

1. What is advanced land use?

Humans have lived their entire lives in relation to the land. Deserts, ice fields, mines, and dense forests, where humans have no access, are land that cannot be used, and thus represent zero use of land for humans.

In contrast, land that is suitable for human use and habitable is called ecumenes. Today, up to 87% of the world's land is ekmene. The history of mankind is a history of using land and making it habitable. It began in the era of hunting and gathering, when the land was used without alteration, and then entered the agricultural era, when the land was altered for use, and finally reached the urban era, when the land was used mainly for the construction of man-made structures. If this trend is called "advanced land use," then the history of mankind can be said to be a history of advanced land use.

What we are concerned with here is the advanced use of land in cities during the urban age. When we consider the high-level use of land in the city, it is not always clear what exactly constitutes high-level use. According to Hidemitsu Kawakami and Toshinori Mizuguchi, the concept of "high-level use" is not found in the West. They point out that high-level use is a concept unique to Japanese cities.

In the agricultural era, the term "advanced land use," if not used, seems to be relatively clear. In other words, if the yield per unit area of land increases due to soil improvement and irrigation, it can be said to have become more sophisticated. Compared to hunting and gathering, agriculture is clearly a more sophisticated use of land in terms of food production and acquisition. If we set a clear criterion of food acquisition, the increase in the level of land use is relatively easy to understand in terms of the food productivity of the land. However, even in such a case, it may not be so simple. In other words, while increasing productivity, if there is some kind of price or loss being paid, it must be subtracted from the total. The relationship between mankind and the land is a permanent one, so it cannot be measured only in terms of short-range productivity. Even if the use of large amounts of pesticides and other chemicals results in a high level of utilization for a time, the land itself may eventually be depleted. Ms. Rachel Carson's "Silent Spring" cautioned against this. When the use of land, an enduring entity, is put on the agenda, it must be evaluated from a long-term, holistic perspective.

Even for agricultural land, which seems relatively simple, the meaning of high use is not so simple.

Usually, it is a highly efficient use of land, especially an economically efficient use. Bringing the land from a state of not reaching the expected use or density to the expected use improves

its efficiency as a real estate investment. Even public buildings try to make effective use of land by increasing the volume of land through three-dimensional, overlapping use or by rebuilding. In real estate appraisal, the principle of most efficient use, or in other words, the highest expected use of the land, is assumed and evaluated. The intention of the right holders of each site is to realize the potential economic value of the site even if it is not used in a particularly high level. Let us call this kind of high-level use of each site "high-level use of the site.

The question is whether the high-level use of a site can be regarded as the high-level use of land as a city as it is. As will be explained in more detail later, high-level use of urban land requires the improvement of the urban environment as a whole, which can be achieved by controlling the highest use of the site, or by converting the high-level use of the site to squares, streets, etc., so that the urban land can be used in a high-level manner that is both spacious and functional. This kind of high-level use of the city as a whole is called "upgrading the urban environment," or simply, "high-level use of the city.

High utilization of the site alone, without high utilization of the city, leads to overcrowding, and in the end, it does not even mean that the site has been effectively utilized. High utilization of a site is effective only when there is high utilization of the city. However, the problem is that the emphasis is often placed only on the high-level use of the site, without sufficient recognition of the difference between the two.

Generally speaking, the high-level use of urban land, or "high-level use of urban land," means the use of land in a way that is more favorable to residents' lives in a comprehensive and long-term manner, in response to urban changes. Needless to say, living is not simply defined as housing, but also includes work, recreation, and transportation. Comprehensive means, of course, that it must be conducive to daily life, but it must also ensure safety, health, convenience, and amenity. It also stands to reason that cities exist for the long term, so they should be desirable for the future, not just a temporary value assessment. And it must be desirable not for some city residents, but for the entire city population, including the future. These goals actually conflict with each other and with the interests of the city's residents, which is the nature of cities. High utilization means that the land is not currently being used in a favorable manner. Since cities are constantly changing and fluctuating, even once a land use is established as desirable, it will move on to the next more desirable use in the long run.

2 The Aim of Advanced Land Use

The current high-level use of land is focused on "high-level use of the site," but let us examine what it aims for in more detail.

