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Comparison of Rooftop Garden in Japan and Indonesia (Study case of GINZA SIX Garden, Japan, and PIM 3 Garden, Indonesia)

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ABSTRACT

A rooftop garden is located on the topmost level of a building and provides similar benefits as traditional urban green space while accommodating the limited land issue in cities. The practice of rooftop gardens keeps increasing in urban areas worldwide. There may be differences between rooftop gardens in different countries, be it in the design, the elements, or the activities. This study explores the difference between rooftop gardens in Indonesia and Japan, particularly Jakarta and Tokyo. This study aims to compare the characteristics of rooftop gardens in Jakarta and Tokyo. This study follows a descriptive-qualitative approach. The data used in this study is based on visitors' photos and reviews uploaded to the internet and supported by field observation. PIM 3 Garden's design concept is based on the trend of citizen culture, which likes to update their activities on social media. In contrast, Ginza Six Garden's design is based on the Ginza area's history, which combines traditional and modern culture. Since the design concepts are different, the garden elements and the user activities are also different. The main reason for these differences is most likely due to cultural differences. Indonesian people like sharing their activities on social media more than Japanese people. Although the gardens exhibit contrasting designs, elements, and user activities, both seem to accommodate their respective users' needs and behaviors effectively.

Keywords: *rooftop garden, urban landscape, Japanese garden, Indonesia*

INTRODUCTION

Urban green space can improve the quality of a city's environment by providing environmental and social benefits. Environmental benefits of urban green space include ameliorating urban microclimate, preserving biodiversity, conserving nature, improving air quality, reducing noise, and reducing pollution (Rakhshandehroo et al., 2017). Meanwhile, social benefits of urban green space include providing recreational space, providing aesthetic enjoyment, promoting physical health, improving psychological well-being, enhancing social interactions, and providing educational opportunities (Zhou & Rana, 2012). Urban green space is essential as it has been associated with human health, well-being, and happiness (Kwon et al., 2021). However, the availability of land in cities keeps decreasing due to urbanization, and spaces for urban greenery become more limited. Rooftop gardens are seen as a solution to overcome the limited land issue.

A rooftop garden, or interchangeably referred to as a roof garden, is a garden located on the topmost level of a building. It can be a residential or commercial structure. Rooftop gardens provide similar benefits as traditional urban green spaces while accommodating the limited land issues found in high-rise building areas. Additionally, rooftop gardens may keep buildings cooler than traditional roofs (Thomas & Cherian, 2021) and they also increase property values because people favor green attributes (Shukri & Misni, 2017). In congested urban areas with little land for gardens, rooftop gardens offer recreational opportunities for building users and add beauty to the cityscape.

The practice of rooftop gardens keeps increasing in urban areas worldwide, including developed and developing countries. Rooftop gardens are likely to be more common in developed countries, considering their land availability for urban green space tends to be lower than in developing countries. However, the trend toward roof gardens also increases in metropolitan cities in developing countries, such as Jakarta. There may be some differences between rooftop gardens in different countries, be it in the design, the elements, or the activities. In this study, we explore the difference between rooftop gardens in Indonesia and Japan, particularly Jakarta and Tokyo. Tokyo and Jakarta were chosen considering their similarities as metropolitan cities in Asia.

The study case in Tokyo is Ginza Six Garden, while the study case in Jakarta is PIM 3 Rooftop Garden. Both rooftop gardens are located in shopping malls in an elite area of their respective cities. The objective of this study is to compare the characteristics of rooftop

gardens in Jakarta and Tokyo by describing each garden's design concept, elements, and user activities. As the trend of creating rooftop gardens keeps increasing, this study can be of interest to landscape designers when designing rooftop gardens.

