



STRATEGIC ASSET MANAGEMENT OF COMMERCIAL BUILDING IN TOKYO

LAPPEENRANTA-LAHTI UNIVERSITY OF TECHNOLOGY LUT

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## ABSTRACT

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Strategic asset management and efficient planning are important activities for the profitability and success of a company. To achieve objectives in these areas, commitment from all levels of the company and the optimized use of its resources are required. The Tokyo real estate market is extensive and to identify best practices, differentiating the type of tenant is important. This thesis examines the real estate tenants and landlords of office, commercial and residential properties. The aim of the thesis is to develop an efficient asset management strategy for a target company in Tokyo using the strategic asset management framework.

This qualitative thesis utilizes a case study approach. The study is divided into four parts. Firstly, a literature review on the real estate market in Tokyo and its characteristics. Secondly, the paper discusses the concept of strategic asset management and real option theory in life cycle management. Thirdly, it focuses on the analysis of the current situation of the target company through a framework developed for strategic asset management. The fourth part focuses on the future of the company. To develop future suggestions, the paper proposes and compares real options and their use in the empirical part of the study. Understanding the Tokyo real estate market, and a literature review of the strategic asset management and real options, will enable deeper analysis of the case study. As part of the qualitative research, semi-structured interviews were conducted in this thesis.

The result of the empirical study demonstrates that the strategic asset management framework can also be adopted in the real estate sector. In addition, with the framework and the use of real options, the company can understand better the current state of the various asset management processes and consider the future options. This facilitates the company to take corrective actions and to identify the risks associated with each option.

## TIIVISTELMÄ

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Jyri Meriläinen

### TOKIOSSA SIJAITSEVAN MONIKÄYTTÖRAKENNUKSEN STRATEGINEN OMAISUUDENHALLINTA

Tuotantotalouden diplomityö

81 sivua, 6 kuvaa, 9 taulukkoa ja 1 liite

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Avainsanat: Strateginen omaisuudenhallinta, reaaliopiot, kiinteistön omaisuudenhallinta

Strateginen omaisuudenhallinta ja sen strateginen suunnittelu ovat keskeisiä toimenpiteitä yrityksen kannattavuuden ja menestyksen kannalta. Tavoitteiden saavuttaminen edellyttää sitoutumista yritykseltä kokonaisvaltaista sitoutumista ja sen resurssien optimoitua käyttöä. Tokion kiinteistö markkinat ovat suuret ja parhaiden käytäntöjen löytämiseksi on tärkeää ymmärtää eri vuokralaisten tarpeet. Tässä diplomityössä tarkastellaan toimisto-, liike- ja asuinkiinteistöjen vuokraajia ja vuokranantajia. Diplomityön tavoitteena on kehittää Tokiossa sijaitsevalle kohdeyhtiölle optimaalinen omaisuuden hallinnan strategia hyödyntäen strategisen omaisuuden hallinnan viitekehystä.

Tässä laadullisessa diplomityössä hyödynnetään tapaustutkimuksen lähestymistapaa. Työ koostuu neljästä osasta, joista ensimmäinen on kirjallisuuskatsaus Tokion kiinteistömarkkinoista ja sen ominaispiirteistä. Toiseksi diplomityössä perehdytään strategiseen omaisuudenhallintaan käsitteenä sekä siihen liittyvään kirjallisuuteen. Kolmannessa osuudessa keskitytään kohdeyrityksen nykytilan analyysiin strategisen omaisuudenhallintaan kehitetyn viitekehysten avulla. Neljännessä osassa tutkimus keskittyy kohdeyrityksen tulevaisuuden hahmotteluun. Tulevaisuuden eri vaihtoehtojen hahmottamisen vuoksi työssä tutustutaan reaaliopioihin ja verrataan eri vaihtoehtoja ja niiden hyödyntämistä kohdeyrityksessä. Tokion kiinteistömarkkinoiden ymmärrys sekä kirjallisuuskatsaus strategisesta omaisuuden hallinnasta ja reaaliopio vaihtoehtoista mahdollistavat tapaustutkimuksen syvemmän analyysin. Osana laadullista tutkimusta tässä työssä suoritettiin puolistrukturoitu haastattelu.

Lopputuloksina työssä havaitaan, että strategisen omaisuuden hallinnan viitekehystä voidaan hyödyntää myös kiinteistöalalla. Viitekehysten ja reaaliopioiden käytön avulla yritys voi saada paremman käsityksen omaisuuden hallinnan eri prosessien nykytilasta ja pohtia tulevaisuuden vaihtoehtoja. Tämä helpottaa korjaavien toimenpiteiden suorittamista sekä kuhunkin vaihtoehtoon liittyvien riskien tunnistamista.

## ACKNOWLEDGEMENTS

Finishing this thesis and my master's study marks one of the most exciting but also challenging periods of my life. Studying at LUT University has been a truly wonderful experience thanks to the many people I have been able to meet, learn and grow with.

First, I want to express the deepest gratitude to everyone around me for helping me throughout this phase of my life. Especially, my professor Timo Kärri for the invaluable guidance during the writing of this thesis. Also, thanks to my wife for tremendous support during my studies. Conversations with my parents and brothers have helped me during challenging phases and I am grateful for their guidance.

I would also like to point out my appreciation to the members of the target company for providing me a wonderful opportunity and invaluable advice during the thesis.

## ABBREVIATIONS

AI	Artificial Intelligence
CIPFA	Chartered Institute of Public Finance and Accountancy
IoT	Internet of Things
SAM	Strategic Asset Management
SAMF	Strategic Asset Management Framework
SIAM	Strategic Infrastructure Asset Management

## UNIT CONVERSIONS

Tsubo	Land unit	[3.33, sqm]
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## Tiivistelmä

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# 1 Introduction

## 1.1 Background

Tokyo commercial real estate was booming in the 1980s due to the Japanese economic development where a lot of construction was developed to serve the emerging economy to cater for the different business needs (Tsubomoto, 1996). Japan is prone to earthquakes and other natural disasters, which has precipitated changes in regulation in the construction sector to increase safety and reduce environmental impact. In 1981, the Japanese government implemented a new building regulation to prevent destruction in case of earthquake (Housing Structure Research Institute, 2024a). In Japan, buildings are built with different materials according to the needs of the life expectancy of the building, and the budget. According to the Japanese government, for instance, the statutory useful life for Ferroconcrete buildings in Japan for office use is 50 years, whereas for wood construction, it is 24 years (National Tax Agency, 2017). As most of the small and middle-sized buildings in Tokyo were constructed during 1970-2000, it is time to study the requirement for a plan for major renovations and or reconstruction.

Commercial real estate management refers to a building or a construction that has commercial activities operated by the occupants. In this research study, commercial real estate was selected to respond to the research questions and to conduct the case study of a company that has commercial real estate building. In chapter 4 studying the target company, having a deeper understanding of commercial real estate management enables research to discover better practices that can be applied to the target company. Further, the gathered research is relevant because it is limited to a similar business environment.

Commercial real estate management also serves several stakeholders, from the owner of the building to the tenants, their clients, and suppliers. The revenue from the building is generated when rental income is received from customers. Therefore, building management consists of different elements such as maintenance, design, and functionality and the better the building is at serving its entities, the higher the probability that the building will remain occupied in its lifetime. Landlord interest is to have the greatest return on its investment in

the forms of rental income and long tenant relationships. For tenants, interest lies in the location, accessibility, and functionality of the building as well as a low cost during their lease.

This research focuses on real estate building long-term strategic planning using a strategic asset management framework. The research framework was selected because strategic asset management focuses on having a company's asset strategy aligned with the company's overall strategy (Kellick, 2010). In commercial real estate, the decisions can evolve around whether to maintain it or allocate more profits towards saving for new construction.

The second chapter examines real estate asset management practices in Tokyo and their unique characteristics. To achieve improvement in profitability, it is necessary to understand the characteristics of the asset and its operating environment. The geography of Japan set its challenges for real estate since the island nation is prone to earthquakes and natural disasters (Housing Structure Research Institute, 2024b). When building commercial real estate, it is critical to analyze the lifespan of the building and consider the seismic resistance and related repairs over its lifetime (Japan Seismic Diagnosis Association, 2010). Neglecting the maintenance and safety measures in a hazardous environment can have devastating consequences for the occupants of the building. In addition, investment and repairs are to be evaluated in terms of profitability and fulfilment of the strategic goals of the company. Ultimately, it is easier to assess the overall condition and determine the optimal repair cost-benefit ratio when the past maintenance history of the assets is known.

In the literature review, the strategic asset management (SAM) among strategic asset management framework (SAMF), and its applications will be studied. Having a framework combined with widely used asset management practices, permit owners and real estate asset managers to support their decision-making. The strategic asset management framework includes the current situation and an action plan that describes the process to implement the vision of the company. It is critical to consciously focus on the big picture and move steadily ahead without undue focus on the details (Kellick, 2010). The strategic asset management framework is often used in the public sector, but this paper will examine how it can be applied to the asset management of a middle-sized commercial building.

The building of the target company was built in 1986 in Tokyo, an intriguing metropolis due to its density and constant innovation. The target company has reached the phase of verifying

the need for and timing of rebuilding as well as measures for future major repairs. Their challenge is to develop a long-term plan for the building. Developing the long-term plan enables the company to allocate the funds most efficiently for maintenance and- or investing in new construction. Allocation of resources is critical since it has a direct impact on the profitability of the company. In addition, if the building is not well-maintained, the risk of accident and tenant dissatisfaction may increase which can lead to vacant offices. Furthermore, the expectations of tenants are changing in comparison to the era when the target company's building was initially built. Therefore, it is also necessary in this research to evaluate the impact of the investment decisions.

## 1.2 Objectives and scope

This paper examines the life cycle of real estate building using the strategic asset management framework. The research aims to study Tokyo metropolis commercial real estate asset management practices and develop an efficient asset management strategy for the target company by using strategic asset management framework. The study will cover the building life cycle and explores a path to long-term profitability in the management of rental buildings in Tokyo.

To accomplish this goal, the research problem is divided into three research questions. By unraveling the answers to these three questions one by one, the final objective of this study can be reached. The commercial real estate practices in Tokyo will be studied, a major metropolis in Japan where the target company's building is located. To answer this question, two categories must be analyzed. First, the characteristics and environment of small and medium-sized buildings in Tokyo, such as the target company's building. Secondly, what owners and tenants are looking for, while considering unique Japanese real estate market characteristics such as the importance of preparing for natural disasters. Moreover, specifically in Tokyo, as it has a high population density and in general, real estate value is tied to the proximity of train stations. The aforementioned factors are critical elements in the successful management of the commercial rental building business in Tokyo, and to apply them in commercial real estate management they must be studied.

- What are the main factors that determine the success of businesses among commercial real estate businesses in Tokyo?

Secondly, the strategic asset management framework examines the terminology, what it is, and what it entails. It is crucial to investigate the characteristics and benefits of frameworks what cases they are used for, and in which cases they are most effective. After that, the most suitable strategic asset management framework for commercial real estate asset management will be selected and its applicability will be examined.

- What is the strategic asset management framework and how can it be applied in commercial real estate management?

Thirdly, the application of the strategic asset management framework to a case study is examined. To reach this objective it is necessary to understand the successful commercial real estate asset management practices to derive an efficient approach. The target company is a 38-year-old commercial rental building in Tokyo, and through this case study, the approach that can be applied to all small and medium-sized buildings in Tokyo will be discussed.

- How can a company find the most suitable approach to commercial real estate asset management?

### 1.3 Methods and data

In the field of commercial real estate management, many qualitative factors contribute to the successful management and profitability of the property, ranging from attractive location, design, functionality, safety, and perceived value. Hence, for this research problem, a qualitative approach was selected. To provide comparisons and to conduct actions that provide improved results to the company, this study explicitly focuses on the strategic asset management framework, thereby excluding other asset management frameworks from its scope.

To limit the research, the study will focus specifically on Tokyo and its commercial real estate market. Property types will be primarily commercial and office buildings. To delimit the work, it is necessary to focus on small and medium-size buildings to analyze trends and changes in management practices. Also, it is vital to define Tokyo and the areas it covers. Officially known as Tokyo Metropolis, the capital of Japan consists of 23 wards and the

western parts and islands. This paper focuses mainly on the area of the 23 wards of Tokyo which is often referred to when discussing Tokyo. However, depending on the literature, Tokyo metropolitan area which includes surrounding area is also used (Kikuchi & Sugai, 2018). This paper also delimits the option of a solution that is an “exchange of equal value” which is commonly implemented in Japan, such as between land and building (Japan Ministry of Internal Affairs and Communications, 2008). It is not in the interest of the owner of the target company since they want to retain their rights to the land.

The case study was selected as an approach of this thesis because it aims to provide solutions for the target company based on the learned principles and theory. The target company based in Tokyo operates in the real estate sector renting a medium-size building space for commercial and office use. The building is aging and reaching the end of its statutory useful life and while the maintenance costs are increasing, planning for future actions becomes increasingly essential. The case study aims to define the features, connections, and objections of the research.

It is imperative to gain a good understanding of Tokyo commercial real estate market asset management practices and how these practices could be applied to the target company when developing an asset management strategy. This requires a deeper understanding when constructing a hypothesis and limiting the scope. This is why strategic asset management and real option theories were chosen in this research. With the assistance of these enhancing the strategic analysis, results and generation of hypothesis in the target case can be achieved. While it is critical to acknowledge the different elements that impact the profitability of the company, not all great practices may be suitable for every situation. Also, in terms of time management, resources must be allocated effectively taking into account the priorities of the company which in turn creates a need to understand the characteristics of the target company.

This paper includes a literature review, a semi-structured interview, and an analysis of information collected from local real estate sources and the target company. The literature review will be conducted to identify existing theories, strategic asset management framework, real options theory and other studies related to commercial real estate management, especially in Tokyo but other metropolitan areas may be studied for reference. For the literature review LUT Primo e-library and Google Scholar will be used to find studies and research related to the topics. Published industry reports and surveys on commercial real estate management will be utilized to understand the nature of asset management practices in the

commercial real estate industry in Tokyo. As some of the information is from Japanese sources, translation to English is conducted.

Each phase requires a differing approach. In the first phase, the emphasis is on the research papers related to commercial real estate in Tokyo, published online reports, survey results, and other related information from governmental bodies. The focus of the second phase is on the strategic asset management covering framework and life cycle management especially real option theory, thus academic research of these subjects will be examined. It is necessary to find articles that explain the comprehensive framework of strategic asset management and real options. The asset management framework is clarified by using concept analysis.