(1) Advancement: Usually, the first objective is to increase the total floor area of the building

from the current level. In other words, an increase in floor-area ratio. According to the Tokyo Metropolitan Government, the floor-area ratio in the wards of Tokyo is 68% net and 123% gross. The weighted average of the floor-area ratio in the courtroom is said to be about 240%, so 123% is only half of the current figure. There are calls for a higher floor-area ratio, and there are also strong calls for the legal floor-area ratio itself to be increased.

From the standpoint of real estate investment, the higher the floor-area ratio, the better, as long as there is demand. Especially in the case of today's high land prices, a high floor-area ratio will greatly increase investment efficiency, as it will reduce the land price burden ratio of building floors. As urban density increases, the demand for real estate increases, and it is a general trend to seek higher densities.

However, higher density does not equal higher urban sophistication. So-called "mini-developments," in which mansions with large lots and lush gardens are subdivided into smaller lots and houses are built in close proximity to each other, increase the floor-area ratio, but they also reduce the quality of residential areas by reducing sunlight, ventilation, privacy, greenery, and the risk of natural disasters. In fact, it is a degradation of the urban environment. Among urban areas, high-rise buildings that do not receive sunlight even in the daytime, such as the old Wall Street, may be overcrowded, but they cannot be considered advanced. In recent New York City, high-rise buildings always have wide plazas where sculptures are placed and a pleasant and spacious environment is created.

The current legal floor-area ratio is not based on the overall capacity of the city, but on the vested rights of the old Building Standards Law. Many of the current legal systems are not based on appropriate floor-area ratio in terms of planning. The City of Yokohama, for example, has set a very strict floor-area ratio by designating a large area as a Type 1 residential district, but even with this, if the legal floor-area ratio were to be filled to the brim, it would accommodate 12 million people. If this were to happen, the overcrowding would make living in the area unfeasible. In reality, this is controlled by the fact that there are areas where it is difficult to build and there is a moderate amount of vacant land. If the floor-area ratio is really determined based on urban planning population, water, traffic, waste, greenery, etc., it should be much lower in an average city. If we pursue high density only for the sake of real estate investment efficiency without considering the overall urban environment, we will only end up with overcrowding. The goal of upgrading is not simply to achieve higher densities.

(From the prewar period until the 1960s, the height of buildings was controlled, but the end of the 1930s ushered in the so-called skyscraper era, and the urban skyline underwent a major transformation. The rise of skyscrapers is usually accompanied by an increase in density. Conversely, skyscraping has become a symbol of urban agglomeration and energy, since skyscraping would not take place without the real estate demand created by urban

agglomeration. However, even in this case, high-rise does not necessarily equal urban sophistication. In terms of design, high-rise districts, which are designed for high-rise buildings (called "high-rise" only in terms of height), and high-use districts, which are designed for high-level use of land, are two different things. As mentioned earlier, the overcrowding of buildings that do not even see the light of day cannot be considered as a form of high-rise development, as both people and cars are squeezed into a narrow valley. The problem of high density that accompanies high-rise development has already been mentioned. However, since the days of the Tower of Babel, human activities have been directed toward the heavens. If sufficient open space can be secured in effective situations, it may be said that the city has become more sophisticated, but this depends on the individuality of the city. One must be cautious about high-rise development in a well-rounded city. A wildly high-rise development in a city like Kyoto would degrade the quality of Kyoto.

(As cities change, land use gradually changes. The land that was once used for factories and warehouses will lose its suitability due to the changing urban conditions in the surrounding area. Therefore, they are converted to housing or commercial facilities. In some cases, the floor space is increased and the building is densified at the same time, but in other cases, as in New York's Soho, the warehouse is renovated and turned into a boutique or gallery. In this case, too, there is the question of what constitutes higher density. Some people may have different opinions on whether factories, residences, or offices should be considered higher-order, but in the context of urban development, it is natural that residences should be considered higher-order than factories and businesses should be considered higher-order than residences. The shift of functions that are no longer relatively necessary to the city to outside the city or to outside the city in order to accommodate the newly necessary functions is an indication of the structural transformation of the city, and may be a type of urban upgrading through higher-order development.

