Xymax Real Estate Institute
TOPIC REPORT

The Future of the Office

—In the year 20xx, the "unoccupied building" problem becomes a reality—

May 8, 2023

Introduction

Japan's office stock has expanded continuously even as the economy suffered from low growth. Although the office market fluctuated due to various economic events, the stability of the office building business has stood out from other businesses. However, the declining birthrate and aging population, the COVID-19 pandemic, and the aging of buildings are quietly and steadily transforming the business environment that has been the basis of the stability of the business to date. Can offices remain as offices? In this report, we look back on the office market and capture the signs of change that have appeared in recent years to outline how this change in the business environment will affect office buildings.

(1 tsubo = approx. 3.33 sqm)

Summary

1. **[Past Developments] Continuous Expansion of the Office Market**
   - On the back of factors such as a shift in the industrial structure, industry accumulation and population influx to central Tokyo, and women's participation in society, office workers increased, giving rise to the demand for office buildings.
   - Office stock expanded ceaselessly, as many small and medium-sized office buildings were supplied during the bubble economy, and many large office buildings were subsequently built by major developers and institutional investors, among other players.
   - While vacancy rates and rents rose and fell, the continuous new supply in the office market was absorbed by rising demand.

2. **[Current Status] Signs of Changes in the Office**
   - The COVID-19 pandemic triggered a review of the workplace and work styles. Telework spread quickly, providing an opportunity for companies to rethink the role and value of the main office.
   - Vacancy rates have risen due to the pandemic, prompting companies to be more selective in choosing office buildings.

3. **[20 Years from Now] The "Unoccupied Building Problem" Becomes a Reality**
   - The number of office workers will decline as the productive-age population shrinks, changing how companies use offices. A significant expansion in office demand cannot be expected in the future, as there may be less office work due to the evolution of AI.
   - It will be common for a certain amount of vacancy to exist in the office market, further encouraging companies to become selective in choosing buildings. The difference between buildings chosen by companies and those that are not will become clear.
   - As some older buildings face long-term vacancies, the "unoccupied building problem" that leads to a deterioration of the surrounding environment may become a reality.
   - By 2043, office buildings will become even older, and the total office stock will begin to shrink.

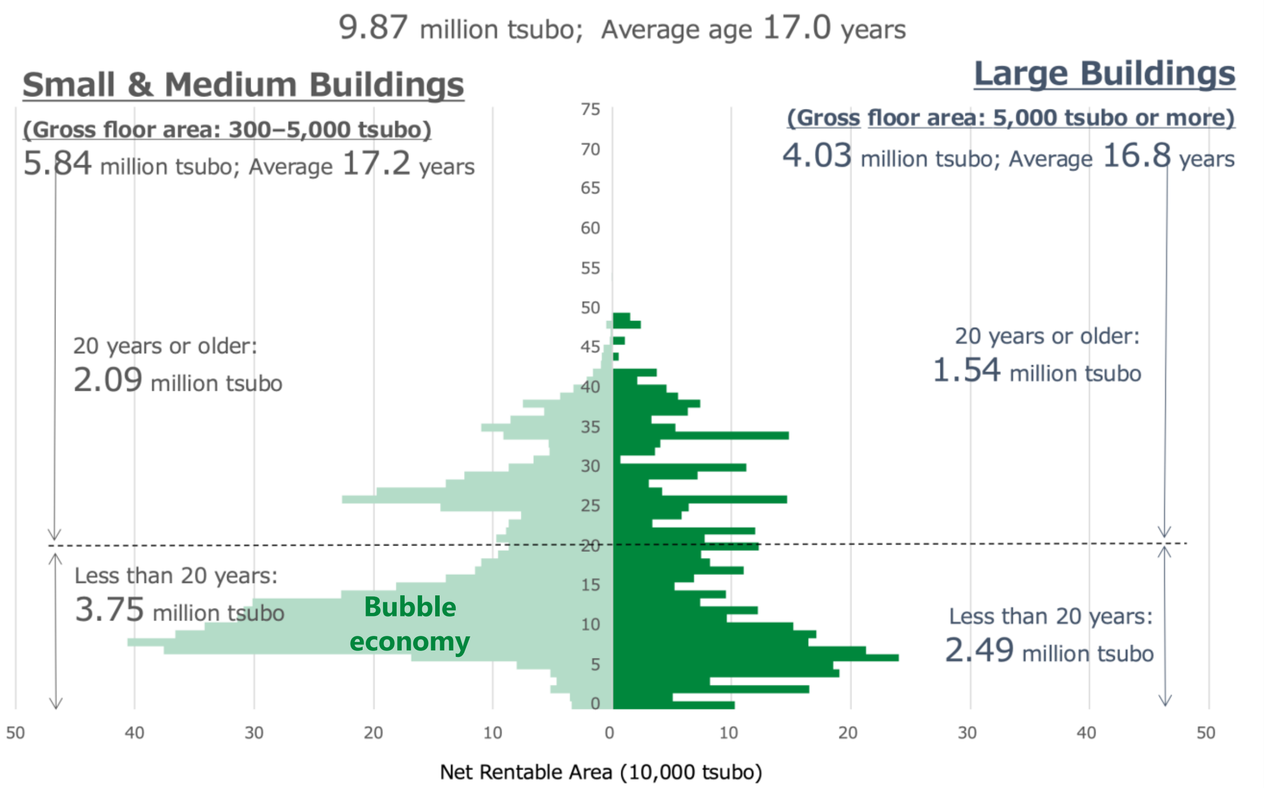
- The office building business, which has hitherto managed to hold up, will no longer hold up. Building owners will need to consider their future seriously.
- The “unoccupied building problem,” which will arise in the future of the office, will provide an opportunity for buildings to transform into new buildings or buildings for other uses and for cities to transform into cities that form high-quality building stock.

