Abstraction & Materiality in Louis I Kahn’s Adler House
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Drawings courtesy of
The Louis I Kahn Collection
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Louis I Kahn's project for the Adler House (1954-55) reminds us in certain respects of similar approaches in the architecture of Mies van der Rohe and Frank Lloyd Wright. At its simplest the basic difference between Kahn and these two illustrious predecessors would seem to reside in Kahn's more sophisticated approach to the interaction of form with space. The masonry masses of the Adler House approximate to Kahn's concept of hollow stones that interact with the interstitial spaces to become the living space of the house. The different orders of solid and void overlap; one is abstract, the other, material; the first is generated from a grid, the second reveals the textural quality of space. This textural aspect is even remarked on by Kahn's clients: 'I share so many of your ideas, Lou - The texture of a surface-live-space.'

The plan (Fig 1) reveals a canonical attitude towards structure, an identity between spatial and structural units, a simultaneous unity and fragmentation of the whole, a distance from 'pure form', a subtle operation of displacement: similarities and dissimilarities with the grid. If the grid, in the early decades of the century, was a metaphor of abstraction, an analytical map of the universality of the real, here in the Adler plan, the 'distorted grid' is surprisingly charged with tangibility. The invisible
presence of the grid in some early twentieth-century architecture, as in the ubiquitous plan libre, is now replaced by the presence of sliding, unstable squares. The grid is thus closely integrated with the tectonic expression of the architecture, dissolving, once and for all, any vestige of the free plan which, according to Colin Rowe, is ‘the greatest and most remarkable discovery of twentieth-century architecture.’

The Adler project belongs to a period in which Kahn was evolving from his beginnings, trying to find grounds for his architectural career. ‘Stop believing and begin learning’, Kahn told himself in 1954 after his sojourn at the American Academy in Rome in 1951. He had first finished the Yale Art Gallery (1953) and had already published his seminal ‘Order Is’. For in the Adler House, Kahn would not only propose an adequate response to the thesis of this essay, but would also reflect on What the Building Wants to Be, and on the material expression of the immaterial order he was looking for.

Kahn would explain the Adler House as a plan form in which each square was a whole structure, supported independently, with its own roof. As Anne Tyng remarks, Kahn ‘always wanted a distinction between things’, from the interface between materials to the articulation of spaces within a project. But, at the same time there is also a great concern for gathering and clustering elements into a whole. For Kahn the work had to be compounded of inseparable elements if the order were to become legible: ‘Concept is very close to form, but concept and idea are also closely linked; thus to conceive is to know everything about the thing he wants to create... I maintain that form has nothing to do with outward appearance; in “design” we are concerned with appearance, we choose an aspect and anyone can do as much. Form is the area in which the architect can give the best of himself because of his knowledge of the inseparable elements. If a construction possesses this quality of inseparable elements, the project has a chance of being legible. With regard to office blocks, they do not possess form; the inseparable elements are made homogeneous and do not demonstrate the association of separate parts.’

I am thankful to Kenneth Frampton for his great help in editing this.

Anne Tyng has also read this paper and without her help it would not have been written.

1 Mies van der Rohe said that architecture begins when two bricks are carefully brought together. He pointed out that tactility, modularity, physical presence and laws imposed by material upon the building are one of the strongest bases for architecture. Frank Lloyd Wright tells of his first architectural experience: a set of Froebel blocks which brought him to experience shape. A sensible experience of form, colour, rhythm, weight and texture would be for him what laid hidden behind appearances. Even the shapes the blocks made just leaving them alone fascinated him for the underlying ordered pattern.

2 Mrs Adler, Letter to Kahn, June 17, 1954, Adler, Box UK 32, Kahn Collection.
4 Louis I Kahn, letter to Anne G Tyng, March, 1954. ‘Of course, for myself, I keep thinking of André Gide’ – ‘stop believing and begin learning’ I say it to him and I say it to myself. To know is one thing; to believe is another. All this ideas must be on solid ground. But don’t fret? not everyone can judge the difference’. This letter was reproduced in Anne G Tyng, ‘Simultaneous Randomness and Order: The Fibonacci-Divine Proportion as a Universal Forming Principle’, Ph D diss, University of Pennsylvania, Philadelphia, 1975, pp44-46 (Adviser: Buckminster Fuller), p46


This suggests that between the parts there had to be some kind of unity as a prerequisite of form. And for this formulation the parts cannot in any way be regarded as autonomous.

