A study on public space design strategies in Japanese National Museums - focusing on The National Museum of Western Art and The National Art Center in Tokyo

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ABSTRACT
This study examines the prototypes, characteristics, and perspectives of public space in museums whose existential values and concepts have continuously changed based on their historical contexts. Based on an understanding of museum architecture and its cultural and social context in Japan, this research focuses on two national museums that represent Japanese modern and contemporary eras. In particular, this research examines The National Museum of Western Art in Tokyo – designed by Le Corbusier, an internationally known French architect, in the 20th century – and the public space of The National Art Centre – the fifth national museum in Japan which was designed in the environment of Japanese museums by a Japanese representative architect, Kisho Kurokawa. This research concentrates on the public space within museums that reflects the flows and social demands of the era, rather than focusing on the architects’ design concepts or architectural analysis. A thorough analysis will be conducted, focusing on the museums’ floor plans, sections, images, and diagrams to showcase the characteristics and perspectives of public space in 21st century museums.

1. Introduction
The existential values and concepts underlying museums have continuously changed based on the historical context. For example, modern museums were places for privileged people to collect, preserve, exhibit, and manage artwork for their own engagement and enjoyment. In that sense, the public understood modern museums as a part of upper class culture. For them, museums were private spaces that the public could not easily access. Hence, Filippo Tommaso Marinetti (1876–1944), a radical Italian futurist poet, heavily argued that academic museums should disappear. Museums posed a challenge for architects in the modern era. Similarly, Vera L. Zolberg (1994) points out, "the mission of the museum is to find people who do not usually come to the museum." Therefore, contemporary museums have developed into "complex cultural spaces" and have opened to the public. In addition to serving basic functions such as collection, preservation, and exhibition, they have become a visitor-friendly, cultural, and educational space that allows visitors leisure and relaxation. In addition, contemporary museums that reflect their social contexts sometimes become city landmarks.

Claire Bishop (2016) points out, "with museums’ current emphasis on entertainment, there is an inherent risk that they have changed into ‘amusement parks’ or ‘populist temples’." Bishop argues that museums should be a balanced public space.

The purpose of this study is to analyse the periodical changes in museums’ demand for public space with a special focus on National Museums of Art in Japan, which experienced a steep decline in visits after the era of the Japanese bubble economy (December 1986–February 1991). After this, the so-called "lost decade" continued until 2001, and the majority of public museums closed – either temporarily or permanently – in Japan.

Accordingly, this study examines the chronological change and characteristics of public spaces in Japanese national museums and aims to provide a possible strategy for the design and spatial composition of public space in the 21st century. The study focuses on two major architects’ works that were completed before and after the 90s, when the significant decrease in museum visits occurred: 1) The National Museums of Western Art (NMWA) in Tokyo – the main building (1959), as one of the UNESCO World Heritage sites listed in 2016, was designed by Le Corbusier, an internationally renowned 20th century French architect – and (2) The National Art Centre (NACT) in Tokyo (2007), which is located within the Tokyo Museum Complex, one of Japan’s representative contemporary museums (Figure 1). Although these museums are different in scale and time of completion, comparing the public spaces of these museums leads us to a meaningful conclusion as the
two spaces were designed by two leading representative architects and both reflect the contexts and demands of their times. In 2016, NMWA received 1.3 million visitors and NACT received 1.6 million visitors according to the statistics. These figures are more than twice those of other national museums. Although these numbers cannot be used as basis for evaluating museums, these figures can help us to grasp the scale of visitors for modern museums in Tokyo. Ultimately, this study aims to provide a practical basis for evaluating museums’ public space.

2. Literature review

The literature review focuses on Le Corbusier and Kisho Kurokawa (Table 1).

As listed above, existing studies have focused on architects’ concepts and architectural processes. Therefore, studies on the relationship between exhibition space and public space, as well as the characteristics of public space, are required, particularly focusing on architecture’s periodical situations and visitors’ perspectives.

