

Office Stock Pyramid 2016

January 29, 2016

Xymax Real Estate Institute compiled the Office Stock Pyramid 2016 of Tokyo 23 Wards (**Figure 1**). This pyramid chart, similar to the population pyramid representing the distribution of age groups and gender, shows a distribution of large buildings and small and medium buildings in Tokyo 23 wards. This chart compares the rentable area and the number of buildings by building age and shows the proportion of each.

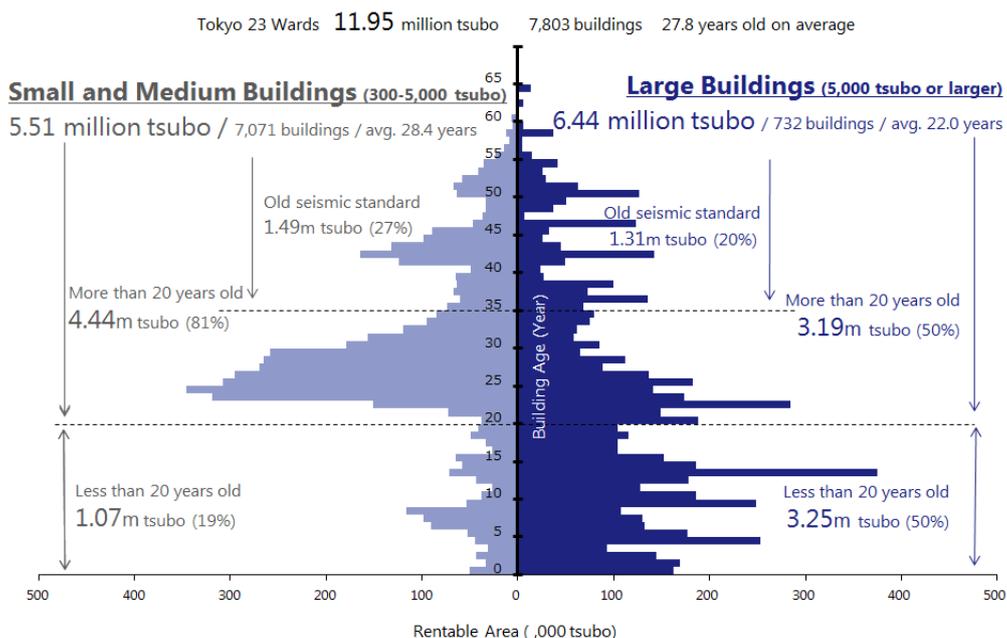
Our previous study, as of 2014, included office buildings that are less than 50 years old. In this 2016 study, we included office buildings that are 70 years old or less, meaning those constructed in the post-war period.

Key Findings

- Tokyo 23 Wards office stock totaled 11.95 million tsubo in the rentable area basis. Small and medium buildings account for 46% while large buildings account for more than half, 54%.
- Tokyo 23 Wards office stock totaled 7,803 buildings in the number of building basis. Over 90% of the buildings are small or medium buildings.
- Entire stock is 27.8 years old on average. Small and medium buildings are 28.4 years old while large buildings are 22.0 years old. Stock is aging; small and medium buildings in particular.
- Not many small and medium buildings were constructed after the economic bubble; over 80% are more than 20 years old in both the rentable area basis and the number of building basis.
- Large buildings that are more than 20 years old slightly exceed those less than 20 years old in the number of building basis but not much difference in the rentable area basis. This indicates that supply of large buildings continued after the burst of the economic bubble.

