

CHAPTER TEN

THE APPROACH THAT LIVING PROCESSES SUGGEST
FOR GENERATING

“BELONGING” IN
HIGH-DENSITY HOUSING

FROM 40 FAMILIES PER ACRE
TO 80 FAMILIES PER ACRE



1 / A QUESTION

Many of the world's dwellings are now being built in the form of high-density mass housing. During the 20th century, this mass housing was typically concentrated in the very high apartment towers — six, eight, twelve, fourteen stories high — where people had to live almost like rats in boxes. The population of the world is still increasing. Creation of such high-density housing, at least for a century or two, is likely to continue.

What does living process have to say about the problem which such houses and dwellings create for their inhabitants? If we take as a given the need to house people in limited space on expensive land — with a demonstrated need to go as high as about 80 households to the acre (200 households per hectare) — what then can the repeated use of the fundamental process tell us about generating a suitable structure that has some kind of reasonable life?



2 / A VITAL COMMENT ABOUT PEOPLE'S WISHES

The idea of a living process includes the simple idea that what is built must arise in response to people's actual feelings, their actual wishes! Yet this simplest of all points is not followed often enough.

Here are a few comments distilled from interviews conducted by my friend Hisae Hosoi in Nagoya.¹ In interviews conducted with one hundred families living in high-rise housing in Nagoya in late 1990, Hosoi and I asked people these questions about their housing: What qualities do they value most in the living environment?

Specifically we asked:

The present government plan for the Shiratori area is an environment with 14-story apartments, a huge shopping center and a huge parking area.² It is typical of today's trend. What do you think of it?

To this question we received the following answers:

| | |
|--------------------------------------|-----|
| Positive (including approval) | 10% |
| Negative | 50% |
| Others (including "it's inevitable") | 30% |
| No answer | 10% |

Then we asked:

What is the most important thing for you if you ask what makes a living environment for you?

In answer to this question, we received the following answers, listed here with the number of people who mentioned them spontaneously.³

1. Touching nature like tree, water, green, earth, sunshine and breeze 32%
2. Formation of communication and community 15%
3. Stillness (without noise, cars) 13%
4. Public establishment and common place (bench in public place) 13%
5. Sunshine 10%
6. Convenience to daily shops 11%
7. Large living room (at least 13 m²) 10%
8. Traffic convenience 8%
9. Ventilation 7%
10. Safety 7%

Other answers included Feeling of culture, Sound of rain (nature), Tatami mat, No concrete floor, Without loneliness

Then Hosoi and I asked each family more detailed questions. The following eleven written questions were distributed to one hundred families in Nagoya. One hundred answers were received.

QUESTION 1 *Do you want a private garden?*

ANSWERS

- | | | | |
|---|-----|--|-----|
| a. Even if it is a tiny one, it is good to have a private garden for my family | 86% | b. It's O.K. if there is the individual private entrance or stairs with direct approach from the street. | 60% |
| b. A private garden is not necessary, if there is a playground or park near my house. | 6% | c. Entering the common entrance from the street and going through the corridor or stairs to arrive at the house. | 4% |
| c. Others | 6% | d. Others. | 2% |
| d. No answer | 2% | e. No answers. | 2% |

QUESTION 2 *What floor is desirable for your house? Do you prefer to live at ground level, 2nd story, 3rd story or higher off the ground?*

ANSWERS

- | | |
|---|-----|
| a. The ground floor touching earth. | 46% |
| b. The second or third floor is available, if there is direct approach from the street. | 34% |
| c. The fourth or fifth floor is possible, if there is an elevator. | 8% |
| d. The seventh or eighth floor or more with nice view, and it's pleasant. | 2% |
| e. Others. | 8% |
| f. No answer. | 2% |

QUESTION 3 *What do you think is a proper width of the front street? Do you want a big street or a small lane?*

ANSWERS

- | | |
|---|-----|
| a. A little narrow street with just enough width so that the car can go to front of the house (about 4 meters). | 50% |
| b. If it has two way traffic with pedestrian space, I will be worried. | 36% |
| c. Others. | 10% |
| d. No answers. | 4% |

QUESTION 4 *What would you consider as a desirable approach to your house? Do you want the common space around your house to be a parking lot?*

ANSWERS

- | | |
|---|-----|
| a. It's good to go through gate from street and enter the entrance. | 32% |
|---|-----|

Beyond these questions, Hosoi and I asked the following further questions:

QUESTION 5 *Should the outdoor common land be a place where you can feel comfortable with others?*

QUESTION 6 *Do you like to have children playing outside your house?*

QUESTION 7 *Do you want your own entrance from the street?*

QUESTION 8 *Do you like to arrange your own house as you wish internally, or do you feel comfortable to have a mass-designed apartment made by an architect?*

QUESTION 9 *Do you want an apartment which is deep with sunlight at one end and no light at the other, or do you want an apartment in which there is good light for all the rooms?*

QUESTION 10 *Do you want to come home to a high-rise apartment through an elevator or parking lot, or do you prefer to come to your own house off a small lane?*

QUESTION 11 *Do you prefer small plants and trees within view of your windows and front door, or do you prefer just concrete?*

These questions almost answer themselves. In another part of the same survey, Hosoi then asked the same questions again, through in a different form of words. He asked people to state independently what they want most in their living environment. He found out that what people want *most* in the qualities of their dwellings are the following eight things, listed here in order of importance as rated by the families:

1. *Each house should have a private garden.*
2. *It should be low-rise.*
3. *The user must be able to design the dwelling —*

exterior and interior — for themselves, according to their desires, to make their own living space unique.

4. *The street has little traffic, so it becomes a place for play and chatter.*
5. *The amount of sunshine in the dwelling is more than we can typically get in a high rise apartment.*
6. *It is possible to park very near the house.*
7. *It is possible to enter the house directly from the street.*
8. *There are small shops near the house.*

Of course these answers are all of them obvious. Most of us would give similar answers. What is astonishing is certainly not any strangeness of the answers, but rather the fact that the municipalities creating housing all over the world, consistently and steadfastly ignore these answers, *although they are obvious and although everybody knows them.* That is why we took the trouble to compile these answers statistically, to dramatize their definiteness and concreteness.

These answers were compiled statistically from the answers given by one hundred families.

From these answers, we get a very definite idea of what Japanese people want. It is confirmed by common sense. It is confirmed, too, by asking yourself — for myself, for instance, by my own personal feeling of what I want for myself. Probably it is confirmed for you, the reader, by *your* feeling. If you or I make an informal analysis of what we would want for ourselves, in our own houses, we would choose roughly the same things that the families in Nagoya chose.