As the third phase, the general data collection about the property from the target company is performed. In the fourth chapter, the current situation of the company and existing practices will be studied, and the interviews will be done. The key personnel of the company will be interviewed, as they have the highest expertise, and their decisions have the greatest impact on the asset management decisions. In addition, the company maintenance records are reviewed from the construction years and current maintenance plans. The fourth phase is about the future of the target company. Therefore, the data and insights from the previous phases will be used. Based on the findings of previous phases, the options are analyzed and evaluated against each other.

#### 1.4 Structure

This paper examines the current situation and discusses the future planning of a target company located in Tokyo, Japan as an example of asset management for a small to medium-sized commercial building in Tokyo that is aging. In figure 1 below the flow of the thesis is presented.

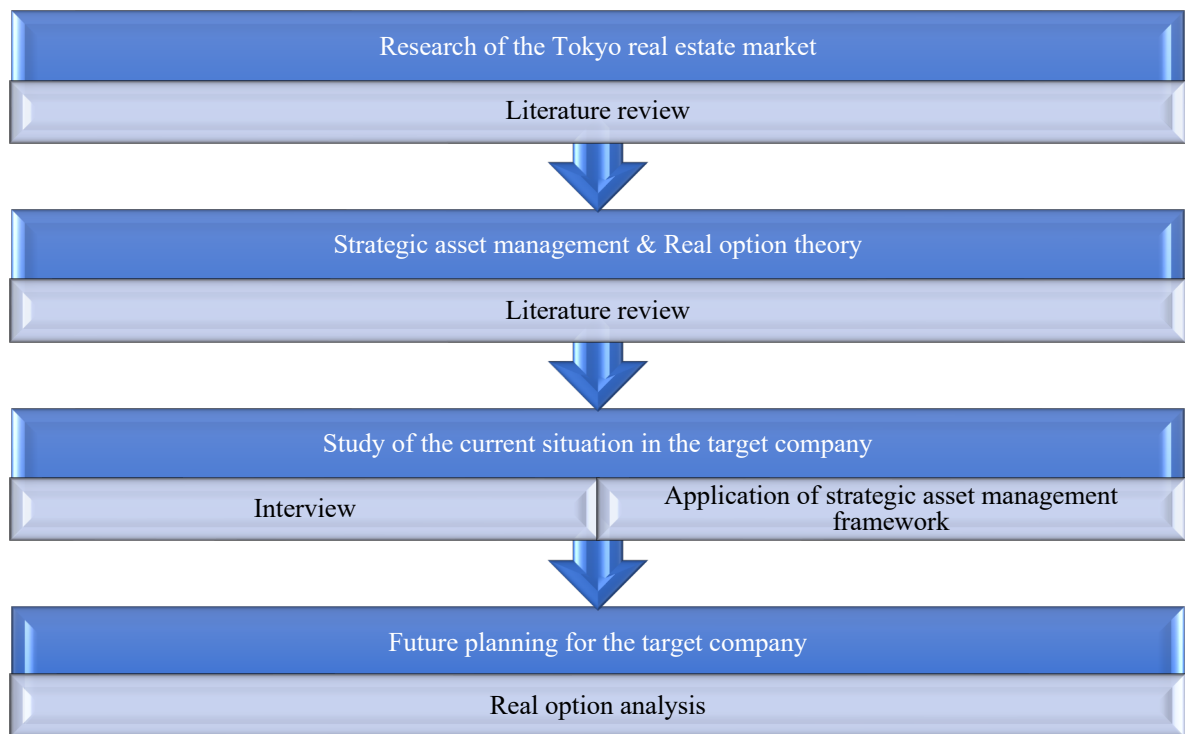


Figure 1. The flow of the thesis.

It first investigates the geographical characteristics of the target area, Tokyo, such as its unique regulations and background, and current practices and conditions. To this end, it will trace the history of office and commercial buildings dating back to the postwar period. The study focuses on the current office building situation and challenges, as well as the background regulations unique to earthquake-prone Japan, the environment of small and medium-sized Japanese building owners, tenant demands, and the status of rebuilding. After that, discussion will move to what kind of strategic asset management framework is to be used for this examination, its definition, characteristics, process, and benefits.

Once understanding of the market of commercial and office buildings in Tokyo has been established, the concept of strategic asset management and real option theory will be studied. The current situation of the target company is then to be analyzed from various perspectives using the strategic asset management framework since it is the target of this thesis. After analyzing the target company's current situation, different options will be examined and compared. Future planning covers various aspects, from cost perspective to tenant management and environmental impact. This comparison is possible by applying real option theory which is often used in future planning where there are many uncertain elements. To succeed

in this phase, the future options need to be clarified. These options can be defined by understanding the operating environment, current strengths and challenges of the company. Further, the objective is to develop the most suitable option for the target company by comparing the options to another one, and finally suggesting most suitable option for the target company.

## 2 Commercial real estate asset management in Tokyo

### 2.1 Current status of buildings in Tokyo

Further to Japan's recovery from the damages of World War II and the subsequent economic miracle of substantial industrial growth, there was a growing need for employees to work in such industries, and the number of office workers also augmented. Notably from 1980 to 1990, this office worker increase in urban areas resulted in a significant rise in demand for office space (Tsubomoto, 1996). As a result, many office buildings were constructed in urban areas, creating a construction boom. During that time, Japan was experiencing its most booming economy and many small and medium-sized buildings were constructed during this period known as the "bubble" (1986-1997). Against this background, as of 2018, in Tokyo's 23 wards, buildings over 20 years old accounted for 4.86 million tsubo (1 tsubo = 3.30579 m<sup>2</sup>) and 7,077 buildings, or over 80% of all office buildings (Yoshida, 2018), properties that are 20 years old or older account for 83% of the total (Service Office.jp, 2023). However, that construction rush was temporary, with a significant drop in new construction projects since the massive supply during the bubble period (Yoshida, 2018). According to XYMAX corporation (2024) in the 23 wards of Tokyo, there are 9,410 buildings, the majority (92%) being small and medium size buildings, while large buildings comprise 8%. Their survey also found that less than 20% were under 20 years old, with an average age of 34.8 years (XYMAX corporation, 2024).

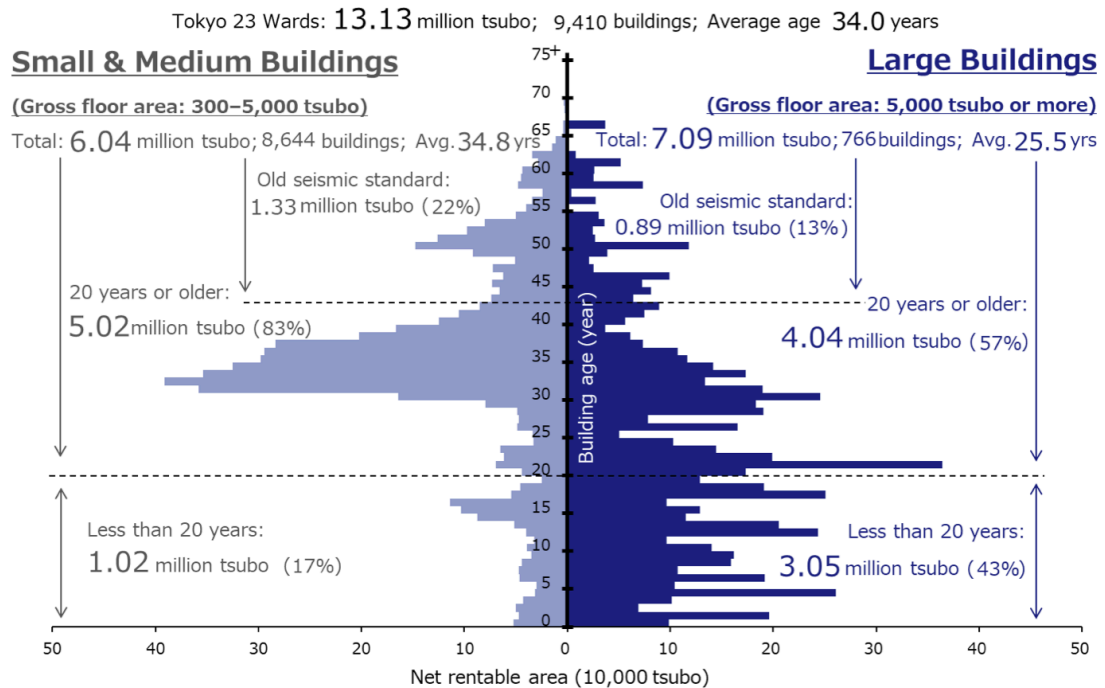


Figure 2. Tokyo 23 Wards Office Pyramid 2024 (XYMAX corporation, 2024).

Higano (2021) states that the Tokyo Metropolitan area's gross regional product impacts more than one-third of GDP. This indicates that economical activities in Japan are centralized in the Tokyo Metropolitan Area. Yet, this has also influenced the real estate market (Higano, 2021). Considering office buildings where the floor space is 50 tsubo (165.289m) or more per floor, the vacancy rate is projected to remain at 4-6% after 2024, and some believe that there may be a slight oversupply to be seen in the future. In the past, rental prices have had a tendency to remain mostly stable and have not changed significantly, in addition, in the future, rental prices are expected to rise gradually. (Commercial Property Research Institute, 2024)

Ishikawa et al. (2007) conducted research in the Ginza area of central Tokyo, where there are many older small and medium-sized office buildings, ascertained that many buildings constructed before 1983 generally scored low in terms of disaster preparedness, and that barrier-free accessibility and IT for security systems were also lagging. IT systems were also not commonly adopted. In addition, most buildings were not energy efficient enough for the global environment, and few utilized renewable energy. In terms of energy conservation, all of them either did nothing or only installed insulation. On the other hand, recycling practices

were favorable, with many buildings making efforts to separate trash and use recycled resources. Also, there were no complaints about sound insulation in any of the buildings.

According to the Tokyo Metropolitan Government (2024), as of February 2024, 43.4% of companies have implemented the remote work practices. However, considering that the figure was 24% before the Covid-19 pandemic, it can be said that remote work has been recognized as one way of working since the Covid-19 pandemic, and the number of companies that are implementing remote work has increased. The percentage of companies with 300 or more employees is 57.7%, with larger companies having a higher percentage. Additionally, 40.1% of companies telework three or more times a week, indicating that many companies combine telework with work rather than going fully remote.

## 2.2 Building owners in Tokyo

Prior to the collapse of the bubble economy, Japan's office building rental market was in favor of building owners. As the supply of office space could not keep pace with demand, rents continued to rise. However, due to the construction of many buildings during the bubble economy and the rapid decrease in demand after the burst of the bubble economy, the supply-demand balance was upset causing vacancy rates to rise. (Kuroiwa, 2002)

Large commercial buildings and high-rise buildings are currently owned by large developers. However, this study focuses on small and medium-sized buildings. As many of the buildings were built during 1970-2000, depending on the building's construction materials, their statutory useful life is reaching its end. This means that rebuilding or maintaining the building becomes important for reducing the tax burden and retaining the tenants. However, according to Yoshida (2018), adding floors or making structural changes is problematic to implement, which means that rebuilding become the relevant option.

In many cases, small and medium-sized buildings have not yet undergone a generational change since they were built, and more than 60% of building owners are over 60 years old, of those about 70% own 1-2 buildings, and many buildings are over 30 years old. (Yoshida, 2018) Depending on the building's construction materials, the statutory useful life of an office building, as defined by the government, is 50 years for the reinforced concrete (National Tax Agency, 2017). Most small- and medium-scale buildings have reached the point where

they need to be considered for large-scale renovation or reconstruction. Nonetheless, many are hesitant to do so due to their response to changes in the business environment and the low economic benefits of rebuilding (Yoshida, 2018). Research conducted from the perspective of “safety”, “comfort” and “basic performance” by Ishikawa et al. (2007) found that many owners did not consider that barrier-free access, energy conservation, and global environmental are important when rebuilding despite owners' low satisfaction with those points. On the other hand, many said that earthquake resistance and security were important when rebuilding.

When considering income and expenses, Nakayama et al. (2021) undertook a survey in 2021 covering 12,039 companies with sales ranging from 10 million yen to 3 billion yen, mainly in the rental office business, in the 23 wards of Tokyo and all 56 cities in Japan, including the major suburban cities of the Tokyo metropolitan area. In this survey, multiple owners are concerned about a decrease in income due to tenants moving out or rent reductions, and many owners believe that the finding new tenants is becoming more difficult after tenants move out, and many owners believe that various expenses are on the rise. Among them, more than 50% of owners responded that repair expenses are increasing. And numerous owners state that their expenses for insurance are increasing, especially because of the number of natural disasters that have occurred in recent years. (Nakayama et al., 2021)

### 2.3 Tenants in the buildings

Conversely, what are the characteristics of building tenants in Tokyo? In the office leasing market, small- and medium-scale buildings account for 90% of the market. From a real estate investment perspective, the market for small- and medium-scale buildings is large, and the tenants are mainly small- and medium-sized companies. Although rent levels are lower than those of large buildings, rent volatility is low and stable. (Nakayama et al., 2021; Yoshida, 2018)

The average tenancy period for building tenants in Tokyo is about 13 years, and the tenancy period tends to be longer if the building is older, has a good exterior image, and the use of the building is retail. The space that will become vacant in one year due to renovations etc, the average time to determine next tenant is 88 days on average (Development Bank of

Japan, 2022; Takizawa et.al, 2010). There was a survey conducted by the Development Bank of Japan which comprised of 199 building tenants with 10 or more employees in Tokyo's 23 wards. This survey concluded that in current society, tenants are not only interested in convenience, such as conventional location, but also in environmental friendliness, wellbeing, and preparedness for natural disasters, and nearly half of both large and medium-sized buildings, as well as small buildings, would allow rent increases if these measures were taken (Development Bank of Japan, 2022; Takizawa et.al, 2010). Therefore, it can be said that to make the building attractive to the customer, companies should focus on normal requirements such as location and floor space but also well-being, sustainability, and safety.

#### 2.4 Challenges for small and medium-sized buildings

The challenge for small- and medium-scale buildings is how to utilize the increasing number of older buildings. To maximize the use of existing small- and medium-sized buildings, it is necessary to properly manage and operate them, analyze to understand the building's strengths and weaknesses, and implement measures to differentiate them from other buildings based on this analysis (Yoshida, 2018). As mentioned earlier, potential tenants of small- and medium-sized office buildings are small and medium-sized firms with many firms and workers. Many firms make it easier to attract new tenants, which means that high occupancy rates are likely to be maintained. Due to the low new supply, existing older buildings can remain competitive if properly managed (Yoshida, 2018). In addition, the aging of the population means that while bearing the financial burden of major repairs and rebuilding, there are also issues of how to connect with the next generation, such as inheritance issues and training successors.