Large Building: 5,000 tsubo or larger GFA / Small-Medium Building: 300-5,000 tsubo GFA / 1 tsubo = 3.3 sqm

Figure 1: Tokyo 23 Wards Office Stock Pyramid 2016 based on Rentable Area



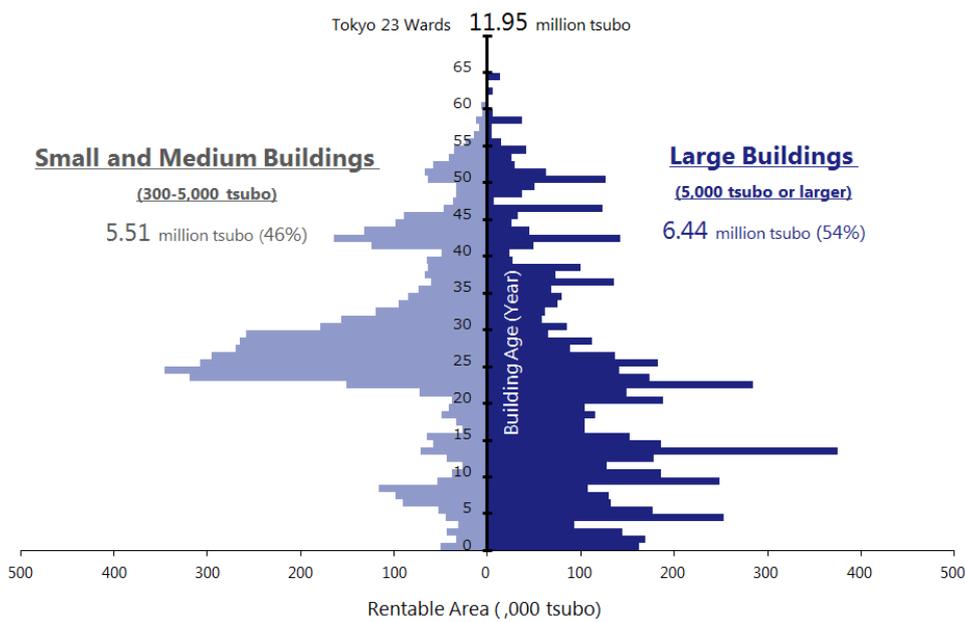
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1. Small and Medium Buildings versus Large Buildings

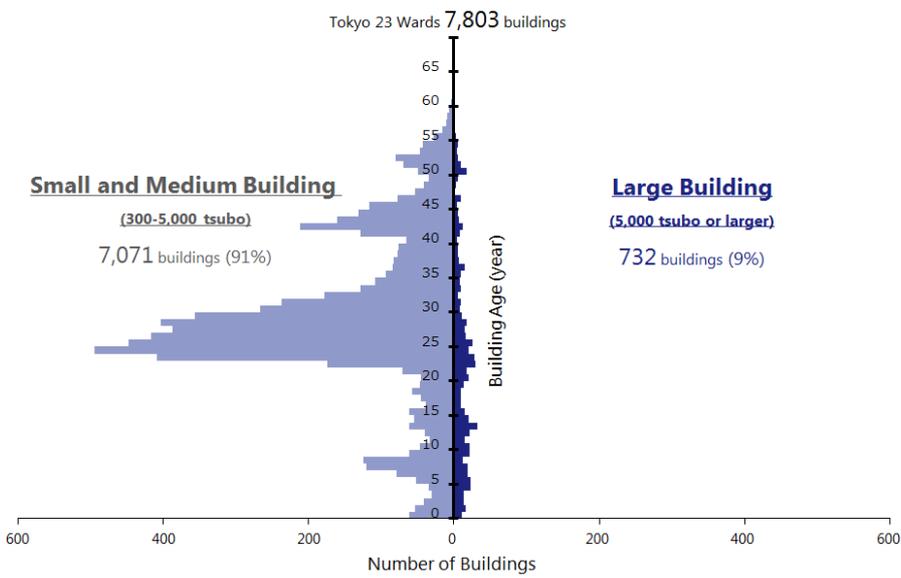
As of the end of 2016, the total rentable area of office stock in Tokyo 23 Wards is 11.95 million tsubo. Of them 46% or 5.51 million tsubo are of the small and medium buildings with gross floor area of less than 5,000 tsubo (**Figure 2**). The rentable area of large buildings (gross floor area of 5,000 tsubo or larger) totaled 6.44 million tsubo or 54% of the entire stock. The share of small and medium buildings and large buildings are approximately the same in the rentable area basis.