Many people might say that it is impossible to provide a high-density living environment in which these qualities exist while housing *80 families per acre.* Until I undertook this work and discovered the many-parallel-lanes configuration, I would have said the same myself. Surprisingly, though, the repeated use of the fundamental process to give the design, forcing, as it does, concentration on the most salient issues, and in the proper order, led me, with Miyoko Tsutsui, a Japanese colleague, to conceive a solution — ancient in spirit — yet not tried before. The result we got is not previously known, yet it follows naturally, directly from the wishes people have expressed.



3 / A DIRECT SEQUENCE OF LOGICAL STEPS LEADING FROM PEOPLE'S WISHES TO A USEFUL GEOMETRIC FORM

First fix the height.

Then fix the daylight.

Hence the possibility of individual layout.

Then the gardens.

Then the lanes.

Hence some parking under the street.

Let us follow people's wishes, as they are expressed on pages 311-14, and take them literally, step by step, not introducing anything except what is required to meet these wishes.

We get a most unusual form. What kind of design process could take people's wishes and desire for belonging seriously at high density? Here is a process for obtaining a generic

design: Let us start with an imaginary area of 1 hectare (100 meters by 100 meters) or 10,000 m², in which 200 families are going to live. Let us, then, go step by step, following the unfolding process, and defining the morphological characteristics one by one, just asking how people's wishes have impact on a plan to contain 200 apartments within this area.

First fix the height.

Hardly anyone really wants to live more than two stories off the ground. At high densities, what can we do? Let us say, then, that buildings have a maximum height of two and a half stories.

Now fix the area of buildings on the ground, per acre.

Assume that the total area of each apartment is 72 m² (a reasonable average for Japanese families today). The total built area for the 200 families will then be 14,400 m². If buildings have three floors, the footprint of these buildings will occupy one-third of that area or 4,800 m². The remaining 5,200 m² (10,000 - 4,800) can be used for streets and gardens.

Then fix the daylight.

To get good daylight in the apartments, much of the perimeter of each apartment must be open to the sky, not boxed into a big building. In effect this will create buildings which are long and narrow, almost like spaghetti, ribbons of long, thin buildings with open space between them forming gardens and streets. An ideal dimension for the thickness of the ribbons is about 6 meters (20 feet). This can give each apartment excellent daylight on all sides, but still create good space inside, in which people can really shape their own lives and feel that they belong.

Hence the possibility of individual layout.

Within such a apartment, a rectangle of 6 meters deep and 12 meters long, with its own private entrance, since it has two long walls with the possibility of windows anywhere along these walls, each family can lay out the interior of the apartment according to their own wishes. The building system needs to be one which allows windows to be placed, afterwards, to reflect the interior plan.

Then the gardens.

Let us now consider the 5,200 m² of outdoor space. Each family needs a tiny garden. At such a high density a large garden is impossible. But each family could have 8 or better 10 m². Then 200 families will require 2,000 m² of land devoted to their gardens. This leaves 3,200 m² for streets.

Then the lanes.

The remaining land, 3,200 m², is to be used for streets. If every house has a street outside, along its full length, and the street is 6 meters wide, then there need to be 3 meters times 200 families, divided by 3 (floors), times 12 meters of length, or 2,400 m² of street. These lanes can only be one-way with one lane of parallel parking. This leaves 800 m² for other streets not fronting on houses, for turns and so on.

Hence some underground parking under the street.

The total street length in this configuration is 650 meters per hectare. If every family is allowed one parking place, total parking length needed for 200 families is about 1000 meters of street length. Two-thirds of these spaces can be along the lanes fronting on houses and at the project perimeter. If the remaining one-third of the cars are placed in underground parking, under half the lanes, and using house foundations as retaining walls, this will dramatically lower the cost of the underground structure (see page 323).

At only slightly lower densities the whole thing is extremely relaxed and pleasant — see pages 325-29.

At lower densities of 40-50 families per acre or 120/hectare (which is still very high), the same geometry gives larger gardens, and there is no need for underground parking. At this still very high density, the environment is pleasant, beautiful, humane: and people can achieve a true sense of belonging and love for the places where they live.



What people *want* in their housing environment is not obscure. The families have made their wishes clear. And what these wishes lead to, if one follows a logical path, unfolding the design according to people's wishes, under the conditions imposed by high density, is also not obscure. It will be something more or less along the lines of what I have shown.



4 / SHIRATORI: A NEW FORM OF HIGH-DENSITY HOUSING
AT 80 FAMILIES PER ACRE: DETAILED EXPLANATION

I will now describe this new geometry in fuller detail with *all* its features since the project as a whole — cars, pedestrians, gardens, windows, sunlight, roof height, everything — all together reflects on the question of what it means to create a harmonious pedestrian housing environment where cars exist but do not dominate.

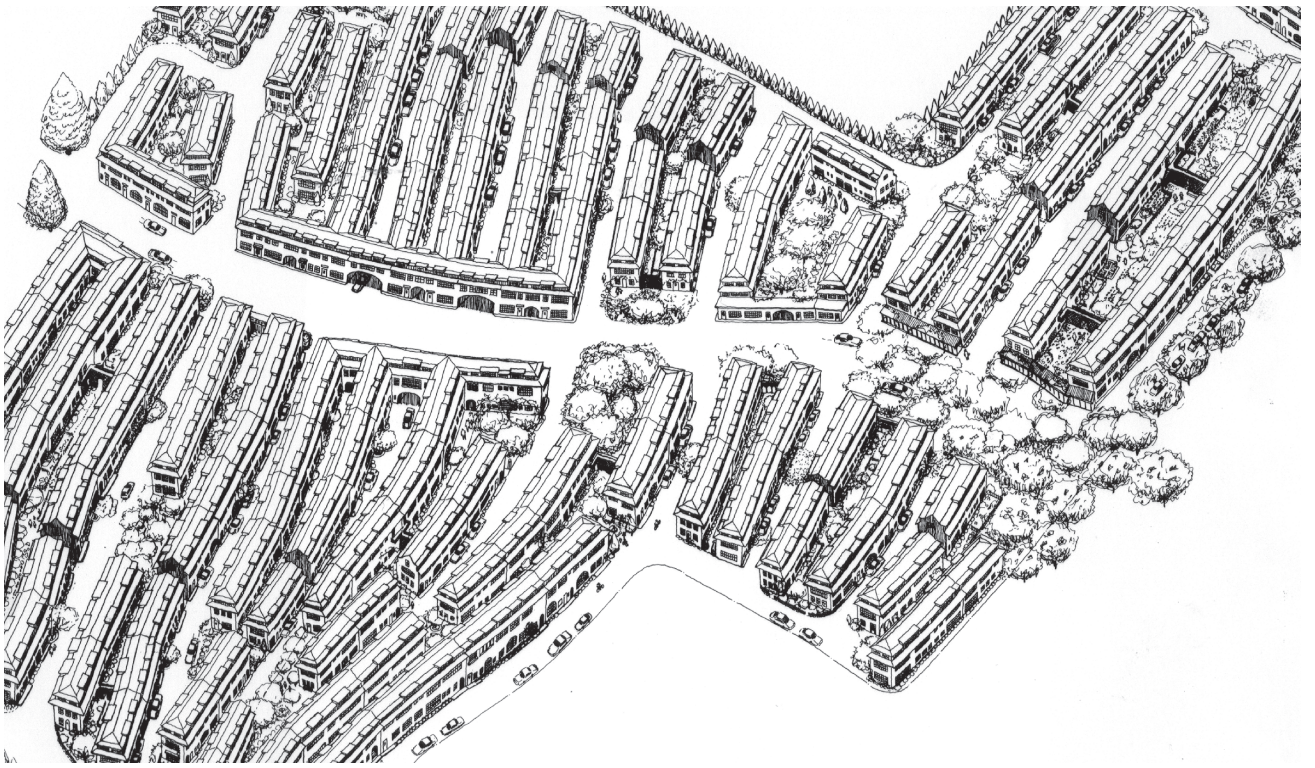
Between 1990 and 1993, I worked out two versions of this archetypal project for the City of Nagoya. One, in a place called Shiratori, was at *very* high density. The other, in a place called Chikusadai, was at a somewhat lower density (see page 325). I was first asked by the city of Nagoya to visit an area known as the Shiratori area, where the Japanese National Housing Corporation had been planning to build 500 units of high-density

