

Economic Value of Repair

Repairs that are well-planned and consistent have a positive impact on rent.

September 28, 2016

REPORT SUMMARY

- ✓ Office buildings are now used for a longer period of time and the value of the property will decrease (the "deterioration" of the value) for all the stakeholders: the landlords, investors, tenants and others. We must face this risk.
- ✓ Well-planned and consistent repairs against such risk are important. Use the idea of the risk management. More specifically, the future risk should be analyzed first and then a repair plan should be prepared. Each repair should be performed in a timely manner (not all at once).
- ✓ The new rent is 3%-7% higher for buildings with a repair plan and timely implementations of such plan; the data accumulated by Xymax revealed.
- ✓ Repair is an important part of real estate management. It is not only about fixing the failure. Well-planned and consistent repairs can mitigate the risk of deterioration and give benefit to the building.

Background

Long Life of Buildings and Deterioration Risk

The social maturity, population decline and slowing economic growth; Japan is now moving to a new era where things are maintained and used for a much longer period of time ("Stock Type Society" is the word typically used in Japan) from the era of mass consumption ("Flow Type Society"). In the real estate industry, buildings are increasingly more maintained and used longer rather than being demolished and constructed. Real estate investors are changing too; their focus on short-term capital gain is now being replaced by long-term income gain.

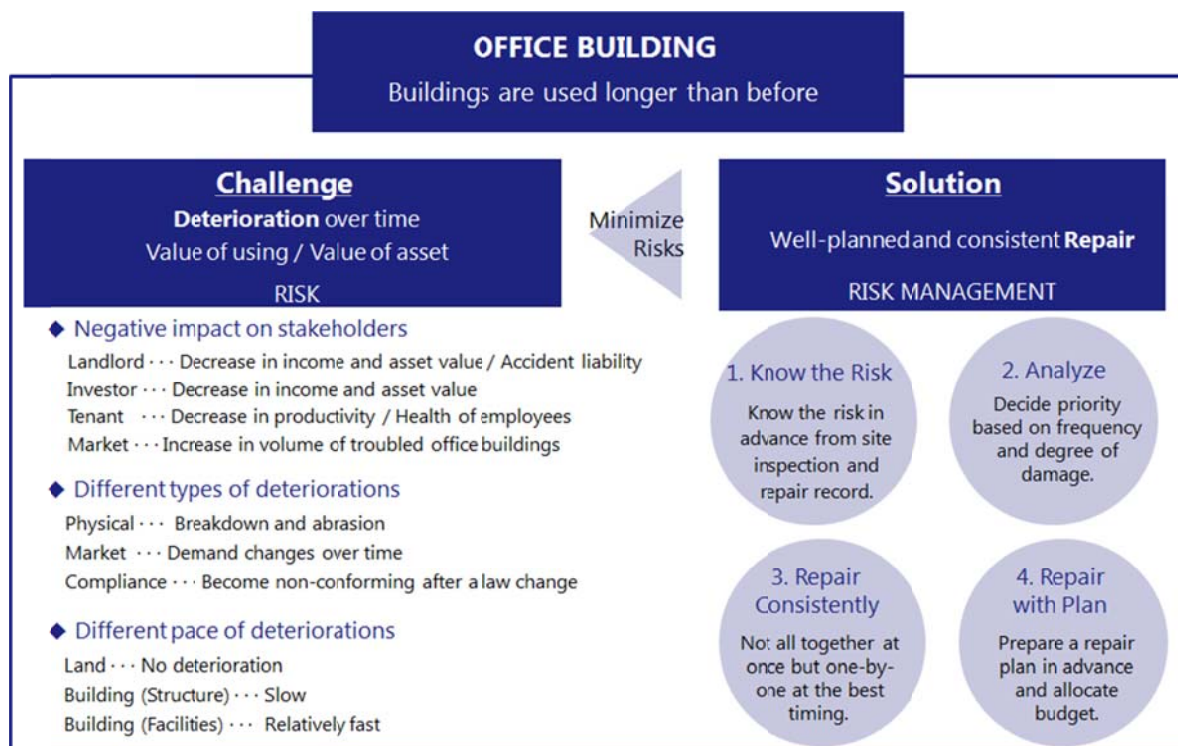
The impact of the deterioration on value in the future, including the decrease in asset value and decrease in value of using, cannot be ignored.