The Two Sides of Kahnian Space

Two drawings illustrated the project the first time it was published (Fig 2).

One shows the structural points of support, the other the spaces. While we do not have drawings by Kahn explicitly showing the interdependency of the two plans, his direct supervision of the material both for the Perspecta article and for the first edition of his complete works surely implies that this idea of conscious integration was in his mind.

These two layers, shown as independent realities, inform us about the constitution of Kahnian space and about his method of design. The plan with the pillars emphasises the abstract character of structure in space, the second drawing to the physical properties of architecture, to its tactility and its textural character. These drawings articulate the two orders upon which architectural phenomena depend: Two overlapping realities and two modes of thought about space. The schism between the two represents the most canonical expression of a spatial equation: structure + voids = architectural space.

The structural plan is like a distant way of apprehending the project. It is as if we were looking from a distance where we only perceive the weighty pillars. It was, in some way, a general attitude for Kahn in the origins of a design. At his studio class, he advised students who were engaged in a project for Philadelphia to view the city from such a distant point that they see only the two rivers. They were encouraged to go sufficiently far from the immediate conditions to see what remains, the essence of the problem to be solved. As Giurgola said, structure for Kahn constitutes the 'station points' of the project, a 'framework of constants', the expression of a search for timelessness in architecture. These constants of space are what we find in the structural plan. They reciprocally confirm that 'a column is important in space-making', and that these station points on which the structure rests have the right to be an event.

This line of thinking recalls Kahn's admiration for poché. In total contradiction to the free plan of the avant garde, Kahn thought that space and structure were not independent.

7 These drawings were originally published in Louis I Kahn, 'Two Houses', Perspecta: The Yale Architectural Journal 3, 1955, pp60, 61. Later, they were also published in the first edition of, H. Ronner and, S. Jhaveri, Louis I. Kahn: Complete Work 1935-1974, Westview Press, Boulder, Colorado, 1977. In the second edition of Kahn's Complete Work the two drawings did not appear as independent plans. It is logical to assume that Kahn's intervention in these two publications can be also applied to the Adler drawings. Independent drawings of the Adler house do not exist, only photographic archival material from Kahn's office.


11 Louis I Kahn, see 'In the Louis I Kahn Studios', University of Pennsylvania, 29 September 1969, in Richard Saul Wurman, What Will be Will Always Be, The Words of Louis I Kahn, ...
The solid piers of the Adler House seem to demand the presence of the hollow columns of the Trenton Bath House. As Kahn would say later: 'This idea comes for me, for the real reverence I have for "poché"... the spaces within the structural supports. My hollow column, which contains rooms, are similar to those piers in Saint Peter's which contain a space which is a passageway. The sense of the hollow column is really what inspired me.'

Kahn claimed that the articulation of poché made him discover the difference between the solid wall and the hollow wall: 'I made the wall a container instead of a solid'. At the time of the Adler House, however, the column was not yet hollow. It comprised in fact an overdimensioned 3'6" square stone pier set in the four corners of each square. To satisfy the order the design purposely created the piers heavier than necessary for support.

Their development as hollow columns for usable spaces would occur in 1957 in the Trenton Bath House piers.

The structural plan of the Adler House is a permanently stable frame of reference. The spatial plan, on the other hand, is an expression of movement and constant change, the natural life of the house in constant evolution. While the plan of the columns manifests an abstract idea of space, the plan of voids reveals a tangible space with materials and textures creating a mosaic of living surfaces. If abstraction in the structural plan is related to spatial conceptions of the first modern movement, the living expression of space in the second plan is more related to the organic tradition, to an understanding of nature as a support for the extension of life. This plan of textures indicates that the project is not only composed of volumes posed on the ground but also of a geometry that generates the volumes of the house.

The projection of the Adler House into nature and the way in which its abstract geometry generating the project fuses with the surrounding external spaces is a signs of a harmonic relation with nature. As Kahn would put it: 'The plan does not begin nor end with the space he has enveloped it stretches beyond to the rolling contours and vegetation of the surrounding land and continues farther out to the distant hills'.

