

Creating More Space

By Toshio Ojima

Just like everything else in the universe, a city has a life of its own. If you look back through history, you will find that cities typically experience a rise-and-fall cycle of about 300 years. This can be considered the life span of a city. Edo, the predecessor of Tokyo, flourished for 270 years as Japan's main city at the close of the feudal era, before taking the name of Tokyo.

The 300-year life span of a city consists of three stages. In the first 100 years the city undergoes construction; in the next 100 years it enjoys its zenith; and in the final century it suffers a decline.

In the century following the Meiji Restoration of 1868, Tokyo developed into a modern city, passing rapidly from a society oriented toward primary industries to one dominated by manufacturing and then services. In the process, Tokyo built up its status as the main city not only of Japan but also of Asia. But the pace of Tokyo's development was so fast that various problems remained untreated and have become chronic today—the ex-

orbitant price of land, long commuting times from homes in the suburbs to offices in the center and cramped housing.

Having completed a frenetic first century of growth, Tokyo has now entered its period of maturity. What kind of city should Tokyo become in its second century? Above all else, the Japanese capital must become a city that is more open to the world than it has been. Tokyo must fulfill its role as an information society that functions around the clock and plays an important part in making the world go round. Geographically speaking, Asia accounts for almost one-third of the world. As this region's core city, Tokyo is being called on to participate in managing the various activities of the world in time shifts with New York and London. This trend is already evident in the field of international finance.

To ensure that it can fulfill this role, Tokyo faces the task of making a rapid transformation from being a Japanese and Asian city to being a world city. First of all, it must prepare the environment for

becoming an international city, because from now on more and more people and companies from around the world are going to gather in Tokyo.

The most urgent requirements are a 24-hour international airport that enables people to enter and leave Japan at all times, and housing that is suitable for foreigners. Tokyo's hotels and convention centers have reached quite a high standard, but other facilities for foreigners, such as schools and language centers, need improvement, including improvement of the operational systems. Traffic signs and other indicators must also be made more international. Unless these facilities and machinery for accepting people from other countries are improved, Tokyo will not qualify as an international city.

Abnormal land prices

Next, Tokyo must quickly find solutions to the various problems that I just mentioned. Residents of Tokyo live in confined, inferior housing. If Japan continues to make direct investments overseas and to snap up real estate in other countries without tackling this domestic problem, it will only invite further criticism of its economic activities abroad. Families that have lived in Tokyo for generations are finding it difficult to remain because of the confusion brought about by urban development and the abnormally high land prices.

Efforts are needed to make sure that these families remain in Tokyo for much longer, that those people who flocked to Tokyo in the years of development after World War II and worked diligently to build up the manufacturing industries that made Japan prosperous do not have to worry about housing, and that the foreigners who come to Tokyo to play a role in the functioning of this international city can find comfortable housing without any trouble.

But, some people will say, Tokyo just





does not have the space available at reasonable prices. Certainly, land prices in Tokyo are so astronomical that people give up buying a house in the center and resign themselves to living out in the suburbs and commuting two hours or so to work. And even then they have to pay a ridiculous price for nothing more than a "rabbit hutch."

The major reason for this state of affairs is that Tokyo's development has taken place at surface level. The construction of housing that sticks closely to the surface level has led to a flat urban sprawl, so that the beautiful kind of city found in other countries—a downtown with many towering skyscrapers and suburbs with abundant greenery—has not developed. Instead, what we have in Tokyo is a faceless, overcrowded city in which it is impossible to tell where the center stops and the suburbs begin and in which you have to expend an enormous amount of time and energy to escape from the artificial space of the city to natural surroundings.

To solve the problem we must undergo a drastic change of values, liberate ourselves from our fixation with surface-level possessions, promote the use of space in central Tokyo, and provide large quantities of housing that is roomy, inexpensive and within easy reach of the center. At the same time, we must turn

back the urban sprawl and restore Tokyo's surroundings to a healthy natural environment.

Tokyo's 23 wards cover a total area of about 60,000 hectares. The average height of buildings across this total area, including road space, is 0.5 stories—much less than the average of three stories in Paris and London and of five stories in New York. If the average height of buildings in central Tokyo were raised to that of Paris and London, we would have six times more space. If it were raised to the New York level, we would have 10 times more space. Even if we kept a space equivalent to the surface area of central Tokyo for the preservation of historic sites, beautiful scenery and general comfort, we would still have several times more space than we have at present for housing and offices. Tokyo's problems of high land prices, confined spaces and long commuting distances would melt away naturally.

The legal revisions necessary to make this "skyfront" project possible must be carried out immediately. For example, buildings in central Tokyo with a ratio of floor space to actual land covered of about 500% have only been approved in a few cases. What we need is approval for buildings with a floor area ratio of as much as 3,000% or 5,000%.

If the skyfront project for raising the

heights of Tokyo's buildings represents one method of solving the city's problems, another is the waterfront project for redeveloping the coastline along Tokyo Bay. In the last 60 years 20,000 hectares of reclaimed land has been created along Tokyo's waterfront, much more than the 2,000 hectares reclaimed for London's dockland development and the few hundred reclaimed in Boston and Baltimore in the United States.

Eliminating factories

Most of Tokyo's reclaimed land was for industrial use, created at a time when Tokyo was developing as an industrial city. The heavy industrial companies that built plants there in the past still occupy the bulk of it. Nowadays, however, there is no need for Tokyo to have factories in its waterfront area. With Tokyo's development from an industrial society to an information society, these factories no longer have a role to play.