#### 2.5 Unique laws and regulations in Japan

When discussing buildings in Japan, one must not forget the country's unique environment. Japan is a country prone to natural disasters, and earthquakes often cause damage to buildings. Each time a major earthquake occurs in Japan, guidelines for earthquake-resistant construction of buildings and earthquake countermeasures are strengthened and rendered

increasingly stringent. Since the earthquake resistance standards have been revised several times, there are many buildings throughout Japan that were following the laws at the time of construction but are not in compliance with the current laws. Many buildings, especially in large cities, do not comply with current laws (Higano, 2021).

In the case of Tokyo, the Great Kanto Earthquake struck in 1923, causing extensive damage. The earthquake killed 140,000 people and destroyed 300,000 houses (Tokyo Metropolitan Government, 2006). A particularly significant change occurred in 1981 when the seismic standards were made stricter. Until then, the old seismic resistance standards were designed to ensure that buildings would not collapse from an earthquake of intensity 5 or higher in Shindo seismic intensity scale, which occurs once every 10 years, with no consideration given to earthquakes larger than that. However, after the Miyagi earthquake in 1978, which caused buildings to collapse and extensive damage, a new standard was established, and this new earthquake-proof standard, which began in June 1981, has been revised to the extent that buildings will not collapse even in an earthquake of intensity 6 or 7, with stricter regulations which are still in effect today (Miwa, 2023). Therefore, in terms of the earthquake resistance of buildings in Japan, it is important to pay attention to whether the construction of buildings was started after 1981. However, the new earthquake resistance standards focus on whether the building will not collapse in a way that would kill people, and whether people will have enough time to evacuate the building. In other words, the important thing is that human life is protected, and property is not necessarily guaranteed by law (Murakami, 2020).

Furthermore, in Japan, the Law for the Promotion of Seismic Retrofitting, which is a law for the promotion of seismic retrofitting of buildings, obliges certain buildings to undergo seismic diagnosis, but it is an effort requirement in the case of seismic retrofitting. Therefore, even if a building is not retrofitted for seismic retrofitting for any reason, it does not constitute a violation of the Law to Promote Seismic Retrofitting (Murakami, 2020).

Today, buildings constructed before 1981 are inadequately resistant to earthquakes because they were built according to the old seismic resistance standards before they were strengthened according to stipulations in the Building Standards Law, and therefore, they are urged to undergo seismic diagnoses. The Law on the Promotion of Seismic Retrofitting requires that large buildings requiring emergency safety confirmation that are visited by an unspecified number of people and buildings listed in plans requiring safety confirmation, such as

those along evacuation routes, be subject to seismic diagnosis. (Japan Ministry of Land, Infrastructure, Transport and Tourism, 2008; Japan Seismic Diagnosis Association, 2010)

## 2.6 Maintenance practices in Japan

The overwhelming majority of small- and medium-scale buildings were supplied in large numbers during the bubble period, and there has been little new supply since then, so small- and medium-scale buildings are aging more quickly than large buildings. Repair and renewal costs for older buildings increase year by year as equipment deteriorates and malfunctions occur more frequently. In addition to equipment, extensive renovation costs are continually required for layout and interior design to meet tenant needs and to improve common areas that take health and the environment into consideration. Securing funds for repairs and renovations has become a major burden for owners. (Nakamura, Kamata, Kikuzawa, 2021)

In building maintenance, even small and medium-sized buildings are often outsourced due to the time-consuming nature of maintenance for the owners themselves. In the Japanese building maintenance industry, environmental hygiene management, facility management, building and facility maintenance, security guarding, and other management tasks are performed (Hirade, 2023). Owners may order each of these services from a separate company, or they may collectively request management from a single company. Since major building construction companies also have building maintenance companies within their group, they often contract building management directly to the maintenance subsidiary group company of the company that constructed the building. In many cases, once a building maintenance company enters a building management contract with an owner, the contract is automatically extended each year, and the contract fee is negotiated before each renewal.

Table 1. Building Maintenance Operations in Japan (Hirade, 2023: 180)

Building Maintenance Operations	Duties
Environmental Health Management	Cleaning and management services: There are two types of cleaning: internal building cleaning and external building cleaning. Recently, there has been a shift from post-cleaning to preventive cleaning. Preventive cleaning means taking action before a building gets dirty to keep it clean at all times. Sanitation management services: Checks and inspections to ensure compliance with the environmental sanitation standards set forth in the Building Management Law. Air quality measurements, water quality standard measurements, etc. are conducted on a regular basis.
Facilities Management	Operation, monitoring, inspection, maintenance, and preservation of equipment in buildings. Telecommunications equipment, air conditioning equipment, water supply and drainage equipment, elevator equipment, fire fighting equipment, etc.
Building and Equipment Maintenance	Inspection and maintenance services include safety inspection surveys of building structural components and operational inspection surveys of building equipment.
Security Operations	Fire and disaster prevention and security services for buildings. These include security services, fire and disaster prevention services, and parking lot management. Many building maintenance companies offer security, fire and disaster prevention services in combination with cleaning and facilities management.
Other Administrative Operations	Document-related building management services and information, administrative services such as elevator operation management, telephone reception, and mail services, and building energy management services.

A recent problem in Japan's building maintenance industry is the aging of the workforce and the growing shortage of workers due to the low birth rate and unattractive work for young people. According to Hirade (2023), the work is not popular among young people because much of it is seen as dull and the salaries are not high, and with the declining birthrate, the problem is expected to accelerate in the future with an anticipated impact to the service delivered. In addition to this, costs are likely to continue to rise as prices rise (Hirade, 2023).

## 2.7 Rebuilding and renovation

In addition to continuing to use old buildings through repairs and renovations, another option is to reconstruct them. Many buildings built around the time of the bubble economy are now in the process of considering plans for rebuilding. However, there is no end to the concerns of owners. Even if they rebuild, the floor-area ratio may remain the same as it is now, or it may decrease due to legal revisions. In addition, soaring demolition and construction costs, as well as the hassle and expense of procedures associated with the departure of existing

tenants, will also be involved. It is also unclear whether it is wise to reconstruct the building for the same use. (Nakamura, Kamata, Kikuzawa, 2021)

All buildings, including buildings in Japan, have a statutory useful life determined by the government. This is a taxation rule, meaning that it is the period before the building loses its asset value. Details of different statutory useful lives for buildings can be found in table 2 below.

Table 2. Useful life of reinforced concrete buildings (National Tax Agency, 2017)

Office use	50 years
Residential use	47 years
Store Use	39 years
Restaurant Use	34–41 years
Accommodation Use	31–39 years

However, this statutory useful life is not related to the usage life of the building itself, and it does not mean that the building will become unusable as soon as this number of years is exceeded. There is an existing reinforced concrete building in Japan dating from 1911, which has proven to be durable for more than 100 years (Japan Concrete Institute, 2024). Building owners should be aware that after the legal useful life of the building has passed, it means that the building has lost its asset value, and the tax savings will be less. What this means is that the acquisition cost of the building can be divided by the remaining useful life of the building and recorded as an expense as “depreciation”. As a result, they can reduce their annual taxes. However, after the useful life of the building, the depreciation expense can no longer be expensed, resulting in an increase in book profit and therefore an increase in income taxes. Because the tax expenditure is large, the negative impact is also large. Perhaps considering these tax implications, according to a survey conducted by the Long-Life Building Promotion Association targeting building owners and designers, approximately 74% of respondents said that they rebuild within 30-50 years of construction (Long Life Building Promotion Association, 2011). Of course, that is not the only reason for rebuilding. Being 30-50 years old, it is only natural that the floor plan and design no longer fit the times, and the facilities have deteriorated. There are also concerns about earthquake resistance, which affects occupancy rates.

Therefore, older small and medium-sized buildings are considering rebuilding. According to data from the Ministry of Land, Infrastructure, Transport, and Tourism (2022), the average construction cost of a reinforced concrete building is 388,200 yen/m<sup>2</sup> for offices, 366,600 yen/m<sup>2</sup> for stores, and 271,700 yen/m<sup>2</sup> for residences, which is an expensive consideration. In addition to this, demolition costs and application procedures will also be incurred. Furthermore, tenants must be notified well in advance, and in some cases, rent must be paid for several months to a year, or relocation expenses must be covered to ensure tenants relocate before the reconstruction begins. The construction period would also be of a long duration, and of course, the lack of revenue during that period is another severe consequence. Therefore, some owners choose the option of renovating an entire building, meaning a complete interior renovation, rather than a large-scale reconstruction. The table 3 below presents an example of differences between renovation and reconstruction. The construction size and its characteristics will naturally impact factors such as costs and renovation or reconstruction time.

Table 3. Difference between reconstruction and renovation (Shuken Re, 2023a)

	Renovation	Reconstruction
Meaning	Major renovations and refurbishments to the current building, having the most use of the existing building.	Demolition of existing buildings and reconstruction of new buildings.
Major structures and foundations	Remain	Not remain
Interior and exterior and equipment	Often replaced	Always replace
Floor Plan Flexibility	Restricted by location of columns and walls	High degree of freedom
Cost	Less expensive than rebuilding (Market price is 150,000-200,000 yen/m <sup>2</sup> for full renovation)	More expensive than renovation (150,000-300,000 yen/m <sup>2</sup> is the market price) Various taxes are also required
Demolition	Partial demolition may be undertaken	Demolish the entire building (10,000-20,000 yen/m <sup>2</sup> is the market price)
Application for construction confirmation	In essence, not required if the house is less than 2 stories, wooden and no additions are made	Required by default
Construction period	About 2 to 4 months	About 3 to 9 months (including demolition and ground investigation)

The amount of this cost varies depending on the condition of the building and the nature of the work. For Office A, the cost is about 240,000 yen/m<sup>2</sup> x 120.49 m<sup>2</sup> = 29 million yen; for

Office B, about  $110,000 \text{ yen/m}^2 \times 234.90 \text{ m}^2 = 27 \text{ million yen}$  (Renovation Association of Japan, 2024; Shuken Re, 2023b). In general, compared to the demolition and reconstruction, the cost of retrofitting a building is much less (Caccavelli & Gugerli, 2002). When repurposing an existing building rather than demolishing and rebuilding, the focus should be on maximizing rentable floor area. Additionally, due to the possibility of having unsatisfactory results, including time and cost overruns, owners must have a solid renovation plan in place (Perera et al., 2006).

## 2.8 Sustainability in Tokyo

It is important to recognize that Tokyo has launched a zero-emissions project, with the goal of achieving zero emissions by 2050. One of the projects mentioned as part of this project is the expansion of zero-emission buildings. The goal is to make all buildings in Tokyo zero-emission, and by 2030 the city hopes to achieve a 30% reduction in greenhouse gas emissions, a 38% reduction in energy consumption, and a 30% increase in the use of renewable energy (each compared to FY2000). Specifically, the city will promote the expansion of zero-emission business sites through cap-and-trade and the building environmental plan system, support the introduction of “Tokyo Zero Emission Homes” for their full spread, promote the replacement of home appliances with energy-saving ones, and promote energy management utilizing Artificial Intelligence (AI) and Internet of Things (IoT). (Tokyo Metropolitan Government, 2019a)

To achieve zero emissions, it is essential to shift from fossil fuels to decarbonized energy. In addition to making renewable energy a key power source, the report clearly states that CO<sub>2</sub>-free hydrogen derived from renewable energy, which can be stored in large quantities for long periods, will be used in earnest and will be a pillar in realizing a decarbonized society (Tokyo Metropolitan Government, 2019b).

## 2.9 Summary of the chapter

This chapter focused on the real estate market in Tokyo, primarily the key characteristics in commercial real estate management. It also dives into what are the current trends and what

tenants are looking for. Key findings of the Tokyo market study were that most of the commercial real estate were constructed during the bubble period 1980s and since the statutory useful life depends on the use of the building, even for the office use where the statutory useful life is 50 years for reinforced concrete buildings, the planning to rebuild is becoming relevant. Also, the regulations for building safety measures have also become stricter over the decades due to the damage caused by earthquakes. It was also discovered that most of the owners of the commercial real estate buildings are older than sixty years old and typically hold one or two buildings. Additionally, many are not interested in rebuilding since they do not see that the high rebuilding costs can be compensated in terms of rental income.

Further, the chapter covered the maintenance practices and challenges that the industry is facing and what kind of impact it has on building owners. Moreover, it was discovered that the buildings lack digital functions which could be explained by the owners not anticipating a benefit in implementing digital services. The study revealed that tenants appreciate the proximity of a station. The tenant was more open to rental increases if the company had a safety measure plan implemented in case of emergency. Lastly, the environmental measures were seen as important to have in the buildings they occupy, this is due to the reputation and pressure that companies may face from their stakeholders.

Lastly, the Tokyo metropolitan government has sustainable initiatives such as zero-emission by 2050. Part of this project is the expansion of zero emission buildings with the goal of having all buildings zero emission. It aims to achieve this by reducing greenhouse gas emission and energy consumption while increasing use of renewable energy. The city will promote expansion of zero emission sites and support the introduction of “Tokyo Zero Emission Homes” which includes promoting the replacement of old appliances with newer more energy efficient appliances and solutions. AI & IoT solutions are seen to be part of these initiatives. (Tokyo Metropolitan Government, 2019a)

## 3 Strategic asset management

### 3.1 Overview

Strategic asset management (SAM) refers to a process where asset management is aligned with the company's overall strategic objectives. The term asset management, which is used increasingly often, possesses a varying definition dependent upon the study, but the widely known ISO standard defines asset management as the “coordinated activity of an organization to realize value from assets.” (Standard, ISO 55000). Its definition varies depending on the study (Valkonen, 2016; Maheshwari, 2006). According to Cahyo et al. (2021) Asset management sounds like a concept that focuses on assets, but it focuses on how assets can help an organization achieve its goals. It can be applied by implementing processes to make profits and reduce costs as efficiently and effectively as possible. Maheshwari (2006: 597) defines the strategic asset management framework as “A process of developing, creating, maintaining and disposing assets through a complex series of interlinked well-defined processes that are continually improved, over the life cycle of an organisation, with an aim of achieving the objectives of the organisation.”

The organization often faces often asset management decisions when it is planning its strategy, while they are developing and maintaining activities in assets such as buildings or factories. Further, many other forms of assets can be found in the organizations and therefore it is not only limited to physical assets. Commonly, assets can be divided into different categories: physical assets, information assets, financial assets, intangible and human assets. (Standard, ISO 55002; Hanski, 2019) A strategic approach to asset management should be considered for implementation as a strategy within the organization, as it will lead to an enhanced competitive advantage (Gavrikova et al., 2020).

