

NEWS & RELEASE

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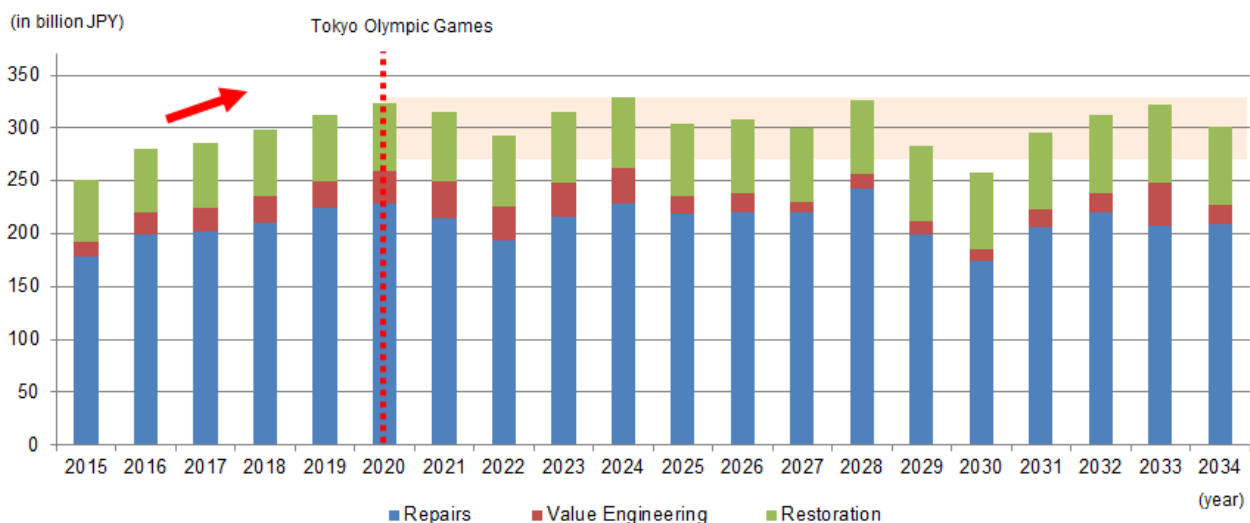
Projection of Future Repair Costs of Tenant-Occupied Office Buildings in Tokyo

Market volume is expected to remain high after the Tokyo Olympic Games

Xymax Real Estate Institute made a projection of future repair costs of the tenant-occupied office buildings in Tokyo 23 Wards. As Japan's building industry is shifting from the traditional "Scrap and Build" to so-called "Stock Type" where buildings are more sustainable, a proper maintenance based on a medium- to long-term plan is essential in providing good office spaces for a long time to come. Xymax Real Estate Institute estimated the market volume of repair costs until 2054. (See Note 1 for the types of repairs covered in this study.)

For the next 20 years, the repair market of Tokyo 23 Wards tenant-occupied office buildings will continue to grow until the Tokyo Olympic Games in 2020 and then remain high at around JPY 300 billion. (See Figure 1)

Figure 1: Market Volume Projection: Repair Costs of Tenant-Occupied Office Buildings in Tokyo 23 Wards



Note 1: Repairs covered in this study

Repairs of tenant-occupied office buildings can be classified as follows:

- Common Area or Exclusive Area
- Costs Borne by Owner or Borne by Tenant

This study covers Repairs, Value Engineering and Restoration. Tenant improvements are excluded because the costs and specifications vary greatly depending on the building.

Repairs

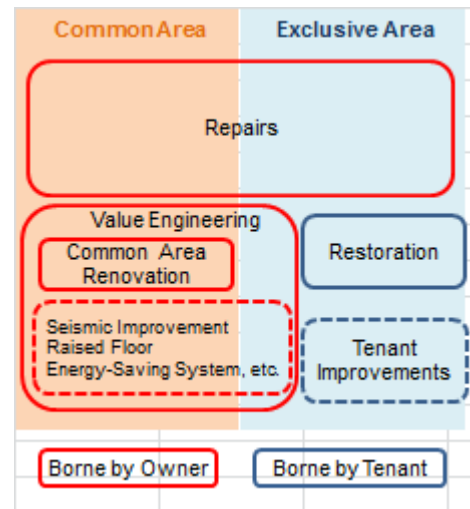
Repairs to sustain original building functionality such as repairs of air conditioner, electric machine, exterior wall and interior materials that have deteriorated over time. The purpose is to make them operable again or to restore the initial conditions.

