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## Philadelphia

Kahn was the only architect on the continent I wanted to work for at that moment.

I had seen his Richards laboratory building in Philadelphia on the CMHC trip, and it impressed me very much. It was the beginning of a way of looking at a building as a system and not as an individual, finite thing. It was not a fixed composition; it could grow. Kahn has since moved the other way. His recent buildings are becoming more and more finite; they are becoming compositions. But for me his work then was the stimulus for seeing environment as a continuum. Kahn never used the word *system*. He talked of *order*. I had also admired his project for an office tower in Philadelphia, a three-dimensional space matrix; it too was to become the generator of ideas. I felt Kahn was also one of the great teachers of architecture of our time, probably a greater teacher than Le Corbusier.

I wrote. I didn't get an answer, so I picked up the phone. Kahn was about to go into hospital for a cataract operation but he said, "All right, you can come in Saturday." I drove down and took my sketches, my thesis. He gets many applications from all over the place, but most of the people in his office at that time were his former students from Yale or from the University of Pennsylvania. He made an exception and hired me.

But first, Nina and I went on a two-month trip with the travelling scholarship money. We wanted to see the American continent; we preferred to travel America rather than make the traditional European tour.

We bought an old car, which continually broke down. We drove along the flat plains of the prairies and down the rocky California coast to San Francisco and Los Angeles. We revisited many of the places I had seen on the CMHC travelling scholarship. Then came the real treat. We went inland. After the hardness of the American city, after the glassiness and squareness and

massiveness of Chicago and Lakeshore Drive, after the long grey car rivers of Los Angeles, the Grand Canyon was soft and brown and richly textured, more of the scale of a city than any city I have known, more of an urban reality than the unreal scale of the inorganic man-made places. And as if growing from this great Canyon City – made in the image of the ridges and plant life in the rocks – were the Indian pueblos. These cliff dwellings built in the rocks, and the adobe clusters on the hill-tops and in the plains were, more than anything else I had seen, the expression of people living together harmoniously in nature and true to nature, building an architecture of unquestionable morphological truth in the context of the native material and the climate and the landscape.

Then south to Mexico and to the causeways and pyramids of the ornate yet rigid Mayan and Aztec cities. It was the little villages surrounding these great cities (houses with whitewashed stone walls, with curved ends and thatched roofs leading to enclosed walled courts in the rear) that reminded us the pyramids were temples and they too had been surrounded with a living city built in the tradition of the pueblo of the north. We were overwhelmed with Taxco, a town sitting on a hill with walkways and stairs interconnecting it and a unity that seems to have been achieved by cobblestones, whitewash, and planter-boxes all like lace-work on the steep hills. We came back through the south, Alabama, Mississippi. I took thousands of photographs. I don't really sketch that much when I travel. I get impatient. Now, I have also stopped taking photographs when we travel because I found that I started framing everything as a photograph and it disturbed me.

The pueblos and Taxco were immediately more meaningful to me than any work of an individual architect. I can't think of very many buildings that have moved me as the little hill town of Taxco did. I find that I have shut off to many contemporary buildings, although there have been the grand exceptions: the breathless feeling I had entering the great space of Frank Lloyd Wright's Johnson's Wax building, or approaching "Fallingwater" through the woods, or a few years later walking through Le Corbusier's buildings in Chandigarh.

We returned to Philadelphia just when Lou Kahn came back from his operation. He was working on a closed competition for a planetarium at Berkeley. It was a week before the deadline. Anne Tyng, who has been with him for twenty years, was working on it and I began helping out. She went home after an argument and for the next week I found myself working day and night with Kahn. I would stand next to him while he was sketching away, talking of the scheme. I found it difficult to believe I was actually there working. When the project was completed he put me to work on a synagogue he was doing. Later on, when the Institute of Management College in Ahmedabad, India came in, he put me on that.

Kahn has a thin, very scarred face as a result of severe burns he had as a child. His longish, silvery-white hair is always hanging loosely. He is a short man yet very solidly built. Nina used to say jokingly that he looks like a Jewish tailor. After his operation he had enormous lenses in his glasses that enlarged his

eyes. He speaks softly, in a semi-whisper. He is a born preacher, a poet. His lectures are a dialogue between himself and his poems; he inspires you by personifying and giving life to walls and windows and spaces and light and he then makes them talk to each other so that you can never again ignore them. He is my image of the archetypal Socratic teacher. There is a prophet-like quality to him that seduces everybody around him.

Kahn was born in Estonia but went to the United States when he was very young and grew up in Philadelphia. It is said that his family was fairly poor, and it took him many years to get work as an architect, so he spent those years theorizing and thinking and talking and teaching. Then, at the age of fifty, he became a world-famous architect. Now he has more work than he can handle. I think it is remarkable that Kahn, trained in the Beaux-Arts tradition, has become the generator of thoughts that are the polar opposite of that tradition.