If the landlord ignores the ongoing deterioration, the buildings will eventually lose competitiveness in the market and see a decrease in rental income or a decrease in asset value. Also, tenants and visitors may accuse the landlord of any damage on them caused by such deteriorations. What is more, for tenants who use the space as an important base of their intellectual production, a troubling and obsolete office building and facilities will affect the productivity and will give negative impact on the health of the workers. Such low-value and less-usable buildings also become problems in the market if they exist in a large volume. Thus, there is a risk of deteriorations, which may give negative impact on all the stakeholders of the office building. (Figure 1)

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Figure 1: Office Building of "Stock Type Society"



The pace and frequency of deteriorations are different for every building depending on the components included. The land does not deteriorate, but the building deteriorates as time goes by. Buildings can be divided into the structure and facilities: facilities tend to have shorter life and deteriorate relatively faster than the structure^{*1}.

The type of the deteriorations also varies: Physical Deteriorations are the loss of quality or function after being used for a long period of time or being used many times; Market-Driven Deteriorations are the facilities becoming obsolete due to change in value or demand of users or due to new technologies; and Legal Deteriorations are the buildings becoming illegal after a law change or city plan change.

*1 Structure: The structure forming the building; the floor, wall, beams, etc.
Facilities: Facilities installed to the building; power supply, water supply, drainage, air conditioner, elevators, etc.

Well-Planned and Consistent Repair as Risk Management

In real estate management, "repair" is a solution for the complicated risk of deterioration. The "repair" in this report includes all the works which are performed to keep the quality or to increase the value of the building as a result.

The repair should be performed based on the risk management process because deteriorations are considered a risk. More specifically: 1) "Know the Risk" Do the site inspection and check the record to find out which repairs and improvements will be needed; 2) "Analyze" Decide priority based on the frequency and degree of the damage if it happens; 3) "Repair Consistently" Perform the repairs and improvements, but not all together at once; do them in a timely manner and continue; and 4) "Repair with Plan" Make a repair plan, allocate budget and be prepared for future damage. The repair based on risk management is considered useful in terms of cost, workload, and impact to the tenants, compared to ad-hoc repairs and postponed repairs.

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Risk management is, however, not always adopted in the actual real estate management today. It is because: the importance of the repairs are not understood enough; there are restrictions in accumulating know-how and data; there are restrictions in using manpower; and it is difficult to present the economic value of such repairs.

In this report, we used the statistical analysis to examine the benefit of the well-planned and consistent repairs.

Analysis and Result

Data and Method

The database of new rent and repair record was used in this analysis. The data was accumulated by Xymax through the property management services it provided.

The data used in this analysis includes the rent under 2,167 new lease agreements of 245 office buildings in Tokyo 23 Wards for the period between 1997 and 2015. The physical information of the office buildings (size, age and area) and whether well-planned and consistent repairs had been performed were added to the rental data. (See the overview at the end of this report for information about the data.)

Whether or not the well-planned and consistent repairs had been performed was judged as follows: "repairs had been performed three years in a row prior to the signing of the lease" (consistency) and also "repairs were planned and performed in the year before the lease signing" (well-planned); if both were 'Yes', it was deemed that well-planned and consistent repairs had been performed.

To examine which of the repairs had impact on rent, we separated the repairs into six groups. Repairs can be grouped into several types based on the type of work (building's structure, electricity supply, air conditioning, etc.), which parts of the facility are repaired, the accounting rules, and whether it is just a day-to-day repair or special repair to increase the value of the property. In this analysis, such categories were divided into six different groups based on the principal component analysis (Figure 2).

Figure 2: Repairs into Groups

Group	Explanation	Example of Work
Air Conditioner	Inspection, cleaning, repair, replacement and installation of air conditioners and related equipment	<ul style="list-style-type: none"> Replacement of air conditioner package Overhaul of water cooler/heater
Facilities	Inspection, cleaning, repair, replacement and installation of facilities other than air conditioners	<ul style="list-style-type: none"> Replacement of lights Replacement of transformers
Compliance	Inspection, check, correction, replacement and installation of facilities in accordance with the laws	<ul style="list-style-type: none"> Replacement of valve of halon fire extinguisher
Tenant Related	Improvements or changes made for existing tenants and potential tenants	<ul style="list-style-type: none"> Division of a floor Replacement of tenant signs
Cleaning	Cleaning, wash and construction for the purpose to recover or improve the designed appearance. (Excluding the wash to maintain the facilities.)	<ul style="list-style-type: none"> Wash of exterior wall Special cleaning of tile carpet
Improvement	Improvement of the quality and function of the environment, the amenity, the risk management and the community	<ul style="list-style-type: none"> Conversion of common area lights to LED Enhancement of seismic resilience

The method we used in this analysis is one of the regression techniques called the hedonic approach, which is a statistical analysis that clarifies the correlation between the quality and the price. This method can calculate the impact of the repairs on new rents after removing the influence of other factors such as location, size and age of the building.