1. [Past Developments] Continuous Expansion of the Office Market

(1) Increase in office workers and office buildings

Japan's industrial structure shifted from the primary to the secondary and tertiary industries as the economy grew. In addition to this shift, industry accumulation to central Tokyo, an influx of people from rural areas, and women's participation in society led to a continued increase in office workers. Consequently, the demand for offices as a place for work expanded, leading to the development of office buildings as an infrastructure. The bubble economy resulted in concerns of a further shortage of offices, prompting not only realtors but also many general companies and individual operators to enter the office building business. This led to a sharp increase in small and medium-sized office buildings, not only in central Tokyo but also in the surrounding areas. In 2000, the office market consisted of small and medium-sized buildings accounting for roughly 90% of office buildings in the 23 wards of Tokyo ("Tokyo 23 Wards") in terms of number and approximately 60% in terms of rentable area (**Figure 1**).

Figure 1: [Year 2000] Office Pyramid (Tokyo 23 Wards: Net Rentable Area Basis)



Office pyramid: A distribution of net rentable area by building age, with large buildings (gross floor area (GFA) of 5,000 tsubo or more) plotted at the right and small and medium-sized buildings (GFA of 300–5,000 tsubo) plotted at the left (the same applies hereinafter).

(2) Expansion of the office stock due to an increase in large buildings

As the economy slowed down following the burst of the bubble, there was a rise in momentum for urban regeneration as a catalyst for economic revival. This resulted in the enactment of the Act on Special Measures concerning Urban Regeneration in 2002, which eased floor area ratios, among other measures. Real estate securitization markets, such as J-REIT, were also established, leading to a larger inflow of investment funds by domestic and foreign institutional investors into Japan's real estate market. Against this background, many high-spec large buildings were built as real estate investment was accelerated by major developers and insurance companies, as well as new entities, such as real estate funds. Tokyo's office stock expanded continuously (**Figure 2**), with large buildings outstripping small and medium-sized buildings in terms of rentable area in 2023 (**Figure 3**).

Although there had been concerns about a deterioration of the supply-demand balance of the office market due to the large supply of new buildings, such as the "year 2003 problem" and the "year 2007 problem," vacancy rates and rents rose and fell in line with the economic cycle, and new supply was absorbed by increasing demand.

Figure 2: Expanding Office Stock (Tokyo 23 Wards)