In the Adler House, however, this organic approach is combined with an abstract, rationalist understanding of space.

14 Tyng suggests that between the hollow spaces for utilities and the hollow usable spaces in the Trenton Bath House exists a big leap. Interview with Tyng, August 31, 1996, Philadelphia. The project for the Jewish Community Center in Trenton was made between 1954 and 1959. A configuration of the Bath House similar to the final one does not seem to appear until 1957. See article on the Jewish Community Center in David B Brownlee, David De Long, Louis I. Kahn: In the Realm of Architecture, Rizzoli International Publications, New York, 1991, pp 318-323
We find here then a reflection of the two traditions that Kahn brought together. On the one hand, a European rational, abstract understanding of space on the other, the American organic tradition of Richardson, Sullivan, Wright. Kahn had contact with the rationalism of the modern movement through George Howe (see the Parasol House of 1944) and publications on Le Corbusier’s work. He also came into contact with abstraction through the Bauhaus painter Joseph Albers, who began to teach at Yale in 1949 thanks to Kahn’s advice to Charles Sawyer, then dean of the School of Architecture. Kahn’s concept of the organic is not derived from Wright, however. It is more based on his contact with Anne Tyng and, through her, with biological foundations of form. Kahn’s friendship with Robert Le Ricolais, who “found no better discipline in this unpredictable problem of form than to observe the prodigies created by nature,” was also an important influence in his organicism.

Besides the analysis of solid versus void, the Adler House can also be analysed from the point of the volume and ground texture. The volumes are like dice; the ground is, on the contrary, composed of bands of different texture juxtaposed without interstitial gaps. The spatial containers seem freely disposed in a random disposition, but closely considered they are restricted by the bands. A hidden pattern organises what at first seems an absolutely free organization of the blocks. The displacement operation between the blocks exists only in one direction of the grid; in the other, we find a continuous juxtaposition of load-bearing elements and volumes. Following Anne Tyng we see in the Adler plan at the same time the most rigorous, geometrical order and its deliberate distortion, simultaneous randomness and order. In both cases geometry is the secret generator of order. This geometrical principle appears in the cubic cell, as a perfect square, and also in the partitions of the enclosure, the non load-bearing material. At the same time the modularity is present in the distortion of the order, in the displacement operation between the blocks, regulated by the dimension of the pillar. Geometry regulates, in a way, ‘random’ and ordered operations (Fig 6).

Different textures constitute the plan of the house as they interact with the strong presence of the structure. Three soft grass squares are the living extensions of the private areas of the building, extending the basic geometrical pattern into nature. Two paved external court areas, connected between themselves and the entrance steps, form a more public projection of the house into the landscape. An internal tile-paved entrance foyer housing most of the common service areas is the connector between the different elements. This connector-foyer is, in fact, an early version of

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16 Anne Tyng, Interview with Antonio Juarez, August 31, 1996, Philadelphia
17 Cf letters between Kahn, Charles Sawyer, new dean of the School of Architecture at Yale after 1947, and Joseph Albers, “Yale University, Correspondence”, Box UK 60, Kahn Collection. See also references in David B Brownlee, David De Long, Louis I Kahn: In the Realm of Architecture, Rizzoli International Publications, New York, 1981, pp46-46
19 Anne G Tyng, ‘Simultaneous Randomness and Order: The Fibonacci-Divine Proportion as a Universal Forming Principle’
Kahnian servant spaces. The other internal spaces of the plan give no indication of flooring material, and have a more functionalist approach to the use of space. The garage volume, disconnected, belongs to the non-textured elements, being only defined by its load or non-load bearing perimeter.

The plan as a whole wants to be rooted in nature, but paradoxically it floats on the void with its irregular contours. The entrance steps are the only clue to the surrounding topography. The natural environment of the house is reduced to four textured squares. Out of them we find only the empty space of the surrounding of the plan: an abstract, non-existent site. The plan is thus a collage of an abstract context, functional spaces, and textural surfaces, a curious juxtaposition of abstract and material qualities.