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Result and Commentary

The result of the analysis was statistically significant as follows: Buildings with well-planned and consistent repairs got higher new rents compared to those without such repairs. The impact on rents by group was: +3.5% for "Air Conditioner"; +6.9% for "Facilities"; +5.2% for "Compliance"; and +6.9% for "Improvement".

Other explanatory variables ("Tenant Related" and "Cleaning") had no statistically significant result (see the middle column of Figure 3). As a reference, we also analyzed repairs that are not well-planned and consistent. The result was: "Improvement" had a statistically significant impact on rents but other repairs such as "Air Conditioner", "Facilities" and "Compliance" had no statistically significant result (no impact on rents). (See the right column of Figure 3.)

Figure 3: Impact of Repairs on New Rents

Explanatory Variable	Well-Planned and Consistent Repairs	(Reference) Other Repairs
Air Conditioner	+3.51%	+0.93%
Facilities	+6.87%	-2.32%
Compliance	+5.19%	+0.87%
Tenant Related	-3.31%	+0.41%
Cleaning	+0.38%	+0.20%
Improvement	+6.94%	+2.27%

Numbers in **bold** font: Statistically significant.
 Numbers in non-bold grey font: NOT statistically significant (5 % significance level)

Tenants may complain and express fear if there are breakdowns or problems with the air conditioners, other facilities and compliance-related matters. Well-planned and consistent repairs can avoid such troubles from happening or can minimize the damage even if there happened to be such troubles. The result of this analysis indicated that tenants value a good real estate management approach. Improvements such as the conversion to LED lights and seismic reinforcement also had a positive impact on new rents because such improvements will increase the quality of the office building.

Conclusion

So far, with the process of risk management, we made clear the risks of deteriorations and repairs, which are the challenges people face when office buildings are used longer, and then analyzed the impact of well-planned and consistent repairs on new rents. The analysis indicated that some repairs had approximately 3%-7% of positive impact on the rent.

In the tenant survey conducted by Xymax Real Estate Institute in 2014 on the use of office space, 41% of the respondents said the cleanness and maintenance of the building is "very important" when choosing an office building; the fourth most important criteria in the survey result. The affordable rent (62%) ranked the top followed by enough seismic resistance (51%) and 24-hour 365-day operation (42%). The result of this quantitative analysis of repair supports the findings from the tenant survey: tenants value not only the location, size and age of the building but also quality real estate management services.

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If repairs are performed consistently and with a plan, rather than merely for the purposes of fixing failures and breakdowns, they can mitigate the risk of deterioration. This also indicates that the repairs are the important parts of real estate management which can achieve benefits. The circumstances surrounding the real estate are changing now: the buildings are to be used for a longer period of time; real estate investors' behaviors are changing too; the demand varies tenant by tenant; office workers' working style are also changing; and the cost of construction is surging while the workers are becoming in short supply. All of these tell us that the real estate management based on the mid- to long-term view will be more important in the future.

This analysis mostly focused on tenant-occupied buildings, but well-planned and consistent repairs are equally important for company-owned buildings in terms of safety of the employees, keeping and improving the productivity, the business continuity plan and other matters.

We hope our study helps the long-term use of buildings, mitigation of risks and good real estate management.

Analysis Overview

Subject Buildings	245 office buildings in Tokyo 23 Wards
Period	1997 - 2015
Number of Data	2,167
Average Building	New Rent: JPY17,029 per tsubo Gross Floor Area: 1,844 tsubo Age: 18.1 year
Analysis Method	Hedonic Approach
Variables	<p><u>Explained Variable</u> Rent per tsubo including CAM charge in a new lease agreement</p> <p><u>Explanatory Variable</u> Gross floor area, number of floors above ground, typical floor area, age of building, raised floor or not, individual air conditioning or not, automatic security or not, walking distance from station, office market, year the lease was signed, well-planned and consistent repairs performed or not.*</p> <p>* If the building was 'Yes' for both "repairs performed for three consecutive years prior to the lease signing" (consistency) and "budgeted repair was performed in the year before the lease signing" (well-planned), the dummy variable is '1'. This test was performed for all the six types of repairs.</p>

For questions on this report, please contact us.

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Economic Value of Repair

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