3. Museum’s historical spatial transformation

Museums appeared in the 16th century as places for the upper class to store and display their art. Filippo Tommaso Marinetti (1876–1944), a poet and pioneer of Italian futurism, argued that “academic” museums and libraries should be destroyed. Also, Jean Cocteau (1889–1963), a French poet, described the Louvre Museum as a morgue. Based on these criticisms of “academic museums” at the time, Lee (2014) states that museum construction at the time was so challenging for architects that only a few master architects could design them (Figure 2).

Since the 1970s, museums have endeavoured to narrow the sense of distance toward the public by moving away from their previous authority and austerity. For example, acting on an interest in developing public educational spaces, museums created culturally and socially meaningful space. Therefore, the public was able to access museums and approach artifacts more comfortably than they were previously able to do. Due to the increase in people’s quality of education and amount of leisure time, the role of museums in the contemporary era has become significant, regardless of one’s socioeconomic strata or age. In addition, museums’ educational role has expanded to the realm of lifelong-social education while reflecting their newly acquired needs for local communities.

Thus, museum construction should consider “software” aspects – for example, space composition for amenity, leisure, relaxation, and cultural contexts. In addition, Japanese architect Ryue Nishizawa (2016) emphasised that museums aim to create continuity between art, architecture, and city, rather than only focusing on the creation of a functional plan. Aside from serving simple exhibition functions, contemporary museums are designed to act as community centres with cafés and libraries that are open to citizens. From a macroscopic viewpoint, the role of a museum as a “landmark” in urban contexts should not be

![Figure 1. Location of The National Museum of Western Art, Tokyo (L), and The National Art Center, Tokyo (R).](image1)

![Figure 2. Les mots en liberté futuriste, Filippo Tommaso Marinetti, 1919 (L) and Museums’ Transformation Diagram by Claire Bishop (R).](image2)
underestimated. Therefore, on the one hand, we can conclude that contemporary museums have become multi-functional facilities.

On the other hand, as Claire Bishop (2016) points out, a quantitative analysis of contemporary museums yields negative evaluations and risks on value using the number of visitors to emphasise entertainment aspects. Criticising museums’ evolution into “amusement parks” or “populism temples,” Bishop underlines the necessity for “balanced” public spaces in museums.

4. Background and characteristics

4.1 The independent administrative Institution National Museum of Art, Japan

As of 2017, The Independent Administrative Institution National Museum of Art is composed of five art museums – The National Museums of Modern Art in Tokyo and Kyoto, the National Museum of Western Art in Tokyo, the National Museum of Art in Osaka, and the National Art Centre in Tokyo. The five museums share some features such as campus member programmes, teacher training programmes, and travelling exhibitions of National Art Museum collection art works (Table 3).

This study was limited to works that are located in the centre of the city and positively assessed in terms of spatial characteristics and architecture. Also, based on the period of the Japanese bubble economy (December 1986–February 1991), the works analysed were limited to those that were built before and after.

4.2 The National Museum of Western Art, Tokyo – main building (NMWA)

The National Museum of Western Art opened in 1959 as Japan’s only national institution devoted to Western art. The building was listed in “Kokyo Kenchiku 100 Sen” (100 selected public buildings) by the former Ministry of Construction in 1998 and designated as an Important Cultural Property in 2007.

The process of building the National Museum of Western Art, Tokyo (1959), designed by Le Corbusier, an internationally renowned French architect in the 20th century, was started in 1955 by the Japanese government. One year after its initiation, Le Corbusier proposed his ideal master plan, which included indoor and outdoor theatres and a temporary exhibition hall, to the Japanese government. However, because cultural facilities were scattered near the site, the Japanese government decided to only build the main building, rejecting Le Corbusier’s master plan for a cultural complex (Figure 3).