Value Engineering

Improvements to increase the value of the building when, for example, there is significant deterioration in performance of facilities or systems, or when the specifications of the building became obsolete, or when it became difficult to maintain security with the existing specifications. Examples of this include a renovation of the entire building, installation of an energy-saving system and improvement of seismic performance. This study, however, covers only the large-scale renovations of the common area.

Restoration

In accordance with the lease contract, at the end of occupancy, the tenant vacates the office space after restoring the space to its original state.



Bold line: Included in this study

Dotted line: Not included in this study

Repair Market Volume by Size of Office Buildings

The repair market volume of large buildings will continue to grow year by year until 2054 while that of small and medium buildings will reach its peak by 2027 and rise and fall frequently after that. (Figure 2)

Figure 2 shows the estimated repair costs of the large buildings and the small and medium buildings (*1) until 2054. In general, replacements and improvements of large facilities start after approximately 15 years from the building's completion, and therefore the costs tend to increase from that point (Note 2).

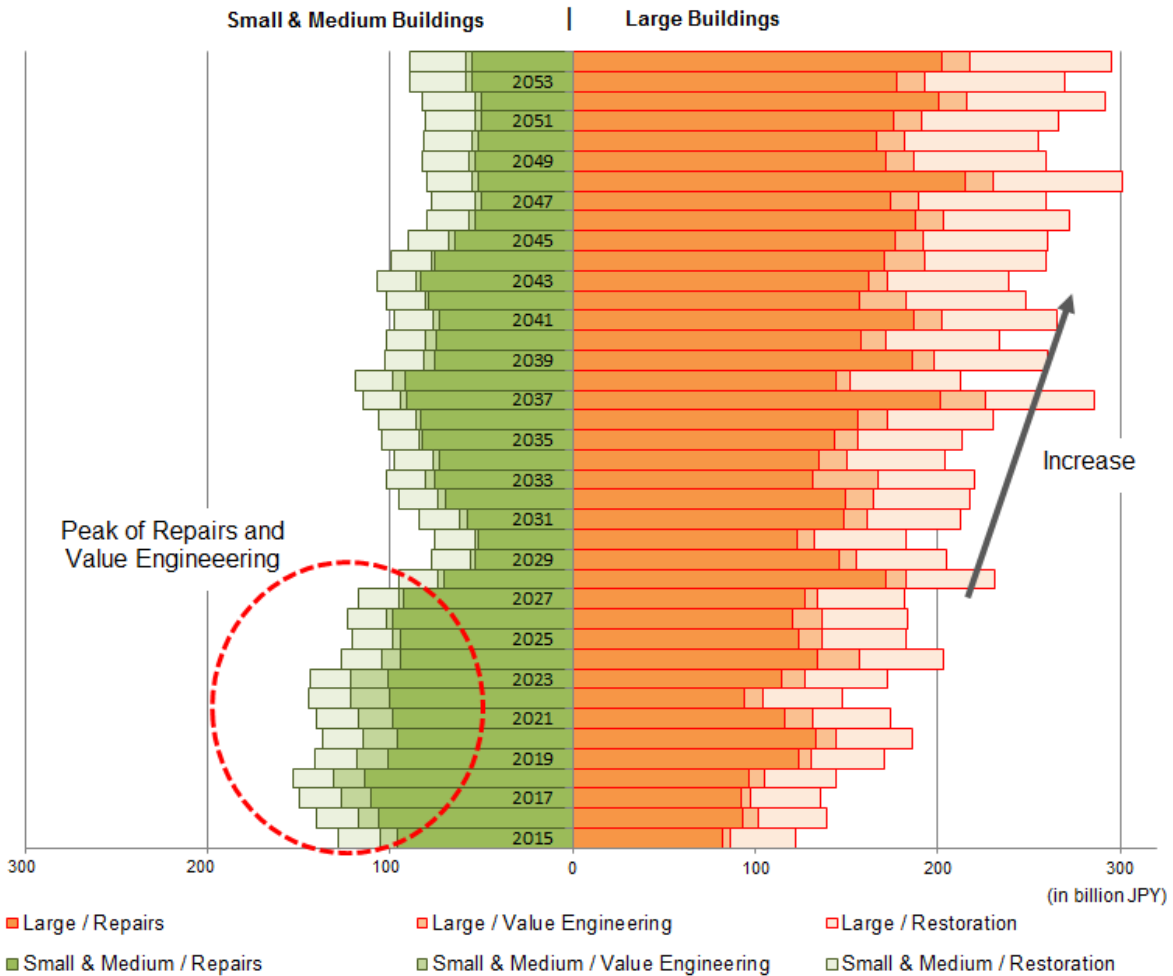
Large buildings have been constructed year after year until now. If this momentum continues, the repair market volume is expected to grow even further.