Especially capital-intensive industry physical assets, such as buildings or manufacturing plants where many resources are required to produce certain outcomes, are substantial and therefore implementing the strategy that maximizes the use of the asset in the most efficient way, is essential. (El-Akruti et al., 2018) Efficient use of assets over their lifetime often requires maintenance to ensure safe and normal operation. In buildings, the maintenance covers the elevators, physical elements, and infrastructure. Moreover, to sustain the

operation of the asset the safety element is also critical, and actively maintaining the asset can enhance its safe operation. To know how much the asset is functioning depends on how the company undertakes planning, designing, operating, maintaining, and disposing in three core areas which are management, engineering and information (Brown et al., 2014).

Companies often make strategic decisions and since these decisions often involve higher expenditure and have a greater impact on the performance of the company, they also require a higher level of planning and approval. (Hanski, 2019) Asset management decisions should therefore relate to the strategy of the company and the usage of the term strategic asset management is used in this study. (El-Akruti et al., 2018)

A company that is targeting to increase its whole life value created from its assets can benefit from using strategic asset management. SAM connects the technical aspect side of the assets with the business targets. (El-Akruti et al., 2018) Combining asset management strategy with the overall company strategy is essential, because asset management relates to investment allocation and higher-level decision making in areas such as infrastructure expansion, modernization, outsourcing and leasing (Gavrikova, Volkova & Burda, 2020). Hanski (2019) noted that the strategic level decisions literature of SAM is not as widely studied as the asset management or strategic management field. In addition, it was emphasized that strategic management should be integrated into asset management. Another limitation was that due to the importance of the financial impact of decision-making, other aspects considering asset management and other impacts such as environmental, social, and governance have received less attention. (Hanski, 2019)

### 3.2 Life cycle management

Life cycle management refers to the management of the product from planning to disposal. The aim of it is to maximize the value that an asset provides to its users. To do so, various aspects must be considered such as risk management, expected costs during the lifetime of the asset. This means that if there is increased efficiency in the different phases, fewer unexpected costs, and reduced management costs, then higher profits can be achieved.

Hui & Ng (2008) argued that there are crucial factors to succeed in the property business. Property developers should take the estimated total cost of the development with predictions

of the realistic income yielded from the property to evaluate which can yield the highest return, thus understanding whether to make the investment now or later.

Whether constructing a new building or acquiring a new product, there is typically a certain defined longevity for the item. In real estate, when discussing commercial buildings, the life cycle management is important from the monetary perspective as well as the environmental and social impact. The commercial buildings life cycle management starts from defining the area for the building and its size and materials used in construction. It extends from daily maintenance to bigger repairs and eventually disposing and recycling (Standard, ISO 55000). Value of the asset must be considered when planning asset management practices (Ahonen et al., 2022). While Rosqvist et al. (2009) have stated that maintenance does not have intrinsic value, and its value comes from supporting the organizational strategic objectives. (Ahonen et al., 2022) This is important to clarify since, if the assets are not operating due to improper or lack of maintenance, the company can provoke significant losses.

Evidently, many stakeholders are affected by the decisions made in the construction and their interest may vary. Also, regulations set limitations to the building, for instance in the height of the building and staircase size. Similarly, as owners may prefer maximizing floor space, and cutting the material costs, tenants may value common areas.

Companies are often faced with strategic decisions including whether to expand into other markets, continue with existing product portfolios, or invest in new facilities. Especially high capital investment, making justified correct decisions is essential but also challenging since existing actions can be hard to reverse and incorrect decisions can be costly (Gilbert, 2005). As decisions in different phases may pose challenges such as the impact that certain decisions may have in the future, it is critical to be able to compare the different plans with each other and discover their advantages and disadvantages.

Stewart Myers who introduced the term “Real options” in 1977, argued that the enterprise’s value consists of its real assets and the present value of option for future investments. Further, these options are used when the company can see a benefit in using them. (Nembhard & Aktan, 2010; Adner & Levinthal, 2004) Using real options enables companies to discover different options to conduct certain investments and compare them. These options provide value and flexibility, and they are also measurable, since using them is not mandatory (Nembhard & Aktan, 2010; Gilbert, 2005; Čirjevskis, 2021).

As the decisions, especially strategic ones, are rarely just one-time decisions, having flexibility as time progress is valuable especially if the situation is uncertain (Gilbert, 2005). In practice this can be an option to increase production of a certain product as the demand rises, but not tie costs to it in case the demand is not as expected. Also, most decisions, especially investment related ones, are not usually fixed, referring to the fact that they are exposed to adjustments several times. In the daily life of management, the timing of decisions can usually be decided, and there are various choices such as “do” or “don't do”. The outcome of such choices also affects the value of investment. Real option approach enables decision makers to think of the action they can and should take when faced with uncertainties (Gilbert, 2005). It is better for decision makers to have freedom of choice to deal with future uncertainties and having this freedom is valuable Merton's (1998, cited in Hui & Ng, 2008). When managers form a strategy, they create a path from the present to where they want to be in a few years' time, thinking about themselves and their organization. Of course, they should not just plan and execute it but should be flexible and respond according to the situation. (Nembhard & Aktan, 2010)

Different priorities of stakeholders and lack of incentives also pose opportunities and challenges. Since property managers' KPIs may focus on increasing rental revenue while asset managers emphasize increase of net operating income. (Read & Sanderson, 2021)

Schwartz (2013) introduces four different types of options. Option to expand, option to delay, option to abandon and option to temporarily suspend. Firstly, option to expand or time to build can be beneficial in a case where only part of project can be done at the time but it leaves a possibility to develop further once it is feasible. Trigeorgis (1996) argues that time to build option is relevant in many large-scale construction projects since the investment does not occur singularly, rather it consists of many phases and therefore includes many optional investments. In real estate this can mean first building half of the usable land or certain area to see how the demand for the space is. In the second phase if the demand continues to be high, the option for the second part can be used. In the third phase, even more space can be used for building extra space if the demand continues to be high. This way the company can respond to the changes flexibly without having too much risk. (Schwartz, 2013)

Secondly, postponing the project can be used if the market is unclear or has faced some disruption that delaying option provides more time to gather relevant information

(Trigeorgis, 1996). Thirdly, option to abandon the project is useful when a company is investing in developing new products or services. The real option approach focuses on the whole distribution of cash-flows associated with the project enabling management to make the right decisions. Fourthly, the option to temporarily suspend production is relevant when raw material prices change drastically or there is a labor shortage affecting the execution of the project. (Schwartz, 2013)

### 3.3 Strategic asset management framework

#### 3.3.1 Definition

Defined as “The Strategic Asset Management Framework (SAMF) is an integrated policy designed to improve asset management and capital investment across the State’s public sector.” (Government of Western Australia, 2022: 1), the SAMF is developed to ensure that the Government can continue to successfully manage its capital program while meeting its financial targets. Since the recommendations and investments regarding new or existing assets must be justified in the public sector, a clear strategy and value creation for the resources are critical. (Government of Western Australia, 2022) The SAMF is commonly used in the public sector, but Maheshwari (2006: 598) defined it as “strategic asset management framework (SAMF) as a tool that ties an asset management organization’s entire business operations from end to end. The framework forms the foundation on which the entire organization operates.”, which means that the SAMF can be applied not only to the public sector but also to private businesses.

#### 3.3.2 Characteristics

The purpose of using the strategic asset management framework is to develop the way to solve the issues in areas of dynamic life cycle optimization, determination of maintenance strategies and maximization of returns of assets. The framework is used to analyze and solve corporate problems, model different businesses and their environments in terms of assets based on set business goals. It takes into consideration the uncertainties, characteristics of

technology and structure of the economy in the industry. (Komonen et al., 2006) The purpose of the SAMF is to identify ways to improve current processes by enhancing them or developing new ones to achieve the organization's strategic goals (Maheshwari, 2006). SAMF provides the guide for decision making and when the SAMF is implemented, the key factor is people, process, and technology. It should be identified the key processes of the business and their metrics which are impacting on strategic asset management (Maheshwari, 2006). However, it is important to note that the development and use of an asset management framework does not guarantee organizational success nor behind every successful organization is SAMF. Strategic asset management capabilities, management support, clarity of roles and responsibilities, and a participatory environment are all key to success (Kellick, 2010; Maheshwari, 2006).

### 3.3.3 Structure

When developing SAMF it is critical to understand its structure and steps. Too & Too (2010) presents the conceptual framework for identifying capabilities in five steps. The first step is defining responsibilities of asset management, the second is alignment of infrastructure asset management goals and the third is identify strategic/core infrastructure asset management processes, the fourth is delineate challenges within strategic/core infrastructure management processes and the last step is distill infrastructure for strategic infrastructure asset management (SIAM) capabilities (Too & Too, 2010).

Whereas Maheshwari (2006) clearly presents the following steps to apply the framework to the organization. The framework consists of the steps to follow with concrete actions. The steps to be proposed begin with the preparation of basic information such as determining the decision-making persons and their roles and organization chart. Then it examines the process with scores and the measurement. It proposes the setting targeting the scores of each process which leads to developing the action plans and budgets.

- Preparation
- Identification of key processes
- Definition and detailing of processes

- Defining process maturity levels and scores
- Establishing the measurement framework
- Conducting process assessment
- Setting target score
- Development action plans and budgets
- Delivery
- Review and monitoring

This paper examines the target company by applying these strategic asset management framework approaches in chapter 4.

#### 3.3.4 Benefits

There are many benefits of applying strategic asset management framework. In table 4 below, the Chartered Institute of Public Finance and Accountancy (CIPFA) has identified the following benefits. (CIPFA, 2018)

Table 4. The benefits of strategic asset management framework (CIPFA, 2018: 4-6)

Being corporate	Establishing a strategic property group (or board) where corporate discussions can take place.
	Putting into place a corporate landlord governance model.
	Appreciating that long-term change was needed which relies on a corporate approach.
	Increasing the desire for a corporate solution.
	Enabling common priorities to be agreed and adopted.
	Enabling the establishment of corporate standards for assets, for example in asset condition or utilisation.
Awareness	Raising profile of property assets and brought senior leadership buy-in.
	Showing that things had to change.
	Knowing more about their assets.
	Improving engagement with elected members.
	Increasing understanding of how assets enable an organisation and services to deliver.
	Putting property at the top table.

Service delivery	Improving engagement between property team and services.
	Development of department asset strategies or incorporating asset strategies within departmental business planning approaches.
	Supporting services to challenge their service delivery operating models.
Finances	Improving financial forecasting.
	Identifying procurement cost savings.
	Analysing and aligning budgets.
	Demonstrating savings, delivering efficiencies or spending money more wisely.
	Taking a more commercial attitude to services and to property assets, and driven value from the portfolio.
	Focussing staff and finance where the biggest difference can be made.
	Initiated a capital and disposal strategy.
	Developing an investment strategy.
Efficiency	Realising the need and value of data in improving efficiency and in making decisions.
	Understanding costs.
	Highlighting property performance: <ul style="list-style-type: none"> <li>o energy</li> <li>o maintenance</li> <li>o compliance</li> <li>o fitness for purpose</li> </ul>
	Achieving better and fewer assets.
	Enabling the development of a repair and maintenance programme.
	Supporting asset review, rationalization and asset challenge.
	Supporting asset review, rationalization and asset challenge.
Delivering corporate objectives	Delivering better return (social and financial) through formal decision-making platforms.
	Driving regeneration.
	Driving organizational policy on Community Asset Transfer.
Partnerships	Improving collaboration and brought organizations together, including neighboring local authorities, blue light services, health, central government etc.
	Supporting area reviews and co-location strategies.
	Developing better links with other council strategies.
	Promoting and delivering Internal shared use of assets.
	Promoting and delivering Internal shared use of assets.

In real estate, the efficiency of operations within asset management that reduce cost are especially beneficial as the asset ages and requires more maintenance. The cost can rise, and the real estate industry is capital intensive. Further, when planning for new investment such as rebuilding or expansion being able to forecast the return on investments and therefore improve risk management.

### 3.4 Summary of the chapter

This chapter focused on studying the strategic asset management and developed framework. Firstly, it discussed what it is, its definitions and the relevancy for the business use. Secondly, the topic of life cycle management was covered since it is one of the fundamentals in strategic asset management.

The adopted framework in this paper was developed by Maheshwari (2006) and Too&Too (2010). They were selected after careful evaluation and comparison of other frameworks. The framework parts and steps were then explained to give a better understanding of the strategic asset management framework.

## 4 Real estate asset management in the target company

### 4.1 Company overview

The target company is operating in the business of leasing office spaces. The current asset is a 38-year-old commercial building constructed in 1986. The building is located close to a major terminal station in Tokyo's 23 wards, and it is leased to several tenants. The buildings in Japan are prone to natural disasters and most commonly earthquakes cause them considerable damage. Therefore, the requirement for earthquake-resistant structures is paramount and emphasized. The building is a reinforced concrete structure that is often used in Japan due to its longevity and resistance to earthquakes (Japan Ministry of Land, Infrastructure, Transport and Tourism, 2008). Since the statutory useful life of reinforced concrete construction for office use in Japan is 50 years, the planning of reconstruction is becoming increasingly relevant (Japan Ministry of Internal Affairs and Communications, 2008).

The building has been regularly maintained by the maintenance company by means of the development of a plan. However, since visible wear-offs are noticeable and the building is becoming older, this has consequently engendered a rise in the maintenance costs. Discussion for profitability and a long-term plan for the building is relevant hence the reason for which the target company commissioned this research.

### 4.2 Interview method

To dive deeper into the empirical aspect of this thesis, interviews were selected to gain a better understanding of the Tokyo metropolitan's real estate market, asset management practices and to learn from the target company's present situation. As part of this thesis, interviews were conducted to address specific topics. Six persons were interviewed (see table 5), and five of the six interviews were conducted face-to-face while one was conducted via text. The interviews lasted around one hour, and the analysis of the answers was performed after the interview. The contact person of the target company acted as an interpreter for ensuring

the questions and answers were understood correctly. In table 5 below the interviewees and the schedule of interviews are presented.

Table 5. Interview schedule

Interviewees		Date/Time
Real estate agency	Tokyo major real estate agent, Chief	May 24th, 2024, at 14:00
	Greater area of Tokyo real estate agent, Executive director	May 24th, 2024, at 16:00
Target company	Managing director	February 26th, 2024, at 15:00
	Board member A	February 26th, 2024, at 13:00
	Board member B	March 15th, 2024, at 18:00
Management company	Janitor of the target company building	May 17th, 2024, at 15:45

The interviews were conducted in a semi-structured manner to obtain the most in-depth and comprehensive information about the experiences and views of the interviewees. Semi-structured interviews were selected because they allow a certain structure to assure that the conversation remains within the required framework but also offers the interviewee the possibility to express their opinion more freely and talk about points that they see relevant, more than a structured interview would allow. This enabled the interviewer to address topics at varying points within the interview. Further, semi-structural interviews increased the ease of addressing sensitive topics such as strategic decisions and cultural practices.