In this main building, we can find two concepts. The first is Le Corbusier’s 1939 concept, the “Museum

Table 2. Summary of selected works.

| Architect                  | Location                          | Opened         |
|----------------------------|-----------------------------------|----------------|
| Le Corbusier (1887–1965, France) | Le Corbusier (1887–1965, France) | 1959           |
| Taniguchi Yoshio           | Taniguchi Yoshio                  | 1952           |
| Maki Fumihiko              | Maki Fumihiko                     | 1963           |
| Cesar Pelli                | Cesar Pelli                       | 1977           |
| Kurokawa Kisho             | Kurokawa Kisho                     | 2007           |

| Project                        | Location                          | Architect         | Location       | Opened    |
|--------------------------------|-----------------------------------|-------------------|----------------|-----------|
| The National Museum of Western Art | Tokyo                            | Le Corbusier      | 1959           |
| The National Museum of Modern Art | Tokyo                           | Taniguchi Yoshio  | 1952           |
| The National Museum of Modern Art | Tokyo                           | Maki Fumihiko     | 1963           |
| The National Museum of Art     | Osaka                             | Cesar Pelli       | 1977           |
| The National Art Center        | Tokyo                             | Kurokawa Kisho    | 2007           |

Figure 3. Master Plan designed by Le Corbusier (1956).
of unlimited growth” (“Musée à croissance illimitée”). This concept was well-actualised in the building, particularly in the circulation planning that expands from the centre of internal space and efficient space composition through a lattice-arrangement of cylinders. The National Museum of Western Art was exposed to few geo-climatic examples compared with other architectural works. Thus, among the three museums designed by Le Corbusier, this main building is assessed as the best representation of the architect’s concepts. The second concept is “the five points of modern architecture.” This concept can be found in areas such as the entrance space, which is located under a simple square mass formulated by pilotis, or “architectural promenade,” which is connected to the upper level, and in the inner-directed space centred on the 19th century grand hall.

Riviere (1989) criticises Le Corbusier’s notions of growth and perpetuity in the “Musée à croissance illimitée”, arguing that museums cannot be considered as biological structures (Figure 4). Although Lee admits that Le Corbusier proposes a new approach to museums as a space for exhibitions as well as spatial and temporalexperience, he criticises Le Corbusier’s formalist-monumentalism in that the architect holds a traditional view toward museums as “a temple for exhibitions.” Despite these criticisms, the National Museum of Western Art was included in the UNESCO World Heritage list in 2016, and its value has been recognised worldwide.

The museum is composed of the New Wing, which was opened in 1979 and designed by Maekawa Kunio; the Special Exhibition Galleries, opened in 1997; and Research Library, opened in 2002.

4.3 The National Art Center, Tokyo (NACT)

The National Art Centre, Tokyo (2007) is located in Roppongi in the centre of Tokyo. Originally, this site was the University of Tokyo research centre campus after the military base (the Japanese Army Infantry Division III). Also, in the 21st century, this area is being developed as a central business, busy commercial district and is a representative contemporary museum in the Tokyo Museum Complex along with the Mori Art Museum designed by Richard Gluckman (1947b) and Suntory Museum of Art designed by Kengo Kuma (1954b). This museum, as the first national museum of such a large scale in the central business and busy cultural district of Tokyo, is the Japanese government’s fifth art institution. It was established under the Independent Administrative Institution National Museum of Art (Figure 5).

According to Ushijima, K. and Beltran Kawashima, A. (Ushijima and Beltran Kawashima 2002), in the period of rapid economic growth, there was a widely-based boom of establishing art museums throughout the nation in Japan. However, after the economic bubble collapsed in Japan (December 1986–February 1991), those art museums were regarded as the symbolic existence of administrative failure. After this, the so-called “lost decade” continued until 2001, and the majority of public museums closed – either temporarily or permanently. The National Art Centre was built directly following this period of contention and crisis regarding museums (Figure 6).

In terms of the museum’s exhibition space, the National Art Centre can be considered as a completely new type of museum because it does not have any permanent collections. The architect of this museum, Kisho Kurokawa, was part of the Great Four in the 1990s, along with Arata Isozaki (1931b), Fumihiko Maki (1928b), and Kazuo Shinohara (1925-2006). In the Japanese architecture of the 1960–70s, discourse related to the “intermediate space” and “in-between

Figure 4. Design Concepts of Le Corbusier; “Musée à croissance illimitée” (L) and “Architectural Promenade” in The National Museum of Western Art (R) (The Japan Architect, 1995).