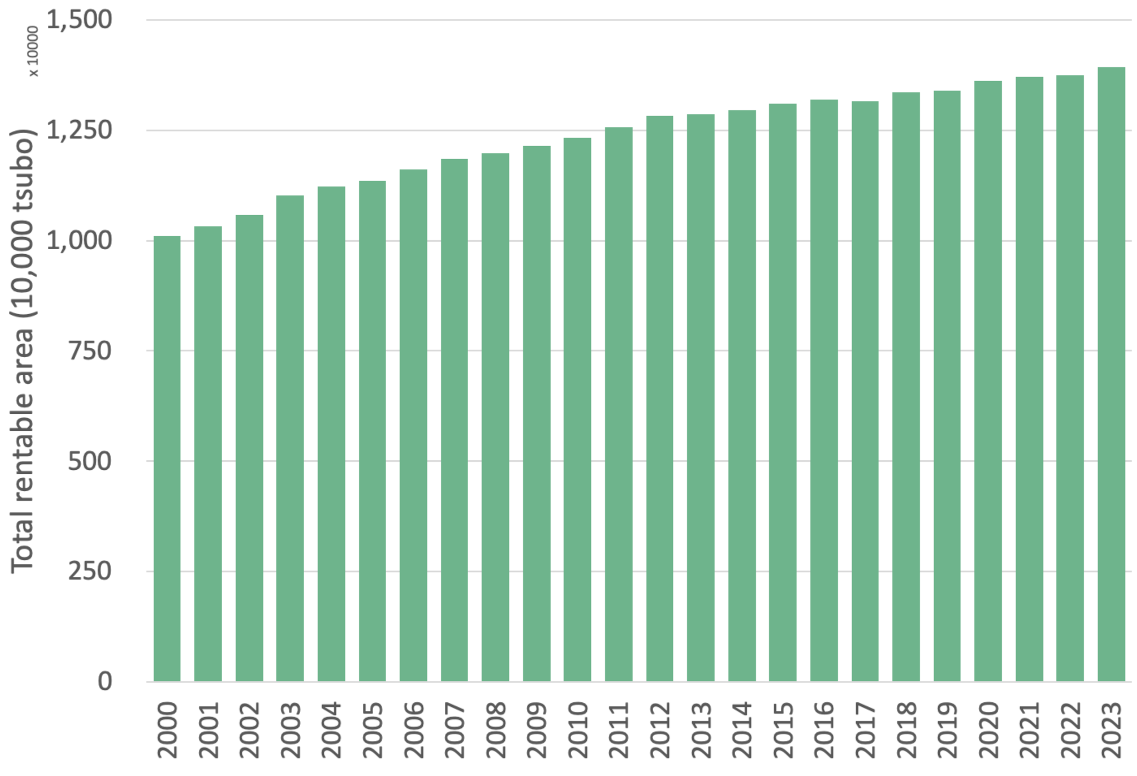
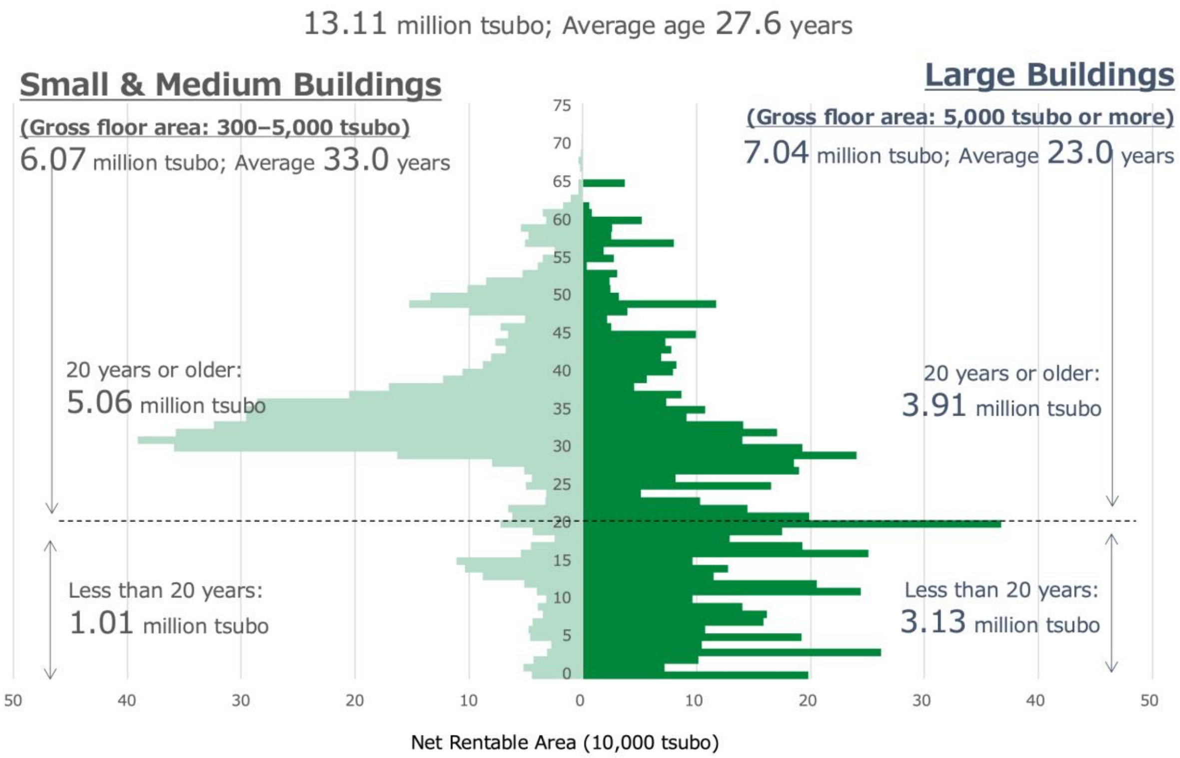


Figure 3: [Year 2023] Office Pyramid (Tokyo 23 Wards; Net Rentable Area Basis)



2. [Current Status] Signs of Changes in the Office

(1) The COVID-19 pandemic triggers a reconsideration of the workplace and work styles

The outbreak of the COVID-19 pandemic in 2020 led to drastic changes in the environment surrounding office work. Prior to the pandemic, the main workplace was offices in central Tokyo, where many employees gathered to work. The government's recommendation of introducing telework to promote work style reforms was met with hesitancy by companies concerned about a decline in employees' productivity and the need to change their operational framework. However, telework spread rapidly due to the pandemic as the act of gathering itself became recognized as a risk of infection.