high-rise housing on 2.5 hectares. Officials of the Shiratori area development group asked me to prepare a plan for this area to demonstrate how housing can accommodate new and better principles of living. The housing which I showed them exactly met the standards that were at that time being met by the city's criteria in other public housing projects (density 200 units/hectare or 80/acre, parking 1:1, average apartment size 70 m²). These conditions were given to me at a meeting with officials of the city of Nagoya in August 1989.

The new project, derived from the sequence summarized on pages 314-15, and given in full on pages 317-24, showed that even in a big city like Nagoya, high-density housing need not be built in the 14-story free-standing apartment



Shiratori Housing, Nagoya. Five hundred apartments on 2.5 hectares. Christopher Alexander and Miyoko Tsutsui, 1988.



Lanes, gardens, and small houses: Overview of Shiratori Housing, Nagoya. 500 apartments on 2.5 hectares. Christopher Alexander and Miyoko Tsutsui, 1988.

buildings which are common today, since the same 500 units, on the same site, can be built in 2 1/2 story buildings (2 stories plus an attic story), arranged along narrow lanes. Even though housing officials at first told me that they felt such a thing to be physically impossible, I demonstrated to them that it can be done at the same cost and same density.

How does the “magic” come about? Two hundred apartments need a total floor area of about 14,400 m². In the usual way of building high-rise apartments, these 14,400 m² of built space are put in a tower, and occupy only 1,440 m² of the land. The remaining 8,560 m² of land is typically left as a large open area of dead space between the buildings, good for parking, but so unpleasant that it is useless for human purposes. Emotionally it belongs to no one. But if we put the 14,400 m² in low buildings, the buildings cover 4,800 m² of the one hectare. This sounds more crowded, but what happens is that the re-

maining 5,200 m² of land *can now be divided into small areas which are beautiful and useful.* Instead of being a desert of horrible space it becomes humane *because it can be composed of small gardens and narrow, winding, semi-pedestrian lanes.*

I. GENERAL DESCRIPTION OF THE PLAN

The houses are long and narrow along the lanes, so that each one has its own long and unique frontage; the apartments on upper floors have individual private stairs going up to them. All apartments have far more daylight and sun than is possible in present day high-rise buildings (because of the long perimeter exposed to sun). Every family has a parking space. The tiny gardens, though small by today’s standards, are the same size as many traditional Japanese gardens and give every family the chance to grow trees or flowers or vegetables according to their desire (photo, page 322).

The lanes are gently curved, so that there is a subtle human quality in the street, and the street is quiet and lightly travelled. Each lane is pleasant as a center of community and a possible place for children to play. Most important, the construction type allows each family to determine the physical layout of their own apartment. The uniqueness of each house is created by a unique plan and windows. Each one is a real home, not a cell in an egg-crate. Altogether, the environment is vastly better than that which is currently provided by typical contemporary high-rise housing developers in Japan.

2. THE HEIGHT OF THE BUILDINGS

The buildings have three floors but the eave height is only 2 1/2 stories off the ground. The top floor is partly placed within the volume of the roof. The main reason for doing this is that the very small outdoor spaces feel comfortable for people when the eave height is 7 meters from the ground, but 8 meters (3 stories) is too high and makes the outdoor space less personal, less pleasant, less usable. This seemingly small but essential difference is a key for the success of the project. It also allows sunlight to get into the narrow spaces much more easily.

3. THE BEAUTY OF THE LANES

Although the streets allow cars to move in them (slowly), each one is actually more pedestrian in character. Each street is really a small lane, similar to many small lanes that existed all over traditional Japan. It is intimate. It has a nice shape created by the low overhanging eave of the buildings. (See cross-section on page 341.) Even though the buildings have three floors, still the pitched roof and lower eave make a very good atmosphere in the street.

The lane contains cars parked informally along one side. It also contains front doorsteps, front gardens, benches, small trees, low walls, pleasant places to sit and stand. Here and there a passage goes through the building to the gardens

behind. And from time to time, there is an opening to relieve the space.

The lane is curved so there is a constantly and subtly changing view. At one end, one senses a connection to the main street creating a neighborly feeling of community. Houses vary as you go along the lane. You can feel the uniqueness of each house, from the changing windows, and from subtle changes of material, color and position in the different houses.

4. THE BEAUTY OF THE INDIVIDUAL APARTMENTS

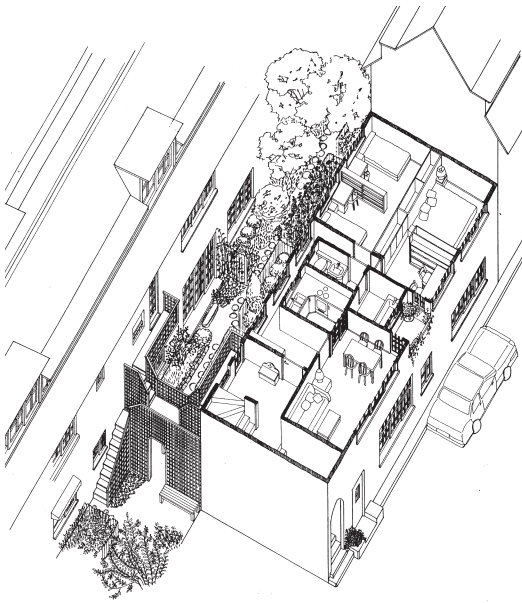
Each apartment has the opportunity to exist as a world in itself. It has excellent views, good daylight, good sun. Each apartment has its own entrance from the street. Even the apartments on the second floor or third floor have their own private stair which goes directly to the ground.

