design derived in turn from my Princeton education in the forties as a student of Jan Labatut and Donald Drew Egbert, where Modernism was recognized as a valid movement within the history of Western architecture and not as an end of history. And it is sad to note that historical analogy as analytical method, employed in *Complexity and Contradiction in Architecture* which I was writing in the early sixties, was later misinterpreted (but never by Kahn) as a form of stylistic promotion by later so-called Postmodernists: perhaps if you're good, you're misunderstood!

I have described Kahn's more original than referential, more heroic than ordinary, more formal than symbolic kind of architecture, while Denise Scott Brown and I began in the sixties to look at everyday roadside sprawl more than correctly abstracted ruins and to practice a pragmatism, an anguished realism that included an acknowledged symbolism – itself an approach with a valid tradition where the subject in art can be not gods in Arcadia but bohemians in cafes or Dutch burghers as genre.⁴⁵

⁴⁵ Venturi, Robert, Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture*. MIT Press, 1996 p. 87

APPENDIX H

SELECTED ANNOTATED BIBLIOGRAPHY

Brownlee, David B. & De Long, David G. *Louis I. Kahn: In the Realm of Architecture*
Museum of Modern Art, 1997

In my opinion, any inquiry into the literature concerning Kahn would be well served by beginning here. The authors have been quoted in this paper extensively. They discuss the influence of Venturi on Kahn, as noted above, although they stop short of the argument advanced in this paper (the interview with Dr. Brownlee sheds some light on why).

Brownlee, David B., De Long, David G., & Hiesinger, Kathryn B. *Out of the Ordinary: The Architecture and Design of Robert Venturi, Denise Scott Brown and Associates.*
Philadelphia Museum of Art, 2001

Perhaps the best general reference available for Scott Brown and Venturi, and also a rich source of information about the interactions between Kahn and Venturi early in Venturi's career.

Cook, John W. & Klotz, Heinrich. *Conversations with Architects.*
Praeger Publishers, 1973

This book consists primarily of transcripts of interviews with eight leading architects of the time, including Louis Kahn and Denise Scott Brown with Robert Venturi. The interviews occur nearly a decade after Kahn and Venturi had parted company and their careers had taken them on dramatically different paths.

Forty, Adrian. *Words and Buildings: A Vocabulary of Modern Architecture*.

Thames & Hudson, 2000

Forty includes a chapter on Context in this book, in which he notes that “the terms ‘context’, ‘contextual’, and ‘contextualism’ were part of the first substantial critique of modernist practice, and might on that account be classed as postmodernist terms.” Forty dates the first architectural use of the term back to Italy in the mid-50s, but the first appearance of the notion of context in architectural design appears to be with Robert Venturi’s MFA thesis at Princeton, *Context in Architectural Composition*, presented in 1950.” I corresponded with Forty concerning Venturi’s earlier use of the term, and he replied “Thanks for this. I didn’t know about Venturi’s dissertation, so have obviously missed an important source...” Forty’s book directly, if unintentionally, lends support to Venturi’s claim that his was the first articulation of the idea of ‘context’ as a viable theoretical concept in architectural, and it also correctly notes how contrary to the prevailing norm of modernism the concept was at that time. Louis Kahn was on Venturi’s master’s thesis jury, placing him front row center to internalize what Venturi presented.

Frampton, Kenneth. *Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture* Massachusetts Institute of Technology, 1995

Frampton devotes a chapter to Kahn here, where he writes extensively about the influence of Buckminster Fuller and Anne Tyng on Kahn, but avoids any substantial discussion of Kahn’s subsequent renewal of interest in history (and never mentions Venturi). Perhaps coincidentally, his relationship with Scott Brown and Venturi has been less than cordial; Denise Scott Brown’s treatment of Frampton (Pop Off: Reply to Kenneth Frampton) in *A View from the Campidoglio* makes this clear.

Gast, Klaus-Peter. *Louis I. Kahn: The Idea of Order*.

Birkhäuser, 2001

This book is a study of the geometric and proportional systems found in Kahn's architecture. Appropriately enough, there is a foreword by Anne Tyng.

Goldhagen, Sarah Williams. *Louis Kahn's Situated Modernism*.

Yale University Press, 2001

Goldhagen contributes a thoughtful and well researched work embodying a wealth of information and insights. The title might suggest a sympathetic view toward Venturi's influence on Kahn with respect to context, but she does not delve into the role of Venturi on Kahn's "situational" interpretation of Modernism. She acknowledges Venturi's presence and infers the potential influence of both Venturi and Charles Moore on Kahn, somewhat emphasizing the latter.

Johnson, Eugene J. and Lewis, Michael J. *Drawn From the Source: The Travel Sketches of Louis I. Kahn*.

MIT Press, 1996

This book is a careful and thoughtful analysis of the Kahn's travel drawings that includes rich biographical background research on Kahn's life. Venturi's potential role is mentioned.