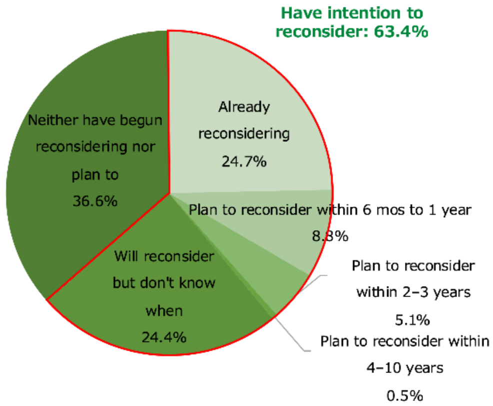
Some point out that telework leads to greater engagement as a result of reduced commute time and more time with family and enhances productivity due to employees' work environment and mental and physical health (well-being). When companies first introduced telework, there was talk about the disadvantages of telework, such as the difficulty to manage or evaluate employees and the feeling of social isolation and stress. However, both companies and employees now use telework to their advantage as IT tools and operational frameworks to resolve these disadvantages have been introduced.

In response to these developments, many companies are considering reviewing their workplace strategies (**Figure 4**). There has been a rising trend of implementing a hybrid strategy for the office, which allows workers to choose multiple workplaces, such as the office in central Tokyo, a satellite office, and the home. Teleworking from home or a satellite office has allowed companies to rethink the purpose of the main office. Companies have discovered that simple business processing can be done from home or a satellite office and even more efficiently by leveraging telework's advantages, such as the reduction of commute time. Therefore, for the main office, more emphasis is being placed on its value as a physical place where innovation is generated as employees meet face to face and inspire one another and where a sense of belonging as a member of an organization is fostered.

The layouts within the offices go beyond the traditional island layout, and many arrangements have been incorporated, such as a space for employees to communicate with one another and private rooms for online meetings. As for the necessary office space, the concept of adding employees' coming-to-office ratio to the traditional "number of employees x office space per person" has become common.*[1]

*1 *Office Space per Person 2022*, released on January 20, 2023
https://www.xymax.co.jp/english/research/images/pdf/20230120.pdf

Figure 4: Status of Reconsidering Workplace Strategies



(Excludes "Don't know" (n=1,107))

(2) Companies becoming selective in choosing office buildings

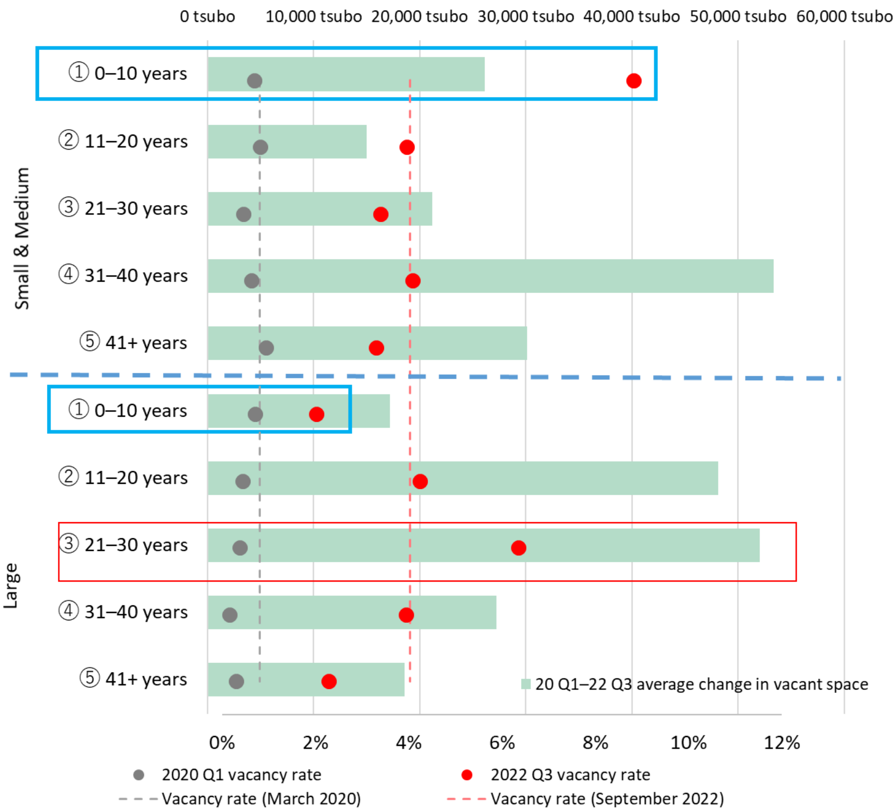
Turning to the office market of the Tokyo 23 Wards, the vacancy rate, which was less than 1% in 2020 Q1 before the pandemic, began to rise after the outbreak of the pandemic and reached 4% by 2022 Q3. However, not all buildings faced a similar rise in the vacancy rate. When examining the vacancy rate of the two periods in terms of building age and size, the vacancy rate in 2020 Q1 was generally low, irrespective of building age or size, while in 2022 Q3, the vacancy rate differed by building age and size. For example, the vacancy rate of relatively new buildings 0 to 10 years old was low among large buildings and high among small and medium buildings (**Figure 5**: blue frame). Among large buildings, the vacancy rate of buildings 21 to 30 years old was higher than those of other ages (**Figure 5**: red frame).