(The shift in functions and uses is underpinned by the urban structure and land prices. The rise in land prices is a result of a change in land use in an attempt to create a land use that is commensurate with higher land prices. In addition, the conversion of land use will be more actively promoted in areas where land prices can be expected to rise due to the conversion of land use to higher land prices in the surrounding area, because of the high investment efficiency of such areas. Land prices in Japan's urban areas are unusually high. However, it is a fact that high land prices or the disparity in land prices between urban areas and their surrounding areas promote the advancement of land use, and it is undeniable that the relationship between higher land prices and urban upgrading encourages land prices to rise. So-called redevelopment is a method of expanding publicly available land while taking advantage of this mechanism. Even though high land prices themselves are not a factor of land

price upgrading, they are a cause and effect of the mechanism that encourages high land prices, and they are also an inducing factor. However, unless we stop the myth that land prices will rise indefinitely, land prices will only rise, and no real upgrading will be possible.

(Vacant land left without any purpose is either a speculative object waiting for a price increase, or land that has to be abandoned due to lack of demand for appropriate land use. There may be land that has a purpose but is not yet ready for use. Since these make the land look desolate, active use of the land would be considered advanced use of the site, and therefore advanced use of the city. However, filling up vacant land with buildings is not the only way to enhance the land. Within a city, adequate green space, open space, and public facilities are also necessary, and upgrading is about improving the quality of the city to enhance disaster prevention and amenity.

In addition, reclamation of water surfaces would be even more problematic. Many of Japan's large cities fulfilled their urban functions while reclaiming the sea surface. Whether or not this constitutes an advanced use of the city must be considered according to the purpose, method, and content of the reclamation. In particular, the reclamation and use of inland water surfaces must be carefully considered. Even if reclaimed, it should not be filled with buildings, but should be used as open space necessary for the city, as it contributes to the quality of the city as open space. It must be controlled to realize only the right by reclamation as an economic value and not to deteriorate the actual environment.

(6) Site Consolidation Site size tends to be increasingly subdivided due to soaring land prices and divided inheritance. Furthermore, due to the revision of the Building Standards, the 30-square-meter exemption in residential districts, which was disadvantageous for small lots, has been eliminated. In fact, in the wards of Tokyo, the number of small individual residential lots of less than 100 square meters was 40.2% in 1975, and 44% in 1957. In the wards of Tokyo, the number of small individual residential lots of less than 100 square meters increased from 40.2% in 1975 to 44.0% in 2005. In the wards of Tokyo, the number of small individual residential lots under 100 square meters increased from 40.2% in 1975 to 44.0% in 2005. Since such small lots reduce the efficiency of use and deteriorate the urban environment, the integration of such small lots leads to advanced use of both the site and the city. This is the most consistent and consistent advancement of both companies.

3. Upgrading the Urban Environment and Advanced Land Use

The development of high-density, high-rise, higher-order use, higher land prices, use of vacant land and water surfaces, and the integration of land use described in Chapter 2 were all aimed at improving the efficiency of land use, mainly from the perspective of private-sector real estate investment. However, as discussed in each section, we have also pointed out that

an increase in investment efficiency alone is merely a result of higher densification and higher-rise buildings, and cannot be considered a form of high-level use as such. What, then, is needed for urban upgrading?

The upgrading of land use in a city means first of all that the city as a whole improves its environment, and then that individual sites are used effectively in accordance with the city as a whole, not the other way around. If we only focus on improving the efficiency of individual sites and do not consider the city as a whole, we will end up deteriorating the urban environment by creating congestion, which will in turn reduce the efficiency of individual sites.

More specifically, the improvement of the overall urban environment should include (1) enhancement of urban functions, (2) improvement of public facilities, (3) enhancement of the attractiveness and individuality of the city, (4) enhancement of public open spaces (squares, green spaces, water surfaces), (5) strengthening of urban disaster prevention, and (6) prevention of environmental pollution (air, water, noise, etc.). These cannot be achieved if left to individual actions alone. For example, even if the enhancement of urban functions leads to higher density, higher levels, and higher use of sites, this does not naturally lead to the creation of public facilities and open spaces, and often has the opposite effect in terms of attractiveness, individuality, and disaster prevention. Therefore, it is necessary to realize the relationship between the effective use of land and the advancement of urban land use from a more comprehensive and sophisticated perspective.