**Ideal and material order. An idea of ‘collective form’**

Some sketches sent by Kahn to Anne Tyng in March 1954 seem to embody the first outline for the Adler House (Fig 3). The accompanying text by Kahn reveals first the original intent behind the independence of cells, and second, the concern for correctly expressing the constructional system: ‘This house is essentially the same as the one I did in the hospital, only I believe it is much less static. The equal squares of 24’ x 24’ are placed as suits best the dictates of orientation, view, trees, contours. The connector still is different in shape from the rest—even the garage is 24’ x 24’.

> These people like brick interiors so see detail. The F.P. [fireplace] is the black square in the L.R. [living room]. It helps to articulate its space, although may be it should be showed over to the right.

> All existing trees are beech or oak. The living room is higher [13'] than the other squares. The structure is wood column, wood beams, running full length of 24’ for all squares.  

One notes in the sketches sent to Anne Tyng (Fig 3) the relative freedom with which the project begins. A flexible configuration permits the satisfaction of multiple requirements: view, trees, topography and program. It can grow, have one more or one less element, but the same order always prevails. A precise tectonic expression exists in these drawings. In one direction there are wood beams that run the full length of 24’ for each square (Fig 3-A). At this preliminary stage, the structure is composed of sets of posts and beams instead of the square solid piers on the corners of each module of the final version. The direction of structure generates a difference in the external walls between the post side and the non-post side (see elevations in Fig 3-B). The cavity brick wall (Fig 3-C), continuous in the non-post side of the units, is turned into a modular wall when it takes place in the post side, where the brick is placed between the posts. The project is born out of a clear structural and

20 Louis I Kahn, letter to Anne Tyng, March 1954. Printed in Anne G Tyng, Simultaneous Randomness and Order. The Fibonacci-Divine Proportion as a Universal Forming Principle
constructional idea. The nature of space and the tectonic expression are brought together by Kahn in the Adler House.

The plan of the house in the Tyng sketches (Fig 3) has a similar organisation to the preliminary drawings for the house (Fig 4). In both plans the project is composed of four modules instead of the five in the final version. As Kahn noted on the letter: ‘The connector is still different in shape’. This statement and the evolution of the project suggest that the solid square on the outside (Figs 3-A and 4) would be transformed into the entrance module with the service core. This explains the ambiguous character of the foyer module in the final plan, which is internal but also external with an almost invisible presence of its enclosure.

21 This drawing was published by mistake as a preliminary drawing of the Trenton Bath House in Romaldo Giurgola; Jaimini Mehta, *Louis I Kahn*, Westview Press, Boulder, Colorado. 1975
The solid piers of the Adler House, although heavier than necessary, have also the intention of establishing 'an order of construction which provides the avenues to harbor today's complex mechanical requirements including complete air conditioning.' These two facts indicate two opposed tendencies: an interest in heaviness in architecture in order to create a clear order through the presence of the structure, and an attention towards lightness and looking for a way in which utilities can be easily accommodated in servant spaces. The square piers of the Adler House are to be modified into hollow columns for the accommodation of utilities. Here we are returned to the Kahnian distinction between servant and served spaces that will sharply come into focus with the Trenton Bath House. The square piers in Trenton are hollowed out in all cases, containing the elements that architecture often neglects, for 'engineering is not one thing and design another. They must be one and the same... a building should show the way it was made...'

In this way Kahn attempted to fulfil what for him was missing in Mies's approach. As he wrote: Mies's sensitivities with creation of space reacts to imposed structural order with little inspiration drawn from what a building "wants to be"... Mies's order is not comprehensive enough to encompass acoustics, light, air, piping, storage, stairs, shafts, vertical and horizontal and other service spaces. His order of structure serves to frame the building but not harbor the servant space.

When the Adler and the De Vore houses were published in Perspecta, it was claimed that both projects emerged from the same order principle. Only the design and the circumstantial factors were different. The project does not therefore correspond to any kind of external form, as a fixed, a priori shape, but rather belongs to an open notion of form composed of independent, clustering cells: an organic whole integrated by its parts. The order is in the basic unit and in the way the blocks are brought together. Kahn's notion of order in this project seems to be close to the idea of 'collective form' advanced later by Fumihiko Maki in his Investigations in Collective Form. This idea of collective form goes beyond the simple building and is linked to a notion of dynamic equilibrium that keeps order while the project is able to grow and to change without altering its basic identity. Collective form represents groups of buildings or quasi-buildings... not a collection of unrelated, separated buildings, but of buildings that have reasons to be together. Maki's approach has a number of points in common with Kahn's. It assumes that form can be composed of a group of elements instead of being a simple, rigid pattern.