Interview topics included the Tokyo metropolis tenant situation and market trends. The second part was to understand the present state, goals and needs of the target company. The third part was to interview real estate operators in the same area to formulate trends in the target company's operating area specifically, as the Tokyo metropolis is a large area comprising many different types of areas of which each have their own unique characteristics. As the target company is facing the strategic question regarding its asset management, it demands the development of a comprehensive plan. This would occur after determining the most suitable options and for this reason conducting an interview study not only of Tokyo metropolis area but also from the specific area was deemed critical. If interviews would focus only on the Tokyo metropolitan area, there may have been several aspects missed or suggestions may have been provided to areas that may not be applicable to the target company. On the other hand, if interviews were only conducted from the operating area, it may ignore

good practice elsewhere in similar situations. In addition, interviewing the target company board members, and the janitor working in the target company, who is hired by the maintenance company offered a valuable insight into the client.

One interviewee had more than 10 years of experience from the real estate agency operating in 23 wards of Tokyo, and another was a real estate agent operating in the Tokyo metropolitan area with more than 20 years of experience in the industry. From the target company the interviewees were the managing director who has managed the company since inception, board members with experience ranging from 10 years to 25 years. In addition, the janitor from the maintenance company with 20 years of experience who works in the target company building. A wide variety of interviewees were selected to understand the current practices and the possibilities, since each interviewee focuses on different aspects in their work but ultimately, similar outcomes affect all of them. Questions looked to answer the following: Are the clients satisfied with the place that they purchased or rented, does the space meet their needs, what does the market look like, on what type of spaces should the company focus when rebuilding or modifying existing spaces. However, this also meant that although the interview questions were following a similar structure, there were certain specific questions according to the individual interviewees.

As this research paper focuses on Tokyo, cultural differences are important to consider when conducting an interview. Cultural differences are present in how people communicate and what is expected in a situation. As Japan is culturally distinct in many ways from other countries so prior to the interviews, a crucial element of the process was to obtain access to the interviewees and ensure they become comfortable to share their information. One of the ways to obtain the information was to use the Japanese “nemawashi” process, which refers to informal discussions and negotiations before the actual decision-making. The “nemawashi” process was used to ensure that all parties were engaged and understood the objectives of the study. This was especially important in Japanese culture, where trust and maintaining relationships are key elements of successful collaboration. (Martinus & Hedgcock, 2015).

The target company's contact provided better access to executives of the target company and real estate professionals in Tokyo. Having a mediator who already knew the interviewees, helped them to feel more relaxed and confident with the researcher, which improved the

honesty of the interviews. This was a key factor in gaining trust and gathering in-depth information. (Martinus & Hedgcock, 2015)

Japanese ethical standards were respected during the interviews. Since respect for others and harmony are critical in Japanese culture, care was taken during the interviews to avoid asking questions that were too direct to the interviewee and to avoid being rude or creating a sentiment of discomfort or shame. (Martinus & Hedgcock, 2015)

The interview themes were specified according to interviewee's area of expertise; real estate agents were asked about real estate market, tenants and rental income factors. While on the other hand, target company history, current practices and future were discussed with target company interviewees. For the target company tenants' requirements, management and concerns, the management company janitor contracted by the target company was interviewed. Interview themes are presented in the figure 3 below and detailed subjects for each theme are in appendix 1.

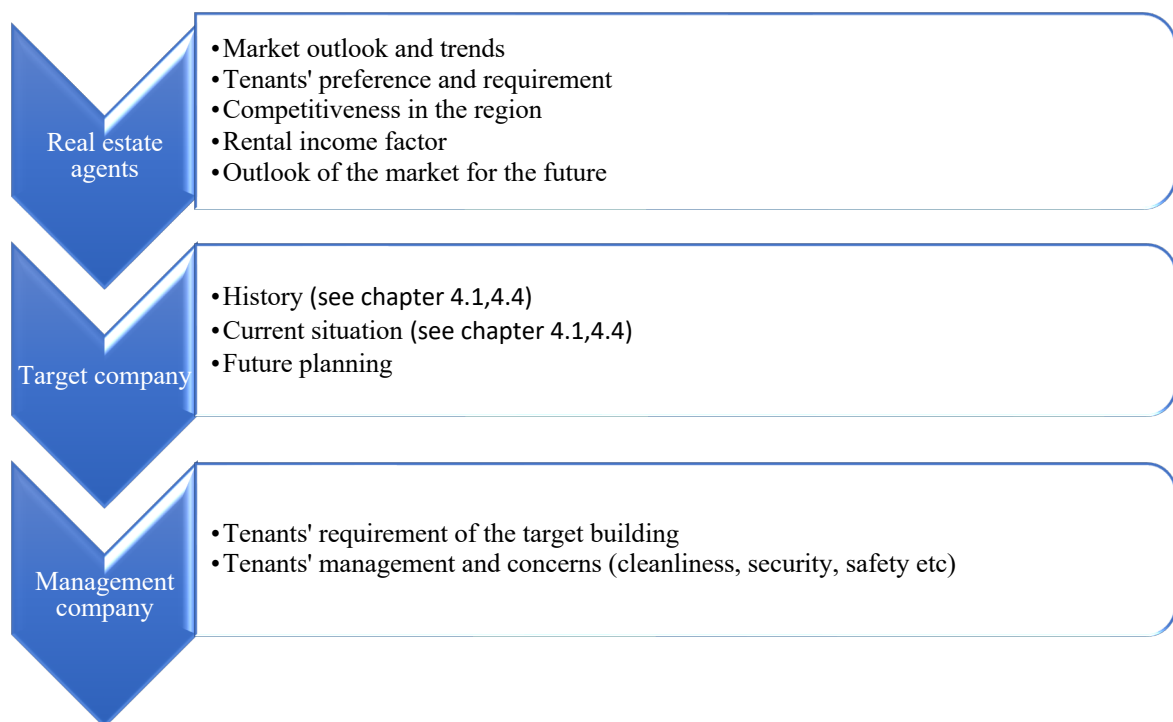


Figure 3. Interview themes.

Questions about the market focused on the Tokyo metropolitan area but also depending on the interviewee, questions related to the specific area of knowledge were asked. Tenant

management questions focused on the experiences with tenants and what they have experienced when dealing with tenants. The questions were also categorized to consider differences between office, residential and commercial tenants. The focus on the topic about rental income was to understand the rental price and its changes, and under what conditions it may be changed and how the contracts with tenants are usually effected. Understanding rental conditions was important since the target company is planning its future and one of the challenges it has faced is the required increase in rental income to match its growing maintenance expenses.

The topics of the target company were targeted specifically to the target company board members since they have the optimal knowledge of the company's history and its current state. Their decisions also have the greatest impact on the company's future. The purpose was to understand the underlying factors that have affected the current state of the company. Tenant management of the target company is most material since the revenue is derived from rental income. The managing director and the board members were questioned around the subject, but since they do not speak often with the tenants and the communication is via a third party, it was decided to interview the janitor to get better view of tenant management and their feedback. The janitor working in the target company facilities, who is hired by the maintenance company, works as a primary contact for the tenants and therefore have their insights.

#### 4.3 Interview results

##### **Market outlook and trends**

The Tokyo major real estate agent stated that the environmental or sustainability aspects are not considered that much in the rental property market. In the case of residences, the reason is that in the apartments there are energy conservation laws are in place and self-sufficiency and sales of electricity using solar cells are possible, but in the case of rental housing, unless it is a high-end rental apartment, construction costs are high, so it is difficult to apply this to apartments supplied by individuals or small developers, or properties that are already on the market as second-hand properties. Also, large-scale repairs are carried out every 10 to 15 years, so it is common to make major changes accordingly and carry out minor repairs daily.

According to the real estate agent in Tokyo, when looking at market trends in the Tokyo area, the interviewee commented that the current trend for offices is that the effects of the COVID-19 pandemic are fading, with vacancy rates decreasing and contracted rents on the rise (Mitsubishi UFJ Trust and Banking Corporation, 2024). The number of stores advertised has decreased by 3% compared to the previous year, but rents are on the rise.

The challenges in the Tokyo office and retail leasing market can impact on cash flow due to increased costs from rising raw material costs, rent, labor costs, etc. There could be disparities due to property size and location.

Opportunities involve an increased need for shared offices and coworking spaces due to the increase in remote working from the COVID-19 pandemic, in the case of offices specifically.

### **Tenants' preferences and requirements**

The real estate agent interviewees emphasized that the features that tenants value the most, regardless of purpose, are often: the location of the property especially if it is close to the train station, balance between size and rent, minimum security such as automatic lock, common spaces such as elevators, and trash areas in case of residences. However, there are differences in tenants' preferences based on their need, whether the space is used for residential, office or commercial purposes. While the functions required by office tenants are location, the reason that there is a considerable contrast in the location selected is dependent on the following: whether it is a head office or a branch office, whether there is a lot of face-to-face contact with customers. Due to the increase in remote working and the rise in rent and labor costs due to the recent COVID-19 pandemic, it is thought that in Tokyo, especially closer to the city center, there is a strong tendency to select a location based on the balance between rent and purpose of use.

For the office tenants, rent is a significant monthly cost, and the better the location and the larger the size, the greater the burden. Therefore, preferences when selecting a rental space seems to be in the following order. First, it must have the minimum functionality, and secondly, it would be better if the rent was cheaper than other properties. Therefore, if they see added value such as increasing profitability, becoming a symbol of the area and increasing awareness of a newer building compared to an older one, this may determine their choice.

In the case of commercial tenants, the most notable feature is the location which is a place that can secure visibility and sales to attract customers. Then, the second can be if there is

equipment that can meet their business needs, or if it can be added later by interior construction work. The commercial tenant also considers the balance between sales and rent, if the location can increase sales and if it is worth investing in a better location. (Japan Real Estate Institute, 2024) The real estate agent operating in the Tokyo metropolitan area commented that apart from the location and price of rent, some individual shop owners look for the unique property such as “Kominka” which refers to an old traditional Japanese house to differentiate themselves from others, and they renovate it inside by themselves. Although, renovating instead of rebuilding can be a sustainable action, this is not the owners' primary reason for doing so, they renovate for distinction and uniqueness. These individual shop owners who come to the local real estate agency tend to listen well to the advice the agency provides them since the owners believe the local agencies are the experts of the area.

### **Tenants' management**

In the case of office and commercial tenants, as tenants do not have ownership of the property, and unless there is a reason that they must remain in the property permanently, if the tenant's business scale or economic situation changes, it is easy to think of relocating to a property that can meet their needs. On the other hand, if the property is built as a company building or by an affiliated company, the possibility of relocation for the above reasons is low, and the design and functions will be made in accordance with the tenant's uses and requests, or functions will be added midway, so there may be differences in how the environment and sustainability are addressed depending on the relationship between the developer and the tenant.

It is common practice to include in the contracts the possibility of rental income increases due to inflation, price increases, or surrounding rental rates. Regarding the possibility of changing rent, there are two types of lease contracts: ordinary lease contracts and fixed-term lease contracts. In ordinary lease contracts, it is generally written in the contract that the rent may increase or decrease depending on the market price or changes in the market conditions in the neighborhood. If written in the contract, it is invalid if the content such as the rent can be increased but not decreased. In fixed-term leases, the contract period is fixed, and it may be stipulated that the rent will not increase or decrease during the contract period. When the fixed-term lease expires and a new contract is concluded, the rent can be reviewed again. In practice, the rent is often increased not during the contract period, but when recruiting after the tenant moves out or when renewing the contract with the current tenant. Until now, rent

increases have been more common compared to the surrounding market price, but from now on, it is quite possible that there will be a trend toward increasing rent due to inflation and rising prices.

The rate of return on residential, office, and retail leases in recent years has been on a downward trend because of the COVID-19 pandemic and is likely to be recovering. Housing is less affected by COVID-19 and market conditions, so it is thought to be flat. What all these properties have in common is that property prices are rising due to rising land prices and construction costs, so the yield on the property price is falling, and the profitability rate in terms of ownership and operation may be declining. However, due to the increase in the price at the time of sale, it is possible that the overall profitability rate is increasing.

### **Rental income factors**

The real estate agent who operates in the greater Tokyo area stated that in general, the factor that has the greatest impact on rental prices is the economic situation. If there is a new building with a reasonably high rent and an older building with a low rent, it is normal to consider not only the rent figure but also the condition of the plumbing and other equipment inside the building and the cost of repairs that will be required in the future. Even if the rent is a little higher, it is advantageous if business is not interrupted by breakdowns or repairs, and customers are more likely to be impressed by a clean building. Therefore, the decision is not based solely on the amount of rent.

### **Future planning**

The real estate agent who operates in 23 wards mentioned that one of the significant development plans that may affect the office or retail rental market in Tokyo would be the redevelopment of the Yaesu area around Tokyo station. The demand will increase until 2025, and rents may rise, but after that, rents may fall due to oversupply. In addition, pressure for rent reductions in office and commercial shops can take place due to the new invoice system, which is estimated to increase the tax burden for small and medium size businesses. (Hikari Tax Accounting Corporation, 2023) The Tokyo area real estate agent also emphasized that the growth of the flow of incoming and outgoing people of Tokyo, may affect the needs of tenants over the next few years. The impact of inbound tourism is strong, and there is a possibility that building ownership will increase due to an increase in overseas companies

and acquisitions by funds. Due to these changes, multi-use spaces will increase, and tenants will be able to be accommodated according to each case.

The increase in remote working may affect the office renting more in the future. It is expected that remote working will continue in the society, and therefore it is possible that building facilities for this purpose is essential. Whether remote working will become mainstream or less common depends on the type of job and the type of business, but it is expected that the impact will continue to some extent. Conversely, for the companies that reduce their remote working, the criteria for selection will be the size that can accommodate employees and equipment and the ability to accommodate multiple uses, and this trend is likely to be growing. Buildings that meet needs usually have higher construction costs, and rents will rise accordingly. Also, if remote working will increase, rent will be a minimal expense and the money can be invested elsewhere in the company.

#### 4.4 Analysis of current situation

This sub chapter covers the SWOT-analysis and application of SAMF in the target company (see table 6).