RESEARCH METHODS

Study Area

This study focuses on two rooftop gardens, which are Pondok Indah Mall (PIM) 3 Rooftop Garden, Jakarta, Indonesia, and Ginza Six Garden, Tokyo, Japan. Both rooftop gardens are located in shopping center buildings in elite areas of each city. Ginza is a district in Chuo-ku, Tokyo, known for its luxury shopping, restaurants, and entertainment. Meanwhile, Pondok Indah is an elite residential area in Kebayoran Lama, Jakarta Selatan. The study area can be seen in Figure 1.

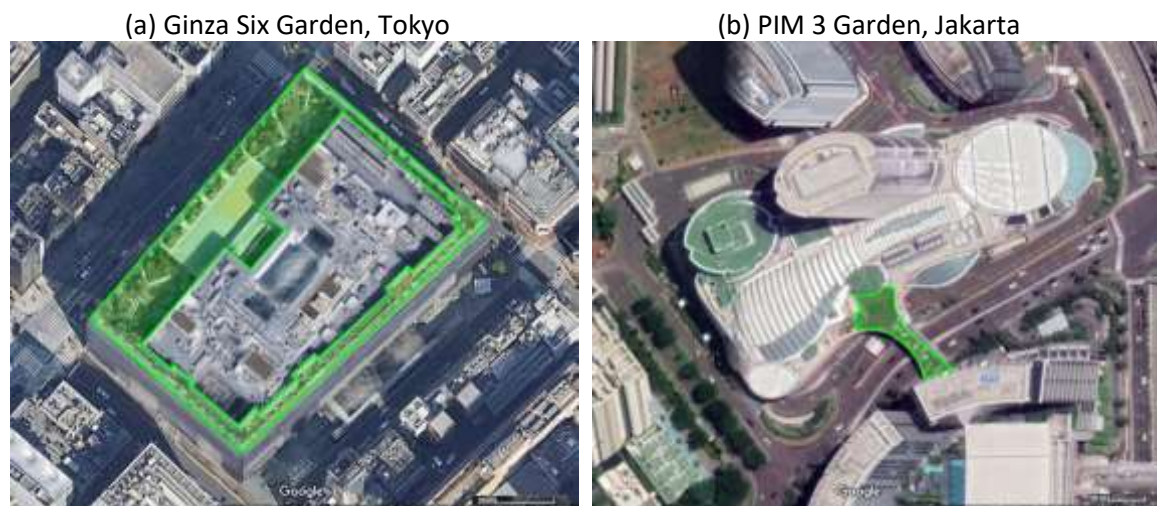


Figure 1. Study areas in (a) Tokyo and (b) Jakarta, marked with green color
Source: Google Map (2023)

Data Collection and Analysis

This study follows a descriptive qualitative approach. The data used in this study is based on visitors' photos and reviews uploaded in the internet (secondary data) and supported by field observation (primary data). Shared visitors' photos may tell us the interesting parts of the gardens according to visitors. Conducting research using secondary data collected from the internet as a base for analyzing recreational areas are common to analyze the attractive areas perceived by users (Nikjoo & Bakhshi, 2019; Walden-Schreiner et al., 2018).

Landscape elements can be divided into four elements, which are living elements (flora or fauna), natural elements (landforms, terrain, elevation), human elements (structures,

building, fences), and abstract elements (weather, lighting) (Landscape Institute, 2012). Generally, landscape elements are divided into two, softscape (living things) and hardscape (non-living things). This study identifies the garden elements in study areas, including the perceived design concept, softscape and hardscape elements, and user activities.

RESULTS AND DISCUSSION

The results and discussion section consists of the three subsections: (1) PIM 3 Rooftop Garden, (2) GINZA SIX Rooftop Garden, and (3) Comparison between PIM 3 and GINZA SIX Rooftop Garden.

1. PIM 3 Rooftop Garden

Overview

PIM 3 is a shopping mall that is connected to an office tower. This mall is opened in April 2021. PIM 3 is the newest shopping mall in Pondok Indah area, after PIM 1 and PIM 2. PIM 3 Rooftop Garden is located on the top floor of PIM 3 and can be accessed from the 3rd floor. The rooftop garden is called Love on Top (LoT). This garden is opened in December 2021. The garden's opening hours follow PIM 3's operational hours, from 10:00 to 22:00.