A similar trend was seen by area. The vacancy rate was generally low in all areas in 2020 Q1. However, in 2022 Q3, the rate rose significantly in the "Kita-Shinagawa, Higashi-Shinagawa" and "Shibaura, Kaigan" areas, while the rate rise remained small in the "Shibuya, Dogenzaka," "Kyobashi, Yaesu, Nihonbashi," and "Marunouchi, Otemachi" areas.*2

*2 *Deciphering the Recent Rise in Vacancy Rates (2022)*, released on December 15, 2022 (in Japanese only)
https://soken.xymax.co.jp/2022/12/05/2212-rise_in_vacancy_rates/

These differences imply that companies are becoming selective in choosing the building for their offices. In the initial stages of the pandemic, companies whose business was hit hard downsized and relocated or moved out. Currently, there is high demand for relocation by companies reconsidering their office strategies for after the end of the pandemic. From the perspective of companies, it was difficult to find a suitable building to relocate to before the pandemic due to the generally low vacancy rates of the office market. Now, there are more options for buildings to relocate to due to the rise in vacancy rates, facilitating companies to implement their ideal workplace strategy.

Figure 5: Vacancy Rates in 2020 Q1 and 2022 Q3 by Building Size and Age (5 Central Wards)



3. [20 Years from Now] The "Unoccupied Building Problem" Becomes a Reality

(1) Continued expansion of office demand not expected

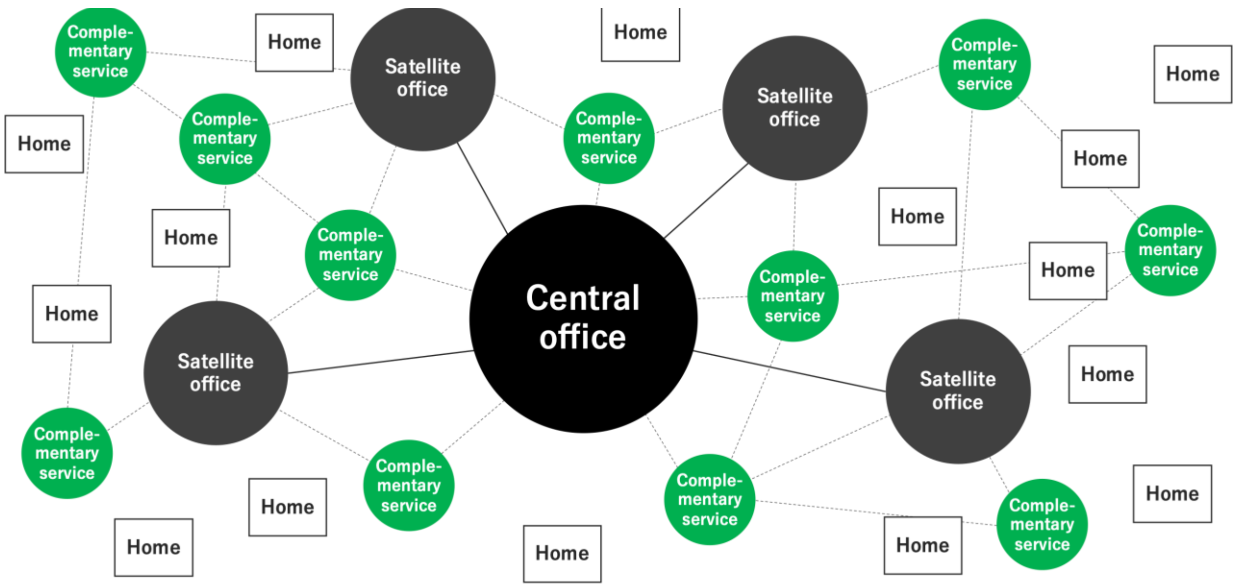
Thus far, the office market has managed to balance supply and demand, as the increase in office stock due to new supply was absorbed by demand catching up. In the future, however, there will be changes in this demand in quantity and quality, making it difficult to expect a significant increase in demand.