Larson, Kent. *Unbuilt Masterworks: Louis I. Kahn*.

Monacelli, 2000

This book is a compilation of digitally modeled and rendered Kahn projects that were never built. It includes numerous examples of architectural elements that suggest the influence of Venturi, two of which I include in this paper.

Latour, Alessandra. *Louis I. Kahn: l'uomo, il maestro*

Edizioni Kappa, 1986

Latour compiles a rich collection of perspectives on Kahn in this book. It includes a chapter by Kenneth Frampton, wherein he explains Kahn's interest in history as simply owing to a distant figure of that history: "...it seems that Piranesi was the essential catalyst which enabled Kahn to synthesize two otherwise irreconcilable aspects of his art: on the one hand, his constant preoccupation with the technical and tectonic authority of the constituent elements from which building had to be compounded – the ducts and piers of service and support; on the other, the capacity to combine and recombine the ruined fragments of a lost heroic past..." Frampton recognizes Kahn's interest in architectural history as a constant in his late career, and also acknowledges that Kahn's mature work represents a synthesis of opposing (abstract and historical) forces (that I see as an obvious reflection of the influences of Tyng and Venturi, respectively).

Latour, Alessandra. *Louis I. Kahn: Writings, Lectures, Interviews*

Rizzoli, 1991

As the title suggests, this is a collection of previously published writings, lectures and interviews of Kahn. It appears to be a comprehensive collection spanning his career.

Leslie, Thomas. *Louis I. Kahn: Building Art, Building Science.*

Braziller, 2005

This book focuses on the innovative technologies and engineering that were required, and achieved, in Kahn's architecture.

Lobell, John. *A Lucid Mystic Helped Transform Our Architecture.*

Smithsonian, July 1979, Volume 10, Number 4

Lobell teaches a class at Pratt about Kahn and Venturi, and was a student of both at Penn.

This paper is mostly focused on Kahn and his role in architectural history.

Lobell, John. *Between Silence and Light: Spirit in the Architecture of Louis I. Kahn.*

Shambhala 1979

In the front of this book, Lobell places selections of Kahn's poetic oratories adjacent to minimalist photographs of his architecture. (The column and wall idea that Venturi claims was his idea is on page 42.) The balance of the book consists of general summaries of selected Kahn projects and a brief biography.

Lobell, John. *Kahn and Venturi: An Architecture of Being-in-Context.*

Artform, Summer 1977

This paper articulates Lobell's observations about Kahn and Venturi being nearly perfect complimentary opposites of one another.

Loud, Patricia Cummings. *The Art Museums of Louis I. Kahn.*

Duke University Press, 1989

This book offers detailed treatment of the Yale University Art Gallery, the Kimbell Art Museum, and the Yale Center for British Art. The chapter on the Yale University Art Gallery discusses the influence of Tyng.

McCarter, Robert. *Louis I. Kahn*.

Phiadon Press, 2005

McCarter mentions Venturi but twice in his 500 page book, once dismissively as a ‘post-modern historicist’ and once in passing within a list of faculty at Penn (where he states the faculty “had a profound influence on Kahn” but does not elaborate beyond claiming Norman Rice and Robert Le Ricolais were the only important influences). This book features an excellent chronology of Kahn’s projects by William Whitaker, curator of the Architectural Archives at Penn.

Mead, Christopher. *The Architecture of Robert Venturi*.

University of New Mexico Press, 1989

Although now somewhat dated, this book was written well after Venturi’s interactions with Kahn and although Venturi’s role re-introducing history and Kahn are both discussed, there is no connection drawn between the two.

Ngo, Dung. *Louis I. Kahn: Conversations with Students*, 2nd Edition.

Rice University School of Architecture, 1998

This book portrays Kahn as visionary mentoring students who sit reverently at his feet. It is written basically in a question and answer format, where a question serves as a chapter heading.

Progressive Architecture, April 1961

The Philadelphia School

Progressive Architecture virtually dedicated the April 1961 issue to events unfolding at Penn: both Kahn and the term 'Philadelphia School' were elevated to celebrity status in the mainstream architectural press. The issue discussed the roles of many key figures, including Perkins, Le Ricolais, Komendant, Venturi, Giurgola, Geddes, and above all, Kahn as their unofficial leader. The segment begins by lamenting the "prevalent confusion and aimlessness in today's architectural design philosophy" and the "spiritual vacuum" in the profession of architecture – as a lead-in to an exposition of photographs, drawings, sketches, and interviews of Kahn. Far more than affording Kahn enormous exposure and credibility, this article framed his architectural 'philosophy' as a way for the profession to recover its relevance and substance. Twenty-some pages later, Giurgola, Venturi, Le Ricolais, and Geddes begin to share brief appearances in print, but within in the larger context of Kahn's architectural vision. The article concludes:

"The similarity of architectural expression that is clearly visible in the work of those who think like Kahn, indicates that this approach need not be limited and should not be considered as one man's personal expression, but should be regarded as having a universal validity. From examinations of the various projects, it is evident that there are infinite possibilities of individual solutions and expressions inherent in this approach. This heralds an exciting new period in architecture, a new renaissance, which could prove to be as important in the history of architectural development as the emergence of the Chicago School in the late 19th century. Since this new movement stems from Philadelphia, it can be said that we are witnessing the birth of a new school in architectural thinking, the Philadelphia School."