In contrast, constructions of small and medium buildings have been limited after the large volume of supply during the bubble period (*2). Accordingly, the market volume remains high until 2027 as facilities are being replaced, and after that, unlike large buildings, the market volume repeats modest ups and downs.

*1 Large buildings: gross floor area of over 5,000 tsubo (674 buildings and 11,260,000 tsubo in total)
 Small and medium buildings: gross floor area of 300-5,000 tsubo (6,425 buildings and 7,420,000 tsubo in total)
 (as of November 2014) 1 tsubo = 3.3 sqm

*2 Office Stock Pyramid 2014 by Xymax Real Estate Institute
http://www.xymax.co.jp/english/research/images/pdf/140417_News-release.pdf

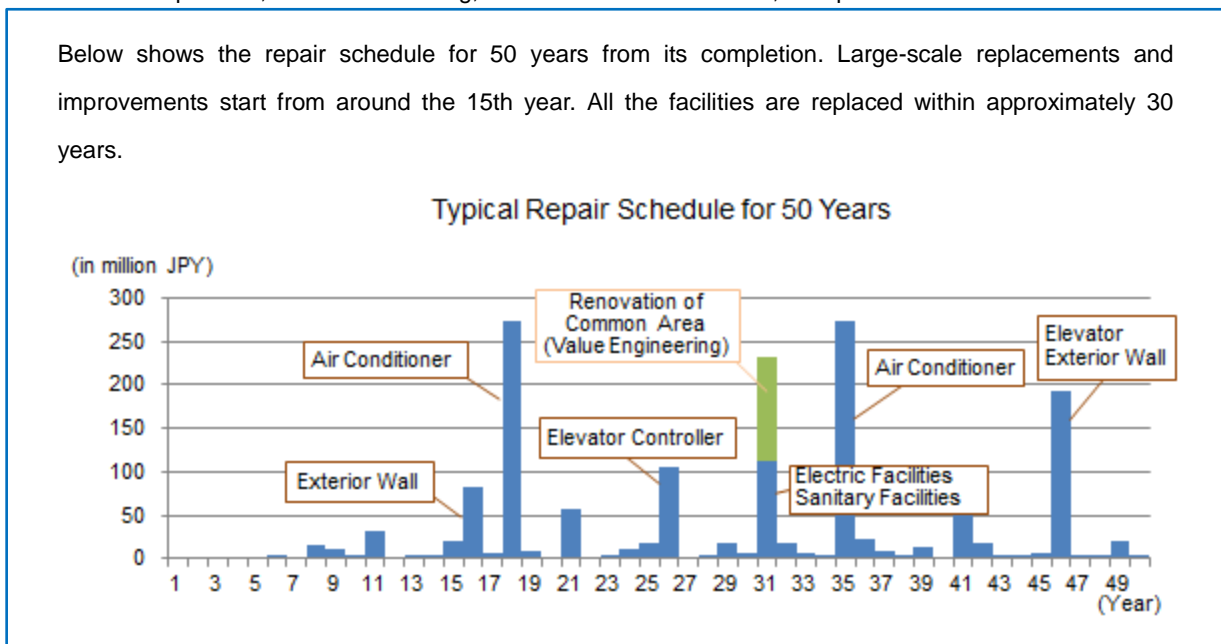
Figure 2: Market Volume Projection: Repair Costs by Size of Buildings



Note 2: Repair Schedule of a Typical Office Building for 50 Years

Assumption: 2,700 tsubo building, 9 floors with a basement, completed in 1990

Below shows the repair schedule for 50 years from its completion. Large-scale replacements and improvements start from around the 15th year. All the facilities are replaced within approximately 30 years.