Garden Design Concept

PIM 3 Rooftop Garden has a theme of "Love on Top" that leads to a romantic garden concept. The garden aims to create a romantic atmosphere for its visitors. The main attraction of this rooftop garden is spots to take photos, as promoted on social media. To support the romantic concept, there are many flowers with white, pink, and red colors. The ornamental features in this garden have organic shapes, such as circle, heart shape, and other curvilinear shapes.

Garden Elements

To accommodate the design concept, the majority of softscape elements in PIM 3 garden are ornamental plants, including flowering shrubs such as *Tagetes erecta*, *Pachystachys coccinea*, *Bougainvillea spectabilis*, and small trees such as *Wodyetia bifurcate*, *Livistona chinensis*, and many more. A wide variety of plants is commonly found in tropical gardens. Colorful flowering shrubs seem to be used to create places suitable for taking photos, now often referred to as "*instagrammable*", places to take photos that are considered worthy to be uploaded to social media, particularly Instagram. The hardscape elements in PIM 3 garden

includes wood decks, pergolas, benches, planting pots, and many others. Many hardscape elements are created as ornamental elements, some with striking colors, such as the “LOVE” art sculpture colored in red, some are with calmer color, such as white pergola and wooden shelter with artificial flowers (Figure 2). The elements’ shapes follow a heart’s shape, a circular shape, and other organic forms. Overall, the garden elements, both softscape and hardscape, in PIM 3 rooftop have ornamental aspects considering the garden aims to be an aesthetic place for taking photos.

Garden Activities and Events

Visitors’ activities that can be seen in PIM 3 Rooftop Garden includes sitting, chatting, and taking photos. It is easy to find users taking photos in the garden (Figure 2). Visitors usually come in a small group, such as two to five people. Sometimes, there is a temporary event being held in this garden. When the event is being held, the garden would have decorations, such as paper lantern for Chinese New Year event (Figure 3). The garden gets busier in the evening when visitors take pictures with the view of the sunset sky and the high-rise building.



Figure 2. Visitors taking photos in PIM 3 garden (face are blurred for privacy)

Source: Ardian (2022)



Figure 3. Temporary decoration on PIM 3 garden for Chinese New Year

Source: (Seamata, 2023; Tashandra, 2022)

2. GINZA SIX Rooftop Garden

Overview

GINZA SIX Garden is a part of GINZA SIX, the largest retail facility in Ginza, Tokyo, that houses around 241 brands in one commercial space. It is a new commercial complex and an urban redevelopment project that unified two blocks in Ginza 6-chome District 10. GINZA SIX opened in April 2017. GINZA SIX Garden is located on the top floor of GINZA SIX, which is the 14th floor. The rooftop garden is open to the public every day, from 07:00 until 23:00. The garden area is approximately 4,000 m², which makes this garden the largest public rooftop garden in Ginza area. The outline of GINZA SIX is shown in Figure 4.