Within each apartment, there is always one beautiful room: small bedrooms and other guest rooms have their own uniqueness. Each room has good daylight and the space is carefully made, so that each room is protected and given more individual space by a bend in a passage or a thickening of a wall. This makes family life easier in a small crowded apartment, of necessity quite small. Sliding screens (*shoji*) are used so that rooms can be combined or separated.

5. DAYLIGHT

Daylight is one of the most important features of the place. In a normal contemporary apartment building, a typical apartment of 72 m² (say 6 meters by 12 meters), has one short wall which faces out and has daylight. In a typical high apartment building with an internal corridor, the other *short* wall is on the corridor on the interior of the building. This apartment has a total of only 6 linear meters of daylight-facing exterior wall surface.

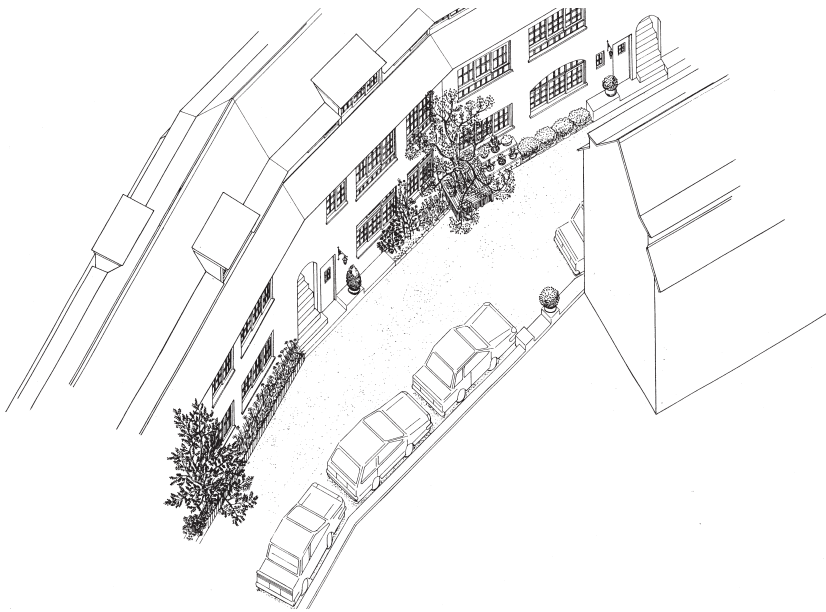
The typical apartment in the Shiratori plan is oriented the other way, and has daylight on both long walls. The same apartment of 72 m²,



Cutaway drawing showing apartments, street and gardens



Typical view of lane in Shiratori



Shiratori Housing, parking along one side of lanes.

if it is 6 meters by 12 meters, has both long walls open to daylight with a total of 24 linear meters of daylight-facing exterior wall surface, *four times as much daylight as the typical high-rise apartment.*

There is another way to make the same calculation. Typically, in an apartment, only those

areas within 3 meters of a window are reached by daylight that is useful and pleasant. In the usual high-rise configuration, no more than one quarter of the space in any one apartment is within 3 meters of a window, so only a quarter of the apartment has good daylight. In the apart-



One row house in the lanes; three apartments one above the other, in a long narrow building, 2 1/2 stories high. Shiratori and Chikusadai, Nagoya. Christopher Alexander and Miyoko Tsutsui

ments of the Shiratori plan, 100% of the floor area is within 3 meters of a window, and 100% of the apartment has good daylight.

6. SUNLIGHT

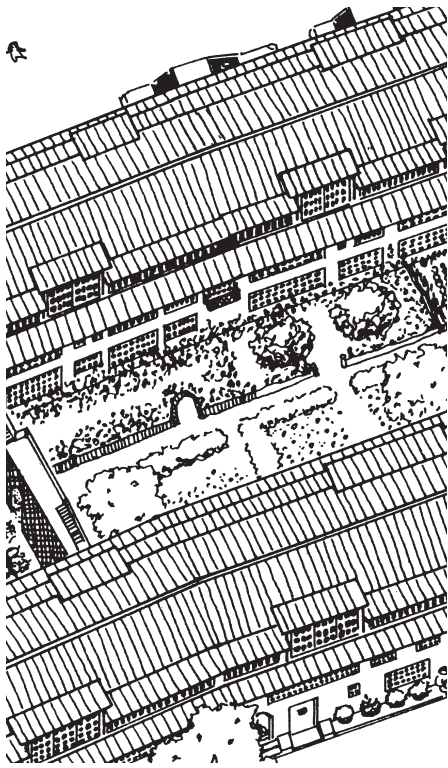
In the northern hemisphere, except in tropical countries, one may say broadly that rooms in houses and apartments should face south to give people as much sunlight as possible.⁴

However, this rule must be interpreted with great care, and especially at high densities one has to treat it with care. If, for example, the main wall of the long side of the Shiratori apartments were to face south, this would have two results; one, that half the apartment, by facing north, could almost never get sunlight; second, because buildings are so close together, sunshine would be obstructed when sun angles are low — yet these are the times of year when sunlight is most important.

To make sunlight work in the Shiratori configuration, one actually needs to orient the buildings so that the windows, as a group, face into the cone of sunlight from south-east to south-west. To achieve that, the buildings should face east and west, while streets and building volumes run north-south, allowing the faces of the buildings to catch south-east and south-west sun.

To measure the total effective sunshine in an apartment, we may use the measure of square-meter hours. This measures the total square meters on the floor getting sunlight, each square meter multiplied by the number of hours of sunlight it receives (using the day with shortest sun-hours and lowest sun angle).

On December 21, a typical apartment of 72 m², in a high-rise configuration building, receives a total sunshine of 70 square-meter hours. On the same day, a Shiratori apartment of the same size, oriented the way I have described, will receive 150 square-meter hours — because



Scale drawing of volume proportions showing space of gardens and streets, with building heights



Accurate view of a lane in a large scale model, showing scale, tightness, and relationship of lane to cars

of the much longer window perimeter, and the better orientation possible in the Shiratori arrangement. Thus the inhabitants of the Shiratori apartments will, on the average, *get more than twice as much sunlight* as the less fortunate families who live in the typical high rise apartments.

7. CROSS VENTILATION

Summer is hot in Japan, hot, and often sticky. It needs a nice breeze to cool you down. The houses which are designed in the Shiratori plan, are only 6 meters deep — so it is very easy to open windows on opposite sides of the house and thus lead a breeze through the house.