If this reclaimed land were redeveloped, it would provide enough living space for 4 to 5 million people. Moreover, since almost all of the factories on this land were built to last only for 10 to 20 years, there should be no difficulty about redeveloping the area for housing over the same period. So the waterfront project will probably precede the sky-front project.

Naturally, the expansion of space in Tokyo will require improvements in the city's infrastructure. But major improvements at the surface level in the traffic network, sewage system and energy supplies will not be easy in the overcrowded center of Tokyo.

The solution to this lies deep underground. In the past, the construction of the Tokaido Shinkansen brought about the rapid development of the coastal belt along the Pacific Ocean side of Honshu, Japan's main island. In the same way, if a large tunnel for common use were built deep below the center of Tokyo, it would provide a foundation for the reorganization of the basic urban facilities that are now overflowing on and near the surface.

This proposal, which I call the "geofront" project, has three advantages: it would promote the redevelopment of

Tokyo above ground, it would revitalize the urban functions of Tokyo by enabling the smooth distribution of goods and the recycling of energy and water resources, and it would promote domestic demand and allow Tokyo to build monuments that would survive into the future, to the detriment of no one.

Here I would like to refer to a plan, which would promote all three of these objectives, for constructing a 55-kilometer-long, 15-meter-wide tunnel under the center of Tokyo. If such a trench were built at a depth of 70 meters or more beneath the surface, it would have absolutely no negative impact on existing rights and interests of private individuals and corporations, even at the present point in time. As proven by the success of the underwater Seikan Tunnel between Honshu and Hokkaido, Japan possesses the technology for constructing such a deep underground tunnel; the one proposed for Tokyo would probably cost about ¥1 trillion (\$6.67 billion at the rate of ¥150/\$)

The main users of a deep underground tunnel beneath Tokyo would be those who control and transport waste and those who utilize the heat generated from waste disposal. The disposal of waste in Tokyo poses a major headache for those concerned; it is impossible to construct incinerators in the 23 wards of Tokyo. If each of the wards were to build one or two underground routes linked to a main underground tunnel, however, it would be possible to transport the waste directly to incinerators constructed on Tokyo Bay by means of computer-operated conveyor belts. The heat generated by the incinerators could then be used as energy for cooling and heating systems in the wards, and the main underground tunnel could also be used for conveying the heat and recycled items.

The secondary users of the deep underground tunnel would be businesses engaged in supplying heat, such as firms involved in incinerating waste, generating thermal power, and obtaining heat from sewer systems. Tokyo lags far behind New York and Paris in the use of heat generated in this way. If the concept of the deep underground tunnel were realized, how-

ever, Tokyo would become an energy-saving city on a par with them.

In addition, a deep underground tunnel could be used for high-voltage electric power and gas supplies, advanced communications cables, sewage pipes, and high-speed subways and as an emergency passageway should a major disaster occur. It is expected that the tunnel would provide enough revenues, such as income from the sale of heat generated from waste disposal, to become profitable in four or five years.

Era of makeshift

To put an end to the era in which Tokyo has pursued makeshift urban development to cope with the demands of post-war reconstruction and subsequent rapid expansion and to begin its transformation into an international city, Japan's capital must lose no time in carrying out the three projects that I have discussed: the skyfront, waterfront and geofront projects.

Another absolute must for Tokyo if it is to become a truly international city is an international airport that is open to the world for 24 hours a day. Unfortunately, Japan at present has no 24-hour airport, so between certain hours it is virtually isolated from the rest of the world. The reason is that takeoffs and landings at night are prohibited to prevent noise pollution. When the Kansai International Airport that is now being constructed on Osaka Bay is completed, it will become Japan's first 24-hour international airport. But specific plans for such an airport in Tokyo are lagging.

When work now going ahead on expanding Haneda Airport on reclaimed land in Tokyo Bay is completed, Haneda, which is used mainly for domestic flights, will at last offer round-the-clock services. Expansion work is also taking place at the New Tokyo International Airport at Narita in Chiba Prefecture, but Narita will not become a 24-hour airport. Moreover, in terms of scale and facilities, Japan's airports are far inferior to those in the United States and Europe.

Narita and Haneda should of course be expanded. But as the core city of the Asia-

Pacific region, with as many as 30 million people living in a 100-kilometer radius, Tokyo should build a large airport fit for the 21st century either on a nearby mountain or in the sea, where noise pollution poses no problem.

Specifically, I think we should begin by carrying out a further large-scale expansion of Haneda Airport in Tokyo Bay, then build a new airport by leveling a mountain in the vicinity of Tokyo at about 1,000 meters above sea level. Assuming the environmental problems could be solved, the construction of such a mountaintop airport would be technologically quite feasible. And if Tokyo could then construct another airport on the sea outside Tokyo Bay, it would at last reach the level of other international cities of the world.

To achieve the role of one of the world's leading international cities by the beginning of the 21st century, Tokyo must move quickly to liberate its skyfront and waterfront areas to create more living and office space, improve its infrastructure by developing its subterranean geofront, and construct the facilities necessary for an international city, especially a 24-hour airport.

These developments alone will not suffice to make Tokyo a charming city. To become an attractive city, it will be necessary to preserve or restore a rich supply of the buildings and other cultural relics that Tokyo has accumulated in its 400-year history, including the Edo period. The space for such a cultural heritage can be created by building skyscrapers much higher than at present and by transferring basic facilities underground.

The new Tokyo that is born in this way will boast a comfortable living environment, intelligent office buildings and plenty of amenities. Hopefully, in the next century people around the world will look at Japan's capital and praise it as the most fascinating and beautiful city on earth. ■

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