As mentioned above, there are many aspects of contradiction and conflict between the high-level use of land from the perspective of real estate investment and the high-level use of land from the perspective of the overall urban environment. However, if the urban environment as a whole is not upgraded, the densification of sites may temporarily increase the efficiency of real estate investment, but the investment itself will worsen the environment of the entire city, and in the long run, this will result in excessive investment in a bad environment, which will cause economic loss to the nation. Therefore, from a long-term comprehensive perspective, the most important issue in land use upgrading is to find a point of harmony between the upgrading of the urban environment and the upgrading of site use.

When microorganisms begin to divide and reproduce, they spread to the periphery, but when they reach a certain level of overcrowding, it becomes difficult for them to live in the center of the city, and they die. Continued upgrading of only the site itself will create a state of urban center death. Under appropriate rules, necessary public facilities and open spaces must be secured. The densification of the site without securing transportation, streets, parks, plazas, etc. is a temporary short-sighted efficiency for the city. The first priority is to upgrade the city as a whole.

The deregulation of sites that is being advocated today is not about upgrading the urban environment, but about simply increasing short-term real estate efficiency.

If real estate investment is a long-term goal, it would be more advantageous in the long run to not only increase the density of land use, but also to improve the urban environment as part of real estate investment. However, if it is left to individual actions alone, it will be a one-time event, so an urban management perspective and an urban management entity that seeks to improve the overall environment will be necessary.

4. Systems and Methods for Land Use Upgrading

How can we reconcile the conflicting nature of the urban environment and real estate investment in land use? There are a variety of methods that can be used for this purpose.

(3) Rational use of building sites (4) Regulation and guidance through regional district systems (5) Urban design methods

(The most typical urban development project is a redevelopment project.

The characteristic feature of these projects is the coexistence of urban environmental improvement and effective site utilization within a certain area of the city. In any case, however, the standard may be too uniform, and the individuality and attractiveness of the city may be reduced.

(The second type (2) is to improve streets, railroads, waterways, parks, sewers, etc., regardless of the real estate investment side of site use, and various laws and projects are in place. This is the most orthodox approach to urban environmental improvement. In reality, however, it takes too much time from planning to realization, and it is difficult to create facilities in urban centers that meet the needs of a city of new dimensions. In addition, each facility is divided vertically and lacks integration, and because it is not directly related to the use of the site, the site development may not be used effectively or, conversely, may be used excessively, harming the environment. If possible, it would be preferable to develop the site in conjunction with urban development. Environmental standards and environmental assessments are also methods to promote environmental improvement.

(3) is represented by the designated district and the urban design system. This is a method to improve the efficiency of the site by providing public open space and green space for urban environmental improvement, and by increasing the height and density of the land instead.

(It can be said to be an attempt to realize the urban development project method described in (1) above on a small scale within the scope of the site. It is a rational method that effectively directs the power of the many land rights that actually make up the city toward the improvement of the urban environment.

However, it is problematic in that it is limited to individual sites and the conditions are

uniform. It would be more effective if an urban design method were used to guide a single district with a framework design policy, as Yokohama City has done, or if a method based on a broad strategy were used, such as the Yokohama City Environmental Design System.

(A typical example of (4) is the designation of high-use and high-altitude districts, as already mentioned. In addition, urban development project zones, etc., as stipulated in Article 10-2 of the City Planning Act, are another method to promote the effective use of sites by improving the urban environment.

In addition, general use zones and floor-area systems can also provide effective regulation and guidance, depending on how they are used. In addition, disaster prevention areas, scenic areas, and aesthetic districts can also be utilized.

However, since these systems themselves are rigid and fixed, they can be made more effective through a combination of methods of operation, ordinances, and guidelines.

In Japan, where sites can be freely divided, and where there are no longer any restrictions on the narrowing of lots, this is a major obstacle both in terms of improving the urban environment and in terms of the advanced use of sites. There are some cases where minimum lot sizes are stipulated by ordinance or administrative guidance is provided. It is necessary to put a stop to the division of sites once again, and to provide incentives for the common use of sites and the noncombustibility of sites.

(Urban design (5) has not yet been implemented in Japan, except in a few cities such as Yokohama. The actions of individual property rights holders and the maintenance of urban facilities by the public sector should not be viewed as separate entities. It is a method of guiding, directing, and controlling the actions of each property owner and the development of urban facilities on the public side in a concrete manner through a single process. It is necessary to utilize this method more actively in each city in the future. By doing so, we can seek the contact point between the advanced use of the city and the site in a concrete form, rather than abstract advanced use, and show the results of this approach.