8. THE BEAUTY OF THE SMALL PRIVATE GARDENS

At first sight the tiny gardens which the Shiratori apartments have, may seem almost ab-

surd. Each family has a garden that is 2 meters wide and 4 meters long. Further, the gardens are in a zone only 4 meters wide, between the buildings. How can these gardens get any sunlight to let plants grow? And, is such a tiny garden really useful?

It is instructive to realize that traditional Japanese town houses very often had gardens of just this size. For instance, I went into a house in Nagoya, a two-story row house, opening off just such a lane. The garden, which is pleasant, filled with plants and enjoyed by all the family, is 2.2 meters by 3.85 meters (photo next page).

Although this garden size seems small by mechanistic or present westernized standards, it is normal for the feelings of Japanese people and, for them, pleasant and useful.

Second, because of the street orientation, the gardens receive many hours of sunlight — even though the space between the buildings is so narrow. In summer (June 22) the garden gets



An existing tiny garden in Nagoya, 2.2 meters by 3.85 meters, showing how even the smallest garden means a great deal to people and is considered practical and useful in Japan today.

6 hours of sunshine. Even on the worst day of the year, December 21, each garden gets 3 hours of sun.

Compare Shiratori with conventional housing of the same density. In the Shiratori area, every single family has their own garden. The traditional Japanese feeling (“let me be connected to my own little bit of soil”) is respected and honored here. In conventional high-rise housing where the density is the same (200 units per hectare), not one family has their own garden.

Is there really any comparison?

9. UNIQUENESS OF INTERIOR PLAN FOR DIFFERENT FAMILIES

The form of the buildings allows each family to develop a special and unique house for

themselves, with unique details, inside and outside the buildings.

Thus, it is very easy for each family to install an apartment plan of their own wish, within the rectangle they are provided. This is easy because the short party walls between adjacent apartments and the long window perimeter make the planning flexible and easy, and there are few constraints.

The apartment plans shown in chapter 13 (page 383) show different possible interior plans generated by different families within the daylit rectangles provided by the housing envelope. They allow individual families greater dignity than is possible in a high-rise housing because each house is more truly unique and special to that family’s character and wishes.

Physical installation of these different interiors can be done privately by individual families — or publicly by using computer-cut lumber and the computerized planning service already offered by Japanese companies in low-density suburban housing.

10. CONVENIENCE OF PARKING

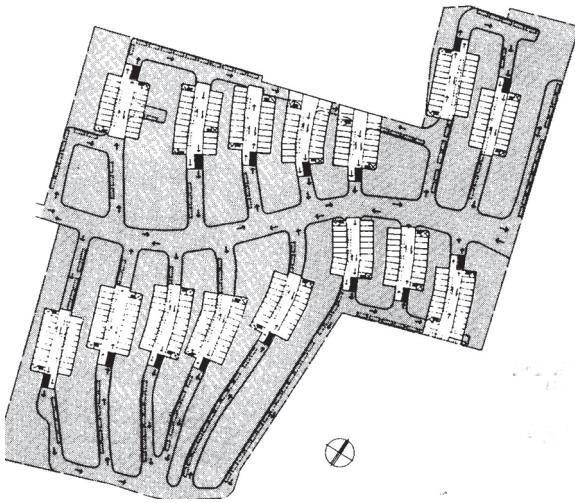
Cars are easy to get to, but do not dominate the landscape. Thirty-five percent of the cars are parked in the lane itself, with your car parked outside your own house. Another thirty percent are parked on perimeter streets, two minutes walk from the house. Thirty-five percent are in underground garages, one level below the ground, at the end of the lanes where you live.

The underground parking lots are reached by small, Japanese freight elevators for cars, from the lane (drawing opposite). The lots are small and safe because of their intimacy, and also have stairs leading directly to the lane, so there is no long distance, nor the frightening quality one experiences in large underground garages.

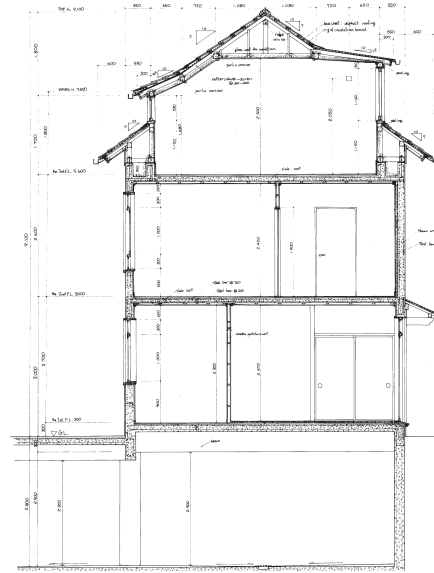
II. BEAUTY OF CONSTRUCTION

One of the things people like about traditional Japanese buildings is their beauty of con-

“BELONGING” IN HIGH-DENSITY HOUSING



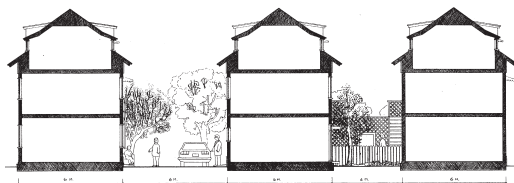
The specially designed low-cost underground garages which follow the streets and house foundations to reduce cost. Car elevators are shown in black.



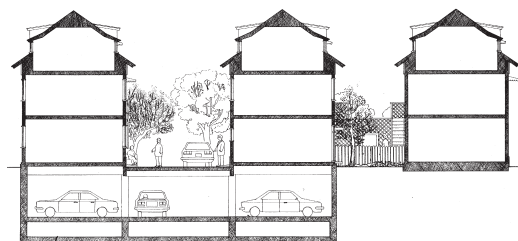
Cross section of one two-and-a-half story house showing three apartments, one in the roof space. Underground parking has retaining walls and columns in the structural positions of the house bearing walls.