The quantity aspect is the number of office workers. Japan has already entered an age of population decrease, with the productive-age population declining continuously after peaking in the 1990s. The number of office workers, which has consistently increased on the back of a population influx to central Tokyo and the shift of the industrial structure, will eventually peak and begin to decrease. Even if there was a rise in the percentage of the tertiary industry, which is based in offices, or an increase in foreign companies, we do not believe there will be a dramatic rise, making it unlikely for the number of office workers, who are the source of office demand, to increase significantly.

The quality aspect is the diversification of the workplace due to telework. Even after the end of the pandemic, companies are likely to continue implementing hybrid strategies for the office, which involve decentralizing the workplace (**Figure 6**). Although the frequency of telework will differ depending on the company's management policy, industry, and business, many companies will continue to adopt telework.

Telework has also enabled employees to work in a company in central Tokyo while living in the provinces. More employees of companies in central Tokyo will likely relocate to the provinces to suit their lifestyles without changing jobs.

Figure 6: Diversification of the Workplace



Productivity improvement by AI (artificial intelligence) and DX (digital transformation) may also drastically change the labor supply-demand structure. Although DX will not progress uniformly in all office work, the time may come when it will reduce the current operations, making office workers redundant.

The number of office workers is unlikely to increase significantly, workplaces have become diversified, and companies are changing their ideas of the main office and necessary floor area. If technological advances result in fewer operations done by office workers, continued demand growth for offices as a "place for work" will be difficult to expect.

(2) Low-spec, older buildings not chosen; the "unoccupied building problem" becomes a reality

While a large amount of new supply will continue mainly in central Tokyo, significant demand growth cannot be expected. Therefore, the supply-demand balance is likely to be less tight than before when companies could not find offices. It will become common for a certain amount of vacancy to exist in the office market, and companies will become more selective in choosing buildings, which will highlight the difference between buildings capturing tenant demand and those that do not.

Recent office buildings take into consideration tangible aspects, such as adopting aseismic or seismic isolation facilities and energy-efficient equipment, as well as intangible elements that ensure workers' well-being and comfort. Newly built, large buildings will continue to capture companies' demand, as occupying the latest, top-class buildings will benefit companies in branding and hiring competent talents.

Meanwhile, older office buildings have deteriorated not only physically and functionally but also socially due to changes in tenants' needs. As social requirement levels rise, some buildings will fail to meet the minimum requirements and face difficulty attracting tenants. Unless they find tenants and earn stable revenue, securing the funds to introduce the latest equipment to attract tenants or facilities that respond to new work styles will be difficult. Since the vacancies in these buildings are hard to fill, and their rents will be low, brokerage firms looking for tenants are unlikely to make proactive efforts in them. If a building falls into a vicious cycle where it is increasingly avoided by companies, and its vacancies increase but not decrease, the building itself may become a deadstock.

Figure 7 shows that a certain number of old buildings do face long-term vacancies. Among old buildings, the percentage is higher in those completed between 1982 and 2000, which includes the bubble economy era, than in those built before 1981. Possible factors include the fact that older buildings have undergone renovations or are better located since they were built in the early stages of the development of office districts. The table also shows that many medium-sized buildings supplied in large quantities during the bubble economy are struggling to attract tenants due to a drop in competitiveness. Since even office areas in central Tokyo are already in this situation, it is likely that buildings completed during the bubble economy with a decline in competitiveness exist in other areas as well.

An increase in deadstock buildings in office areas is not only a problem in terms of landscape but also security and disaster prevention and may eventually turn the area into a slum. The "unoccupied building problem" that leads to a deterioration of the surrounding environment may become a reality.

Figure 7: Percentage of Buildings with Long-term Vacancies (Number of Buildings Basis)

Year of completion	(1) After 2021	(2) 2001–2020	(3) 1982–2000	(4) Before 1981
Otemachi, Marunouchi, Yurakucho	0.0%	0.0%	1.0%	0.0%
Iidabashi, Kudanshita, Bancho	0.4%	1.0%	2.9%	1.0%
Akihabara, Kanda, Ochanomizu, Jimbocho	0.8%	0.5%	**3.1%**	1.3%
Nihonbashi, Mitsukoshimae, Kayabacho, Hacchobori	0.8%	1.1%	2.5%	1.2%
Ginza, Higashi-Ginza, Tsukiji	0.4%	1.1%	**3.3%**	**3.1%**
Shimbashi, Toranomon, Shiodome	0.6%	1.7%	2.4%	2.1%
Akasaka, Roppongi, Aoyama	0.4%	1.1%	**3.3%**	**3.1%**
Hamamatsucho, Tamachi, Shinagawa	0.5%	0.9%	**3.2%**	0.3%
Azabu, Shirokane, Shirokanedai	0.0%	0.0%	**5.3%**	0.0%
Nishi-Shinjuku, Shinjuku, Shinjuku Gyoen	0.0%	0.2%	2.9%	1.0%
Shibuya, Ebisu, Hiroo	0.4%	0.5%	**3.8%**	1.3%
Tokyo 23 Wards total	0.4%	0.7%	**3.2%**	1.2%

The figure indicates the percentage of buildings with a vacancy rate of 20% or more throughout the year 2022.
The figure is an extract of representative areas. Cells indicating 2% or more are meshed.