It was 1962 and the planning of the New York World's Fair was well underway. One day I decided that this would be the place to build my thesis. I clipped it from the pages of *Forum*, made a specific sketch showing how to build half-a-dozen houses as a pavilion, and sent it to the Portland Cement Institute in Chicago with a long letter explaining that this could be built for a limited cost as a great exhibit. They never acknowledged receipt of it.

I met a number of people in that office who became friends, but Dave Rinehart and Anne Tyng, each in a special way, became particularly close and important in terms of the evolution of my ideas. Anne, had worked with Kahn for many years, and was very interested in geometry. Dave had just returned to Kahn's office, where he had worked earlier, when I arrived. He is a few years older than me. Dave's interest in architecture is almost the opposite of Anne's. She approaches the environment from the atoms, molecules and crystals that make it up and the systems that structure them; he approaches it from the image of the whole.

Dave is an American, a midwesterner of German origin. He studied art in Chicago, then went to Philadelphia to study architecture under Kahn. Dave's architectural heritage is rooted in America and Frank Lloyd Wright. In many ways Dave thinks of himself as an uncompromised and true American. His views of the individual and of nature and urbanity are rooted in Jefferson and Wright. He often expresses a resentment of the pseudo-European tradition of the east coast schools of architecture and planning, and their refusal to accept American values for what they are. He's a very sensitive man. He draws beautifully. It is difficult to talk of someone who is a very close friend, almost an alter ego. I always feel his judgments and values to be those of a complete architect, values I have always trusted.

Many fundamental differences between Dave's approach to the environment and mine became apparent during our discussions, differences coming from our respective cultures. Dave thought of the environment in terms of the

individual; I thought of it in terms of groups of individuals. In his spare time Dave would design houses, I would design communities or groups of houses. As Dave put it one day: "You always think of numbers, I think first of the singular."

An international competition for a master plan for the center of Tel Aviv was announced. Kahn was on the jury and, as his employees, none of us could enter. But Anne, Dave and I decided that the problem was an interesting one and we would get together and work out a solution as an intellectual exercise, even though we couldn't submit it. We met several times a week and talked about the center itself, and transportation and its relationship with the rest of the country, and produced sketches. It was an intense involvement and there was a great deal of tension because each of us had strong ideas about how things should be. As a result, the three of us were never able to agree on a solution. One evening the whole situation exploded. I went my way and developed a solution, and I think they did the same.

The Arab city of Jaffa and the Jewish city of Tel Aviv became a single city after 1948. The no-man's land in between became the geographic center of the new city and consequently the natural place for a city center. Part of the scheme was to consider ways to allow the city to extend into the sea by reclaiming land. There were three fundamental problems. The first was the relationship of the new center to Tel Aviv and areas beyond. How do people get there? Why do they come there? Who lives there? Where do they go from there? The second was how to plan for growth and at the same time create some kind of validity to the city structure at each stage, so that it was not just an incomplete part of a whole to be completed in a hundred years. The third problem was how to relate the city to the sea in that particular climate—a question which most cities by the sea ignore.

In the case of Tel Aviv, when we considered the nature of the center, with its theaters and newspaper publishing offices and shops and other facilities, in addition to residential and office development, it became obvious we were not dealing with the center of Tel Aviv at all, but with the center of Israel. If you're planning a center that is going to have a life of fifty or a hundred years, you must consider people's ever increasing mobility. They would come from Haifa, Jerusalem, or the Negev to Tel Aviv to see a play or visit a certain agency. If Israel, a thin, three-hundred-mile-long area, had a transportation network that moved at an average speed of three hundred miles an hour, then the whole country would become a single urban region. The area we were working on was at the center of this linear development.

From that basic idea of an expanded city things started falling into place. Israel was planning many new towns, in the Negev and the north. They were being scattered, half randomly all over the place, linked by a road system, sometimes also by a railway. But, if we came to the conclusion that Israel was one city and that one city was served by an extremely efficient spinal transportation system,

then every new city as it was being considered would have to be part of it. The alignment of the transportation had to be based on potential industrial development, topography, climate, security, agriculture, and so on. Basically, it was a regional plan of Israel conceived as a single city, that had to be designed. That totally changed our approach to the center of Tel Aviv.

Interestingly enough, the length of Israel is much the same as the distance between New York and Washington, or Toronto and Montreal, so that in fact there is a whole country that is a prototype regional city, with a city population of three million people.

That year I also started to work on a theoretical plan for a new city to resettle the Arab refugees.