Typical street wall showing variety of windows caused by user design of apartment interiors



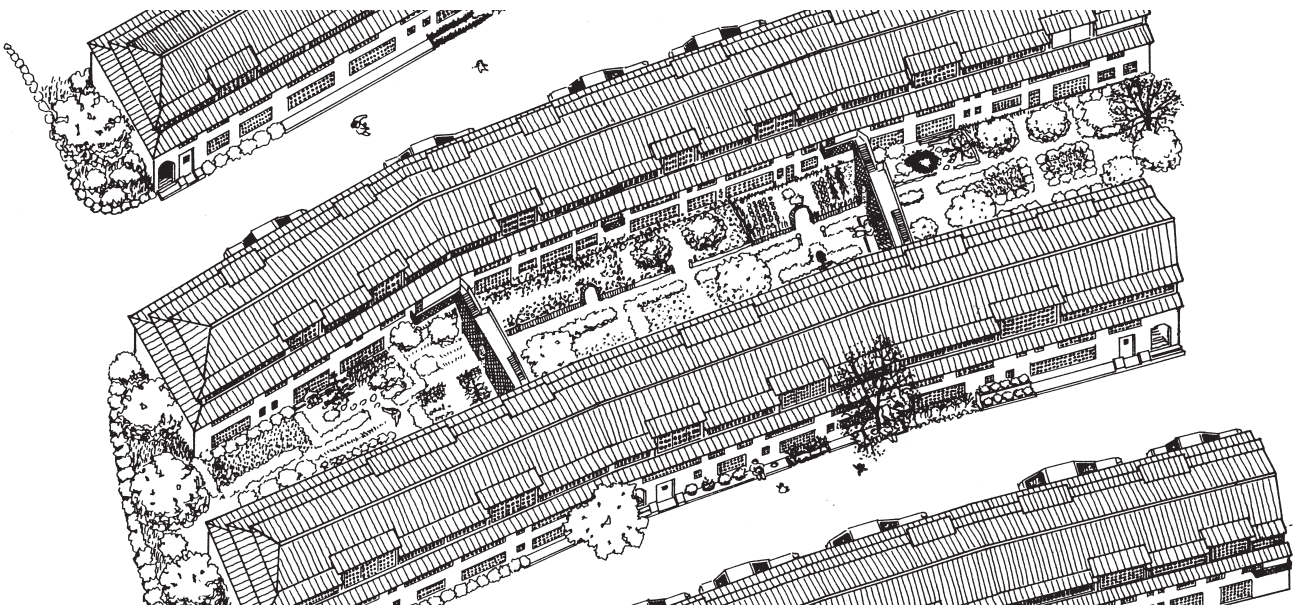
Typical cross-section showing proportions and dimensions



Cross-section in those areas where there is underground parking under the lanes (see parking plan, above)

struction. This has completely disappeared from modern high-rise apartments which are most often built in extreme, debilitating ugliness.

It is commonly assumed that this is done because of economic necessity or because of some kind of special efficiency. In reality, though, it



Axonometric drawing showing building exteriors, and the gardens tucked in between rows of houses and streets

is simply a consequence of an unintelligent building form which causes the method of construction to be banal and highly unpleasant.

In the Shiratori plan, we have very simple small buildings. They can be built in masonry with wooden roofs and some wooden interiors. See illustration on page 320.

12. BEAUTIFUL BUILDING EXTERIORS

The unique character of each unique apartment interior can easily be carried outward to the building's exterior and to the boundary zone where the building meets the street. It becomes expressed, then, in the variety of windows, roofs, entrances, eaves, openings, window sills, passages, and flower-pots. Each part is recognizable, and individual, with its own life.

13. COST OF CONSTRUCTION

The cost of the construction which I have proposed for the Shiratori plan is the same or lower than costs of present-day high-rise housing. This is because high-rise housing, though often put forward with dramatic claims about cost effectiveness, has various built-in hidden costs, which greatly increase the cost per square meter (for example, more expensive foundations, elevators, air conditioners, heating systems, wall systems, crane-lifted panels, are all more expensive). In Oregon we built a sample of 3-story housing, not too different in type from the Shiratori arrangement, with no two apartments the same, and a similar average size of apartment (80 m² each), at a cost of \$40,000 per apartment (1993).

Sadly, the contractor's and developer's lobby in Nagoya prevented the Shiratori project from being built. I suspect they were worried that if carried out, it would put a limit on density, from which they might never recover: and at that time, although 200/hectare was the legal limit on all multifamily buildings, behind the scenes lobbies were trying to increase this limit, so that they could make all land more profitable.



5 / CHIKUSADAI: 40 FAMILIES PER ACRE

After the reluctance of the Nagoya municipality to build the Shiratori project, I was approached by a community of several thousand families from Chikusadai, another part of Nagoya, with the request that I help them in their struggle with the city, and build housing of a similar type for them. In this case the project was at a lower density than in Shiratori (about 100 families/hectare or 40/acre in Chikusadai), though using the same general principles.

What was especially interesting here were these features:

1. They had an existing community dating from about 1940, which was to be torn down because it had become derelict. They wanted to preserve the feeling of the community while building to the city's desire for new housing at a higher density. The Chikusadai plan is therefore

based on extensive participation with the people of Hazama-sou, one of the neighborhoods of Chikusadai.

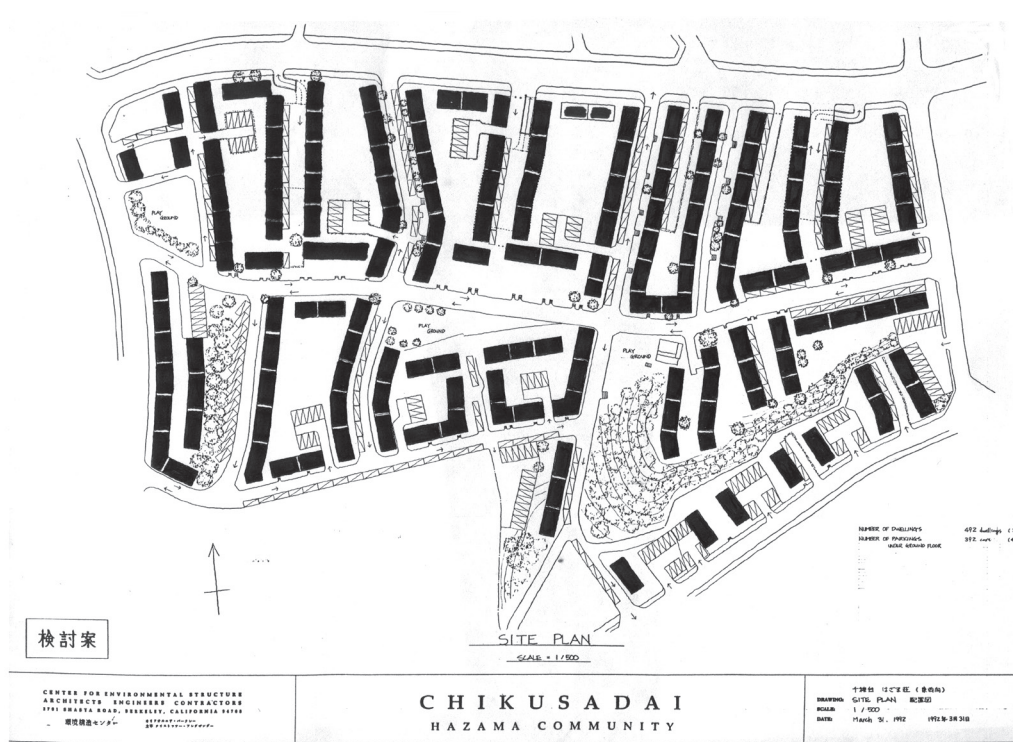
2. The overall density is lower. The plan shows the same kind of housing in a context where there is much more open space, making a more relaxed and pleasant layout for the families — with plentiful large gardens and parks.