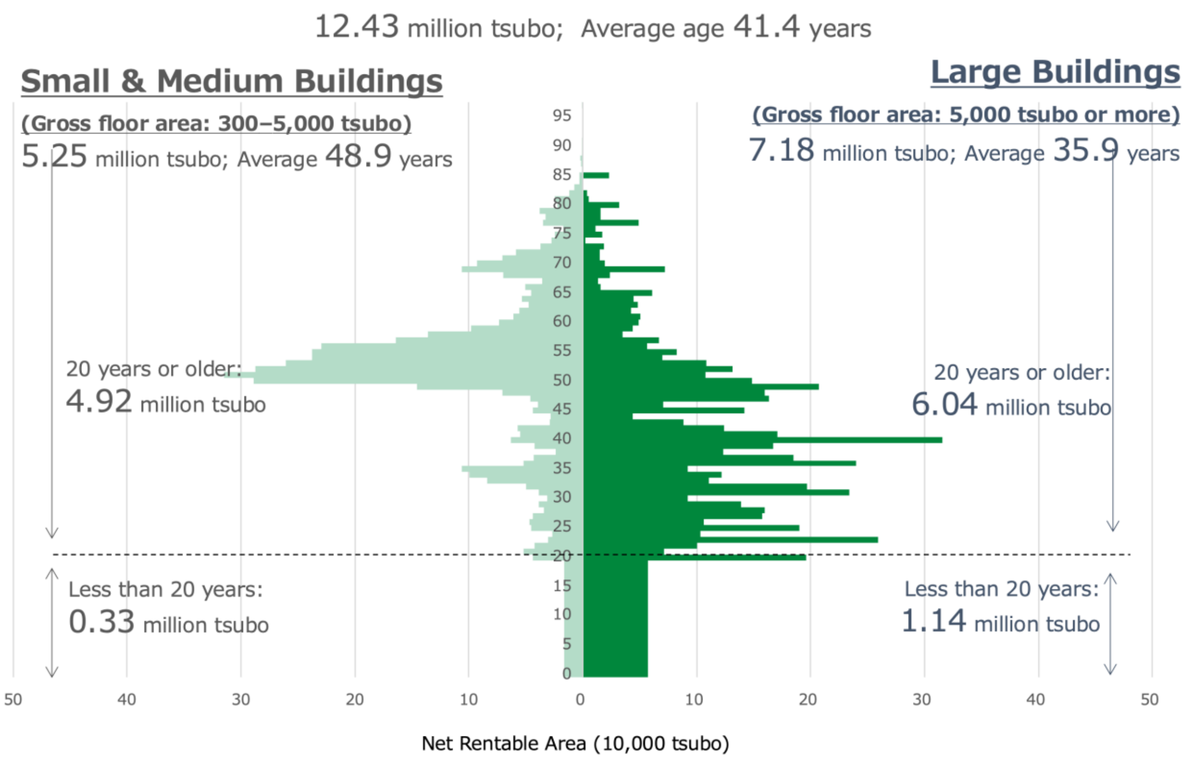
(3) Further aging of offices and the end of the expansion of office stock

Figure 8 is the Office Pyramid 2043, which shows the state of Tokyo's office stock 20 years from now. It is a forecast of the future supply and demolition based on the 2023 office pyramid. Based on the assumption that future growth of office demand is not expected and the "regeneration" of office buildings is suppressed, we estimated new supply between 2024 and 2026 to be in line with the published plans and new supply after 2027 to be half the new supply in 2024–2026. For demolitions, we estimated the percentage of lost floor area by age group to the office stock to be half that in 2000–2026.

The average age of small & medium-sized buildings on the left-hand side of the chart is forecast to reach 48.9 years by 2043 (33.0 years in 2023), and many small & medium buildings in the office market will be over 50 years old. Meanwhile, the average age of large buildings on the right-hand side of the chart is expected to reach 35.9 years (23.0 years in 2023), indicating that the aging of large buildings will also proceed.