This was to be a model city, a model community, and the site I chose, a hypothetical site, was around the Pyramids at Giza, outside Cairo. The political idea was that the refugees, who are in camps and who have compensation money coming to them, would be encouraged to move to a site that appeared to have economic potential. A number of industries would be established there, including building industries. The refugees, many of whom are now idle, would first be given training so that they would actually build their own city, using sophisticated mass-production methods. The compensation funds, instead of being distributed in small pieces and just burned up by each individual, would form the capital base for setting up the industries; labor, which represents half the cost of building the city, would be supplied by them. They would co-operatively or individually own the whole city as their form of compensation indeed its value would multiply because their own labor had gone into it.

This could be a prototype of what could be done in many underdeveloped countries, a process of urbanization in which the population could move to a new place and physically build their own environment, letting the industries continue as part of their economic life.

My thoughts on transportation, three-dimensional planning, and growth patterns were all part of the solution. This was a community that had few assets, especially few cars, so it had to be a city that could work without depending on them. I designed the framework for a city for about a quarter of a million people which you could move through without reliance on a personal vehicle, just public transportation, without ever having to walk more than one thousand feet. Out of that came what I nicknamed "The Giza Plan," a whole series of transportation systems moving at different speeds in continuous motion. Later that became the basis of a proposed demonstration system at Expo 67 and the first Expo plan was entirely based on this idea of inter-linked transportation systems.

Quite apart from the political ideas behind it, the refugee city became a kind of vehicle for constantly developing and expressing my image of the utopian city.

The first proposal consisted of a series of inclined sloping transparent membranes, thirty to forty storeys in the air. The membranes were made up of houses, each an entity in itself, with gardens and public parks penetrating them. The membranes formed a kind of continuous shelter, like the leaves in a forest, under which was a continuous concentrated meeting place – the shops, the recreational facilities, and offices – the sun penetrating it, right through the membranes. The parks and the open countryside and the city continuously interpenetrated. At any given place you were within reach of the parks.

There was complete mobility; you could move anywhere. You got onto a slow-moving ferris-wheel-like vehicle to reach pedestrian streets up in the air. In certain areas, it would speed up and running parallel to it, having decelerated to that speed, would be a train. Then in motion, without stopping, without ever waiting, you could get from one system to the other. The train would accelerate again, and in another section it would run parallel to another system running even faster. Just as the wheels in a gear system are all constantly turning but at different speeds, so here there was to be constant and continuous mobility in the ever flowing arteries.

Halfway through my year with Kahn, I started to question what he was doing. It would be different if I had to go and work for him today. I'd say, "It's his office, let him do what he wants." I would be much more tolerant. But my own ego needed much more assertion at that time. It takes a special kind of security to accept being subservient.

I constantly criticized what he was doing; I challenged ideas and concepts; I made counter-proposals. Kahn would make some sketches and I would independently develop my own schemes. I would constantly try to assert my proposals which I intensely felt had validity, but he would just look at them, nod his head slightly, cover my drawings with a fresh piece of sketch paper, and reassert his design. Later, when I had my own office, I came to know what that sad nod was all about.

Kahn was designing the Ahmedabad College residences in India. He wanted the houses to form a V, pointing into the prevailing wind. I felt we should group the houses as an inclined hillside, creating all the public spaces in the shade under them and making the whole thing a draft tunnel so that it would catch all the prevailing wind and force it through. The meeting rooms and classrooms, which he put into separate free-standing structures, I put right under the residences. He would nod: "This is good. But try that." He just went on with his own scheme. I got into the habit of working at night on my own plans and during the day in the office on his. The college was completed. I have seen it built now. I feel deeply I was right, although it's a beautiful thing – beautiful, artful, but for the time and place irrelevant.

Something had to give. At one point I wanted to go to India to supervise the college construction. Kahn wanted me to go too, and then he changed his

mind. That was the breaking point. I felt I had to leave. I didn't want to stay in the office. Working on his building was not satisfying any more. I had learned what I had to learn and had become restless. I suppose the restlessness was rooted in vanity, but also in impatience – an urge to come closer to the realization of my ideas.

Then, out of the clear blue sky, Sandy van Ginkel showed up in Philadelphia. Montreal had just been chosen as the site of the 1967 major international exhibition. Claude Robillard, head of Montreal's city planning department, was being made director of planning, van Ginkel was to be the deputy responsible for physical planning. Would I come and work with them on the master plan?

I told Sandy I had some conditions: I should be able to take some time off to work on the housing system; I should be able to develop it within Expo; I needed ten thousand dollars a year to live on. He wrote back accepting. We packed up with two weeks' notice and went back to Montreal. That was August 1963.





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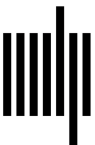
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