26 Fumihiko Maki, Investigations in Collective Form, The School of Architecture, Washington University, St Louis, June 1964
27 Fumihiko Maki, ibid, p3
28 Fumihiko Maki, ibid, p5
It is also an attempt at a solution to contemporary urban exigencies affecting growth and change. As a confirmation of the closeness of Maki's notion of collective form to Kahn's idea of form is Maki's citation of Kahn's definition of form in a lecture given in Tokyo in 1960: 'There is a need to distinguish “form” from “design”. Form implies what a building...would like to be, whereas the design is the circumstantial act evolving from its basic form.'

Certain early sketches for the Adler House (Fig 5) elaborate with greater clarity the initial sketches contained in the letter to Tyng (Fig 3). The statement which introduces the house in Perspecta refers to the way in which the project is freely organised as a set of spaces removed from a closed concept of form:

'The Kitchen wants to be the Living Room.
The Bed Room wants to be a little house by itself.
The car is the room on wheels.
In searching for the nature of the spaces of house might they not be separated a distance from each other theoretically before they are brought together. A predetermined total form might inhibit what the various spaces want to be.
Architectural interpretations accepted without reflection could obscure the search for signs of a true nature and a higher order. The order of construction should suggest an even greater variety of design in the interpretations of what space aspires to become and more versatility in expression of the ever present problems of levels, services, the sun, the wind and the rain.'

He distanced himself from any predetermined notion of form...would make it difficult for him to find out what the space wants to be. The aim is the spatial freedom of spaces in order to let them find their true nature. The true nature of a space is also revealed by the order of the construction, which gives space its material presence.

'The Room' and the Critique of Functionalism

Beyond the abstract, generic idea of space projected by the modern movement, Kahn proposes a specific, material space. Space, for Kahn, is to be colonised by people, as a dwelling space or place. A new category has been introduced. As Giurgola notes 'for Kahn, the two concepts of space and place were inseparable, space always possessing the humane connotation of place. As a consequence, the abstraction of modern architecture became translated into an ideology expressed in a fundamental proposition, between the environment and a program for life.'

29 Fumihiko Maki, op cit, p6
30 Louis I Kahn, quoted by Fumihiko Maki, ibid, p20
Dwelling space is what Kahn would call The Room, which for him is the essence of architecture: ‘I wanted to talk to you about rooms: these are the basis of architecture.’ Architectural space for Kahn, from now on, would be composed of chambers, rooms, each one with its own personality from a physical and functional point of view. The notion of function, as a machine-age, mechanical operation would be transcended in Kahn’s approach. The Room would be a ‘place-for’. It has to ‘evoke’ its function. An almost symbolic or poetic approach to the notion of function emerges. The Room has to be understood from a psychological standpoint. Above all, it has to express it physical constitution: ‘I will now talk about functionalism. I think you can talk about machines being functional; bicycles being functional; beer plants being functional, but not all buildings are functional. Now, they must function, but they must function psychologically. There is a psychological function which is a paramount function whether it’s a factory or otherwise…And that sense, I think, brings about a new era in architecture which doesn’t try to make everything be accountable.’

Instead of the modern movement’s plastic notion of space as a continuity, Kahn would try to attain the natural living expression of the building through the institution that inspires it. When in his famous drawing The Room Kahn affirms that the Room is the beginning of architecture, he reminds us that space has a particular physical presence. This space is to be perceived through its construction. This is what the square masonry piers of the Adler house make absolutely manifest, along with the counterpoint with the volume and texture ground surface which both expresses and realises the character of the house as a ‘dwelling’: ‘Every building is a house, regardless of whether it is a Senate, or whether it is just a house. It is the room that is important when you are in it. The whole building means nothing compared to the room you are in. And if you consider that a plan is a society of rooms in whatever may be their duty and in whatever way they supplement the duty of others, then the plan begins to be something, the spirit of which you can convey to others.’