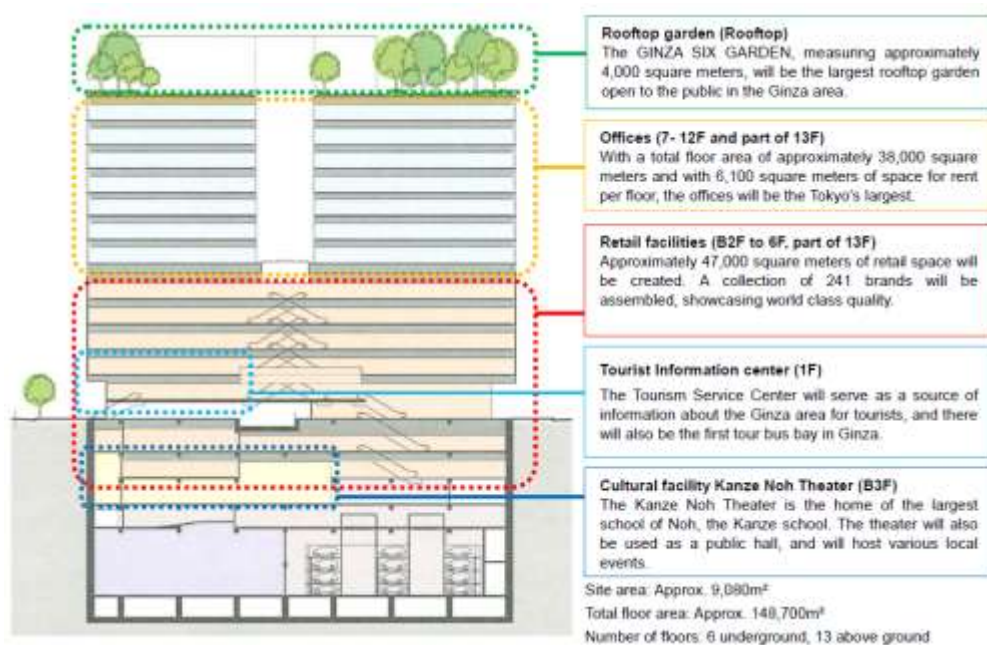


Figure 4. GINZA SIX Outline

Source: (GINZA SIX PR OFFICE, 2016)

Garden Design Concept

GINZA SIX Garden exhibits the uniqueness of Japanese culture while embracing the modernity of Ginza area by integrating the concept of traditional Edo Garden and modern urban western plaza. The modern urban western concept fits the location context, which is the middle of Ginza, and the traditional Edo Garden concept preserves the localness of Japan. The concept of combining east and west is rooted in the history of Ginza. Ginza was considered as the ground zero of Japan modernization (Grunow, n.d.), the first intersection of the east and west style in Tokyo. Ginza Bricktown is remembered as the start of Japanese efforts to modernize and westernize following the Meiji restoration. Ginza Bricktown display the new

Meiji government, the New Tokyo, and the new Japan (Smith, 1978). The GINZA SIX GARDEN is an attempt to revive the image of the city that is often described in the context of modern history.

The traditional Edo Garden culture is shown through the vegetation selection and arrangement that also creates semi-private sitting areas (Figure 5a). The north and south groves (groups of trees) are planted with a variety of tree species that were used in gardens of the feudal lords of Edo period (1603-1868), to express the changing seasons of Japan. The western garden culture is shown through the large open flat surfaces of water and grass that allow variety activities (Figure 5b).



Figure 5. (a) Groups of Japanese maple trees that represents Edo concept and (b) open plaza that represents western concept

Source: (Placemedia Landscape Architects Inc., n.d.)

Garden Elements

The softscape in GINZA SIX garden includes tree species that were used in Edo gardens. The northern grove is centered around several varieties of Japanese cherry trees (*Prunus* sp.), while the southern grove forms a sparse forest centered around Japanese maple trees (*Acer* sp.), creating a sense of the different seasons in spring and fall (Figure 6a). The forest floor, with its gently varying elevation, is planted with a variety of shrubs and ground cover plants, and benches and verandas are placed along the pathways to create an environment in which visitors can experience the changing seasons as they spend time relaxedly. The hardscape in GINZA SIX garden uses materials like wood, concrete, steel, and glass. Wood is used for the deck, bench, and other elements that are designed for passive activities such as resting (Figure 6b), while concrete is mainly used for plaza, pathway, and elements that are used for active activities such as walking and playing.