Figure 2: Tokyo 23 Wards Office Stock Pyramid 2016 based on Rentable Area Comparison of Small and Medium Buildings and Large Buildings



In the number of building basis, the entire stock in Tokyo 23 Wards totaled 7,803 buildings. Of them, 91% or 7,071 buildings are small or medium buildings whereas large buildings account for only 9% or 732 buildings (**Figure 3**).

Figure 3: Tokyo 23 Wards Office Stock Pyramid 2016 based on Number of Buildings Comparison of Large Buildings and Small and Medium Buildings



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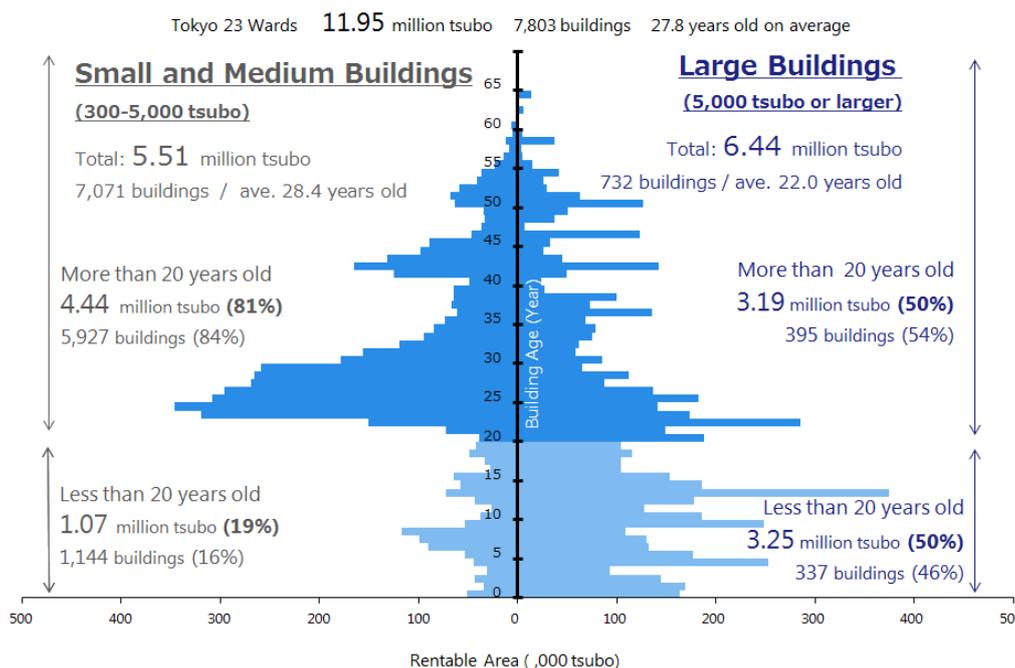
2. Aged Buildings versus New Buildings

The average age of the entire stock is 27.8 years old. Small and medium buildings averaged 28.4 years old while large buildings averaged 22.0 years old, underlining the aging of small and medium buildings in particular (Figure 4).

The small and medium buildings constructed during the economic bubble in 1987-1993 (23-29 year-old buildings) account for a large part of the stock, pushing the number of buildings that are more than 20 years old to 5,927 buildings or over 80%. Since not many small and medium buildings were constructed after that, the number of buildings that are less than 20 years old remained at 1,144 buildings. Similarly in the rentable area basis, the share of the aged office buildings (more than 20 years old) dominates the small and medium building stock with 4.44 million tsubo; the buildings that are less than 20 years old are 1.07 million tsubo.

If we look at large buildings, the number of buildings that is more than 20 years old slightly exceeds those less than 20 years old, the former is 395 buildings and the latter, 337 buildings, but this is only a small difference. Also in the rentable area basis, buildings that are more than 20 years old and those less than 20 years old are roughly the same level, the former is 3.19 million tsubo and the latter, 3.25 million tsubo, indicating that large buildings have been constantly constructed even after the burst of the economic bubble.