3. Since it was done with the people of Chikusadai, all living there at the time of our work together, the plan illustrates the structure-preserving aspects of living process and closely follows the outline defined by neighborhood groups and families.

4. The project had, also, this wonderful slogan from the community: OUR NEIGHBORHOOD MUST BE FIT FOR INSECTS. IT IS THE INSECTS WHICH ARE IMPORTANT. WE WANT A WORLD



People of the Hazama neighborhood in Chikusadai, gathering as we made plans together, 1992



Plan of the Hazama neighborhood showing the same long rows of houses, two and a half stories high, forming the same narrow lanes for pedestrians and a few cars. However, compared with Shiratori, the houses are opened out, there are open spaces for greens, playing fields, space for future projects, and a lower density of about 40 families per acre. 1992

IN WHICH OUR INSECTS ARE PRESERVED. With these astonishing words, the citizens of Chikusadai launched their attack on the city, their appeal for help, and their work with me.

In 1992 I wrote some twenty letters to the 400 families of the Hazama neighborhood in Chikusadai, while we were working. Here is one of these letters:

To the people of Hazama-sou, March 7, 1992:

ON OUR WORK TOGETHER ESSAY #2: INSECTS

My dear friends and colleagues,

When Mr. Ozawa, the NHK film director, asked me what impressed me most during my discussions with you, I answered "insects". He was very surprised, and even I myself was a little surprised by my own answer to him.

When you told me about living environment, and that one of the things you cared about so deeply

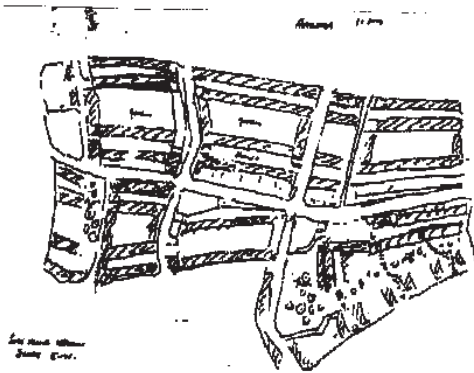
was insects . . . it seems a small thing, even a trivial thing. But it expressed very strongly your deep love of trees, and sunshine, and darkness, and living things, and the reality and short moment of our own life, in a way that surprised me very much.

In almost thirty years of work, working together with families like you, I have never before heard people mention "the well-being of insects" as the most important thing in a neighborhood. When I heard it from you, and thought about it, I wondered why it moved me very much. Partly I found the answer in Matsuo Basho's poems. He also thought very much about insects and the meaning of life in small things, the sound of cicadas. I began to realize with increased respect how deep-thinking you all are about your own lives: and how this work we are doing together now, in Chikusadai, is a much greater thing than just "a housing project." It is really a work about the meaning of life in a way that almost all people in the world have been forgetting.

Christopher Alexander



The central street, as it was, and which people wanted to keep as the central spine of their new neighborhood.



Another plan for the Hazama neighborhood, also done with the families. This illustrates what happens when the streets run parallel to the main axis: not as good from the point of view of sunlight, but a feasible plan with other good features.

This version was finally rejected by the families in their discussions. Christopher Alexander and Miyoko Tsutsui.

At the time when the project began, the City promised the people of Hazama-sou that if 70% of the citizens of the area would support the new plan, the city would build the design they wanted. Our work with the neighborhood was

very successful. Eighty-five percent of the people in Hazama-sou supported the plan and signed a petition to the city, declaring their support. Proudly the petition was taken to the city offices. To our horror, a few days later the City issued a statement that they had refused the plan and would ignore it altogether. I wrote this public letter to the Mayor.

THE FUTURE OF CHIKUSADAI:

October 5, 1992

*The Honorable Mr. Takeyoshi Nishio, Mayor,
Nagoya City Hall,
Nagoya, Japan*

Dear Mayor Nishio,

It has been some time since you and I spoke together in 1989 and 1990. Since then I have always been remembering your statement that user-participation by the people, in the construction of



検討案

Chikusadai. Here, on a sloping site, the terrace houses are adapted to the slope conditions. The two drawings show the appearance of the terrace houses after families have made their apartments as they want them.

public housing, is the most important thing. I was very impressed by this statement because you said it to me so strongly, and I felt it was most unusual for the Mayor of a big city to understand this very important thing so well. I have never forgotten your saying it.

I hope you saw the NHK program on June 15 in which the work of the citizens of Chikusadai was described. I am sure you must be very proud of the people of Chikusadai, who are so firmly and so strongly insisting that their lives, their children's lives, their families lives are the most important thing. I was very impressed when the Chikusadai citizens made a formal request to the city of Nagoya to listen to their wishes and adopt the plan which they had made with my help.

But frankly, I was deeply shocked to hear that your housing office sent such a blunt and impolite refusal to the citizens of Chikusadai, especially since in 1989 you had told me so strongly that user participation is the most important thing, and I, taking you at your word, had implemented this idea with several hundred people in Hazama-sou.

Originally the Housing Department agreed that they would follow the plan if at least 70% of the families supported it. Do you realize that in Hazama-sou, a full 85% of the families in the community have declared that the plan they made together with me is their will, and what they believe must be done for the good of their families. Their request was very clear and modest. They just asked the officials to proceed with the city plan with the people



Each house at each level is different, and has a different window configuration, as a result of the different interior plans made by the families. Christopher Alexander and Miyoko Tsutsui, 1992

of Chikusadai and with me, and using our plan made with Chikusadai people as a basic draft. But as you probably know, the housing officials ignored the request, broke their promise with some impolite letter, and have now started trying to move people out of Kusunoki-sou instead, so that they can go on building the existing municipal plans which the people don't want and which destroys "green and soil" completely. Unfortunately, of course the intention of the officials' act is only to begin destruction of Kusunoki-sou, with the idea of breaking the spirit of Hazama-sou and others in Chikusadai. This cynical and shameful attitude surprised me very much, since your vision of true concern for the lives of ordinary people was so positive in 1989.