Progressive Architecture, April 1976

Philadelphia's Phantom School

In the April of 1976 Progressive Architecture published a retrospective article that, with the benefit of fifteen years of historical hindsight, offered a critically tempered step back from the exuberance of 1961; claims of the impact of “The Philadelphia School” are more restrained and the role of Venturi is significantly more prominent. Kahn and Venturi’s fundamental differences with respect to questions of ‘meaning’ in architecture are discussed, as are their respective influences on the profession at large.

Ronner, Heinz, and Jhaveri, Sharad. *Louis I. Kahn – Complete Work 1935-1974*

Birkhäuser, 1977

This large format book was compiled as a complete catalog of Kahn projects. It is considered a standard reference for drawings and a must-have resource for a Kahn scholar on the basis of the exhaustive graphic content alone. The writing component of the book is poorly written and unreliable, however.

Rykwert, Joseph. *Louis Kahn*.

Abrahms, 2001

This large format book features recent photography of Kahn’s projects, and is a visual delight. The writing explains the various projects, and though it does not go into depth with Kahn or his work, it provides a general overview of Kahn’s late career.

Saito, Yutaka. *Louis I. Kahn: Houses*.

Toto, 2003

As the title suggests, this book looks exclusively at Kahn's residential projects. The suggestion of any creative force other than Kahn as a factor in their histories seems outside the scope of the book.

Schwartz, Frederic. *Mother's House*.

Rizzoli, 1992

This book traces the development of the Vanna Venturi house over a period of time crucial to the argument of this paper, and has a wealth of related information, as evidenced by the numerous times it is cited.

Scott Brown, Denise. "*A worm's eye view of recent architectural history.*"

Architectural Record, February 1984

Scott Brown here recalls her version of the interactions she observed between Kahn and Venturi.

Scully, Vincent. *Louis I. Kahn*.

Braziller, 1962

By 1962, Kahn had become important enough that Scully wrote a book about him. At this point, Scully seems unaware of Venturi's significance in Kahn's development, and there is no mention of him in this writing.

Twombly, Robert. *Louis Kahn: Essential Texts*.

W. W. Norton & Co., 2003

This book is another compilation of Kahn's writings and lectures, but it draws from the Architectural Archives at the University of Pennsylvania and does not rely exclusively on previously published material.

Tyng, Alexandra. *Beginnings: Louis I. Kahn's Philosophy of Architecture*

New York: John Wiley & Sons, 1984

Alexandra Tyng is the daughter of Anne Tyng and Louis Kahn. She wrote a more personal biography of her father and his career.

Tyng, Anne Griswold. *Louis Kahn to Anne Tyng: The Rome Letters 1953-1954*

Rizzoli, 1997

Tyng's compilation of letters from Kahn offer highly poignant and personal insights into Kahn and their relationship. She supplements the letters with her recollections of Kahn and those years of her life. Kahn's reluctance to credit the work of others or to acknowledge their influence on his work is illuminated here. (Tyng's letters to Kahn were apparently destroyed.)

Tzonis, Alexander. *The Louis I. Kahn Archive: The Completely Illustrated Catalogue of the Drawings in the Louis I. Kahn Collection* Garland Architectural Archives, 1987

This is the best reference for Kahn drawings outside of the Architectural Archives at the University of Pennsylvania.

Venturi, Robert. *Complexity and Contradiction in Architecture*.

Museum of Modern Art, 1966

Venturi's first book was developed as a formalization of the theory classes he was teaching at Penn and Yale. He mentions Kahn at various times in the body of the text, but not at the end of the book, where he provided brief summaries of projects he had completed at that time.

Venturi, Robert. *Iconography and Electronics Upon a Generic Architecture*.

MIT Press, 1996

This more personal collection of papers, articles, and essays by Venturi contain the only two incidents of Venturi writing about his relationship with Kahn.

Venturi, Robert, & Scott Brown, Denise. *Architecture as Signs and Systems*.

Belknap Press, 2004

This book is a retrospective collection of essays authored by either Venturi or Scott Brown. It offers insights into many topics that have been of professional interest to them over the course of their careers, including those addressed in this paper.

Wiseman, Carter. *Louis I. Kahn: Beyond Time and Style*

New York: W. W. Norton & Co., 2007

This is another book dedicated to Kahn that largely ignores Venturi. In this case, Wiseman evidently made this decision intentionally (Refer to Gianopoulos, Appendix D).