The total office stock, which has been increasing continuously since 2000 when the survey began, is forecast at 12.43 million tsubo in 2043 (13.11 million tsubo in 2023), indicating a future decline. An era of considering new supply and stock volume to match demand will have arrived, and the period of continuing stock growth will have come to an end by 2043.

Figure 8: [Year 2043] Office Pyramid (Tokyo 23 Wards; Net Rentable Area Basis)



New supply in 2024–2026 is estimated to be in line with published plans and that after 2027 to be half the new supply in 2024–2026. Demolition is estimated to be half the demolition rate in 2000–2023.

(4) Building owners must consider the future of the office building business seriously

The future office market will be divided into buildings that will be appropriately managed daily and introduce the latest equipment in response to various types of deterioration that come with age and those that will not be able to do so. The distinction between buildings chosen by companies and those that are not will become clear.

In real estate, there is a concept called the "highest and best use," which means the most profitable possible use of a property. Especially during the bubble economy, many small & medium-sized buildings were supplied since constructing "office buildings" was the highest and best use and the most economically rational for many lots of land to meet the rising demand for offices. However, even in the same location, there will naturally be cases where other uses are better as the times and social environment change. After the bubble burst, many condominiums and hotels were built in central Tokyo office districts that became less popular. There was also an increase in high-rise condominiums and hotels in office districts in central Osaka.*3

*3 *Changes in the Use of Real Estate Over Time*, released on April 17, 2017
https://www.xymax.co.jp/english/research/images/pdf/20170417.pdf

Nearly 70% of the owners of small & medium-sized buildings are not engaged in a broad office building business but only own 1–2 buildings. Even if they are aware that their building business will face difficulty unless they take steps to improve the situation, many of the owners are old and hesitate to make large-scale renovations or rebuild the building, which requires a large amount of borrowing. There are also cases where owners who decide to leave their business to a successor cannot find a successor.*4

It will be difficult to expect tenants to return once the economy recovers, as it had been in the past. Building owners must proactively consider the office building business, including exit strategies (end-of-life preparations for office buildings), beyond the traditional ways of viewing the business.

*4 *Building Owner Survey 2021*, released on October 5, 2021 (in Japanese only)
https://soken.xymax.co.jp/2021/10/05/2110-building_owner_survey_2021/

Conclusion

Due to economic development and the industrial shift to services, offices grew as "intellectual production plants," and many small & medium-sized office buildings emerged during the bubble era. After the bubble burst, despite repeated concerns that market conditions would deteriorate due to large supply, it never became a large problem, as supply and demand eased and tightened amid the economic cycle. However, future market conditions may not largely depend on corporate results and business sentiment. When we consider the future of the office, it is likely that building management, which has hitherto managed to hold up, may no longer be able to do so.

The quantitative and qualitative changes in companies' office needs will likely lead to an end of an era of offices that was nothing but expansion. Building owners who will continue their office building business will be required to respond to the needs of tenant companies more than ever. It will also become important to provide amenities that cater not only to tenant companies but also to local residents and visitors. These practices may be difficult for owners of small & medium-sized buildings to conduct independently. In that case, it may also require new ways of thinking, such as cooperating and sharing work with neighboring building owners. Such attempts will create unique area characteristics and help build the area's brand.

It is natural for the use of real estate to change with shifts in society and industrial structures. As society changes at an accelerated pace, the highest and best use of many small & medium buildings constructed during the bubble economy will not necessarily continue to be offices. Transforming office buildings with long-term vacancies into buildings for other uses will be an effective option in economic terms.

Three-quarters of the Tokyo 23 Wards' office stock is concentrated in the five central wards. They include "unoccupied buildings" no longer chosen by tenant companies and buildings with safety and security issues that need to be reviewed being used with neither the owners nor tenants aware of the problem.

The transformation of these buildings into new ones or buildings for other uses will allow cities to transform into cities that form high-quality stock. It may be an opportunity for cities to transform from office-centered to mixed-use cities with a mix of housing, stores, accommodation facilities, and cultural facilities and to workable, ecological, safe, and secure cities with more parkland.

Interaction among diverse people is born out of the coexistence of various uses and applications of space and catalyzes innovation. It is an opportunity to transform into an even more attractive city that can realize a prosperous, human-centered lifestyle.

In this report, we explored a medium- to long-term theme titled "the future of the office." We consider the report to be not fiction but a prediction of the future with some degree of certainty. As with the "unoccupied house problem," which is currently a social issue, the "unoccupied building problem" is highly likely to become a reality. We hope this report will provide an opportunity for a wide range of stakeholders, including building owners, investors, tenant companies, and government administrators, to become more aware of the future social issue and to begin discussions on how to deal with it.

Xymax REI will continue investigating and studying office market conditions and various office-related themes to release useful information.

The percentage mix in the charts contained in this report are rounded to the first decimal place and, therefore, may not add up to 100%.

For further inquiries please contact below

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