Conclusion

As an important social asset where corporate business activities are based, office buildings must be kept in a good condition and functional for a long time into the future.

This study provided approximate total costs required for repairs of office buildings. A large volume of small and medium buildings constructed in Tokyo 23 Wards during the bubble period (and also prior) will become older and require more expenditure on repairs. Whether those buildings will be properly maintained is important in the office space market in the future because well-maintained office buildings can continue to be functional and achieve stable rental income.

This study and analysis is based on the data of 1,900,000 tsubo of office spaces. The future office stock was estimated based on the advice, on the estimation method reflecting information such as the office buildings to be demolished, given by Professor Yukio Komatsu of School of Creative Science and Engineering, Waseda University.

Xymax Real Estate Institute will continue to study social issues and share our findings through news releases and other means.

Repair Costs of Tenant-Occupied Office Buildings in Tokyo

Data of Office Buildings Used in This Study

- Subject Market: Tokyo 23 Wards
- Subject Buildings:
- Gross floor area of over 300 tsubo
 - Less than 50 years from completion
 - Used mainly as an office space
- Data was collected from publicly available information such as newspaper articles and rental information (including those in the past). Data of buildings accompanied with the data of building age was used in this study. Owner-occupied buildings are excluded.
 - In general, "the bubble period" refers to 1985-1991. In this study, however, considering the development period, we included three more years; therefore "large volume of supply in the bubble period" refers to the new supply (completion of new buildings) in 1985-1994.
 - Changes in office stock after 2015 are estimated based on the assumptions of new supply and demolition of office buildings estimated from the gross floor area of past supply. The results are shown by year of building completion and by size of buildings.

Estimation of Repair Costs

- Xymax Standard LCC, which is a repair schedule index developed based on 84,000 cases of repairs performed by Xymax Group, is used in the estimation of a repair schedule for the next 60 years. The results of the estimation are shown by age of buildings.
- Assumptions of building specifications (system, number, volume, etc.) are based on the gross floor area, number of floors and year of completion and in line with the legal regulations. The building specifications must be sufficient for the office space to be leased at market rent.
 Example of building specifications: gross floor area of 2,700 tsubo, 9 floors with a basement, completed in 1990

Waterproofing:	Waterproof asphalt concrete
Exterior Wall:	Tiled wall
Air Conditioner:	Individual air conditioning
Parking System:	1 horizontal parking system for 30 vehicles
Elevator:	3 units
- Examples of "Renovation of Common Area (Value Engineering)" are renovations of toilet, kitchenette, entrance, signage and elevator interior. However, the replacement of wall cloth in elevator hall due to deterioration for use over time is regarded as "Repairs".
- The restoration of the tenant occupied area (exclusive area) includes the following:
 - Replacement of floor tile carpet
 - Replacement or recoating of wall cloth
 - Coating of rock wool insulation ceiling panel
 - Coating of entrance fittings and window ledge
 - Removal of LAN cables and wiring under the raised floor
 - Replacement of fluorescent bulbs
 - Replacement of key lock, cleaning
 - Preparation of the restoration such as protective coating, scaffolding, etc.
 Removal of partition, installation of additional power source and removal of air conditioner are excluded.
- Tenant improvements of the exclusive area are not included in the repair costs in this study.
- Facilities and specifications of large buildings vary depending on the building. We, therefore, made a specific standard for this study. Also please note that the installation and renovation of system that will be demanded due to changes in environment in the future, such as increased demand for seismic enhancement after a great earthquake, are not considered in this study.