Table 6. SWOT-analysis of the target company

Strengths	Weaknesses
Convenient location	Not particularly barrier-free
Large tenant space available, which is harder to find from the area	Due to the building age, it requires more frequent and major repairs
The janitor is attentive to tenant requests and questions	Technology is not fully utilized
Many long-term tenants	The building is not particularly environmentally friendly
The company is privately owned and is debt free	
Opportunities	Threats
If housing prices in Tokyo's 23 wards rise and more people move to the suburbs, more people will use terminal stations, more customers for tenants, and the need to locate stores will rise	If remote work becomes more prevalent and significantly fewer people use the terminal stations, commercial store sales may decrease or finding new tenants may be harder to find due to reduced customer traffic
The city has sustainable initiatives, and it aims to increase carbon neutral buildings	Overall costs are rising due to rising price of goods and human resource shortages

To obtain a better view of the current situation it is important to conduct analysis from various aspects according to the strategic asset management framework. Whether the company should use strategic asset management framework or not, it is important to first review the strategic objectives of the company. Also, the SAMF that is used mainly in public sector and infrastructure assets, can be used in the commercial real estate management. To understand when SAMF can be used, it is important to clarify in the beginning if the assets across different sectors share similar characteristics such as the high capital cost and long periods of depreciation. Second, life cycle thinking from acquisition and maintenance to disposal are factors that requires significant resources, time, and effort. Therefore, to successfully achieve higher returns, planning for each phase is essential.

The case study approach was selected to solve a business problem for the target company but to also understand how SAMF can be used in practice. Learning how to apply SAMF can be valuable to other companies who have similar problems and are looking for examples on how to use SAMF. Application of SAMF is also different when applying it to a medium size commercial real estate company compared to a larger organization where SAMF is usually used. In the larger organization there are more processes and problems that can also be very complex involving different departments and business functions to solve problems.

In this paper, the SAMF that is applied is described in Too & Too's (2010) research and developed by Maheshwari (2006) assists in the success of the case study analysis of a target company. To start with the analysis of the target company, five steps that were proposed by Too & Too (2010) have to be analyzed.

Step 1 focuses on clarifying responsibilities. Too & Too (2010) recommended that responsibilities are divided between top management, asset managers, and property managers. Since the target company has a limited number of employees and is small in size, the top management is currently also the asset manager (see figure 4), and the property manager's duties are outsourced to the building management company with which the company has a contract.

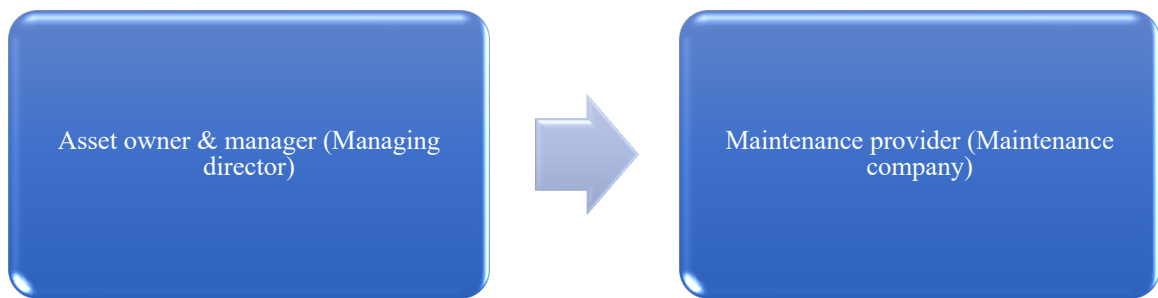


Figure 4. Target company current asset management responsibilities.

However, it is recommended that the asset manager be appointed as one of the employees in the target company, because having separate responsibilities for the top management and the asset manager's duties clearly separates decision-making and execution, allows each entity to specialize, and focuses on specific competencies and responsibilities (Too & Too, 2010). The asset manager should be appointed as one of the employees in the target company.

As Too & Too (2010) states in Step 2 that the asset owner is responsible for setting corporate strategic objectives, which serve as guidelines for the asset manager regarding asset costs, the extent of risk the organization can handle, and the level of performance expected. The infrastructure asset management goals to be managed should then be aligned with the strategic business goals set by the owner.

In the target company situation, the owner and the top management are in charge of asset management. In practice this means that the business goals and asset management goals are easily aligned in terms of estimated cost, level of risk, and expected performance level. Nevertheless, if there are changes in responsibility, especially who will be in charge of asset management in the future, it will be critical to clearly set and define the estimated cost, risk level, and expected performance level.

In Step 3, the focus is on the strategic process of how to implement the infrastructure asset management goals that have been established. These goals should be built by considering what the core asset management processes in the infrastructure asset life cycle are (asset planning, asset creation, and asset management). (Too & Too, 2010)

In the target company the core asset management processes are asset planning and asset creation which are closely related to rebuilding and inheritance issues, so stakeholder

interests need to be carefully considered as the company moves forward. Asset management planning and discussions should also involve rent increases and whether the future plan is to expand the business and if so, then clarify and define the timeframe.

In Step 4, the goal is to develop a plan of action on how to address the issues related to the core infrastructure asset management process strategy covered in Step 3 (Too & Too, 2010). The target company has identified a variety of issues that need to be improved and resolved in each area of the infrastructure asset management process. The company should develop a specific action plan to address each issue by clarifying long-term benefits, establishing timeframes, identifying individual issue responsibilities, and improvements and solutions should be secured.

In Step 5, which is also the final step, the aim is to identify and invest in capabilities that can contribute to performance. Too & Too (2010) states that the assumption is that if an organization can develop its capabilities to effectively support each step of the asset management process, it can contribute to achieving asset management goals and improving asset performance. As the target company is eventually going through a change of asset manager, it will be necessary to invest in developing that capacity. In addition, the target company should also consider capability building in terms of defining roles, investing in training and capacity creation for asset management and related business partners, including subcontractors.

In the next phase, SAMF that Maheshwari (2006) developed will be applied to the target company. The framework will be examined from various aspects after the first steps. In this step, the organization starts the preparation of the SAMF by communicating with staff members about the process. The first step is to define the process owner, which in the target company is the managing director who is also owner of the target company. Therefore, the process owner is the owner of the company.

The primary objective of the company is to ensure that all spaces are used by good tenants over the long-term and operate consistently minimizing the expenses. The target tenants are preferably large group companies that are well run and can be covered by the parent company if something happens to one store or branch. In this step it is critical to limit the most relevant processes since the company has many processes that can be measured and improved. However, regarding the outcome of this research it is important to clarify that only

the asset management processes are considered and therefore processes such as payment or finances were left out for separate study.

The next step was to identify the processes (see table 7) that the target company has and what will be taken into consideration. Economic viability refers to a company being able to sustain and improve its operations financially. This process was chosen as the first process since the company cannot operate sustainably if it is not profitable. Structural integrity and safety concerns ensuring the building is generally safe for its use even in the case of natural disasters. The reason it was chosen as a second process was due to the operating environment that can be affected by natural disasters and ensuring that tenants' safety remains priority.

Technological advancements are to improve the efficiency, productivity and quality of service using IoT. This third chosen process is relevant because the company has not adapted advanced technological solutions in its operations and is looking to reduce its expenses. As mentioned earlier, the maintenance sector encounters challenges in finding young people to work on maintenance. This challenge affects the maintenance costs and technological solutions could decrease the financial burden of the company in the long-term.

Legal and regulatory considerations refer to complying with local laws and regulations as it is critical to ensure occupants' safety and to decrease risks when operating an enterprise. To understand how a company responds to the tenants' requirement and preferences, market trends and demand process was selected. It is to understand in what type of market the target company is operating and how it is meeting the criteria of the tenants' it intends to attract. Buildings are expensive to build and even reforms can be expensive and time consuming. As the buildings are used for many decades, a long-term view of the asset planning is important therefore long-term asset preservation was chosen as a process to evaluate. As the building ages, it requires consistent maintenance to ensure its safe operation, hence the maintenance process was selected.

Table 7. Asset management information and inputs

Categories	Description
Asset information	Commercial office building
Characteristics	X amount floors, two staircases and two elevators. Retail use 40 %, office use 60 %
Location	Walking distance to the terminal station in Tokyo's 23 wards
Condition	Maintenance is done according to the plan, but the building is not in perfect condition. Currently maintenance is focusing only on essential repairs.
Actual performance	Fully occupied with no critical problems with long-term use of tenants, but not rented with ideal rent price (See chapter 4.4 for details)
Maintenance contract	Maintenance is outsourced by another company which handles the daily operations with customers and works with maintenance companies. The contract is negotiated when previous contract expires and is renewed if not renegotiated. The process owner wants to keep maintenance outsourced but evaluates each repair proposal separately.

After asset management information and inputs are defined, each relevant aspect will be evaluated by the measurement framework with the maturity levels and timeline that Maheshwari (2006) suggests. This is a quantified assessment of the level of awareness and application of a particular process or process element by the organization and its employees. Table 8 shows the status and range of scores for each level. To define improvement target scores for each process, discussions are undertaken with target company management to ensure that there are adequate resources and commitment to implement the target scores. Especially as each process' importance may vary, the timeline for implementation and scoring can vary. First, assessment of the current situation must be achieved according to the maturity level scale on table 8.

Table 8. Scoring for the maturity levels (Maheshwari, 2006: 602-603)

Maturity level	Score	Description
Unaware	0-10	A rating that shows that the organisation and its staff are not aware of a particular process or a process element.
Aware	11-30	A rating that shows that the organisation and its staff have a reasonable awareness of the process, but do not practice (apply) it widely.
Application	31-50	A rating that shows that awareness of the process exists and is being applied in some cases.
Systematic Approach	51-70	A rating that shows that the organisations awareness of the process is very high and it is being applied consistently in almost all the cases.
Competence	71-85	A rating that shows that the organisation is well aware of the process, applies it systematically throughout the organisation (high compliance) and its process is matured to an extent that it can be classified as one of the best processes (when benchmarked against other similar organisations).
Excellence	86-100	A rating that shows that the process is applied systematically within the organisation and the process that is followed can be rated as the best in the industry.

The following subchapters are divided by each process category starting from economic viability. In the figure 5 below, the maturity levels and their current and target scores are seen for each process. Target scores and maturity levels were defined by studying the processes and then comparing them with the descriptions on the table 8 for each level according to Maheshwari (2006) principles. The score differences in maturity levels were decided based on how well the process was applied in the specific maturity level.

		Economic viability	Structural integrity & safety	Technological advancements	Legal & regulatory considerations	Market trends & demand	Long-term asset preservation	Maintenance
		A	B	C	D	E	F	G
Excellence	100							
	95							
	90							
Competence	85							
	80							
	75							
	70							
Systematic approach	65							
	60							
	55							
Application	50							
	45							
	40							
	35							
Awareness	30							
	25							
	20							
	15							
Unaware	10							
	5							
Current Score		35	50	20	75	40	30	50
Target Score (3 years)		70	75	50	85	70	70	75
Gap		35	25	30	10	30	40	25

Figure 5. The maturity level of processes in target company (Maheshwari, 2006).

The overall process rating is presented in the 4.5 summary of the chapter. Score improvement for the target company improvements has been set to be three years. The blue color indicates the current situation where green indicates the gap between improvement target and the actual level.

#### 4.4.1 Economic viability

The building has completed repayment of the loans taken out at the time of construction and is currently debt-free. The company generates its income from the rental payments it collects. The contracts are negotiated case by case, and increases in rental income are usually when tenants are replaced. The lease rate is determined based on the market rate in the surrounding area. There have been cases where the lease rate has been renegotiated, in 2009 during the banking crisis at the request of tenants some rates were decreased to a minimum. Due to the

Japanese culture of building trust over a long period, long-term relationships are preferred. The consequence of this is that once rents are lowered, it is not easy to raise them, and rents have not risen since that time. Tenant turnover is infrequent, and currently 50% of the tenants are tenants who have been with the building since its inception and are paying rents agreed at that time or rents that were lowered in 2009. Although the company has been able to retain its tenants in the long-term, it is experiencing stagnant profits as they have been unable to raise rents to offset the associated increase in operating costs.

Considering the maturity level of economic viability in figure 5, this process is considered lower “application” level, because currently the company staff has awareness of this process, and it is being applied in some cases. However, it should be applied consistently in all cases. Therefore, the target is that in three years, it should reach the lower “competence” level.

#### 4.4.2 Structural integrity and safety

The building in question was constructed in 1986, and construction began after the new earthquake resistance standards were adopted in June 1981. As a result, the building is durable to intensity 6 or 7 in Shindo seismic intensity scale and is considered to have a low risk of collapse even in the event of a strong earthquake. Maintenance has been outsourced to a major maintenance company since the construction was built, and overall maintenance is performed as needed to ensure that there are no safety issues. According to the janitor of the building, interior renovations are only actioned when new tenants move in, but tenants rarely make requests or complaints. Regarding earthquakes, each tenant has a person in charge who participates in annual general evacuation drills and is responsible for preparing their own stockpiles and evacuation routes. Safety and ease of access are also likely to be a concern for some tenants, but this has not been mentioned in discussion with the janitor.

As seen in figure 5, the maturity level of structural integrity and safety can be considered in full in “application” phase because in some fields such as disaster response, it is systematically organized and recognized by employees and stakeholders. However, it should be applied to overall safety. Therefore, the aim is to achieve the mid “competence” level in the next three years.

#### 4.4.3 Technological advancements

Technology has advanced remarkably over the past few decades. For example, large buildings in central Tokyo are being remotely monitored 24 hours a day from tablets or PCs with monitoring systems in response to the shortage of human resources for cleaning and management and increasing costs, robot cleaning (Hirade, 2023), incorporating renewable energy such as solar power generation for environmental considerations. The IoT is being used in a variety of ways, such as by utilizing elevator doors to generate digital advertising revenues. However, the building in question does not incorporate the latest technology. The reason is cost, as the introduction of the latest technology is often expensive. For example, the price of commercial robots is about 3 million yen per unit, and even if leased, each robot costs more than 100,000 yen per month (Hirade, 2023). In addition, like many small and medium-sized building owners in Tokyo, the owners of the buildings in question are elderly, and therefore not only do not pay attention to the latest technology, but they still perform contracting and administrative tasks without the use of computers. In this respect, there is still room for improvement without significant cost.

The maturity level of technological advancements in figure 5 can be considered mid “awareness”. It is rarely applied now, and the recognition is quite low. In three years, this process should be targeted to “application” level. It can be challenging since it starts almost from nothing. On the other hand, it means there are basic things to improve which do not cost much and the savings in operation costs can justify the investments.

#### 4.4.4 Legal and regulatory considerations

Regarding building codes, seismic codes, and other laws and rules, the company has been operating in compliance with the laws during the building's construction and thereafter with its contracted maintenance company. When rebuilding in the future, there is a local rule of a maximum of 14 floors that needs to be taken into consideration.

In figure 5, the maturity level of legal and regulatory considerations can be considered mid “competence”. It is applied widely, and the process and importance are well recognized. To reach competence level is important because in case of violation of regulatory requirements

the consequences can significantly affect the company. The target is to reach higher “competence” level in the next three years. Although there are still improvement areas that can be improved, the improvement efforts should focus more on other processes that are in lower maturity levels.