Figure 4: Tokyo 23 Wards Office Stock Pyramid based on Rentable Area Comparison of Building Age

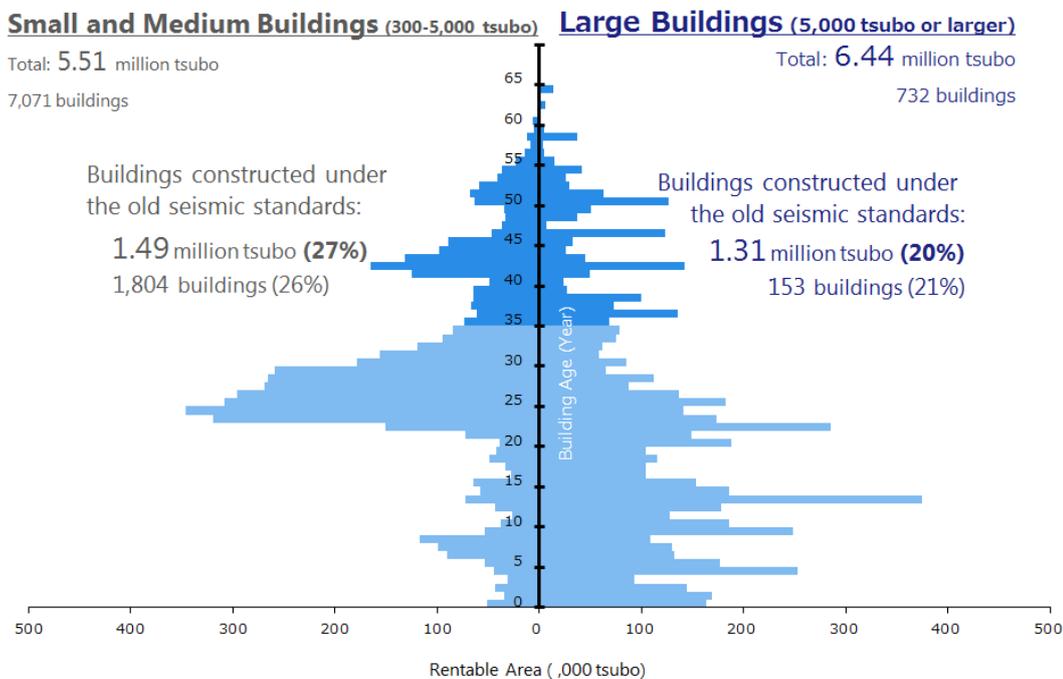


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Buildings constructed under the old seismic standards (35 years old or older) continue to see some level of volume, accounting for over 20% in both small and medium buildings (27%) and large buildings (20%) in the rentable area basis (Figure 5).

Figure 5: Tokyo 23 Wards Office Stock Pyramid based on Rentable Area Percentage of Buildings Constructed under the Old Seismic Standards



From now on, new constructions of large buildings will continue, and competitions among same-size buildings are expected to be intense. Small and medium buildings constructed during the economic bubble will turn 30 years of age and system renewals and renovations will be necessary.

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Survey Overview

Period	November 2015
Area	Tokyo 23 Wards
Subject Buildings	Office buildings (mainly used as office) with 300 tsubo or larger gross floor area constructed in and after 1946, including buildings to be completed in 2016.
Data	Number of office buildings and size of rentable office area in tsubo (1 tsubo = 3.3 sqm) Large buildings: 5,000 tsubo or larger gross floor area Small and medium buildings: 300-5,000 tsubo gross floor area

- The data was collected from publicly available sources such as news articles and office for rent information (including those in the past). The data used in this study is those with the building age. Owner-occupied buildings are excluded.
- The data of new constructions replacing old buildings and the data of demolished buildings have been collected and reflected in our data to the extent possible. Please, however, understand that some information may not be included in our data.
- Buildings to be completed in 2016 are based on the information available as of November 2015.
- If the rentable area is publicly available, that area is applied. If not, the rentable area is estimated based on the gross floor area with the formula developed by our joint research with the laboratory of Dr. Naoki Katoh, Professor at Graduate School of Engineering, Kyoto University.
- "Buildings constructed under the old seismic standards" refer to the buildings constructed before the enforcement of the new seismic standards in 1981. In this study, buildings completed in 1981 or before are deemed as constructed in line with the old seismic standards.

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