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Beyond Habitat

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OA Funding Provided By:

National Endowment for the Humanities/Andrew W. Mellon
Foundation Humanities Open Book Program.

The title-level DOI for this work is:

[doi:10.7551/mitpress/1575.001.0001](https://doi.org/10.7551/mitpress/1575.001.0001)

I didn't want to leave Israel at all. I was very unhappy about it. But it was impractical for me to stay on alone at the age of fifteen. I left, declaring that I would be back by year's end, that as soon as I finished high school I would return. After a short trip through Europe we immigrated to Canada and settled in Montreal. I was still very unhappy and wanted to go back. For the first few months I spent half my time writing letters to my friends.

But I also found myself becoming more and more interested in architecture, in cities. It happened slowly. The kibbutz gradually became less immediate. By the time I finished high school, a year after I reached Canada, architecture was the one thing I wanted to study. I had no relatives who were architects, I had never met an architect, I had no contact with architecture. I was interested in designing buildings and cities, and that was it.

I met considerable opposition at home. My decision was disrupting an age-old tradition of middle-eastern Jewish families. For generations the elder son would join his father, learn his trade or business and then, with the years, take over and perpetuate the family business. My father expected, almost took it for granted, that I would join him just as my many cousins had joined their fathers. It was a blow that took some time for him to get over. For me, architecture was clearly the only thing I could do, and so I persisted and insisted. I went to work at a hardware store selling tools to earn my university fees. My parents had been wealthy in Israel, but now in Canada, it was a real struggle for them.

In the fall of 1955 I registered in architecture at McGill University. I had very few friends; for the first time in my life I started studying seriously. At McGill I did very well academically. It was surprising; I used to look down on anybody who did well academically. I still have suspicions . . .

I am not a born draftsman. I work in a sketch book with a pen. I developed my thesis in three sketch books, which traced the whole evolution of a building

system from the first ideas to the final presentation. I don't think of them as beautiful drawings. I use drawings to think out basic problems. I use models to work out spatial relationships and three-dimensional systems. My buildings are so complex three-dimensionally that I can't conceive them on paper. I can't design that way.

Douglas Shadbolt came to teach at McGill. He began talking to us about the problems of mass production and about industrializing the building industry. I was impressed; a basic political conviction in me resonated. In Shadbolt's class we had to design a public housing project for Vancouver. The program was real, the actual program for a Central Mortgage and Housing Corporation project that was underway, and we were working with CMHC people as our critics. Looking back, I realize this was an important moment for me. Here was a typical public housing project – two apartment slabs with one-and two-bedroom units and efficiencies, plus row houses at the bottom with three or four bedrooms. I just couldn't get down to doing it.

I was very confused. The more I thought about the separation between slab and row houses, the less sense it made. It ought to be one thing, I thought. I kept drawing and making models of buildings that built up, pyramid-like, from row house to high-rise, and I made cardboard models of houses independent of each other that were not cells in the major slab structure. Shadbolt would come around and talk about costs and areas and other realities, and in the end I came up with an unresolved model of terraced units piled one on top of the other, set back in some way. But though I couldn't solve my problem, I felt the fallacy of the currently acceptable formula.

That summer CMHC initiated a scholarship; a group of students, one from every school of architecture in Canada, was to travel around North America looking at housing. I was top of the class academically and got on the tour. We looked at suburbia all over the United States; we looked at public housing; we visited forty-storey towers in Chicago and Philadelphia, luxury housing in San Francisco and Toronto; we had appointments with Edmund Bacon, and Mies van der Rohe, and Harry Weese, all kinds of architects, planners and administrators, and housing authorities. We met five or six people and looked at five or six projects a day. We were constantly on the go – a fantastic experience.

When we came back we each had to write a report. I found two things going on in the United States and Canada: high-rise apartment construction, which seemed not to work for families, and suburbia, which also seemed not to work, though it offered amenities that people generally preferred when they had a choice.