Figure 5. The National Art Center (L) and The National Art Center, Public Space (R).

Figure 6. The National Art Center Main Entrance (L) and Roof Garden (R).
space" focused on the Metabolist. Kisho Kurokawa, a representative architect of metabolism, insisted on the importance of “intermediate space” in Japanese architecture through his books and works.

Through these activities, his popularity surpassed the borders of Japan, and, before his death in 2007, Kisho Kurokawa completed 65 architectural projects. Among these works, 23 were museums, comprising 35% of own projects. He is considered a notable architect in Japanese museum architecture.

Based on the National Art Centre’s Report (April 2015–March 2016), the total number of visitors to the National Art Centre was 2.29 million as of 2015. This number includes those who visited not only the museum’s exhibitions, but also its multiple cultural spaces. This number shows that the National Art Centre successfully reflects social and cultural needs in its public spaces. Currently, this museum is recognised as a new gathering place with diverse public spaces like museum shops, restaurants, and cafés. This directly affects the financial independence of the museum.

5. Analysis of public space formulation

This section examines the public space of museums based on their architectural backgrounds and concepts, focusing on their outdoor space, intermediate space – such as entrance halls, major space, and inner public space.

5.1 Outdoor space

The main building of the National Museum of Western Art, Tokyo is located within a park and provides a wide rectangular open square extended by pilotis. The spatial planning is outstanding, particularly because visitors to the outdoor public space are induced into the inner space through the horizontal expansion created by the pilotis.

The overall exterior space of the National Art Centre is located in the buffer-zone with the southern part of the National Graduate Institute of Policy Studies. Due to parking space and ramps, the exterior space does not function as an open-public space. However, unlike general exterior spaces, there is an exterior terrace between the fractal form of the double-layered glass curtain wall and green space. The building was built to facilitate circulation from the side facing the main entrance to the exterior space, so people can access it from inside. The terrace was finished with wood for a sense of comfort and release of tension between indoor and outdoor by arranging trees for a restful space. Like the relation between a base and its flowers, the terrace, despite its small and narrow features, erases the boundary between exterior space and the inner atrium while expanding its spatial boundary (Table 4).

5.2 Intermediate space (entrance hall, major space)

The intermediate space of the National Museum of Western Art begins from the volume of glass on the first floor under the box-shaped mass created by the pilotis. The light-glass volume naturally establishes a visual connection to the open square in the front. This eases the boundary between interior and exterior space, which results in the interior space on the first floor being a spacious semi-exterior. This strategy for space indirectly encourages visitors’ access. Visitors enter through a low and dark entrance hall but immediately encounter a high and bright 19th century grand hall (Figure 7). This hall is not only the most important major space in this building, but also the space that most showcases Le Corbusier’s concept of museum architecture. The space is vertically

Table 4. Comparative analysis about outdoor space (The Japan Architect, 1998, 2007; Kisho, 2002).

| Characteristics | NMWA, Tokyo | NACT, Tokyo |
|-----------------|-------------|-------------|
| Floor Plan      | ![Image](scale 1:1,000) | ![Image](scale 1:4,000) |
| Image           | ![Image](Open square, pilotis) | ![Image](Environment-friendly Terrace) |

Figure 7. 19th century grand hall sketch by Le Corbusier.
open, and the two tall circular cylinders support the triangular skylight. The light that shines through the skylight illuminates the inner space and motivates people to gather in the space. The space’s overall aspects enable visitors to continuously experience its multi-dimensionality.

The cone form of the National Art Centre’s entrance hall attracts visitors with its vertical spatiality. The atrium, which is three stories tall (21.6 m), is a major space consisting of two inverted cones (Figure 8). This atrium acts as a mediating space between exterior and interior exhibition spaces. Although the atrium is an inner space, it is tall and wide, which provides visitors with a sense of liberation. The first floor of the major space also consists of a pop-up store and café coquille, in which visitors sit comfortably and relax. Salon de The Rond, a café on the second floor, is named for its rounded public space above the inverted cone, which is designed to provide a special public space to facilitate rest and recuperation after visiting the museum (Table 5).