There are lawn and water surfaces located at the center, two squares of exactly the same size and shape, but with completely different expressions, juxtaposed as a pair (Figure 5b). On the north side is a flat lawn, which is common in Western parks, and on the south side is a water basin (water jetty) with a water film only 5 mm thick that flows slowly, bringing movement to the plaza with the sound of water and sparkling light. The water basin is also a place where people can touch the water, as it is intended for people to enter. Furthermore, by stopping the flow of water in the water basin, the two plazas can be used as one continuous entity for various events.



Figure 6. (a) Trees, (b) deck, and pathway in GINZA SIX garden

Source: (Placemedia Landscape Architects Inc., n.d.)

Another feature of GINZA SIX Garden is that the rooftop also takes advantage of the fact that it was developed across two city blocks to create a circular path around the entire perimeter of the building. This plan is a departure from the logic of the typical Edo period (1603-1867) garden style, in which the main focus is on looking out from the path of circulation. By following this path, visitors can enjoy an almost 360-degree view of Tokyo, centering on Ginza. Each visitor is allowed to find their own favorite place.

Garden Activities and Events

Visitors who come to GINZA SIX garden are mainly for sitting, chatting, and resting. Sometimes, this garden is used to hold temporary events, such as lighting events (Resonating Trees) and art exhibition events. Figure 7 shows the events held in GINZA SIX garden. Holding temporary events in this garden attracts visitors to come and enjoy the scenery. Through night events, visitors can enjoy the night view and lighting attraction after a hectic day at work.

(a) Resonating Trees



(b) Art Exhibition



Figure 7. The events held in GINZA SIX garden

Source: (a) (teamLab, 2018), (b) (Takaki, 2023)

3. Comparison between PIM 3 and GINZA SIX Rooftop Garden

Garden Design Concept

Both rooftop gardens are located on the top of a large shopping mall in the elite area of respective city. However, there are major differences in the design concept, the elements, and user activities of the gardens. As for the design aspect, the rooftop garden in PIM 3 employs a more complex and sophisticated look than GINZA SIX. In PIM 3, the garden design tends to focus on creating *instagrammable* spots. Meanwhile in GINZA SIX, the garden design tends to focus on creating tranquil resting areas for visitors while still providing spaces for social interactions. This is the core difference between both gardens. Therefore, the elements and the user activities are different as well.

Garden Elements

The hardscape elements design in PIM 3 is more complicated than GINZA SIX that tends to have simpler design. In PIM 3 garden, there are pergolas with rather complicated designs (Figure 8a). Meanwhile, in GINZA SIX garden, the hardscape element designs are rather minimalistic and futuristic (Figure 8b). Many hardscape elements in PIM 3 are created for ornamental purposes. This is expected considering the garden is designed to be *instagrammable*. On the other hand, the elements in GINZA SIX do not focus on the ornamental purpose. Still, both gardens are aesthetically pleasing.

(a) PIM 3 garden



(b) GINZA SIX garden

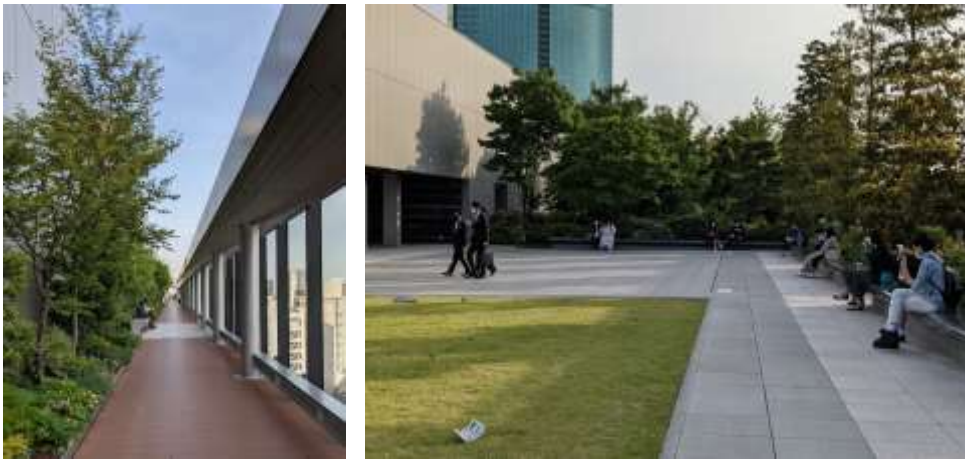


Figure 8. (a) Ornamental hardscape in PIM 3 garden and (b) futuristic hardscape elements in GINZA SIX garden