#### 4.4.5 Market trends and demand

After the COVID-19 pandemic, office vacancy rates have also been high near stations in Tokyo that are served by only one train line. The building in question is relatively low risk because it is served by multiple lines and is a major terminal station that connects the suburbs to the city center, but trends related to the movement of people are one point to be aware of. In addition, the proximity to the station, within five minutes of the station, is very important for companies when choosing a location to set up a store, and it can be said that this point has been met. Although there is demand, because the company operates without computers, it does not have the tools to inform the real estate industry when a tenant decides to move out and currently relies on real estate agents with a local network to visit the company based on what they hear from others. This is only possible because it is a buyer's market, but since the number of potential tenants is limited, there are few options for tenants to choose from, which may put them at a disadvantage when considering the balance of industries and overlap between tenants, and when negotiating rent and other terms. If land and apartment prices in Tokyo continue to skyrocket, and people begin to live further out in the suburbs, or if remote work becomes the norm, terminal stations may no longer be as advantageous as they are today. In such a case, it may be necessary to provide thematic and advanced features that will make people want to visit the area.

Figure 5 shows the maturity level of market trends and demand can be considered mid “application” level. In the company there is some level understanding of the market and demand within its employees, but in general the employees’ awareness is low. Thus, no visible effort is taking place to respond to the opportunities and challenges seen in the market. Therefore, in the next three years the target should be on increasing the employees’ awareness, set and implement strategic measures it should reach the lower “competence” level.

#### 4.4.6 Long-term asset preservation

In preparation for major repairs and rebuilding, the company in question has been setting aside a monthly reserve for repairs since the building was built. Since the reserve has never been withdrawn from, it can be used as part of the future rebuilding fund. The managing director of the target company commented during the interview that the company is considering rebuilding within the next 10 years. Based on this assumption, this study focuses on three phases which are to be evaluated, the phase up to the rebuilding, rebuilding, and after rebuilding.

As illustrated in figure 5, the maturity level of long-term asset preservation can be considered a higher “awareness” level. This process is recognized and concerned based on the discussion with the target company employees but there is no clear strategy in place to describe direction and the steps. Therefore, it is recommended that the company make a long-term asset management plan which is then implemented by its employees. The target in this process is to reach lower “competence” level in the next three years.

#### 4.4.7 Maintenance

The maintenance company has presented the plan for overall maintenance in 2022, but as the asset ages, the cost for repairs have increased hence it becomes challenging to allocate the funds required to implement all the proposed items. It is in the current owner’s interest to keep current maintenance to a minimum, since there is a possibility of rebuilding soon. The maintenance action plan has three levels of urgency, currently the budget is used only on the most urgent C-level items. C-level items are those that are likely to break down in the current situation (preventive maintenance) and those that have broken down (reactive maintenance). Since the maintenance is often more expensive because of breakdown, it is generally recommended that preventive maintenance is performed to restore the condition in advance to prevent breakage or malfunction. However, although inspections are conducted in the building in question to minimize costs as much as possible, they are minimal, and sometimes breakdowns occur before preventive maintenance can be performed,

resulting in after-the-fact maintenance. In the future, it is desirable to spend more money on preventive maintenance to prevent breakage.

Currently, the building in question has a long-term maintenance contract with a major maintenance company, which is typical of medium-sized buildings in Tokyo. The disadvantage of a long-term contract with one company is that it is impossible to obtain quotes from other companies, which makes maintenance costs more expensive. At the end of 2022, the maintenance company submitted an overall building repair plan. The owner has a policy of minimal maintenance until rebuilding and will use the budget only to address what is likely to break and what has broken.

It can be seen in figure 5 that the maturity level of maintenance process is considered higher “application” level. The building is well managed by the management company in terms of the maintenance. The management company reports and proposes the maintenance plan to the owner. Considering that the owner evaluates each proposal presented and often communicates with other staff members, it can be said that employees are aware of the condition of the building. In addition, the current situation is rated as “application” level. The current actions have been taken after an incident happens and preventive measures have not been sufficiently taken. In the next three years, the company should develop a preventive measures plan for the long-term benefits as well as cost efficiency so that it can reach the mid “competence” level.

#### 4.5 Summary of the chapter

The fourth chapter focused on presenting the target company, outlining its history, the type of business, where it is operating and its current asset management practices. The chapter also covers the current problems it faces in terms of rental income, aging, rising maintenance costs and the type of opportunities it has. As the building is reaching 40 years of age, emphasis was placed on the study of a firm long-term plan. To gain a better understanding of the current situation and to plan efficient approaches, interviews were conducted, and the strategic asset management framework was applied to the target company going step by step according to framework developed by Maheshwari (2006) and Too & Too (2010). Interviews gave better insight into the Tokyo metropolitan area, distinguishing commercial,

office and residential tenants needs. In addition, interviews with target company representatives and staff enabled a wider understanding of the current situation and why certain things are done in a certain manner. Also, SAMF application enabled to provide a clearer picture of the current situation and recognize the areas of improvement and further discussions with the owner about finding the most suitable solution related to current issues and planning for the future.

		Overall process rating
Excellence	100	
	95	
	90	
Competence	85	
	80	
	75	
	70	
Systematic approach	65	
	60	
	55	
Application	50	
	45	
	40	
	35	
Awareness	30	
	25	
	20	
	15	
Unaware	10	
	5	
Current Score		45
Target Score (3 years)		75
Gap		30

Figure 6. The maturity level of overall processes (Maheshwari, 2006).

The results of the case study applying SAMF can be summarized as following: As seen in figure 6, the target company has an overall process in a higher “application” level of maturity. At the target company, there is a process where the company has already achieved a

level of competence, which is in compliance with laws and regulations. In addition, in the process of structural integrity and safety, the company has taken the necessary measures to reach the application level. On the other hand, there are many processes that could be significantly improved. The company would benefit financially if it focused on long-term planning to define concrete actions to achieve its goals. This requires involvement of the employees, defining asset management roles and establishing timetables for actively monitoring and evaluating progress. At the operational level, a company could focus on studying market trends and conduct research to determine where they could improve the most. In the process of technological development, it could benefit from new technologies that could improve efficiency and safety. With advanced technological solutions, the company could improve its maintenance operations, because with preventive maintenance, it could facilitate the identification of wear and tear, take the necessary measures in time, which on the other hand would reduce the company's cost burden in the long run.

## 5 Future planning

### 5.1 Options for the future

To sustain the operation of the company, careful planning and identifying opportunities are essential. This is also highlighted in SAMF where the asset management has practices that are affecting the whole lifecycle of the asset and thus planning and efficient utilization can improve the profitability. To identify risks and opportunities in future planning, real option theory will be applied to the target company. The company has various stakeholders with varying interest. The owner wants to maximize profitability and sustain occupancy rates, while also expressing an interest to rebuilding into a higher building. Tenants on the other hand prefer long-term predictability and want to avoid rental increases. In situations where the discrepancy between running costs and the rental income becomes greater and the tenant's inability to accept the rental increase, changing the tenant may be attractive choice. On the other hand, if the tenant's business is growing or the rental property does not meet their requirements, move-out can be considered. However, tenant move-out is only possible for tenants to say so, according to the Landlord and Tenant Law, even if a tenant wishes to relocate, there are various costs involved, including moving costs, administrative costs associated with notifying the tenant of the move, and restoration of the property to its original condition (Kuroiwa, 2002). Greater repairs or rebuilding would impact the tenants' day to day business, which may cause them to move to other areas.

When planning the future of the asset management, various options must be observed and compared to develop an efficient plan. Hence, the options to be evaluated are based on the discussions with the owner of the company. Options are presented below:

1. Rebuilding entirely to twice the height of the existing building, 60% commercial space and 40% residential apartments (Option to expand)
2. Rebuilding to the existing height for commercial use (Option to delay)
3. Rebuilding entirely to twice the height of the existing building, but having the building entirely for commercial spaces (Option to abandon)

Each subchapter will discuss the factors that will depend on the option. This is critical since at the time of rebuilding, various aspects should be considered to maximize future profitability. Therefore, numerous elements will have to be taken into account such as retaining occupancy rate and the building being able to match its tenants' requirements.

The first option, to expand the rebuilding that can serve mixed clientele, also has its challenges since residents have contrasting needs to commercial tenants. Also, the taller the building is, the more traffic its elevators face which may require various elevators to manage the flow of people hence generating an impact to the costs. Commercial occupants may prefer easier client access thus making the first floor more expensive than the higher ones. For residential tenants, higher floors may be preferred for security and having a nice view.

The second option, to delay with the higher building, should be considered but the greatest problem is the unused possibility of the land; it would be wasteful to build only a current height building on a plot of land where twice the height of the existing building could be built. On the other hand, building costs remain significantly lower if retaining the existing building height. In addition, there is also a risk that not all the premises of a larger building could be rented if demand weakens. This could lead to the large building remaining partially empty, which could pose economic risks if the loan payment increases due to higher rates.

The third option, to abandon by moving to mixed clientele, has its challenges since if the area loses its attractiveness or there are better located buildings that could impose challenges to retain the building occupancy. In addition, larger chains or companies could occupy more space since the size of the building would be twice the current size which would also enable them to model the space according to their needs. Especially when in the area there is scarcity of office space.

### **Costs**

Each option will vary in terms of the costs ranging from building size but also the design and material used. In addition, the economic situation will also have an impact in terms of available human and material resources to construct the building. As discussed earlier in chapter 2, the average construction cost of a reinforced concrete building is presented in table 9 below.

Table 9. Construction cost estimates (Ministry of Land, Infrastructure, Transport and Tourism 2022).

Construction cost estimates	
Office	388,200 yen/m <sup>2</sup>
Stores	366,600 yen/m <sup>2</sup>
Residences	271,700 yen/m <sup>2</sup>

Yet this cost table does not cover the demolition costs of an existing building and the necessary bureaucratic expenditures. Also, tenants must be notified one year prior to the start of demolishing the old building. However, considering these options where each option includes rebuilding, lack of rental income may differ in terms of option 2 since the current size of building takes less time compared to a building twice as high.

Building offices is 116,500 yen/m<sup>2</sup> more expensive than residential buildings. Based on the estimated floor space and the construction costs per square meter, option 3 is the most expensive while option 2 is the least expensive. This is because the estimated construction costs for office building is significantly higher than for residential.

In addition to this, demolition costs and application procedures will also be incurred. Furthermore, tenants must be notified well in advance, and in some cases, rent must be paid for several months to a year, or relocation expenses must be covered to ensure tenants relocate before the reconstruction begins. Kamiike Kaitai kougyou. (no date) stated that demolition for medium-sized buildings is estimated to take one to two months. The construction period is also lengthy; according to YUMESHIN Co., Ltd. (2023) the construction period for reinforced concrete building is estimated to be number of floors plus three months, and of course, the lack of revenue during that period has a major impact on the company's finances.

In Japan, instead of demolishing a building, in the case of reinforced concrete construction, there is a method called "full renovation", in which only the foundation and major columns are left, and other parts of the building are completely renewed. In this case, the building is effectively treated as a renovation rather than a reconstruction, which saves on taxes, lowers construction costs, and shortens the time frame. As mentioned above, there are reinforced concrete buildings in Tokyo that are more than 100 years old, so this is a method that should be considered if there are no major problems with the core structure.

This option would be worth studying if the building would be the same size as the current one. However, in option 1 and option 3, the building would be more than twice its current height posing a lot of challenges and requirement thus this is left out of the study.

### **Tenant management**

Considering the increase in management costs associated with recent price hikes, rent increases should be negotiated as much as possible at the time of contract renewal for each tenant. Rent increases should be implemented specifically for tenants in the building from before the Lehman Shock, as their rents are currently lower than the market rent in the surrounding area. In addition, as is customary in Japan, it is appropriate to inform tenants of the rebuilding about one year before the rebuilding, to give them sufficient time to prepare to move out or temporarily vacate, and if necessary, to offer free rent for a few months immediately before the rebuild.

Option 1 can be most challenging since it requires to meet the needs of residents and the commercial tenants. Although it supports a well-diversified asset management especially in case of economic recession, it is still important to consider what kind of clients the company aims to have and how they align with the overall building image.

Option 2 helps to reduce the risk of vacant spaces in case of low demand. The target company has expressed that with the current building it has not faced any issues when filling the space. Also, when looking to the past for lower demand periods such as the bubble burst in the 90s and the global financial crisis in 2008, the company did not have issues regarding tenant loss or high turnover. These can serve as an example when considering a bigger building and whether the required spaces could be filled. Regarding the area where the building is located, this has also improved and become more popular especially for younger people and families.

Option 3 regarding tenant management can be more effortless, since the commercial tenants' contract are generally longer and if the tenant companies are part of bigger group there is more financial security, which enables the target company to have more predictability in its cash flows also affecting loan finance. Predictability in terms of rental income is different from the building with individual residential tenants. Also, when the building is constructed for residential use, there are additional requirements to the building. However, option 3 has more risk not to occupy the whole tenant space especially in the financial crisis.

## **Investment and financial plan**

Discussions regarding financing the rebuilding must be discussed with financiers. A bank loan will be taken for the reconstruction. This process includes presenting the options to the bank and comparing their rates to determine the most suitable loan. Since there is already a rebuilding plan, it is necessary to prepare a budget and a bank loan so that these investments can be made at the time of rebuilding, without making new investments in building equipment and technology in the future.

Alternative finance options are worth investigating. Project finance is one way where a separate project organization is created that is liable for the loan. Financiers of the project are sponsors and the loan is secured by future cash flows and its costs of the loan are deducted from cash flows. Project finance requires financial modelling of project cashflows. Stress tests are usually conducted to identify weak points of the project. The benefit of project finance is that the other assets and sponsors' capital is not used as a guarantee. (Holtinen, 2017)

In 2017, Japanese government introduced a financing scheme called small scale real estate specified joint venture to support small businesses. The scheme enables building owners to obtain financial resources from individual investors and or corporate investors, which can be useful when financing from the banks is limited. In the formed joint venture, the investors receive returns from operational profit. (Value Management Institute, Inc., 2017)

According to the greater Tokyo area real estate agent in the interview, see table 5, there are cases that when a company is planning for rebuilding, a potential tenant comes to an agreement with the building owner that they guarantee occupying a certain amount of space for an agreed number of years in exchange of designing the place as they prefer. In this way the owner of the building can secure tenants which enable them to have a better chance of securing the future income and increasing probability for securing the loan for rebuilding.

Financial discussions involve the financial institutions in all options. In option 1 many aspects must be evaluated since the residential apartments could be sold to the customers which would facilitate secure financing for the rebuilding. The size of apartments must be defined to cater to the needs of the tenants. This is a significant factor when considering the financing aspect. Option 2 can be financed with lowest amount of money since the size of the building is the lowest. However, the rental income is also the lowest due to the available space the

building offers. Option 3 will require the highest amount of financing since the construction costs are the highest for a building with commercial purposes only.