The Adler House began as a simple remodelling of a kitchen for the Adlers. Kahn’s thorough approach to the problem brought him little by little to propose an entirely new house.

The notion of The Room as the origin of architecture, as the basic living entity of the project, would make it extremely difficult for Kahn to create a spatial subdivision. Kahn made absolutely clear in his conversation with John W Cook and Heinrich Klotz:

37 Louis I Kahn, Interview with, J W Cook, and, H Kloth, in Conversations with Architects, pp178-217
Space is not space unless you can see the evidence of how it was made. Then I like to call that a room. What I would call an area, Mies would call a space, because he thought nothing of dividing a space. That is where I say no.  

For Kahn 'a room must have always the character of completeness'. He could no more place the structural explanation of a space out its spatial limits. Structure had to be perceived from the very space it defines. Kahn made during the course of that conversation three schemes to illustrate his point.

The critique of Mies van der Rohe could not be more explicit. The first of the schemes is where Kahn agrees with Mies, but Kahn does not accept Mies’s easy way of dividing space (the second scheme): 'No matter how many partitions are in it, Mies would always call the whole area a space. I would call any one of the four divisions a space, but after you divide it, the whole thing is not a space any more. I would call this a space provided it is never divided. What you see in the third diagram are four spaces. I consider these four rooms. Mies would consider this a space within which divisions could be made. In the Miesian spaces he allows division, but for me there is no entity when it is divided. 

...If he [Mies] subdivides his general space I would not. I make a space as an offering and do not designate what it is to be used for. The use should be inspired, that is to say, I would like to make a house in which the living room is discovered as the living room. I will not say that it is a living room and you must use it as such.

'I don't believe in constructing a large space and then making partitioned areas within it and calling them rooms. A room should be an extension of self. In a large commercial auditorium I would speak one way, but if I gave a talk in the Baptistery of Florence I would say something I'd never say before.'

As one might expect and as was true of other Kahnian houses, the Adler House was forced to compromise on this point since it has internal partitions in the bedrooms. However maintaining equal size in terms of primary elements was important for him, in order to sustain the order of the project.

We can recognise in all of this an underlying critique of functionalism: 'As long as I have considered only the functions of the building, I still cannot build the building.' As far as Kahn was concerned, a building that only functioned was not a work of architecture, for it lacked any essential character. For Kahn, the character of a space did not exist if it was
not clear how the space had been made: 'Ask the room how it is made, and it will have
to say: "if you go next door, you can see the columns of me in that room". And this is
what stops me from naming it...

Each of the four rooms have its own character because of the light... The structure is the
maker of the light. The structure can make an opening, just as a column and a beam can.
This is an opportunity for light. And that means if I hide the structure I have lost the
opportunity. I go through an immense amount of trouble."44

As his work developed Kahn moved away from the high modern functionalist ideal of
flexibility, as if he were trying to make it impossible for the owner to alter the quality of
spaces after their completion. 'If I were to build a gallery now, I would really be more
concerned about building spaces which are not used freely by the director as he wants.
Rather I would give him spaces that were there and had certain inherent characteristics."45

Kahn's critique of Mies was likewise clearly related to the former's rejection of the concept
of abstract space as a preexistent medium to any architectonic operation. For Kahn, space
demanded architectonic work in order for it to come into being.

The same word 'room' draws its original meaning, as Heidegger reminds us in 'Building
Dwelling Thinking"46 from the antique notion of Raum, Rum (the German equivalent to
room). This original meaning refers to a place freed for settlement, a cleared space cut
out of the forest: an artificial space opened out and consequently limited by boundaries:
'A space is something that has been made room for, something that is cleared and free,
namely within a boundary... A boundary is not that at which something stops but, as the
Greeks recognised, the boundary is that for which something begins its presencing."47

Thus we are confronted with two notions of space. The first, Heideggerian space, is
limited by existential connotations, as in the Kahnian concept of The Room.
The second corresponds to the Latin spatium or extensio. It is more abstract and
mathematical, pure extension. This notion of space as an extension, as a universally
applicable continuous category, is composed by mere positions. Between any two given
points of space, considered as extension, there is a space in which we can establish
geometrical relationships, measure distances, relate directions. These are the
mathematical positions that can always be applied to any three-dimensional physical
reality. But according to Heidegger this notion of space cannot be the basis for the
creation of dwelling places.