Source: (a) Satya (2022), (b) Author's documentation

Contrasting situations can also be seen in the softscape materials (vegetation) selection. Overall, the vegetation in PIM 3 garden is more colorful than in GINZA SIX garden. PIM 3 garden utilizes colorful flowering shrubs in many spots of the area. Meanwhile, GINZA SIX garden uses shrubs with calmer colors, mostly green (Figure 9a). There are seasonal plants in GINZA SIX gardens, such as Japanese cherry trees and maple trees. These trees change color in different seasons, cherry trees turn pink or white in spring and maple trees turn yellow to red in autumn. There are more tall trees in GINZA SIX garden than in PIM 3 garden. The tall trees in GINZA SIX create a semi-private sitting area for visitors (Figure 9b).



Figure 9. (a) colorful flowering shrubs in PIM 3 and (b) simple monotonous shrubs and trees in GINZA SIX garden.

Source: (a) Satya (2022), (b) Author's documentation

Garden Activities and Events

Basically, people visit the gardens to rest and relax. But there is a different tendency between PIM 3 and GINZA SIX garden activities. From the photos that are uploaded in the internet by users, it is common to see PIM 3 users posing and taking self-portraits or group pictures in the garden. Considering the design is aimed to be *instagrammable*, these kinds of activities show the effectiveness of the design. Meanwhile, it is less common to see people taking self-portrait pictures in GINZA SIX garden. Based on author's observation, visitors of GINZA SIX mainly use the garden to sit, rest, and relax. Visitors of GINZA SIX tended to take pictures of the cityscape scenery outside the garden, rather than pictures of themselves. This is likely related to the cultural and behavioral difference between Indonesian and Japanese as well. Based on authors' observation and experience, common Indonesian people like to upload their photos on social media, more than common Japanese people. This difference might influence the landscape design of each rooftop garden. This possibly explains the reason why both rooftop gardens have rather contrasting designs despite both are similarly located in the shopping mall of the elite area in the respective city.

Regarding events, both rooftop gardens are sometimes used for temporary events, such as Chinese New Year celebration in PIM 3 and resonating trees in GINZA SIX. Holding an event in these gardens seems effective considering their location on top of shopping malls, which makes them easy to access. However, since authors did not have a chance to experience any temporary event in both gardens, we are not able to compare the events held there.

CONCLUSION

PIM 3 and GINZA SIX rooftop gardens are very distinctive to each other despite both gardens similarly are located in the elite area of their respective city. The differences can be seen from the design concept, garden elements, and user activities. PIM 3 garden's concept is based on the trend of citizen culture that likes to update their activities on to social media, meanwhile GINZA SIX garden's concept is based on the history of Ginza area that is a combination of traditional and modern culture. Since the design concepts are different, the garden elements and the user activities are different as well. PIM 3 garden tends to have more ornamental elements and colorful plants than GINZA SIX garden. As for the activity, PIM 3 garden visitors like to take pictures of themselves, aside from resting. Meanwhile, GINZA SIX garden visitors mostly just sit and relax, and sometimes take pictures of the scenery. The main reason for these differences is most likely due to cultural differences. Japanese people seem to be more private than Indonesian people. Therefore, their needs in public space are different. Although the gardens exhibit contrasting design, elements, and users' activities, both gardens seem to accommodate their respective users' needs and behaviors effectively.

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