I found suburbia wasteful of land. It lacked privacy and it depressed me. The highway systems couldn't cope with it. Low density development was choking the city. I came to the conclusion that one couldn't re-house all the families living in slums in Chicago, in single-family housing – it wouldn't work because of the sheer numbers of people and areas of land you would need to do it.

Yet high-rise didn't work either. We saw it in the most dramatic form: kids clinging to wire mesh balcony railings on the thirtieth floor, corridors and balconies with cages over them and kids running up and down, people complaining about the horrible life. For the first time I experienced the life of a newly-built slum. It made you feel compassion for the people; it made you hate those buildings.

In retrospect, I had set out on this trip with preconceived ideas, feeling suburbia was bad – after all, the Mediterranean cities were my background. But my conclusion was new: I felt we had to find new forms of housing that would re-create, in a high-density environment, the relationships and the amenities of the house and the village. I remember coming back to Ottawa and saying so in our formal presentation; and I remember Humphrey Carver, then on the CMHC Advisory Committee, replying that it couldn't be done, that families belong on the ground, they belong in low-density. At that point I said, "Well, I'm going to try and do it." I decided to abandon my plan to do a parliament building in Jerusalem for my thesis and instead do a housing system.

This decision posed some problems because one did a "building," not housing, and not a system, for a thesis. I didn't want to do a building; I wanted to do a system that could be applied to any site. I didn't want to tie it to one particular site. That was very unorthodox because students were supposed to choose museums, theaters, synagogues, churches and libraries for their theses. Eventually I got reluctant permission.

Everybody looked very skeptically at the whole thing while I was developing it in the sixth year. But then Jane Drew came from England to visit the school and after her lecture she went around looking at the sixth-year projects. She stopped by my desk and said, "That's fantastic. There's nothing I can tell you; you know what you're doing. I wish you the best of luck." There was a changed attitude after that. It became something that students and teachers were interested in. I called my thesis "A Three-Dimensional Modular Building System": *three dimensional* because it dealt with the three-dimensional organization of a continuous urban structure; *modular* because it was a construction system based on the use of the repetitive three dimensional modules; and *system* because it was a system capable of application to various sites and conditions.

It had all the ingredients that were eventually to make up Habitat. There were boxlike space cells manufactured in the factory. The modules were combined in many different permutations to make up the variety of house types. Each house was an entity in itself, recognizable in space. The modules were grouped in spiral formations stepping back from each other, each roof forming a roof garden for another dwelling. I had developed three possible systems each with its own geometry and structural system, and I then made a model showing what a community of five thousand people would be like.

When I submitted my thesis, it got the highest mark at McGill and the gold medal, but when it was submitted for the national Pilkington scholarships it didn't get mentioned at all. One was supposed to do buildings and this, they felt, was not a building. At any rate, with the gold medal came a travelling scholarship which made it possible for Nina and me to make a long trip.

By that time Nina and I were married and had our first child. Nina Nusynowicz and I both came to Canada in 1954, and met shortly after. Nina was born in Poland and spent all the war years there before going to Israel in 1946. We met at a party of Israeli expatriates. She had finished high school and, shortly after we met, had started working for the Bell Telephone Company as a secretary. We knew each other for four years before we were married. Nina kept on working until I graduated from McGill; in fact, we lived on her income during those first years while I was still studying. In 1961, while I was doing my thesis, our daughter Taal was born.

People often ask me if Nina is an architect and I say, "No, but she almost is." She has no architectural training but I feel that because she was totally involved throughout my own education as an architect, came to many of the lectures and helped in the work, she is almost an architect. She is certainly an incredibly lucid critic.

After McGill I went to work for the van Ginkels, Sandy and Blanche, in Montreal.