44 Louis I Kahn, ibid, p204
45 Louis I Kahn, 'Talk at the Conclusion of the Otterlo Congress', CIAM'59 in Otterlo. In, Oscar Newman, New Frontiers in Architecture:
CIAM'59 in Otterlo, Universe Books Inc, New York, 1961, p213
47 Martin Heidegger, ibid, p154
For Kahn, as for Heidegger, a space was always a world within the world, an enclosed microcosmos of meaning: 'The world outside is wide and complete and stretches out into the universe. There is this world within a world which is a case to the violin, the violin being the soul of the person. And so it is the violin and the violin case. If it is a large case, the violin doesn't fit very well.'

As in Stonehenge, architectural space for Kahn had to be a dwelling space, an enclosed space, with an apparent built enclosure. Kahn finds in the mystery of Stonehenge the beginning of architecture. And, as in Stonehenge, the space built this way permits humans to dwell and reflect about their situations between two worlds: one external, cosmic, infinite; the other internal: The Room.

Kahn's use of the term 'unmeasurable' seems to acquire in this context a very specific meaning. It returns us to Kahn's rejection of analytical space, whose prime determination is its measurability. Kahn rejects this spatial extendibility for being endless and unlimited. Kahn's intends a more psychological and phenomenological notion of space, in closer contact with human aspirations, searching for places to dwell. It is a critique of functionalist space. Paradoxically, by establishing limits for human life through order and measure in the process of design, architecture reaches a sphere that belongs to the unmeasurable: 'Architecture has its limits – and when we touch the invisible walls of its limits, then we know more about what is contained in them. A great building, in my opinion, must begin with the unmeasurable, go through measurable means when it is being designed, and in the end must be unmeasurable. The design, the making of things is a measurable act. At that point, you are like physical nature itself, because in physical nature everything is measurable – even that which is yet unmeasured, like the most distant stars which we can assume will eventually be measured.'

But what is unmeasurable is the psychic spirit. The psyche is expressed by feeling and also thought and, I believe, will always be unmeasurable. I sense that the psychic existence will call on nature to make what it wants to be.'

In this unmeasurability resides that which is of primordial interest for Kahn: For him Form was not understood as an external, resultant shape, but a something prior, as the seminal origin of design, in which dimensions are not the issue. 'Form has no shape or dimension. Form has merely a nature, a characteristic.' Sometimes he called this 'form' pre-form: 'In the preform actually exists more life, more of the story that can come

49 Louis I Kahn, 'Silence and Light, Address to the Students at the School of Architecture, ETH, Zurich,op cit, p59
after...In the preform lies more power than in anything that follows..." Here is the core of the problem for Kahn. It is not the circumstantial, but the underlying Order that is able to generate the project, an order from which different designs may be born. The Adler and the De Vore houses are examples of two projects that 'grow out of the same order.' In Otterlo Kahn would repudiate any excessive concern for external form: 'There are new problems, tremendous new problems today, which have not been touched by the architect because he is thinking about exterior forms.'

If Kahn searched for permanent, timeless qualities in architecture, the new elements to be redefined on the basis of their hidden eternity, he also looked for play, a rigorous plastic play and not an arbitrary formal fantasy, a play rooted also in the poetry of construction, the affirmation of life, and the deep spatial resonances that these decisions bring about. This is the paradox that underlies the Adler House, the play of architecture for Kahn in the 1950's. A play that, as Le Corbusier's, as Wright's with his little wooden blocks, reveals the impossibility of reducing architecture to the merely 'measurable': it takes part in a dialogue with the unforeseen, 'unmeasurable' of life.

Nowadays, in a time of concern towards external forms, Kahn's attitude is a valuable approach since it maintains that modern architecture can be sustained without any of the assumed orthodoxies that converted modern architecture into a style without the freshness of its beginnings: 'our design became a style...with all the restrictions, disciplines, limitations, and blessings that we usually associate with the term.' These words by Matthew Nowicki...can illuminate Kahn's deeper connections with the organic tradition and help us to see Kahn not as the mentor and last excuse for an empty rhetoric but as one of the most provocative interpreters of functionalism.