5The Path to the Upgrading of the Urban Environment

As we have already seen, there are a number of methods for making advanced use of urban land, improving the urban environment, and making the most of the site. The problem, however, is that these methods exist in a disjointed, fragmented, and rigid manner. Therefore, it is difficult to achieve a high level of land utilization in a strategic and comprehensive manner. Since 1975, the population movements between metropolitan and rural areas have been almost in balance, and metropolitanization appears to have reached its peak. However, the underlying trend toward urbanization and its massive scale is a deep-rooted trend that exists worldwide. Moreover, unlike the cities of the past, where people lived only temporarily, these cities must be qualitatively developed as places where people can settle down. In addition,

various functions will be added to or created in cities in the future, although it is not clear exactly what these functions will be. Cities will continue to be forced to become more and more sophisticated. Cities will continue to be forced to become more sophisticated. The full-fledged urban age has just begun, and we do not yet have the means to fully create and control cities in a desirable direction. Therefore, the city must first have the capacity to be resilient for the future. This is because the city must be able to accommodate urban upgrading and improve the lives of its citizens. As is well known, the city of Stockholm has already secured a large area of land 80 years ago in preparation for the future growth of the city. Even if we do not go as far as Stockholm, it is necessary to secure a large amount of land and flexibility in the face of changing urban conditions.

As cities become more sophisticated, they will also make more advanced use of land. This will also create political pressure. However, it must not be a temporary economic stimulus measure or an easy, opportunistic policy. It should be done because of policies for urban upgrading or as a method of urban upgrading, based on a broad perspective on the future of urban upgrading.

However, the existence of private energies that seek advanced use of sites, as mentioned above, should not be ignored or underestimated, and these are the energies of the larger city. Therefore, it is necessary to have an urban management perspective and methods to utilize these energies for urban upgrading in a broad and cooperative manner. Incentive zoning and urban design are one such method.

However, to utilize private energy, there must first be an agreement that individual rights to use land in the city are limited. Ownership comes with obligations, and land is an environmental sin, and the authority to use it is socially restricted due to its strong environmental impact. Based on this limitation, the use of a site that leads to the enhancement of the urban environment is given advantages that go beyond the limitation. If the restrictions are relaxed from the beginning, it will not lead to the upgrading of the city. Even public works projects that use taxpayer funds will become more difficult. It is precisely to create a desirable city while making use of the energy of the private sector that we need rules on land use. Japan has lagged far behind in this respect, but since the enactment of the City Planning Law in 1968, a series of laws and regulations covering use, floor area, district planning, etc., have finally borne fruit thanks to the efforts of all concerned. It should be recognized that these are not mere regulations but are meant to truly harness the energy of the private sector.

Will it be driven by the energy of upgrading individual sites, or will it involve the energy of site upgrading in the upgrading of the city as a whole? The two may seem similar at first glance, but they are worlds apart. The former is a path that will lead the city to ruin and chaos, while the latter is a realistic urban management approach. The difference between the two

must be recognized. The former is

The former will lead to a higher level of site sophistication → deterioration of the urban environment → lower quality of the city → deterioration of the site's environment.

urban deterioration → urban quality deterioration → environmental deterioration of the site.

The latter, on the other hand, follows the path of cities differ in terms of their history, climate, and scale. Specific upgrading must be considered within the context of the individual characteristics of each city. Uniform upgrading will kill a city's charm and individuality and will not lead to true upgrading.

In urban upgrading, appropriate contrasts in site use will be important in the future. Relatively small cities and cities with little change require a cohesive balance, but large cities and cities with large variable factors will have difficulty achieving a static balance. Therefore, it is necessary to have a method whereby some sites are used very densely, while others are completely green or vacant, or where low-rise buildings exist amidst high-rise buildings.

To make it possible to upgrade the urban environment as described above, it is necessary to have an entity that can comprehensively plan the upgrading of the city by mobilizing the power of citizens (including businesses). This can only be achieved by a civic-minded local government that can take the initiative. Municipalities have a variety of laws and regulations, but instead of utilizing them, they are being used in a variety of different ways. They must not unprincipledly give in to the pressure of individual site use.

Urban municipalities must carefully assess the situation of urban upgrading, utilize various methods, and develop their own methods, so that the upgrading of sites can be directed toward the upgrading of the urban environment and the upgrading of the city.