Sandy van Ginkel has been very important in my development. I first saw him in a lecture he gave at McGill when I was in fifth year. (He had taught there previously.) In his lecture he talked about many of the experiments in Europe, about his work with Aldo van Eyck his partner in Holland, about CIAM (Congrès International d'Architecture Moderne). When thesis time arrived in sixth year Doug Shadbolt, as my teacher, was my immediate critic, but I asked permission to have van Ginkel as a critic as well. Even though he was no longer teaching at the school, he agreed to do it. Once a week I would go to him with my sketch book and we would talk and discuss the sketches. He was an inspiring critic. It was through him that I became familiar with European thought, and with the ideas of CIAM and the people around it.

It is difficult for me to talk of Sandy without seeing him in action with his red hair, his red moustache, wearing his woolly Harris tweed jacket, and colorful silk ties. He has a persistent penetrating stare in his blue eyes; when he talks, particularly about architecture, the words come out like eruptions in a fencing match, waiting for a chance and charging again, yet it all comes out with a gentleness inherent in his slight Dutch accent. He knows what's good, he really recognizes a high quality environment; he is also therefore, an excellent critic. But he is more than that because he draws ideas out of you almost as if he sees them in there and must bring them out. Later at Expo 67, installations director Ed Churchill said of him, "He's the best recognizer of talent I've ever known." Sandy is also temperamental and moody, and working with him you come to

expect the occasional burst of anger rooted in frustration. In contrast Blanche, his wife, is cool and calm, reserved and withdrawn, a highly articulate woman. When I worked for Sandy we would sometimes sit after hours, late at night, with him telling me of his experiences with van Eyck, or his trip to the Sahara, or the CIAM meetings. I felt much devotion and loyalty to him.

It was he who sent my thesis to the Dutch magazine *Forum*, a mouthpiece of the post-CIAM group, known as Team 10. Soon after, the entire thesis, drawings, photos and text were published. I worked at the van Ginkels' for a year, day and night. It was an inspiring year because from the problem of a housing system, I was turned to the problem of a whole town. Instead of thinking at the construction level, I had to think of growth patterns, patterns of change, movement, transportation – all the things I didn't think about when I did the building system. It was a wonderful switch. Sandy had a commission to design the master plan for a town of one hundred thousand in Ontario, known as Meadowvale. I developed the Meadowvale master plan in a sketch book, just as I did the thesis, point by point, sketch by sketch, until the plan emerged. Each evening at the end of a day's work I would sit with Sandy and review it. Sandy would talk about the plan, would react and respond to the proposal, would make suggestions and give directions. It was a natural extension of the way we had sat and discussed my thesis the year before.

Meadowvale has never been built, but in the planning stage there were two generating ideas. One was that the city had to grow from an initial small development to a large urban center. This had to take place in the context of North American economics where basically, density is directly related to land value. Therefore, we had to design a city that would be fairly low density to begin with and, as it grew in size and land values rose, would be able to accommodate higher densities without destroying the initial low density development. Now this is a totally different situation from, say, Russia where the central government can decide that the optimum final density is fifty or a hundred units to the acre and therefore from the outset develop at that density. North America is different. Planning is not by decree; the development in a sense is more organic. When there are few people and much open space, people tend to spread. As the community grows and there are more and more people, everybody wants to be nearer the center of things. Thus, the need for higher density.

The problem, of course, is that in the rigid static plan, say the typical gridiron, it is impossible to achieve high density except by replacing earlier built low density areas. Thus, instead of a natural evolution in which development of increased density is added to earlier construction, we have to destroy one development to create another. The problem then is to develop a plan form in which increased density evolves naturally without the destruction of what has been built in the earlier stage.

The plan for Meadowvale is based on a spine with sectors along it, each of

which begins at low density and, as the pressure builds, follows a spiral to increase in density. Yet at each cycle of the city's life there is a choice of low, medium, or high density living areas. As the spine of public and commercial functions grows, so do the cells along it. Each cell is made of rings increasing in density toward the center.

We worked on the plan for a year and by the time it was completed I decided I wanted to go and work for Louis Kahn.