Is it not shameful that your own housing officials behave like this, in blatant defiance of the will of your own citizens? Please may I urge you, as Mayor of a great city, to take a positive view which is helpful for people's lives. Please sit with Mr. Kato and with other housing officials, and explain to them your view that user-participation is the most important thing, and that user participation must be done in Chikusadai, so that it becomes a symbol for Nagoya and a symbol for Japan. Please use your influence to explain this to the leaders of your Housing Department and your Community Department. Please tell them that they are doing wrong, and that they have the wrong understanding of a living environment. Perhaps, also, they do not realize how relatively simple it will be to

implement something so much better at the same cost, and in a way which will nourish the hearts of families throughout that neighborhood at the same density your officials originally specified. Is it not possible, too, that you could use the force of your office, and your position, to do what is right?

Please believe me, I will do anything I can to help you reach your dream of user participation, and to overcome whatever obstacles you have found to make this dream come true for some of the people of Nagoya.

Christopher Alexander



6 / EVALUATION OF THE SHIRATORI AND CHIKUSADAI PLANS

To some degree I approached — at least just began to approach — a living structure in the Shiratori and Chikusadai plans. The feeling is unique. They have an intimate feeling, an almost miniature quality. And above all they create — and preserve — the sanctity of the pedestrian world.

I believe this quality is consistent with the deep feeling of Japanese people, who have always had a unique sense of scale and size. The small size of a traditional tatami mat is what I mean. The small size of tiny stairs in traditional Japanese house illustrate what I mean, often no more than 60 centimeters wide and very steep. The small size of traditional garden is what I mean. The modest size of a traditional entrance to a Japanese house is what I mean. The small lanes of traditional urban housing from the Edo period also show what I mean.

The great beauty of Japan, in traditional times, came from an understanding that human

life is most beautiful, when many things are a little small. This emphasizes their preciousness and makes them more intense in their feeling.

Modern western standards have driven this feeling out of Japan, and replaced it with a cruder sense of scale which is just slightly too large. I believe, however, that the desire for this smaller and more intimate scale remains in people's hearts.

In the end it is this intimate and subtle feeling which may be the most important thing about the Shiratori plan. I hope that when it is, one day, built for the first time, people will feel themselves better there. I believe they will experience an intimate feeling which brings people back to the ground, back to their hearts — and allows an ordinary person of modern Japan to feel the same quiet and beautiful feeling of oneness in the harmony of mind and body which Rikiyu felt in his small tea house that was only two mats large.



7 / A POSSIBLE WORLD-WIDE ARCHETYPE

I should say, too, that the results I have presented, although they were obtained in Japan, and although the analysis of people's wishes was studied with objective questions, only in Japan, nevertheless the results are more widely applicable. I believe that similar — certainly not identi-

cal — results will come from asking people in other cultures, to answer questions similar to those on pages 312–14. And I believe the results shown in this chapter, though worked out for people in Japan, will, in some version, also make sense (in some transformed version) in Norway,

in Jordan, in China, in the United States, in Chile, in Germany, in Kenya, in Germany, in England, in north India and Nepal.

Of course, housing is very specific to culture. An example of a generative process, specific to Colombian culture, is given in chapter 12. One for Venezuelan culture, quite different, is given in chapter 11. But when density increases to the levels discussed in this chapter, the options become more restricted, and the limitations of human need and human desire coupled with the density lead to a smaller range of possible good solutions. Just as high-rise apartments, though detrimental to people’s wishes, became used all over the world, so I believe that archetypes like the one I have shown here show a *partially* universal form which might, in different versions, modified for culture, address the feelings and wishes people have in many, many places on Earth where building density has to be extremely high.

In most countries of the world, people are

suffering from modern forms of housing. These forms of housing have, unnecessarily, gone in a direction which is inhumane, inefficient, expensive, and unpleasant. It has happened because people have assumed (wrongly) that there is no alternative. They have therefore reluctantly built the 19th- and 20th-century types of housing, regretting the necessity, perhaps apologizing in their hearts to the families whose lives they have destroyed or damaged.

In this passage, I have shown that there is an alternative, not previously imagined. There is a form of housing which achieves the maximum density permitted by Japanese law, but under conditions which resemble humane and beautiful high-density urban housing of past eras. Such new forms of housing are better in space, better in daylight, better in sunlight, better in parking, better in gardens, better in quality and uniqueness, better in planning. They also come — I believe — closer to creating real community.



8 / SOME INVARIANTS FOR HIGH-DENSITY HOUSING

What I have described in this chapter is not a universal living process for high-density housing, but rather a process which can generate one very particular type of plan for high-density housing — one that keeps extremely good characteristics even at the very highest densities of 50 to 80 families per acres — about the highest densities that housing ever reaches.

If we compare it with the form of housing arrangement described in chapter 10, where I examined the general features of housing at 10–20 families per acre, we see how extremely different the arrangement is. At 20 families per acre, the gardens dominate and the pedestrian system is very important, cars are separate from pedestrians. At 40–80 families per acre, the gardens are tiny, though still present; buildings are 2 1/2 stories high, not 2 stories; cars are partly underground and partly mixed with very narrow lanes, leaving the daylight as the all important features which, in a successful project, must dominate the form.

The general morphological features of housing arrangements that will typically come from living process, at such very high densities, are these:

Height is all important. The low eave of the third floor so that the height to the eave is 7 meters, but not 8, is a surprisingly important detail. The shape of the apartments, long and thin along the street, and garden, so that abundant daylight comes in, and windows dominate the interior. Each apartment with a tiny garden — still vitally important. Narrow lanes, able to take cars, at slow speeds, and able to allow a few cars to park, but made so that these lanes are largely pedestrian, small in scale, and parallel to each other. Design of apartments, even at this ultra-high density, by the families themselves.

The essence of any morphology generated by a truly living process for high-density housing will go like this:

The world — where children, old people, human beings walk, play, exist — is mainly pedestrian. The scale is tiny. Lanes are small, narrow, the total area given to cars is minimized. If the number of parked cars above a certain figure, some of them go underground. Everyone still has a garden, even if it is no more than a patch of sunlight with a pot of geraniums and an old chair. It is yours. The houses are arranged so that they receive a tremendous amount of light. This means that they are, as structures, necessarily very narrow, with long exterior walls. Within the houses, people can create their own living space, walls, bathroom, kitchen, as they wish. The houses are no more than two-and-a-half stories high: so that the eave of the roof is low enough to create a comfortable human scale and positive feeling relative to human beings in the narrow lanes and gardens.

NOTES

1. Hisae Hosoi, interview conducted with residents of high rise apartment buildings in Nagoya

2. Typical layouts may be seen all over Japan, and equally in Italy, Manila, Moscow, Sweden, Germany, Brazil. It is almost universal. Only a few countries have progressed beyond the high-rise apartments building. US

and UK are two countries where it is beginning to fall off in popularity because user needs have begun to have some impact.

3. Data taken from Hosoi, 1992.

4. Obviously, in the southern hemisphere south and north must be reversed.