### 5.3 Inner space for the public

The National Museum of Western Art divides the characteristics of each space vertically. Like the 19th century grand hall, the first floor is planned as a public space. Museum shops and restaurants are located on the first floor, and exhibition and maintenance areas are located on the second and third floors. The curtain wall in the first floor emphasises its characteristic as public space through its visual permeability to the exterior space. Even though the public space on the first floor is relatively small, it does not have a purpose but is open to the public. Based on the museum’s scale and the era in which it was established, this public space contains symbolic meaning for visitors.

The National Art Centre provides visitors with various cultural and educational spaces beyond the basic function of exhibition. A museum shop and café on the base and open-air exhibition area along with the café coquille, art library, auditorium, roof-top garden, and lecture rooms on the ground level are exemplary of this multi-functional organisation (Figure 9). These public spaces also serve as semi-public corridors

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**Table 5. Comparative analysis about intermediate space (The Japan Architect, 1998, 2007; Kisho, 2002).**

| Characteristics                                      | NMWA, Tokyo | NACT, Tokyo |
|------------------------------------------------------|-------------|-------------|
| Grand hall with skylights, Architectural Promenade   |             |             |
| Visual permeability                                  |             |             |
| Two inversed cones, Atrium                           |             |             |
| Atrium                                               |             |             |

**Figure 8. The National Art Center, Public Space: Major Space (L) and Restaurant (R).**

**Table 6. Comparative analysis about inner space (The Japan Architect, 1998, 2007; Kisho, 2002).**

| Characteristics                                      | NMWA, Tokyo | NACT, Tokyo |
|------------------------------------------------------|-------------|-------------|
| Visual permeability                                  |             |             |
| Diverse culture space                                |             |             |
| Relaxed aisle                                        |             |             |

**Figure 9. The National Art Center, Public Space: Pop-up Store (L), Art Library (R).**
between the atrium and exhibition spaces. The architect planned these corridors as foyers, or lobbies, which serve as places for people to spend time in that are large enough to be corridors between spaces. These spaces are finished with wood for a warm and comfortable feeling. The benches and rest areas in the centre allow visitors to rest in a space in which they want to stay (Table 6).

6. Conclusion

This study examined the characteristics and perspectives of museums’ public space based on the contexts and requests of the time, focusing on two museum architects of the Japanese national museums in modern and contemporary times. A comparison of these two architects yielded two traits, as described below.

First, a contemporary museum in the centre of a city, such as The National Art Centre, is planned as a single building on a narrow site, unlike past museum projects. Therefore, a museum complex is established that has relationships with surrounding museums and emphasises the accessibility and inflow of citizens.

Secondly, museums reflect public spatiality based on the period in which they are established. Particularly, contemporary museums are being used as community spaces that facilitate numerous activities for the public. The National Art Centre contains multiple public spaces, and its atrium consists of two inverted cones allowing visitors to relax. At the same time, it considers the space’s cultural and art-management aspects and includes a museum shop, restaurant, and café.

Finally, the multiplicity of public spaces is the product of a particular design strategy. Even though the National Museum of Western Art’s scale was not significant, it creates spatial affluence through various strategies, such as the creation of space using pilotis and the establishment of visual continuity using glass and vertical space. Also, the National Art Centre atrium’s extraordinary cone design resolves concerns over the limited outdoor space by providing enough indoor space.

In sum, the role of spatial design is significant in reflecting changes and responding to the requests of the time. However, we should be aware that museums’ public space should not be the basis upon which we evaluate museums’ values quantitatively – for example, counting the number of visitors.

Due to this study’s focus on two museums, it should be supplemented with other Independent Administrative Institution National Museums of Art from different regions to generalise the results. Furthermore, the diachronic analysis of multiple regional cases, such as a comparison with other contemporary museums, should be conducted in future research.

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