### **Structure and materials**

As mentioned above, the city ordinances allow for the construction of buildings up to twice the current building height in the area where the building is located. For greater profitability, it is desirable to build twice the current height. Also, when selecting materials, one should not simply choose materials based on cost, but materials that are long-lasting and require less effort to maintain. This will lead to savings in future repair and replacement work and costs of parts in the long run.

#### **Option 1 and 3**

Structural requirements must be studied in option 1 since the building would be occupied by residents and commercial clients which both have their specific needs. However, in both options 1 and 3, the requirements are greater since the building height would be twice compared to the current height of the existing building. Although, in option 3 the building would be occupied by commercial tenants only, the requirement would be more manageable.

All options will naturally require more planning when the time comes, since the availability of materials and construction as well as regulation may change from now.

#### **Option 2**

Occupying only commercial tenants such as in the current building, can be more flexible regarding the structural requirement. This is because there are no residential tenants and therefore, requirements for commercial use are different. Although, the option requires planning what type of materials would be used and how the land space is used. Currently there is space in the land area that could be used when building a new one.

### **Design and environmental consideration**

Design is a lower priority than cost, environmental considerations, or materials, but since the building will be used for nearly 50 years afterwards, it should have a long-lasting design that will not become outdated. In addition, the design should differentiate the building from surrounding buildings, make it easy for users to use, and make it feel comfortable and

attractive, thereby fulfilling the preferences and requirements of tenants who hope that many users will visit the building.

One point that is likely to come under greater regulatory and market expectations than ever before is whether the building is environmentally friendly. As this is a point that has rarely been considered in the current building in question, there are many areas that can be improved upon with the rebuilding. Specifically, these include the installation of photovoltaic power generation for the use of renewable energy, infrastructure facilities such as water supply systems and water heaters that enable zero emissions, and thermal insulation that emphasizes energy efficiency.

Option 1 provides unique opportunities but also challenges due to the variety of tenants and having more floors. The flow of people must be planned well, in which floors the elevators stops and how many elevators are needed to smooth the operations. Also, whether the residents should have the same entrance and elevators as commercial clients or do a separate entrance. Although option 3 has the same height as option 1, it would not have the same issue with separate entrances since it would be fully occupied by commercial tenants.

### **Safety**

Although the safety standards such as for earthquake resistance are becoming stricter with each passing year, it is preferable to use seismic isolation structure instead of earthquake resistance structure for actual safety reasons. Although costly, the probability of a major earthquake is relatively high, and damage should be minimized in consideration of post-quake restoration. Since seismic isolation structure cannot be undertaken later, since the equipment is installed under the building, the only opportunity for seismic isolation structure is when the building is rebuilt. Safety aspects are not differentiating significantly between the option at this point, rather the question becomes relevant when the company starts planning design of the building.

### **Applications of IoT technology**

There are benefits of using advanced technological solutions, especially in areas such as cleaning, management, and security, where costs will increase in the future due to labor shortages. Examples include cleaning robots, climate control, 24-hour remote security, and digital tenant management and information networks. Between the options there are no visible differences at this point regarding this category.

## 5.2 Post reconstruction

### **Tenants**

Long-term occupancy by tenants is of great benefit to building owners. Higher customer retention tends to result in higher occupancy rates. If tenants move out less frequently, there is less likelihood that a space will be without a tenant for several months. In addition, tenants who rent for longer periods of time have the benefit of lower costs, including brokerage fees, screening costs, and operating costs. (Kuroiwa, 2002) Thus, it is worthwhile trying to obtain quality tenants. The internet and real estate industry networks should be used to find quality tenant candidates from the middle of the rebuild. Although existing tenants with long-term contracts have established good relationships and are known to be quality tenants, it is necessary to make a serious decision to sign contracts, only with those that have agreed on rents that also consider reconstruction costs. It is also important to decide on an overall concept and policy, select a tenant from an industry that fits with the building concept, choose a company with a solid background to prevent payment delays and choose a company that can smoothly agree on a payment amount, as the first step is crucial when it comes to rents. In addition, subleasing should be avoided as much as possible because there is a high possibility of trouble due to the lack of direct selection, negotiation, and explanation.

### **Maintenance**

For post-reconstruction maintenance, a long-term repair plan should be established, with clear policies and rules to be shared with tenants. It is also recommended to establish a payment plan, including the establishment of a rent amount and reserve fund, in anticipation of repair costs.

### **Financial constraints**

With soaring raw material costs and labor shortages becoming problematic, construction prices have risen to unprecedented levels. Therefore, borrowing from banks is inevitable because a considerable budget is required even for full renovation rather than reconstruction. However, the owner may face inheritance problems at that time, and the future of the company is uncertain. When borrowing, it is necessary to confirm at an early stage what collateral will be used and how much borrowing can be expected. Also, it is yet unknown how much the price will rise in 10 years, but it will be necessary to roughly estimate the total cost

from current prices. Depending on the amount of money that can be borrowed and the extent to which the above changes can be achieved at the time of reconstruction will affect the conclusion greatly.

### **Technological limitations**

Technology is likely to advance exponentially over the next decade. It is of course possible that what is considered most efficient at present will already be outdated in 10 years. Therefore, it is advisable to consider again at the concrete planning stage what and to what extent the reconstruction should incorporate technological aspects.

In recent years, the overall working population in Japan has been declining, and the construction of new buildings one after another since the collapse of the bubble economy has increased the demand for the personnel needed to operate buildings, resulting in a serious labor shortage in the building management industry (Kimura, 2021). Therefore, it should be considered that the labor costs may increase or that all the services required may become more challenging to cover without advanced solutions. Therefore, the company should consider deploying IoT solutions in those areas.

As the smart IoT-solution are becoming widely applied in the buildings, it is important to study the opportunities in the planning phase. Understanding what type of customers would likely be occupying the building can help to understand their needs. Also, some modification may pose challenges in terms of costs and extra work if executed after the building has been constructed.

### **Regulatory hurdles**

Regulations regarding environmental considerations and earthquake resistance may become even stricter in the future. Looking at the history, it is evident that after bigger earthquakes, the building requirements have expanded. Therefore, it would be advisable not to set a goal to clear the current regulations, but rather to go one step further and make sure that the building is capable of withstanding even more stringent standards.

The plan of the city is also taking into an account the maximal floor size that can be built on the area, as well as the change in waste and other requirements since the current building was built.

### **Stakeholder resistance**

Since the company in question is a privately held company and the only shareholders are family members, it is unlikely to be significantly affected by the intentions of the shareholders, but the sharing of wills and agreements among family members should be confirmed on a case-by-case basis. There is also a possibility that existing tenants may oppose the rebuilding. Therefore, it is necessary to take sufficient time to firmly communicate the timing and purpose of rent and rebuilding, as well as the post-rebuilding policy. It would then be advisable for the tenants to decide whether they agree to it or whether they will move out.

### 5.3 Summary of the chapter

This chapter aimed to facilitate future planning for the target company. Real options are used to identify and differentiate plans for comparison. Various aspects were considered in the real options. The chapter first discusses life cycle management and then presents real options and explains why they are relevant, and how should they be used. After that it covers many aspects and discusses differences in the options.

As a result of this chapter, overall, the first option (Option to expand) having considered all aspects, is recommended to investigate further. This is because with expanding the building size the company can increase significantly its revenue, also by having a variety of tenants such as commercial and residential, the company can either rent the apartments to the tenants or sell them if needed. Diversifying tenants reduces the risk of space being left empty in case of economic downturn. The target company building is conveniently located; walking distance to major train station is valued across different kind of tenants.

## 6 Conclusion

### 6.1 Research questions

The purpose of this paper was to develop the efficient asset management strategy for the target company by using strategic asset management framework. This is primarily because many of the small and medium size buildings are aging in Tokyo since they were built during the bubble period. The maintenance costs rise as the building ages and companies may find it challenging to increase the rents accordingly. Therefore, strategic asset management planning is critical to optimize the operations.

The purpose of the first research question is to find information from real estate asset management practices in Tokyo to understand how one company can improve their operations. First research question: What are the main factors that determine the success of businesses among commercial real estate businesses in Tokyo?

To determine the success of businesses among commercial real estate business in Tokyo, the objectives that the company is looking to achieve must be clear since they vary a lot depending on the following: where the company is located, what kind of tenants it aims attract, how they want to operate the business, and understanding tenants' requirements to direct resources to the areas that have the most impact. The most crucial aspect for the real estate company is to make profit and maintain full occupancy.

Other considerable burden to the real estate companies is statutory useful life which is determined for commercial, office and residential buildings. This enables the company to depreciate the construction costs over the life cycle of the construction. However, once the statutory useful life reaches its end, maintenance repairs are essential or rebuilding to lower the tax burden. As the building ages there are a variety of other issues such as increased insurance costs and risk of breakdowns since the building that was built 40 years ago has different safety requirements. Having a safe and structurally firm construction is essential in Japan which is prone to earthquakes and other natural disasters. The remodel is an option to maintain the existing building and renovate the space according to tenant preferences. It is

important to evaluate each case separately since often the structural elements such as floor height cannot be changed easily after the building has been constructed.

The second research question focused on defining strategic asset management framework and its application: What is the strategic asset management framework and how can it be applied in commercial real estate management? The strategic asset management framework is used to develop the way to analyze and solve the business problems in areas of dynamic life cycle optimization, determination of maintenance strategies and maximization of returns of asset. SAMF provides the practical steps for decision making, and when the SAMF is implemented, the key elements are people, process and technology. (Maheshwari, 2006) SAMF can be applied to other industries such as commercial real estate; the development of the framework requires clarifying roles, recognizing the processes, and commitment at all levels of the organization is required. During the process, the company should also invest in capabilities that can contribute to performance (Too & Too, 2010).

The idea of the third research question is to combine the information gained from the theoretical part and the empirical part to propose future ideas. The third research question is: How can a company find the most suitable approach to commercial real estate asset management? To find the most suitable approach it is recommended that the organization start by analyzing the current situation of the company, identifying the processes, responsibilities and setting goals. Develop a concrete plan with timeframe and consider using real option to identify and compare different scenarios.

## 6.2 Value for the company

The principal value for the company is the awareness of the different asset management processes. Also, conducting semi-structured interviews as a part of a target company and market study was essential to understand the challenges and opportunities in Tokyo real estate market. With these insights, the company will have a better understanding of what type of requirement and trends there are in real estate market in Tokyo.

Application of SAMF revealed the current asset management process maturity levels. After considering all aspects, the current overall maturity level was rated as “application”. In general, strategic planning for long-term benefits is lacking. A concrete action plan for each

process is needed, with a three-year timeframe and a goal of reaching a level of competence by then.

When the real estate owner is considering rebuilding it is important to consider elements such as financial improvement, market condition and to see if public entities can support initiatives, since sustainable development is imperative it is advisable to look for intelligent and sustainable solutions that can reduce carbon footprint improve energy efficiency. Implementation of such technologies are to be evaluated case by case but in the long-term, savings can be substantial. In addition, investigating cooperation opportunities with the local government is advisable.

Findings from the literature review of the Tokyo real estate market and interviews with real estate agents revealed that the location is often the priority when tenants are looking to move. Further, as the tenants and the landlords both prefer long-term relationships, which brings stable cashflow to the landlord and a secure place for the tenant, it is worth noticing that in the long run increasing rental income can be challenging and the profitability can become harder to achieve as the maintenance costs rise. To address this, the company has a long-term plan and is aware of its required cashflow so it can take preventive measures when the contractual renewals are taking place.

### 6.3 Further research

As the target company is medium size, this study did not focus on larger buildings. Also, finances and calculations were excluded from the study because the target company is still in the early phase of future planning. As mentioned in chapter 5, the future research could involve studying alternative finance methods such as project finance and small-scale real estate specified joint venture. In addition, the company could consider having discussions with companies that it aims to attract for future building, this could enable the owner to secure the occupancy of the space which in turn would secure the income. Therefore, the future study can investigate further what type of building and tenants the company would like to have.

For the current situation, the company should consider and implement solutions to the critical areas that were presented in the empirical part. Especially developing a concrete action

plan for improvement based on SAMF. Improving processes is long and time consuming but it is also rewarding since if the problems are noticeable early, the solutions can be implemented with lower costs and the progress is also easier to follow because there are clear steps and benchmarks. Also, with the tools presented in this paper the company identify areas in which it is lacking and take corrective steps.

Tenants' feedback could be requested by performing surveys to see if the existing areas of improvement are the ones that tenants consider valuable. Tenants' opinions are critical since they are paying the rent and as the target company has long-term tenants and wants to retain them, their input is valuable. In the future, if the company conduct financial calculations related to the options, simulating rebuilding and full renovation with numbers could be very beneficial.

It is suggested to deepen the research into advanced technology solutions such as robots for cleaning, temperature control, remote access control and security systems. Sustainable practices are also recommended area of investigation for small and medium sized buildings in Tokyo in areas such as energy consumption, waste management, recycling and renewable energy.

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## APPENDIX I: Interview subjects for interviewees

Themes	Subjects
Market trends	Current trends in the Tokyo office and retail leasing market
	The biggest challenges and opportunities
	Features and services tenants are looking for
Tenants' requirements	Features the tenants value most
	Factors most influence tenants' decisions about a property
	Environmental aspect that tenants consider important
	What matters most to different tenants, age of the building, location, price of rent
Competitiveness in the area	Competitive environment changes in recent years and expected changes in the near future
Rental income factor	Changes of rental income increases on the contracts due to inflation, price increases, or surrounding rental rates
	Reality of increases in rental income due to inflation or rising prices
	The rate and reasons of return on residential, office, and retail leases
	The average rental rates for different types of properties in the area
	Factors most influential on rental prices
Outlook for the future	Significant development plans that may affect the office or retail rental market in this area
	Tenant needs to change over the next five years due to the influx and outflow of people into the area
	Advances in technology and the increase in remote workforce affected the demand for office rentals and their impact on the demand for office space for rent
History of target company	Tenants' selection, contract management
	Tenants' occupancy
	Building maintenance
Current situation	Financial situation as the building ages
	Buildings general condition and maintenance planning
	Use of technologies
	Current tenants' and concerns
Outlook for the future	Rebuilding plan
	Maintenance planning
	Financing aspect
	Future plan and preferred type of clients
Tenants' requirement of the target building	Requests that tenants often have
Tenants' concerns (cleanliness, security, safety etc)	Tenants' dissatisfactions and areas of improvement
	Tenants' concerns, cleanliness, maintenance, security, earthquake preparedness and safety, ease of use, etc.
	Communication with tenants